

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	Pollan Dam PUB
Organisation	Irish Water
Scheme Code	0600PUB1020
County	Donegal
Site Visit Reference No.	SV25650

Report Detail	
Issue Date	22/06/2022
Prepared By	Ruth Barrington

Site Visit Detail			
Date Of Inspection	01/06/2022	Announced	Yes
Time In	13:55	Time Out	17:25
EPA Inspector(s)	Ruth Barrington Lisa Noone		
Additional Visitors			
Company Personnel	Irish Water: Yvonne McMonagle, Martin Temple, Eamonn Doherty, Hugh Kerr Donegal County Council (working under Service Level Agreement to Irish Water): Stephen Glackin, Philip Doherty, Bernard Doherty		

> Summary of Key Findings

1. Full chlorine contact time for primary disinfection is not achieved at Illies Water Treatment Plant (WTP). While calculations show that sufficient contact time would be achieved through reservoir capacity, this is not continuously verified at two out of the three reservoirs. Irish Water should establish continuous verification of disinfection for all treated water.
2. Training on Irish Water's "Incident Communication Response Guidance Form" was not provided to Donegal County Council plant operators at Illies WTP. This conflicts with Irish Water's report to the EPA that training was delivered/ cascaded to all staff in the top 26 water treatment plants during Q4 2021.

> Introduction

Pollan Dam Public Water Supply serves a population of 20,121 people and is one of the largest 26 public water supplies in Ireland. Raw water abstracted at Fullerton Dam is treated at the Illies Water Treatment Plant. Treatment processes include dissolved air flotation, rapid gravity filtration, prechlorination for oxidation of manganese, secondary rapid gravity filtration for manganese removal, and disinfection using sodium hypochlorite.

The audit was undertaken as part of the EPA's ongoing assessment of the largest 26 public water supplies, which together serve approximately 65% of public water supply consumers.

> Supply Zones Areas Inspected

On-site treatment processes were included as part of the audit scope. The raw water abstraction and treated water reservoirs were not visited.



1. Coagulation Flocculation and Clarification (CFC) Stage

	Answer
1.1	Is the CFC process optimised to respond to changes in raw water quality? Comment 1. Controls on chemical dosing prior to the Dissolved Air Flotation (DAF) processes have recently been upgraded to allow for automatic dose control based on the post-coagulation streaming current monitor, supported by raw water UVT. In practice, manual control of chemical dosing is brought back into use frequently where the Donegal County Council plant operator notes changes in DAF outflow turbidity, aluminium concentration or floc test results. 2. The operator considered that at present the automatic dosing upgrade does not respond quickly enough to raw water quality changes and thus manual intervention is needed to maintain water quality. It was noted that the upgrades have not yet been fully handed over and the streaming current monitor has not gathered 12 months' worth of results. Adjustments to the upgrade controls are still being made prior to handover and completion.



2.1

	Answer
Are the filters designed and managed in accordance with EPA guidance?	Yes
Comment 1. The six primary rapid gravity filters (RGF) use single media sand which was last replaced during 2014-2015. The media has a design depth of 800 mm but the current sand depth is not known. The design depth does not meet the initial guidance specified in Section 5.3 of the <i>EPA Water Treatment Manual-Filtration</i> , however since the L/D ratio falls within the best practice range of 1000-1500 the current filter media design should be considered adequate until future filter upgrades are planned. At that stage, the filter media design depth should be re-assessed against EPA guidance. 2. No recent filter assessments/ inspections have been carried out and there is no indicator of sand bed depth on the filters. 3. Automatic backwash of the primary RGF is not currently in operation at Illies WTP as the actuator valves require replacement. The valves have been ordered but a delivery date was not available at the time of the audit. Turbidity in excess of 0.25 NTU on any one filter will hold that filter over for manual backwash with a maximum of one filter off-line being possible before the water treatment plant shuts down. 3. A critical alarm and inhibit on 0.2 NTU is currently in effect on final water turbidity to shut down the water treatment plant in the event of rising turbidity.	



3. Disinfection

3.1

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

Answer

No

Comment

1. Full chlorine contact time for primary disinfection is not achieved at Illies Water Treatment Plant (WTP). The sample for the verification chlorine residual monitor at Illies WTP is located before full contact time is achieved. Chlorine contact time calculations indicate that the WHO recommended minimum of 15 mg.min/l is not achieved on-site even when the oxidation dose location (pre-chlorination) is taken into account.

2. Chlorine contact time calculations indicate in excess of the required contact time when the capacity of each of the reservoirs is included. There are no consumer connections prior to the reservoirs at Illies, Ballymangan and Crockaveaney, but continuous chlorine residual monitoring is only in place at Crockaveaney. Therefore the contact time provided at Illies and Ballymangan reservoirs does not have continuous verification.

3. The planned next phase of upgrades at Illies WTP will include a full review of the disinfection processes and controls, including the provision of a contact tank and verified contact time within the WTP site. Timescales for this upgrade are not yet available.



4. Site Specific Issues

	Answer
4.1 Has training been provided to plant operators on updated Incident Response Procedures?	No
Comment	
<p>1. Irish Water provided training to Donegal County Council on the revised Irish Water incident response procedure <i>Incident Communication Response Guidance Form</i> during Q4 2021. However, this training was not then rolled out by Donegal County Council to the operators at Illies WTP. This conflicts with Irish Water's report to the EPA that training was delivered/ cascaded to all staff in the top 26 water treatment plants during Q4 2021.</p> <p>2. It was noted that the site specific procedure for Illies WTP was displayed in the control room.</p>	

Recommendations

Subject	Pollan Dam (Illies WTP) Audit 01/06/2022	Due Date	22/07/2022
Action Text	<p data-bbox="272 338 517 371">Recommendations</p> <ol data-bbox="300 398 1417 891" style="list-style-type: none"><li data-bbox="300 398 1417 517">1. Irish Water should provide verification of primary disinfection for all treated water in the Pollan Dam PWS. An action programme for short term measures (chlorine monitors at Illies and Ballymangan Reservoirs) and the provision of additional contact time onsite at Illies Water Treatment Plant should be included as part of the audit response.<li data-bbox="300 544 1417 633">2. Irish Water should ensure that training is provided to water treatment plant operators (including relief and temporary staff) on the requirements of the Irish Water <i>Incident Communication Response Guidance Form</i>.<li data-bbox="300 660 1417 719">3. Irish Water should ensure that the rapid gravity filter valves are replaced as planned to allow automatic backwash controlled by appropriate turbidity trigger levels.<li data-bbox="300 745 1417 804">4. Irish Water should complete the commissioning of the latest dose control upgrade at Illies WTP to support operational confidence in the automatic dosing.<li data-bbox="300 831 1417 891">5. Irish Water should provide a means of assessing the depth of media in the rapid gravity filters, such as depth gauges fixed to the filter walls. <p data-bbox="272 972 810 1005">Follow-Up Actions required by Irish Water</p> <p data-bbox="272 1028 1390 1086">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.</p> <p data-bbox="272 1113 1329 1171">This report has been reviewed and approved by Michelle Minihan, Drinking Water Senior Inspector.</p> <p data-bbox="272 1198 1386 1256">Irish Water should submit a report to the Agency on or before 22/07/2022, detailing how it has dealt with the issues of concern identified during this audit.</p> <p data-bbox="272 1283 1425 1344">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.</p> <p data-bbox="272 1370 1425 1429">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.</p>		