

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	South Leitrim Regional
Organisation	Uisce Éireann
Scheme Code	1700PUB1100
County	Leitrim
Site Visit Reference No.	SV32013

Report Detail	
Issue Date	08/04/2025
Prepared By	Veronica Boland

Site Visit Detail			
Date Of Inspection	28/02/2025	Announced	No
Time In	10:30	Time Out	13:20
EPA Inspector(s)	Veronica Boland		
Additional Visitors			
Company Personnel	Uisce Éireann: Marie Finneran, Paul Kelleher, Kevin Love. Leitrim County Council (working in partnership with Uisce Éireann): Colleen McTigue, Cathal Gormley.		

> Summary of Key Findings

1. The South Leitrim Regional Water Supply water treatment plant (WTP) operates over its design capacity. This poses a significant risk to the quality of treated water and to the maintenance of a supply to the area. Uisce Éireann should address these risks by progressing the proposed plan as referred to in this report to upgrade the WTP and increase the capacity of the WTP.

> Introduction

The South Leitrim Regional Water Supply WTP has a design capacity of 10,500m³/day and produces 11,300 m³/day of treated water. Raw water is abstracted from the River Shannon. The treatment process comprises of alkalinity adjustment, coagulation and flocculation, Dissolved Air Flotation (DAF), rapid gravity filtration, UV disinfection, chlorination, fluoridation and pH correction. Treated water is pumped to two reservoirs (Mong Lower and Mong Upper) with a combined storage capacity of approximately 8,600 m³.

The audit was undertaken to assess Uisce Éireann's performance in producing clean and wholesome water with a focus on the alarms, inhibits and management oversight in place at the water treatment plant (WTP).

> Supply Zones Areas Inspected

- Raw water abstraction points
- South Leitrim WTP.



1. Coagulation Flocculation and Clarification (CFC) Stage

1.1

Were the CFC tanks, channels and weirs observed to be clean, level and well maintained during the audit?

Answer

No

Comment

1. At the audit, the EPA inspector observed vegetation (ivy) growing out of the side of the 'new DAF' flocculation tank close to the flocculator paddle. It is important that the area be maintained free of vegetation to prevent entanglement with the flocculator paddle and to prevent any potential impact on the water treatment process.



2. Management and Control

2.1

Is the water treatment plant resilient enough to cope with significant variations in raw water quality or demand?

Answer

No

Comment

1. The South Leitrim RWSS WTP is operating over its design capacity, and is in operation 24 hours per day, seven days per week to meet the demand placed on it. At the audit, staff advised that the WTP serves a population of approximately 17,285 people (EDEN figure 15,392). The Mong Lower and Upper reservoirs can provide for less than one day's demand. Thus, a plant outage may quickly result in supply being lost to homes and businesses.
2. At the audit, Uisce Éireann advised that they are in the process of scoping for the potential upgrade of the South Leitrim RWSS WTP to increase the design capacity of the WTP to facilitate current and future demand.
3. Uisce Éireann advised that an on-site generator has been installed at the WTP and a generator has also been installed at Lower Mong reservoir to ensure continued supply during power outages.
4. Staff also advised that a further upgrade to the Mong reservoirs is proposed in relation to the movement of water between the reservoir cells and to facilitate extra headroom.

2.2

Have the recommendations from the previous EPA audit been satisfactorily addressed?

Answer

No

Comment

A number of recommendations from the previous EPA audit undertaken on 24/01/2023 have not been completed to date. The outstanding recommendations are as follows:

Recommendation No. 1: Ensure that works in relation to the installation of the new sulphuric acid dosing and streaming current dosing control systems are completed to ensure CFC processes at the treatment plant are optimised to respond to changes in raw water quality.

Update: The newly installed streaming current monitor (SCM) system for coagulation dosing control was offline on the day of the audit. Staff advised that the SCM was running at a higher coagulant pH than it should be and a software upgrade is required and would be scheduled. Staff are manually controlling the coagulant dosing and carrying out jar tests and daily test of the raw water UVT with handheld UVT meters in the on-site laboratory until the commissioning issues with the SCM is resolved and the SCM is returned to service.

Recommendation No. 3: Conduct regular operational checks of filters at the treatment plant and maintain adequate records of these checks in accordance with the *EPA Drinking Water Treatment: Filtration*.

Update: At the audit a review of records of operational checks of filters was carried out. Records of filter depths for filters 5 to 8 were available but not for filters 1 to 4. The previous audit report also referred to records to be kept in accordance with Section 5.5.4 of the *EPA Drinking Water Treatment: Filtration*, regarding any incidents, unusual events or notable observations with respect to raw water quality (i.e. algal blooms, storms, etc.), details of any floc carryover. At the audit, a review of final water turbidity trend data indicated that final water turbidity exceeded 1 NTU for 5 minutes. Staff advised at the audit that this spike in turbidity was due to air getting trapped in the turbidity sample line, the line was cleaned and probes changed and this rectified the issue, however there was no record of this event.

Recommendation No. 5: Ensure that the raw water ammonia meter at the treatment plant is repaired and returned to service.

Update: The raw water ammonia meter/monitor was not working. Staff advised that the monitor was serviced numerous times but has never properly worked and parts are difficult to obtain for the monitor.



3. Alarms, Inhibits & Oversight Audits 2025

3.1

Were online monitors operational?

Answer

No

Comment

1. The 'new DAF' turbidity/pH/temperature monitor (HACH SC4500) had a warning symbol on the screen related to gasket warning. Instrument calibration records were reviewed at the audit (last calibration on 27/06/2024, next due 06/2025). The 'new DAF' turbidity probe calibration certificate stated 'The turbidity sensor was thoroughly cleaned Gasket warning showing. Next calibration date 06-2025'.
2. The 'old DAF' post turbidity/pH/temperature monitor (sc200) also had a warning symbol indicating that there was a fault with the monitor.
3. Staff advised that modification works to the DAF system to address issues with the DAF saturator were scheduled for the end of March.
4. The newly installed streaming current monitor (SCM) system for coagulation dosing control was offline. Staff advised that the SCM was running at a higher coagulant pH than it should be and a software upgrade is required and would be scheduled. Staff are manually controlling the coagulant dosing and carrying out jar tests and daily testing of the raw water UVT with handheld UVT meters in the on-site laboratory until the issue with the SCM is resolved.
5. The EPA inspector observed that the chlorine dosing pump no.1 'PU001' had a build up of dried 'caked' chlorine deposit on the pump head, tubing and surrounding pipework causing partial erosion of the pump head. The inspector also observed a build up of brownish rust colour material along tubing from the pump head.

3.2

Was there a plan in place for repair of any monitor not in operation during the audit?

Answer

No

Comment

1. There was no plan in place for repair of the monitors referred to in section 3.1. It is important that instrumentation linked to critical treatment processes is visually checked and recorded by operational staff and that any warning symbols/lights are investigated (even if the instrument is within it's service date) and repair/service of the instrumentation is undertaken as soon as possible to ensure operational control of the treatment processes.

3.3

Is there appropriate oversight of alarm responses?

Answer

No

Comment

1. While there was local oversight of plant performance trends, there was no oversight of alarm responses at the WTP (review of alarm history, response that were made, lessons learned).

3.4

Is there a documented procedure for responding to specific alarms?

Answer

No

Comment

1. The incident response form is displayed at the WTP and staff advised that they had been trained on it. However, there is no formal site specific procedure setting out how critical alarms are responded to and actions taken at the plant in order to protect water quality and public health.

3.5

Are there appropriate procedures covering verification of alarms and inhibits status following maintenance or other work on site?

Answer

No

Comment

1. There is no formal procedure covering verification of alarms and inhibits status following maintenance or other work onsite (for example, tag in/out system for contractors, testing alarm settings after works are complete).

Subject	South Leitrim RWSS - Audit 2025 - Recommendations	Due Date	09/05/2025
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. Provide details of the scope of works including timeframes for Uisce Éireann's proposed upgrade at the North Leitrim RWSS WTP to address risk to water treatment plant resilience and performance. 2. Remove vegetation and vegetative debris from the flocculation tank area and ensure the flocculation tanks and surrounds are maintained to prevent a reoccurrence of growth of vegetation. 3. Ensure that the 'new DAF' and 'old DAF' turbidity/pH/temperature monitors are restored to proper working order. 4. Investigate the feasibility of re-instating the raw water ammonia monitor at the WTP. 5. Restore the Streaming Current Monitor for coagulation dosing as soon as commissioning issues (coagulation pH) are addressed. 6. Replace the chlorine dosing pump no.1 pump head, tubing and any pipework that are impacted by 'chlorine erosion' to ensure that chlorine dosing is maintained at the WTP. 7. Put in place a written alarm response procedure for responding to and escalating all alarms generated at the WTP. The procedure should clearly document the corrective actions and set out delegation of responsibilities for operational and relief staff. Ensure all staff are trained in this procedure. 8. Put in place a written formal procedure covering verification of alarms and inhibits status following maintenance or other work onsite. Ensure all staff are trained in this procedure. 9. Ensure that the daily plant logbook includes recording of alarms and incidents with details of the actions undertaken in response to the alarms and incidents. 10. Ensure there are robust systems of reviews and checks on water treatment plant alarms and response to alarms including actions taken, and act on any deficiencies identified to protect public health and maintain drinking water quality. <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 09/05/2025 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>		