



Drinking Water Audit Report

County:	Leitrim	Date of Audit:	16 th May 2014
Plant(s) visited:	Cornashamsoge PWS, Scheme Code 1700PUB1202	Date of issue of Audit Report:	17 th June 2014
		File Reference:	DW2014/245
		Auditors:	Ms Ruth Barrington Mr David O'Connor
Audit Criteria:	<ul style="list-style-type: none"> • The <i>European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014)</i>. • The <i>EPA Handbook on the Implementation of the Regulations for Water Services Authorities for Public Water Supplies (ISBN: 978-1-84095-349-7)</i> • The recommendations specified in the EPA Report on <i>The Provision and Quality of Drinking Water in Ireland</i>. 		

MAIN FINDINGS

- i. **The Cornashamsoge PWS is fed from an upland lake/springs. Disinfection is carried out using chlorination and UV.**
- ii. **The operation of the UV treatment provided could not be verified during the audit.**

1. INTRODUCTION

Under the *European Union (Drinking Water) Regulations 2014* 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 drinking water.

Where the text of this report refers to the Water Service Authority this refers to Irish Water in accordance with Section 7 of the Water Services (No. 2) Act 2013.

Cornashamsoge PWS is supplied by a water abstraction from a spring fed upland lake. The source was not visited as part of the audit. Historically, Cornashamsoge water supply was operated as a Group Water Scheme. However since 2009, the abstraction point remained within the control of a Group Water Scheme while the treatment was installed and operated by Leitrim County Council due to detections of *E.coli* and coliforms and the failure by the Group Scheme to provide adequate treatment. The supply provides water (8 to 9 m³/day) to a population of approximately 20 people. In 2014, the EPA received information through EDEN reflecting the designation of Cornashamsoge as a Public Water Supply.

The opening meeting commenced at 11.55 a.m. at Cornashamsoge treatment plant. The scope and purpose of the audit were outlined at the opening meeting. The audit process consisted of interviews with staff, review of records and observations made during an inspection of the treatment plant. The audit observations and recommendations are listed in Section 2 and 4 of this report.

The following were in attendance during the audit.

Representing Irish Water: (* indicates that person was also present for the closing meeting)

Mr Justin Doran – Wastewater Engineer, Irish Water*

Ms Maeve Coultry – Executive Technician, Leitrim County Council*

Ms Collette Connolly – Environmental Technician, Leitrim County Council*

Mr John McCrann – Acting Caretaker, Leitrim County Council

Representing the Environmental Protection Agency:

Ms Ruth Barrington – Inspector*

Mr David O'Connor – Inspector*

2. AUDIT OBSERVATIONS

The audit process is a random sample on a particular day of a facility's operation. Where an observation or recommendation against a particular issue has not been reported, this should not be construed to mean that this issue is fully addressed.

1.	<p>Source Protection</p> <ul style="list-style-type: none"> a. The source was described by staff as a spring fed lake, located in an upland area at some distance from the plant. There are no routine inspections scheduled to check the abstraction source which is in private ownership. b. There has not been any recent catchment work that staff were aware of. c. Land owners have not been written to with regard to their obligations under the <i>European Union (Good Agricultural Practice for the Protection of Waters) Regulations 2014 (SI No.31 of 2014)</i>.
3.	<p>Filtration</p> <ul style="list-style-type: none"> a. There is manganese filtration in place at the plant. b. The turbidity monitors (for filter inlet/outlet, not for final water) were due for calibration in January 2014 according to the calibration sticker shown in photograph Ref. 050.jpg. c. The turbidity on inlet and outlet monitors, while outside calibration dates, read less than 1.0 NTU. However, it was noted that the inlet reading of 0.507 NTU was lower than the outlet reading of 0.635 NTU (refer to photograph Ref. 052.jpg).
4.	<p>Chlorination and Disinfection</p> <ul style="list-style-type: none"> a. Sample results from the treated water showed detections of coliforms and E.coli in October 2012 and September 2013 (before the supply's re-designation as a Public Water Supply), and there was a Boil Water Notice in place on the supply for some years. b. Chlorine monitoring is in place at the plant but the alarm facility did not appear to be in use at the time of the audit. c. The chlorination contact time has not been calculated for the supply. d. There does not appear to be any system of chlorine residual monitoring in the network and there were no records of same. Staff said that the Group Scheme may have done this in the past. e. There is also a (duty only) UV unit in place at the plant. The monitor for this has the capability to display as "on", as was the case during the audit, or "off", but not the dose applied (refer to photograph 053.jpg) There was no validation certificate available for the UV unit at the time of the audit.

3. AUDITOR'S COMMENTS

The history of the supply indicates contamination of the raw water source which is liable to re-occur, as there is no catchment measures in place to control this risk. There was insufficient control over the disinfection and barrier systems at the plant. The residual chlorine alarm facility did not appear to be set up to notify the water supplier in case of problems with the system, and the operation of the UV unit was unverifiable (other than the on/off display).

4. RECOMMENDATIONS

Source Protection

1. The Water Services Authority should report to the EPA on the history and sequence of boil water notices placed on the supply since 2009.
2. The Water Services Authority should carry out regular monitoring of microbiological parameters on the raw water prior to filtration/treatment as an indicator of trends in water quality.
3. The Water Services Authority should implement the requirements of Regulation 17 of the *European Union (Good Agricultural Practice for the Protection of Waters) Regulations 2014 (SI No.31 of 2014)* to ensure the required set back distances for springs and lake shores are adhered to.
4. The Water Services Authority should implement a system of regular checks of the source water to identify and target action on the risks to the source and potential impacts on the disinfection provided.

Filtration

5. The Water Services Authority should review the operation of the manganese filtration and ensure that maintenance and media replacement is carried out as required.
6. The Water Services Authority should ensure that any monitors provided for treatment processes (such as filter turbidity monitors) are maintained and calibrated as recommended by the manufacturer/supplier.

Disinfection

7. The Water Services Authority should review the contact time for chlorine disinfection to ensure that the correct dose and time (0.5 mg/l for at least 30 minutes) is being achieved as recommended by the World Health Organisation and that the first connections are receiving appropriately disinfected drinking water. The Water Services Authority should submit a calculation of the contact time to the Agency.
8. The Water Services Authority should ensure that the chlorine residual monitor is alarmed and linked to a recording device to ensure that either a sudden increase in chlorine demand or a failure of the chlorine dosing system is immediately detected and can be acted on.
9. The Water Services Authority should establish a programme of residual chlorine monitoring in the network to ensure that adequate residual is maintained at all times, having regard to the EPA's *Disinfection Manual*.
10. The Water Services Authority should ensure that the UV disinfection system is validated in accordance with an appropriate internationally accepted validation system.
11. The Water Services Authority should install a continuous UVI or UVT monitor at the point of disinfection and this monitor should be alarmed and linked to a recording device to ensure that any deviation of the quality of water outside the validated range for the UV treatment system or a failure of the UV disinfection system is immediately detected and can be acted on.

FOLLOW-UP ACTIONS REQUIRED BY IRISH WATER

During the audit the Water Services Authority representatives were advised of the audit findings and that action must be taken as a priority by the Water Services Authority to address the issues raised. This report has been reviewed and approved by Mr Darragh Page, Drinking Water Team Leader.

The Water Services Authority should submit a report to the Agency within one month of the date of this audit report 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 timeframe 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 File Reference Number in any future correspondence in relation to this Report.

Report prepared by:  Date: 17/06/2014

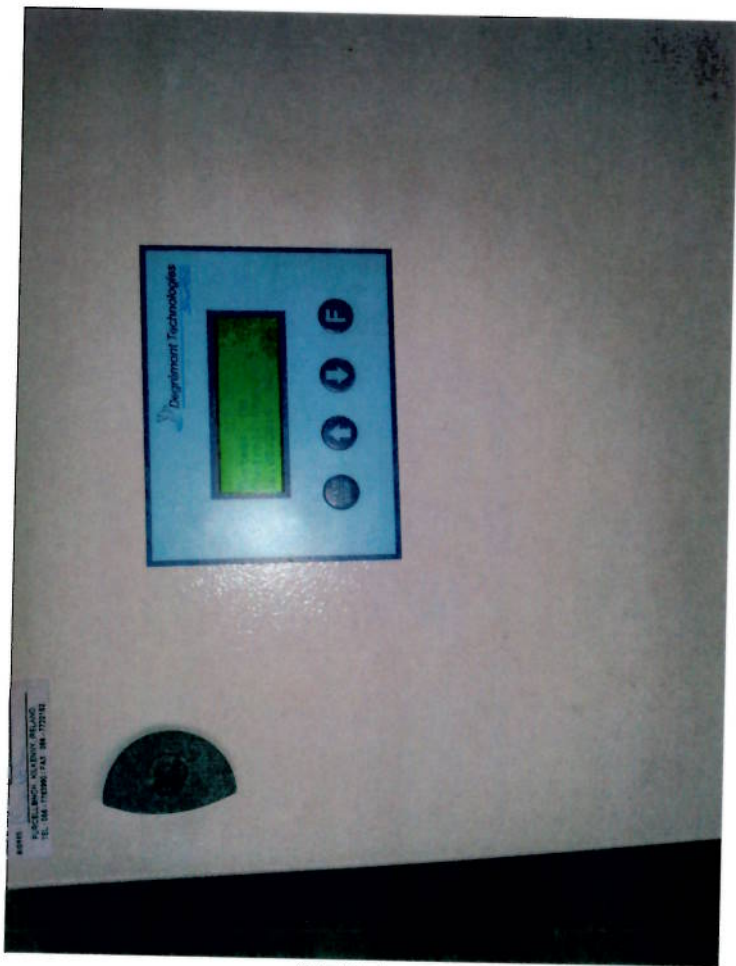
Ruth Barrington
Inspector



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