



Drinking Water Audit Report

County:	Galway	Date of Audit:	24 th June 2016
Plant(s) visited:	Carraroe Water Treatment Plant	Date of issue of Audit Report:	27 th June 2016
		File Reference:	DW2008/552
		Auditors:	Mr. Darragh Page
Audit Criteria:	<ul style="list-style-type: none"> • The <i>European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014)</i>. • <i>The 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 <i>EPA Drinking Water Report</i>. • EPA Drinking Water Advice Notes No.s 1 to 15. • The recommendations in any previous audit reports. 		

MAIN FINDINGS

- i. The EPA issued a Direction under Regulation 10 to Irish Water on 12th May 2014 requiring the submission of an action programme no later than 11th July 2014 to secure compliance with the THMs parametric value in the Carraroe PWS. Following the submission of a revised action programme, the action programme was approved by the EPA on 9th September 2014. The action programme required the installation and commissioning of a new solids removal plant ahead of the existing plant to be complete no later than 30th November 2015. The auditor found that the Direction has not been complied with. However construction works had commenced and are due for completion on 16th August 2016. Legal proceedings in relation to this are ongoing.
- ii. Carraroe PWS continues to be non-compliant with the trihalomethanes parametric value and the boil water notice will remain in place until the plant upgrade is complete, the network and reservoirs are cleaned and Irish Water can demonstrate the effectiveness of the remedial actions to the EPA and the HSE.

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.

The Carraroe public water supply is sourced from Loughaunwillan Lake and was treated using ozone, GAC filtration, UV disinfection and chlorination. The treatment plant was originally upgraded in 2011, however this did not result in the water being supplied meeting the trihalomethanes standard specified in the Drinking Water Regulations. Furthermore, the UV unit has not been providing an adequate treatment barrier to prevent *Cryptosporidium* entering the supply due to the fact that it has been operating outside its validated range. As a consequence the supply has been on a boil water notice since 7th March 2016. The plant is currently being upgraded.

The Direction issued by the EPA on 12th May 2014 required the preparation and implementation of an action programme by Irish Water to secure compliance with the THMs parametric value no later than 30th November 2015.

The opening meeting commenced at 10.30am at the Carraroe Water 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 audits observations and recommendations are listed in Section 2 and 4 of this report. The following were in attendance during the audit.

Representing Irish Water:

Pat O’Sullivan – Drinking Water Compliance, Irish Water
Eoin Curran – Area Engineer, Galway County Council
Ronan Griffin – Caretaker, Galway County Council
Jim O’Connell – Technician, Galway County Council
Shay Walsh - Engineer, Operations & Maintenance, Irish Water
Cathal Hurley – EPS
Aidan O’Malley - EPS

Representing the Environmental Protection Agency:

Darragh Page – Senior 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. Progress in relation to the upgrade of the Carraroe Water Treatment Plant

- a. Prior to the audit Irish Water submitted an updated progress report and GANTT chart to the EPA outlining the actions taken and planned by Irish Water in relation to the upgrade of the Carraroe Water Treatment Plant .
- b. Contractors EPS arrived on site on 11th April 2016 and commenced the upgrade of the plant.
- c. On the day of the audit the remedial works carried out included:
 - a. Installation of chemical coagulant dosing points and associated chemical storage area.
 - b. Installation of the dissolved air flotation unit and associated equipment.
 - c. Replacement of the GAC filter media to facilitate its conversion to a rapid gravity filter.
 - d. Removal of the ozonation equipment.
 - e. Installation of sludge tanks.
- d. IW stated that to facilitate the upgrade raw water was bypassing the filtration system for a period. IW stated that the chlorine dose had been increased to facilitate the expected increase in chlorine demand during this period.
- e. Subsequent to the audit Irish Water submitted a table outlining the expected short term impacts the upgrade would have on water quality and on water production capacity. They stated that consumers have been advised of the short terms impacts.
- f. IW stated that the anticipated completion date for the upgrade is 16th August 2016.

	<p>Following this IW intend to commence a programme of flushing of the mains and cleaning of the reservoir to remove any residual discoloured water from the supply. IW is to engage with the HSE once the works are complete, with a view to lifting the boil water notice.</p> <p>g. The capacity of the upgraded plant will be 100 m³/hr. IW stated that current production is 114 m³/hr. A mains rehab programme is currently underway to replace 14 km of the 104 km of pipeline in the supply. IW also stated that leakage detection crews are active in the supply to reduce unaccounted for water (currently at 60%). IW assured the EPA that this work would be complete before the plant upgrade is complete and that it was anticipated to reduce demand to 80 m³/hr.</p>
<p>2.</p>	<p>Exceedances of the Parametric Values</p> <p>a. Three recent THM exceedances have been notified to the EPA: 238 µg/l (19th May), 313 µg/l (7th June) and 275 µg/l (9th June). Irish Water stated that these coincided with the bypassing of the GAC as part of the upgrade works. The EPA pointed out that this cause was not referred to in the notification to the EPA through ODWNS.</p> <p>b. Once the upgrade of the treatment plant and the cleaning of the network and reservoir has been completed IW will carry out testing of THMs in the network to determine whether the remedial works have been successful in ensuring compliance with the THM parametric value.</p>

3. AUDITORS COMMENTS

The EPA issued a Direction under Regulation 10 to Irish Water on 12th May 2014 requiring the submission of an action programme no later than 11th July 2014 to secure compliance with the THMs parametric value in the Carraroe PWS. Following the submission of a revised action programme, the action programme prepared by Irish Water was approved by the EPA on 9th September 2014. The action programme required the installation and commissioning of a new solids removal plant ahead of the existing plant to be complete no later than 30th November 2015.

At the time of the audit the new solids treatment plant had not been completed but construction had commenced on 11th April 2016 and is due for completion on 16th August 2016. Monitoring results continue to be non-compliant with the trihalomethanes parametric value in 2016 but IW intend to verify the effectiveness of the remedial actions once the plant has been upgraded and the network and reservoir cleaned.

4. RECOMMENDATIONS

General

1. Irish Water should implement the action programme and ensure that the Carraroe public water supply is returned to compliance with the THM parametric value without any further delay.

FOLLOW-UP ACTIONS REQUIRED BY IRISH WATER

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. This report has been reviewed and approved by Ms Aoife Loughnane, Drinking Water Team Leader.

Irish Water is recommended to put such measures in place as are necessary to implement the recommendations listed in this report. The actions by Irish Water to address the recommendations taken will be verified by the Agency during any future audits.

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:

27th June 2016

Darragh Page

Senior Inspector