Drinking Water Audit Report

County:	Donegal	**Date of Audit:**	4th April 2017
Plant(s) visited:	Greencastle Drinking Water Treatment Plant	**Date of issue of Audit Report:**	13th April 2017
		File Reference:	DW2009/169
		Auditors:	Ms Derval Devaney
Audit Criteria:	• The *European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014).* • *The EPA Handbook on the Implementation of the Regulations for Water Services Authorities for Public Water Supplies (ISBN: 978-1-84095-349-7)* • The recommendations specified in the EPA *Drinking Water Report*. • EPA Drinking Water Advice Notes No.s 1 to 15. • The Regulation 10(4) Direction issued by the EPA on 11th December 2014 and associated Action Programme.		

MAIN FINDINGS

i. **Irish Water has not met the requirement of the EPA's Regulation 10(4)(c) Direction issued on 11th December 2014 and associated agreed Action Programme to address THMs failures in the supply by the 11th February 2017, as there is insufficient treatment at Greencastle Water Treatment Plant to prevent THMs formation.**

ii. **The connection of East Inishowen PWS to Pollen Dam PWS, which is the long-term solution to address the THMs failures at Greencastle PWS, is planned to be complete by Q4 2018. This network project will enable decommissioning of the Greencastle WTP.**

iii. **The interim measure proposed, to supply water from East Inishowen PWS to supplement the Greencastle PWS, has been in place since August 2013, in advance of the Direction being issued. However due to the limited capacity at East Inishowen PWS, this measure has not rectified the THMs issue at Greencastle PWS.**

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 and to determine compliance with the EPA's Regulation 10(4) Direction issued to Irish Water on 11th December 2014 and subsequent Action Programme approved by the EPA on 11th February 2015 in accordance with Regulation 10(4) 10(6) regarding compliance with the trihalomethanes (THMs) parametric value as soon as possible and no later than the 11th February 2017.

The Greencastle Public Water Supply (PWS) is on the EPA's Remedial Action List (RAL), as the supply has continuous THMs failures dating back to November 2009. The source of the supply is taken from Ballymacarthur Stream. Treatment at the plant consists of filtration (via three slow sand filters; two duty and one standby) and chlorination.

In 2013 a pipeline was laid to connect the supply to East Inishowen PWS and since August 2013 the final water of both supplies is blended at the Greencastle clear water tank on-site prior to entry into the Greencastle PWS distribution network. This is the only solution in place as an interim solution to assist in the reduction of THMs in the supply until the long-term plan is in place which is planned for completion by Q4, 2018.

The average flow though the Greencastle plant is 251 m^3/day and is blended with 258 m^3/day from East Inishowen PWS with 509 m3/day in total supplying a population of approximately maximum 1,937 during the tourist season and approximately 800 population during the audit.

The opening meeting commenced at 1.45 pm at Greencastle 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:

Sarah Casey, IW Analyst; Yvonne McMonagle. IW Compliance; Hugh Kerr, Chief Technician, Donegal Co. Co; Michael Ryan, Waterworks Inspector Donegal Co. Co; Kevin Lake. Acting Senior Engineer, Donegal Co. Co.

Representing the Environmental Protection Agency:

Derval Devaney, 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.	**Interim Solution** The interim solution as outlined in Irish Water's first progress report dated 28th April 2015 proposed: a. To continue the supply and blending of water from East Inishowen PWS with water from the Greencastle WTP which has been in place since August 2013 to reduce water being supplied by the Greencastle WTP and therefore to assist in the reduction of THMs in the Greencastle PWS until the long-term solution is in place. During the audit the Greencastle WTP was operating with two slow sand filters in operation and one on standby to be used when a SSF requires cleaning. The filter media was last replaced in February 2016. Irish Water stated that 50% of the Greencastle water supply comes from the East Inishowen PWS and is blended with treated water from the Greencastle WTP at a reservoir onsite. However, due to the limited capacity at East Inishowen PWS, this interim measure has not rectified the THMs issue at Greencastle PWS.
2.	**Long-term Solution** The long-term solution as outlined in the approved Irish Water Action Programme dated 11th February 2015 included: a. Providing a new distribution main and reservoir linking the Illies WTP at Pollen Dam to East Inishowen PWS; b. Decommissioning the existing Greencastle WTP; c. Commence construction in Q2, 2016; d. Completion date is Q2, 2017. In accordance with Regulation 10(4) and 10 (6), the Action Programme submitted by Irish Water dated 30th January 2015 was amended and approved by the EPA on 11th February 2015 and

	directed Irish Water to complete the proposed upgrade works to ensure compliance with the THMs parametric value in the Greencastle PWS as soon as possible but no later than 11th February 2017. During the audit, Irish Water stated the contractor was appointed in 2017 and they hope to commence ground works in April or May 2017 with completion of works by Q4, 2018. This network project is proposed to address the THMs issue in the Greencastle PWS but goes beyond the Direction timeframe of the 11th of February 2017.
3.	**Water Quality - THMs and *Cryptosporidium* Monitoring** a. The audit found that THMs continue to fail to comply with the parametric value of 100 µg/l as set out in the *European Union (Drinking Water) Regulations 2014* (S.I. 122 of 2014). b. THMs are monitored monthly by Irish Water and the most recent THMs results for 2016 and 2017 were reviewed during the audit. The THM results reported for 2017 were compliant and the last failures date back to August and September 2016 which were 162 µg/l on 02/08/16 and 199 µg/l on 26/09/16. c. *Cryptosporidium* is monitored in the final water at the plant each during September/ October. The *Cryptosporidium* risk score provided by Irish Water in the 2015 Drinking Water Returns was 70 giving the supply a moderate risk score.

3. AUDITORS COMMENTS

The EPA issued a Direction to Irish Water on 11th December 2014 requesting it to submit an Action Programme to address the persistent THMs failures in the Greencastle PWS.

In accordance with Regulation 10(4) and 10 (6), the Action Programme submitted by Irish Water dated 30th January 2015 was amended and approved by the EPA on 11th February 2015 and directed Irish Water to complete the proposed upgrade works to ensure compliance with the THMs parametric value in the Greencastle PWS as soon as possible but no later than 11th February 2017.

Irish Water's most recent bi-annual progress report dated 22nd December 2016 states it is investing €4.6 million to tackle the THMs issue in the Greencastle PWS by extending the water network infrastructure from Pollen Dam PWS via East Inishowen PWS to allow capacity for the supply of treated water to Greencastle PWS, thereby making the current water treatment plant at Greencastle redundant. However the completion date for the proposed works provided in this report and during the audit is Q4 2018, which goes beyond the Direction deadline of 11th February 2017.

During Irish Water's Meeting with the EPA on 6th March 2017 Irish Water stated that the Direction timeframe would not be met but hopes that the long-term works would be completed earlier than Q4, 2018. Irish Water's monitoring reports show THMs continuing to fail to comply with the parametric value of 100 µg/l as set out in the *European Union (Drinking Water) Regulations 2014* (S.I. 122 of 2014).

4. RECOMMENDATIONS

1. Irish Water shall carry out the proposed upgrade works as soon as practicable to ensure that the final water is compliant with the THMs parametric value of 100 µg/l as set out in the *European Union (Drinking Water) Regulations 2014* (S.I. 122 of 2014) and shall notify the EPA when complete.

2. Irish Water shall carry out *Cryptosporidium* monitoring in the final water during high risk periods until such time as the Greencastle water treatment plant is made redundant (e.g. Spring-time when oocysts are likely to be present in the raw water due to farming practices such as lambing or slurry spreading or during significant weather events such as heavy rainfall and flooding).

3. Irish Water shall carry out monitoring for THM following the decommissioning of the Greencastle WTP to verify the effectiveness of the actions undertaken and submit the results to the EPA.

FOLLOW-UP ACTIONS REQUIRED BY IRISH WATER

During the audit Irish Water representatives were advised of the audit findings and that there was a breach in meeting the legal requirements of the Regulation 10(4)(c) Direction issued by the EPA on 11th December 2014 and as a result further enforcement action may follow. This report has been reviewed and approved by Mr Darragh Page, Senior Inspector.

Please quote the File Reference Number in any future correspondence in relation to this Report.

Report prepared by:  **Date:**

Derval Devaney	13th April 2017
Inspector	