



Drinking Water Audit Report

County:	Clare	Date of Audit:	16 th & 28 October 2015
Plant(s) visited:	Broadford 0300PUB1027	Date of issue of Audit Report:	04/11/2015
		File Reference:	DW2015/179
		Auditors:	Mr Niall Dunne
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 <i>EPA Drinking Water Report</i>. • The recommendations in any previous audit reports. 		

MAIN FINDINGS

- i. There are no operational chlorine monitors on this supply. Irish Water must as a priority ensure that operational chlorine monitors are installed at all chlorine disinfection points, including booster chlorination points. All chlorine monitors must be 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 notified to a competent person.

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 disinfection processes in the supply and as such was limited to the disinfection equipment and related information.

This supply serves a population of approximately 800 people (this includes a group scheme, the population of the group water scheme was unknown), the plant produces approximately 900 m³/day in total. There are two boreholes at the treatment plant; one borehole supplies Broadford village and the other supplies, O' Callaghan's Mills and Tulla villages. (A separate audit undertaken on the 28/10/2015 was carried out to review the disinfection system within the network). Photographs taken by Niall Dunne during the audit are attached to this report and are referred to in the text where relevant.

The opening meeting commenced at 14.30 at Broadford WTP. 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: (* indicates that person was also present for the closing meeting)

Deirdre O'Loughlin - Compliance Specialist, Irish Water;

Kevin Murphy - Water Engineer, Irish Water;

Anthony McNamara - Senior Engineer; Clare County Council;

Tom Mellett - Executive Engineer, Clare County Council;

Maeve Lait - Senior Technician, Clare County Council;

Patrice Ryan - Senior Executive Technician, Clare County Council;

Eugene Maloney - Caretaker, Clare County Council.

Representing the Environmental Protection Agency:

Niall Dunne – 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.	Source Protection <ul style="list-style-type: none">a. There are two boreholes on this supply, one supplies the villages of O Callaghan's Mills and Tulla and the other supplies the village of Broadford. The well heads for either borehole were not in compliance with the EPA guideline and the covers were not sufficient to prevent surface water ingress, (see photograph 1).b. Clare County Council (CCC) stated that no farm surveys had been carried within the vicinity of the borehole.
2.	Chlorination and Disinfection <ul style="list-style-type: none">a. There are separate duty standby chlorine dosing pumps on the Tulla and the Broadford networks, (see photograph 2). CCC stated that there is auto switch over between the duty and standby pumps.b. On the Broadford network there is a chlorine monitor prior to the Broadford reservoir. This chlorine monitor at the time of the audit was not operational and was disconnected from the supply, (see photograph 3). According to CCC the monitor was never operational. CCC estimated that the monitor was installed approximately 7- 8 years ago.c. Prior to the Tulla reservoir there is booster chlorination with duty standby chlorine dosing pumps, (these chlorine pumps were not visited as part of the audit, as at different location). There is a chlorine monitor at the reservoir but was not operational at the time of the audit. According to CCC it was never operational, (see photograph 4).d. New replacement duty standby dosing pumps were observed at the Tulla reservoir; according to IW these pumps are to be operational by the Q1 2016.e. Caretakers tests for chlorine levels within the network on a daily basis.
3.	Treated Water Storage and Distribution Network <ul style="list-style-type: none">a. There are three reservoirs within this supply zone; one on the Boardford network, two on the Tulla network, one at Violet Hill the other at Tulla. (The reservoirs were not inspected as part of this audit.)b. Within this one supply zone, there are two separate networks each fed by a separate borehole.
4.	Management and Control <ul style="list-style-type: none">a. It was observed that the fencing around the treatment was not adequate to prevent unauthorised access.b. There was no calibration sticker observed on the chlorine dosing pumps.c. There is no chlorine sampling point at the treatment plant.

3. AUDITORS COMMENTS

There is no operational chlorine monitor on this supply, either on the Broadford or Tulla networks. It is essential that there is an operational chlorine monitor at all chlorine dosing points; this includes booster chlorination points. These chlorine monitors should be 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 notified to a competent person. A direction separate to this audit report has issued for the installation of the chlorine monitors and alarms and so this issue is not included in the recommendations of this report.

Within this one supply, there are in effect two separate networks, each fed by separate boreholes. One borehole supplies Broadford while the other supplies O'Callaghan's Mills & Tulla. IW should review these networks to determine whether separate supply codes should be allocated to each of these networks, if so EDEN should be updated accordingly.

4. RECOMMENDATIONS

Source Protection

1. Irish Water should ensure that the construction of each borehole is in accordance with the EPA Advice Note No 14: *Borehole Construction and Wellhead Protection*.
2. Irish Water should liaise with Clare Country Council in carrying out farm surveys within the vicinity of the borehole.

Disinfection

3. Irish Water should ensure that the chlorine dosing pumps are regularly maintained and calibrated in accordance with the manufacturer's instructions.
4. Irish Water should install a chlorine sampling point on the final water of each network.

Distribution

5. Irish Water should review the Broadford and Tulla networks to determine whether two separate supply codes should be allocated to these supplies. If so EDEN should be updated accordingly.

Management and Control

6. Irish Water should ensure that the water treatment site is made secure against unauthorised access.

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 Yvonne Doris, Drinking Water Team Leader.

Irish Water 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 in the above recommendations. The report should include details on the action taken and planned to address the various recommendations, including timeframes 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 DW2015/179 in any future correspondence in relation to this Report.

Report prepared by:



Date:

04/11/2015

Inspector

Photograph 1; Inadequate borehole construction (susceptible to surface water ingress).



Photograph 2; Separate duty and standby pumps on the Broadford and Tulla supplies.



Photograph 3: Chlorine monitor at the Broadford reservoir (not operational).



Photograph 4: Chlorine monitor at the Tulla reservoir (not operational).

