



Drinking Water Audit Report

Local Authority:	Laois County Council	Date of Audit:	29/11/2013
Plant(s) visited:	The Strand Supply 1600PUB 0027	Date of issue of Audit Report:	19/12/2013
		File Reference:	DW2012/100
		Auditors:	Mr Niall Dunne
Audit Criteria:	<ul style="list-style-type: none"> • The <i>European Communities (Drinking Water) (No. 2) Regulations, 2007</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>. • The recommendations in any previous audit reports. 		

MAIN FINDINGS

- i. **A Direction for the upgrade of the disinfection system on this supply was issued to Laois County Council on the 19th October 2012. The Direction required that the works to be completed by the 19th February 2013. LCC have completed the majority of works required by the Direction. However, the following works still remain outstanding;**
 - a. **The dial out alarms have yet to be commissioned.**
 - b. **The chlorine monitor has yet to be linked to a recording device.**
- ii. **There is no turbidity monitor on the final water. LCC should install an alarmed turbidity monitor on the final water and the monitor should be linked to a recording device.**

1. INTRODUCTION

Under the *European Communities (Drinking Water) (No. 2) Regulations 2007* the Environmental Protection Agency is the supervisory authority in relation to the local authorities and their role in the provision of public water supplies. This audit was carried out to assess the performance of the local authority in providing clean and wholesome drinking water and to assess whether the EPA Direction, issued on the 19th October 2012, to improve disinfection on this supply has been complied with.

This supply is served by a bored well. There are three houses on this supply with an average daily demand of 3 m³/day. The treatment plant is new and consists of chlorination, manganese and iron filtration. This supply was audited in 20th September 2012 and a Direction for the upgrade of the chlorination system was issued to Laois County Council.

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 12.30 at the 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 the Local Authority: (* indicates that person was also present for the closing meeting)

Jack Creegan – Senior Executive Engineer*; John Gavin – Senior Executive Engineer*; Kevin Coogan – Caretaker*.

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. The source for this supply is a bored well.b. Since the previous audit of the Strand supply, Laois County Council (LCC) have purchased the land surrounding the well.c. The well head is capped, (see photograph 1). At the time of the audit and according to LCC a kiosk has to be placed over the well head. LCC stated that since the last audit the well had been cleaned and flushed out.d. LCC stated that the Crypto risk assessment has not yet been revised. The original Crypto score was 29 (low risk). LCC stated that the farmers within the vicinity of the source have not yet been written to regarding their responsibilities under the GAP regulations.e. There is a turbidity monitor on the raw water; the reading on the day of the audit was 0.41 NTU. The high turbidity alarm is to be set at 0.8 NTU.f. LCC have also carried out some source protection works on the adjacent stream.
2.	Filtration <ul style="list-style-type: none">a. LCC have installed a manganese and iron filter (see photograph 2). According to LCC these filters are backwashed every day. The backwash is sent to a sludge holding tank (see photograph 3). As the plant is new LCC have not yet established how often the holding tank is to be de-sludged.b. LCC have also installed a Cintropur filter after the chlorine contact tank. LCC stated that the filter membrane is changed based on filter pressure but have not yet determined the schedule for when the filter needs to be replaced.
3.	Chlorination and Disinfection <ul style="list-style-type: none">a. The Direction issued on the 19th October 2012, required LCC to upgrade the chlorination system.b. LCC have constructed a new chlorination building (see photograph 3).c. There are duty standby chlorine dosing pumps in place, with 24 hour automatic change over. Dosing is flow proportional.d. There is a chlorine monitor in place, but it is not yet connected to recording device. The SCADA system is to be set up before the end of 2013. The reading on the chlorine monitor was 0.5 mg/l.e. LCC stated that the contact time is between 20 and 30 minutes. LCC did not have the contact time calculations on site.f. According to LCC that there is also auto shut off in place if the chlorine levels drop below 0.1mg/l.g. The dial out alarms are not yet operational but are set at 0.1 and 0.8 mg/l for low and high respectively.h. There is still a boil water notice (BWN) in place on this supply. LCC stated that it will remain in place until they have sampled for three samples clear of <i>E.coli</i>. LCC stated that the BWN should be lifted before the end of 2013.
4.	Management and Control <ul style="list-style-type: none">a. There is a leak from the final water piping. Otherwise the site was well maintained.b. LCC stated that the caretaker visits the site every day.c. There is no turbidity monitor on the final water.d. No written procedures manual was observed on the day of the audit.

3. AUDITORS COMMENTS

This supply was audited in 20th September 2012. Following this audit a direction was issued for the chlorination system to be upgraded by the 13th February 2013. Since the pervious audit Laois County Council has purchased the land where the well is located and have built a new chlorination building on this site. The old chlorination building has been abandoned. The well head has also been upgraded with well head protection works to be completed by the end of 2013.

The majority of works specified in the Direction have been complied with. The outstanding works are; to link the continuous monitor to a recording device and the commissioning of the dial out alarms, which, according to LCC, will be complete by the end of 2013.

Since the previous audit, Laois County Council has completed a substantial amount of work in upgrading this supply. There are some works still out standing which LCC should endeavour to complete by the end of 2013.

4. RECOMMENDATIONS

Source Protection

1. The Water Services Authority should submit the revised *Cryptosporidium* risk assessment for this supply.
2. The Water Services Authority should write to farmers with in the vicinity of the well to inform them of their responsibilities under the requirements of the *European Communities (Good Agricultural Practice for the Protection of Waters) Regulations 2010 (SI No.610 of 2010)*.
3. The Water Services Authority should ensure that the outstanding well head protection works are complete by the end of 2013.

Filtration (General)

4. The Water Services Authority should install continuous turbidity monitor on the final treated water at the water treatment plant. This monitor should be linked to a recording device and should generate an alarm in the event of a deviation from the acceptable operating range of the filters.

Management

5. The Water Services Authority should develop a documented management system to assist in the management of drinking water for this supply. The written documented procedure should also detail the maintenance and performance of the iron and manganese filters, the Cintropur filter and the sludge holding tank. The Water Services Authority should also take action to ensure that the procedures are being complied with

Disinfection

6. The Water Services Authority should inform the EPA when the out standing works as set out in the Direction are complete.
7. The Water Services Authority should review the chlorine alarm settings, especially the low alarm as this coincides with the shut down of the plant. The low alarm setting should provide adequate time for the caretaker to react and to deal with issues in a time efficient manner. A procedure should also be put in place defining the actions to be taken in response to the different levels of alarm.


FOLLOW-UP ACTIONS REQUIRED BY THE LOCAL AUTHORITY

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 Ms Yvonne Doris, 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 the Water Services Authority.

Please quote the File Reference Number DW2012/100 in any future correspondence in relation to this Report.

Report prepared by:  Date: 19/12/13
Niall Dunne
Inspector

Photograph 1: Well head. Kiosk to be placed over well head.



Photograph 2: Manganese and iron filters.



Photograph 3: New chlorination building with sludge holding tank.



