



Drinking Water Monitoring Programme Audit Report

County:	Longford	Date of Audit:	17 th November 2016
Location visited:	Longford County Council Offices	Date of issue of Audit Report:	6 th January 2017
		Auditors:	Ms. Derval Devaney (EPA) Dr. John Gray (Consultant)
Audit Criteria:	<ul style="list-style-type: none"> • <i>The 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 Private Water Supplies (ISBN: 978-1-84095-349-7).</i> 		

MAIN FINDINGS

- i. The list of private supplies reported by Longford County Council to the EPA through EDEN was found not to be accurate with some supplies no longer in existence. Longford County Council should review the list of supplies reported to the EPA and ensure that it is accurate and up to date prior to submission of the 2016 monitoring results.
- ii. Longford County Council should liaise with the private supplier (e.g. a GWS) when compiling the sampling plan for the upcoming year to ensure that the sample locations are representative of the water supply zone.
- iii. Longford County Council should carry out a risk assessment on private water supplies in consultation with the private water supplier to identify what audit parameters to monitor for, as required in accordance with Section 3 Paragraph 2.6 of the EPA's Handbook for Private Water Supplies.
- iv. Longford County Council should develop a protocol to ensure that sampling represents the water supply zone. Also, the distribution of sample days, times and locations within a monitoring programme should be as wide as possible.
- v. Longford County Council should review, in consultation with Irish Water, the four small public water supplies identified during the audit in an effort to determine whose responsibility they fall under. Such supplies should be included in the relevant monitoring programme for 2017 and onwards.

1. INTRODUCTION

Under the *European Union (Drinking Water) Regulations 2014* the Environmental Protection Agency has a supervisory role in relation to the establishment and implementation of monitoring programmes both by Irish Water and Local Authorities. This audit was carried out to assess the performance of Longford County Council in carrying out effective monitoring of private drinking water supplies to ensure the provision of clean and wholesome drinking water.

An audit of the 2015 monitoring programmes implemented in County Longford was carried out at the Longford County Council Offices on 17th November 2016. Using a questionnaire as a guide¹, Longford County Council staff were interviewed to ascertain the principles and methodology for establishing monitoring programmes, sample point selection, sample classification, integrity of data reporting and notification procedures.

There are 20 private supplies listed on the 2015 Drinking Water Returns submitted to the EPA. Longford Co. Co. confirmed that 18 of those are Private Small Supplies (PRI - of which 10 serve less than 10 m³/ day on average and less than 50 persons that are part of a commercial or public activity) and the remaining two private supplies are classified as Private Group Water Schemes (PRG).

The audit observations and recommendations are listed in Section 2 and 4 of this report. The following were in attendance during the audit.

<p>Representing Longford County Council: (*indicates that person was also present for the closing meeting)</p> <p>John Brannigan - Director of Services, Longford County Council*; Tom Murtagh, Senior Engineer; Longford County Council* Angela Brady, Executive Scientist, Longford County Council*; Martin Smyth, Executive Engineer, Longford County Council* Noel Madden, Assistant Executive Engineer, Longford County Council* Gerry Cassidy – Executive Engineer, Longford County Council*</p> <p>Representing the Environmental Protection Agency:</p> <p>Ms. Derval Devaney – Inspector, EPA* Dr. John Gray – Consultant, John Gray Consultancy*</p>
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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.

<p>1.</p>	<p>Compliance Monitoring Programme</p> <ol style="list-style-type: none"> a. The 2015 compliance monitoring programme for private water supplies was prepared by Longford County Council’s Executive Scientist and the HSE. b. The private supplier was not consulted when drafting the monitoring programme therefore the auditors were unable to determine if there were samples which were not representative of the water supply zone. c. The compliance monitoring programme for 2015 included: a list of all private water supplies in the county and the required number and frequency of all check and audit samples. d. Two check samples for each scheme listed in the compliance monitoring programme for 2015 were scheduled regardless of volume or population (all supplies supply a volume of 60 m³/day or less). The size of the schemes (population and volume) were not recorded in the monitoring programme. None of the audit parameters were included in the 2015 private supplies compliance monitoring programme. e. Sample locations were identified in general but individual properties were not listed. f. Specific sample locations, collection dates and suitable alternative sample locations were not pre-determined in the 2015 monitoring programme. Sample locations were selected by the HSE sampler based on personal knowledge of the area. g. Selection of alternative premises is not formalised and is based on the sampler’s local
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¹ The questionnaire was based on those used by the Drinking Water Inspectorate, London, and modified for the purpose.

	<p>knowledge and awareness of the supply networks. It was stated that there was no written protocol for the selection of addresses of alternative premises.</p> <ul style="list-style-type: none"> h. Samples are generally taken from the cold water tap in the kitchen although outside taps may on occasion be sampled. i. The analysis of audit samples was carried out by the City Analyst Laboratory in Dublin and check samples by the Public Analyst Laboratory in Dublin. No audit of external laboratories was undertaken by Longford Co. Co. j. A critical review of the temporal and spatial distribution of sampling, to ensure sampling represents the supply as accurately as possible, has not been carried out for County Longford. Reliance is placed on the predetermined sampling plan and sampler's choice of sampling location. The sampler does however take the GPS co-ordinates of the sample location. k. Upon review of the 2015 compliance sampling data returns submitted to EPA it is evident that most samples are taken on a Monday with some on Wednesday and a small number on Tuesday. None are taken on other days of the week or at the weekend. l. Consideration of the data for total coliforms shows that the first sample date for Longford Co. Co. the first sample date was 19 January 2015 and the last 8 December 2015. If these circumstances are repeated year on year then it is apparent that no compliance samples are taken for Longford Co. Co. for a period approaching six weeks. A lack of available resource around the Christmas holiday season was provided as a reason for this significant gap in compliance monitoring. m. Four small supplies serving 5, 2, 2 and 1 house (with public facilities) respectively were declared in 2013 to the EPA as small public supplies which are run by the Local Authority and were considered appropriate for Irish Water to take responsibility. These supplies have no supply zone code and are not monitored and are not included in the Compliance Monitoring Programme. Longford Co. Co. stated that there may be 100 – 200 single one off houses owned by the Local Authority which are not on the small public water supply list and requested the EPA's advice on this matter and whose responsibility these supplies rested with.
<p>2.</p>	<p>Operational Monitoring Programme</p> <ul style="list-style-type: none"> a. An operational monitoring programme for 2015 was not prepared by Longford Co. Co. for private supplies, however it was stated that the scheme owners carry out their own operational monitoring of raw and treated water and some supplies have both chlorination and UV units installed with monitoring capabilities.
<p>3.</p>	<p>Monitoring Programmes for Specific Parameters</p> <ul style="list-style-type: none"> a. There is no specific sampling programme for tankers. Tankers are deployed from contractors in response to incidents and all have "Boil Water Advice" notices permanently affixed.
<p>4.</p>	<p>Sampling Procedures</p> <ul style="list-style-type: none"> a. A comprehensive document, "Monitoring water quality in the Environmental Health Service, Longford", dated September 2013, covers sampling and other associated matters. It is not a controlled document. It is issued by HSE and held by the Executive Scientist. The auditors were unable to determine other recipients of the manual. It includes, among other things, consideration of the water sampling plan; sampling procedure; labelling and recording; parametric exceedances and incidents; follow-up actions; outcome/action requirements; and small rural supplies. b. There was no documented procedure available to view during the audit other than for bacteriological sampling. This is clearly defined and includes the need to sterilise taps before taking samples and the need to deliver samples to the laboratories before 1300 on the day following sampling. However, it is best practice to ensure the analysis of bacteriological samples commence within six hours of sampling. c. Sampling procedures are as agreed between Longford Co. Co. and the analysing laboratories. Water sampling log sheets are provided which allow the recording of the sampling point, sampler and chlorine residual. d. Alternative addresses are selected by the HSE sampler in the event that sampling from the originally selected property is not feasible, particularly in more rural areas. No formal

	<p>procedure is in place to select an alternative address although the sampler is aware of the need to take a representative sample from a given area.</p> <p>e. Compliance samples are pre-designated as such but because the sample receipt and data handling system is remote from Longford County Council it is not known whether the designation can be changed either at the time of sampling or in the laboratory. The auditors were unable to inspect sample handling at the laboratories although it was stated that samples would be received in the respective laboratories at the reception desk by an analyst and a receipt for the sample and the analyses required would be e-mailed to Longford Co. Co.</p>
5.	<p>Data Handling</p> <p>a. Analytical and associated data is recorded in the laboratory and when transferred to Longford Co. Co. it is entered on the Labinfo system by the technician and authorised by the Executive Scientist.</p> <p>b. If a result on the database is subsequently shown to be incorrect the data may be changed before the data is archived. The system produces an audit trail of access to the system and of data entries.</p> <p>c. The 2015 Drinking Water Returns had a private supply incorrectly categorised (e.g. Carrowbeg Preschool Newtowncashel was classified as “PRG” instead of “PRI”).</p> <p>d. Some private supplies were incorrectly included in 2015 Drinking Water Returns to the EPA. It transpired during the audit that these private supplies were no longer in use (e.g. Laurel Lodge Nursing Home, Ann Geraghty and Mulligans). Laurel Lodge is now connected to Longford Central PWS.</p> <p>e. Compliance monitoring data is made available on Longford County Council’s website however a hardcopy of the monitoring results is not routinely sent to private suppliers nor are they notified when results are uploaded to the Local Authority’s website.</p>
6.	<p>Exceedances of Parametric Values</p> <p>a. In the event of an exceedance of a microbiological parametric value, the HSE would notify Longford Co. Co. and consult over the need to issue advice to boil water. Owners of the scheme would also be advised and Longford Co. Co. would follow up with any remedial actions and resampling. The EPA would be informed through the submission of the annual drinking water returns.</p> <p>b. There were microbiological failures associated with a number of private supplies during 2015 some which had no treatment and Longford Co. Co. in consultation with the HSE issued 6 boil water notices to the affected premises. Longford Co. Co. stated that a phone call is made to inform the water supply owner and this is followed up with a formal letter. The letter also requests the water supplier to investigate the cause of the failure, carry out remedial action and to notify the Local Authority when works are complete so re-sampling can be arranged. It was stated during the audit that following 3 compliant samples the boil water notice can be lifted.</p> <p>c. There is a documented procedure identifying follow up samples and actions required in the event of exceedances in relation to specific parameters such as coliforms, <i>E.coli</i> and Enterococci; <i>Clostridium perfringens</i>, <i>Cryptosporidium</i>; copper, lead or nickel; other chemical exceedances; and turbidity. The required outcomes of any investigation and action required are identified.</p>

3. AUDITORS COMMENTS

Arrangements by Longford County Council in assessing the quality of private water supplies for 2015 were generally found to be satisfactory. However a number of weaknesses in policy and procedures were identified particularly the lack of a documented procedure for selecting and taking samples and communication of failures, the timing of sampling throughout the year and the lack of pre-determined specific sampling locations and dates to ensure samples are evenly spread and representative of the water supply zone.

In addition, none of the audit parameters were included in the 2015 private supplies compliance monitoring programme. In accordance with the EPA’s Handbook for Private Supplies, Longford County Council should carry out a risk assessment to determine what audit parameters to include in the check monitoring for private supplies. Also, the list of such private supplies should be accurate and up to date in EDEN.

Finally, the four small public water supplies identified during the audit should be reviewed in consultation with Irish Water in an effort to determine whose responsibility they fall under. Such supplies should be included in the relevant monitoring programme for 2017 and onwards.

4. RECOMMENDATIONS

Compliance Monitoring Programme

1. Longford County Council should liaise with the private supplier (e.g. a GWS) when compiling the sampling plan for the upcoming year to ensure that the sample locations are representative of the water supply zone.
2. Longford County Council should:
 - (a) establish a formal protocol for the selection of random addresses for sampling at consumer's premises and for the selection of alternative addresses if required;
 - (b) ensure that the spread of sample days, times and locations within a monitoring programme is as wide as possible, this is to ensure that compliance samples are representative of water quality consumed throughout the year as required by the Drinking Water Regulations;
 - (c) undertake a review of the temporal and spatial distribution of sampling for compliance monitoring. A formal and structured method of assessment should be developed and implemented to ensure that sampling is representing the water supply zone as accurately as possible. Sample locations should be mapped using GIS co-ordinates obtained in sampling to assist in this process.
3. Longford County Council should include in its compliance sampling programme:
 - (a) a predetermined narrow window of sampling dates to samplers;
 - (b) specific sampling locations;
 - (c) predetermined alternative sample locations in the event that a sample location is unsuitable or inaccessible;
 - (d) population and volumes for all private schemes.
4. Longford County Council should carry out a risk assessment in consultation with the private water supplier for each of its small private water schemes of < 100 m³/d to determine what audit parameters are to be included in the check monitoring, as required in accordance with Section 3 Paragraph 2.6 of the EPA's Handbook for Private Water Supplies.
5. Longford County Council should review, in consultation with Irish Water, the four small public water supplies identified during the audit in an effort to determine whose responsibility they fall under. Such supplies should be included in the relevant monitoring programme for 2017 and onwards.

Monitoring Programmes for Specific Parameters

6. Longford County Council should ensure that Section 4, Paragraph 4 of the EPA's Handbook is adhered to in relation to sampling required for water tankers. Sampling may be required on the water used to fill a tanker, depending on the length of time water is stored in the tanker and the source of the water used for filling.

Sampling Procedures

7. Longford County Council should:
 - (a) put in place a documented procedure for taking compliance samples (to include sampling of parameters other than bacteriological parameters currently in place);
 - (b) revise the procedure for bacteriological sampling with regard to storage and transport of samples;
 - (c) provide training to sampler on the procedure to ensure compliance sampling is undertaken adequately (e.g. not at an outside tap).

8. Longford County Council should put in place a written protocol on action to take when it is discovered that a compliance sample was taken at an incorrect property which is not representative of the water supply zone. This protocol should meet the requirements of Section 4, Paragraph 6 of the EPA's Handbook for Private Supplies which states that where a sample taken from a property is subsequently shown not to be served from the private supply, the Local Authority should take an appropriate representative sample as soon as practical and not include reporting of the unrepresentative sample to the EPA as part of the Drinking Water Returns but record the result for auditing purposes.

Data Handling

9. Longford County Council should ensure that all private water supply scheme data is accurate and updated on EDEN. In particular, Longford County Council should review the list of supplies reported to the EPA and ensure that it is accurate and up to date prior to submission of the 2016 monitoring results.
10. Longford County Council should provide a copy of the monitoring results to the private water suppliers.

Exceedances of Parametric Values

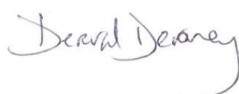
11. Longford County Council should put in place a written procedure for the communication and notification of an exceedance with the parametric values outlined in the Drinking Water Regulations (S.I. no 122 of 2014). This procedure should include who to contact in the event of a failure or where there is a potential risk to human health from a private water supply including those that serve populations of less than 50 persons as part of a commercial or public activity. The procedure should include actions to be taken to investigate the exceedance and report the exceedance to the HSE, private water supply owners and other relevant parties.

FOLLOW-UP ACTIONS REQUIRED BY LONGFORD COUNTY COUNCIL

This report has been reviewed and approved by Mr Darragh Page, Senior Manager, Drinking Water Team.

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

Report prepared by:



Date:

6th January 2017

Derval Devaney

Inspector