



Drinking Water Audit Report

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| County: | Kildare | Date of Audit: | 06/07/2017 |
| Plant visited: | Rathangan Water Treatment Plant (WTP) Scheme Code: 1400PUB1041 | Date of issue of Audit Report: | 25/07/2017 |
| | | File Reference: | DW2017/93 |
| | | Auditors: | Ms Pauline Gillard Ms Aoife Loughnane |
| 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>. • EPA Drinking Water Advice Notes No.s 1 to 15. | | |

MAIN FINDINGS

- i. **Rathangan water treatment plant was found to be well managed, with good operational controls over the treatment processes, and a SCADA system with remote monitoring facilities to alert the operators in the event of an alarm or incident at the plant.**

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 in the Rathangan public water supply.

Rathangan water treatment plant (WTP) is operated by Veolia on behalf of Irish Water. The raw water is sourced from 6 boreholes in the area. Treatment comprises of rapid gravity filtration, chlorination, and fluoridation. The treatment plant produces approximately 1,850 m³/day and serves a total population of 6,401 people in the Rathangan area.

The opening meeting commenced at 12.20 pm at Rathangan 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:

Aoife Lambe - Drinking Water Compliance Analyst,
Aodhnait Ni Chathasaigh - Drinking Water Compliance Analyst

Representing Veolia

Catherine Corrigan - Veolia

Ger Harkin - Veolia

Representing Kildare County Council

Paul Dennis - Area Engineer

Richie Furlong - Caretaker

Norman Hannigan - Overseer

Representing the Health Service Executive

Mary Gorby - Senior Environmental Health Officer HSE

Representing the Environmental Protection Agency:

Pauline Gillard – Inspector

Aoife Loughnane – 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.

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| 1. | Source Protection <ul style="list-style-type: none">a. The source of the raw water is 6 boreholes located in the area around Rathangan WTP. The auditors visited one of the boreholes (BH28), closest to the treatment plant. The borehole was enclosed in a steel kiosk, bolted into a concrete slab with a security fence around it. The borehole was covered. The wellhead was protected and meets the design principles set out in <i>EPA Drinking Water Advice Note No. 14: Borehole Construction and Wellhead Protection</i>.b. The borehole construction log was not available during the audit.c. The immediate catchment around the borehole was agriculture with sheep grazing adjacent to the borehole.d. Kildare County Council did not know if the Landowners in the vicinity of the borehole have been notified of setback distances under the <i>European Communities (Good Agricultural Practice for the Protection of Waters) Regulations 2014</i>.e. The <i>Cryptosporidium</i> risk assessment score has not been completed for the Rathangan water supply.f. A Drinking Water Safety Plan is not yet in place for Rathangan public water supply.g. Raw water quality is monitored continuously and relayed to the plant's SCADA system. |
| 2. | Filtration <ul style="list-style-type: none">a. The first stage of treatment is filtration in two rapid gravity sand filters.b. Filter backwashing is initiated every 24 hours.c. A backwash of Filter No. 1 was manually triggered during the audit. The auditors observed an even air scour and backwash across the filter bed.d. There was algae growing on the weir of both filters, which was impeding the even flow of water into the decanting channel. (See photograph no. 1)e. There are 2 alarmed turbidity monitors on both filters. The turbidity monitors are calibrated every year. At the time of the audit, the turbidity monitor on Filter No. 2 was not working. |

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| | <p>f. Backwash water is diverted to a holding tank for 6 hours within the treatment plant compound. The holding tank discharges water to a local stream. No sludge is produced from the backwash.</p> |
| 3. | <p>Disinfection</p> <p>a. Disinfection consisted of chlorination using sodium hypochlorite.</p> <p>b. The chlorine dosing is flow proportional and linked to the chlorine residual monitor. The chlorine residual target leaving the plant is 0.65 mg/l -0.7mg/l.</p> <p>c. The duty and standby chlorine dosing pumps are monitored and alarmed. The low chlorine alarm set-point is 0.3 mg/l.</p> <p>d. When the chlorine alarm is triggered there is a documented cascade system in place for responding to the alarm.</p> <p>e. Chlorine residuals in the network are measured and recorded daily.</p> <p>f. There is adequate chlorine contact time of 30 minutes at a minimum of 0.5mg/l free chlorine, in accordance with EPA Advice Note 3.</p> |
| 4. | <p>Treated Water Storage and Distribution Network</p> <p>a. Treated water is stored in the underground clear water tank on-site. The roof of the clear water tank was sealed but the mesh was peeling back from the vents. (See photograph no. 2)</p> <p>b. The clear water tank has not been cleaned out since it was built. A visual inspection at the opening of the tank showed no obvious contamination and appeared to be clean.</p> <p>c. The reservoir was not inspected during the audit. Kildare County Council advised that the reservoir has never been cleaned.</p> |
| 5. | <p>Management and Control</p> <p>d. There is a SCADA system at the plant which also allows for online monitoring of plant performance and data trends by the operator.</p> |

3. AUDITORS COMMENTS

Overall Rathangan water treatment plant was found to be well managed, clean and tidy. The plant produces good quality drinking water and is fully compliant with the drinking water standards. The auditors identified a few items for Irish Water to address, in order to safeguard the quality of water being supplied to consumers.

4. RECOMMENDATIONS

Source Protection

1. Irish Water should use the *Cryptosporidium* Risk Screening Methodology as outlined in *EPA Handbook on the Implementation of the Regulations for Water Services Authorities for Public Water Supplies* to determine the relative risk of contamination of the supply with *Cryptosporidium*. Following the risk screening, Irish Water should identify and implement measures to reduce the risk at the plant.
2. Irish Water should liaise with the Kildare County Council in relation to the requirements of the *European Union (Good Agricultural Practice for the Protection of Waters) Regulations*

2014 (SI No.31 of 2014) to ensure, unless an alternative setback distance has been set as per Article 17 that:

- i. Organic fertiliser or soiled water is not applied to land within 200 m of the abstraction point; and
- ii. Farmyard manure held in a field prior to landspreading is not placed within 250 m of the abstraction point.

Filtration

3. Irish Water should ensure that the filters are cleaned on a regular basis to prevent build-up of algae on the weirs of the filter.
4. Irish Water should assess the performance of the filters in order to determine an appropriate timeframe for replacement of the filter media.

Treated Water Storage

5. Irish Water should ensure that all vents on the clear water tank are secured against ingress of animals or deliberate introduction of any contaminant or acts of vandalism.
6. Irish Water should ensure that service reservoirs are inspected and cleaned out on a regular basis and any maintenance and repairs completed as soon as possible after the need has been identified.

Management and Control

7. Irish Water should ensure that automatic monitors are regularly maintained and calibrated in accordance with the manufacturer's instructions. In particular, Irish Water should ensure that the turbidity monitor on Filter No. 2 is repaired without delay.
8. Irish Water should ensure that hazard mitigation plans, with timeframes, are in place for all hazards identified as high risk in accordance the Drinking Water Safety Plan approach to managing water supplies. Irish Water should provide information to the EPA on the projects that are highlighted through the statement of needs process for Rathangan PWS, and how these correspond with identified risks.

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 Aoife Loughnane, 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 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 Irish Water.

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

Report prepared by:

Pauline

Date:

Pauline Gillard
Inspector

25/07/2017



Photograph No. 1: Algae on Weir.



Photograph No. 2. Mesh peeling back from the vent.

