PRIVATE WATER SUPPLIES – CASE STUDY 2017/05

Faecal contamination of a supply

This case study concerns a Regulation 9 supply which feeds an estate encompassing nine residential properties and a commercial unit which has a coffee shop supplying drinks to members of the public. The supply consists of a single borehole, nitrate removal by ion exchange and an automated chlorination system. Water is pumped to a covered holding reservoir before being gravity fed to the properties. There is storage in a covered reservoir. The supply was last risk assessed in 2013 and the risk assessment identified high risks associated with the reservoir not having adequate vermin protection on one of the vents and not being cleaned within the last 12 months. At the time the risk assessment was completed there had been no microbiological failures in the previous two years. The local authority did not serve any Notices to address the deficiencies identified during the risk assessment process.

During 2017, a sample was taken from the supply indicating faecal contamination. In response, the local authority served a Regulation 18 Notice which instructed users of the supply to boil water before consumption. The Notice did not contain any long-term measures for the estate owner, who is the operator of the supply, to investigate the cause or undertake any remedial works to rectify the source of the contamination.

The supply operator employed a water treatment specialist contractor who ‘shock chlorinated’ the system by manually increasing the chlorine residual on the chlorine dosing system. Following this chlorination, further samples were taken which were free from microbiological parameters and the local authority subsequently revoked the Notice which stipulated the boil water advice.

The Inspectorate was contacted by one of the users of the supply who raised concerns that that the supply operator had not identified and rectified the cause of the contamination. A review of the sample results identified that the samples collected after the chlorination did not include any on-site measurements for chlorine residuals. Without these measurements it was not possible to tell whether the chlorine concentrations in the system had returned to normal levels or remained elevated and be potentially masking any ongoing microbiological contamination. Without this information any samples could not be determined as being valid. As a logical conclusion to this, and without additional information, as none of the deficiencies identified during the risk assessment were rectified, potential contamination pathways still exist on the supply and the supply remains unsuitable for consumption.

The Inspectorate reminds local authorities for the need to take proactive action in response to any potential risks identified from the completion of the risk assessment process. This can be done via the serving of a Regulation 18 Notice if there is a potential risk to human health or Section 80 Notice if the supply is at risk of being unwholesome. Likewise, the Inspectorate reminds local

authorities that Notices served due to the presence of faecal indicators should include steps to remediate against the source of the contamination and not just stipulate the need for the water to be boiled before consumption. Finally, the Inspectorate would like to remind local authorities of the need to take representative samples from a supply and to record the residual chlorine levels if chlorination is practiced at a supply. Chlorine measurements should be completed on-site at the time of sampling and local authorities can refer to the Inspectorate's sampling manual at http://dwi.defra.gov.uk/private-water-supply/regs-guidance/Guidance/sampling/pws-sampling-procedures.pdf for more information on the correct procedures for collection of water quality samples.