



Farm borehole cross connection discovered following customer complaints.

CUSTOMER COMPLAINTS

In July 2012 Yorkshire Water identified *E. coli*, Clostridia spp, coliform bacteria and elevated nitrate in samples collected from customers in a village who had complained about the taste of their water. In addition to issuing a boil water notice, flushing the mains and increasing chlorine residuals in the distribution system the Water Quality team immediately instigated an investigation.

INVESTIGATION

Integral to the investigation was the role of the Water Regulations team. To ensure that water fittings inspections were appropriately targeted, the Water Quality Scientist provided information regarding the possible sources of the contamination. Having considered all the available evidence the most likely source was suspected to be one of the many agricultural premises in the immediate vicinity of the affected properties. Armed with this information the Water Fittings team dispatched a number of Regulations Inspectors to inspect all of the agricultural premises which had been identified as being a possible source.

At one of these properties the inspectors identified a private borehole distribution system with a direct cross connection to mains water supplying the farm. This had been installed by a private borehole company without any

backflow protection. In fact the only means of separation was a gate valve which had been left partially open.

RESOLUTION

The Water Regulations Inspectors attending made the farmer disconnect the cross connection immediately, thus removing any risk or reoccurrence of contamination. The owner was subsequently prosecuted for the offence of installing a fitting without adequate backflow prevention [Schedule 2 paragraph 15 (1)] fined £400 and costs of £5000 awarded.

Although a potential source had been located, in recognition of the seriousness of the contamination and rather than make any assumptions, the Regulations Inspectors completed inspections of all of the agricultural premises identified by the Water Quality Scientist.

Although some infringements (mostly associated with the use of hoses) were identified at these premises none of these was judged to be the potential source of the contamination event. This was later borne out by the results from a sample taken from the borehole supply, which correlated with that of the failed samples taken from the taps of those customers affected.

Regulations Inspectors provided the customers at all the inspected properties with both verbal and written

feedback regarding the infringements found at their premises and how these could be rectified. The customers were also issued with infringement notices, rectification requirements and the timescales required to comply.

At the premises where the cross connection had been discovered the customer was given specific advice, again both verbal and in writing on how to reconnect their mains back up supply in a way which complied with the Water Supply (Water Fittings) Regulations. To further assist the customer and ensure that there was no further misunderstanding or problems a Regulations Inspector made several return visits to the property.

CONCLUSIONS

This event highlights the potentially serious risks to water quality posed by inadequately installed private boreholes. As a consequence, Yorkshire Water (through information available from the British Geological Society) has identified over 2500 additional private boreholes within the county. These have now been included in the "Wrapzody" risk database and will be prioritised as part of the Company's planned inspection programme.