

Case study 4 - Further evidence of farms as a category of premises at high risk of causing water to be unsafe as a consequence of unsuitable water supply arrangements

In September, a customer contacted their water company over concerns they had about particles in their drinking water at their farm in Herefordshire. Samples taken by the company as part of their investigation were found to contain high counts of coliforms, *E.coli* and Enterococci.

In response, the water company issued boil water advice to the owner of the farm and delivered bottled water as an alternative supply while they investigated the cause and extent of the issue. This included taking additional samples from within the property and from neighbouring properties in order to isolate possible sources of contamination.

The water company carried out an inspection which identified a storage tank present within the grounds of the farm, which was receiving water from a private spring supply (see Figure 11). It found that a pipe had been connected from the farm's service pipe to this storage tank and mains water was being used to supplement the volume of water within the tank. The mains connection did not have an adequate air gap or back-flow protection and, due to the tank's elevation, the company concluded that untreated spring water mixed with mains water was flowing back into the property's service pipe as it was at greater pressure than the mains supply alone.

Figure 11: Storage tank



The company disconnected both piped feeds to the tank and served a Notice to the farm owner for a category 5 risk under Section 75 of the Water Industry Act 1991. To provide protection to the wider distribution system, the company fitted a double check valve at the boundary box.

Samples, taken from a neighbouring property during the investigation were also found to contain similar numbers of coliforms, *E.coli* and Enterococci. The company issued boil water advice to the occupant of this property, however, they were not able to obtain any resamples as there was no longer a supply of water available.

A water fittings inspection confirmed that the property was being solely supplied by the storage tank and that the disconnection of the inlet pipework had resulted in the loss of supply to the property.

The water company made a temporary connection to their mains supply in order to restore a potable supply to the property. Samples from this new connection were found to meet regulatory water quality standards and so the boil water notice was lifted from the property. The temporary connection remained at the property until a permanent connection was laid later that month.

Following the removal of the cross connection with the spring supply, samples taken from the farm were also satisfactory and the company revoked the boil water advice from the farm. However, due to the potential risk of additional cross-connections on the farm, a further water fittings inspection was carried out in early 2016.

This case study illustrates that cross connections between private and public supplies must have adequate backflow protection as specified in the Water Supply (Water Fittings) Regulations 1999 in order to protect consumers against the risk of contamination. These deficiencies occur where cross connections have not been made by competent plumbers (i.e. those approved under the Watersafe scheme). Such deficiencies often come to light through water companies following up on reports from their consumers of unusual taste, odour, appearance or cases of illness, as this case study demonstrates.

While this case study reinforces the Inspectorate's advice that private water supply owners and operators should use plumbers who are deemed competent under the Watersafe scheme, it also highlights the public health value of local authorities recording the details of all sources of water used on premises in their area. Keeping as full a record as practicable can help investigations of this nature.