

Incident Summary

Kerse SR Repeat microbiological failures September – December 2022

DWQR Inspector:
Colette Robertson-Kellie

Event No. 12854

Event Category: Significant

A scheduled regulatory sample taken from Kerse Service Reservoir (SR) on the 1st September 2022 failed the Coliform bacteria standard. Its resample taken on the 3rd September also failed. On the 6th September a 'preliminary high-level inspection' of the tank was carried out; no problems were observed, but issues were found with the sample tap – it was not compliant with Scottish Water's latest specification, the kiosk was undersized and in poor condition and it was very close to a busy road. A regulatory sample from the 20th September also failed the Coliform bacteria standard, but the sample from the 24th was satisfactory. The absence of E. coli and the low levels of Coliform bacteria in the samples (1 or 2 CFU/100ml) led Scottish Water to assume that the sample point was the source of the failures, so between the 27th and the 29th September the sample line and tap were relocated and replaced. Four samples taken during the commissioning of the new sampling arrangements were taken between the 30th September and the 7th October; one, from the 1st October, failed the Coliform bacteria standard while the other samples were satisfactory.

Enhanced sampling from the tank sample tap, dip sampling of the tank and increased downstream sampling was started on the 3rd October, and three sample tap failures were recorded on the 7th, 12th and 17th October, along with a dip sample failure on the 12th October. Contractors were then engaged to remove the tank from service to clean and inspect it – it was known that this would be difficult in practice due to hydraulic issues caused by an undersized bypass and a pressure reducing valve (PRV) on the bypass.

On the 18th October a tarpaulin cover was placed over the roof of the tank as a



precautionary measure and valve operations were carried out to isolate and bypass the tank on the 21st October, which was drained on the 25th October. Contractors inspected and cleaned the tank on the 28th October – the tank failed flood testing in various locations, there were visible holes in the roof and walls and ‘significant amounts of debris and animal remains’ were found on the floor of the tank. The tank remained offline to allow repairs to be made by contractors and the works were completed by the 19th December.

A burst on the inlet to the tank occurred on the 29th October, causing a large number of consumer contacts and prolonged outages in the three district metered areas (DMAs). I shall write to you separately with my assessment of that incident (event 13007). Severe weather conditions in mid-December and leakage from an upstream SR added further strains to the network, and between the 29th October and the 19th December over 900 consumer contacts for no water, bursts or leaks, low pressure and bottled water requests were made to Scottish Water.

On the 19th December Kerse SR was returned to service after its repairs and passing a flood test. Daily site inspections, chlorine residual measurements and sampling of the tank were instigated, and an overland bypass was set up to use in case of further failures from the tank. An upsized and improved bypass was completed in January 2023 to allow isolation of the tank while a new tank is being built on the site.

There were seven failures of the Coliform bacteria standard from the sample tap and one failure from dipsampling.

The cause of the incident was the poor condition of the service reservoir caused by a lack of maintenance.

The event has been categorised as significant. Scottish Water has identified eight actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made one additional recommendation.

