

Graemsay Service Reservoir Loss of supply 23 February 2015

DWQR Inspector:
William Byers

Event No. 6755

Event Category: Significant

Summary of Incident

In the early hours of Saturday morning, 21 February, the Control Centre received a low level alarm from Graemsay service reservoir and by 10:42, this had reached the point (45% full) where a very low alarm was generated. Staff were able to get to the island on the next ferry in mid-afternoon to check the system. Initial checks however found no obvious issues with the distribution system from the tank and arrangements were made to return to the island the next day for a fuller investigation. These investigations discounted any fault in the island system and with an increasing outflow from the tank, it became apparent that the problem lay with the sub-sea pipeline from/to North Hoy Water Treatment Works (WTW) and this line was isolated. The level of supply left in the service reservoir was significantly reduced by this stage and it emptied at approximately 01:00 on 23 February, stimulating the first reports in the morning from consumers, of no water.

Being a small island with limited provision for transport on and off for vehicles and equipment, a number of difficulties were surmounted to expose the landfall anchor points and carry out tests on the pipeline. Due to existing commitments of various supply vessels and the need for specialist diving and undersea equipment, it was not possible to commence these until 25 February. During this time, bottled water and limited bowser supplies were provided to consumers. Once the necessary logistics were in place however, tankered water was able to be regularly delivered to replenish water levels in the service reservoir. A regime of sampling was put in place to check the quality of tankered water but a restriction on water use, a boil notice, was put in place as a precautionary measure on 25 February. One minor microbiological failure occurred in a sample from the service reservoir over the period.

Tests confirmed that there was a problem with the sub-sea pipeline and after investigation by divers, the mid-point joint in the pipeline was found to be leaking. A repair was made to the central flanged joint by the divers and tested to ensure its integrity. The pipeline was then swabbed and flushed and a sequence of water samples were taken for analysis. The samples were shown to be clear of any contamination and following a second cycle of clear samples, authorisation was given to resume flows to the Service Reservoir on Sunday 8 March on which date the boil notice was also removed.

DWQR Assessment of Cause of Incident

This event was declared an incident by DWQR due to the period of time in which the failure of the mains supply necessitated alternative supplies to be provided and the subsequent restrictions imposed on water use. The clear cause of this was the failure of a joint in the sub-sea pipeline between Hoy and Graemsay.

DWQR Assessment of Actions Taken by Scottish Water

DWQR recognises that this incident presented Scottish Water with some very difficult circumstances in which to resolve the loss of supply to the island. Graemsay is served by an infrequent ferry service, which has no roll-on / roll-off facility. Vehicles have to be lifted on and off the ferry and there is a limitation on the size that can be accommodated. To support this incident, SW had to charter four sea vessels of varying types and sizes to transport excavators, tanks, bowsers, bottled water and staff back and forward from mainland Orkney to the island. In addition, because a return flow is provided from Graemsay tank to North Hoy, to augment supplies there during peak flow periods, tankered water was required to be provided to maintain levels in the North Hoy storage tank.

In terms of liaison with Health Authorities, the Orkney Local Emergency Co-ordination Group (OLEG) were fully involved in developing the necessary response and monitoring plans for the incident.

Throughout this incident, extensive communication took place between Scottish Water and consumers on the island. A number of provisions were made to ensure their needs were met and that they were fully informed of progress and the required activities to restore supplies. DWQR acknowledges the very positive feedback provided by the island community on the response to the problem is well deserved.

The event has been categorised as significant. Scottish Water has identified a number of actions and DWQR accepts that these are appropriate and will be monitoring to ensure they are completed prior to signing off the incident.

