

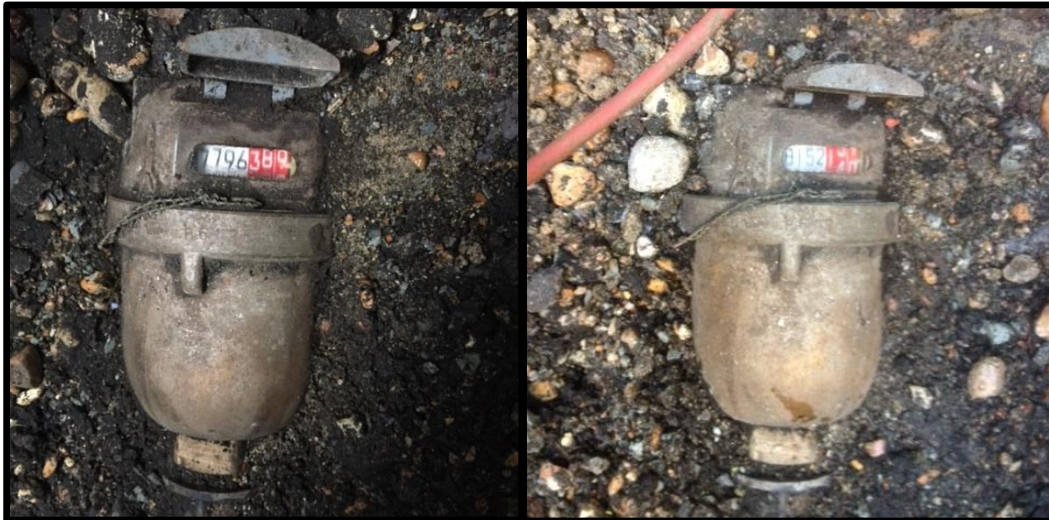
Water leak detection and Repair Report

4th March 2014

We attended the site on Monday 2nd March 2015 to carry out a water leak repair which was the result of our water leak detection visit on 10th February 2015.

In our previous visit we had gauged that the leak was running at approximately 10 litres per minute, equating to an **unaccounted water loss to site of 0.6m³ per hour, 14.4m³ per day and 5,256m³ per annum** with an **unaccounted financial loss of £2.68 per hour, £64.32 per day and £23,476.80 per annum.**

On arrival to site on 10th February, the meter was reading 7796m³ and upon arrival on 2nd March the water meter was reading 8152m³ which equates to a usage of 356m³ in 20 days and an **average daily usage of 17.8m³ of which approximately 14.4m³ per day was leakage.**



Our engineers began by excavating a trial hole at the entrance to the building to find the supply pipe. We located the supply & cut and capped the pipe which proved the leak was inside the building because as soon as this pipe was cut & capped, there was no movement on the water meter. This capping of the supply pipe eradicated the leakage on the section of supply running under the garage floor.

We continued our works and isolated the water supply. We removed the cap on the incoming external supply which allowed us to connect the new 15mm barrier pipe. We brought this up out of the floor up the wall and installed a new isolation valve. We continued to run this pipework up the wall, clipping in place as we installed.



Once our engineers connected the new main, the supply was reinstated but as soon as the supply was reinstated, it was established that another leak had occurred on the section of supply between the water meter chamber and the new section of pipework. The **new leakage rate was measured at 16 litres per minute, equating to 0.96m³ per hour and 23.04m³ per day** carrying a **financial hit of £89.16 per day and £32,545.15 per annum.**



The pipework is aged worn copper which subsequently becomes very prone to bursts. When we detected for leakage noise on the new leak, we were unable to pick up any traces apart from the spinning meter. No leak noise could indicate that the supply tees off at some point between the meter and the new supply pipe.

To detect and eradicate this leak we need to excavate at the boundary in concrete and cut and cap the copper pipe to determine which side of the supply the leak is on. If the leak is in the footpath, then the detection and repair of this is the responsibility of the water company. If the leak is found to be from the boundary to the new supply pipe, this will need moling for approximately 15m in concrete to locate the leak and the 15m of pipe will be relayed to eradicate the leakage.

In conclusion, the leakage that we originally attended site to repair has been completed & new pipework installed. There are no issues on this section of supply. However, when the supply has been turned back on, due to the deteriorated copper pipework, another leak has occurred between the meter box outside and the entrance to the building. This is leaking at a rate of 16 litres per minute and requires urgent attention.

Recommendations

Attend site, excavate at the boundary, cut & cap the copper pipe & establish whose responsibility it is to repair. If site are responsible, mole for approx. 15m in concrete to locate leak. Once located, relay 15m of supply pipe to eradicate leak. All of the above is to be done within the same day.

Annual Saving: £32,545.15

In the event that the water company are responsible, H²O will make contact with the water supplier to arrange detection and repair.