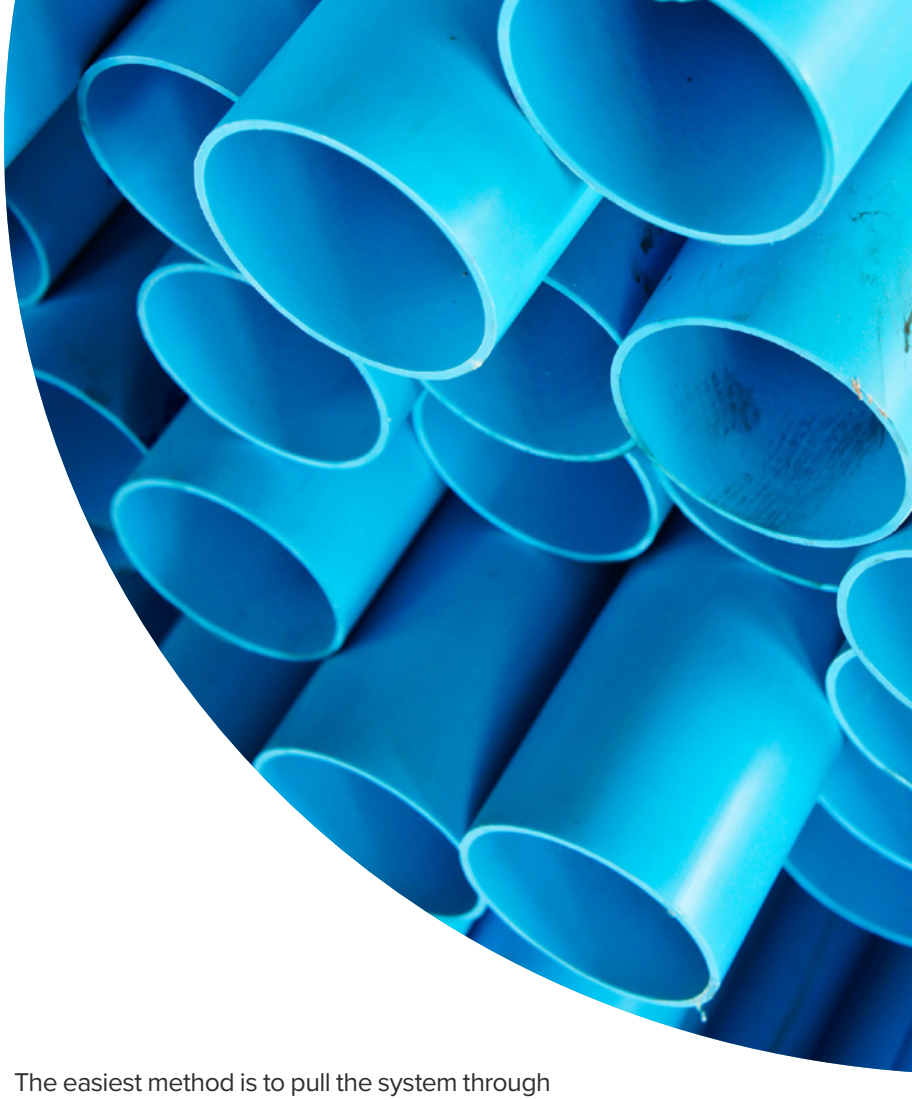
wrc infrastructure



The Sahara® Leak Location System Commissioning New Pipelines

The Sahara® Leak Location System is able to detect and pinpoint the location of very small leaks in mains of all materials. The leaks that cause pipelines to fail an initial pressure test are often extremely small and hence difficult to locate using conventional techniques. The Sahara system allows leaks to be found without the need to split the pipeline into short sections and pressure test each one.

Key advantages:

- High sensitivity will detect even the smallest leak
- Instant results – excavate and repair immediately
- Precise location of any leaks identified
- Suitable for all pipe materials
- Survey at the pipeline test pressure
- Sections up to 2 km long be tested from a single point
- Full sensitivity over entire survey length – whatever the length
- Precise to within 300 mm up to 30 m deep

The Sahara system can be used to locate leaks already detected by a pressure test or alternatively, in the case of plastic pipes and MDPE in particular, it can be used to check the integrity of the pipeline before embarking on a lengthy pressure test.

In live water mains the sensor and cable are pulled through the main by the flow of water. In new mains where there is no flow, several techniques can be used to transport the sensor.

The easiest method is to pull the system through using a draw line installed during construction of the pipeline. Alternatively a line can be pulled through after construction by attaching it to a swab and flushing it through when filling the line for test. A third option is to use a swab or over-sized drogue to pull the sensor through while filling the line. Once transported to the far end of the pipeline, the pressure can be raised and the survey carried out as the sensor is drawn back along the pipeline.

Sahara Pipeline Inspection have experience of testing many different pipes and can suggest the most appropriate solution for each case

The system has been used to successfully locate leaks on new pipes made of :

- Ductile Iron
- MDPE
- PVC
- Concrete (PCCP)
- GRP

in sizes from 250 mm (10 inch) to 2770 mm (9 feet) diameter.

Case study: J Murphy and Sons – Farmoor to Blunsdon Duplication Main, 800 mm GRP

J Murphy & Sons employed Sahara to inspect a 900 mm GRP pipeline to identify a leak causing a 1.4 km section to fail a pressure test. Sahara was able to identify the location of the leak allowing a swift resolution to the problem. The leak location was identified during the survey ensuring remedial action could get underway immediately.

Once the identified leak had been repaired the pipe successfully passed pressure test.

"Our previous experience with the system had shown that the precise location can be identified - performance that is not possible with any other existing technique on this type of pipe. The only alternative method for locating the leak would have been successive sectioning and testing of the line followed by excavation of individual areas."
Mike Davey – Project Manager, J Murphy & Sons

Inserting into hydrant fitting

Case study: Thames Water International – Puerto Rico North Coast Super Aqueduct

During the final construction phase of a 50 mile long 6' (1800 mm) diameter pipeline, leakage from the line was identified. The leakage was sufficient to cause failure of the commissioning tests and looked set to cause delay; there was also concern that the resulting ground moisture could lead to corrosion of the pipeline reinforcement. The static tests that identified the leakage were able to narrow down the suspected leaking sections of pipeline – although this still left 25 km requiring inspection. Conventional methods of leak location tried first to find the leaks were unable to detect the leaks.

Thames Water International contracted the Sahara system to be used to locate the leaks. All the identified sections were successfully surveyed and five leaks pin-pointed. Leak magnitude varied at each location; the smallest leak located being just 0.001 l/s. Following the repairs, the pipeline was proved as leak-tight, passing all commissioning procedures.

"Thames Water was impressed at Sahara's ability to accurately locate even the smallest leak where conventional methods had failed. Sahara provided us and our client with confidence in the integrity of the pipeline and enabled us to reduce the commissioning time."
Roger Remington – Projects Director, Thames Water International

Leaking 6' PCCP main

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