

Case study

# Samanalawewa Dam Willowstick Survey

## Willowstick rapidly located leak at dam troubled for decades

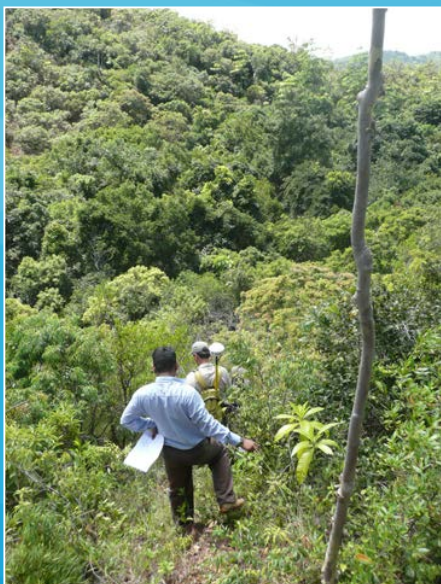
After 18 years of unsuccessful remediation work costing tens of millions of dollars Willowstick identified the exact leakage pathway in less than a month. This enabled the client to carry out targeted remediation works at a fraction of the original cost.

The leakage path identified by Willowstick was significantly different than previously assumed by the client and its location was successfully confirmed, using boreholes, to within 100mm.

## Leakage identified through Karstic foundation

The Samanalawewa Dam is a 105m high, 530m long, rockfill embankment.

Signs of leakage through karstic terrain at the right abutment led to an extensive grouting program both during and after construction. A grout curtain was constructed from a 2km long tunnel drilled beneath the right abutment.

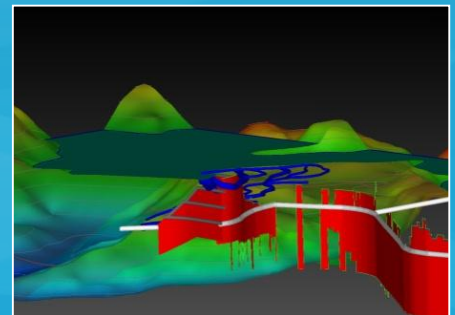


After first filling water burst out of an area downstream of the right abutment and an attempt to stop the leakage by dumping clay in suspected ingress areas was unsuccessful.

## Borehole confirmed leakage to within 100mm

A Willowstick survey was subsequently commissioned to identify the exact location of seepage through the right abutment.

In three weeks the survey pinpointed the two main areas where the cut-off was comprised. A subsequent borehole confirmed the location of the main leakage path at a depth of 100m to within 100mm.



3D visualization of flow paths

Following the Willowstick survey it was possible to undertake cost effective remedial works ensuring the safety of the dam and allowing it to store water again.