

CASE STUDY · FEDERAL INFRASTRUCTURE

100 m of 1970s piping screened in place and mapped in 3D — without cutting, draining or dismantling

Banner: PEC heatmap on captured geometry — colours relative to this scan, not safe/unsafe limits.



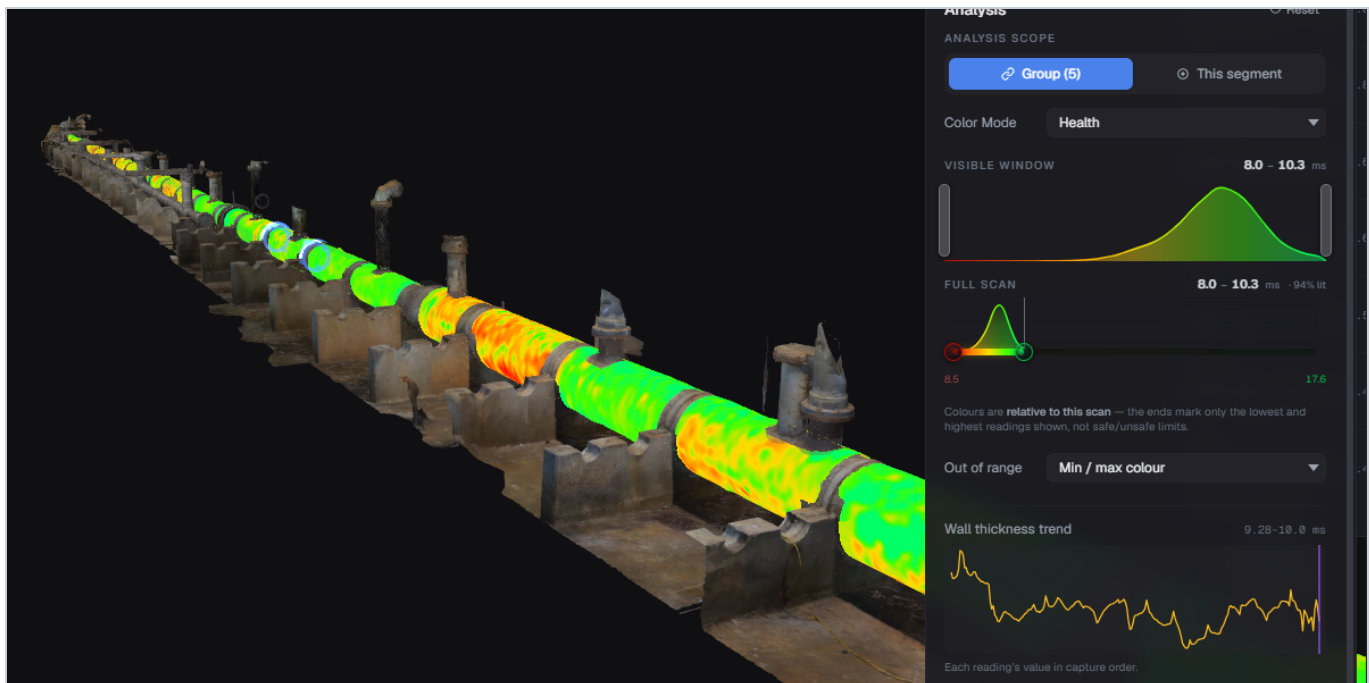
FISHERIES AND OCEANS CANADA

CAPILANO RIVER HATCHERY · NORTH VANCOUVER, BC · AUGUST 2026

Pulsed eddy-current and eddy-current-array screening through original coatings, registered to a LiDAR + photogrammetry model in HELIX Horizon.

RESULTS

- 378,407 screening samples, every one registered to its location on a 3D model of the asset
- 34 inspection zones reduced to seven located, answerable questions
- Four days on site — no shutdown, no cutting, no draining, no dismantling



*PEC results mapped over the captured geometry, with per-zone histogram analysis — HELIX Horizon.
Colours are relative to this scan — they mark the lowest and highest readings shown, not safe/unsafe limits.*

CUSTOMER

Fisheries and Oceans Canada (DFO) operates the Capilano River Hatchery in North Vancouver, BC. An underground room at the working hatchery holds two 1970s piping installations: a 24-inch tank-flush wastewater line, out of service for about five years, and a live 4-inch chlorinated drinking-water line.

APPLICATION

Screening inspection and 3D condition mapping of roughly 100 m of pipe — two runs of about 50 m each, screened from the outside through their original coatings. The 4-inch line stayed in service throughout.

CHALLENGE

Neither line could be cut open; the 4-inch line could not come out of service at all. No baseline condition record existed. DFO needed to know where the pipe stood after five decades — and where to spend direct examination — without dismantling anything to find out.

SOLUTION — FOUR METHODS, ONE VISIT

Over four days on site (6–9 July 2026), HELIX screened both runs on a single visit:

Pulsed eddy current (PEC)

68,679 readings along the 24-inch line — through the coating, no surface prep.

Eddy-current array (ECA)

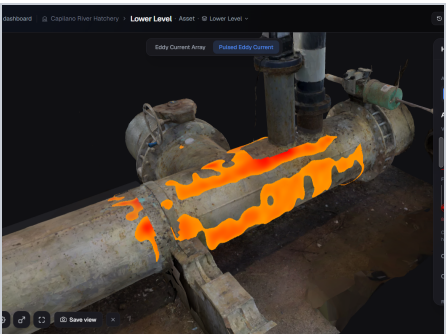
309,728 samples across the 24-inch welds and the whole accessible 4-inch surface.

LiDAR + photogrammetry

Both runs and the room around them, captured as a registered 3D model.

HELIX Horizon

All 378,407 samples placed at the point on that model where they were taken.



Searching the scan: the visible window narrowed to the lowest band — only those readings stay painted, in place on the asset. Colours are relative to this scan — not safe/unsafe limits.

AT A GLANCE

4 days on site
~100 m screened in place
378,407 registered samples
46 points of interest

A reading stops being a row in a spreadsheet and becomes a coloured patch on the actual pipe, in the actual room — something an inspector can walk to.

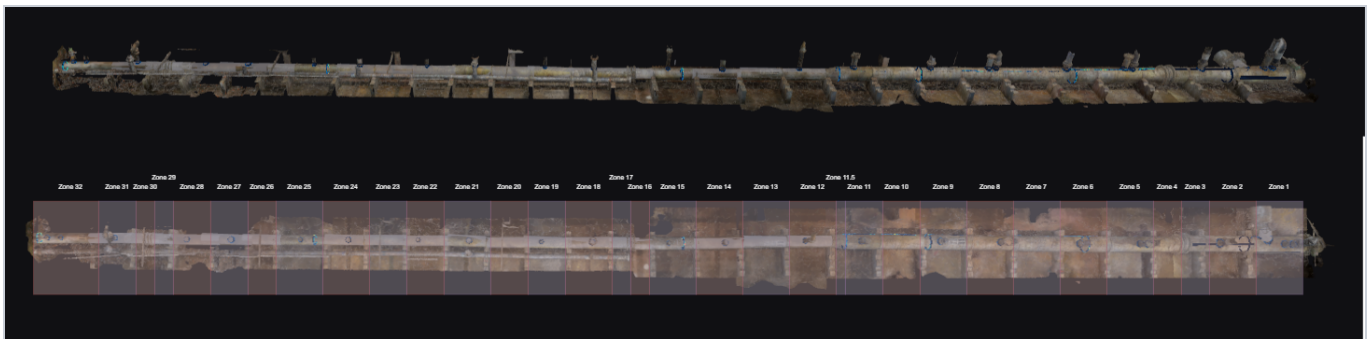
WHAT THE SURVEY FOUND

The survey reduced 34 numbered zones to seven located questions — among them:

- Relative wall thinning along the top of the wastewater line — clearest across Zones 10–11, and into Zone 2 at the outlet
- Deposit or corrosion-product bands along the invert of Zones 4–6, where the high reading itself hides whatever wall is left underneath
- An unconfirmed material boundary from Zone 12 onward, and one half-metre section (Zone 29) reading about 2.1× its neighbours
- On the 4-inch line: repeatable dents and scrapes recorded as monitoring baselines; blistered, probably lead-containing coating flagged for direct examination

WHAT THE CLIENT GOT

- A registered 3D model of both runs and the room — a reusable baseline
- 46 point-of-interest entries, each mapped to a place an inspector can stand
- Processed PEC and ECA datasets, the inspection report (ref. HLX-2026-001) and HELIX Horizon access
- A direct-examination shortlist: where to spend ultrasonic readings, and where wall is hidden, not measured



The 24-inch line divided into numbered inspection zones — every finding above is located against this map.

Screening, not certification. This survey does not decide whether a line is fit to return to service — fitness-for-service is a regulated engineering assessment that stays with the client's engineers. PEC values are relative wall responses (τ -based), not absolute thickness. HELIX's role is acquisition, spatial registration and initial interpretation of the measurement data.

HELIX Sensors Inc.

info@helixsensors.com · 1774 Billington Rd, Bowen Island, BC · 236-334-7871 · helixsensors.com

Non-intrusive NDT screening · permanent sensor wraps · HELIX Horizon 3D inspection software. Full 30-page findings report available on request.

© 2026 HELIX Sensors Inc. All rights reserved. · Issued August 2026 · Prepared by: Mateo Zane