

COMPREHENSIVE INFRASTRUCTURE SURVEYS

ESSENTIAL DATA FOR INTELLIGENT DECISIONS

1080P Digital Video frame grab at a bend

COLUMBIA ST

MH01.17

TO

M

4.6 M PHOTO 005
LL: LINE LEFT
50 %

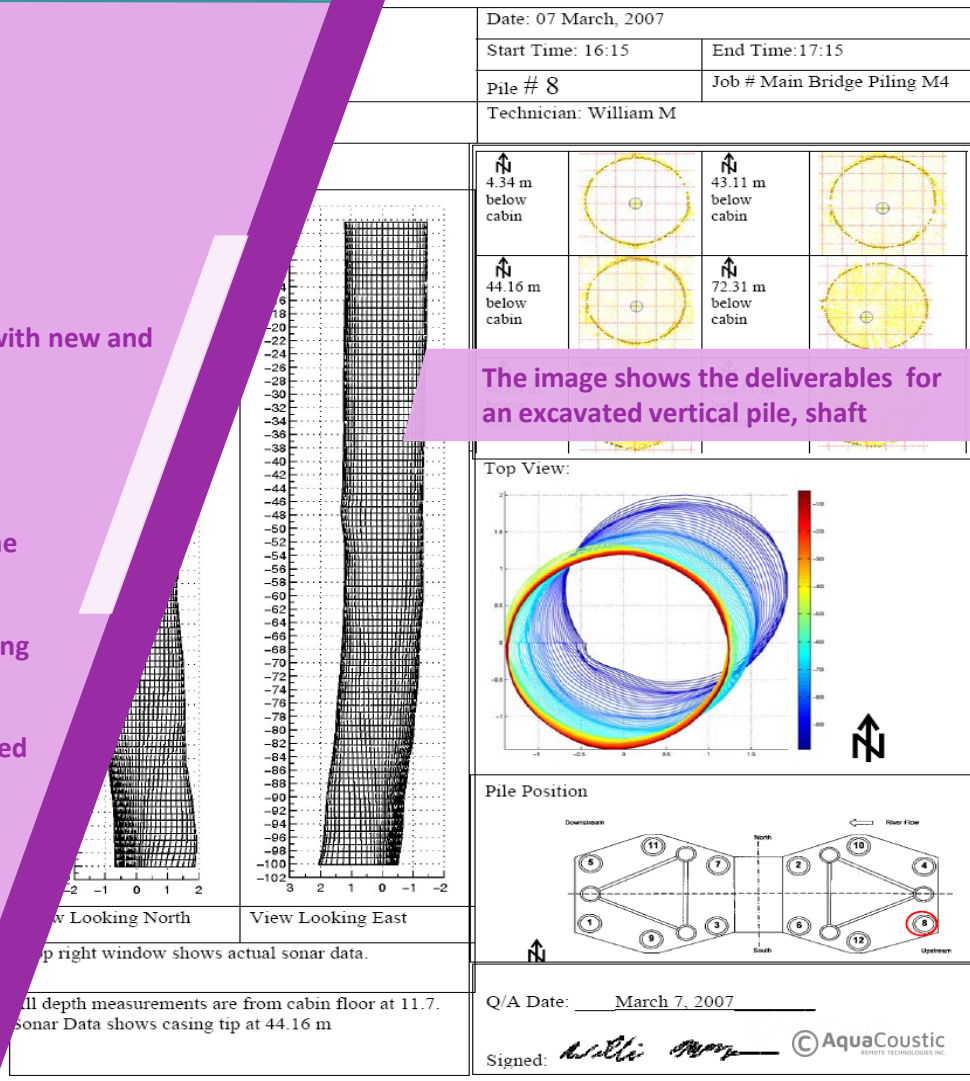
AquaCoustic
REMOTE TECHNOLOGIES INC.

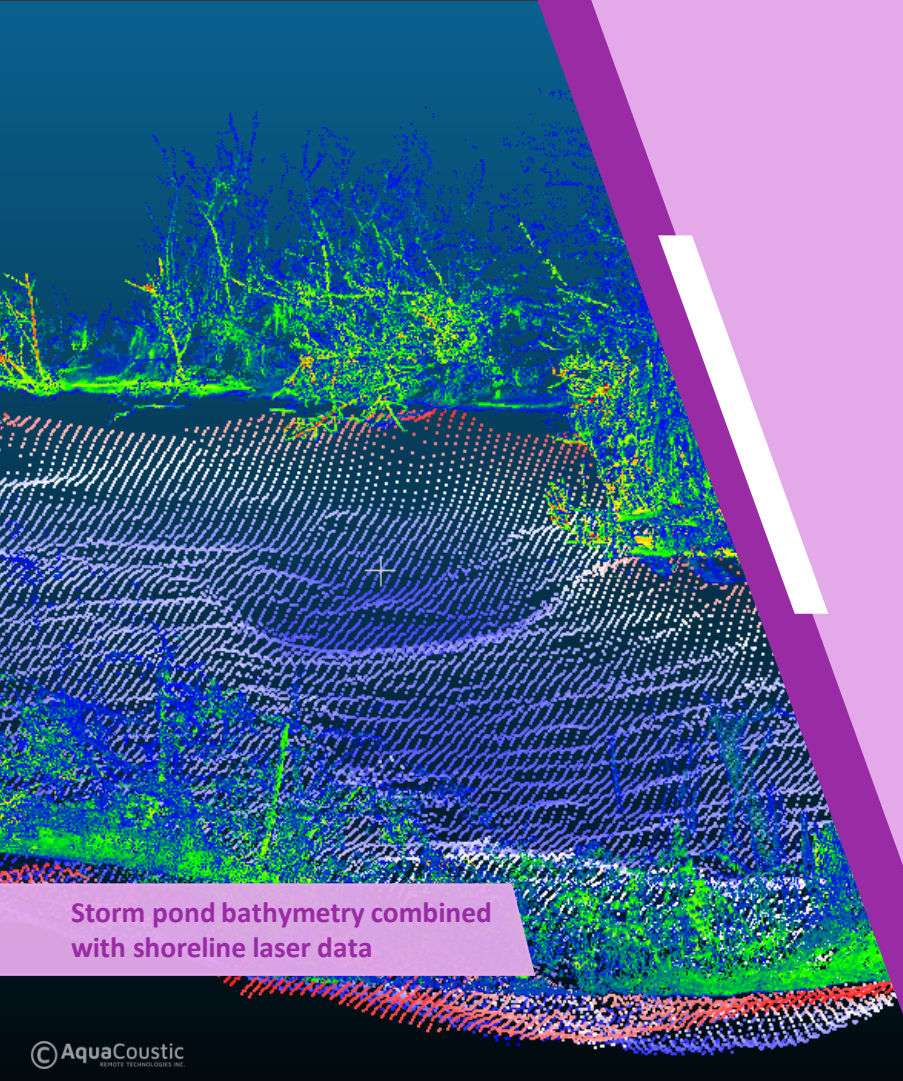
- SEWERS, CULVERTS
- SHAFTS, BOREHOLES
- DAMS, RESERVOIRS
- MINES, TAILING PONDS
- RIVER CROSSINGS
- PORTS, HARBORS

SINCE 1993 OUR GOAL HAS BEEN TO PROVIDE
EASILY UNDERSTOOD DIGITAL SURVEY REPORTS

WE DELIVER THE DATA YOU NEED

- Our integrated sensor data collection technology can provide you with new and unrivalled definition of your fixed assets
- If you have a challenging inspection or survey problem; our design team can help
- We have designed & built innovative robotic systems to position the sensors accurately
- We collect video & xyz point cloud data above and below water using digital video cameras, time of flight lasers and digital sonars
- We develop and continuously improve our unique and system-based data analysis software
- Since 1993, civil engineers have used our data to prioritize remedial work for their fixed assets





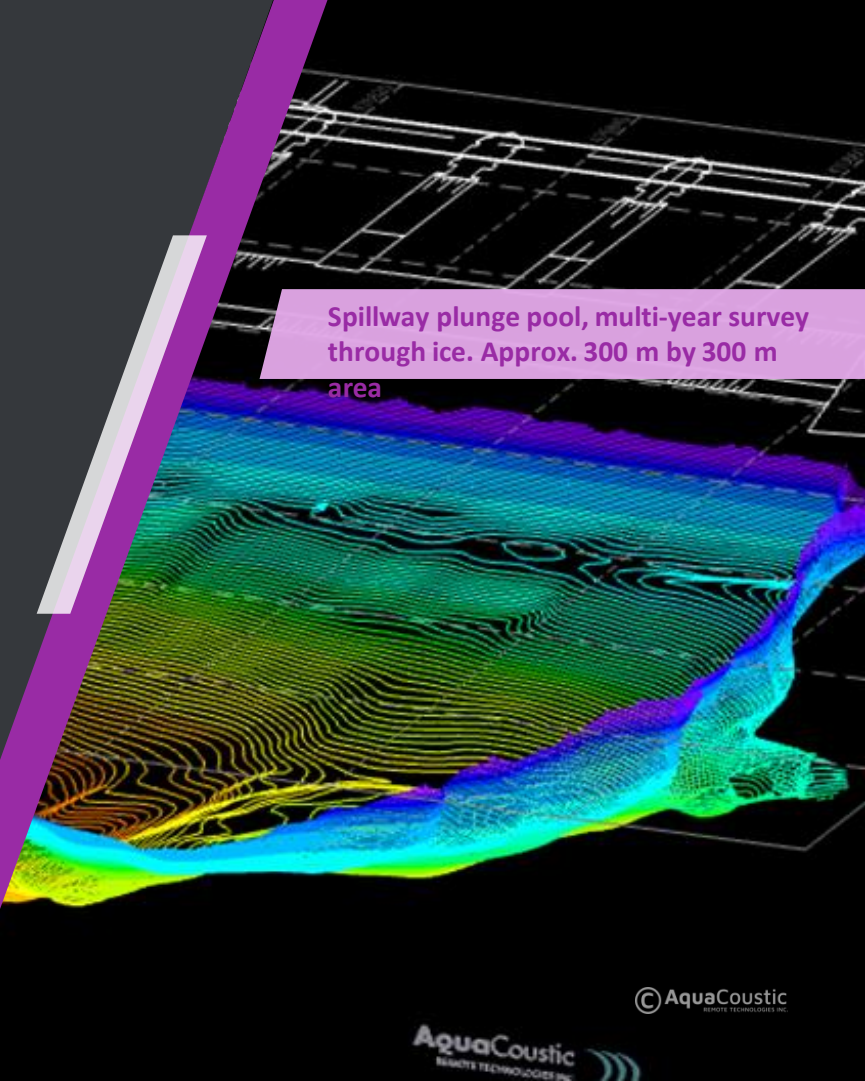
Storm pond bathymetry combined with shoreline laser data

ALL DIGITAL SENSOR PLATFORMS

- Since 2005, we've used electro fiber optic umbilical cables to power and communicate with our devices
- Fiber optic advantages include long distance communication without losing data quality; small cable diameter and a signal that is immune to electromagnetic interference
- Closed loop Ethernet protocols to communicate with all sensors that may be installed on the units. This also allows client supplied or specific sensor units to be plug and play almost instantly
- The data is then analyzed using proprietary software to create measurable 3D computer drawings, images, graphs and tables that help clients manage and maintain those assets
- All our deliverables can be viewed on freely available software

3D SONAR UNITS

- In-house designed for simple deployment
- Light weight system (less than 20lbs)
- Is able to pass through a 6" (15 cm) pipe or drill hole
- Better than half inch accuracy
- Rotates in quarter of a degree step angles for fine detail
- Sound footprint approx. 3% of range
- Maximum useful range of 50 m (160'). The sonar has a max range of 150 m
- Depth to 1,000 m (3,200')
- The unit can be surface deployed from structures or from an ROV or surface vessel

A 3D sonar scan of a spillway plunge pool, showing a complex, multi-layered structure with various depths and features. The scan is color-coded, with blue representing the deepest areas and yellow/green representing shallower areas. The scan is overlaid on a white wireframe grid. A purple diagonal bar runs across the image from the top right to the bottom left.

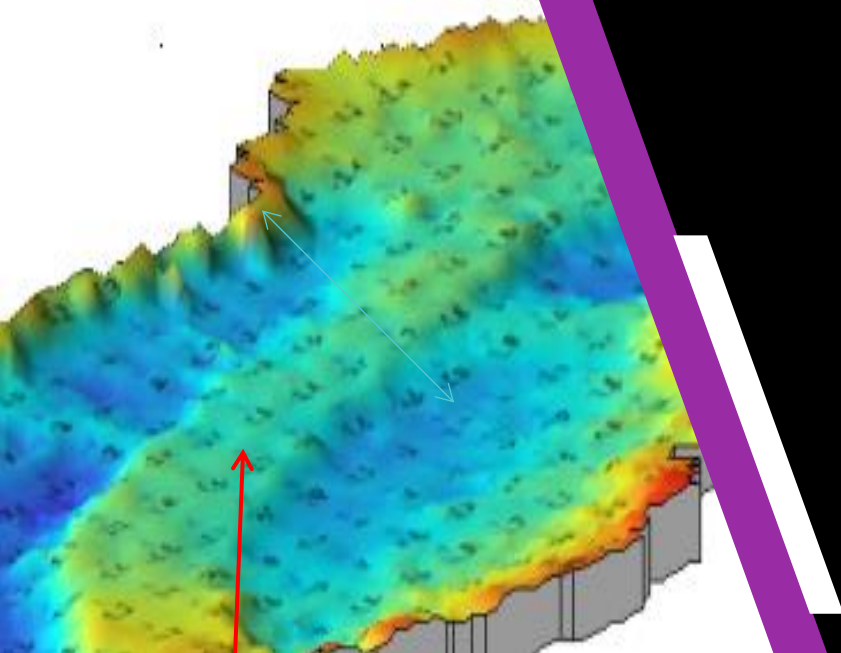
Spillway plunge pool, multi-year survey through ice. Approx. 300 m by 300 m area



Our 6 wheel drive, propane powered amphibious vehicle is used for off road or tunnel surveys

AVAILABLE WORK PLATFORMS

- Siphon floats used under rivers or roads or submerged pipes in dams. Can carry depth sensors, sonar or video cameras
- Inspection class ROV for outfalls, culverts, river crossings and dam surveys. Uses scanning sonar, profiling sonar and video camera. We can also add specific sensors to fit your needs
- Propane Powered Six Wheel Drive Amphibious Vehicle, with Time of Flight (ToF) lasers, video camera, sonar and positioning systems
- High Flow Aluminum Floats. These are towed through semi submerged pipelines or tunnels 5,000' (1,500 m) range. They carry ToF lasers, sonar, cameras and any specific sensor to fit your needs
- Four Wheel Drive Steerable Tractors. 600 m (2,000') distance. Carries all sensors plus any specific sensor that is required
- 14' Achilles inflatable boat with a Yamaha 9.9 outboard or Torqeedo electric outboard for sensitive areas. Carries RTK GPS, video camera, ToF laser, high resolution attitude sensor and profiling sonar

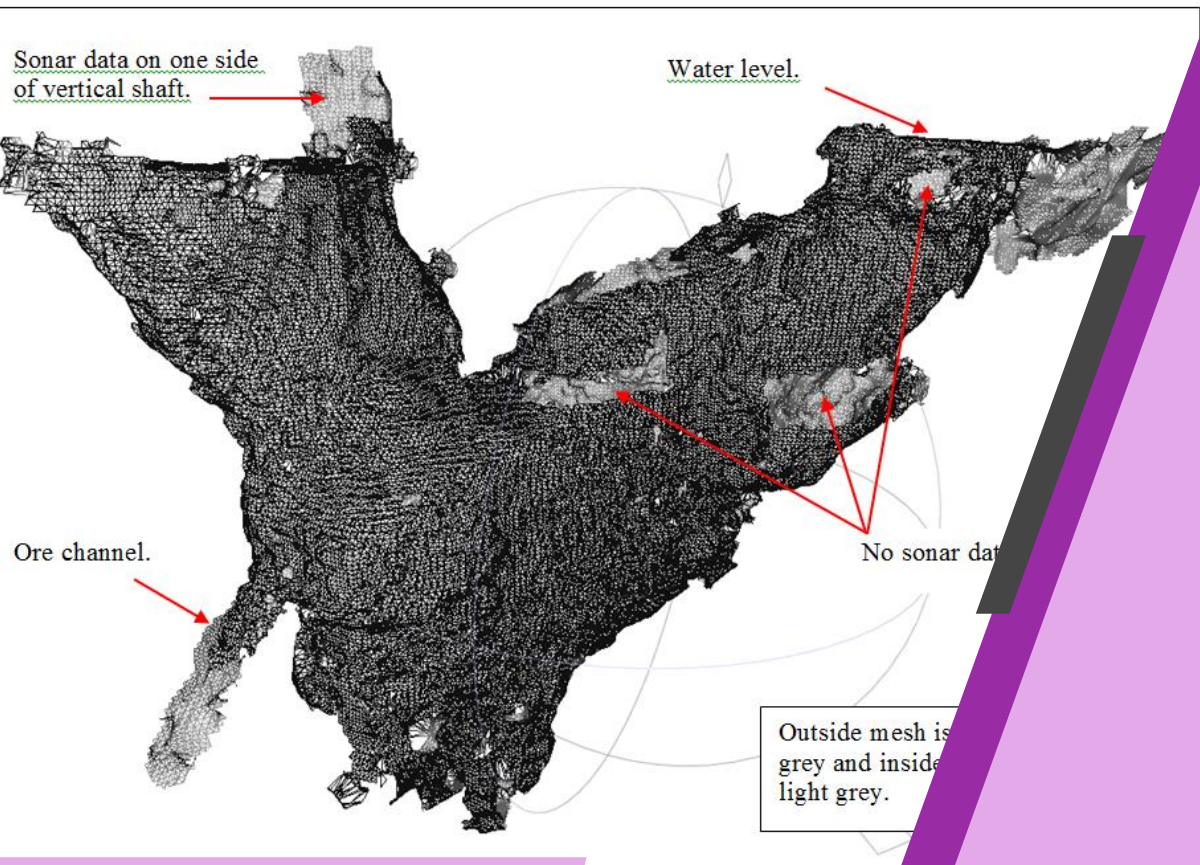


Storm Water Pond Volume Survey.
Note the Earthen Backhoe Ramp



AVAILABLE INSPECTION SENSORS

- Time of flight (ToF) 2d lasers – 2" (50 mm) minimum range, 25 m (82'), maximum range. Calibrated to 3 mm accuracy
- Time of flight (ToF) 3d lasers – in-house designed unit; rotates the laser head in quarter degree increments for a full 360 degrees
- Digital profiling sonars – Ethernet profiling and scanning sonars. Minimum range 2" (50 mm), maximum range 100 m (330')
- Digital 3D profiling sonars – in-house designed unit, rotates 190 degrees, built to pass through a 6" (150 mm) borehole
- Scanning & side scan sonars – used as a standalone or on a vehicle. 100 m (330') diameter scan range. 20 mm (3/4") resolution
- High-resolution digital marine cameras – 1080P, low light
- Additional sensors are easily incorporated
- RTK GPS for 2 cm (3/4") accuracy



Sonar data on one side of vertical shaft.

Water level.

Ore channel.

No sonar data

Outside mesh is grey and inside light grey.

Collected and processed 3D Sonar Data of a Flooded Mine Stope

WHY HIRE AQUACOUSTIC?

- Rapid, cost effective asset assessment surveys
- You spend less time understanding the issues you may have
- You can concentrate your efforts where critical or to budget for future work
- Quickly identify areas that do not need intervention
- The advancement, continuing education and encouragement of our employees is important to us
- We are solutions-driven: our employees are dedicated to delivering on our promises and providing positive client experiences

Figure 4- Mesh produced from actual data po
View from the East.



Pole mounted 3D Sonar system lowered into a 6" borehole at a flooded mine

AQC KEY POINTS

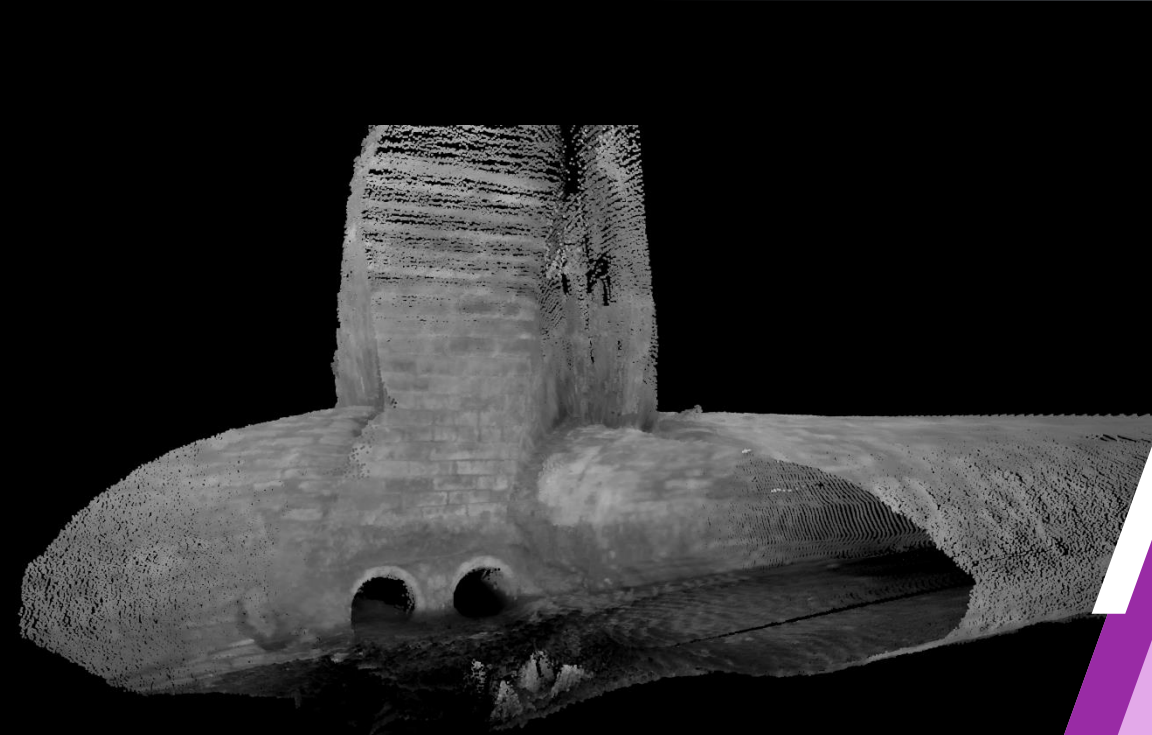
- We are an infrastructure pre-engineering firm that develops unique data gathering solutions
- Our data helps you prioritize areas of concern and can be instrumental in reducing costs of repairs
- We design and build robotic systems capable of meeting any challenge and develop software that transforms data into useful information
- We control the data from collection to deliverables without outsourcing; therefore, we respond to client input directly and completely
- Our technological solutions generate actionable information that reduces costs
- If you have any technical questions please phone or email us & we'd be happy to provide an answer

AREAS OF EXPERIENCE

IF YOU HAVE A PARTICULAR INTEREST OR CHALLENGE, WE CAN DISCUSS SOLUTIONS ON THE PHONE OR WE CAN SEND ADDITIONAL INFORMATION ON THE FOLLOWING:

- ✓ Dams
- ✓ Bridges
- ✓ Tunnels
- ✓ Culverts
- ✓ Manholes
- ✓ Mine Stopes
- ✓ Ports & Marinas
- ✓ Large Diameter Pipes
- ✓ Traffic Control Plans
- ✓ Mine Tailing Ponds
- ✓ Shafts and Boreholes
- ✓ Specialty Sonar/Laser Surveys
- ✓ Pipe and Cable River Crossing Surveys
- ✓ Internal ROV outfall surveys, minimum diameter 450mm (18")
- ✓ Historical Video Re-coding to New Standards or AI Quality Control
- ✓ Processing Client Collected Sonar & Laser Data

AQUACOUSTIC CAN PLAY A SIGNIFICANT ROLE IN YOUR RISK MANAGEMENT STRATEGY



WHAT CAN WE DO FOR YOU



info@Aquacoustic.com
www.aquacoustic.com
188 West 6th Avenue
Vancouver, BC V5Y 1K6

Phone: +1.604.730.8117
Fax: +1.604.730.8817

Toll free in North America: +1.888.379.7601

Processed, measurable, 3D Laser
Data of a Brick Manhole