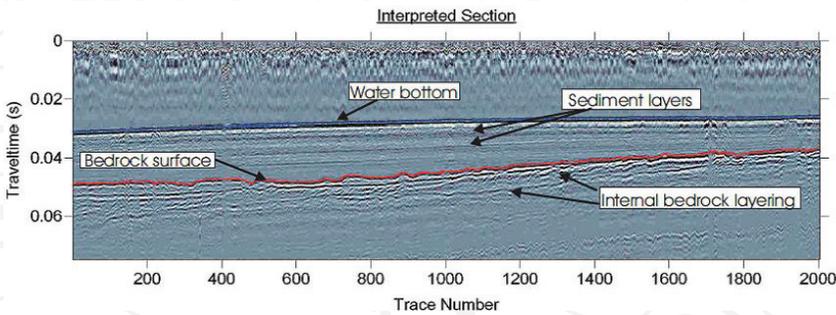


BEDROCK MAPPING SURVEY USING A BUBBLE -PULSER SOURCE - DATA SHOWN ON LEFT WITH INTERPRETED SECTION ON RIGHT.

DMT Geosciences has a variety of marine geophysical methods at its disposal to meet their clients needs. We have developed a unique approach to the aquisition and processing of marine seismic reflection data.

APPLICATIONS

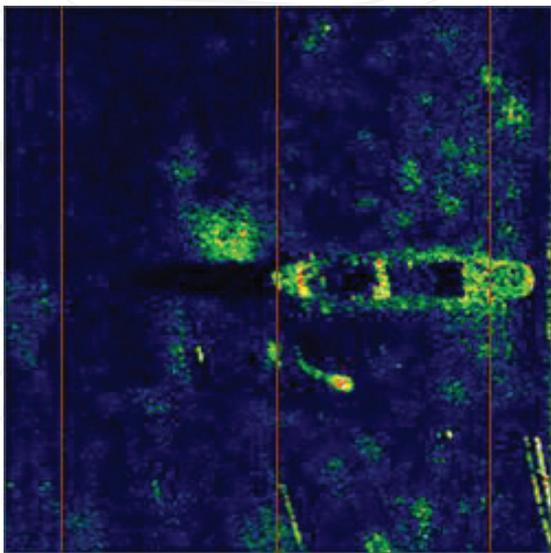
- Pre and post dredging
- Bedrock mapping
- Detecting and mapping bottom hazards
- Mapping sedimentary layers above bedrock
- Bathymetry
- Existing and paleo-scour surfaces around piers



MARINE SEISMIC SURVEY PROVIDING AN IMAGE OF SEDIMENT STRUCTURE ABOVE BEDROCK, BEDROCK SURFACE AND INTERNAL BEDROCK LAYERING

SEISMIC REFLECTION

The marine seismic reflection method images geologic boundaries, either sediment or rock interfaces. Sources of different frequencies are chosen to optimize resolution versus depth of penetration.



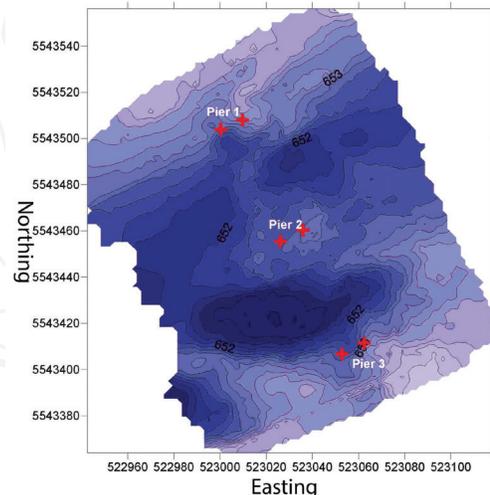
SIDESCAN SONAR SURVEY OVER A SUNKEN BARGE. NOTE THE SHADOW TO THE LEFT OF THE IMAGE THAT CAN BE USED TO CALCULATE HEIGHT OF THE BARGE ABOVE SEAFLOOR

SIDESCAN SONAR

Sidescan sonar is used to provide high-resolution images of the water bottom, and is commonly used in marine archaeology and for creating maps. A sidescan sonar system directs sound waves from a transducer suspended beneath the boat in a fan shape towards the water bottom. Reflections are recorded to provide an image of the water bottom to the left and right of the boat's path. Frequencies range from about 100 to 500 kHz. Sidescan can be used to provide full bottom coverage maps of harbours at sub-meter resolution.

BATHYMETRY

A bathymetry survey uses high frequency sound waves to measure the depth to water bottom. The high frequency signal, typically 100-200 kHz, allows bottom resolution of +/-10 cm. A simple single beam survey, such as used here, provides depths to water bottom beneath the boat. Multiple lines are collected and contoured to provide an image of the water bottom.



BATHYMETRY SURVEY USED TO DETERMINE SCOURING FEATURES AROUND BRIDGE PIERS