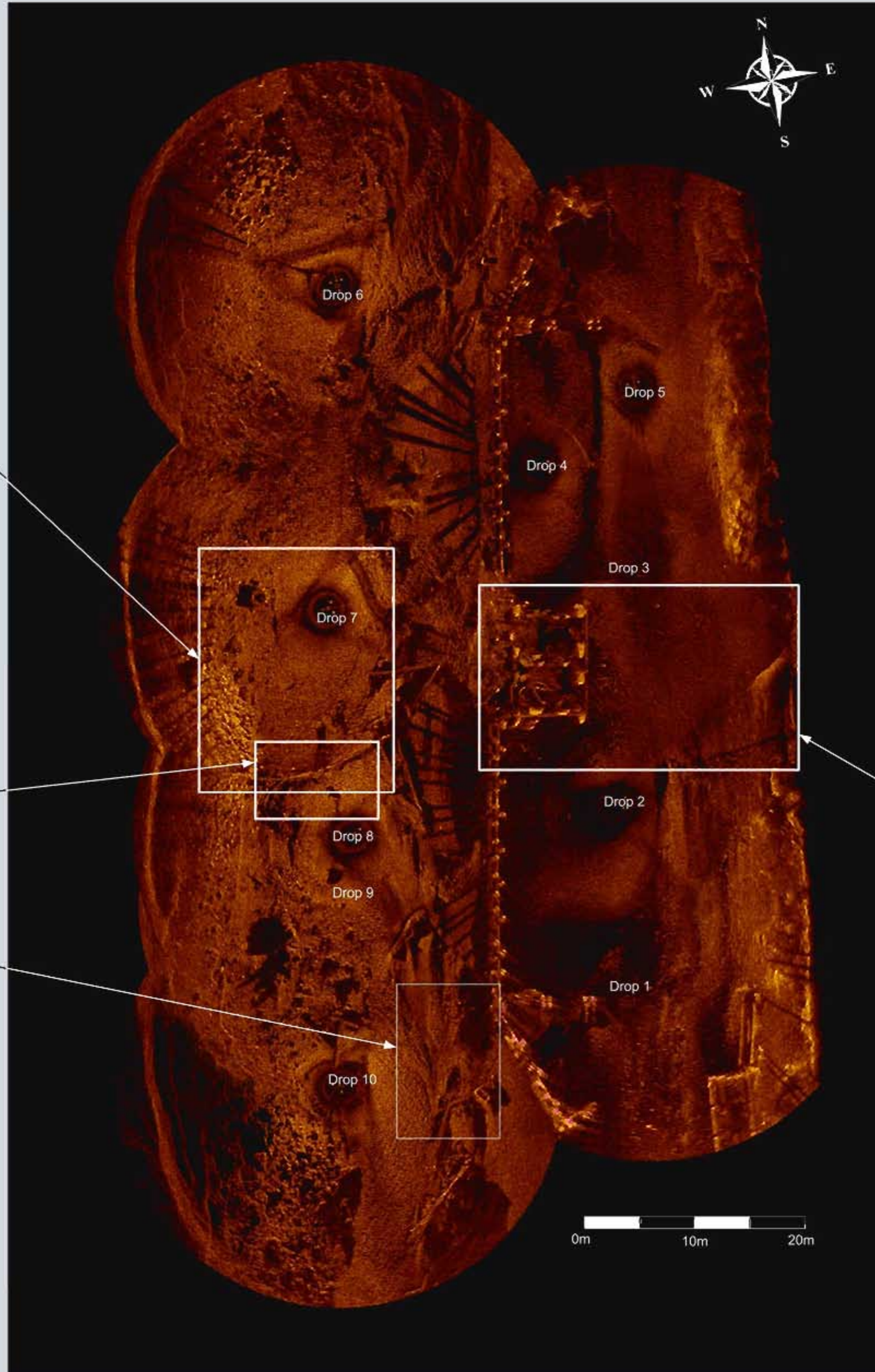
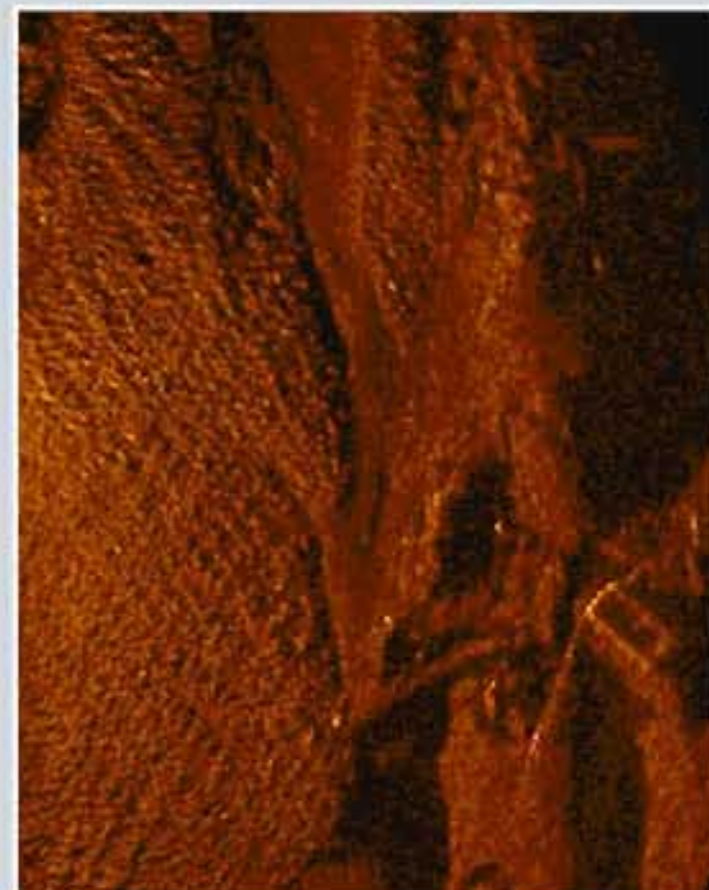
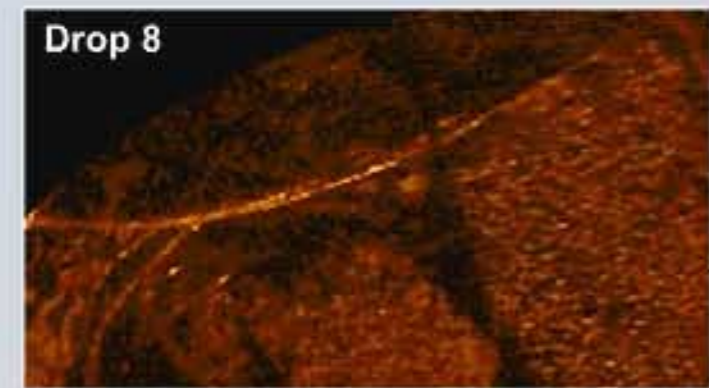
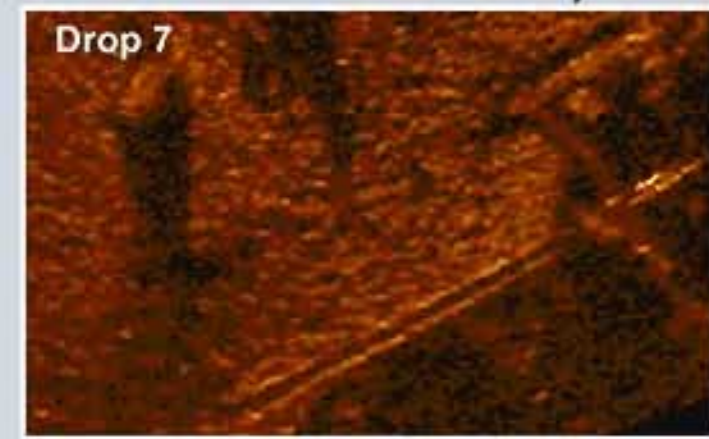
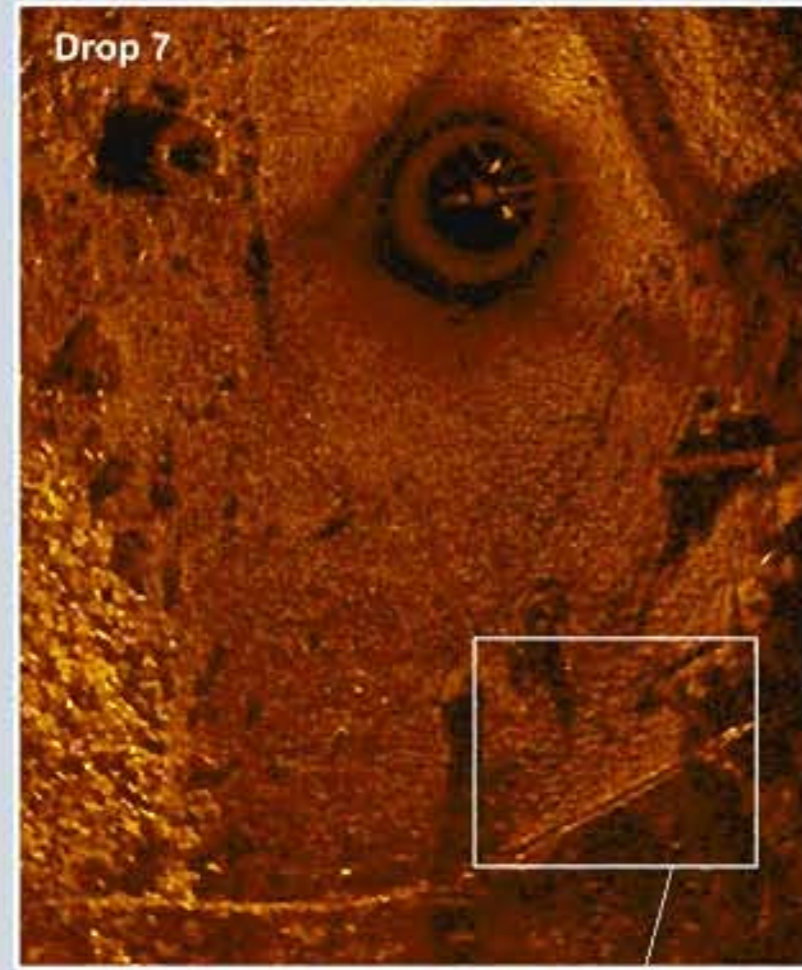




FHWA SONAR Evaluation Georgiana Slough Bridge

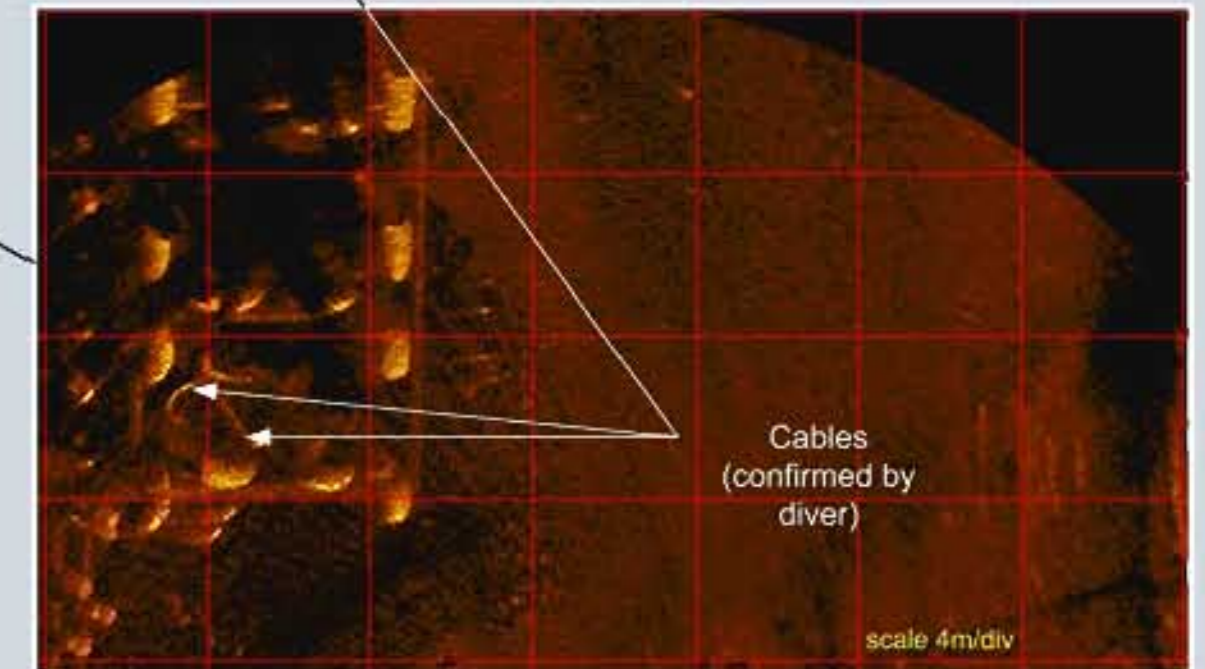
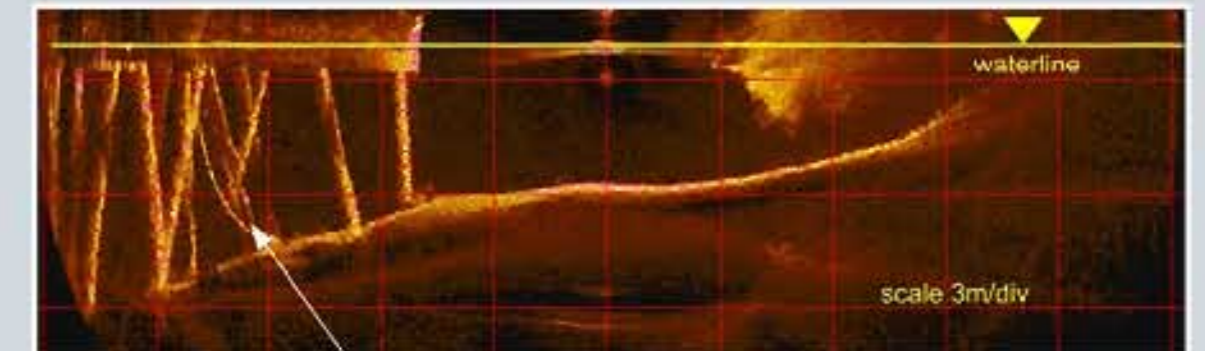
Coordinates: 38°14'14"N 121°31'2"W



Data collected using the Kongsberg Mesotech, MS 1000 Software and an i171-series High-resolution, Scanning Sonar Head (tunable frequency 675kHz - 1.2MHz). This survey was completed at 1.1MHz with the exception of Drop 1 (675kHz).

Riverbed images were collected by deploying the sonar in a tripod; the vertical visualization image was collected from a survey vessel by pole-mounting the sonar head.

Image below shows vertical visualization of pier showing piles and cables suspended in the water column; the waterline elevation 14' (local datum staff on pier).



Sonar Drop 2 showing plan view of pier and cables



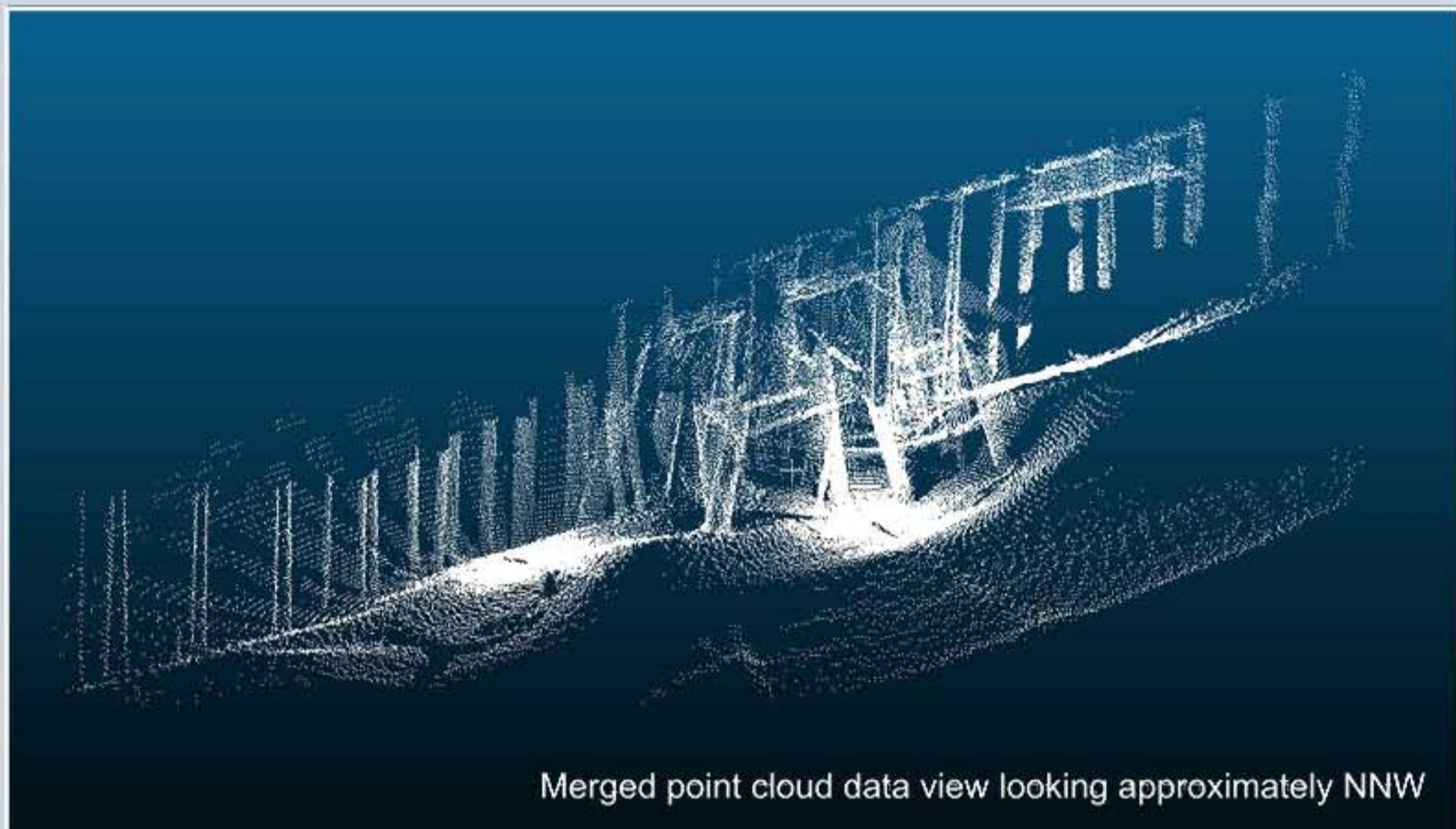
View looking approximately ENE of pier (www.bridgehunter.com)

Sediment bedforms and antique Philco Refrigerator (target confirmed by divers)

Sonar drops 7 and 8 show two parallel linear targets – suspected power cables – on the riverbed.



Georgiana Slough Bridge Point Cloud and Vertical Visualization Data



Merged point cloud data view looking approximately NNW



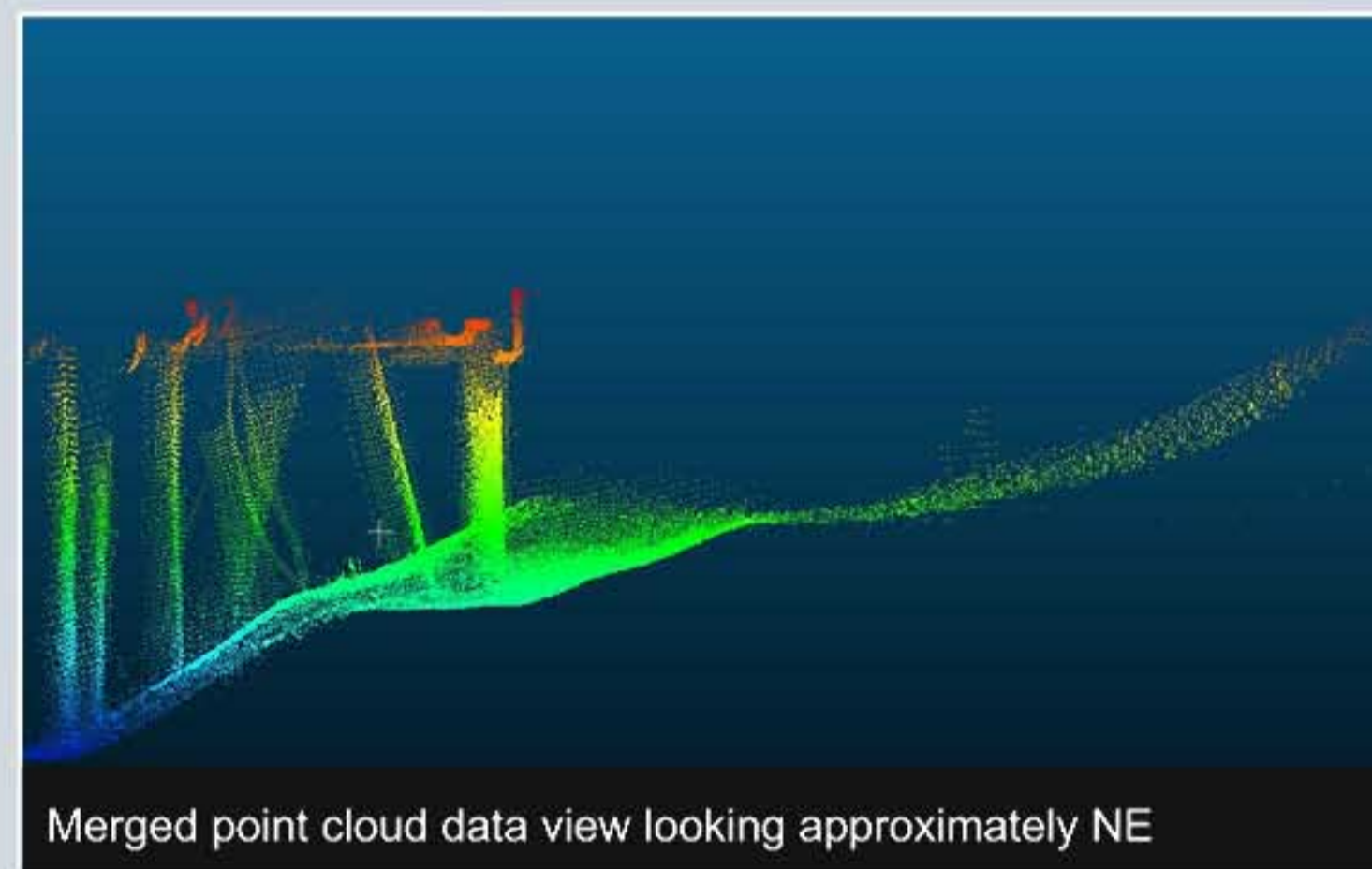
Domed 1171-Series Profiler and Rotator

Point cloud data collected using the MS 1000 3D profiling system with a tunable frequency 1171-Series Profiling head (675kHz-1.350MHz).

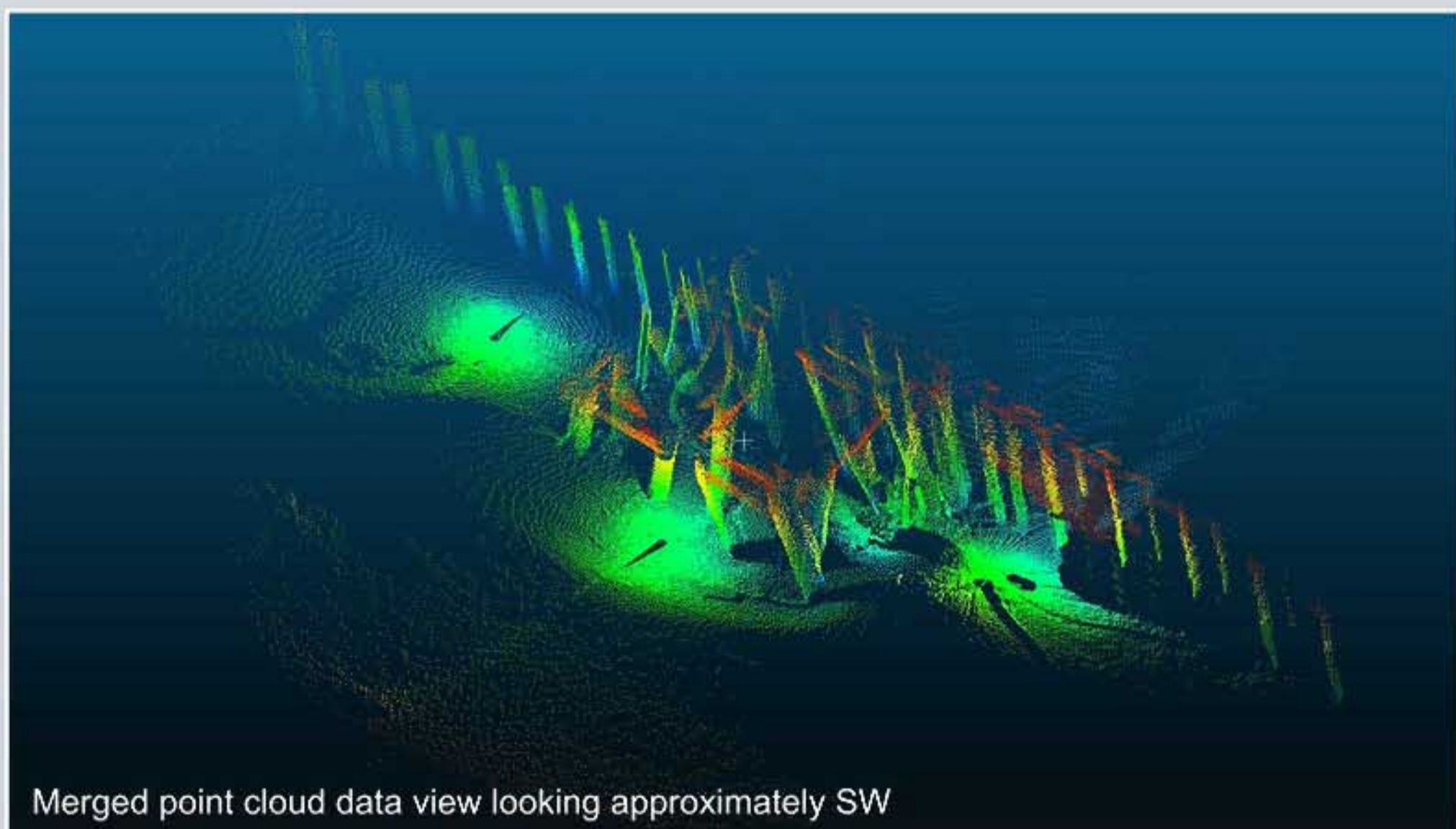
For this survey the frequency was set at 1105kHz.

The head and rotator were tripod-deployed.

The vertical visualization data was collected with an 1171-Series, tunable-frequency High Resolution Sonar Head set at 1100kHz.

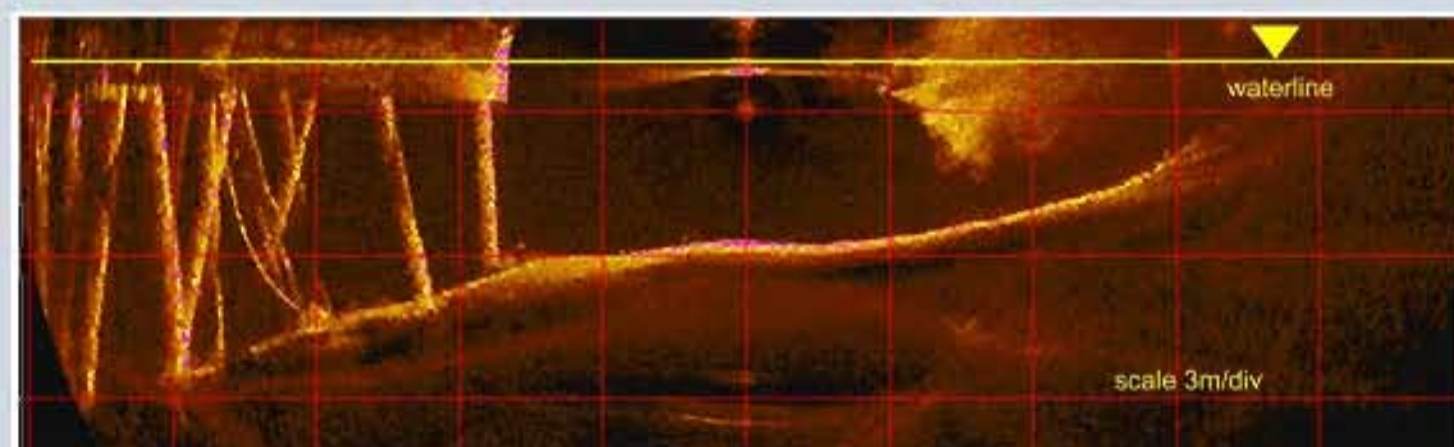


Merged point cloud data view looking approximately NE

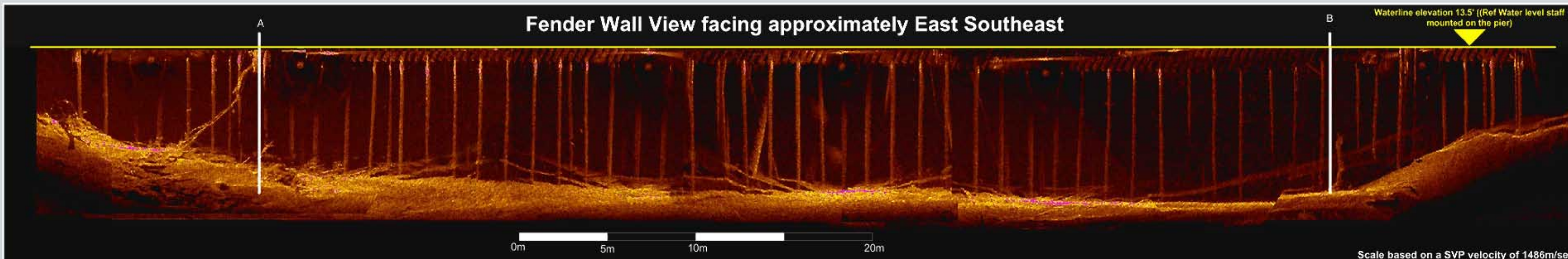
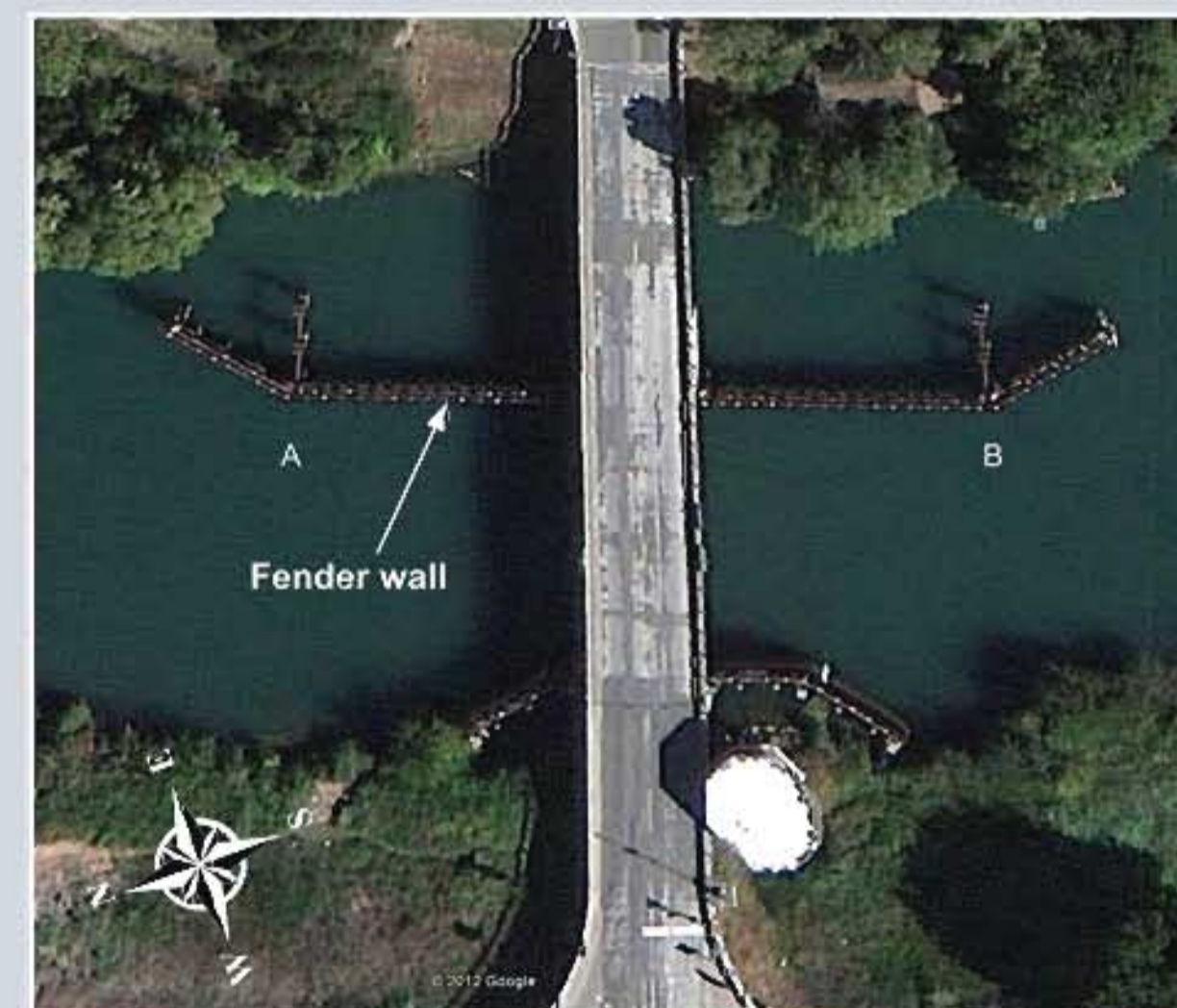


Merged point cloud data view looking approximately SW

Vertical visualization of pier showing piles and cables suspended in the water column; waterline elevation 14' (local datum staff on pier)



Georgiana Slough Bridge (www.google.com/earth)



Fender Wall View facing approximately East Southeast

Waterline elevation 13.5' ((Ref Water level staff mounted on the pier)

0m 5m 10m 20m

Scale based on a SVP velocity of 1486m/sec