

Technology Demonstration Facility Case Study

AML Oceanographics Inc. - Anti-Biofouling System

Biofouling of scientific instrumentation on in-situ deployments—such as ocean observing systems—quickly and dramatically impairs the accuracy of measurements. Systems using toxins and pumps are currently used to keep CTDs and other instruments clean. However, toxins are not ecologically friendly and pumps create both electrical and acoustic noise that can impede the effectiveness of other sensors such as hydrophones. The AML Oceanographic UV anti-biofouling system can provide an effective alternate solution.

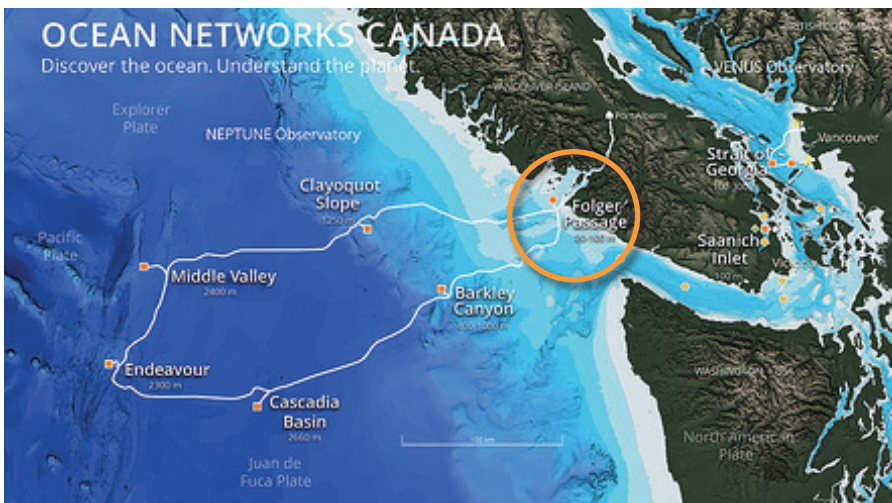


Anti-fouling system applications:

- Camera and light lenses of glass or acrylic
- Sensors such as: CTDs, dissolved oxygen, turbidity, pH, carbon dioxide & sound speed
- On sensors located near hydrophones (which require extremely quiet conditions). The silent UV antifouling system provides a useful solution in this situation



AML's UV-Exchange Biofouling Control



In October 2013, two UV protected AML Oceanographic CTDs and one control unprotected AML Oceanographic CTD were installed on the ONC instrument platform at Folger Pinnacle in 23 m of water. A video camera with lights was also installed to visually monitor the three CTDs. Thirty seconds of video were captured at 9:00 am PDT each morning. Data was collected from the sensors (1x per sec.) for the duration of the experiment, to assess the impact of biofouling.

"We leveraged ONC infrastructure for an in-situ technology demonstration of our new biofouling control system prior to market release.

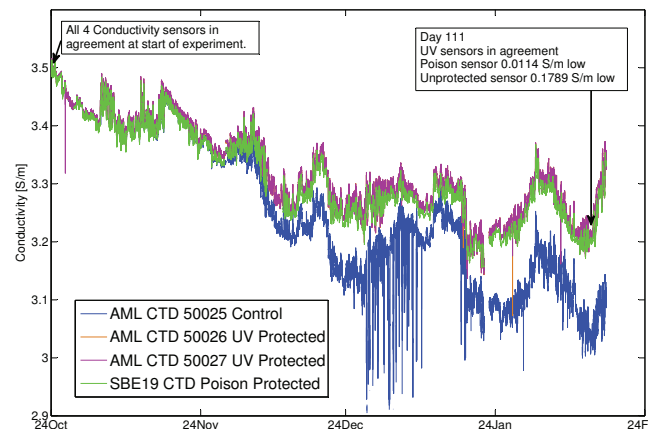
They installed the instruments, conducted the experiments and managed the network infrastructure, allowing us to communicate with the in-situ instruments and retrieve the collected data remotely from our office.

The testing has allowed AML to substantiate the efficacy of its new product and has greatly improved speed to market."

~ Chris Buely, Lead Project Engineer



Day 66: heavy fouling on the control sensors renders them unuseable while the UV-protected experimental sensors are performing within specifications.



Conductivity data over time due to biofouling (in blue).