

Beaufort Gyre Exploration Project: Dispatch 4: Water Sampling

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The *Louis* arrived outside Tuktoyaktuk this morning expecting to receive fuel, but was told that the barge would not be able to provide it until tomorrow. Despite the fact that it is Saturday, the scientific (and ship) operations do not break for the weekend so another CTD/Rosette cast was conducted today at a location of scientific interest close enough that we could be back at the refueling site tomorrow morning.

Recovering the CTD/Rosette is only the first step in the data collection process. While the digital data from the CTD is acquired and stored on a computer during the cast, the water samples need to be drawn from the Rosette bottles immediately, sometimes fixed with chemicals and then analyzed. Inside the CTD shack, watchstanders do a coordinated dance around the Rosette collecting the water samples in the proper order and proper amount designed to utilize the valuable seawater in the best possible manner. On this cruise, water samples are being collected for measurements of salinity, dissolved oxygen, nutrients, oxygen isotope (^{18}O), barium, alkalinity, chlorophyll, bacteria, colored dissolved organic matter (CDOM), plus sometimes chlorofluorocarbons (CFCs), dissolved inorganic carbon (DIC), and iodine (^{129}I) and cesium (^{137}Cs) radionuclides. Some of the chemistry is brought back to the laboratory for analysis after the cruise, but most is analyzed here onboard. Details of these analyses will be described in another dispatch.

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