**Colored dissolved organic matter absorption method**

**(Cdom)**

**Plumes and Blooms**

**Sampling**

Surface samples are collected in amber Qorpak bottles from 5-liter Niskin samplers and refrigerated until analysis.

**Analysis procedure**

The day after the cruise, Cdom samples are filtered on pre-rinsed 0.2 m polycarbonate filters. Filtered samples are run within a week after collection and refrigerated in the meantime.

When ready to be analyzed, the samples are allowed to warm to room temperature. A Shimadzu UV-2401PC dual-beam spectrophotometer is used to determine optical densities. The measurements are performed between 250nm and 750nm, with a slit width of 2 nm, a data interval of 1 nm and a scan speed of 530 nm/min. This is an approximate scan speed as Shimadzu Technical Support can’t provide scan speed for our model. The scan speed reported here corresponds to a more recent model configurated as well with a data interval of 1 nm.

At the beginning of the analysis, a baseline is run with both 10-cm quartz cuvettes filled with freshly produced ultrapure water. The pure water scan is then recorded as an initial blank scan. This operation is repeated in order to obtain a second initial blank scan. The ultrapure water in the sample cuvette is discarded and the cuvette is rinsed 3 times with a small amount of the sample water. The cuvette is then filled with the sample and scanned. The cuvette is filled again with the same sample and scan in order to obtain a duplicate. The same procedure is followed for each sample. Two other blank scans, with both cuvettes filled with ultrapure water, are performed at the end of the analysis.

**Data processing**

The duplicate spectra are averaged and average of the four blank scans are subtracted. The null point correction is calculated as the average absorbance between 650–680 nm. The optical densities are converted into absorption values as follow:

