

US EPA ARCHIVE DOCUMENT

Daily Report: Evidence of Dispersed Oil using Particle Size Distribution Measurements

May 23, 2010

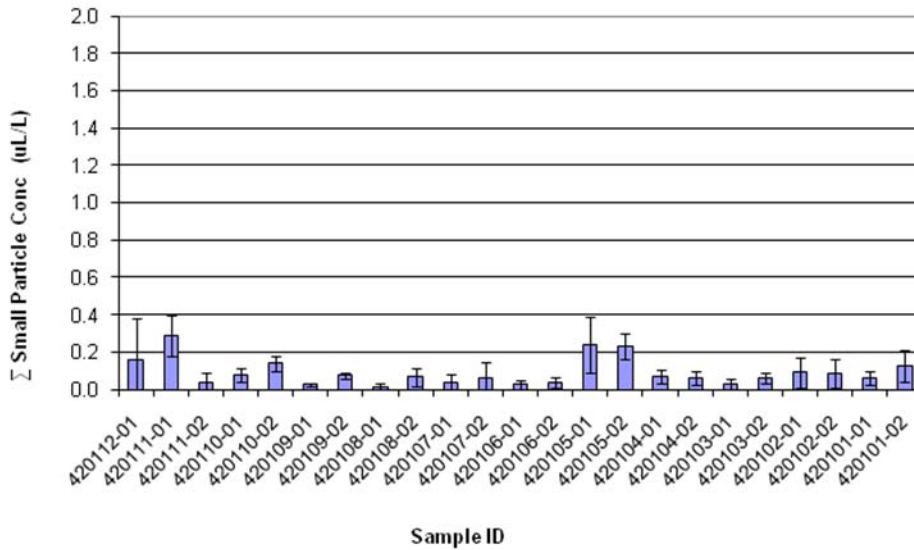
Water samples were collected at three stations for particle size distribution measurements using the LISST-100X particle counter. A total of 69 LISST samples were analyzed, including duplicates. Selected samples were also collected and stored for shore based fluorescence intensity ratio measurements.

Figure 1 presents the small droplet (Σ 2.5 - 60 μ m) particle size data for stations 42 through 44. Because we are now operating with a winch equipped with a conductive wire, we have the ability to get real-time data from the CTD fluorometer during the downcast. This enables us to collect samples at depths corresponding to increases in the fluorescence signal.

Consistent with observations made during the previous leg of the mission (May 19-21), we continue to observe elevated concentrations of small particles in the deep water ranging from 1100m to 1200m in depth. The increase in particles at this depth also corresponds to data from the *in situ* CTD fluorometer, which could indicate the presence of a plume of dispersed oil at this depth.

The concentration of small particles in the surface water samples was low compared to observations made on May 19-20, and this corresponds to the trace from the CTD fluorometer that indicated little change from the surface down through 800m. This was supported by visual observations where only a slight sheen of oil was visible on the surface, compared to previous days where slicks of surface oil were more abundant.

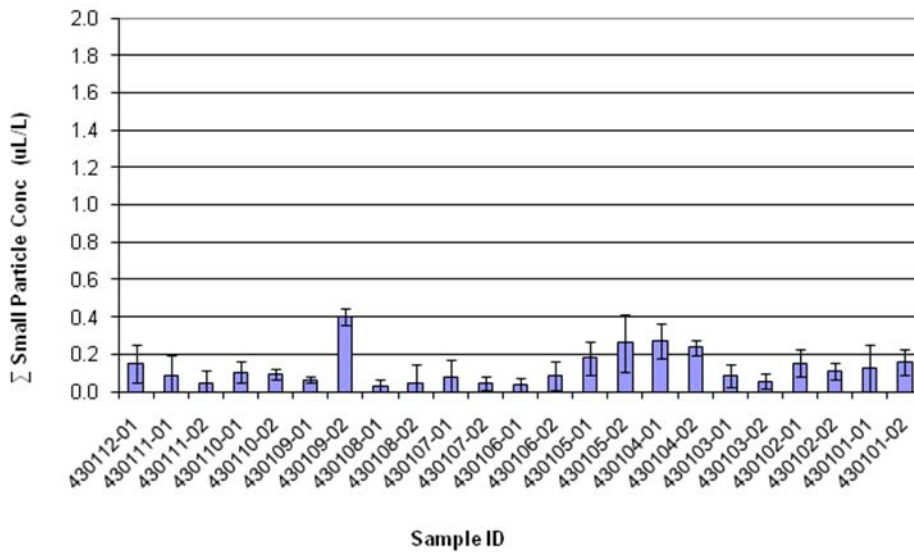
Small Particle Concentrations in Station 42



Sample	Depth
12	0.5m
11	2m
10	50m
09	100m
08	500m
07	1000m
06	1050m
05	1200m
04	1244m
03	1300m
02	1400m
01	1550m

Sample ID Coding:
 eg. 420112-01
 Station Visit# Depth Dup#

Small Particle Concentrations in Station 43



Sample	Depth
12	0.5m
11	2m
10	50m
09	100m
08	500m
07	930m
06	1100m
05	1160m
04	1220m
03	1300m
02	1400m
01	1490m

Sample ID Coding:
 eg. 430112-01
 Station Visit# Depth Dup#

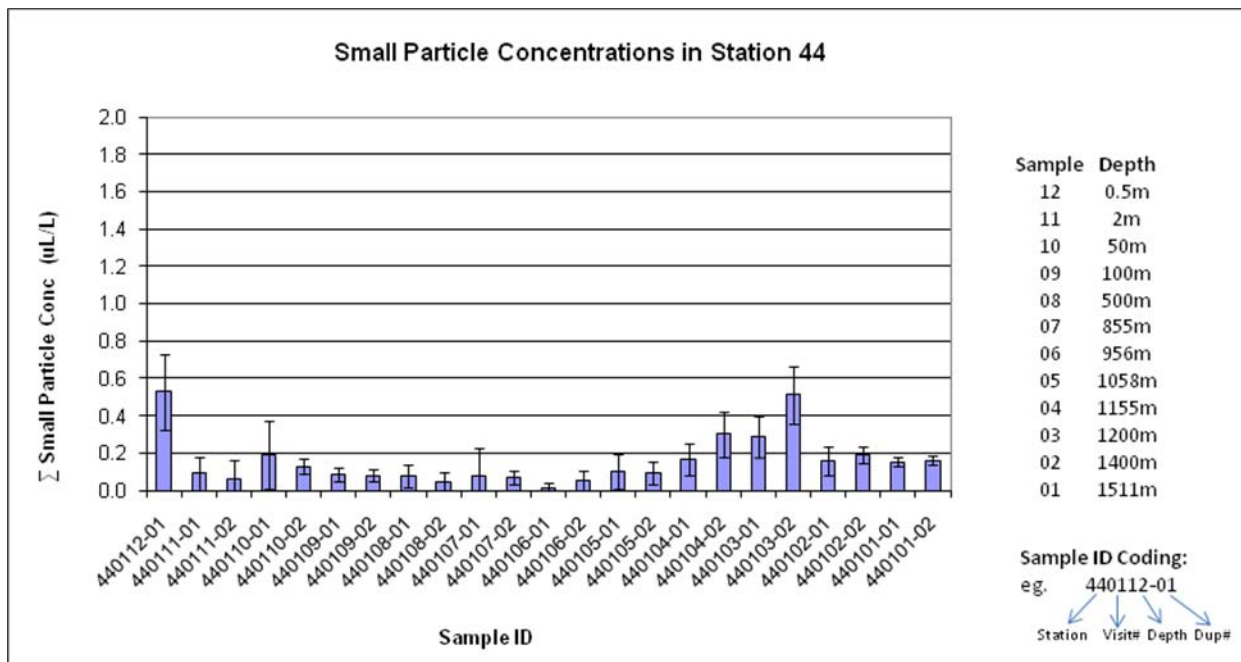


Figure 1: Average small particle concentrations as a function of depth from stations 42 to 44.