Daily Report: Tracking the Plume of Dispersed Oil using Particle Size Distribution Measurements and Fluorescence Intensity Ratios

August 9, 2010

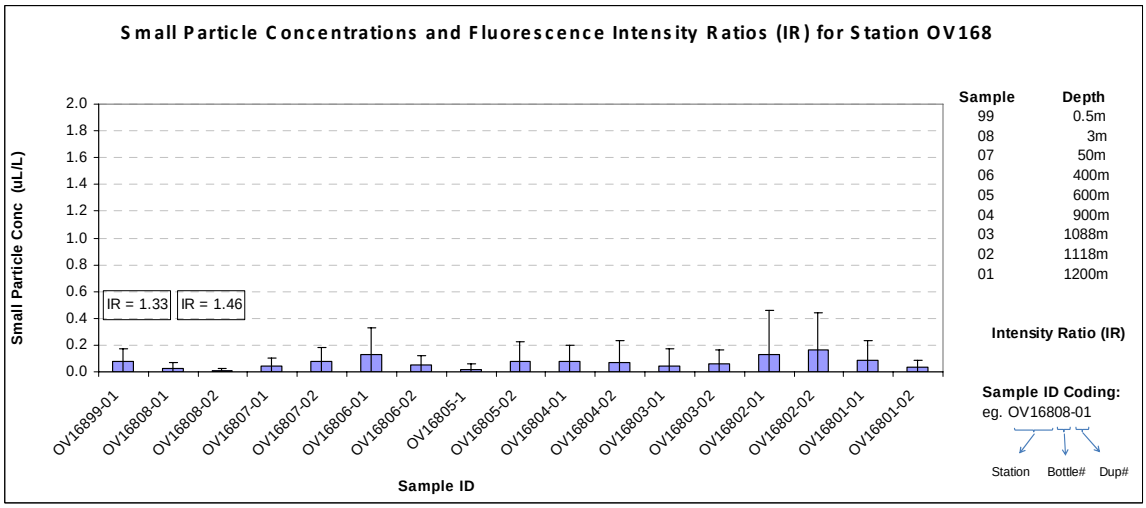
Water samples were collected at four stations for particle size distribution measurements using the LISST-100X particle counter. A total of 67 LISST samples were analyzed, including duplicates. Samples from the surface and 3m, plus those at depths of elevated fluorescence selected from the CTD trace, were analyzed for fluorescence intensity ratio measurements using a Quantech Life Sciences fixed wavelength fluorometer.

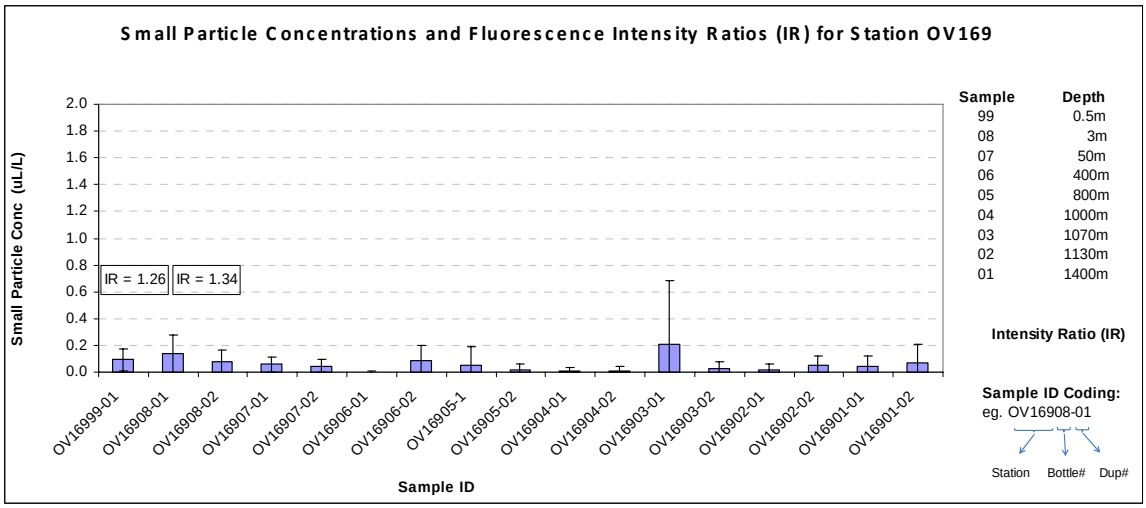
Figure 1 presents the small droplet (∑ 2.5 - 60µm) particle size data and fluorescence intensity ratios for stations OV168 through OV171. The station locations were:

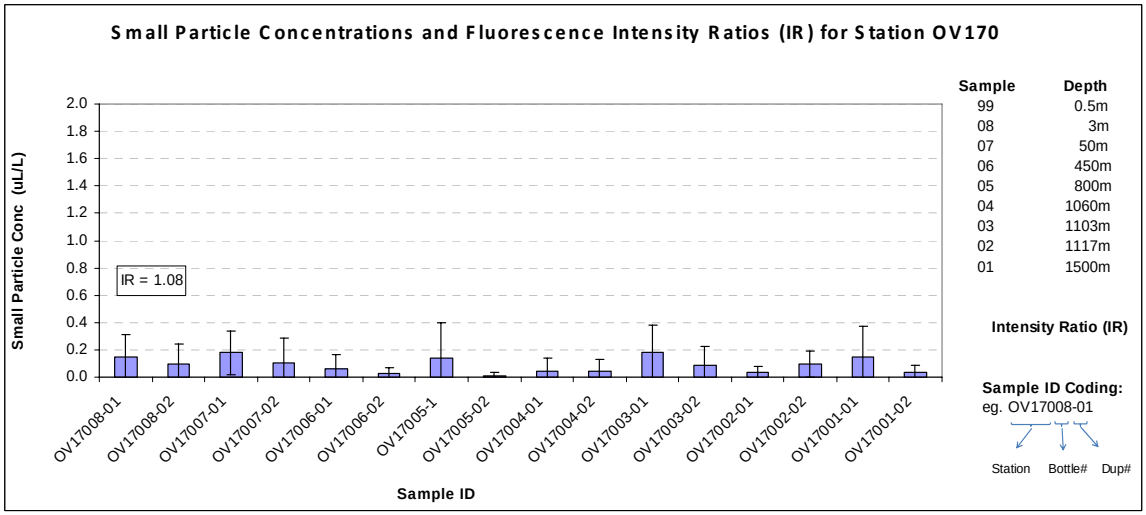
OV168: Lat= 28.279017 Long= -88.927057
OV169: Lat= 28.165983 Long= -88.842065
OV170: Lat= 28.053952 Long= -88.758450
OV171: Lat= 27.940955 Long= -88.673934

Small particle concentrations at all stations were low, similar to what has been observed at other stations recently. There was no evidence of a subsurface plume seen in the CTD fluorometer trace at any of the four stations sampled, although a decrease in oxygen concentration was observed near 1100m at stations OV168, OV169 and OV170. There was no indication that the concentration of small particles was greater at these depths than at any other depth.

Fluorescence intensity ratios were very similar to those observed recently, falling between 1.08 and 1.59. Due to the absence of a subsurface fluorescence plume, no samples for the fluorescence intensity ratio were taken below the surface and 3m.







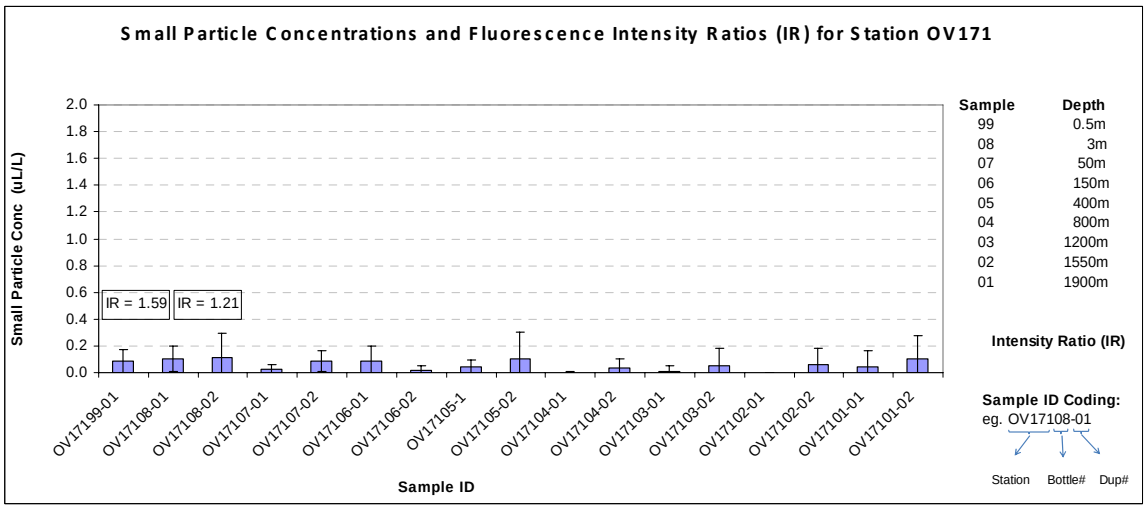


Figure 1: Average small particle concentrations and fluorescence intensity ratios as a function of depth for stations OV168 to OV171.