

US EPA ARCHIVE DOCUMENT

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

July 11, 2010

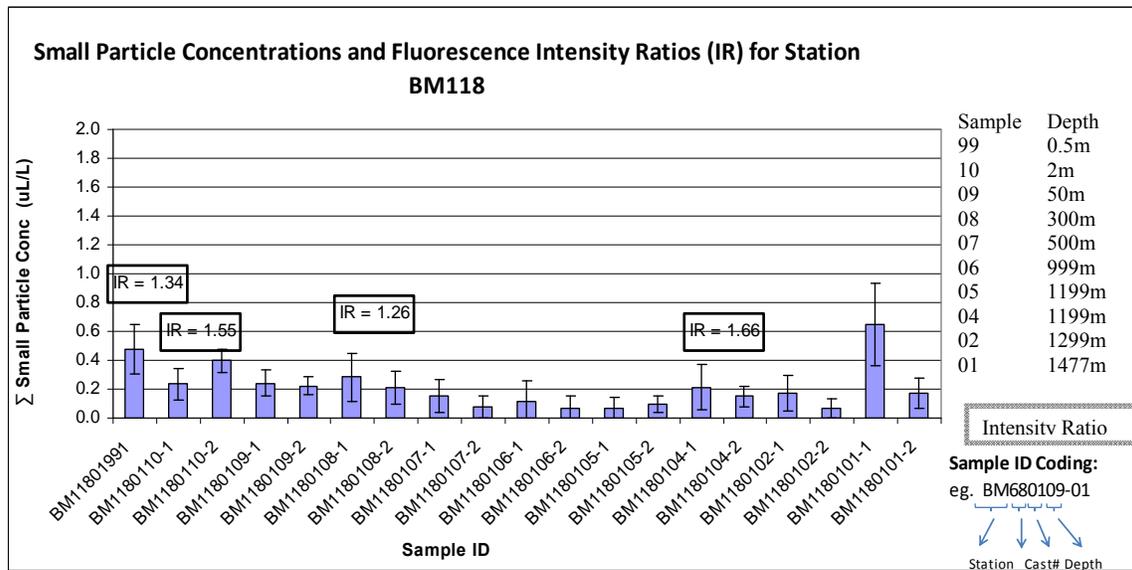
Water samples were collected at three stations for particle size distribution measurements using the LISST-100X particle counter. A total of 84 LISST samples were analyzed, including duplicates. Samples at depths of elevated fluorescence were selected from the CTD trace for fluorescence intensity ratio measurements and analyzed using a Quantech Life Sciences fixed wavelength fluorometer.

Figure 1 presents the small droplet (Σ 2.5 - 60 μ m) particle size data and fluorescence intensity ratios for stations BM118 through BM122. The station locations were:

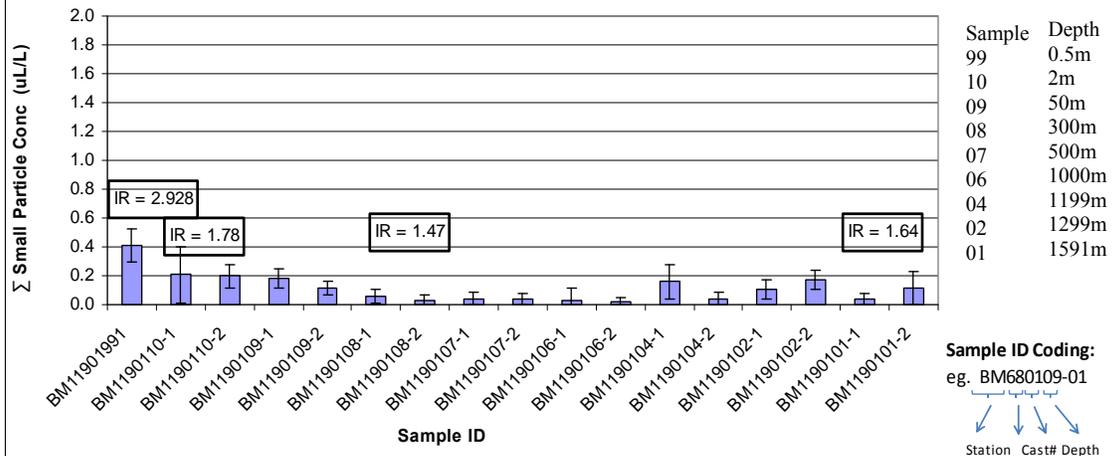
- BM118: Lat= 28.7379183 Long= -88.3973766 (3km West of the well head)
- BM119: Lat= 28.71156833 Long= -88.3650316 (3km South of the well head)
- BM120: Lat= 28.7158333 Long= -88.3827966 (3km South East of the well head)
- BM121: Lat= 28.7198633 Long= -88.3875466 (3km South East of the well head)
- BM122: Lat= 28.7081316 Long= -88.3886633 (3km South East of the well head)

The LISST data did not show an increase in small particles at depth on stations BM118 through BM122. Slightly elevated concentrations of small particles were detected in the surface samples (0.5m, 3m, and 50m) on Station BM118 and BM122.

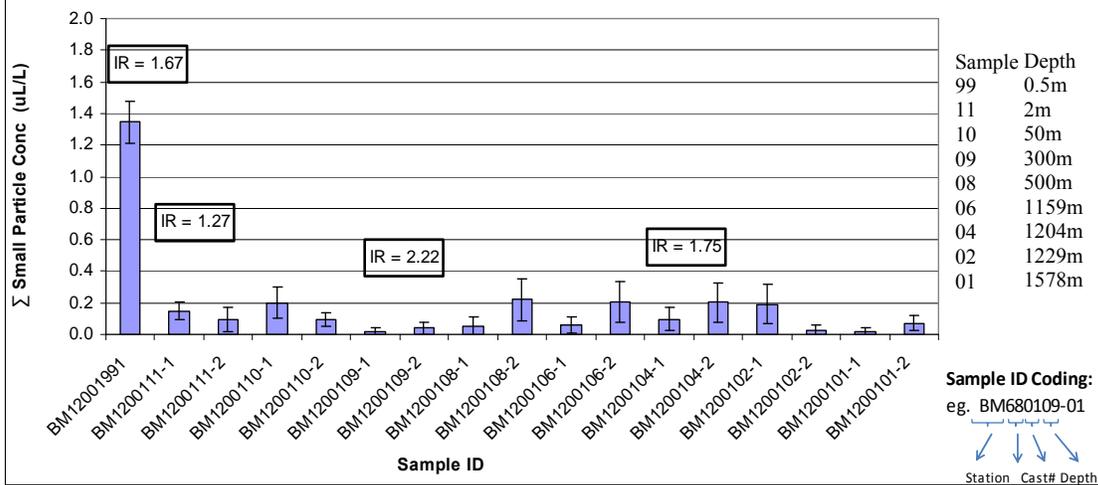
The results of fluorescence intensity ratios showed that low ratios were observed in both the near surface waters (3m or less) and in the deeper water samples.



Small Particle Concentrations and Fluorescence Intensity Ratios (IR) for Station BM119



Small Particle Concentrations and Fluorescence Intensity Ratios (IR) for Station BM120



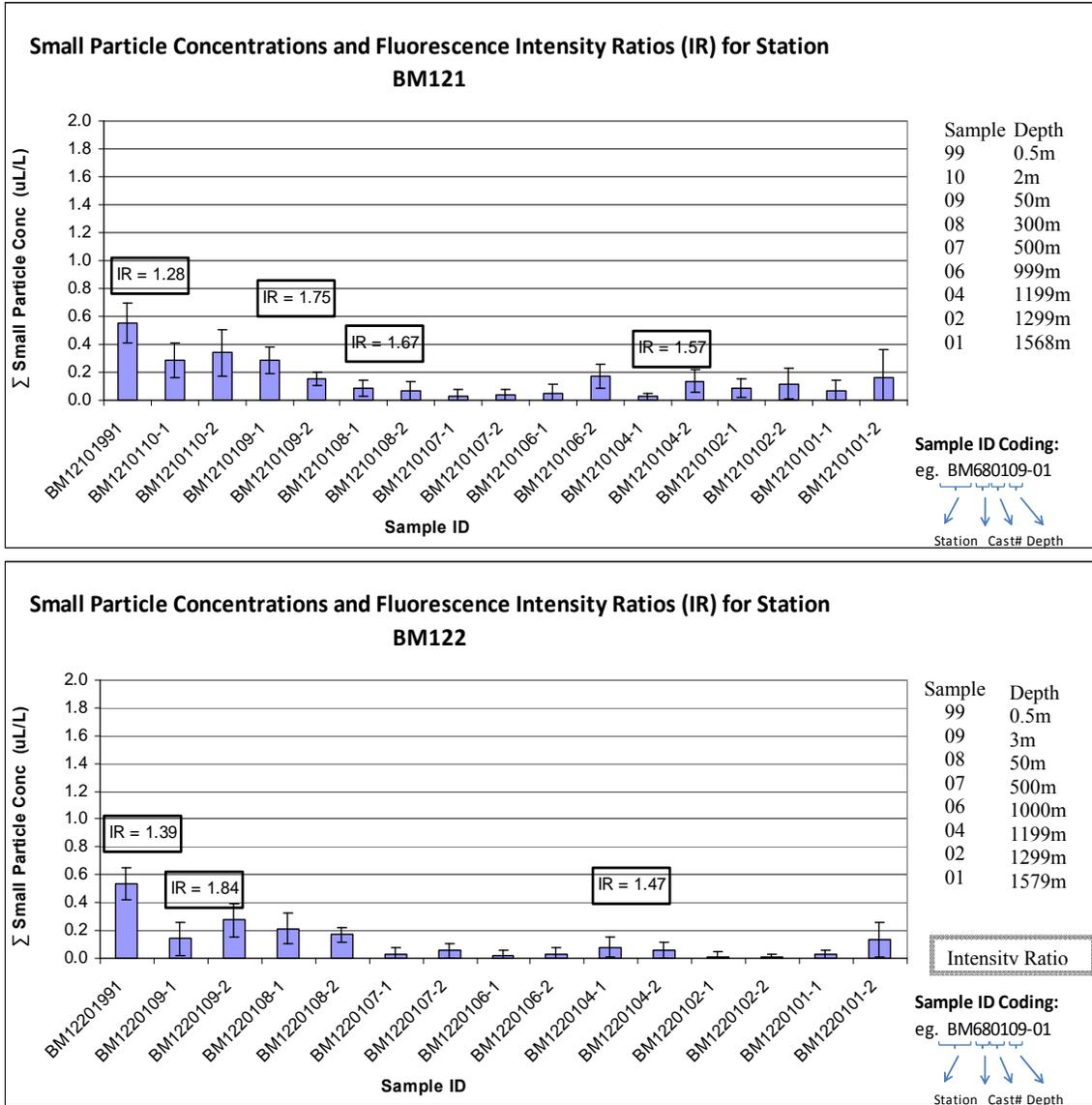


Figure 1: Average small particle concentrations and fluorescence intensity ratios as a function of depth for stations BM118 to BM122.