

US EPA ARCHIVE DOCUMENT

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

July 12, 2010

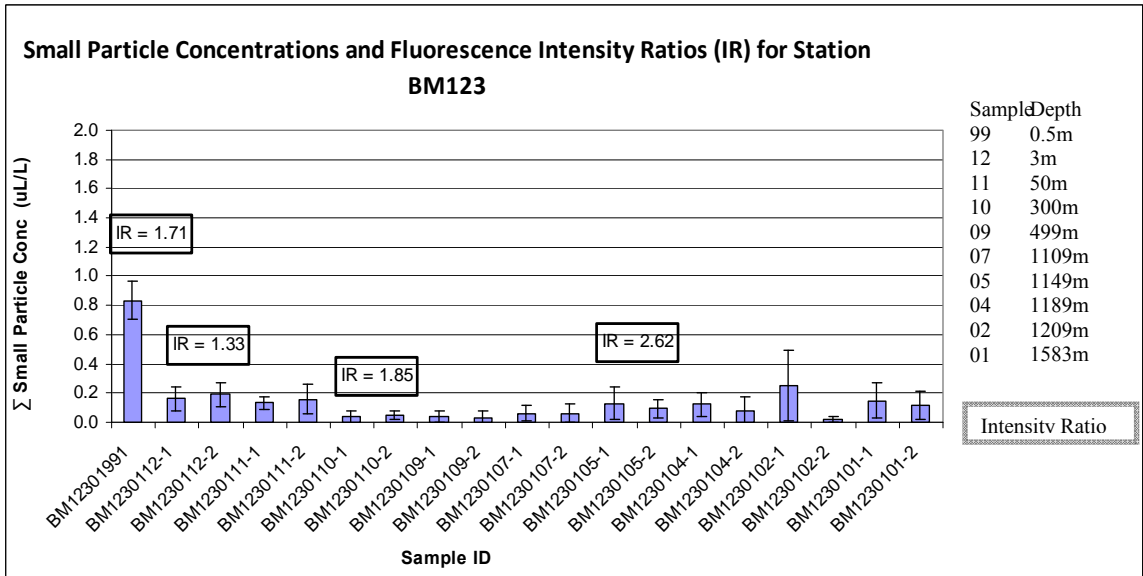
Water samples were collected at three stations for particle size distribution measurements using the LISST-100X particle counter. A total of 57 LISST samples were analyzed, including duplicates. Samples at depths of elevated fluorescence were selected from the CTD trace for fluorescence intensity ratio 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 BM123 through BM125. The station locations were:

BM123: Lat= 28.7128366 Long= -88.3756885 (3km South West of the well head)
 BM124: Lat= 28.708525 Long= -88.3772833 (3.5km South West of the well head)
 BM125: Lat= 28.704225 Long= -88.378725 (4km South West of the well head)

The LISST data did show an increase in small particles at 1139m depth in station BM125 which correlates with the CTD *in situ* fluorometer. Elevated concentrations of small particles were detected in the 0.5m surface sample on Station BM123 through BM125.

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.



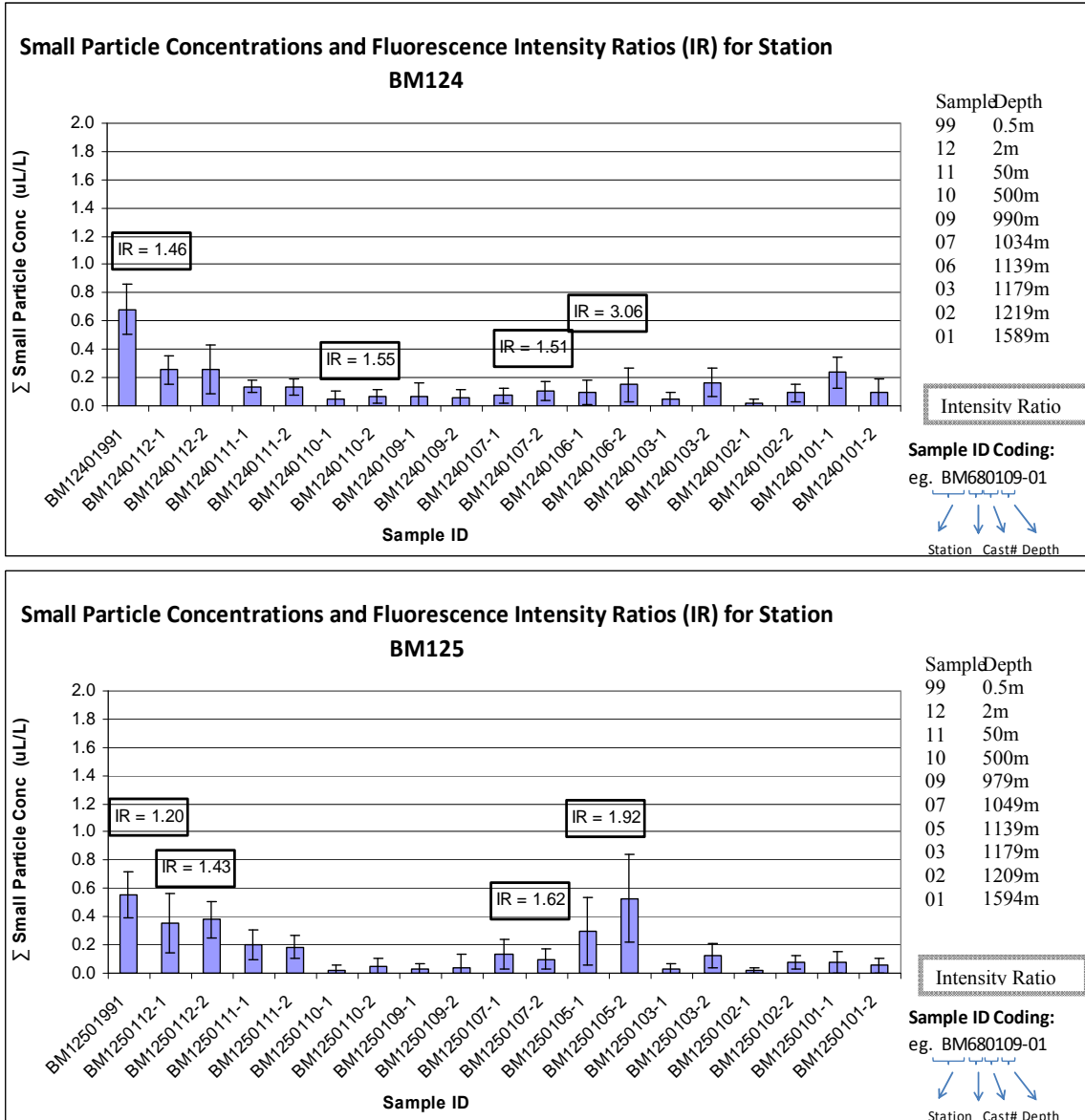


Figure 1: Average small particle concentrations and fluorescence intensity ratios as a function of depth for stations BM123 to BM125.