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

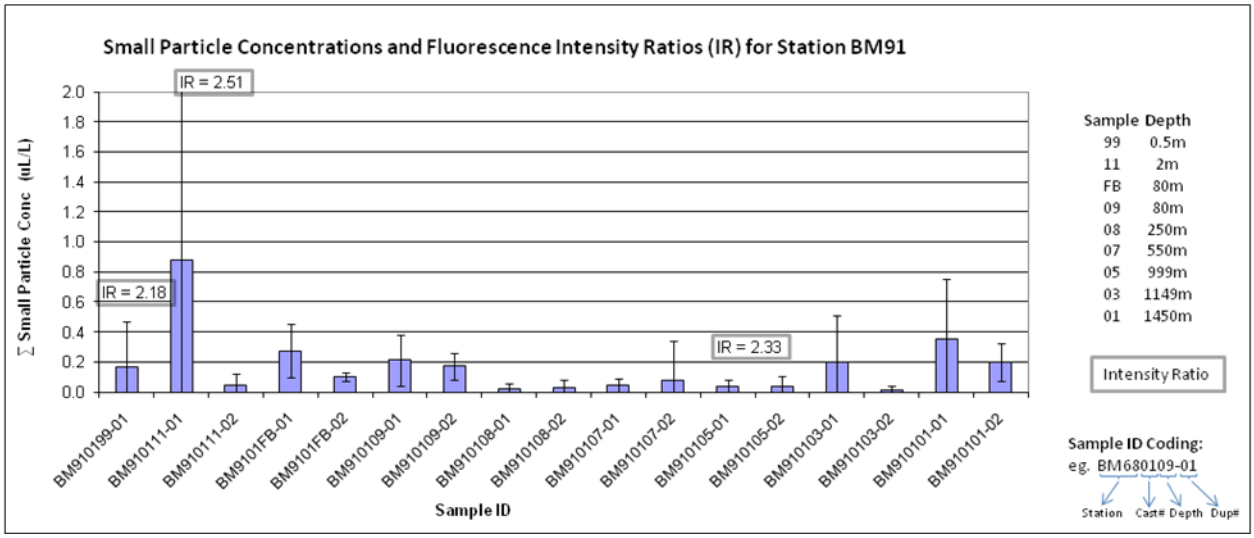
June 18, 2010

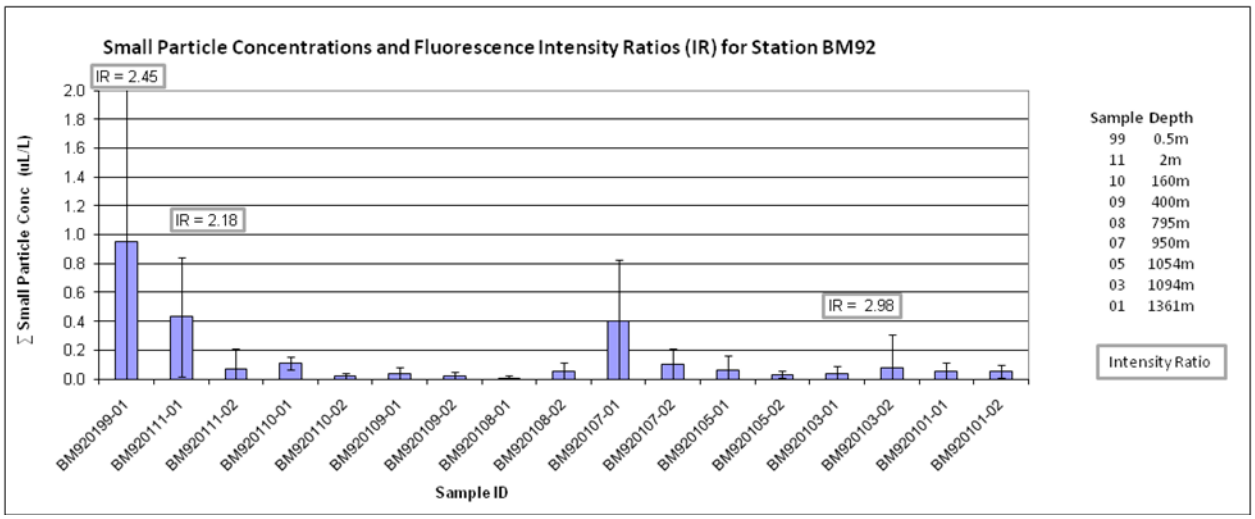
Water samples were collected at four stations for particle size distribution measurements using the LISST-100X particle counter. A total of 68 LISST samples were analyzed, including duplicates. Samples at depths of elevated fluorescence or other significance were selected from the CTD trace for fluorescence intensity ratio measurements and analyzed using a Quantech Life Sciences fixed wavelength fluorometer.

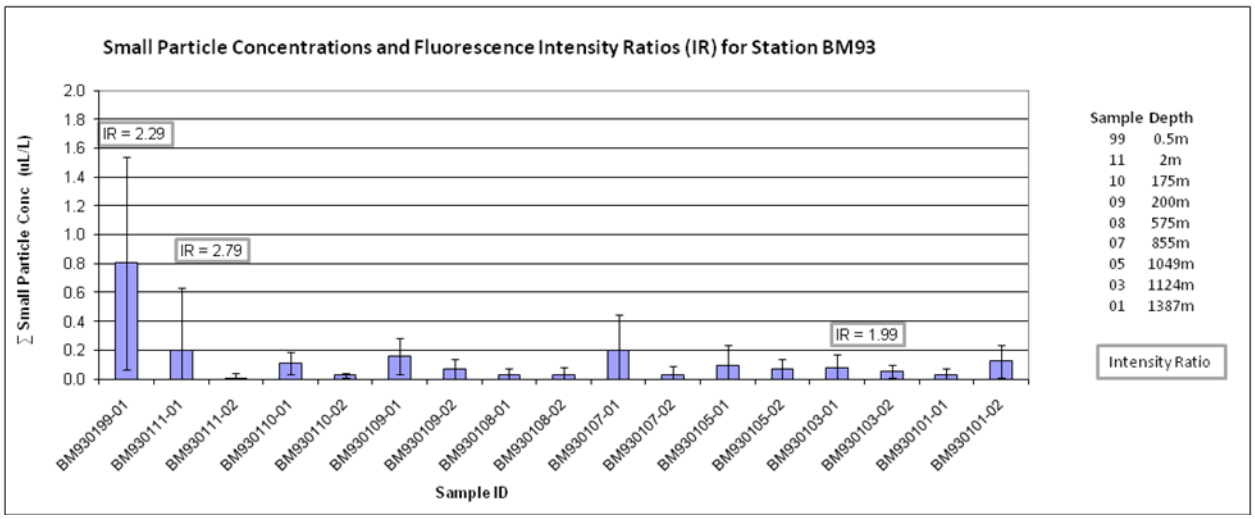
Figure 1 presents the small droplet (∑ 2.5 - 60µm) particle size data and fluorescence intensity ratios for stations BM91 through BM94. Station BM91 was 6km north-northeast of the wellhead, Station BM92 was 5km northeast of the wellhead, Station BM93 was 5km east-northeast of the wellhead, and Station BM94 was 7km north of the wellhead.

Stations BM92, BM93 and BM94 showed high small particle concentrations at the surface layer (0.5m). Station BM91 seemed to have lower surface small particle concentrations than the other three stations, but samples at 80m showed a slight elevation in small particle concentration. Little evidence was observed to indicate a subsurface plume at any of the four stations visited today.

Fluorescence intensity ratios for the surface layer were moderately high at all four stations relative to results observed on June 17th.







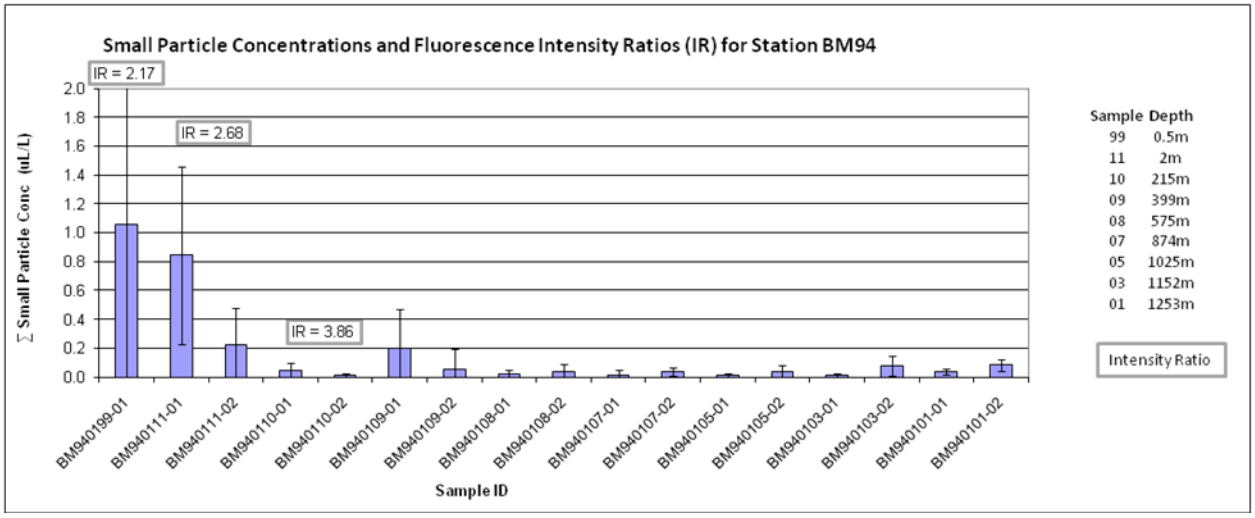


Figure 1: Average small particle concentrations and fluorescence intensity ratios as a function of depth for stations BM91 to BM94.