

US EPA ARCHIVE DOCUMENT

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

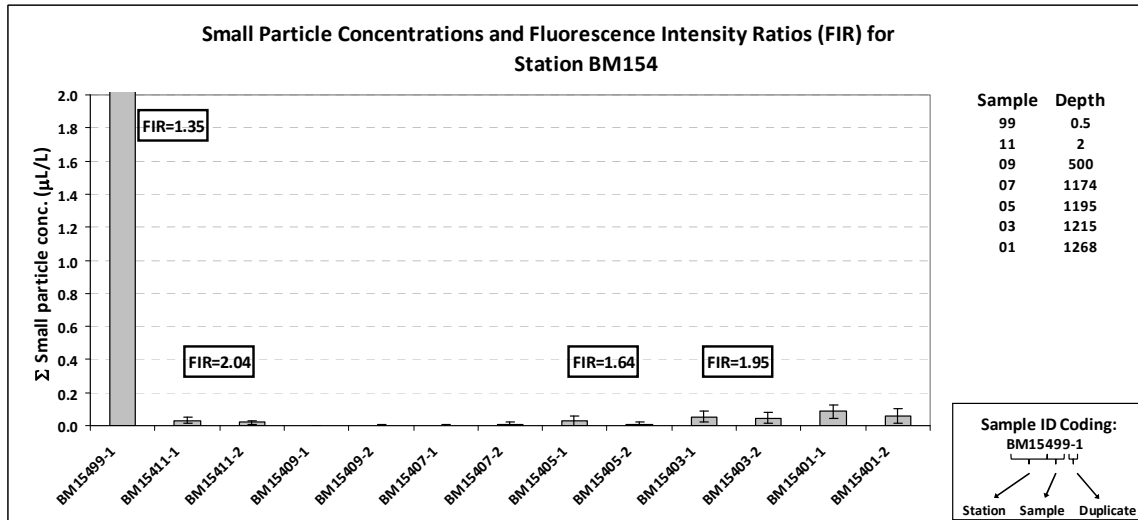
August 04, 2010

Water samples were collected at four stations for particle size distribution measurements using the LISST-100X particle counter. A total of 52 duplicate LISST samples were analyzed. Samples at depths with elevated CDOM fluorescence levels and/or oxygen anomalies were selected for fluorescence intensity ratio measurements using a Quantech Life Sciences fixed wavelength fluorometer.

Station	Latitude	Longitude
BM154	28.182697	-88.825428
BM155	28.182697	-88.825428
BM156	28.182697	-88.825428
BM157	28.218793	-88.794833

With the exception of the surface water sample, small particle concentrations were <0.2 ul/L at all depths. The surface “bucket” samples (0.5 m) had elevated concentrations of small particles at Station 154, 155 and 157. Particles including organic debris were observed in the sampling cups from the 0.5 m samples. Biogenic material including seaweed was observed floating around the vessel at all stations. The CDOM *in-situ* fluorometry profiles from all stations did not show elevated fluorescence.

Fluorescence intensity ratios were measured at the surface along with depths where a slight depression was observed in the *in-situ* dissolved oxygen profile. The results of these analyses showed low fluorescence intensity ratios (<2.1).



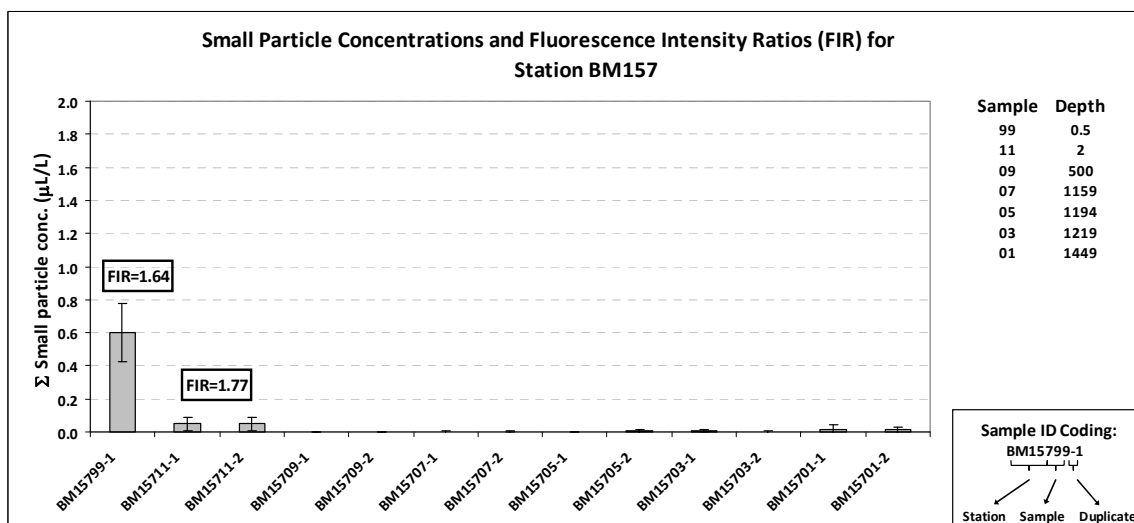
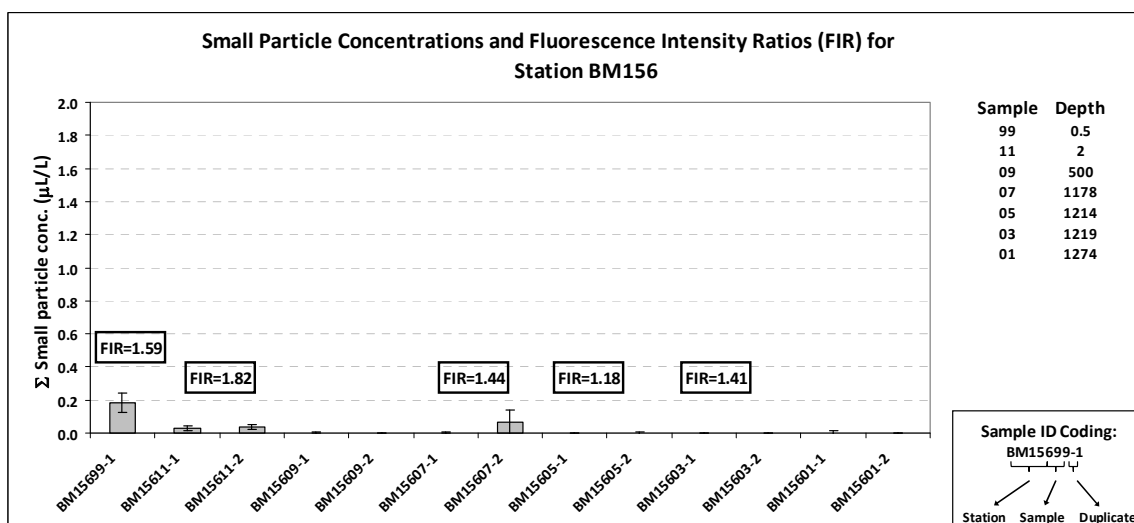
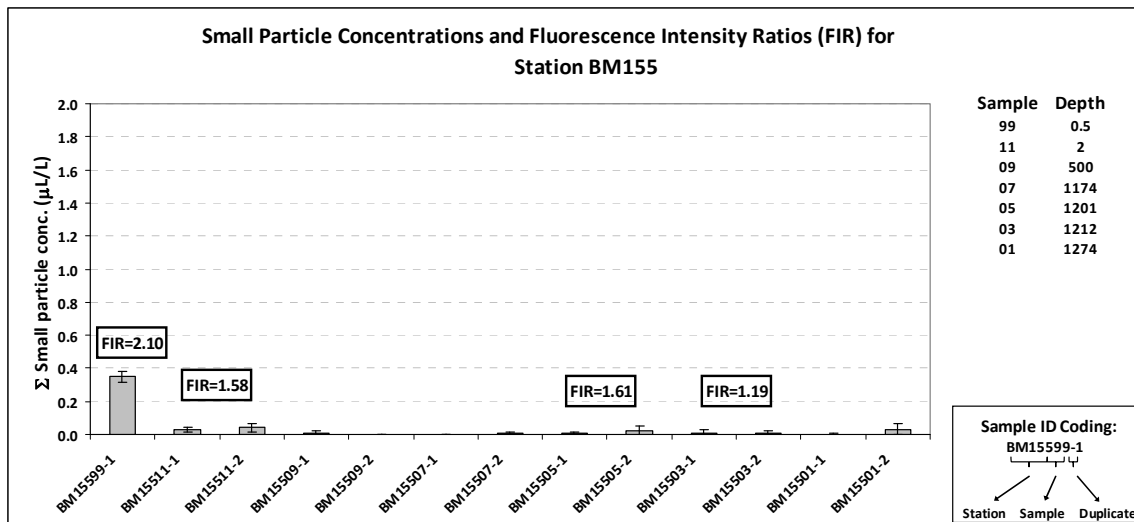


Figure 1: Average small particle concentrations and fluorescence intensity ratios as a function of depth for stations BM154 to BM157.