

US EPA ARCHIVE DOCUMENT

## Daily Report: Tracking the Plume of Dispersed Oil using Particle Size Distribution Measurements

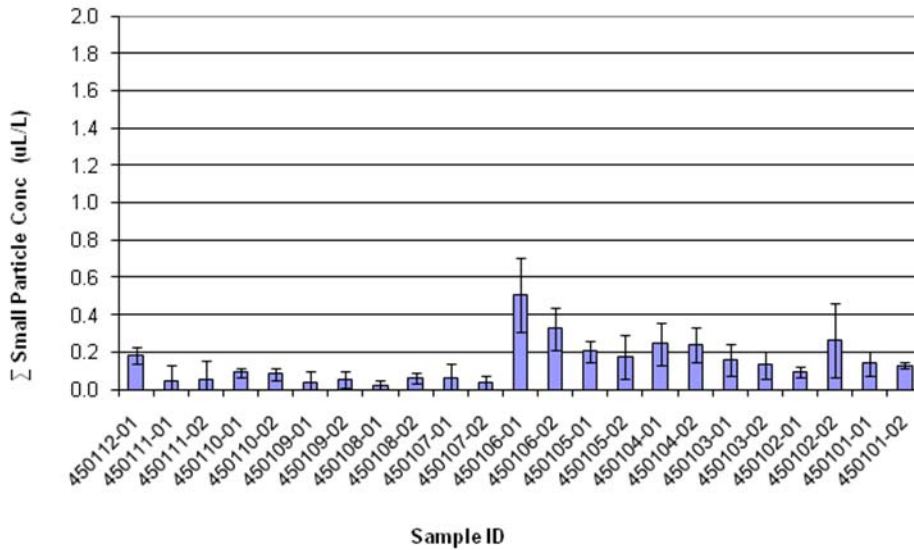
May 24, 2010

Water samples were collected at four stations for particle size distribution measurements using the LISST-100X particle counter. A total of 91 LISST samples were analyzed, including duplicates. Selected samples were also collected and stored for shore based fluorescence intensity ratio measurements.

Figure 1 presents the small droplet ( $\Sigma$  2.5 - 60 $\mu$ m) particle size data for stations 45 through 48. These stations were located 3 to 6 km from the wellhead in the southwestern quadrant. The goal of the sampling program for today was to track the extent of the deepwater plume of dispersed oil.

Despite our distance from the wellhead, we continue to observe elevated concentrations of small particles in the deep water ranging from 1100m to 1300m in depth. The increase in particles at these depths also corresponds to data from the *in situ* CTD fluorometer. The highest concentrations of small particles were detected in stations 45 and 48, which were 4 km and 6 km west of the wellhead, respectively. Station 46, which was approximately 3.5 km from the wellhead in the west-southwest direction, also had elevated concentrations of small particles. Station 47, which was 3 km from the wellhead in the southwest direction, did not produce a signal from the CTD fluorometer suggesting the deepwater plume did not extend this far south. Unfortunately, the LISST samples from this station were contaminated with a blast of exhaust soot from *Brooks McCall*, so the particle size data for this station is unreliable.

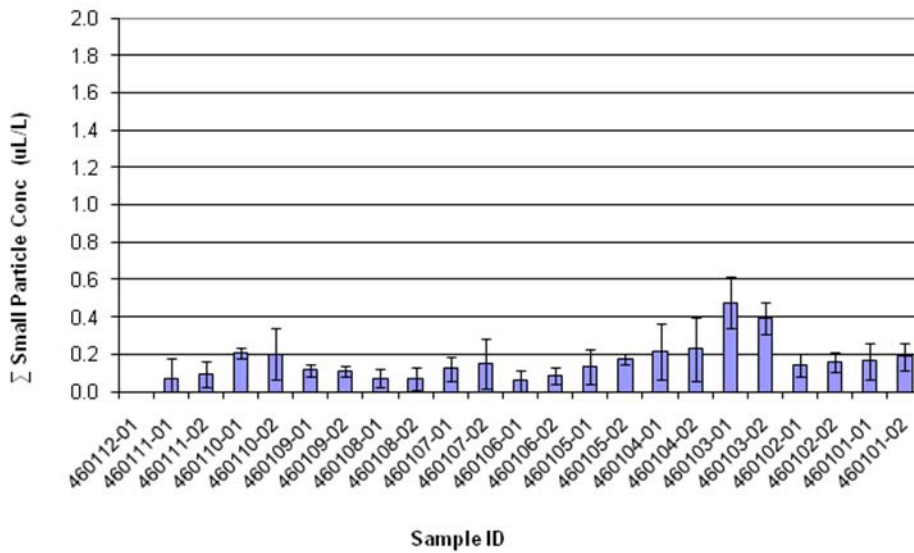
### Small Particle Concentrations in Station 45



Sample	Depth
12	0.5m
11	2m
10	50m
09	500m
08	900m
07	1100m
06	1147m
05	1200m
04	1200m
03	1240m
02	1400m
01	1488m

Sample ID Coding:  
 eg. 450112-01  
 Station Visit# Depth Dup#

### Small Particle Concentrations in Station 46



Sample	Depth
12	0.5m
11	2m
10	50m
09	100m
08	500m
07	900m
06	1050m
05	1100m
04	1150m
03	1228m
02	1400m
01	1535m

Sample ID Coding:  
 eg. 460112-01  
 Station Visit# Depth Dup#

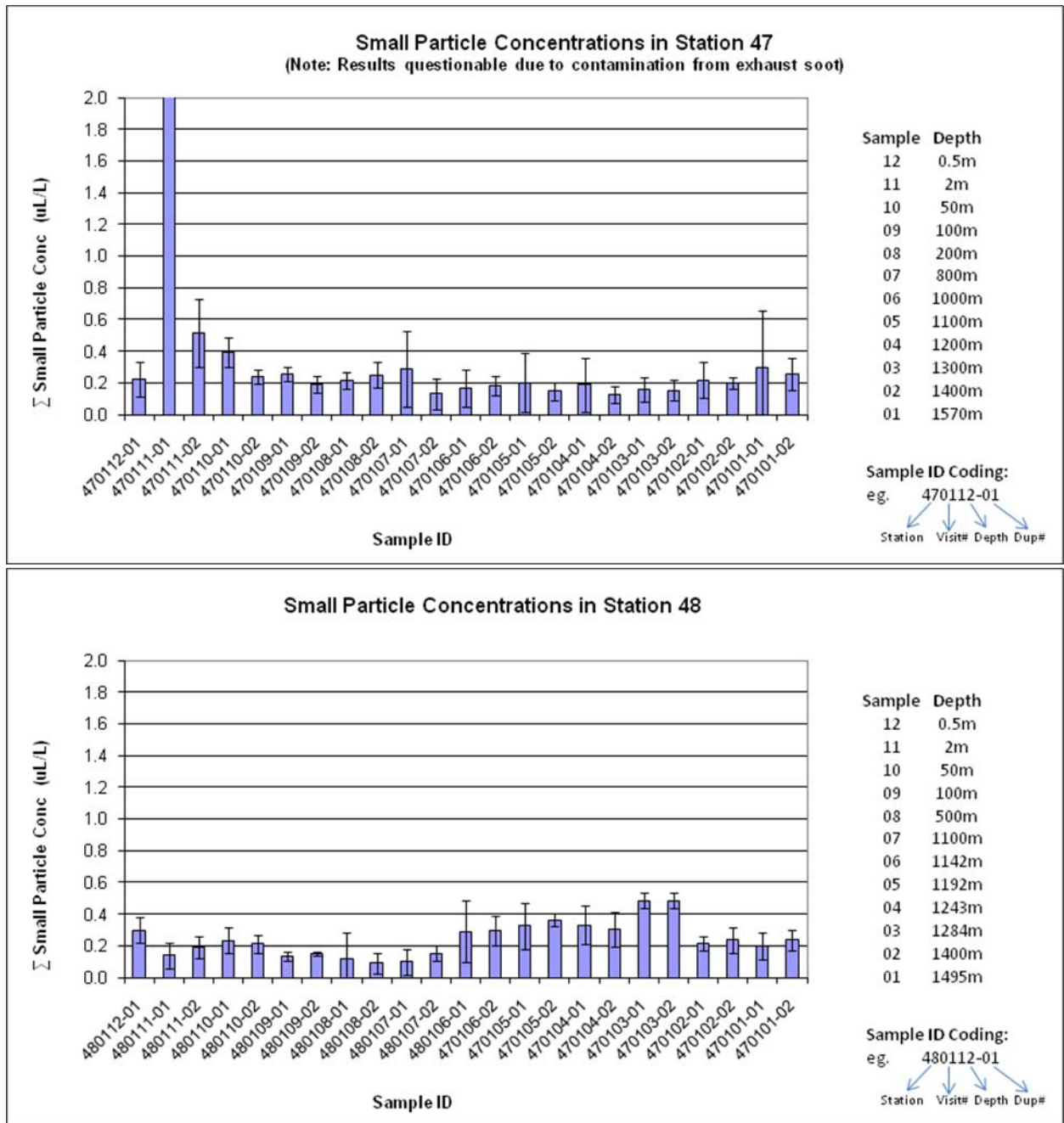


Figure 1: Average small particle concentrations as a function of depth from stations 45 to 48.