

C3 Fluorometer report and observations
 R/V Brooks McCall, 21 May 2010
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Below are graphs and explanations of the 3 C3 tows done today. To address some QA concerns from yesterday, I thoroughly cleaned the sensors with Dawn detergent and water, but visual inspection of the sensors suggested they remained quite clean. I repeated this after the first cast, but it was clear that the sensors had remained very clean, so I did not clean again.

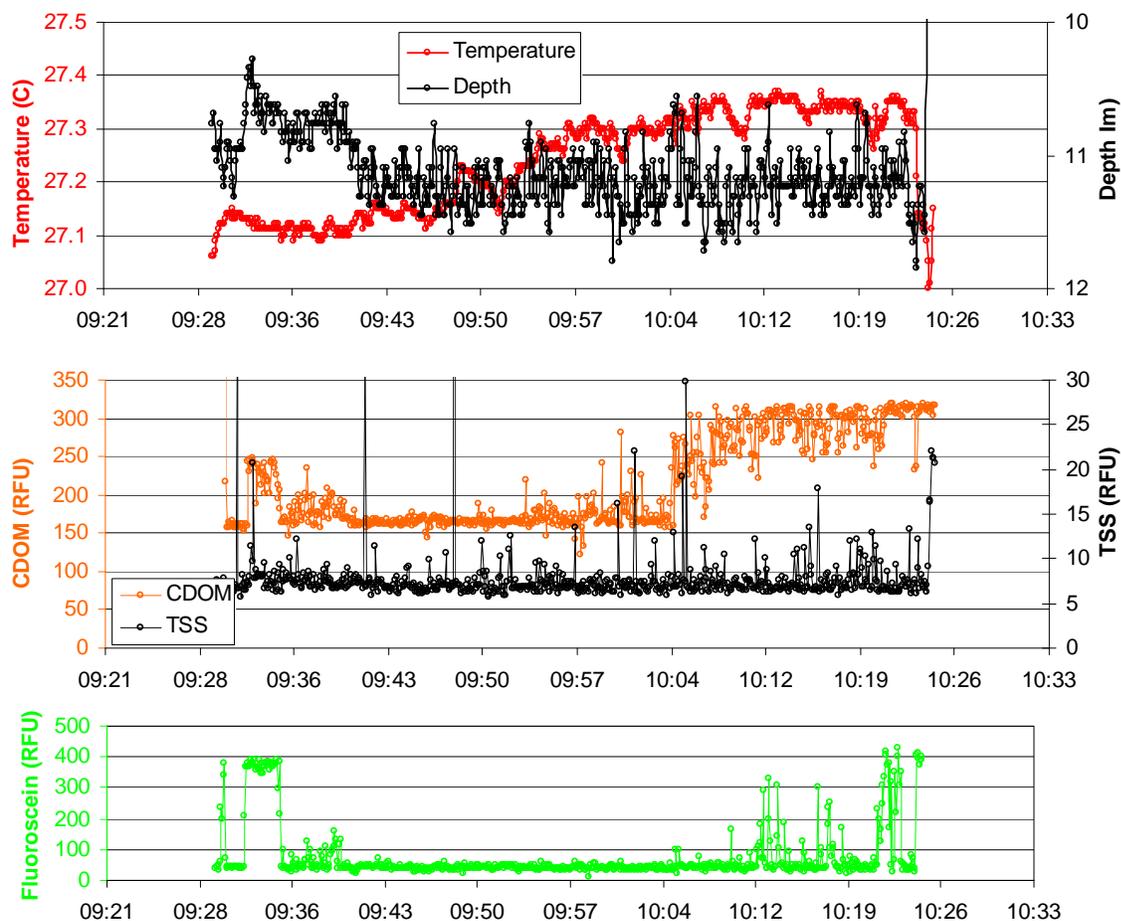


Figure 1: First tow of 21 May of ~50 min duration traversing a partial circle from SW to E of the wellhead between stations B38 and B39. The depth scale was somehow corrupted, ranging from 10.5 to 11.5, but seemed to be only an offset issue. Temperature varied from 27.1 to 27.35 °C. The CDOM (oil) channel indicated a small patch of oil (~250 FSU) at the beginning of the tow, then a larger and more concentrated patch (300 FSU) as we made our way to the east of the wellhead. The TSS (turbidity) channel is mostly low varying from 5 to 10 FSU with numerous spikes. The fluorescein channel covaried with the CDOM channel showing evidence of oil both at the beginning and the end of the tow.

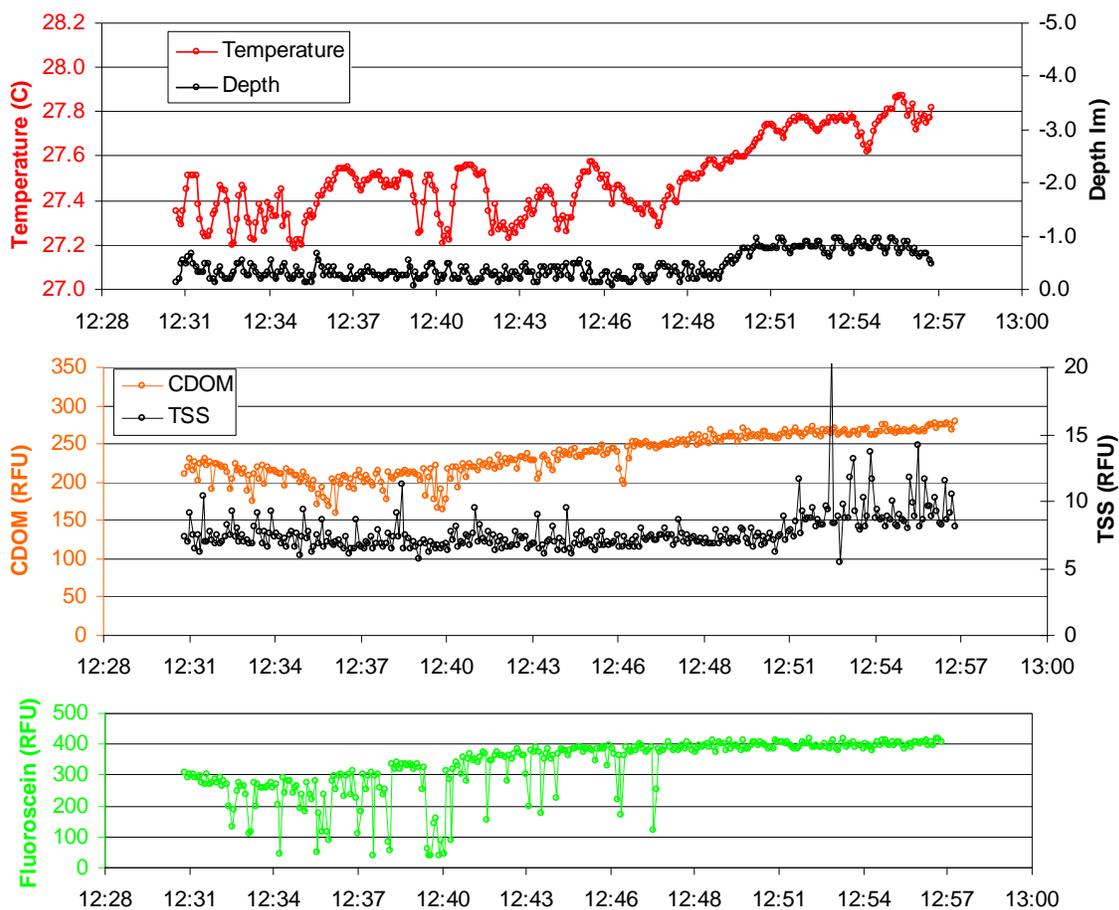


Figure 2: Second tow of 21 May of ~25 minutes duration between stations B39 and B40 moving from east to north of the wellhead. The depth readings still were still offset slightly, varying between -0.5 to -1.0. Temperature varied in a cyclical fashion, similar to earlier casts, from 27.2 to 27.8 °C. The CDOM (oil) channel had a slight bowl shape, being ~225 FSU dropping to under 200 FSU then gradually increasing to ~275. The TSS (turbidity) channel is mostly low varying from 5 to 10 FSU with occasional spikes. The fluorescein was not consistent with the CDOM channel, being highly variable (from ~50 to 350) at the beginning then becoming stable (~400) by the end of the tow.

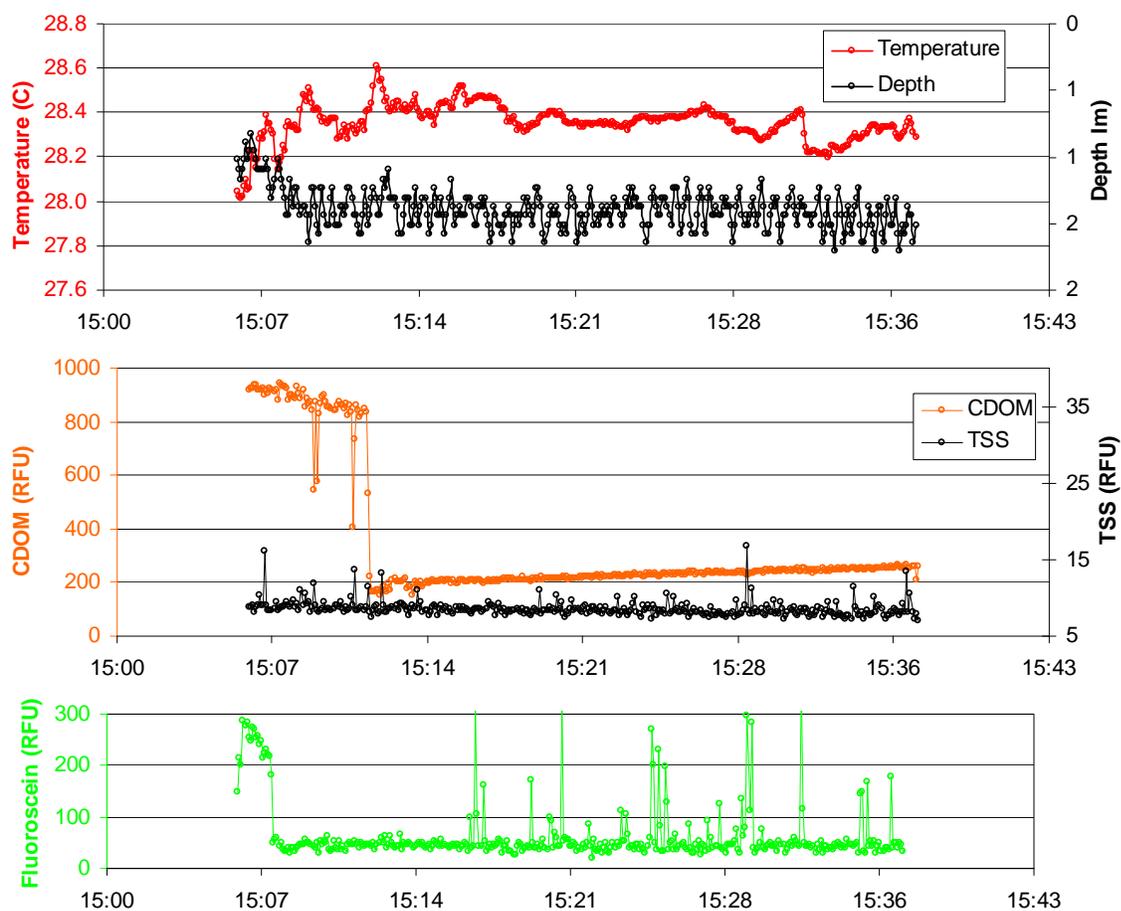


Figure 3: Third and final tow of 21 May of ~30 minutes duration between B40 and B41 from north to west of the wellhead. The depth sensor was recalibrated, so read correctly from 1.5 to 1.75 m. Temperature varied from ~28 to 28.6 °C similar to other casts. The CDOM (oil) showed an intense patch of oil (~900 FSU) at the beginning of the tow, then decreasing abruptly to ~200 FSU after about 5 minutes. This was also the time when there was a strong smell of oil and clear evidence of undispersed oil around the ship. As before, the TSS (turbidity) channel was mostly low varying from 5 to 10 FSU with very few spikes. The fluorescein channel started out ~ 300 FSU and then abruptly dropped to ~50 FSU after only 2 or 3 minutes. While it is clearly oil related, it was curious how the fluorescein channel dropped ~5 minutes before a similar drop in the CDOM channel. For the rest of the tow the fluorescein channel had intermittent spikes but mostly stayed at the ~50 FSU level.