**Brooks McCall Status Report - Cruise 13 - Day 1 - 17 July 2010**

**Complied by: Alison Lane, Ecosystem Management and Associates Inc. (for BP)**

**Site conditions**

Seas were not comfortable this morning, with 3 to 4 foot wave height and short wave period although the seas eased to approximately 2 feet during the afternoon. Clear skies and winds 10 to 15 knots.

Seismic survey work all day prevented access closer than approximately 7 nm to the wellhead and caused some short delays to sampling work while we waited on approval from SIMOPS to move to different locations.

**Air Quality**

VOC monitoring was conducted at regular intervals at each sample site throughout the day by Bob Miller, Industrial Hygiene Specialist with Bureau Veritas. VOC maximum, recorded at BM131 was 0.9 ppm.

**Equipment**

A new CTD unit was being used for this voyage. Background fluorometry signals and other measurements of DO and temperature were very consistent with that observed previously. There was some interruption in communications with the bottle firing mechanism, meaning that the system had to be restarted during each of the 4 casts to allow bottles to be fired. This has resulted in two sets of records for each of these sites although no data from the CTD has been lost. On the final cast two of the bottles could not be fired and bottles 4 to 7 fired but the depth of firing was not certain. An attempt will be made to re-cable the firing system tonight before starting tomorrow’s sampling effort.

**Findings**

The following definition has been adopted to provide common terminology on subsurface oil:

*Oil Plume:* "Concentration of oil (above background) in the water column that appears to be part of a larger pattern of dispersed oil based on real-time fluorometry and LISST particle data analysis."

A total of 4 CTD casts were completed, as summarized below and shown in the figure (over page).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Station** | **Position from wellhead** | **Fluorescence**  **signal** | **Signal depth** | **Comment** |
| BM131 | 14 km SW | Very weak | 1370m – 1400m | One very weak signal centered at 1380m. DO decrease approximately 0.5mg/L associated with the peak in fluorescence. Occasional broken light sheen. |
| BM132 | 14 km SSW | Very weak | 1410m – 1450m | One very weak signal centered at 1430m. DO decrease approximately 0.5mg/L associated with the peak in fluorescence. Occasional broken light sheen. |
| BM133 | 15 km SSW | Weak | 1370m – 1460m | Two peaks in fluorescence – one very weak at 1385m one weak at 1450m. Slight but distinct decrease in DO associated with both peaks. Very light surface sheen. |
| BM134 | 14 km SSW | Weak | 1400m – 1450m | A weak fluorescence peak centered at 1425m and a distinct decrease in DO of approximately 1mg/L at the same depth. Very light surface sheen. |

**BM131** was located 14km to the south west of the wellhead. Access to the original preferred site (7km from the wellhead) was not permitted due to seismic operations. There were only very occasional small traces of surface sheen at the site. There was a single very weak peak in fluorescence between 1370 and 1400m. LISST analysis supported the presence of a plume at this depth. DO minimum was at 550m depth.

**BM132** was located 14km to the south south west of the wellhead, approximately 2km south east of site BM131. There was a very light broken surface sheen observed at the site. There was a single very weak peak in fluorescence between 1410m and 1450m. There was a small (<0.5mg/L) decrease in DO at the same depth. LISST analysis supported the presence of a plume at this depth. DO minimum was at 550m depth.

**BM133** was located 15 km south south west of the wellhead, approximately 2km to the south of BM132. There were two small peaks in the fluorescence centered at 1380 meters (very weak signal) and 1450 meters (weak signal).DO minimum was between 550m and 600 m depth. LISST analysis supported the presence of a plume at depth at this station. Equipment blanks, and matrix spike and matrix spike duplicate were conducted at this site.

**BM134** was located 14 km SSW from the wellhead, approximately 2km to the south of BM133. A weak signal was detected at this site, centered at 1425 meters. DO minimum was between 450m to 650m depth. At this site Niskin bottles 5 through to 9 did not fire or the firing depth could not be reliably determined and samples were not taken from these Niskin bottles.

**Toxicity Testing**

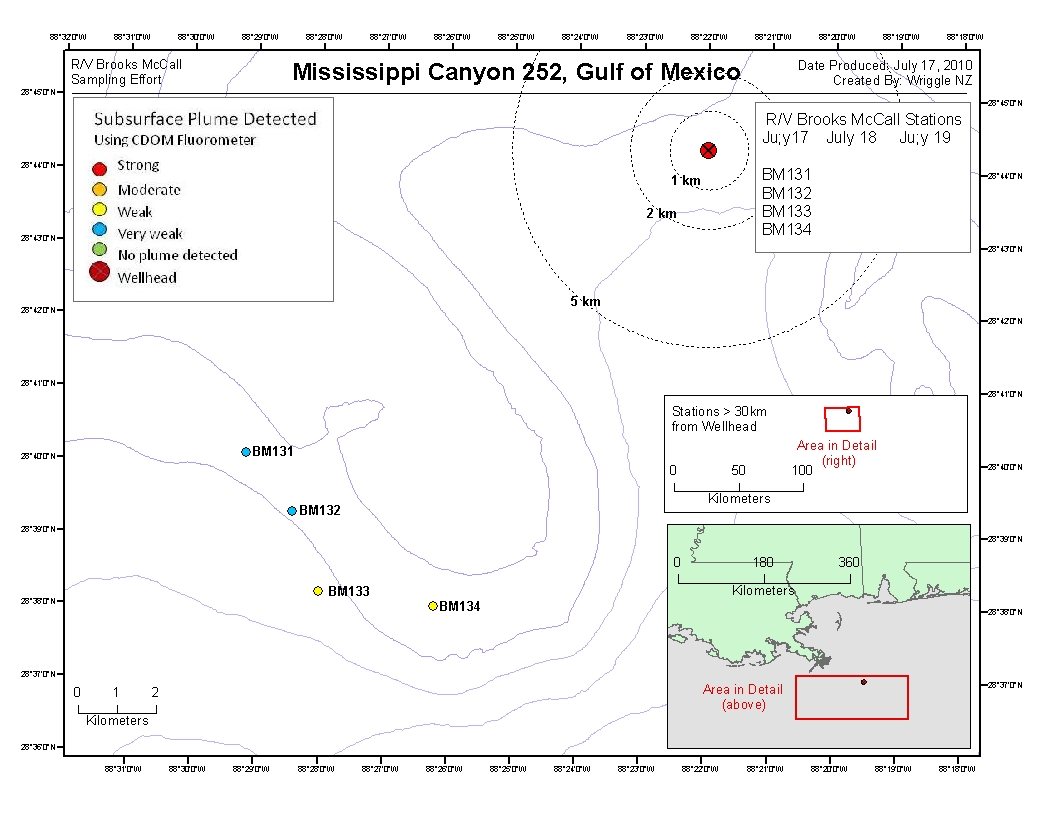
Rotox tests started today for sample stations BM131 to BM134 with results due to be reported on 18 July 2010.

**LISST and Fluorometry**

The LISST analysis demonstrated an increase in small particles in the depths associated with the in-situ fluorescence peak at Stations BM131, BM132 and BM133. The fluorescence ratio intensity at Stations BM133 and BM134 were elevated. Today’s LISST and fluorometry report is attached in the daily deliverables for today.

**Summary**

Day 1 of the Brooks McCall Cruise 12 sampled between 14km and 15km to the south west of the wellhead. The choice of locations was based on data from the previous Ocean Veritas cruise, the Fugro modeling and limitations to areas closer to the site as a result of seismic vessel operations. A very weak or weak plume signal was detected at all sites sampled today. The maximum vertical extent of the plume at any of the sample sites was 90 meters at BM133 if both peaks are taken together. Where a single peak was present, the vertical extent was only approximately 40 meters at most. The lowest recorded DO reading using the handheld Extech probe was 3.73 mg/L in the DO minimum at 500 meters at site BM133.



**Crew Manifest**

|  |  |  |
| --- | --- | --- |
| OPEL, Chris | Master | TDI BROOKS |
| MAJNI, Geno | Chief Mate | TDI BROOKS |
| KAMAL, Wasib | Chief Engineer | TDI BROOKS |
| McCLUSKEY, Ben | Oiler | TDI BROOKS |
| FELIX, Frank | A/B | TDI BROOKS |
| MAJNI, Ann | OS | TDI BROOKS |
| NARCISIS, Paul | Cook | TDI BROOKS |
| MACDONALD, Ian | Crew Chief | TDI BROOKS |
| GREEN, Billy | Winch Operator | TDI BROOKS |
| LANE, Larry | Deck | TDI BROOKS |
| LANE, Alison | Chief Scientist | EM&A |
| HILL, Stephanie | Data Manager | CSS |
| ESSEX, Laura | Rototox testing | EM&A |
| CLARK, Paul | CTD Tech | GERG/TEXAS A&M |
| KEPKAY, Paul | LISST and fluorometry | DFO |
| RYAN, Scott | LISST and fluorometry | DFO |
| SUSDORF, Gary | Water sampling | ENTRIX |
| McTHENIA, Andy | Water sampling | ENTRIX |
| WANNER, Brandon | Water sampling | ENTRIX |
| MILLER, Robert | Industrial Hygienist | BV |
| TODD, Brandi | EPA representative | EPA |

\*\*\*