September 11th | 2010

# Ryan Chouest daily data transmission and report

# Period covered: 2028 *hrs* 09/10/2010 – 1340 *hrs* 09/11/2010

# *72.572* - Nautical miles covered

## Vessel science party:

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## Contact details:

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## Cruise notes:

The *Ryan Chouest* followed the planned cruise 15 route after the launch of Glider 2 and transited Southeast to the first potential natural seep location Site 1 (LAD-023) (Figures 1 and 2). Cast #1 was performed directly over Site 1. The Ryan Chouest then travelled south to explore two further natural seep locations Site 2 (DCS-052) and a known Weatherbird site (Site 3) and then Northeast to Site 4 (LAD-018). A rough grid pattern was used to investigate the possible seeps at Sites 2, 3 and 4 with the echosounder. Collection of underway fluorometer data was continuous.

## Science results and preliminary interpretation:

### Fluorometry results

The Chelsea and Trios sensors generally indicate low levels of inferred hydrocarbons concentrations through the reporting period (Figures 2 and 3).

### Surface Observations

Dolphins were observed riding the ships bow wave during the transit to Site #1 (Photo 1).

### EK-60 Echosounder results

No echosounder contacts were observed during this report period.

### CTD Casts

One CTD cast was performed during this reporting period at Site 1 (LAD-023, N28 52.818, W87 50.954) down to 1734m. A stepwise increase was shown in the Chelsea's "down" profile at 420m, however the

feature did not reappear in the “up” profile. Water samples were collected at 1734m, 1480m, 1210m, 860m, 457m, 430m and 410m to cover the depths that displayed variations in responses from either the fluoromters or the Dissolved Oxygen sensor. Some spikes in the vertical profile of the PAH fluorometer were considered as noises from the sensor.

**Wave Glider operations**

Wave Glider’s #1 and #2 continue on their planned circular courses 10NM and 20NM from the Macondo well site respectively.
The instrument data, as well as operational notes will be reported in a separate daily report daily Monday through Friday. The Monday report will cover the previous weekend.
It is intended to inspect the Wave Glider systems in approximately four weeks. This will be scheduled for a future sailing of the Ryan Chouest.

## Planned route for cruise 15:

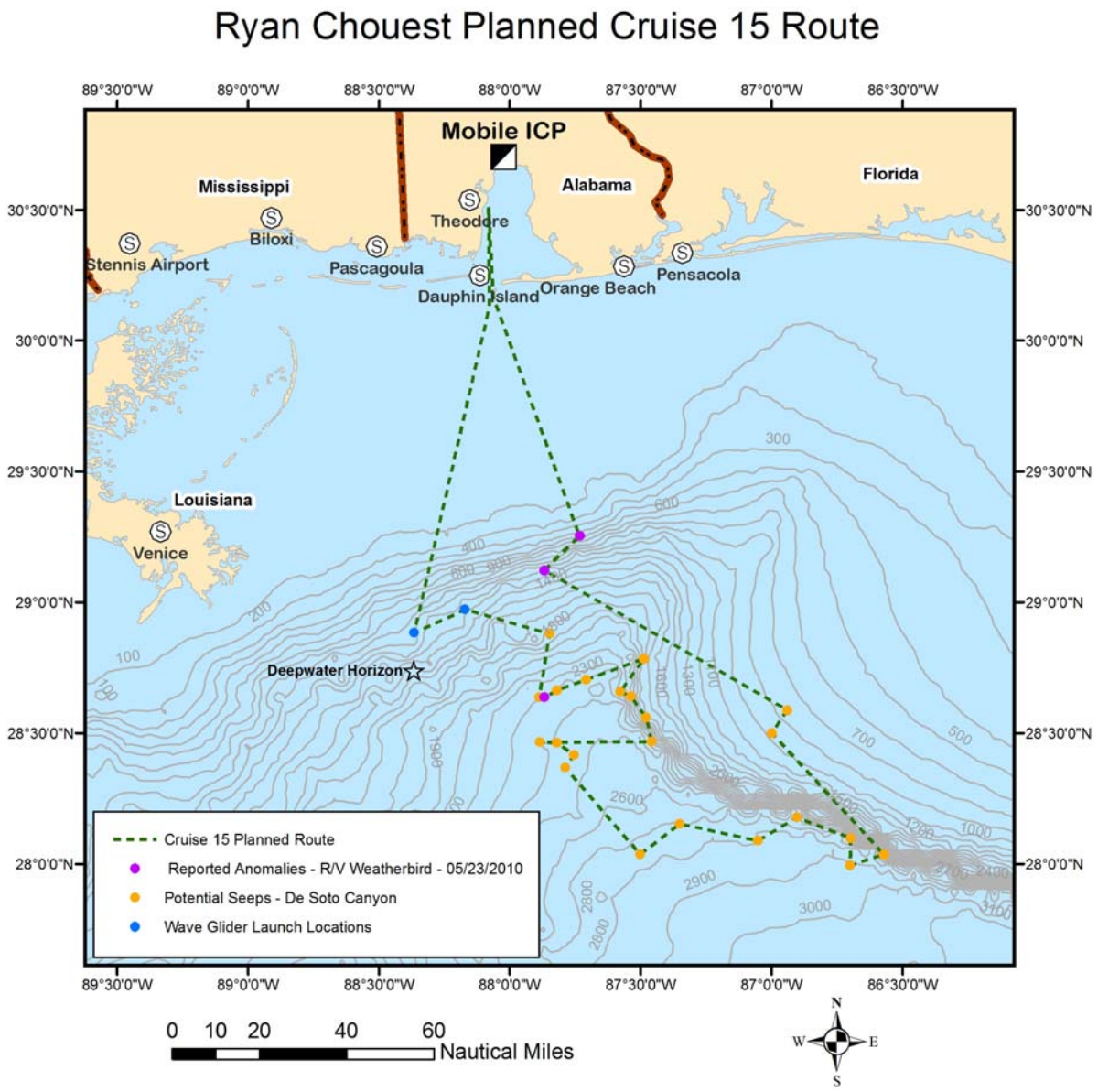


**Figure 1:** Planned route for cruise 15 from 09/09/2010 – 09/015/2010.

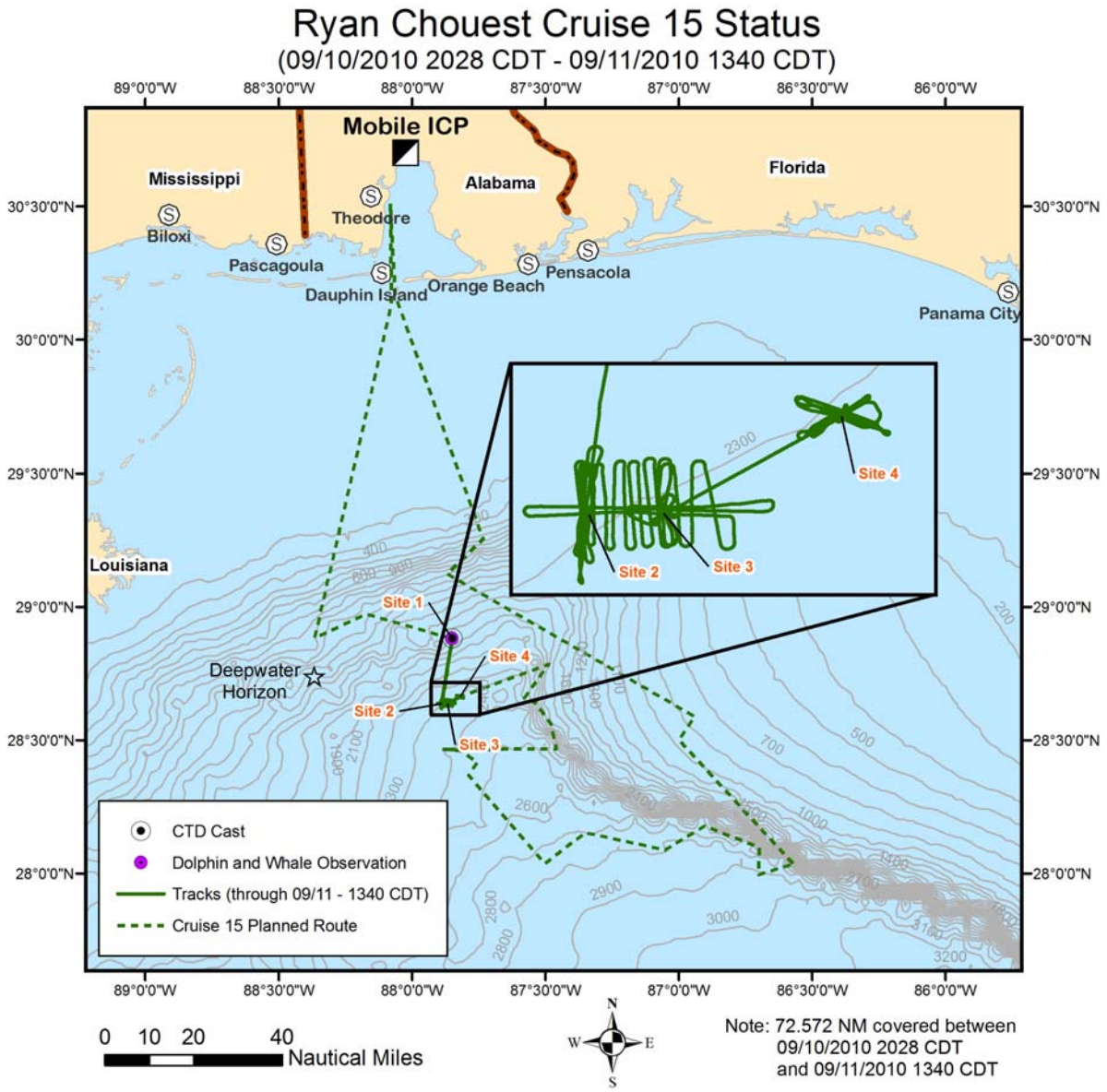


**Figure 2:** Actual route for cruise 15 from 09/10/2010 – 09/11/2010.

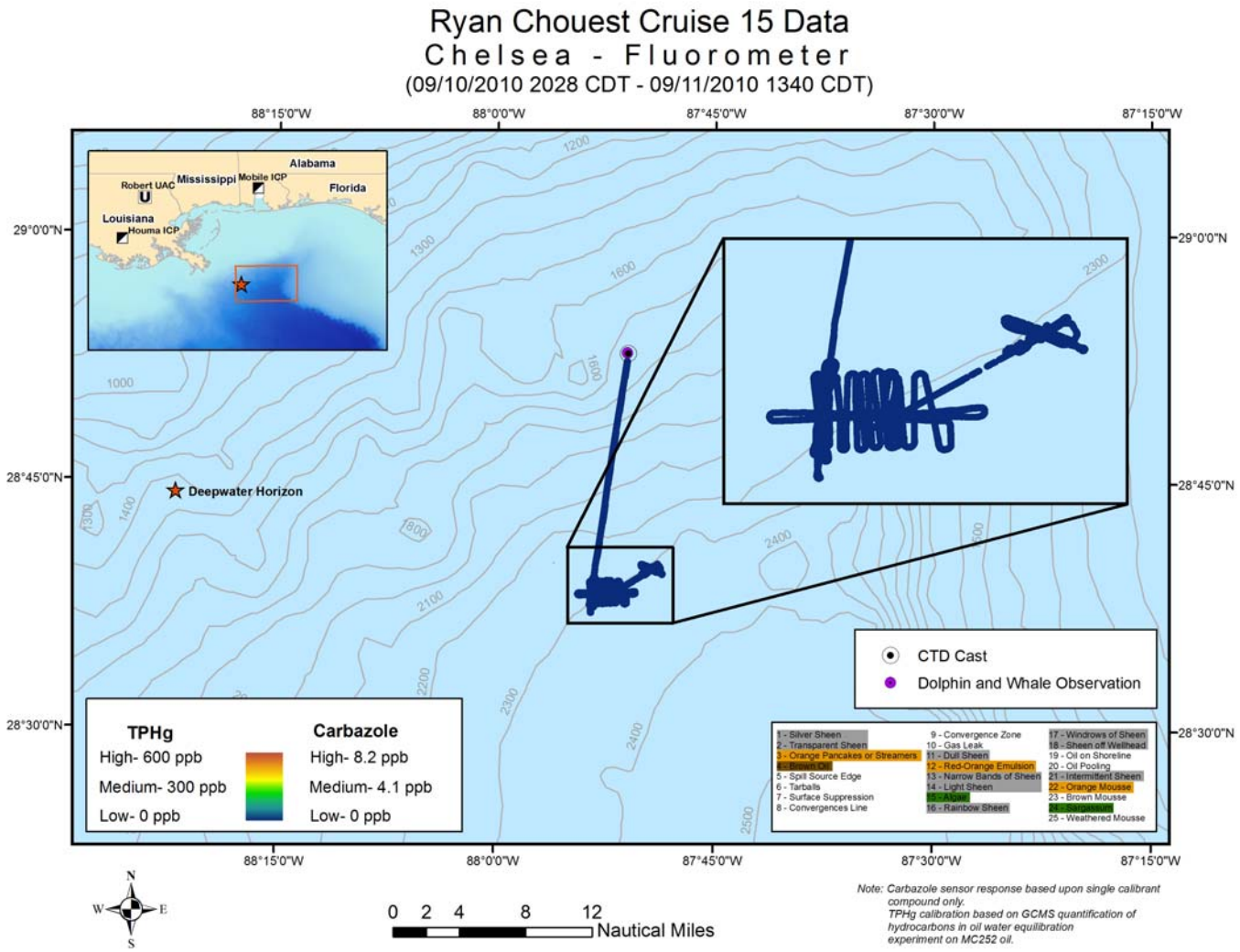


Figure 3. Chelsea fluorometer results plotted with location on cruise track 15. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

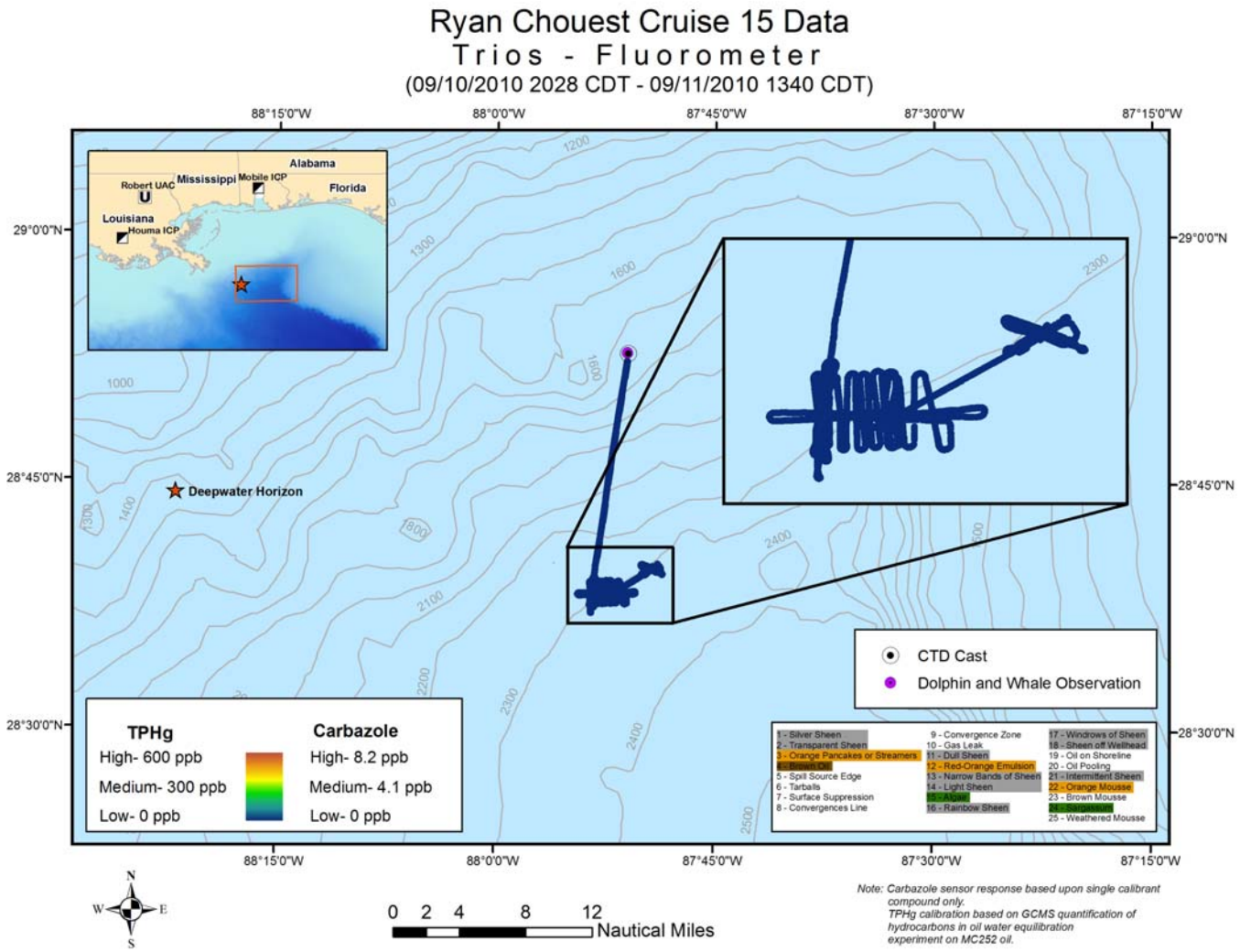


Figure 4. Trios fluorometer results plotted with location on cruise track 15. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

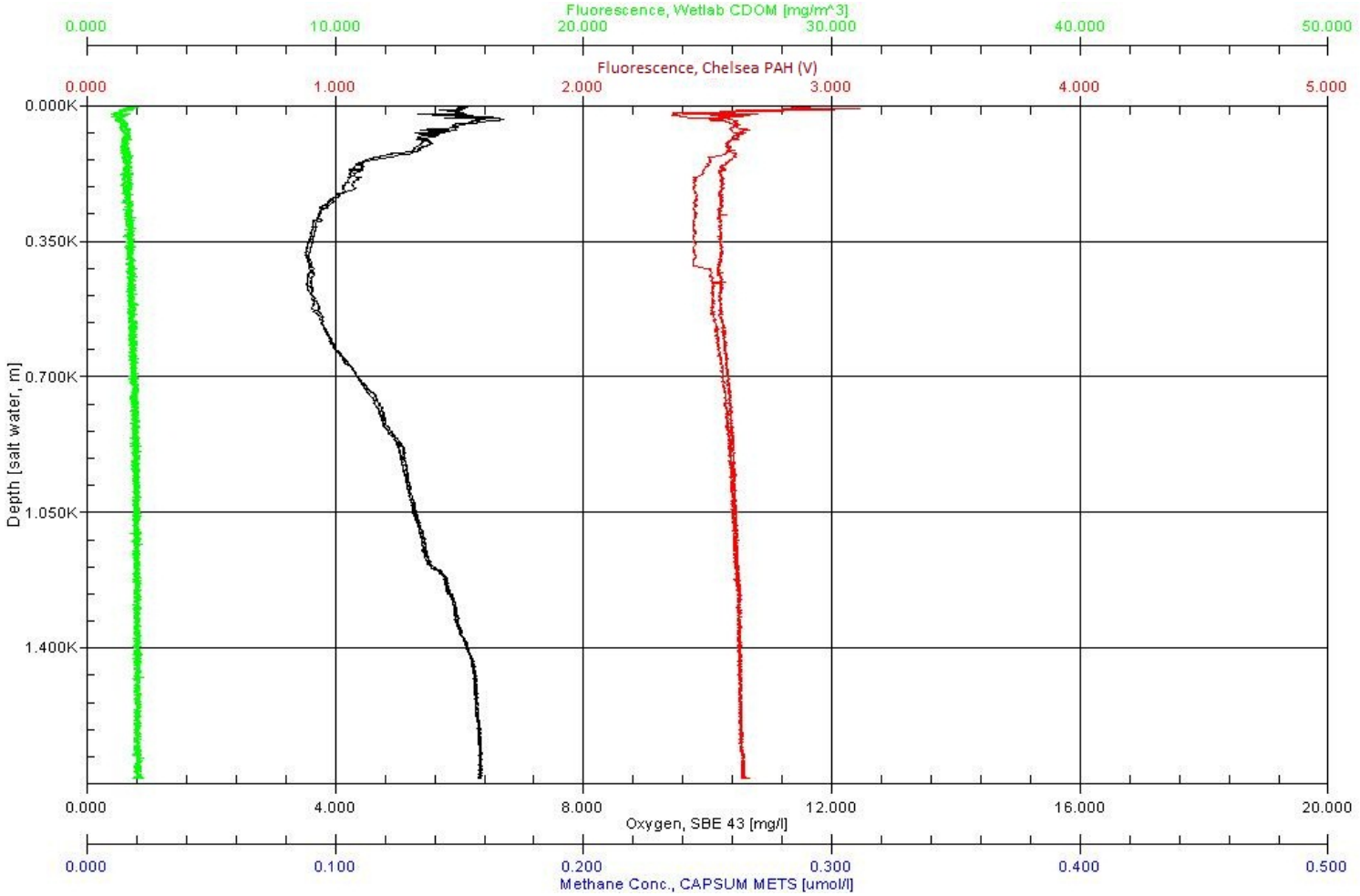


**Figure 5** CDOM fluorescence, PAH fluorescence, dissolved oxygen, and methane concentration profiles. The results were obtained for Cruise 15 CTD cast 1 down to 1700 m. Water samples were collected at 1734m, 1480m, 1210m, 860m, 457m, 430m and 410m. Temperature, conductivity and water depth measurements were also recorded from a SBE 19+ system.

## Science Operations:

Observations of sea-surface conditions were made throughout. One CTD cast was completed around a probable hydrocarbon seep (LAD-023) to a depth of 1734 m. The EK-60 echo sounder continuously collects data to evaluate the seabed and water column for possible seeps and to relocate seeps for further investigation and potential casting sites. We continue to analyse water samples using the GCMS.

## Problems/operational issues:

No problems or operational issues are reported.

## Selected Photographs:

Photo 1. Dolphins on the bow wave of the Ryan Chouest

## Planned activities for next 24 hours:

The Ryan Chouest will continue on its cruise 15 track investigating possible natural seeps at the Northwestern end of the De Sota Canyon. The “clover leaf” pattern will be used to establish the predominant direction of the seep plume using the echo sounder. A few vertical CTD casts will be attempted over the seep and along the seep plume.

## Full Crew List:

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|---|---|---|---|
| Eric Houston | BP | William Smith | MASTER |
| Brett Bundick | C&C | Brian Corley | Mate |
| Mathew Baham | C&C | Mark Harmon | A/B |
| Quinn Guidry | C&C | Ricky Matherne | A/B/Cook |
| Tim MacEwen | C&C | Lance Broussard | ENG |
| Craig Smith | C&C | Patric Cousin | A/B |
| Jen Carlsen | C&C | Trever Dorics | A/B |
| Xiubin Qi | CSIRO | Patric Anderson | Qmed |
| Charlotte Staivies | CSIRO | Jason Bednarski | A/B/Cook |
| Andy Revill | CSIRO | Eiljah Benjamin | O/S |
| Stephane Armand | CSIRO | Larry Luke | Crane Op |
| Gui de Almeida | Entrix | | |
| Carlelton Edmunds | Shaw | | |
| Brad Woolhiser | LR | | |
| Dustin Boettcher | LR | | |