July 29th | 2010

Ryan Chouest daily data transmission and report

Period covered: *2344 hrs* 07/28/2010 - *1958 hrs* 07/29/2010

136.98 - Nautical miles covered

Vessel science party:

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Cruise notes:

The *Ryan Chouest* vessel departed Port Fourchon at 2310 hrs (07/28), for the planned cruise 11 (figure 1). Shortly afterwards both the underway pump was deployed and the echo sounder was switched on. The cruise path was planned to enter the green canyon seeps area and then to sample and map selected previously described MacDonald *et al.* 1996 seeps. In this report we present the results of the hydrocarbon sensors array and additional evidence for further acoustical contacts we interpret as possible additional seep locations.

Science results and preliminary interpretation:

Fluorometry results

Fluorometry measurements are low along the travelled track for the Chelsea and Trios (Figures 2-3). The Contros sensor, however, measured alternating low to medium levels of inferred hydrocarbons along the track (Figures 4). The Trios and Contros data appears to correlate reasonably well with the oiling extent map from the 27/07. Once in the Green Canyon area all of the sensor values were very low and in the case of the Chelsea and Trios data at or below baseline.

Contros HydroC Methane Sensor

No detectable levels of methane were recorded over the route traveled.

Surface Observations

Sargassum was commonly observed along travelled path while a dolphin was spotted at 0717 hrs (figure 1).

EK-60 Echosounder results

Once again the EK-60 echo sounder was operated along the route. The echo sounder identified areas with a total of three possible water column contacts all of which are interpreted as possible seep features (contact_0729010_070650, contact_0729010_131917, Contact_0729010_132310, figures 5 -7). These features are all vertical or near vertical plumes which appear to be related to the sea floor.

Contact contact_0729010_070650 and contact_0729010_132310 appear to reach the sea surface. They all occur in shallow water. Contact_0729010_131917, Contact_0729010_132310 may be visited if the preliminary seeps survey in the Green Canyon is unsuccessful.

Planned route for cruise 11:

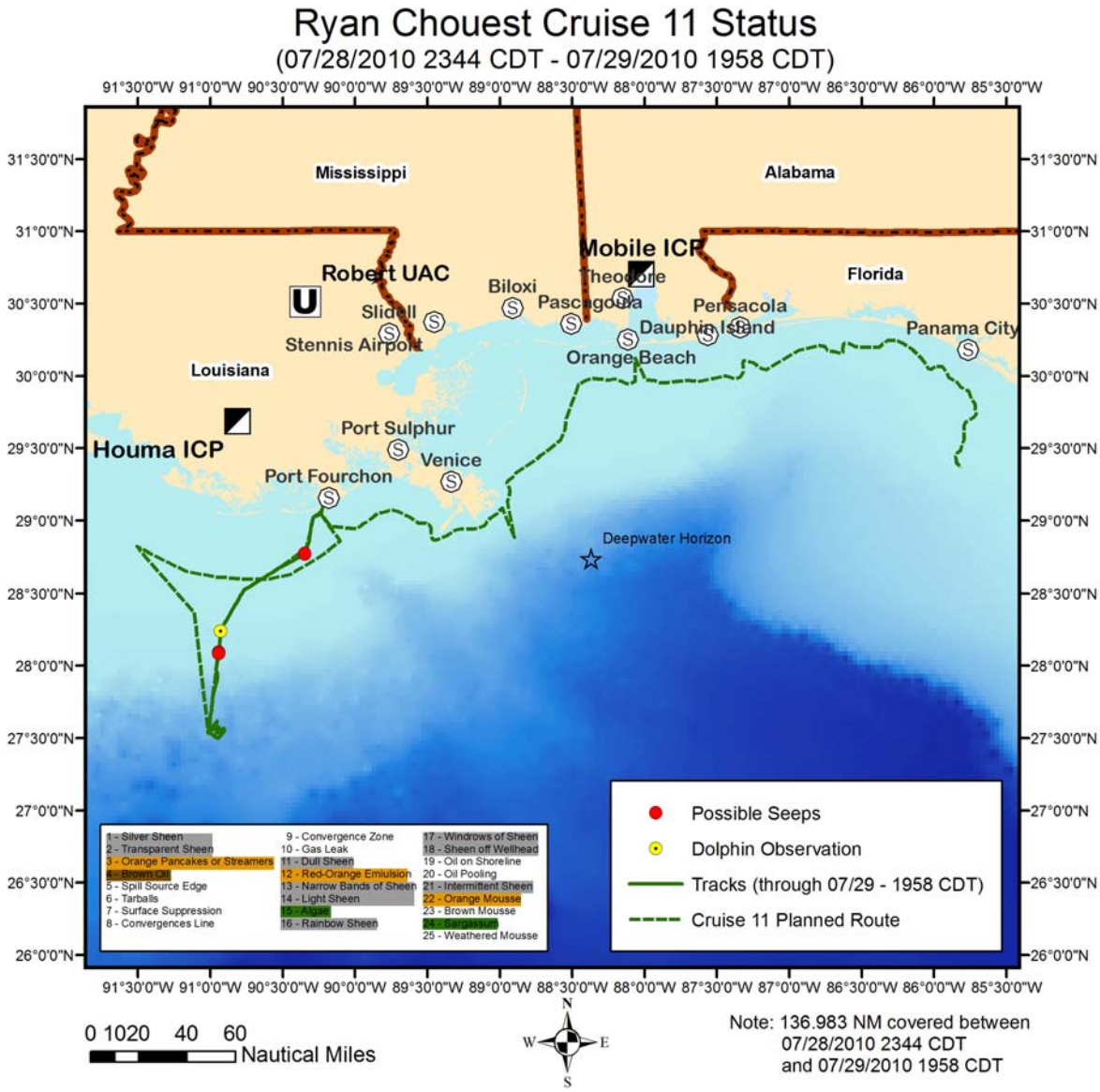

Figure 1: Planned route for cruise 11 versus the actual route plotted between 07/28 – 07/29.

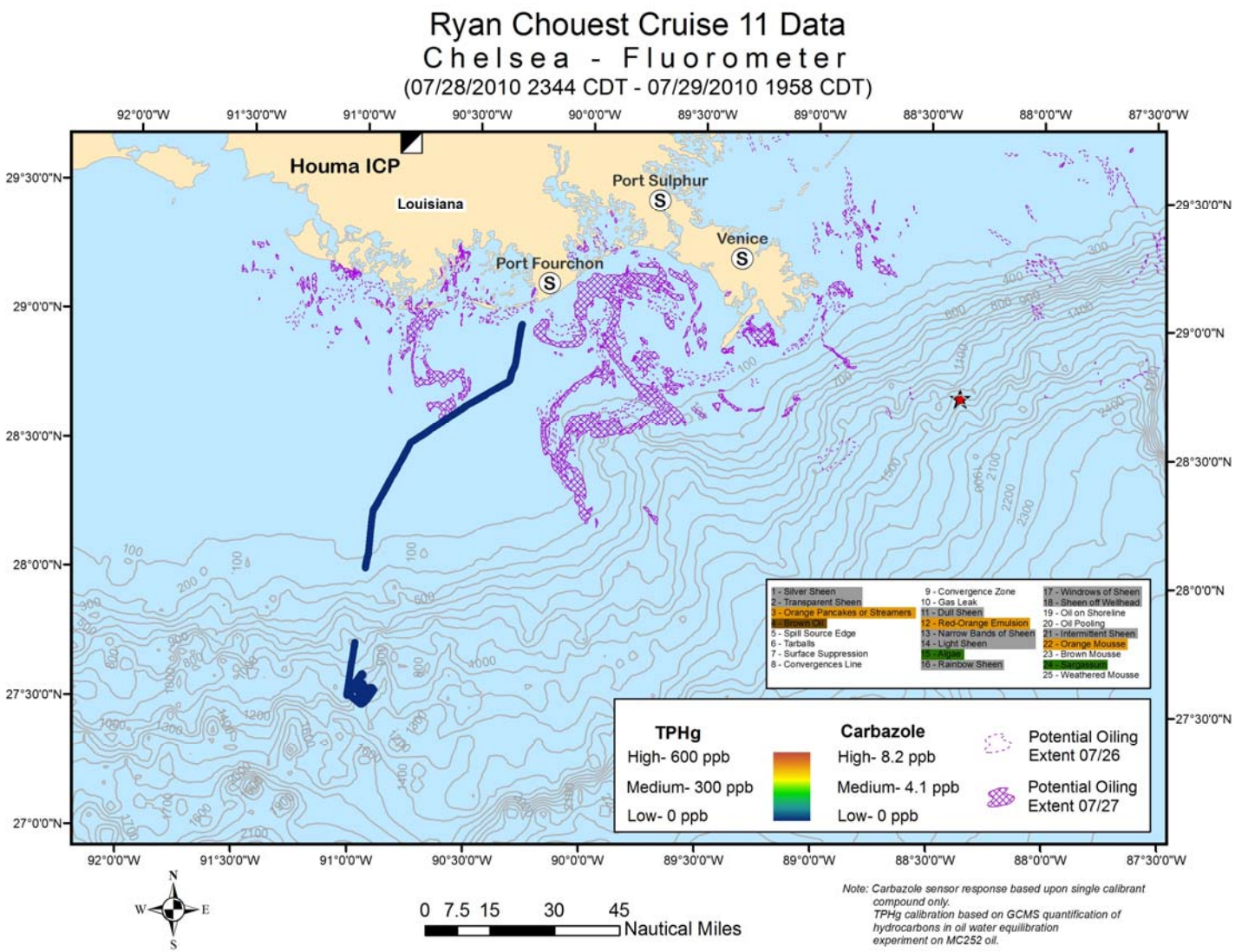

Figure 2. Chelsea fluorometer results plotted with location on cruise track 11. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

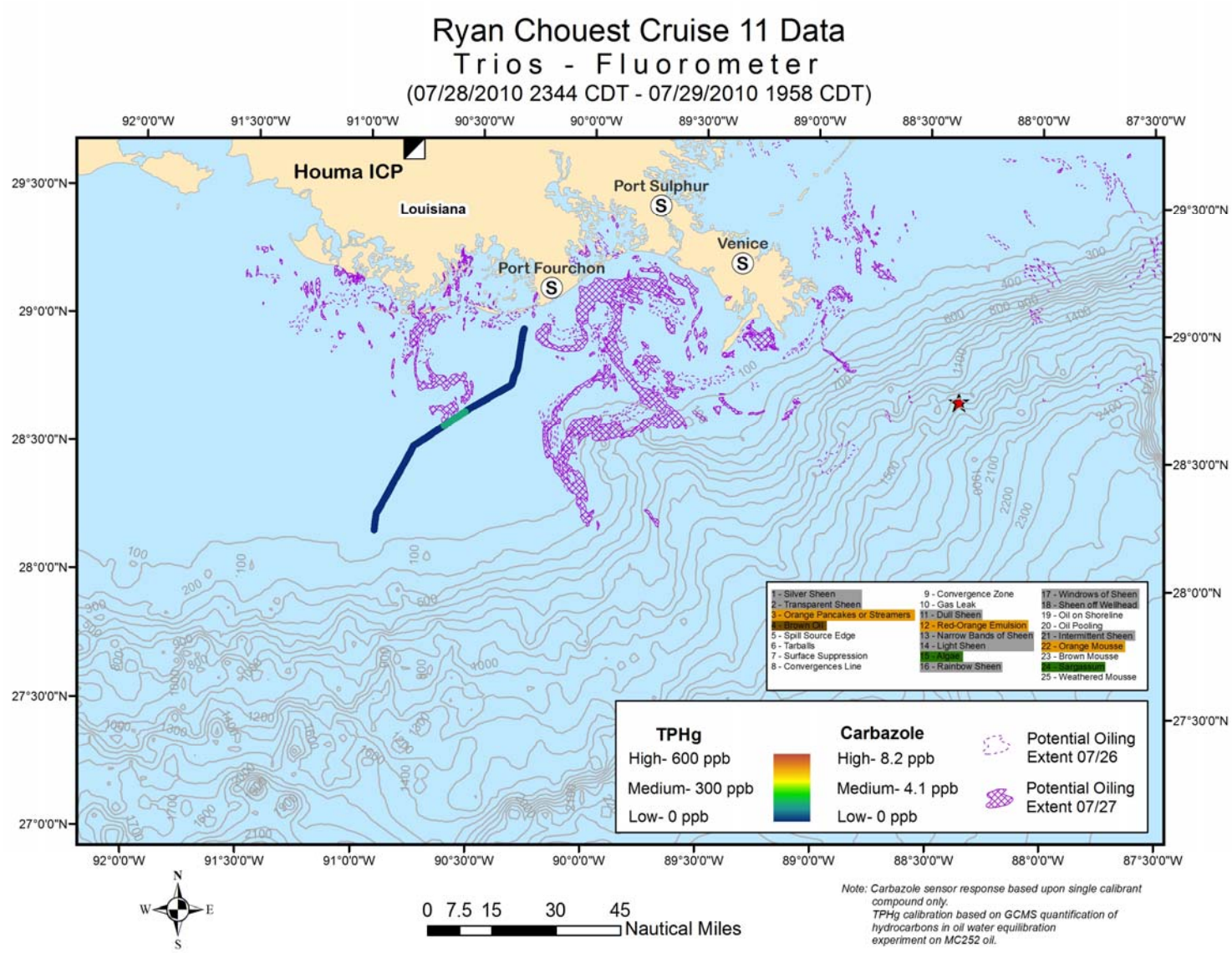

Figure 3. Trios fluorometer results plotted with location on cruise track 11. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

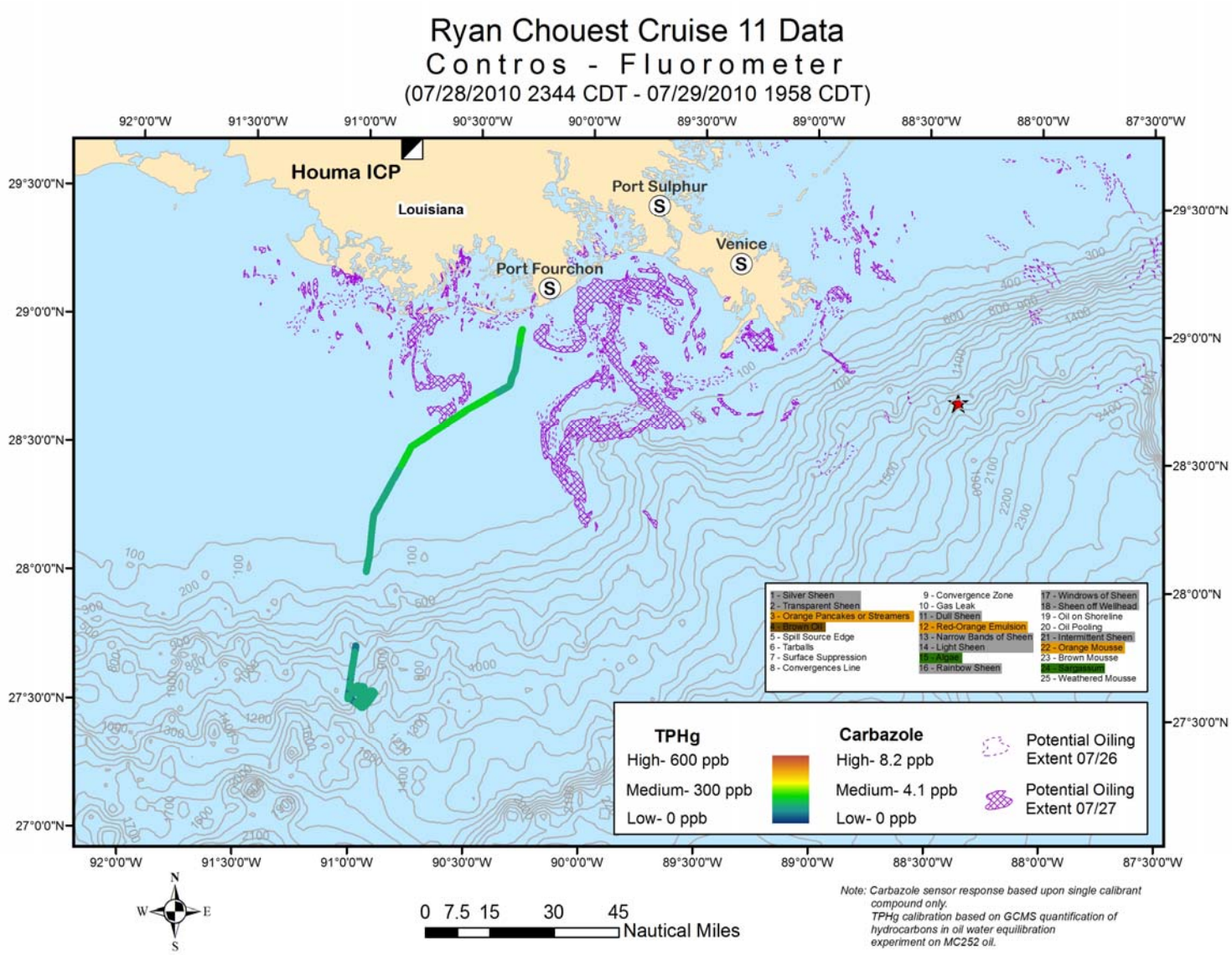

Figure 4. Contros fluorometer results plotted with location on cruise track 11. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

Echo sounder Results:

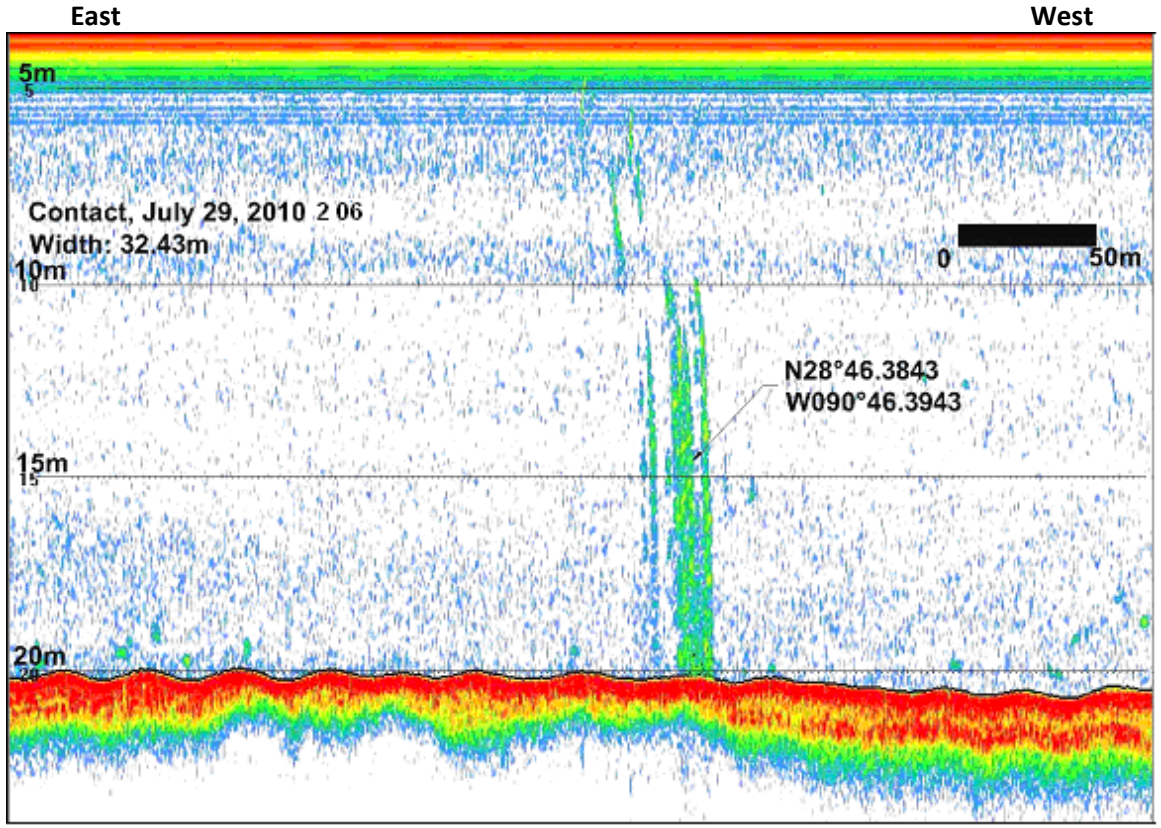

Figure 5. Contact_0729010_070650 the more northerly contact as marked on Figure 1 along track line for the period.

Description: Possible seep from seafloor to mid water column

Time (CDT): 07/29/2010 0206 hrs

Location: 28° 46.3843N; 90° 46.3943W

Depth displayed: 2.47m to 20.33m

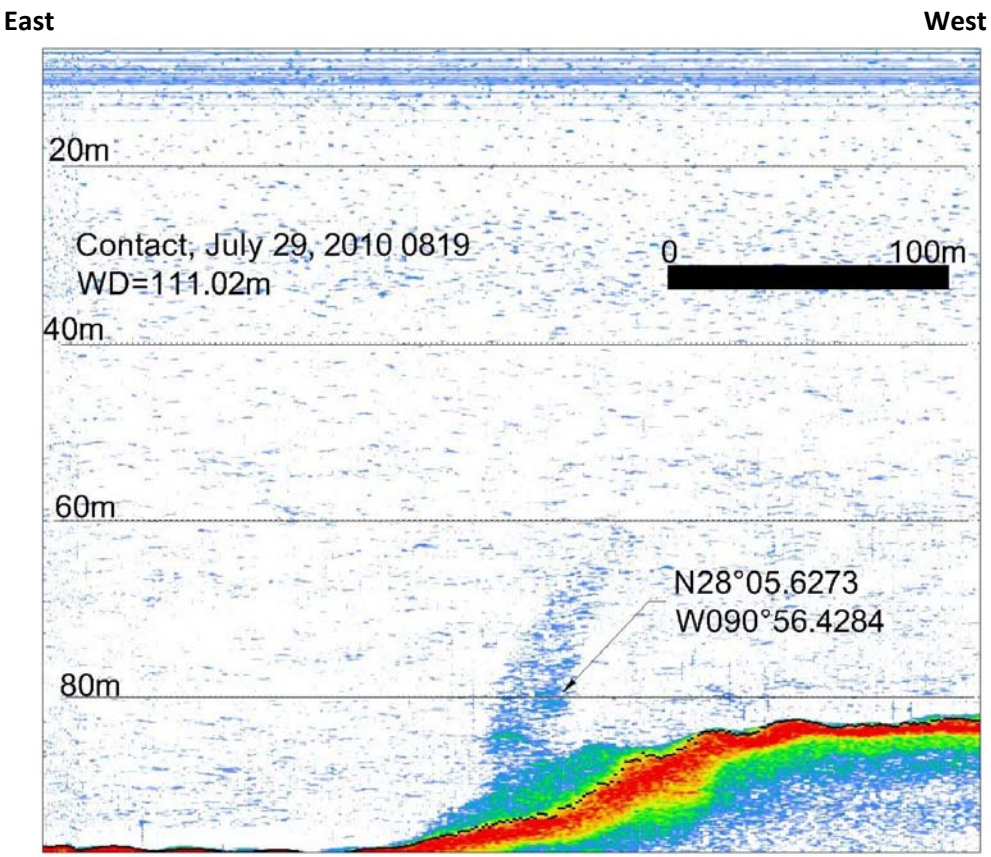

Figure 6. Contact_0729010_131917 the more southerly contact as marked on Figure 1 along track line for the period.

Description: Seafloor to mid-water contact, possible seep

Time (CDT): 07/29/2010 0819 hrs

Location: 28° 05.6273N; 90° 56.4284W

Depth displayed: 57.24m to 96.76m

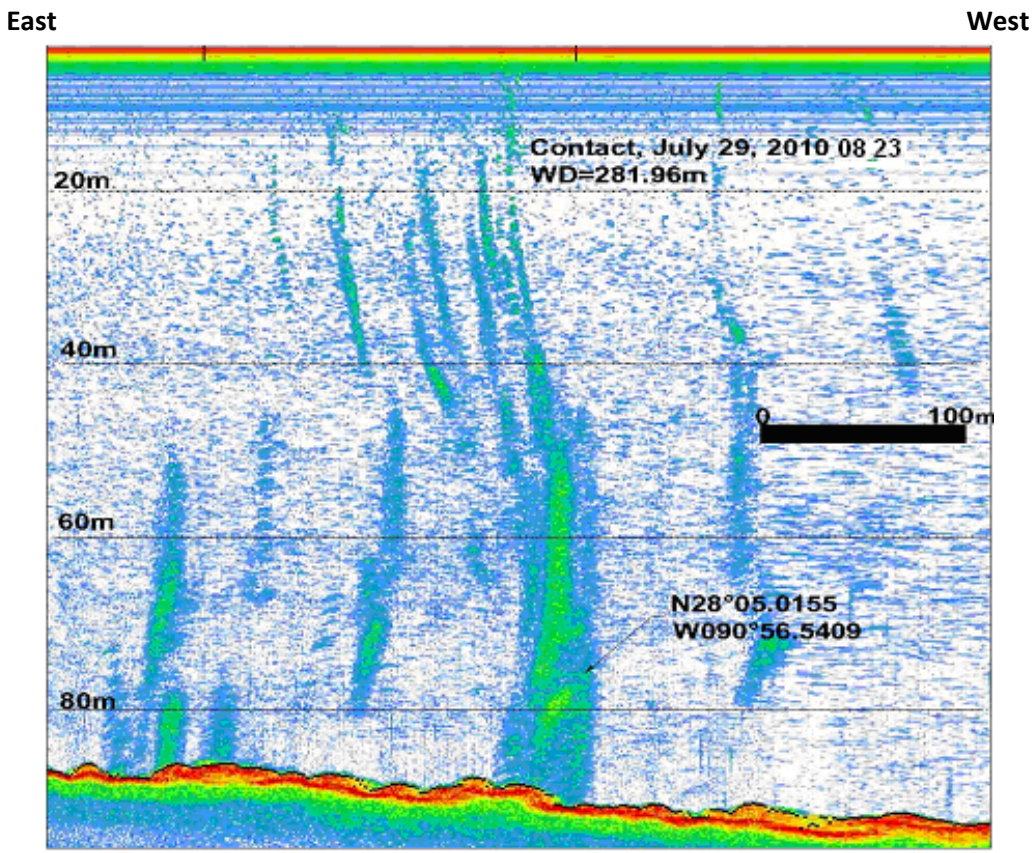

Figure 7. Contact_0729010_132310 the more southerly contact as marked on Figure 1 along track line for the period.

Description: Possible seep from seafloor towards the surface.

Time (CDT): 07/29/2010 0823 hrs

Location: 28° 05.0115N; 90° 56.5409W

Depth displayed: 1.65m to 93.06m

Science Operations:

Fluorometer measurements were logged for the majority of the period and observations of sea-surface conditions were made throughout. We continue to perform liquid-liquid extractions on seawater samples. The EK-60 echo sounder is continuously collecting data to evaluate the seabed and water column for methane seeps.

Problems/operational issues:

There were several problems encountered during the period. The underway pump failed due to a abraded electrical cable leading to a short. The GCMS instrument after a routine service could not be brought back to standard operating conditions and were problems with the navigation software on the boat. The instrumentation issues have been solved through the exchange of pumps and electrical cables and the GCMS is nearly within operation conditions after several re-calibrations. The navigation software continues to be a problem although we will attempt to solve these problems tomorrow.

Planned activities for next 24 hours:

The *Ryan Chouest* will continue cruise along planned route. We hope to detect a number of seep locations in the Green canyon area. If unsuccessful we will revisit the seep sites previously identified in this report. After which we will start out traverse along the Alabama coastline towards Florida.

Selected Photos:

No photographs were taken over the cruise period.

Full Crew List:

William A. Smith	MASTER	Brian Corley	Mate
Craig Lyons	ENG	Patrick Cousin	A/B
Mark Harmon	A/B	Arthur Triggs	O/S
Elijah Benjamin	O/S	Patric Anderson	QMED
Kile Blunt	OS/Cook	Roderick Baker	OS/Cook
Tosin Majekodunmi	BP	Curtis Walker	Entrix
Andrew Ross	CSIRO	David Fuentes	CSIRO
Emma Crooke	CSIRO	Asrar Talukder	CSIRO
Quinn Guidrey	C&C	Kelly Bates	C&C
Jen Carlson	C&C	Mathew Baham	C&C
Joseph Watson	C&C	Jay Ridgeway	C&C
Josh Chauffe	C-Port	Larry Luke	C-Port