

## 27 September 2010, Ryan Chouest Status Report, Cruise 17

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### Cruise operations summary

Technical problems were experienced with the CTD on the 09/25/10 which could not be fixed on site. The Ryan Chouest therefore transited to Port Fourchon to undertake repairs to the CTD and returned to MC110-01 on the 09/27/10 where survey operations recommenced at midday.

A summary of operations for is provided in Table 1.

**Table 1. Summary of Cruise 16 Operations**

Date	Day	Summary
23 Sep 10	1	Ryan Chouest ran weather patterns collecting echosounder data. Wave height 6ft. No casts deployed.
24 Sep 10	2	Location MC 118-1 investigated. Seep relocated. Casts at Station <b>RC008, RC009 and RC010.</b>
25 Sep 10	3	Technical problems with CTD whilst at MC110.
26 Sep 10	4	Ryan Chouest in Port Fourchon for repairs to CTD
27 Sep 10	5	Location MC 110-1 investigated. Seep relocated. Casts at Station <b>RC011 and RC012</b> Location MC109-02 investigated. Seep located. Cast at Station <b>RC013.</b>

### Weather and sea conditions

The day was sunny. Winds were between 13-14 kts and seas were between 1-3 feet wave height.

Today's weather conditions are summarized in Table 2, below.

**Table 2 – Summary of the Weather for 24th September 2010**

Time	Wind	Sea	Weather
0800	14 kts N	1-3 ft	Sunny
1400	13 kts NW	1-3 ft	Sunny
1600	14 kts NW	1-3 ft	Sunny

### Sample locations and Fluorescence, DO and methane Traces.

The objective of Cruise 17 is to re-occupy sites which have been identified as being possible natural hydrocarbon seeps and to acquire water samples from within the vicinity of the seeps for chemical analysis. The general location of these potential seeps was primarily based upon echosounder contact information from previous Ryan Chouest Cruises 10, 11, 12, 13, 14 and 16. In order to relocate the seeps the vessel transited initially to the coordinates of these

previous contacts and carried out a 'cloverleaf' pattern echosounder survey to relocate and characterize the seep prior to performing CTD casts. If the location of the potential seep could not be reoccupied no CTD cast was performed.

Location MC110-01 was reinvestigated. It is located 29.45 NM NW of the well head. Two casts were performed at a distance of 75m from one another, in order to maximize the chance of successfully positioning the CTD rosette within the plume of the possible seep feature identified on the echosounder. Station RC011 was located at N28° 51.032 W088° 54.133 in a water depth of 449m and RC010 at N28° 51.003 W88° 29.133 in a water depth of 448m. A distinct methane spike was recorded for RC011 at 443m. There were also CDOM spikes and DO dips between 40-50m and 90-100m in both casts. Water samples for RC010 were collected at 443m, 390m 343m, 222m, 92m and 43m and for RC012 at 438m, 388m, 338m, 219m, 99m and 47m.

Location MC109-01 was investigated. It is located 2.6 NM NW of MC110-01. One cast RC013 was performed at N28° 53.058 W088° 55.934 in a water depth of 275 m. There was a CDOM spike and DO dip at 55m. Water samples were collected at 265m, 130m and 55m.

The locations and results of the CTD casts conducted on 27 September are summarized in Table 3 and Figure 1, below.

**Table 3 – Station Summary for 27 September 2010**

Station	Sampling Location	Fluorescence Signal	Signal Depth	DO Depression	Depression Depth	Methane Signal	Signal Depth
RC011	MC110-01 Lat: N28°51.032 Long: W88°29.133 Cast duration: 1432-1503	CDOM signal	47m 94m	Yes	47m 94m	Yes 1.8 µmol	443m
RC012	MC110-01 Lat: N28°51.003 Long: W88°29.133 Cast duration: 1625-1653	CDOM signal	42m 97m	Yes	42m 97m	No	-
RC013	MC109-01 Lat: N28°53.058 Long: W88°55.934W Cast duration: 2115-2138	CDOM signal	55m	Yes	55m	No	-

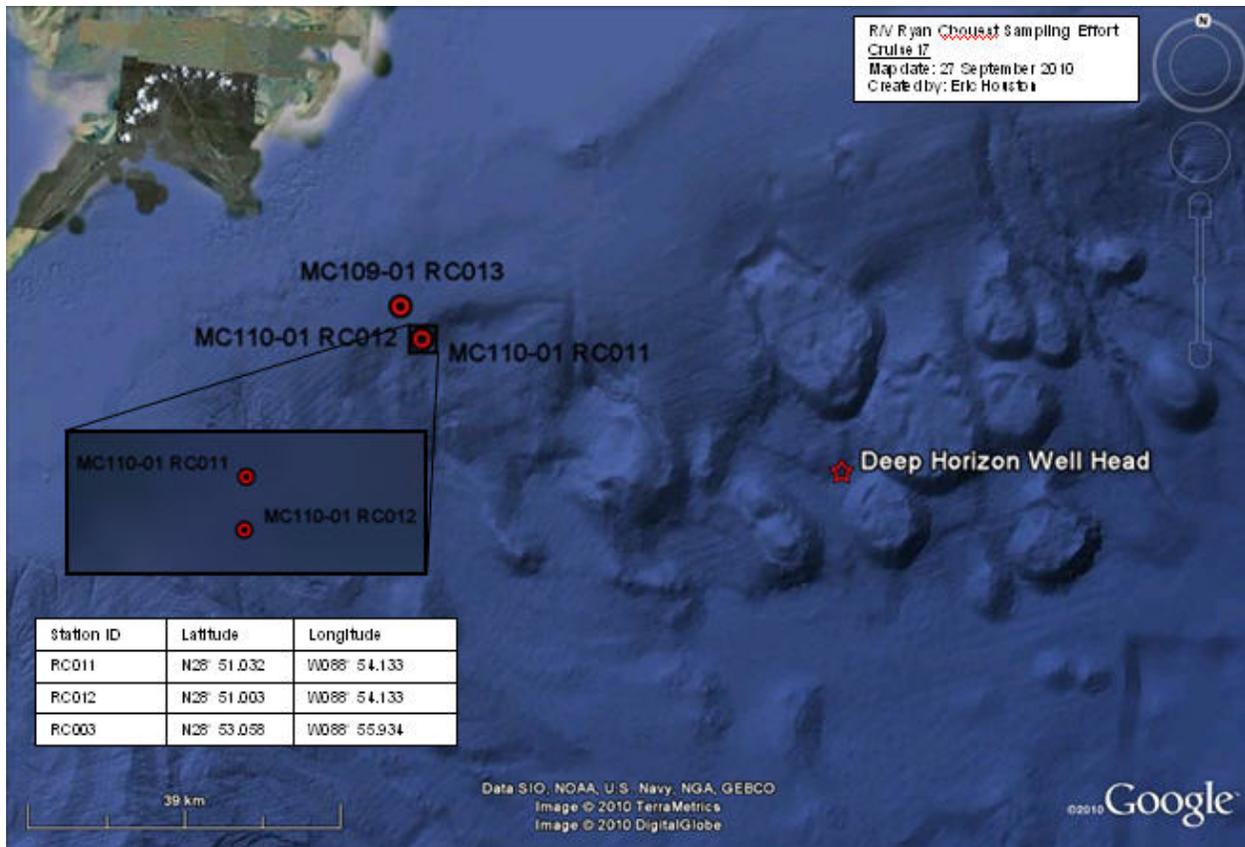


Figure 1 – Sampling Effort for Cruise 17 on 27 September 2010.