
August 20th | 2010

Ryan Chouest daily data transmission and report

Period covered: 1115 hrs 08/19/2010 – 0853 hrs 08/20/2010

103.665 - Nautical miles covered

Vessel science party:

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Cruise notes:

The *Ryan Chouest* sailed on the planned cruise 12 route. We continue with the echo sounder and underway pump system, along the coastal transect towards and across the western coast of Florida rejoining the previous Cruise 2 track along the gulf coastlines of Alabama and west Florida. (Figure 1).

Science results and preliminary interpretation:

Fluorometry results

The Chelsea and Trios sensors indicate baseline levels of inferred hydrocarbons concentrations through the reporting period (Figures 2 and 3). As previously discussed, the Contros data are not shown as the instrument needs servicing as the lamp reached the end of its useful life. We await a spare Contros sensor from the manufacturer.

Surface Observations

Relatively dense, closely spaced convergence lines with an apparent surface sheen were noticed on the evening of August 19th (Figure 1). We turned back to examine the surface conditions and observed abundant white particles which resembled styrofoam beads. We collected surface samples for GCMS and also retrieved a bucket of water for closer inspection. Several small white particles were collected and then examined under a binocular dissecting microscope. These flat, tear drop shaped particles were 3-4 mm in length, transparent to slightly opaque, and had a honeycomb surface texture with an attached stem, perhaps composed of soft cartilagenous material. We hypothesize that these particles are planktonic and may have been shed from dispersed egg cases, although further examination is required onshore. After closer inspection of the surface water, we observed abundant schools of small fish feeding around the white particles. The surface observation in general appears to be biological in origin with no obvious hydrocarbon sheen observed, but we await GCMS analysis of the water samples for confirmation. Unfortunately, we were unable to photograph the surface clearly.

EK-60 Echosounder results

No echosounder contacts related to seabed seep activities were observed during this report period.

Vertical Casts

Six vertical fluorometry/CTD casts were taken during this report period (Figures 4 – 9).

All sensors show low level of Hydrocarbon outputs. The readings from the fluorometer, the AW2 and the temperature probe follow the same trend along the water column with sensor readings reaching maximum at surface. Dissolved oxygen indicates minor increase at the bottom, yet the value is still close to the average of 6mg/L.

The missing methane concentration values are due to the invalid results returned based on the calculations using the formula provided by the manufacture. The invalid values might be because that the actual water temperature fall outside of the range of the calibration temperature (0-20 degree centigrade), hence a new calibration formula (curve) is required in order to predict the actual methane concentration.

Planned route for cruise 12:

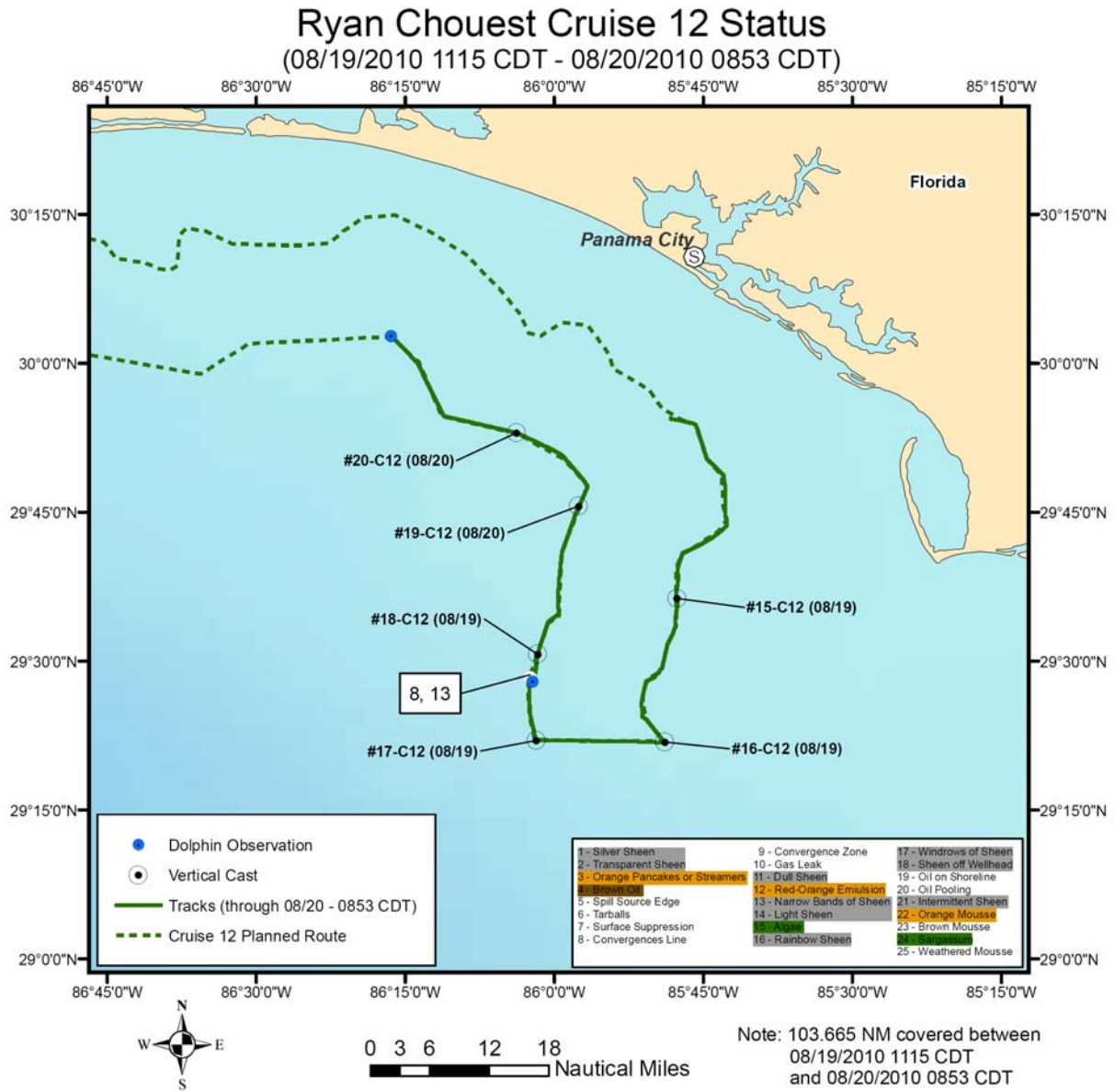


Figure 1: Planned route for cruise 12 versus the actual route plotted between 08/19/2010 – 08/20/2010.

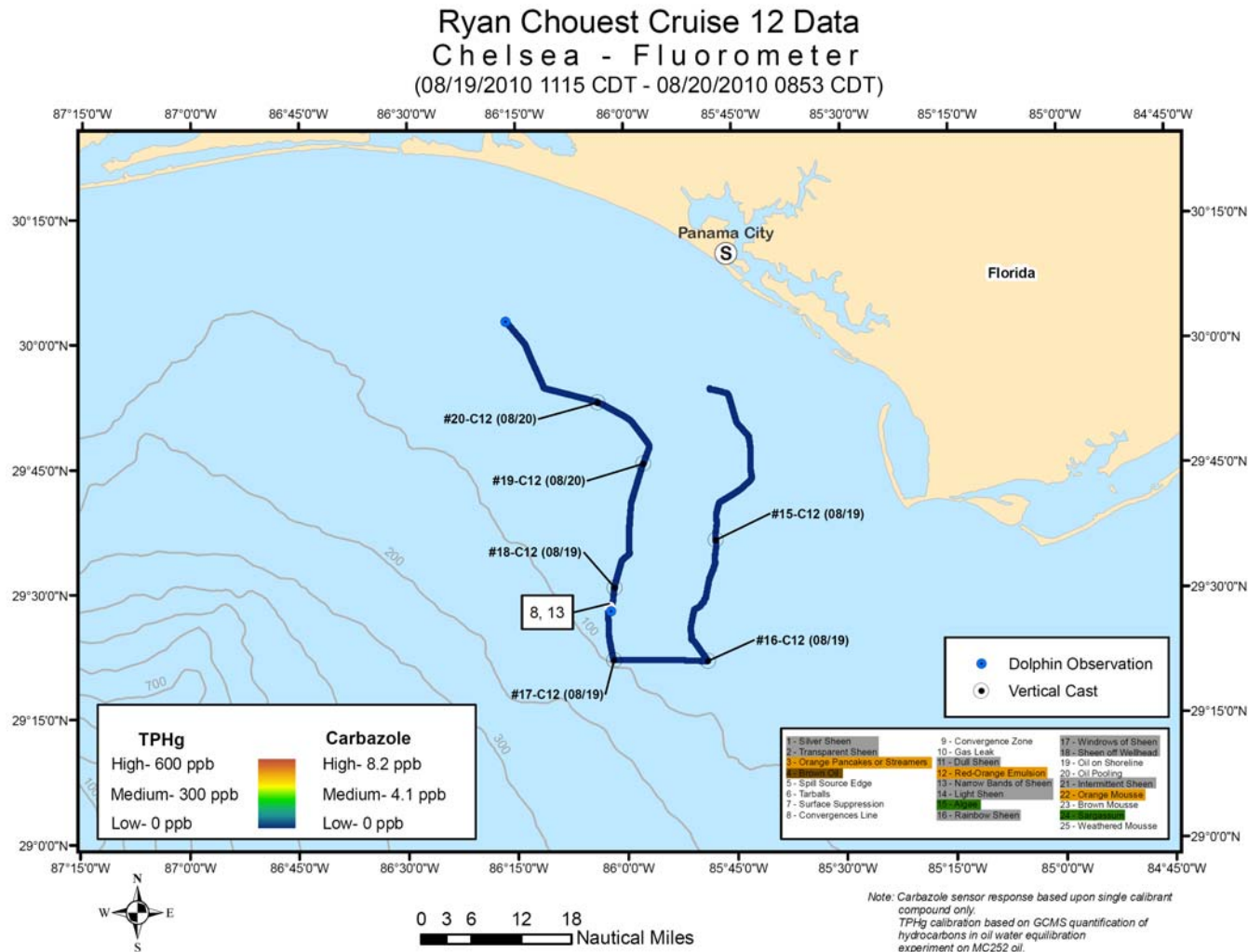


Figure 2. Chelsea fluorometer results plotted with location on cruise track 12. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

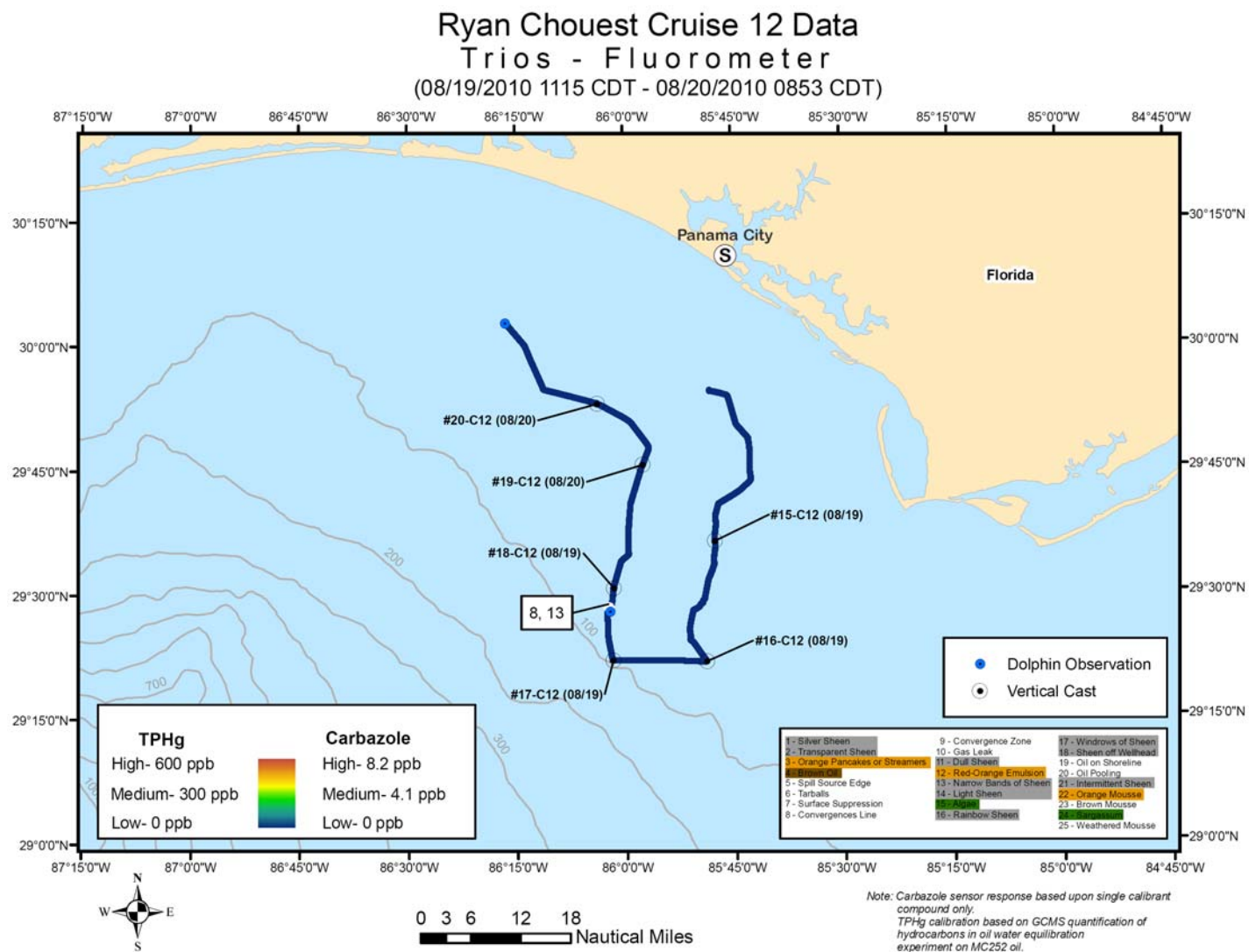


Figure 3. Trios fluorometer results plotted with location on cruise track 12. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.

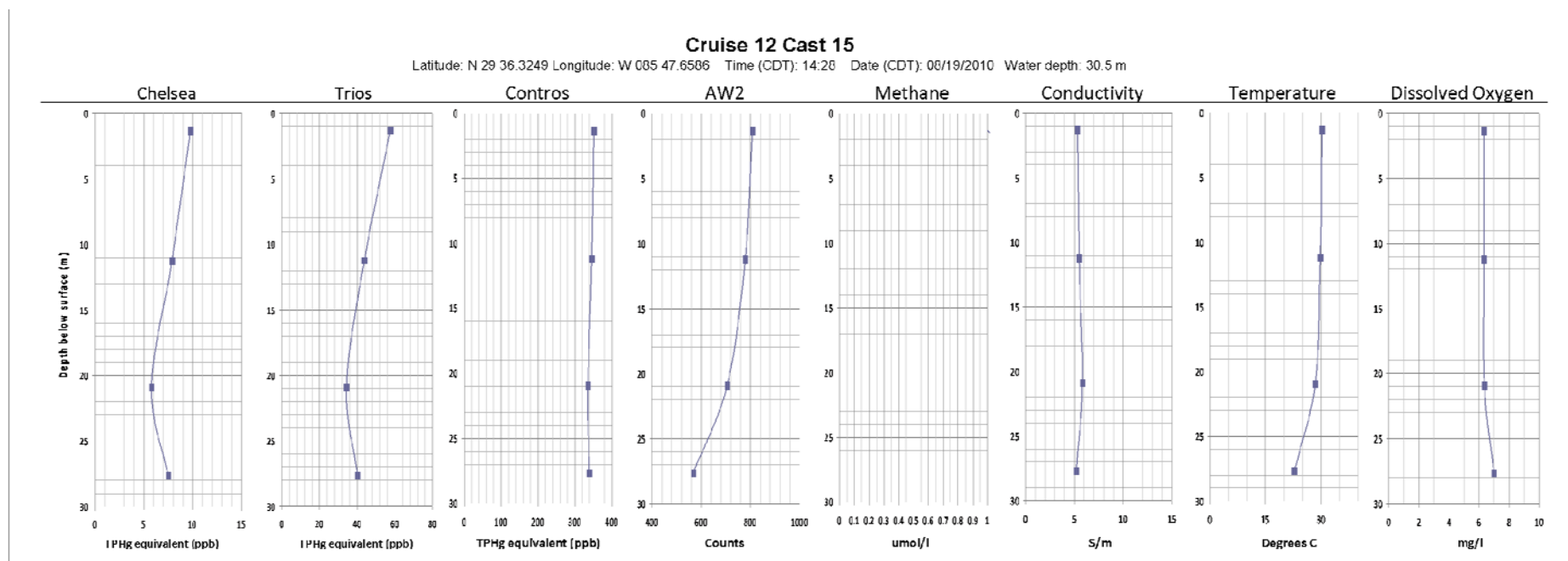


Figure 4. The results obtained for Cruise 12 vertical cast 15 (#15-C12) down to 28 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.

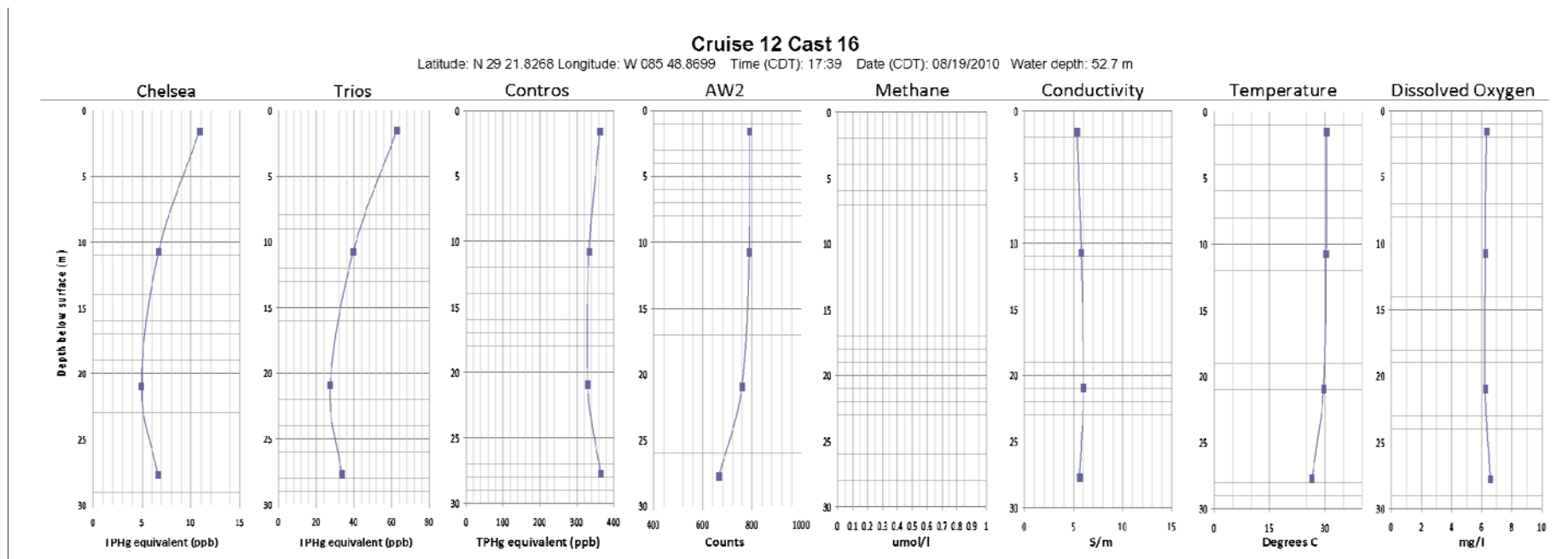


Figure 5. The results obtained for Cruise 12 vertical cast 16 (#16-C12) down to 28 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.

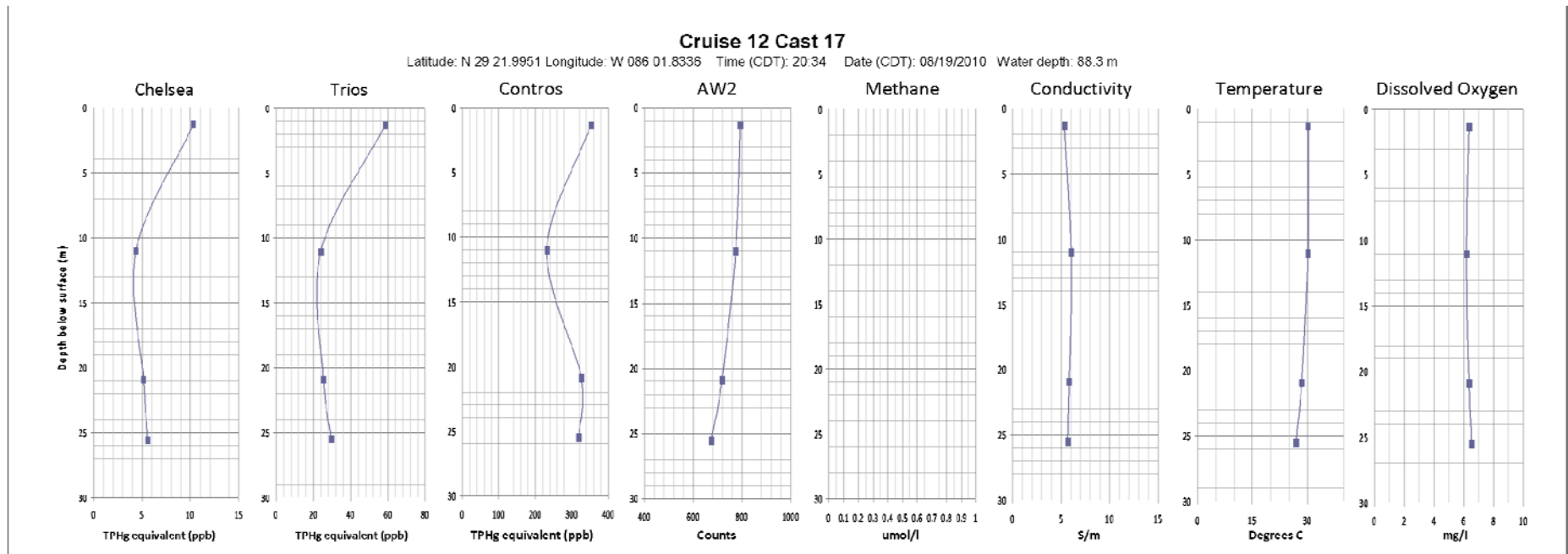


Figure 6. The results obtained for Cruise 12 vertical cast 17 (#17-C12) down to 25 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.

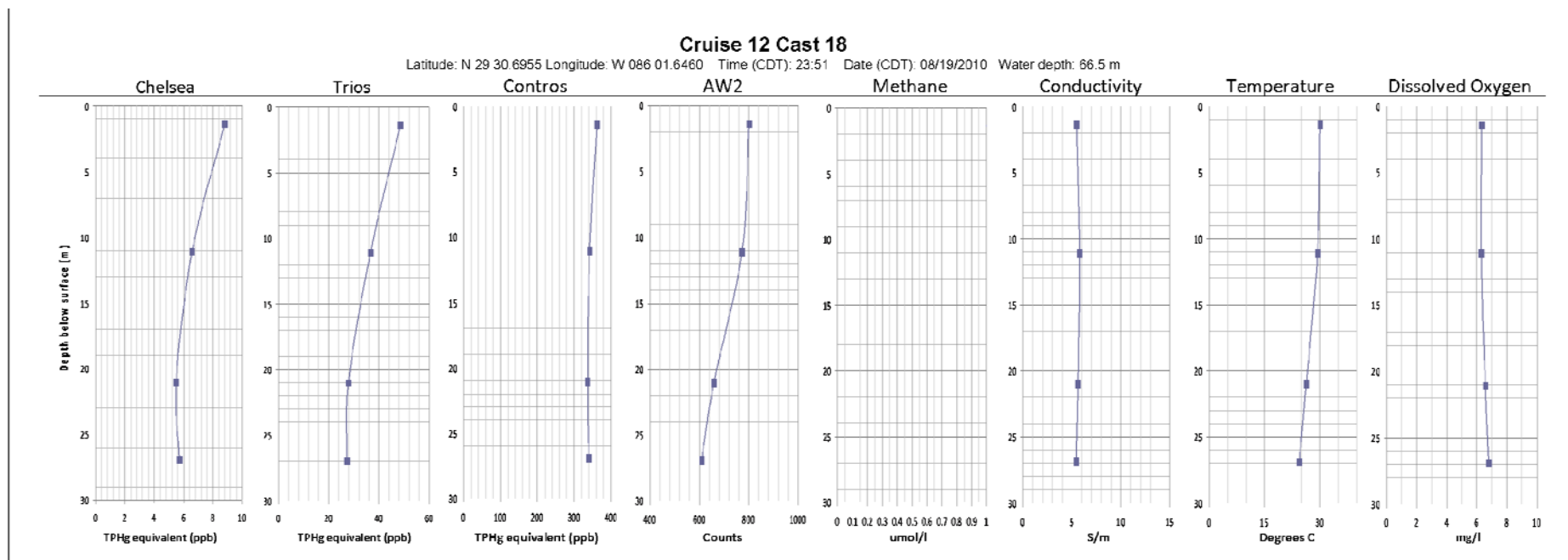


Figure 7. The results obtained for Cruise 12 vertical cast 18 (#18-C12) down to 27 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.

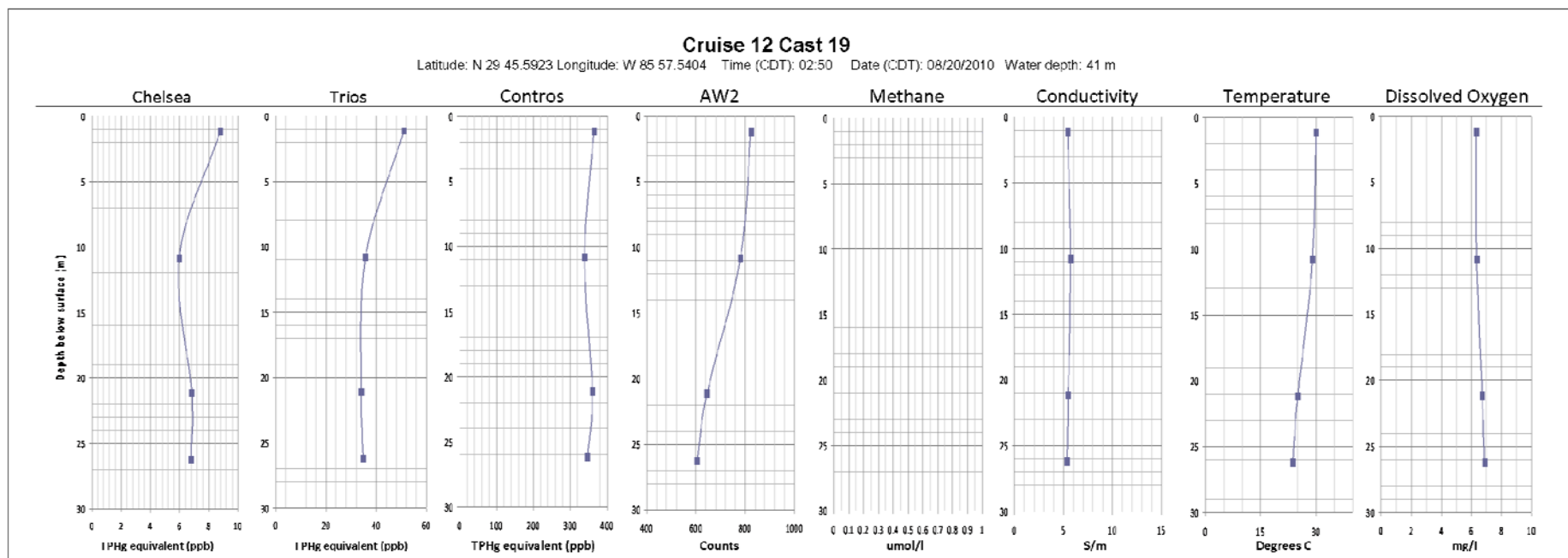


Figure 8. The results obtained for Cruise 12 vertical cast 19 (#19-C12) down to 26 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.

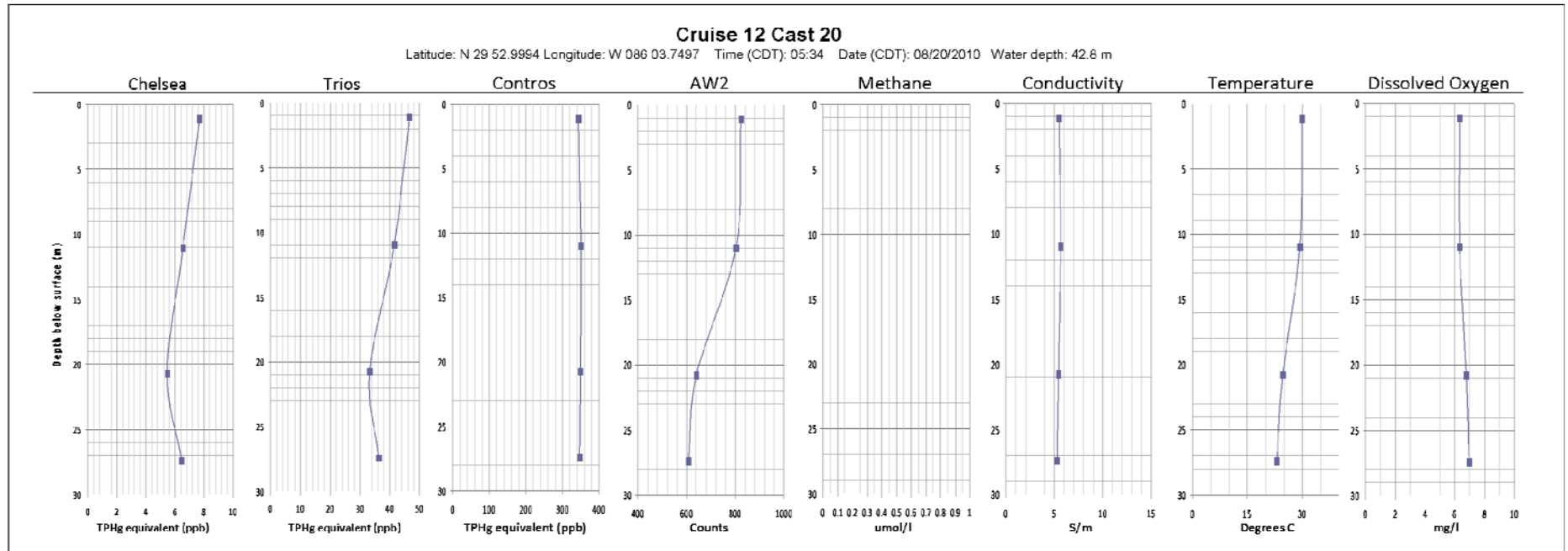


Figure 9. The results obtained for Cruise 12 vertical cast 12 (#20-C12) down to 27 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.

Science Operations:

Fluorometer measurements were logged for the majority of the period and observations of sea-surface conditions were made throughout. Vertical fluorometry and CTD casts were taken approximately every 20 nautical miles and sample the upper 30m. The EK-60 echo sounder is continuously collecting data to evaluate the seabed and water column for possible seeps. We continue to analyse water samples using the GCMS.

Problems/operational issues:

No new problems have occurred during the past 24 hrs.

Selected Photographs:

No photographs were taken during the reporting period.

Planned activities for next 24 hours:

The *Ryan Chouest* will continue on its cruise 12 track.

Full Crew List:

William A. Smith	MASTER	Brian Corley	Mate
Craig Lyons	ENG	Robert Thompson	ENG
Elijah Benjamin	O/S	Arthur Triggs	O/S
Roderick Baker	OS/Cook	Patrick Anderson	A/B
Kile Blunt	A/B/Cook	Guilherme de Almeida	Entrix
Lawrence Febo	BP	Stephane Armand	CSIRO
Xiubin Qi	CSIRO	Charlotte Stalvies	CSIRO
Andy Revill	CSIRO	Bobby Patrick	C&C
Tim MacEwan	C&C	Ben Autin	C-Port
Brett Bundick	C&C	Braden Wilson	C-Port
David Duplechain	C&C		

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