

Ryan Chouest daily data transmission and report

Period covered: 2351 07/14/2010- 0957 07/16/2010

205.511- Nautical miles covered

Vessel science party:

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Cruise notes:

We sailed on the cruise track shown in Figure 1.

Science results and preliminary interpretation:

Underway fluorometry results

The Chelsea, Trios, and Contros fluorometry data show low to medium inferred hydrocarbon concentrations over the short interval sampled (Figures 2-4). Chelsea data show the lowest values throughout the entire course (Figure 2), whereas the Trios and Contros show relatively higher medium-level values primarily along the zigzagged circular path (Figures 3-4). The highest Contros sensor data are found just to the east where the dull sheens were noted (Figure 4). The part of the survey following the zigzag pattern in the fishery area yields low to medium level of sensor readings.

Vertical cast fluorometry results

One vertical cast was carried out in the red snapper fishery area, south of Port Theodore (Cast # 1 / Cruise 8, 2010/07/15, N 30 02.8425, W 088 01.8437). Fluorometry results of the casts are shown in figure 5. Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump. The vertical profile in figure 5 shows elevated sensor responses from 5m water depth and reaches maximum values at the surface while the conductivity reduces to minimum. Noting that one previous vertical cast in the fishery area (cast # 12 / Cruise 7 conducted on 2010/07/12 at N 30 02.8430, W 088 01.8456) also displays the same vertical profile feature with minor sensor reading increase and reduced conductivity at the surface . Further GC analysis of the water samples collected in this area is required to verify the existence of the PAH or the nature of the background.

Surface Observations

Few surface observations were made during this portion of the cruise. Convergence lines and dull sheen were the only types of features noted (Figure 1). The dull sheens were not observed until reaching the northern tip of the outer circular path.

Science Operations:

Fluorometer measurements were logged and observations sea-surface conditions were made throughout the majority of the period. Water samples were taken during the 24-hour period when features of interest were encountered. A vertical fluorometry cast was taken near a shipwreck site in the vicinity of the Red Snapper fisheries (Figure 1). We continue to perform liquid-liquid extractions on seawater samples and analyze the extracted material by GCMS. We are also continuing to collect midwater echosounder contacts. These will be included in the next daily report.

Planned versus actual route taken cruise 8:

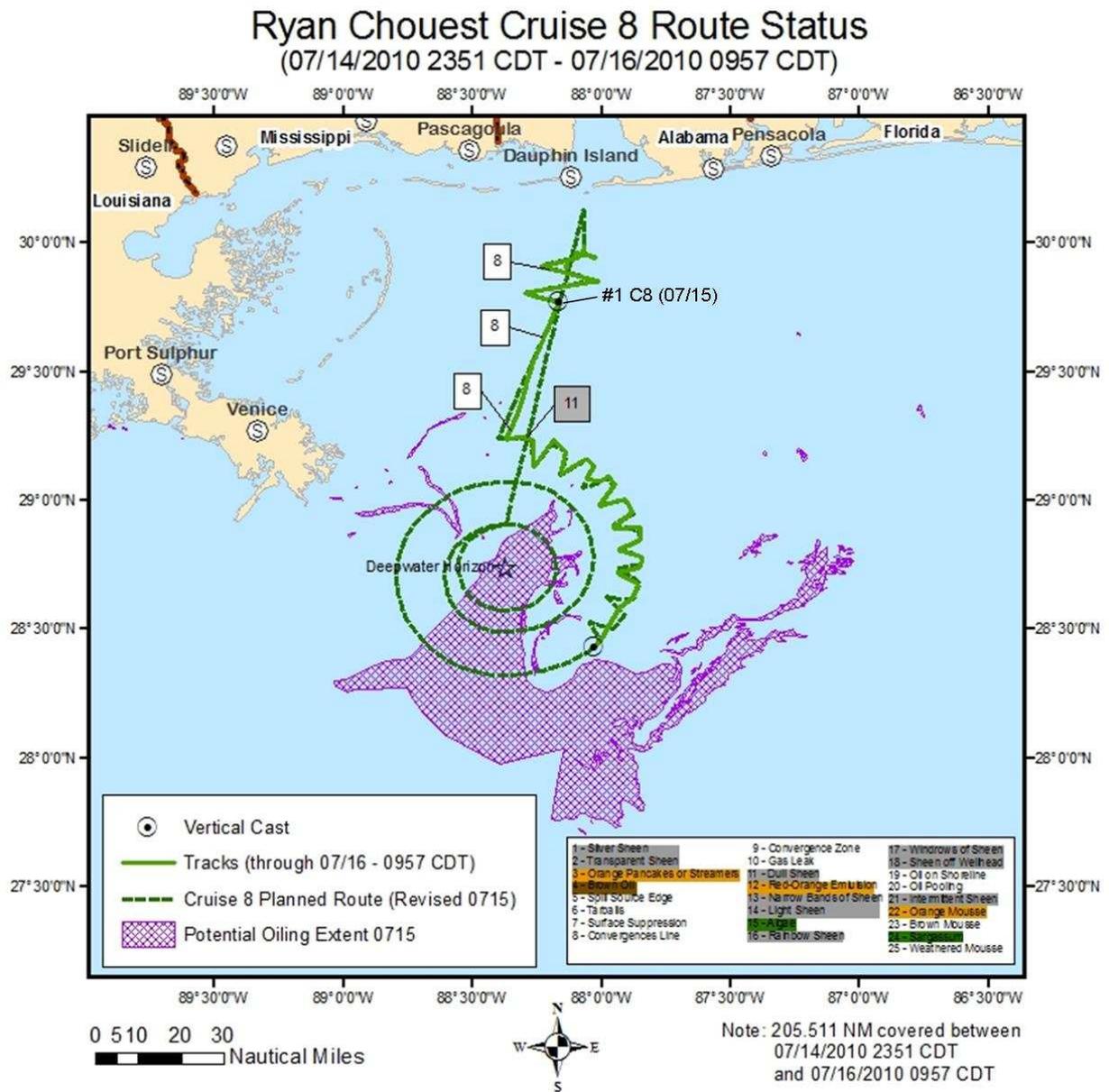


Figure 1: Planned versus actual route course plotted between 2351 07/14 – 0957 07/16. Disregard the unlabeled cast symbol in the southeastern portion of the outer circle. Purple shaded area represents outline extent of the slick from 07/15 ERMA composite.

Ryan Chouest Cruise 8 Data
 Chelsea - Fluorometer
 (07/14/2010 2351 CDT - 07/16/2010 0957 CDT)

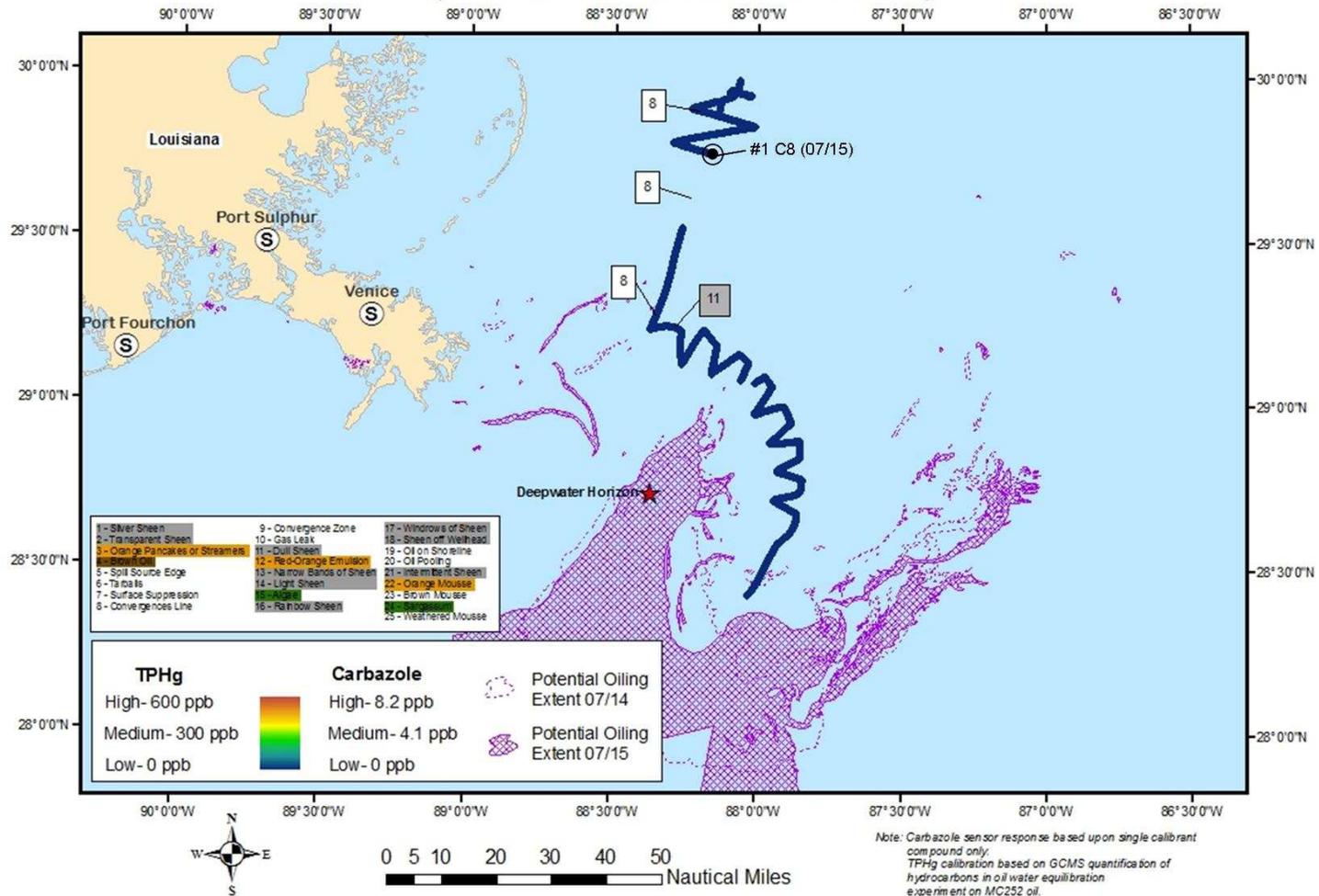


Figure 2. Chelsea fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

Ryan Chouest Cruise 8 Data
 Trios - Fluorometer
 (07/14/2010 2351 CDT - 07/16/2010 0957 CDT)

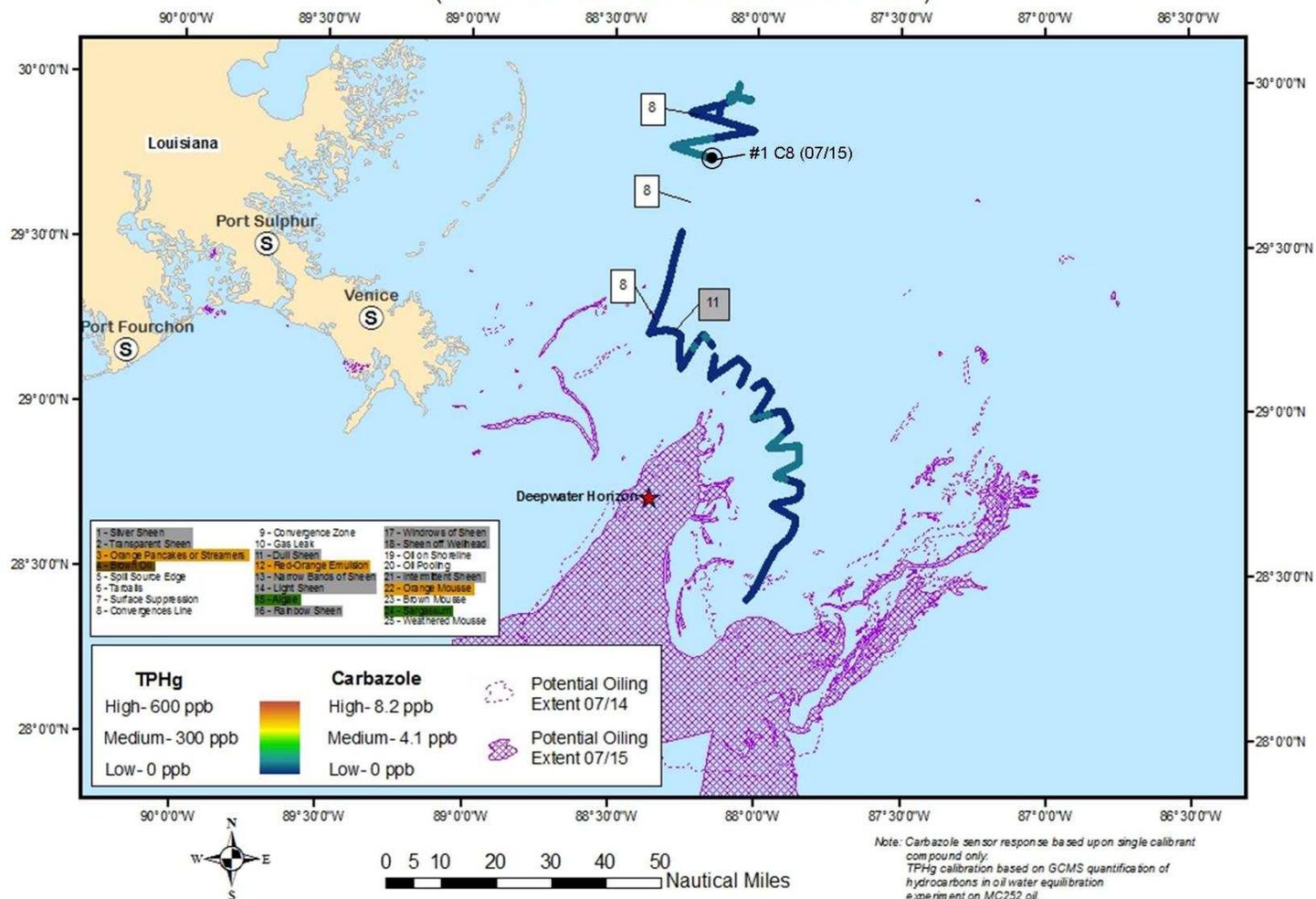


Figure 3. Trios fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

Ryan Chouest Cruise 8 Data
 Contros - Fluorometer
 (07/14/2010 2351 CDT - 07/16/2010 0957 CDT)

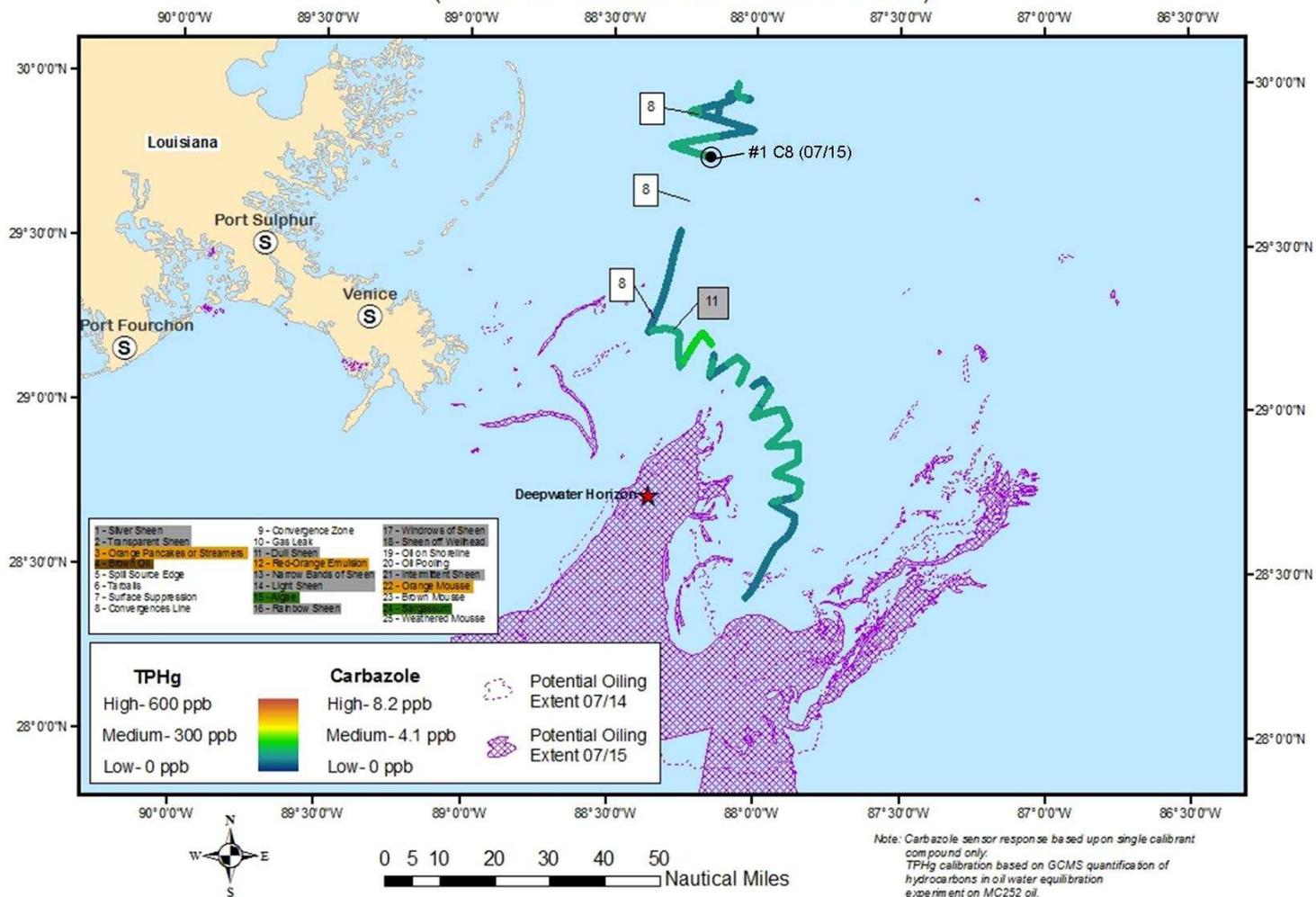


Figure 4. Contros fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

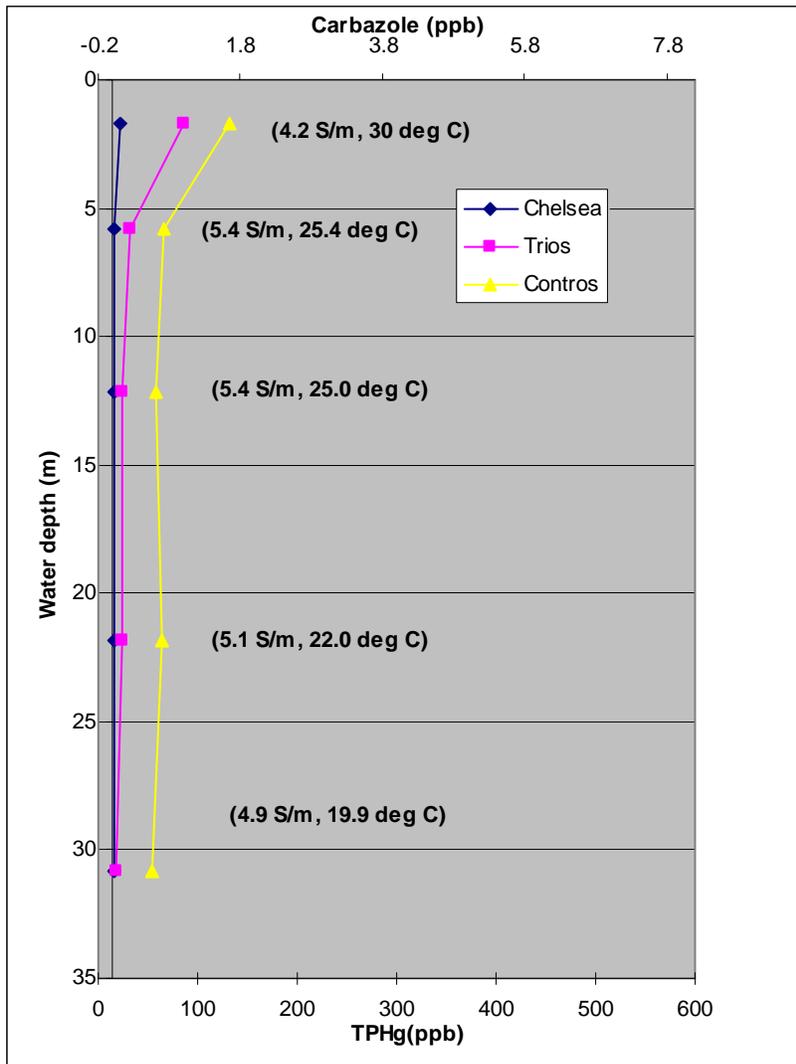


Figure 5 Fluorometer response vs. water depth for vertical cast # 1 / Cruise 8 conducted on 2010/07/15 at N 30 02.8425, W 088 01.8437. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CDT unit attached to the vertical cast pump.)

Problems/operational issues:

(Includes items up to report submission time)

The vertical cast water pump has been restored and successfully deployed on several drops throughout the day. The generator to the C&C office container has failed, which has caused issues around where to house the echosounder equipment. The acoustical gear requires an air-conditioned unit so that it does not overheat. We successfully rerouted the equipment into the smaller BP container and reconnected the gear. We have also established space to hold one of the C&C technicians using the echosounder equipment. The remainder of the C&C staff are positioned on the bridge.

The generator is not specifically a skid-mounted, marine diesel generator as would be preferred for marine vessel operations. The generator onboard is a Hertz generator and outfitted with only one fuel filter, marine units have at least two. As such, the fuel filter became clogged with sooty material from the bottom of the fuel tank, likely resuspended by the rocking ship. Our engineer replaced the fuel filter, but it still does not work, likely because the ignition cylinders have also clogged. As a result, we recommend replacing the generator with a proper skidded marine diesel generator to power the C&C container. This can be accomplished upon return to Theodore on Tuesday evening, 7/20.

We do not have an air quality sensor onboard to test for VOC levels and we also do not have enough carbon filter breathing masks for all of the science crew. These two conditions will prevent us from venturing into the ground zero location if air quality becomes an issue.

Planned activities for next 24 hours:

We will continue to sail along the closer circular route (5 NM radius to incident site) and complete surficial water sampling and deep water casts every 45°. We will remain in this area until further notice.