

Daily Operational and Science Report
UT-GOM2-2 Coring Expedition
Terrebonne Basin, Gulf of Mexico Outer Continental Slope

1. DATE: 01-August-2023, 0000-2400hr

2. LOCATION:

2400 hr, 01-August-2023

Hole: *Helix D/V Q4000* located over the general location of Hole WR313 H001 that was previously drilled in the Walker Ridge Block 313 H during the Gulf of Mexico Gas Hydrates Joint Industry Project (JIP) Expedition II in 2009.

Water depth: NA

Per Datum: NA

Lat 26° 39' 45.89"N, Long 091° 40' 33.953"W

3. DESCRIPTION OF OPERATIONS:

0000-0100 The *Helix D/V Q4000* completed the transit to the site of Hole WR313 H001, which represents the primary reference well for the Walker Ridge Block 313 H gas hydrate research test site as established during the 2009 JIP Expedition II.

0100-0600 Successfully conducted pressure testing of the drilling system internal blowout preventers (IBOPs) and Full Opening Safety Valve (short for FOSV), and electrical line night cap.

0600-2400 After completing the transit to Walker Ridge Block 313 H gas hydrate research test site. Both of the *Helix D/V Q4000* work class ROVs (XLS09 and XLS10) were launched to conduct a systematic search for the 2009 drilled WR313 H001 well head. After completing the trip to the seafloor a circular, a slightly elevated, mound like feature was located within only several feet from the previously surveyed location of the WR313 H001 well head; at the time of this report additional seafloor surveys were being conducted to confirm the location of the WR313 H001 well head.

1900-2130 Transferred additional fuel and the required BHA coring collars from the *Harvey Ram Supply Vessel* to the *Helix D/V Q4000*. In addition, *Harvey Ram Supply Vessel* has been “rolling the mud” every 4 hours and will continue so long as they have mud onboard.

4. OPERATIONAL PLAN (Next 24 Hours):

Use the ROV *Helix D/V Q4000* to establish the location of the proposed Walker Ridge Block 313 H well locations. Complete the regulatory required ROV supported acoustic survey of the Walker Ridge Block 313 H gas hydrate research test site. Continue to makeup (MU) the PCTB-CS coring BHA and run into the hole (RIH) in preparation to conduct drill pipe test of the Pressure and Temperature Tool (T2P). Continue to MU and RIH the PCTB-CS drill string.

5. DOWNHOLE LOGGING OPERATIONS:

Hole: NA

Wireline Totals (directional): NA

6. CORE OPERATIONS AND DATA:

Hole: NA

G-APC Coring Totals: NA

G-XCB Coring Totals: NA

G-PCTB-CS Coring Totals: NA

G-PCTB-FB Coring Totals: NA

7. DOWNHOLE MEASUREMENTS

Hole: NA

Pressure and Temperature Tool Deployment (T2P): NA

Temperature Tool Deployment (APCT-3): NA

8. SCIENCE ACTIVITIES

The Science Party continued to refine and finalize both the conventional and pressure core handling and processing plans leading the coring/drilling operations in the UT-GOM2-2-H003 hole. In the first hole to be established at the Walker Ridge Block 313 H gas hydrate research test site (Hole UT-GOM2-2-H003), conventional cores, pressure cores, and temperature/pressure measurements will be obtained in the shallow interval. Pressure-cores will be obtained from hydrate-bearing targets (Red, Upper Blue, and/or Orange sands), bounding mud, and background mud to total depth. The depth of the target sands range from ~950 to ~2700 fbsf. The Geotek pressure Core Analysis and Transfer System (PCATS), which was transferred to the Q4000 late on 31-July-2023, was connected to ship power in order to bring online the pressure core handling and analysis capabilities of the PCATS. The Science Party continued to prepare the projected designated (1) Conventional Core Receiving Lab – G17, (2) Conventional Core Processing Lab – G19, and (3) Conventional Core Pore Water Labs – G20 in preparation for the planned conventional coring operations associated with the UT-GOM2-2-H003 hole. The Geotek technical staff completed preparation of the Conventional Core Receiving Lab (G17), which has been instrumented with the Geotek thermal infrared (IR) imaging system that will be used to image the thermal impact of gas hydrate dissociation on the recovered core. The Geotek IR imaging system consists of a computer controlled IR camera mounted on a skate that moves incrementally along the core, rapidly capturing thermal images. The thermal images allow endothermically cooled portions of the recovered cores to be quickly identified, with the final images remaining on the screens, making thermal anomalies easy to locate while the cores are marked and sampled.