

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

1. **DATE:** 20-August-2023, 0000-2400hr

2. **LOCATION:**

2400 hr, 20-August-2023

Hole: *Helix D/V Q4000* was located over Hole UT-GOM2-2-H002

Last Drill/Core depth: 8738 ft MD RKB

RKB to Mud line: 6506 ft on Drill pipe measurements

Water depth: 6454 ft

Per Datum: 52 ft

Lat 26°39'44.2229"N, Long 091°40'33.8972"W NAD27 BLM15 Feet

3. **DESCRIPTION OF OPERATIONS:**

0900-2400 At Hole UT-GOM2-2-H002

General Operations/Maintenance: General rig housekeeping. Offload/backload supplies and continue to transfer drilling mud from *M/V Harvey Hermes*. Held shallow gas drill with crew.

0000-0030 Continue to RIH PCTB retrieval tool.

0030-0100 Acquire **Core UT-GOM2-2-H003-01FB**, F/8621 - T/8631 ft RKB (2115.0 to 2125.0 fbsf.)

0100-0210 POOH PCTB-CS coring tool and transfer to the Geotek Pressure Core Processing Van.

0210-0830 Prepare and RIH Geotek Center Bit (required several attempts to land out Center Bit).

0830-1000 Prepare for fourth directional survey in **Hole UT-GOM2-2-H002**, RIH Gyro-Data Omega – 1.875 inch Battery Slickline Gyro and performed a gyro survey at 8577 ft RKB (2071 fbsf). POOH the gyro survey tool. Gyro inclination survey reading of 0.60° at an azimuth of 99.31°.

1000-1300 Drilled ahead while pumping 10.3 ppg mud, at 7 bpm, w/ 93 psi, 70 RPM, 0-10 k WOB, F/ 8631 to 8718 ft RKB.

1300-1500 R/U and RIH Geotek Center Bit retrieval tool and POOH Center Bit.

1500-1700 Observed with the ROV partial loss of returns from the wellhead to the seafloor, possibly caused by borehole carvings, pumped 30 bbls of Hi Vis sweep to clear the borehole.

1700-1830 Prepare and RIH the PCTB-FB coring tool.

1830-1930 POOH from depth with PCTB setting tool and RIH the PCTB retrieval tool.

1930-2000 Acquire **Core UT-GOM2-2-H003-02FB**, F/8718 - T/8728 ft RKB (2212.0-2222.0 fbsf).

2000-2115 POOH PCTB-CS coring tool and transfer to the Geotek Pressure Core Processing Van.

2115-2130 Prepare and RIH the PCTB-FB coring tool.

2130-2330 POOH from depth with PCTB setting tool and RIH the PCTB retrieval tool.

2330-2400 Acquire **Core UT-GOM2-2-H003-03FB**, F/8728 - T/8738 ft RKB (2222.0-2232.0 fbsf).

4. **OPERATIONAL PLAN (Next 24 Hours):**

Acquire the third consecutive PCTB-FB pressure core in **Hole UT-GOM2-2-H002** at a depth from 8738 to 8748 ft RKB **Core UT-GOM2-2-H003-04FB** (2232.0 to 2242.0 fbsf). We will next advance

the hole by drilling from 8748 to 9010 ft RKB and prepare to acquire **Core UT-GOM2-2-H003-05FB** (2504.0 to 2514.0 fbsf).

Blue Sand (and background mud) Coring Campaign

Activity	Ft RKB	fbsf	Completed
H002-01FB-Start	8621	2115	X
H002-01FB End	8631	2125	X
Drill Ahead Start	8631	2125	X
Drill Ahead End	8718	2212	X
H002-02FB Start	8718	2212	X
H002-02FB End	8728	2222	X
H002-03FB Start	8728	2222	X
H002-03FB End	8738	2232	X
H002-04FB Start	8738	2232	
H002-04FB End	8748	2242	

5. DOWNHOLE LOGGING OPERATIONS:

Hole: Hole UT-GOM2-2-H002

Wireline Totals (directional): The wireline deployed (memory sonde) gyroscopic logging services on the Q4000 are being provided by Gyro-Data, who used an Omega – 1.875 inch Battery Slickline Gyro to perform the directional surveys in **Hole UT-GOM2-2-H002** at a depth of 8577 ft RKB (2071 fbsf) at which depth the borehole was determined to inclined at 0.60° and at an azimuth of 99.31°. This survey is within the BSEE inclination limit of 3.0° for a deviated well classification.

6. CORE OPERATIONS AND DATA:

Hole: Hole UT-GOM2-2-H002

G-APC Coring Totals: NA

G-XCB Coring Totals: NA

PCTB-CS Coring Totals: NA

PCTB-FB Coring Totals:

Core UT-GOM2-2-H003-01FB: 3.31 ft (33 % recovery), 0 psi.

Coring F/ 8621 - T/ 8631 ft RKB at 80 rpm, maintaining 8-10k on bit, CMT pumping 10.3 ppg WBM at 3.5 bpm and 155 psi.

Core UT-GOM2-2-H003-02FB: 4.39 ft (44% recovery), 4543 psi.

Coring F/ 8718 - T/ 8728 ft RKB at 80 rpm, maintaining 8-10k on bit, CMT pumping 10.3 ppg WBM at 3.5 bpm and 155 psi.

Core UT-GOM2-2-H003-03FB: NA ft (NA % recovery), 4542 psi. (being processed in PCATS)

Coring F/ 8728 - T/ 8738 ft RKB at 80 rpm, maintaining 8-10k on bit, CMT pumping 10.3 ppg WBM at 3.5 bpm and 155 psi.

7. DOWNHOLE MEASUREMENTS

Hole: NA

Pressure and Temperature Tool Deployment (T2P): NA

Temperature Tool Deployment (APCT-3): NA

8. SCIENCE ACTIVITIES

From 0030 to 0100 hr on the morning of 20-AUG the first PCTB-FB core (**Core UT-GOM2-2-H003-01FB**) was attempted in **Hole UT-GOM2-2-H002** within the depth interval from 8621 to 8631 ft RKB (2115.0 to 2125.0 fbsf). Upon recovery of **Core UT-GOM2-2-H003-01FB** it was confirmed that the lower ball valve seal on the PCTB-FB had properly sealed, however, the upper seal on the autoclave failed to fully engage; thus, **Core UT-GOM2-2-H003-01FB** was recovered without pressure.

As reviewed above in the “Downhole Logging Operations” section of this report, an additional regulatory required directional survey was conducted in **Hole UT-GOM2-2-H002** immediately following the acquisition of **Core UT-GOM2-2-H003-01FB**. The directional survey conducted at a depth of 8577 ft RKB (2071 fbsf) in **Hole UT-GOM2-2-H002** indicated a borehole inclination of 0.60° with an azimuth of 99.31°.

The hole was then advanced by drilling from 8631 to 8718 ft RKB (2125-2212 fbsf) (87 ft hole advance), at 8718 ft RKB our attention turned to the acquisition of three consecutive PCTB-FB pressure cores across the main reservoir section of the Blue Sands in **Hole UT-GOM2-2-H002** at a depth from 8718 to 8748 ft RKB (2212-2242 fbsf). The first core in the Blue Sands reservoir section, **Core UT-GOM2-2-H003-02F**, was acquired from the depth interval from 2212 to 2222 fbsf. Upon examination in the Geotek Pressure Core Processing Van it was determined that **Core UT-GOM2-2-H003-02F** was recovered at a pressure of 4543 psi and is currently being processed through PCATS. In addition, at the very end of the day **Core UT-GOM2-2-H003-03F** was acquired from 8728 to 8738 ft RKB (2222-2232 fbsf); it was determined later the next day that **Core UT-GOM2-2-H003-03F** was recovered at a pressure of 4542 psi.

The onboard Scientific Party also processed conventionalized **Core UT-GOM2-2-H003-01FB** collecting a paleontological sample from the core-catcher, and whole round interstitial water and microbiological samples from the core. Additional headspace organic geochemistry samples and geomechanical measurements were obtained from the core. The remaining portion of the core will be transported to the post-expedition project established laboratory in Salt Lake City where a wide array of technical core scans, additional subsamples will be taken, and other detailed cores analysis will be performed.

The Scientific Party is working on finalizing the “Methods” section and working on the “Results” sections of the Expedition Report and processing samples and data that has been collected during the expedition.

There have been no new COVID cases on the *Q4000* in the last eight days.

9. ACRONYMS

bpm	Barrels per minute
Fish	The object to be recovered from the borehole/BHA
M/U	Make up
PCATS	Pressure Core Analysis and Transfer System
PCTB-CS	Pressure coring tool with ball-cutting shoe version.
POOH	Pull out of hole
psi	Pounds per square inch
RIH	Run in hole
RKB	Depth measured from the rig floor
SLB	Schlumberger
Slickline	Wireline used to deploy and recover core, etc.
TD	Total depth
TDS	Top drive system

UT-GOM2-2-H002

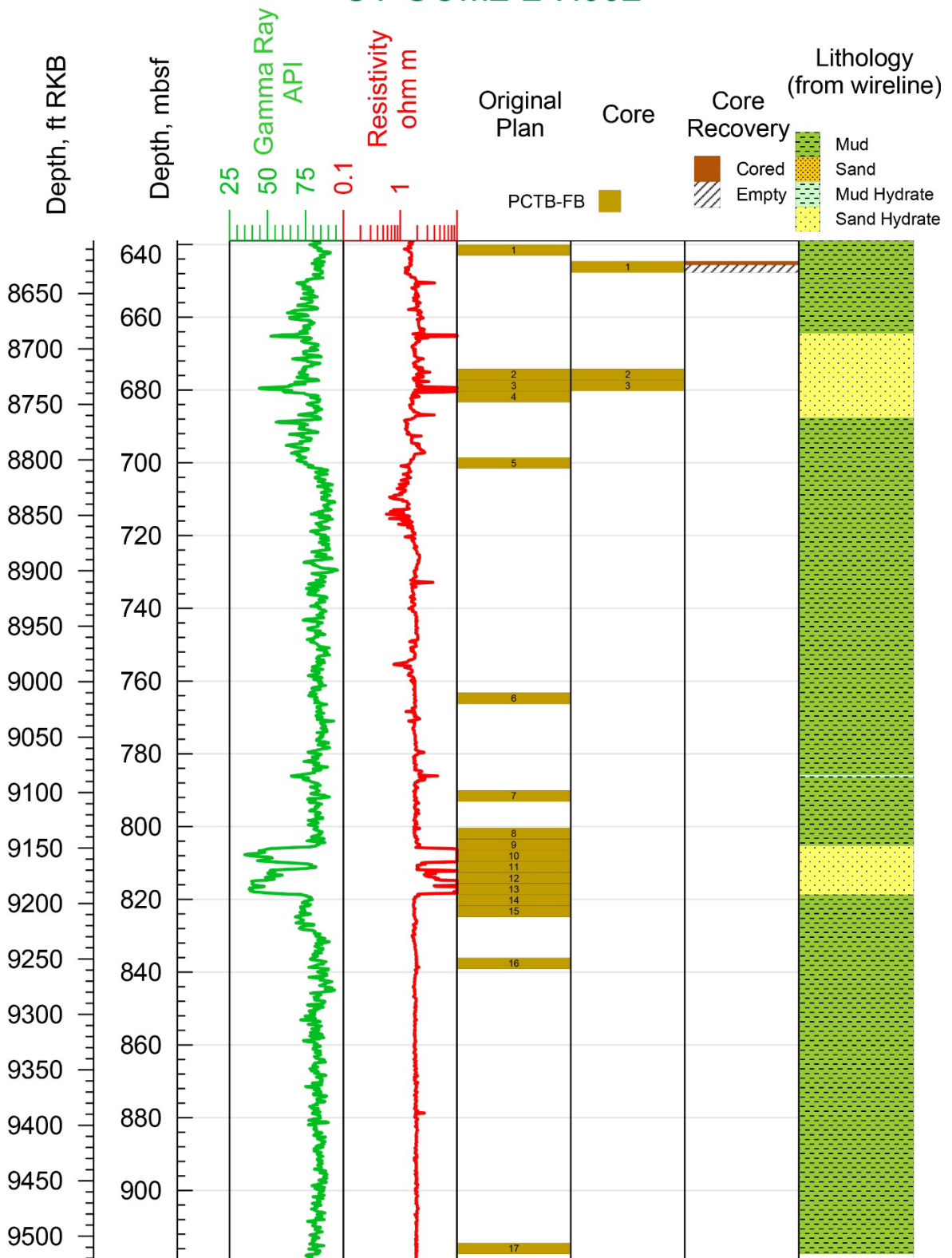


Figure 1: Core recovery plot for the UT-GOM2-2-H002 well as of 24:00 hr 20-AUG-2023. 'PCTB-FB' records core recovered by the face bit version of the Pressure Coring Tool with Ball (PCTB).