

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

1. **DATE:** 09-August-2023, 0000-2400hr

2. **LOCATION:**

2400 hr, 09-August-2023

Hole: *Helix D/V Q4000* was located over the location of Hole UT-GOM2-2-H003

Last Drill/Core depth: 6955 ft RKB

RKB to Mud line: 6506 ft on Drill pipe measurements

Water depth: 6454 ft (updated 05-AUG-2023)

Per Datum: 52 ft

Lat 26°39'46.50488"N, Long 091°40'33.82464"W

3. **DESCRIPTION OF OPERATIONS:**

0000-2400 At Hole UT-GOM2-2-H003

0000-0030 Continue to RIH G-PCTB-CS

0030-0100 Acquire **Core UT-GOM2-2-H003-15CS**, 290.0 to 300.0 fbsf

0100-0145 POOH G-PCTB-CS and transfer to the Geotek Pressure Core Processing Van

0145-0315 Prepare and RIH the G-APCT coring tool

0315-0330 Acquire **Core UT-GOM2-2-H003-16H**, 300.0 to 321.0 fbsf

0330-0400 POOH G-APCT coring tool and transfer to the Geotek Core Processing Van

0430-0600 Drill out cored section to 321 fbsf

0600-0700 Prepare and RIH the G-APCT coring tool

0700-0715 Acquire **Core UT-GOM2-2-H003-17H**, 321.0 to 342.0 fbsf

0715-0800 POOH G-APCT coring tool and transfer to the Geotek Core Processing Van

0800-0900 Drill out cored section to 342 fbsf

0900-1000 Prepare and RIH the G-APCT coring tool

1000-1015 Acquire **Core UT-GOM2-2-H003-18H**, 342.0 to 364.0 fbsf

1015-1100 POOH G-APCT coring tool and transfer to the Geotek Core Processing Van

1100-1300 Drill out cored section to 364 fbsf

1300-1430 Continue to RIH G-PCTB-CS

1430-1500 Acquire **Core UT-GOM2-2-H003-19CS**, 364.0 to 374.0 fbsf

1500-1530 POOH G-PCTB-CS and transfer to the Geotek Pressure Core Processing Van

1530-1615 Prepare and RIH the G-APCT coring tool

1615-1623 Acquire **Core UT-GOM2-2-H003-20H**, 374.0 to 399.0 fbsf

1623-1800 POOH G-APCT coring tool and transfer to the Geotek Core Processing Van

1800-1830 Drill out cored section to 399 fbsf

1830-1953 Prepare and RIH the G-APCT coring tool

1953-2000 Acquire **Core UT-GOM2-2-H003-21H**, 399.0 to 424.0 fbsf

2000-2100 POOH G-APCT coring tool and transfer to the Geotek Core Processing Van

2100-2300 Drill out cored section to 424 fbsf

2300-2343 Prepare and RIH the G-APCT coring tool

2342-2358 Acquire **Core UT-GOM2-2-H003-22H**, 424.0 to 449.0 fbsf

2358-2400 POOH G-APCT coring tool

4. OPERATIONAL PLAN (Next 24 Hours):

Continue conventional and pressure coring operations in Hole UT-GOM2-2-H003 from the current hole depth of 449.0 fbsf with the following planned core runs:

Core UT-GOM2-2-H003-023H, 449.0 to 474.0 fbsf

Core UT-GOM2-2-H003-24CS, 474.0 to 484.0 fbsf

Core UT-GOM2-2-H003-025H, 484.0 to 509.0 fbsf (with APCT-3)

Core UT-GOM2-2-H003-026H, 509.0 to 534.0 fbsf

Core UT-GOM2-2-H003-027H, 534.0 to 559.0 fbsf

Core UT-GOM2-2-H003-028H, 559.0 to 585.0 fbsf

5. DOWNHOLE LOGGING OPERATIONS:

Hole: NA

Wireline Totals (directional): NA

6. CORE OPERATIONS AND DATA:

Hole: UT-GOM2-2-H003

G-APC Coring Totals:

Core UT-GOM2-2-H003-016H: 26.30 ft recovered core (128% recovery)

Core UT-GOM2-2-H003-017H: 27.7 ft recovered core (135% recovery)

Core UT-GOM2-2-H003-018H: 30.7 ft recovered core (143% recovery)

Core UT-GOM2-2-H003-020H: 29.0 ft recovered core (119% recovery)

Core UT-GOM2-2-H003-021H: 28.3 ft recovered core (113% recovery)

Core UT-GOM2-2-H003-022H: 23.8 ft recovered core (105% recovery)

G-XCB Coring Totals: NA

G-PCTB-CS Coring Totals:

Core UT-GOM2-2-H003-15CS: 11.3 ft (115% recovery), 0 psi

Coring F 6771 ft – T 6796 ft (RKB) at 60 rpm w/ 1-3 K torque circulating 8.6 ppg SW at 2 bpm w/ 190 psi standpipe. Maintaining 1-3K on bit.

Core UT-GOM2-2-H003-19CS: TBD ft (not yet in PCATS) (TBD recovery), 3533 psi

Coring F 6870 ft – T 6880 ft (RKB) at 60 rpm w/ 2-4 K torque circulating 8.6 ppg SW at 3 bpm w/ 270 psi standpipe. Maintaining 4-5K on bit.

G-PCTB-FB Coring Totals: NA

7. DOWNHOLE MEASUREMENTS

Hole: UT-GOM2-2-H003

Pressure and Temperature Tool Deployment (T2P): NA

Temperature Tool Deployment (APCT-3):

Core UT-GOM2-2-H003-017H – 10 min dwell time

Core UT-GOM2-2-H003-021H – 10 min dwell time

8. SCIENCE ACTIVITIES

Scientific coring activities over the last 24-hours focused advancing Hole UT-GOM2-2-H003 from a depth of 300 fbsf (6806 ft RKB) to a total depth of 449 fbsf (6955 ft RKB) by the deployment of six conventional piston cores (G-APC) and two pressure cores (G-PCTB-CS). This combination of conventional and pressure cores targeted a series of transitional low to high density stratigraphic intervals as observed on the logging while drilling (LWD) data as acquired in the WR313H-001 well.

The conventional cores UT-GOM2-2-H003-16H, -17H, -18H, -20H, -21H, and -22H were processed through the Geotek Core Receiving Lab using the standard GOM2-2 core processing techniques. Laboratory measurements conducted on the acquired core material will provide important understanding

of reservoir and bounding mud properties, such as (1) hydrate concentrations, dissolved methane concentrations, and gas compositions, (2) pore water solute concentration and compositions, (3) lithofacies identification, grain size, and sorting, (4) permeability, (5) compressibility, (6) strength behavior, (7) sediment composition and age, (8) microbial communities and activity, (8) and physical properties such as mineral and clay composition, porosity, and liquid limit. Characterizing these properties will allow us to better understand fluid and gas transport processes in the greater Walker Ridge area associated with reservoirs and seals, providing insight in terms of gas migration and hydrate formation.

Pressure core sections UT-GOM2-2-H003-08CS-2 and UT-GOM2-2-H003-08CS-3 (each 120 cm) were quantitatively degassed to calculate the dissolved methane concentration, and multiple gas samples were collected. These sections were depressurized in an extra slow manner in an attempt to preserve the thin beds and laminations observed in the PCATS scans. We now have a dissolved methane profile defined by three points over two pressure cores.

The Scientific Party continued to work on writing both the “Methods” and “Hole H003” results chapters for the Expedition Report.

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