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

1. DATE: 21-August-2023, 0000-2400hr

2. LOCATION:

2400 hr, 21-August-2023
Hole: *Helix D/V Q4000* was located over Hole UT-GOM2-2-H002

Last Drill/Core depth: 8748 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

0000-0030 Continue to acquire **Core UT-GOM2-2-H003-03FB**, F/8728 - T/8738 ft RKB (2222.0-2232.0 fbsf).
0030-0100 POOH PCTB-CS coring tool and transfer to the Geotek Pressure Core Processing Van.
0100-0249 Prepare and RIH the PCTB-FB coring tool.
0249-0400 POOH from depth with PCTB setting tool and RIH the PCTB retrieval tool.
0400-0430 Acquire **Core UT-GOM2-2-H003-04FB**, F/8738 - T/8748 ft RKB (2232.0 to 2242.0 fbsf).
0430-0500 Attempted too POOH. Unable to unlatch the PCTB-CS.
0500-0700 After multiple attempts to unlatch the PCTB-CS tool, the slickline parted at the packer in the TDS.
0700-1930 The parted end of the SLB slickline was recovered from the drill pipe and after multiple attempts to again pull the CTB-FB core barrel free it was ultimately decided that the inner barrel to the PCTB-FB could not be removed from the BHA.
1930-2400 M/U to TDS POOH F/8366 to T/5476 ft RKB while laying down doubles of 5 7/8" XT57 drill pipe and slipping and cutting SLB coring wireline.

4. OPERATIONAL PLAN (Next 24 Hours):

Continue to POOH the PCTB-CS BHA while laying down doubles of 5 7/8" XT57 drill pipe; and slipping and cutting SLB coring wireline with each stand.

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	X
H002-04FB End	8748	2242	X

5. DOWNHOLE LOGGING OPERATIONS:

Hole: NA

Wireline Totals (directional): NA

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-H003-03FB: *4.66* ft (47 % recovery), 4530 psi.

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.

Core UT-GOM2-2-H003-04FB: *8.43* ft (*84*% recovery), 0 psi. (not recovered as of this time)

Coring F/ 8738 - T/ 8748 ft RKB at 80 rpm, maintaining 8-10k on bit, CMT pumping 10.3 ppg WBM at 3.0 bpm and 120 psi.

7. DOWNHOLE MEASUREMENTS

Hole: NA

Pressure and Temperature Tool Deployment (T2P): NA

Temperature Tool Deployment (APCT-3): NA

8. SCIENCE ACTIVITES

Core UT-GOM2-2-H003-03FB was cut from 8728 to 8738 ft RKB (2222-2232 fbsf). This was the second of three consecutive PCTB-FB pressure cores planned for the Blue Sand within the interval from 8718 to 8748 ft RKB (2212-2242 fbsf) in **Hole UT-GOM2-2-H002.** Upon recovery, we found the lower ball valve had properly sealed on the PCTB-FB and the measured pressure in the Geotek Pressure Core Receiving Lab was 4542 psi. The PCATS acquired X-Ray scans along with the gamma-density and P-wave velocity core scans confirmed the recovery of *4.66* ft of core and two probable gas hydrate-bearing sand units (Figure 1). This was our first recovery of sandy core with high hydrate concentrations on the GOM2-2 Expedition.

We next cut **Core UT-GOM2-2-H003-04FB** for 10 feet from 8738 to 8748 ft RKB. The Geotek CTB-FB recovery tool was lowered into the hole and latched into the PCTB-FB core barrel to recover the inner core barrel. We attempted to unlatch the PCTB-FB core barrel by pulling on slickline. However, we could not recover the tool. We applied greater than 10,000 lb pulls and used the rig mud pumps to clear any debris preventing the tool from unlatching. After multiple attempts, the slickline parted at the packer in the TDS. The BHA was raised and stands of pipe were removed until the slickline was encountered in the pipe. The slickline was recovered from the drill pipe and reattached to the SLB wireline spooler. After multiple attempts to again pull the CTB-FB core barrel free, it was ultimately decided that the inner barrel to the PCTB-FB could not be removed from the BHA. We also tried to shear off the slickline from the coring tool, which would allow the running of the CTB-FB emergency recovery tool; however, it was not possible to shear off the slickline. We then cut the slickline allowing it to drop inside of the pipe and proceeded to pull the BHA to the surface. After recovering each stand of pipe, we used a wire cutter to remove the exposed slickline. As of midnight, on 21-AUG-23, we were recovering the BHA to the

surface. **Plans are currently being developed to re-enter Hole UT-GOM2-2-H002 and move ahead with the program to acquire the sequence of pressure cores associated with the high-priority Orange Sand.**

As we look forward, BSEE requires that we make a best effort to P&A (cement) **Hole UT-GOM2-2-H002** after reaching the depth of the Blue Sands. To do so, we will need to re-enter the hole and return to depth above the Blue Sand in order to pump cement; this will provide us with the opportunity to advance the hole to acquire the Orange Sands related cores.

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 nine 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

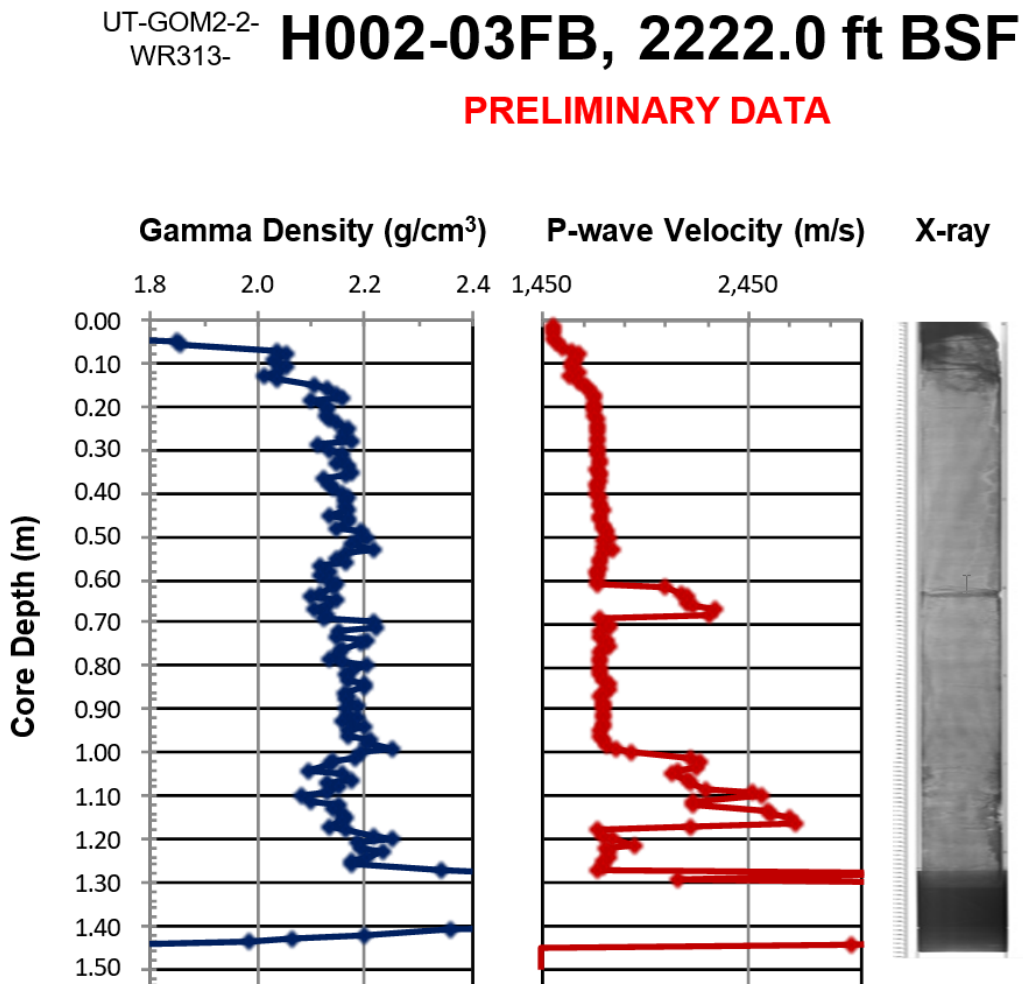

Figure 1: X-ray, P-wave velocity, and density of Core UT-GOM2-2-H002-03FB from the Geotek Pressure Core Analysis and Transfer System (PCATS). Gamma density and P-wave velocity logs along with the X-ray images.