

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

1. DATE: 14-August-2023, 0000-2400hr

2. LOCATION:

2400 hr, 14-August-2023

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

Last Drill/Core depth: 7458 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

General Maintenance: *Helix D/V Q4000* ROV corrosion maintenance, general rig housekeeping.

0000-0930 Drill ahead from 7015 to 7420 ft RKB at 70 RPM w/ 3-4k torque, pumping at 7 bpm and a pressure of 830 psi while maintaining 2-5k on bit and 100 ROP; pumped 40 bbl of 10.5 ppg Hi-Vis sweep.

0930-1258 Recover Geotek Center Bit (CBRT) used to advance the hole by drilling.

1258-1400 Prepare to run **Core UT-GOM2-2-H003-26X**, space out G-XCB and RIH.

1400-1530 RIH G-XCB from surface to 7420 ft RKB while pumping with 8.6 ppg seawater at 3.5 bpm and 150 psi using the cement pumps; and latch G-XCB into BHA; recovery running tool to the ship.

1530-1600 Acquire G-XCM rotary **Core UT-GOM2-2-H003-26X** from F/ 7420 to T/ 7448 ft (RKB) at 80 rpm, maintaining 8-10k on bit, CMT pumping 8.6 ppg SW at 3.5 bpm and 330 psi.

1600-1800 RIH the Geotek CBRT to recover the G-XCM inner barrel to the vessel.

1800-2030 Prepare to run **Core UT-GOM2-2-H003-27CS**, RIH the PCTB, and recover wireline running tool.

2030-2100 Acquire PCTB-CS rotary **Core UT-GOM2-2-H003-27CS** from F/ 7448 - T/ 7458 ft (RKB) at 80 rpm, maintaining 8-10k on bit, CMT pumping 8.6 ppg seawater at 3.5 bpm and 330 psi.

2100-2147 RIH the Geotek CBRT to recover the PCTB-CS tool, POOH **Core UT-GOM2-2-H003-27CS**.

2147-2400 Prepare to acquire **Core UT-GOM2-2-H003-28CS**.

4. OPERATIONAL PLAN (Next 24 Hours):

Advance the hole by coring and drilling from 952.0 fbsf to 2100.0 fbsf. Conduct two wireline directional surveys. Acquire two additional PCTB-CS pressure cores in Hole UT-GOM2-2-H003 with the following planned core runs:

Core UT-GOM2-2-H003-28CS, 952.0 to 962.0 fbsf

Core UT-GOM2-2-H003-29CS, 962.0 to 972.0 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: NA

G-XCB Coring Totals:

Core UT-GOM2-2-H003-26X: 27.92 ft recovered core (100% recovery)

PCTB-CS Coring Totals:

Core UT-GOM2-2-H003-27CS: NA ft (NA % recovery), 3550 psi – core currently in PCATS
Coring F/ 7448 - T/ 7458 ft (RKB) at 80 rpm, maintaining 8-10k on bit, CMT pumping 8.6
ppg seawater at 3.5 bpm and 330 psi.

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): NA

8. SCIENCE ACTIVITIES

As reviewed in the 13-AUG-23 Daily Operational and Science Report for the UT-GOM2-2 Coring Expedition, it was decided to advance Hole UT-GOM2-2-H003 by drilling (without coring) to a core point depth of 7420 ft RKB (914.0 fbsf) to just above the Red Sand. The hole was successfully drilled without any problems to the targeted depth of 7420 ft RKB by 0930 hr on 14-AUG-23. The first G-XCB core (**Core UT-GOM2-2-H003-26X**) of the UT-GOM2-2 Expedition was acquired over the core depth interval from 914.0 to 942.0 fbsf, with a total recovery of 27.92 ft of core (100 % recovery). The G-XCB also known as the Geotek “Extended Core Barrel” or “Rotary Extended Shoe Coring System” is designed to acquire cores in relatively more lithified sedimentary formations. In this case, the **Core UT-GOM2-2-H003-26X** yield almost a continuous core section characterized by several large (up to ~10 inches long) gas-charged voids in the recovered core liner. Much like similar gas voids commonly observed in G-APC cores, as described in earlier UT-GOM2-2 Coring Expedition reports, the gas voids were sampled by using a specialized tool to pierce the Butyrate liner and collect gas samples in several different containers that will be processed post-expedition to further characterize the processes controlling the formation of gas hydrates in marine sediments. The other data critical to these analyses were collected in **Core UT-GOM2-2-H003-27CS**, which was a pressure core collected immediately after the **Core UT-GOM2-2-H003-26X** G-XCB core. The pressure core in this case will yield important information on the occurrence of gas hydrate in the targeted Red Sand and additional information on the solubility of methane within the pore fluids associated with the occurrence of gas hydrate in this stratigraphic section.

There has been no new COVID cases on the *Q4000* in the last 48 hours; we are also happy to report that 2 of the 4 UT scientists were released from isolation on the afternoon of 14-AUG-23. There are 3 members of the ship crew and 2 members of the UT crew that are still in quarantine; all are being closely monitored and are recuperating.

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

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-H003

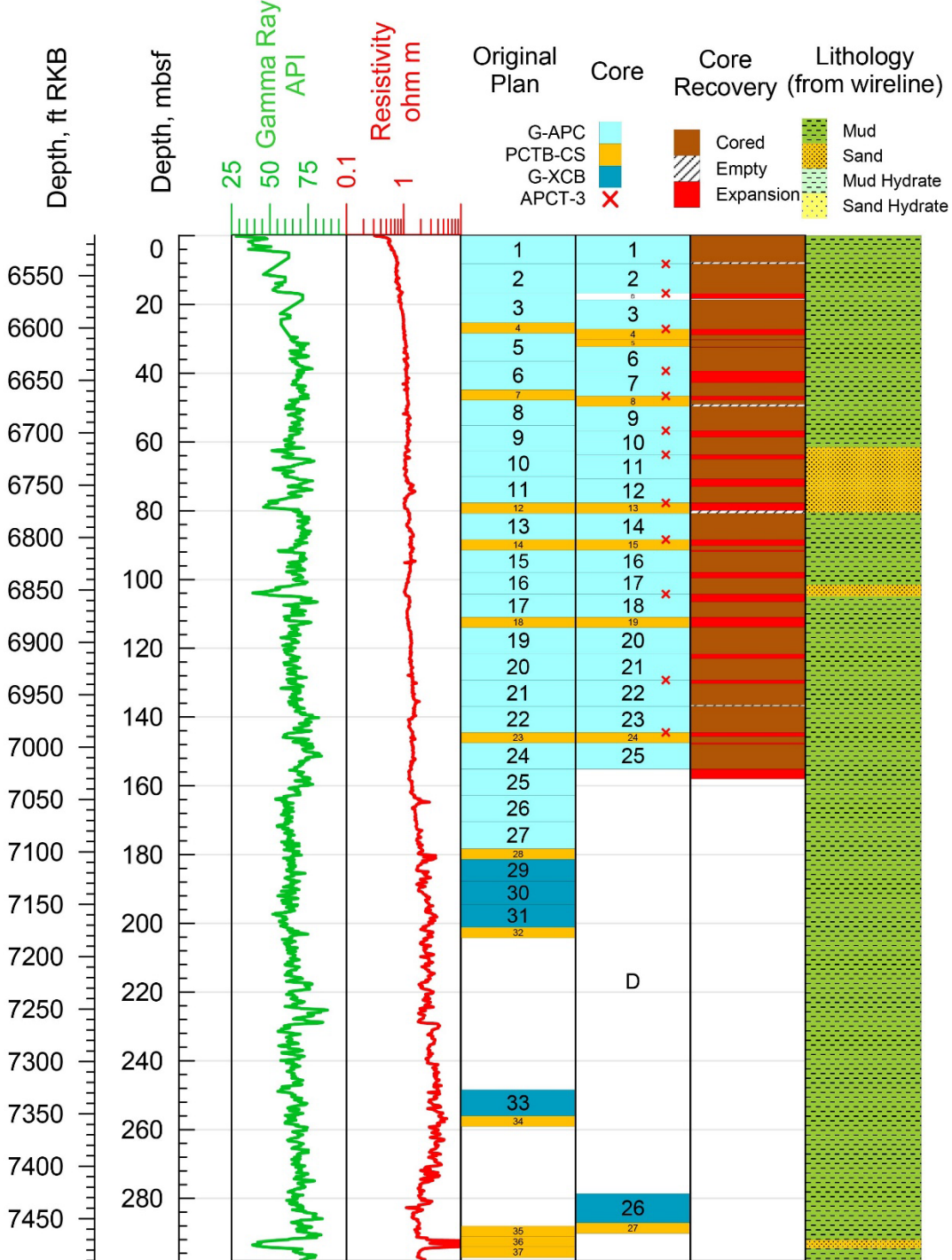


Figure 1: Core recovery plot for the UT-GOM2-2-H003 well as of 24:00 hr 14-AUG-2023. 'G-APC' records core recovered by the Geotek Advanced Piston Corer. 'G-XCB' records core recovered by the Geotech cutting shoe coring cool. 'PCTB-CS' records core recovered by the cutting shoe version of the Pressure Coring Tool with Ball (PCTB). 'APCT-3' records the location where temperatures were measured with a specially instrumented coring shoe.

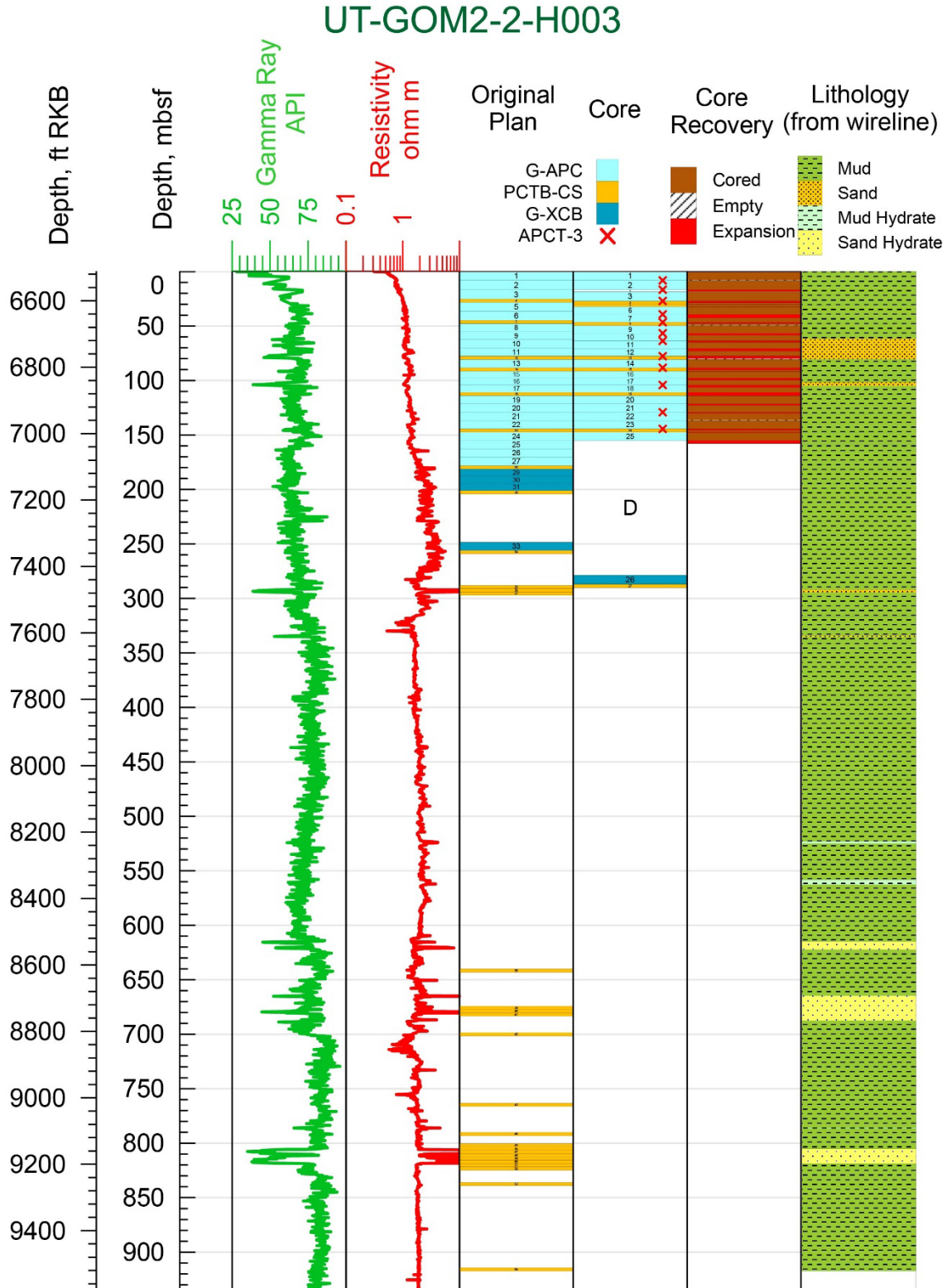


Figure 2: Planned and actual core recovery for the entire UT-GOM2-2-H003 well. 'G-APC', 'PCTB-CS', G-XCB, and 'APCT-3' are defined in the caption to Figure 1. Dashed box defines the interval cored through 24:00 hr 14-AUG-2023.



Figure 3: The 'air blower' arrives by helicopter.

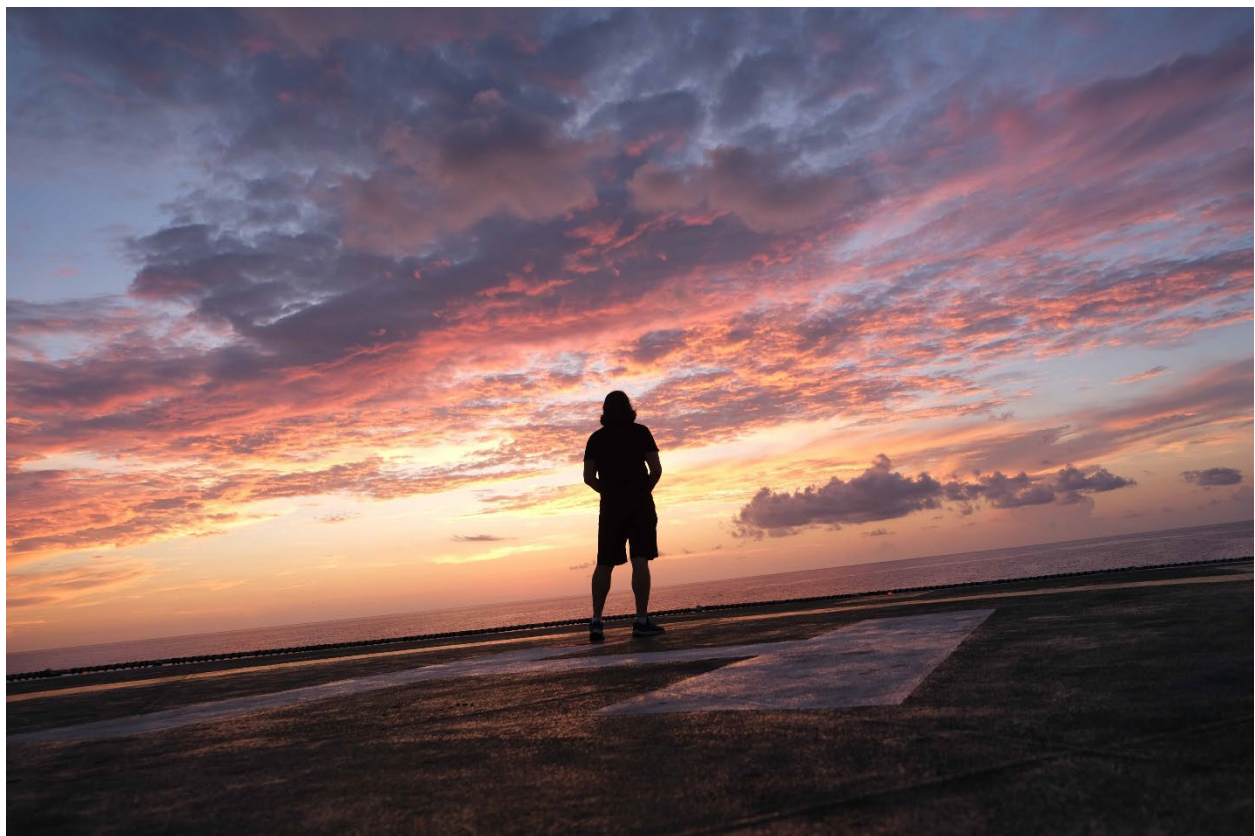


Figure 4: Steve Phillips gets his first breath of fresh air after a 5 day quarantine.