

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

1. **DATE:** 27-August-2023, 0000-2400hr

2. **LOCATION:**

2400 hr, 27-August-2023

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

Last Drill/Core depth: 9332 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:**

0000-2400 At Hole UT-GOM2-2-H002

General Operations/Maintenance: General housekeeping on weather deck. Mud transfer from the *M/V Harvey Spirit*. Derrickman build pad mud and cement spacer. Pit Cleaners cleaning Brine Tanks.

0000-0400 Continue to acquire **Core UT-GOM2-2-H002-15CS** from **Hole UT-GOM2-2-H002**.

0400-0430 Acquire **Core UT-GOM2-2-H002-15CS**, *F/9322 - T/9332 ft RKB* (2816.0-2826.0 fbsf).

0430-0548 POOH PCTB-CS coring tool and transfer to the Geotek Pressure Core Processing Van.

0548-0800 M/U and RIH Geotek Cement Liner BHA. SLB slickline lower cement liner in to BHA noted pressured up to ~500 psi on drill string, shut pumps down then bled pressure to 0 psi. SLB slickline unable to P/U free from cement liner. Company representative and SLB slickline discuss forward plan.

0800-1500 Cycled drill string while SLB slickline attempt to pull free, continued to try to pull the Cement Liner from the BHA.

1500-1530 Laydown one single and cut wireline. R/D TDS wireline packoff and wireline equipment.

1530-1900 POOH drill pipe doubles cutting wireline slip/cut on way out F/9332 to T/7017 ft RKB.

1900-2030 About 300 ft below mudline, R/U wireline and wireline equipment, splice wireline into the SLB wireline unit. SLB wireline continue to attempt to remove the Cement Liner from the BHA.

2030-2230 M/U wireline to the bails on the TDS to enable a more straight pull from the hole. Pump seawater through the TDS in an attempt to reduce the mass of the high density mud in the drill pipe. No flow was possible. Repeated attempts to remove the Cement Liner from the BHA were unsuccessful.

2230-2400 POOH drill pipe in doubles cutting wireline slip/cut on way out F/7017 to T/6326 (above seafloor) ft RKB.

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

Remove the Cement Liner from the BHA, re-enter **Hole UT-GOM2-2-H002**, RIH PCTB-CS BHA to above the Orange Sand and set a ~300 ft long cement plug.

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:

Core UT-GOM2-2-H002-15CS: 4.10 ft (41% recovery), 0 psi. (in core receiving)

Coring F/ 9322 - T/ 9332 ft RKB at 80 rpm, maintaining 10-12k on bit, CMT pumping 10.5 ppg WBM at 3.0 bpm and 101 psi.

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

Coring operations in **Hole UT-GOM2-2-H002** ended today with the recovery and processing of **Core UT-GOM2-2-H002-15CS** from the depth interval 9322-9332 ft RKB (2816-2826 fbsf), which also marked the total final depth of **Hole UT-GOM2-2-H002** at 9332 ft RKB (2826 fbsf) (Figure 1, Table 1). **Core UT-GOM2-2-H002-14CS** and **Core UT-GOM2-2-H002-15CS** were also processed today as conventional core and important interstitial-water, microbiological, and headspace geochemistry samples were collected from the core. It is also important to note that Geotek has been acquiring X-ray scans of the conventionalized core using PCATS to help direct the core sub-sampling efforts.

Since 0650 hr today Geotek and the Helix D/V Q4000 rig crew have been dealing with freeing the Geotek Cement Liner BHA and regaining the ability to circulate through the drill bit and pipe. The focus of this effort has been the consideration that we may be dealing with a “pressure lock” that formed at the bottom of the BHA when the Geotek Cement Liner was landed out in the BHA during deployment. As reviewed in the above “4. DESCRIPTION OF OPERATIONS” section of this report, after making a number attempts to pull the Cement Liner from the BHA, the decision was made to cut the wireline connected to the Cement Liner and slip/cut while tripping the BHA back to near the seafloor and to try again to pull the Cement Liner from the BHA, which started near the end of today’s reporting period at midnight on 27-AUG-23.

Additional Information from the morning of 28-AUG-23: Additional attempts to pull the Cement Liner from the BHA at approximately 3000 ft RKB was unsuccessful. The decision was made to pull the BHA back to the ship for further inspection and analysis.

The Scientific Party is working on finalizing the writing assignments in support of the hole section descriptions in the Expedition Report and processing samples and data that have been collected during the expedition. In addition, the UT Scientific Party have been working with Geotek staff to further develop and refine the operational plans for the post-expedition core processing and analysis efforts to be conducted at the Geotek facilities at Salt Lake City.

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

9. ACRONYMS

bpm	Barrels per minute
Fish	The object to be recovered from the borehole/BHA
gpm	Gallons per minute
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
P/U	Pick up
RIH	Run in hole
RKB	Depth measured from the rig floor
rpm	Revolutions per minute
R/U	Rig up
SLB	Schlumberger
Slickline	Wireline used to deploy and recover core, etc.
TD	Total depth
TDS	Top drive system
WOB	Weight on bit

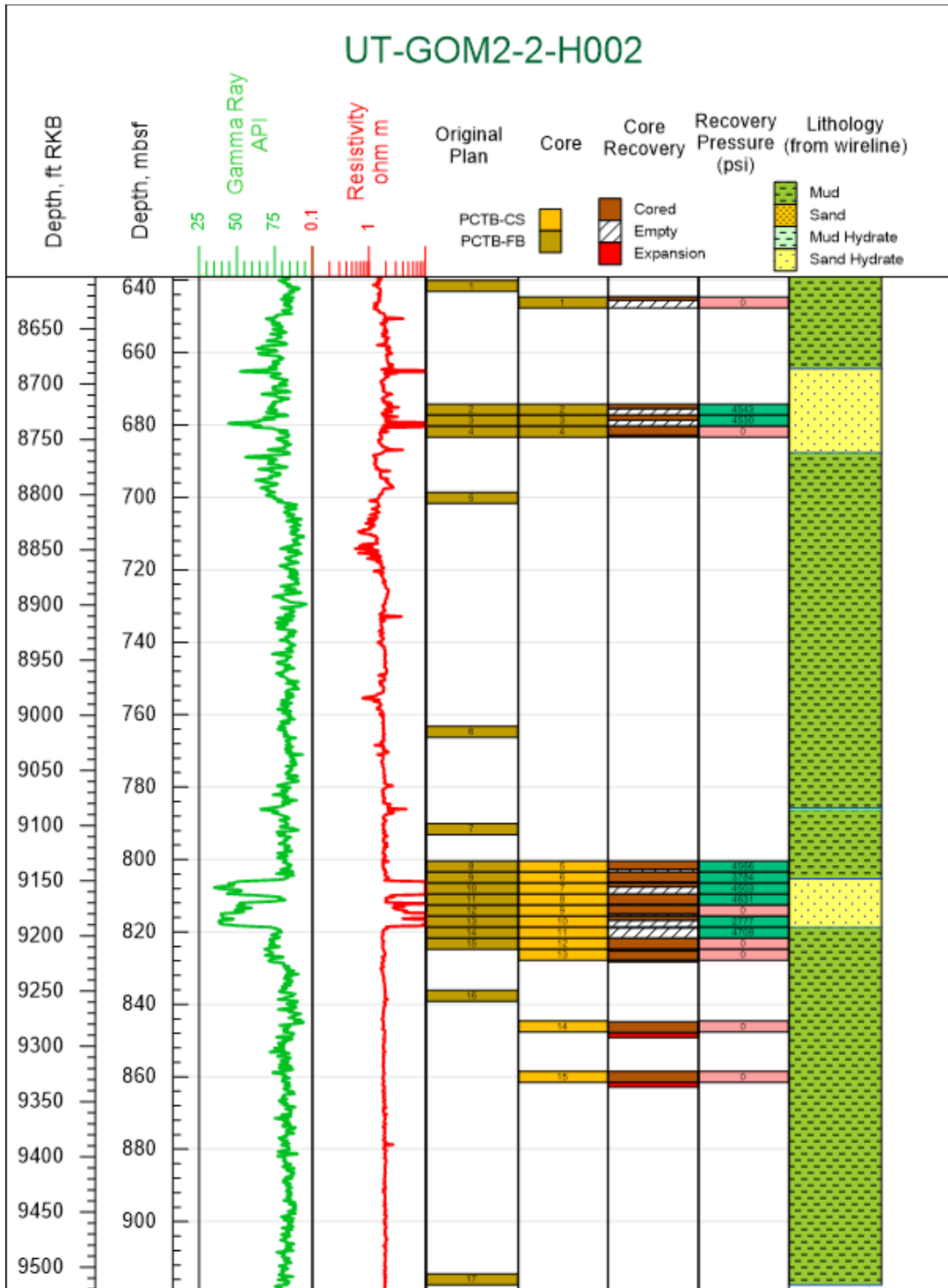


Figure 1: Core recovery plot for the UT-GOM2-2-H002 well as of 24:00 hr 27-AUG-2023. 'PCTB-FB' and 'PCTB-CS' records core recovered by the face bit and cutting shoe versions of the Pressure Coring Tool with Ball (PCTB). Under 'Recovery Pressure', areas colored pink indicate a ball valve that did not seal (End of Hole).

Table 1: PCTB-FB and PCTB-CS pressure core results in Hole UT-GOM2-2-H002 through 27-AUG-2023 (End of Hole).

CORE System	Core Number	Core top (RKB ft)	CORE Top (fbsf)	CORE Bottom (fbsf)	CORE Advance (ft)	Curated length (ft)	Recovery (%)	In situ Pressure (psi)	Tool Boost Set Pressure (psi)	Recovery Pressure (psi)
PCTB-FB	1	8621	2115	2125	10	3.31	33%	3820	4500	0
PCTB-FB	2	8718	2212	2222	10	4.30	43%	3863	4500	4543
PCTB-FB	3	8728	2222	2232	10	4.66	47%	3867	4500	4530
PCTB-FB	4	8738	2232	2242	10	8.63	86%	3872	4500	0
PCTB-CS	5	9132	2626	2636	10	7.61	76%	4047	4500	4566
PCTB-CS	6	9142	2636	2646	10	8.89	89%	4051	4500	3784
PCTB-CS	7	9152	2646	2656	10	3.80	38%	4056	4500	4503
PCTB-CS	8	9162	2656	2666	10	9.81	98%	4060	4500	4631
PCTB-CS	9	9172	2666	2676	10	8.20	82%	4065	4500	0
PCTB-CS	10	9182	2676	2686	10	4.07	41%	4069	4500	2777
PCTB-CS	11	9192	2686	2696	10	0.59	6%	4073	4500	4708
PCTB-CS	12	9202	2696	2706	10	11.38	114%	4078	4500	0
PCTB-CS	13	9212	2706	2716	10	11.29	113%	4082	4500	0
PCTB-CS	14	9277	2771	2781	10	11.29	113%	4111	5200	0
PCTB-CS	15	9322	2816	2826	10	4.10	41%	4131	5500	0