

IODP EXP 358 Daily Geomechanics Report

Report #055 20190103

RTG Team

RTG Supervisor(s)	David Castillo / Thomas Finkbeiner / Demian Saffer
RTG Watch Lead (00:00-12:00)	Kan Aoike
RTG Watch Lead (12:00-24:00)	Toby Colson

Well Status

Site Name:	C0002	Hole Name:	R
Water Depth:	1,939.0 m	RT-MSL:	28.5 m
0600h Depth:	5,052.0 mBRT (5049.0) (mTVD)	Section TD:	5,667.5 mBRT (5,664.5) (mTVD)
Section #:	0	CSG Depth/Size:	4757.0 mBRT 11-3/4 inches
Static MW:	1.39 sg	Current ECD:	(1.41) sg
FIT/LOT/ XLOT:	1.46sg FIT @ 4,757mBRT.		
Current formation/ lithology:	Shale		
Sensor Offsets from the Bit:	TeleScope 675: (Direction + Inclination: 18.00 m)		
Other BHA Offsets from the Bit:	8-1/2" Mill Tool Bit: 0~0.24 m Motor with 1.5 deg bend: 0.24~8.09 m 8.125" Stabilizer: 8.09~9.76 m 2 x 6-3/4" Non-Magnetic Drill Collar + TeleScope 675: 10.54~32.21 m 9 x 6-3/4" Drill Collar: 32.21~116.80 m 6-1/2" Hydraulic Jar: 116.80~126.73 m 2 x 6-3/4" Drill Collar: 127.73~145.39 m 12 x 5.68" Heavy Weight Drill Pipe: 146.19~257.14 m Top of BHA: 258.14 m		
Current Operations:	Continued with wiper trip to bottom, reaming and working tight spots.		

Geomechanics Alert

GREEN	Green = Projected model remains accurate White = Unanticipated deviation from model which <i>should not</i> affect drilling Yellow = Unanticipated deviation from model which <i>may</i> affect drilling Red = Imminent requirement to stop drilling
Basis for Alert Level + Recommendations	1.39 sg remains recommended MW for Section 1. Observation suggests hole cleaning remains a key factor in current wellbore condition.

Principal Findings

N/A

IODP EXP 358 Daily Geomechanics Report

Report #055 20190103

Observations Summary

Use this space to discuss any observations while drilling, running casing etc.

Fracture Gradient	N/A
Pore Pressure	No indications of overpressure observed.
Wellbore Breakout	N/A
Tensile Failure	N/A
Drilling Parameters	N/A
Other	N/A

Analysis

Drilling Experience Analysis

Conducted wiper trip reaming and working tight spots. Encountered possible ledging at 4,840mBRT likely associated with tuff layers. Encountered resistance at 4,804 mBRT which is suspected being due to high dog leg severity. There remains likely fatigued/weakened rock above 4,840mBRT due to proximity of <1m from the offset well. This combined with a tuff layer between ~ 4,830 and 4,840 mBRT and a high dogleg severity will be hampering efforts to easily ream/re-work the section.

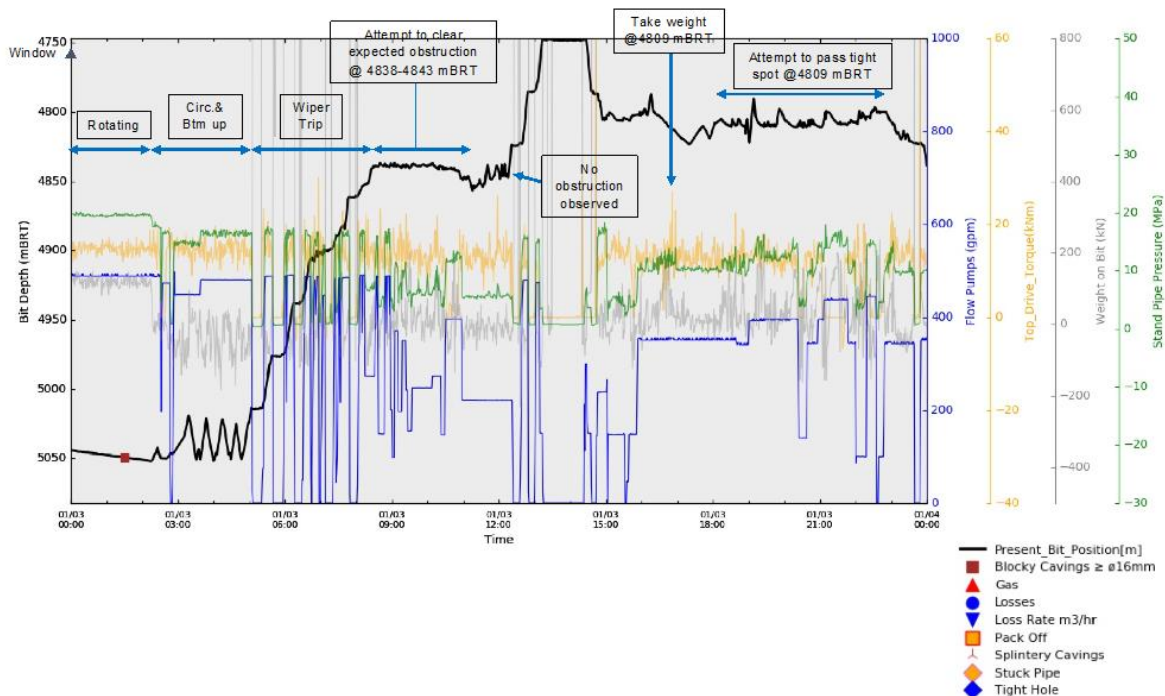


Figure 1: Drilling experiences over the last 24 hrs (~24:00 Jan. 3).

Cuttings and Cavings Analysis

Coarser shale/mudstone fragments > ø4mm with sharp edges remain blocky with minor occurrence of platy fragments. Tuff fragments with generally rounded shapes remain present throughout; however, proportion in coarser grains ≥ ø4mm are ~1-2 % in most samples.

A large portion (>50%) of rounded/reworked cuttings were seen whilst boosting the riser and circulating bottoms up. Abundance decreased and during the wiper trip and reaming/re-working the majority of cuttings are small <9mm fresh cuttings likely resulting from the reaming of tight spots/ledges. It remains possible that larger cuttings/cavings are not being effectively circulated out.

IODP EXP 358 Daily Geomechanics Report

Report #055 20190103

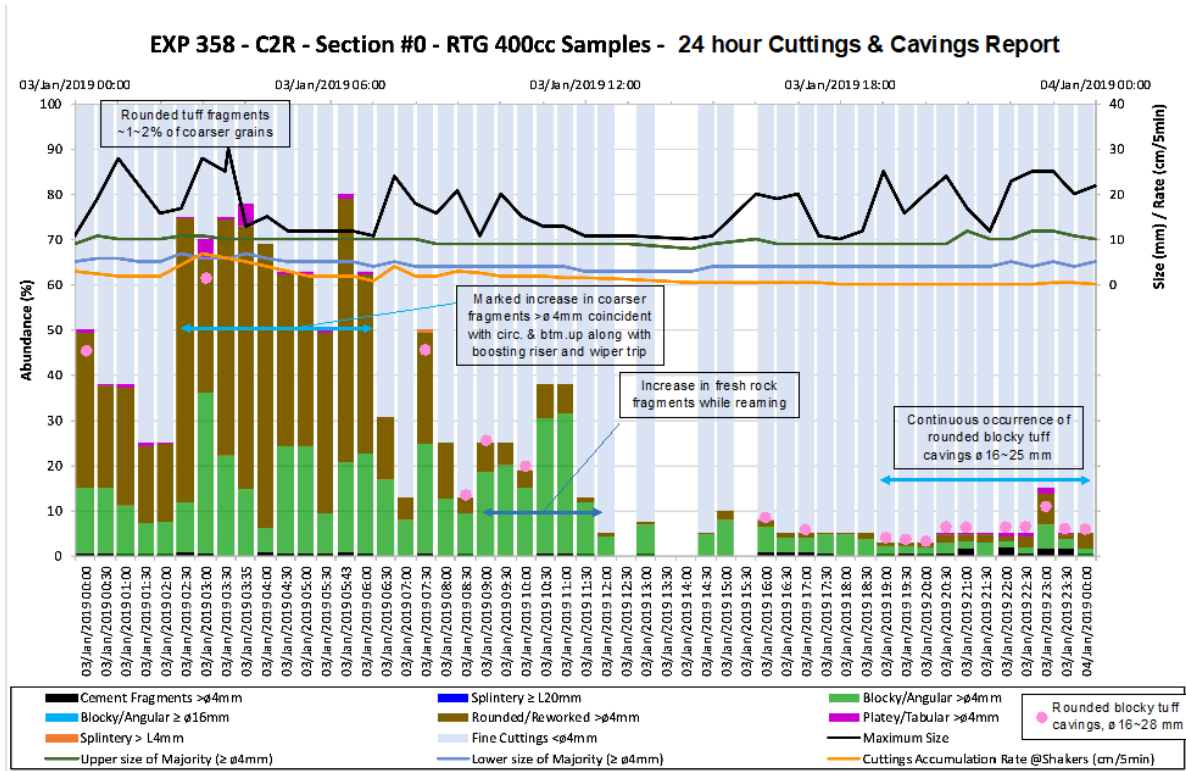


Figure 2: Analysis of cuttings/cavings > ø 4mm (taken from 400cc RTG Samples) over last 24 hrs (~24:00 Jan.3). Not corrected for lag-time.

The marked increase in rounded cuttings after 0230 hrs is likely due to cuttings that were trapped in the riser and released after increasing the riser flow rate to ~900 gpm (boosting riser) and wiper trip. Rounded large blocky tuff cavings continuously occurred after 1900 hrs while reaming up/down to pass the tight spot at around 4809 mBRT.

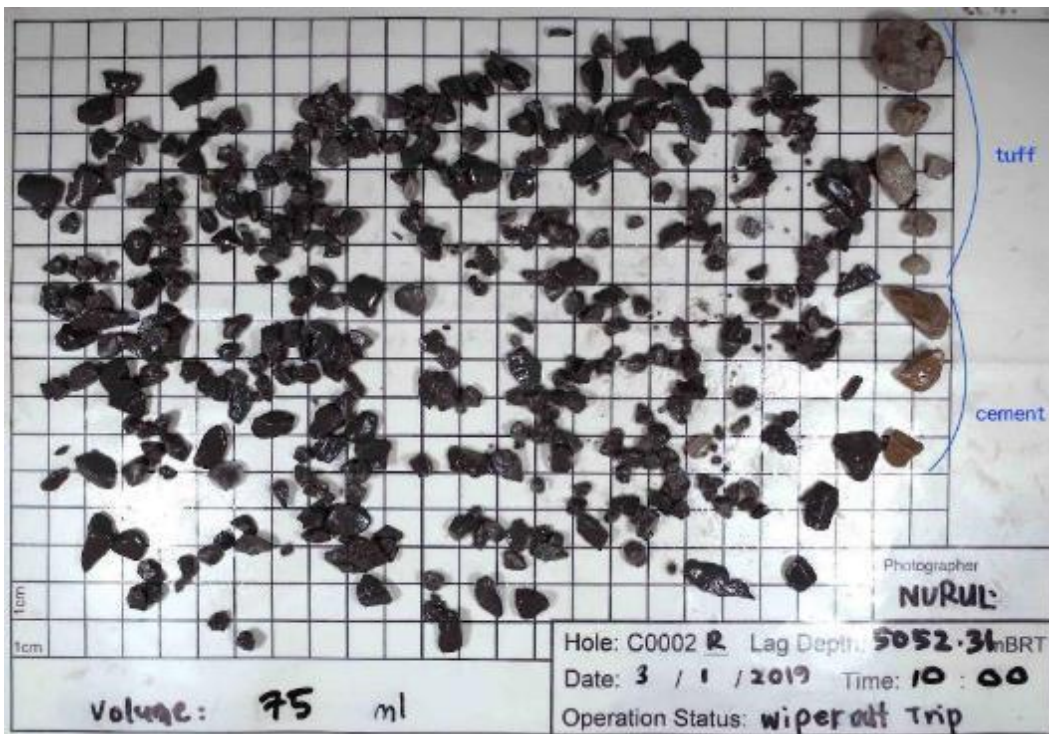


Figure 3: Example of cuttings/cavings > ø 4mm (taken from 400cc RTG Samples). Fresh shale fragments ≤ ø10 mm are predominant, with rounded large blocky tuff cavings and angular cement fragments.

IODP EXP 358 Daily Geomechanics Report
Report #055 20190103

LWD Data Analysis

N/A

SFIB Analysis

No further updates

IODP EXP 358 Daily Geomechanics Report

Report #055 20190103

Geomechanical Model Review

No change in the current stress model.

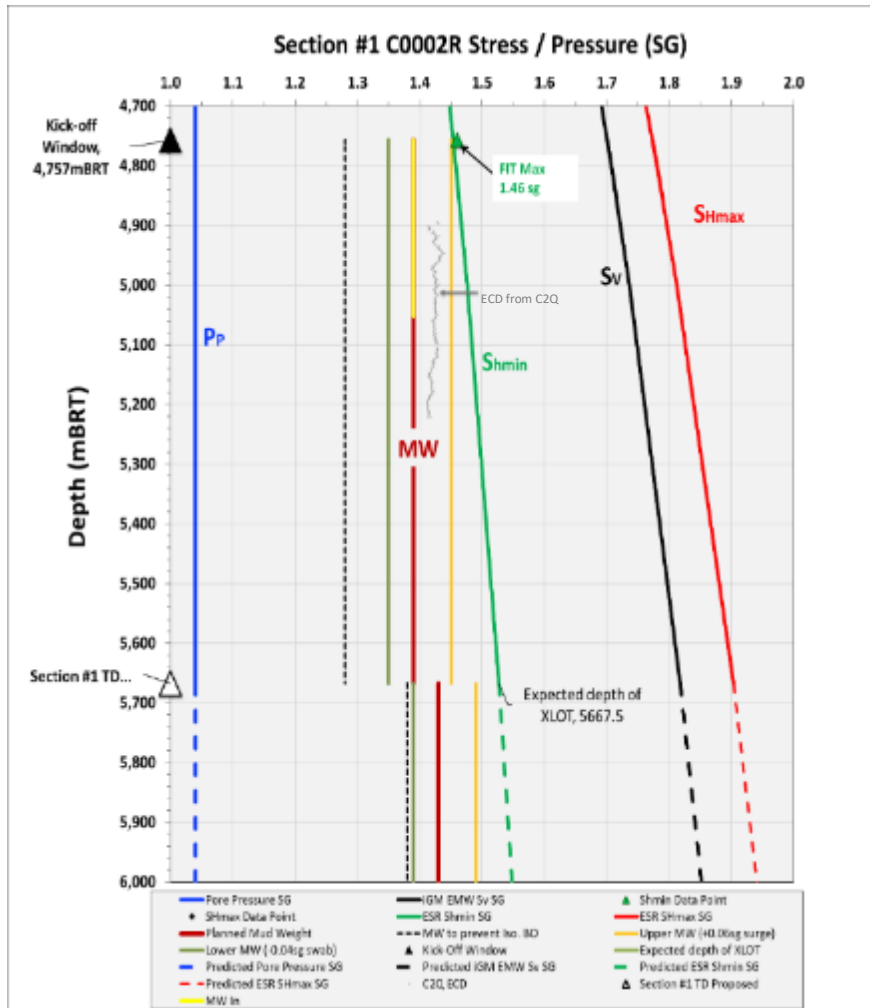


Figure 4: Current stress model for Section #1

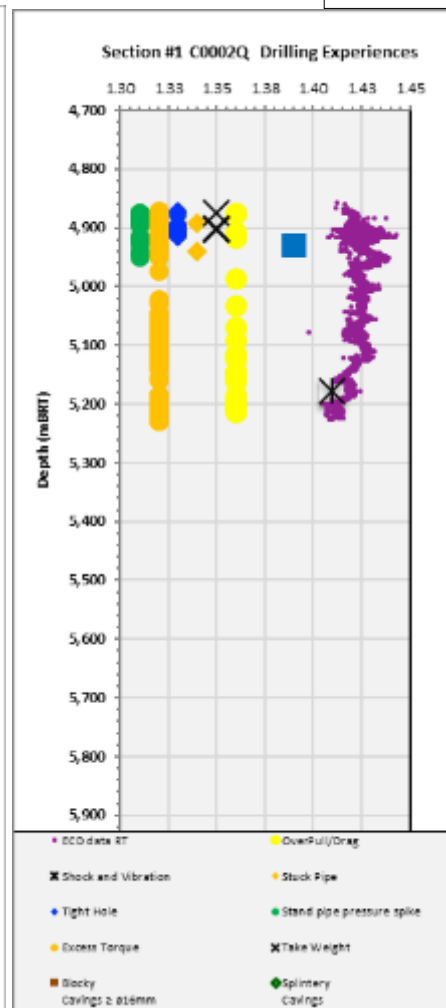


Figure 5: C0002Q Drilling Experiences

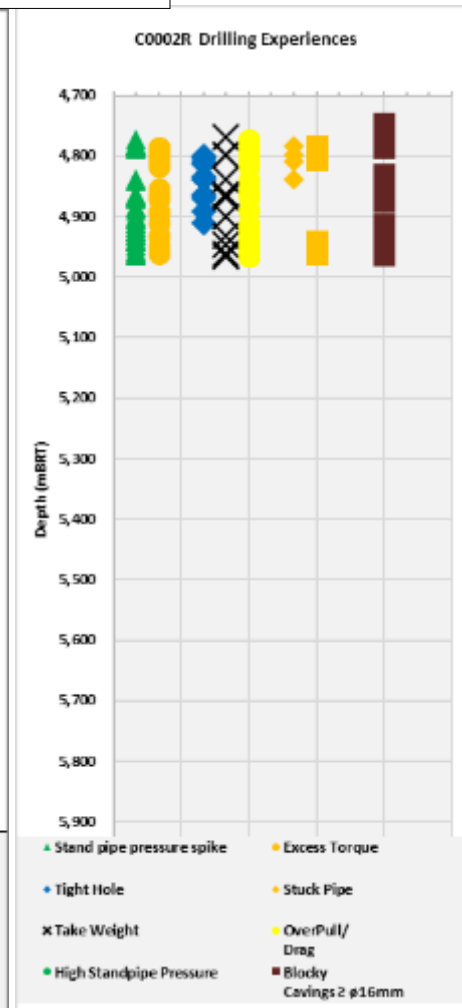


Figure 6: C0002R Drilling Experiences