IODP EXP 358 Daily Geomechanics Report

Report #048 20181227

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:	4,933.5 (4,931.5)	mBRT (mTVD)	**Section TD:**	5,667.5 (5,664.5)	mBRT (mTVD)
Section #:	0		**CSG Depth/Size:**	4757.0 11-3/4	mBRT inches
Static MW:	1.39	sg	**Current ECD:**	(1.42)	sg
FIT/LOT/ XLOT:	1.46sg FIT @ 4,757mBRT.				
Current formation/ lithology:	Shale				
Sensor Offsets from the Bit:	TeleScope 675: (Direction + Inclination: 18.37 m)				
Other BHA Offsets from the Bit:	8-1/2” Insert Rock Bit: 0~0.25 m 8.125” Stabilizer: 8.47~10.13 m 2 x 6-3/4” Non-Magnetic Drill Collar + TeleScope 675: 10.91~32.58 m 9 x 6-3/4” Drill Collar: 32.58~117.17 m 6-1/2” Hydraulic Jar: 117.17~127.10 m 2 x 6-3/4” Drill Collar: 127.10~145.76 m 12 x 5.68” Heavy Weight Drill Pipe: 146.56~257.51 m Top of BHA: 258.51 m				
Current Operations:	Drilled 8-1/2” hole from 4887.5 m to 4927 mBRT, then commenced directional drilling with sliding and drilling down. 4933.5 mBRT (bit depth) as of 06:00 Dec.28.				

Geomechanics Alert

GREEN	Green = Projected model remains accurate White = Unanticipated deviation from model which *should not* affect drilling Yellow = Unanticipated deviation from model which *may* affect drilling Red = Imminent requirement to stop drilling
Basis for Alert Level + Recommendations	No further observations have been made to suggest any change in wellbore condition 1.39 sg remains recommended MW for Section 1.

Principal Findings

N/A

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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

Drilled ahead with consistent and stable response below 4941 mBRT since 14:00 Dec.26. Survey's indicate lateral separation from the Q well was ~1 m in the section above 4941 mBRT and then has increased with depth in the section below. Probable improvement in drilling response may be associated with departure from a greater damage zone of the Q well where the rock may have been fatigued from previous drilling with associated poor wellbore wall integrity.

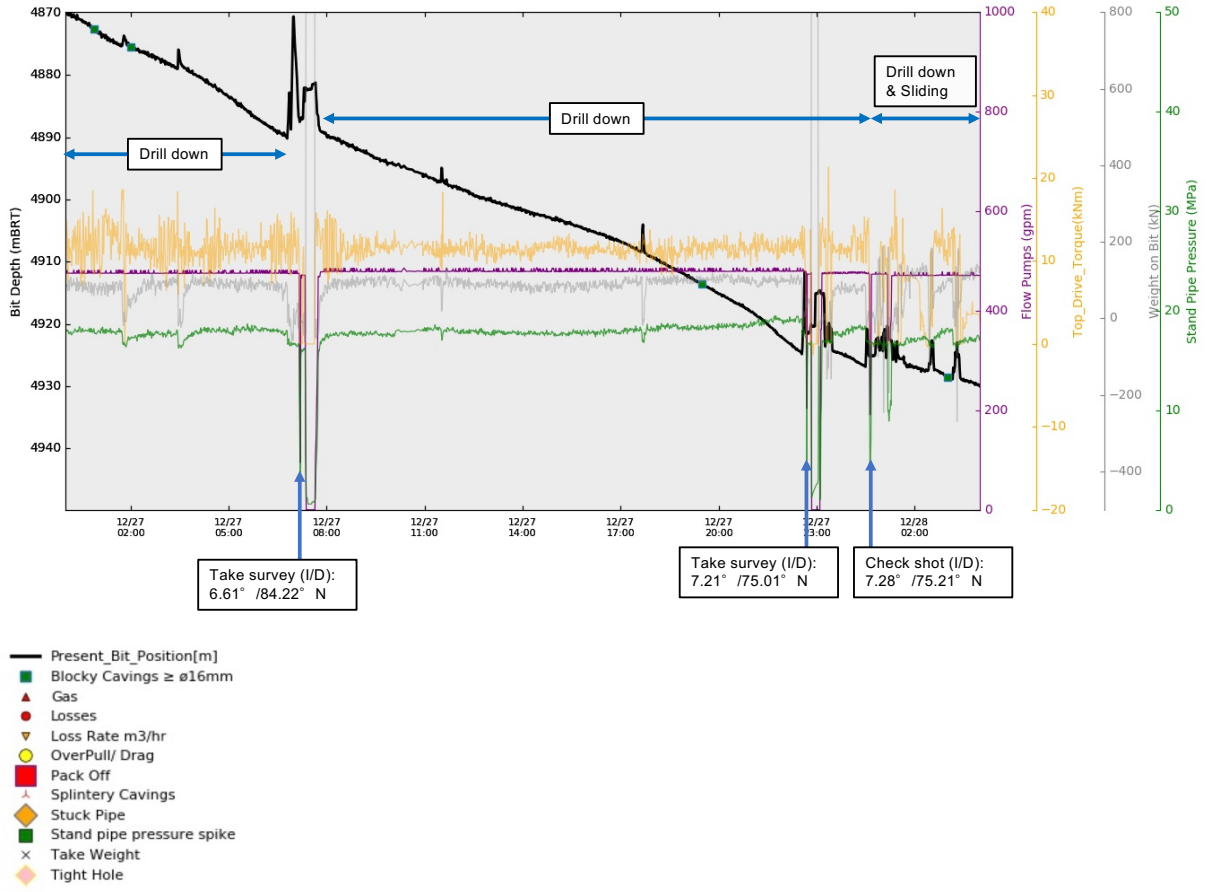

Figure 1: Drilling experiences over the last 28 hrs (~04:00 Dec.27).

Cuttings and Cavings Analysis

Coarser rock fragments > ø4mm in diameter, which are possibly coarse cuttings or fine cavings, were typically blocky and approximately 10 mm in size. No notable indications of wellbore instability were seen. Tuff grains are steadily contained. They are generally rounded in shape and relatively greater than shale fragments in size (~ø30 mm).

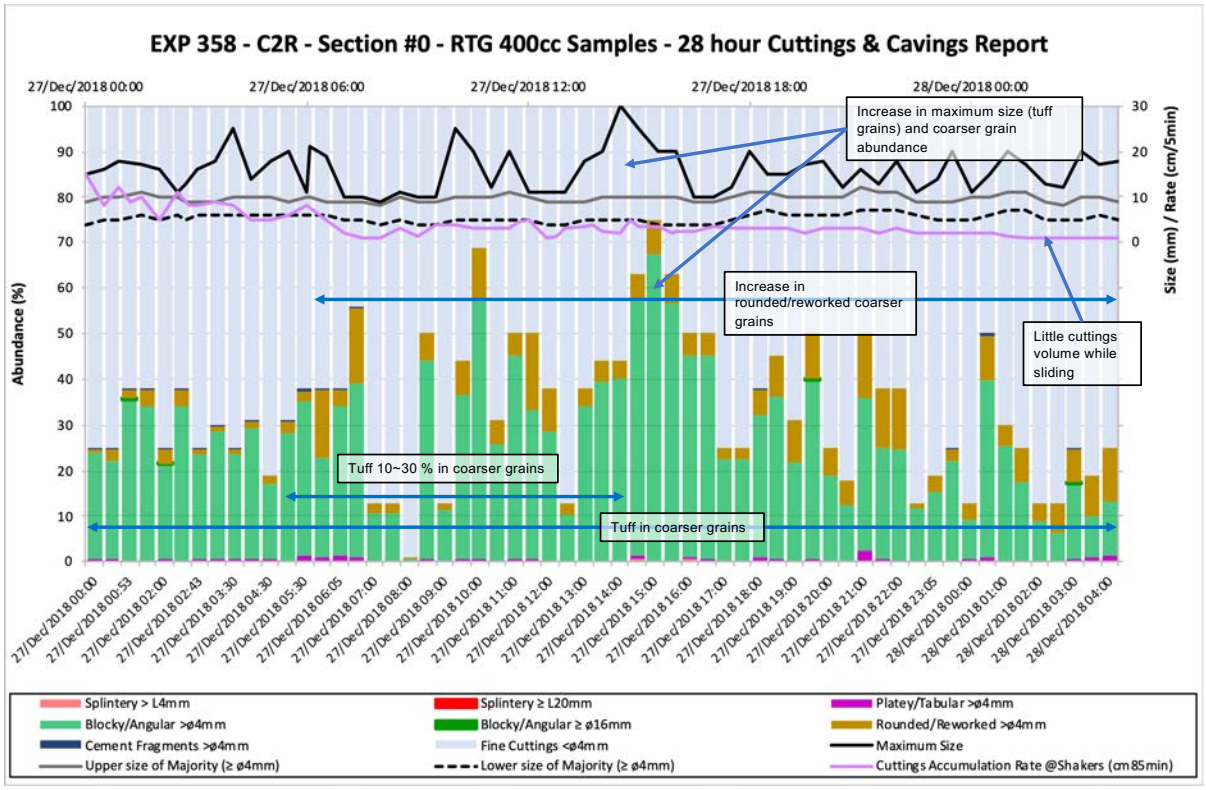

Figure 2: Analysis of cuttings/cavings > ø 4mm (taken from 400cc RTG Samples) over last 28 hrs (~04:00 Dec.27).

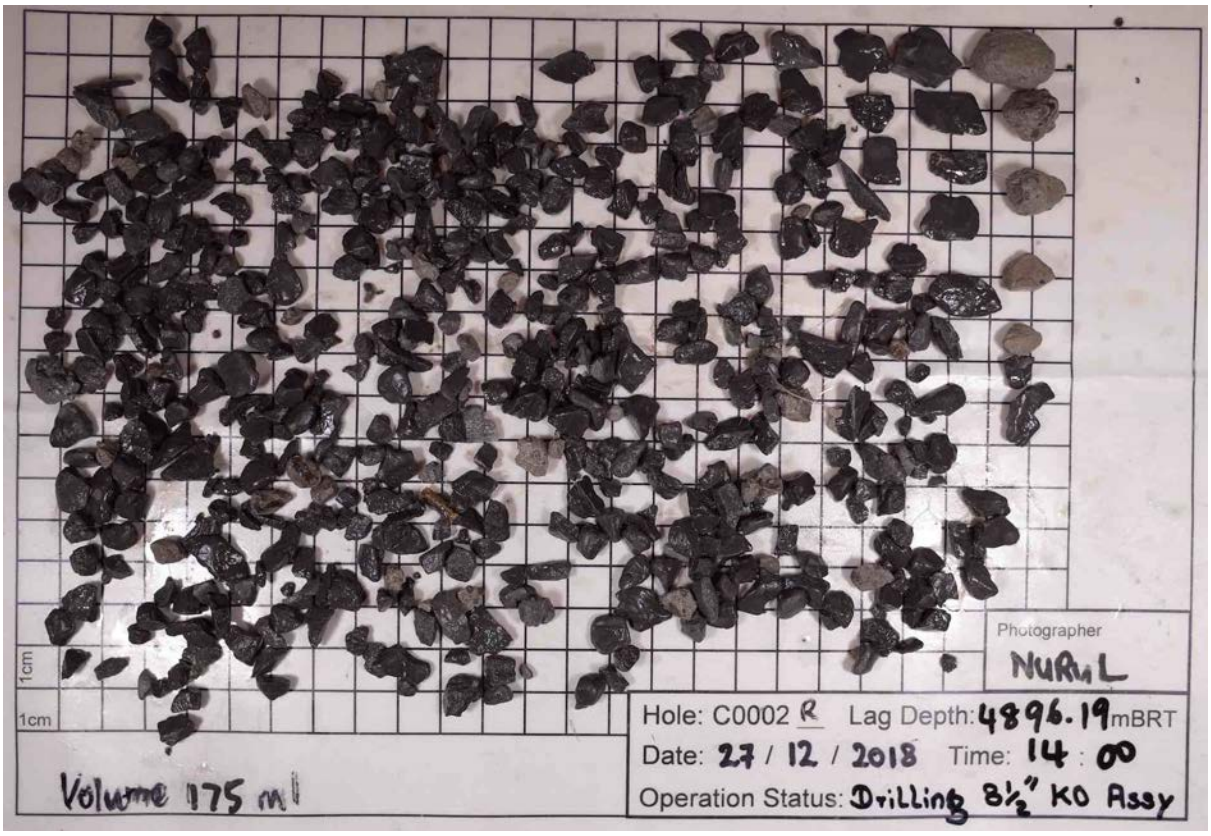

Figure 3: Example of cuttings/cavings > ø 4mm (taken from 400cc RTG Samples). Light gray rounded grains are tuff fragments.

LWD Data Analysis
N/A

SFIB Analysis
No further updates

Geomechanical Model Review

No change in the current stress model.

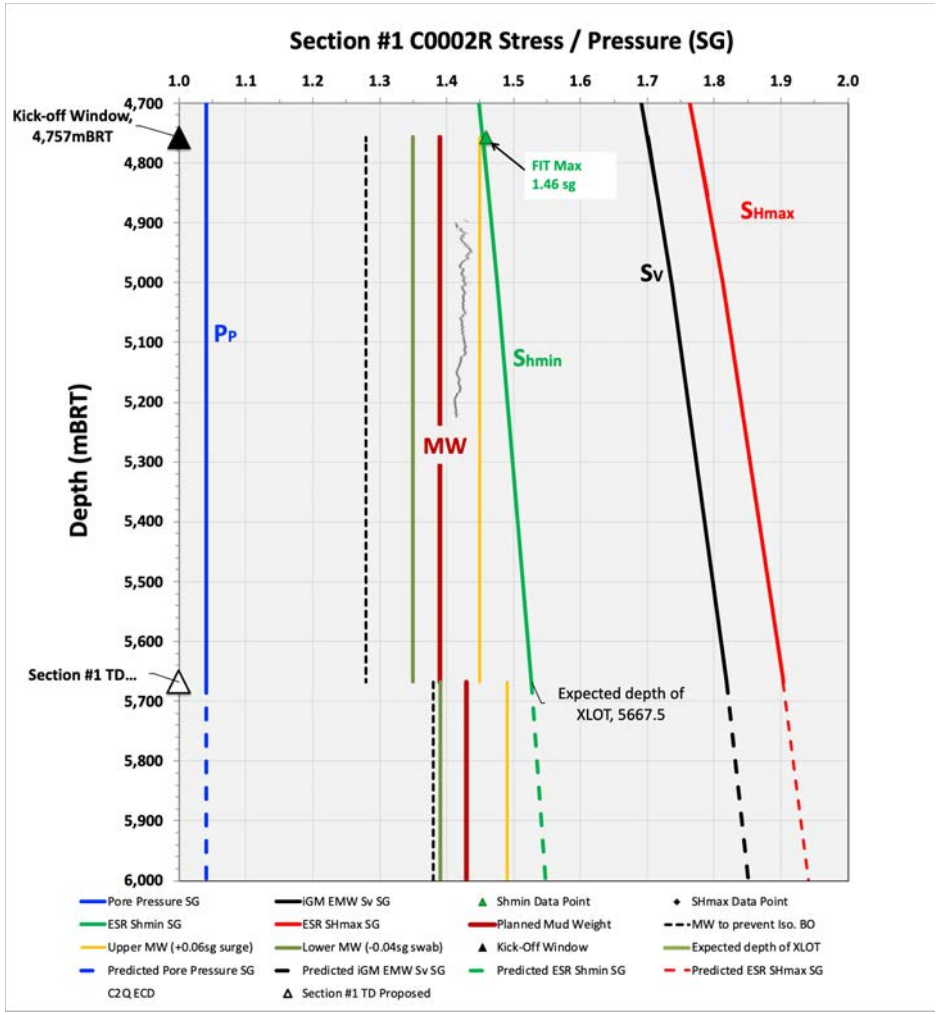

Figure 4: Current stress model for Section #1

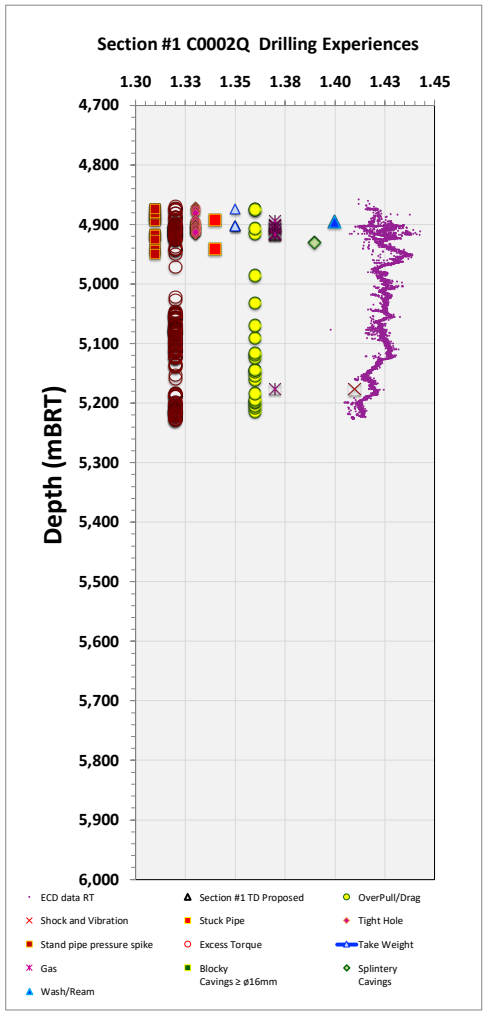

Figure 5: C0002Q Drilling Experiences