

IODP EXP 358 Daily Geomechanics Report

Report #044 20181223

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:	4,807.9 mBRT (4,809.9) (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:	1.37 sg	Current ECD:	(1.39) 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:	RIH with BHA to 4772 mBRT and commenced drilling 8-1/2" kick-off hole. Took survey at 4771.8 and 4785.6 mBRT. Obtained inclinations/azimuths of 1.92°/149.07°N and 1.44°/113.28°N, respectively.		

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	1.37 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	Total gas elevations up to 3%, from 22:00 Dec.23 to 02:00 Dec.24, mainly composed of C1. No indications of overpressure observed.
Wellbore Breakout	N/A
Tensile Failure	N/A
Drilling Parameters	N/A
Other	N/A

Analysis

Drilling Experience Analysis

Stuck pipe and pack off at 4783 mBRT. Worked free with no jars fired. High ROP with little WOB predominately associated with a fresh bit and motor in the BHA. High torque periodically encountered could be a result of fill (Fig.1).

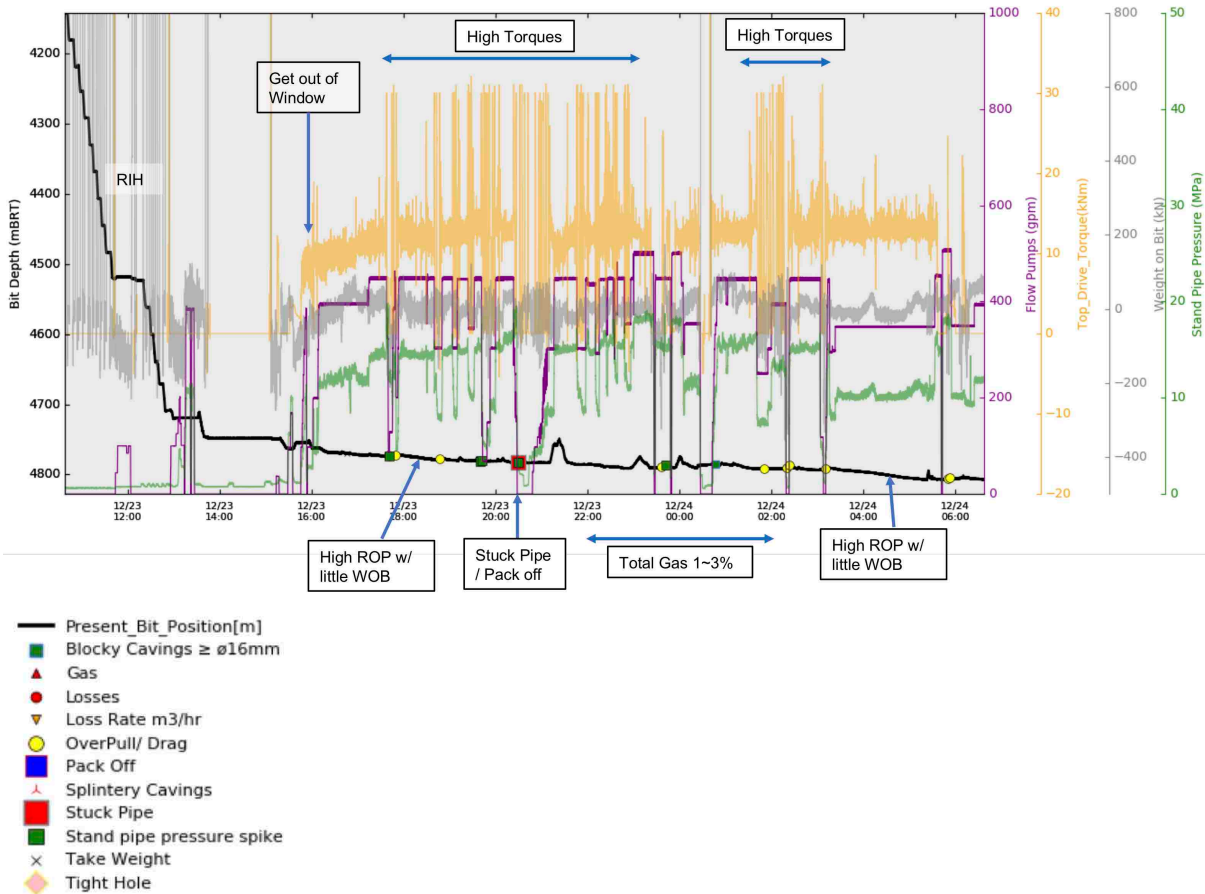


Figure 1: Drilling experiences over the last 18 hrs.

Cuttings and Cavings Analysis

Coarser “rock fragments” $> \phi 4\text{mm}$, which are possibly coarse cuttings and/or fine cavings, increased from ~2 % to 40~70 % in total cuttings per unit volume after midnight (Fig.2). Prior to this increment in coarser grains, accumulation rate of cuttings at the shakers abruptly increased 3 hours later after commencement of pumping and peaked at around 20:00 (Fig.3). Majority of the coarser rock fragments are fresh blocky or angular in shape and less than $\phi 10\text{ mm}$ in diameter (Figs. 2 and 4). Shapes and sizes of those are consistent with those formed by the current type bit.

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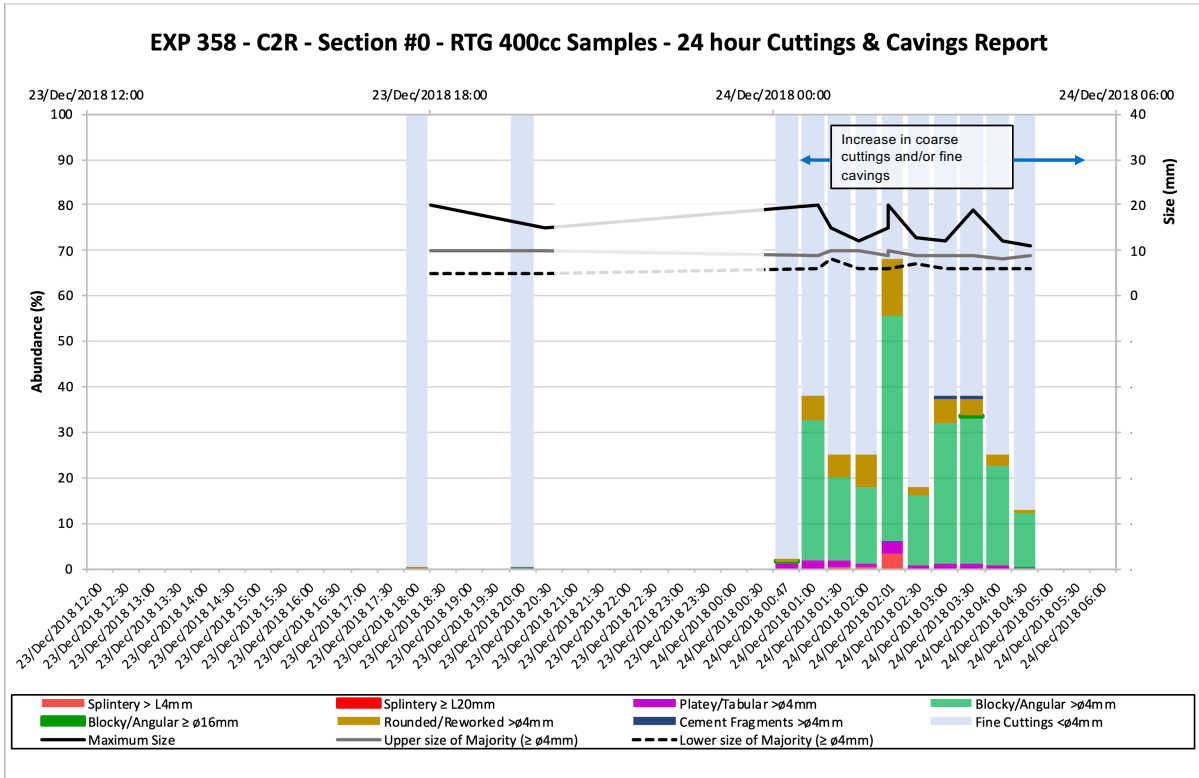


Figure 2: Analysis of cuttings/cavings > ø 4mm (taken from 400cc RTG Samples) over last 18 hrs.

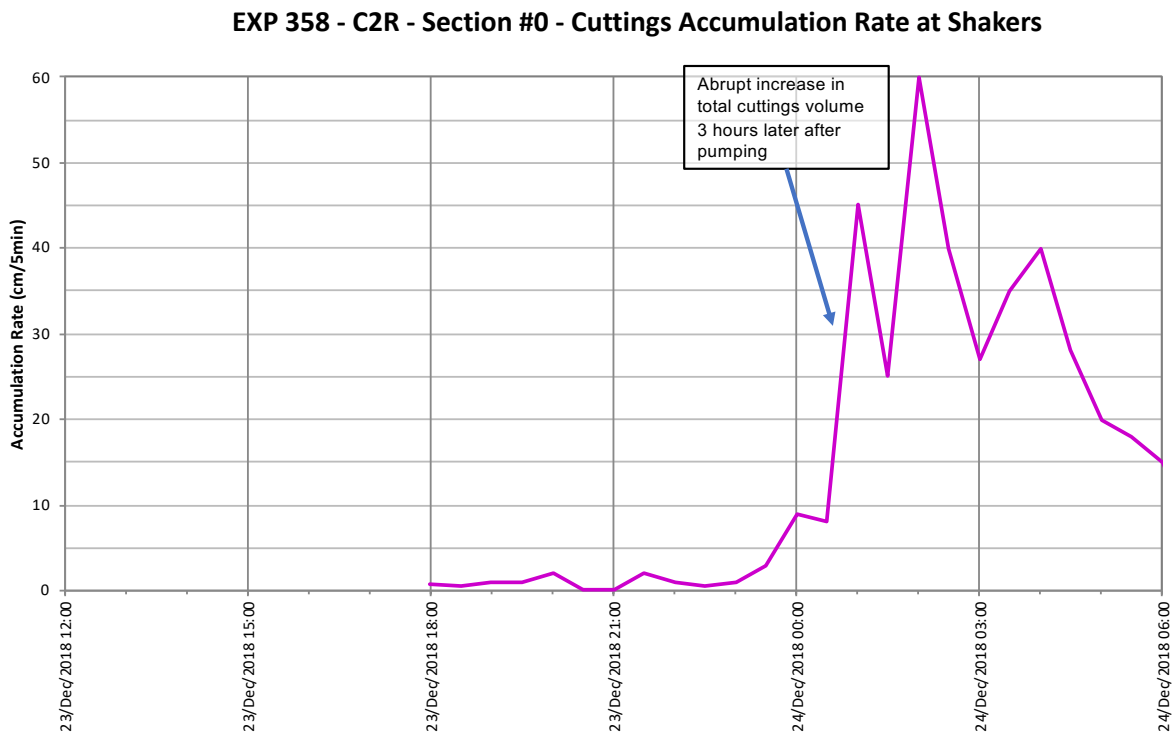


Figure 3: Cuttings accumulation rate (cm/5min) at the shakers over last 18 hrs.

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Figure 4: Example of cuttings/cavings > \varnothing 4mm (taken from 400cc RTG Samples).

LWD Data Analysis

N/A

SFIB Analysis

No further updates

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Geomechanical Model Review

No change in the current stress model.

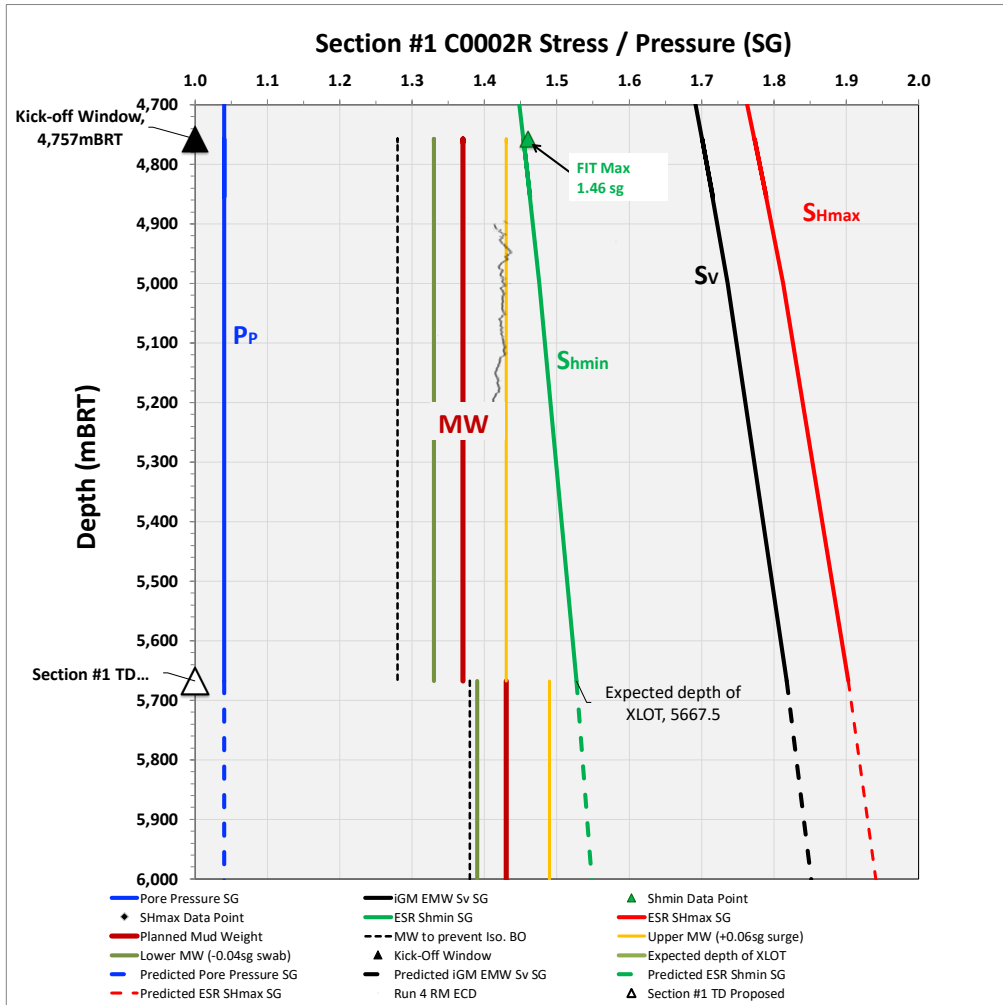


Figure 5: Current stress model for Section #1

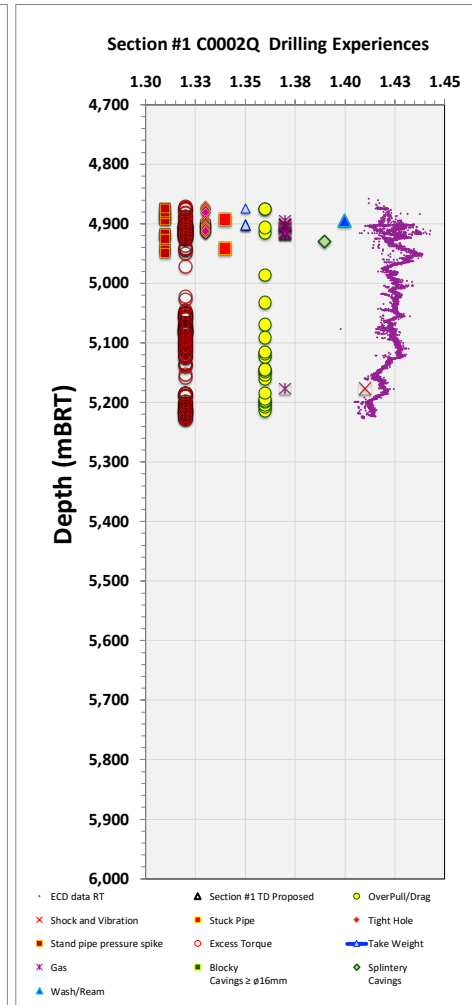


Figure 6: C0002Q Drilling Experiences