

IODP EXP 358 Daily Geomechanics Report

Report #046 20181225

RTG Team

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|------------------------------|--|
| 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: | 4,843.0 mBRT (4,841.0) (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: 18.37 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: | Reamed and washed down to 4808.5 mBRT. Drilled and slid ahead to 4843 mBRT. Encountered tight holes at 4800-4805 mBRT, 4810-4813 mBRT and 4835-4839 mBRT. Took survey at 4787 mBRT, 4798 mBRT and 4805 mBRT, obtaining inclinations/azimuths of 0.60°/76.18°N, 0.98°/54.43°N and 1.38°/175.82°N, respectively. | | |

Geomechanics Alert

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|---|--|
| 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 | 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.

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| 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

Encountered a tight zone at 4800-4805 mBRT while reaming/washing down to 4808.5 mBRT in the original kick off hole. Encountered further tight zones associated with work pipe operations at 4810-4813 mBRT and 4835-4839 mBRT after commencing drilling down and sliding the new hole (jarring was performed several times at the latter tight zone). However, cuttings coming up to the shakers after those events have not indicated obvious hole collapse (see Cuttings and Cavings Analysis).

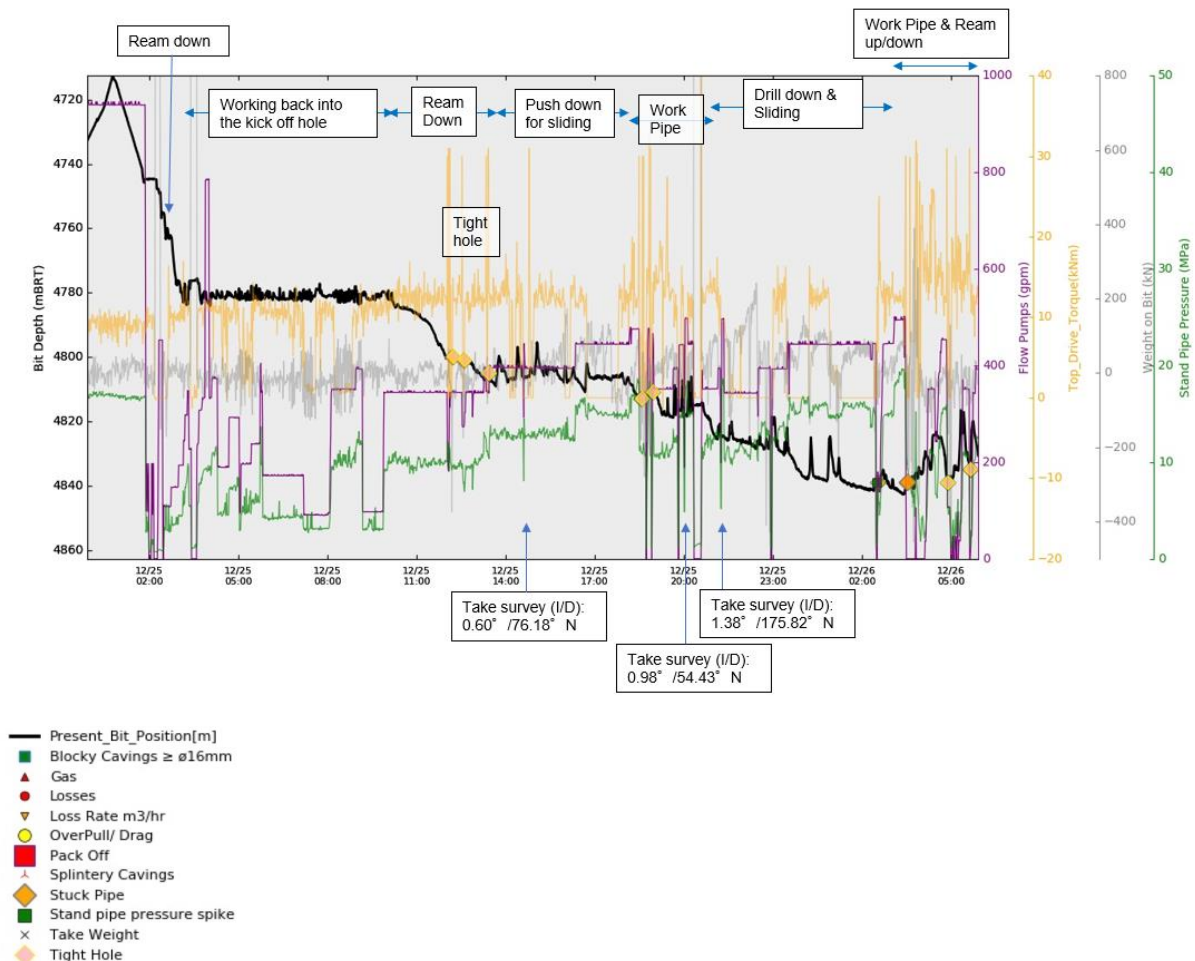


Figure 1: Drilling experiences over the last 29 hrs (~05:00 Dec.26).

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Cuttings and Cavings Analysis

Coarser rock fragments > ϕ 4mm 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 was seen. It remains possible that because flow rate was up to 450 gpm (Telescope LWD tool in hole was rated at less than 500 gpm) larger cavings were not been cleared. However, a relative increase in cuttings volume was seen when returning to the previously drilled TD of the section (past 24 hours) suggesting the circulation was clearing some fill.

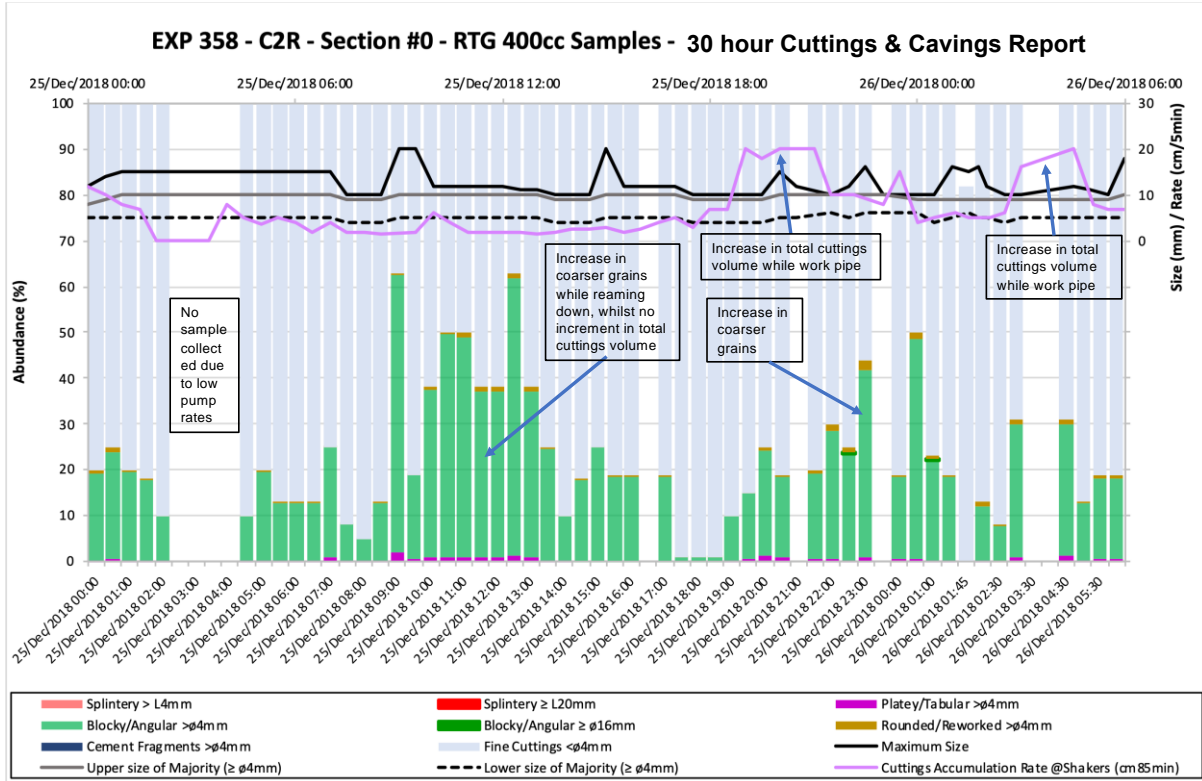


Figure 2: Analysis of cuttings/cavings > ϕ 4mm (taken from 400cc RTG Samples) over last 30 hrs (~06:00 Dec.26).

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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.

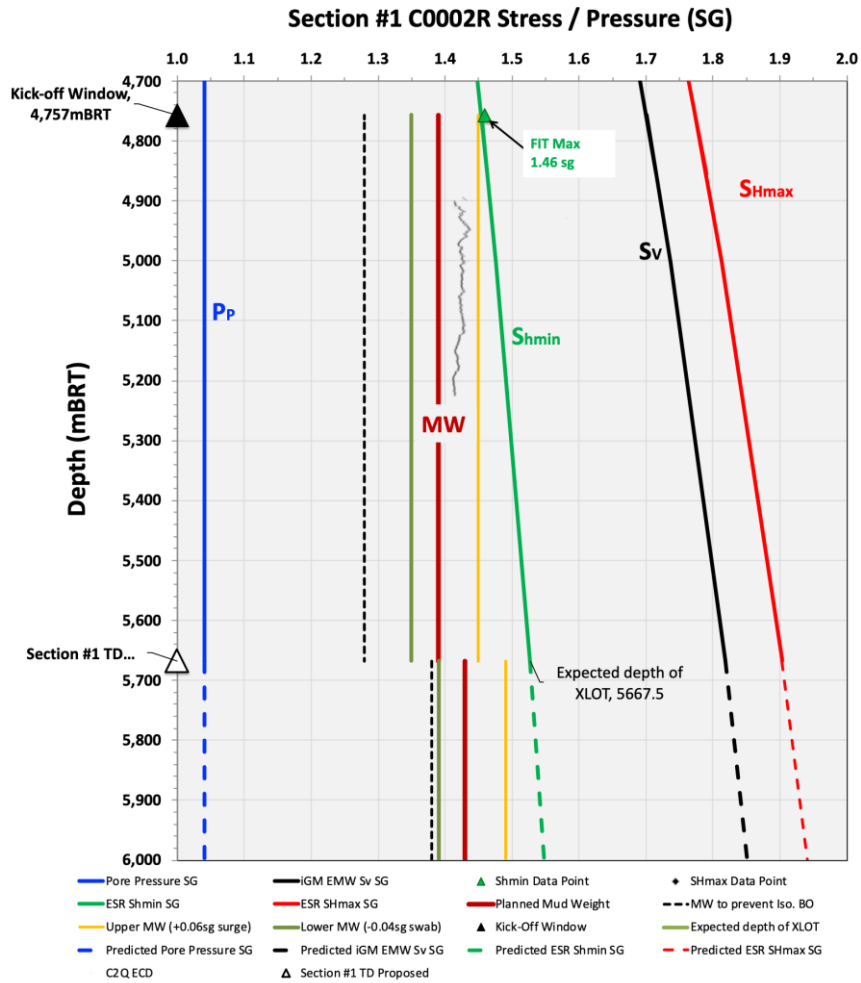


Figure 5: Current stress model for Section #1

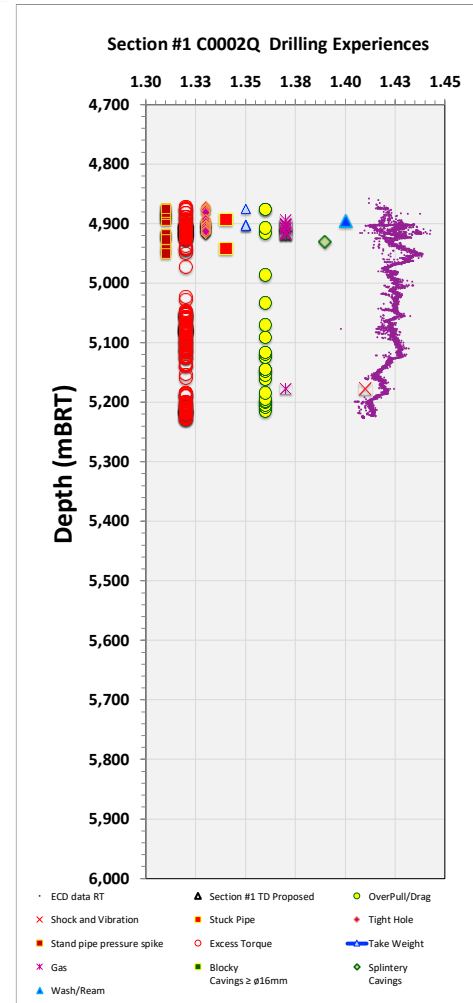


Figure 6: C0002Q Drilling Experiences