

Drilling Mechanics Log

DML

C0002R Run1, Measured Depth 1:200

Company: JAMSTEC

Well: C0002R

Field: C0002

Rig Name: D/V Chikyū

Prefecture: Wakayama

Country: Japan

Latitude: 33° 18' 3.042" N

UWID:

Longitude: 136° 38' 12.174" E

Rig Name:

D/V Chikyū

Block:

Rig Type:

Drill ship

FL: Pacific Ocean

FL1: X = 652,382.39 m

FL2: Y = 3,685,834.62 m

Log Measured From: - Drill Floor: 28.50 m
Permanent Datum: - Mean Sea Level

Ground Level: 1939.00 m

Acquisition Dates: 22-Dec-2018 -- 30-Dec-2018

Log Interval: 4772.00(m)MD-4963.00(m)MD

Index Types: Measured Depth

Index Scales: 1:200

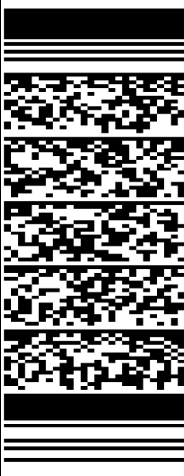
Depth Source: Driller's Depth

Depth Sensor: DES

Print Type: Final

Spud Date: 26-Oct-2018

Other Services:
Direction and Inclination



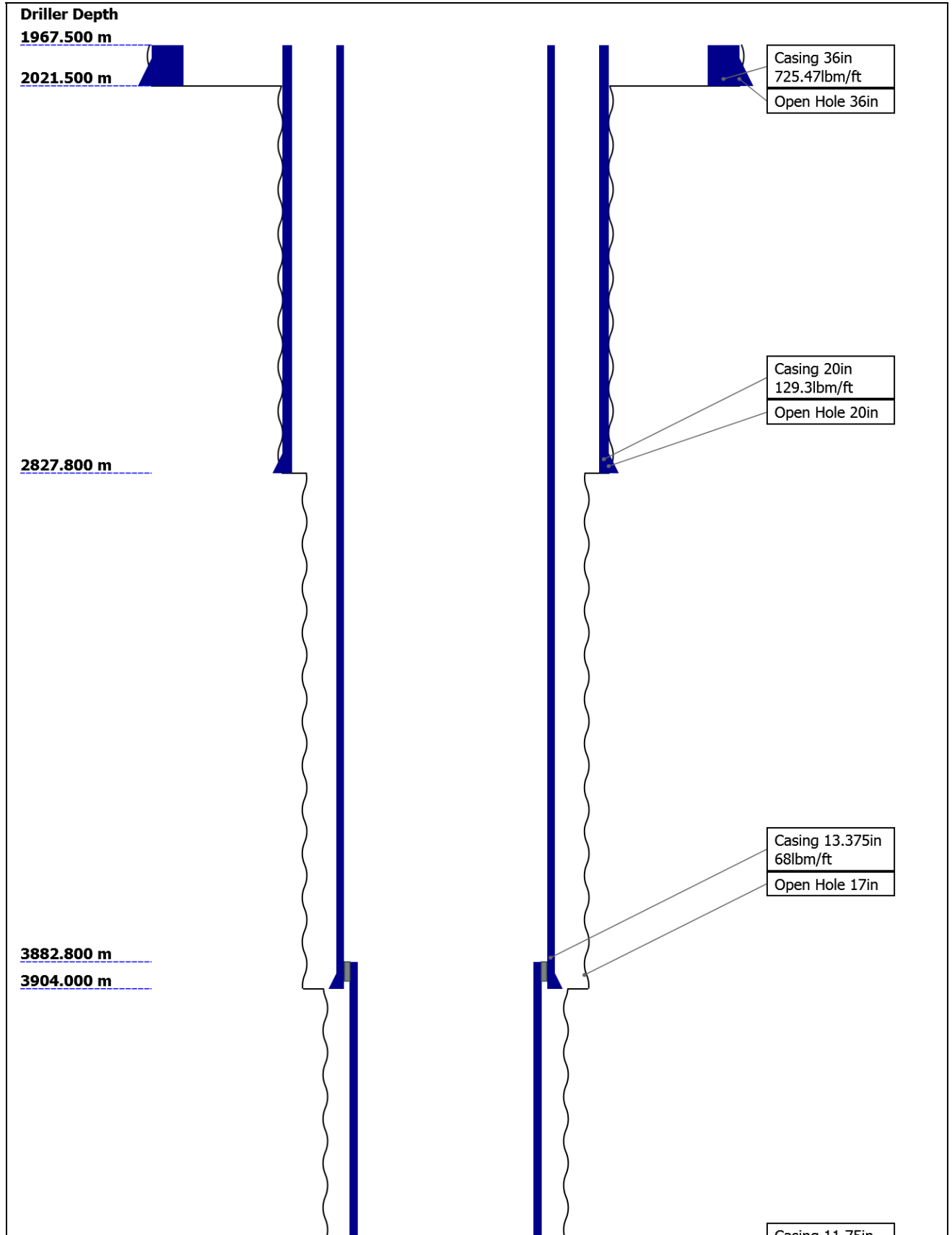
Disclaimer

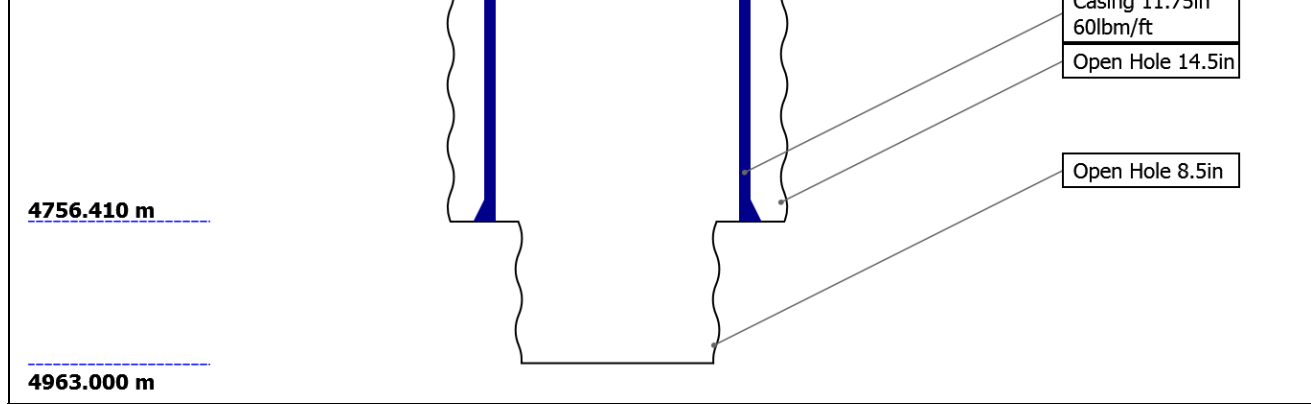
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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Well Sketch





Borehole Size/Casing Record

| | | | | | | |
|-----------------------|--------|--------|--------|---------|---------|--|
| Bit | | | | | | |
| Bit Size (in) | 36 | 20 | 17 | 14.5 | 8.5 | |
| Top Driller (m) | 1967.5 | 2021.5 | 2827.8 | 3904 | 4756.41 | |
| Bottom Driller (m) | 2021.5 | 2827.8 | 3904 | 4756.41 | 4963 | |
| Casing | | | | | | |
| Size (in) | 36 | 20 | 13.375 | 11.75 | | |
| Weight (lbm/ft) | 725.47 | 129.3 | 68 | 60 | | |
| Inner Diameter (in) | 32.099 | 18.779 | 12.415 | 10.772 | | |
| Grade | X56 | X56 | N/A | N/A | | |
| Top Driller (m) | 1967.5 | 1967.5 | 1967.5 | 3882.8 | | |
| Bottom Driller (m) | 2021.5 | 2827.8 | 3904 | 4756.41 | | |

Operational Run Summary

| | | | | | |
|----------------------------------|------------------------|--|--|--|--|
| Parameter (unit) | Run1 | | | | |
| Date Log Started | 22-Dec-2018 | | | | |
| Time Log Started | 22:23:55 | | | | |
| Date Log Finished | 30-Dec-2018 | | | | |
| Time Log Finished | 01:09:10 | | | | |
| Bit Size (in) | 8.500 | | | | |
| Bit Start Depth (m) | 4772.00 | | | | |
| Bit Stop Depth (m) | 4963.00 | | | | |
| Top Log Interval (m) | 4772.00 | | | | |
| Bottom Log Interval (m) | 4963.00 | | | | |
| Max Hole Deviation (deg) | 1.44 | | | | |
| Azimuth of Max Deviation (deg) | 140.07 | | | | |
| Logging Unit Number | OLU-MB 8054 | | | | |
| Logging Unit Location | Zone2 | | | | |
| Recorded By | SMoriyama/Bian KangLei | | | | |
| Witnessed By | YSanada/YKido | | | | |
| Service Order Number | 18JAP0007 | | | | |

Borehole Fluids

| Parameter(unit) | Run1 | | | | |
|------------------------------------|-------------|--|--|--|--|
| Fluid Type | Water | | | | |
| Max Recorded Temperatures (degC) | 32.16 | | | | |
| Source of Sample | Active Tank | | | | |
| Salinity (ppm) | 34972.18 | | | | |
| Density (g/cm3) | Zoned | | | | |
| Funnel Viscosity (s) | 63 | | | | |
| Fluid Loss (cm3) | 5.4 | | | | |
| PH | 9.8 | | | | |
| Source RMF | Pressed | | | | |
| RMC | Pressed | | | | |
| RM @ Meas Temp (ohm.m@degC) | 0.2 @ 20 | | | | |
| RMF @ Meas Temp (ohm.m@degC) | 0.15 @ 20 | | | | |
| RMC @ Meas Temp (ohm.m@degC) | | | | | |
| RM @ BHT (ohm.m@degC) | 0.12 @ 50 | | | | |
| RMF @ BHT (ohm.m@degC) | 0.09 @ 50 | | | | |
| RMC @ BHT (ohm.m@degC) | NaN @ 50 | | | | |
| Total Solid (%) | 18 | | | | |
| High Gravity Solids (%) | | | | | |

Zoned Borehole Fluids

Run1

| Parameter | Value | Start |
|-----------|-------|------------------------|
| Density | 1.37 | 12/22/2018 10:23:55 PM |
| Density | 1.39 | 12/25/2018 1:45:00 AM |

Remarks and Equipment Summary

| Run1: Toolstring | Run1: Remarks | | | | | | | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------|--------------|--------|-------------------------------|-------|--------------|--|-------------------------|-------|--------------|--|---------------|-------|--------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <table border="0"> <thead> <tr> <th>Equip name</th> <th>Length</th> <th>MP name</th> <th>Offset</th> </tr> </thead> <tbody> <tr> <td>NMDC: 6 3/4"[2] :KSBD14857</td> <td>32.58</td> <td>Schlumberger</td> <td></td> </tr> <tr> <td>X/O: 6 3/4"[2]:J N75</td> <td>23.17</td> <td>Schlumberger</td> <td></td> </tr> <tr> <td>TELE675:B0540</td> <td>22.68</td> <td>Schlumberger</td> <td></td> </tr> </tbody> </table> | Equip name | Length | MP name | Offset | NMDC: 6 3/4"[2] :KSBD14857 | 32.58 | Schlumberger | | X/O: 6 3/4"[2]:J N75 | 23.17 | Schlumberger | | TELE675:B0540 | 22.68 | Schlumberger | | <p>Depth Reference is driller's depth measured from Rotary Table.</p> <p>Data presented is Recorded Mode data which was acquired while drilling.</p> <p>Reason of POOH: Change BHA</p> <p>Drilling Time: 62.05 hrs</p> <p>Pumping Time: 133.32 hrs</p> |
| | Equip name | Length | MP name | Offset | | | | | | | | | | | | | |
| | NMDC: 6 3/4"[2] :KSBD14857 | 32.58 | Schlumberger | | | | | | | | | | | | | | |
| | X/O: 6 3/4"[2]:J N75 | 23.17 | Schlumberger | | | | | | | | | | | | | | |
| | TELE675:B0540 | 22.68 | Schlumberger | | | | | | | | | | | | | | |

D&I 18.37

GR 17.72

ROP 16.02

X/O: 6 3/4"[1]:O 14.22
SSTJ1407002E

Schlumberger

NMDC: 6 3/4"[1] 13.75
:YD08070141-1

Schlumberger

Fit Sub: 6 3/4":T 10.91
H0915936-2

Schlumberger

Stab: 6 3/4":THD 10.13
0812973-3

Schlumberger

Motor: 6 3/4":59 8.47
25593

Schlumberger

Bit: 8 1/2":RG20 0.25
23

Smith

TOOL_ZERO

Lengths are in m
Maximum Outer Diameter = 8,500 in



Survey Record

Survey Calculation

Method : Minimum Radius of Curvature DLS Method : Lubinski
 North Reference : Grid North Total Correction Formula : Magnetic Dec - Grid Convergence
 Grid Convergence : 0.90 deg

Rig Location

Latitude : 33° 18' 3.042" N Longitude : 136° 38' 12.174" E

Tie In Point

Measured Depth: 4724.76 m Inclination: 1.62 deg Azimuth: 93.01 deg
 True Vertical Depth: 4722.98 m North Displacement: 3.97 m East Displacement: 46.10 m
 N-S VSec Origin: 0.00 m E/-W VSec Origin: 0.00 m Vertical Section Azimuth: 0.00 deg

D&I Inits Computed and Values Used - Run1

Geomagnetic Model : HDGM 2018 Geomagnetic Date : 22-Dec-2018
 Computed Location B : 46168.20 nT +/- 300.00nT Used Location B : 46168.20 nT +/- 300.00nT
 Computed Location G : 998.92 mgn +/- 2.50mgn Used Location G : 998.92 mgn +/- 2.50mgn
 Computed Magnetic Dip : 47.02 deg +/- 0.45deg Used Magnetic Dip : 47.02 deg +/- 0.45deg
 Computed Magnetic Dec : -7.16 deg Used Magnetic Dec : -7.16 deg
 Computed Total Correction : -8.06 deg Used Total Correction : -8.06 deg

D&I Inits Computed and Values Used - Run2

Geomagnetic Model : HDGM 2018 Geomagnetic Date : 22-Dec-2018
 Computed Location B : 46168.20 nT +/- 300.00nT Used Location B : 46168.20 nT +/- 300.00nT
 Computed Location G : 998.92 mgn +/- 2.50mgn Used Location G : 998.92 mgn +/- 2.50mgn
 Computed Magnetic Dip : 47.02 deg +/- 0.45deg Used Magnetic Dip : 47.02 deg +/- 0.45deg
 Computed Magnetic Dec : -7.16 deg Used Magnetic Dec : -7.16 deg
 Computed Total Correction : -8.06 deg Used Total Correction : -8.06 deg

D&I Inits Computed and Values Used - Run4

Geomagnetic Model : HDGM 2018 Geomagnetic Date : 22-Dec-2018
 Computed Location B : 46168.20 nT +/- 300.00nT Used Location B : 46168.20 nT +/- 300.00nT
 Computed Location G : 998.92 mgn +/- 2.50mgn Used Location G : 998.92 mgn +/- 2.50mgn
 Computed Magnetic Dip : 47.02 deg +/- 0.45deg Used Magnetic Dip : 47.02 deg +/- 0.45deg
 Computed Magnetic Dec : -7.16 deg Used Magnetic Dec : -7.16 deg
 Computed Total Correction : -8.06 deg Used Total Correction : -8.06 deg

Survey Quality Index

0 : Long Survey passed all criteria 2 : Long Survey failed mag criteria 9 : Manual
 28 : Tie-In Point

Survey Correction Index

0 : No correction

Survey Description Index

0 : Not Flagged Survey

| Seq | MD (m) | Incl (deg) | Azim (deg) | Course (m) | TVD (m) | V Sec (m) | N/ -S (m) | E/ -W (m) | Closure (m) | at Azim (deg) | DLS deg/30m | Tool Type | QI | CI | DI |
|-----|-----------|---------------|---------------|---------------|------------|--------------|--------------|--------------|----------------|------------------|----------------|-----------|----|----|----|
| 1 | 4724.76 | 1.62 | 93.01 | ---- | 4722.98 | 3.97 | 3.97 | 46.10 | 46.27 | 85.08 | 0.00 | TIP | 28 | 0 | 0 |
| 2 | 4771.81 | 1.92 | 149.07 | 47.05 | 4770.01 | 3.26 | 3.26 | 47.17 | 47.28 | 86.05 | 1.08 | TeleScope | 2 | 0 | 0 |
| 3 | 4787.76 | 1.44 | 113.28 | 15.94 | 4785.95 | 2.95 | 2.95 | 47.49 | 47.58 | 86.45 | 2.13 | TeleScope | 2 | 0 | 0 |
| 4 | 4794.24 | 1.20 | 140.07 | 6.48 | 4792.43 | 2.86 | 2.86 | 47.61 | 47.70 | 86.56 | 3.04 | TeleScope | 2 | 0 | 0 |
| 5 | 4805.24 | 1.38 | 175.82 | 11.00 | 4803.43 | 2.64 | 2.64 | 47.69 | 47.77 | 86.83 | 2.21 | TeleScope | 2 | 0 | 0 |
| 6 | 4823.24 | 1.20 | 110.59 | 18.00 | 4821.43 | 2.36 | 2.36 | 47.89 | 47.95 | 87.18 | 2.34 | TeleScope | 2 | 0 | 0 |
| 7 | 4836.64 | 5.20 | 78.51 | 13.40 | 4834.80 | 2.43 | 2.43 | 48.61 | 48.68 | 87.14 | 9.48 | TeleScope | 2 | 0 | 0 |
| 8 | 4844.04 | 5.77 | 85.98 | 7.40 | 4842.17 | 2.53 | 2.53 | 49.31 | 49.38 | 87.07 | 3.68 | TeleScope | 2 | 0 | 0 |
| 9 | 4866.97 | 6.61 | 84.22 | 22.93 | 4864.96 | 2.74 | 2.74 | 51.78 | 51.85 | 86.97 | 1.13 | TeleScope | 2 | 0 | 0 |
| 10 | 4901.84 | 7.21 | 75.01 | 34.87 | 4899.58 | 3.51 | 3.51 | 55.89 | 56.00 | 86.41 | 1.08 | TeleScope | 2 | 0 | 0 |
| 11 | 4933.34 | 7.79 | 80.99 | 31.50 | 4930.82 | 4.35 | 4.35 | 59.90 | 60.06 | 85.84 | 0.93 | TeleScope | 0 | 0 | 0 |
| 12 | 4942.30 | 8.07 | 85.26 | 8.95 | 4939.68 | 4.50 | 4.50 | 61.13 | 61.29 | 85.79 | 2.19 | TeleScope | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | |
|----|---------|------|--------|-------|---------|------|------|-------|-------|-------|------|-----------|---|---|---|
| 13 | 4960.04 | 7.46 | 91.57 | 17.74 | 4957.27 | 4.57 | 4.57 | 63.52 | 63.69 | 85.88 | 1.78 | TeleScope | 2 | 0 | 0 |
| 14 | 4975.81 | 5.38 | 98.09 | 15.77 | 4972.94 | 4.44 | 4.44 | 65.28 | 65.43 | 86.11 | 4.17 | TeleScope | 2 | 0 | 0 |
| 15 | 4985.09 | 4.13 | 100.43 | 9.28 | 4982.19 | 4.32 | 4.32 | 66.04 | 66.18 | 86.26 | 4.09 | TeleScope | 2 | 0 | 0 |
| 16 | 4993.35 | 2.82 | 103.77 | 8.25 | 4990.43 | 4.21 | 4.21 | 66.53 | 66.66 | 86.38 | 4.84 | TeleScope | 2 | 0 | 0 |
| 17 | 4998.02 | 2.44 | 104.21 | 4.68 | 4995.10 | 4.16 | 4.16 | 66.73 | 66.86 | 86.43 | 2.45 | TeleScope | 2 | 0 | 0 |
| 18 | 5003.13 | 2.20 | 106.33 | 5.11 | 5000.20 | 4.11 | 4.11 | 66.93 | 67.06 | 86.49 | 1.47 | TeleScope | 2 | 0 | 0 |
| 19 | 5008.87 | 1.87 | 111.82 | 5.73 | 5005.93 | 4.04 | 4.04 | 67.13 | 67.25 | 86.55 | 1.99 | TeleScope | 2 | 0 | 0 |
| 20 | 5020.15 | 1.03 | 141.28 | 11.29 | 5017.22 | 3.90 | 3.90 | 67.36 | 67.47 | 86.69 | 2.93 | TeleScope | 2 | 0 | 0 |
| 21 | 5031.07 | 0.85 | 223.25 | 10.92 | 5028.13 | 3.76 | 3.76 | 67.37 | 67.47 | 86.81 | 3.40 | TeleScope | 2 | 0 | 0 |
| 22 | 5052.00 | 0.85 | 223.25 | 20.93 | 5049.06 | 3.53 | 3.53 | 67.15 | 67.25 | 86.99 | 0.00 | Other | 9 | 0 | 0 |

Run1

Run1_DML

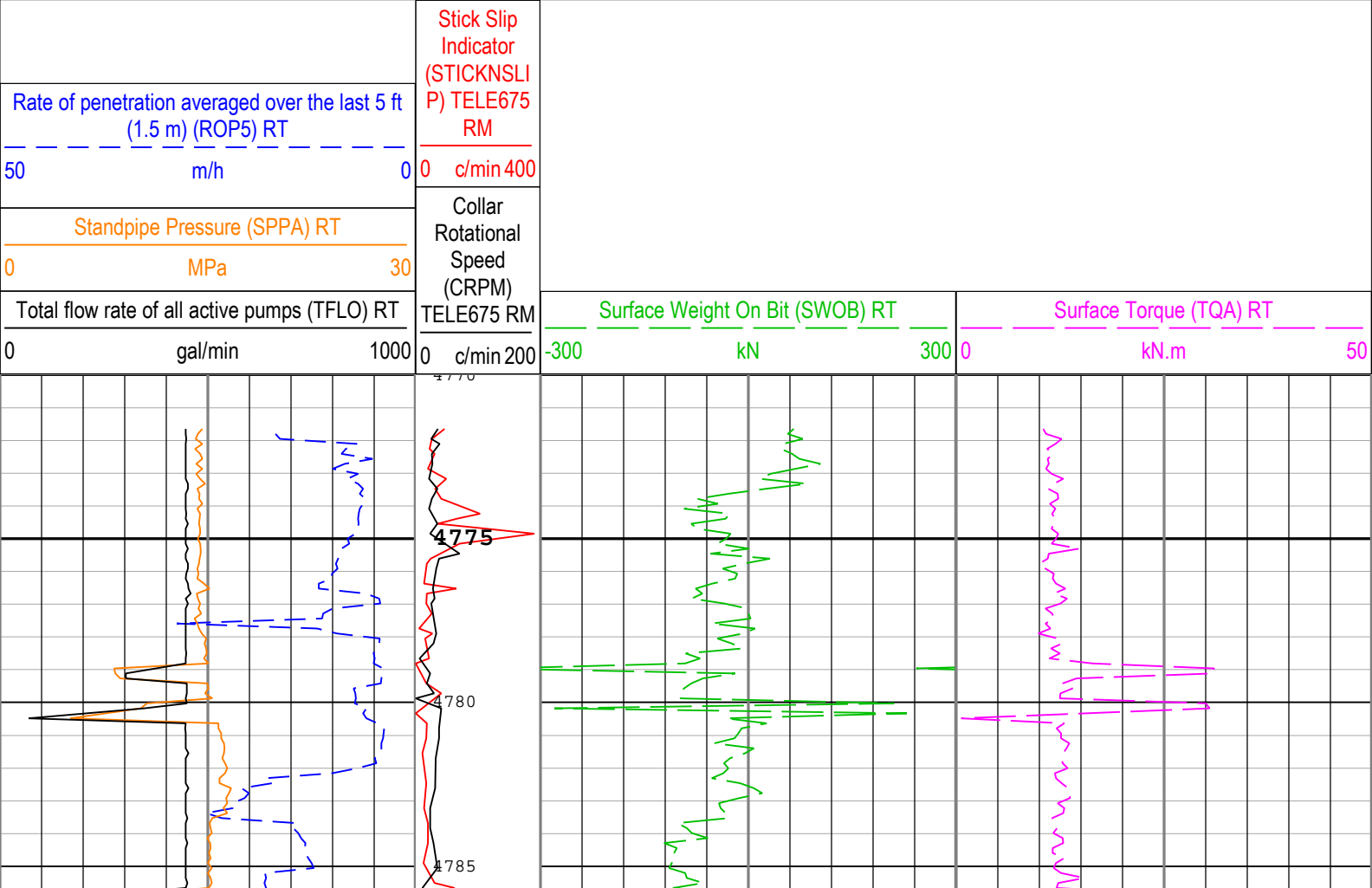
| Software Version | |
|--------------------|----------------------------------------|
| Acquisition System | Version |
| Maxwell 2018 SP2 | 8.2.104493.3100 |
| Application Patch | DnM_TestKit-PD-DHS31-2018-2_8.2.104864 |

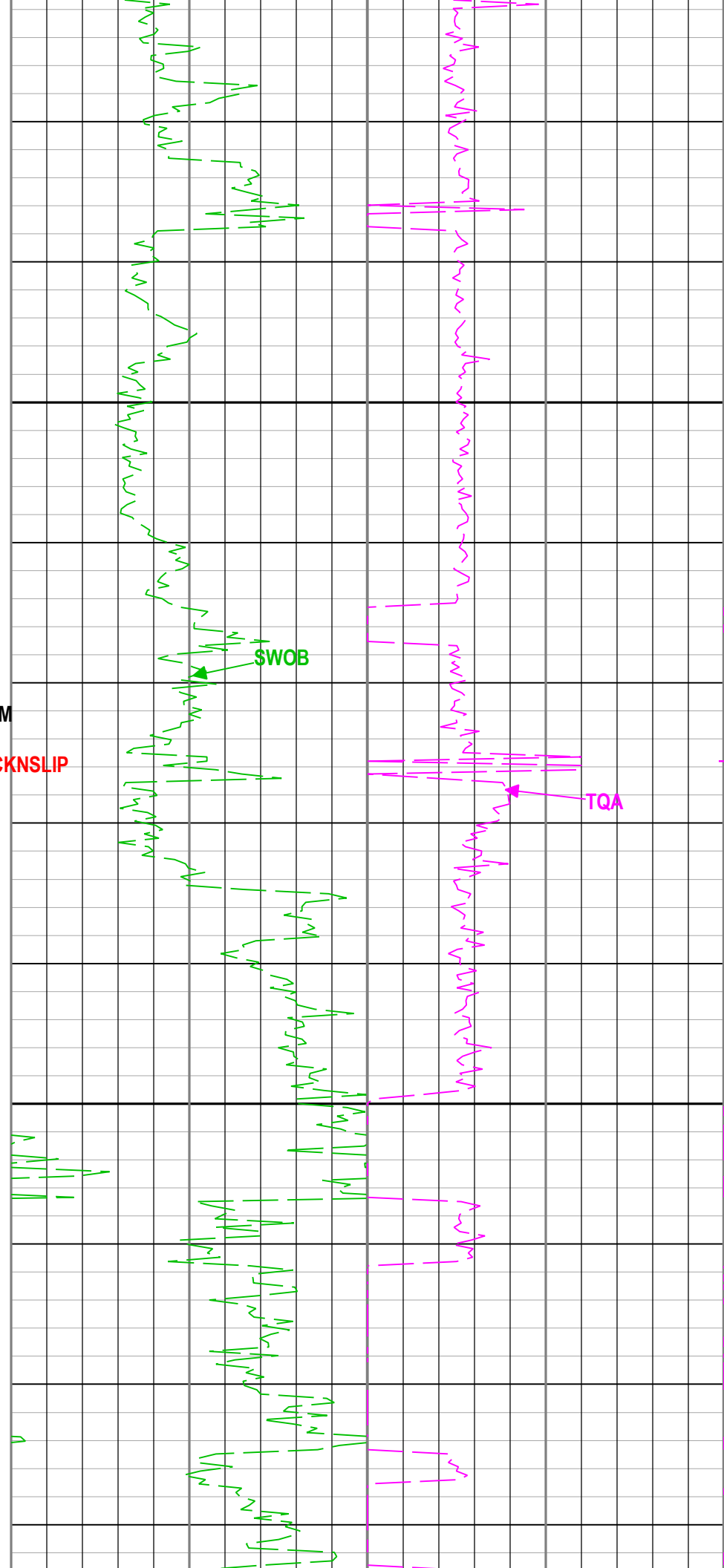
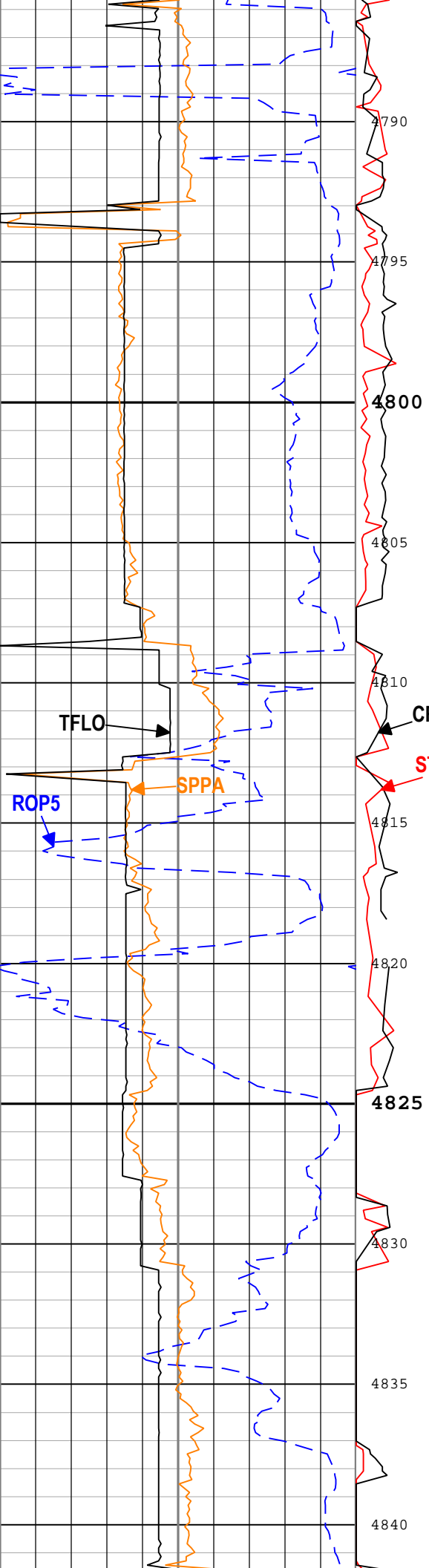
| Pass Summary | | | | | | | |
|--------------|----------------|-----------|-----------|-----------|----------------------------|---------------------------|-----------------------|
| Run Name | Pass Objective | Direction | Top | Bottom | Start | Stop | Include Parallel Data |
| Run1 | Drilling | Down | 4771.62 m | 4962.27 m | 22-Dec-2018 10:23:55 PM | 30-Dec-2018 1:09:10 AM | Yes |

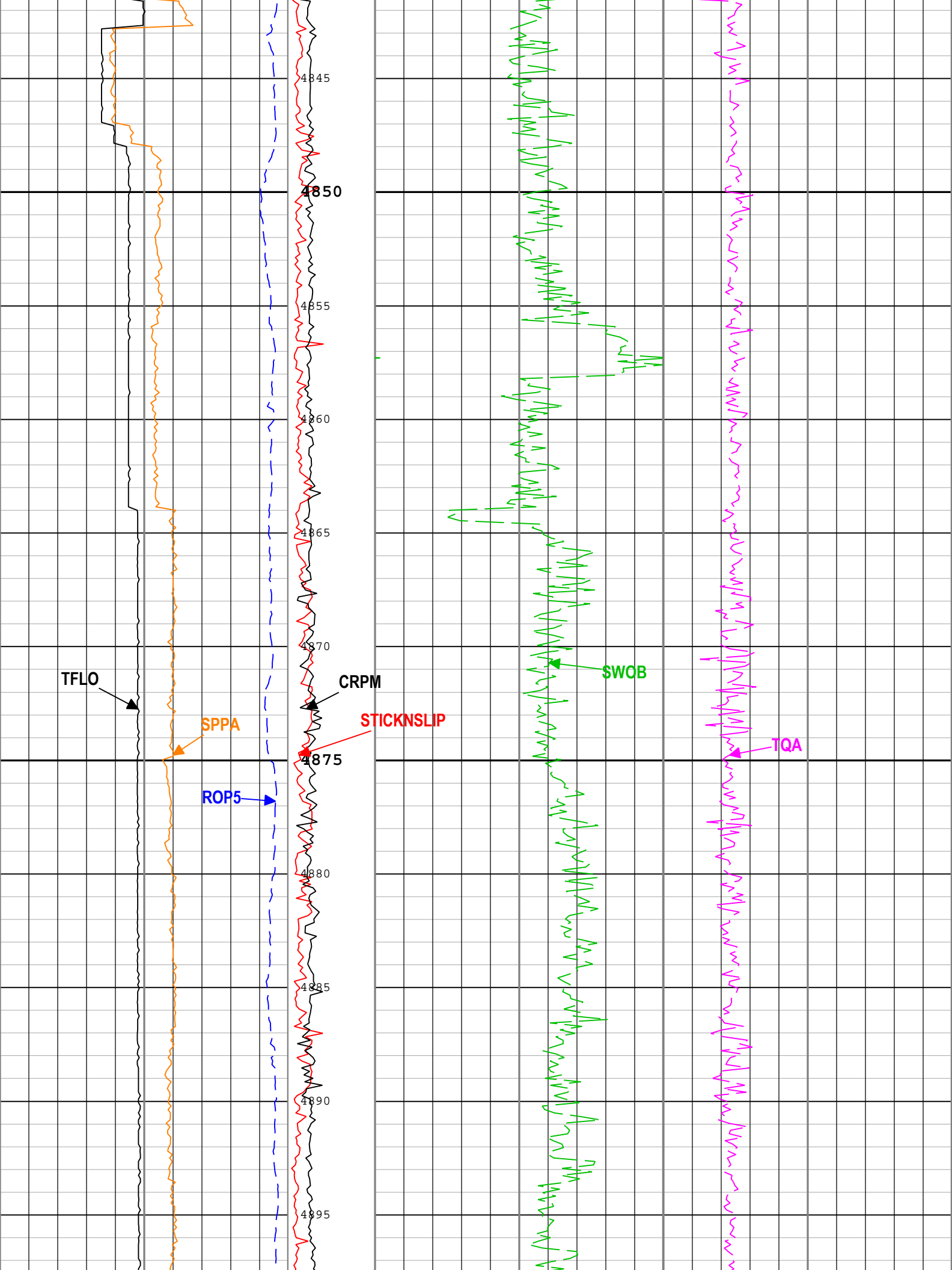
All depths are referenced to toolstring zero

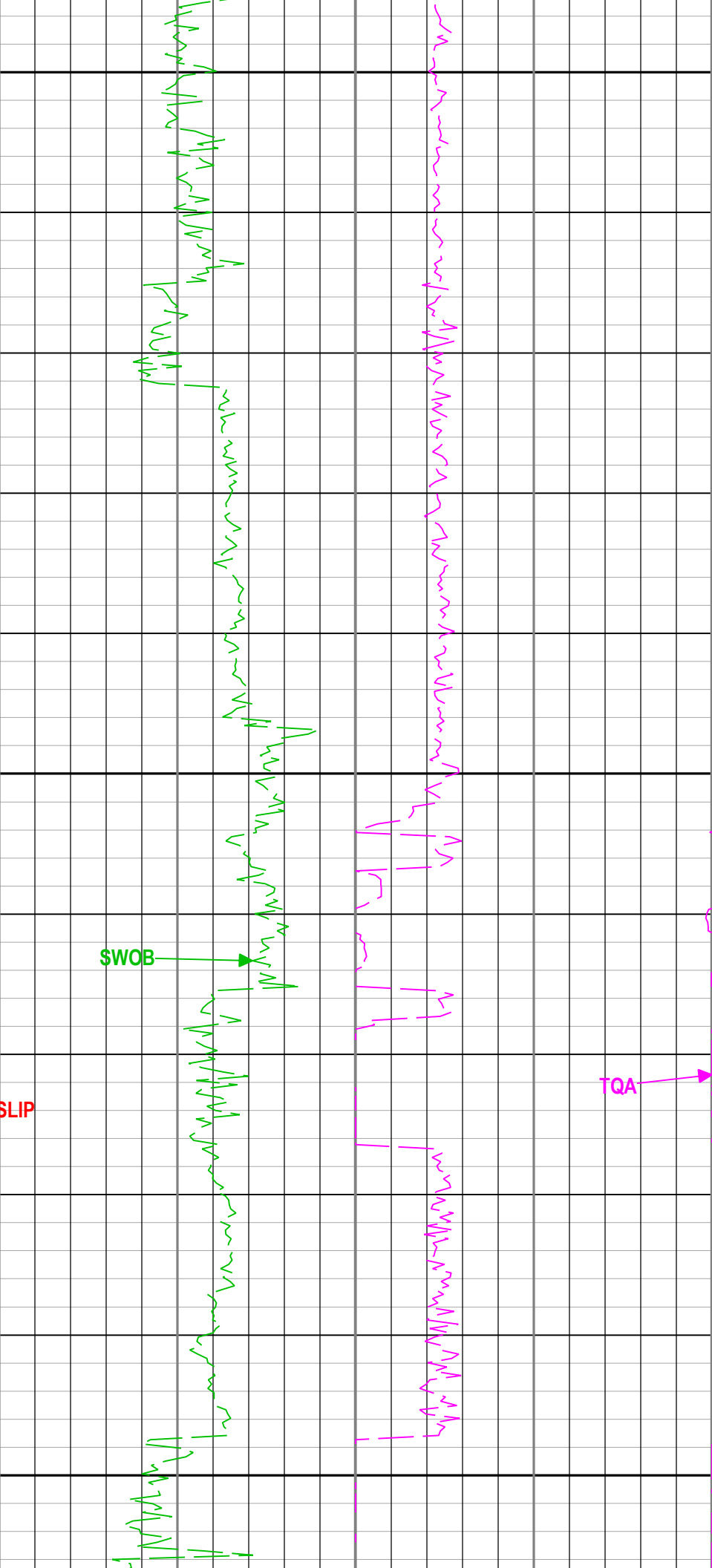
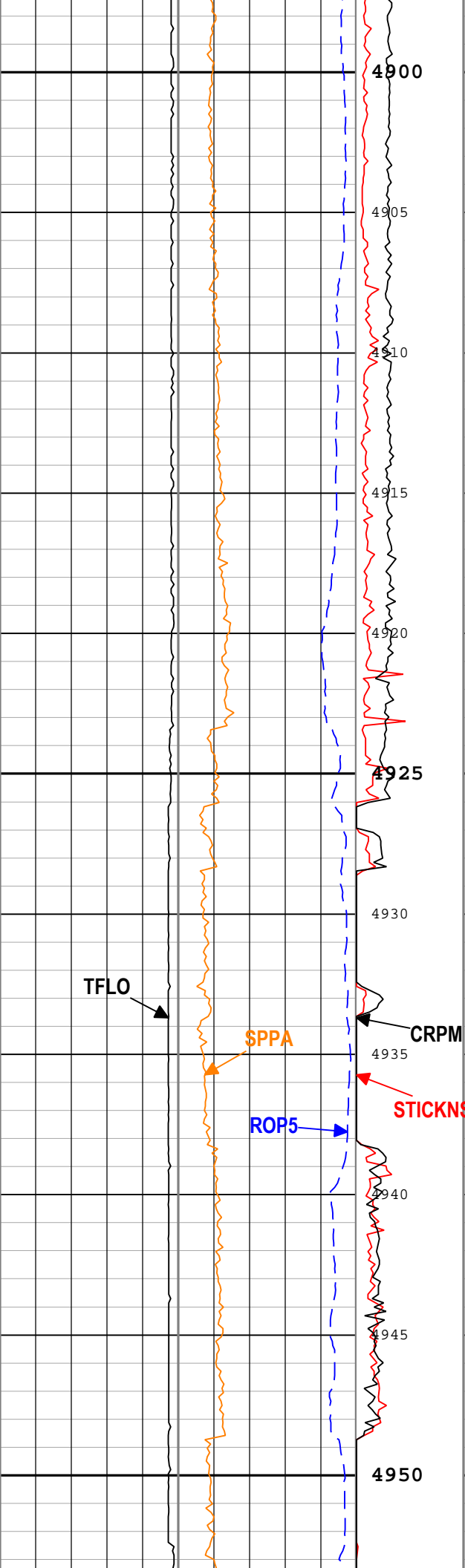
| | |
|------------|----------------------------------------------------------|
| Log | Company: JAMSTEC Well: C0002R Run1: Drilling: S072 |
|------------|----------------------------------------------------------|

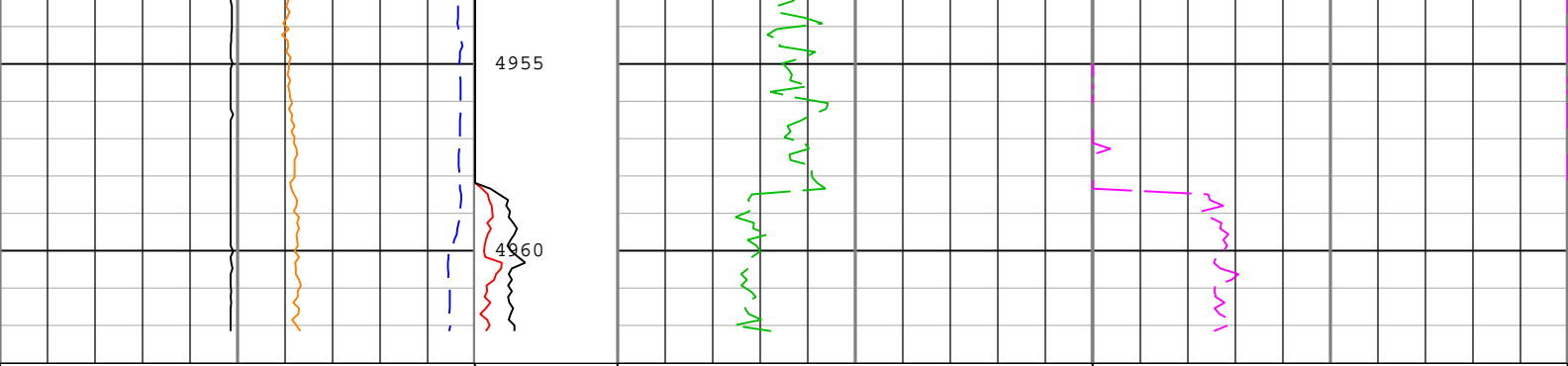
Description: Format: Log (Drilling Mechanics Log 675 RM MD) Index Scale: 1:200 Index Unit: m Index Type: Measured Depth Creation Date: 04-Mar-2019 00:35:20











Rate of penetration averaged over the last 5 ft (1.5 m) (ROP5) RT
 50 m/h 0

Stick Slip Indicator (STICKNSLIP) TELE675 RM

Surface Weight On Bit (SWOB) RT
 -300 kN 300

Surface Torque (TQA) RT
 0 kN.m 50

Standpipe Pressure (SPPA) RT
 0 MPa 30

0 c/min 400

Total flow rate of all active pumps (TFLO) RT
 0 gal/min 1000

Collar Rotational Speed (CRPM) TELE675 RM

0 c/min 200

Description: Format: Log (Drilling Mechanics Log 675 RM MD) Index Scale: 1:200 Index Unit: m Index Type: Measured Depth Creation Date: 04-Mar-2019 00:35:20

Channel Processing Parameters

Tool Control Parameters

Company: JAMSTEC
Well: C0002R
Field: C0002
Rig Name: D/V Chikyu
Prefecture: Wakayama
Country: Japan



Drilling Mechanics Log

DML

C0002R Run1, Measured Depth 1:200