

MicroScope HD Resistivity Image

Gamma Ray - Resistivity - HD Resistivity Image

Recorded Mode Log, Measured Depth 1:500



Company: JAMSTEC

Well: C0002Q

Field: C0002

Rig Name: D/V Chiky

Prefecture: Wakayama

Country: Japan

Latitude: 33° 18' 3.042" N

Longitude: 136° 38' 12.174" E

Block: Pacific Ocean

FL1: X = 652,382.39 m

FL2: Y = 3,685,834.62 m

UWID:

Rig Name:

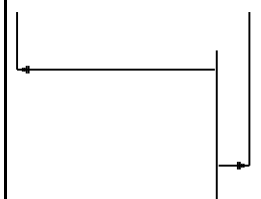
Rig Type:

D/V Chiky

Drill ship

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

Ground Level: 1939.00 m



Acquisition Dates: 24-Nov-2018

Log Interval: 4860.70(m)MD-4898.90(m)MD

Index Types: Measured Depth

Index Scales: 1:500

Depth Source: Driller's Depth

Depth Sensor: DES

Print Type: Final

Spud Date: 26-Oct-2018

Other Services:

Direction and Inclination

seismic/VISION

SonicScope



Disclaimer

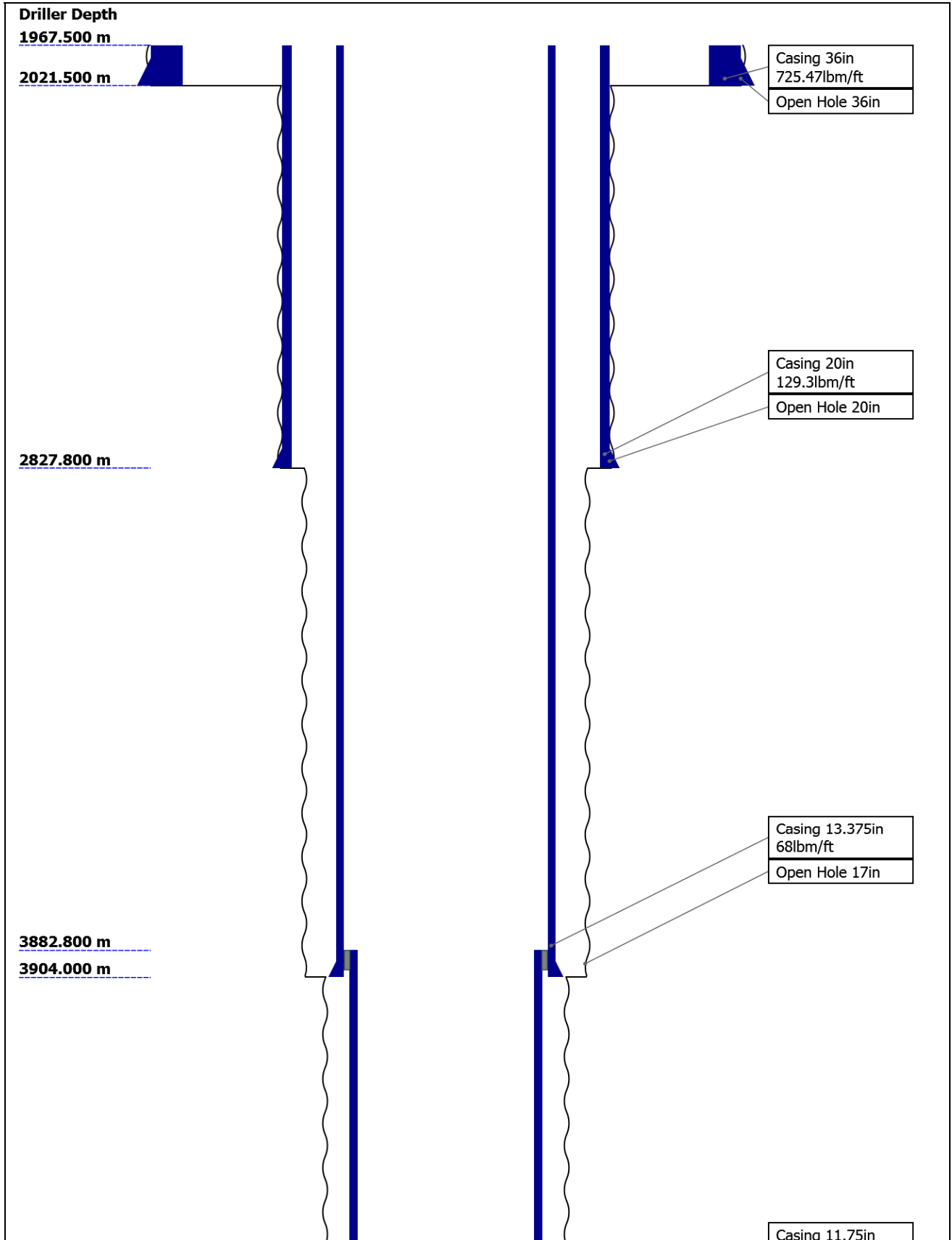
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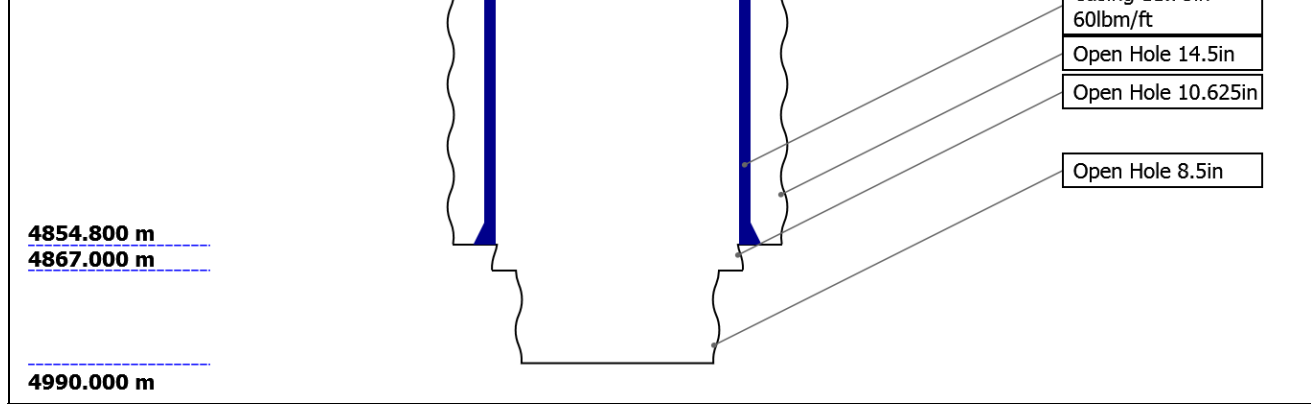
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Well Sketch





Borehole Size/Casing Record

Bit						
Bit Size (in)	36	20	17	14.5	10.625	8.5
Top Driller (m)	1967.5	2021.5	2827.8	3904	4854.8	4867
Bottom Driller (m)	2021.5	2827.8	3904	4854.8	4867	4990
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	4854.8		

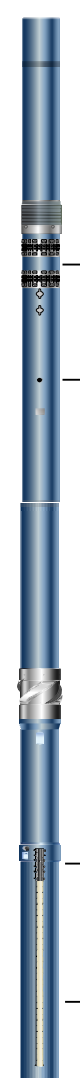
Operational Run Summary

Parameter (unit)	Run2					
Date Log Started	22-Nov-2018					
Time Log Started	03:44:29					
Date Log Finished	25-Nov-2018					
Time Log Finished	08:28:02					
Bit Size (in)	8.500					
Bit Start Depth (m)	0.00					
Bit Stop Depth (m)	0.00					
Top Log Interval (m)	4860.70					
Bottom Log Interval (m)	4898.90					
Max Hole Deviation (deg)	1.64					
Azimuth of Max Deviation (deg)	90.69					
Logging Unit Number	OLU-MB 8054					
Logging Unit Location	Zone2					
Recorded By	SMoriyama/SMurakami/KBian					
Witnessed By	YSanada/YKido					
Service Order Number	18JAP0007					

Borehole Fluids

Parameter(unit)	Run2				
Fluid Type	Water				
Max Recorded Temperatures (degC)	50				
Source of Sample	Active Tank				
Salinity (ppm)	141288.5				
Density (g/cm3)	1.37				
Funnel Viscosity (s)	56				
Fluid Loss (cm3)	2.5				
PH	9.9				
Source RMF	Pressed				
RMC	Pressed				
RM @ Meas Temp (ohm.m@degC)	0.06 @ 21.1				
RMF @ Meas Temp (ohm.m@degC)	0.05 @ 20.2				
RMC @ Meas Temp (ohm.m@degC)	0.07 @ 19.8				
RM @ BHT (ohm.m@degC)	0.04 @ 50				
RMF @ BHT (ohm.m@degC)	0.03 @ 50				
RMC @ BHT (ohm.m@degC)	0.04 @ 50				
Total Solid (%)	16.5				
High Gravity Solids (%)	0				

Remarks and Equipment Summary

Run2: Toolstring				Run2: Remarks	
Equip name seismicVISION675 :42835	Length 34.5		MP name Schlumberger	Offset	Depth Reference is driller's depth measured from Rotary Table.
					Data presented is Recorded Mode data which was acquired while drilling.
					MicroScope record rate is depending on RPM. APWD record rate is 10s.
					MicroScope GR is environmentally corrected for bit size, mud weight, and potassium content in the mud (1.56% in Run4).
				32.18	Reason of POOH: Hole Condition
					Drilling Time: 0.00 hrs
				31.27	Pumping Time: 34.04 hrs
					MicroScope GR data could not be plotted partially due to Maxwell bug.
SONICSCOPE6:H03 36	Length 30.04		Schlumberger		
				27.11	
				25.9	



TELE675-IWOB:G3 20.03
917

Schlumberger

— D&I 15.79

— GR 15.15

• — ROP 13.44

• — IWOB 12.43

ARC6:ZL37312 11.65

Schlumberger

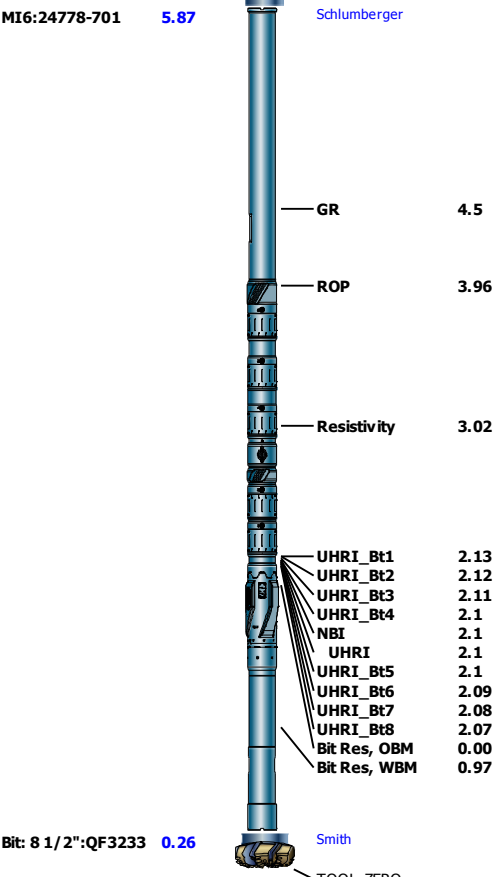
• — ROP 9.41

— GR 8.35

— Resistivity 8.3

— Pressure 7.58





Lengths are in m
 Maximum Outer Diameter = 8.500 in
 Line: Sensor Location, Value: Gating Offset
 All measurements are relative to TOOL_ZERO

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
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Tie In Point

Measured Depth:	4853.87 m	Inclination:	1.64 deg	Azimuth:	90.69 deg
True Vertical Depth:	4852.02 m	North Displacement:	-0.27 m	East Displacement:	49.95 m
N/-S VSec Origin:	0.00 m	E/-W VSec Origin:	0.00 m	Vertical Section Azimuth:	90.28 deg

D&I Inits Computed and Values Used - Run5

Geomagnetic Model :	HDGM 2018	Geomagnetic Date :	17-Nov-2018
Computed Location B :	46164.86 nT +/- 300.00nT	Used Location B :	46164.86 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

2 : Long Survey failed mag criteria 28 : Tie-In Point

Survey Correction Index

0 : No correction

Survey Description Index

0 : Not Flagged Survey

Seq	MD	Incl	Azim	Course	TVD	V Sec	N/ -S	E/ -W	Closure	at Azim	DLS	Tool Type	QI	CI	DI
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	(m)	(deg)	(deg)	(m)	(m)	(m)	(m)	(m)	(m)	(deg)	deg/30m				
1	4853.87	1.64	90.69	----	4852.02	49.95	-0.27	49.95	49.95	90.31	0.00	TIP	28	0	0
2	4870.63	3.61	138.88	16.76	4868.77	50.54	-0.67	50.54	50.54	90.76	5.00	TeleScope	2	0	0
3	4882.77	3.16	140.86	12.13	4880.88	51.00	-1.22	51.00	51.01	91.37	1.14	TeleScope	2	0	0
4	4897.67	0.64	145.72	14.91	4895.77	51.31	-1.60	51.30	51.33	91.79	5.07	TeleScope	2	0	0
5	4908.67	0.96	50.36	11.00	4906.77	51.42	-1.60	51.41	51.44	91.78	3.28	TeleScope	2	0	0

Run2

Run_2 LWD Log

Software Version

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

Composite Summary

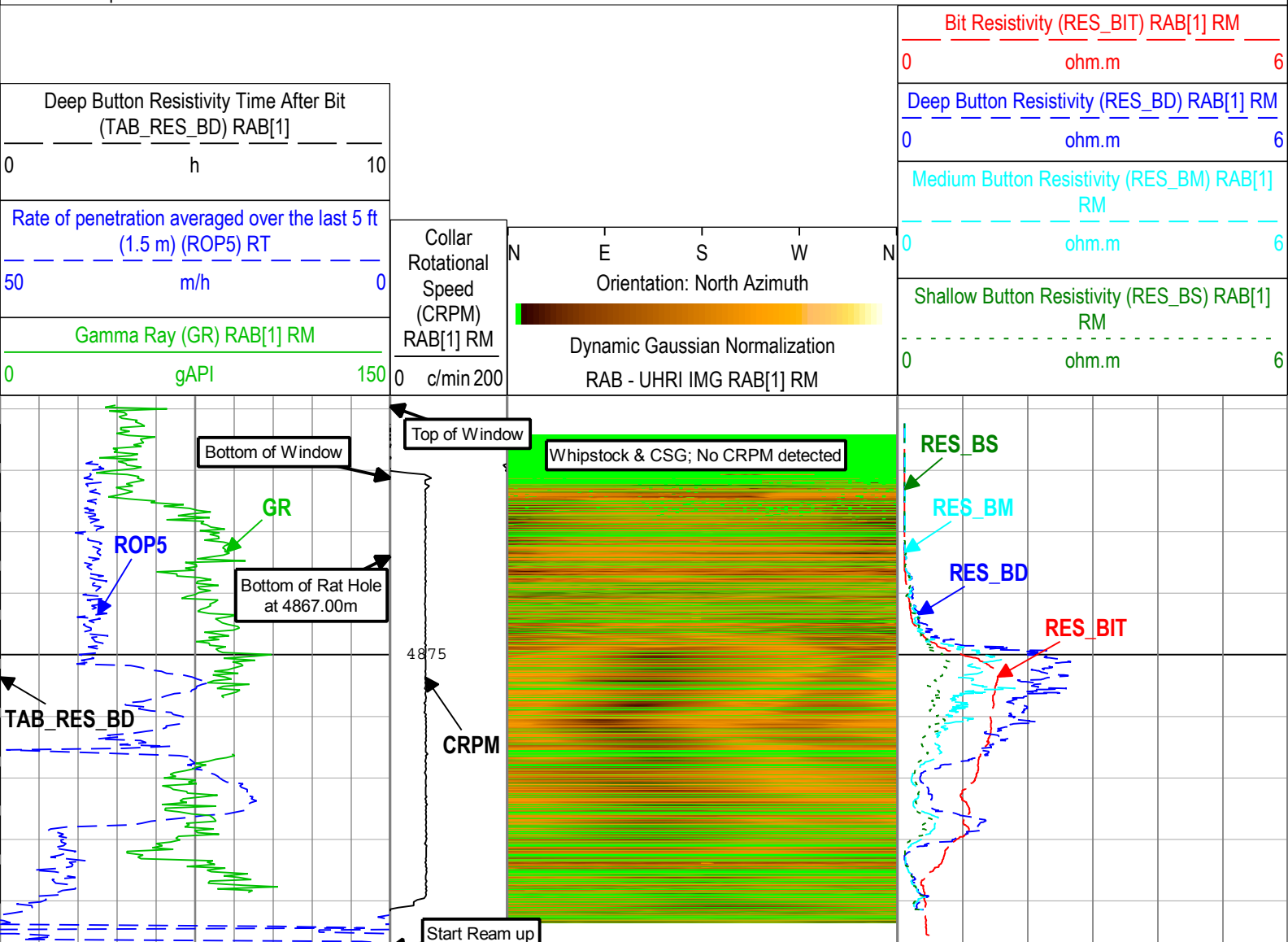
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Include Parallel Data
Run2	Ream Up 1	Up	4882.18 m	4898.90 m	24-Nov-2018 8:30:58 AM	24-Nov-2018 9:33:49 AM	No
Run2	Ream Up 4	Up	4854.55 m	4883.02 m	24-Nov-2018 10:10:55 AM	24-Nov-2018 11:00:13 AM	No

All depths are referenced to toolstring zero

Log

Company: JAMSTEC Well: C0002Q
Run2: S120

Description: MicroScope Resistivity, Deep Button Image RM Format: Log (MI6 Res, UHRI RM MD) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 28-Feb-2019 17:12:06



Deep Button Resistivity Time After Bit (TAB_RES_BD) RAB[1]	Collar Rotational Speed (CRPM) RAB[1] RM	Dynamic Gaussian Normalization RAB - UHRI IMG RAB[1] RM Orientation: North Azimuth	Bit Resistivity (RES_BIT) RAB[1] RM
0 h 10	0 c/min 200	N E S W N	0 ohm.m 6
Rate of penetration averaged over the last 5 ft (1.5 m) (ROP5) RT			Deep Button Resistivity (RES_BD) RAB[1] RM
50 m/h 0			0 ohm.m 6
Gamma Ray (GR) RAB[1] RM			Medium Button Resistivity (RES_BM) RAB[1] RM
0 gAPI 150			0 ohm.m 6
			Shallow Button Resistivity (RES_BS) RAB[1] RM
			0 ohm.m 6

Description: MicroScope Resistivity, Deep Button Image RM Format: Log (MI6 Res, UHRI RM MD) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 28-Feb-2019 17:12:06

Channel Processing Parameters

Run2: Parameters

Parameter	Description	Tool	Value	Unit
BHK	Drilling Fluid Potassium Concentration	Borehole	1.56	%
BHT	Bottom Hole Temperature	Borehole	50	degC
BS	Bit Size	DNMSESSION	Depth Zoned	in
DEPTH_SEL	Depth Selection Parameter	DNMSESSION	Driller's Depth	
DFD	Drilling Fluid Density	Borehole	1.37	g/cm3
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
GCSE_RM	Generalized Caliper Selection for DnM recorded mode	Borehole	BS(RT)	
GRSE_RM	Generalized Mud Resistivity Selection for Recorded Mode	Borehole	REMS(RM)	
GTSE_RM	Generalized Temperature Selection for Recorded Mode	Borehole	DHAT(RM)	
JOBID	Job Identification	DNMSESSION	18JAP0007	
MST	Mud Sample Temperature	Borehole	21.1	degC
RMS	Resistivity of Mud Sample	Borehole	0.06	ohm.m
UHRI_IMG_T	UHRI Image Type	MI6	UHRI Raw	

Run2Depth Zoned Parameters

Parameter	Value	Start (m)	Stop (m)
BS	14.5	4854	4854.8
BS	10.625	4854.8	4867
BS	8.5	4867	4898.898

All depth are actual.

Tool Control Parameters

Run2: Parameters

Parameter	Description	Tool	Value	Unit
OFFBTM_TH	Threshold for deciding whether the bit is off bottom	DNMSESSION	0.4	m

Run2

Run_2 DML

Software Version

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

Composite Summary

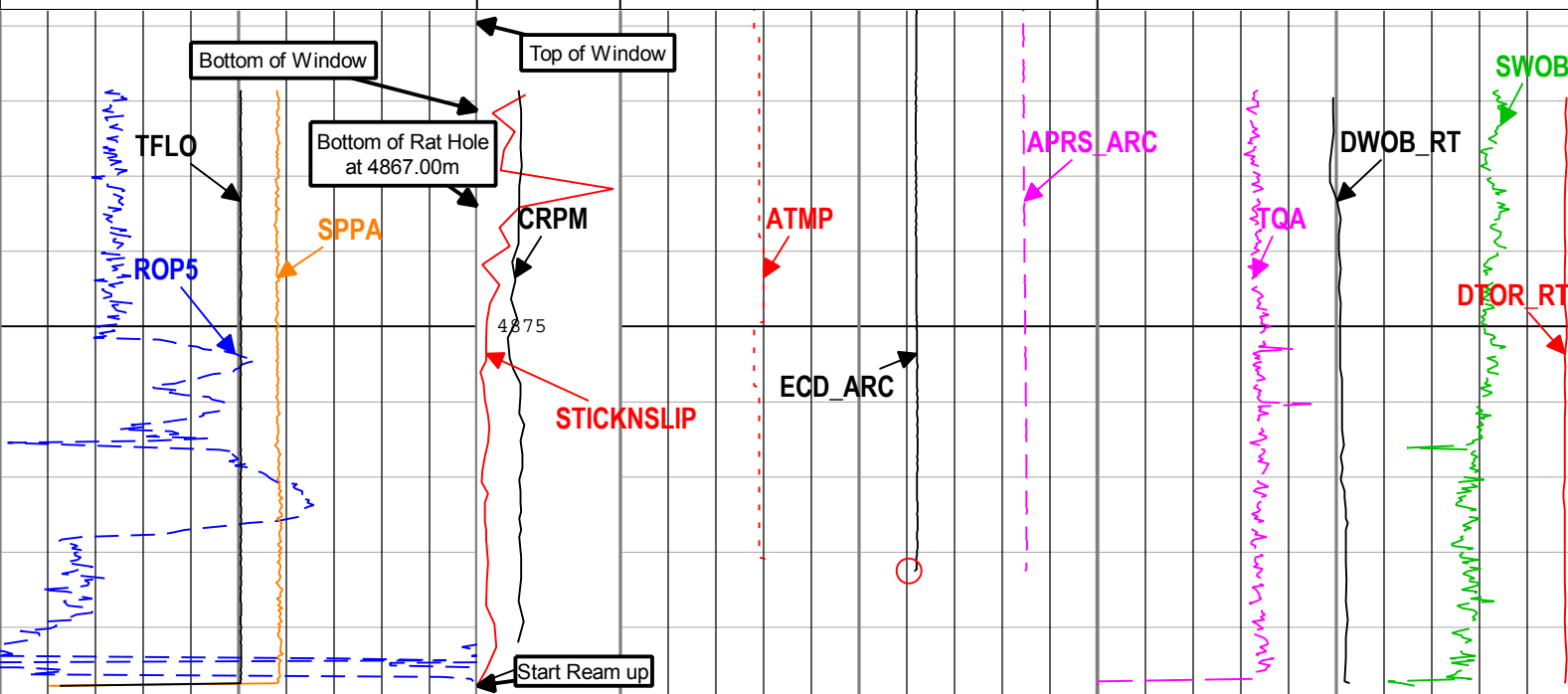
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Include Parallel Data
Run2	Ream Up 1	Up	4882.18 m	4898.90 m	24-Nov-2018 8:30:58 AM	24-Nov-2018 9:33:49 AM	No
Run2	Ream Up 4	Up	4854.55 m	4883.02 m	24-Nov-2018 10:10:55 AM	24-Nov-2018 11:00:13 AM	No

All depths are referenced to toolstring zero

Log	Company: JAMSTEC	Well: C0002Q
	Run2: S120	

Description: Format: Log (Drilling Mechanics Log 675 RM MD with ARC) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 28-Feb-2019 17:12:08

Rate of penetration averaged over the last 5 ft (1.5 m) (ROP5) RT 0 c/min 400	Stick Slip Indicator (STICKNSLIP) TeleScope[1] RM	Equivalent Circulating Density (ECD_ARC) ARC[1] RM	0.8	g/cm3	1.8	Downhole Torque (MWD) (DTOR_RT) TeleScope[1] RT	0	kN.m	50
		Downhole Annulus Temperature (ATMP) ARC[1] RM	0	degC	100	Surface Torque (TQA) RT	0	kN.m	50
50 m/h	Collar Rotational Speed (CRPM) TeleScope[1] RM	Downhole Annulus Pressure (APRS_ARC) ARC[1] RM	0	MPa	80	Downhole Weight on Bit (DWOB_RT) TeleScope[1] RT	-300	kN	300
Standpipe Pressure (SPPA) RT 0 MPa 30	Total flow rate of all active pumps (TFLO) RT 0 gal/min 1000	Equivalent Static Density (ESD) ARC[1] RT	0.8	g/cm3	1.8	Surface Weight On Bit (SWOB) RT	-300	kN	300



Rate of penetration averaged over the last 5 ft (1.5 m) (ROP5) RT 50 m/h	Stick Slip Indicator (STICKNSLIP) TeleScope[1] RM	Equivalent Circulating Density (ECD_ARC) ARC[1] RM	0.8	g/cm3	1.8	Downhole Torque (MWD) (DTOR_RT) TeleScope[1] RT	0	kN.m	50
		Downhole Annulus Temperature (ATMP) ARC[1] RM	0	degC	100	Surface Torque (TQA) RT	0	kN.m	50
Standpipe Pressure (SPPA) RT 0 MPa 30	Total flow rate of all active pumps (TFLO) RT 0 gal/min 1000	Downhole Annulus Pressure (APRS_ARC) ARC[1] RM	0	MPa	80	Downhole Weight on Bit (DWOB_RT) TeleScope[1] RT	-300	kN	300
		Equivalent Static Density (ESD) ARC[1] RT	-300	kN	300				

Description: Format: Log (Drilling Mechanics Log 675 RM MD with ARC) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth Creation Date: 28-Feb-2019 17:12:08

Channel Processing Parameters

Run2: Parameters

Parameter	Description	Tool	Value	Unit
DEPTH_SEL	Depth Selection Parameter	DNMSESSION	Driller's Depth	
DFD	Drilling Fluid Density	Borehole	1.37	g/cm3
FLEV	Depth of Drilling Fluid Level to LMF (Log Measured From)	Borehole	3	m
RHO_SEAWATER	Density of the Sea Water	Borehole	1.022	g/cm3
SF_FLAG	Mud Return to Sea Floor (No Riser)?	Borehole	No	

Tool Control Parameters

Run2: Parameters

Parameter	Description	Tool	Value	Unit
DTOF	DTOR Offset	TELE675-IWOB	-16.47	kN.m
DWOB_BETA	DWOB Beta Pressure Correction Factor	TELE675-IWOB	3.62	
DWOF	DWOB Offset	TELE675-IWOB	-520.44	kN
DWOB_ZEROTOOLP	DWOB Differential Pressure Drop at Zero Weight-on-Bit	TELE675-IWOB	4.24	MPa
OFFBTM_TH	Threshold for deciding whether the bit is off bottom	DNMSESSION	0.4	m

Calibration Report

ARC6 (Array Resistivity Compensated 675) Calibration - Run Run2

Primary Equipment : Elec. Chassis HP w/o AIM Receiver AREA 570

RESAIRCAL - Resistivity: Air

Master (Time Frame File): 02:39:59 24-Oct-2018

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Attenuation T1 at 2 MHz	dB	Master	8.500	6.500	8.784	10.500	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 6.5%, white 6.5%, white 8.784%, black 8.784%);"></div>
Attenuation T2 at 2 MHz	dB	Master	6.500	4.500	6.175	8.500	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 4.5%, white 4.5%, white 6.175%, black 6.175%);"></div>
Attenuation T3 at 2 MHz	dB	Master	4.500	2.500	5.413	6.500	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 2.5%, white 2.5%, white 5.413%, black 5.413%);"></div>
Attenuation T4 at 2 MHz	dB	Master	4.600	2.600	4.086	6.600	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 2.6%, white 2.6%, white 4.086%, black 4.086%);"></div>
Attenuation T5 at 2 MHz	dB	Master	3.600	1.600	3.965	5.600	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 1.6%, white 1.6%, white 3.965%, black 3.965%);"></div>
Phase Shift T1 at 2 MHz	deg	Master	0.100	-3.900	0.207	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white 0.207%, black 0.207%);"></div>
Phase Shift T2 at 2 MHz	deg	Master	0.100	-3.900	-0.155	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white -0.155%, black -0.155%);"></div>
Phase Shift T3 at 2 MHz	deg	Master	0.100	-3.900	0.147	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white 0.147%, black 0.147%);"></div>
Phase Shift T4 at 2 MHz	deg	Master	0.100	-3.900	-0.186	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white -0.186%, black -0.186%);"></div>
Phase Shift T5 at 2 MHz	deg	Master	0.100	-3.900	0.129	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white 0.129%, black 0.129%);"></div>
Attenuation T1 at 400 KHz	dB	Master	8.500	6.500	8.782	10.500	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 6.5%, white 6.5%, white 8.782%, black 8.782%);"></div>
Attenuation T2 at 400 KHz	dB	Master	6.500	4.500	6.189	8.500	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 4.5%, white 4.5%, white 6.189%, black 6.189%);"></div>
Attenuation T3 at 400 KHz	dB	Master	4.500	2.500	5.402	6.500	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 2.5%, white 2.5%, white 5.402%, black 5.402%);"></div>
Attenuation T4 at 400 KHz	dB	Master	4.600	2.600	4.090	6.600	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 2.6%, white 2.6%, white 4.090%, black 4.090%);"></div>
Attenuation T5 at 400 KHz	dB	Master	3.600	1.600	3.966	5.600	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 1.6%, white 1.6%, white 3.966%, black 3.966%);"></div>
Phase Shift T1 at 400 KHz	deg	Master	0.100	-3.900	1.065	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white 1.065%, black 1.065%);"></div>
Phase Shift T2 at 400 KHz	deg	Master	0.100	-3.900	-1.152	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white -1.152%, black -1.152%);"></div>
Phase Shift T3 at 400 KHz	deg	Master	0.100	-3.900	1.103	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white 1.103%, black 1.103%);"></div>
Phase Shift T4 at 400 KHz	deg	Master	0.100	-3.900	-1.162	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white -1.162%, black -1.162%);"></div>
Phase Shift T5 at 400 KHz	deg	Master	0.100	-3.900	1.075	4.100	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black -3.9%, white -3.9%, white 1.075%, black 1.075%);"></div>

GRGAIN - Gamma Ray: Blanket

Master (Time Frame File): 18:47:37 24-Oct-2018

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Gamma Ray Calibration Gain		Master	1.000	0.580	1.155	1.250	<div style="border: 1px solid black; width: 100%; height: 10px; background: linear-gradient(to right, black 0.58%, white 0.58%, white 1.155%, black 1.155%);"></div>

Company: JAMSTEC
Well: C0002Q
Field: C0002
Rig Name: D/V Chikyu
Prefecture: Wakayama
Country: Japan



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Gamma Ray - Resistivity - HD Resistivity Image

Recorded Mode Log, Measured Depth 1:500