

# Schlumberger

**ArcVISION Resistivity**  
**Measured Depth, Scale 1:500**  
**Recorded Mode RUN01**

**Company:** JAMSTEC  
**Well:** NT3-01  
**Field:** Nankai Kumano Basin  
**Rig Name:** Chikyu  
**State:** Mie Prefecture  
**Country:** Japan

**Latitude:** 33° 18' 0.756" N  
**Longitude:** 136° 38' 8.928" E  
**Block:** N/A  
**UWID:** N/A  
**Rig Name:** Chikyu  
**Rig Type:** Driftship

**FL:** Philippine Sea  
**FL1:** N/A  
**FL2:** N/A

Log Measured From - Drill Floor: 28.5 m



Permanent Datum - Mean Sea Level

**Acquisition Dates:** 17 Nov 10 to 19 Nov 10

**Print Interval:** 2006.6(m) to 2857.8(m)

**Index Types:** Measured Depth

**Index Scales:** 1:500

**Depth Source:** Driller's Depth

**Depth Sensor:** DES

**Conveyance:** Drill Pipe

**Print Type:** Final

**Spud Date:** 16-Nov-2010

**Other Services:**

Directional Drilling

## 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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## Borehole Size/Casing Record

<b>Bit</b>					
Bit Size ( in )	12.25				
Bottom Driller ( m )	2857.75				
<b>Casing</b>					
Size ( in )	20				
Weight ( kg/m )	192.4				
Inner Diameter ( in )	18.779				
Grade	X56				
Top Driller ( m )	1966				
Bottom Driller ( m )	2006.9				

## Operational Run Summary

<b>Parameter ( unit )</b>	<b>1</b>				
Date Log Started	16-Nov-2010				
Time Log Started	18:18:07				
Date Log Finished	19-Nov-2010				
Time Log Finished	16:04:53				
Bit Size ( in )	12.250				
Bit Start Depth ( m )	2006.60				
Bit Stop Depth ( m )	2857.75				
Top Log Interval ( m )	2003.30				
Bottom Log Interval ( m )	2843.17				
Max Hole Deviation ( deg )	0.77				
Azimuth of Max Deviation ( deg )	38.08				
Logging Unit Number	OLU-KC-0504				
Logging Unit Location	Zone 3				
Recorded By	Yu Ito/Kikuko Iwama				
Witnessed By	Yoshio Ikeda				
Service Order Number	10JAP0004				

## Remarks and Equipment Summary

1: Toolstring	1: Remarks	
<p>Cum. Length 36.7 Stab: 8 :EW21985</p>  <p>Cum. Length 35.08 NMDC: 8 :SBD7069</p>		

Cum. Length 25.74  
TELE825:E3165  
MSSU825  
Upper Extender  
MDC825:E3165  
MMA:1336  
MDI:2259  
PMGR  
PMEA  
MTA  
MTK825  
MSSD825  
Lower Extender,

D&I 21.38

GR 20.73

ROP 19.03

Cum. Length 17.76  
ARC8:1955  
ARDC:1955  
Upper Extender  
CDJA  
AREA:1925F  
APWD  
ARSS  
Lower Extender

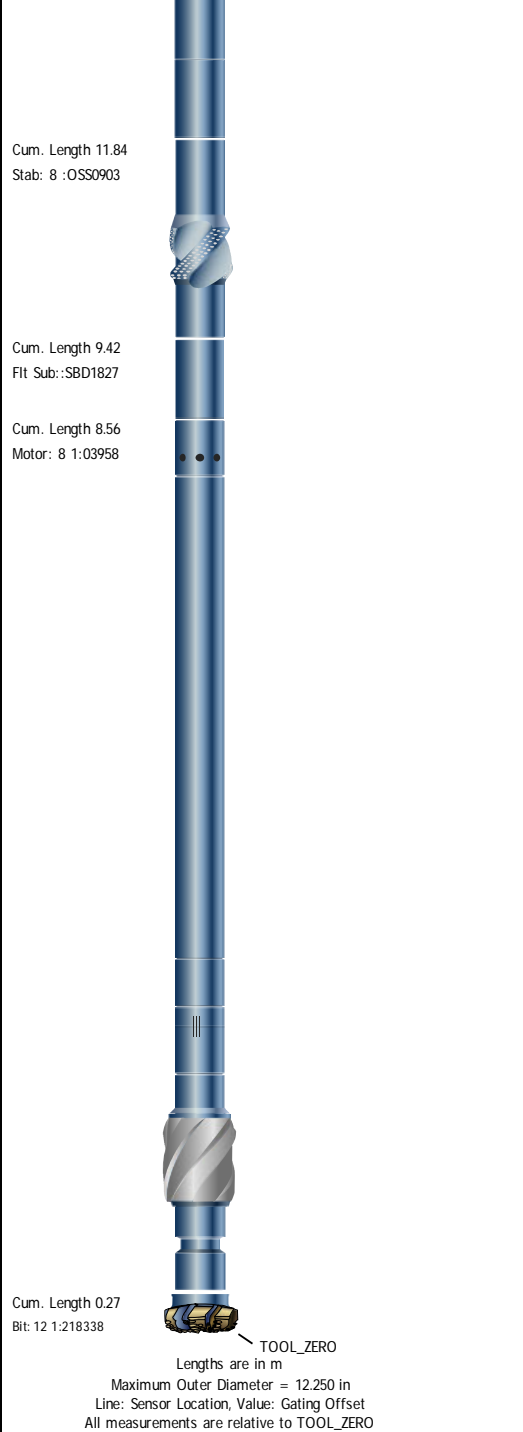
ROP 15.46

GR 14.39

Resistivity 14.34

Pressure 13.63





## Survey Record

<b>Survey Calculation</b>					
Method :	Minimum Radius of Curvature	DLS Method :	Lubinski		
North Reference :	Grid North	Total Correction Formula :	Magnetic Dec - Grid Convergence		
Grid Convergence :	1.01 deg				
<b>Rig Location</b>					
Latitude :	33° 18' 0.756" N	Longitude :	136° 38' 8.928" E		
<b>Tie In Point</b>					
Measured Depth:	0.00 m	Inclination:	0.00 deg	Azimuth:	0.00 deg
True Vertical Depth:	0.00 m	North Displacement:	0.00 m	East Displacement:	0.00 m
N/-S VSec Origin:	0.00 m	E/-W VSec Origin:	0.00 m	Vertical Section Azimuth:	0.00 deg

<b>D&amp;I Inits Computed and Values Used - 1</b>			
Geomagnetic Model :	BGGM 2009	Geomagnetic Date :	13-Nov-2010
Computed Location B :	45915.09 nT +/- 300.00nT	Used Location B :	45915.09 nT +/- 300.00nT
Computed Location G :	9.80 m/s2 +/- 0.02m/s2	Used Location G :	9.80 m/s2 +/- 0.02m/s2

Computed Magnetic Dip :	46.76 deg +/- 0.45deg	Used Magnetic Dip :	46.76 deg +/- 0.45deg
Computed Magnetic Dec :	-6.58 deg	Used Magnetic Dec :	-6.58 deg
Computed Total Correction :	-7.59 deg	Used Total Correction :	-7.59 deg

<b>D&amp;I Inits Computed and Values Used - 2</b>			
Geomagnetic Model :	BGGM 2009	Geomagnetic Date :	20-Nov-2010
Computed Location B :	45915.72 nT +/- 300.00nT	Used Location B :	45915.72 nT +/- 300.00nT
Computed Location G :	9.80 m/s2 +/- 0.02m/s2	Used Location G :	9.80 m/s2 +/- 0.02m/s2
Computed Magnetic Dip :	46.76 deg +/- 0.45deg	Used Magnetic Dip :	46.76 deg +/- 0.45deg
Computed Magnetic Dec :	-6.58 deg	Used Magnetic Dec :	-6.58 deg
Computed Total Correction :	-7.59 deg	Used Total Correction :	-7.59 deg

<b>Survey Quality Index</b>		
0 : Long, passed all criteria	3 : Long, failed G criteria	4 : Long, failed all criteria
9 : Manual		

<b>Survey Correction Index</b>													
0 : No correction													

Seq	MD (m)	Incl (deg)	Azim (deg)	Course (m)	TVD (m)	V Sec (m)	N/ -S (m)	E/ -W (m)	Closure (m)	at Azi (deg)	DLS deg/30m	Tool Type	QI	CI
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP		
2	1966.00	0.00	0.00	1966.00	1966.00	0.00	0.00	0.00	0.00	90.00	0.00	Other	9	
3	2012.75	0.33	215.43	46.75	2012.75	-0.11	-0.11	-0.08	0.13	215.43	0.21	TeleScope	4	0
4	2052.34	0.09	294.07	39.58	2052.33	-0.19	-0.19	-0.17	0.25	222.39	0.24	TeleScope	0	0
5	2091.49	0.27	262.16	39.15	2091.49	-0.19	-0.19	-0.29	0.35	237.25	0.15	TeleScope	0	0
6	2128.43	0.15	212.97	36.95	2128.43	-0.24	-0.24	-0.41	0.47	239.24	0.17	TeleScope	3	0
7	2166.16	0.14	272.11	37.73	2166.16	-0.28	-0.28	-0.48	0.56	239.55	0.12	TeleScope	0	0
8	2204.01	0.34	262.46	37.85	2204.01	-0.30	-0.30	-0.64	0.70	245.23	0.16	TeleScope	0	0
9	2243.14	0.26	327.53	39.13	2243.13	-0.24	-0.24	-0.80	0.84	253.57	0.25	TeleScope	0	0
10	2281.39	0.28	314.51	38.25	2281.38	-0.10	-0.10	-0.92	0.92	263.86	0.05	TeleScope	0	0
11	2320.23	0.08	0.06	38.85	2320.23	0.00	0.00	-0.99	0.99	269.78	0.18	TeleScope	0	0
12	2358.29	0.27	359.35	38.06	2358.29	0.11	0.11	-0.99	0.99	276.54	0.15	TeleScope	0	0
13	2395.06	0.37	334.98	36.77	2395.06	0.31	0.31	-1.04	1.08	286.56	0.14	TeleScope	0	0
14	2436.94	0.22	8.62	41.89	2436.94	0.51	0.51	-1.08	1.20	295.25	0.16	TeleScope	0	0
15	2473.67	0.31	337.62	36.73	2473.67	0.67	0.67	-1.11	1.30	301.16	0.14	TeleScope	0	0
16	2509.82	0.42	339.03	36.14	2509.81	0.89	0.89	-1.20	1.49	306.51	0.09	TeleScope	0	0
17	2549.35	0.44	18.06	39.53	2549.34	1.16	1.16	-1.20	1.67	314.10	0.22	TeleScope	0	0
18	2588.00	0.34	340.82	38.66	2588.00	1.41	1.41	-1.19	1.85	319.81	0.21	TeleScope	0	0
19	2626.70	0.49	9.69	38.70	2626.70	1.68	1.68	-1.20	2.07	324.43	0.20	TeleScope	0	0
20	2663.60	0.54	7.50	36.90	2663.59	2.01	2.01	-1.15	2.31	330.14	0.05	TeleScope	3	0
21	2701.64	0.67	36.16	38.04	2701.63	2.36	2.36	-1.00	2.57	337.13	0.26	TeleScope	0	0
22	2739.45	0.77	38.08	37.80	2739.43	2.74	2.74	-0.71	2.83	345.50	0.08	TeleScope	0	0
23	2776.32	0.55	35.64	36.87	2776.30	3.08	3.08	-0.45	3.12	351.66	0.18	TeleScope	3	0
24	2815.07	0.61	47.29	38.75	2815.05	3.38	3.38	-0.19	3.38	356.73	0.10	TeleScope	3	0
25	2835.39	0.73	29.17	20.32	2835.37	3.56	3.56	-0.05	3.56	359.18	0.36	TeleScope	3	0
26	2858.37	0.89	32.22	22.99	2858.35	3.84	3.84	0.12	3.84	1.73	0.22	TeleScope	0	0
27	2896.18	0.77	14.92	37.81	2896.15	4.33	4.33	0.34	4.35	4.46	0.22	TeleScope	3	0
28	2932.88	0.38	133.08	36.70	2932.85	4.49	4.49	0.49	4.52	6.22	0.82	TeleScope	3	0

1

**NT3-01 RUN01 1:500MD**

<b>Integration Summary</b>				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit

Software Version			
Acquisition System		Version	
MaxWell		2.0.6803.0	
Computation	Description		Version
ARC8GammaRayComputation	ARC8 Gamma Ray Computation Package for both Real-time and Recorded Mode		2.0.6803.0
ARCResistivity	ARC Resistivity Computation Package for ARC Tool Family		2.0.6803.0
Tool Elements	Description	Software Version	Firmware Version
ARDC	ARC 8.25 Inch Tool Drilling Collar	2.0.6803.0	V9.4B
DRILLING_SURFACE	DRILLING_SURFACE	2.0.6803.0	

Pass Summary						
Run Name	Pass Objective	Direction	Top	Bottom	Acquisition Start Date	Acquisition Start Time
1	Drilling	Down	2006.60 m	2857.75 m	17-Nov-2010	09:17:52
All depths are referenced to toolstring zero						

## Log 1: Drilling 6753DE61-F745-4984-B686-EFEE0571EB18

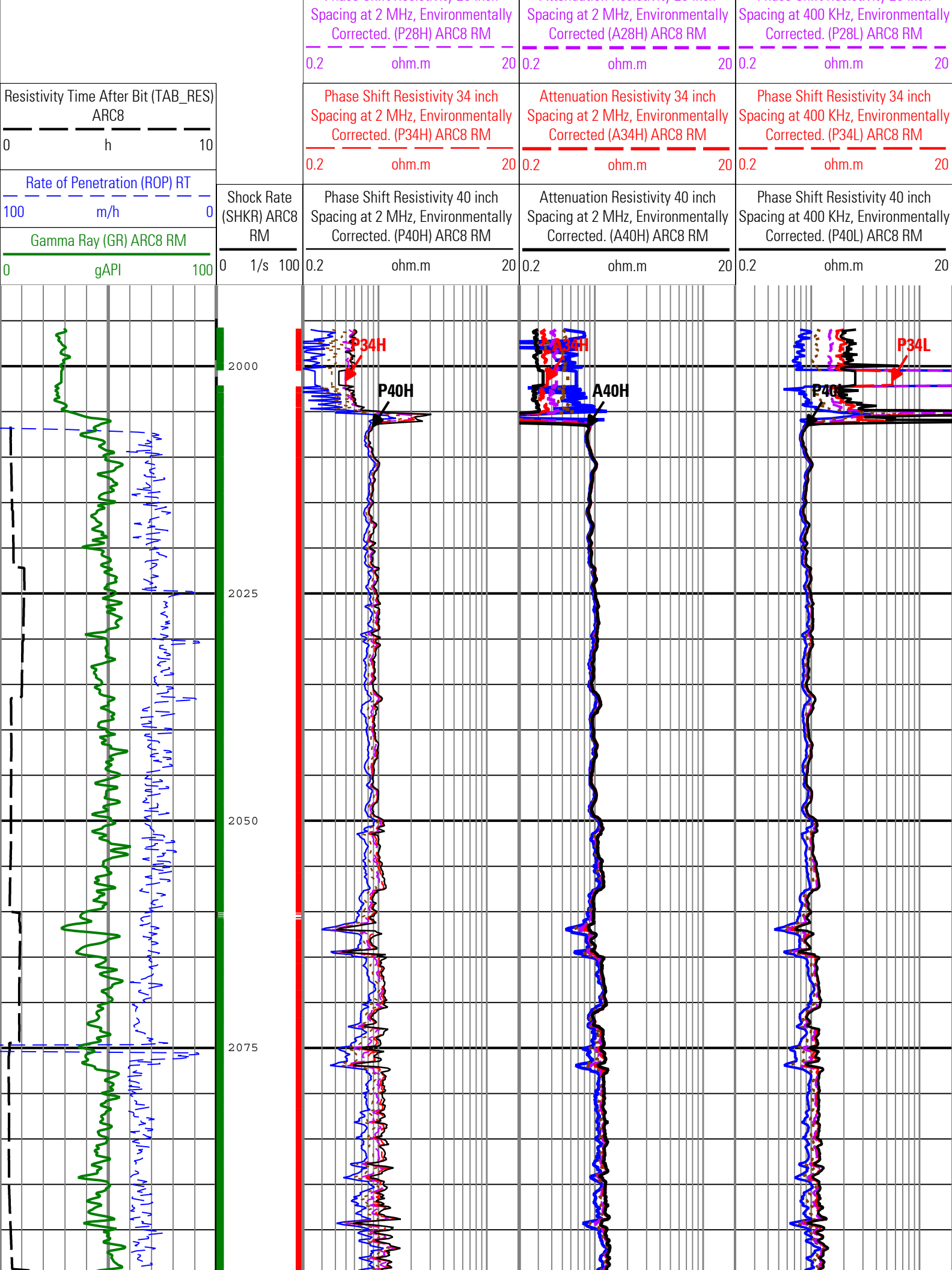
Description: ARC Dual Frequency 3-Log Resistivity Format: Log ( ARC Dual Resistivity 3-Log ) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth  
 Creation Date: 08-Dec-2010 10:09:22

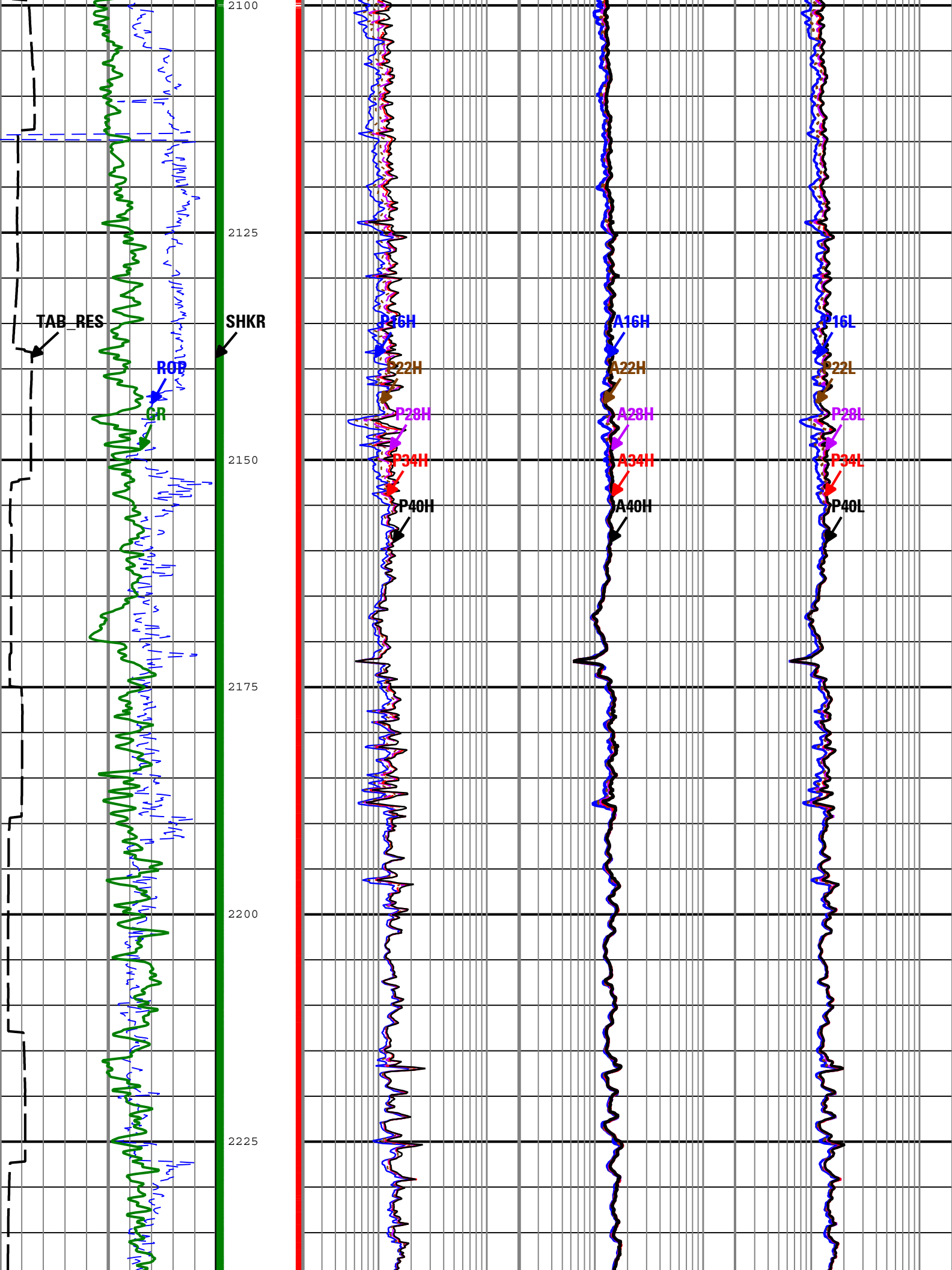
A16H	ARC8:ARC8:ARDC	6in - RM
A22H	ARC8:ARC8:ARDC	6in - RM
A28H	ARC8:ARC8:ARDC	6in - RM
A34H	ARC8:ARC8:ARDC	6in - RM
A40H	ARC8:ARC8:ARDC	6in - RM
GR	ARC8:ARC8:ARDC	6in - RM
P16H	ARC8:ARC8:ARDC	6in - RM
P16L	ARC8:ARC8:ARDC	6in - RM
P22H	ARC8:ARC8:ARDC	6in - RM
P22L	ARC8:ARC8:ARDC	6in - RM
P28H	ARC8:ARC8:ARDC	6in - RM
P28L	ARC8:ARC8:ARDC	6in - RM
P34H	ARC8:ARC8:ARDC	6in - RM
P34L	ARC8:ARC8:ARDC	6in - RM
P40H	ARC8:ARC8:ARDC	6in - RM
P40L	ARC8:ARC8:ARDC	6in - RM
ROP	DRILLING_SURFACE	6in - RT
SHKR	ARC8:ARC8	6in - RM
TAB_RES	ARC8:ARC8:ARDC	6in
TICKS_GR	ARC8:ARC8	1.2in - RM
TICKS_RES	ARC8:ARC8	1.2in - RM

┆ TICKS\_GR - Gamma Ray Tick Marks ARC8 RM

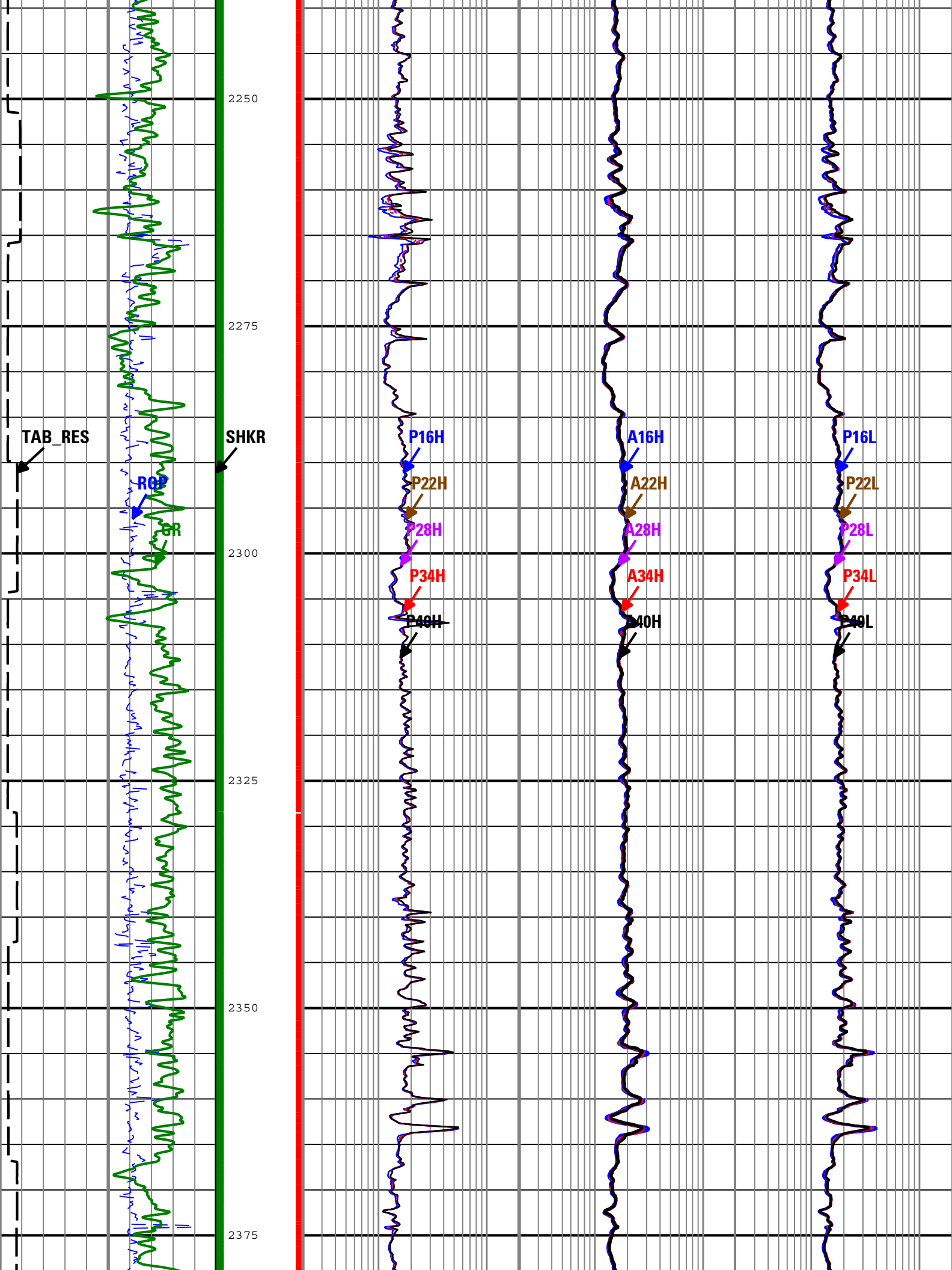
┆ TICKS\_RES - Resistivity Tick Marks ARC8 RM

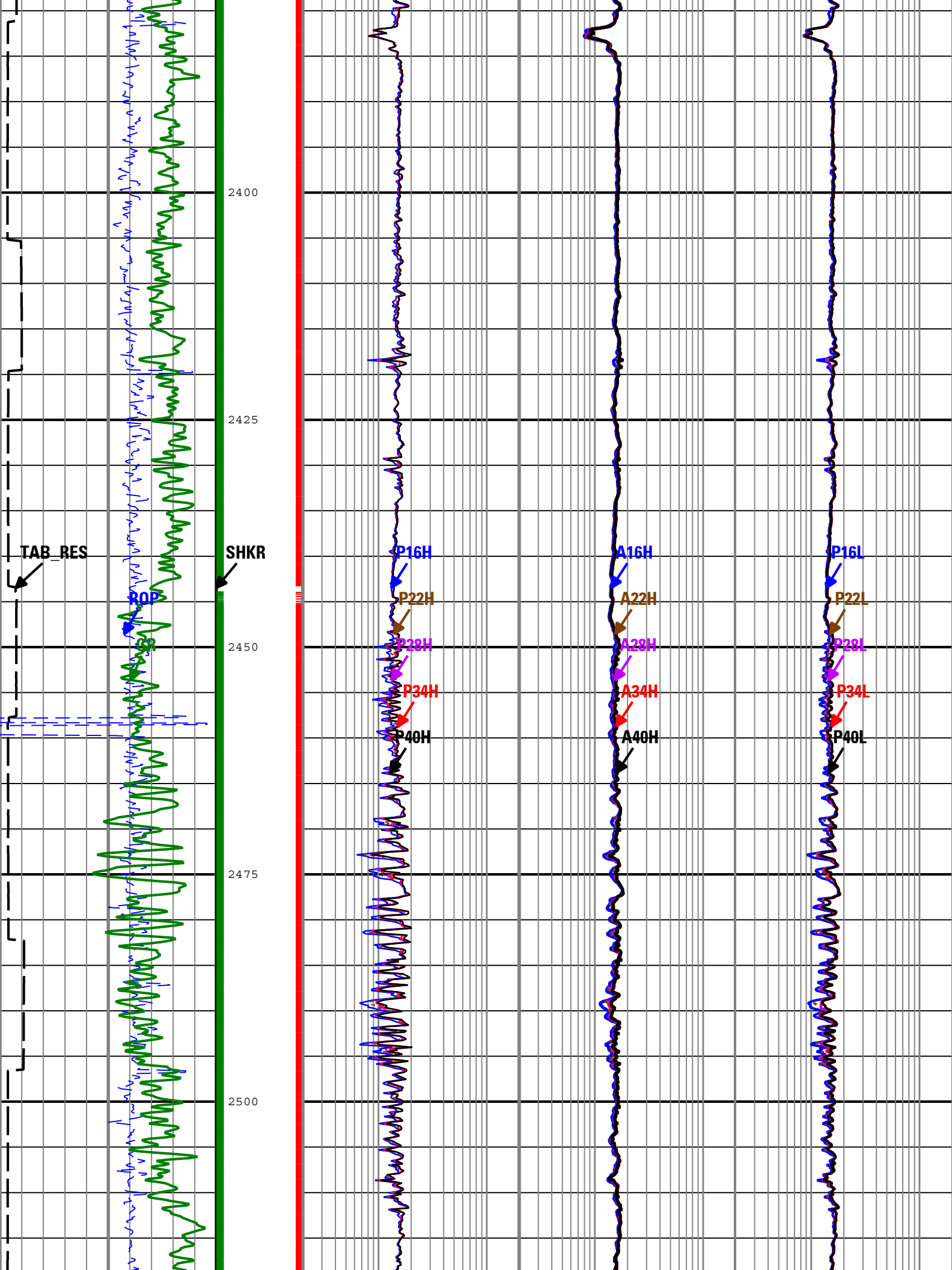
Phase Shift Resistivity 16 inch Spacing at 2 MHz, Environmentally Corrected. (P16H) ARC8 RM	Attenuation Resistivity 16 inch Spacing at 2 MHz, Environmentally Corrected (A16H) ARC8 RM	Phase Shift Resistivity 16 inch Spacing at 400 KHz, Environmentally Corrected. (P16L) ARC8 RM
0.2 ohm.m 20	0.2 ohm.m 20	0.2 ohm.m 20
Phase Shift Resistivity 22 inch Spacing at 2 MHz, Environmentally Corrected. (P22H) ARC8 RM	Attenuation Resistivity 22 inch Spacing at 2 MHz, Environmentally Corrected (A22H) ARC8 RM	Phase Shift Resistivity 22 inch Spacing at 400 KHz, Environmentally Corrected. (P22L) ARC8 RM
0.2 ohm.m 20	0.2 ohm.m 20	0.2 ohm.m 20
Phase Shift Resistivity 28 inch	Attenuation Resistivity 28 inch	Phase Shift Resistivity 28 inch

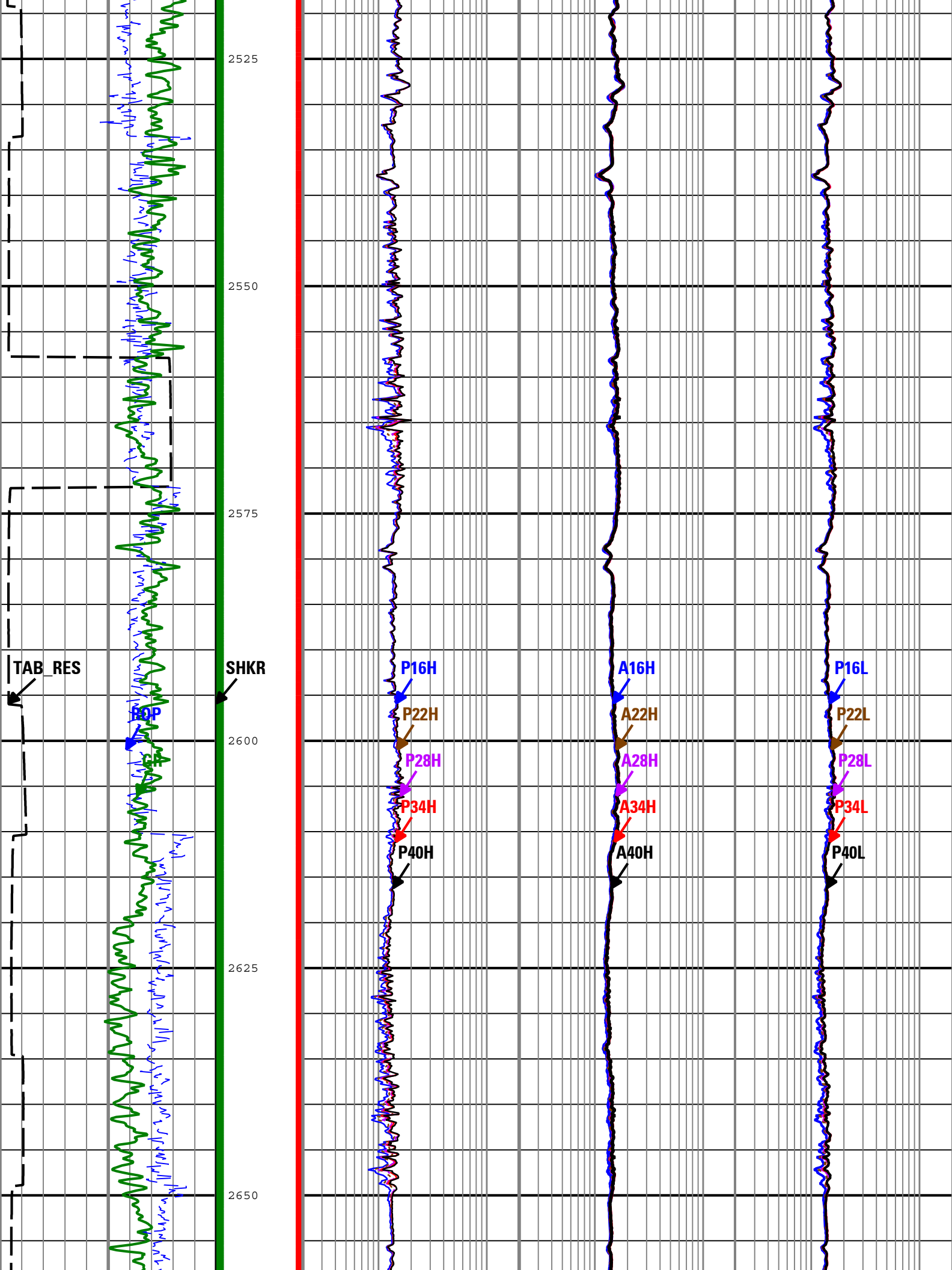


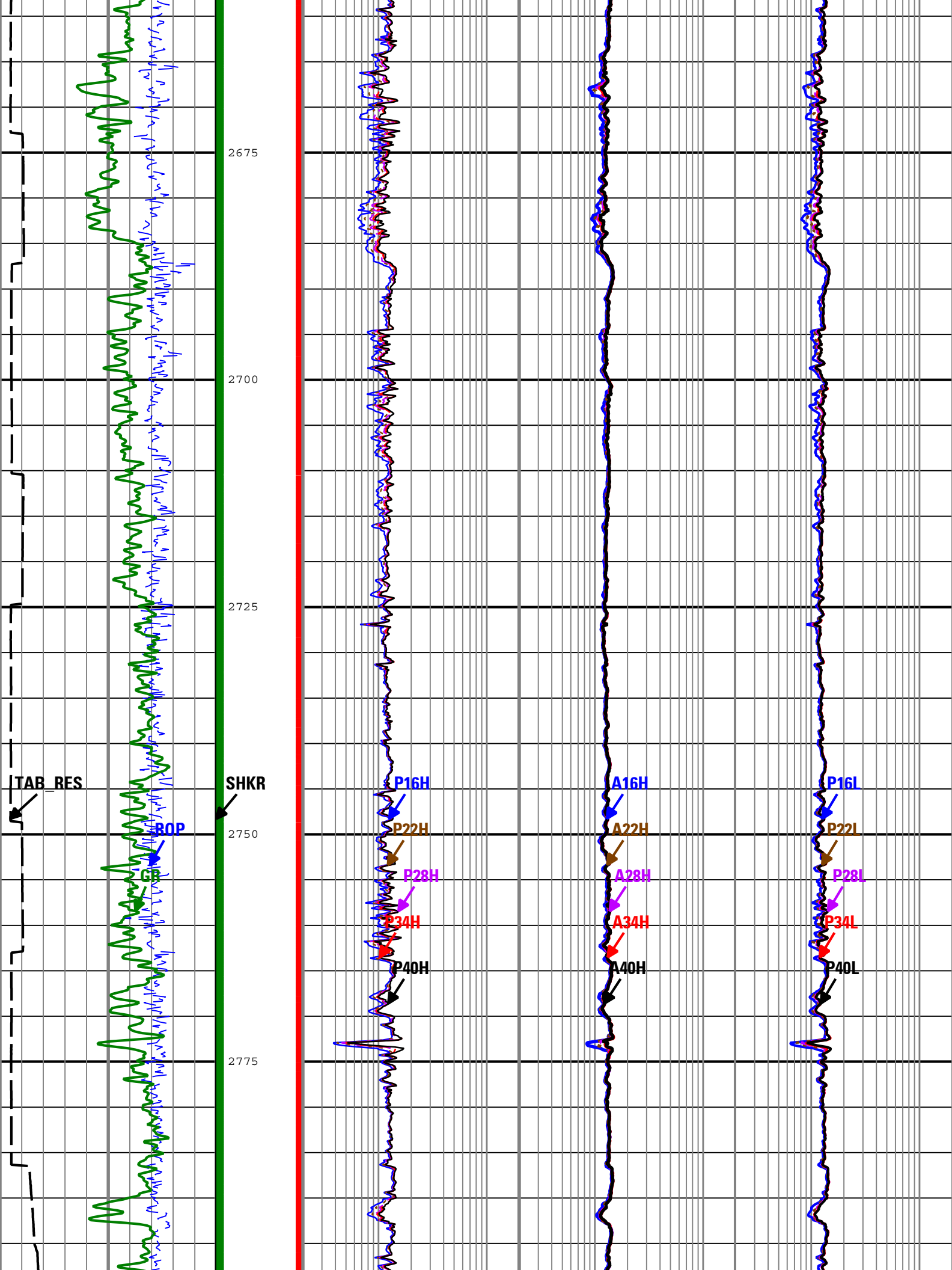


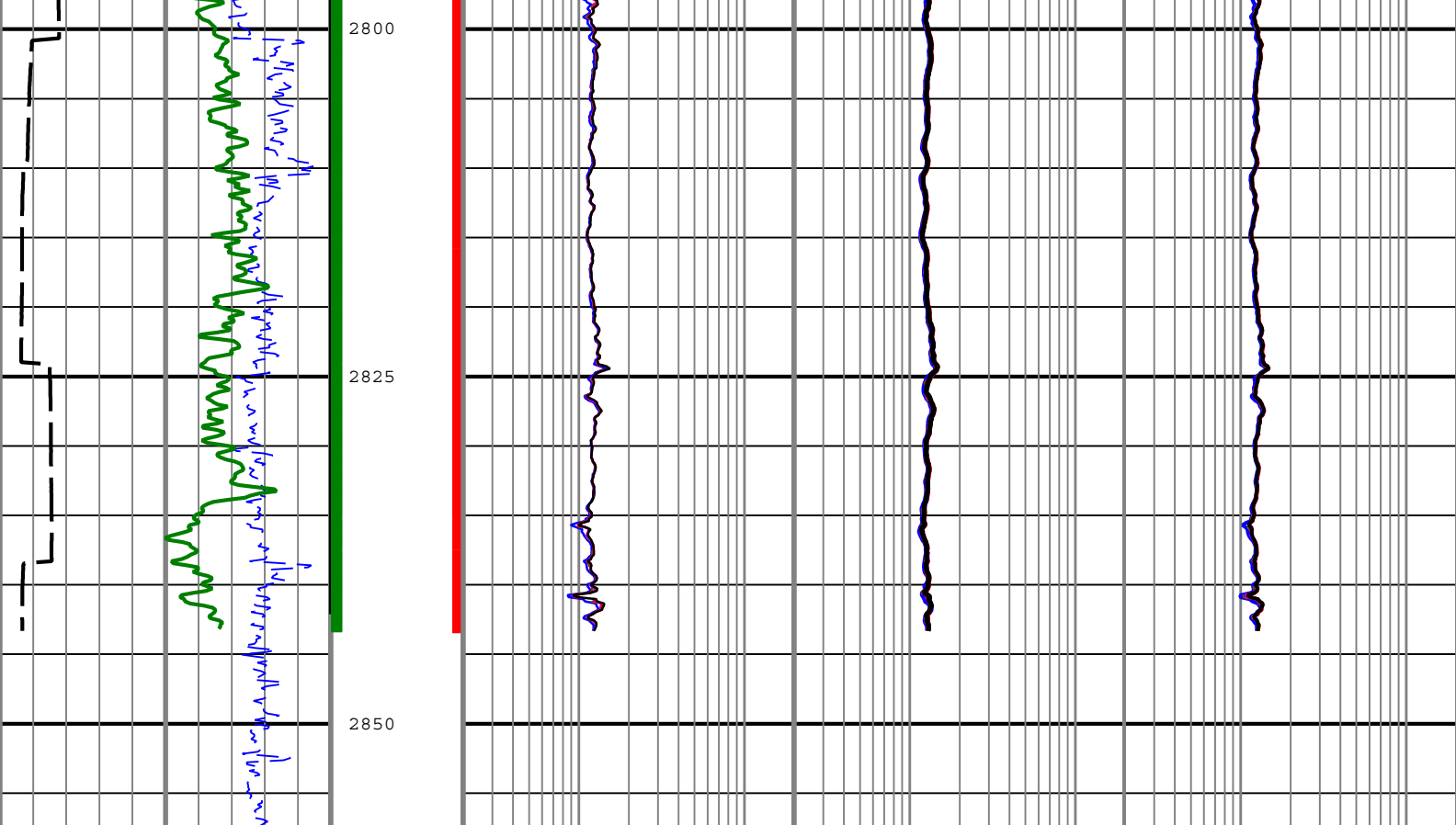












Resistivity Time After Bit (TAB_RES) ARC8 0 h 10	Shock Rate (SHKR) ARC8 RM 0 1/s 100	Phase Shift Resistivity 16 inch Spacing at 2 MHz, Environmentally Corrected. (P16H) ARC8 RM 0.2 ohm.m 20	Attenuation Resistivity 16 inch Spacing at 2 MHz, Environmentally Corrected (A16H) ARC8 RM 0.2 ohm.m 20	Phase Shift Resistivity 16 inch Spacing at 400 KHz, Environmentally Corrected. (P16L) ARC8 RM 0.2 ohm.m 20
Rate of Penetration (ROP) RT 100 m/h 0		Phase Shift Resistivity 22 inch Spacing at 2 MHz, Environmentally Corrected. (P22H) ARC8 RM 0.2 ohm.m 20	Attenuation Resistivity 22 inch Spacing at 2 MHz, Environmentally Corrected (A22H) ARC8 RM 0.2 ohm.m 20	Phase Shift Resistivity 22 inch Spacing at 400 KHz, Environmentally Corrected. (P22L) ARC8 RM 0.2 ohm.m 20
Gamma Ray (GR) ARC8 RM 0 gAPI 100		Phase Shift Resistivity 28 inch Spacing at 2 MHz, Environmentally Corrected. (P28H) ARC8 RM 0.2 ohm.m 20	Attenuation Resistivity 28 inch Spacing at 2 MHz, Environmentally Corrected (A28H) ARC8 RM 0.2 ohm.m 20	Phase Shift Resistivity 28 inch Spacing at 400 KHz, Environmentally Corrected. (P28L) ARC8 RM 0.2 ohm.m 20
		Phase Shift Resistivity 34 inch Spacing at 2 MHz, Environmentally Corrected. (P34H) ARC8 RM 0.2 ohm.m 20	Attenuation Resistivity 34 inch Spacing at 2 MHz, Environmentally Corrected (A34H) ARC8 RM 0.2 ohm.m 20	Phase Shift Resistivity 34 inch Spacing at 400 KHz, Environmentally Corrected. (P34L) ARC8 RM 0.2 ohm.m 20
		Phase Shift Resistivity 40 inch Spacing at 2 MHz, Environmentally Corrected. (P40H) ARC8 RM 0.2 ohm.m 20	Attenuation Resistivity 40 inch Spacing at 2 MHz, Environmentally Corrected. (A40H) ARC8 RM 0.2 ohm.m 20	Phase Shift Resistivity 40 inch Spacing at 400 KHz, Environmentally Corrected. (P40L) ARC8 RM 0.2 ohm.m 20

┆TICKS\_RES - Resistivity Tick Marks ARC8 RM

┆TICKS\_GR - Gamma Ray Tick Marks ARC8 RM

Description: ARC Dual Frequency 3-Log Resistivity Format: Log ( ARC Dual Resistivity 3-Log ) Index Scale: 1:500 Index Unit: m Index Type: Measured Depth  
 Creation Date: 08-Dec-2010 10:09:22

### Channel Processing Parameters

Parameter	Description	ToolPath	Value	Unit
BHK	Drilling Fluid Potassium Concentration	Borehole	0	%
BHT	Bottom Hole Temperature	Borehole	10	degC
BS	Bit Size	COMPLETION	Depth Zoned	in

DEPTH_SEL	Depth Selection Parameter	DNMSESSION	Driller's Depth	m
DFD	Drilling Fluid Density	Borehole	1.02	g/cm3
DFT	Drilling Fluid Type	Borehole	Water	
GRSE_RM	Generalized Mud Resistivity Selection for Recorded Mode	Borehole	REMS	
GTSE_RT	Generalized Temperature Selection for Realtime Mode	Borehole	GTEM_GRDSURF	
MST	Mud Sample Temperature	Borehole	20	degC
RMS	Resistivity of Mud Sample	Borehole	0.2	ohm.m
SHT	Surface Hole Temperature	Borehole	5	degC
TD	Total Measured Depth	Borehole	2858	m

## Depth Zone Parameters

Parameter	Value	Start ( m )	Stop ( m )
BS	0	1991.11	2006.9
BS	12.25	2006.9	2857.5

All depth are actual.

## Tool Control Parameters

Parameter	Description	ToolPath	Value	Unit
OFFBTM_TH	Threshold for deciding whether the bit is off bottom	DnMWorkflow	0.3	m

## Detailed Calibration Record

### ARC8 : Calibration Resistivity - 1

Primary Set Components	Description	Tool Element	Serial Number
	Electronics with AIM	AREA	1925F
Calibration Dates	Shop Calibration		
Date & Time / Date Validity	06-Oct-2010 02:42:57 PM - Valid		
Calibration Source	Time Frame File		

**Calibration Type:** Resistivity: Air

Description	Min/Nominal/Max	Shop	Unit
ATT1F2AIR Attenuation T1 at 2 MHz	6.500 / 8.500 / 10.500	7.873	dB
ATT2F2AIR Attenuation T2 at 2 MHz	4.500 / 6.500 / 8.500	6.779	dB
ATT3F2AIR Attenuation T3 at 2 MHz	2.500 / 4.500 / 6.500	4.591	dB
ATT4F2AIR Attenuation T4 at 2 MHz	2.600 / 4.600 / 6.600	4.742	dB
ATT5F2AIR Attenuation T5 at 2 MHz	1.600 / 3.600 / 5.600	3.183	dB
PST1F2AIR Phase Shift T1 at 2 MHz	-3.900 / 0.100 / 4.100	-1.087	deg
PST2F2AIR Phase Shift T2 at 2 MHz	-3.900 / 0.100 / 4.100	1.170	deg
PST3F2AIR Phase Shift T3 at 2 MHz	-3.900 / 0.100 / 4.100	-1.186	deg
PST4F2AIR Phase Shift T4 at 2 MHz	-3.900 / 0.100 / 4.100	1.161	deg
PST5F2AIR Phase Shift T5 at 2 MHz	-3.900 / 0.100 / 4.100	-1.211	deg
ATT1F4AIR Attenuation T1 at 400 KHz	6.500 / 8.500 / 10.500	7.903	dB
ATT2F4AIR Attenuation T2 at 400 KHz	4.500 / 6.500 / 8.500	6.762	dB
ATT3F4AIR Attenuation T3 at 400 KHz	2.500 / 4.500 / 6.500	4.619	dB
ATT4F4AIR Attenuation T4 at 400 KHz	2.600 / 4.600 / 6.600	4.713	dB
ATT5F4AIR Attenuation T5 at 400 KHz	1.600 / 3.600 / 5.600	3.223	dB
PST1F4AIR Phase Shift T1 at 400 KHz	-3.900 / 0.100 / 4.100	1.897	deg

PST2F4AIR Phase Shift T2 at 400 KHz	-3.900 / 0.100 / 4.100	-2.010	deg
PST3F4AIR Phase Shift T3 at 400 KHz	-3.900 / 0.100 / 4.100	1.940	deg
PST4F4AIR Phase Shift T4 at 400 KHz	-3.900 / 0.100 / 4.100	-1.978	deg
PST5F4AIR Phase Shift T5 at 400 KHz	-3.900 / 0.100 / 4.100	1.890	deg

### ARC8 : Calibration Gamma Ray - 1

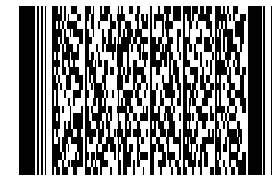
Primary Set Components	Description	Tool Element	Serial Number
	Electronics with AIM	AREA	1925F

Calibration Dates	Shop Calibration		
Date & Time / Date Validity	06-Oct-2010 04:40:52 PM - Valid		
Calibration Source	Time Frame File		

Calibration Type: Gamma Ray: Blanket

Description	Min/Nominal/Max	Shop	Unit
GR_GAIN Gamma Ray Calibration Gain	0.580 / 1.000 / 1.250	1.017	

**Company:** JAMSTEC  
 MQJ  
**Well:** NT3-01  
**Field:** Nankai Kumano Basin  
**Rig Name:** Chikyu  
**State:** Mie Prefecture  
**Country:** Japan



**Schlumberger**

ArcVISION Resistivity  
 Measured Depth, Scale 1:500  
 Recorded Mode RUN01