

Schlumberger

Company: Integrated Ocean Drilling Program

Well: IODP Exp 308 Hole U1321A
 Field: East Breaks Block 691
 Rig: Joides Resolution State: Texas

VISION Resistivity - Dual Frequency 1 : 200 Measured Depth Recorded Mode Log

Location		Total depth:	1602 m	K.B.	Top Drive
Spud date:		13-Jun-2005		G.L.	-1451.5 m
Runs:		1 To 1		D.F.	10.5 m
Permanent datum:		Mean Sea Level		Elev.:	0 m
Log measured from:		Drill Floor		10.5 m above Perm. datum	
Depth reference:		Driller's Depth			
Service Order no.	NAD 27	Longitude	Latitude		
40012055	UTM Zone 15N	W94.39892	N27.27568		

Rig: Joides Resolution
 Field: East Breaks Block 691
 Location: Brazos Trinity Basin
 Well: IODP Exp 308 Hole U1321A
 Company: Integrated Ocean Drilling Program

Depth logged:	1462 m	To	1595 m	Mag decl:	3.52 deg.	Other services:	
Date logged:	13-Jun-05	To	13-Jun-05	Mag dip:	56.98 deg.		
Bore hole record		Casing record					
Hole size	from	to	Size	Density	from	to	
9.875 in.	1462 m	1602 m					
Type	Mud record		Borehole deviation record				
Seawater	from	to	Min	Max	from	to	
	1462 m	1602 m	1.08 deg.	1.82 deg.	1462 m	1602 m	

Surface equipment		Software record	
Unit	TWIS	IDEAL Wis	10_OC_04.1
Depth system	Geolograph	SPM	10_1C_05
		LWD	See Remarks
		MWD	8.0c00

DISCLAIMER
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OTHER SERVICES FOR RUN 1
 Annular Pressure While Drilling

OTHER SERVICES FOR RUN

OTHER SERVICES FOR RUN

REMARKS: RUN NUMBER 1
 Run Objective: Drill and log sites U1320B, U1319B and U1321A.
 Source of data: Recorded Mode
 Reason POOH: Move to next drill site.

 geoVISION gamma ray is corrected for mud weight and bit size.
 arcVISION gamma ray is not environmentally corrected
 Resistivity is borehole compensated and environmentally corrected for bit size and mud resistivity.
 Neutron porosity was computed using a sandstone matrix of 2.65 g/cc and is corrected for bit size, temperature, borehole salinity and mud hydrogen index

REMARKS: RUN NUMBER

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Tool Record Rates:
 adnVISION Density & Neutron @ 10 Sec
 arcVISION Res & GR @ 6 sec, Pres @ 10 sec
 geoVISION Res = 5 sec, GR @ 10 sec

Tools software versions:
 PowerPulse (8.0C00) ; adnVISION (8.3A02)
 arcVISION (6.4B01) ; geoVISION (6.2B01)
 Crew: Hoong, K. & Domalakes, D.

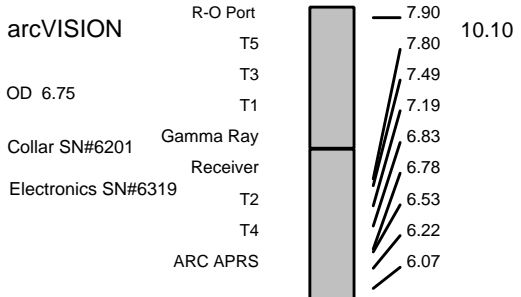
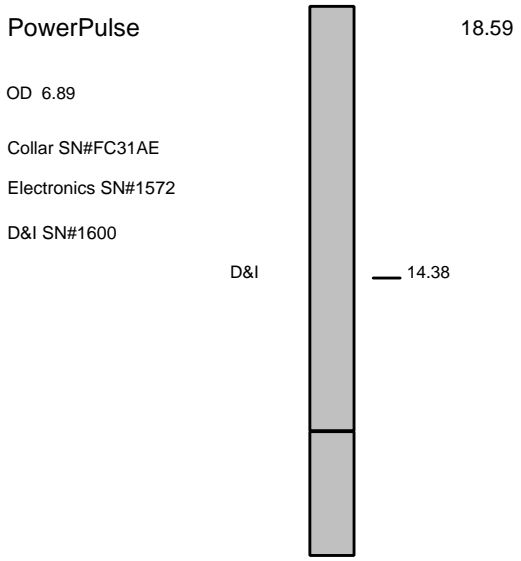
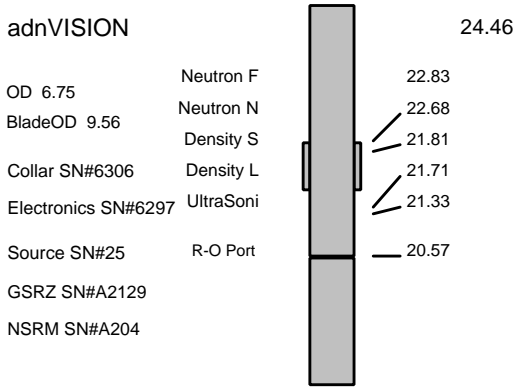
EQUIPMENT DESCRIPTION

RUN1

RUN

RUN

DOWNHOLE EQUIPMENT



Variable Name	Variable Description	Run Name & Value
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Run Number 1

General Information

BHT_RM	Bottom Hole Temperature (RM)	42.799999
BSAL_RM	Mud Salinity (RM)	0.000000
BS_RM	Bit Size (RM)	9.875000
COEF_M	User Defined FEXP in Clean Sand	1.650000
C_WS	Overpressure correction to Sw and M	1.000000
FEXP	Formation Factor Exponent(RM)	2.000000
FNUM	Formation Factor Enumerator(RM)	1.000000
FPHI_RM	Formation Factor Porosity Source (RM)	XPLOT
MST_RM	Mud Sample temperature (RM)	67.900002
MW_RM	Mud Weight (RM)	8.570000
OBMF_RM	Oil Based Mud (RM)	NO
RHOF_RM	Mud Filtrate Density (RM)	1.000000
RHOM_RM	Matrix density (RM)	2.650000
RMS_RM	Resistivity of Mud Sample (RM)	0.205000
RWA_COMP_M	Rwa computation model	BASIC
RWA_DEN_AD	Rwa Density Input ADN	RHOB
RWA_DEN_CD	Rwa Density Input CDN	RHOB
RWA_DEN_IN	Rwa Density Input	RHOB
RWA_FORM_M	Rwa computation formation model	CLASTIC
RWA_RES_IN	Rwa computation resistivity input	RT
RWS_RM	Resistivity of Connate Water (RM)	1.000000
SHT_RM	Surface Hole Temperature (RM)	-5.000000
TD_RM	Total Measured Depth (RM)	5252.620117
TWS_RM	Temperature of Connate Water (RM)	75.000000
VF_ILLI	Fraction of illite in shales	0.500000
VF_KAOL	Fraction of kaolinite in shales	0.500000
VF_MONT	Fraction of montmorillonite in shales	0.000000
XPDM_RM	Cross plot density porosity multiplier	0.675000
XPNM_RM	Cross plot neutron porosity multiplier	0.325000

ADN

LWD_RM/STATION_FILE/PARAMETER	Station Time-frame file name		Station
ADN_CHASSI	ADN Chassis Type String	ADN	
ADN_COLLAR	ADN Collar Type String	ADN	
ADN_STAB_S	ADN Stabilizer Type String	ADN	
ALPHA_COMP	Perform Density Enhanced Vertical Resolution process ?		YES
ALPHA_COMP	Perform Neutron Enhanced Vertical Resolution process ?		YES
AVE_ADN	ADN/Array Channels: perform averaging(RM) :		YES
A_DHS	ADN Down Hole Software Version String		YES
CHI_RM	Caliper High limit from BS (RM)	3.000000	
CLO_RM	Caliper Low limit from BS (RM)	0.000000	
DEVI	Well Section Deviation	0.100000	
DTIK_SEL	ADN: Density Tick Channel Name	LSAZ	
DTMUD	Delta-T for Mud	196.000000	
DYN_IMG_CO	Generate Dynamic Normalized Image?		YES
ECC_CORR_A	Perform Eccentering Correction for TNPH?		YES
ENVCOR	Neutron Quadrant Processing: Environmental Correction?		YES
EVRL	EVR Process averaging number of samples (RM)	49	
GCSE	Generalized Caliper Selection	BS	
HPS	ADSE-EB (High Pressure Inconel Chassis)?	NO	
IBS	Intergal Blade Stabilizer Collar?	NO	
IDQT	Image Derived Quality Threshold	0.500000	
IHVS	Integrated Hole Volume Start Value(RM)	0.000000	
IMAGE_MAX_	Image SOA (Quadrant) Right Scale	2.500000	
IMAGE_MAX_	Image PEF(Segment) Right Scale	6.000000	
IMAGE_MAX_	Image RHOB(Segment) Right Scale	2.650000	
IMAGE_MIN_	Image SOA (Quadrant) Left Scale	0.000000	
IMAGE_MIN_	Image PEF(Segment) Left Scale	2.000000	
IMAGE_MIN_	Image RHOB(Segment) Left Scale	2.050000	
LITHO_TYPE	Lithology (RM)	SAND	
N1FTU_6_RM	ADN: Neutron Bank 1 Far Tubes used :	1-2-3	
N2FTU_6_RM	ADN: Neutron Bank 2 Far Tubes used :	1-2-3	
NNTU_RM	ADN Neutron Near Banks Used	1-2	
NTIK_SEL	ADN: Neutron Tick Channel Name	FR11	
SOCNL	Standoff Distance of the CNL Tool	1.000000	
SSIZ_ADN	ADN Stabilizer Size	9.625000	
STOH	ADN Density Top of Hole Sector (Left Boundary):	SECTOR_0	
TRPM_RM	Average Tool Rotational Speed	20.000000	
USMIN_RM	ADN:Minimum Ultrasonic standoff (RM)	0.180000	
USWF_RM	ADN:Process Ultrasonic Waveform?	YES	
VERS_ADN	ADN Downhole Software Version	8.300000	
WSDI	Window Size of Dynamic Normalization Image	15.000000	

RAB

RAB/BTN_SLV_SIZE/PARAMETER	RAB: Button Sleeve Diameter		RAB6:
RAB/STAB_SIZE/PARAMETER	RAB: Stabilizer Diameter		RAB6:
BDBHCA	RAB: Button Deep Borehole A Factor	-0.027121	
BDBHCB	RAB: Button Deep Borehole B Factor	0.000000	
BHA_COEF_V	RAB: BHA Coef Generator Version	2.000000	
BITBHCA	RAB: Bit A Borehole Factor	0.082395	
BITBHCB	RAB: Bit B Borehole Factor	0.000000	
BIT_K_FACT	RAB: Bit K Factor	3.347454	
BMBHCA	RAB: Button Medium Borehole A Factor	0.038730	
BMBHCB	RAB: Button Medium Borehole B Factor	0.000000	
BSBHCA	RAB: Button Shallow Borehole A Factor	0.070726	
BSBHCB	RAB: Button Shallow Borehole B Factor	0.000000	
BUT_KIMP_A	RAB: Button Impedance Coeff A	0.000000	

BUT_KIMP_B	RAB: Button Impedance Coeff B	0.000000	
DBUTTON_K	RAB: Button Deep K factor	0.004579	
GR_BHC_TOO	RAB: Gamma-Ray Borehole Coeff 1	6.750000	
IMAGE_MAX_	RAB: GR Image Maximum Scale Value	120.000000	
IMAGE_MAX_	RAB: Image Maximum Resistivity Value	100.000000	
IMAGE_MIN_	RAB: GR Image Minimum Scale Value	20.000000	
IMAGE_MIN_	RAB: Image Minimum Resistivity Value	1.000000	
JSD_RAB	RAB Acquisition start date	1.000000	
MAG_DECL_R	RAB: Magnetic Declination	3.520024	
MAG_INCL_R	RAB: Magnetic Dip	56.979965	
MBUTTON_K	RAB: Button Medium K Factor	0.004846	
OBM	RAB: Oil base Mud	NO	
ORIENTATIO	Rab Image Orientation	NORTH	
RABBDA0	RAB: Button Deep A0 Coeff	-0.030961	
RABBDA1	RAB: Button Deep A1 Coeff	0.016394	
RABBDA2	RAB: Button Deep A2 Coeff	-0.004267	
RABBDA3	RAB: Button Deep A3 Coeff	0.000480	
RABBDA4	RAB: Button Deep A4 Coeff	-0.000019	
RABBDA5	RAB: Button Deep A5 Coeff	0.000000	
RABBDMIN	RAB: Button Deep Minimum Value	0.050743	
RABBITA0	RAB: Bit A0 Coeff	0.482820	
RABBITA1	RAB: Bit A1 Coeff	-0.370526	
RABBITA2	RAB: Bit A2 Coeff	0.168749	
RABBITA3	RAB: Bit A3 Coeff	-0.033883	
RABBITA4	RAB: Bit A4 Coeff	0.002445	
RABBITA5	RAB: Bit A5 Coeff	0.000000	
RABBITMIN	RAB: Bit Minimum Value	18.398317	
RABBMA0	RAB: Button Medium A0 Coeff	-0.043972	
RABBMA1	RAB: Button Medium A1 Coeff	0.023308	
RABBMA2	RAB: Button Medium A2 Coeff	-0.006046	
RABBMA3	RAB: Button Medium A3 Coeff	0.000675	
RABBMA4	RAB: Button Medium A4 Coeff	-0.000027	
RABBMA5	RAB: Button Medium A5 Coeff	0.000000	
RABMMIN	RAB: Button Medium Minimum Value	0.056764	
RABBSA0	RAB: Button Shallow A0 Coeff	-0.062402	
RABBSA1	RAB: Button Shallow A1 Coeff	0.032476	
RABBSA2	RAB: Button Shallow A2 Coeff	-0.008229	
RABBSA3	RAB: Button Shallow A3 Coeff	0.000898	
RABBSA4	RAB: Button Shallow A4 Coeff	-0.000034	
RABBSA5	RAB: Button Shallow A5 Coeff	0.000000	
RABBSMIN	RAB: Button Shallow Minimum Value	0.078912	
RABDHS	RAB Down Hole Software	4.000000	
RABEC	RAB: Resistivity Env-Cor	YES	
RABRNGA0	RAB: RING A0 Coeff	-0.025738	
RABRNGA1	RAB: RING A1 Coeff	0.014539	
RABRNGA2	RAB: RING A2 Coeff	-0.003917	
RABRNGA3	RAB: RING A3 Coeff	0.000451	
RABRNGA4	RAB: RING A4 Coeff	-0.000018	
RABRNGA5	RAB: RING A5 Coeff	0.000000	
RABRNGMIN	RAB: Ring Minimum Value	1.605737	
RAB_BIT_EC	Bit Resistivity for ECAL_RAB?	YES	
RAB_BIT_IN	Input Bit Resistivity for Inversion? (Recommended at the bit)	NO	
RAB_CALIPE	Compute ECAL_RAB?	YES	
RAB_DEEPBT	Deep Button Resistivity for ECAL_RAB?	YES	
RAB_DEEPBT	Input Deep Button Resistivity for Inversion?	YES	
RAB_INVERS	Perform Rt Inversion?	NO	
RAB_INVERS	RAB Bit Sensor Weight for Inversion[0,1]	0.000000	
RAB_INVERS	Ending Depth for GR Cutoff in Zone1 (default through the whole well)	100000.000000	
RAB_INVERS	Continuity Multiplier[0,1]	0.500000	
RAB_INVERS	RAB Deep Button Sensor Weight for Inversion[0,1]	1.000000	
RAB_INVERS	RAB inversion for Dh?	NO	
RAB_INVERS	RAB inversion for Di?	YES	
RAB_INVERS	GR Cutoff for Shale Formation	75.000000	
RAB_INVERS	GR Cutoff for Shale Formation in Zone1(default through the whole well)	75.000000	
RAB_INVERS	GR Cutoff in Zone10	75.000000	
RAB_INVERS	GR Cutoff in Zone2	75.000000	
RAB_INVERS	GR Cutoff in Zone3	75.000000	
RAB_INVERS	GR Cutoff in Zone4	75.000000	
RAB_INVERS	GR Cutoff in Zone5	75.000000	
RAB_INVERS	GR Cutoff in Zone6	75.000000	
RAB_INVERS	GR Cutoff in Zone7	75.000000	
RAB_INVERS	GR Cutoff in Zone8	75.000000	
RAB_INVERS	GR Cutoff in Zone9	75.000000	
RAB_INVERS	RAB Medium Button Sensor Weight for Inversion[0,1]	1.000000	
RAB_INVERS	Resistivity Cutoff for Shale Formation	2.000000	
RAB_INVERS	Resistive Invasion Allowed	NO	
RAB_INVERS	RAB Ring Sensor Weight for Inversion[0,1]	0.000000	
RAB_INVERS	RAB inversion for Rmud?	NO	
RAB_INVERS	RAB inversion for Rt?	YES	
RAB_INVERS	Rt to R-deepest separation penalty multiplier[0,1]	0.500000	
RAB_INVERS	RAB inversion for Rxo?	YES	
RAB_INVERS	RAB Shallow Button Sensor Weight for Inversion[0,1]	1.000000	
RAB_INVERS	Inversion Threshold[0, 0.3]	0.010000	
RAB_INVERS	Formation Water Resistivity	0.100000	
RAB_INVERS	Formation Water Temperature	150.000000	
RAB_MEDIUM	Medium Button Resistivity for ECAL_RAB?	YES	
RAB_MEDIUM	Input Medium Button Resistivity for Inversion?	YES	
RAB_QUAD	RAB: Process Quadrant data ?	YES	
RAB_RIGMOD	Bit on Bottom?	YES	
RAB_RING_E	Ring Resistivity for ECAL_RAB?	YES	
RAB_RING_I	Input RING Resistivity for Inversion?	NO	
RAB_SHALLO	Shallow Button Resistivity for ECAL_RAB?	YES	
RAB_SHALLO	Input Shallow Button Resistivity for Inversion?	YES	
RAB_TAB	RAB: Compute TAB ?	YES	
RAB_TECHLO	RAB: Generate Techlog ?	YES	
RAB_TEMP_S	RAB Temperature Selection	MEASURED	

RAB_TEMP_S	RAB Temperature Selection	MEASURED
RAB_TICKS	RAB: Generate Ticks ?	YES
READOUT_PO	RAB: ROP to Bit Face Distance	7.286745
RINGBHCA	RAB: Ring Borehole A Factor	0.296258
RINGBHCB	RAB: Ring Borehole B Factor	0.000000
RING_KIMP	RAB: Ring Impedance Coeff A	0.000000
RING_KIMP	RAB: Ring Impedance Coeff B	0.000000
RING_K_FAC	RAB: Ring K Factor	0.152829
SBUTTON_K	RAB: Button Shallow K Factor	0.006581
SCALE_IMAG	RAB: Process Image Data	YES
STAB	RAB: Run with Stabilizer	YES
TFF_OFFSET	RAB Time-Frame File Time Offset	0.000000
TIMEFRAME	RAB: Time Frame File Name	0.000000
TOOLTYPE	RAB: Azimuthal Tool	YES
VRAB6	Rab Tool type (ENP/PILOT)	RAB6_C_SERIES
WIN_SIZE_D	RAB: Window Size for Scaling Dynamic Image	5.000000

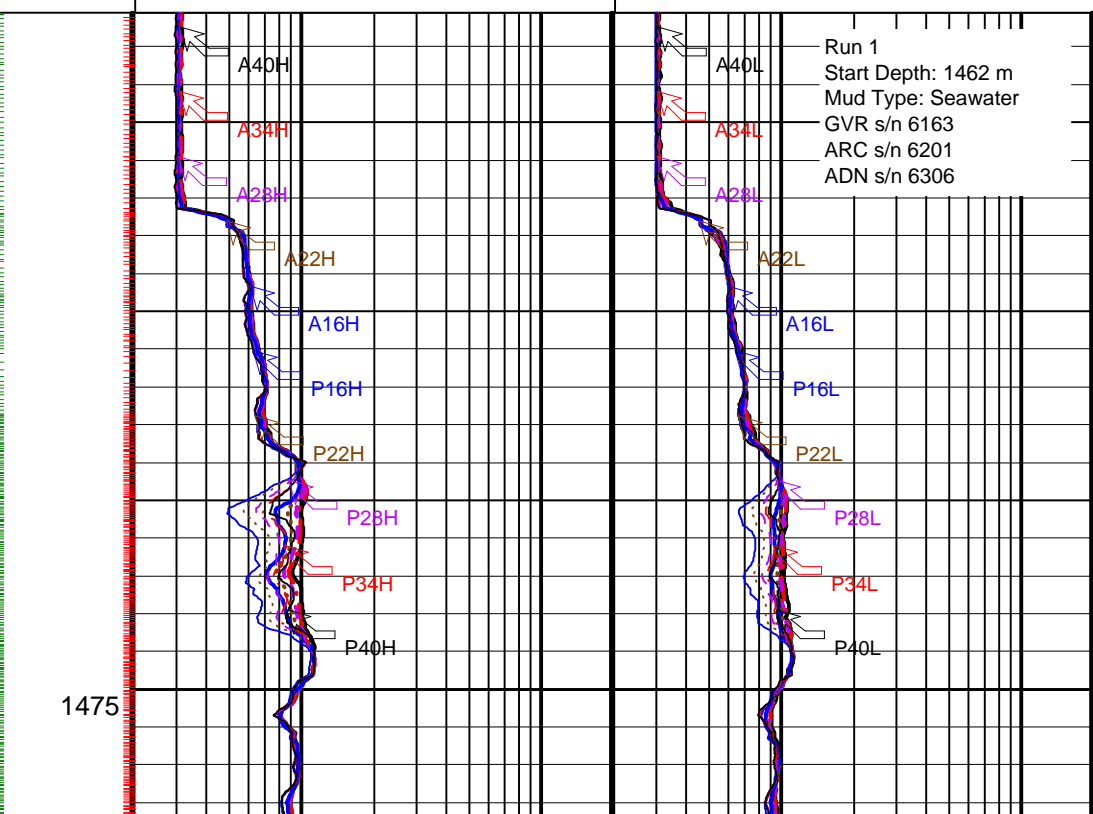
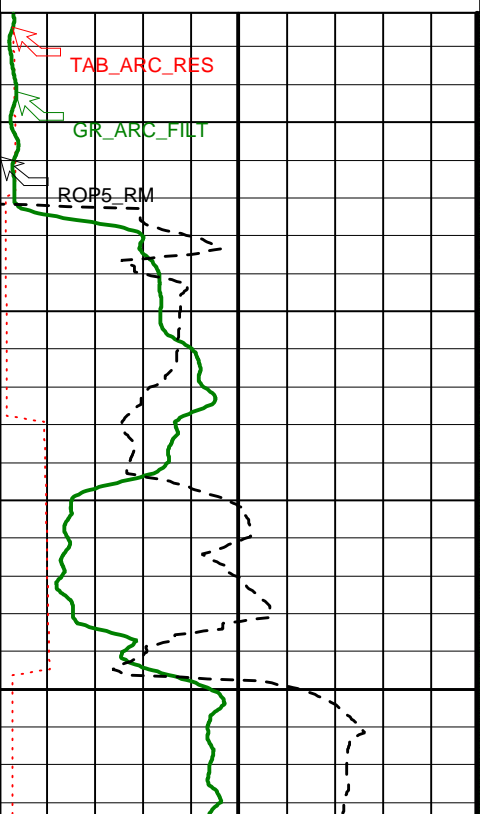
ARC

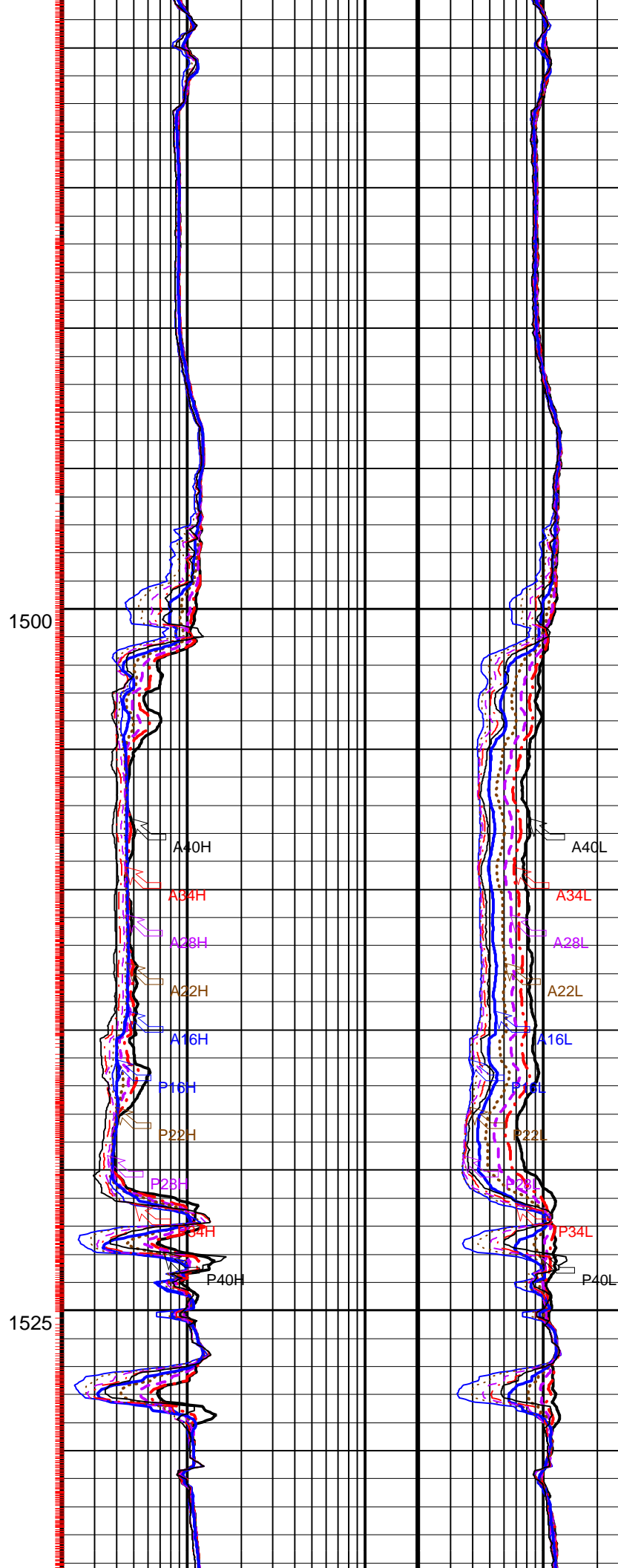
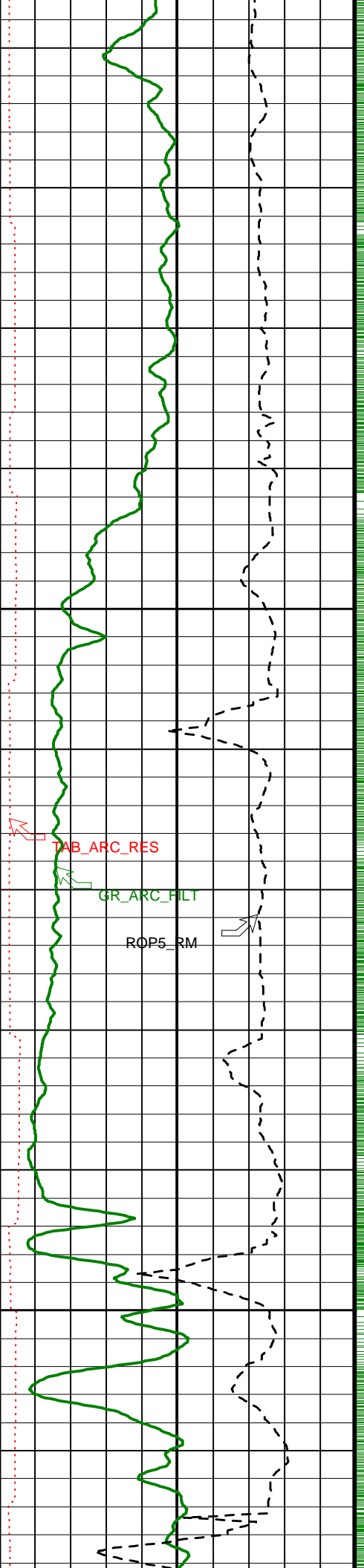
A12A	ARC Air Cal Attenuation From T1 at 2 MHz	8.232080
A14A	ARC Air Cal Attenuation From T1 at 400 KHz	8.256890
A22A	ARC Air Cal Attenuation From T2 at 2 MHz	6.810180
A24A	ARC Air Cal Attenuation From T2 at 400 KHz	6.791850
A32A	ARC Air Cal Attenuation From T3 at 2 MHz	4.826260
A34A	ARC Air Cal Attenuation From T3 at 400 KHz	4.843570
A42A	ARC Air Cal Attenuation From T4 at 2 MHz	4.708000
A44A	ARC Air Cal Attenuation From T4 at 400 KHz	4.687440
A52A	ARC Air Cal Attenuation From T5 at 2 MHz	3.381080
A54A	ARC Air Cal Attenuation From T5 at 400 KHz	3.408180
ABNT	Abnormal Transmitter Indicator	No_Tx_Failed
ADHS	ARC Down Hole Software Version	No_Tx_Failed
ANISO_COMP	Anisotropy Computation Option	YES
APICG	ARC5 Gamma Ray Gain Factor	1.038700
APIG	ARC Gamma Ray API Gain Factor	-1.000000
ATMP_ARC	ARC Select Temperature Channel	Annulus_Temp
ATRN	ARC Tool Run Number	Annulus_Temp
ATSN	ARC Tool Serial Number	Annulus_Temp
AZMF	Formation DIP Azimuth	0.000000
BH_COMPUTE	Borehole Inversion Computation Option	YES
CALG	ARC Gamma Ray Cal Gain Factor	1.038700
CALI_SLCT	ARC Caliper Selection	BITSIZE
CDPTH_ARC	Process Start Depth	100.000000
DIELEC_COM	Dielectric Computation Option	YES
DIPF	Formation DIP Angle	0.000000
ERRCT	Percentage Error Cutoff	4.500000
GRSH	GR Shale (Invasion Computation Cutoff)	1000.000000
HIGH_BLEND	High Resistivity Threshold for Blending	2.000000
INCLIN_B0	ARC Bias Constant (mg)	0.000000
INCLIN_B1	ARC Bias First-order Coefficient (mg/degC)	0.000000
INCLIN_B2	ARC Bias Second-order Coefficient (mg/degC)	0.000000
INCLIN_B3	ARC Bias Third-order Coefficient (mg/degC)	0.000000
INCLIN_C0	ARC Current Scale Factor Constant (mA/g)	1.000000
INCLIN_C1	ARC Scale First-order Coefficient (mA/g/degC)	0.000000
INCLIN_C2	ARC Scale Second-order Coefficient (mA/g/degC)	0.000000
INCLIN_C3	ARC Scale Third-order Coefficient (mA/g/degC)	0.000000
INVAS_COMP	Invasion Computation Option	YES
JSD_ARC	ARC Acquisition start date	YES
KPER	Potassium Concentration (RM)	0.000000
LOW_BLEND	Low Resistivity Threshold for Blending	1.000000
MSWS	ARC Wizard Model Switch Window	5.000000
MULTIEFFEC	Multi Effect Option	YES
P12A	ARC Air Cal Phase-Shift From T1 at 2 MHz	0.742475
P14A	ARC Air Cal Phase-Shift From T1 at 400 KHz	-0.688361
P22A	ARC Air Cal Phase-Shift From T2 at 2 MHz	-0.644164
P24A	ARC Air Cal Phase-Shift From T2 at 400 KHz	0.624656
P32A	ARC Air Cal Phase-Shift From T3 at 2 MHz	0.656164
P34A	ARC Air Cal Phase-Shift From T3 at 400 KHz	-0.680148
P42A	ARC Air Cal Phase-Shift From T4 at 2 MHz	-0.707656
P44A	ARC Air Cal Phase-Shift From T4 at 400 KHz	0.588475
P52A	ARC Air Cal Phase-Shift From T5 at 2 MHz	0.629033
P54A	ARC Air Cal Phase-Shift From T5 at 400 KHz	-0.684902
POFFSET_AR	ARC: Pressure Offset	0.000000
PRTD	Preferred Resistivity Log for Rt Display while Multi-Effects	P34B
PSOF_ADJ_T	ARC: User Input Phase offset	0.000000
RESTIK	ARC resistivity tick source	Phase
SHIG	ARC High Shock Risk Level	0.500000
SMED	ARC Medium Shock Risk Level	0.330000
SMIN	ARC Minimum Shock Risk Level	0.160000
SUPD	ARC Real Time Shock Update Rate	30.000000
TCODE_ARC	ARC Tool File Code	30.000000
TSIZ_ARC	ARC Tool Size	6.750000
UNIFORM_CO	Uniform Rock Option	YES
VERS_ARC	ARC Down hole software version Number	6.400000
WRK	Way to Report Potassium Concentration (RM)	K_by_Wgt_%

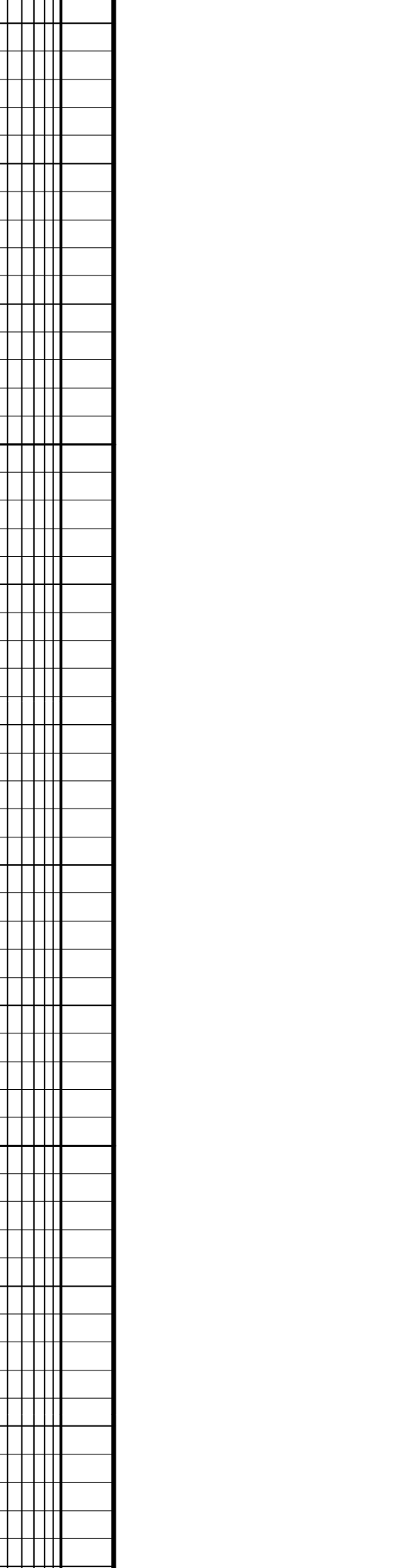
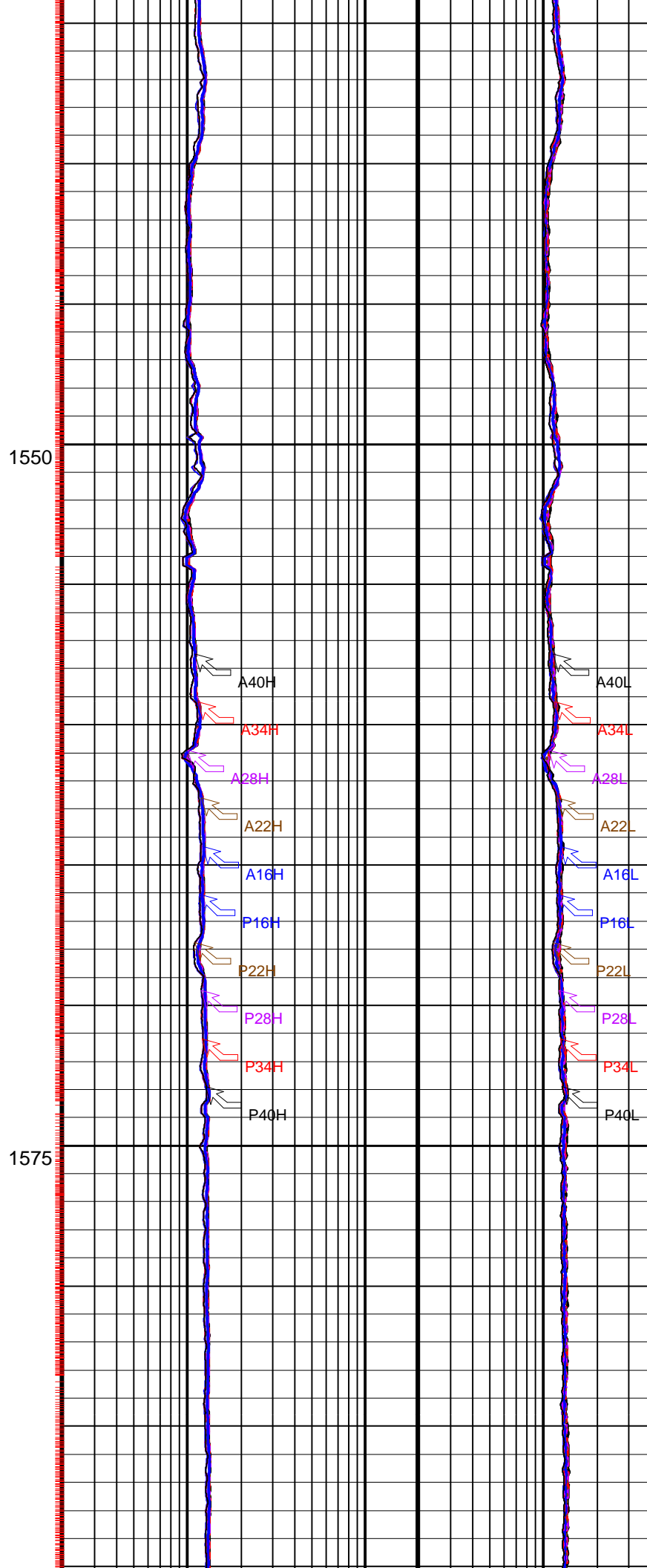
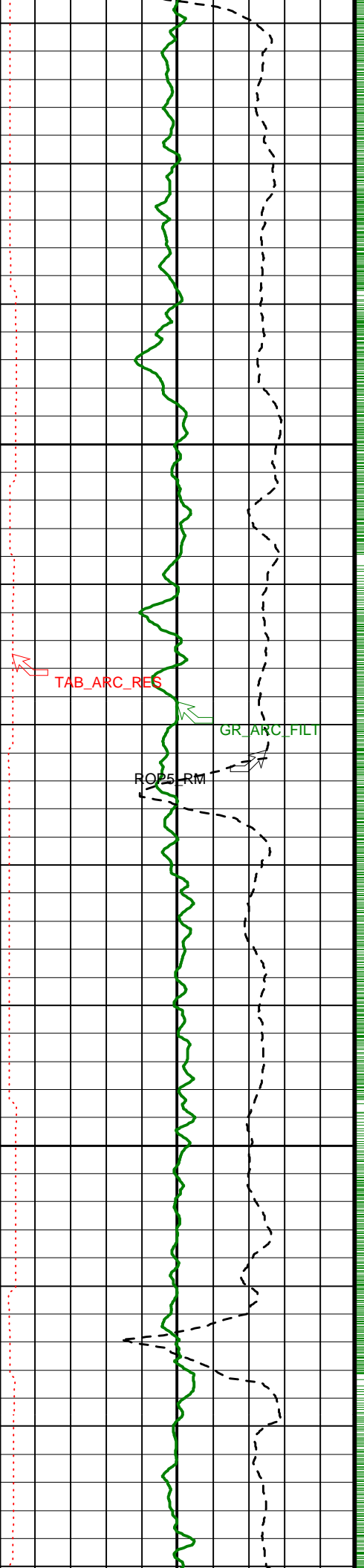
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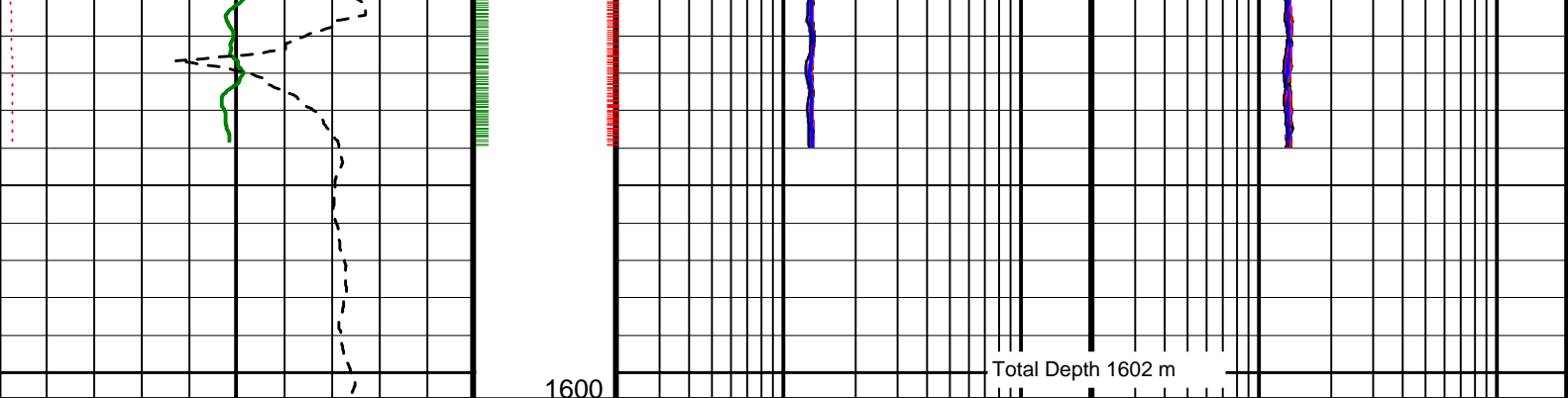
- └ ARC Gamma Ray Samples
- └ ARC Resistivity Samples

	ARC Attenuation Resistivity 16-in. at 2 MHz (A16H)	ARC Phase-Shift Resistivity 40-in. at 400 KHz (P40L)	
	0.2 (OHMM) 20	0.2 (OHMM) 20	
	ARC Attenuation Resistivity 22-in. at 2 MHz (A22H)	ARC Phase-Shift Resistivity 34-in. at 400 KHz (P34L)	
	0.2 (OHMM) 20	0.2 (OHMM) 20	
	ARC Phase-Shift Resistivity 40-in. at 2 MHz (P40H)	ARC Phase-Shift Resistivity 28-in. at 400 KHz (P28L)	
	0.2 (OHMM) 20	0.2 (OHMM) 20	
	ARC Phase-Shift Resistivity 34-in. at 2 MHz (P34H)	ARC Phase-Shift Resistivity 22-in. at 400 KHz (P22L)	
	0.2 (OHMM) 20	0.2 (OHMM) 20	
	ARC Phase-Shift Resistivity 28-in. at 2 MHz (P28H)	ARC Phase-Shift Resistivity 16-in. at 400 KHz (P16L)	
	0.2 (OHMM) 20	0.2 (OHMM) 20	
	ARC Phase-Shift Resistivity 22-in. at 2 MHz (P22H)	ARC Attenuation Resistivity 16-in. at 400 KHz (A16L)	
	0.2 (OHMM) 20	0.2 (OHMM) 20	
	ARC Phase-Shift Resistivity 16-in. at 2 MHz (P16H)	ARC Attenuation Resistivity 22-in. at 400 KHz (A22L)	
	0.2 (OHMM) 20	0.2 (OHMM) 20	
ARC Calibrated, Filtered Gamma Ray (GR_ARC_FILT)	ARC Attenuation Resistivity 28-in. at 2 MHz (A28H)	ARC Attenuation Resistivity 28-in. at 400 KHz (A28L)	
0 (GAPI) 150	0.2 (OHMM) 20	0.2 (OHMM) 20	
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)	ARC Attenuation Resistivity 34-in. at 2 MHz (A34H)	ARC Attenuation Resistivity 34-in. at 400 KHz (A34L)	
100 (M/HR) 0	0.2 (OHMM) 20	0.2 (OHMM) 20	
ARC Resistivity Time After Bit (TAB_ARC_RES)	ARC Attenuation Resistivity 40-in. at 2 MHz (A40H)	ARC Attenuation Resistivity 40-in. at 400 KHz (A40L)	
0 (HR) 10	0.2 (OHMM) 20	0.2 (OHMM) 20	









ARC Resistivity Time After Bit (TAB_ARC_RES)	
(HR)	10
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)	
(M/HR)	0
ARC Calibrated, Filtered Gamma Ray (GR_ARC_FILT)	
(GAPI)	150

1600

Total Depth 1602 m

ARC Attenuation Resistivity 40-in. at 2 MHz (A40H)	ARC Attenuation Resistivity 40-in. at 400 KHz (A40L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Attenuation Resistivity 34-in. at 2 MHz (A34H)	ARC Attenuation Resistivity 34-in. at 400 KHz (A34L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Attenuation Resistivity 28-in. at 2 MHz (A28H)	ARC Attenuation Resistivity 28-in. at 400 KHz (A28L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Phase-Shift Resistivity 16-in. at 2 MHz (P16H)	ARC Attenuation Resistivity 22-in. at 400 KHz (A22L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Phase-Shift Resistivity 22-in. at 2 MHz (P22H)	ARC Attenuation Resistivity 16-in. at 400 KHz (A16L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Phase-Shift Resistivity 28-in. at 2 MHz (P28H)	ARC Phase-Shift Resistivity 16-in. at 400 KHz (P16L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Phase-Shift Resistivity 34-in. at 2 MHz (P34H)	ARC Phase-Shift Resistivity 22-in. at 400 KHz (P22L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Phase-Shift Resistivity 40-in. at 2 MHz (P40H)	ARC Phase-Shift Resistivity 28-in. at 400 KHz (P28L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Attenuation Resistivity 22-in. at 2 MHz (A22H)	ARC Phase-Shift Resistivity 34-in. at 400 KHz (P34L)
0.2 (OHMM) 20	0.2 (OHMM) 20
ARC Attenuation Resistivity 16-in. at 2 MHz (A16H)	ARC Phase-Shift Resistivity 40-in. at 400 KHz (P40L)
0.2 (OHMM) 20	0.2 (OHMM) 20

PIP SUMMARY

- ┆ ARC Gamma Ray Samples
- ┆ ARC Resistivity Samples

IDEAL Version: ID10_0C_04
IDF

6.75-in. Array Resistivity Compensated / Equipment Identification

Primary Equipment:
Tool Name and Serial Number
ARC675 Calibration Status

ARC6 - BA 6201
Auto

6.75-in. Array Resistivity Compensated Calibration

Resistivity: Air

Phase	Phase-Shift T1	Value	Phase	Phase-Shift T2	Value	Phase	Phase-Shift T3	Value
Master		0.7425	Master		-0.6442	Master		0.6562
	-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)			-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)			-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)	
Phase	Phase-Shift T4	Value	Phase	Phase-Shift T5	Value	Phase	Phase-Shift T1 at 400KHz	Value
Master		-0.7077	Master		0.6290	Master		-0.6884
	-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)			-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)			-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)	
Phase	Phase-Shift T2 at 400KHz	Value	Phase	Phase-Shift T3 at 400KHz	Value	Phase	Phase-Shift T4 at 400KHz	Value
Master		0.6247	Master		-0.6801	Master		0.5885
	-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)			-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)			-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)	
Phase	Phase-Shift T5 at 400KHz	Value						
Master		-0.6849						
	-3.900 (Minimum) 0.1000 (Nominal) 4.100 (Maximum)							

6.75-in. Array Resistivity Compensated Calibration

Resistivity: Air

Phase	Attenuation T1	Value	Phase	Attenuation T2	Value	Phase	Attenuation T3	Value
Master		8.232	Master		6.810	Master		4.826
	6.500 (Minimum) 8.500 (Nominal) 10.50 (Maximum)			4.500 (Minimum) 6.500 (Nominal) 8.500 (Maximum)			2.500 (Minimum) 4.500 (Nominal) 6.500 (Maximum)	
Phase	Attenuation T4	Value	Phase	Attenuation T5	Value	Phase	Attenuation T1 at 400KHz	Value
Master		4.708	Master		3.381	Master		8.257
	2.600 (Minimum) 4.600 (Nominal) 6.600 (Maximum)			1.600 (Minimum) 3.600 (Nominal) 5.600 (Maximum)			6.500 (Minimum) 8.500 (Nominal) 10.50 (Maximum)	
Phase	Attenuation T2 at 400KHz	Value	Phase	Attenuation T3 at 400KHz	Value	Phase	Attenuation T4 at 400KHz	Value
Master		6.792	Master		4.844	Master		4.687
	4.500 (Minimum) 6.500 (Nominal) 8.500 (Maximum)			2.500 (Minimum) 4.500 (Nominal) 6.500 (Maximum)			2.600 (Minimum) 4.600 (Nominal) 6.600 (Maximum)	
Phase	Attenuation T5 at 400KHz	Value						
Master		3.408						
	1.600 (Minimum) 3.600 (Nominal) 5.600 (Maximum)							

6.75-in. Array Resistivity Compensated Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor (equals Calibration Gain multiplied by API Gain Factor) CPS	Value
Master		4.986
	2.780 (Minimum) 4.800 (Nominal) 6.000 (Maximum)	

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Survey report 28-Jun-2005 22:42:37 Page 1 of 2

Client.....: Integrated Ocean Drilling Program
Field.....: East Breaks Block 691

Well.....: IODP Exp 308 Hole U1321A Spud date.....: 13-Jun-05
Site.....: Brazos Trinity Basin Last survey date.....: 13-Jun-05
Engineer.....: Hoong, K. Total accepted surveys...: 4
MD of first survey.....: 1462.00 m
Rig.....: Joides Resolution MD of last survey.....: 1602.00 m
State.....: Texas

----- Survey calculation methods----- ----- Geomagnetic data -----
Method for positions.....: Minimum curvature Magnetic model.....: BGGM version 2004
Method for DLS.....: Mason & Taylor Magnetic date.....: 13-Jun-2005
Magnetic field strength...: 937.50 HCNT
Magnetic declination (FAM)...: 2.52 degrees

---- Depth reference -----
 Permanent datum.....: Mean Sea Level
 Depth reference.....: Drill Floor
 GL above permanent.....: -1451.50 m
 KB above permanent.....: 10.50 m
 DF above permanent.....: 10.50 m
 ---- Vertical section origin-----
 Latitude (+N/S-).....: 0.00 m
 Departure (+E/W-).....: 0.00 m
 ---- Platform reference point-----
 Latitude (+N/S-).....: 0.00 m
 Departure (+E/W-).....: 0.00 m
 Azimuth from Vsect Origin to target: 0.00 degrees
 ---- Coordinate System-----
 Geodetic Datum.....: NAD 27
 Projection Identification: UTM Zone 15 N
 Magnetic dec (+E/W-).....: 3.52 degrees
 Magnetic dip.....: 56.98 degrees
 ---- MWD survey Reference Criteria -----
 Reference G.....: 999.11 mGal
 Reference H.....: 937.50 HCNT
 Reference Dip.....: 56.98 degrees
 Tolerance of G.....: (+/-) 2.50 mGal
 Tolerance of H.....: (+/-) 6.00 HCNT
 Tolerance of Dip.....: (+/-) 0.45 degrees
 ---- Corrections -----
 Magnetic dec (+E/W-).....: 3.52 degrees
 Grid convergence (+E/W-).....: -0.64 degrees
 Total az corr (+E/W-).....: 4.16 degrees
 (Total az corr = magnetic dec - grid conv)
 Survey Correction Type ...:
 I=Sag Corrected Inclination
 M=Schlumberger Magnetic Correction
 S=Shell Magnetic Correction
 F=Failed Axis Correction
 R=Magnetic Resonance Tool Correction
 D=Dmag Magnetic Correction

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SCHLUMBERGER Survey Report

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Seq Measured Incl Azimuth Course TVD Vertical Displ Displ Total At DLS Srvy Tool
# depth angle angle length depth section +N/S- +E/W- displ Azim (deg/ tool Corr
- (m) (deg) (deg) (m) (m) (m) (m) (m) (m) (deg) 10m) type (deg)
=====
1 1462.00 0.00 0.00 0.00 1462.00 0.00 0.00 0.00 0.00 0.00 0.00 TIP None
2 1534.00 1.82 193.82 72.00 1533.99 -1.11 -1.11 -0.27 1.14 193.82 0.25 MWD_M None
3 1585.00 1.08 189.64 51.00 1584.97 -2.37 -2.37 -0.55 2.43 192.99 0.15 MWD_M None
4 1602.00 1.08 189.64 17.00 1601.97 -2.69 -2.69 -0.60 2.75 192.60 0.00 Proj to TD
=====
  
```

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Company: Integrated Ocean Drilling Program

Schlumberger

Well: IODP Exp 308 Hole U1321A

Field: East Breaks Block 691

Rig: Joides Resolution

State: Texas

VISION Resistivity - Dual Frequency

1 : 200 Measured Depth

Recorded Mode Log

Geomarket	NGC	Location	Brazos Trinity Basin
Job Date	19-Jun-05	Customer	Integrated Ocean Drilling Program
Rig	Joides Resolution	Field/Well	East Breaks Block 691
Engineer	Hoong, K.	Job Number	40012055

Res	GR	APW	Neu	Den

Type of Measurement

When data does not meet standards, put a number in the column corresponding to the measurement with a corresponding number and remark below. Use additional pages for remarks
Positive remarks are welcome; do not append them with a number.

Data Quality Report

Operation

Description of Well - Names, Geometry, Services, Location and References; General Content Header; user or trademarks, directional data, well plot, order of components; spelling and style, units sensor to toolface angle recorded

Equipment and Software Description

Tool sketch, equipment numbers, software versions, data rates, filtering weights

Processing Traceability and Environment Description

Acquisition environment, parameters and key constants for each run or zone, complete and relevant remarks

Annotations, Presented Formats, QC Curves, Print Quality

Documented splice points; data gap explanations; mud changes; movement indicator; color selection

Remarks

- Excessive ROP while extending heave compensator piston after a connection causes low data density.
- Borehole washouts causes resistivity curve separation, geoVISION gamma ray and adnVISION neutron porosity is only corrected for bit size. Large borehole washouts causes low density readings.
- Battle in the mud attenuates the formation gamma ray response.
- ECD measurements are recalculated using seawater density derived annulus pressure measured from the sea floor and actual sea floor depth measured on logs.
- Zoned parameters were used for processing where borehole fluid changed from seawater to weighted mud. Borehole fluid changes are annotated on logs.
- 6 meters depth discrepancy between Real-Time and Recorded Mode data is caused by drillers pipe tally error.

Calibration and Verifications

Calibration / Before survey verification / After survey verification

Validity, completeness (includes equipment number), timeliness, unedited, discrepancy explained

Operating Procedures

Depth Control

Comparison with driller's depth, other logs, other bit runs, between RT and RM. Depth summary listing

Logging speed and sampling rates

As recommended in reference manual or job planner. No loss of data or spatial resolution

Data Comparison

Between runs and passes, with data from nearby wells, other conveyance, mud log and markers

Operating Anomalies/Failure/Missing Data/Sensor Orientation/Transmission Losses

Absence of noise and spurious variations, anomaly repeated, corrected, reported or explained.

6	6	6	6	6

Digital Delivery

Digital Products

Labelled, verification listing with complete digital record, backup for archival, record matches hard copy.

90	90	90	90	90

Job Quality Rating (JQR)

Number of boxes without number X 10

90	90	90	90	90

Environmental effects

Irregular Operation

Excessive ROP or speed, high deviation, shocks, vibrations, sticking conditions

Borehole Geometry

Shape (caves, etc), rugosity, spiralled hole, mud induced fractures. Casing, tubing conditions

Borehole Fluid

Battle, KCl, salinity, additives, gas cut, unstable

Interferences

External noise, nearby casing or drillpipe, debris, unusual formation composition

Operation Outside Tool Specifications

Geomarket temperature, pressure, hole size, hole deviation, dog-leg severity, flow rate, rpm, solids value of parameter

1	1	1	1	1
2	2		2	2
5	3,5	4	5	5
40	40	60	40	40

Environmental Quality Rating (EQR)

Number of boxes without number X 20

40	40	60	40	40

Cell Manager: Hoong, K. FSM: Vijay Moras

