

Tool Software Version:

TeleScope: 9.0_C03 geoVISION: 6.2_B01

Crew: L. Loh and D. Buster

EQUIPMENT DESCRIPTION

RUN1

RUN

RUN

DOWNHOLE EQUIPMENT

proVISION 39.72
 MRLC 611
 MRUC 611
 MRPS 5050
 OD 6.90

ROP 33.72

Antenna 1 30.56
 System 30.23
 Antenna 2 29.90

TeleScope 28.44
 PMEA 003
 MDC 516
 MDI 1580
 OD 6.89

D&I 24.26

sonicVISION 20.05
 SWDC 656
 SWDE 636
 OD 6.75

ROP TF 19.62

RX array 17.07
 R-O port 16.67
 Xmitter 13.63
 PNG Monit 10.09
 Neutron N 9.81
 Spectrosc 9.64
 Neutron F 9.40

EcoScope 12.52
 Collar 736
 EC 736
 GSRJ A2381
 BladeOD 9.38
 OD 6.89

Receiver 9.34
 Neutron D 9.22
 Ultrasoni 7.92
 Density S 7.53
 Density L 7.32
 Continuou 6.82
 R-O Port 6.60
 Pressure 6.46

Variable Name	Variable Description	Run Name & Value
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Run Number

1

General Information

BHT_RM	Bottom Hole Temperature (RM)	43.000000
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)	75.000000
MW_RM	Mud Weight (RM)	8.500000
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)	1.000000
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)	12.700000
TD_RM	Total Measured Depth (RM)	3904.189941
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

RAB

LWD_RM/STATION_FILE/PARAMETER	Station Time-frame file name		Station
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	-0.025692	
BDBHCB	RAB: Button Deep Borehole B Factor	0.000000	
BHA_COEF_V	RAB: BHA Coef Generator Version	62012.000000	
BITBHCA	RAB: Bit A Borehole Factor	0.084578	
BITBHCB	RAB: Bit B Borehole Factor	0.000000	
BIT_K_FACT	RAB: Bit K Factor	3.553587	
BMBHCA	RAB: Button Medium Borehole A Factor	0.040324	
BMBHCB	RAB: Button Medium Borehole B Factor	0.000000	
BSBHCA	RAB: Button Shallow Borehole A Factor	0.072899	
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	0.004559	
DHS_VERSIO	RAB: DownHole Software Version	6.200100	
GR_BHC_TOO	RAB: Gamma-Ray Borehole Coeff 1	6.750000	
HI_CSDEPTH	RAB: Allow Hi-Resolution CS_DEPTH Image Data Output		YES
HI_DLIS_OU	RAB: Allow Hi-Resolution DLIS Image Data Output		YES
HI_RIVER_O	RAB: Allow Hi-Resolution River for Image Data Output		YES
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	18.839998	
MAG_INCL_R	RAB: Magnetic Dip	69.350014	
MBUTTON_K	RAB: Button Medium K Factor	0.004827	
OBM	RAB: Oil base Mud	NO	
ORIENTATIO	Rab Image Orientation	NORTH	
RABBDA0	RAB: Button Deep A0 Coeff	-0.037473	
RABBDA1	RAB: Button Deep A1 Coeff	0.021280	
RABBDA2	RAB: Button Deep A2 Coeff	-0.005697	
RABBDA3	RAB: Button Deep A3 Coeff	0.000651	
RABBDA4	RAB: Button Deep A4 Coeff	-0.000026	
RABBDA5	RAB: Button Deep A5 Coeff	0.000000	
RABBDMIN	RAB: Button Deep Minimum Value	0.050596	
RABBITA0	RAB: Bit A0 Coeff	0.494607	
RABBITA1	RAB: Bit A1 Coeff	-0.369170	
RABBITA2	RAB: Bit A2 Coeff	0.168689	
RABBITA3	RAB: Bit A3 Coeff	-0.034243	
RABBITA4	RAB: Bit A4 Coeff	0.002516	
RABBITA5	RAB: Bit A5 Coeff	0.000000	
RABBITMIN	RAB: Bit Minimum Value	18.938633	
RABBMA0	RAB: Button Medium A0 Coeff	-0.050817	
RABBMA1	RAB: Button Medium A1 Coeff	0.028630	
RABBMA2	RAB: Button Medium A2 Coeff	-0.007609	
RABBMA3	RAB: Button Medium A3 Coeff	0.000861	
RABBMA4	RAB: Button Medium A4 Coeff	-0.000034	
RABBMA5	RAB: Button Medium A5 Coeff	0.000000	
RABBMMIN	RAB: Button Medium Minimum Value	0.056610	
RABBSA0	RAB: Button Shallow A0 Coeff	-0.067444	
RABBSA1	RAB: Button Shallow A1 Coeff	0.035689	
RABBSA2	RAB: Button Shallow A2 Coeff	-0.009054	
RABBSA3	RAB: Button Shallow A3 Coeff	0.000986	

RABBSA4	RAB: Button Shallow A4 Coeff	-0.000038	
RABBSA5	RAB: Button Shallow A5 Coeff	0.000000	
RABBSMIN	RAB: Button Shallow Minimum Value	0.078703	
RABDHS	RAB Down Hole Software	4.000000	
RABEC	RAB: Resistivity Env-Cor	YES	
RABRNGA0	RAB: RING A0 Coeff	-0.032159	
RABRNGA1	RAB: RING A1 Coeff	0.019319	
RABRNGA2	RAB: RING A2 Coeff	-0.005322	
RABRNGA3	RAB: RING A3 Coeff	0.000620	
RABRNGA4	RAB: RING A4 Coeff	-0.000025	
RABRNGA5	RAB: RING A5 Coeff	0.000000	
RABRNGMIN	RAB: Ring Minimum Value	1.600602	
RAB_BIT_EC	Bit Resistivity for ECAL_RAB?	YES	
RAB_BIT_IN	Input Bit Resistivity for Inversion? (Recommended at the bit)	YES	YES
RAB_CALIPE	Compute ECAL_RAB?	YES	
RAB_DEEPBT	Deep Button Resistivity for ECAL_RAB?	YES	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]	1.000000	
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?	YES	
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	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]	1.000000	
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?	YES	
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_TICKS	RAB: Generate Ticks ?	YES	
READOUT_PO	RAB: ROP to Bit Face Distance	7.749343	
RINGBHCA	RAB: Ring Borehole A Factor	0.298040	
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	0.152080	
SBUTTON_K	RAB: Button Shallow K Factor	0.006557	
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	
TS_VERSION	RAB: ToolScope Software Version	0.000000	
VRAB6	Rab Tool type (ENP/PILOT)	RAB6_C_SERIES	
WIN_SIZE_D	RAB: Window Size for Scaling Dynamic Image	3.000000	

Schlumberger Drilling & Measurements

Parameter Insert Header Software version 2.0c

IDEAL Version: ID10_2B_08

IDF

Format: GEOVIS_RES_5MD

Vertical Scale: 1:240

Graphics File Created: 03-Oct-2005 13:05

PIP SUMMARY

+ Gamma Ray Samples
- Ring Samples

Ring Resistivity (RES_RING)

0.2

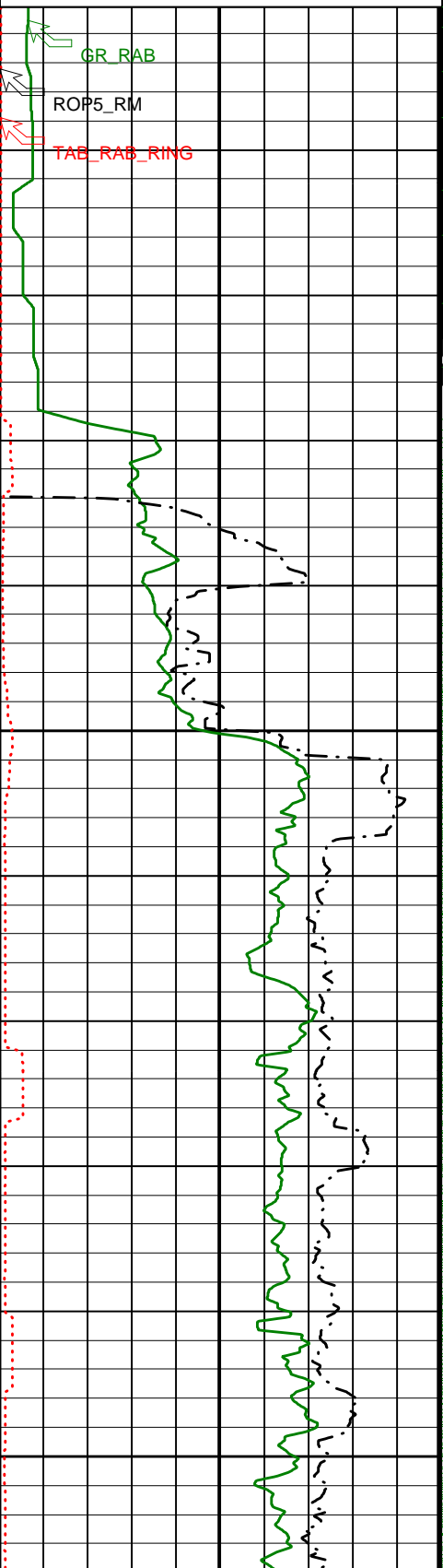
(OHMM)

2000

Ring Resistivity Time After Bit (TAB_RAB_RING)
(HR)

ROP: 5 Feet Average (ROP5_RM)
(M/HR)

RAB Gamma Ray (GR_RAB)
(GAPI)

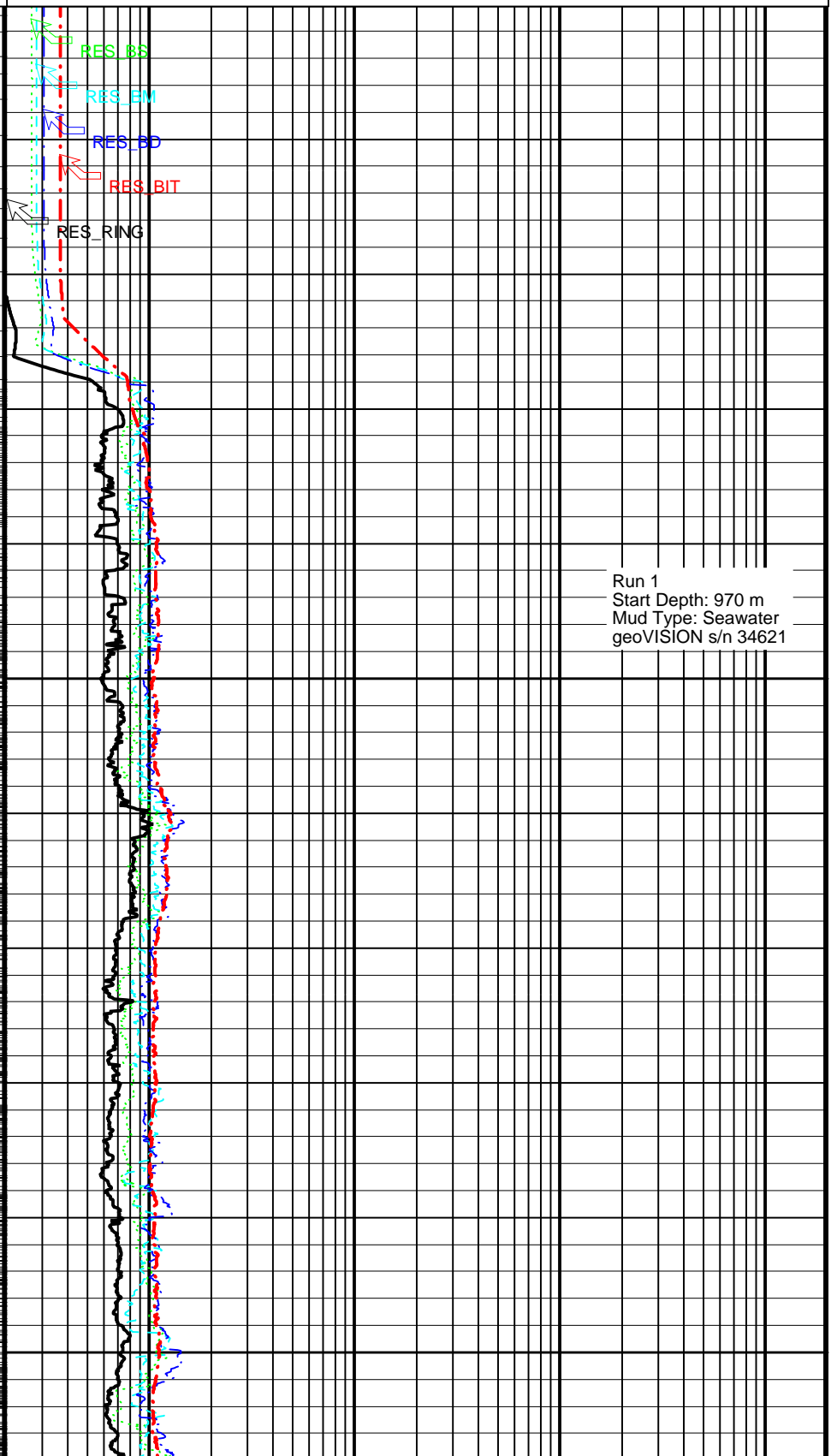


Bit Resistivity (RES_BIT)
(OHMM)

Deep Button Resistivity (RES_BD)
(OHMM)

Medium Button Resistivity (RES_BM)
(OHMM)

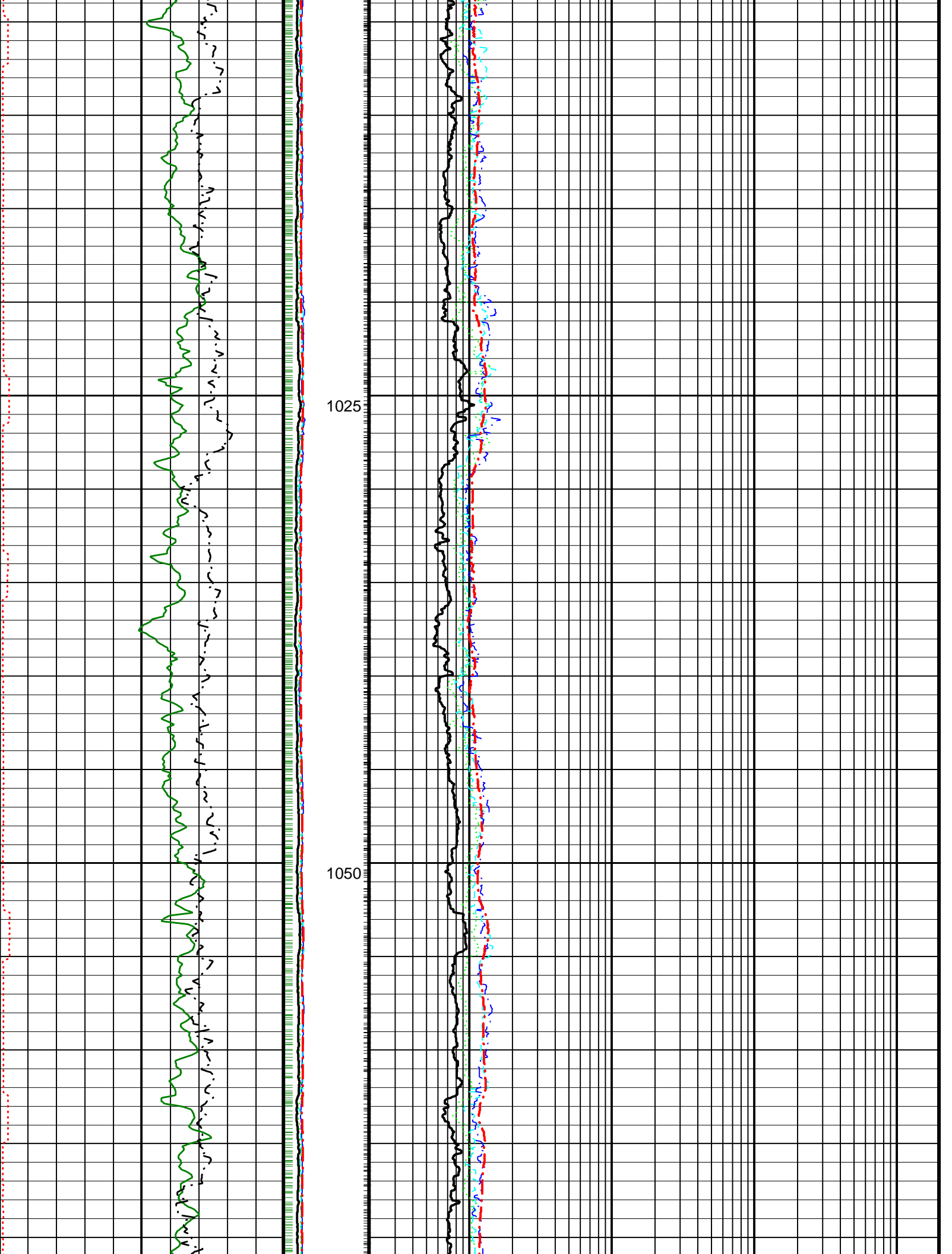
Shallow Button Resistivity (RES_BS)
(OHMM)

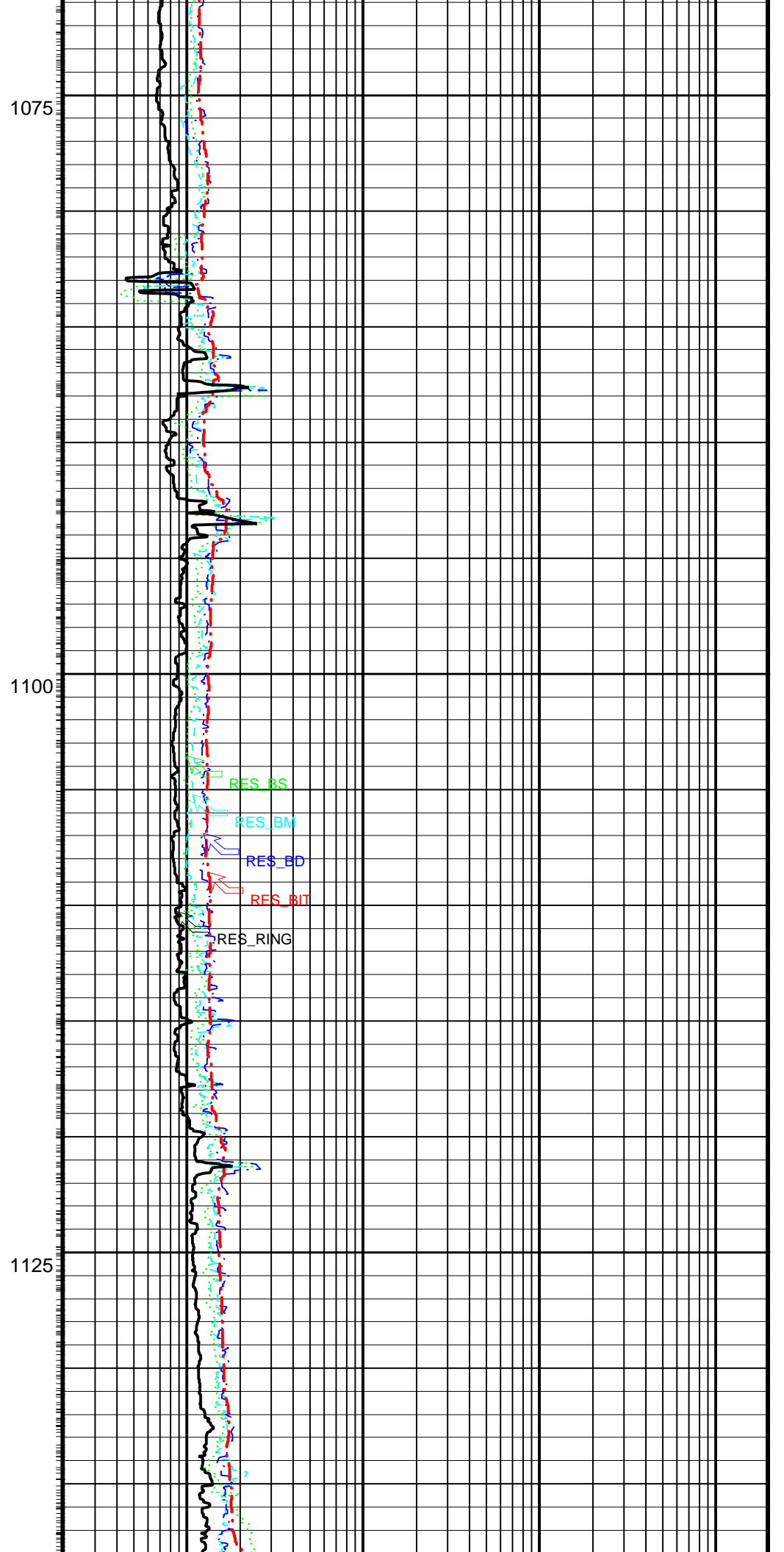
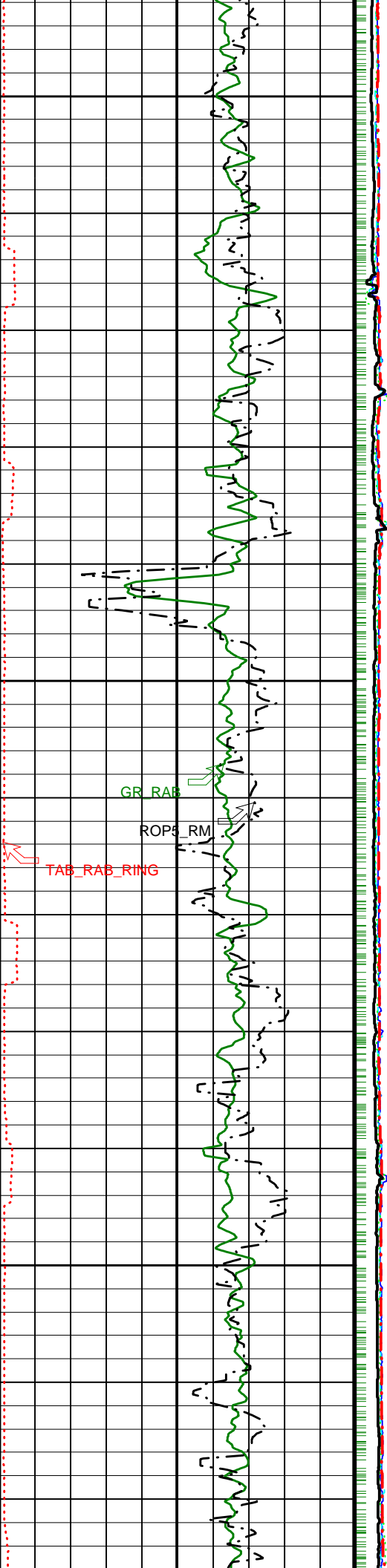


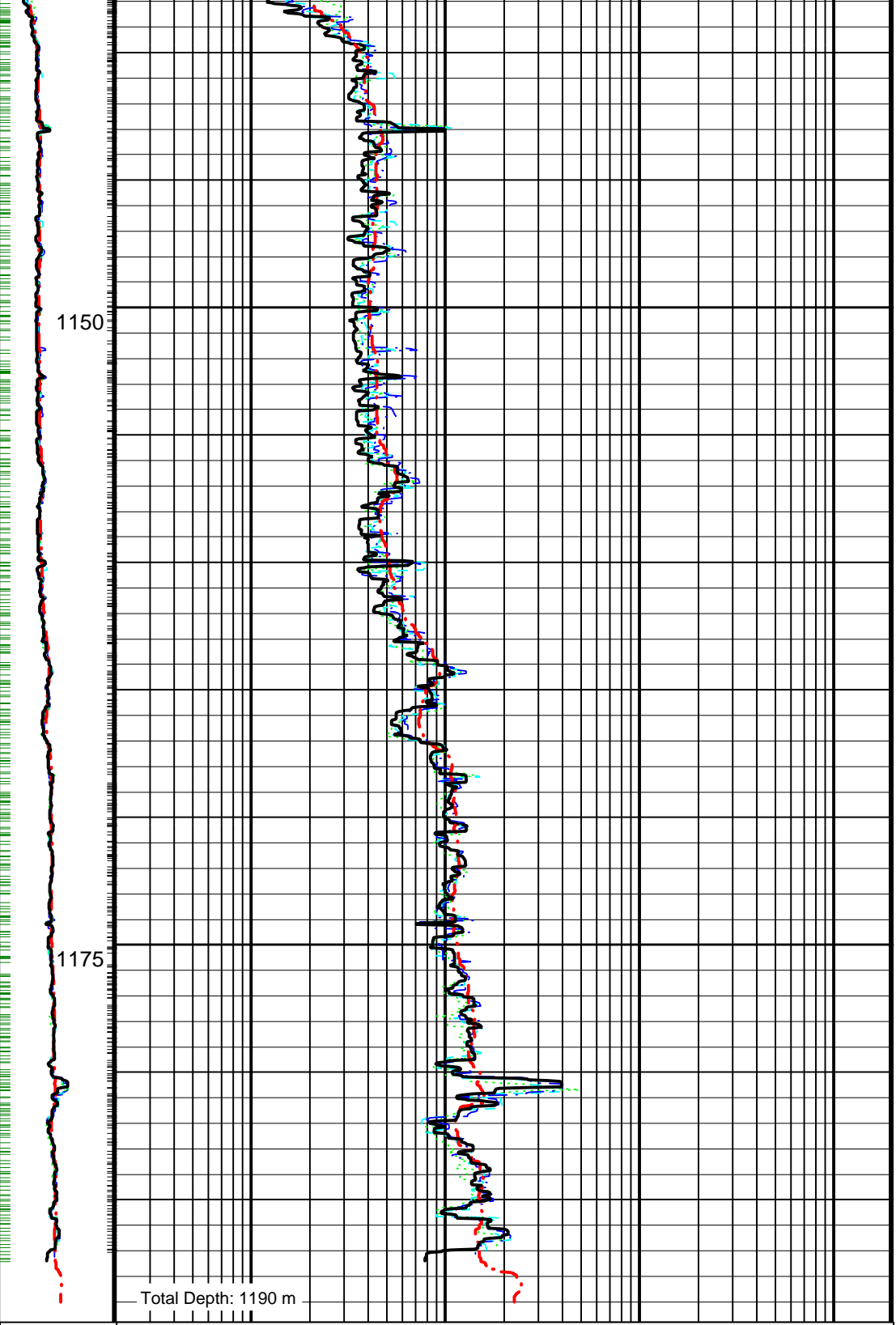
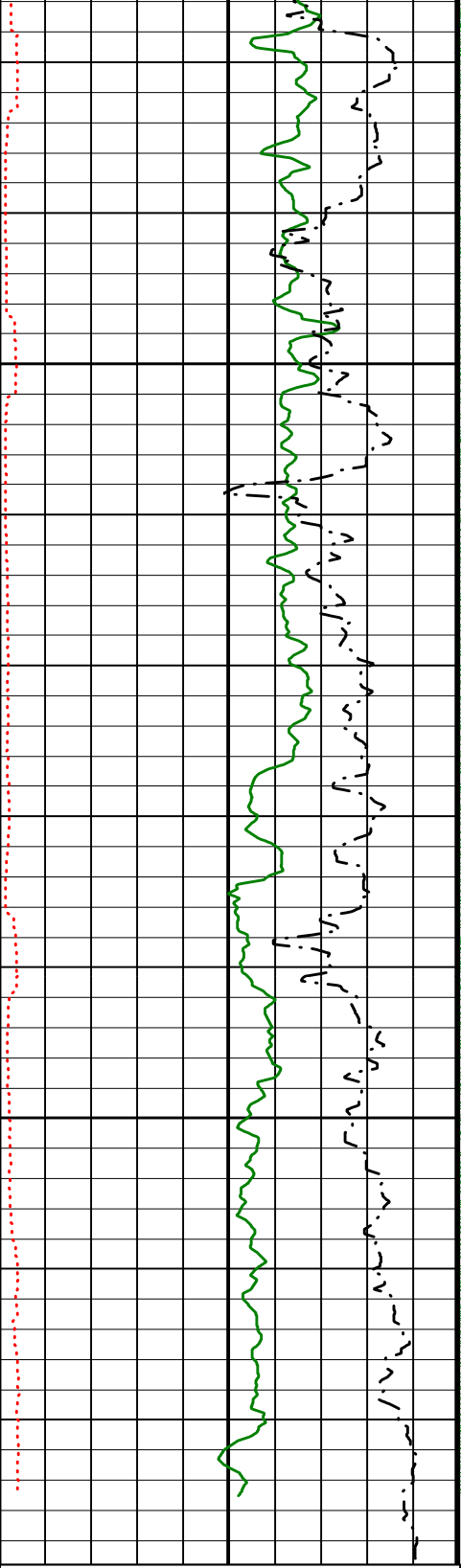
Run 1
Start Depth: 970 m
Mud Type: Seawater
geoVISION s/n 34621

975

1000







RAB Gamma Ray (GR_RAB)	(GAPI)	0	150
ROP: 5 Feet Average (ROP5_RM)	(M/HR)	100	0
Ring Resistivity Time After Bit (TAB_RAB_RING)	(HR)	0	10

Shallow Button Resistivity (RES_BS)	(OHMM)	0.2	2000
Medium Button Resistivity (RES_BM)	(OHMM)	0.2	2000
Deep Button Resistivity (RES_BD)	(OHMM)	0.2	2000
Bit Resistivity (RES_BIT)	(OHMM)	0.2	2000

Ring Resistivity (RES_RING)	(OHMM)	0.2	2000
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- └ Gamma Ray Samples
- └ Ring Samples

IDEAL Version: ID10_2B_08
IDF

6.75-in. Resistivity At-the-Bit / Equipment Identification

Primary Equipment:
Tool Name and Serial Number
Calibration Status

RAB6 - CA

202

Master: 10-Sep-2005 13:31

6.75-in. Resistivity At-the-Bit Calibration

Resistivity: Fixture

Phase	Ring/T1 factor	Value	Phase	Ring/T2 factor	Value	Phase	M0/T1 factor	Value
Master		1.011	Master		1.005	Master		0.9991
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)			0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)			0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	
Phase	M0/T2 factor	Value	Phase	M2/T1 factor	Value	Phase	M2/T2 factor	Value
Master		0.9925	Master		1.001	Master		0.9944
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)			0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)			0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	
Phase	BTN shallow/T1 factor	Value	Phase	BTN shallow/T2 factor	Value	Phase	BTN medium/T1 factor	Value
Master		1.013	Master		1.008	Master		1.007
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)			0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)			0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	
Phase	BTN medium/T2 factor	Value	Phase	BTN deep/T1 factor	Value	Phase	BTN deep/T2 factor	Value
Master		1.001	Master		1.011	Master		1.004
	0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)			0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)			0.9750 (Minimum) 1.000 (Nominal) 1.025 (Maximum)	

Master: Calibration date not found

6.75-in. Resistivity At-the-Bit Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor	Value
Master		0.9517
	0.7500 (Minimum) 1.000 (Nominal) 1.250 (Maximum)	

Company: Lamont-Doherty Borehole Research



Well: IODP Expedition 311 CAS-05D

Field: Cascadia Margin

Rig: JOIDES Resolution

State: Pacific Ocean

GeoVISION Resistivity
1:240 Measured Depth
Recorded Mode Log

Geomarket	NGC	Location	Vancouver Island
Job Date	25-SEP-2005	Customer	Lamont-Doherty Borehole Research
Rig	JIDES Resolution	Field/Well	Cascadia Margin/CAS-05D
Engineer	Lake Loh	Job Number	40012416

Type of Measurement

Res	GR				
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Data Quality

When data does not meet standards, put a number in with a corresponding number and remark below. Use Positive remarks are welcome; do not append them w

Operation

Presentation	
Description of Well - Names, Geometry, Services, Location and References; General Content Header; user of 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	

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1. Correcting the resistivity data by assuming mud re
 2. Depth is not compensated for heave. The heave cau
 this eventually cause the low data density and distor
 also cause the curves (gamma ray and resistivity) d
 very well.

Calibration and Verifications

Calibration / Before survey verification / After survey verification	
Validity, completeness (includes equipment number), timeliness, unedited, discrepancy explained	

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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.	

2	2				
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Digital Delivery

Digital Products	
Labeled, verification listing with complete digital record, backup for archival; record matches hard copy.	
Job Quality Rating (JQR)	
Number of boxes without number X 10	

80	90				
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Environmental effects

Irregular Operation	
Excessive ROP or speed, high deviation, snooks, vibrations, sticking conditions	
Borehole Geometry	
Shape (caves, etc), rugosity, spiralled hole, mud induced fractures. Casing, tubing conditions	
Borehole Fluid	
Barite, KCl, salinity, additives, gas cut, unstable	
Interferences	
External noise, nearby casing or drillpipe, debris, unusual formation composition	
Operator Outside Tool Specifications	
Geomarket/Temperature, pressure, hole size, hole deviation, dog-leg severity, flow rate, rpm, solids value of parameter	
Environmental Quality Rating (EQR)	
Number of boxes without number X 20	

1, 4	1				
2	2				
3					
40	60				

1. Excessive ROP is causing low data density.
 2. Borehole washouts cause the resistivity curves sepa
 is corrected for bit size.
 3. Low RPM during the early stage of the well reduce th
 4. Bit resistivity measurement is highly depends on the
 the bit.

Cell Manager: Lake Loh

FSM:

y Report

the column corresponding to the measurement
additional pages for remarks
with a number.

DQR Header Utility ver 1.1c

Schlumberger Drilling & Measurements

Revised January 2002