Schlumberger

Company:	**LAMONT – DOHERTY**		**9.875in Section**
Well:	**KGGH02–A Site 5 Hole A**		
Field:	**Krishna Godavari Basin**		
Rig:	**JOIDES Resolution**	Country:	**India**

Rig: JOIDES Resolution
Field: Krishna Godavari Basin
Location: Offshore Tamil Nadu
Well: KGGH02–A Site 5 Hole A
Company: LAMONT – DOHERTY

EcoSCOPE Service
1:200 Measured Depth
Recorded Mode Log

Location			Elevation	
Total depth:	1163.0 m		K.B.	Top Drive
Spud date:	24–May–06		G.L.	–945.5 m
Runs:	1 To 1		D.F.	10.5 m
Permanent datum:	Mean Sea Level		Elev.:	0.0 m
Log measured from:	Rotary Table		10.5 m	above Perm. datum
Depth reference:	Driller's Depth			

Service Order no.	X = 611755.1m	Longitude	Latitude
06INM0043	Y = 1772389.5m	E 82° 02.680	N 16° 01.721

Depth logged:	956.0 m	To 1160.0 m	Mag decl:	–1.30 deg.	Other services:	
Date logged:	24–May–06To	25–May–06	Mag dip:	19.22 deg.	SonicVISION	

Bore hole record			Casing record			
Hole size	from	to	Size	Density	from	to
9.875 in.	956.0 m	1163.0 m				

Mud record			Borehole deviation record			
Type	from	to	Min	Max	from	to
Sea Water	956.0 m	1163.0 m				

Surface equipment		Software record			
Unit	OLU–J–N844–1/02	IDEAL Wis	ID10_2C_01		
Depth system	PDA	SPM	hspm10_1c_05		
		LWD	GVR V6.2B Sonic V6.4_B10 DVD V11.0		
		MWD	PUP V90C00		

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 OF 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.

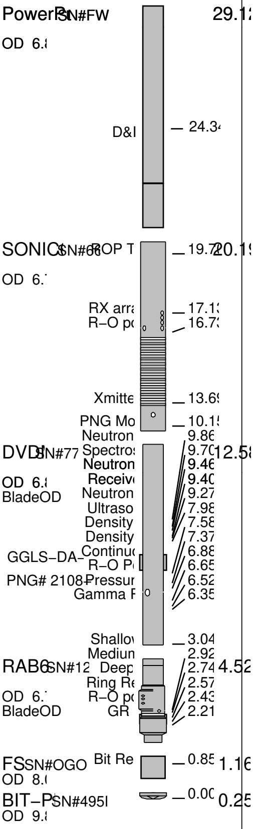
OTHER SERVICES FOR RUN1	OTHER SERVICES FOR RUN	OTHER SERVICES FOR RUN
Real time APWD Monitoring. SonicVISION		

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER	REMARKS: RUN NUMBER
Depth reference is Driller's depth All Data acquired from tool memory while drilling GR is corrected for bit size, tool size and mud weight. GVR resistivity is environmentally corrected for mud resistivity and bit size. EcoSCOPE resistivity is borehole compensated and environmentally corrected. Density is corrected for standoff by Spin and Ribs plot Neutron Porosity is corrected for bit size, tool size, mud hydrogen index, temperature, pressure and mud salinity Maximum Circulating Temperature = 10 degC Objective: Drill and log 9.875in section from sea floor to TD@1163m Results: Drilled and logged to section TD. All calibration parameters within tolerance.		

EQUIPMENT DESCRIPTION

RUN1	RUN	RUN

DOWNHOLE EQ



Maximum string diame
All lengths in I

Bit Run Summary

Run number		1									
Bit size	in	9.875									
Bit start depth	m	956									
Bit end depth	m	1163									
Top interval logged	m	956									
Bottom interval logged	m	1160									
Begin log: time		21:50									
Begin log: date		24–May–06									
End log: time		11:30									
End log: date		25–May–06									
Mud data											
Depth	m	1100									
Type		Sea Water									
Mud weight	ppg	8.665									
Solids	%	0									
Chlorides	ppm	26000									
Rm	ohmm@degC	0.214@27.9									
Rmf	ohmm@degC	0.214@27.9									
Rmc	ohmm@degC	N/A									
Potassium	%	0									
Environmental data											
GR											
Mud weight	ppg	8.665									
Bit size	in	9.875									
Resistivity											
Neutron porosity											
Hole Size	in	9.875									
Mud weight	ppg	8.665									
Temperature	degC	10									
Mud salinity	ppk	26									
Formation salinity	ppk	N/A									
Recording rate 1	SEC	Res @ 2	Nuclear@4								
Recording rate 2	SEC	GVR @ 5									
Filtering GR		3 pts									
Filtering density		3 pts									
Filtering Neutron		3 pts									
Company representative		Stefan M.	Alberto	Ann							
Schlumberger D&M Personnel		Inetimi I.	Abhijeet N.	Ritesh S.	Shivek R.						

English Units

Variable Name	Variable Description	Run Name & Value
Run Number		**1**
General Information		
BHT_RM	Bottom Hole Temperature (RM)	50.000000
BSAL_RM	Mud Salinity (RM)	26.000000
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)**	**82.219971**
MW_RM	**Mud Weight (RM)**	**8.660000**
OBMF_RM	Oil Based Mud (RM)	NO
RHOF_RM	Mud Filtrate Density (RM)	1.000000
RHOM_RM	Matrix density (RM)	2.710000
RMS_RM	Resistivity of Mud Sample (RM)	0.214000
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	CARBONATE
RWA_RES_IN	Rwa computation resistivity input	RAB_RING
RWS_RM	Resistivity of Connate Water (RM)	1.000000
SHT_RM	Surface Hole Temperature (RM)	6.800034
TD_RM	Total Measured Depth (RM)	3815.616699
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	9.125 inch
RAB/STAB_SIZE/PARAMETER	RAB: Stabilizer Diameter	9.375 inch
BDBHCA	RAB: Button Deep Borehole A Factor	−0.025010
BDBHCB	RAB: Button Deep Borehole B Factor	0.000000
BHA_COEF_V	RAB: BHA Coef Generator Version	62011.000000
BITBHCA	RAB: Bit A Borehole Factor	0.085619
BITBHCB	RAB: Bit B Borehole Factor	0.000000
BIT_K_FACT	RAB: Bit K Factor	3.651910
BMBHCA	RAB: Button Medium Borehole A Factor	0.041085
BMBHCB	RAB: Button Medium Borehole B Factor	0.000000
BSBHCA	RAB: Button Shallow Borehole A Factor	0.073936
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	0.004549
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	NO
HI_DLIS_OU	RAB: Allow Hi−Resolution DLIS Image Data Output	NO
HI_RIVER_O	**RAB: Allow Hi−Resolution River for Image Data Output**	**NO**
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	−1.299984
MAG_INCL_R	RAB: Magnetic Dip	19.219984
MBUTTON_K_	RAB: Button Medium K Factor	0.004817
OBM	RAB: Oil base Mud	NO
ORIENTATIO	Rab Image Orientation	NORTH
RABBDA0	RAB: Button Deep A0 Coeff	−0.040578
RABBDA1	RAB: Button Deep A1 Coeff	0.023611
RABBDA2	RAB: Button Deep A2 Coeff	−0.006379
RABBDA3	RAB: Button Deep A3 Coeff	0.000733
RABBDA4	RAB: Button Deep A4 Coeff	−0.000029
RABBDA5	RAB: Button Deep A5 Coeff	0.000000
RABBDMIN	RAB: Button Deep Minimum Value	0.050526
RABBITA0	RAB: Bit A0 Coeff	0.500230
RABBITA1	RAB: Bit A1 Coeff	−0.368524
RABBITA2	RAB: Bit A2 Coeff	0.168660
RABBITA3	RAB: Bit A3 Coeff	−0.034414
RABBITA4	RAB: Bit A4 Coeff	0.002550
RABBITA5	RAB: Bit A5 Coeff	0.000000
RABBITMIN	RAB: Bit Minimum Value	19.196400
RABBMA0	RAB: Button Medium A0 Coeff	−0.054082
RABBMA1	RAB: Button Medium A1 Coeff	0.031168
RABBMA2	RAB: Button Medium A2 Coeff	−0.008354
RABBMA3	RAB: Button Medium A3 Coeff	0.000950
RABBMA4	RAB: Button Medium A4 Coeff	−0.000038
RABBMA5	RAB: Button Medium A5 Coeff	0.000000
RABBMMIN	RAB: Button Medium Minimum Value	0.056537
RABBSA0	RAB: Button Shallow A0 Coeff	−0.069850
RABBSA1	RAB: Button Shallow A1 Coeff	0.037221
RABBSA2	RAB: Button Shallow A2 Coeff	−0.009448
RABBSA3	RAB: Button Shallow A3 Coeff	0.001028
RABBSA4	RAB: Button Shallow A4 Coeff	−0.000039
RABBSA5	RAB: Button Shallow A5 Coeff	0.000000
RABBSMIN	RAB: Button Shallow Minimum Value	0.078603
RABDHS	RAB Down Hole Software	4.000000
RABEC	RAB: Resistivity Env−Cor	YES
RABRNGA0	RAB: RING A0 Coeff	−0.035222
RABRNGA1	RAB: RING A1 Coeff	0.021599
RABRNGA2	RAB: RING A2 Coeff	−0.005992
RABRNGA3	**RAB: RING A3 Coeff**	**0.000701**
RABRNGA4	**RAB: RING A4 Coeff**	**−0.000029**
RABRNGA5	RAB: RING A5 Coeff	0.000000
RABRNGMIN	RAB: Ring Minimum Value	1.598150
RAB_BIT_EC	Bit Resistivity for ECAL_RAB?	YES
RAB_BIT_IN	Input Bit Resistivity for Inversion? (Recommended at the bit)	YES
RAB_CALIPE	Compute ECAL_RAB?	NO
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]	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
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	**Imput 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                              7.972441
RINGBHCA     RAB: Ring Borehole A Factor                             0.298889
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                                   0.151723
SBUTTON_K_   RAB: Button Shallow K Factor                              0.006545
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
```

DVD

```
----------   ------------Density Parameter---------------               ------------Density
----------   ------------Neutron Parameter---------------               ------------Neutron
----------   ---------Interpretation Parameter-----------             ---------Interpretation
----------   ---------Sigma Parameter-----------                    ---------Sigma
A12A         ARC Air Cal Attenuation From T1 at 2 MHz               8.231560
A14A         ARC Air Cal Attenuation From T1 at 400 KHz              8.289690
A22A         ARC Air Cal Attenuation From T2 at 2 MHz               6.180950
A24A         ARC Air Cal Attenuation From T2 at 400 KHz              6.148650
A32A         ARC Air Cal Attenuation From T3 at 2 MHz               4.832750
A34A         ARC Air Cal Attenuation From T3 at 400 KHz              4.884170
A42A         ARC Air Cal Attenuation From T4 at 2 MHz               4.587220
A44A         ARC Air Cal Attenuation From T4 at 400 KHz              4.539020
A52A         ARC Air Cal Attenuation From T5 at 2 MHz               3.392490
A54A         ARC Air Cal Attenuation From T5 at 400 KHz              3.445380
ABNT         Abnormal Transmitter Indicator                    No_Tx_Failed
ALPHA_DEN_   Density Enhanced Vertical Resolution Processing Switch            NO
ANISO_COMP   Anisotropy Computation Option                              YES
ATMP_ARC     ARC Select Temperature Channel                          Annulus_Temp
AZMF         Formation DIP Azimuth                               0.000000
BH_COMPUTE   Borehole Inversion  Computation Option                      YES
CALG         DVDM Gamma Ray Cal Gain Factor                          -1.000000
CDPTH_ARC    Process Start Depth                                100.000000
DEVI         Well Section Deviation                          0.100000
DIELEC_COM   Dielectric Computation Option                              YES
DIPF         Formation DIP Angle                             0.000000
DVDMDHS      DVDM Down Hole Software Version                            0.000000
DYN_IMAGE_   Generate Dynamic Normalized Image?                              YES
EDPTH        Wizard Process Stop Depth                            50000
EN_WIZARD    Enable ARC Wizard Processing                                NO
ERRCT        Percentage Error Cutoff                             4.500000
EVRL         EVR Process averaging number of samples (RM)                     49
FWVN         Firmware Version Number                               1.100000
GCSE         Generalized Caliper Selection                           BS
GRBC         RM: DVDM Gamma Ray Blanket (CPS)                          75.000000
GRSH         GR Shale (Invasion Computation Cutoff)                 1000.000000
GR_CF        Gamma Ray Correction Factor                            2.250000
HIGH_BLEND   High Resistivity Threshold for Blending                      2.000000
IDQT         Image Derived Quality Threshold                       1.000000
IMAGE_MAX_   Image Density Caliper Right Scale                        8.000000
IMAGE_MAX_   Image Density Quality Right Scale                        1.000000
IMAGE_MAX_   Image PEF(Segment) Right Scale                            6.000000
IMAGE_MAX_   Image RHOB(Segment) Right Scale                            2.650000
IMAGE_MIN_   Image Density Caliper Left Scale                       2.000000
IMAGE_MIN_   Image Density Quality Left Scale                       0.000000
IMAGE_MIN_   Image PEF(Segment) Left Scale                            2.000000
IMAGE_MIN_   Image RHOB(Segment) Left Scale                           2.050000
IMAGE_ORIE   Image Orientation Options, e.g. Top of Hole or True North          NORTH
INCLIN_B0    ARC Bias Constant (mg)                                0.000000
INCLIN_B1    ARC Bias First-order Coefficient (mg/degC)                    0.000000
INCLIN_B2    ARC Bias Secod-order Coeeficient (mg/degC)                      0.000000
INCLIN_B3    ARC Bias Third-order Coeeficient (mg/degC)                     0.000000
INCLIN_C0    ARC Current Scale Factor Constant (mA/g)                   1.000000
INCLIN_C1    ARC Scale First-order Coeeficient (mA/g/degC)                 0.000000
INCLIN_C2    ARC Scale Second-order Coeeficient (mA/g/degC)                    0.000000
INCLIN_C3    ARC Scale Third-order Coeeficient (mA/g/degC)                  0.000000
INVAS_COMP   Invasion Computation Option                               YES
JSD          Acquisition start date                            YES
JSD_ARC      ARC Acquisition start date                              YES
LOW_BLEND    Low Resistivity Threshold for Blending                       1.000000
MATR         Rock Matrix for Neutron Porosity Corrections             LIMESTONE
MSWS         ARC Wizard Model Switch Window                           5.000000
MULTIEFFEC   Multi Effect Option                                   YES
NEU_DCOR_O   Density Correction Source for Neutron Processing                Bottom
NEU_FTUBE_   Far Thermal Tube Selection                                  Both
NTIK_SEL     Neutron Tick Channel Name                               FAZ1
OACF         O2 Activation Correction Factor (RM)                   0.000000
P12A         ARC Air Cal Phase-Shift From T1 at 2 MHz                2.472670
P14A         ARC Air Cal Phase-Shift From T1 at 400 KHz               -0.535700
P22A         ARC Air Cal Phase-Shift From T2 at 2 MHz               -2.538020
P24A         ARC Air Cal Phase-Shift From T2 at 400 KHz               0.538316
P32A         ARC Air Cal Phase-Shift From T3 at 2 MHz               2.412610
P34A         ARC Air Cal Phase-Shift From T3 at 400 KHz               -0.538400
P42A         ARC Air Cal Phase-Shift From T4 at 2 MHz               -2.561370
P44A         ARC Air Cal Phase-Shift From T4 at 400 KHz               0.492402
P52A         ARC Air Cal Phase-Shift From T5 at 2 MHz               2.441200
P54A         ARC Air Cal Phase-Shift From T5 at 400 KHz               -0.509005
PMUD         Potassium Concentration in Mud                        0.000000
POFFSET      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
SDPTH        Wizard Process Start Depth                              100
SIG_PCOR_O   Porosity Correction Source for Sigma Processing                  Best
SPEC_CSG_D   Casing Depth for Spectroscopy Processing                      100.000000
SPL_CLAY_M   SpectroLith Clay Model                              ARENITE
SPL_COAL_O   SpectroLith Coal Processing Option                          NONE
SPL_SULFUR   SpectroLith Sulfur Mineral Option                        ANHYDRITE
STAB_SIZE    Stabilizer Size                                 9.125000
STOH         Density Top of Hole Sector (Left Boundary)              SECTOR_0
TRNO         Tool Run Number                                     1
```

TSIZ_ARC	ARC Tool Size	6.900000
TSNO	Tool Serial Number	6.900000
UNIFORM_CO	Uniform Rock Option	YES
VERS_ARC	ARC Down hole software version Number	1.100000
WRK	Way to Report Potassium Concentration	K_by_Wgt_%
WSDI	Window Size of Dynamic Normalization Image	15.000000

Schlumberger Drilling & Measurements   Parameter Insert Header Software version 2.0c

Input DLIS Files

LWD PROCESSING **File ID:DVM_026PDP** **FN:23** **25–May–2006 15:43** **PRODUCER** **3100.0 FT** **3817.4 FT**

IDEAL Version: ID10_2C_01.1SV

IDF

ECO6 **id10_2c_01**

Format: Eco_Combined_200MD **Vertical Scale: 1:200** **Graphics File Created: 25–May–2006 16:17**

PIP SUMMARY

Resistivity Samples

Gamma Ray Samples

Neutron Ticks, 0.1 ft

Density Ticks, 0.1 ft

Rate of Penetration, Averaged over Last 5ft (ROP5_RM)
100 (M/HR) 0

Gamma Ray, Average (GRMA)
0 (GAPI) 150

Ultrasonic Caliper Average (UCAV)
8 (IN) 13

Density Caliper, Average (DCAV)
8 (IN) 13

Collar Rotational Speed (CRPM) (RPM)
0 200

ARC Attenuation Resistivity 16 inch Spacing at 2 MHz, Environmentally Corrected (A16H)
0.2 (OHMM) 20

ARC Phase Shift Resistivity 16 inch Spacing at 2 MHz, Environmentally Corrected. (P16H)
0.2 (OHMM) 20

ARC Attenuation Resistivity 40 inch Spacing at 400 KHz (A40L)
0.2 (OHMM) 20

ARC Phase Shift Resistivity 40 inch Spacing at 400 KHz (P40L)
0.2 (OHMM) 20

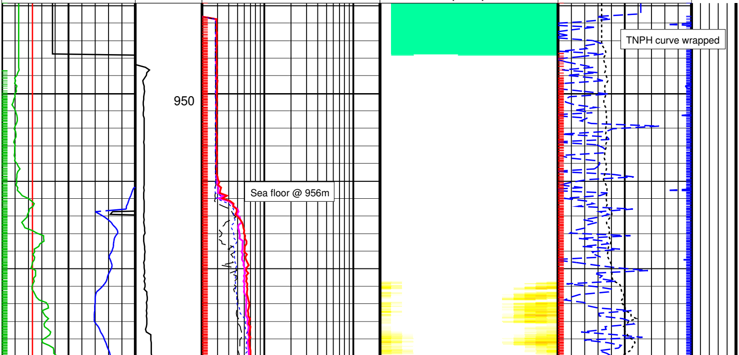
Absent 1.273 1.371 1.468 1.566 1.663 1.761 1.859 1.956 2.054 2.151

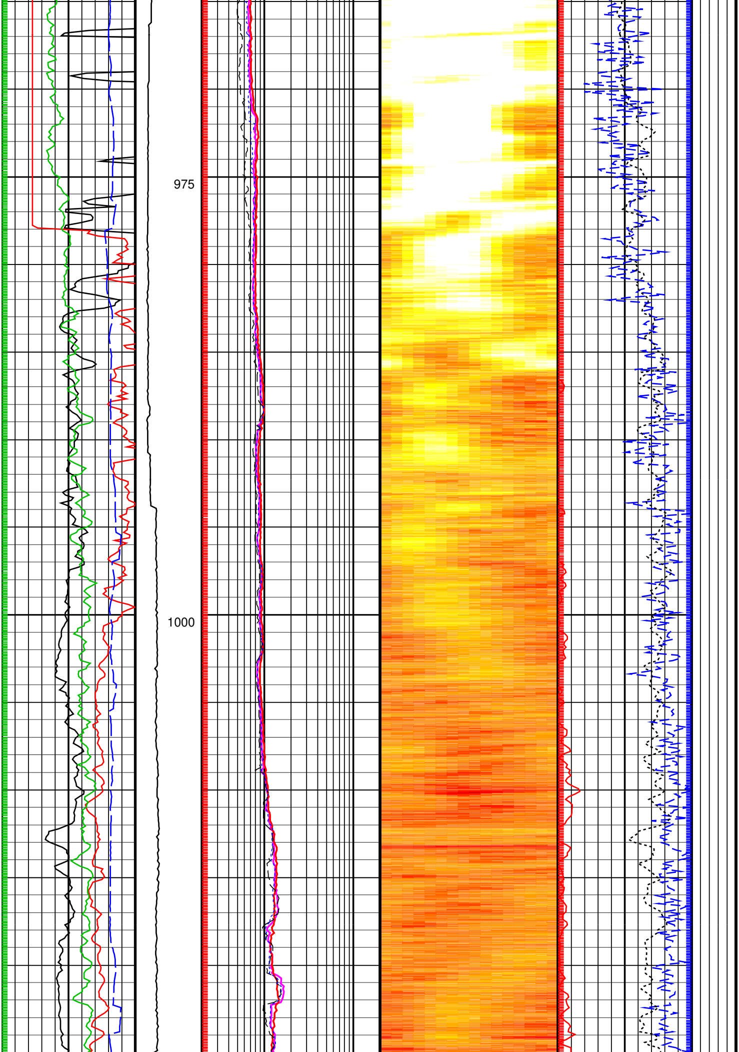
Bulk Density (16–Sector) Image Oriented Top of Hole (U,R,B,L,U) (ROSI) (G/C3)

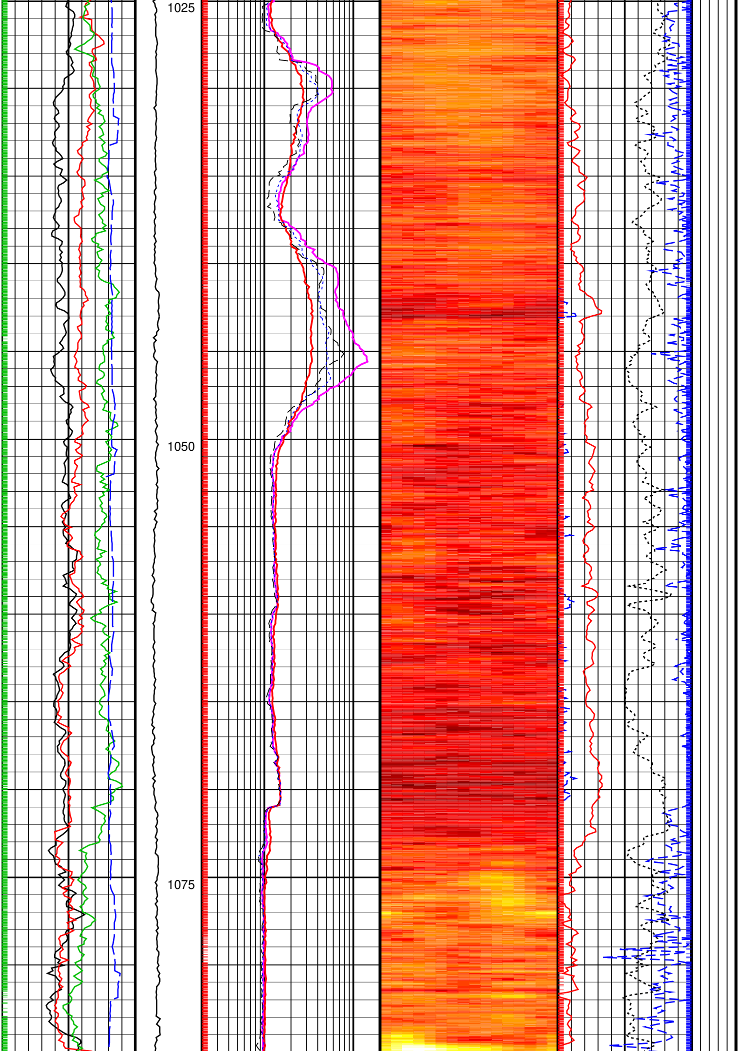
Image Derived Density Correction (IDDR)
–0.25 (G/C3) 0.25

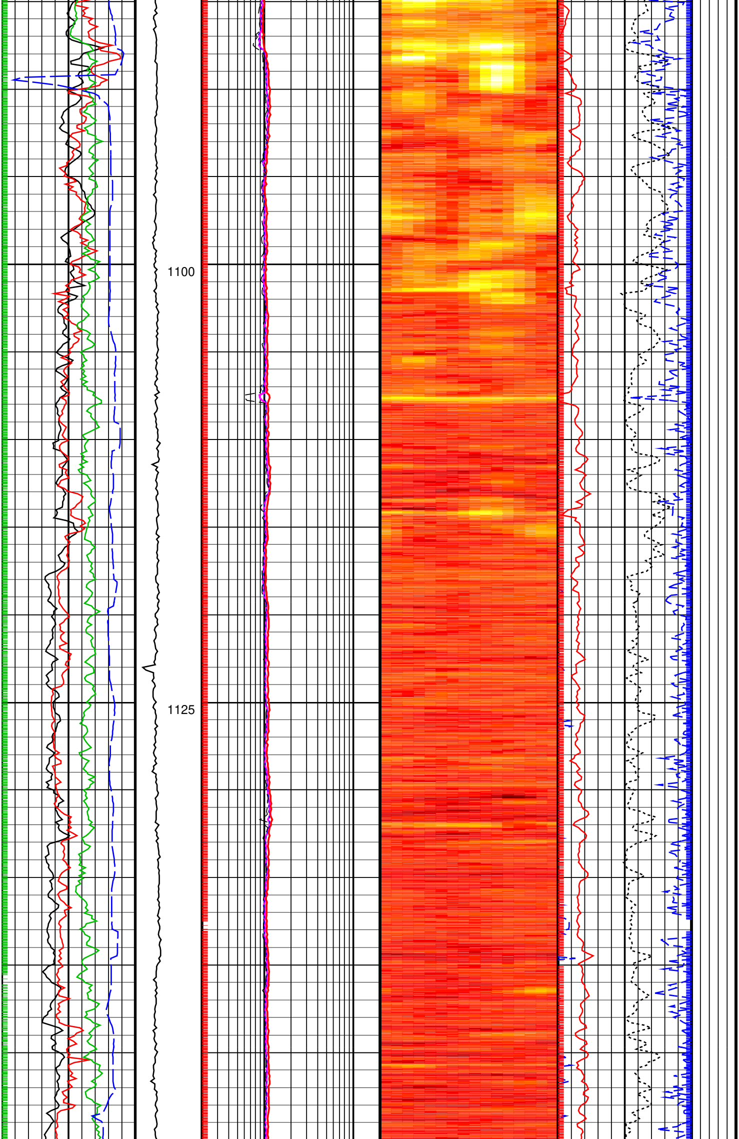
Image Derived Density (IDRO)
1.65 (G/C3) 2.65

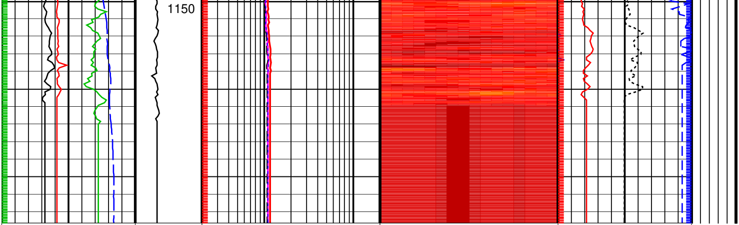
Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH)
60 (PU) 0











Density Caliper, Average (DCAV)
8 (IN) 13

Collar Rotational Speed (CRPM) (RPM)
0 200

ARC Phase Shift Resistivity 40 inch Spacing at 400 KHz (P40L)
0.2 (OHMM) 20

Absent 1.273 1.371 1.468 1.566 1.663 1.761 1.859 1.956 2.054 2.151

Bulk Density (16–Sector) Image Oriented Top of Hole (U,R,B,L,U) (ROSI) (G/C3)

Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH)
60 (PU) 0

Ultrasonic Caliper Average (UCAV)
8 (IN) 13

ARC Attenuation Resistivity 40 inch Spacing at 400 KHz (A40L)
0.2 (OHMM) 20

Image Derived Density (IDRO)
1.65 (G/C3) 2.65

Gamma Ray, Average (GRMA)
0 (GAPI) 150

ARC Phase Shift Resistivity 16 inch Spacing at 2 MHz, Environmentally Corrected. (P16H)
0.2 (OHMM) 20

Image Derived Density Correction (IDDR)
–0.25 (G/C3) 0.25

Rate of Penetration, Averaged over Last 5ft (ROP5_RM)
100 (M/HR) 0

ARC Attenuation Resistivity 16 inch Spacing at 2 MHz, Environmentally Corrected (A16H)
0.2 (OHMM) 20

PIP SUMMARY

⊢ **Resistivity Samples**

⊢ **Gamma Ray Samples**

Neutron Ticks, 0.1 ft ⊣

Density Ticks, 0.1 ft ⊢

IDEAL Version: ID10_2C_01.1SV

IDF

ECO6 **id10_2c_01**

Input DLIS Files

LWDpRMDERAOCESSING **File ID:DVM_026PDP** **FN:23** **25–May–2006 15:43** **PRODUCER** **3100.0 FT** **3817.4 FT**

EcoScope Integrated Logging–While–Drilling Tool – 6.75 inch / Equipment Identification

Primary Equipment:

Tool Name and Serial Number	ECO – 675	778
Calibration Status	–	
Collar Type and Serial Number	ADDC – AA	
Chassis Type and Serial Number	ADSE – EA	
Stabilizer Type and Serial Number	ADCS – CA	
Neutron Logging Source	NSR – M	
Density Logging Source	GSR – J/Z	
Stabilizer Size	9.13 – in.	

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EcoScope Integrated Logging–While–Drilling Tool – 6.75 inch Calibration

SSn LSn : Water Tank

Phase	SSn Gain ----	Value	Phase	SSn Offset ----	Value
Master		1.151	Master		0
	0.6000 (Minimum) 1.000 (Nominal) 1.400 (Maximum)			–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
Phase	**LSn Gain ----**	**Value**	**Phase**	**LSn Offset ----**	**Value**
Master		1.166	Master		0
	0.6000 (Minimum) 1.000 (Nominal) 1.400 (Maximum)			–3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	

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EcoScope Integrated Logging–While–Drilling Tool – 6.75 inch Calibration

Neutron: Water Tank

Phase	Far 2 Gain ––––	Value	Phase	Far 2 Offset ––––	Value
Master		1.044	Master		1.004
0.7000 (Minimum)	1.000 (Nominal)	1.300 (Maximum)	−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Phase	Far 1 Gain ––––	Value	Phase	Far 1 Offset ––––	Value
Master		1.076	Master		0.6590
0.7000 (Minimum)	1.000 (Nominal)	1.300 (Maximum)	−3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Phase	Thermal Near gain ––––	Value	Phase	Thermal Near offset ––––	Value
Master		1.140	Master		−15.25
0.7000 (Minimum)	1.000 (Nominal)	1.300 (Maximum)	−500.0 (Minimum)	0 (Nominal)	500.0 (Maximum)

Phase	Epithermal Near gain ––––	Value	Phase	Eptithermal Near offset ––––	Value
Master		1.124	Master		17.94
0.7000 (Minimum)	1.000 (Nominal)	1.300 (Maximum)	−300.0 (Minimum)	0 (Nominal)	300.0 (Maximum)

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EcoScope Integrated Logging–While–Drilling Tool – 6.75 inch Calibration

Gamma Density: Magnesium Block

Phase	LS window 3 – Mg CPS	Value	Phase	SS window 1 – Mg CPS	Value	Phase	SS window 3 – Mg CPS	Value
Master		2013	Master		4858	Master		11410
1000 (Minimum)	2000 (Nominal)	3000 (Maximum)	2500 (Minimum)	5250 (Nominal)	8000 (Maximum)	6000 (Minimum)	12000 (Nominal)	18000 (Maximum)

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EcoScope Integrated Logging–While–Drilling Tool – 6.75 inch Calibration

Gamma Density: Aluminum Block

Phase	LS window 3 – Al CPS	Value	Phase	SS window 1 – Al CPS	Value	Phase	SS window 3 – Al CPS	Value
Master		372.1	Master		2545	Master		8395
200.0 (Minimum)	400.0 (Nominal)	600.0 (Maximum)	1500 (Minimum)	3000 (Nominal)	4500 (Maximum)	4000 (Minimum)	8500 (Nominal)	13000 (Maximum)

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EcoScope Integrated Logging–While–Drilling Tool – 6.75 inch Calibration

Gamma Density: Background

Phase	LS window 3 – Background CPS	Value	Phase	SS window 1 – Background CPS	Value	Phase	SS window 3 – Background CPS	Value
Master		66.31	Master		74.12	Master		355.2
50.00 (Minimum)	70.00 (Nominal)	90.00 (Maximum)	50.00 (Minimum)	75.00 (Nominal)	100.0 (Maximum)	270.0 (Minimum)	370.0 (Nominal)	470.0 (Maximum)

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EcoScope Integrated Logging–While–Drilling Tool – 6.75 inch Calibration

Gamma Density: Water Block Check

Phase	Long spacing water density G/C3	Value	Phase	Short spacing water density G/C3	Value
Master		1.030	Master		1.263
0.9000 (Minimum)	1.150 (Nominal)	1.400 (Maximum)	0.9000 (Minimum)	1.150 (Nominal)	1.400 (Maximum)

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EcoScope Integrated Logging–While–Drilling Tool – 6.75 inch Calibration

Resistivity: Air

Phase	Phase–Shift T1	Value	Phase	Phase–Shift T2	Value	Phase	Phase–Shift T3	Value
Master		2.473	Master		−2.538	Master		2.413
−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)
Phase	Phase–Shift T4	Value	Phase	Phase–Shift T5	Value	Phase	Phase–Shift T1 at 400KHz	Value
Master		−2.561	Master		2.441	Master		−0.5357
−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)
Phase	Phase–Shift T2 at 400KHz	Value	Phase	Phase–Shift T3 at 400KHz	Value	Phase	Phase–Shift T4 at 400KHz	Value
Master		0.5383	Master		−0.5384	Master		0.4924
−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)	−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)
Phase	Phase–Shift T5 at 400KHz	Value						
Master		−0.5090						
−4.000 (Minimum)	0 (Nominal)	4.000 (Maximum)						

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EcoScope Integrated Logging−While−Drilling Tool − 6.75 inch Calibration

Resistivity: Air

Phase	Attenuation T1	Value	Phase	Attenuation T2	Value	Phase	Attenuation T3	Value
Master		8.232	Master		6.181	Master		4.833
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)			4.000 (Minimum) 6.000 (Nominal) 8.000 (Maximum)			3.500 (Minimum) 5.500 (Nominal) 7.500 (Maximum)	
Phase	**Attenuation T4**	**Value**	**Phase**	**Attenuation T5**	**Value**	**Phase**	**Attenuation T1 at 400KHz**	**Value**
Master		4.587	Master		3.392	Master		8.290
	2.500 (Minimum) 4.500 (Nominal) 6.500 (Maximum)			2.000 (Minimum) 4.000 (Nominal) 6.000 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	
Phase	**Attenuation T2 at 400KHz**	**Value**	**Phase**	**Attenuation T3 at 400KHz**	**Value**	**Phase**	**Attenuation T4 at 400KHz**	**Value**
Master		6.149	Master		4.884	Master		4.539
	4.000 (Minimum) 6.000 (Nominal) 8.000 (Maximum)			3.500 (Minimum) 5.500 (Nominal) 7.500 (Maximum)			2.500 (Minimum) 4.500 (Nominal) 6.500 (Maximum)	
Phase	**Attenuation T5 at 400KHz**	**Value**						
Master		3.445						
	2.000 (Minimum) 4.000 (Nominal) 6.000 (Maximum)							

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EcoScope Integrated Logging−While−Drilling Tool − 6.75 inch Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor	Value
Master		2.250
	2.000 (Minimum) 2.500 (Nominal) 3.000 (Maximum)	

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

Primary Equipment:

Tool Name and Serial Number	RAB6 − CA	127
Calibration Status	−	

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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		1.006	Master		1.010	Master		0.9952
	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		0.9989	Master		1.006	Master		1.010
	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		1.005	Master		1.008	Master		1.001
	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		1.004	Master		1.004	Master		1.008
	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)	

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6.75−in. Resistivity At−the−Bit Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor −−−−	Value
Master		0.9227
	0.7500 (Minimum) 1.000 (Nominal) 1.250 (Maximum)	

Company: **LAMONT – DOHERTY**

Schlumberger

Well: **KGGH02–A Site 5 Hole A**
Field: **Krishna Godavari Basin**
Rig: **JOIDES Resolution** **9.875in Section**
Country: **India**

EcoSCOPE Service
1:200 Measured Depth
Recorded Mode Log