

Company: **JOGMEC**

Well: **AURORA/JOGMEC/NRCAN MALLIK 2L-38**

Field: **MALLIK**

Province: **NWT**

## MAGNETIC RESONANCE SCANNER

Province: NWT  
 Field: MALLIK  
 Location: GRID: 69-30-134-30  
 Well: AURORA/JOGMEC/NRCAN MALLIK 2L-38  
 Company: JOGMEC

GRID: 69-30-134-30 UWID: 302 L38 69-30-134-301	Elev.: K.B. 10.55 m G.L. 1 m D.F. 10.25 m
LOCATION	
Permanent Datum: _____	GROUND LEVEL _____
Log Measured From: _____	KELLY BUSHING _____
Drilling Measured From: _____	KELLY BUSHING _____
Elev.: 1 m _____	
9.6 m above Perm. Datum	
API Serial No. _____	
1163	

	Run 1	Run 2	Run
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth			
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density			
Fluid Loss			
Source Of Sample			
RM @ Measured Temperature			
RMF @ Measured Temperature			
RMC @ Measured Temperature			
Source RMF			
RM @ MRT			
RMF @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

Logging Date	6-Mar-2007
Run Number	1P-RUN FOUR
Depth Driller	1310 m
Schlumberger Depth	1296 m
Bottom Log Interval	1150 m
Top Log Interval	850 m
Casing Driller Size @ Depth	339.700 mm @ 677 m
Casing Schlumberger	680 m
Bit Size	361.950 mm
Type Fluid In Hole	KCL POLYMER
Density	1115 kg/m3
Fluid Loss	5 cm3
Source Of Sample	FLOWLINE
RM @ Measured Temperature	0.107 ohm.m @ 20 degC
RMF @ Measured Temperature	0.120 ohm.m @ 19 degC
RMC @ Measured Temperature	0.150 ohm.m @ 20 degC
Source RMF	PRESS
RM @ MRT	0.128 @ 13
RMF @ MRT	0.140 @ 13
Maximum Recorded Temperatures	13 degC
Circulation Stopped	5-Mar-2007 16:00
Logger On Bottom	9-Mar-2007 21:45
Unit Number	1803 NISKU, AB
Recorded By	LANNY LAROCHE
Witnessed By	SCOTT DALLMORE

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Driller Size @ Depth	
Casing Schlumberger	
Bit Size	
Type Fluid In Hole	
Density	
Fluid Loss	
Source Of Sample	
RM @ Measured Temperature	
RMF @ Measured Temperature	
RMC @ Measured Temperature	
Source RMF	
RM @ MRT	
RMF @ MRT	
Maximum Recorded Temperatures	
Circulation Stopped	
Logger On Bottom	
Unit Number	
Recorded By	
Witnessed By	

## DEPTH SUMMARY LISTING

Date Created: 17-MAR-2007 12:19:39

### Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B Serial Number: 107 Calibration Date: 26-JAN-2007 Calibrator Serial Number: 4 Calibration Cable Type: 7-46P-XS Wheel Correction 1: -5 Wheel Correction 2: -5	Type: CMTD-B/A Serial Number: 5055 Calibration Date: 16-FEB-2007 Calibrator Serial Number: 1111 Calibration Gain: 0.89 Calibration Offset: 400.00	Type: 7-46P-XS Serial Number: -999 Length: 6600.14 M Conveyance Method: Wireline Rig Type: LAND

### Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	PLATFORM EXPRESS: COMPENSATED NEUTRON LITHO DENSITY LOG
Reference Log Run Number:	ONE
Reference Log Date:	03-MAR-2007
Subsequent Trip Down Log Correction:	-0.30 M

### Depth Control Remarks

1.	
2.	
3.	
4.	
5.	
6.	

#### DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: 1.ZAIT-HRLT-EMS-GPI	OS1:
OS2: 2.APS-PEX-CMR-ECS	OS2:
OS3: HNGS	OS3:
OS4: 3.FMI-SSCAN	OS4:
OS5: 4.MRSCAN	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
MAIN HIRES DOWNLOG PERFORMED FROM 1150-850M	
MAIN HIRES UPLOG PERFORMED FROM 1150-850M	
MAIN ANTENNA CURVES NOT AVAILABLE DUE TO MAIN ANTENNA FAILURE	
LOW HIRES ANTENNA CURVES PRESENTED	
BS = 12.25" FROM TD-1296M	

BS = 14.25" FROM 1296-SC

WIPER TRIP BETWEEN RUN2 AND RUN3. DURING THIS TIME,  
 DURING THIS TIME, BOTTOM OF HOLE OPENED UP FROM 9.875" TO 12.25"

RIG: AKITA 62

CREW: JAMES MACDONALD / MARK KIMBALL / MIKE KLOC

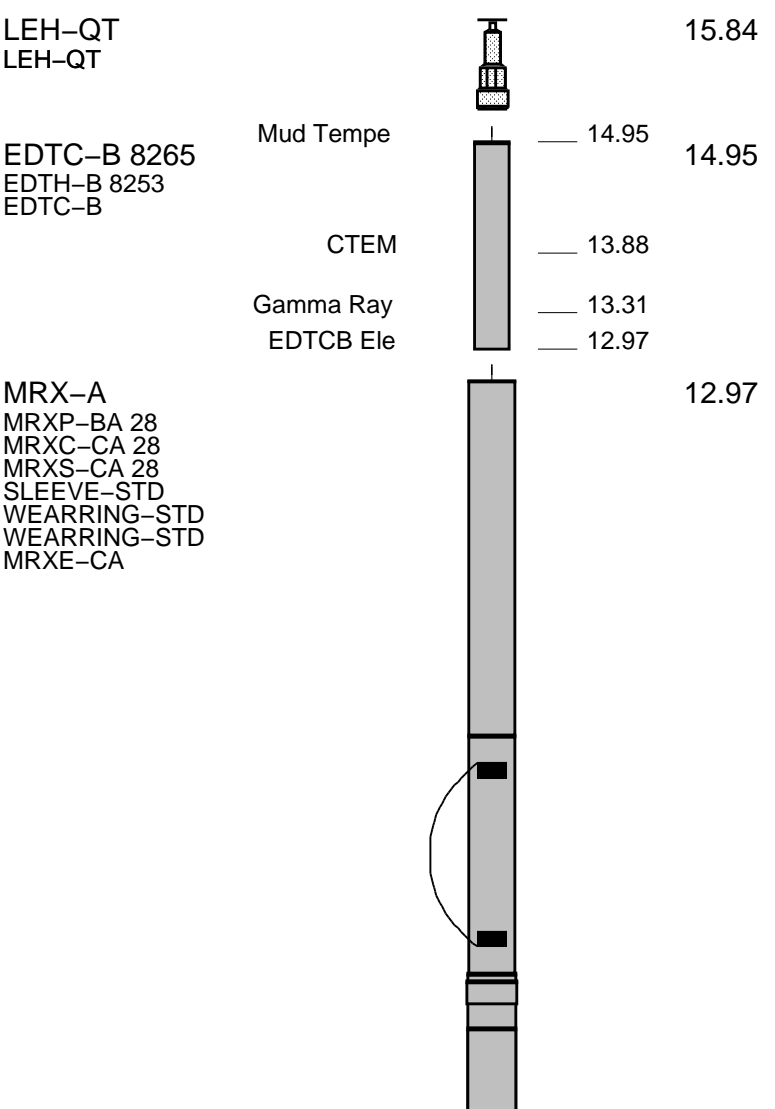
RUN 1			RUN 2		
SERVICE ORDER #:	11709034		SERVICE ORDER #:		
PROGRAM VERSION:	14C0-302		PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

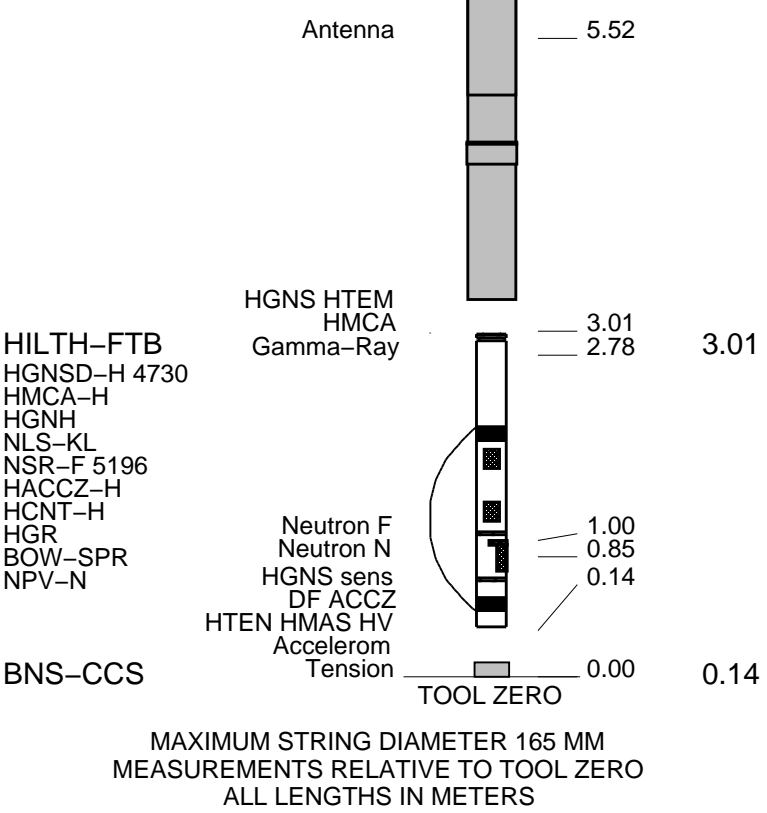
## EQUIPMENT DESCRIPTION

RUN 1 RUN 2

**SURFACE EQUIPMENT**  
 GSR-U/Y 6710 MRPP-AA  
 NCT-B WITM (EDTS)-A  
 CNB-AB  
 NCS-VB

**DOWNHOLE EQUIPMENT**





# HIRES UPLOG

MAXIS Field Log

## Input DLIS Files

17-Mar-2007 09:39

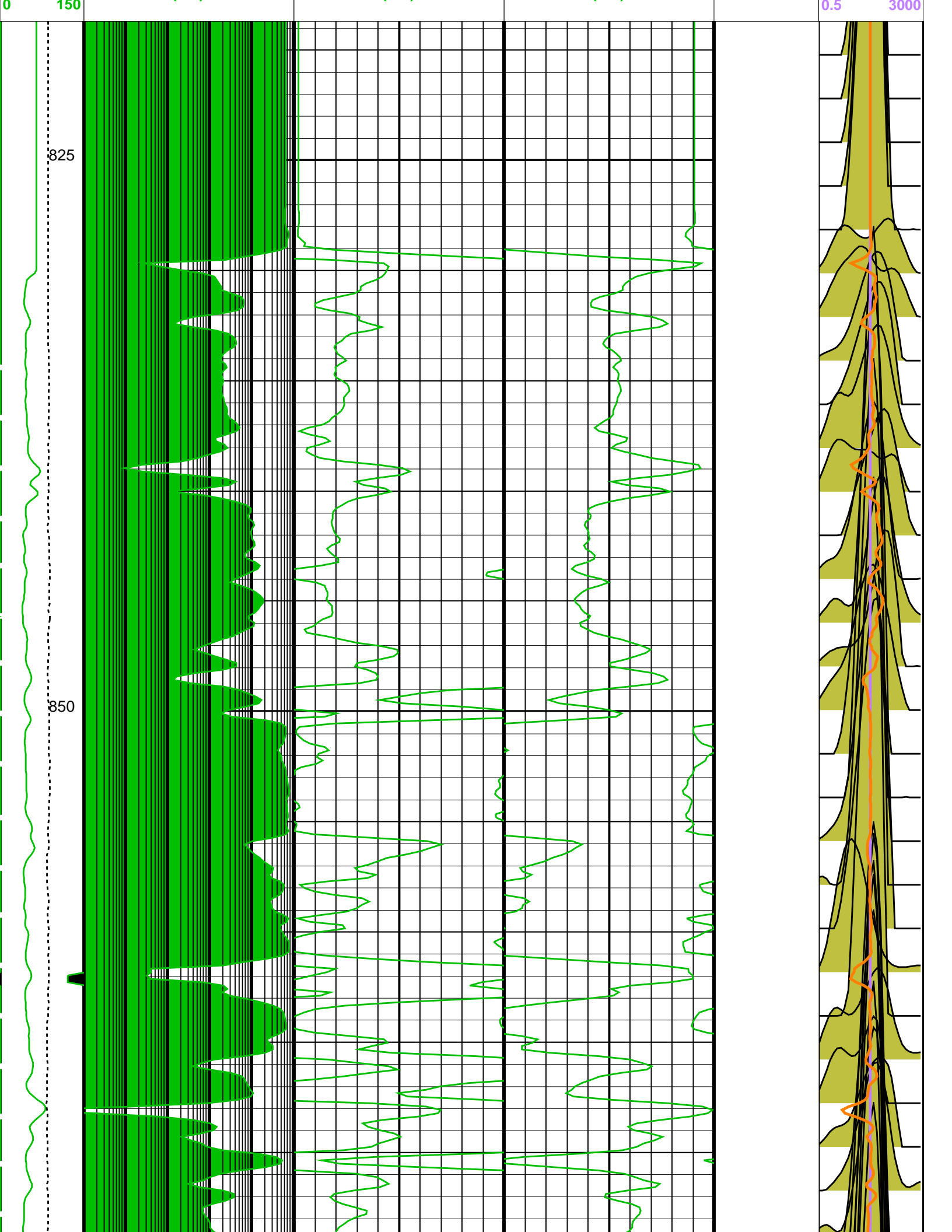
## Output DLIS Files

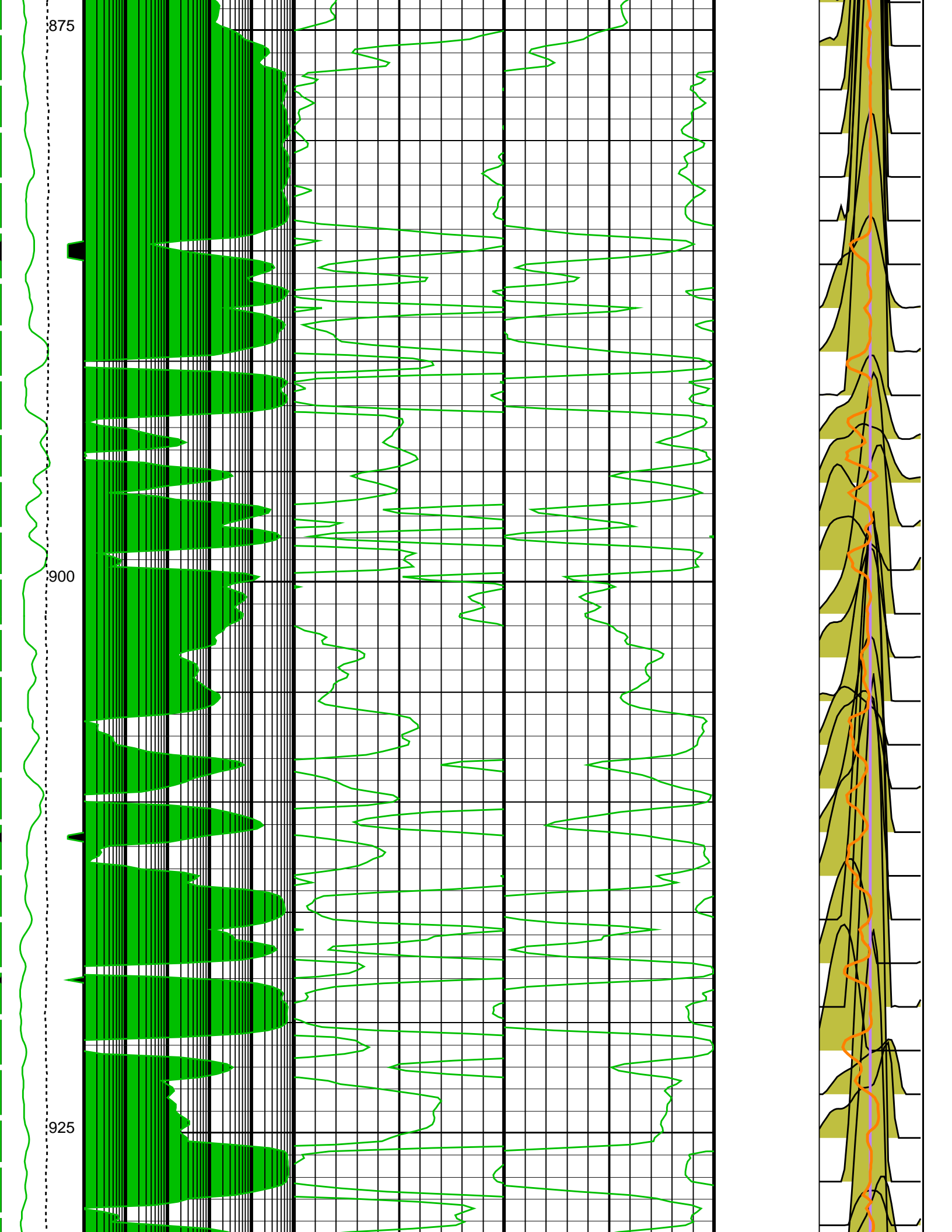
DEFAULT TLD\_MCFL\_CNL\_MRX\_016PUP FN:15 PRODUCER 17-Mar-2007 10:29 1169.2 M 818.9 M

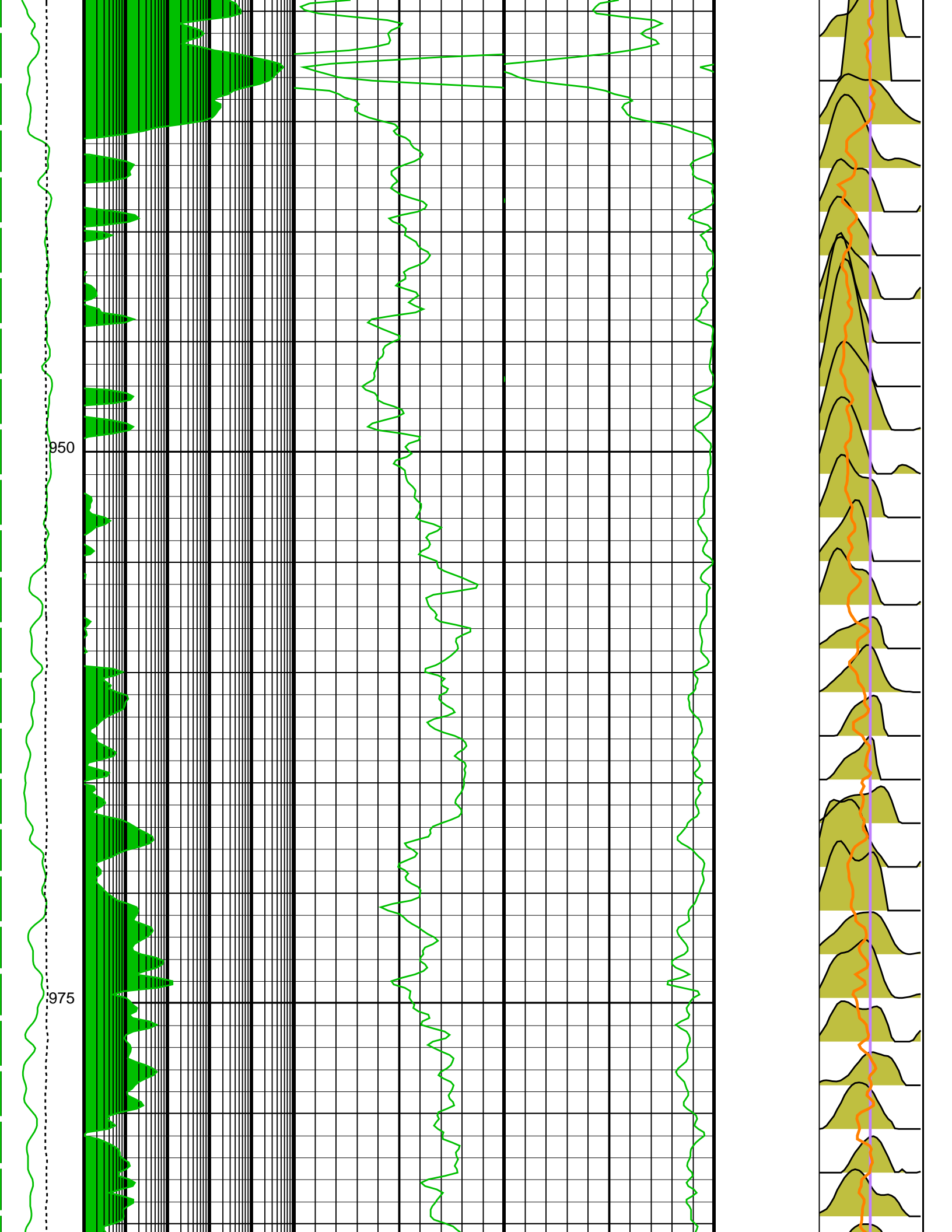
### PIP SUMMARY

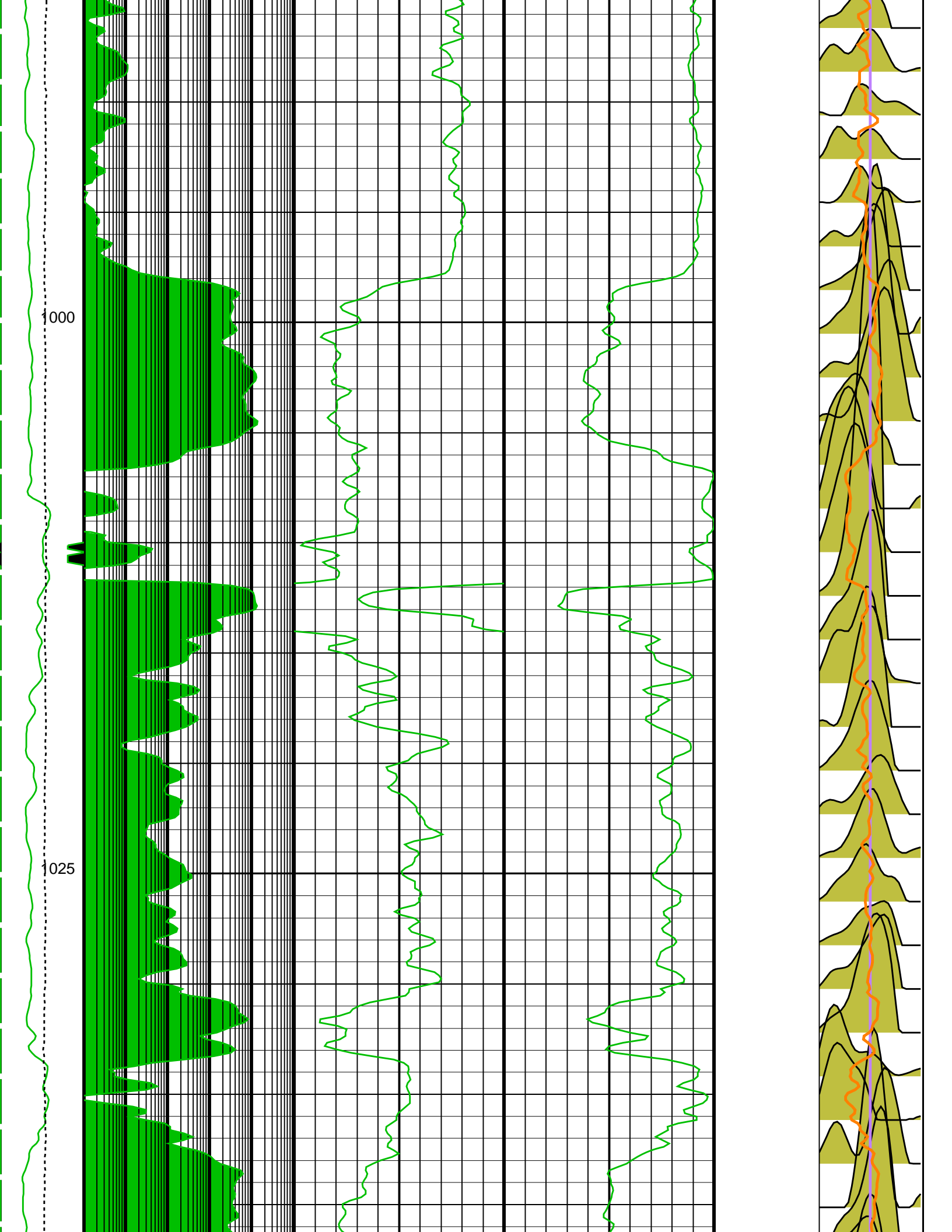
Time Mark Every 60 S

<b>Bad Hole Flag</b> S9[1.25] (BADF_MRF[1])				<b>T2 Log Mean</b> S9[1.25] (T2LM_MRF[1]) (MS)
5 (---- 0)	<b>Permeability</b>			0.5 3000
<b>Tension (TENS)</b> (N)				<b>T2 Cutoff</b> (T2CUTOFF) (MS)
20000 0	<b>Permeability S9[1.25]</b> (KTIM_MRF[1]) (MD)	<b>Total Porosity S9[1.25]</b> (MRP_MRF[1]) (V/V)	<b>Free Fluid Volume S9[1.25]</b> (FFV_MRF[1]) (V/V)	
	0.1 10000	0.4 0	0.4 0	

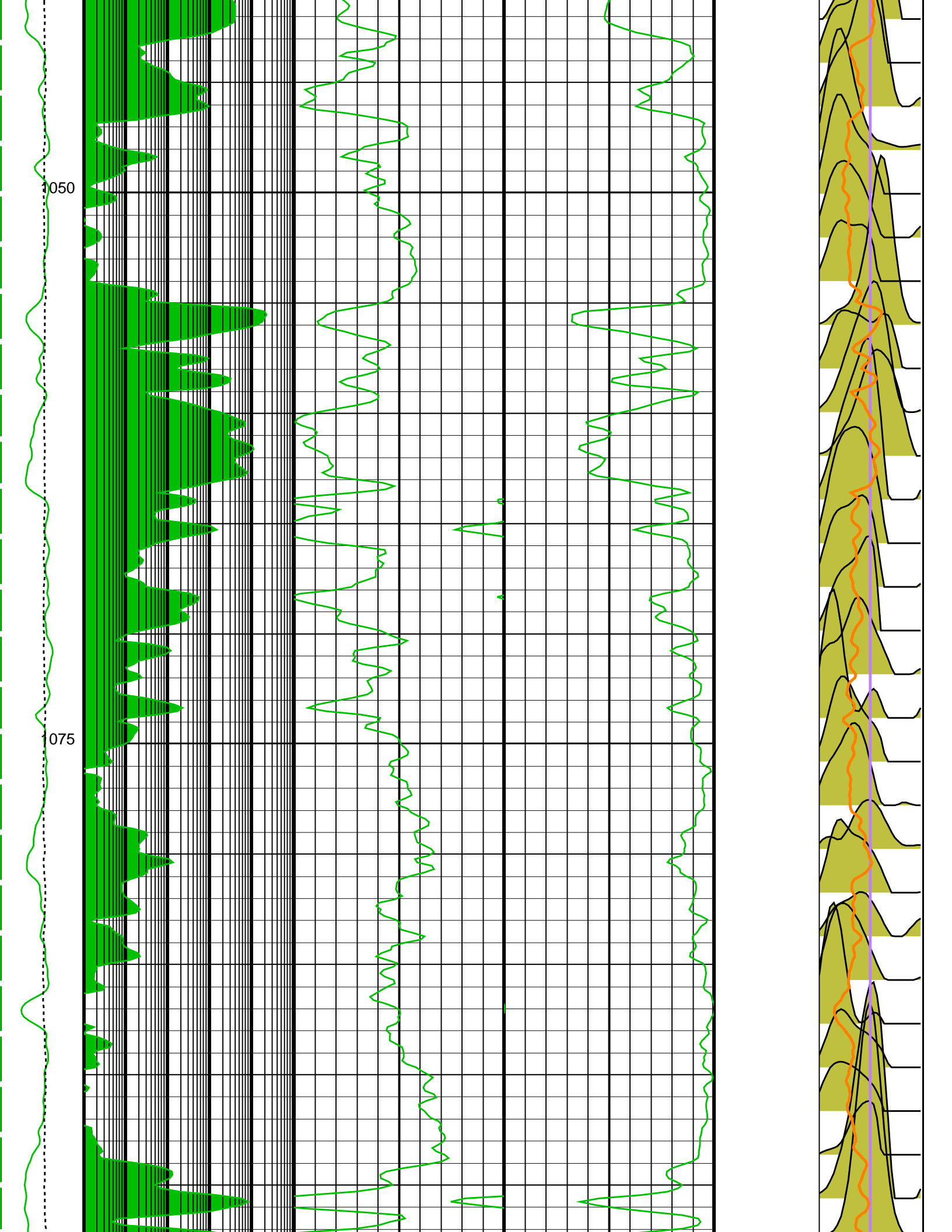


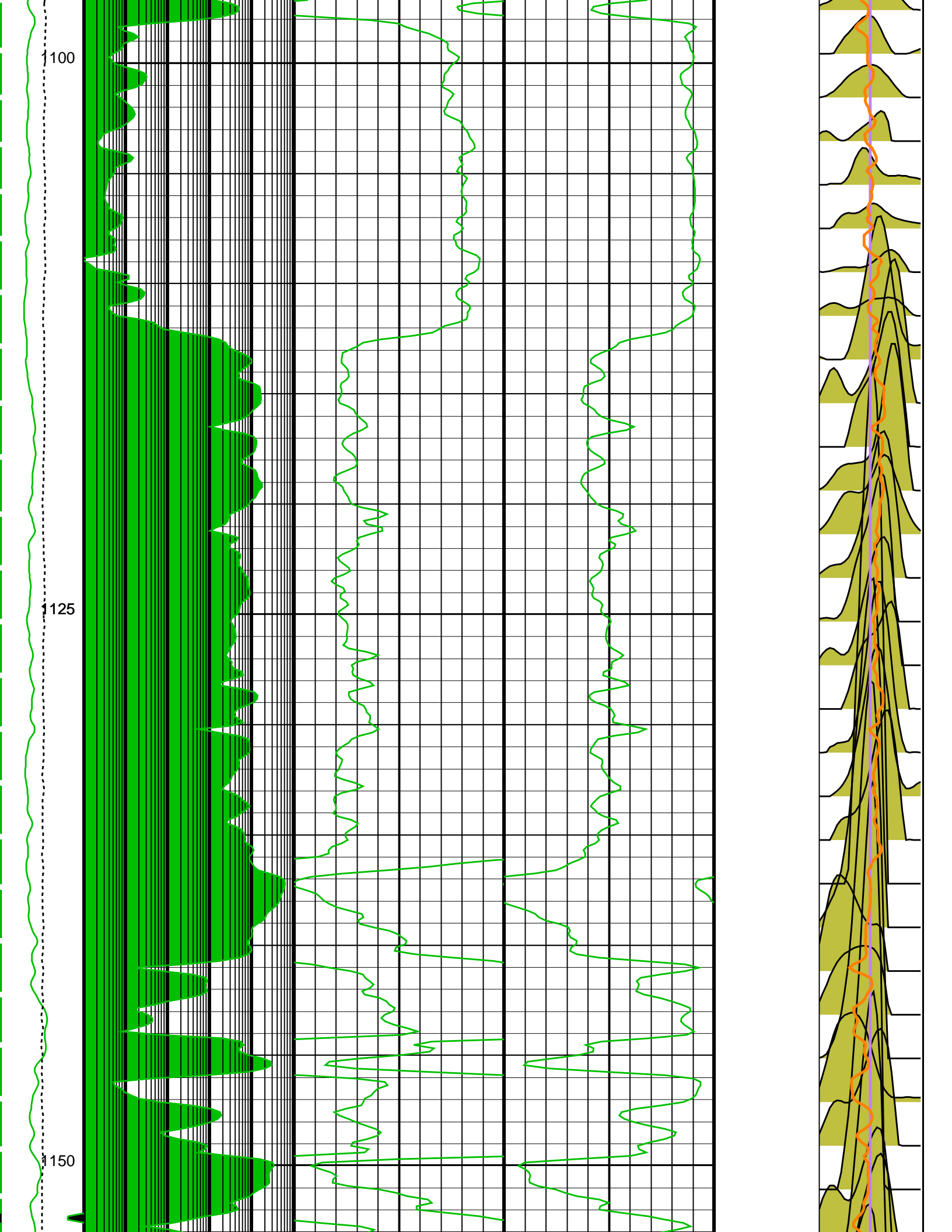


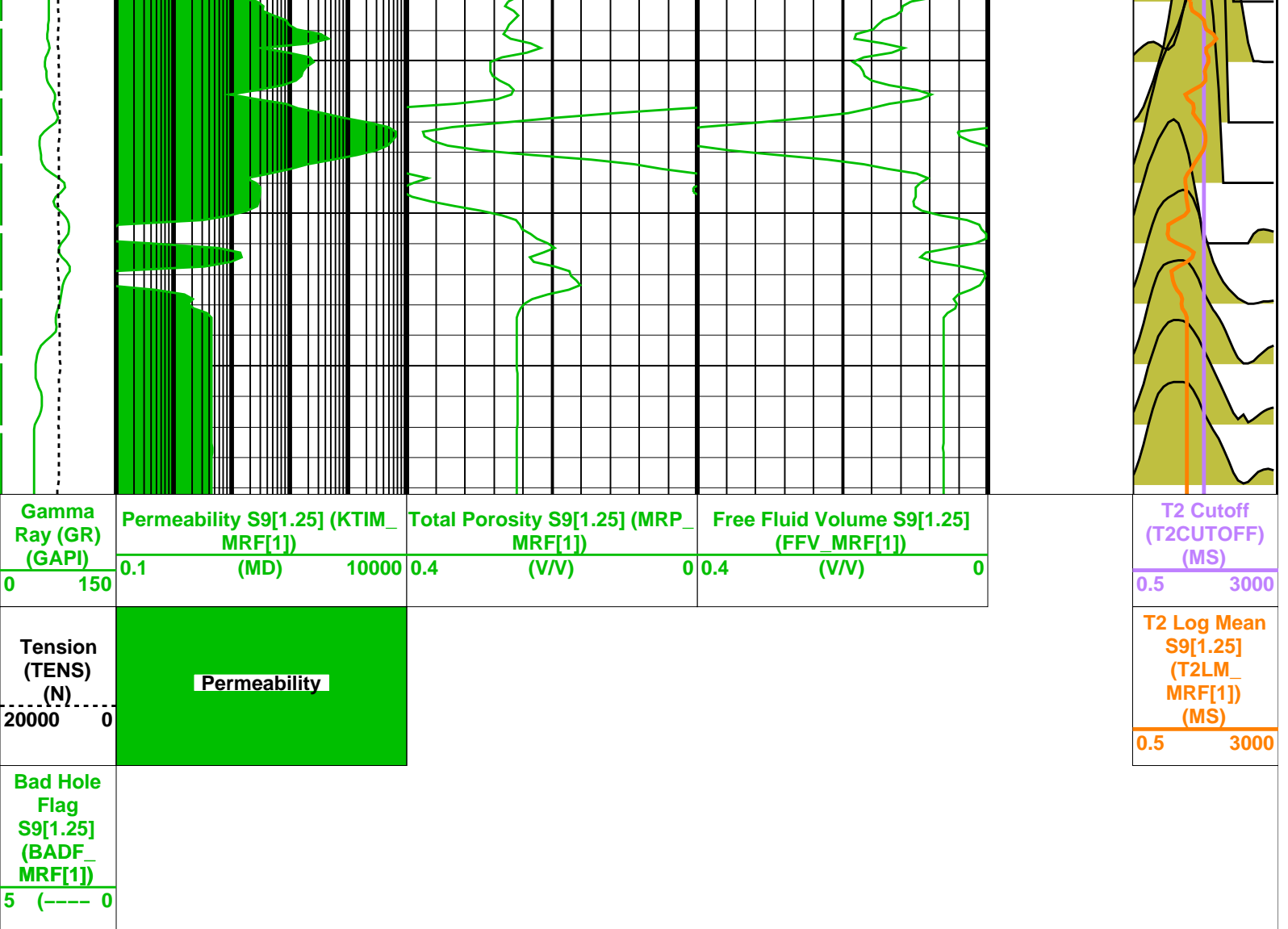












PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
MRX-A: Magnetic Resonance			
BFV_MIN	Bound Fluid Volume - Minimum	0.02	V/V
CALTABLE	Calibration Coefficient Table	** V **	
DESPIKE_OPT	Despiking Option	ON	
DLSR	Depth Log Sample Rate	190.5	MM
EDDV	Echo Data Descriptor (Vector)	** V **	
GAMMA_OPT	GAMMA Parameter Option	MANUAL	
GAMMA_REG	Gamma Regularization Parameter	** V **	
HI_H2O	Hydrogen Index of Water	1	
KTIM_A	Multiplier for Timur/Coates Permeability	1	MD
KTIM_B	Porosity Exponent for Timur/Coates Permeability	4	
KTIM_C	PHI Ratio Exponent for Timur/Coates Permeability	2	
MRX_COEFF	MRX Tool Characterization Coefficients	** V **	
NCOMP	Number of Components (depth logging)	30	
NECH_PHASE	Number of Echos to use in Signal Phase Computation	20	
NMR_FLUID_MODEL	Fluid Model for Magnetic Resonance Fluid Typing	WATER	
NMR_SEQUENCE	NMR Sequence	** V **	
NSTACK	Number of Stacks down-hole	1	
PHI_FOR_BADF	Porosity Threshold to Trigger Bad Hole Flag	0.5	V/V
PSDV	Pulse Sequence Descriptor (Vector)	** V **	
SEQUENCE_FILE	Sequence File	HR_S3LHR_UPORDOWN410_V24_LOW_AQF	
SHNM	Shell Number in Sequence	** V **	
SPEED_CORR_OPT	Speed Correction Option	OFF	
START_ECHO_OPT	Starting Echo Option	SECOND	
T2CUT	T2 Cutoff between BFV and FFV	33	MS
T2_FOR_BADF	T2 Threshold to Trigger Bad Hole Flag	10	MS
T2_MAX	T2 Maximum	3000	MS
T2_MIN	T2 Minimum	0.5	MS
System and Miscellaneous			
DO	Depth Offset for Playback	0.0	M

**OP System Version: 14C0-302**  
 MCM

HILTH-FTB 14C0-302 MRX-A SPC-3273-MRXKit13\_v2  
 EDTC-B SKK-3248-EDTCB

**Input DLIS Files**

17-Mar-2007 09:39

**Output DLIS Files**

DEFAULT TLD\_MCFL\_CNL\_MRX\_016PUP FN:15 PRODUCER 17-Mar-2007 10:29

**Input DLIS Files**

17-Mar-2007 09:39

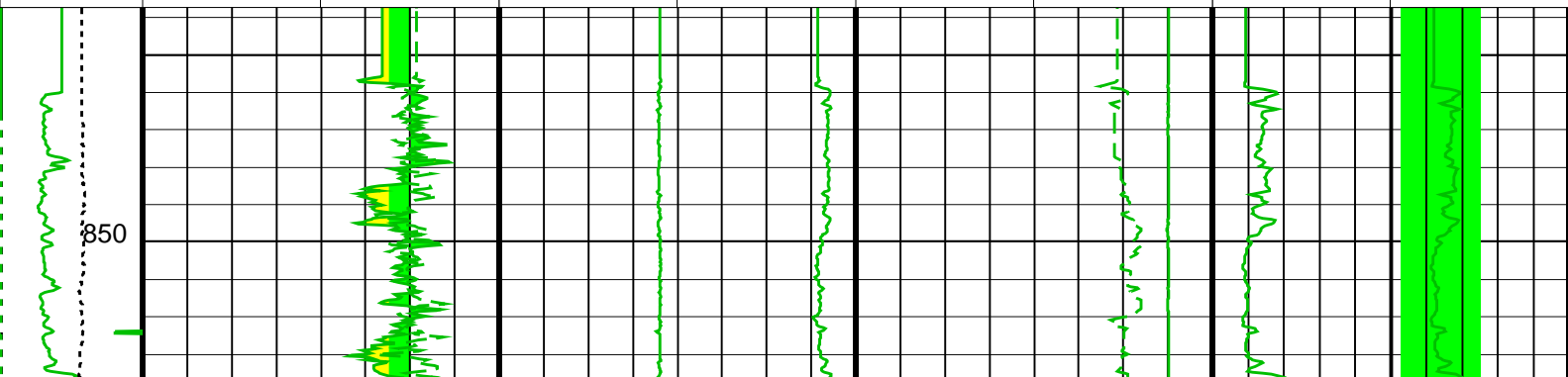
**Output DLIS Files**

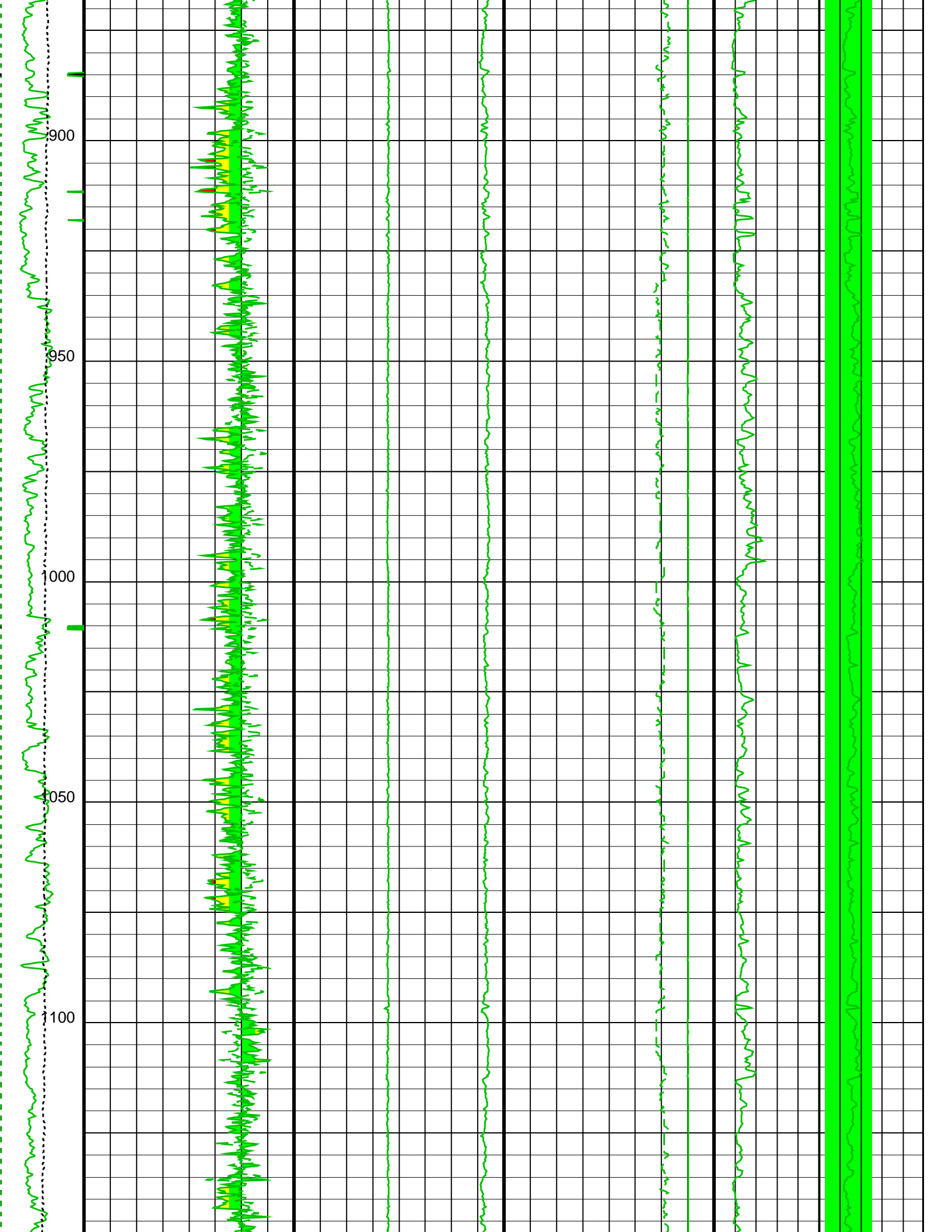
DEFAULT TLD\_MCFL\_CNL\_MRX\_016PUP FN:15 PRODUCER 17-Mar-2007 10:29 1169.2 M 818.9 M

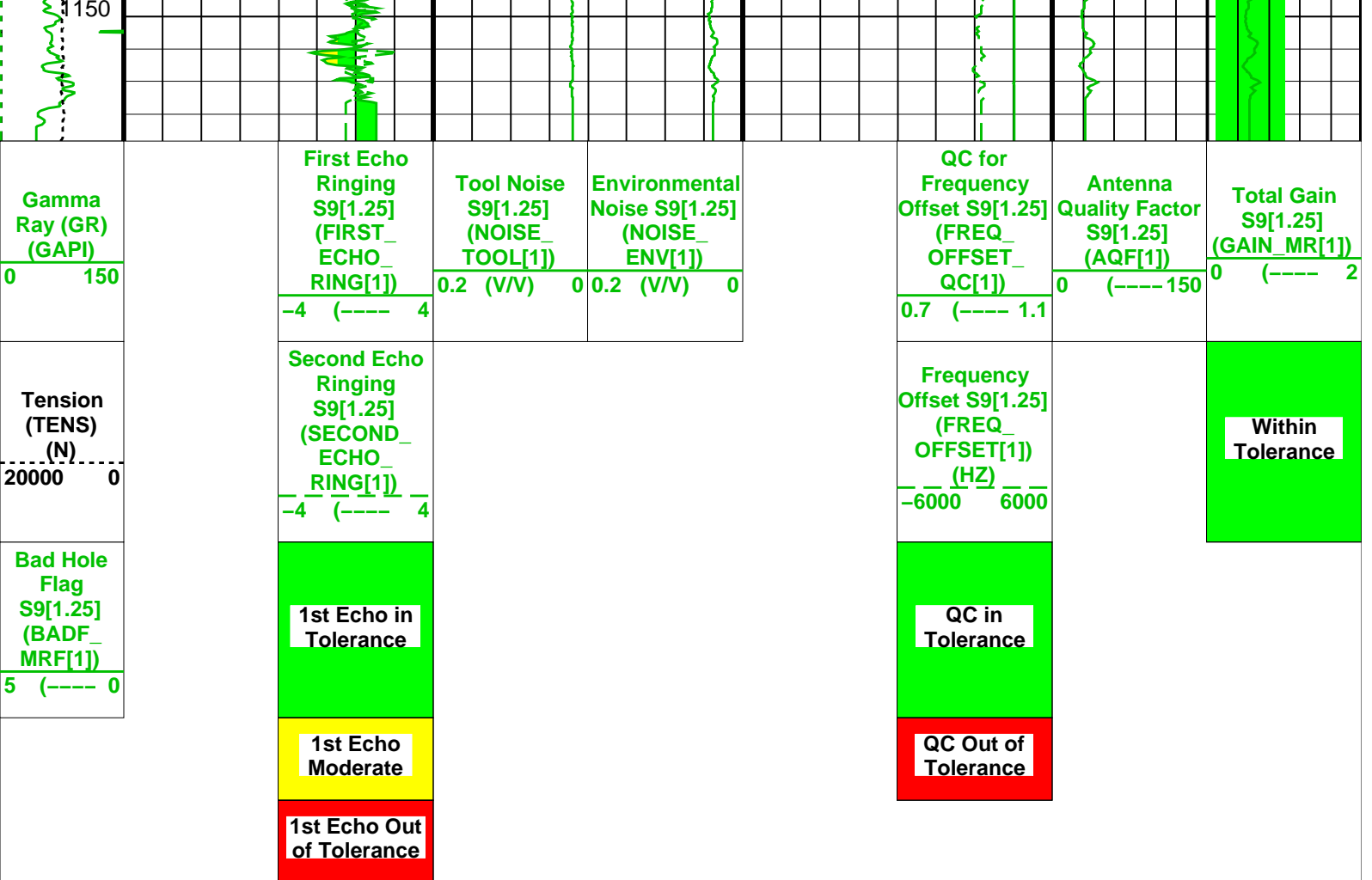
**PIP SUMMARY**

Time Mark Every 60 S

	<b>1st Echo Out of Tolerance</b> 1st Echo Moderate 1st Echo in Tolerance			<b>QC Out of Tolerance</b> QC in Tolerance				
Bad Hole Flag S9[1.25] (BADF_MRF[1]) 5 (---- 0)								
Tension (TENS) (N) 20000 0	Second Echo Ringing S9[1.25] (SECOND_ECHO_RING[1]) -4 (---- 4)			Frequency Offset S9[1.25] (FREQ_OFFSET[1]) (HZ) -6000 6000			Within Tolerance	
Gamma Ray (GR) (GAPI) 0 150	First Echo Ringing S9[1.25] (FIRST_ECHO_RING[1]) -4 (---- 4)	Tool Noise S9[1.25] (NOISE_TOOL[1]) 0.2 (V/V) 0	Environmental Noise S9[1.25] (NOISE_ENV[1]) 0.2 (V/V) 0	QC for Frequency Offset S9[1.25] (FREQ_OFFSET_QC[1]) 0.7 (---- 1.1)	Antenna Quality Factor S9[1.25] (AQF[1]) 0 (---- 150)		Total Gain S9[1.25] (GAIN_MR[1]) 0 (---- 2)	







PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
MRX-A: Magnetic Resonance		
ACQ_DELAYS	Acquisition Delays during Logging	** V ** US
CALTABLE	Calibration Coefficient Table	** V **
DESPIKE_OPT	Despiking Option	ON
DLSR	Depth Log Sample Rate	190.5 MM
EDDV	Echo Data Descriptor (Vector)	** V **
HV_CHECK	High Voltage Check Flag	NO
MRX_COEFF	MRX Tool Characterization Coefficients	** V **
NMR_SEQUENCE	NMR Sequence	** V **
NSTACK	Number of Stacks down-hole	1
PHI_FOR_BADF	Porosity Threshold to Trigger Bad Hole Flag	0.5 V/V
PSDV	Pulse Sequence Descriptor (Vector)	** V **
SEQUENCE_FILE	Sequence File	HR_S3LHR_UPORDOWN410_V24_LOW_AQF
SHNM	Shell Number in Sequence	** V **
T2_FOR_BADF	T2 Threshold to Trigger Bad Hole Flag	10 MS
T90_V	Time Width for 90 Degree Pulse during Logging	** V ** US
System and Miscellaneous		
DO	Depth Offset for Playback	0.0 M
PP	Playback Processing	NORMAL

Format: MRX\_QC\_HR\_S3S9\_LOWQ\_4TRAC Vertical Scale: 1:1000 Graphics File Created: 17-Mar-2007 10:29

OP System Version: 14C0-302

MCM

HILTH-FTB 14C0-302 MRX-A SPC-3273-MRXKit13\_v2  
 EDTC-B SKK-3248-EDTCB

Input DLIS Files

17-Mar-2007 09:39

Output DLIS Files



# HIRES DOWNLOG

MAXIS Field Log

## Input DLIS Files

DEFAULT

FLIP\_TLD\_MCFL\_CNL\_017own

PRODUCER

17-Mar-2007 11:21

## Output DLIS Files

DEFAULT

TLD\_MCFL\_CNL\_MRX\_018PUP

FN:16

PRODUCER

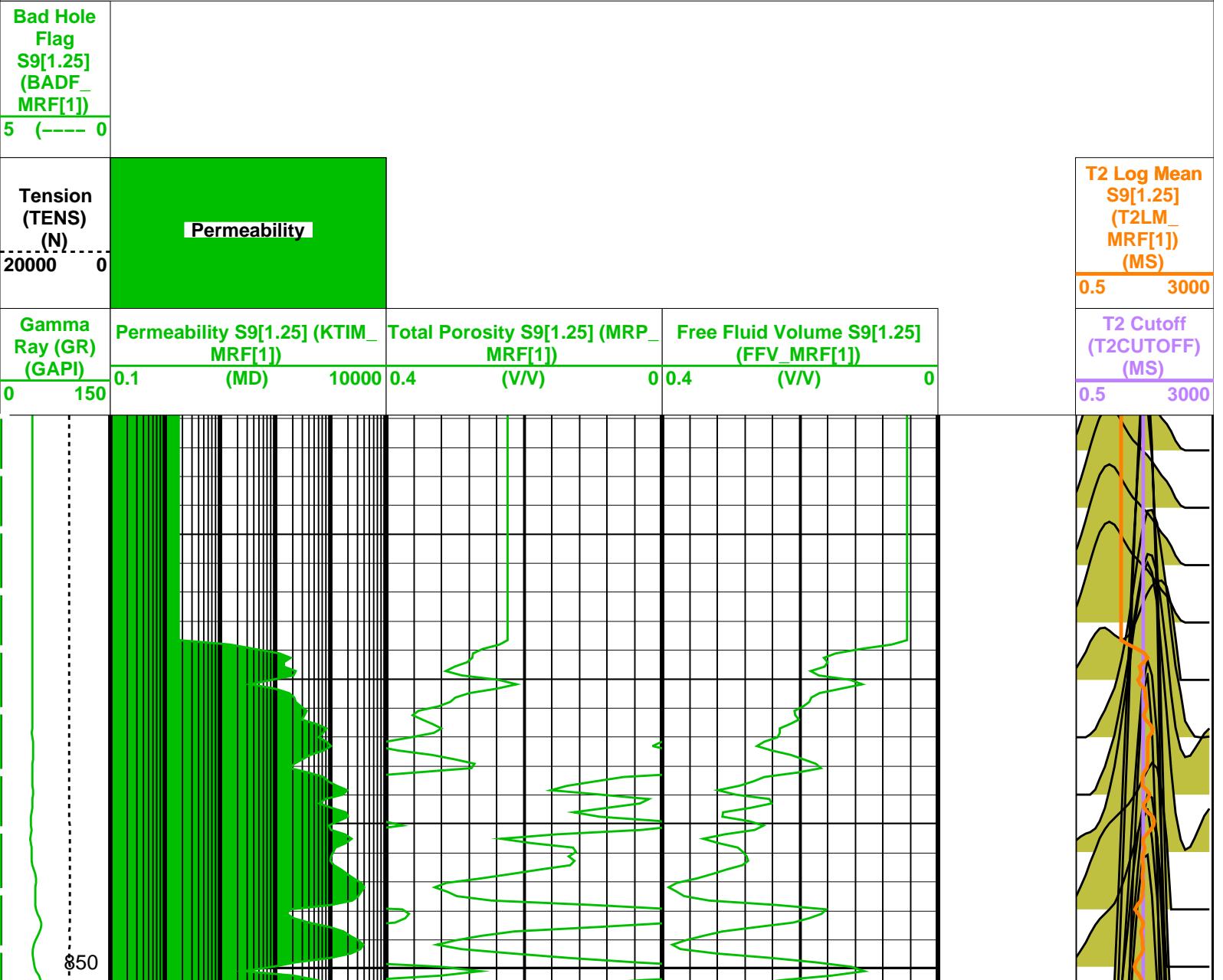
17-Mar-2007 11:54

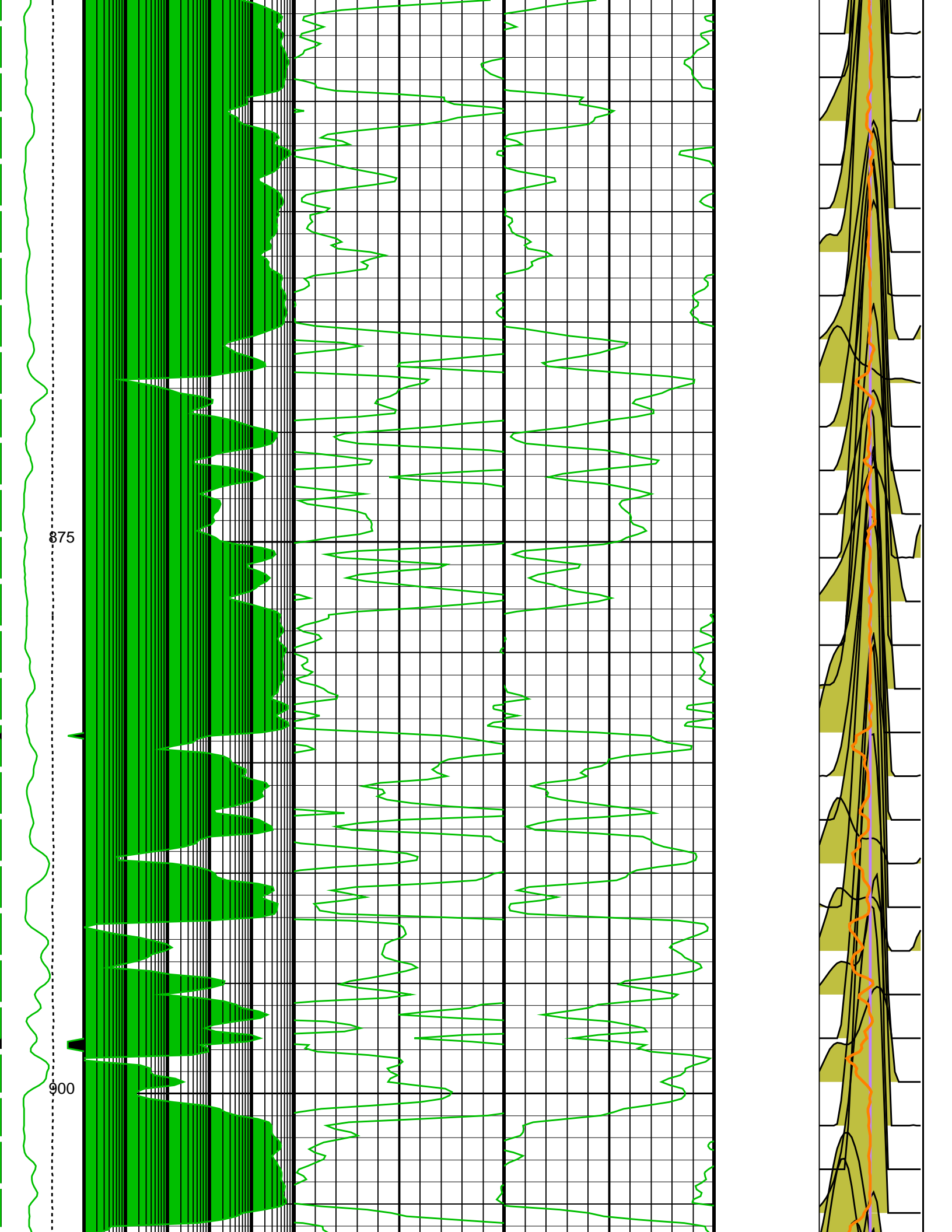
1173.6 M

830.9 M

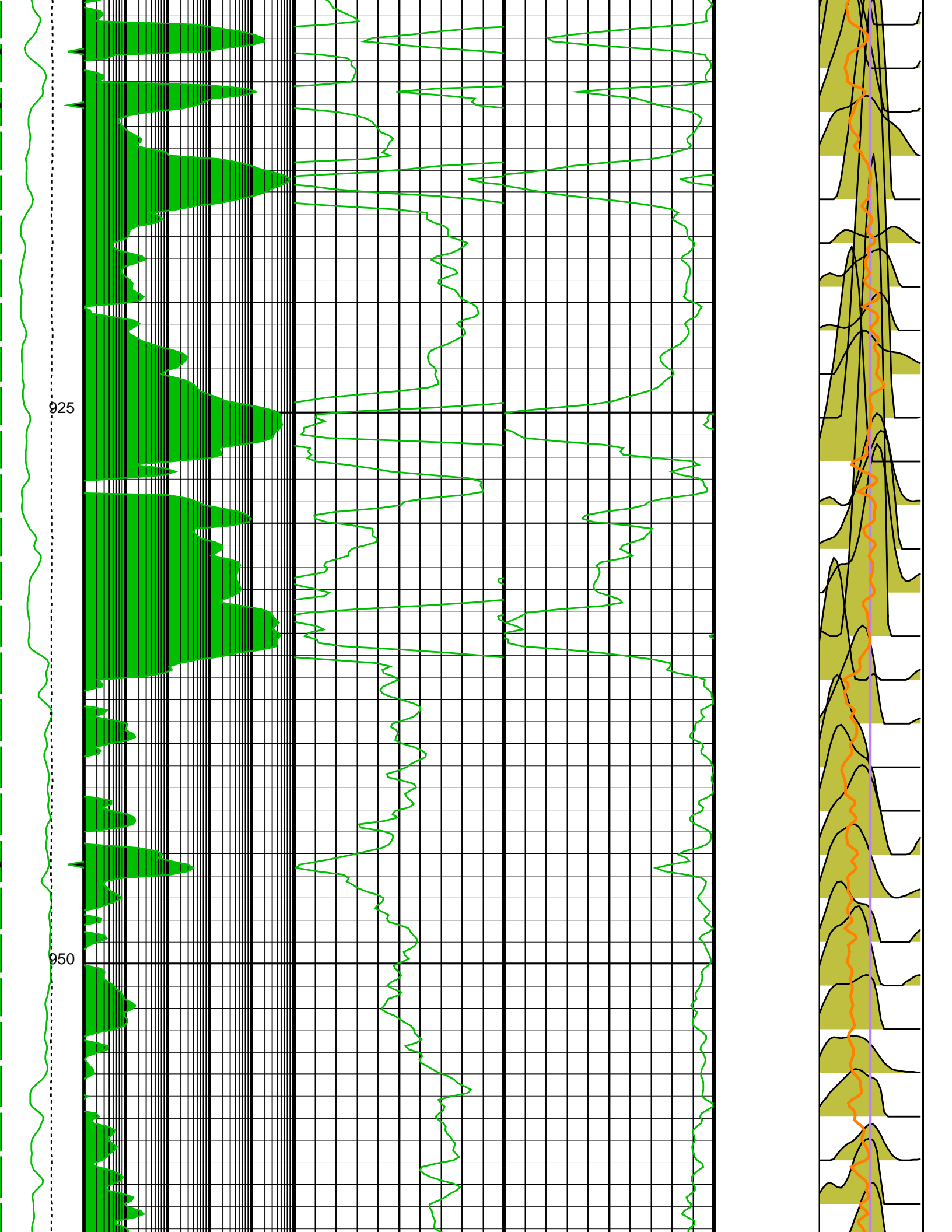
### PIP SUMMARY

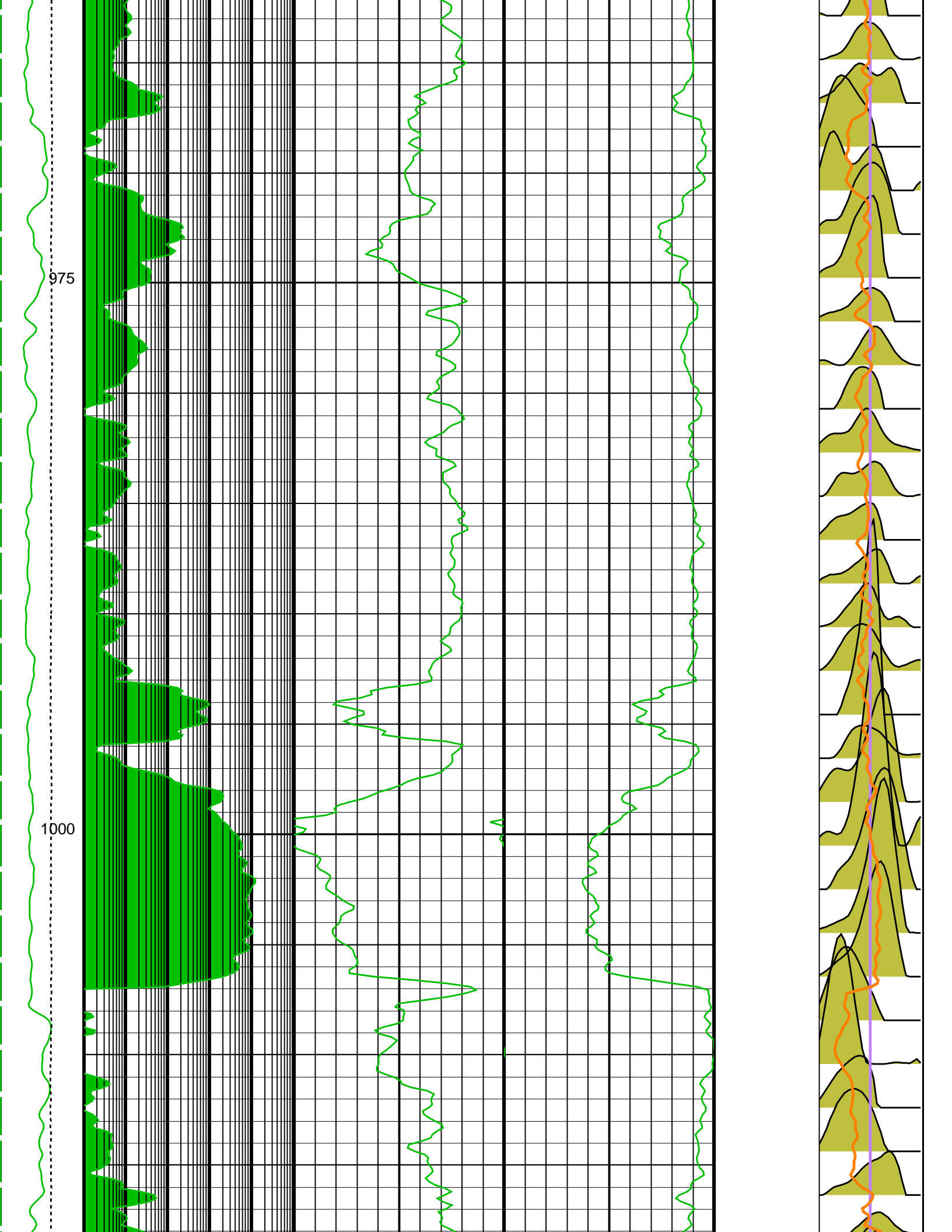
Time Mark Every 60 S

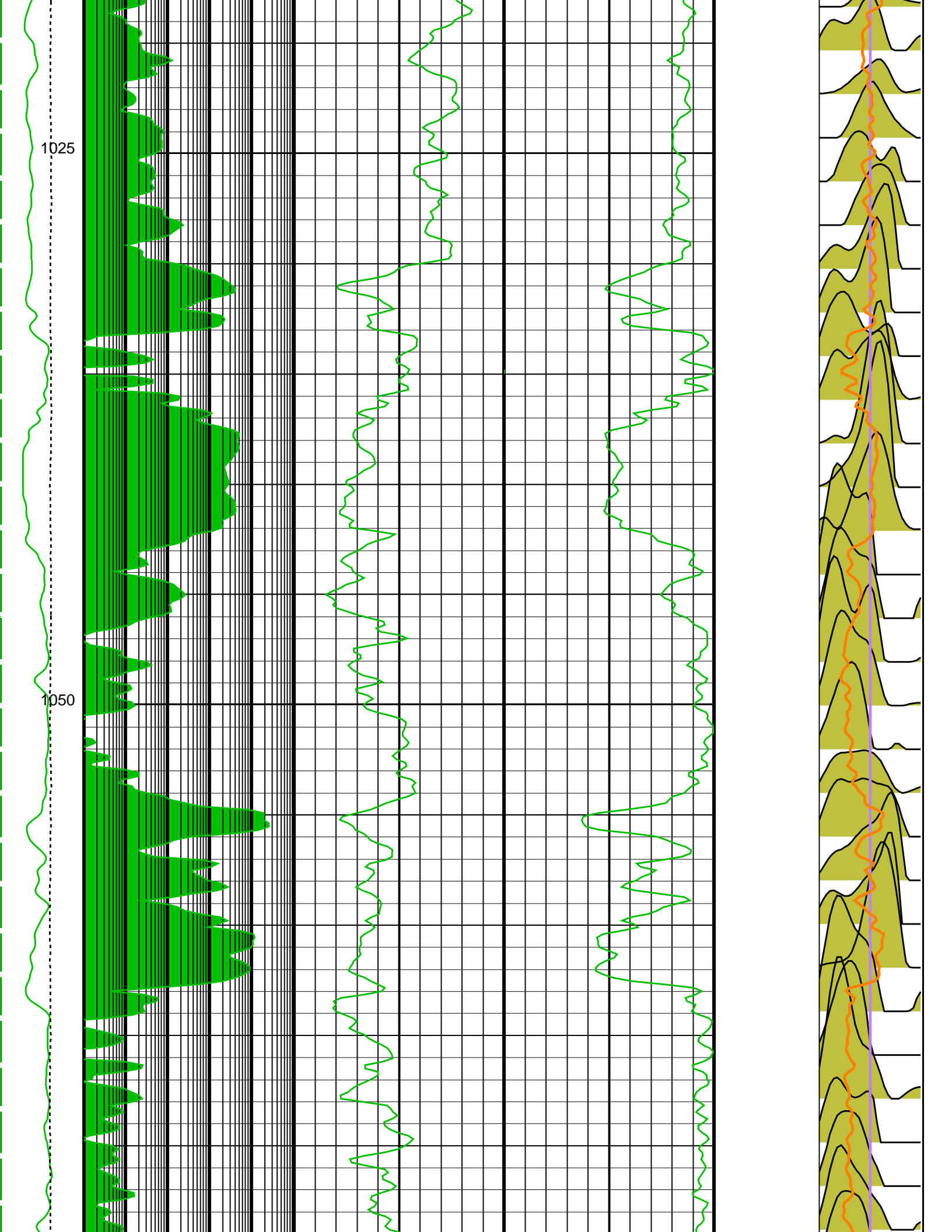


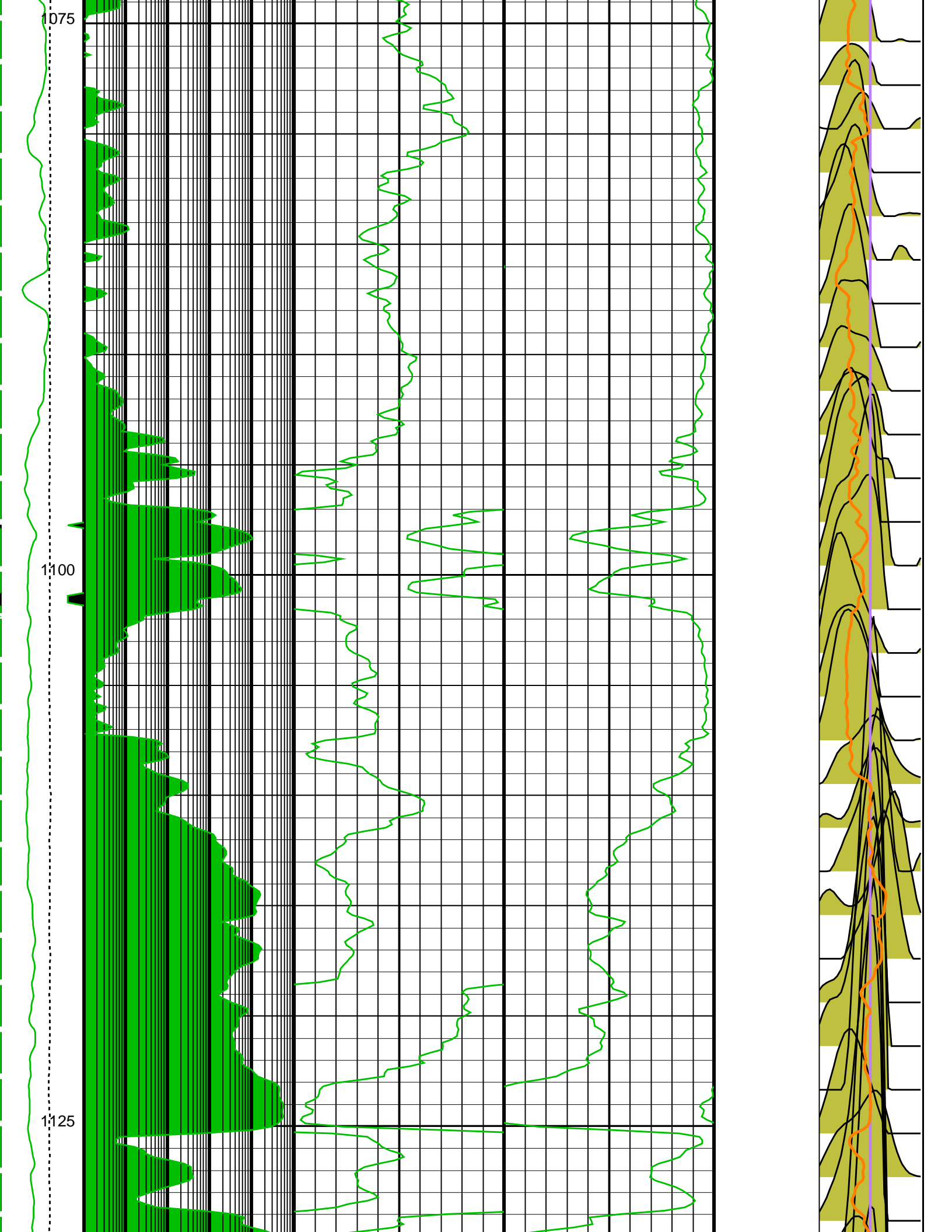


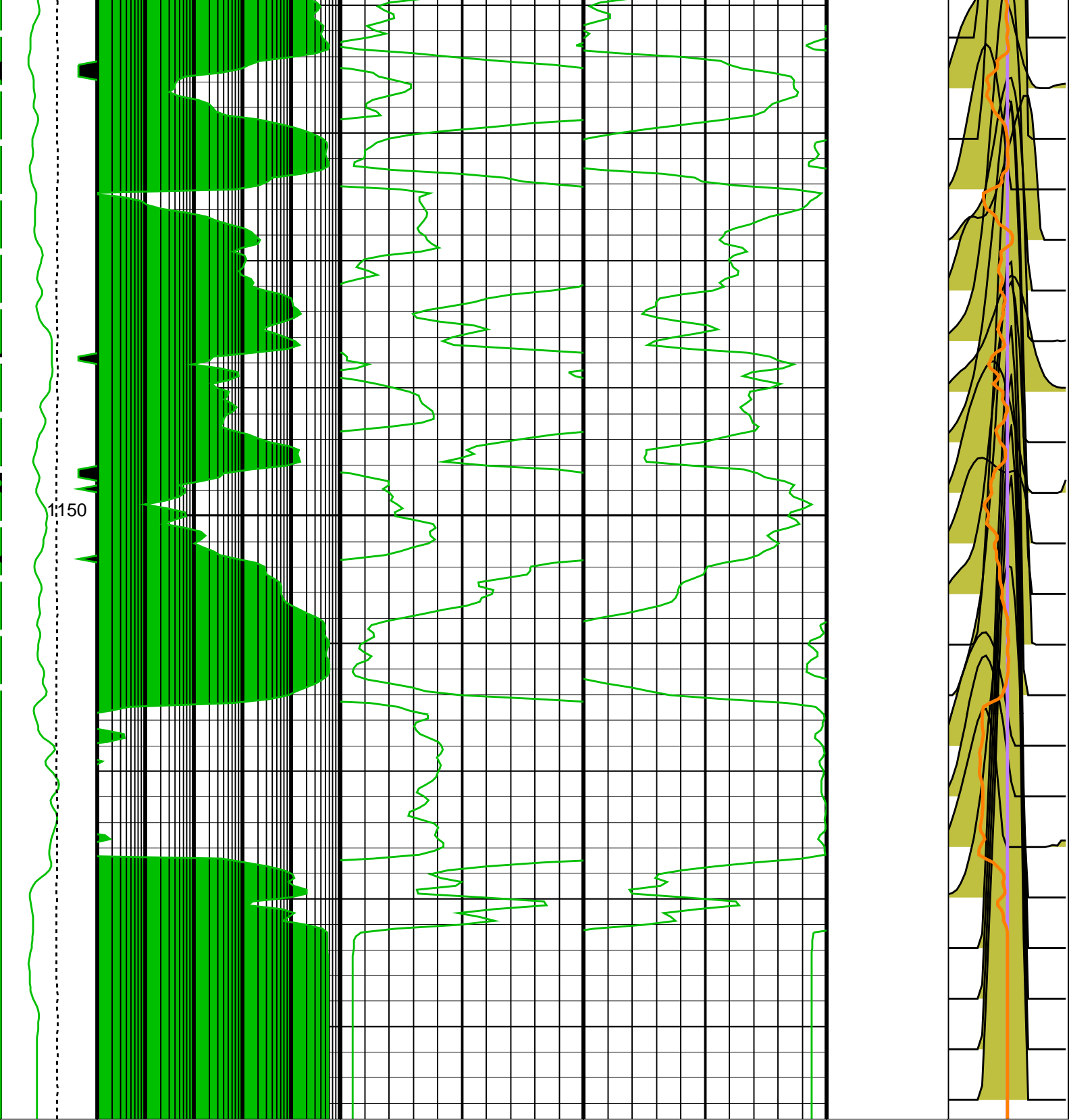












Gamma Ray (GR) (GAPI)	Permeability S9[1.25] (KTIM_MRF[1]) (MD)	Total Porosity S9[1.25] (MRP_MRF[1]) (V/V)	Free Fluid Volume S9[1.25] (FFV_MRF[1]) (V/V)	T2 Cutoff (T2CUTOFF) (MS)
0 150	0.1 10000	0.4	0 0.4 0	0.5 3000

Tension (TENS) (N)	Permeability	T2 Log Mean S9[1.25] (T2LM_MRF[1]) (MS)
20000 0		0.5 3000

Bad Hole Flag S9[1.25] (BADF_)
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PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
<b>MRX-A: Magnetic Resonance</b>			
BFV_MIN	Bound Fluid Volume - Minimum	0.02	V/V
CALTABLE	Calibration Coefficient Table	** V **	
DESPIKE_OPT	Despiking Option	ON	
DLSR	Depth Log Sample Rate	190.5	MM
EDDV	Echo Data Descriptor (Vector)	** V **	
GAMMA_OPT	GAMMA Parameter Option	MANUAL	
GAMMA_REG	Gamma Regularization Parameter	** V **	
HI_H2O	Hydrogen Index of Water	1	
KTIM_A	Multiplier for Timur/Coates Permeability	1	MD
KTIM_B	Porosity Exponent for Timur/Coates Permeability	4	
KTIM_C	PHI Ratio Exponent for Timur/Coates Permeability	2	
MRX_COEFF	MRX Tool Characterization Coefficients	** V **	
NCOMP	Number of Components (depth logging)	30	
NECH_SPHASE	Number of Echos to use in Signal Phase Computation	20	
NMR_FLUID_MODEL	Fluid Model for Magnetic Resonance Fluid Typing	WATER	
NMR_SEQUENCE	NMR Sequence	** V **	
NSTACK	Number of Stacks down-hole	1	
PHI_FOR_BADF	Porosity Threshold to Trigger Bad Hole Flag	0.5	V/V
PSDV	Pulse Sequence Descriptor (Vector)	** V **	
SEQUENCE_FILE	Sequence File	HR_S3LHR_UPORDOWN410_V24_LOW_AQF	
SHNM	Shell Number in Sequence	** V **	
SPEED_CORR_OPT	Speed Correction Option	OFF	
START_ECHO_OPT	Starting Echo Option	SECOND	
T2CUT	T2 Cutoff between BFV and FFV	33	MS
T2_FOR_BADF	T2 Threshold to Trigger Bad Hole Flag	10	MS
T2_MAX	T2 Maximum	3000	MS
T2_MIN	T2 Minimum	0.5	MS
<b>System and Miscellaneous</b>			
DO	Depth Offset for Playback	-0.3	M
PP	Playback Processing	NORMAL	

Format: MRX\_HR\_S3S9\_4TRAC Vertical Scale: 1:200 Graphics File Created: 17-Mar-2007 11:54

OP System Version: 14C0-302

MCM

HILTH-FTB 14C0-302 MRX-A SPC-3273-MRXKit13\_v2  
EDTC-B SKK-3248-EDTCB

Input DLIS Files

DEFAULT FLIP\_TLD\_MCFL\_CNL\_017own PRODUCER 17-Mar-2007 11:21

Output DLIS Files

DEFAULT TLD\_MCFL\_CNL\_MRX\_018PUP FN:16 PRODUCER 17-Mar-2007 11:54

Input DLIS Files

DEFAULT FLIP\_TLD\_MCFL\_CNL\_017own PRODUCER 17-Mar-2007 11:21

Output DLIS Files

DEFAULT TLD\_MCFL\_CNL\_MRX\_018PUP FN:16 PRODUCER 17-Mar-2007 11:54 1173.6 M 830.9 M

PIP SUMMARY

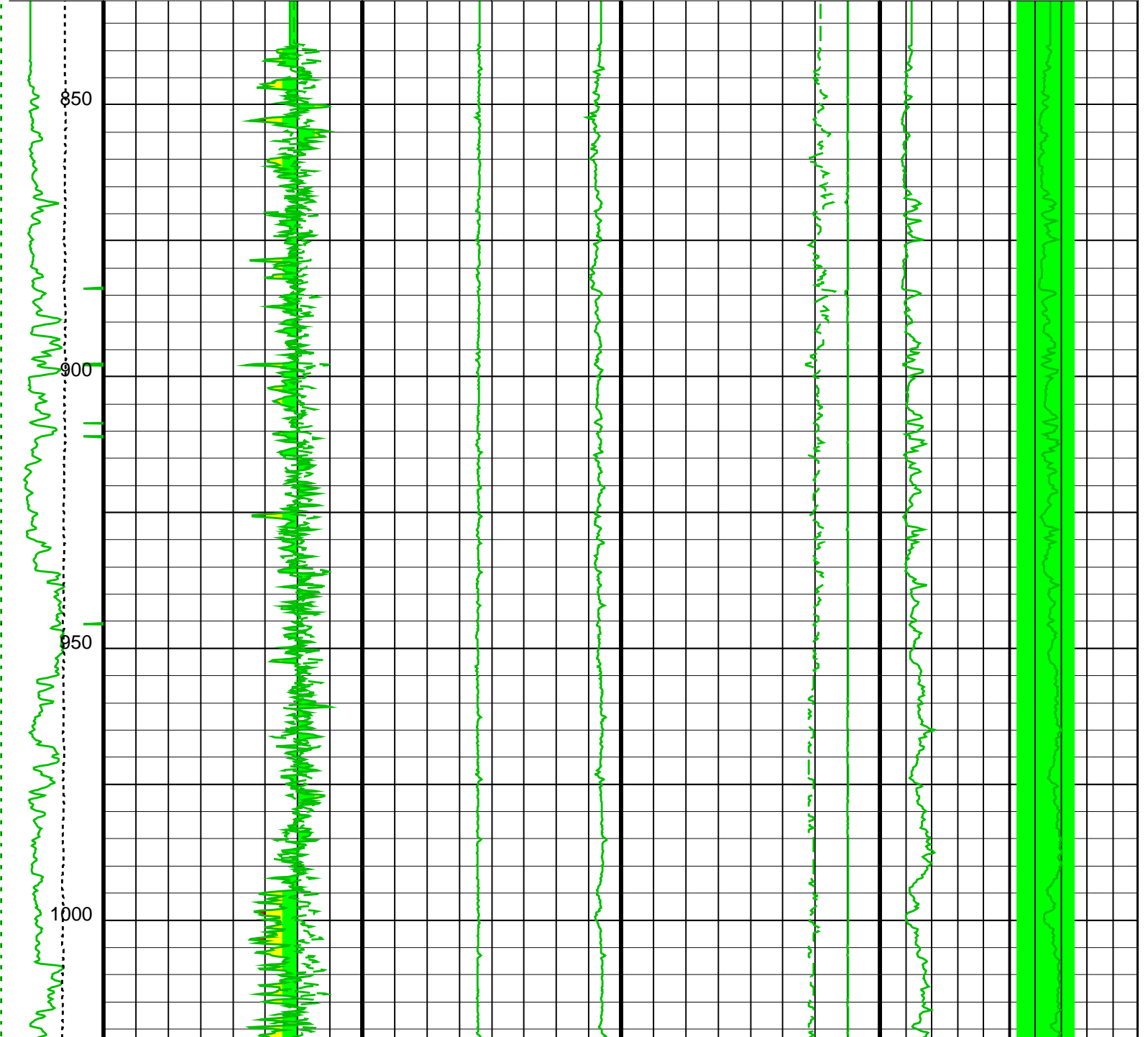
Time Mark Every 60 S

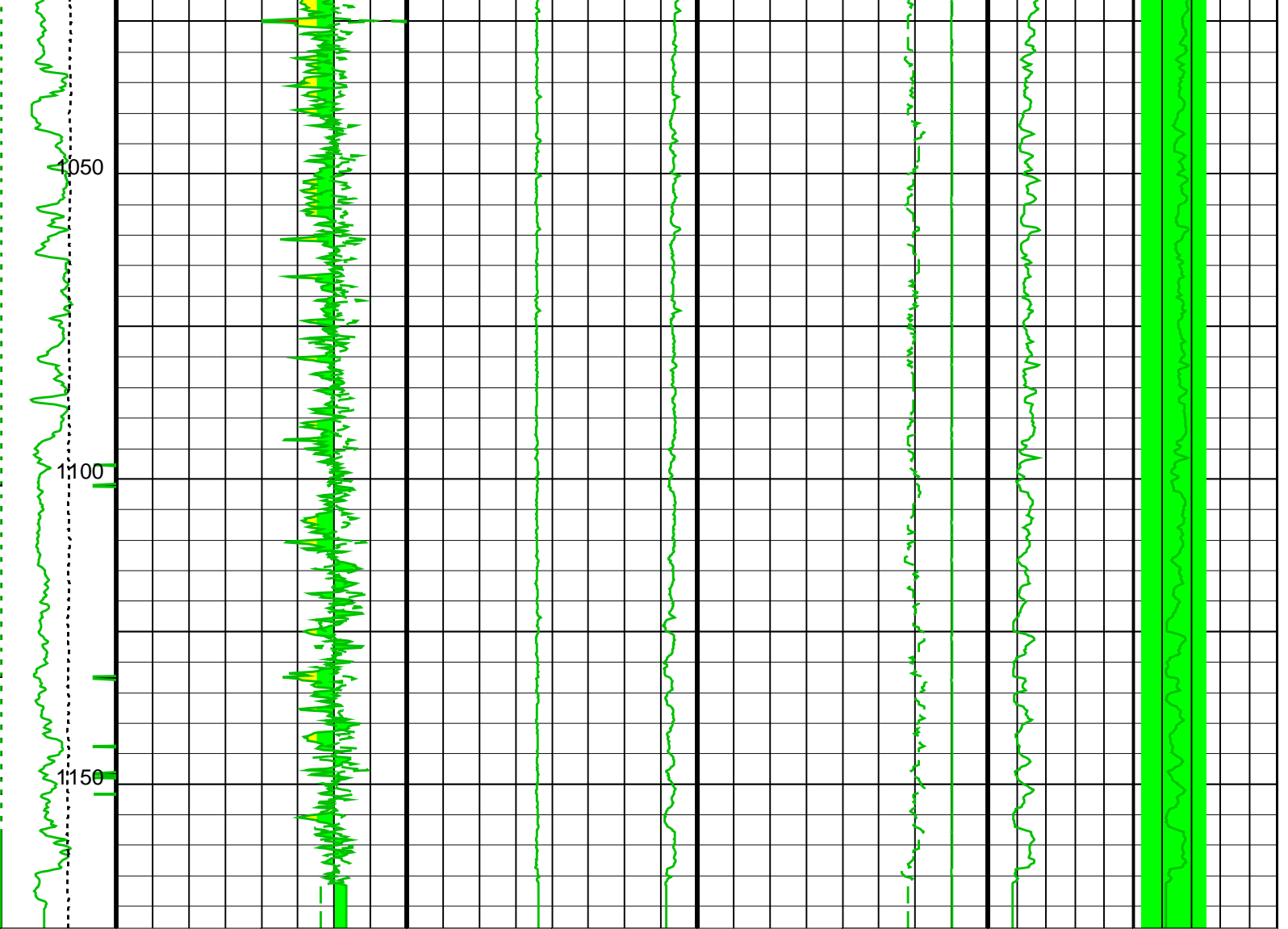
1st Echo Out of Tolerance

1st Echo Moderate

QC Out of Tolerance

<p>Bad Hole Flag S9[1.25] (BADF_MRF[1])</p> <p>5 (---- 0)</p>	<p>1st Echo in Tolerance</p>		<p>QC in Tolerance</p>		<p>Within Tolerance</p>	
<p>Tension (TENS) (N)</p> <p>20000 0</p>	<p>Second Echo Ringing S9[1.25] (SECOND_ECHO_RING[1])</p> <p>-4 (---- 4)</p>	<p>Tool Noise S9[1.25] (NOISE_TOOL[1])</p> <p>0.2 (V/V) 0</p>	<p>Environmental Noise S9[1.25] (NOISE_ENV[1])</p> <p>0.2 (V/V) 0</p>	<p>QC for Frequency Offset S9[1.25] (FREQ_OFFSET_QC[1])</p> <p>-6000 6000</p> <p>0.7 (---- 1.1)</p>	<p>Antenna Quality Factor S9[1.25] (AQF[1])</p> <p>0 (---- 150)</p>	<p>Total Gain S9[1.25] (GAIN_MR[1])</p> <p>0 (---- 2)</p>
<p>Gamma Ray (GR) (GAPI)</p> <p>0 150</p>	<p>First Echo Ringing S9[1.25] (FIRST_ECHO_RING[1])</p> <p>-4 (---- 4)</p>					





<p><b>Gamma Ray (GR) (GAPI)</b></p> <p>0 150</p>	<p><b>First Echo Ringing S9[1.25] (FIRST_ECHO_RING[1])</b></p> <p>-4 (---- 4)</p>	<p><b>Tool Noise S9[1.25] (NOISE_TOOL[1])</b></p> <p>0.2 (V/V)</p>	<p><b>Environmental Noise S9[1.25] (NOISE_ENV[1])</b></p> <p>0 0.2 (V/V) 0</p>		<p><b>QC for Frequency Offset S9[1.25] (FREQ_OFFSET_QC[1])</b></p> <p>0.7 (---- 1.1)</p>	<p><b>Antenna Quality Factor S9[1.25] (AQF[1])</b></p> <p>0 (---- 150)</p>	<p><b>Total Gain S9[1.25] (GAIN_MR[1])</b></p> <p>0 (---- 2)</p>
<p><b>Tension (TENS) (N)</b></p> <p>20000 0</p>	<p><b>Second Echo Ringing S9[1.25] (SECOND_ECHO_RING[1])</b></p> <p>-4 (---- 4)</p>				<p><b>Frequency Offset S9[1.25] (FREQ_OFFSET[1]) (HZ)</b></p> <p>-6000 6000</p>	<p><b>Within Tolerance</b></p>	
<p><b>Bad Hole Flag S9[1.25] (BADF_MRF[1])</b></p> <p>5 (---- 0)</p>	<p><b>1st Echo in Tolerance</b></p>					<p><b>QC in Tolerance</b></p>	
		<p><b>1st Echo Moderate</b></p>				<p><b>QC Out of Tolerance</b></p>	
		<p><b>1st Echo Out of Tolerance</b></p>					

PIP SUMMARY



## Parameters

DLIS Name	Description	Value
<b>MRX-A: Magnetic Resonance</b>		
ACQ_DELAYS	Acquisition Delays during Logging	** V ** US
CALTABLE	Calibration Coefficient Table	** V **
DESPIKE_OPT	Despiking Option	ON
DLSR	Depth Log Sample Rate	190.5 MM
EDDV	Echo Data Descriptor (Vector)	** V **
HV_CHECK	High Voltage Check Flag	NO
MRX_COEFF	MRX Tool Characterization Coefficients	** V **
NMR_SEQUENCE	NMR Sequence	** V **
NSTACK	Number of Stacks down-hole	1
PHI_FOR_BADF	Porosity Threshold to Trigger Bad Hole Flag	0.5 V/V
PSDV	Pulse Sequence Descriptor (Vector)	** V **
SEQUENCE_FILE	Sequence File	HR_S3LHR_UPORDOWN410_V24_LOW_AQF
SHNM	Shell Number in Sequence	** V **
T2_FOR_BADF	T2 Threshold to Trigger Bad Hole Flag	10 MS
T90_V	Time Width for 90 Degree Pulse during Logging	** V ** US
<b>System and Miscellaneous</b>		
DO	Depth Offset for Playback	-0.3 M
PP	Playback Processing	NORMAL

Format: MRX\_QC\_HR\_S3S9\_LOWQ\_4TRAC    Vertical Scale: 1:1000    Graphics File Created: 17-Mar-2007 11:54

### OP System Version: 14C0-302

MCM

HILTH-FTB	14C0-302	MRX-A	SPC-3273-MRXKit13_v2
EDTC-B	SKK-3248-EDTCB		

#### Input DLIS Files

DEFAULT	FLIP_TLD_MCFL_CNL_017own	PRODUCER	17-Mar-2007 11:21
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#### Output DLIS Files

DEFAULT	TLD_MCFL_CNL_MRX_018PUP	FN:16	PRODUCER	17-Mar-2007 11:54
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Company: **JOGMEC**

**Schlumberger**

Well: **AURORA/JOGMEC/NRCAN MALLIK 2L-38**

Field: **MALLIK**

Province: **NWT**

MAGNETIC RESONANCE  
SCANNER