

Company: SUNCOR ENERGY INC.

Well: SUNCOR LEWIS 6-34-91-8

Field: LEWIS

Province: ALBERTA

FULLBORE MICRO IMAGER LOG

****MD****

Province:	ALBERTA
Field:	LEWIS
Location:	6-34-091-08W4
Well:	SUNCOR LEWIS 6-34-91-8
Company:	SUNCOR ENERGY INC.
Location:	6-34-091-08W4 1AA063409108W400
Permanent Datum:	Ground Level
Log Measured From:	Kelly Bushing
Drilling Measured From:	Kelly Bushing
API Serial No.	0464072
Section:	06-34
Township:	091
Range:	08W4
Logging Date	23-Feb-2014
Run Number	ONE/2
Depth Driller	256.00 m
Schlumberger Depth	256.00 m
Bottom Log Interval	256.00 m
Top Log Interval	75.00 m
Casing Driller Size @ Depth	177.8 mm @ 72.80 m
Casing Schlumberger	73.2 m
Bit Size	156 mm
Type Fluid In Hole	Polymer
Density	1090 kg/m³
MUD Fluid Loss	6 cm³
Source of Sample	10
RM @ Meas Temp	0.79 ohm.m @ 8.73 degC
RMF @ Meas Temp	0.59 ohm.m @ 8.73 degC
RMC @ Meas Temp	1.18 ohm.m @ 8.73 degC
Source RMF	Calculated
RM @ BHT	Calculated
Max Recorded Temperatures	12.28 degC
Circulation Stopped	Time
Logger on Bottom	Time
Unit Number	Location:
Recorded By	NICK POLLEY
Witnessed By	JONATHAN FELL

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Operational Run Summary
- 7. Borehole Fluids
- 8. Remarks and Equipment Summary
- 9. Depth Summary
- 10. ONE/2
 - 10.1 Integration Summary
 - 10.2 Composite Summary
 - 10.3 Log (FMI Raw Image Log_3)
 - 10.4 Parameter Listing
- 11. ONE/2
 - 11.1 Integration Summary
 - 11.2 Composite Summary
- 12.5 Parameter Listing
- 13. ONE/2
 - 13.1 Integration Summary
 - 13.2 Software Version
 - 13.3 Composite Summary
 - 13.4 Log (Import of FMI LQC Resistivity-REP)
 - 13.5 Parameter Listing
- 14. ONE/2
 - 14.1 Integration Summary
 - 14.2 Software Version
 - 14.3 Composite Summary
 - 14.4 Log (FMI P1NO-Oriented Image Log)
 - 14.5 Parameter Listing
- 15. ONE/2
 - 15.1 Integration Summary
 - 15.2 Software Version
 - 15.3 Composite Summary

11.3 Log (FMI Raw Image Log_4)

11.4 Parameter Listing

12. ONE/2

12.1 Integration Summary

12.2 Software Version

12.3 Composite Summary

12.4 Log (Import of FMI LQC Resistivity)

15.4 Log (FMI P1NO-Oriented Image Log_1)

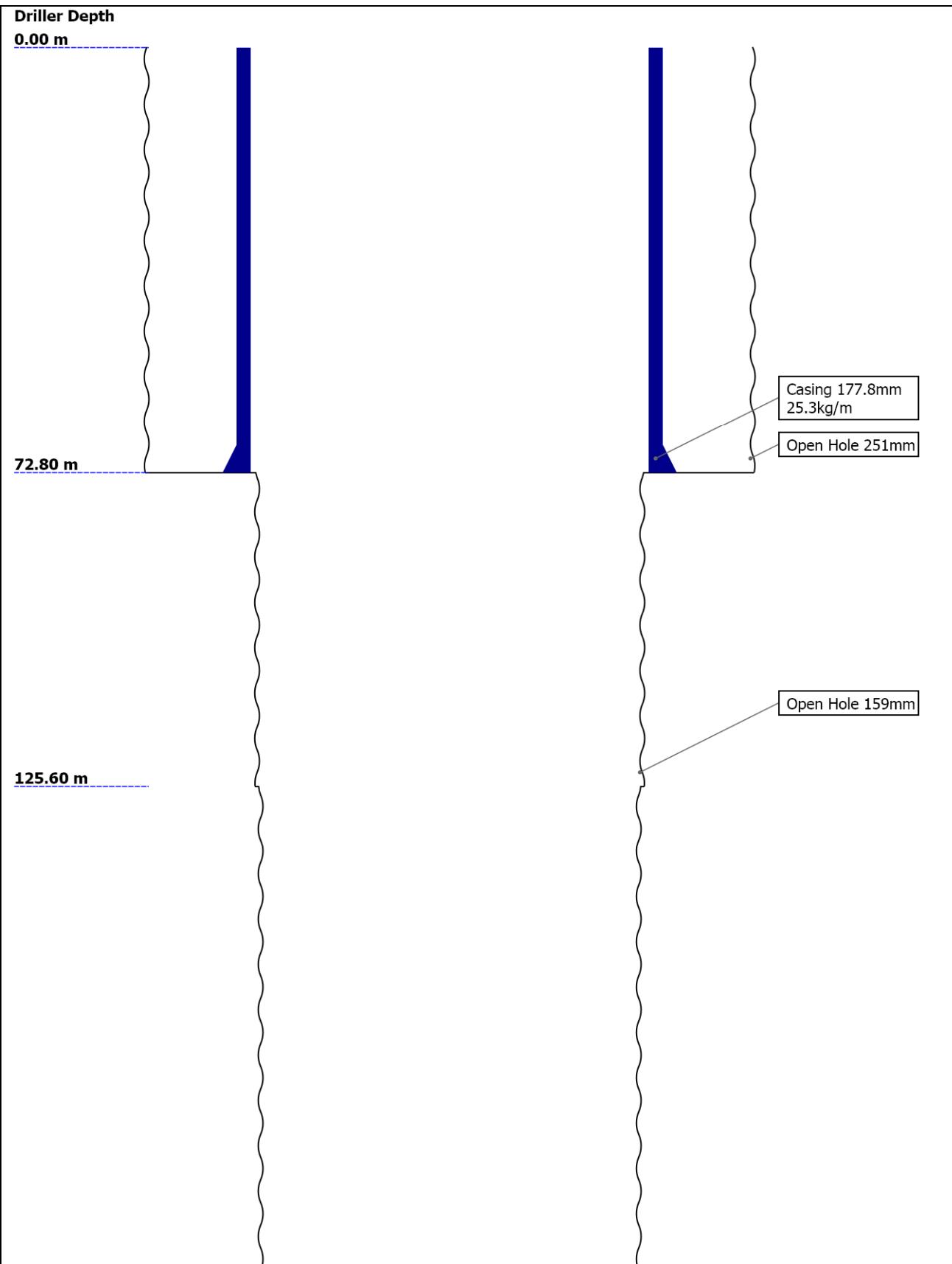
15.5 Parameter Listing

16. Calibration Report

17. Survey Record

18. Tail

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (mm)	251	159	156			
Top Driller (m)	0	72.8	125.6			
Top Logger (m)	0	72.8	125.6			
Bottom Driller (m)	72.8	125.6	256			
Bottom Logger (m)	72.8	125.6	256			
Casing						
Size (mm)	177.8					
Weight (kg/m)	25.3					
Inner Diameter (mm)	166.121					
Grade	H40					
Top Driller (m)	0					
Top Logger (m)	0					
Bottom Driller (m)	72.8					
Bottom Logger (m)	73.2					

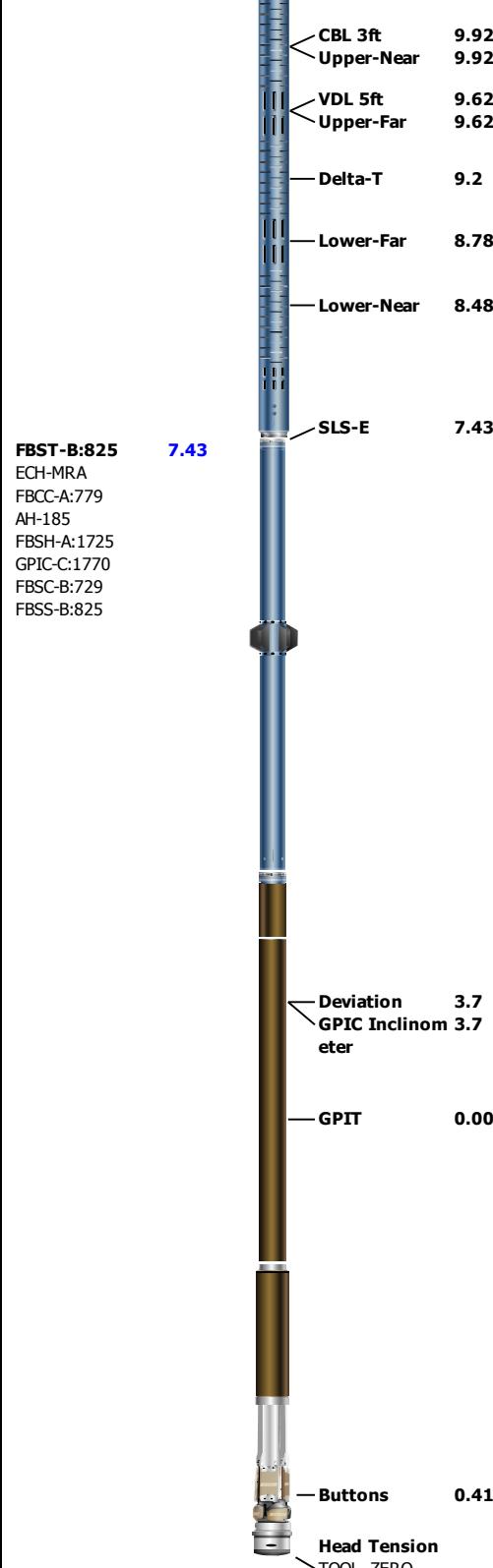
Operational Run Summary

Parameter (unit)	ONE/2					
Date Log Started	23-Feb-2014					
Time Log Started	00:20:06					
Date Log Finished	23-Feb-2014					
Time Log Finished	01:17:25					
Top Log Interval (m)	75.00					
Bottom Log Interval (m)	256.00					
Total Depth (m)	256.00					
Max Hole Deviation (deg)	0.60					
Azimuth of Max Deviation (deg)	207.10					
Bit Size (mm)	156.000					
Logging Unit Number	3125					
Logging Unit Location	WINTER PROJECTS					
Recorded By	NICK POLLEY					
Witnessed By	JONATHAN FFI					

Service Order Number	CP4P-00020					
Borehole Fluids						
Parameter(unit)	ONE/2					
Fluid Type	Water					
Fluid Name	Polymer					
Max Recorded Temperatures (degC)	12.28					
Source of Sample	Flowline					
Salinity (ppm)	0					
Density (kg/m3)	1090					
Funnel Viscosity (s)	108					
Fluid Loss (cm3)	6					
PH	10					
Date/Time Circulation Stopped	22-Feb-2014 18:55:00					
Date Logger on Bottom	23-Feb-2014					
Time Logger on Bottom	00:55:00					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp (ohm.m@degC)	0.79 @ 8.73					
RMF @ Meas Temp (ohm.m@degC)	0.59 @ 8.73					
RMC @ Meas Temp (ohm.m@degC)	1.18 @ 8.73					
RM @ BHT (ohm.m@degC)	0.71 @ 12.28					
RMF @ BHT (ohm.m@degC)	0.53 @ 12.28					
RMC @ BHT (ohm.m@degC)	1.06 @ 12.28					
Total Solid (%)	0					
High Gravity Solids (%)	0					

Remarks and Equipment Summary

ONE/2: Toolstring				ONE/2: Remarks		
Equip name LEH-QT:2490 LEH-QT:2490				THANK YOU FOR CHOOSING SCHLUMBERGER		
Length 18.4				ALL TOOLS RAN AS PER TOOL SKETCH AND ALL PRESENTATIONS AS PER CLIENT REQUEST		
MP name DTC-H:9054 ECH-KC:10131 DTC-H:9054				INDUCTION LOG - DESCENT #1		
Offset 17.23 0.00				NEUTRON / DENSITY LOG - DESCENT #1		
DTC-H:9054 17.51 ECH-KC:10131 DTC-H:9054				FMI LOG - DESCENT #2		
HGNS-B:1745 16.59 HGNH:1767 NSR-F:2374 NPY-N HGNS-B:1745 HACZZ-B:543 HMCA-B				RIG: PREDATOR #3		
TelStatus ToolStatus Temperature GR				GPS COORDINATES FROM TRUCK GPS. LAT: 56.9345 LONG: -111.2054		
16.59 16.59 16.58 16.37				SONIC LOG - DESCENT #2		
CNL Porosity HMCA HGNS Accelerometer				HOLE VOLUME AND CEMENT VOLUME CALCULATED USING FMI CALIPER		
14.44 13.72 13.72 0.00				MAX TEMPERATURE FROM HGNS TEMPERATURE SENSOR		
PSLT-H:2226 13.72				AIT RUN IN COMPUTE STANDOFF MODE		
				REQUESTED LOGGER TIME 02:30		



Depth Summary

ONE/2

Depth Measuring Device

Type	IDW-B		
Serial Number	6159		
Calibration Date	01-JAN-2014		
Calibrator Serial Number	004		
Calibration Cable Type	7-46 PXS		
Wheel Correction 1	-4		
Wheel Correction 2	-2		

Tension Device

Type	CMTD-B/A		
Serial Number	2008		
Calibration Date	10-FEB-2014		
Calibrator Serial Number	207		
Number of Calibration Points	10		
Calibration Root Mean Square Error	8		
Calibration Peak Error	18		

Logging Cable

Type	7-46P-XS		
Serial Number			
Length	7315.20 m		
Conveyance Type	Wireline		
Rig Type	SINGLE		

ONE/2:Depth Control Parameters

ONE/2:Depth Control Parameters		Depth Control Remarks
Log Sequence	Subsequent Log In the Well	ALL SLB DEPTH CONTROL POLICIES FOLLOWED
Reference Log Name	PLATFORM EXPRESS	IDW USED AS PRIMARY DEPTH CONTROL DEVICE
Reference Log Run Number	ONE/1	Z CHART USED AS SECONDARY DEPTH CONTROL
Reference Log Date	23-Feb-2014	

ONE/2

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE/2	Log[3]:Up	Up	72.93 m	257.66 m	23-Feb-2014 12:54:32 AM	23-Feb-2014 1:17:10 AM	ON	-0.16 m	Yes

All depths are referenced to toolstring zero

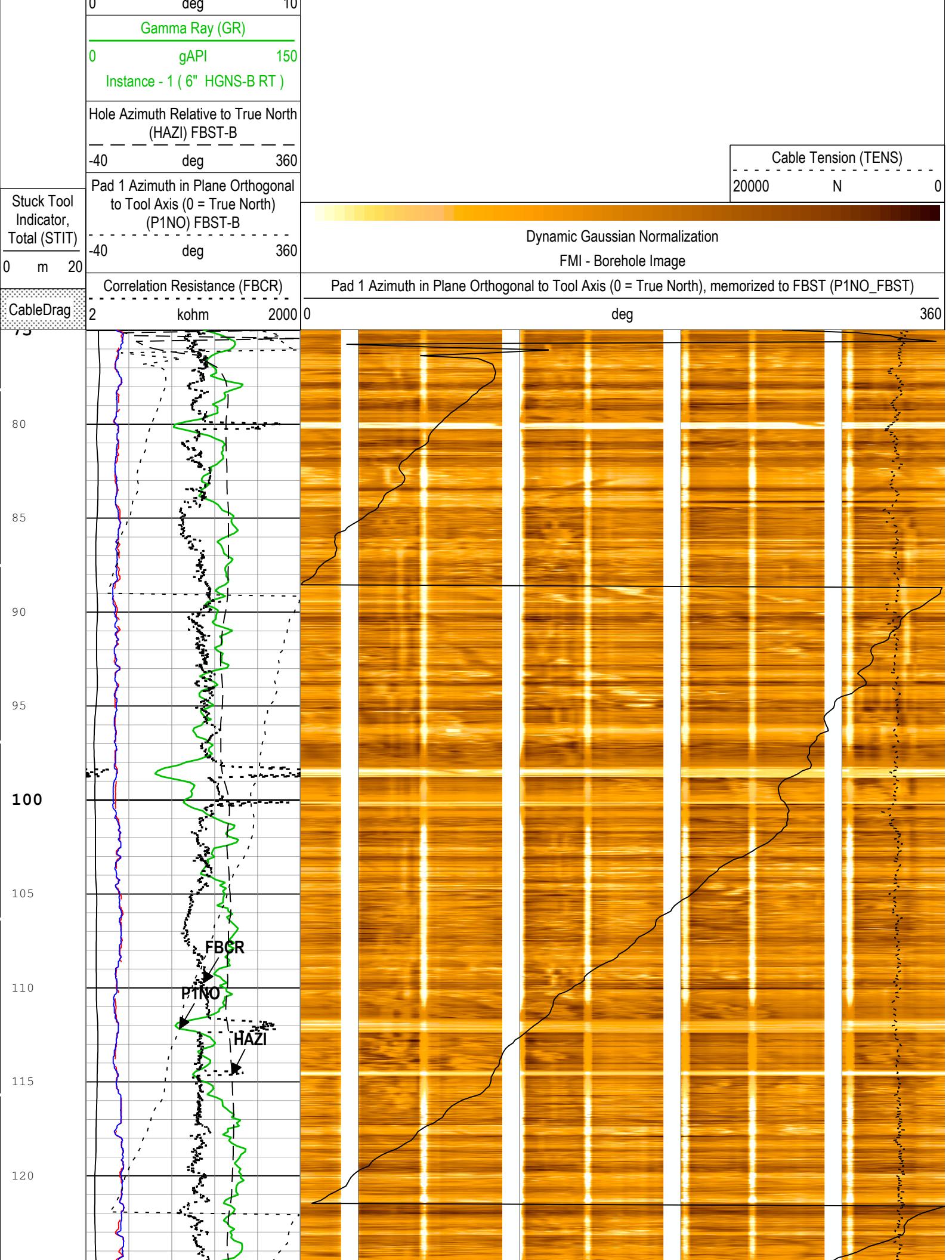
Log

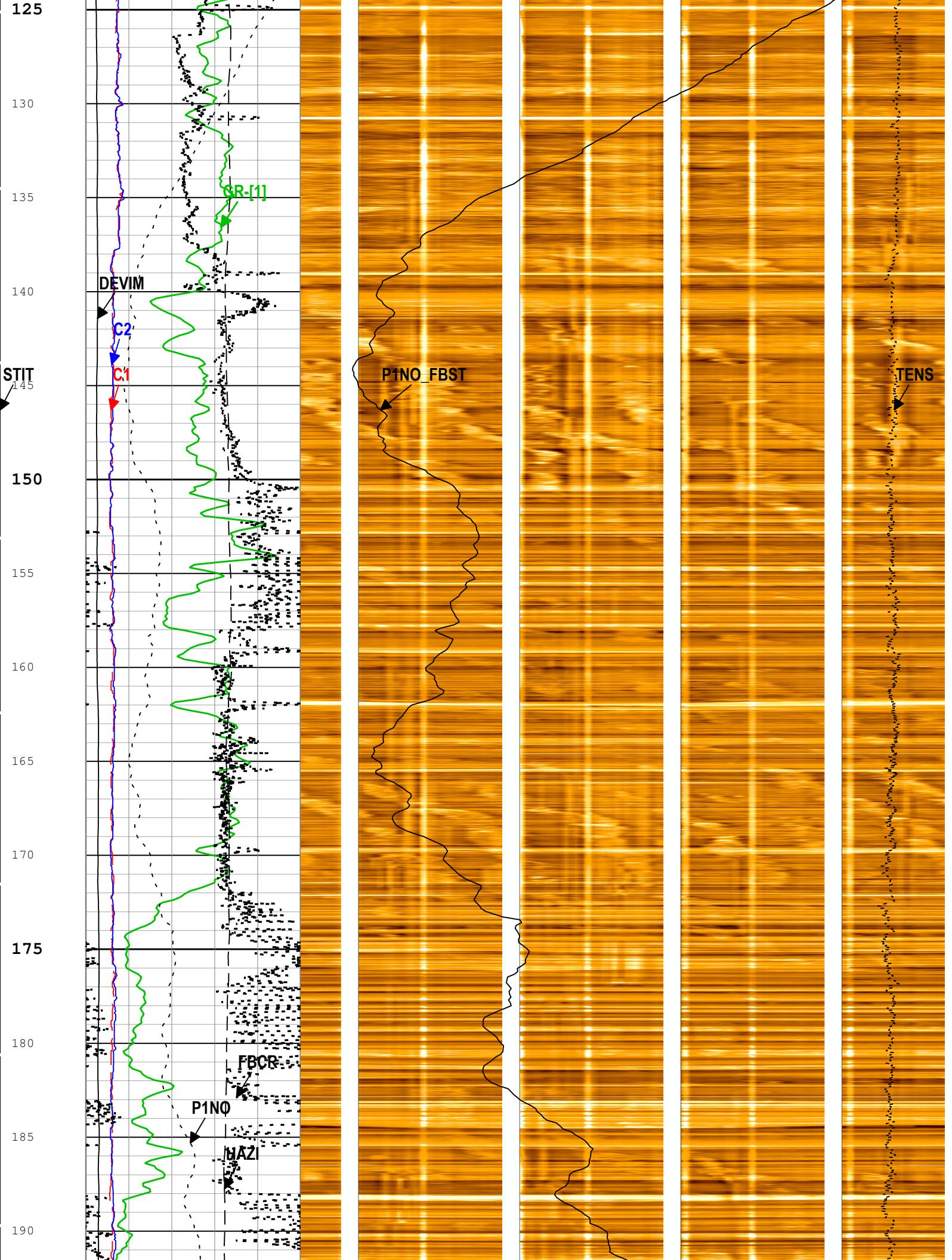
Company:SUNCOR ENERGY INC. Well:SUNCOR LEWIS 6-34-91-8
ONE/2: Log[3]:Up:S009

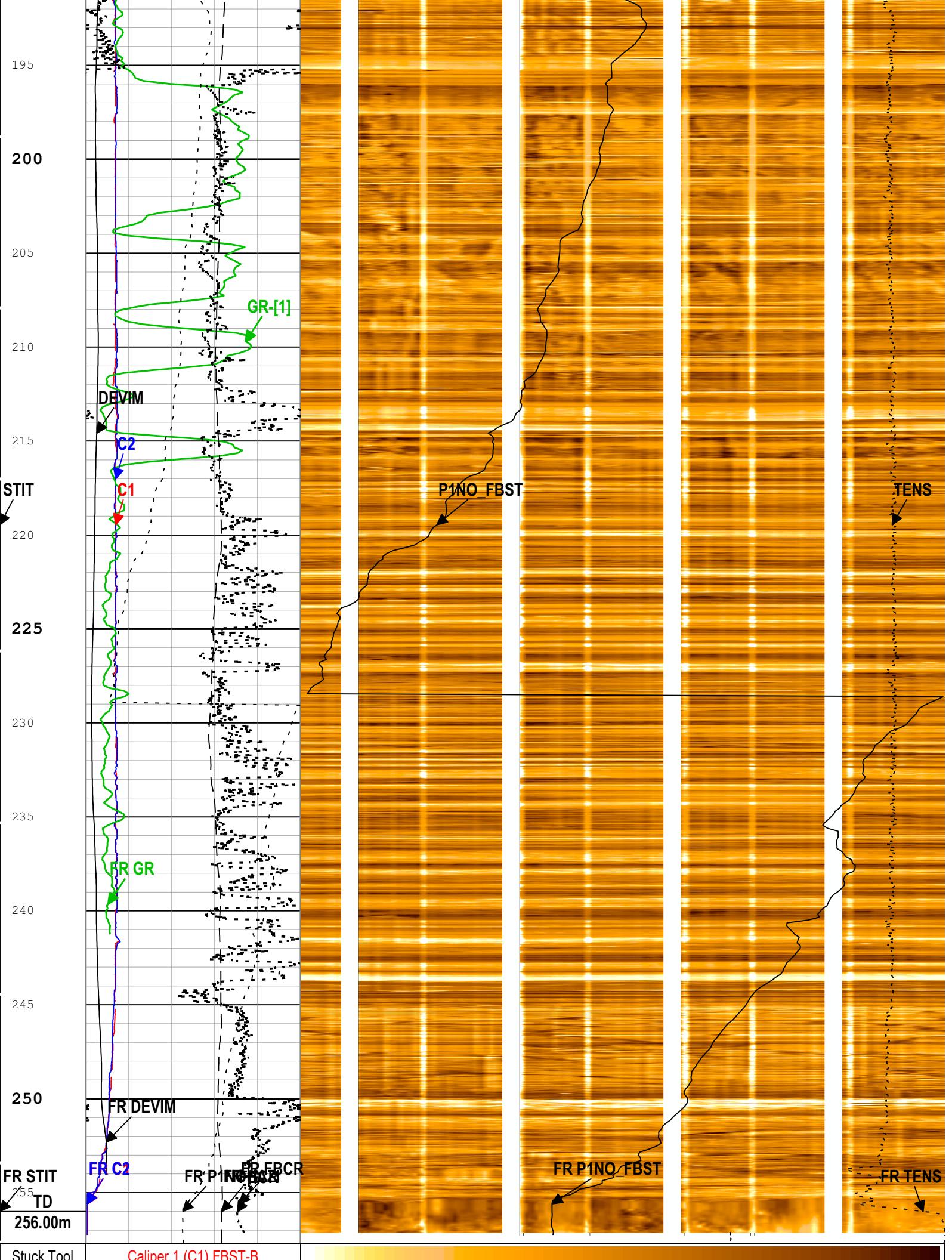
Description: FMI Raw Image Log Format: Log (FMI Raw Image Log_3) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:35:29

TIME_1900 - Time Marked every 60.00 (s)

<u>Caliper 1 (C1) FBST-B</u>		
100	mm	500
<u>Caliper 2 (C2) FBST-B</u>		
100	mm	500
Memorized Deviation (DEVIM) FBST-B		







Stack Freq.	Caliper 1 (C1) FBST-B	100	mm	500	Dynamic Gaussian Normalization
Indicator, Total (STIT)	Caliper 2 (C2) FBST-B	100	mm	500	FMI - Borehole Image
0 m 20	Pad 1 Azimuth in Plane Orthogonal to Tool Axis (0 = True North), memorized to FBST (P1NO_FBST)				
CableDrag	0 deg 360				
	Memorized Deviation (DEVIM) FBST-B	0	deg	10	Cable Tension (TENS)
	Gamma Ray (GR)	0	gAPI	150	20000 N 0
	Instance - 1 (6" HGNS-B RT)				
	Hole Azimuth Relative to True North (HAZI) FBST-B	-40	deg	360	
	Pad 1 Azimuth in Plane Orthogonal to Tool Axis (0 = True North) (P1NO) FBST-B	-40	deg	360	
	Correlation Resistance (FBCR)	2	kohm	2000	

TIME_1900 - Time Marked every 60.00 (s)

Description: FMI Raw Image Log Format: Log (FMI Raw Image Log_3) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:35:29

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
AOFFX	X Accelerometer Offset	FBST-B	0	m/s2
AOFFY	Y Accelerometer Offset	FBST-B	0	m/s2
AOFFZ	Z Accelerometer Offset	FBST-B	0	m/s2
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	mm
C1_SHIFT	C1 Caliper Supplementary Offset	FBST-B	-11	mm
C2_SHIFT	C2 Caliper Supplementary Offset	FBST-B	-6	mm
CBLO	Casing Bottom (Logger)	WLSESSION	73.2	m
CDEN	Cement Density	HGNS-B	2000	kg/m3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	1090	kg/m3
FOFFX	X Magnetometer Offset	FBST-B	0	nT
FOFFY	Y Magnetometer Offset	FBST-B	0	nT
FOFFZ	Z Magnetometer Offset	FBST-B	0	nT
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	C2	
ICMO	Inclinometry Computation Mode	FBST-B	Automatic Selection	
LOG_SPEED_RNG	Logging Speed Range	FBST-B	Normal (600 ft/h - 3600 ft/h)	
TD	Total Measured Depth	Borehole	256	m
USER_LOCB	User-supplied values for Magnetic Flux Density	WLSESSION	58322.11	nT
USER_MDEC	User-supplied values for Magnetic Declination	WLSESSION	14.38	deg
USER_MDIP	User-supplied values for Magnetic Dip Angle	WLSESSION	78.01	deg

Depth Zone Parameters

Parameter	Value	Start (m)	Stop (m)

BS	159	75	125.6
BS	156	125.6	256

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
ACCDATE	Date Accelerometer Coefficients Read from PROM	FBST-B	41693.31	
FBMV	EMEX Maximum Voltage Calculation	FBST-B	Off	
FLM	Logging Mode	FBST-B	Full Image Mode	
MAGDATE	Date Magnetometer Coefficients Read from PROM	FBST-B	41693.31	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	548.64	m/h
TEMS	Temperature Sensor Used	FBST-B	Both	
XGAI_FBST	Gain Value in Manual Mode	FBST-B	00 dB	
XGMO	EMEX and Gain Modes	FBST-B	EMEX= Auto and Gain= Auto, Low Range	
XVOL	EMEX Voltage	FBST-B	0	V

ONE/2

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE/2	Log[2]:Up	Up	106.91 m	257.96 m	23-Feb-2014 12:33:17 AM	23-Feb-2014 12:51:20 AM	ON	-0.16 m	Yes

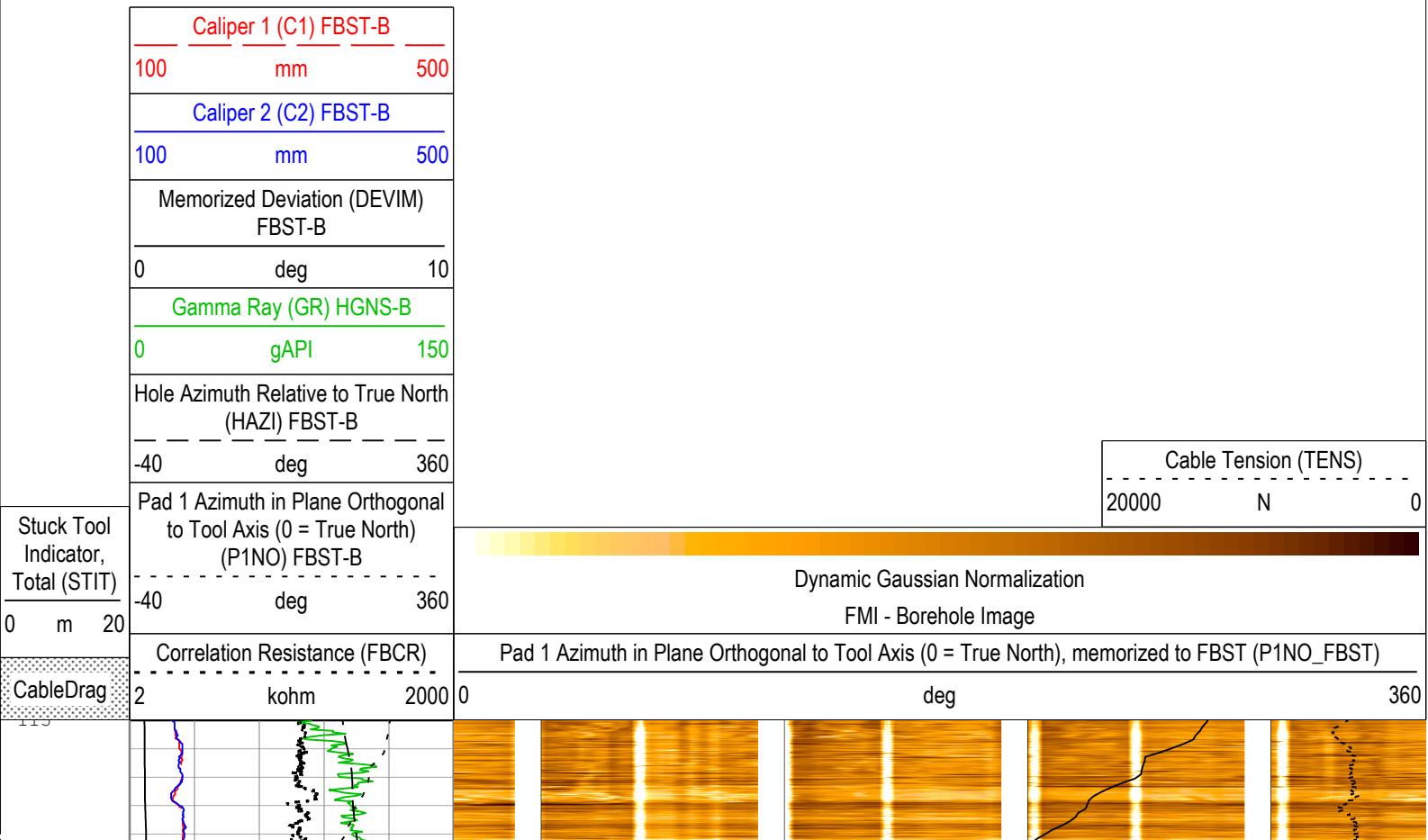
All depths are referenced to toolstring zero

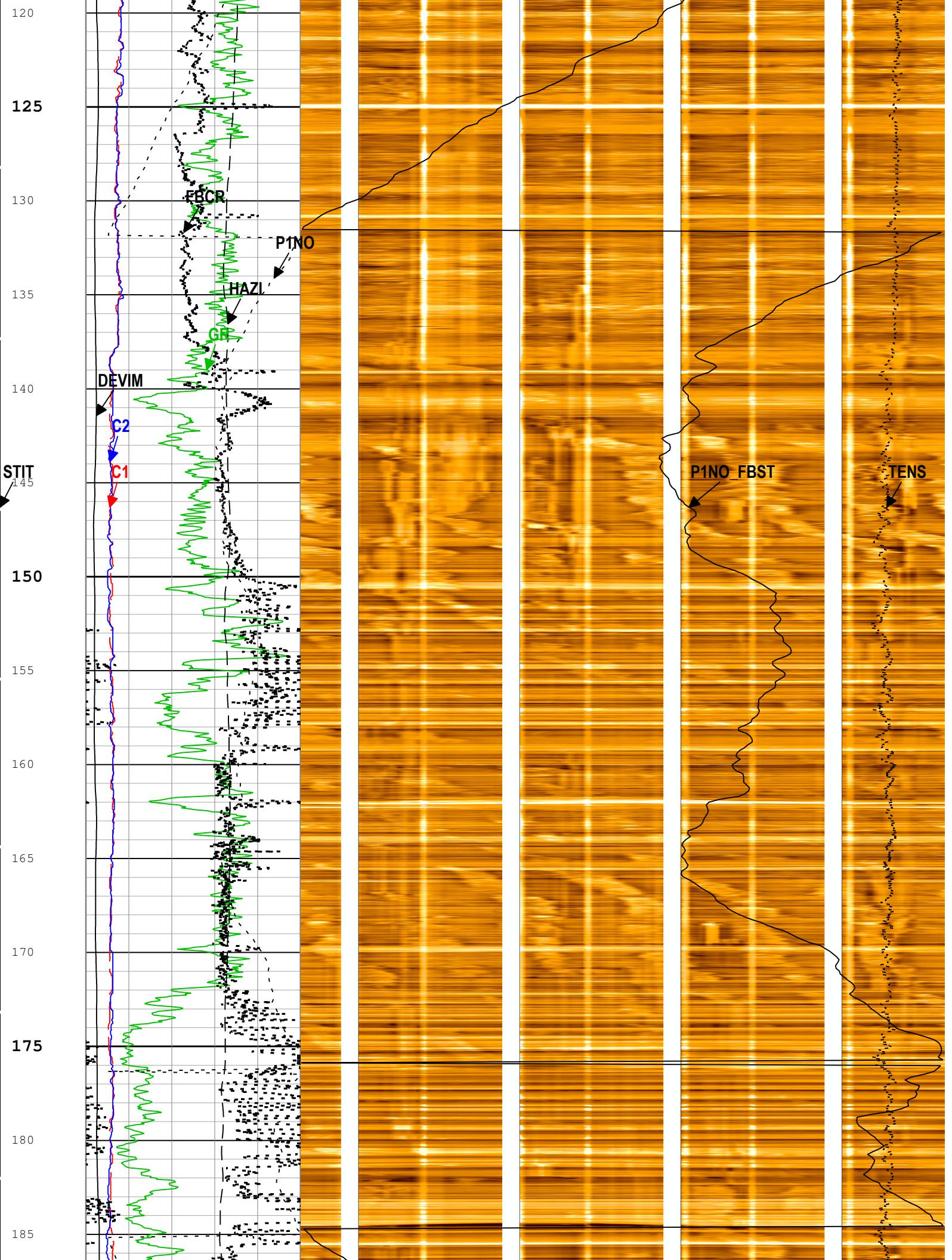
Log

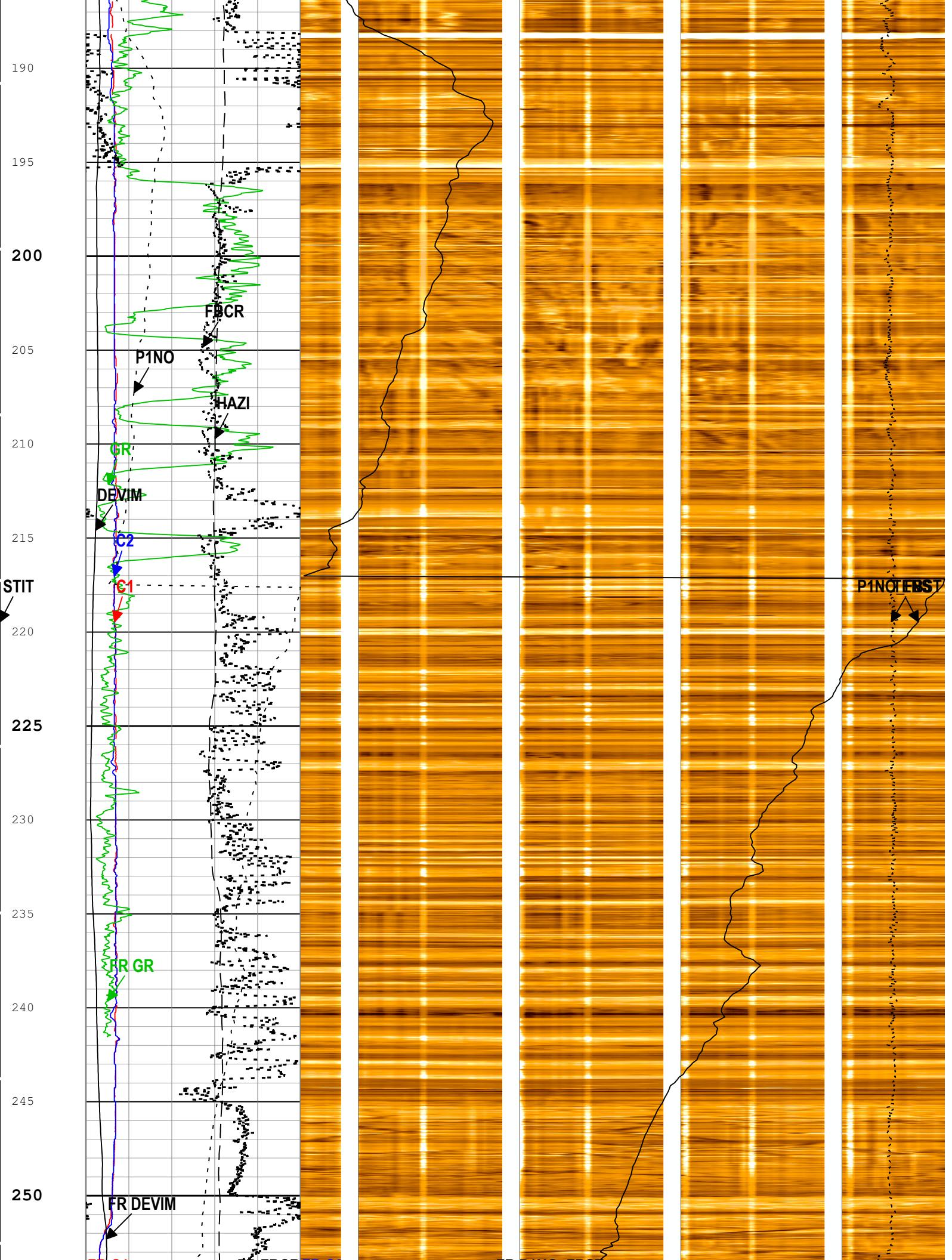
Company:SUNCOR ENERGY INC. Well:SUNCOR LEWIS 6-34-91-8
ONE/2: Log[2]:Up:S009

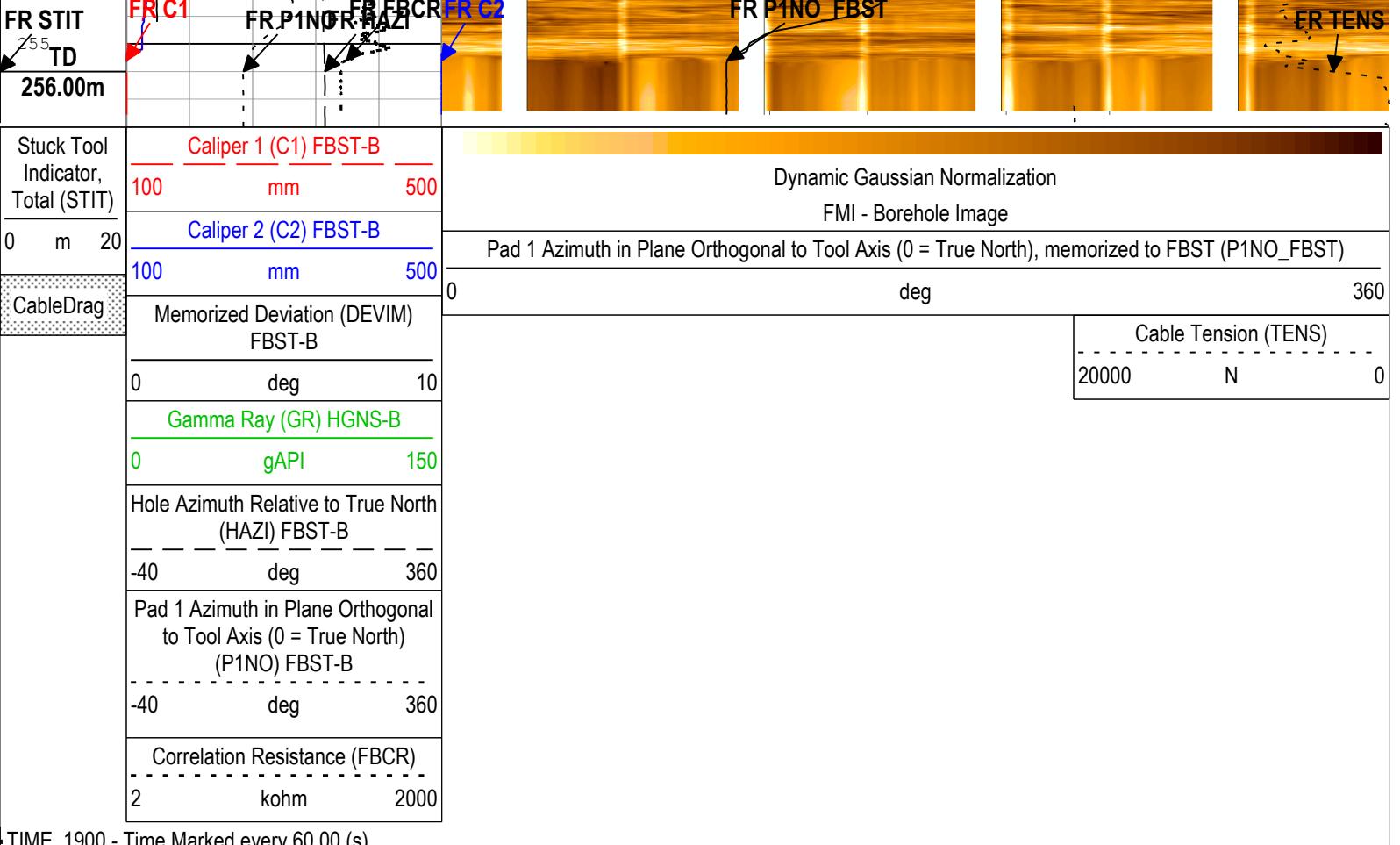
Description: FMI Raw Image Log Format: Log (FMI Raw Image Log_4) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:36:07

TIME_1900 - Time Marked every 60.00 (s)









TIME_1900 - Time Marked every 60.00 (s)

Description: FMI Raw Image Log Format: Log (FMI Raw Image Log_4) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:36:07

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
AOFFX	X Accelerometer Offset	FBST-B	0	m/s ²
AOFFY	Y Accelerometer Offset	FBST-B	0	m/s ²
AOFFZ	Z Accelerometer Offset	FBST-B	0	m/s ²
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	mm
C1_SHIFT	C1 Caliper Supplementary Offset	FBST-B	-11	mm
C2_SHIFT	C2 Caliper Supplementary Offset	FBST-B	-6	mm
CBLO	Casing Bottom (Logger)	WLSESSION	73.2	m
CDEN	Cement Density	HGNS-B	2000	kg/m ³
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	1090	kg/m ³
FOFFX	X Magnetometer Offset	FBST-B	0	mT
FOFFY	Y Magnetometer Offset	FBST-B	0	mT
FOFFZ	Z Magnetometer Offset	FBST-B	0	mT
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	C2	
ICMO	Inclinometry Computation Mode	FBST-B	Automatic Selection	
LOG_SPEED_RNG	Logging Speed Range	FBST-B	Normal (600 ft/h - 3600 ft/h)	
TD	Total Measured Depth	Borehole	256	m
USER_LOCB	User-supplied values for Magnetic Flux Density	WLSESSION	58322.11	nT
USER_MDEC	User-supplied values for Magnetic Declination	WLSESSION	14.38	deg
USER_MDIP	User-supplied values for Magnetic Dip Angle	WLSESSION	78.01	deg

Depth Zone Parameters

Parameter	Value	Start (m)	Stop (m)
BS	159	115	125.6
BS	156	125.6	256

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
ACCDATE	Date Accelerometer Coefficients Read from PROM	FBST-B	41693.31	
FBMV	EMEX Maximum Voltage Calculation	FBST-B	Off	
FLM	Logging Mode	FBST-B	Full Image Mode	
MAGDATE	Date Magnetometer Coefficients Read from PROM	FBST-B	41693.31	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	548.64	m/h
TEMS	Temperature Sensor Used	FBST-B	Both	
XGAI_FBST	Gain Value in Manual Mode	FBST-B	00 dB	
XGMO	EMEX and Gain Modes	FBST-B	EMEX= Auto and Gain= Auto, Low Range	
XVOL	EMEX Voltage	FBST-B	0	V

ONE/2

Software Version

Acquisition System	Version
MaxWell	4.0.9163.3000
Application Patch	Patch-SP-10767_13393-4.0.9163.3001
	Patch-TestKit_ADT_Quicklook_2013SP1-14270-1.0.0202.2000
Computation	Description
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels
Tool Elements	Description
FBSC-B	FullBore Scanner Sonde Cartridge
FBCC-A	FullBore Scanner Control Cartridge
GPI-C	GPIT GPIC Cartridge - C
HGNS-B	HILT Gamma-Ray and Neutron Sonde, 125 degC
Software Version	Firmware Version
4.0.9209.3000	
4.0.9209.3000	
4.0.9174.3000	
4.0.9231.3000	

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE/2	Log[3]:Up	Up	72.93 m	257.66 m	23-Feb-2014 12:54:32 AM	23-Feb-2014 1:17:10 AM	ON	-0.16 m	Yes

All depths are referenced to toolstring zero

Log

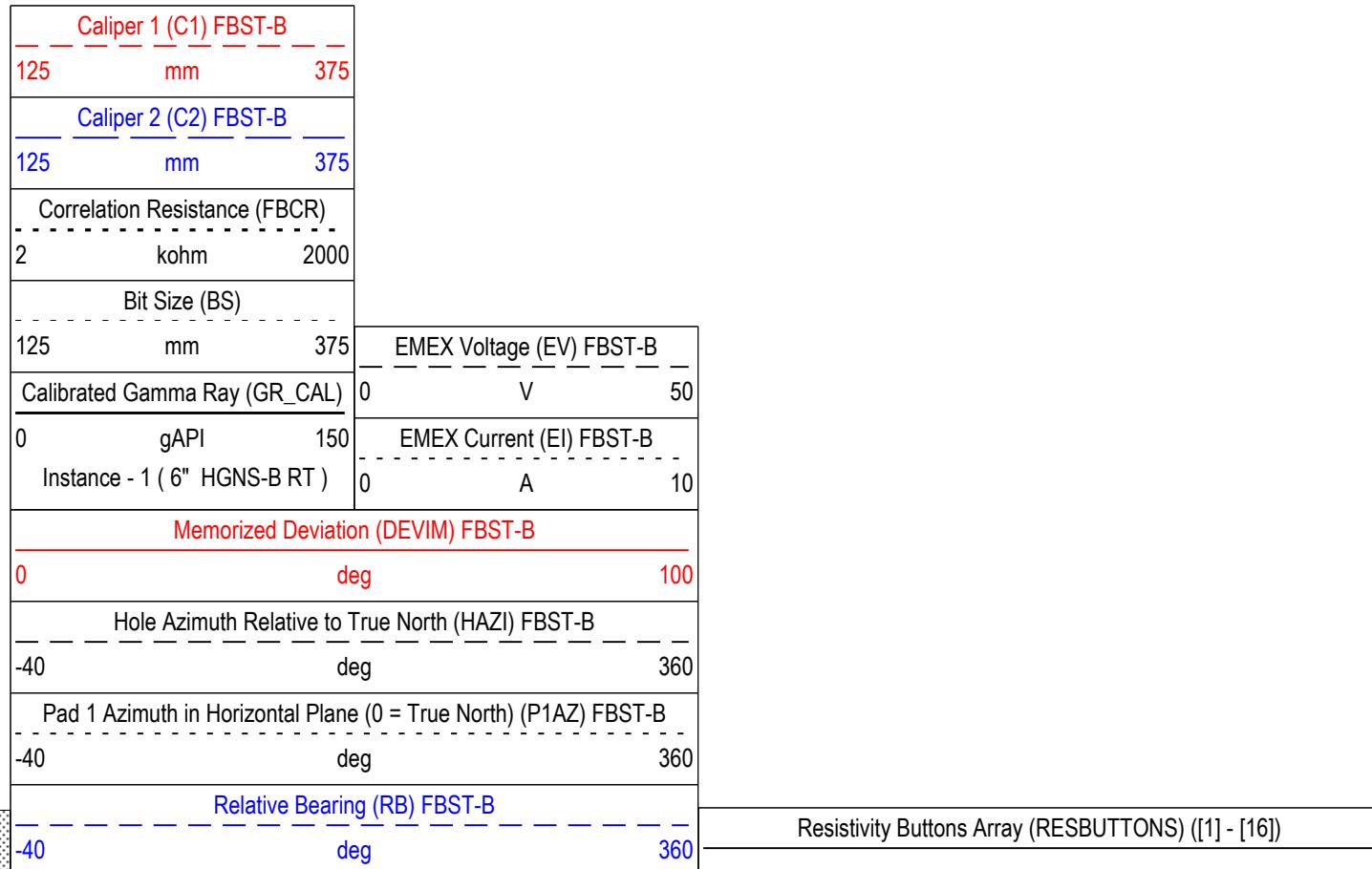
Company:SUNCOR ENERGY INC. Well:SUNCOR LEWIS 6-34-91-8
ONE/2: Log[3]:Up:S009

Description: FMI LQC Resistivity Format: Log (Import of FMI LQC Resistivity) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:36:39

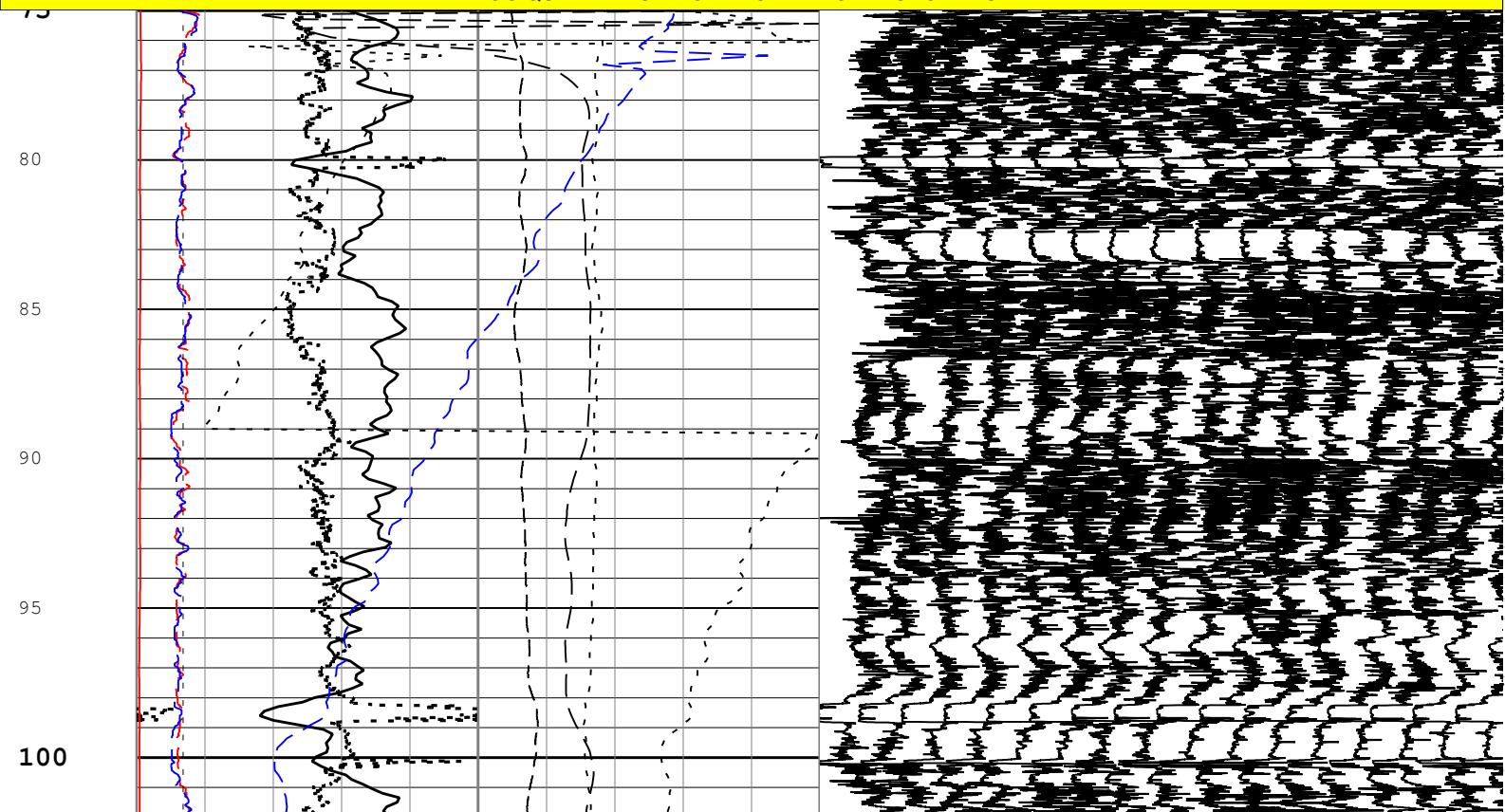
Channel	Source	Sampling
BS	Borehole	6in
C1	FBST-B:FBCC-A:FBCC-A	1.5in
C2	FBST-B:FBCC-A:FBCC-A	1.5in
DEVIM	FBST-B:FBSC-B:FBSC-B	6in
EI	FBST-B:FBCC-A:FBCC-A	6in
EV	FBST-B:FBCC-A:FBCC-A	0.1in
FBCR	FBST-B	0.1in

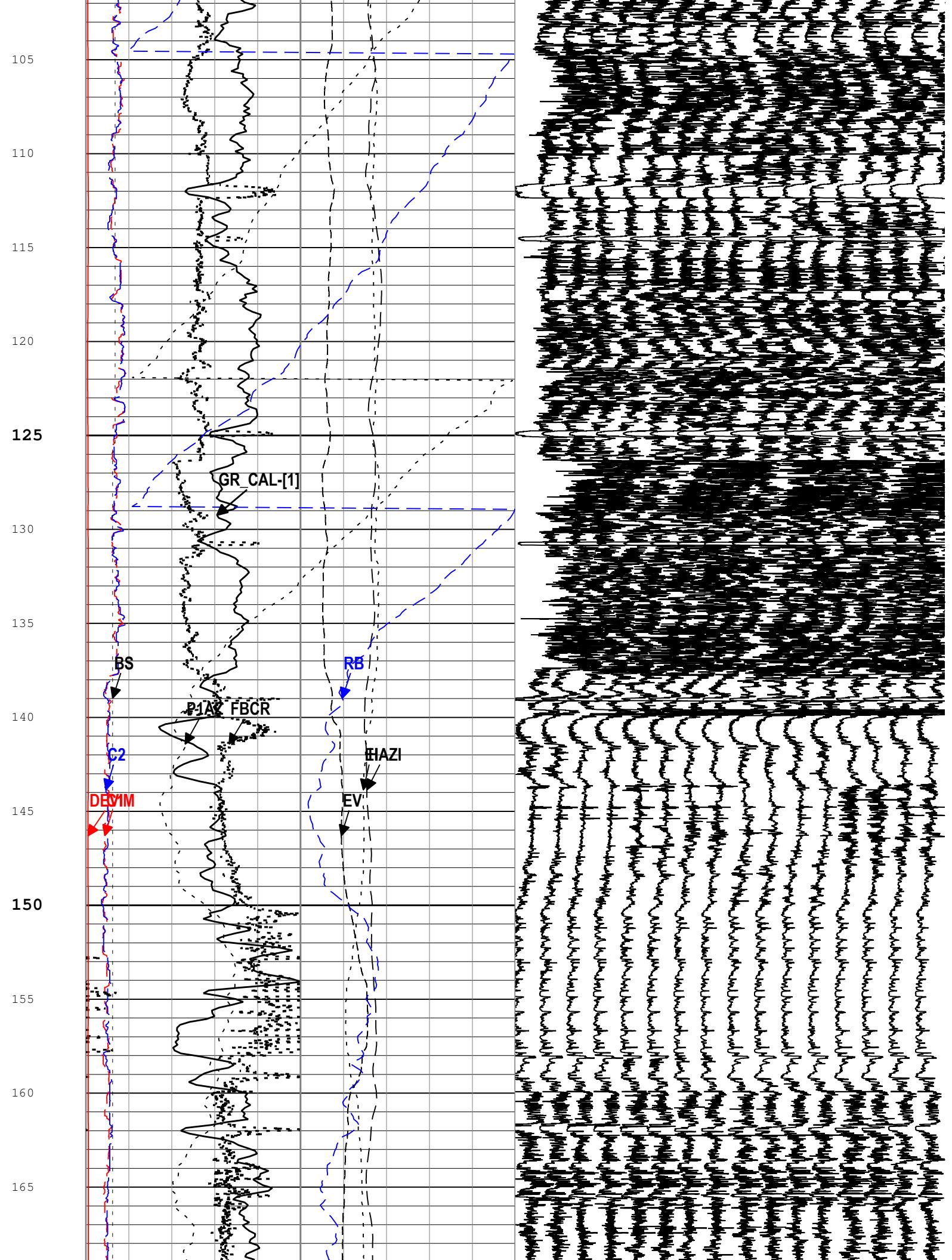
GR_CAL[1]	HGNS-B:HGNS-B:HGNS-B	6in
HAZI	FBST-B:FBSC-B:GPIC-C	6in
P1AZ	FBST-B:FBSC-B:GPIC-C	6in
RB	FBST-B:FBSC-B:GPIC-C	6in
RESBUTTONS	FBST-B	0.1in
TIME_1900	WLWorkflow	0.1in

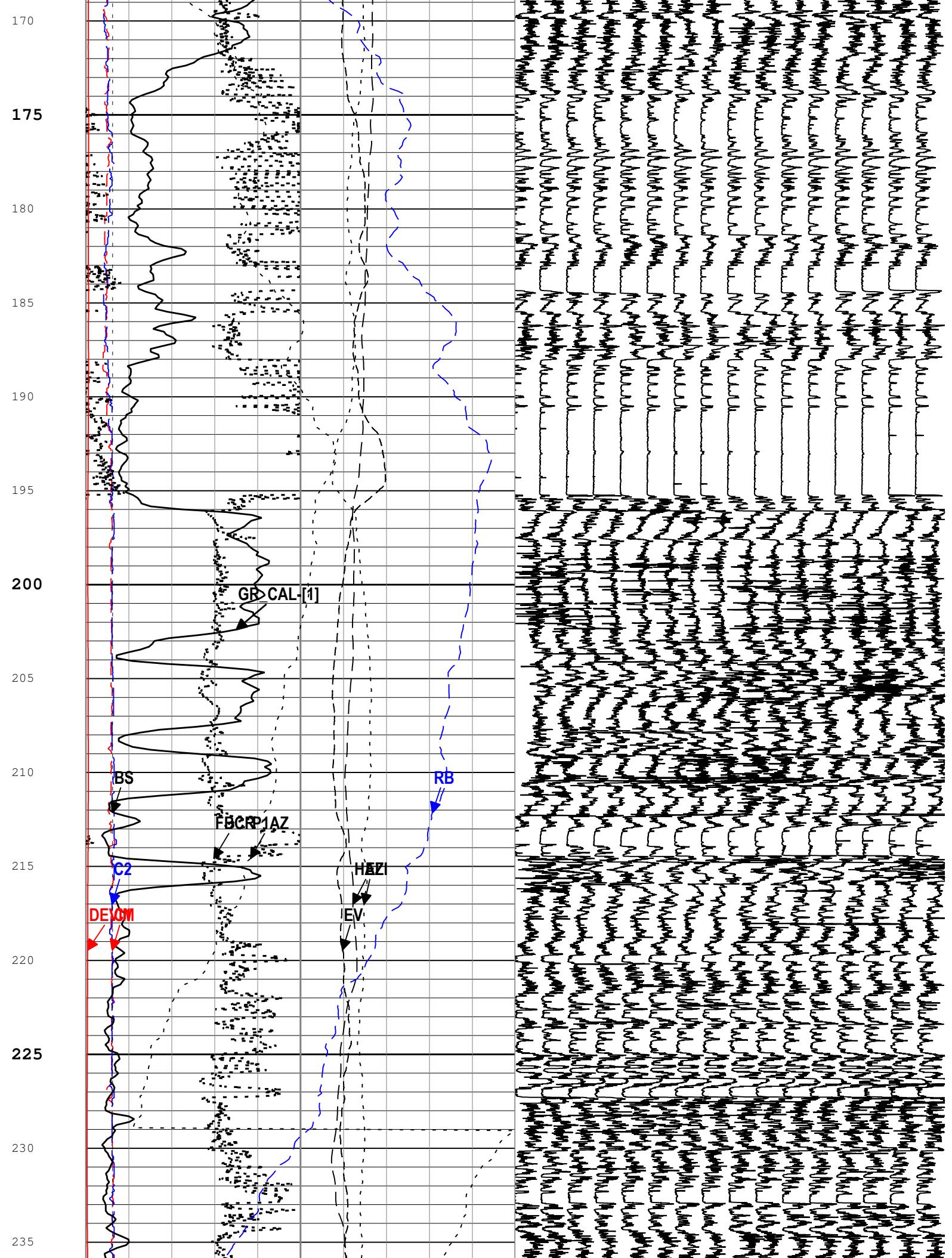
TIME_1900 - Time Marked every 60.00 (s)

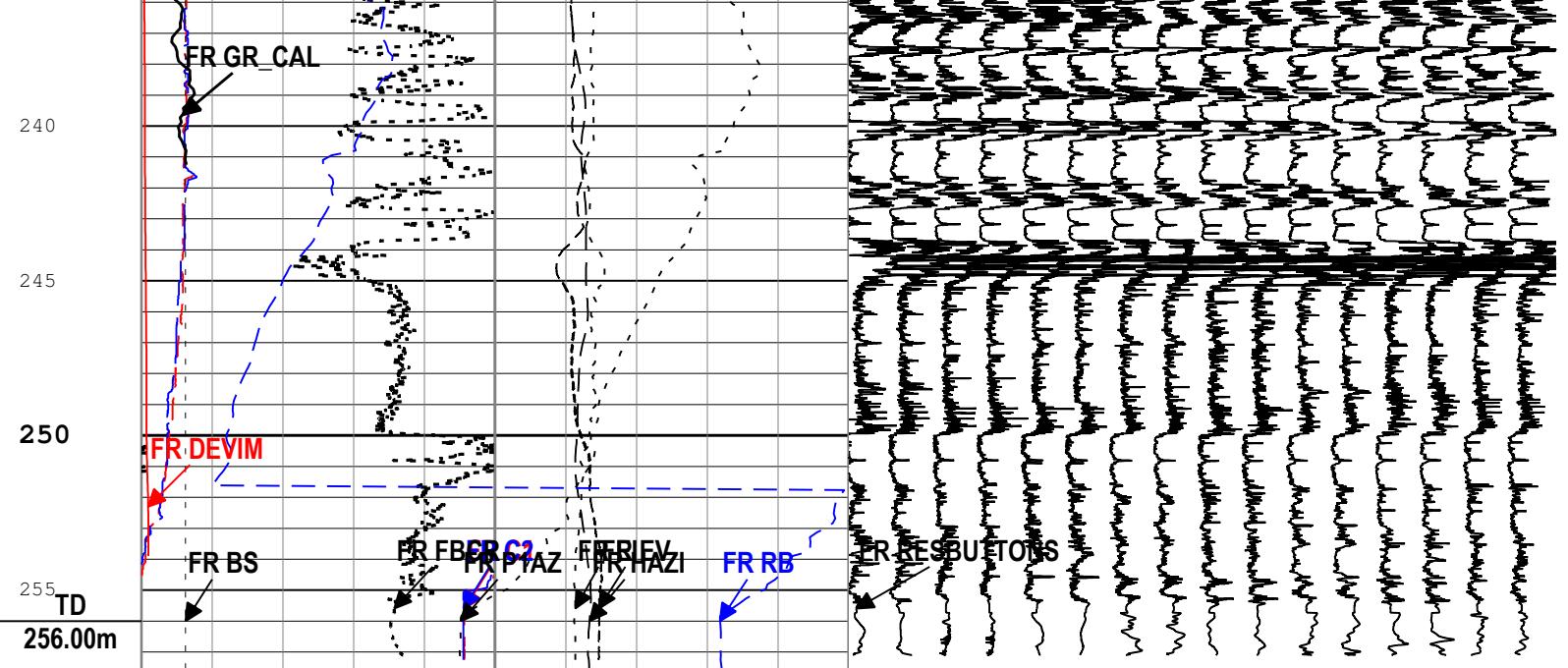


LOG QUALITY: FULLBORE FORMATION MICRO-IMAGER









LOG QUALITY: FULLBORE FORMATION MICRO-IMAGER

CableDrag	Memorized Deviation (DEVIM) FBST-B			Resistivity Buttons Array (RESBUTTONS) ([1] - [16])
0	deg			100
-40	Hole Azimuth Relative to True North (HAZI) FBST-B deg			360
-40	Pad 1 Azimuth in Horizontal Plane (0 = True North) (P1AZ) FBST-B deg			360
-40	Relative Bearing (RB) FBST-B deg			360
125	Caliper 1 (C1) FBST-B mm	375	EMEX Voltage (EV) FBST-B V	50
125	Caliper 2 (C2) FBST-B mm	375	EMEX Current (EI) FBST-B A	10
2	Correlation Resistance (FBCR) kohm			2000
125	Bit Size (BS) mm			375
0	Calibrated Gamma Ray (GR_CAL) gAPI			150
Instance - 1 (6" HGNS-B RT)				

TIME_1900 - Time Marked every 60.00 (s)

Description: FMI LQC Resistivity Format: Log (Import of FMI LQC Resistivity) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:36:39

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
AOFFX	X Accelerometer Offset	FBST-B	0	m/s2
AOFFY	Y Accelerometer Offset	FBST-B	0	m/s2
AOFFZ	Z Accelerometer Offset	FBST-B	0	m/s2
BS	Bit Size	WLSESSION	Depth Zoned	mm
C1_SHIFT	C1 Caliper Supplementary Offset	FBST-B	-11	mm
C2_SHIFT	C2 Caliper Supplementary Offset	FBST-B	-6	mm

CBLO	Casing Bottom (Logger)	WLSESSION	73.2	m
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
FOFFX	X Magnetometer Offset	FBST-B	0	mT
FOFFY	Y Magnetometer Offset	FBST-B	0	mT
FOFFZ	Z Magnetometer Offset	FBST-B	0	mT
ICMO	Inclinometry Computation Mode	FBST-B	Automatic Selection	
LOG_SPEED_RNG	Logging Speed Range	FBST-B	Normal (600 ft/h - 3600 ft/h)	
USER_LOCB	User-supplied values for Magnetic Flux Density	WLSESSION	58322.11	nT
USER_MDEC	User-supplied values for Magnetic Declination	WLSESSION	14.38	deg
USER_MDIP	User-supplied values for Magnetic Dip Angle	WLSESSION	78.01	deg

Depth Zone Parameters

Parameter	Value	Start (m)	Stop (m)	
BS	159	75	125.6	
BS	156	125.6	256	

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
ACCDATE	Date Accelerometer Coefficients Read from PROM	FBST-B	41693.31	
FBMV	EMEX Maximum Voltage Calculation	FBST-B	Off	
FLM	Logging Mode	FBST-B	Full Image Mode	
MAGDATE	Date Magnetometer Coefficients Read from PROM	FBST-B	41693.31	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	548.64	m/h
TEMS	Temperature Sensor Used	FBST-B	Both	
XGAI_FBST	Gain Value in Manual Mode	FBST-B	00 dB	
XGMO	EMEX and Gain Modes	FBST-B	EMEX= Auto and Gain= Auto, Low Range	
XVOL	EMEX Voltage	FBST-B	0	V

ONE/2

Software Version

Acquisition System	Version
MaxWell	4.0.9163.3000
Application Patch	Patch-SP-10767_13393-4.0.9163.3001
	Patch-TestKit_ADT_Quicklook_2013SP1-14270-1.0.0000.2000

Computation	Description	Version
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels	4.0.9213.3000
Tool Elements	Description	Software Version
FBSC-B	FullBore Scanner Sonde Cartridge	4.0.9209.3000
FBCC-A	FullBore Scanner Control Cartridge	4.0.9209.3000
GPIC-C	GPIT GPIC Cartridge - C	4.0.9174.3000
HGNS-B	HILT Gamma-Ray and Neutron Sonde, 125 degC	4.0.9231.3000

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE/2	Log[2]:Up	Up	106.91 m	257.96 m	23-Feb-2014 12:33:17 AM	23-Feb-2014 12:51:20 AM	ON	-0.16 m	Yes

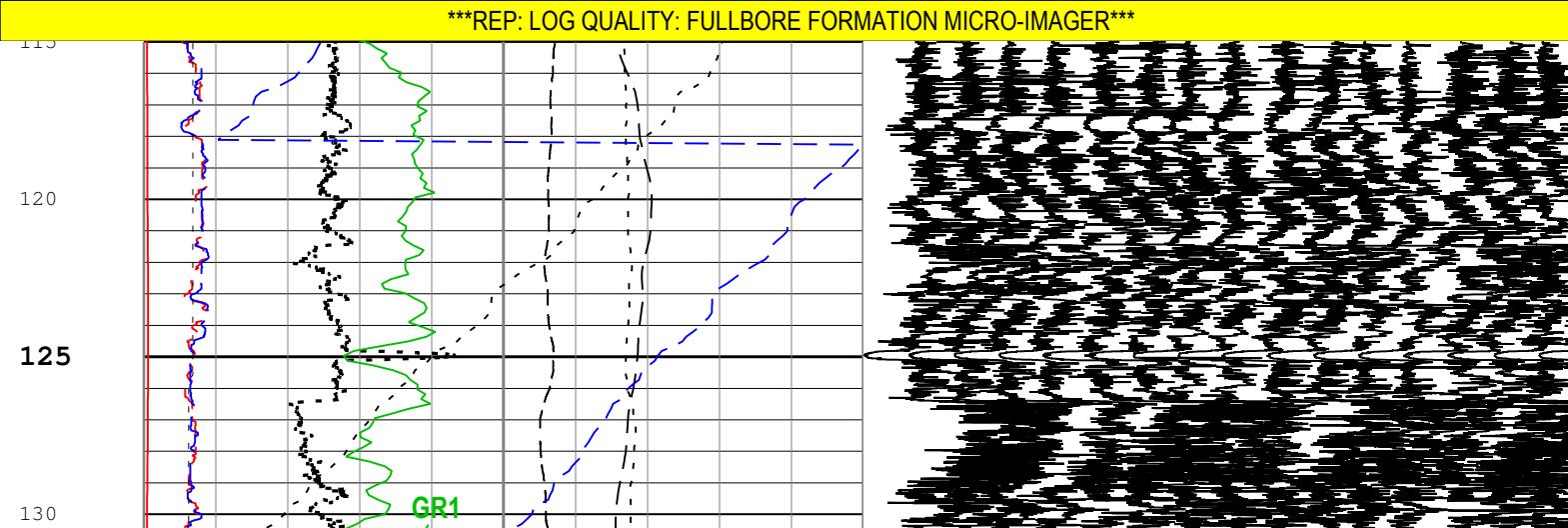
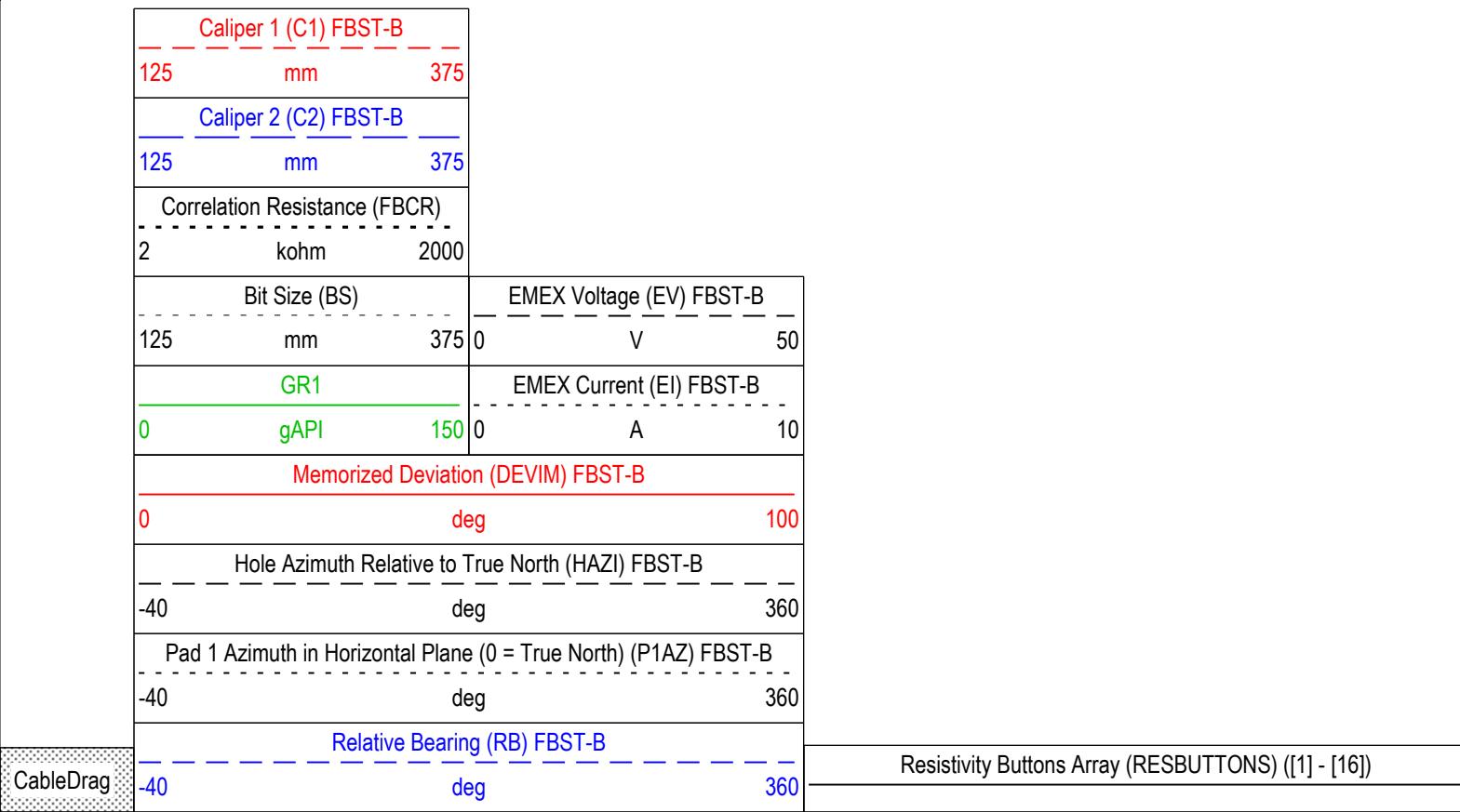
All depths are referenced to toolstring zero

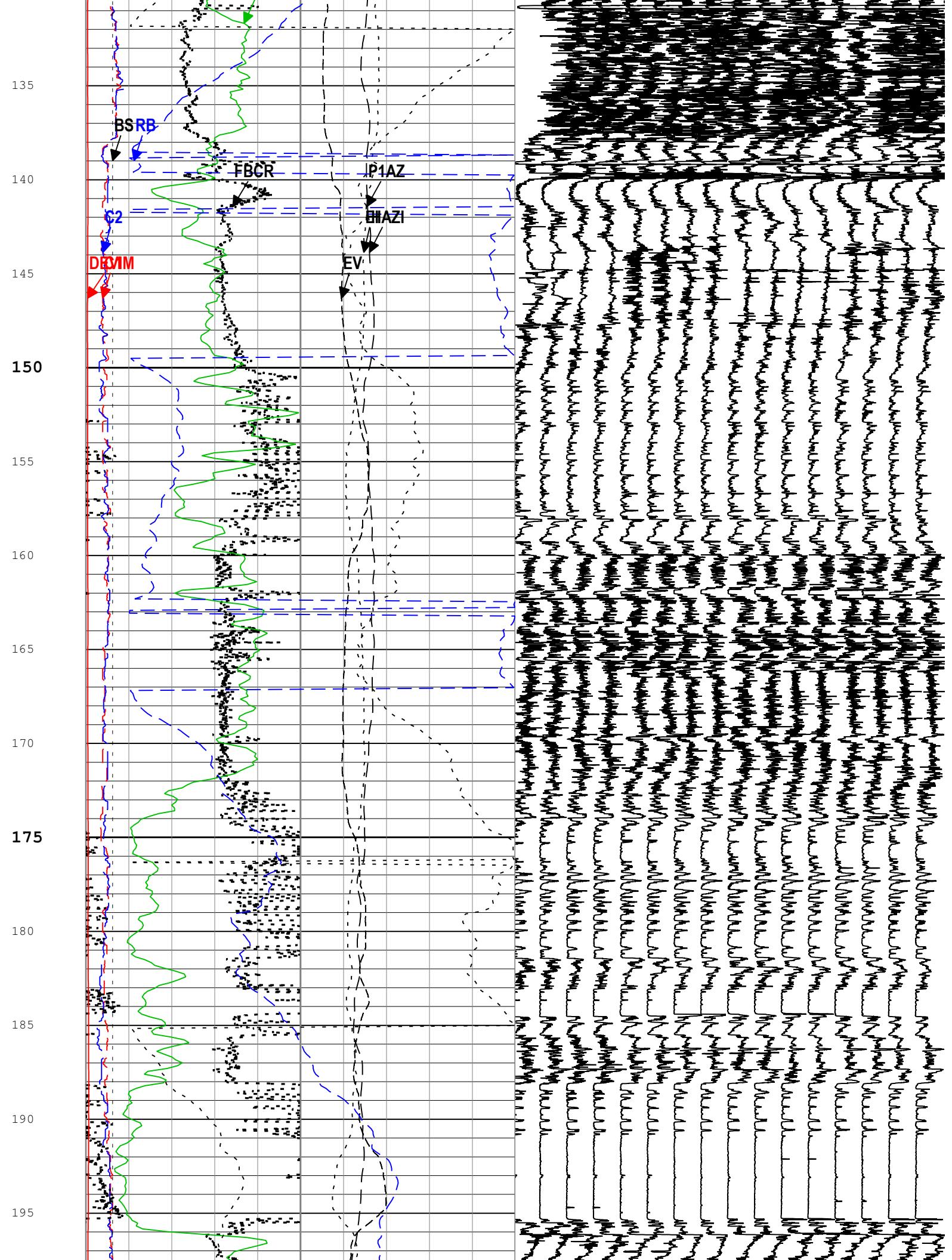
Description: FMI LQC Resistivity Format: Log (Import of FMI LQC Resistivity-REP) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth

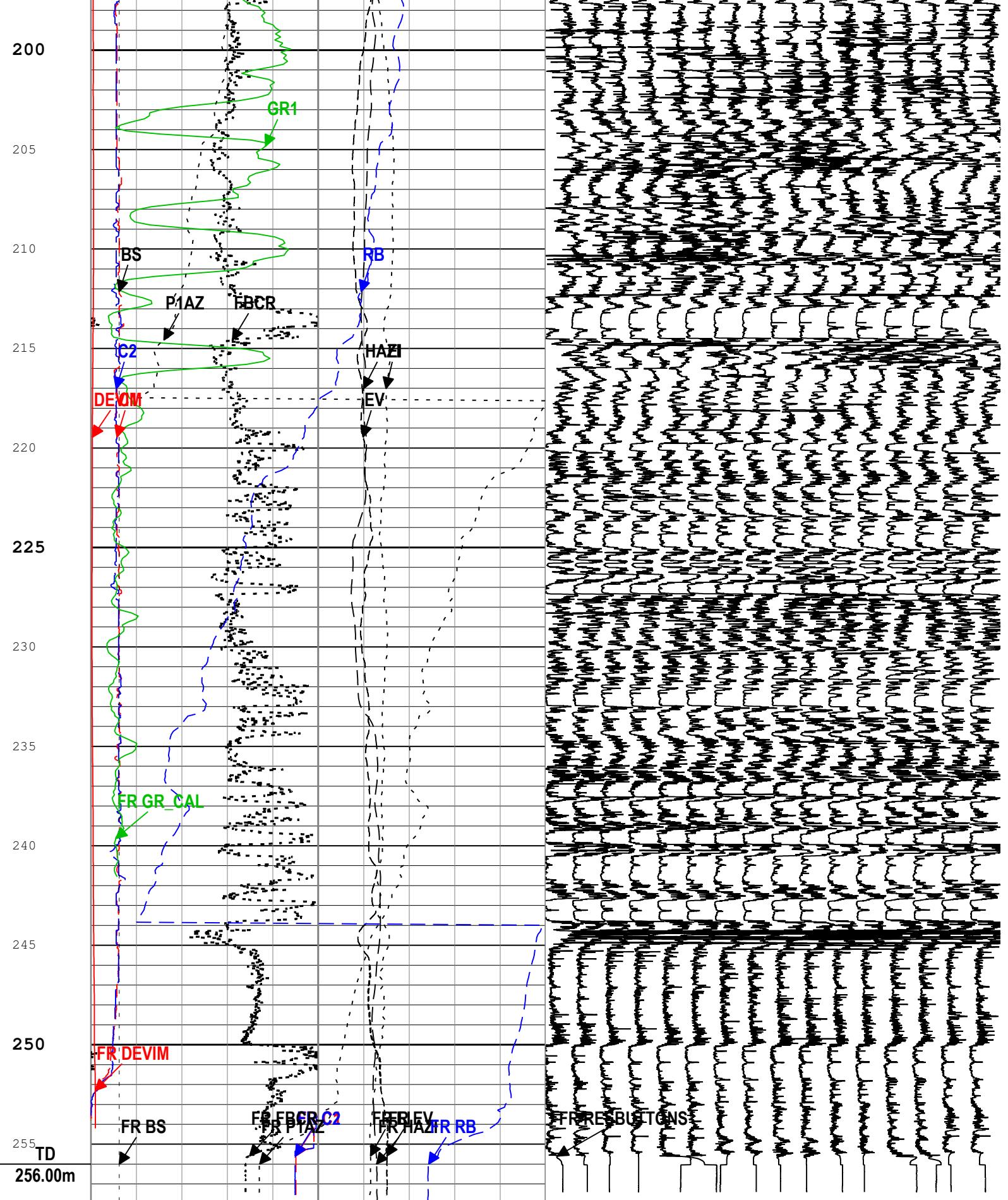
Creation Date: 24-Feb-2014 21:36:48

Channel	Source	Sampling
BS	Borehole	6in
C1	FBST-B:FBCC-A:FBCC-A	1.5in
C2	FBST-B:FBCC-A:FBCC-A	1.5in
DEVIM	FBST-B:FBSC-B:FBSC-B	6in
EI	FBST-B:FBCC-A:FBCC-A	6in
EV	FBST-B:FBCC-A:FBCC-A	0.1in
FBCR	FBST-B	0.1in
GR_CAL	HGNS-B:HGNS-B:HGNS-B	6in
HAZI	FBST-B:FBSC-B:GPIC-C	6in
P1AZ	FBST-B:FBSC-B:GPIC-C	6in
RB	FBST-B:FBSC-B:GPIC-C	6in
RESBUTTONS	FBST-B	0.1in
TIME_1900	WLWorkflow	0.1in

TIME_1900 - Time Marked every 60.00 (s)







REP: LOG QUALITY: FULLBORE FORMATION MICRO-IMAGER

CableDrag	Memorized Deviation (DEVIM) FBST-B	Resistivity Buttons Array (RESBUTTONS) ([1] - [16])
0	deg	100
	Hole Azimuth Relative to True North (HAZI) FBST-B	360

-40	deg	360
Relative Bearing (RB) FBST-B		
-40	deg	360
Caliper 1 (C1) FBST-B		
125	mm	375
Caliper 2 (C2) FBST-B		
125	mm	375
Correlation Resistance (FBCR)		
2	kohm	2000
Bit Size (BS)		
125	mm	375
GR1		
0	gAPI	150

TIME_1900 - Time Marked every 60.00 (s)

Description: FMI LQC Resistivity Format: Log (Import of FMI LQC Resistivity-REP) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth
 Creation Date: 24-Feb-2014 21:36:48

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
AOFFX	X Accelerometer Offset	FBST-B	0	m/s ²
AOFFY	Y Accelerometer Offset	FBST-B	0	m/s ²
AOFFZ	Z Accelerometer Offset	FBST-B	0	m/s ²
BS	Bit Size	WLSESSION	Depth Zoned	mm
C1_SHIFT	C1 Caliper Supplementary Offset	FBST-B	-11	mm
C2_SHIFT	C2 Caliper Supplementary Offset	FBST-B	-6	mm
CBLO	Casing Bottom (Logger)	WLSESSION	73.2	m
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
FOFFX	X Magnetometer Offset	FBST-B	0	µT
FOFFY	Y Magnetometer Offset	FBST-B	0	µT
FOFFZ	Z Magnetometer Offset	FBST-B	0	µT
ICMO	Inclinometry Computation Mode	FBST-B	Automatic Selection	
LOG_SPEED_RNG	Logging Speed Range	FBST-B	Normal (600 ft/h - 3600 ft/h)	
USER_LOCB	User-supplied values for Magnetic Flux Density	WLSESSION	58322.11	nT
USER_MDEC	User-supplied values for Magnetic Declination	WLSESSION	14.38	deg
USER_MDIP	User-supplied values for Magnetic Dip Angle	WLSESSION	78.01	deg

Depth Zone Parameters

Parameter	Value	Start (m)	Stop (m)
BS	159	115	125.6
BS	156	125.6	256

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
ACCDATE	Date Accelerometer Coefficients Read from PROM	FBST-B	41693.31	
FBMV	EMEX Maximum Voltage Calculation	FBST-B	Off	
FLM	Logging Mode	FBST-B	Full Image Mode	
MAGDATE	Date Magnetometer Coefficients Read from PROM	FBST-B	41693.31	

MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	548.64	m/h
TEMS	Temperature Sensor Used	FBST-B	Both	
XGAI_FBST	Gain Value in Manual Mode	FBST-B	00 dB	
XGMO	EMEX and Gain Modes	FBST-B	EMEX= Auto and Gain= Auto, Low Range	
XVOL	EMEX Voltage	FBST-B	0	V

ONE/2

Software Version									
Acquisition System		Version							
MaxWell		4.0.9163.3000							
Application Patch		Patch-SP-10767_13393-4.0.9163.3001							
Computation		Description							Version
DepthCorrection		DepthCorrection							4.0.9213.3000
Tool Elements		Description				Software Version		Firmware Version	
FBSC-B		FullBore Scanner Sonde Cartridge				4.0.9209.3000			
FBCC-A		FullBore Scanner Control Cartridge				4.0.9209.3000			
GPIC-C		GPIT GPIC Cartridge - C				4.0.9174.3000			
HGNS-B		HILT Gamma-Ray and Neutron Sonde, 125 degC				4.0.9231.3000			
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE/2	Log[3]:Up	Up	72.93 m	257.66 m	23-Feb-2014 12:54:32 AM	23-Feb-2014 1:17:10 AM	ON	-0.16 m	Yes

All depths are referenced to toolstring zero

Log

Company:SUNCOR ENERGY INC. Well:SUNCOR LEWIS 6-34-91-8

ONE/2: Log[3]:Up:S009

Description: FMI P1NO-Oriented Image Log Format: Log (FMI P1NO-Oriented Image Log) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:36:53

Channel	Source	Sampling
C1	FBST-B:FBCC-A:FBCC-A	1.5in
C2	FBST-B:FBCC-A:FBCC-A	1.5in
DEVIM	FBST-B:FBSC-B:FBSC-B	6in
FBCR	FBST-B	0.1in
GR_CAL.[1]	HGNS-B:HGNS-B:HGNS-B	6in
HAZI	FBST-B:FBSC-B:GPIC-C	6in
P1NO	FBST-B:FBSC-B:GPIC-C	6in
P1NO_FBST	FBST-B	6in
STIT	DepthCorrection	6in
TENS	WLWorkflow	1in
TIME_1900	WLWorkflow	0.1in

TIME_1900 - Time Marked every 60.00 (s)

Caliper 1 (C1) FBST-B		
125	mm	375
Caliper 2 (C2) FBST-B		
125	mm	375
Memorized Deviation (DEVIM) FBST-B		
0	deg	100

Hole Azimuth Relative to True North
(HAZI) FBST-B
-40 deg 360

Pad 1 Azimuth in Plane Orthogonal
to Tool Axis (0 = True North)
(P1NO) FBST-B
-40 deg 360

Cable Tension (TENS)
25000 N 0

Stuck Tool
Indicator,
Total (STIT)
0 m 20

Correlation Resistance (FBCR)
2 kohm 2000

Calibrated Gamma Ray (GR_CAL)
0 gAPI 150

CableDrag
Instance - 1 (6" HGNS-B RT)

N E S W N

Orientation: North Azimuth

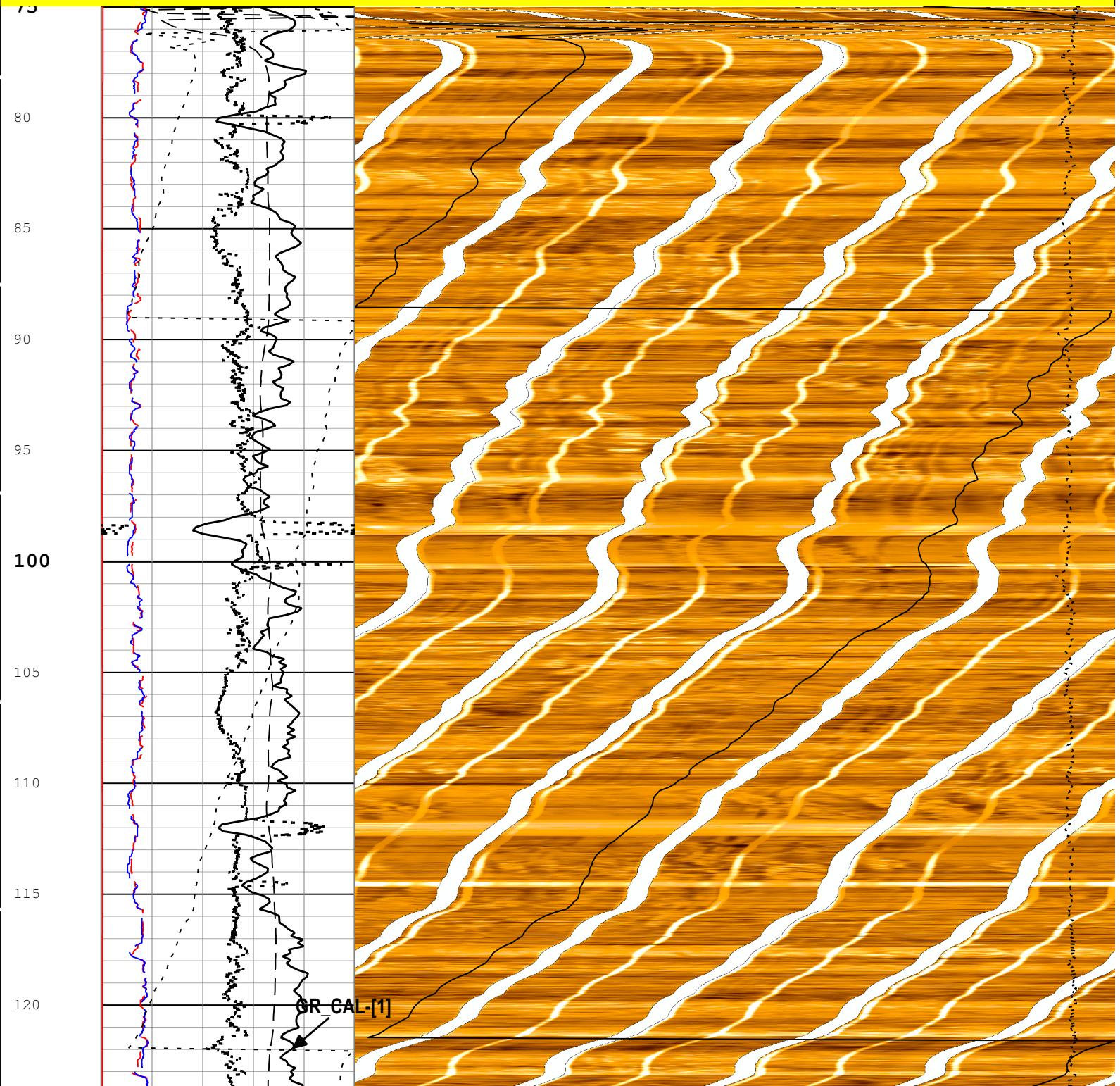
Dynamic Gaussian Normalization

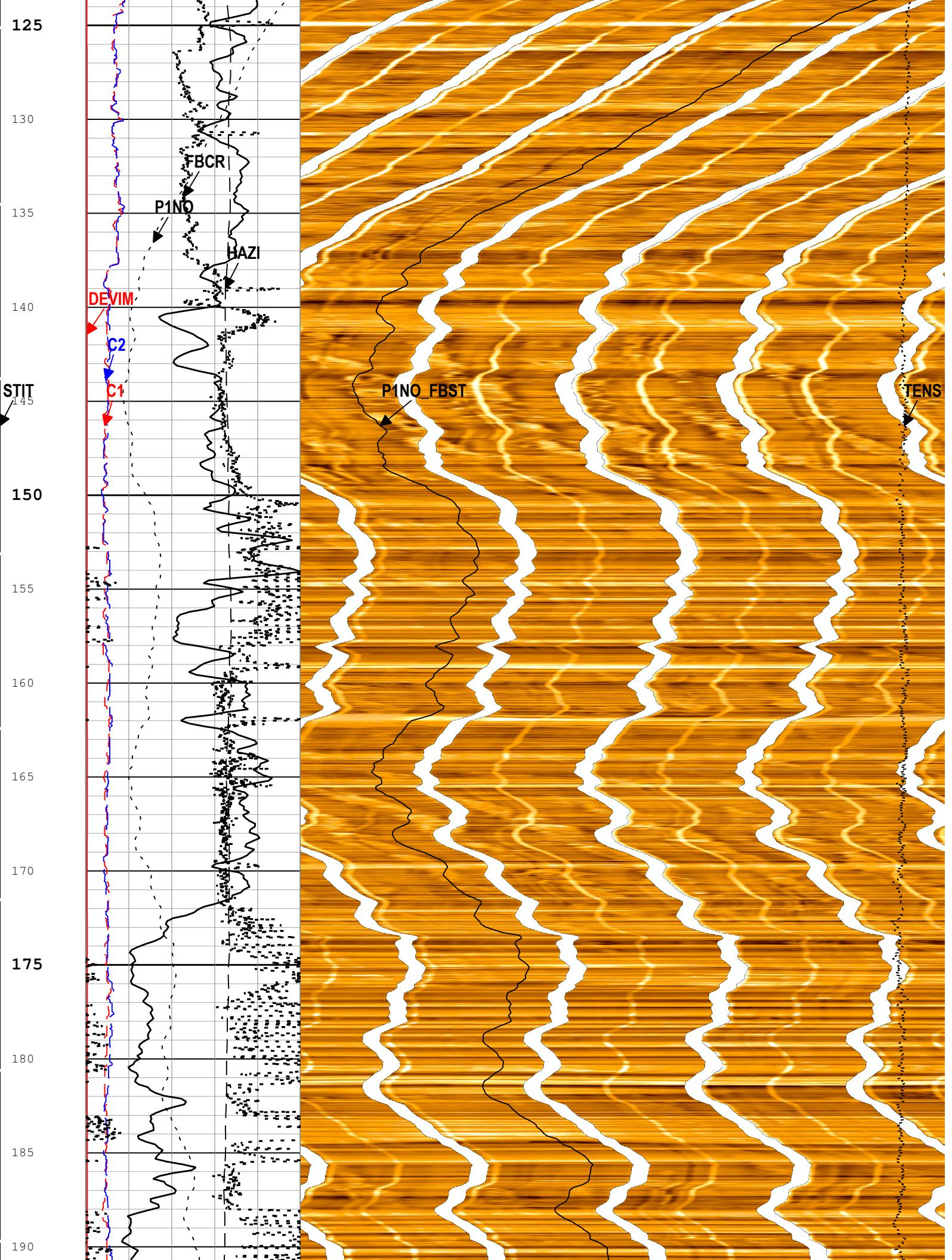
FMI - Borehole Image

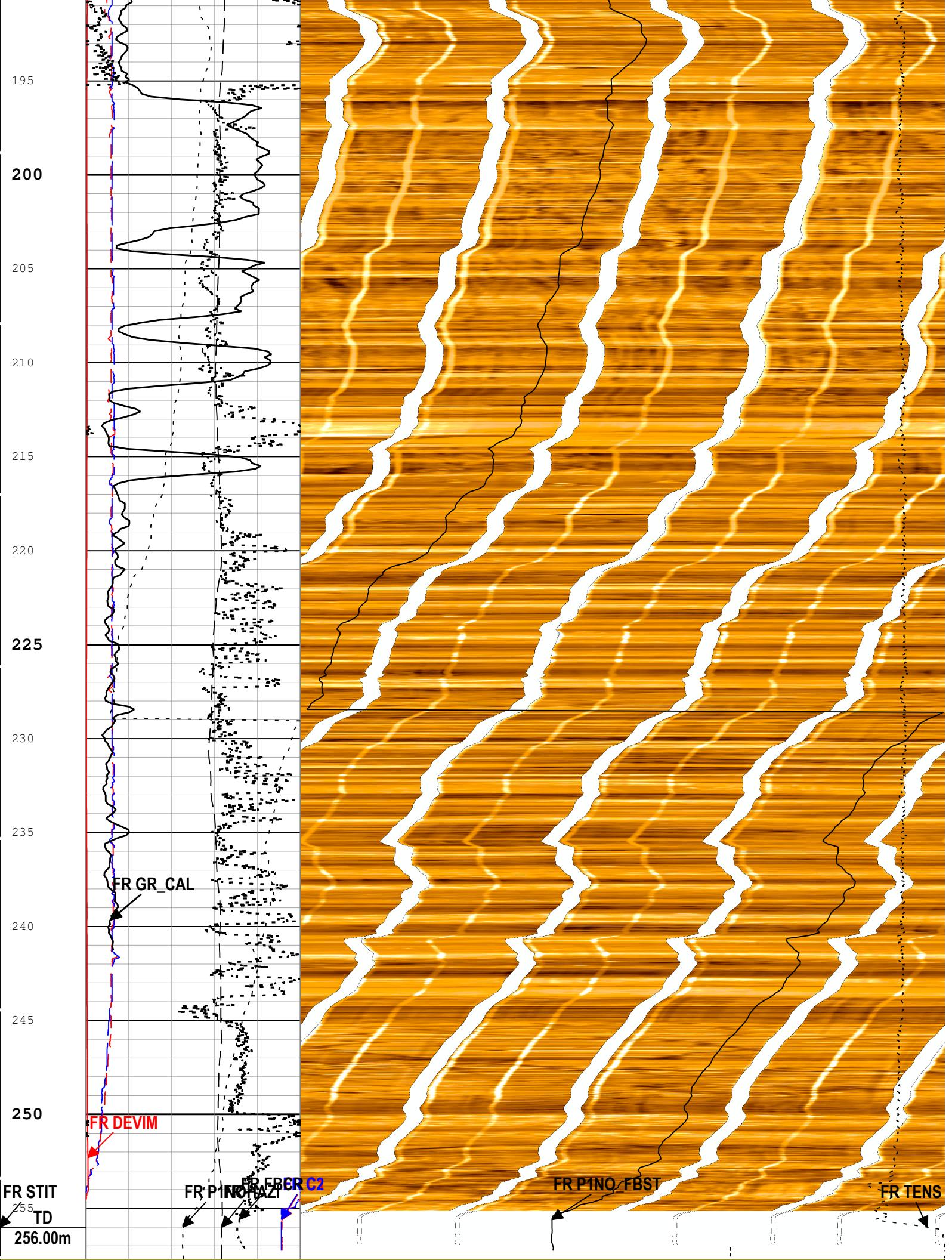
Pad 1 Azimuth in Plane Orthogonal to Tool Axis (0 = True North), memorized to FBST (P1NO_FBST)

0 deg 360

MAIN PASS: FULLBORE FORMATION MICRO-IMAGER







Stuck Tool Indicator, Total (STIT)	Caliper 1 (C1) FBST-B			Dynamic Gaussian Normalization FMI - Borehole Image Orientation: North Azimuth
	125	mm	375	
0 m 20	Caliper 2 (C2) FBST-B			N E S W N
CableDrag	125	mm	375	
Memorized Deviation (DEVIM) FBST-B			Pad 1 Azimuth in Plane Orthogonal to Tool Axis (0 = True North), memorized to FBST (P1NO_FBST)	
0	deg	100	0	360
Hole Azimuth Relative to True North (HAZI) FBST-B			Cable Tension (TENS)	
-40	deg	360	25000	N 0
Pad 1 Azimuth in Plane Orthogonal to Tool Axis (0 = True North) (P1NO) FBST-B				
-40	deg	360		
Correlation Resistance (FBCR)				
2	kohm	2000		
Calibrated Gamma Ray (GR_CAL)				
0	gAPI	150		
Instance - 1 (6" HGNS-B RT)				

TIME_1900 - Time Marked every 60.00 (s)

Description: FMI P1NO-Oriented Image Log Format: Log (FMI P1NO-Oriented Image Log) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth
 Creation Date: 24-Feb-2014 21:36:53

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
AOFFX	X Accelerometer Offset	FBST-B	0	m/s ²
AOFFY	Y Accelerometer Offset	FBST-B	0	m/s ²
AOFFZ	Z Accelerometer Offset	FBST-B	0	m/s ²
C1_SHIFT	C1 Caliper Supplementary Offset	FBST-B	-11	mm
C2_SHIFT	C2 Caliper Supplementary Offset	FBST-B	-6	mm
CBLO	Casing Bottom (Logger)	WLSESSION	73.2	m
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
FDBD	Dead Buttons Detection	FBST-B	Off	
FDPB	Dead Buttons Patching	FBST-B	Off	
FOFFX	X Magnetometer Offset	FBST-B	0	mT
FOFFY	Y Magnetometer Offset	FBST-B	0	mT
FOFFZ	Z Magnetometer Offset	FBST-B	0	mT
ICMO	Inclinometry Computation Mode	FBST-B	Automatic Selection	
LOG_SPEED_RNG	Logging Speed Range	FBST-B	Normal (600 ft/h - 3600 ft/h)	
TD	Total Measured Depth	Borehole	256	m
USER_LOCB	User-supplied values for Magnetic Flux Density	WLSESSION	58322.11	nT
USER_MDEC	User-supplied values for Magnetic Declination	WLSESSION	14.38	deg
USER_MDIP	User-supplied values for Magnetic Dip Angle	WLSESSION	78.01	deg

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
ACCDATE	Date Accelerometer Coefficients Read from PROM	FBST-B	41693.31	
FBMV	EMEX Maximum Voltage Calculation	FBST-B	Off	
FLM	Logging Mode	FBST-B	Full Image Mode	
MAGDATE	Date Magnetometer Coefficients Read from PROM	FBST-B	41693.31	

MAXRATE	Data Magnetometer Coefficients Read from ROM	FBST-B	1163.01	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	548.64	m/h
TEMS	Temperature Sensor Used	FBST-B	Both	
XGAI_FBST	Gain Value in Manual Mode	FBST-B	00 dB	
XGMO	EMEX and Gain Modes	FBST-B	EMEX= Auto and Gain= Auto, Low Range	
XVOL	EMEX Voltage	FBST-B	0	V

ONE/2

Software Version

Acquisition System	Version
MaxWell	4.0.9163.3000
Application Patch	Patch-SP-10767_13393-4.0.9163.3001
	Patch-TestKit_ADT_Quicklook_2013SP1-14270-4.0.9163.3000
Computation	Description
DepthCorrection	DepthCorrection
Tool Elements	Description
FBSC-B	FullBore Scanner Sonde Cartridge
FBCC-A	FullBore Scanner Control Cartridge
GPIIC-C	GPIT GPIC Cartridge - C
HGNS-B	HILT Gamma-Ray and Neutron Sonde, 125 degC

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE/2	Log[2]:Up	Up	106.91 m	257.96 m	23-Feb-2014 12:33:17 AM	23-Feb-2014 12:51:20 AM	ON	-0.16 m	Yes

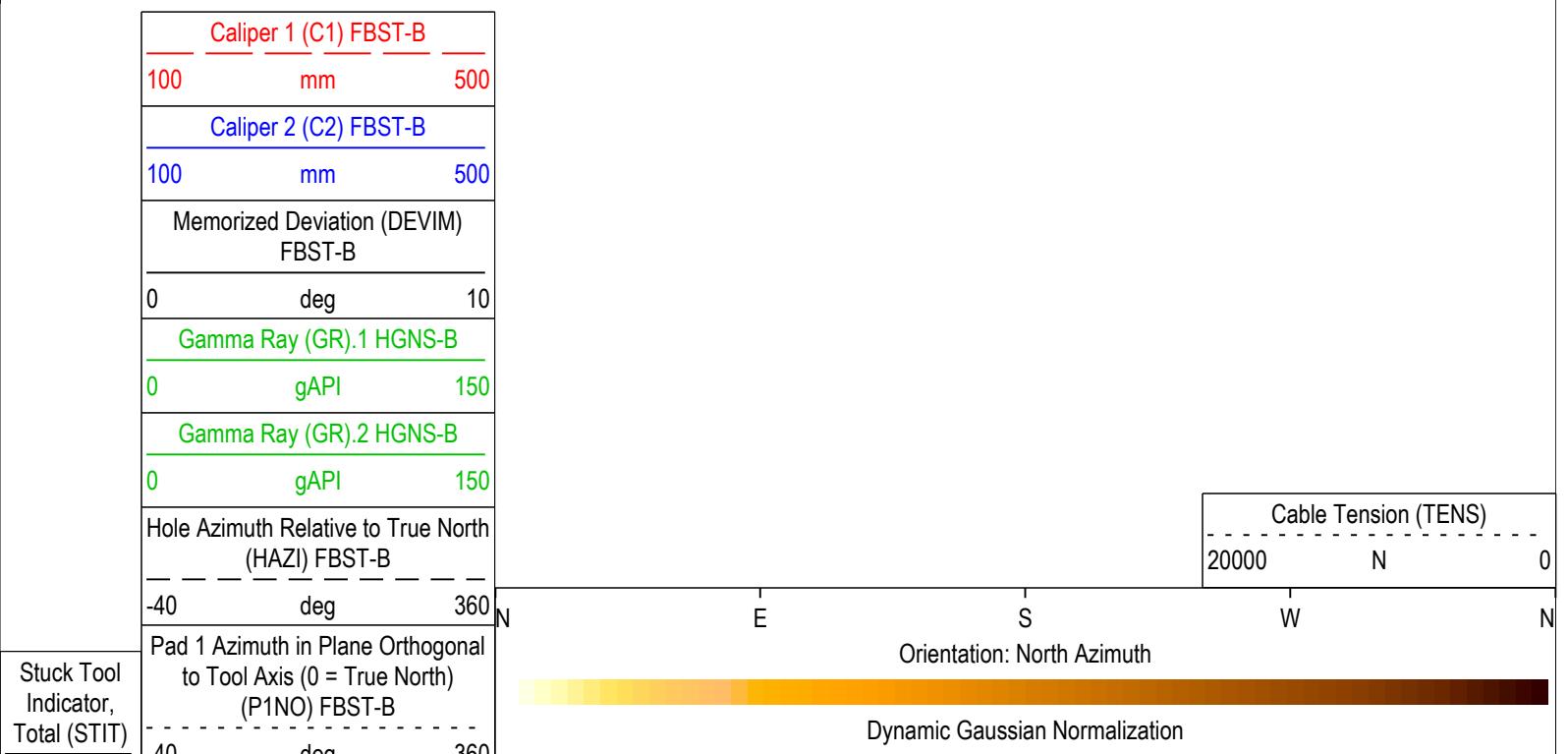
All depths are referenced to toolstring zero

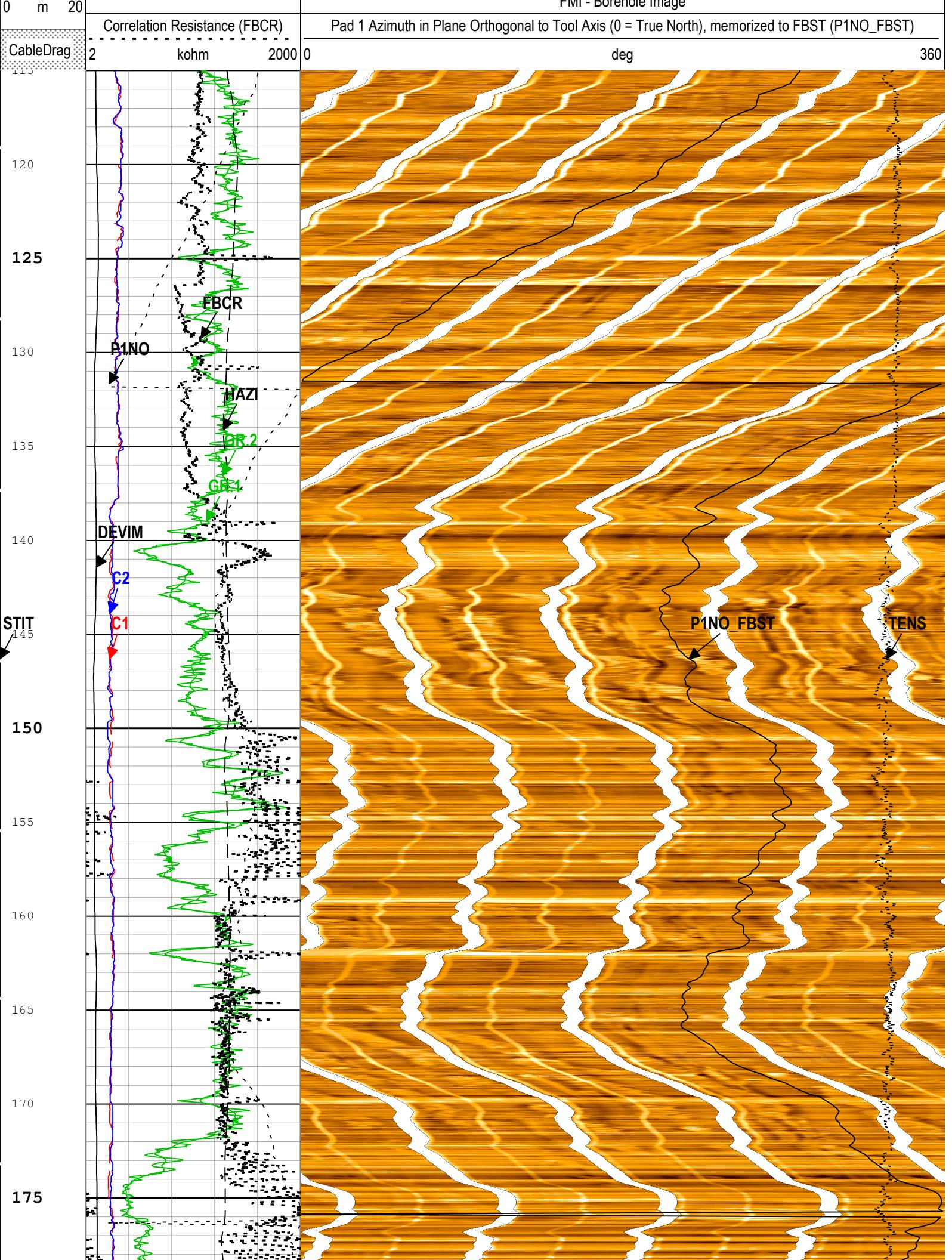
Log

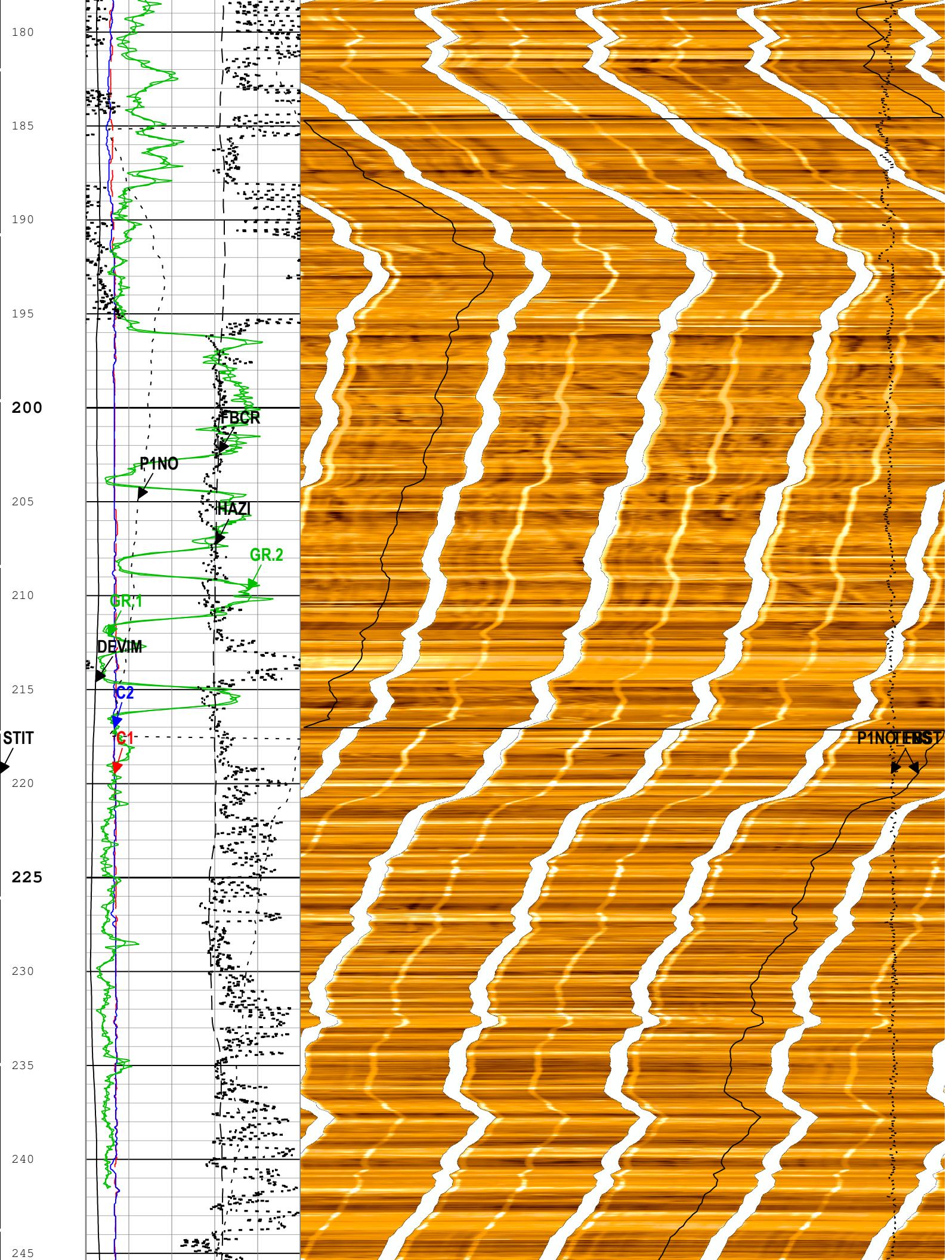
Company:SUNCOR ENERGY INC. Well:SUNCOR LEWIS 6-34-91-8
ONE/2: Log[2]:Up:S009

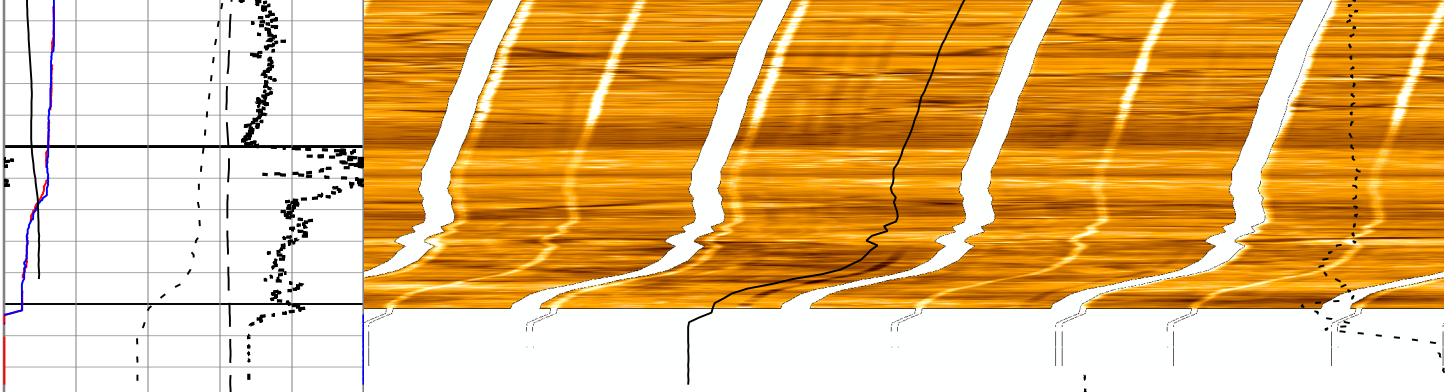
Description: FMI P1NO-Oriented Image Log Format: Log (FMI P1NO-Oriented Image Log_1) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:37:46

TIME_1900 - Time Marked every 60.00 (s)









Stuck Tool Indicator, Total (STIT)	Caliper 1 (C1) FBST-B 100 mm 500	Dynamic Gaussian Normalization
0 m 20	Caliper 2 (C2) FBST-B 100 mm 500	FMI - Borehole Image
CableDrag	Memorized Deviation (DEVIM) FBST-B 0 deg 10	Orientation: North Azimuth
	Gamma Ray (GR).1 HGNS-B 0 gAPI 150	N
	Gamma Ray (GR).2 HGNS-B 0 gAPI 150	E S W N
	Hole Azimuth Relative to True North (HAZI) FBST-B -40 deg 360	Pad 1 Azimuth in Plane Orthogonal to Tool Axis (0 = True North), memorized to FBST (P1NO_FBST) 0 deg 360
	Pad 1 Azimuth in Plane Orthogonal to Tool Axis (0 = True North) (P1NO) FBST-B -40 deg 360	Cable Tension (TENS) 20000 N 0
	Correlation Resistance (FBCR) 2 kohm 2000	

TIME_1900 - Time Marked every 60.00 (s)

Description: FMI P1NO-Oriented Image Log Format: Log (FMI P1NO-Oriented Image Log_1) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 24-Feb-2014 21:37:46

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
AOFFX	X Accelerometer Offset	FBST-B	0	m/s2
AOFFY	Y Accelerometer Offset	FBST-B	0	m/s2
AOFFZ	Z Accelerometer Offset	FBST-B	0	m/s2
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	mm
C1_SHIFT	C1 Caliper Supplementary Offset	FBST-B	-11	mm
C2_SHIFT	C2 Caliper Supplementary Offset	FBST-B	-6	mm
CBLO	Casing Bottom (Logger)	WLSESSION	73.2	m
CDEN	Cement Density	HGNS-B	2000	kg/m3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	1090	kg/m3
FDDB	Dead Buttons Detection	FBST-B	Off	
FDPB	Dead Buttons Patching	FBST-B	Off	
FOFFX	X Magnetometer Offset	FBST-B	0	uT

FOFFX	X Magnetometer Offset	FBST-B	0	mT
FOFY	Y Magnetometer Offset	FBST-B	0	mT
FOFFZ	Z Magnetometer Offset	FBST-B	0	mT
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	C2	
ICMO	Inclinometry Computation Mode	FBST-B	Automatic Selection	
LOG_SPEED_RNG	Logging Speed Range	FBST-B	Normal (600 ft/h - 3600 ft/h)	
TD	Total Measured Depth	Borehole	256	m
USER_LOCB	User-supplied values for Magnetic Flux Density	WLSESSION	58322.11	nT
USER_MDEC	User-supplied values for Magnetic Declination	WLSESSION	14.38	deg
USER_MDIP	User-supplied values for Magnetic Dip Angle	WLSESSION	78.01	deg

Depth Zone Parameters

Parameter	Value	Start (m)	Stop (m)	
BS	159	115	125.6	
BS	156	125.6	256	

All depth are actual.

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
ACCDATE	Date Accelerometer Coefficients Read from PROM	FBST-B	41693.31	
FBMV	EMEX Maximum Voltage Calculation	FBST-B	Off	
FLM	Logging Mode	FBST-B	Full Image Mode	
MAGDATE	Date Magnetometer Coefficients Read from PROM	FBST-B	41693.31	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	548.64	m/h
TEMS	Temperature Sensor Used	FBST-B	Both	
XGAI_FBST	Gain Value in Manual Mode	FBST-B	00 dB	
XGMO	EMEX and Gain Modes	FBST-B	EMEX= Auto and Gain= Auto, Low Range	
XVOL	EMEX Voltage	FBST-B	0	V

Calibration Report

FBST-B (Full-Bore Scanner Tool B) Calibration - Run ONE/2

Primary Equipment :

FBSS-B	FBSS-B	825
GPIC-C	GPIC-C	1770

Calibration Parameter :

Small Ring Size (Caliper Calibration Small Ring)	203.2
Large Ring Size (Caliper Calibration Large Ring)	304.8

FBST Caliper Calibration - Caliper Accumulations

Before (Measured): 20:27:01 21-Feb-2014 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
Small Ring RC1	mm	Before	203.2	172.7	197.2	233.7		
Small Ring RC2	mm	Before	203.2	172.7	193.8	233.7		
Large Ring RC1	mm	Before	304.8	259.1	297.2	350.5		
Large Ring RC2	mm	Before	304.8	259.1	289.2	350.5		

GPIC Accelerometer Calibration - Accelerometer Coef Reading

Master (EEPROM): 18:00:00 14-Sep-2003

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
Reference Temperature	degC	Master			20			
Serial Number		Master			879			
Coefficients - 0		Master	0	----	-0.0018	----		
Coefficients - 1		Master	0	----	-0.0002	----		
Coefficients - 2		Master	0	----	0.0002	----		
Coefficients - 3		Master	0	----	-0.0002	----		
Coefficients - 4		Master	0	----	-4E-06	----		

Coefficients - 5		Master	0	----	-7E-05	----	
Coefficients - 6		Master	0	----	1E-06	----	
Coefficients - 7		Master	0	----	2E-05	----	
Coefficients - 8		Master	0	----	8E-08	----	
Coefficients - 9		Master	0	----	1.6E-07	----	
Coefficients - 10		Master	0	----	-1E-08	----	
Coefficients - 11		Master	0	----	-1E-08	----	
Coefficients - 12		Master	0	----	-0.0014	----	
Coefficients - 13		Master	0	----	-0.0004	----	
Coefficients - 14		Master	0	----	-0.0004	----	
Coefficients - 15		Master	0	----	-0.0002	----	
Coefficients - 16		Master	0	----	1.2E-05	----	
Coefficients - 17		Master	0	----	0	----	
Coefficients - 18		Master	0	----	-7.6E-05	----	
Coefficients - 19		Master	0	----	1.9E-05	----	
Coefficients - 20		Master	0	----	-2E-08	----	
Coefficients - 21		Master	0	----	0	----	
Coefficients - 22		Master	0	----	4E-08	----	
Coefficients - 23		Master	0	----	-1E-08	----	
Coefficients - 24		Master	0	----	-0.0014	----	
Coefficients - 25		Master	0	----	-0.0001	----	
Coefficients - 26		Master	0	----	0.0005	----	
Coefficients - 27		Master	0	----	0	----	
Coefficients - 28		Master	0	----	1.8E-05	----	
Coefficients - 29		Master	0	----	-3E-06	----	
Coefficients - 30		Master	0	----	-2.2E-05	----	
Coefficients - 31		Master	0	----	-4.4E-05	----	
Coefficients - 32		Master	0	----	-6E-08	----	
Coefficients - 33		Master	0	----	2E-08	----	
Coefficients - 34		Master	0	----	1E-08	----	
Coefficients - 35		Master	0	----	1.2E-07	----	

GPIC Magnetometer Calibration - Magnetometer Coef Reading

Master (EEPROM):	18:00:00 14-Aug-2003						
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Reference Temperature	degC	Master			22		
Serial Number		Master			563		
Coefficients - 0		Master	0	----	-0.0036	----	
Coefficients - 1		Master	0	----	-0.0104	----	
Coefficients - 2		Master	0	----	0.0046	----	
Coefficients - 3		Master	0	----	-0.0064	----	
Coefficients - 4		Master	0	----	1E-05	----	
Coefficients - 5		Master	0	----	-6.8E-05	----	
Coefficients - 6		Master	0	----	-3E-06	----	
Coefficients - 7		Master	0	----	2E-06	----	
Coefficients - 8		Master	0	----	-1E-07	----	
Coefficients - 9		Master	0	----	2E-08	----	
Coefficients - 10		Master	0	----	2E-08	----	
Coefficients - 11		Master	0	----	1E-08	----	
Coefficients - 12		Master	0	----	-0.0014	----	
Coefficients - 13		Master	0	----	0	----	
Coefficients - 14		Master	0	----	-0.0076	----	
Coefficients - 15		Master	0	----	0.003	----	
Coefficients - 16		Master	0	----	-2.2E-05	----	
Coefficients - 17		Master	0	----	1E-06	----	
Coefficients - 18		Master	0	----	-6.6E-05	----	
Coefficients - 19		Master	0	----	-1E-06	----	
Coefficients - 20		Master	0	----	-1.6E-07	----	
Coefficients - 21		Master	0	----	-1E-08	----	
Coefficients - 22		Master	0	----	0	----	
Coefficients - 23		Master	0	----	-1E-08	----	
Coefficients - 24		Master	0	----	-0.0036	----	
Coefficients - 25		Master	0	----	-0.0004	----	
Coefficients - 26		Master	0	----	-0.002	----	
Coefficients - 27		Master	0	----	-0.0072	----	

Coefficients - 28		Master	0	----	2E-05	----		
Coefficients - 29		Master	0	----	-5E-06	----		
Coefficients - 30		Master	0	----	2E-06	----		
Coefficients - 31		Master	0	----	-7E-05	----		
Coefficients - 32		Master	0	----	-8E-08	----		
Coefficients - 33		Master	0	----	2E-08	----		
Coefficients - 34		Master	0	----	0	----		
Coefficients - 35		Master	0	----	4E-08	----		

Survey Record

Survey Calculation																																						
Method :		Minimum Radius of Curvature				DLS Method :				Lubinski																												
North Reference :		True North				Total Correction Formula :				Magnetic Dec																												
Rig Location																																						
Latitude : 56.934500 degrees																																						
Tie In Point																																						
Measured Depth: 0.00 m			Inclination: 0.00 deg			Azimuth: 0.00 deg			Longitude : -111.20540 degrees																													
True Vertical Depth: 0.00 m			North Displacement: 0.00 m			East Displacement: 0.00 m																																
Survey Quality Index																																						
9 : Manual					28 : Tie-In Point																																	
Survey Correction Index																																						
0 : No correction																																						
Survey Description Index																																						
0 : Not Flagged Survey																																						
Seq	MD (m)	Incl (deg)	Azim (deg)	Course (m)	TVD (m)	V Sec (m)	N/-S (m)	E/-W (m)	Closure (m)	at Azim (deg)	DLS deg/30m	Tool Type	QI	CI	DI																							
1	0.00	0.00	0.00	----	0.00	0.00	0.00	0.00	0.00	90.00	0.00	TIP	28	0	0																							
2	71.17	0.56	326.01	71.17	71.17	0.29	0.29	-0.19	0.35	326.01	0.23	FBST-B	9	0	0																							
3	80.31	0.52	223.62	9.14	80.31	0.29	0.29	-0.25	0.38	319.99	2.74	FBST-B	9	0	0																							
4	89.46	0.53	211.41	9.14	89.46	0.23	0.23	-0.30	0.37	307.48	0.37	FBST-B	9	0	0																							
5	98.60	0.42	222.78	9.14	98.60	0.17	0.17	-0.34	0.38	296.06	0.48	FBST-B	9	0	0																							
6	107.75	0.48	220.66	9.14	107.74	0.11	0.11	-0.39	0.41	286.21	0.23	FBST-B	9	0	0																							
7	116.89	0.49	232.08	9.14	116.89	0.06	0.06	-0.44	0.45	277.65	0.32	FBST-B	9	0	0																							
8	126.03	0.49	225.97	9.14	126.03	0.01	0.01	-0.50	0.50	270.99	0.17	FBST-B	9	0	0																							
9	135.18	0.52	220.47	9.14	135.18	-0.05	-0.05	-0.56	0.56	264.91	0.19	FBST-B	9	0	0																							
10	144.32	0.52	225.40	9.14	144.32	-0.11	-0.11	-0.61	0.62	259.83	0.15	FBST-B	9	0	0																							
11	153.47	0.52	230.62	9.14	153.46	-0.17	-0.17	-0.68	0.70	256.23	0.16	FBST-B	9	0	0																							
12	162.61	0.58	223.55	9.14	162.61	-0.23	-0.23	-0.74	0.77	253.05	0.28	FBST-B	9	0	0																							
13	171.75	0.56	225.22	9.14	171.75	-0.29	-0.29	-0.80	0.85	250.14	0.09	FBST-B	9	0	0																							
14	180.90	0.56	220.30	9.14	180.89	-0.36	-0.36	-0.86	0.93	247.62	0.16	FBST-B	9	0	0																							
15	190.04	0.58	215.08	9.14	190.04	-0.43	-0.43	-0.92	1.01	245.05	0.18	FBST-B	9	0	0																							
16	199.19	0.45	208.33	9.14	199.18	-0.50	-0.50	-0.96	1.08	242.70	0.47	FBST-B	9	0	0																							
17	208.33	0.56	202.76	9.14	208.32	-0.57	-0.57	-1.00	1.15	240.28	0.39	FBST-B	9	0	0																							
18	217.47	0.44	211.26	9.14	217.47	-0.64	-0.64	-1.03	1.22	238.20	0.45	FBST-B	9	0	0																							
19	226.62	0.29	189.32	9.14	226.61	-0.69	-0.69	-1.05	1.26	236.68	0.66	FBST-B	9	0	0																							
20	235.76	0.39	211.02	9.14	235.76	-0.74	-0.74	-1.07	1.31	235.32	0.53	FBST-B	9	0	0																							
21	244.91	0.60	207.10	9.14	244.90	-0.81	-0.81	-1.11	1.38	233.85	0.68	FBST-B	9	0	0																							

Company: SUNCOR ENERGY INC.

Schlumberger

Well: SUNCOR LEWIS 6-34-91-8

Field: LEWIS

Province: ALBERTA

**FULLBORE MICRO
IMAGER LOG**

*****MD*****