

Schlumberger

Company: **SANDRIDGE ENERGY**

Well: **BARBARA 3404 1-4H**

Field: **BLUFF**

County: **SUMNER**

State: **KANSAS**

Well: BARBARA 3404 1-4H
Field: BLUFF
County: SUMNER
State: KANSAS

Field: **BLUFF**
County: **SUMNER** State: **KANSAS**

County: **SUMNER** State: **KANSAS**

County: SUMNER	
Field: BLUFF	
Location: 350' FSL & 1550' FWL	
Well: BARBARA 3404 1-4H	
Company: SANDRIDGE ENERGY	
BOREHOLE PROFILE GAMMA RAY MEMORY LOG	
350' FSL & 1550' FWL	Elev.: K.B. 1232.00 ft G.L. 1217.00 ft D.F. 1232.00 ft
Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	GROUND LEVEL Elev.: 1217.00 ft 15.00 ft above Perm. Datum
API Serial No. 15191227320100	Section 4 Township 34S Range 4W

County: SUMNER	
Field: BLUFF	
Location: 350' FSL & 15'	
Well: BARBARA 34	
Company: SANDRIDGE	
LOCATION	
Permanent Datum:	GROUND LEVEL
Log Measured From:	D.F. 15.00 ft above Perm. Datum
Drilling Measured From:	D.F. 1217.00 ft
API Serial No. 15191227320100	Section 4
	Township 34S
	Range 4W

County:	SU			
Field:	BL			
Location:	35			
Well:	BA			
Company:	SA			
	LC			
	Log Measured From:	D.F.	15.00 ft above Perm. Datum	
	Drilling Measured From:	D.F.		
API Serial No. 15191227320100	Section 4	Township 34S	Range 4W	

[illegible]

Logging Date						28-May-2014					
Run Number						1					
Depth Driller						8732 ft					
Schlumberger Depth						8699 ft					
Bottom Log Interval						8678 ft					
Top Log Interval						5394 ft					
Casing Driller Size @ Depth						7,000 in @ 5345 ft					
Casing Schlumberger						5394 ft					
Bit Size						6.125 in					
Type Fluid In Hole						WBM					
Density						8.4 lbm/gal					
Viscosity						28 s					
Fluid Loss						PH 21 cm3 10					
Source Of Sample						MUD SENSOR					
RM @ Measured Temperature						0.560 ohm.m @ 65 degF					
RMF @ Measured Temperature						0.470 ohm.m @ 65 degF					
RMC @ Measured Temperature						0.640 ohm.m @ 65 degF					
Source RMF RMC						CALCULATED CALCULATED					
RM @ MRT RMF @ MRT						0.258 @ 149 0.217 @ 149					
Maximum Recorded Temperatures						149 degF					
Circulation Stopped						Time 28-May-2014 3:00					
Logger On Bottom						Time 28-May-2014 3:52					
Unit Number Location						5 OKC					
Recorded By						C.PARKER					
Witnessed By						T.BOARDMEN					

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.

REMA

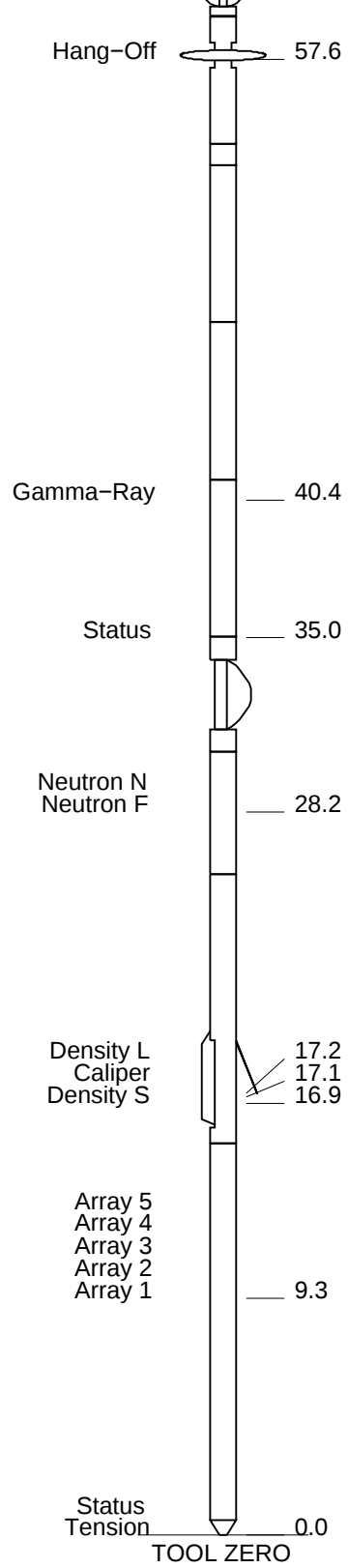
STOP

RUN 2

WITM (ThruBit)

67.1

TMG-A 27
TILE-A
TBN-A 27
NNLS-EWA 4484
TBD-A 43
GGLS-FZ 3216
TBI-A 48



MAXIMUM STRING DIAMETER 2.13 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS

MAXIS Field Log

Company: SANDRIDGE ENERGY Well: BARBARA 3404 1-4H

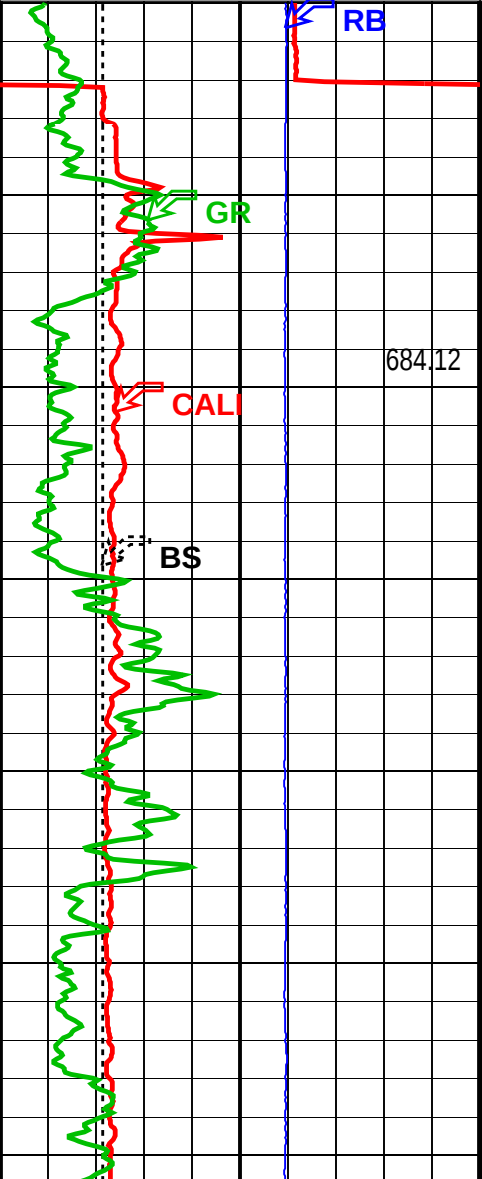
Input DLIS Files				
ThruBit_006PUP	FN:5	28-May-2014 22:03	8695.2 FT	2398.0 FT

OP System Version: 19C2-270	
TBT	SRPC-5298-ThruBit_b

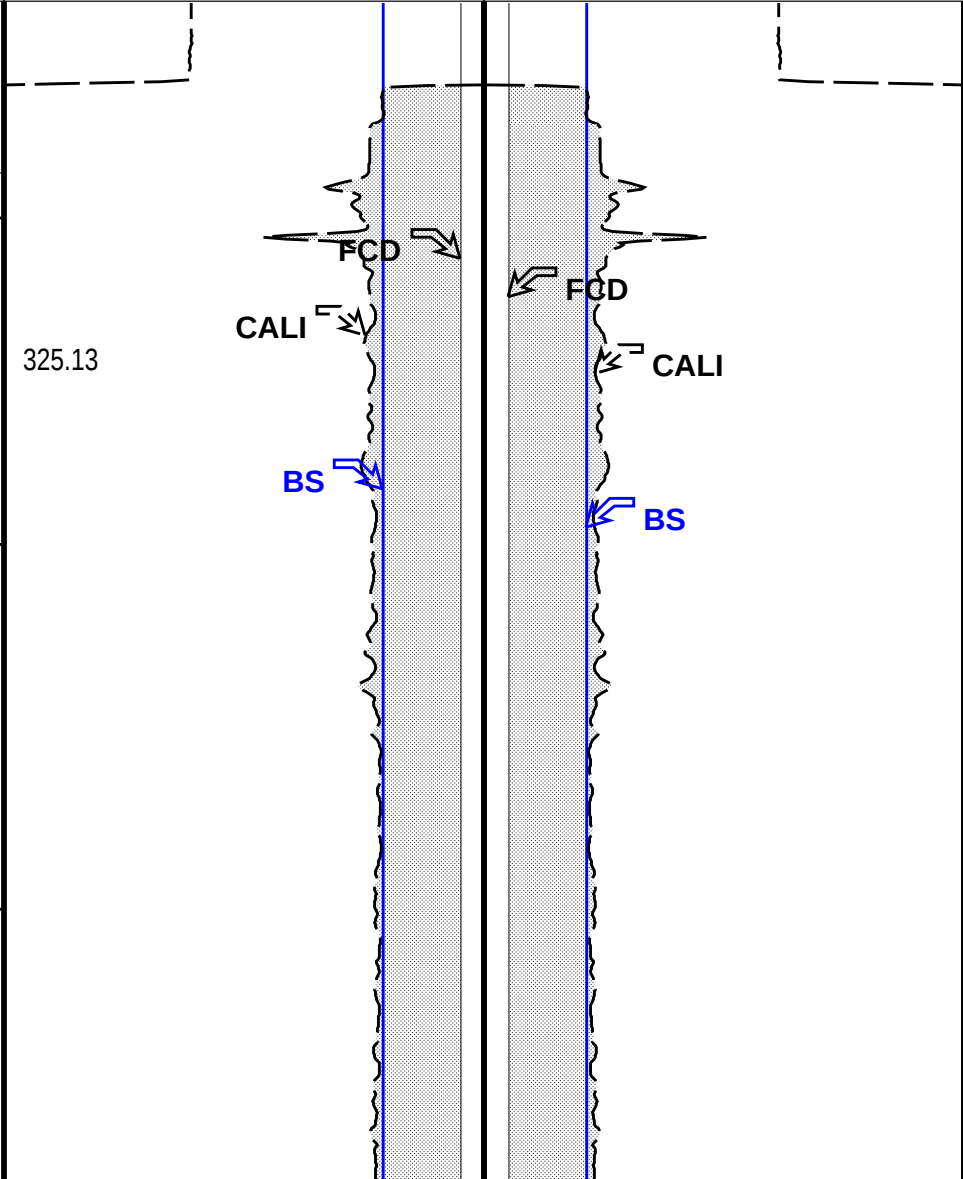
PIP SUMMARY	
└ Integrated Cement Volume Major Pip Every 100 F3	
└ Integrated Cement Volume Minor Pip Every 10 F3	
└	Integrated Hole Volume Major Pip Every 100 F3
└	Integrated Hole Volume Minor Pip Every 10 F3

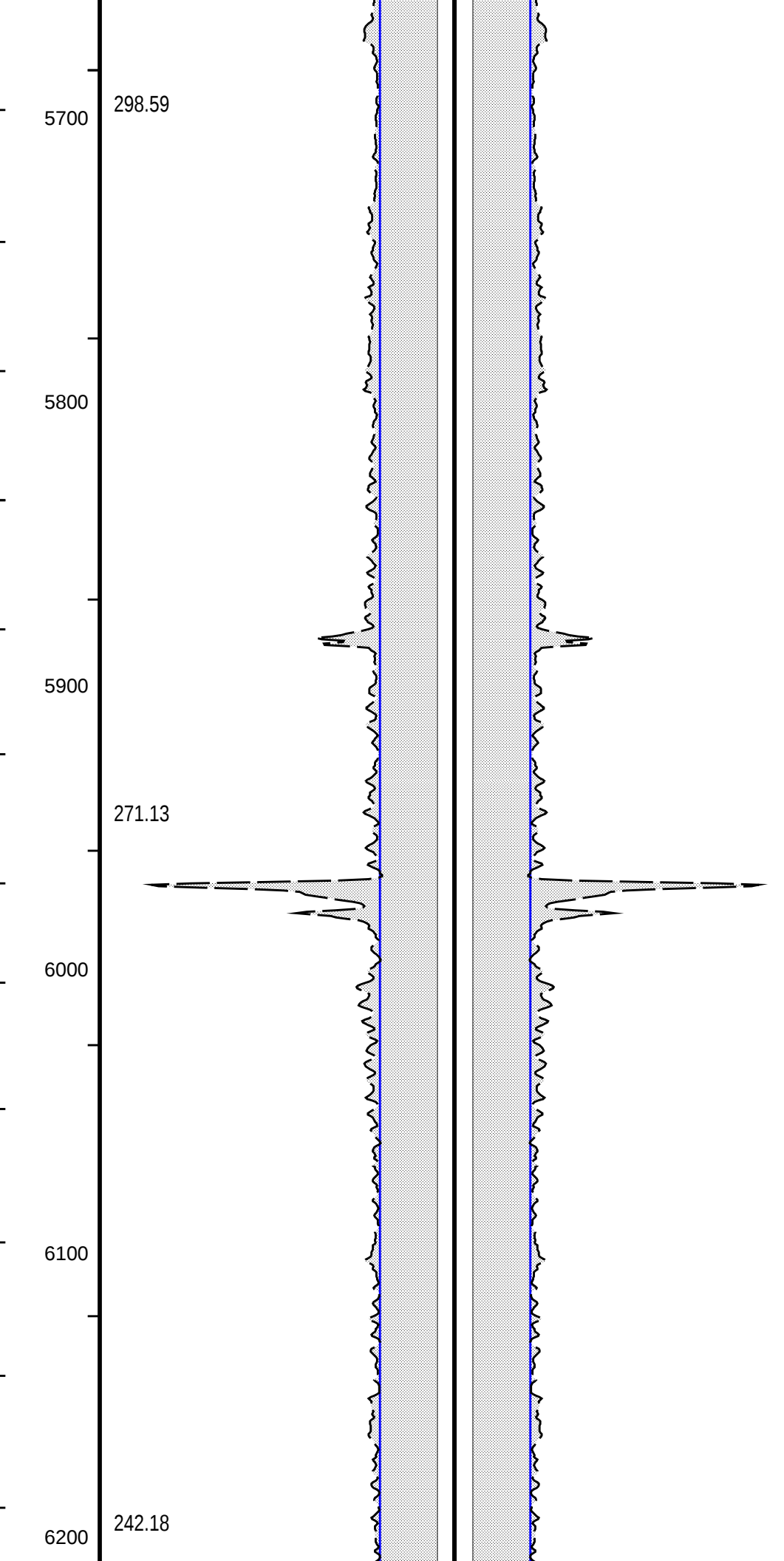
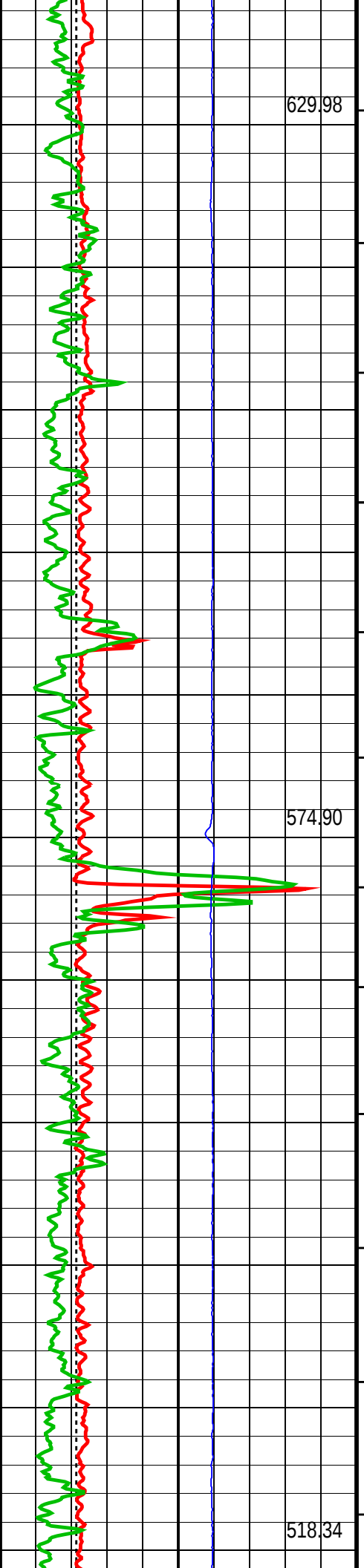
	Relative Bearing (RB)	
	0 (DEG)	940
gr wrap4 From LHT1 to GR4		
gr wrap3 From LHT1 to GR3		
gr wrap2		

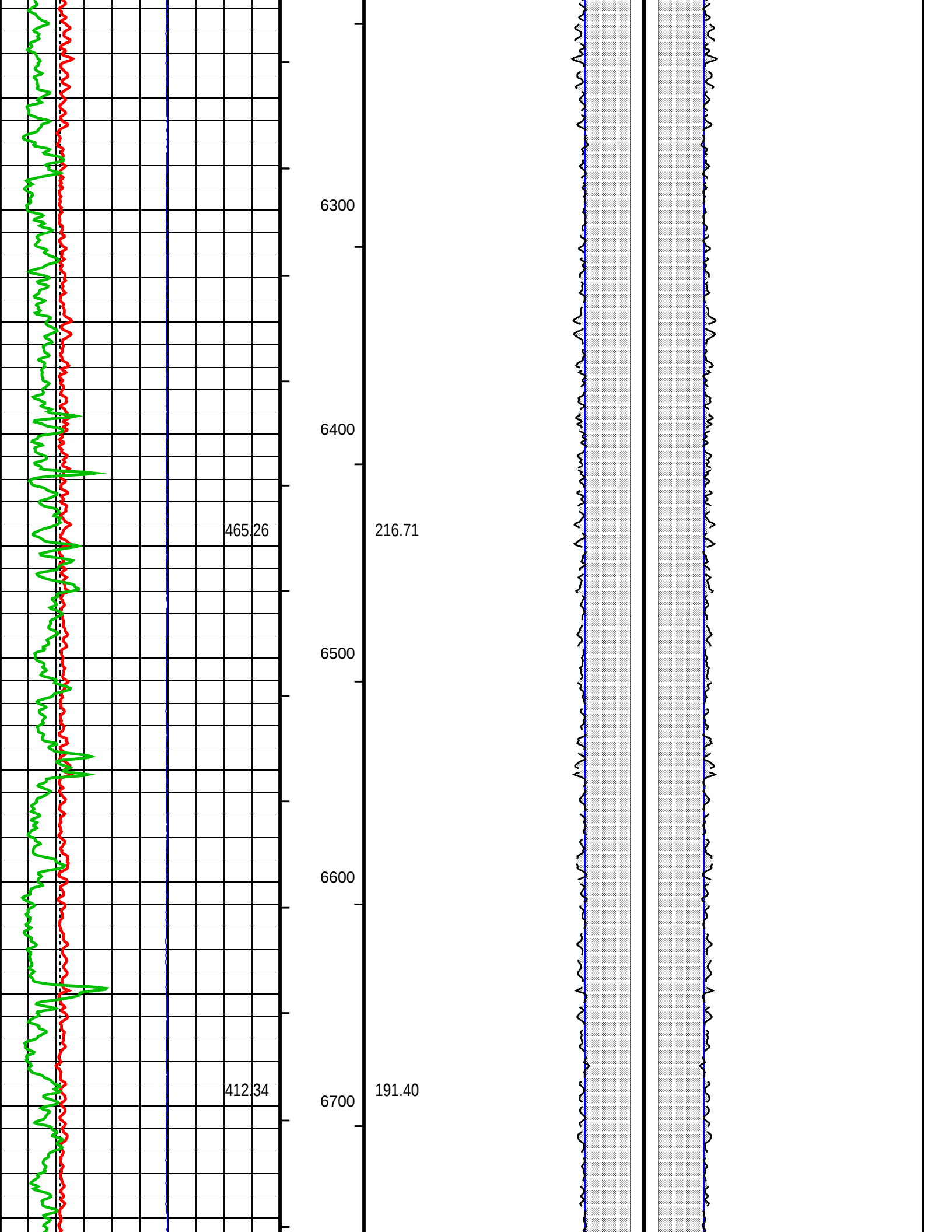
gr wrap1 From LHT1 to GR1		
Gamma Ray (GR)		
0	(GAPI)	150
Caliper (CALI)		
4	(IN)	14
Gamma Ray 4 (GR)		
600	(GAPI)	750
Gamma Ray 3 (GR)		
450	(GAPI)	600
Gamma Ray 2 (GR)		
300	(GAPI)	450
Gamma Ray 1 (GR)		
150	(GAPI)	300
Bit Size (BS)		
4	(IN)	14
HOLE VOLUME (IHV) (----		Tension (TENS) (LBF)
		0 5000

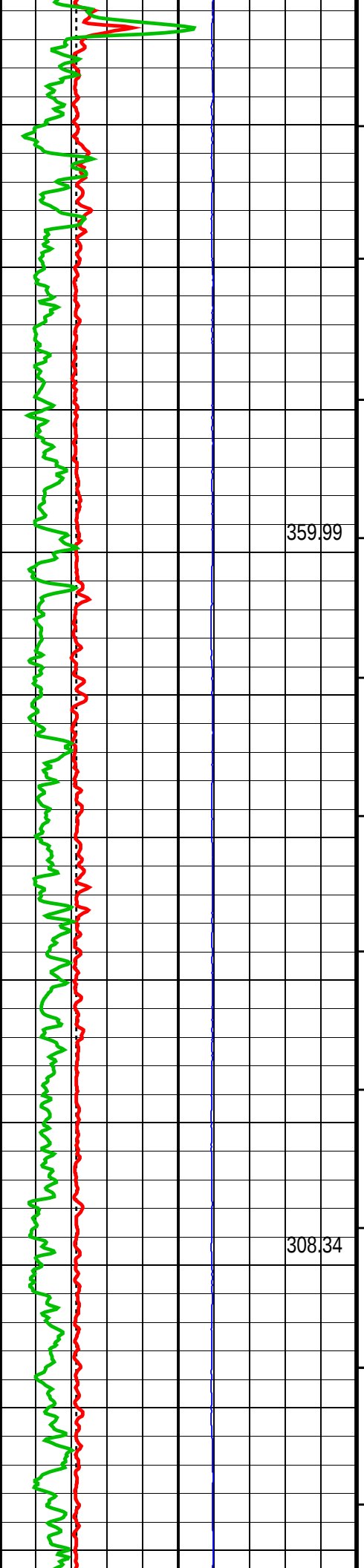


ANNULAR From CALI_1 to FCD_1			
CEMENT VOLUME (ICV) (----		ANNULAR From FCD to CALI	
FCD_1 (FCD) (IN)		FCD (FCD) (IN)	
14		4 4	14
Caliper (CALI) (IN)		Caliper (CALI) (IN)	
14		4 4	14
Bit Size (BS) (IN)		Bit Size (BS) (IN)	
14		4 4	14









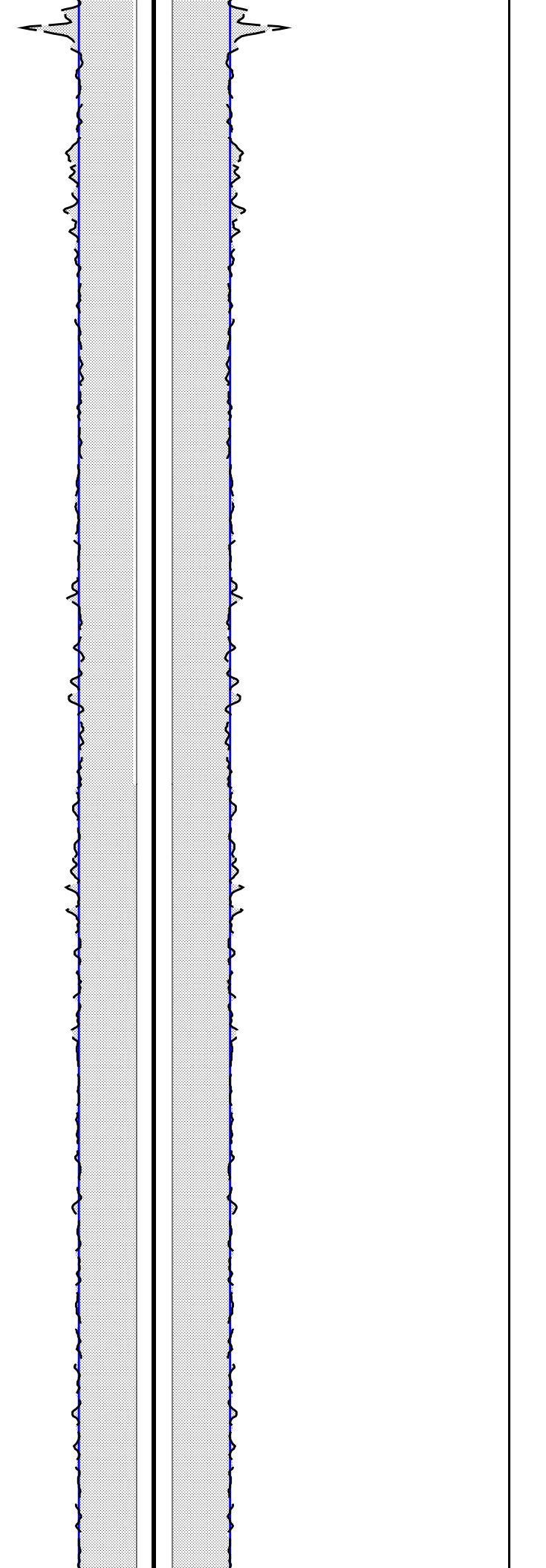
6800
6900
7000
7100
7200
7300

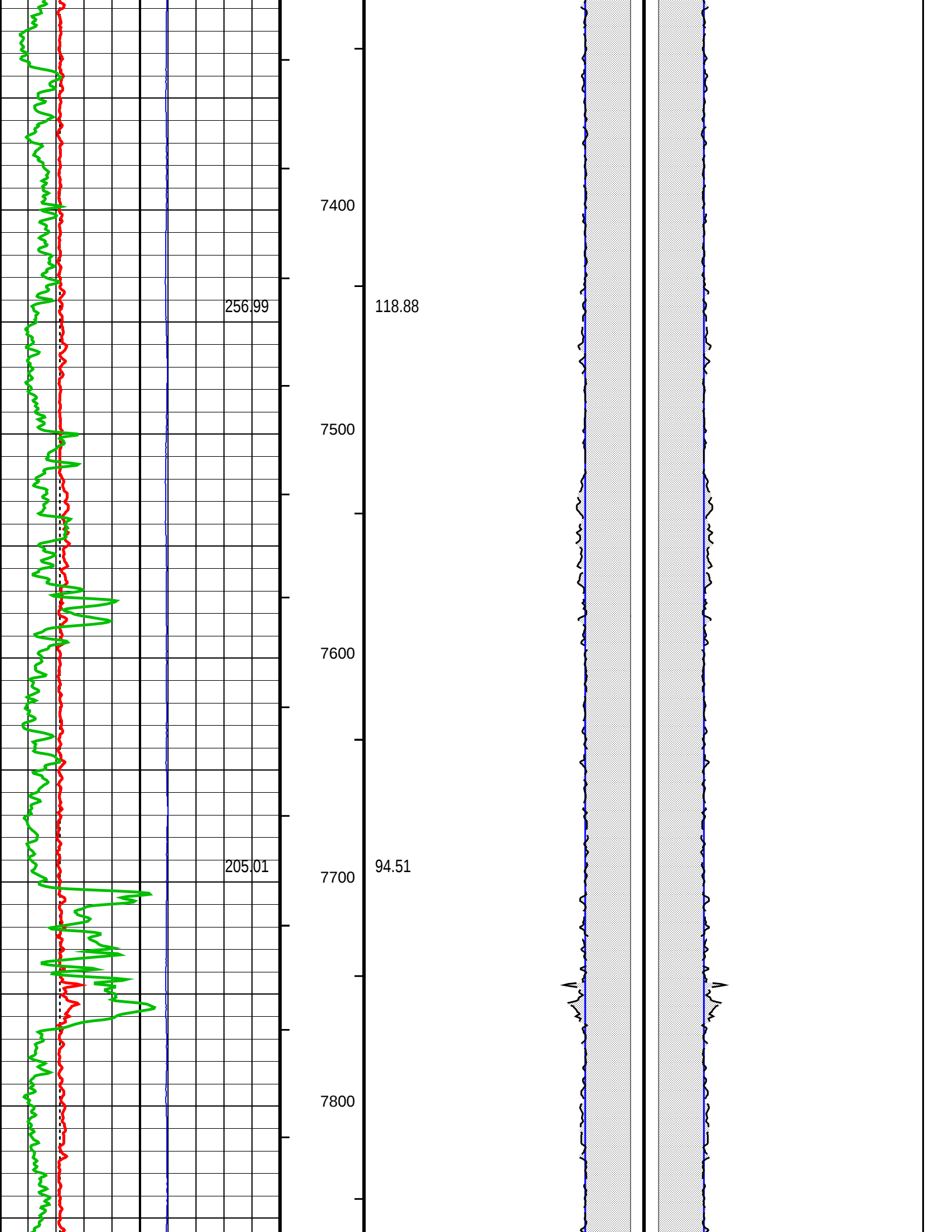
359.99

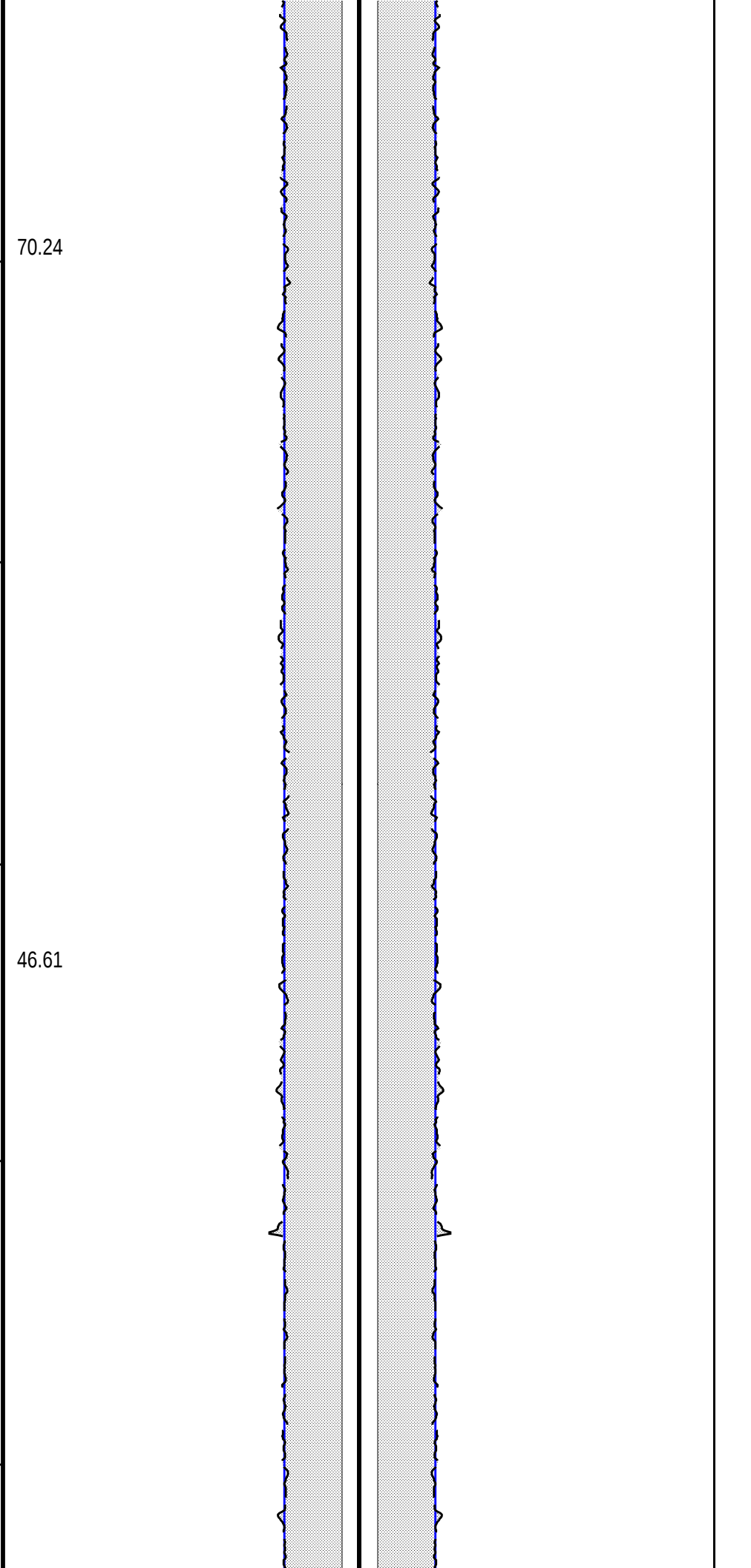
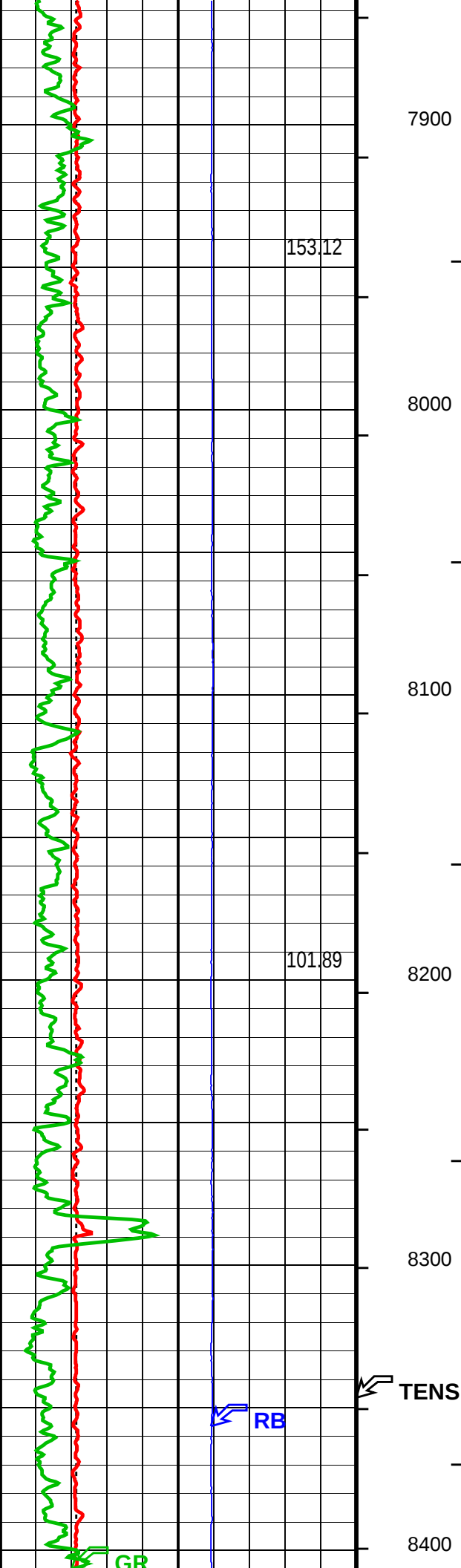
308.34

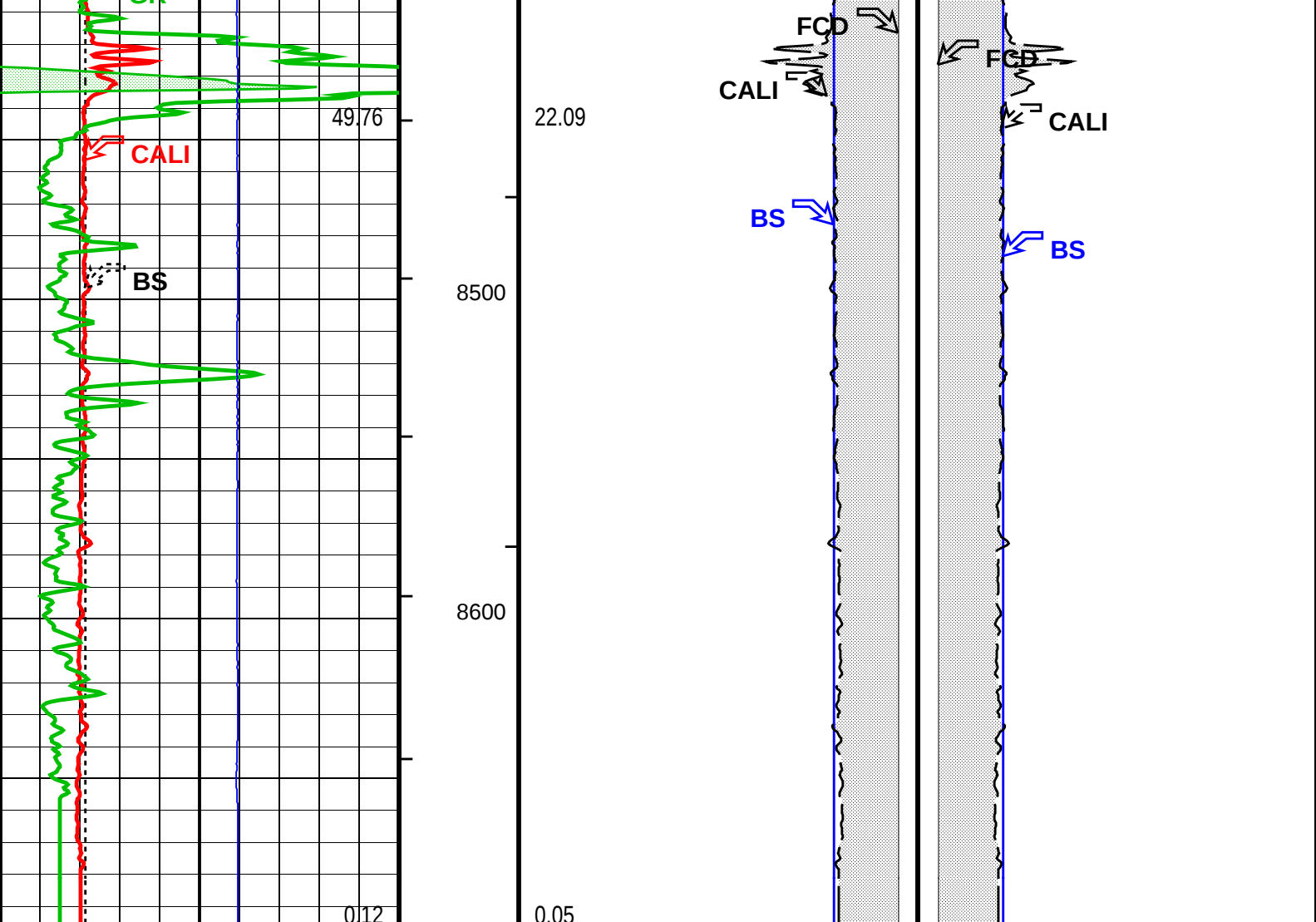
166.66

142.62









HOLE VOLUME (IHV) (----	Tension (TENS) (LBF)	Bit Size (BS)		Bit Size (BS)	
	05000	14	(IN)	44	(IN)14
Bit Size (BS) -----		14	Caliper (CALI) (IN)	44	Caliper (CALI) (IN)14
Gamma Ray 1 (GR) (GAPI)		14	FCD_1 (FCD) (IN)	44	FCD (FCD) (IN)14
Gamma Ray 2 (GR) (GAPI)		CEMENT VOLUME (ICV) (----		ANNULAR From FCD to CALI	
Gamma Ray 3 (GR) (GAPI)		ANNULAR From CALI_1 to FCD_1			
Gamma Ray 4 (GR) (GAPI)					
Caliper (CALI) (IN)					
Gamma Ray (GR) (GAPI)					
gr wrap1 From LHT1 to GR1					
gr wrap2 From LHT1 to GR2					
gr wrap3					

gr wrap4
From LHT1 to GR4

Relative Bearing (RB)	
0	94

- └ Integrated Cement Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Hole Volume Minor Pip Every 10 F3

DLIS Name	Description	Value	
RB_OFFSET	TBT-A: ThruBit String Additional RB offset (degrees)	0.000	deg
FCD	HOLEV: Integrated Hole/Cement Volume Future Casing (Outer) Diameter	4.500	in
BS	System and Miscellaneous Bit Size	6.125	in

Format: TB BOREHOLE Vertical Scale: 2" per 100' Graphics File Created: 28-May-2014 22:09

OP System Version: 19C2-270

TBT SRPC-5298-ThruBit b

Input DLIS Files

ThruBit 006PUP	FN:5	28-May-2014 22:03	8695.2 FT	2398.0 FT
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CALIBRATIONS

MAXIS Field Log

ThruBit String / Equipment Identification

Primary Equipment:

Induction Resistivity	TBI – A	48
Density	TBD – A	43
Gamma-Ray Logging Source	GGLS – FZ	3216
Thermal Neutron	TBN – A	27
Neutron Logging Source	NNLS – EWA	4484
Telemetry Memory GR	TMG – A	27
Battery	TBAT –	35
Battery	TBAT –	13

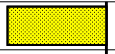
Auxiliary Equipment:

ThruBit String Master Calibration					
TBI Master Calibration Sonde Errors					
Freq 1, A1, R		Value	Nominal	Freq 1, A1, X	
		-475.662	-457.000		
-536.000	-387.000		-500.000	1100.00	

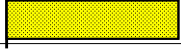
(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)	
Freq 1, A2, R		Value	Nominal	Freq 1, A2, X		Value	Nominal
		-148.883	-141.000			17.2923	320.000
-162.000 (Minimum)	(Nominal)	-120.000 (Maximum)		-75.0000 (Minimum)	(Nominal)	700.000 (Maximum)	
Freq 1, A3, R		Value	Nominal	Freq 1, A3, X		Value	Nominal
		-30.2273	-28.0000			-45.4175	50.0000
-38.0000 (Minimum)	(Nominal)	-18.0000 (Maximum)		-375.000 (Minimum)	(Nominal)	475.000 (Maximum)	
Freq 1, A4, R		Value	Nominal	Freq 1, A4, X		Value	Nominal
		-16.8583	-16.0000			224.452	300.000
-24.0000 (Minimum)	(Nominal)	-8.00000 (Maximum)		25.0000 (Minimum)	(Nominal)	575.000 (Maximum)	
Freq 1, A5, R		Value	Nominal	Freq 1, A5, X		Value	Nominal
		-14.8593	-14.0000			109.636	150.000
-21.0000 (Minimum)	(Nominal)	-7.00000 (Maximum)		25.0000 (Minimum)	(Nominal)	275.000 (Maximum)	
Freq 2, A1, R		Value	Nominal	Freq 2, A1, X		Value	Nominal
		-246.838	-237.000			-47.1666	150.000
-293.000 (Minimum)	(Nominal)	-186.000 (Maximum)		-375.000 (Minimum)	(Nominal)	675.000 (Maximum)	
Freq 2, A2, R		Value	Nominal	Freq 2, A2, X		Value	Nominal
		-96.6990	-92.0000			-16.8976	160.000
-106.000 (Minimum)	(Nominal)	-76.0000 (Maximum)		-100.000 (Minimum)	(Nominal)	425.000 (Maximum)	
Freq 2, A3, R		Value	Nominal	Freq 2, A3, X		Value	Nominal
		-21.8469	-21.0000			-82.2379	-20.0000
-28.0000 (Minimum)	(Nominal)	-13.0000 (Maximum)		-325.000 (Minimum)	(Nominal)	250.000 (Maximum)	
Freq 2, A4, R		Value	Nominal	Freq 2, A4, X		Value	Nominal
		-19.8901	-20.0000			57.4657	100.000
-28.0000 (Minimum)	(Nominal)	-10.0000 (Maximum)		-75.0000 (Minimum)	(Nominal)	275.000 (Maximum)	
Freq 2, A5, R		Value	Nominal	Freq 2, A5, X		Value	Nominal
		-19.6387	-20.0000			-27.9072	-25.0000
-27.0000 (Minimum)	(Nominal)	-10.0000 (Maximum)		-125.000 (Minimum)	(Nominal)	75.0000 (Maximum)	
Freq 3, A1, R		Value	Nominal	Freq 3, A1, X		Value	Nominal
		-156.728	-149.000			-106.926	25.0000
-193.000 (Minimum)	(Nominal)	-108.000 (Maximum)		-375.000 (Minimum)	(Nominal)	425.000 (Maximum)	
Freq 3, A2, R		Value	Nominal	Freq 3, A2, X		Value	Nominal
		-73.8182	-70.0000			-53.9371	70.0000
-81.0000 (Minimum)	(Nominal)	-57.0000 (Maximum)		-125.000 (Minimum)	(Nominal)	250.000 (Maximum)	
Freq 3, A3, R		Value	Nominal	Freq 3, A3, X		Value	Nominal
		-17.9160	-17.0000			-119.884	-90.0000
-23.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-300.000 (Minimum)	(Nominal)	125.000 (Maximum)	
Freq 3, A4, R		Value	Nominal	Freq 3, A4, X		Value	Nominal
		-21.5775	-22.0000			-55.4654	-50.0000
-31.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-200.000 (Minimum)	(Nominal)	100.000 (Maximum)	
Freq 3, A5, R		Value	Nominal	Freq 3, A5, X		Value	Nominal
		-22.3506	-22.0000			-130.465	-110.000
-32.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-250.000 (Minimum)	(Nominal)	-25.0000 (Maximum)	
Freq 4, A1, R		Value	Nominal	Freq 4, A1, X		Value	Nominal
		-86.0029	-80.0000			-232.020	-190.000
-108.000 (Minimum)	(Nominal)	-54.0000 (Maximum)		-450.000 (Minimum)	(Nominal)	75.0000 (Maximum)	
Freq 4, A2, R		Value	Nominal	Freq 4, A2, X		Value	Nominal
		-53.0604	-50.0000			-120.146	-75.0000
-60.0000		-41.0000		-200.000		50.0000	

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Freq 4, A3, R			Freq 4, A3, X		
					
-19.0000 (Minimum)	(Nominal)	-8.00000 (Maximum)	-350.000 (Minimum)	(Nominal)	-25.0000 (Maximum)
Freq 4, A4, R			Freq 4, A4, X		
					
-37.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)	-400.000 (Minimum)	(Nominal)	-75.0000 (Maximum)
Freq 4, A5, R			Freq 4, A5, X		
					
-43.0000 (Minimum)	(Nominal)	-12.0000 (Maximum)	-475.000 (Minimum)	(Nominal)	-125.000 (Maximum)
Master: 11-Mar-2014 11:48					

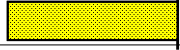
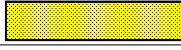
ThruBit String Master Calibration					
TBI Master Calibration COMPLEX GAINS					
Freq 1, R			Freq 1, X		
					
					
					
					
					
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)	-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)
Freq 2, R			Freq 2, X		
					
					
					
					
					
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)	-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)
Freq 3, R			Freq 3, X		
					
					
					
					
					
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)	-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)
Freq 4, R			Freq 4, X		
					
					
					
					
					
0.9300 (Minimum)	(Nominal)	1.070 (Maximum)	-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)
Master: 11-Mar-2014 11:48					

ThruBit String Master Calibration								
TBD Caliper Master Calibration								
Caliper 12in Ring IN	Value	Nominal	Caliper 9in Ring IN	Value	Nominal	Caliper 6in Ring IN	Value	Nominal
	1918.4	1949.8		2046.2	2096.7		2176.2	2285.7
1799.8 (Minimum)	(Nominal)	2099.8 (Maximum)	1946.7 (Minimum)	(Nominal)	2246.7 (Maximum)	2135.7 (Minimum)	(Nominal)	2435.7 (Maximum)

Master: 9-Mar-2014 11:01

ThruBit String Master Calibration					
TBD Density Master Calibration. PEEK Window, ThruBit blocks					
Aluminium Density G/C3	Value	Nominal	Magnesium Density G/C3	Value	Nominal
	2.607	2.607		1.752	1.752
2.557 (Minimum)	2.657 (Maximum)		1.702 (Minimum)	1.802 (Maximum)	
LS1 Background CPS	Value	Nominal	SS1 Background CPS	Value	Nominal
	144.74	140.00		133.43	140.00
100.00 (Minimum)	187.00 (Maximum)		100.00 (Minimum)	185.00 (Maximum)	
LS4 Background CPS	Value	Nominal	SS1 Aluminium CPS	Value	Nominal
	29.27	29.00		4617.14	4850.00
20.00 (Minimum)	38.00 (Maximum)		4076.00 (Minimum)	5613.00 (Maximum)	
LS1 Aluminium CPS	Value	Nominal	SS1 Magnesium CPS	Value	Nominal
	915.65	870.00		7550.90	8000.00
750.00 (Minimum)	982.00 (Maximum)		6695.00 (Minimum)	9269.00 (Maximum)	
LS4 Aluminium CPS	Value	Nominal			
	969.92	955.00			
796.00 (Minimum)	1169.0 (Maximum)				
LS1 Al + Sleeve CPS	Value	Nominal			
	821.92	725.00			
650.00 (Minimum)	838.00 (Maximum)				
LS4 Al + Sleeve CPS	Value	Nominal			
	460.44	426.50			
382.00 (Minimum)	638.00 (Maximum)				
LS1 Magnesium CPS	Value	Nominal			
	5880.64	5800.00			
5158.00 (Minimum)	6486.00 (Maximum)				
SS Slope	Value	Nominal			
	1.678	1.645			
1.520 (Minimum)	1.770 (Maximum)				
LS Slope	Value	Nominal			
	0.4228	0.4150			
0.3800 (Minimum)	0.4500 (Maximum)				
Pef K Factor	Value	Nominal			
	4.696	4.840			
3.510 (Minimum)	6.170 (Maximum)				
Pef B Factor	Value	Nominal			
	-0.5209	-0.5550			
-0.7000 (Minimum)	-0.4100 (Maximum)				

Master: 9-May-2014 10:53

ThruBit String Master Calibration					
Thermal Neutron Master Calibration					
TNF, Background CPS	Value	Nominal	TNN, Background CPS	Value	Nominal
	0.15	1.0		0.083	1.0
0 (Minimum)	2.0 (Maximum)		0 (Minimum)	2.0 (Maximum)	
TNF, Tank CPS	Value	Nominal	TNN, Tank CPS	Value	Nominal
	93.21	96.00		2714.7	2860.0
25.00 (Minimum)	200.0 (Maximum)		750.00 (Minimum)	5700.0 (Maximum)	
TNF, Tank + Al Sleeve CPS	Value	Nominal	TNN, Tank + Al Sleeve CPS	Value	Nominal

		3064.3	3040.0			31464.2	32350.0
727.00 (Minimum)	(Nominal)	6080.0 (Maximum)		8000.00 (Minimum)	(Nominal)	64700.0 (Maximum)	
Tank + AI Sleeve Ratio		Value	Nominal	Tank + AI Sleeve Porosity PU		Value	Nominal
		10.915	10.797			14.46	14.40
10.300 (Minimum)	(Nominal)	11.300 (Maximum)		13.40 (Minimum)	(Nominal)	15.40 (Maximum)	
Tank, Ratio		Value	Nominal	Tank, Temperature DEGF		Value	Nominal
		29.124	30.958			77.8	70.0
28.000 (Minimum)	(Nominal)	34.000 (Maximum)		20.0 (Minimum)	(Nominal)	120 (Maximum)	
Master: 7-May-2014 9:47							

ThruBit String Master Calibration					
TMG Accelerometer Calibration					
Minimum Ax, m/s2		Value	Nominal	Maximum Ax, m/s2	
NOT DONE		N/A	-9.810	NOT DONE	
-10.81 (Minimum)	(Nominal)	-8.810 (Maximum)		8.810 (Minimum)	10.81 (Maximum)
Minimum Ay, m/s2		Value	Nominal	Maximum Ay, m/s2	
NOT DONE		N/A	-9.810	NOT DONE	
-10.81 (Minimum)	(Nominal)	-8.810 (Maximum)		8.810 (Minimum)	10.81 (Maximum)
Minimum Az, m/s2		Value	Nominal	Maximum Az, m/s2	
NOT DONE		N/A	0	NOT DONE	
-1.000 (Minimum)	(Nominal)	1.000 (Maximum)		8.810 (Minimum)	10.81 (Maximum)
RB Offset, degrees		Value	Nominal		
		-17.00	0		
-360.0 (Minimum)	(Nominal)	360.0 (Maximum)			
Master: Calibration not done					

ThruBit String Master Calibration					
TMG Gamma-Ray Calibration					
GR Background GAPI		Value	Nominal	GR Jig-Background GAPI	
		28.95	30.00		
0 (Minimum)	(Nominal)	120.0 (Maximum)		136.6 (Minimum)	205.0 (Maximum)
Master: Calibration out of date 15-Oct-2013 12:57					

Company: **SANDRIDGE ENERGY**

Schlumberger

Well: **BARBARA 3404 1-4H**

Field: **BLUFF**

County: **SUMNER**

State: **KANSAS**

**BOREHOLE PROFILE
GAMMA RAY
MEMORY LOG**