

HALLIBURTON

ANNULAR HOLE VOLUME LOG 5 1/2" CASING

COMPANY		RUSSELL OIL, INC.		COMPANY		RUSSELL OIL, INC.	
WELL		NUSS 'D' #33-1		WELL		NUSS 'D' #33-1	
FIELD/BLOCK		NUSS		FIELD/BLOCK		NUSS	
COUNTY		RUSSELL		COUNTY		RUSSELL	
STATE		KANSAS		STATE		KANSAS	
Permanent Datum		GL		Sect. 33		Twp. 15S	
Log measured from		KB		Rge. 14W		Elev. 1918.0 ft	
Drilling measured from		KB		5.0 ft above perm. Datum		D.F. 1921.0 ft	
Date		12-Feb-19		Other Services:		ACRT SDL-DSN MICROLOG	
Run No.		1		Elev.: K.B.		1923.0 ft	
Depth - Driller		3455.0 ft		D.F.		1921.0 ft	
Depth - Logger		3455.0 ft		G.L.		1918.0 ft	
Bottom - Logged Interval		3445					
Top - Logged Interval		927					
Casing - Driller		8.625 in		@		@	
Casing - Logger		927.0 ft		@		@	
Bit Size		7.875 in		@		@	
Type Fluid in Hole		Water Based Mud					
Density		9.0 ppg		49.00 sl/qt			
PH		9.50 pH		8.0 cpm			
Source of Sample		MUD PIT					
Rm @ Meas. Temperature		0.51 ohmm		@ 72.00 degF		@	
Rmf @ Meas. Temperature		0.44 ohmm		@ 70.00 degF		@	
Rmc @ Meas. Temperature		0.63 ohmm		@ 70.00 degF		@	
Source Rmf		Rmc		MEAS		MEAS	
Rm @ BHT		0.36 ohmm		@ 105.0 degF		@	
Time Since Circulation		11:00 hr					
Time on Bottom		12-Feb-19 14:13					
Max. Rec. Temperature		105.00 degF		@ 3455.0 ft		@	
Equipment Location		12156883		EL RENO, OK			
Recorded By		WHITLOCK					
Witnessed By		KITT NOAH					

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Service Ticket No.: 905479538				API No.: 15-167-24087-00-00				PGM Version: WL INSITE R5.8.9 (Build 6)											
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE						RESISTIVITY SCALE CHANGES													
Date	Sample No.					Type Log	Depth	Scale Up Hole	Scale Down Hole										
Depth-Driller																			
Type Fluid in Hole																			
Density	Viscosity																		
Ph	Fluid Loss																		
Source of Sample						RESISTIVITY EQUIPMENT DATA													
Rm @ Meas. Temp		@		@		Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other									
Rmf @ Meas. Temp.		@		@															
Rmc @ Meas. Temp.		@		@															
Source Rmf	Rmc																		
Rm @ BHT		@		@															
Rmf @ BHT		@		@															
Rmc @ BHT		@		@															
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.				Run No.				Run No.				Run No.							
Serial No.				Serial No.				Serial No.				Serial No.							
Model No.				Model No.				Model No.				Model No.							
Diameter				No. of Cent.				Diameter				Diameter							
Detector Model No.				Spacing				Log Type				Log Type							
Type								Source Type				Source Type							
Length				LSA [Y/N]				Serial No.				Serial No.							
Distance to Source				FWDA [Y/N]				Strength				Strength							
LOGGING DATA																			
GENERAL				GAMMA				ACOUSTIC				DENSITY				NEUTRON			
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix					
No.	From	To	ft/min	L	R	L	R		L	R		L	R						

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@
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Remarks: 5 1/2" CASING USED FOR ANNULAR HOLE VOLUME
LIMESTONE MATRIX USED FOR DENSITY/NEUTRON POROSITY CALCULATIONS

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

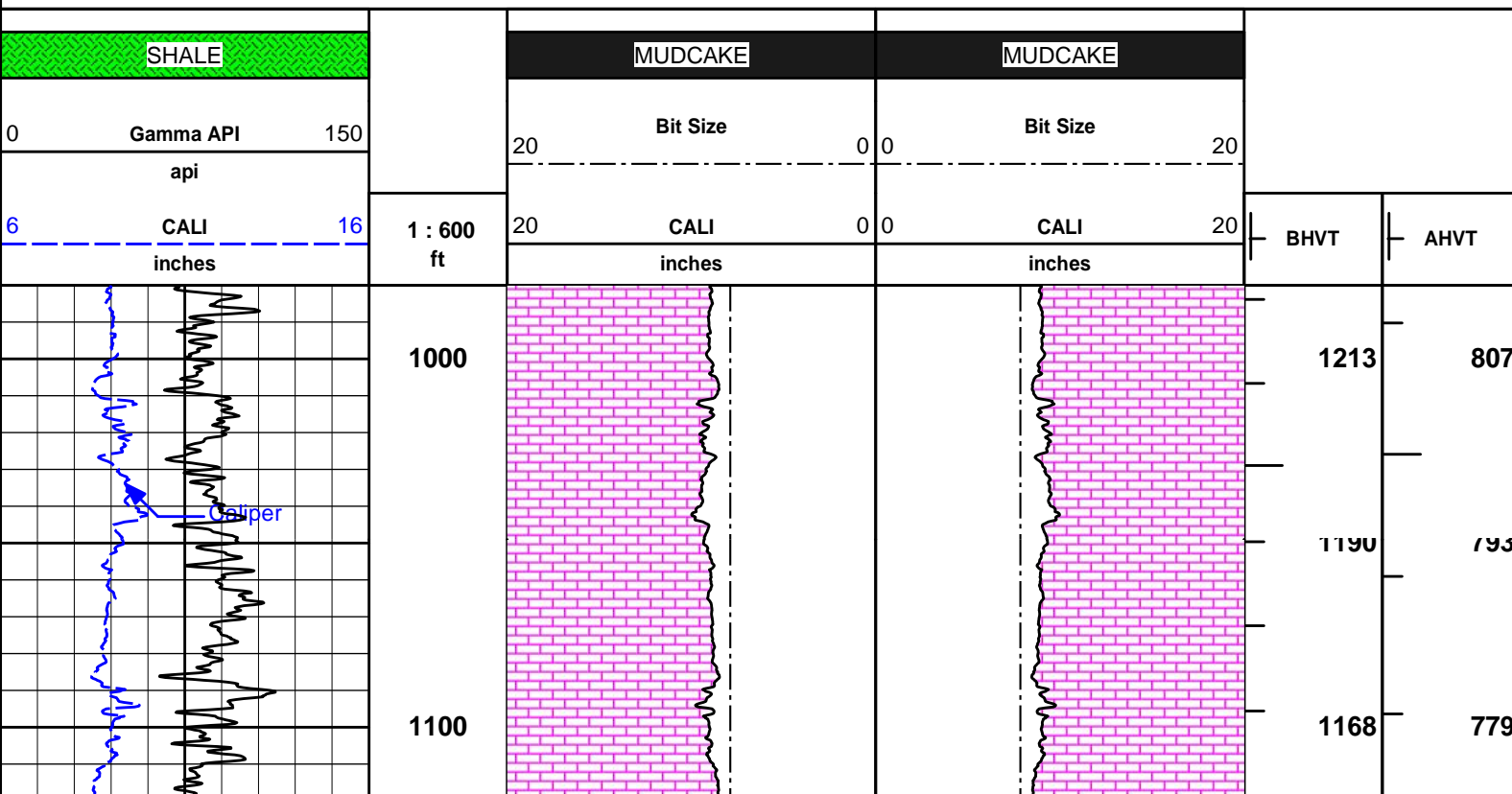
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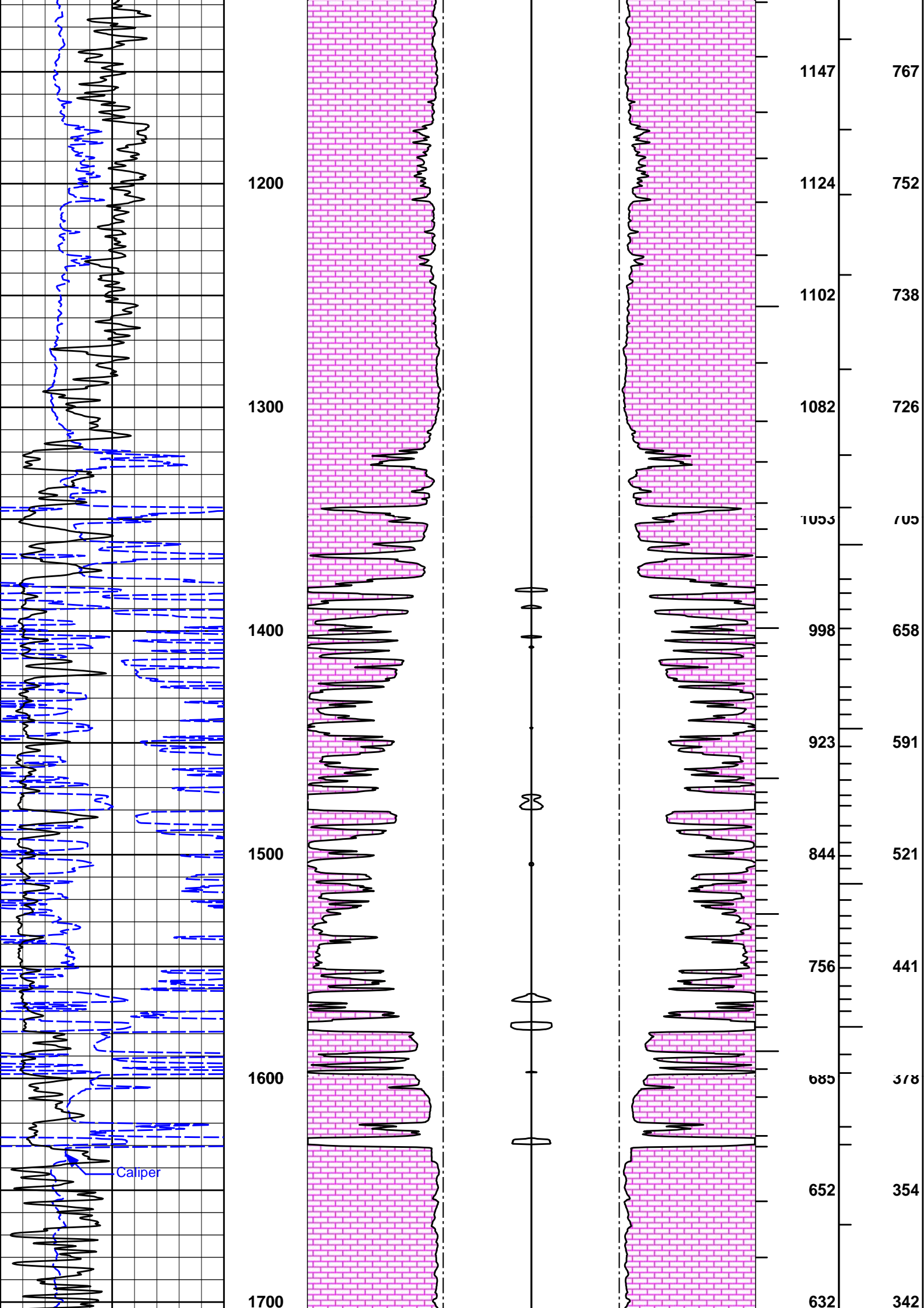


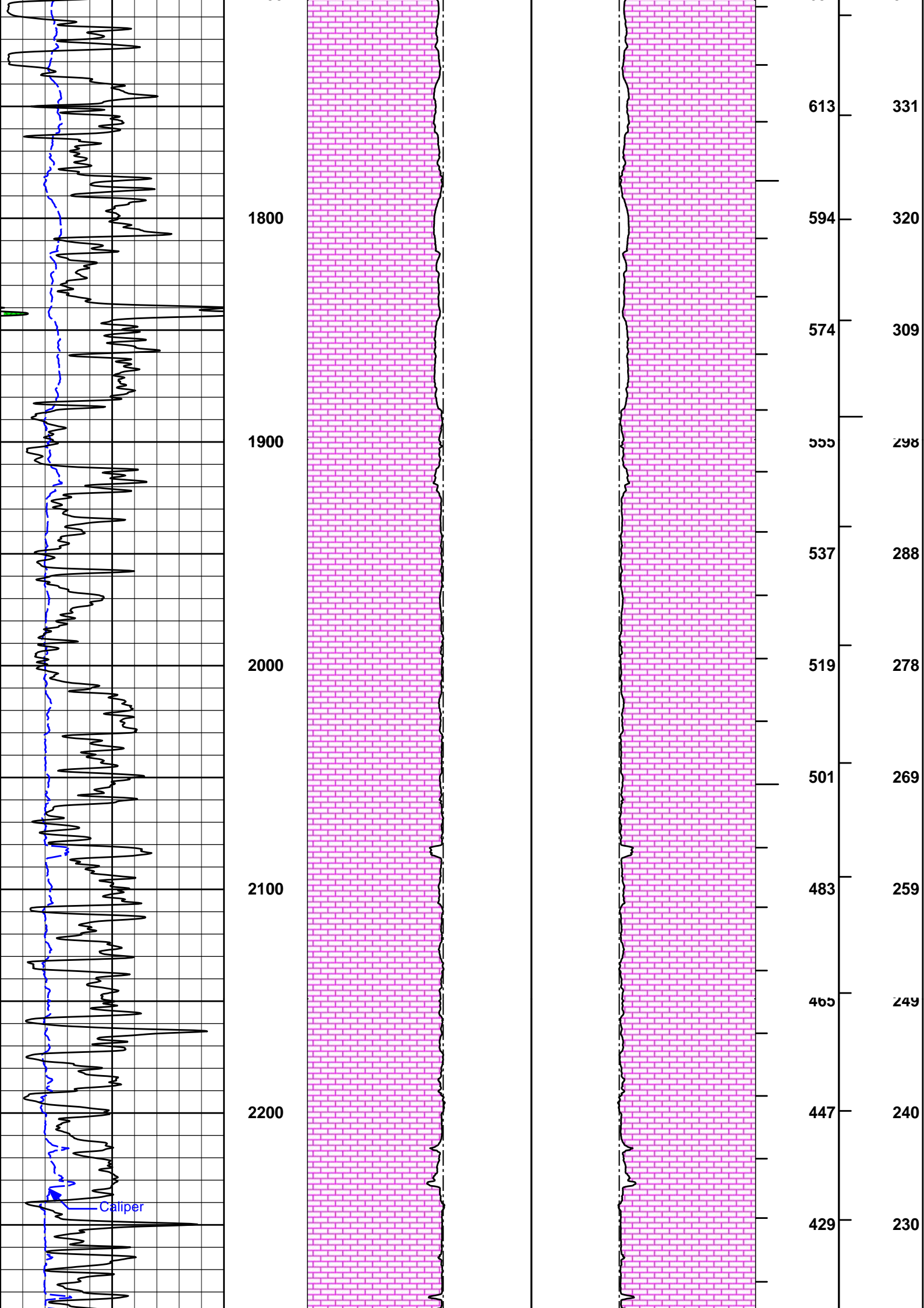
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Plot Range: 980 ft to 3456.42 ft
Data: RUSSELL_NUSS\Well Based\DAQ-0001-002\
Plot File: \\-LOCAL-RUSSELL_NUSS\0001 RWCH-SP-GTET-DSNT-SDLT-ACRT\AHV\AHV Plot_INSITE_IQ

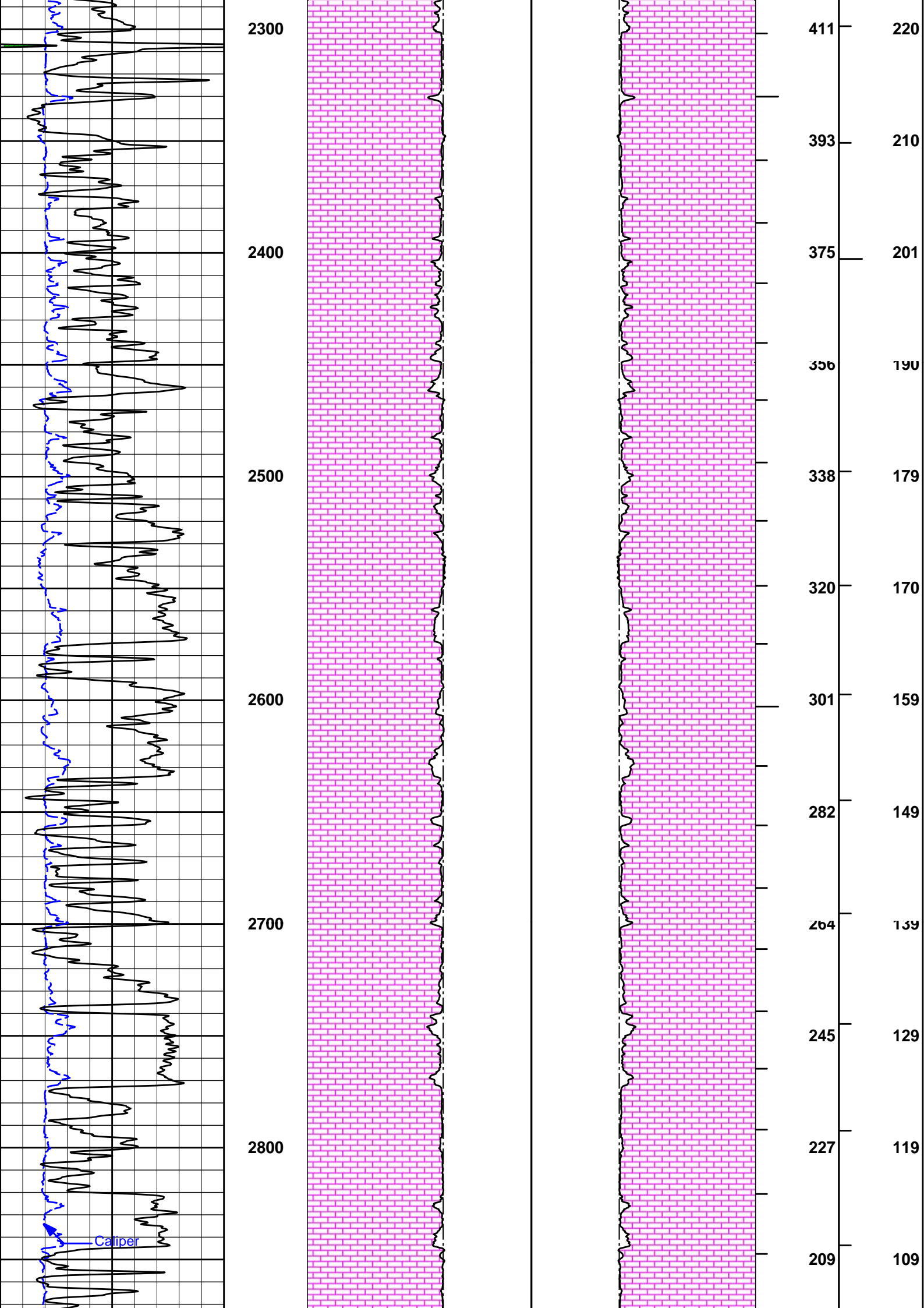
ANNULAR HOLE VOLUME PLOT

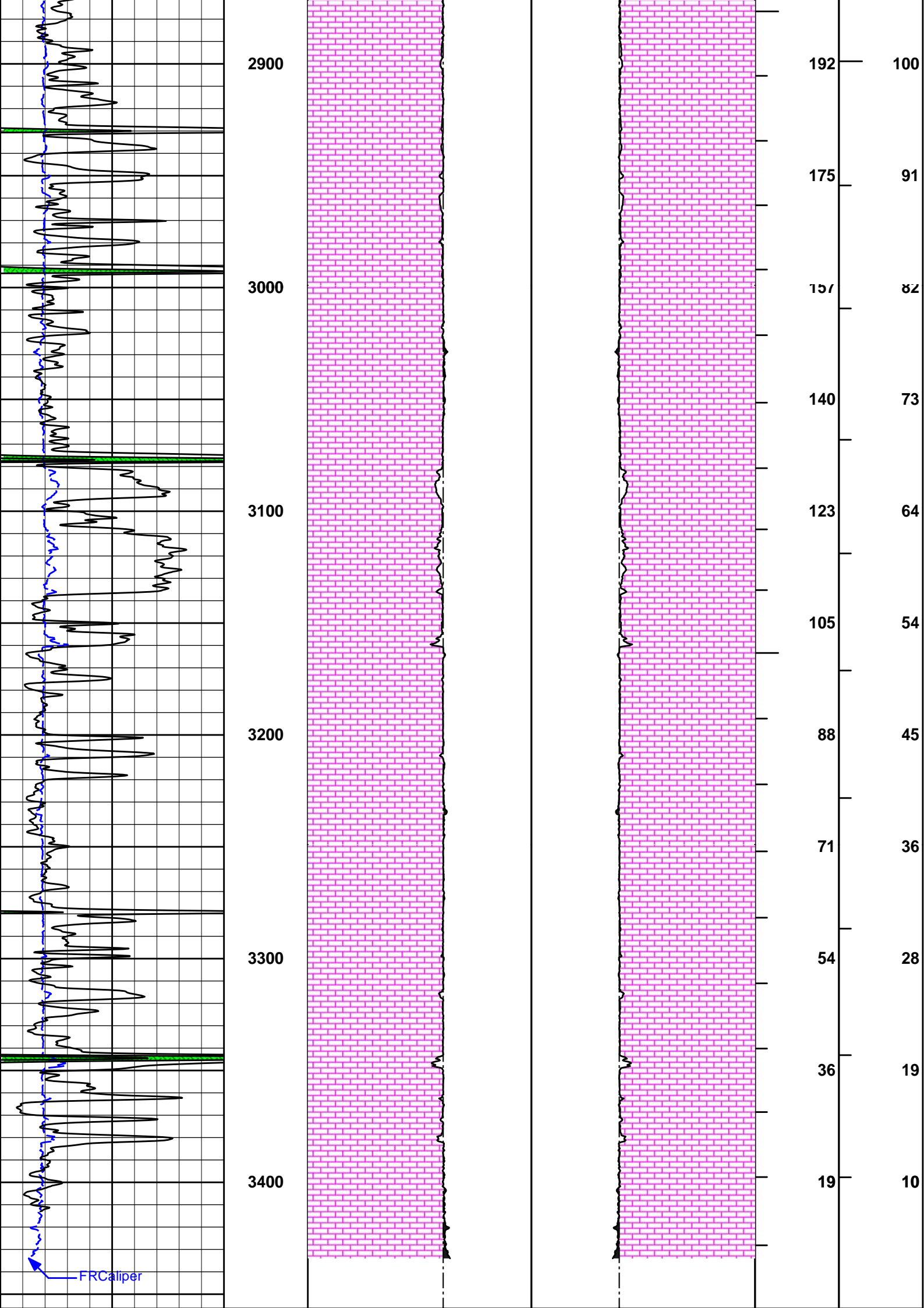
AHV PLOT CALCULATED FOR 5 1/2" CASING











6	CALI	16	1 : 600	20	CALI	0	0	CALI	20	BHVT	AHVT
	inches		ft		inches			inches			
0	Gamma API	150		20	Bit Size	0	0	Bit Size	20		
	api										
	SHALE				MUDCAKE			MUDCAKE			

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ANNULAR HOLE VOLUME PLOT

AHV PLOT CALCULATED FOR 5 1/2" CASING