



Tucker

ENERGY SERVICES

PHASED INDUCTION
SHALLOW FOCUS SP LOG

Company VAL ENERGY, INC.
Well SAWYER V #1-31 OWWO
Field WILSON
County COWLEY
State KANSAS
Country USA
API No. 15-035-30366-0002

File No : TUL-60971
Company : VAL ENERGY, INC.
Well : SAWYER V #1-31 OWWO
Field : WILSON
County : COWLEY
State : KANSAS
Country : USA
API No : 15-035-30366-0002

Location :
4950' FSL & 1650' FEL
NE NW NE

LSD : Sect : 31 Twp : 32S Rge : 6E

Permanent Datum: GL
Drilling Measured From: GL
Log Measured From: GL
Above Permanent Datum: 0.00 Ft
Date: 08-24-2016

Elevations:
KB 0.00
DF 0.00
GL 1263.00

Services:
CNT
LDT
MLT

Run Number	1		
Depth--Driller	3476.0	Ft	
Depth--Logger	3475.0	Ft	
First Reading	3475.0	Ft	
Last Reading	2458.0	Ft	
Casing--Driller	2458.0	Ft	
Casing--Logger	2458.0	Ft	
Bit Size	6.125	In	
Casing Size	7.000	In	
Hole Fluid Type	WBM		
Density	0.0		
Fluid Loss	0.0		
PH/Viscosity	0.0	0.0	
Sample Source	MEASURED		
RMF@Measured Temp.	2.000	@ 75 F	
RMF@Measured Temp	1.600	@ 75 F	
RMF@Measured Temp.	2.400	@ 75 F	
Source RMF/RMC	CALCULATED	CALCULATED	
RM@BHT	1.400	@ 110 F	
Time Circulation Stopped	08-24-2016 09:00		
Max Recorded Temp.	110	F	
Equipment/Base	1022	TULSA, OK	
Recorded By	SHELDON TYLER		
Witnessed By	DEON HOWARD		

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. E. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. E. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
6.125	3476.00	7.000	23.00	2458.00	0.00

Run Number	1	
Date	08-24-2016	
Date/Time On Bottom	08-24-2016 12:00	
Depth to Fluid	0.0 Ft	
Salinity	0.000	
RMF@BHT	1.120 @ 110 F	
RMC@BHT	1.680 @ 110 F	

Run Number 1

Comments

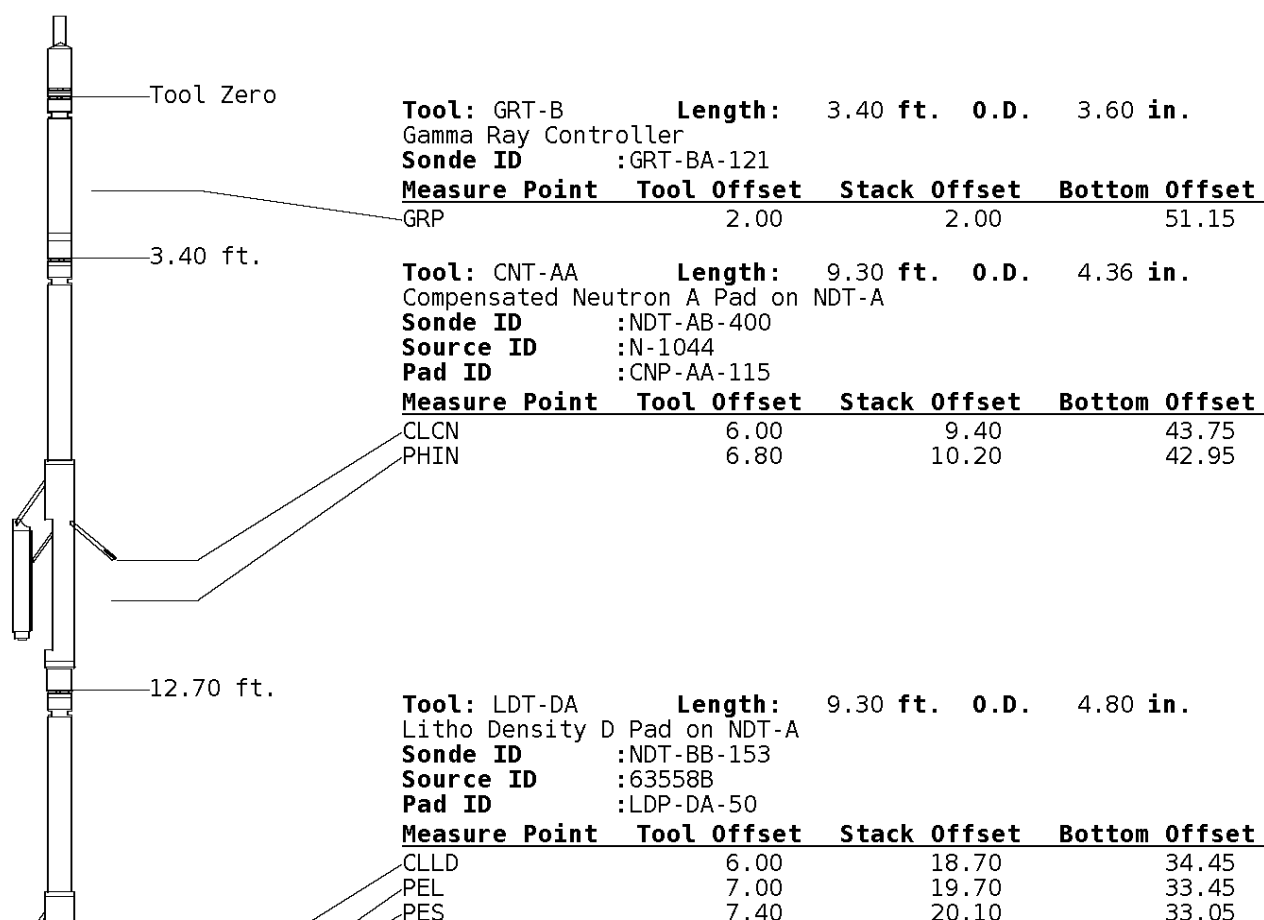
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING
 PHIN IS CALIPER CORRECTED

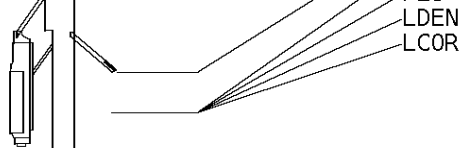
GRT: GRP, GRX
 CNT: PHIN, CLCNIN, PHXN
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX
 MLT: NOR_RF, INV_RF, MSCLPIN
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS:
 B.BAILEY
 R.FRANKLIN

Tool String Schematic

Total Tool Length - 53.15 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.

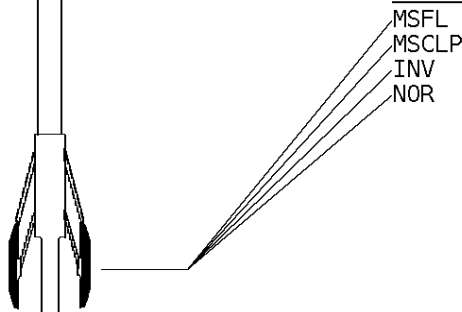




7.20	19.90	33.25
7.20	19.90	33.25

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MST-DA-021

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	23.55
MSCLP	7.60	29.60	23.55
INV	7.60	29.60	23.55
NOR	7.60	29.60	23.55



Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-069

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	40.58	12.56
ILM	10.10	41.76	11.39
SFLU	17.49	49.15	4.00
SP	20.60	52.26	0.88

LWT ————— 53.15 ft.

Well File: VAL ENERGY SAWYERV 1-310WWO AUG24_MSTK

Scale: 1:600 **Format:** DIL-600

Segment: V1.D1.S6 Reprocess of MAIN

Acquired: 2016-08/24 12:42 3.4.0-13544

Reference: 0

Processed: 2016-08/24 13:06 3.4.0-13544

TENSION
LBS

10000

0

DEEP INDUCTION
OHMM

0.0

500.0

0.0

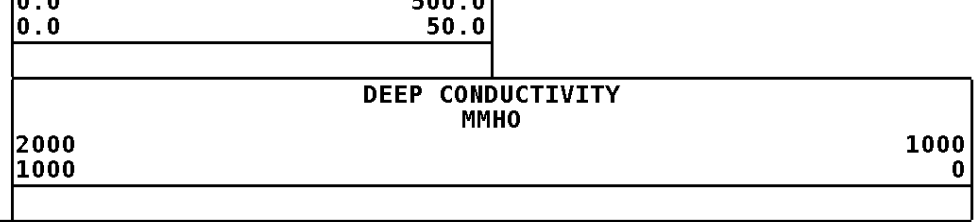
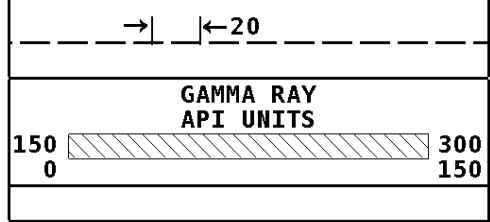
50.0

SPONTANEOUS POTENTIAL
mV

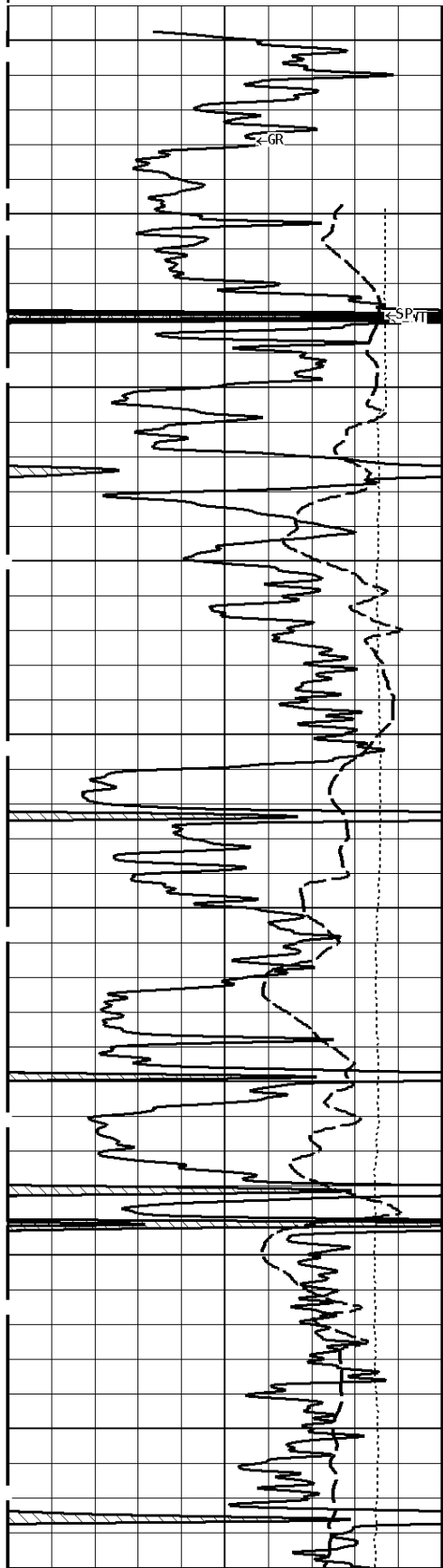
SHALLOW FOCUSED RESISTIVITY
OHMM

0.0

500.0



1:600 MAIN SECTION



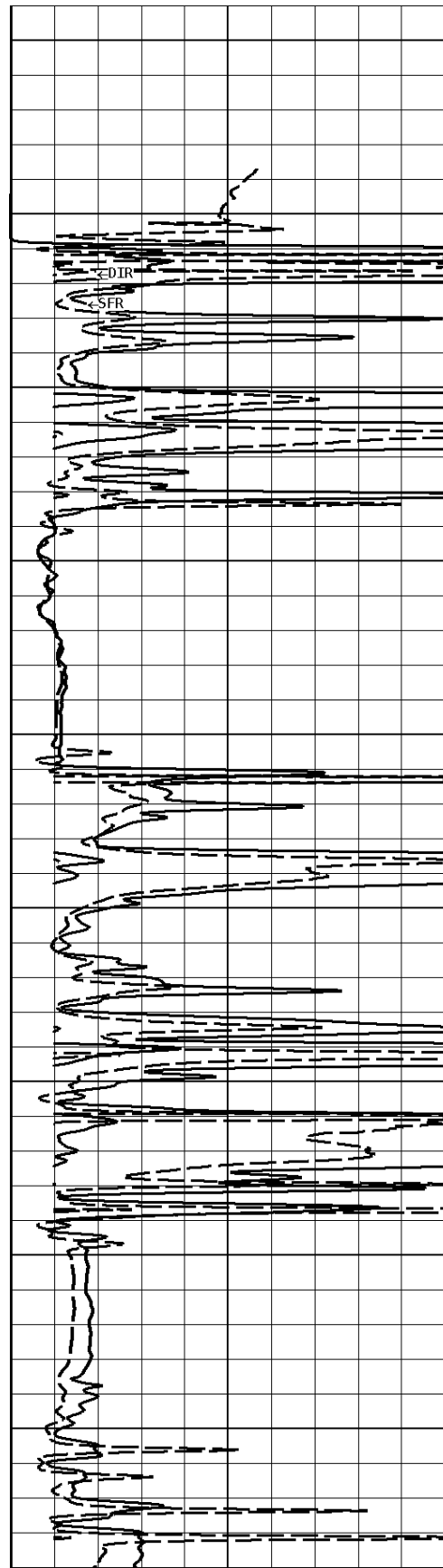
2400

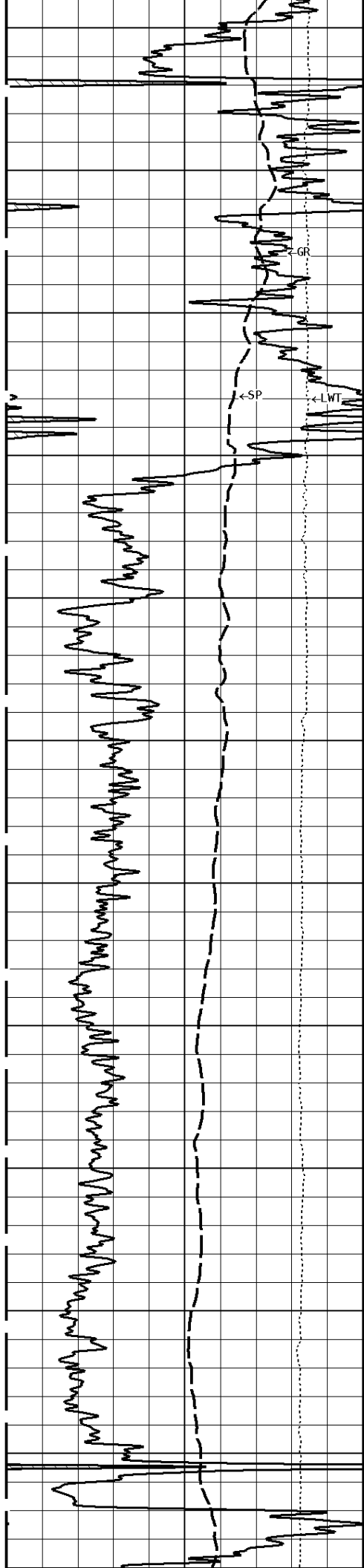
2500

2600

2700

2800





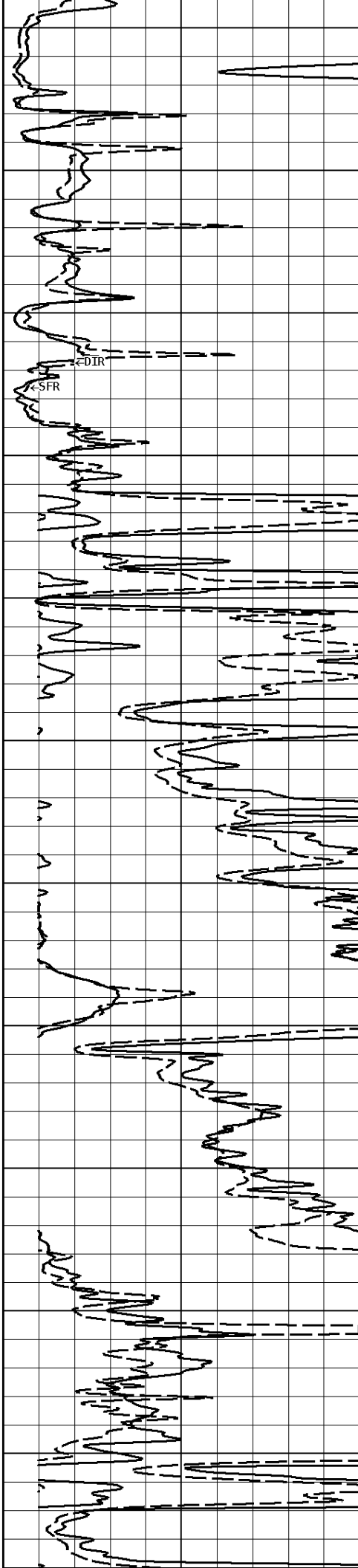
2900

3000

3100

3200

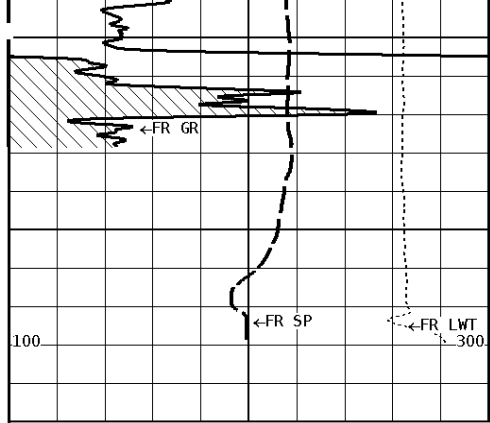
3300



←DIC

←DIR

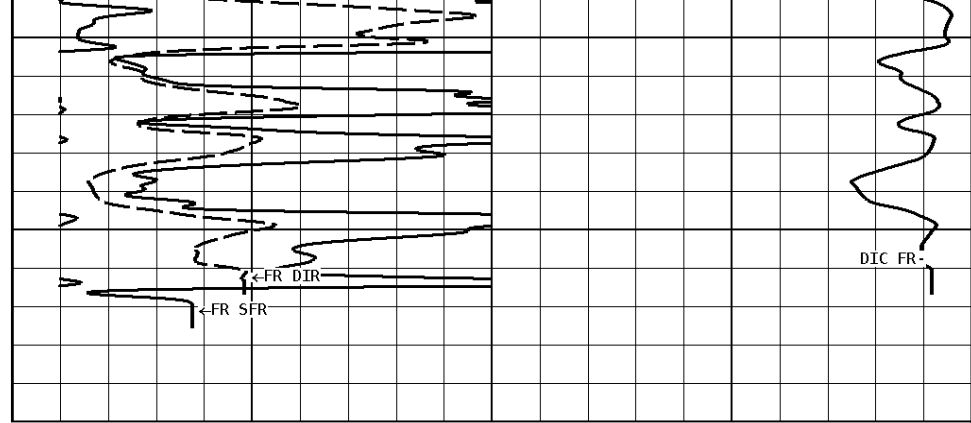
←SFR



File #1.1.6

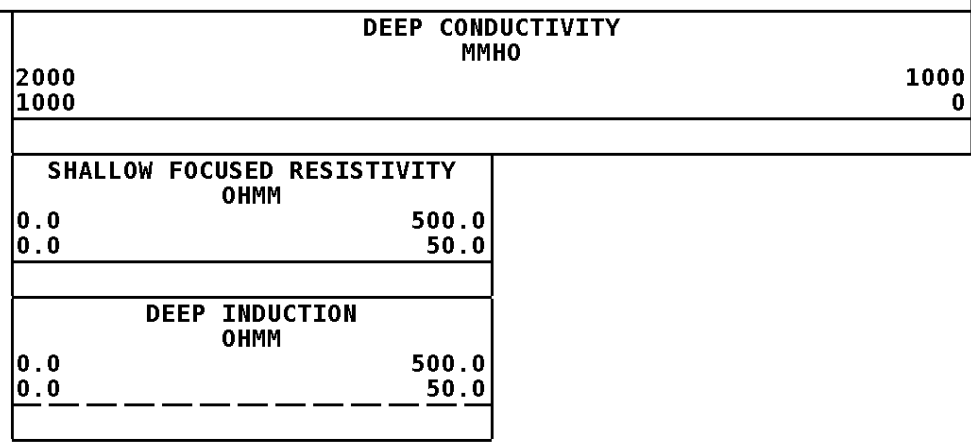
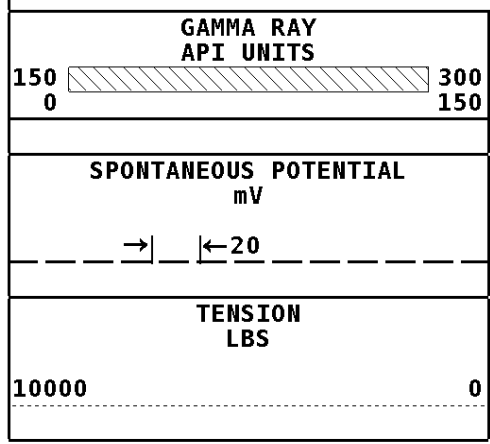
3400

3475

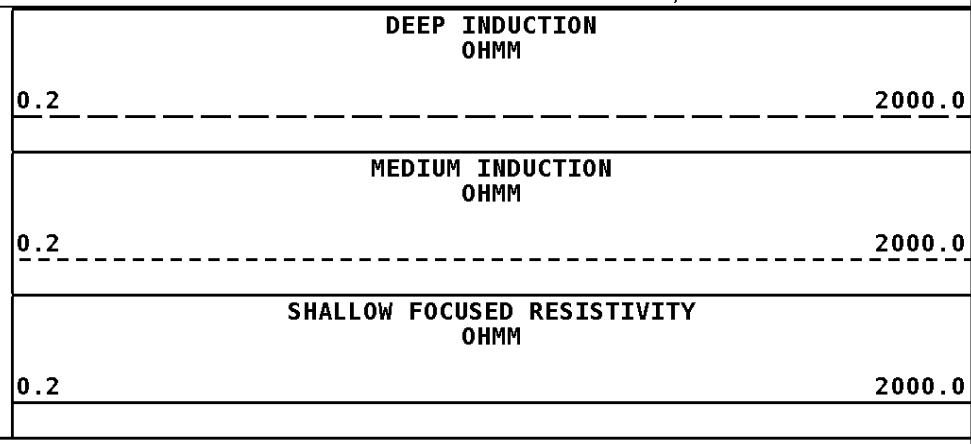
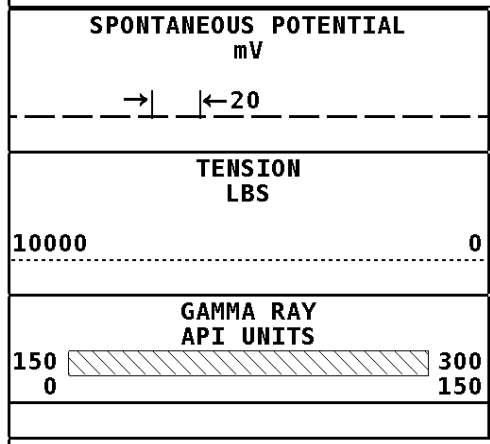


DIC FR

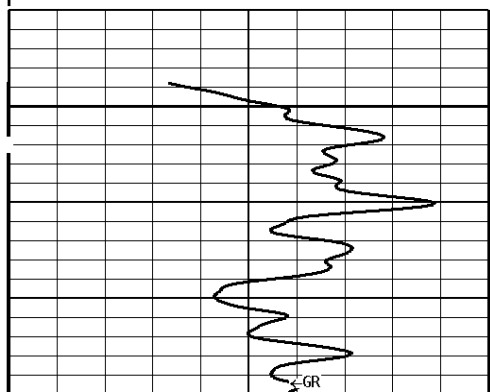
1:600 MAIN SECTION



Well File: VAL ENERGY SAWYERV 1-310WWO AUG24_MSTK Scale: 1:240 Format: DIL-240
 Segment: V1.D1.S6 Reprocess of MAIN Acquired: 2016-08/24 12:42 3.4.0-13544
 Reference: 0 Processed: 2016-08/24 13:06 3.4.0-13544

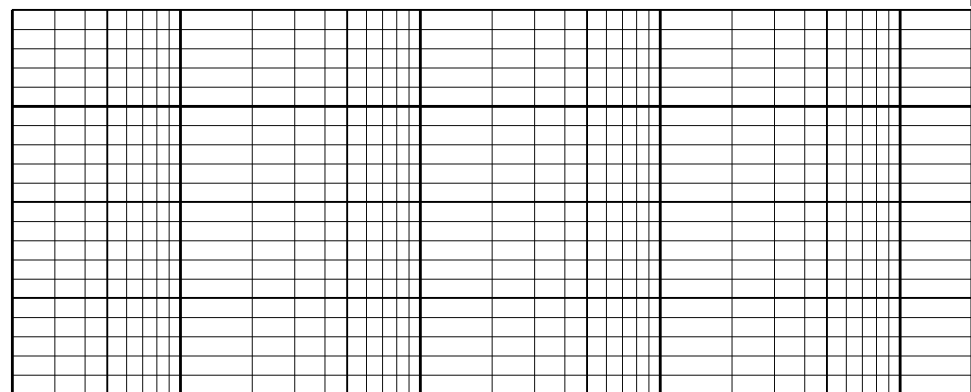


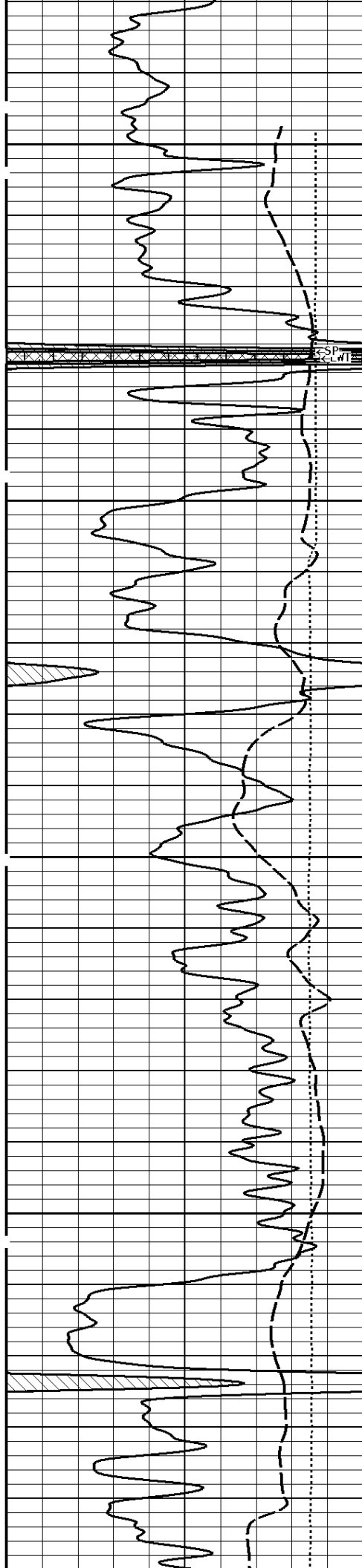
1:240 MAIN SECTION



File #1.1.6

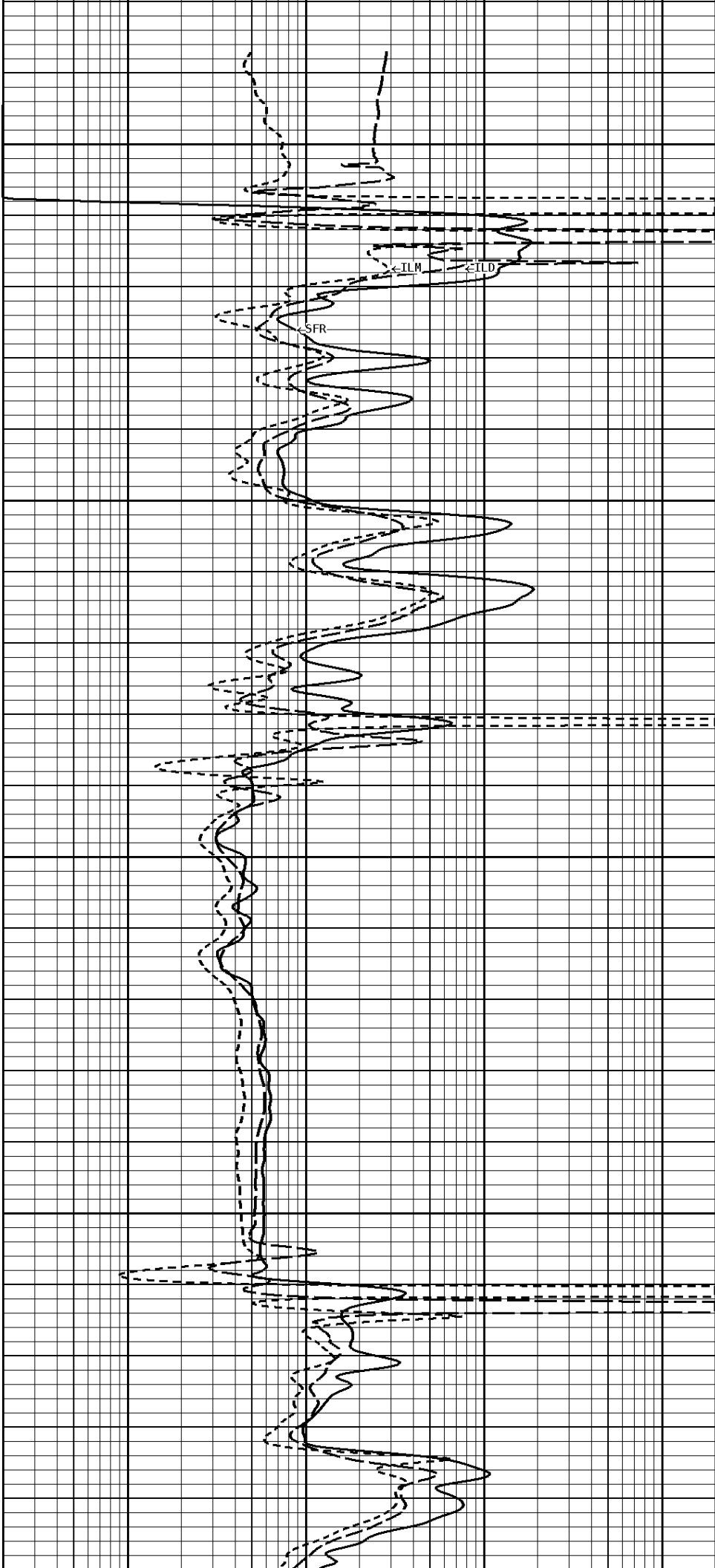
2400

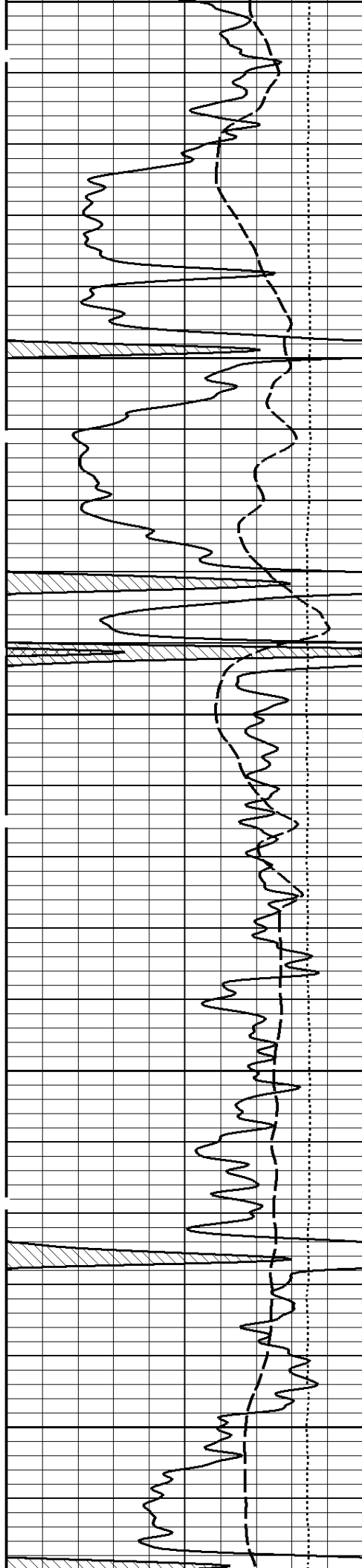




2500

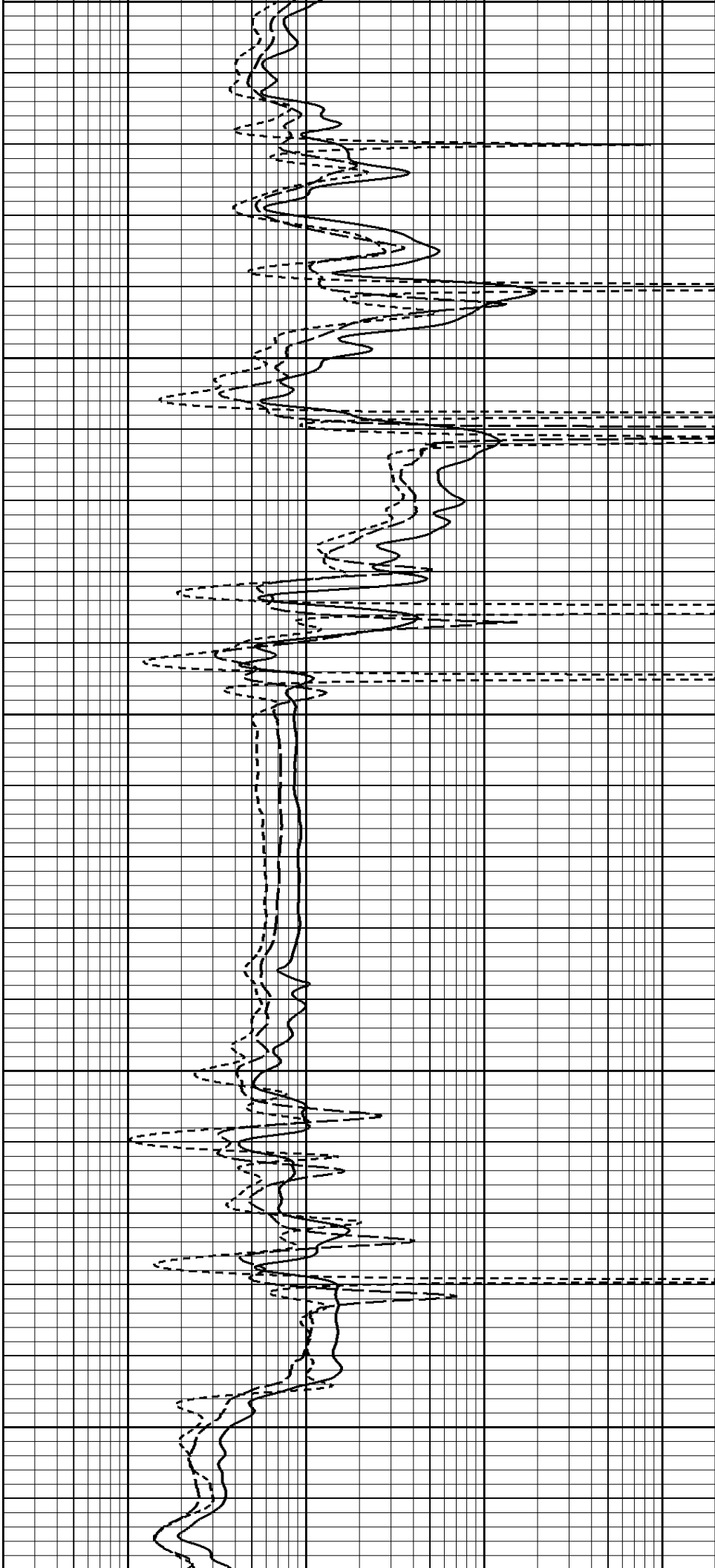
2600

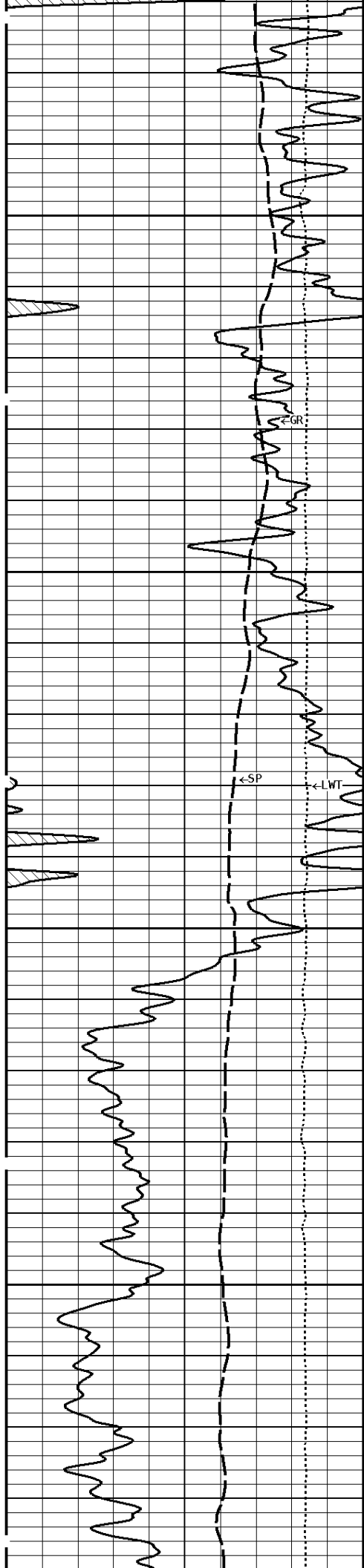




2700

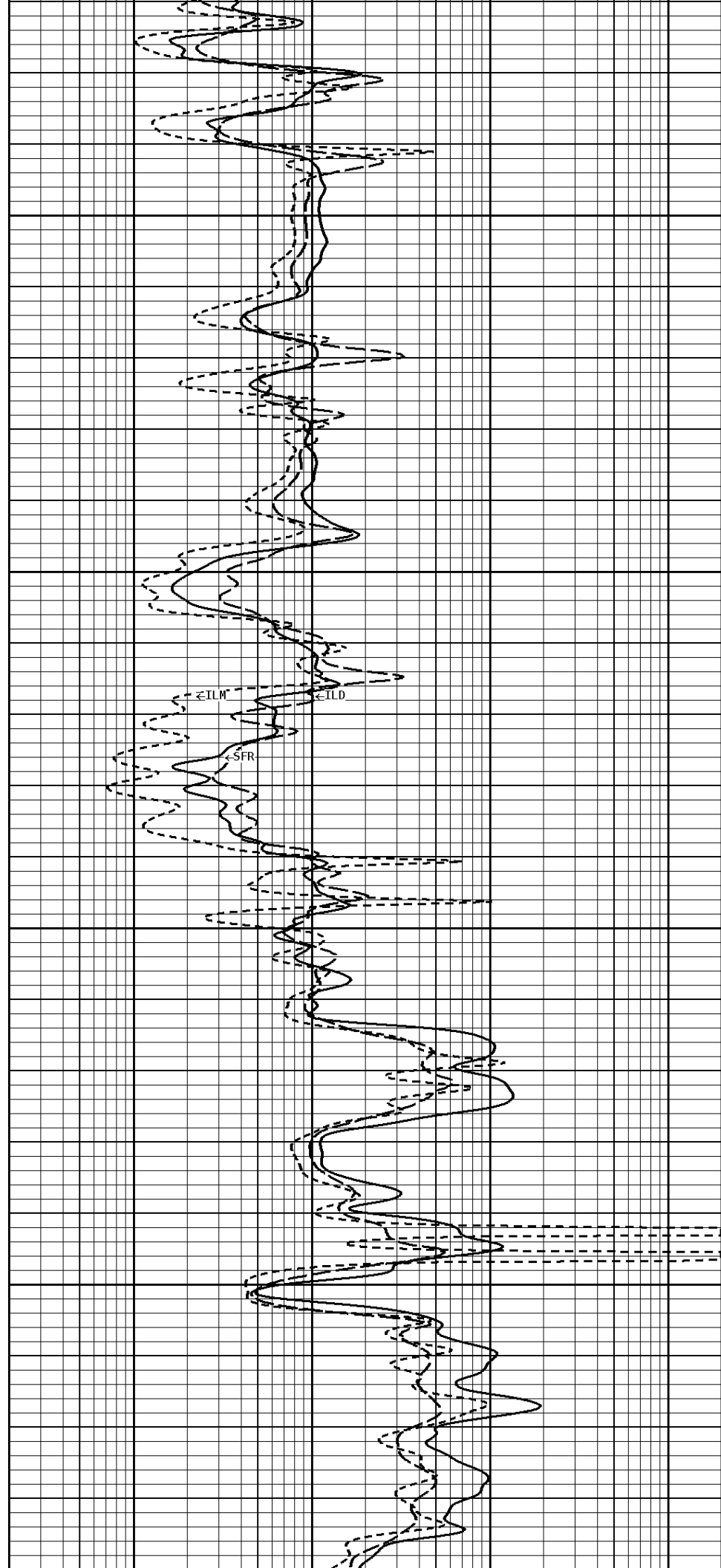
2800

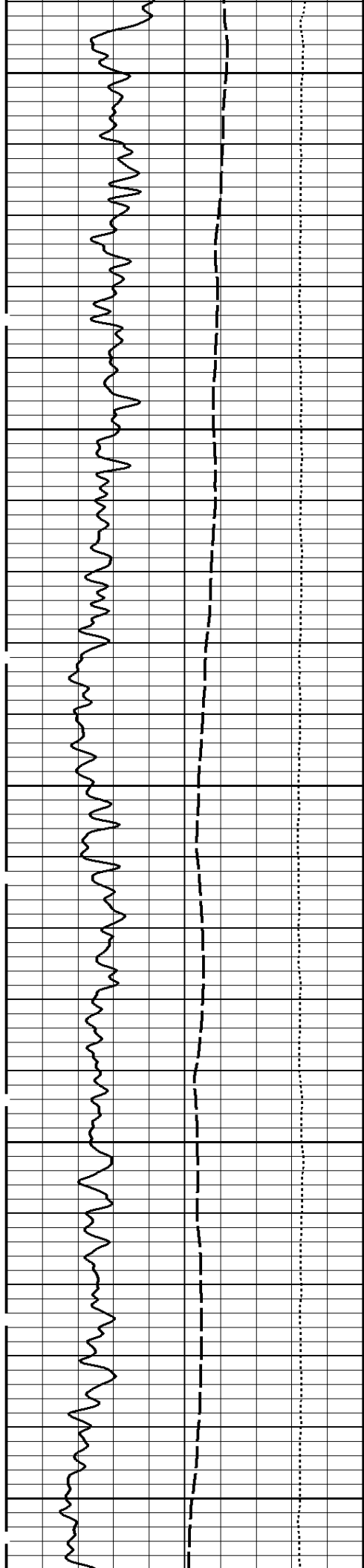




2900

3000

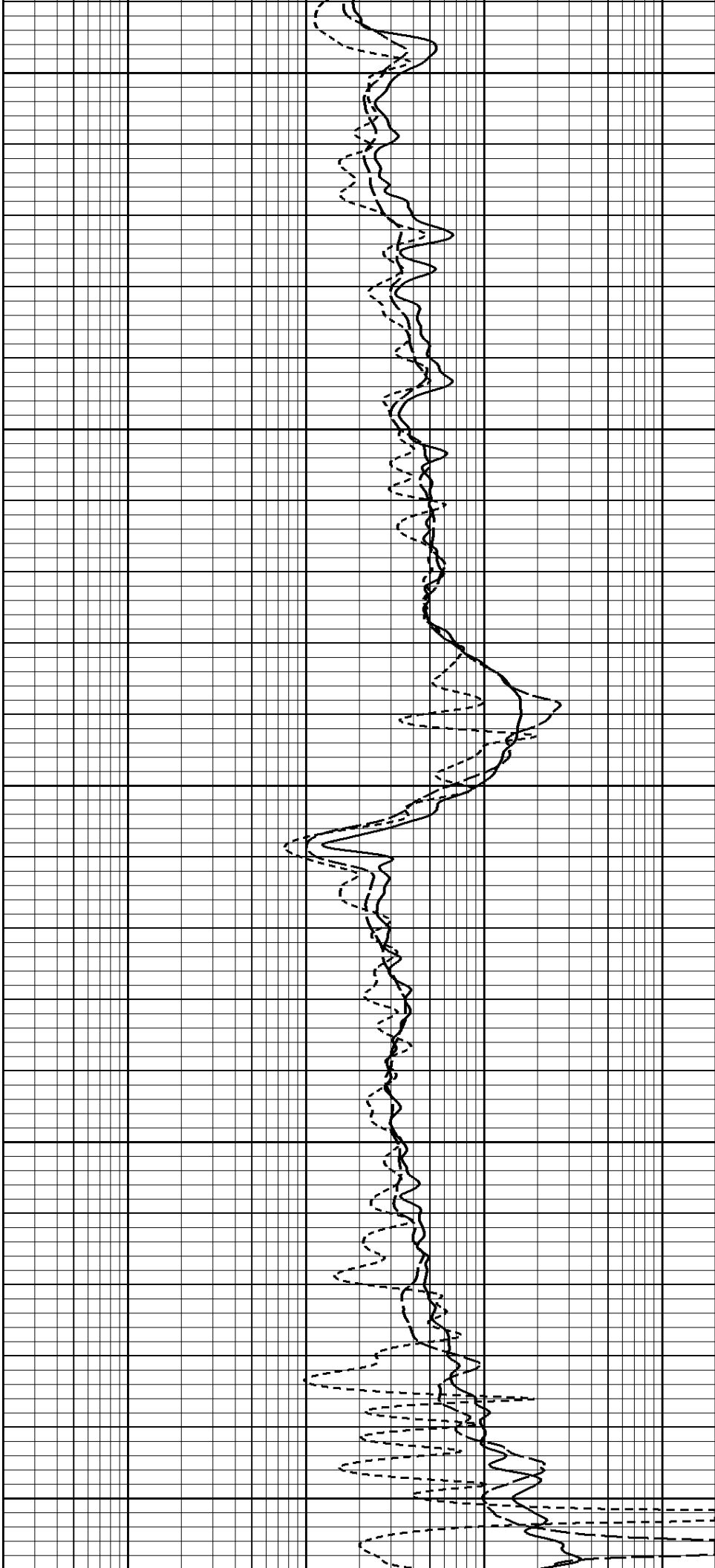


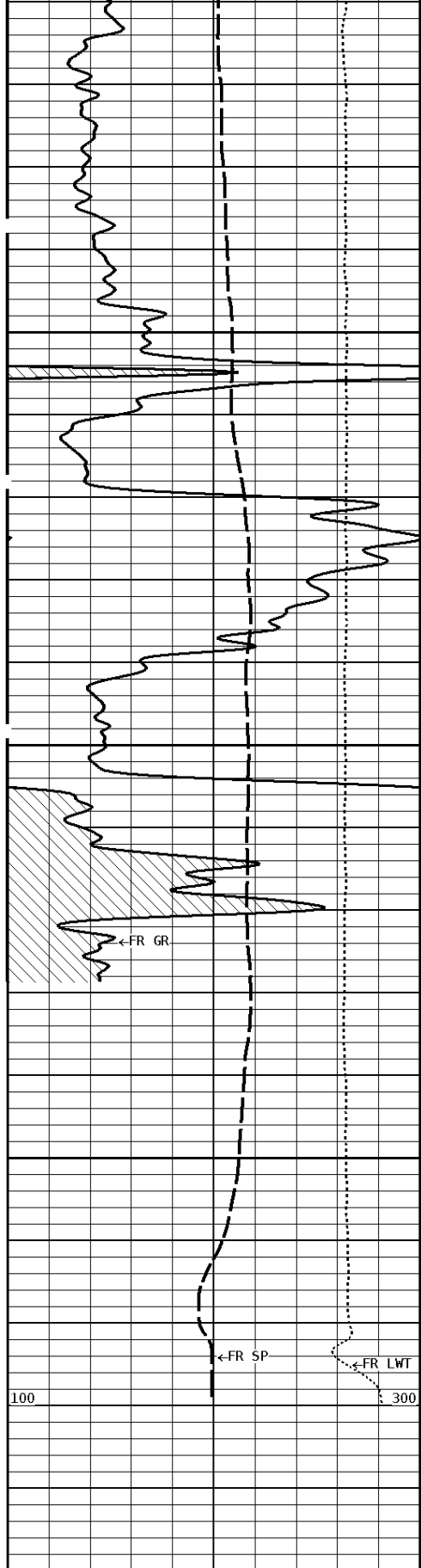


3100

3200

3300



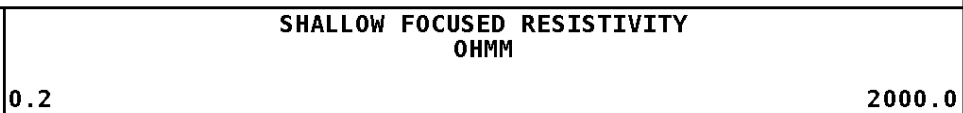
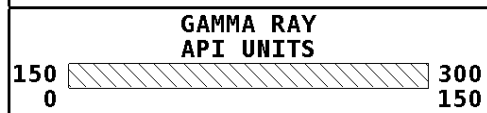
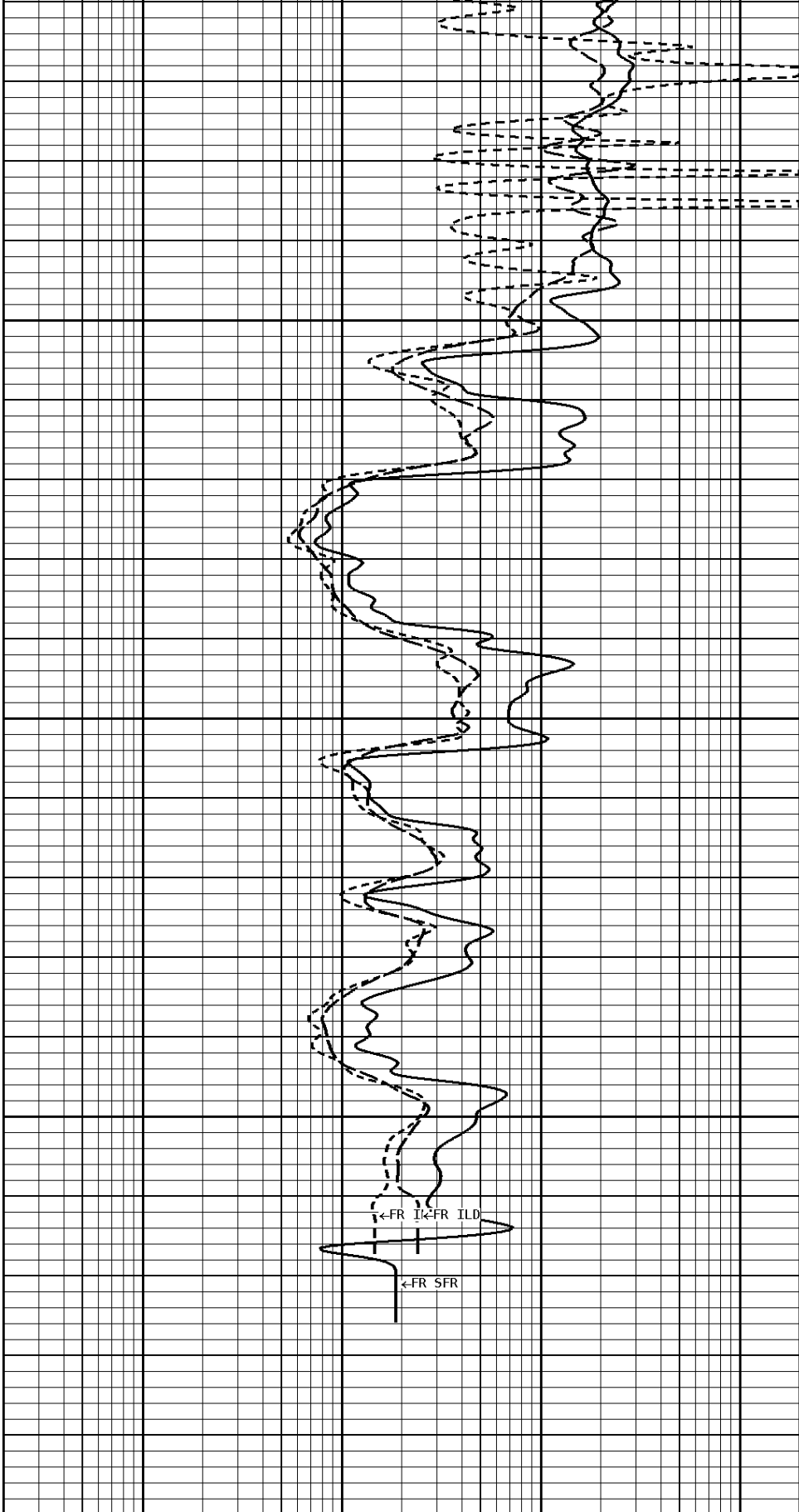


3400

3475

File #1.1.6

1:240 MAIN SECTION



TENSION LBS	
10000	0
SPONTANEOUS POTENTIAL mV	
→	←20

MEDIUM INDUCTION OHMM	
0.2	2000.0
DEEP INDUCTION OHMM	
0.2	2000.0

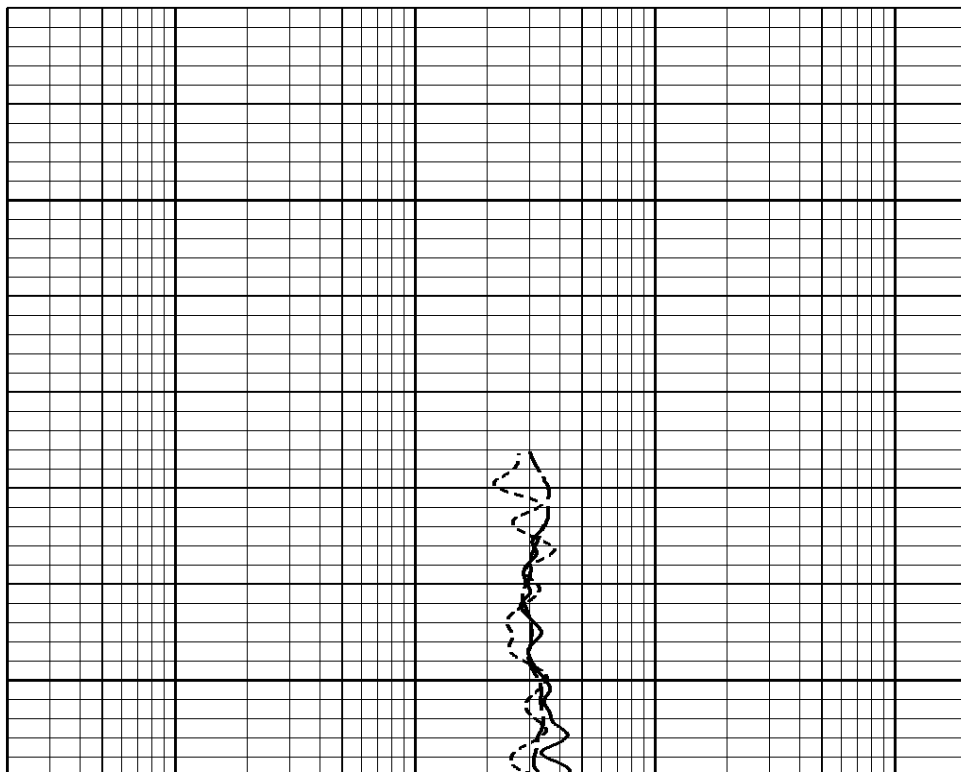
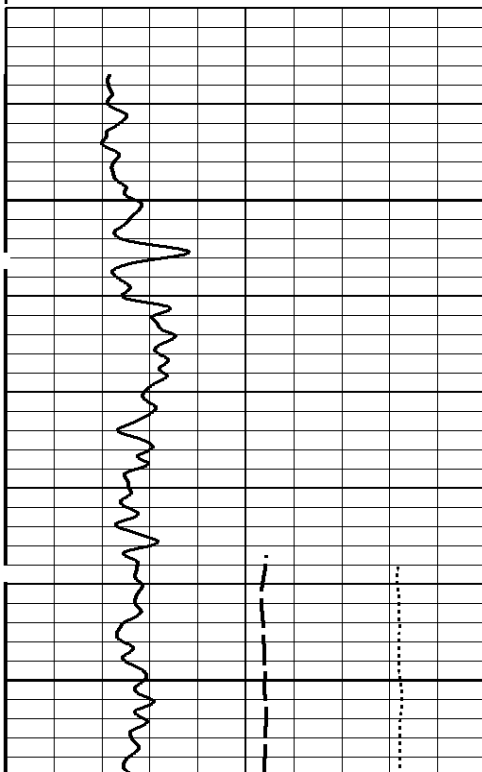
* Borehole Zone Factors *

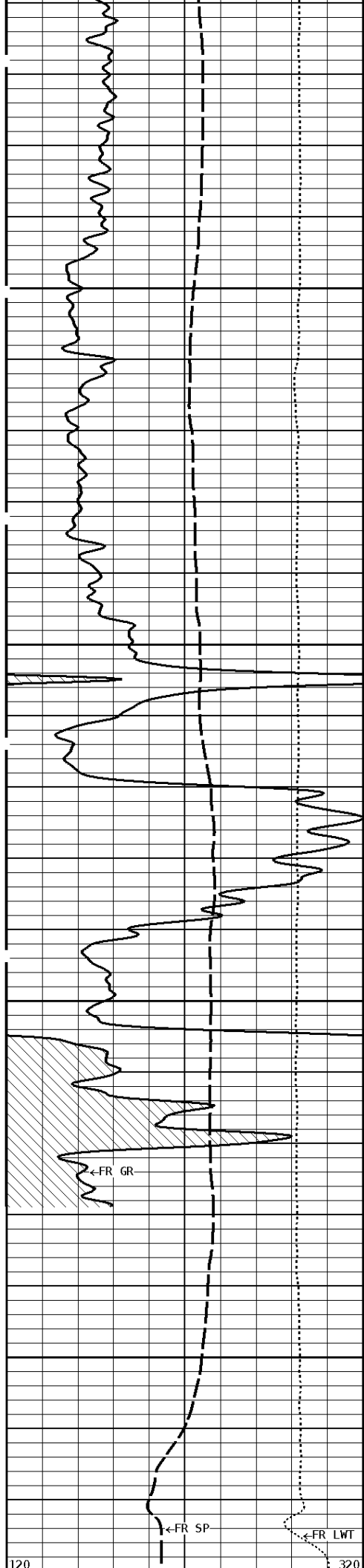
Zone 1	99999.0	to	0.0	Feet
Drill Bit Size		6.125	in	
Casing Diameter		5.500	in	
BHT Depth		3476.000	ft	
Borehole Temperature		110.0	degF	
Temperature Gradient		1.00	DFHF	
Resistivity Of Mud		2.000	ohmm	
Resistivity Of Mud Temperature		75.00	degF	

Well File: VAL ENERGY SAWYERV 1-310WWO AUG24 MSTK	Scale: 1:240	Format: DIL-240
Segment: V1.D1.S4 Reprocess of REPEAT	Acquired: 2016-08/24 12:28 3.4.0-13544	
Reference: 0	Processed: 2016-08/24 12:37 3.4.0-13544	

SPONTANEOUS POTENTIAL mV	DEEP INDUCTION OHMM
→ ←20	0.2 2000.0
TENSION LBS	MEDIUM INDUCTION OHMM
10000 0	0.2 2000.0
GAMMA RAY API UNITS	SHALLOW FOCUSED RESISTIVITY OHMM
150 0 300 150	0.2 2000.0

1:240 REPEAT SECTION

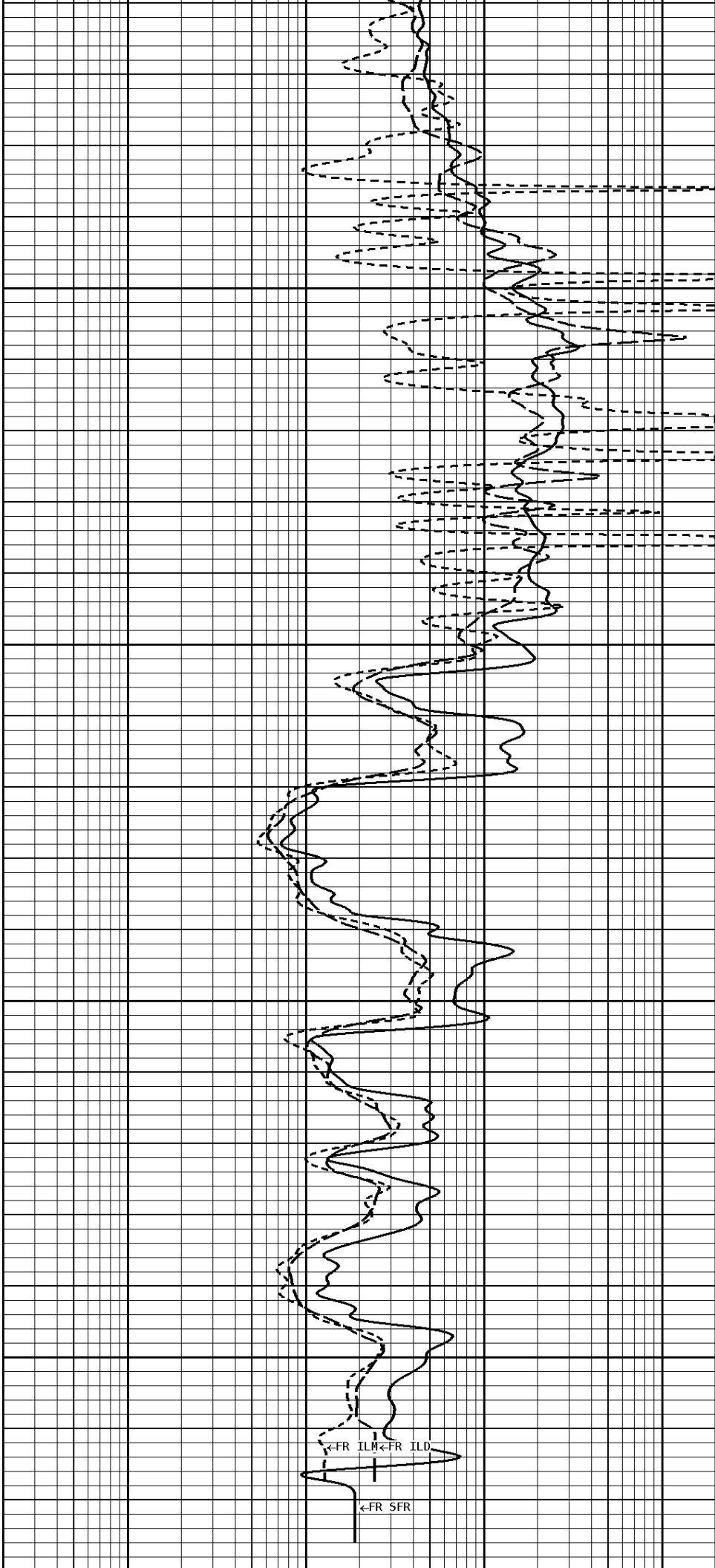




3300

3400

3475



File #1.1.4

1:240 REPEAT SECTIONGAMMA RAY
API UNITS

150 0 300 150

TENSION
LBS

10000 0

SPONTANEOUS POTENTIAL
mV

→ | ← 20

SHALLOW FOCUSED RESISTIVITY
OHMM

0.2 2000.0

MEDIUM INDUCTION
OHMM

0.2 2000.0

DEEP INDUCTION
OHMM

0.2 2000.0

*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

Drill Bit Size	6.125	in
Casing Diameter	5.500	in
BHT Depth	3476.000	ft
Borehole Temperature	110.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	2.000	ohmm
Resistivity Of Mud Temperature	75.00	degF

*** Calibration Summary *****Shop Calibration
GRT-B**

Performed : 08-AUG-2016 Time : 10:25
Sensor Suite : GR-GR5 ID : GRT-BA-121

	Measured	Units	Calibrated	Units
GR	Background Jig		Jig	
	47 341	CPS	175	GRAPI

**Shop Calibration
PIT-CA**

Performed : 08-AUG-2016 Time : 09:31
Sensor Suite : P-IND-T ID : PIT-CA-069

	Measured		Calibrated		Units
	R	X	R	X	
Air	130143	131168	0.7	0.2	MMHOS
Zero	131071	131068	42.6	-7.7	MMHOS
Reference	248896	248691	5042.6	4992.3	MMHOS
Loop	129628	217994	3669.7	3712.9	MMHOS
Sonde Error			-1.0	-6.9	MMHOS
Cond			5042.6	4992.3	MMHOS

	Measured		Calibrated		Units
	R	X	R	X	
Air	128078	132113	0.0	-0.3	MMHOS
Zero	131064	131069	56.8	-22.3	MMHOS
Reference	234442	233900	2056.8	1977.7	MMHOS
Loop	127802	222193	1746.7	1757.0	MMHOS
Sonde Error			-3.0	-0.7	MMHOS
Cond			2056.8	1977.7	MMHOS

Temperature

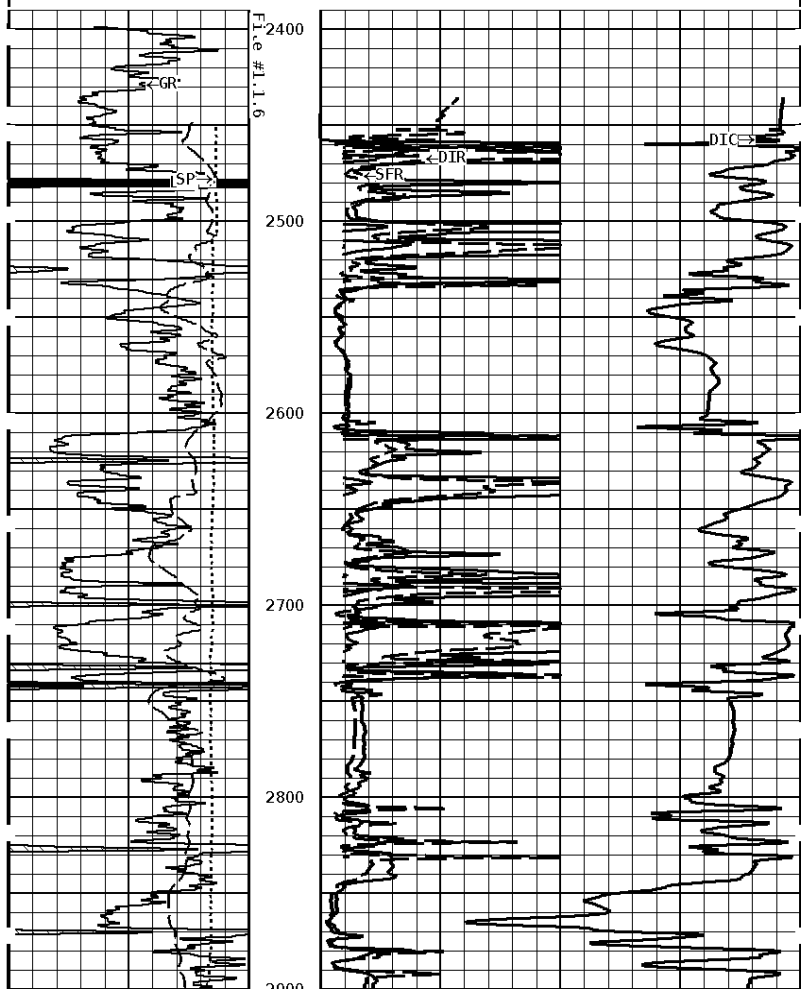
Measured Calibrated

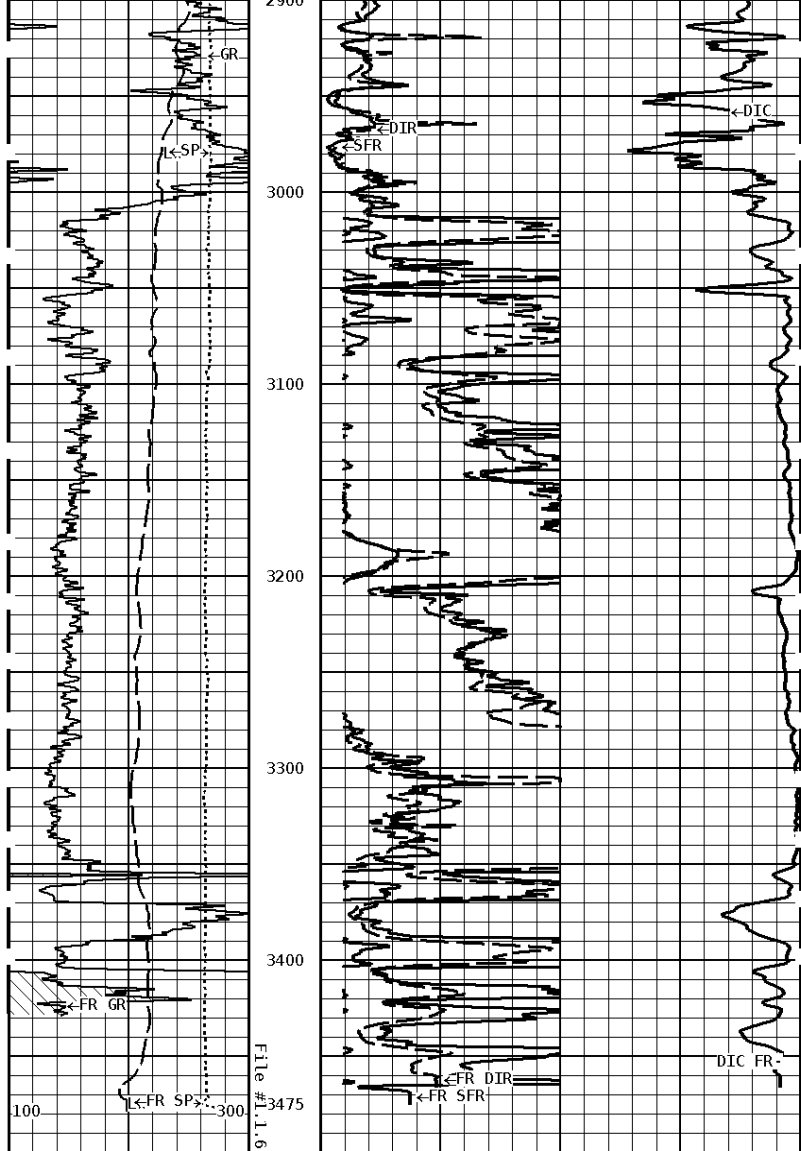
Measured			Calibrated		Units
	Low	High	Low	High	
	16980.0	56920.0	70.0	350.0	DEGF
Performed : 08-AUG-2016			Time : 09:31		
Sensor Suite : SFL			ID : PIT-CA-069		
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32764.0	50173.0	0.0	7028.0	uA
Ib	32771.0	49454.7	0.0	1750.0	mA
MOM1	32777.0	57600.3	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 08-AUG-2016			Time : 09:31		
Sensor Suite : P-SP			ID : PIT-CA-069		
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32789.4	58814.3	0.0	1000.0	mV

Well File: VAL ENERGY SAWYERV_1-310WWO_AUG24_MSTK Scale: 1:1200 Format: DIL1200
Segment: V1.D1.S6 Reprocess of MAIN Acquired: 2016-08/24 12:42 3.4.0-13544
Reference: 0 Processed: 2016-08/24 13:06 3.4.0-13544

TENSION LBS		DEEP INDUCTION OHMM	
10000	0	0.0	500.0
		0.0	50.0
SPONTANEOUS POTENTIAL mV		SHALLOW FOCUSED OHMM	
→ ← 20		0.0	500.0
		0.0	50.0
GAMMA RAY API UNITS		DEEP CONDUCTIVITY HHO	
150	300	2000	1000
0	150	1000	0

1:1200 MAIN SECTION





GAMMA RAY
API UNITS

150 300
0 150

SPONTANEOUS POTENTIAL
mV

→ | ← 20

TENSION
LBS

10000 0

DEEP CONDUCTIVITY
MHMO

2000 1000
1000 0

SHALLOW FOCUSED
OHMM

0.0 500.0
0.0 50.0

DEEP INDUCTION
OHMM

0.0 500.0
0.0 50.0



Tucker
ENERGY SERVICES

Company: VAL ENERGY, INC.
Well: SAWYER V #1-31 OWWO
Location: 4950' FSL & 1650' FEL
Logged: 08-24-2016
K.B. Elev: 0.0 Ft