



PIONEER
Pioneer Energy Services

**DUAL INDUCTION
LOG**

Company STRATAKAN EXPLORATION, LLC
Well SEWARD SW #1-1
Field CURTIS
County STAFFORD State KANSAS

Location: API #: 15-185-23983-00-00
1613' FSL & 405' FEL
SEC 1 TWP 22S RGE 14W
Permanent Datum GROUND LEVEL Elevation 1912'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services
CNL/CDL
MEL
Elevation
K.B. 1923'
D.F. N/A
G.L. 1912'

Date	3/31/2017
Run Number	ONE
Depth Driller	3800'
Depth Logger	3793'
Bottom Logged Interval	3792'
Top Log Interval	400'
Casing Driller	8.625" @ 404'
Casing Logger	400'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	9000
Density / Viscosity	9.2 63
pH / Fluid Loss	8.5 15
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.70 @ 62
Rmt @ Meas. Temp	0.53 @ 62
Rmc @ Meas. Temp	0.95 @ 62
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.38 @ 114
Operating Rig Time	3 HOURS
Max Rec. Temp. F	114
Equipment Number	91
Location	COLBY
Recorded By	D. SCHMIDT
Witnessed By	JUSTIN PRATER

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

GREAT BEND,
SOUTH TO HWY 19, 3 WEST TO 30 RD, 1/4 NORTH,
WEST INTO

Log Measured From: KELLY BUSHING 11 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

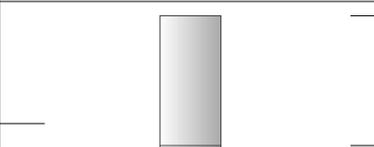
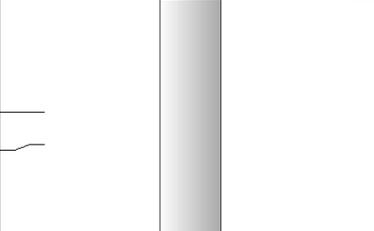
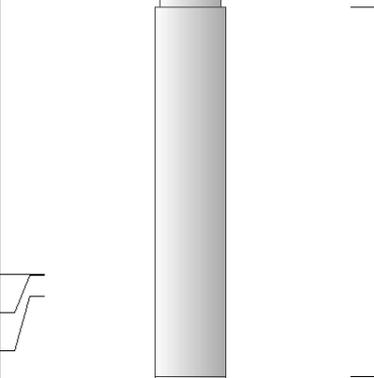
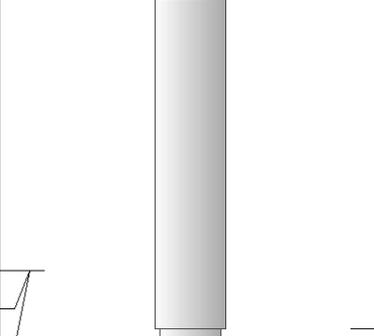
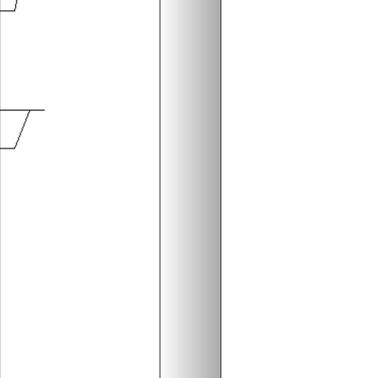
Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: D. SCHMIDT	Primary Witness: JUSTIN PRATER
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

Database C:\ProgramData\Warrior\Data\stratakan_seward sw_1-1.db
 Dataset field/well/STKML/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	114	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	145	0	Off	3793

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58		GR-M&W (89)	3.00	3.50	50.00
CNLSC CNSSC	37.48 36.73		CNT-M&W (207-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (90-1031)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSIML (PSI-01) GO Micro log tools converted to Simplec electronics	7.58	4.00	65.00
RLL3F RLL3	15.80 15.80					

CILD 8.00

CILM 4.70

SP 0.20

DIL-M&W (PSI 13)

18.50

3.50

220.00

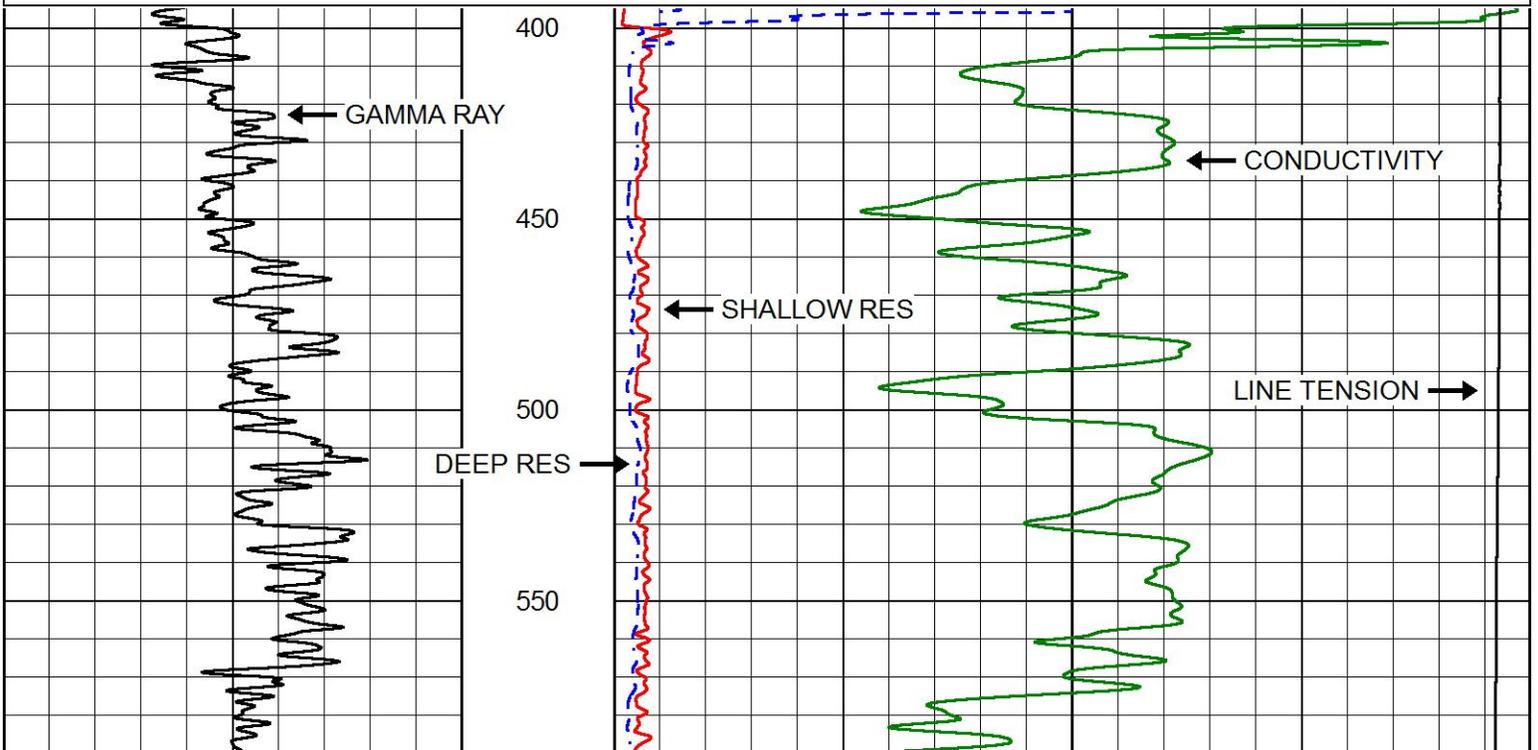
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 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

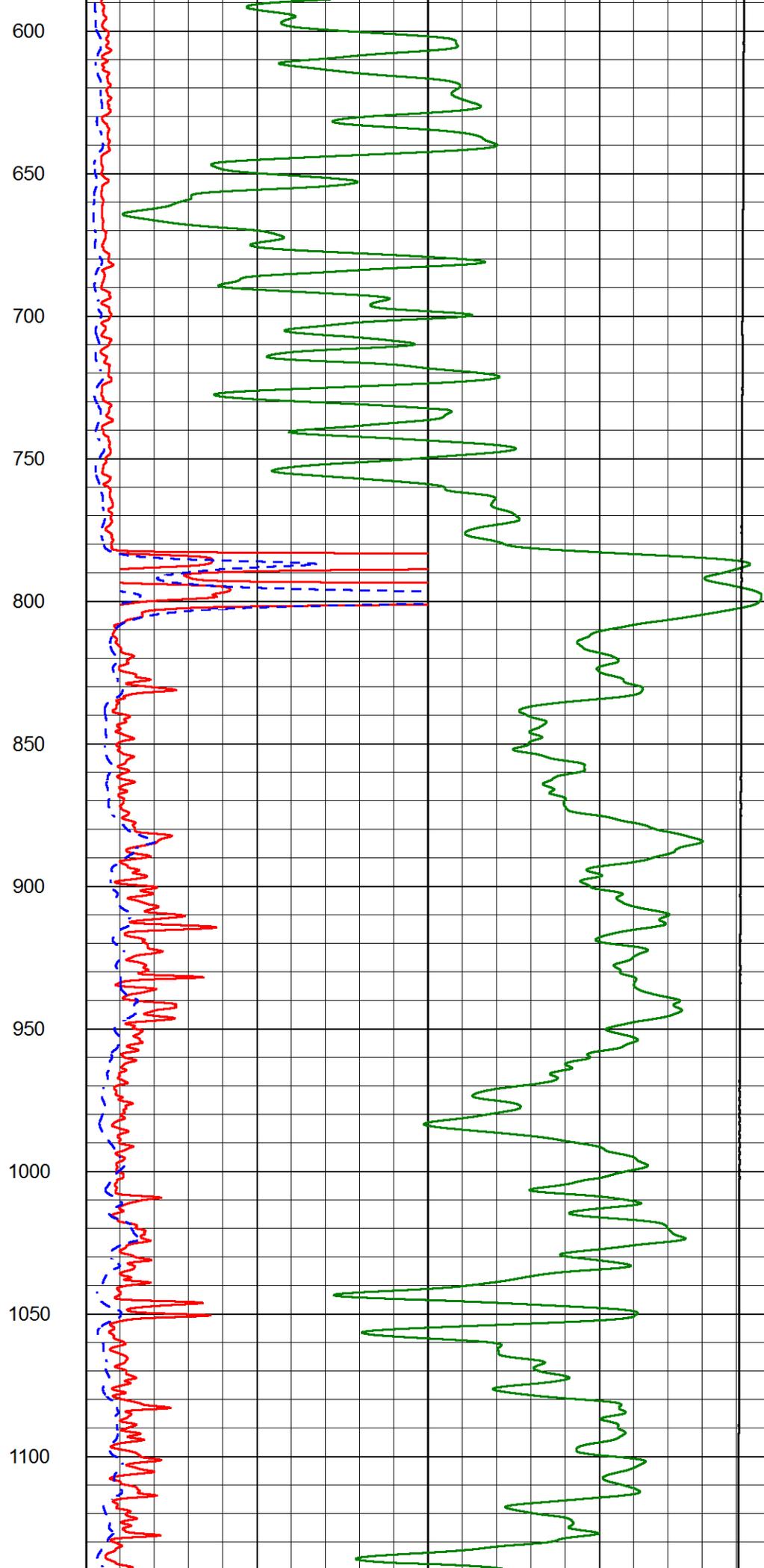
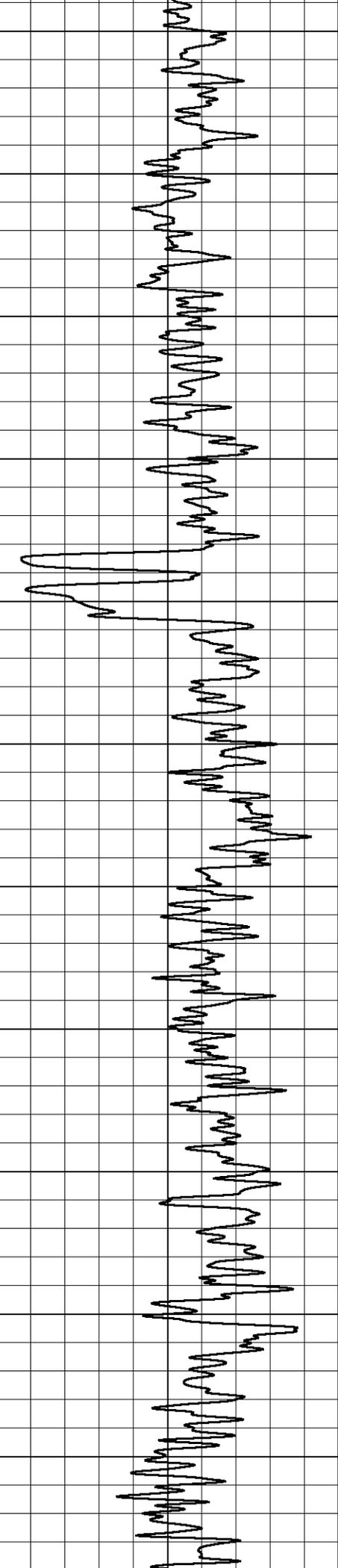


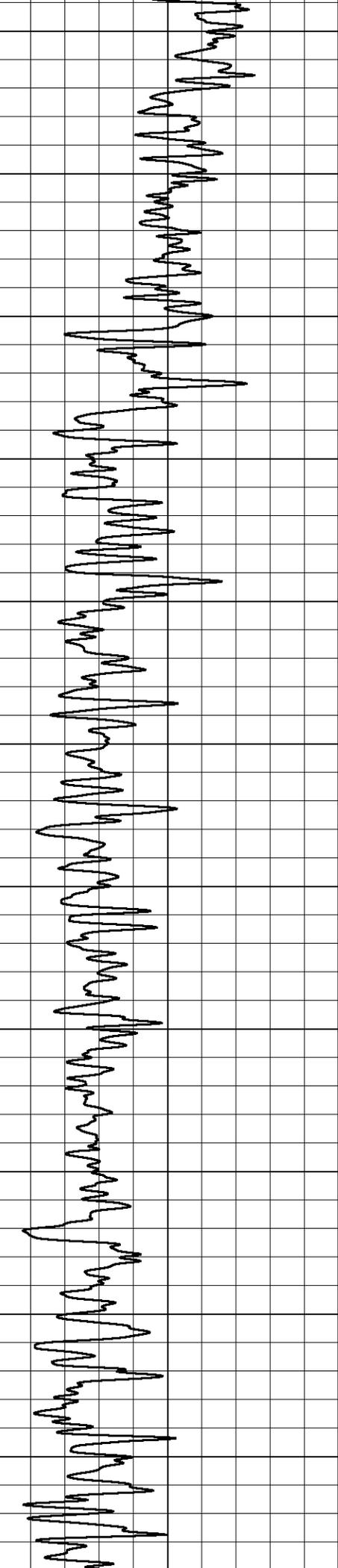
MAIN PASS

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 Presentation Format dil2in
 Dataset Creation Fri Mar 31 20:32:44 2017
 Charted by Depth in Feet scaled 1:600

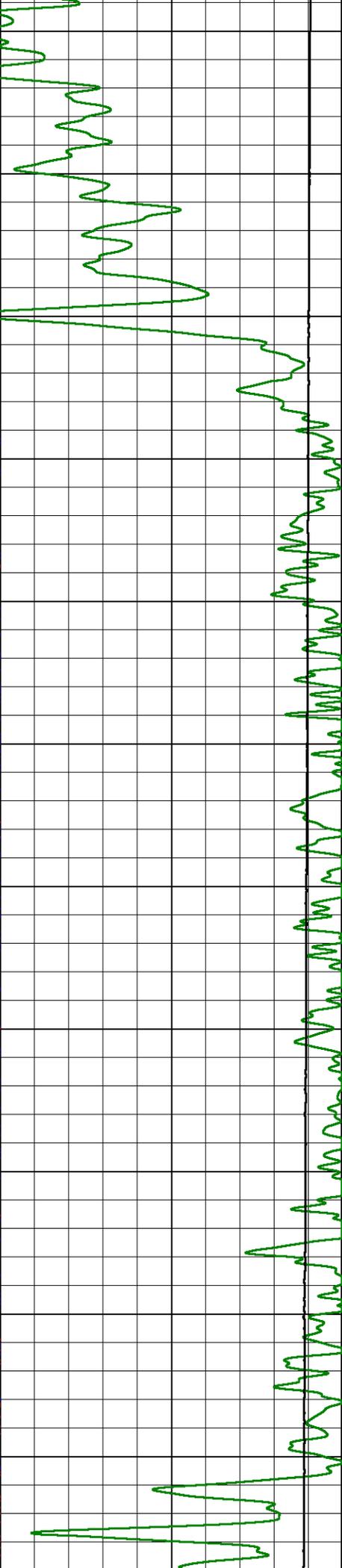
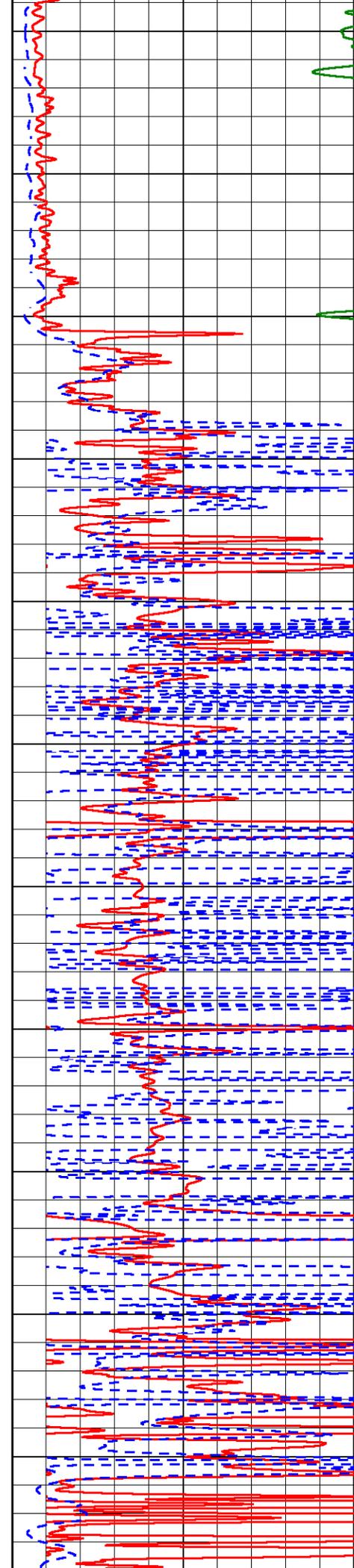
0	Gamma Ray (GAPI)	150	1000	Conductivity (mmho/m)	0
			15000	Line Tension (lb)	0
			0	Shallow Resistivity (Ohm-m)	50
			0	Deep Resistivity (Ohm-m)	50
				Shallow Resistivity	
			50	(Ohm-m)	500
			50	Deep Resistivity (Ohm-m)	500

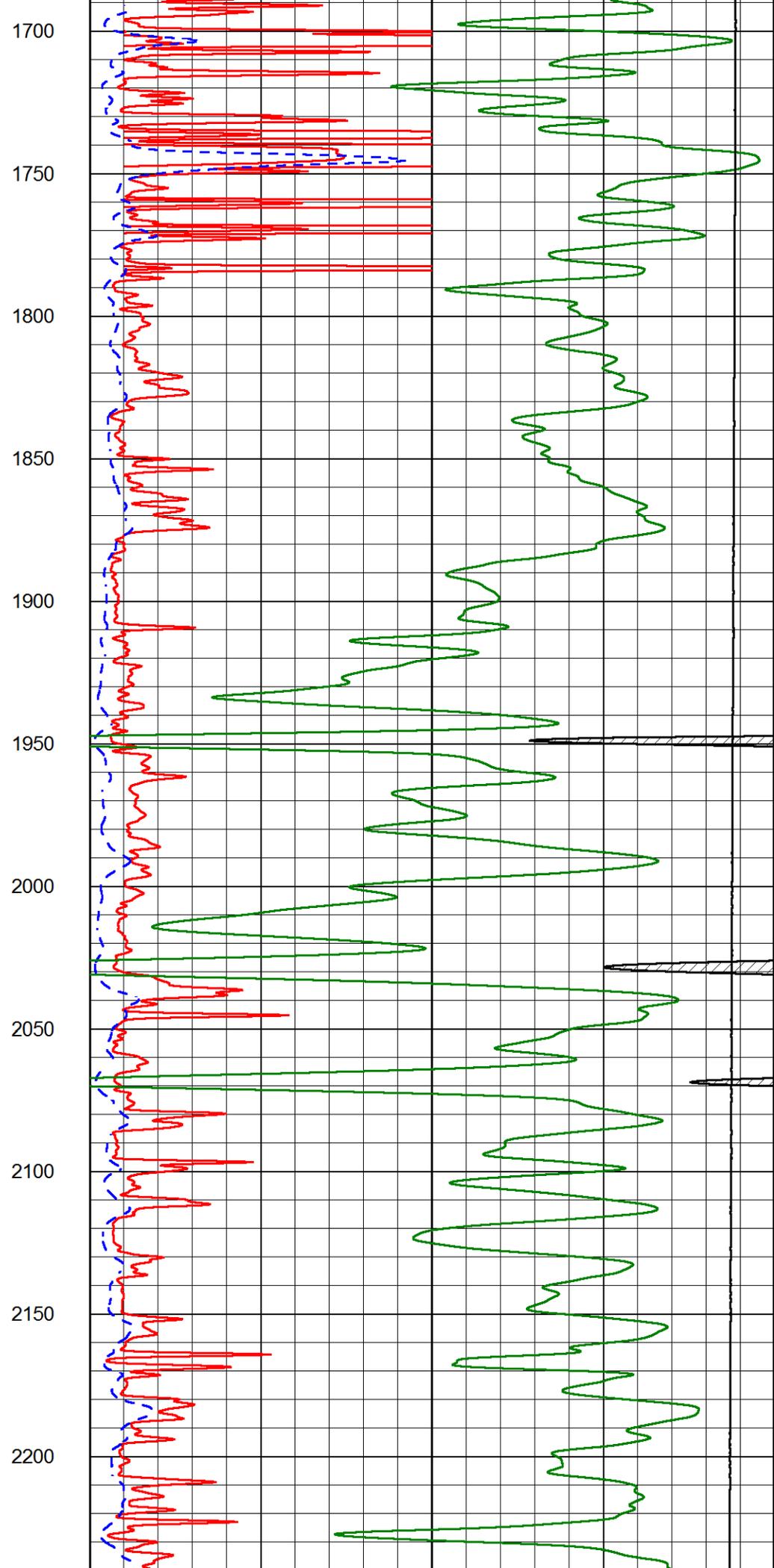
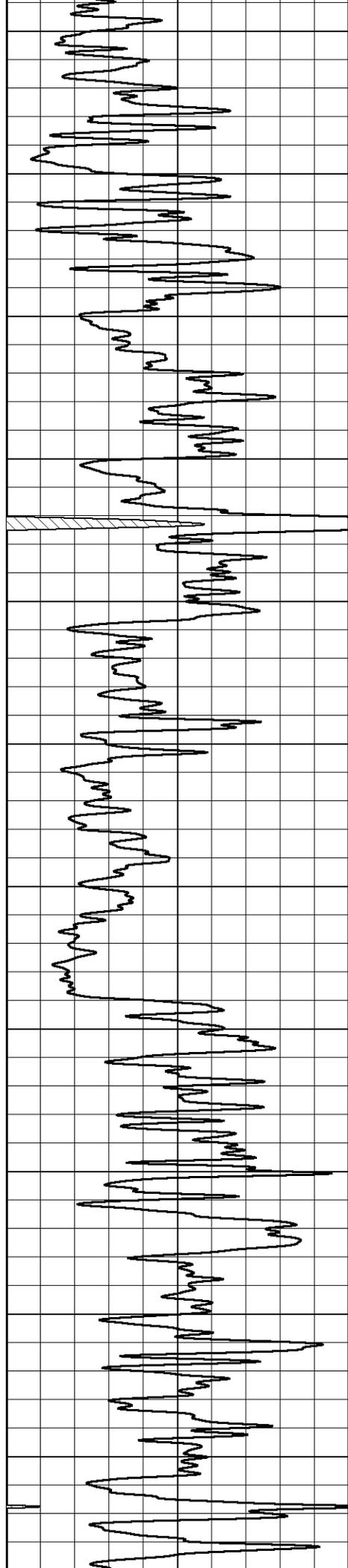


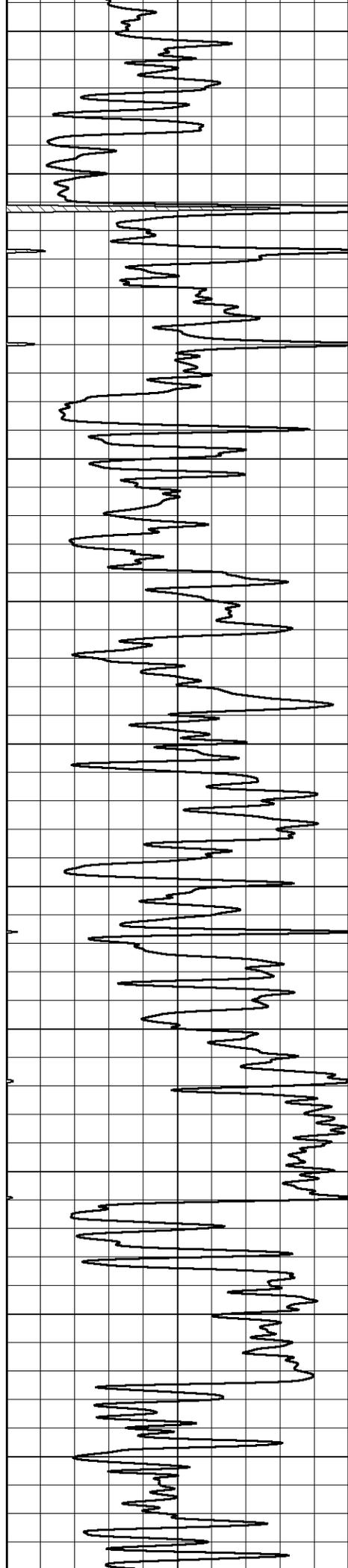




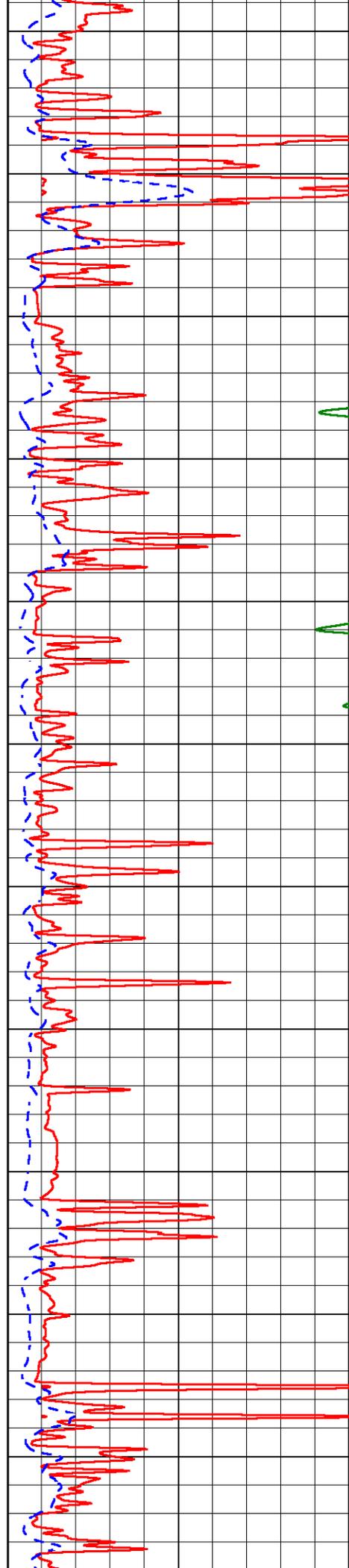
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1200
1250
1300
1350
1400
1450
1500
1550
1600
1650

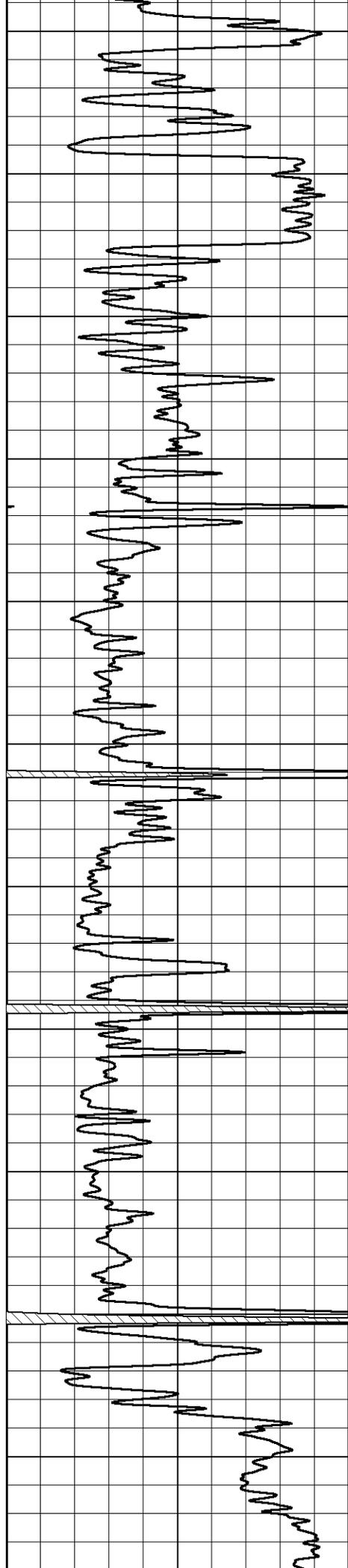




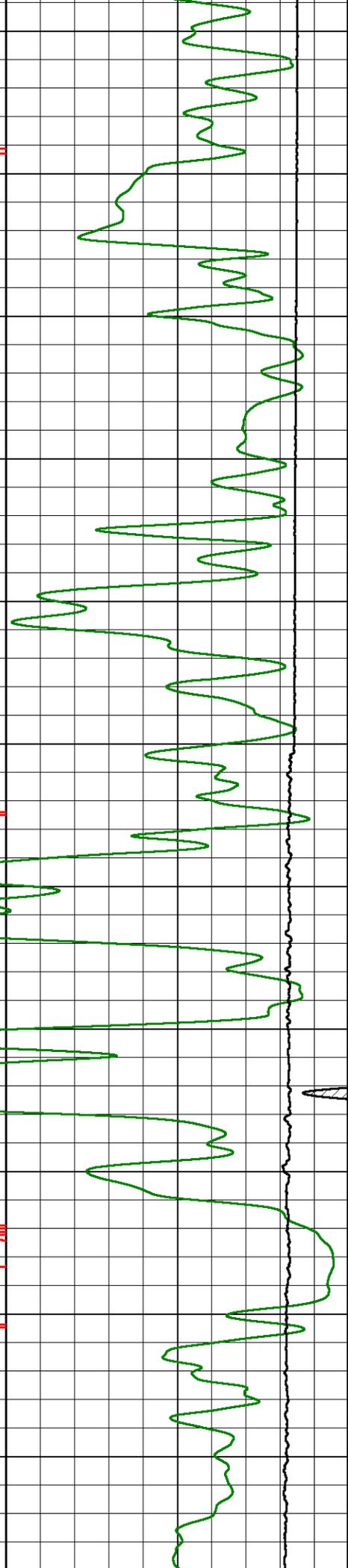
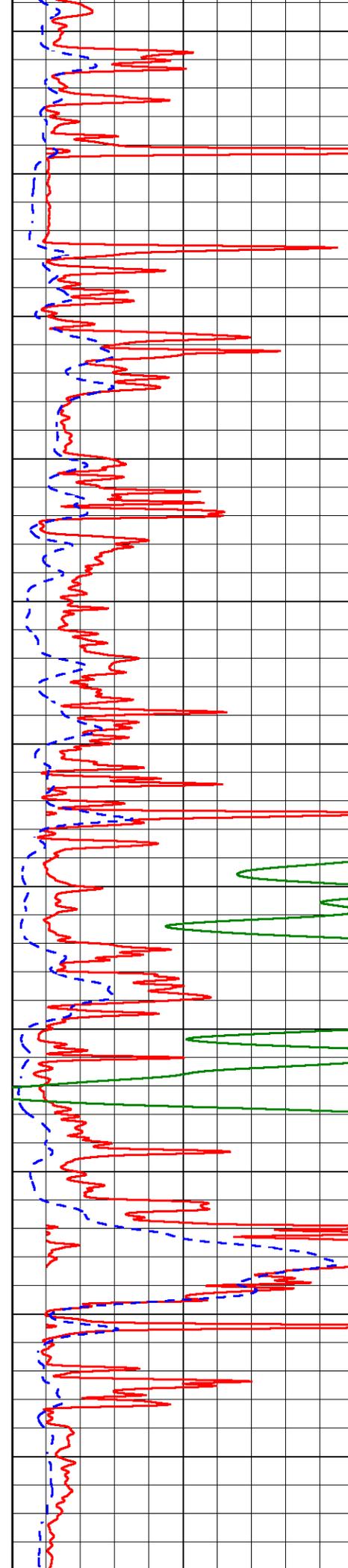


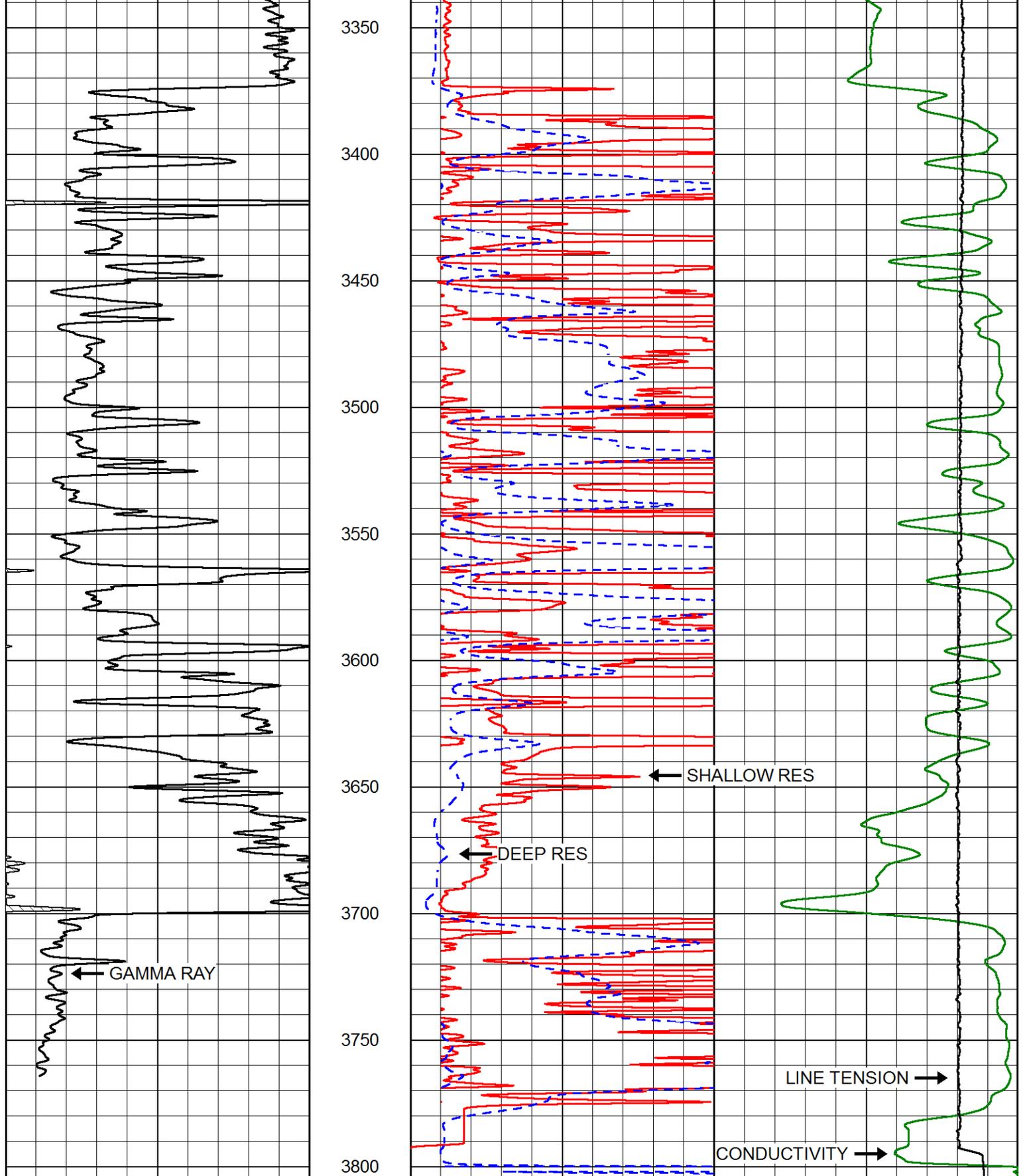
2250
2300
2350
2400
2450
2500
2550
2600
2650
2700
2750





2800
2850
2900
2950
3000
3050
3100
3150
3200
3250
3300





0 Gamma Ray (GAPI) 150

1000 Conductivity (mmho/m) 0

15000 Line Tension (lb) 0

0 Shallow Resistivity (Ohm-m) 50

0 Deep Resistivity (Ohm-m) 50

Shallow Resistivity

50 (Ohm-m) 500

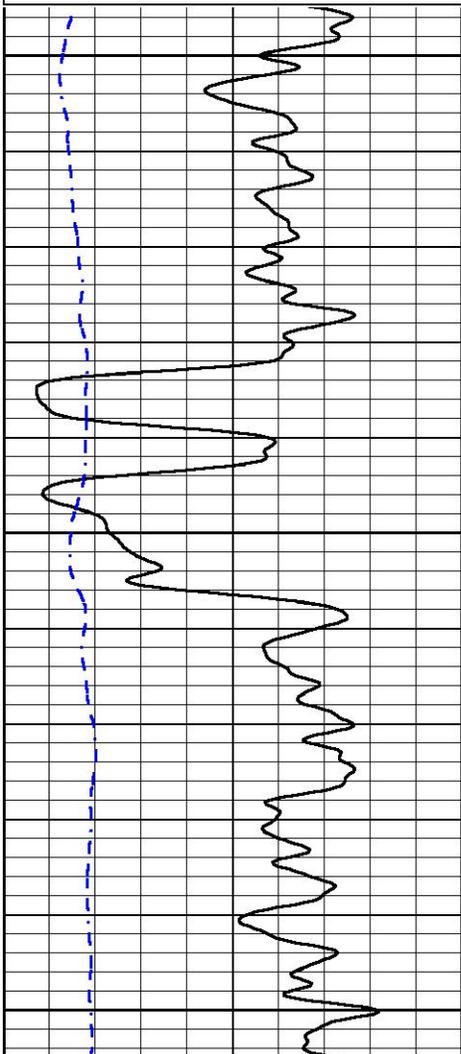
50 Deep Resistivity (Ohm-m) 500

MAIN PASS

Database File stratakan_seward sw_1-1.db
 Dataset Pathname STKML/pass4.1
 Presentation Format dil
 Dataset Creation Fri Mar 31 20:32:44 2017
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

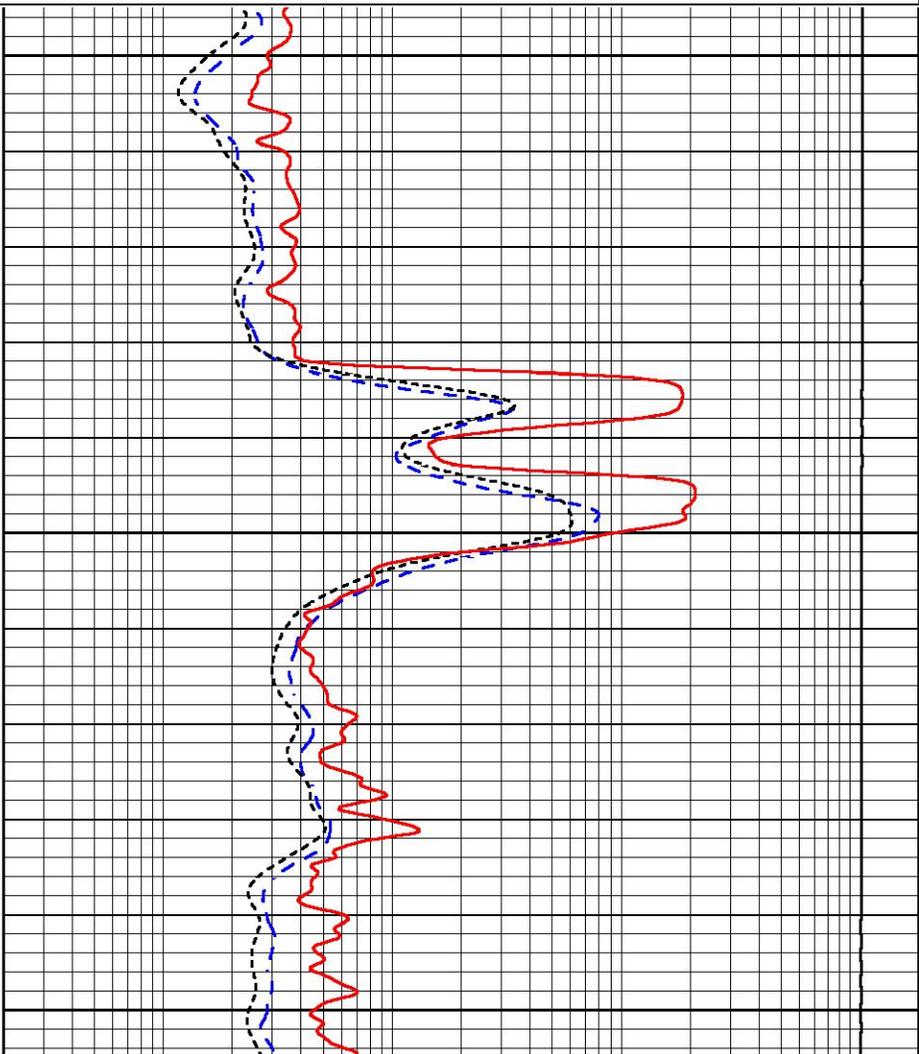
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



750

800

850



0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

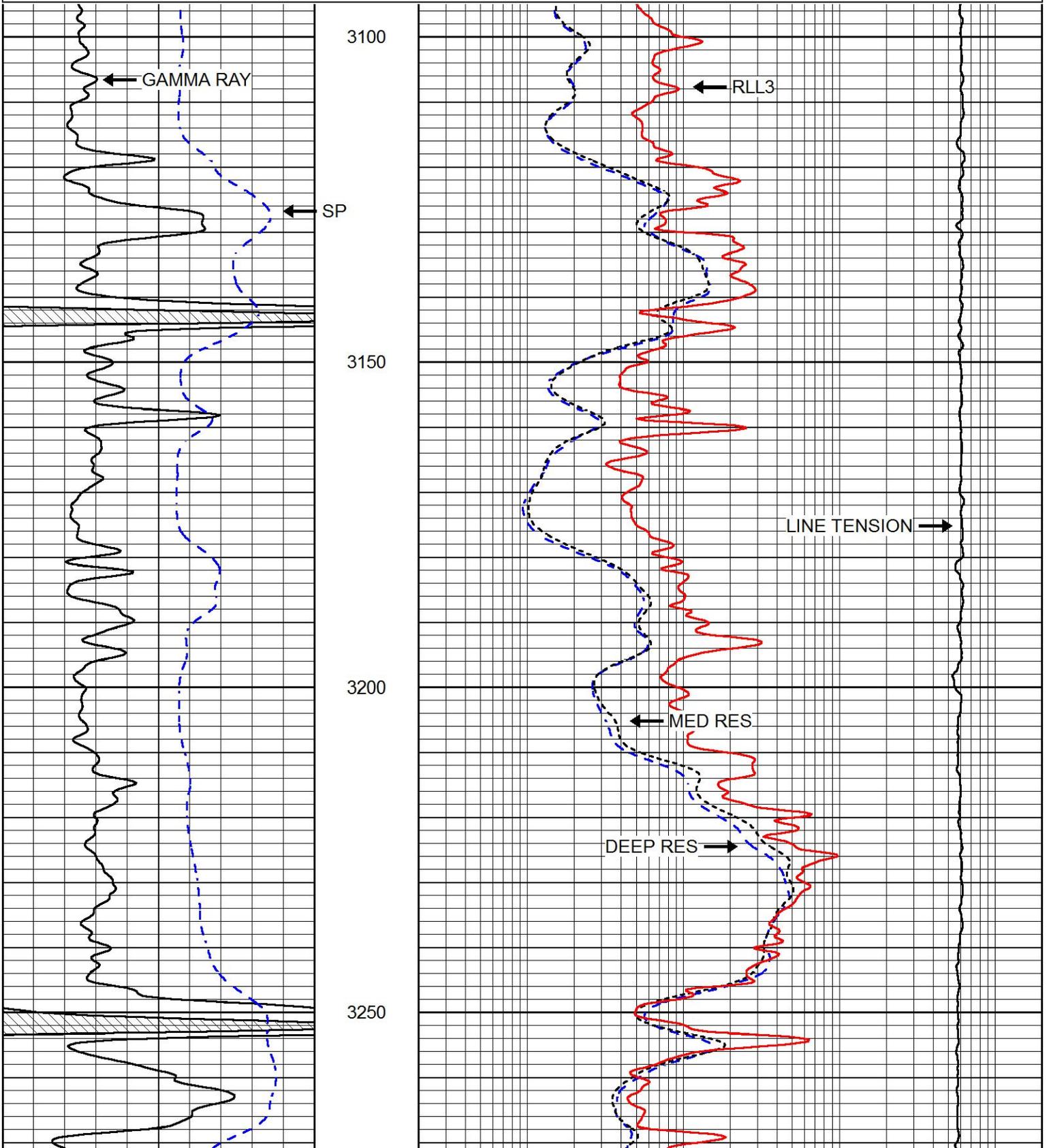
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

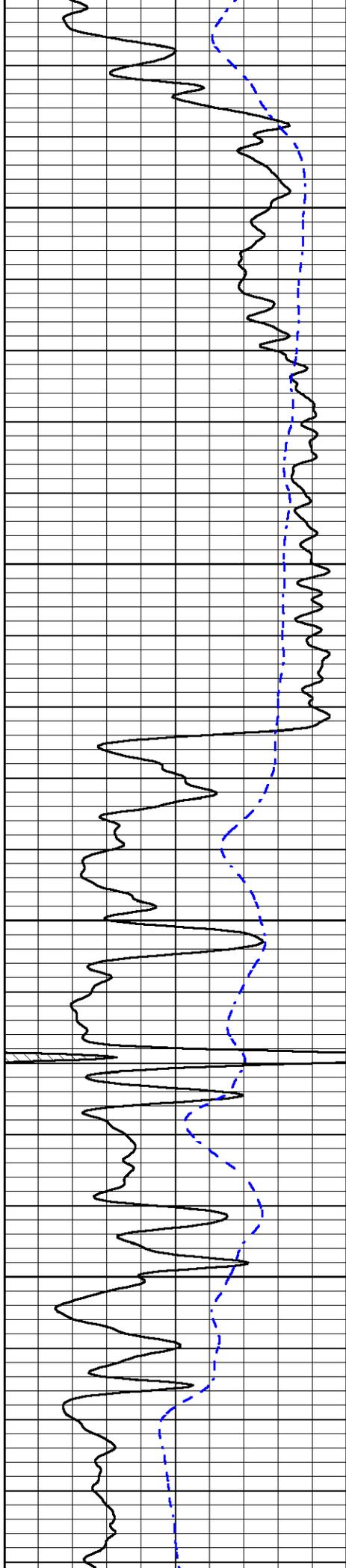
MAIN PASS

Database File stratakan_seward sw_1-1.db
 Dataset Pathname STKML/pass3.1
 Presentation Format dil
 Dataset Creation Fri Mar 31 20:09:00 2017
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



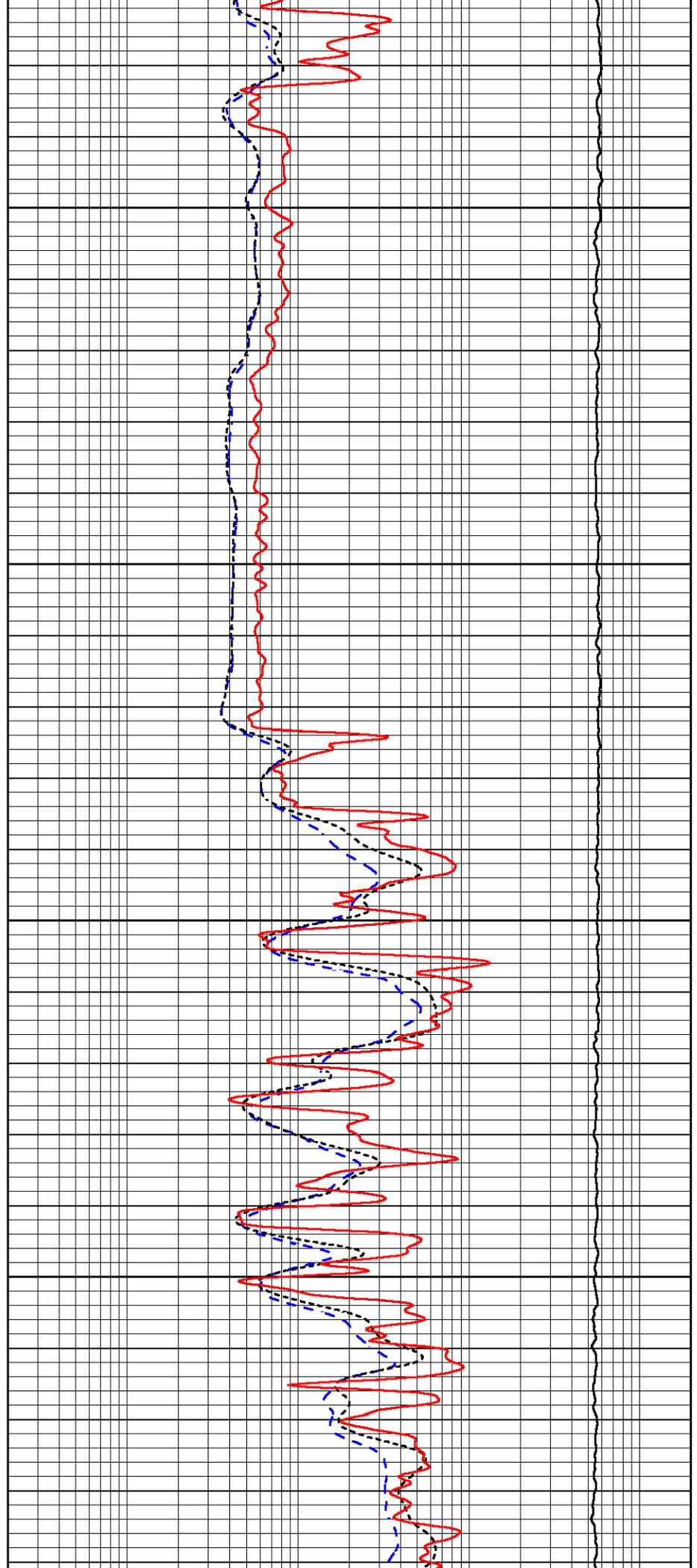


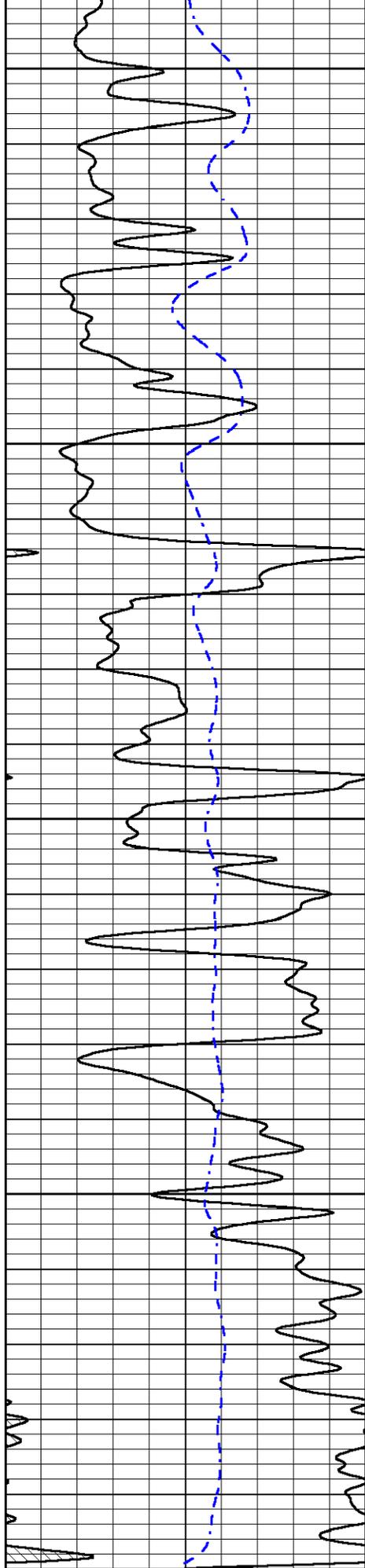
3300

3350

3400

3450





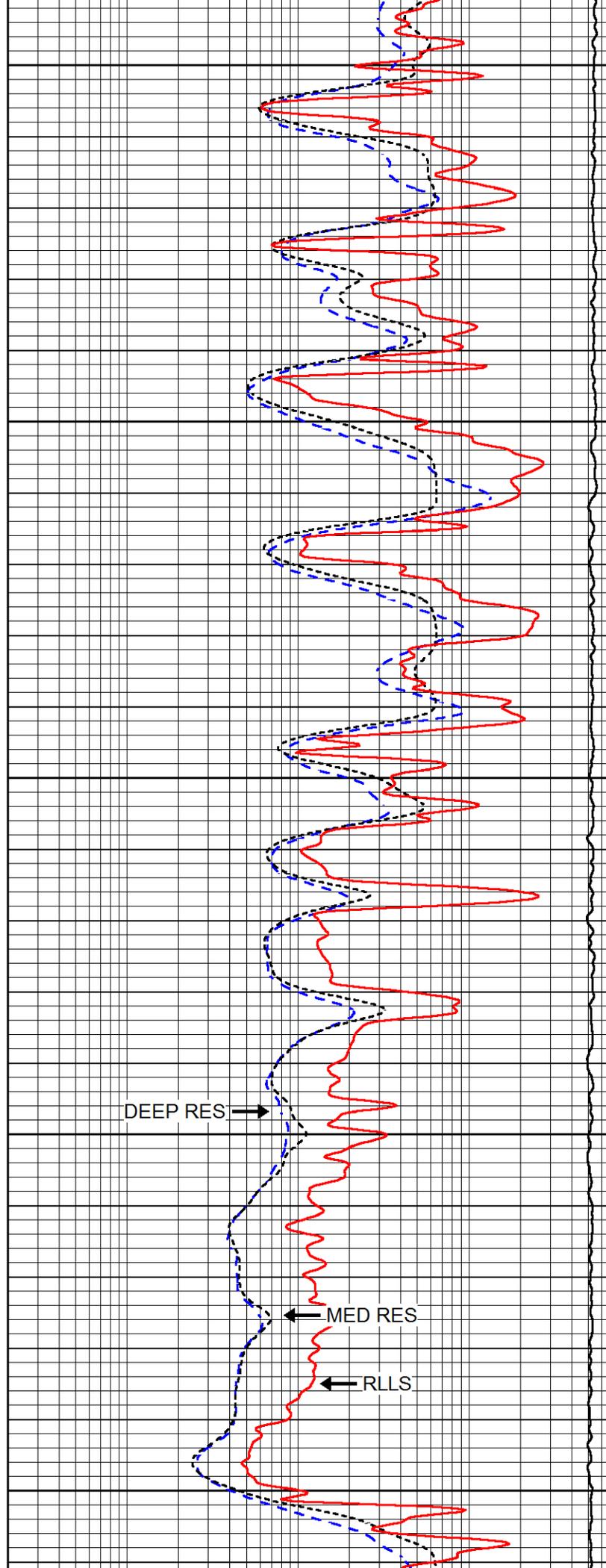
3500

3550

3600

3650

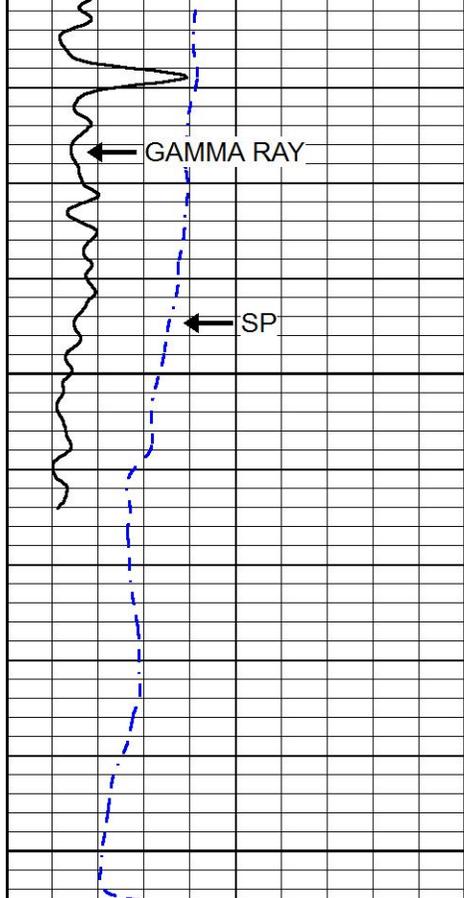
3700



DEEP RES →

← MED RES

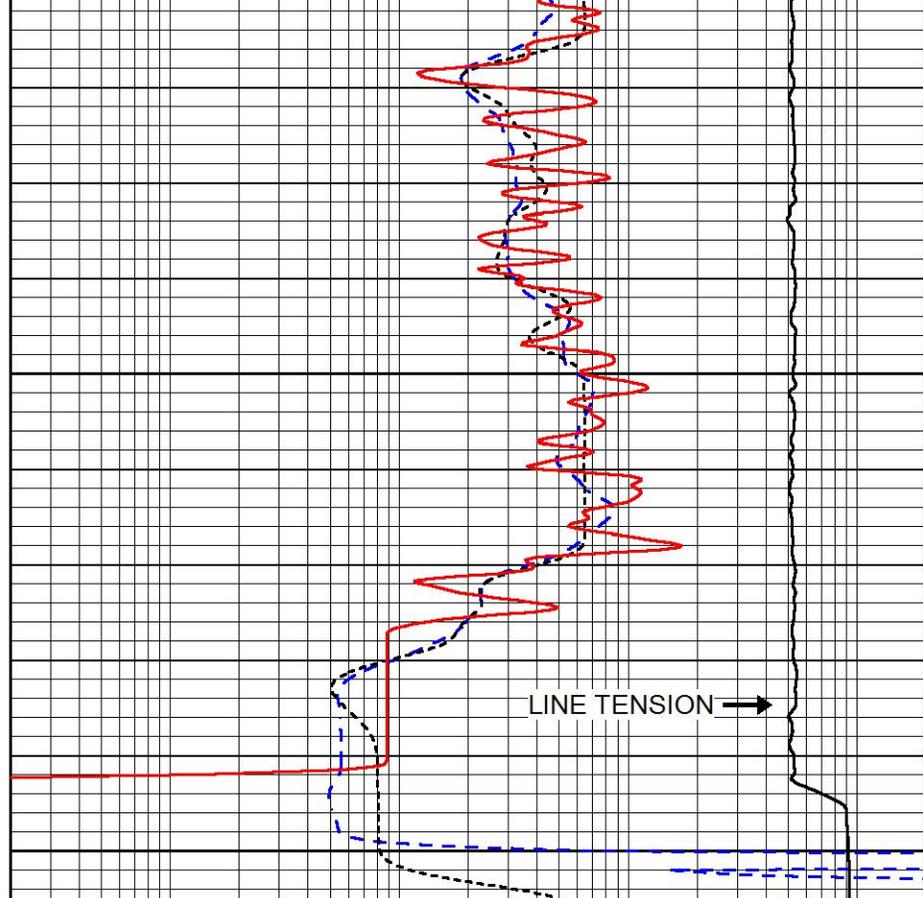
← RLLS



0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

3750

3800



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0

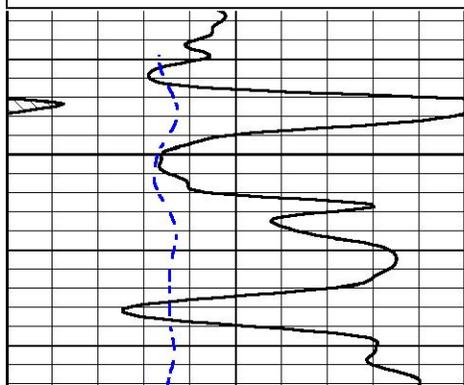


REPEAT SECTION

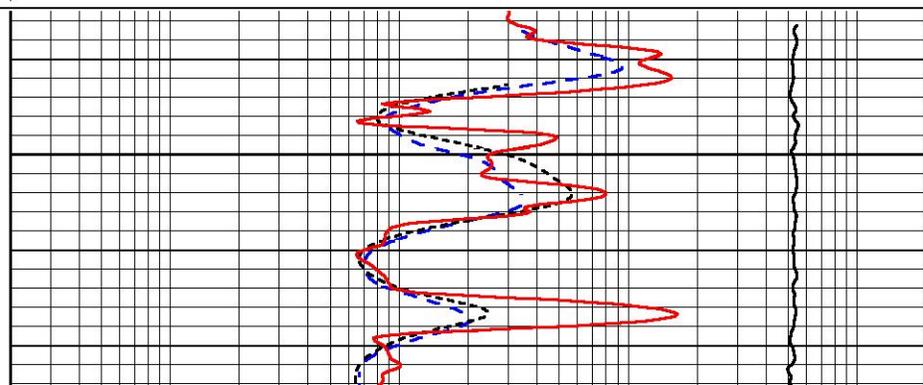
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 Presentation Format dil
 Dataset Creation Fri Mar 31 20:14:20 2017
 Charted by Depth in Feet scaled 1:240

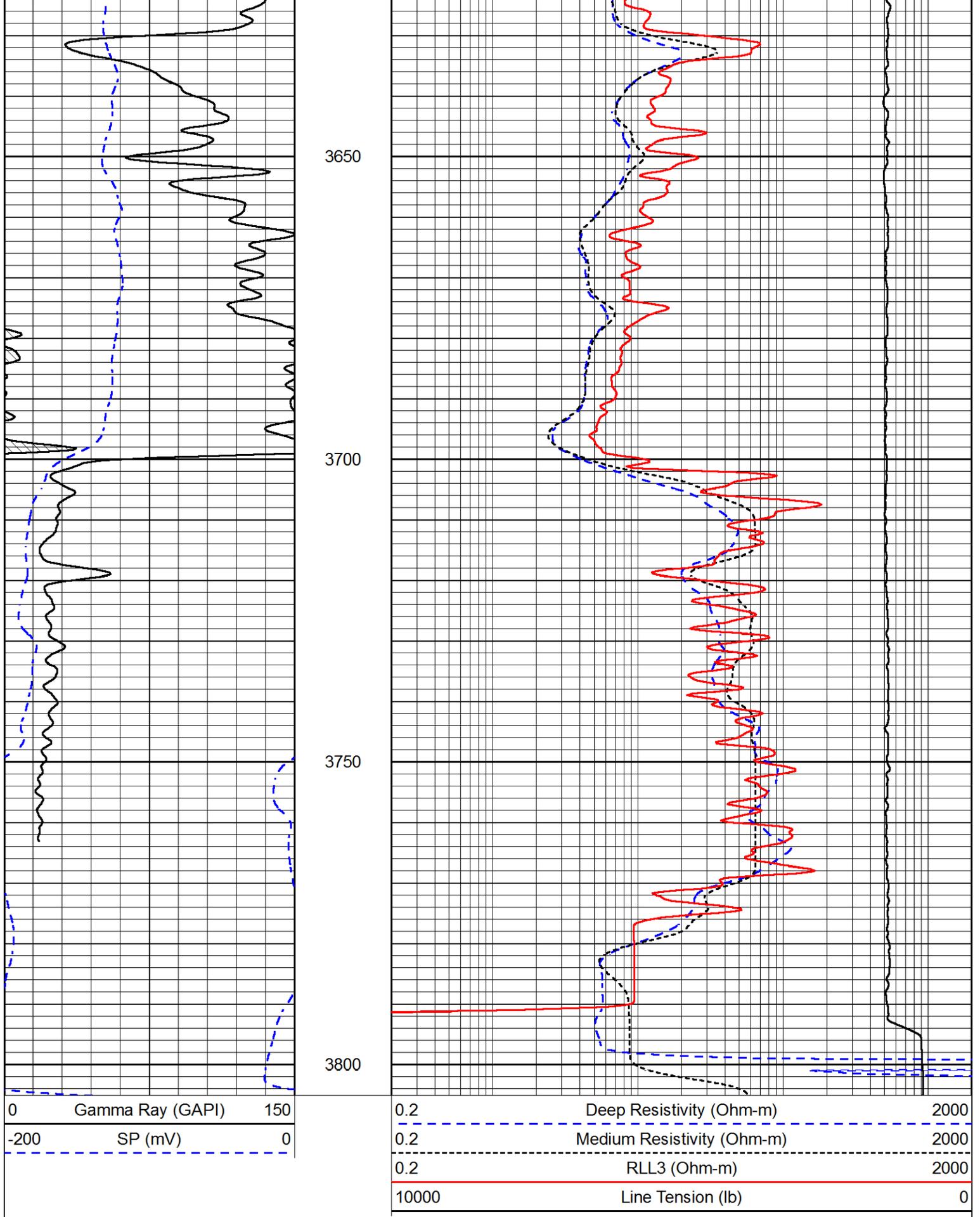
0	Gamma Ray (GAPI)	150
-200	SP (mV)	0

0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



3600





Calibration Report

Database File stratakan_seward sw_1-1.db
 Dataset Pathname STKML/pass3.1
 Dataset Creation Fri Mar 31 20:00:00 2017

Dual Induction Calibration Report

Serial-Model: PSI 13-M&W
 Calibration Performed: Fri Mar 31 18:54:31 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	166.796	835.089	0.000	255.800	mmho/m	0.900	-23.000
Medium	142.009	1348.560	0.000	255.800	mmho/m	0.850	15.000

Microlog Calibration Report

Serial-Model: PSI-01-PSIML
 Performed: Fri Mar 31 18:41:59 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	32500.0000	-0.9500
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	30000.0000	-0.3000
Caliper	1.0001	1.1397	6.5000	18.5000	in	70.0000	-65.5350

Compensated Density Calibration Report

Serial-Model: 90-1031-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Fri Mar 31 18:42:23 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	5174.18	6425.27	cps
Aluminum	2.665	g/cc	963.17	4037.42	cps
Spine Angle = 74.55			Density/Spine Ratio = 0.522		
	Size		Reading		
Small Ring	6.00	in	1.83		
Large Ring	16.00	in	1.48		

Compensated Neutron Calibration Report

Serial Number: 207-MW
 Tool Model: M&W
 Calibration Performed: Fri Mar 31 10:30:30 2017

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number: 89
 Tool Model: M&W

Calibration Performed:	Fri Mar 31 18:42:32 2017	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.6000	GAPI/cps



PIONEER
Pioneer Energy Services

Company	STRATAKAN EXPLORATION, LLC
Well	SEWARD SW #1-1
Field	CURTIS
County	STAFFORD
State	KANSAS