



**COMPLETION  
& PRODUCTION  
SERVICES CO.**

**DUAL  
INDUCTION  
LOG**

Company MAI OIL OPERATIONS, INC.  
Well BETTY #3-1  
Field FAUBION  
County ROOKS  
State KANSAS

Company L.D. DRILLING, INC.  
Well BETTY #3-1  
Field FAUBION  
County ROOKS State KANSAS

Location: API # : 15-163-24285  
708' FSL & 330' FWL  
S2 - NW - SW - SW  
SEC 1 TWP 6S RGE 18W  
Permanent Datum GROUND LEVEL Elevation 1867  
Log Measured From KELLY BUSHING 5' A.G.L.  
Drilling Measured From KELLY BUSHING  
Other Services  
CNL/CDL  
MEL  
Elevation  
K.B. 1872  
D.F. 1870  
G.L. 1867

Date	3/13/15
Run Number	ONE
Depth Driller	3332
Depth Logger	3325
Bottom Logged Interval	3323
Top Log Interval	00
Casing Driller	8 5/8"@387'
Casing Logger	388'
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.1/54
pH / Fluid Loss	11.0/6.0
Source of Sample	FLOWLINE
Rim @ Meas. Temp	1.50@70F
Rmf @ Meas. Temp	1.05@70F
Rmc @ Meas. Temp	1.68@70F
Source of Rmf / Rmc	MEASUREMENT
Rim @ BHT	0.95@110F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	
Maximum Recorded Temperature	110F
Equipment Number	4854
Location	HAYS, KANSAS
Recorded By	IAN MABB
Witnessed By	KIM SHOEMAKER

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

**Comments**

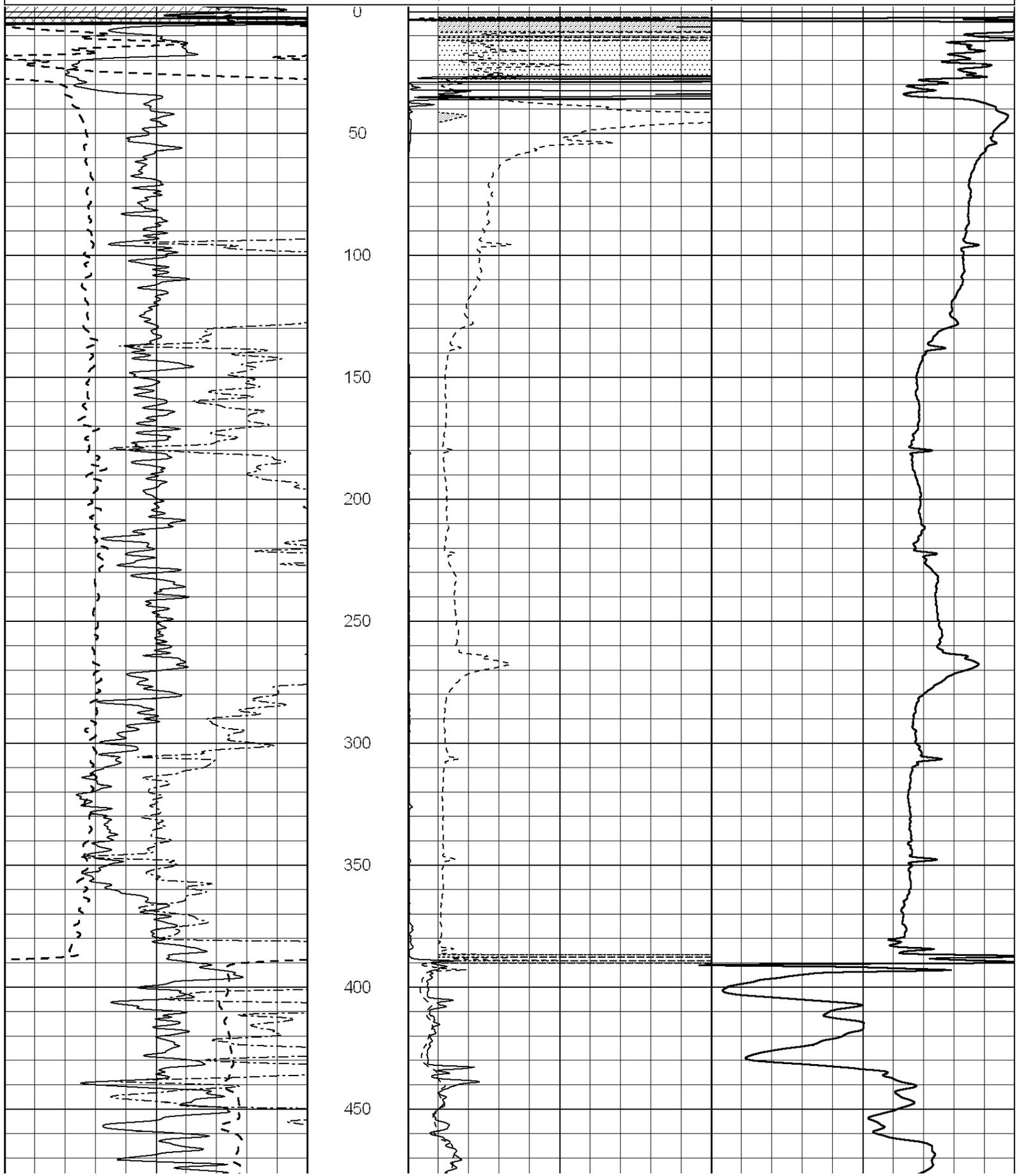
THANK YOU FOR USING "NABORS" HAYS, KANSAS (785) 628-6395  
DIRECTIONS  
STOCKTON, KS. - NORTH TO RD. B - EAST 1/4 MILE - NORTH INTO

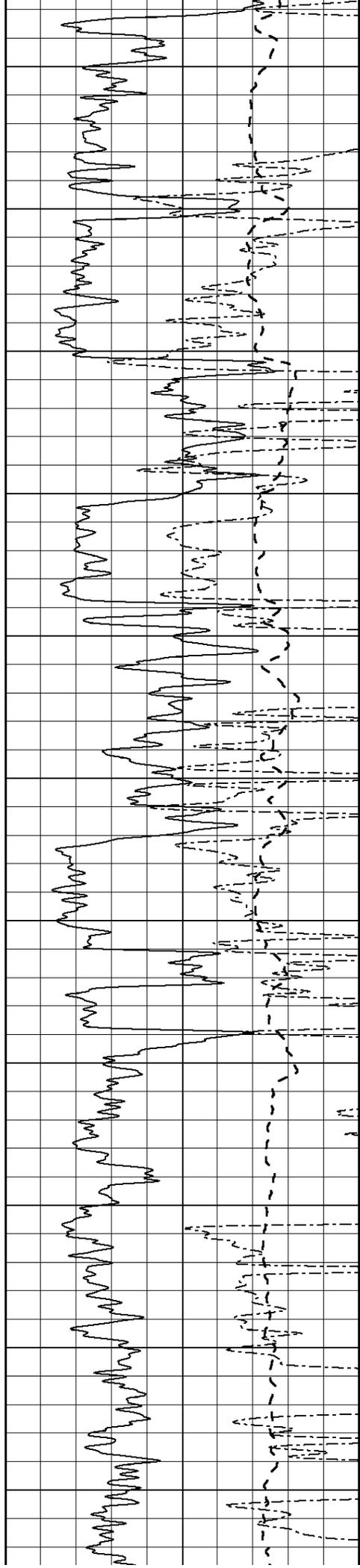
Database File: 26505ddn.db  
Dataset Pathname: pass3.3  
Presentation Format: \_dil2  
Dataset Creation: Fri Mar 13 11:59:09 2015 by Calc SOC 120430  
Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
1000	CILD (mmho/m)	0

50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500





500

550

600

650

700

750

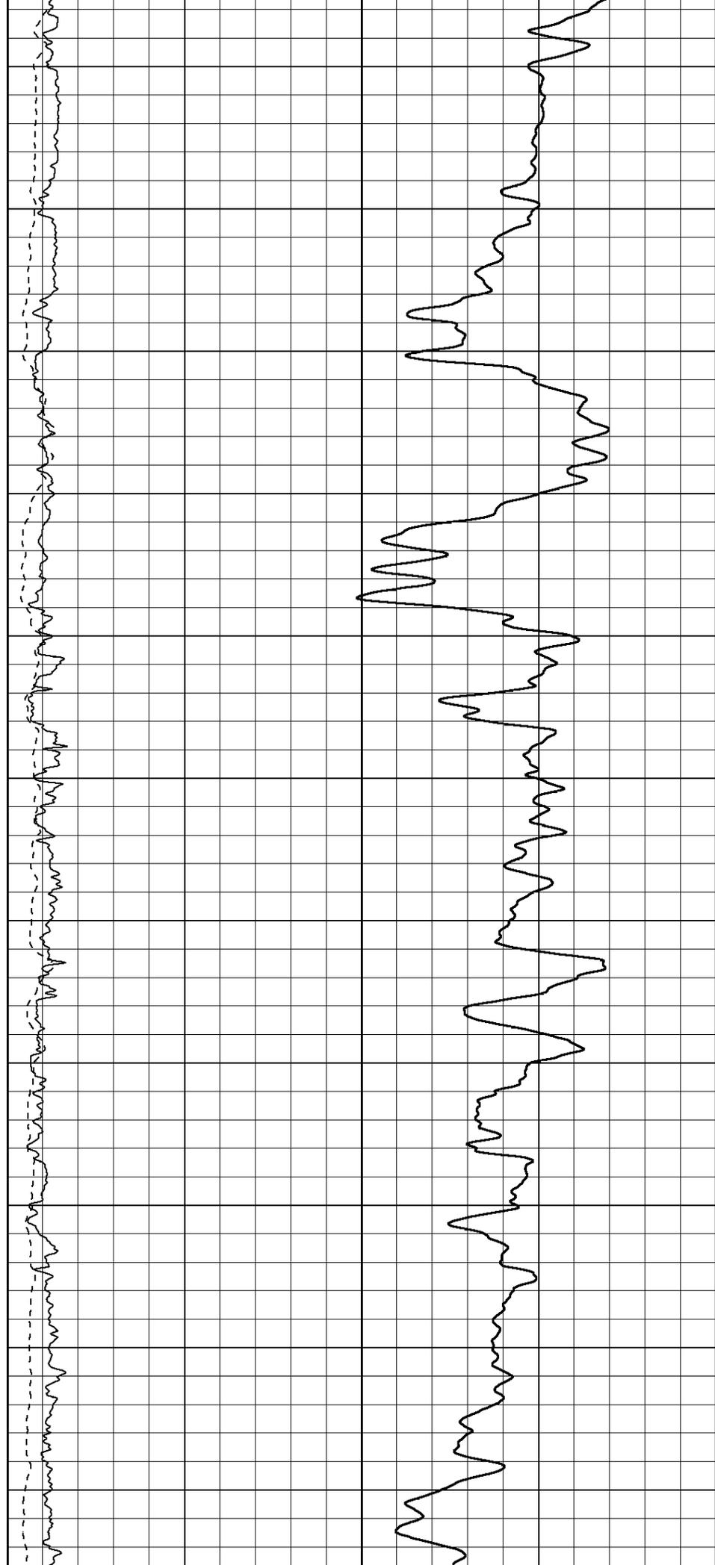
800

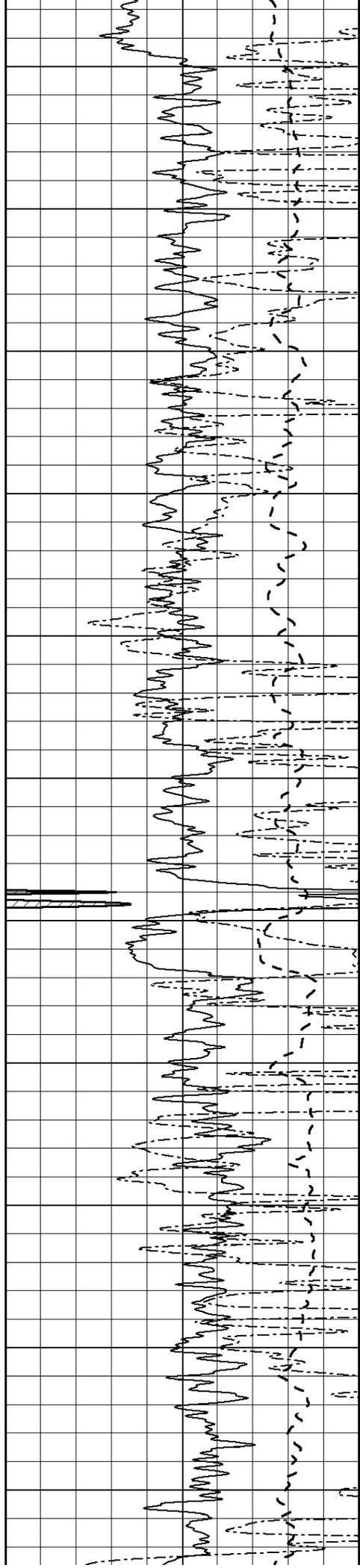
850

900

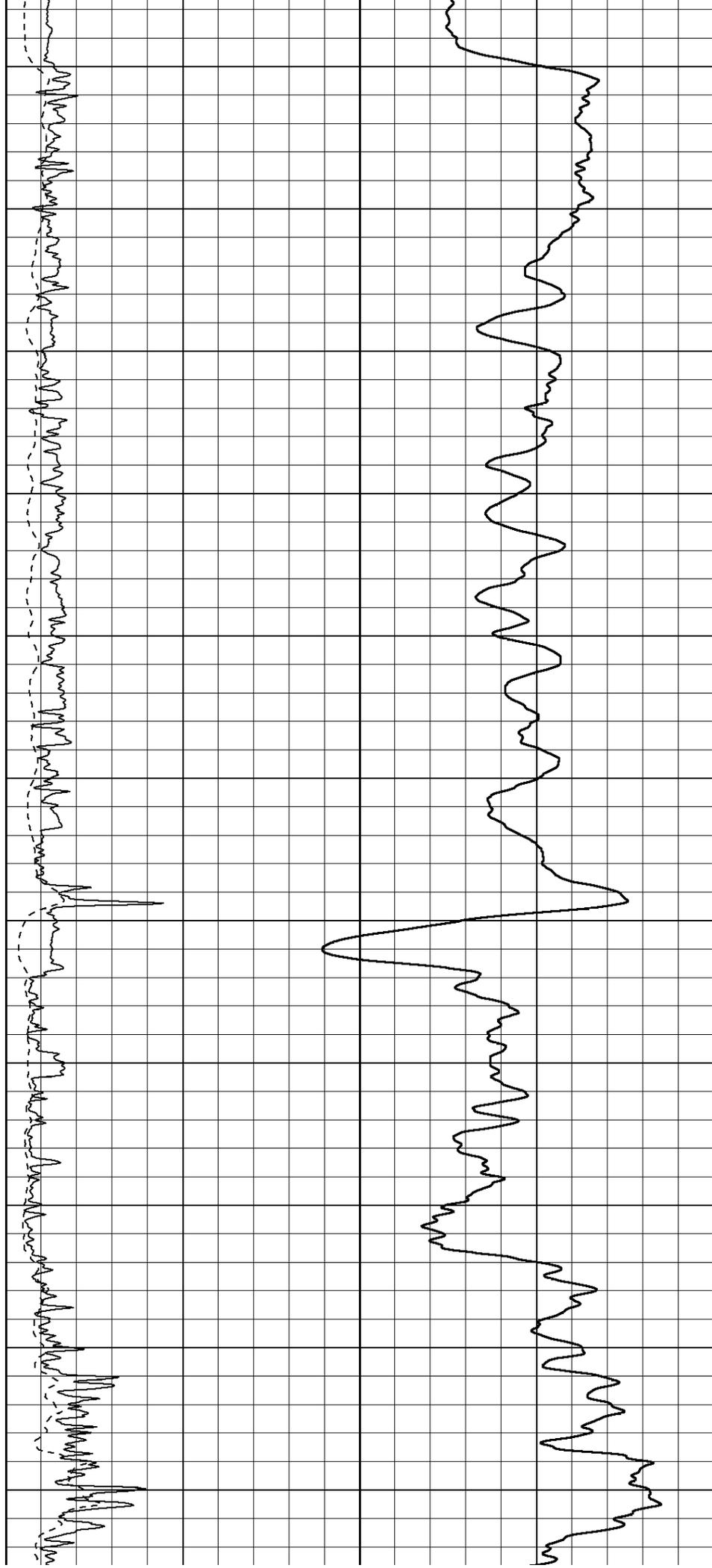
950

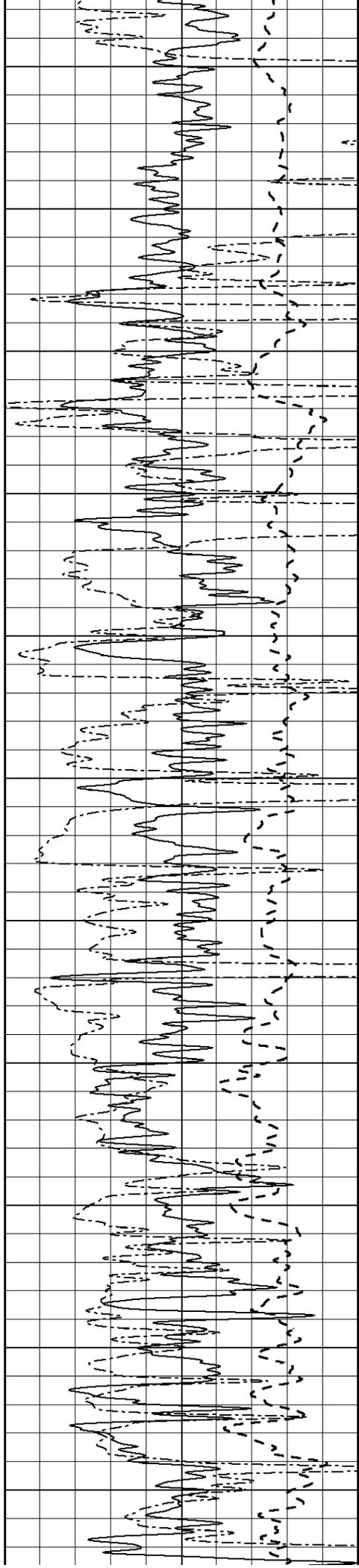
1000





1050  
1100  
1150  
1200  
1250  
1300  
1350  
1400  
1450  
1500  
1550





1600

1650

1700

1750

1800

1850

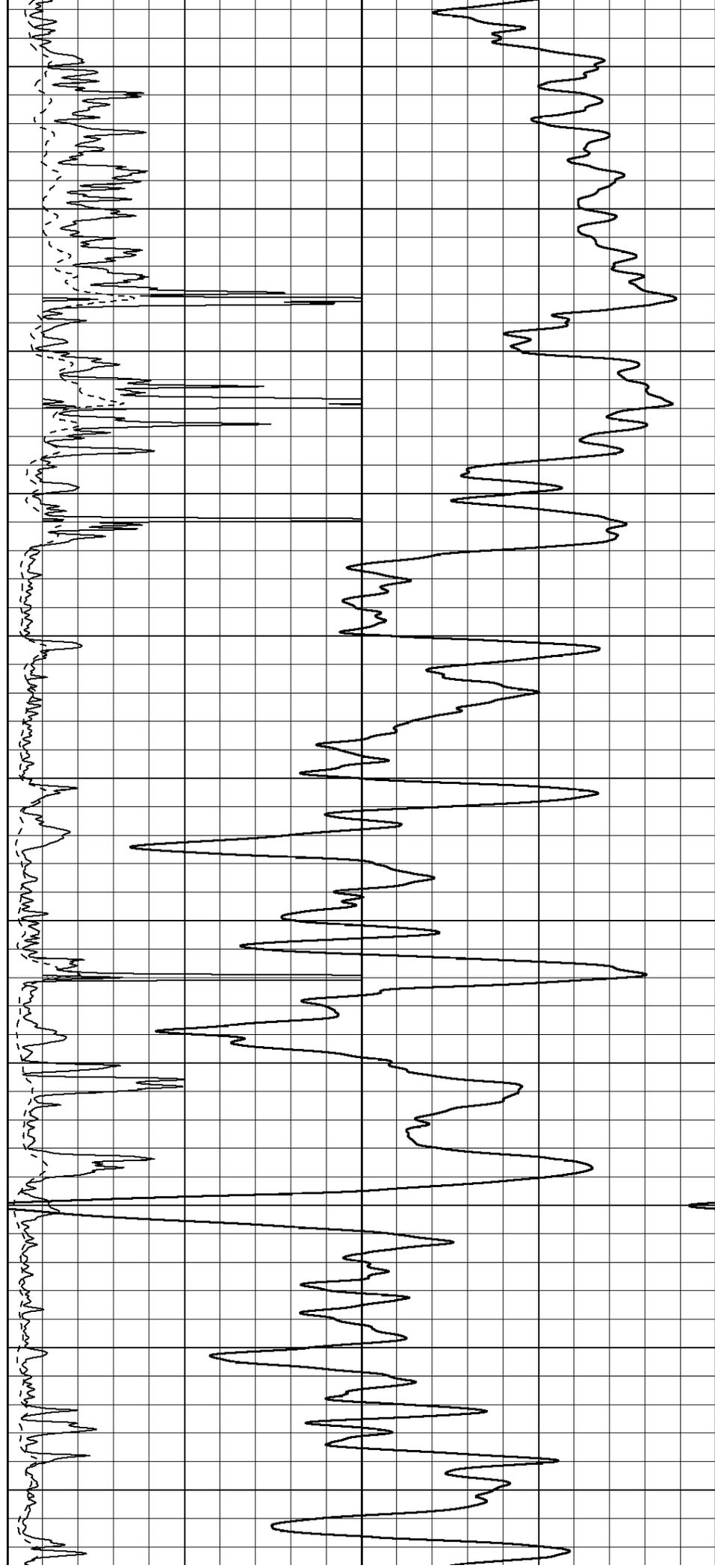
1900

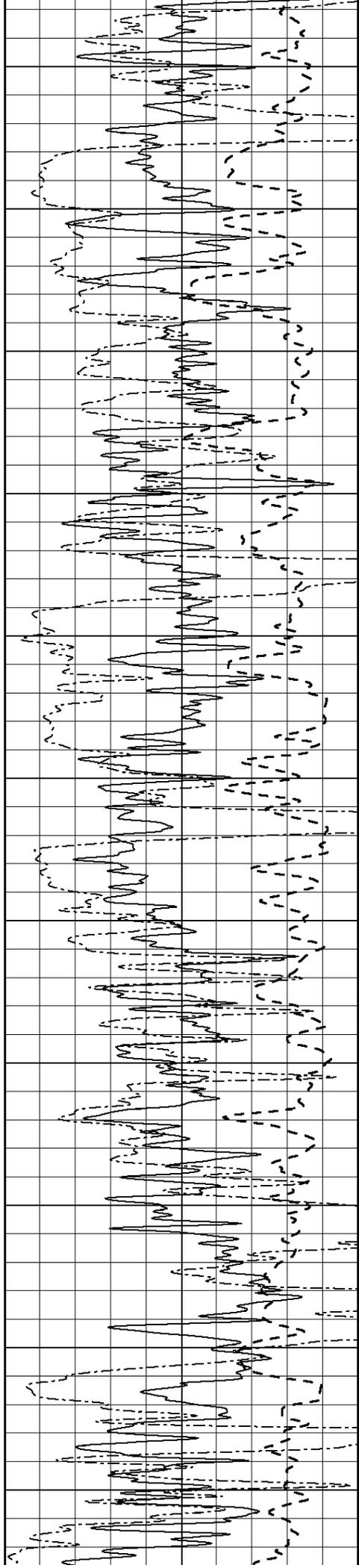
1950

2000

2050

2100





2150

2200

2250

2300

2350

2400

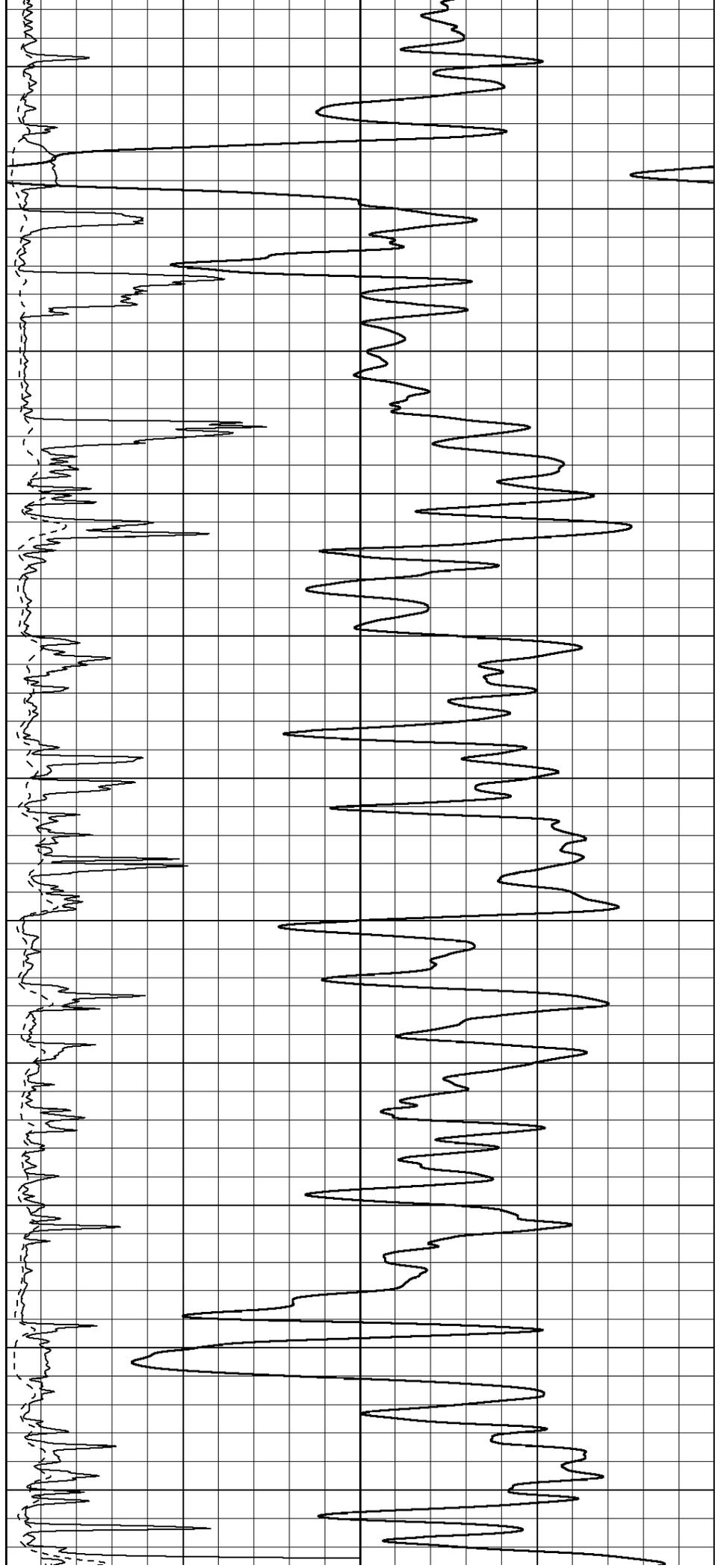
2450

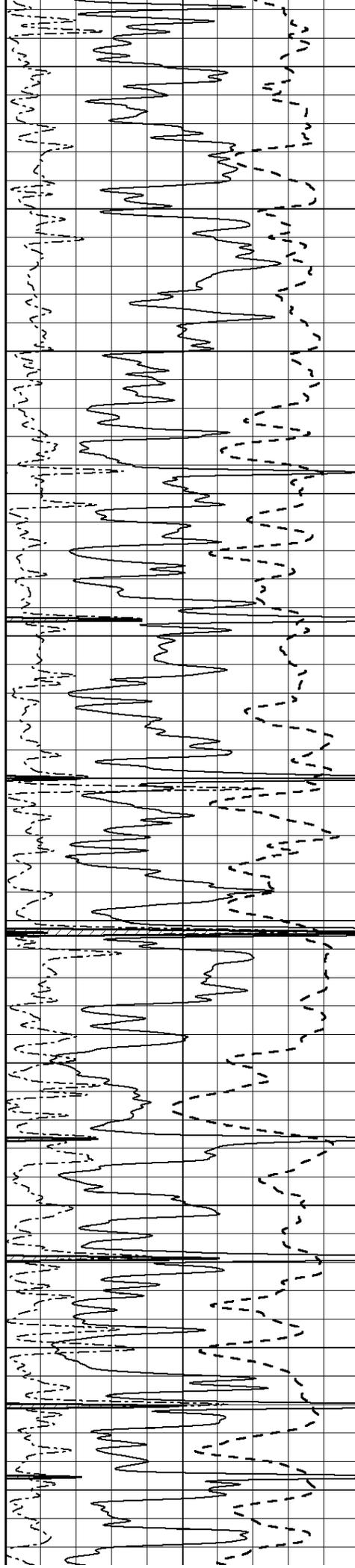
2500

2550

2600

2650





2700

2750

2800

2850

2900

2950

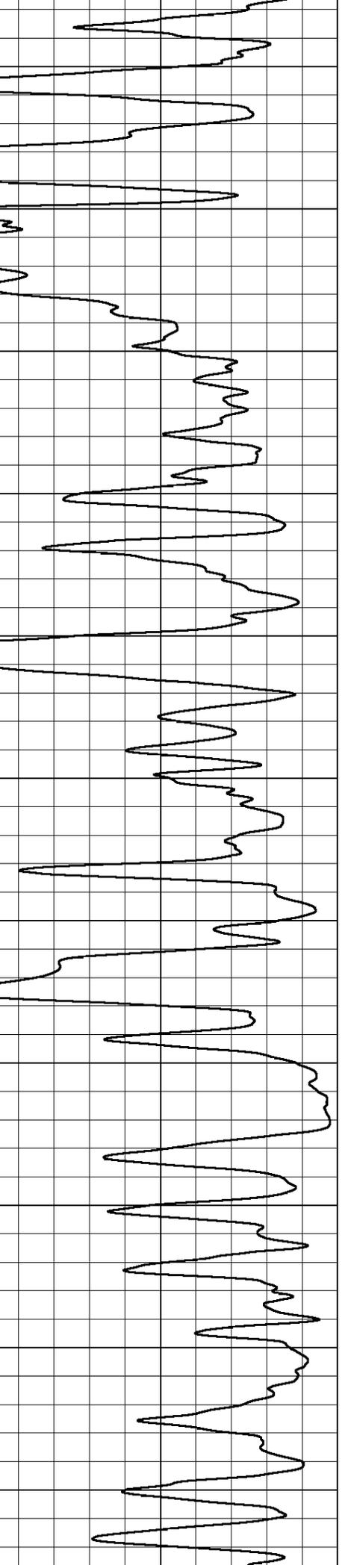
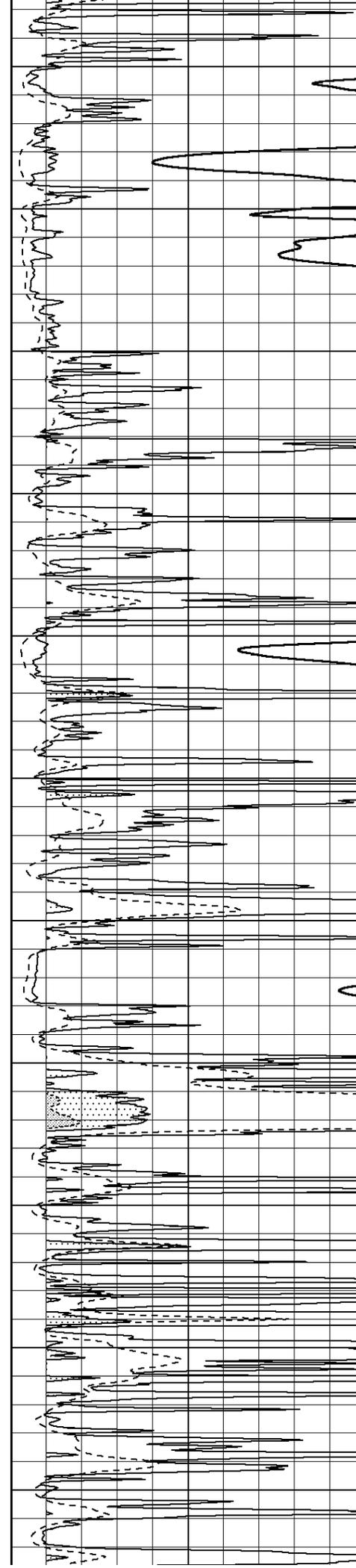
3000

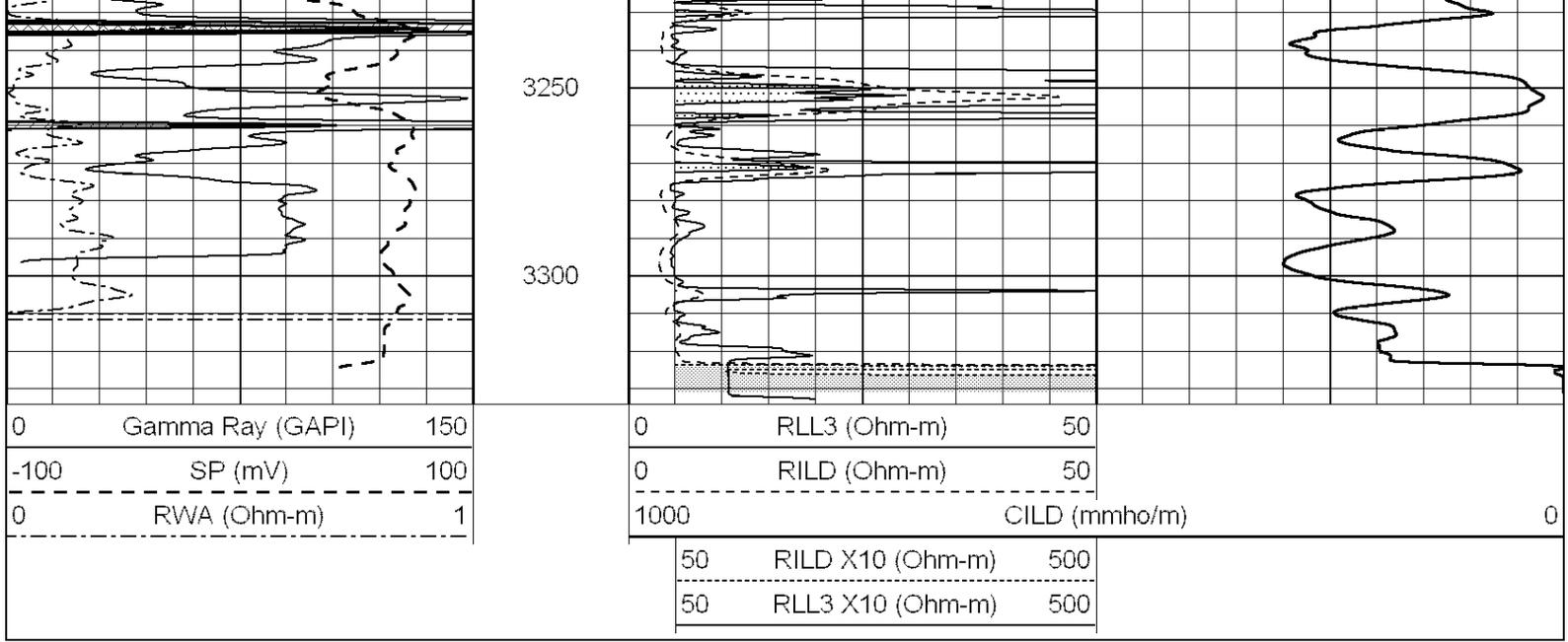
3050

3100

3150

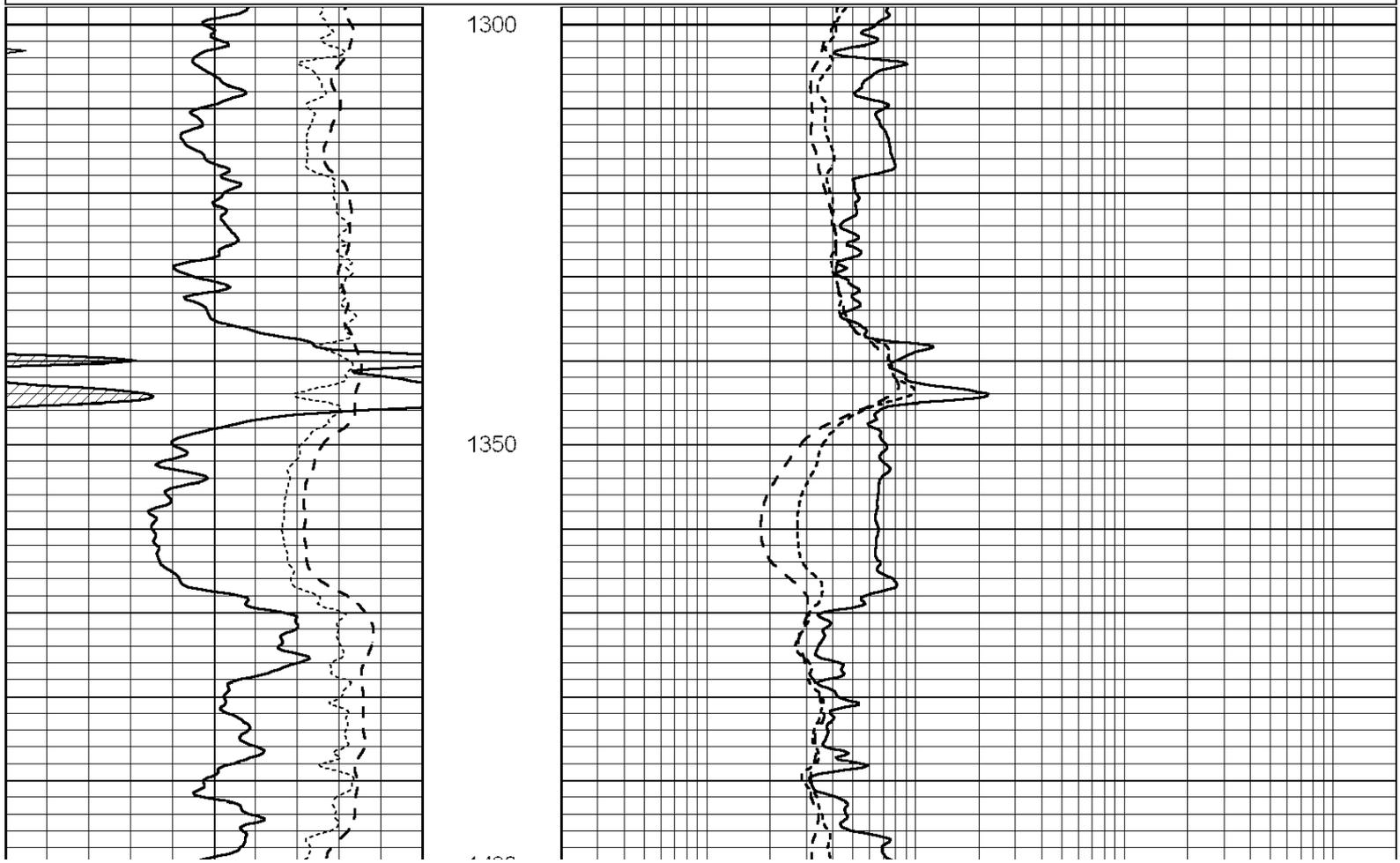
3200





Database File: 26505ddn.db  
 Dataset Pathname: pass3.3  
 Presentation Format: \_dil  
 Dataset Creation: Fri Mar 13 11:59:09 2015 by Calc SOC 120430  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	0.2	SHALLOW GUARD (Ohm-m)	2000
-100	SP (mV)	100	0.2	DEEP INDUCTION (Ohm-m)	2000
-250	Rxo/Rt	50	0.2	MEDIUM INDUCTION (Ohm-m)	2000
0	MINMK	20			



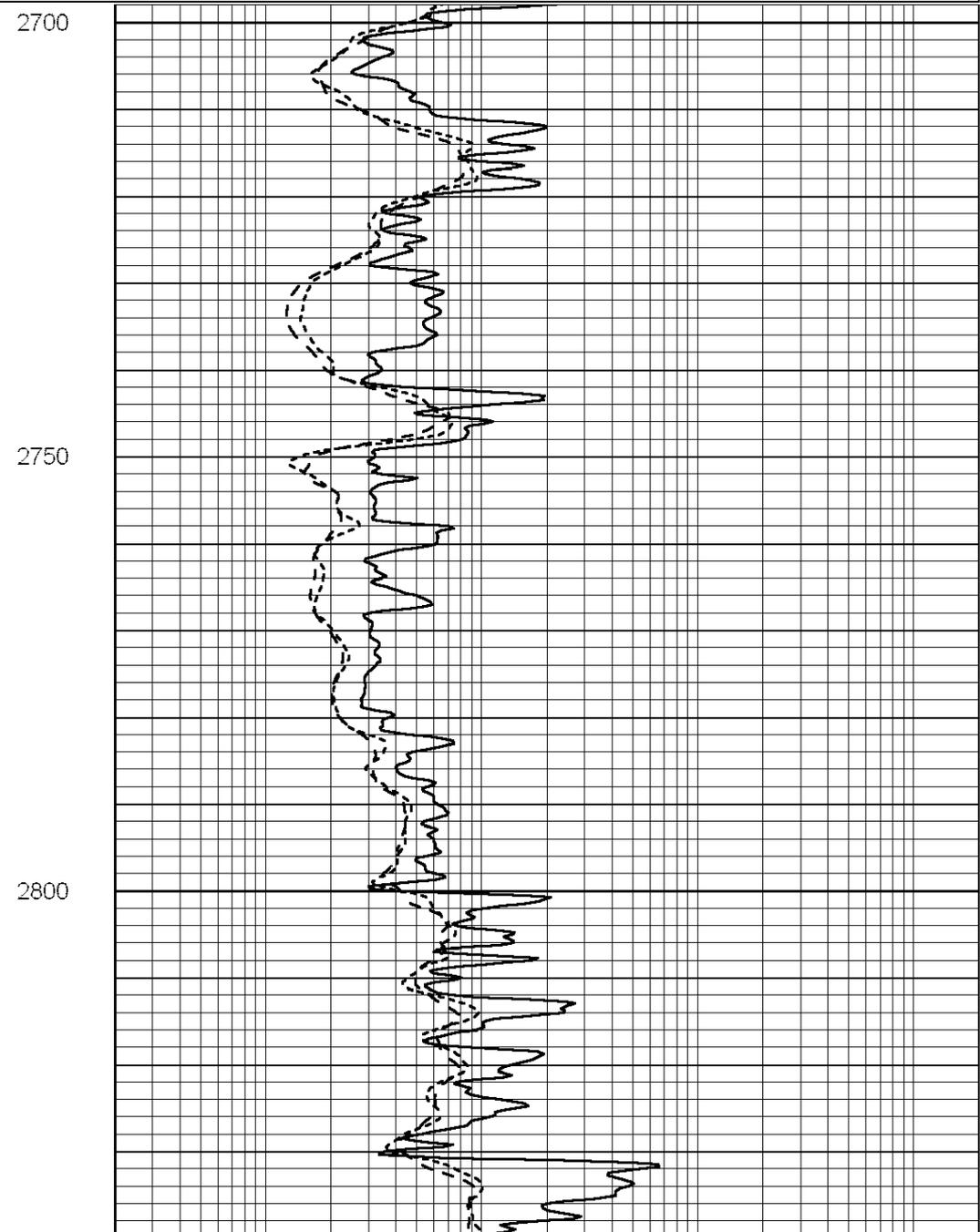
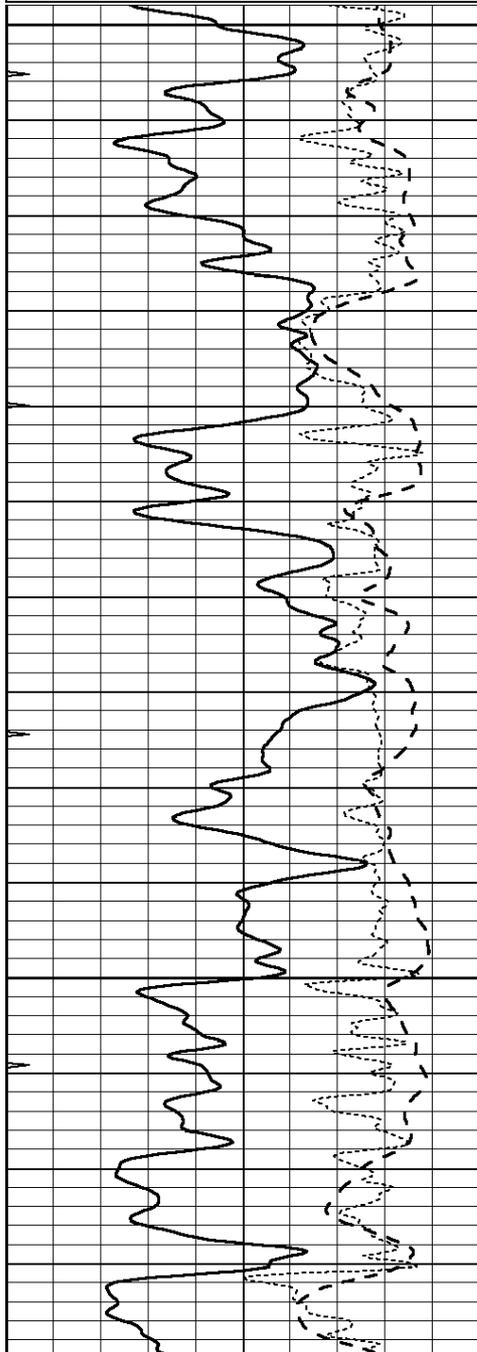
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

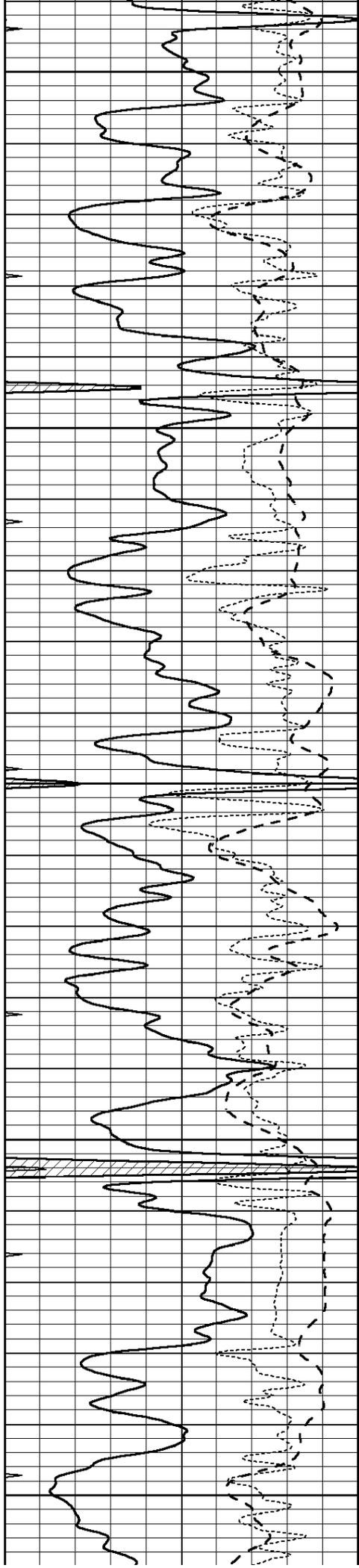
1400	0.2	SHALLOW GUARD (Ohm-m)	2000
	0.2	DEEP INDUCTION (Ohm-m)	2000
	0.2	MEDIUM INDUCTION (Ohm-m)	2000

Database File: 26505ddn.db  
 Dataset Pathname: pass3.2  
 Presentation Format: \_dil  
 Dataset Creation: Fri Mar 13 11:27:14 2015 by Calc SOC 120430  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





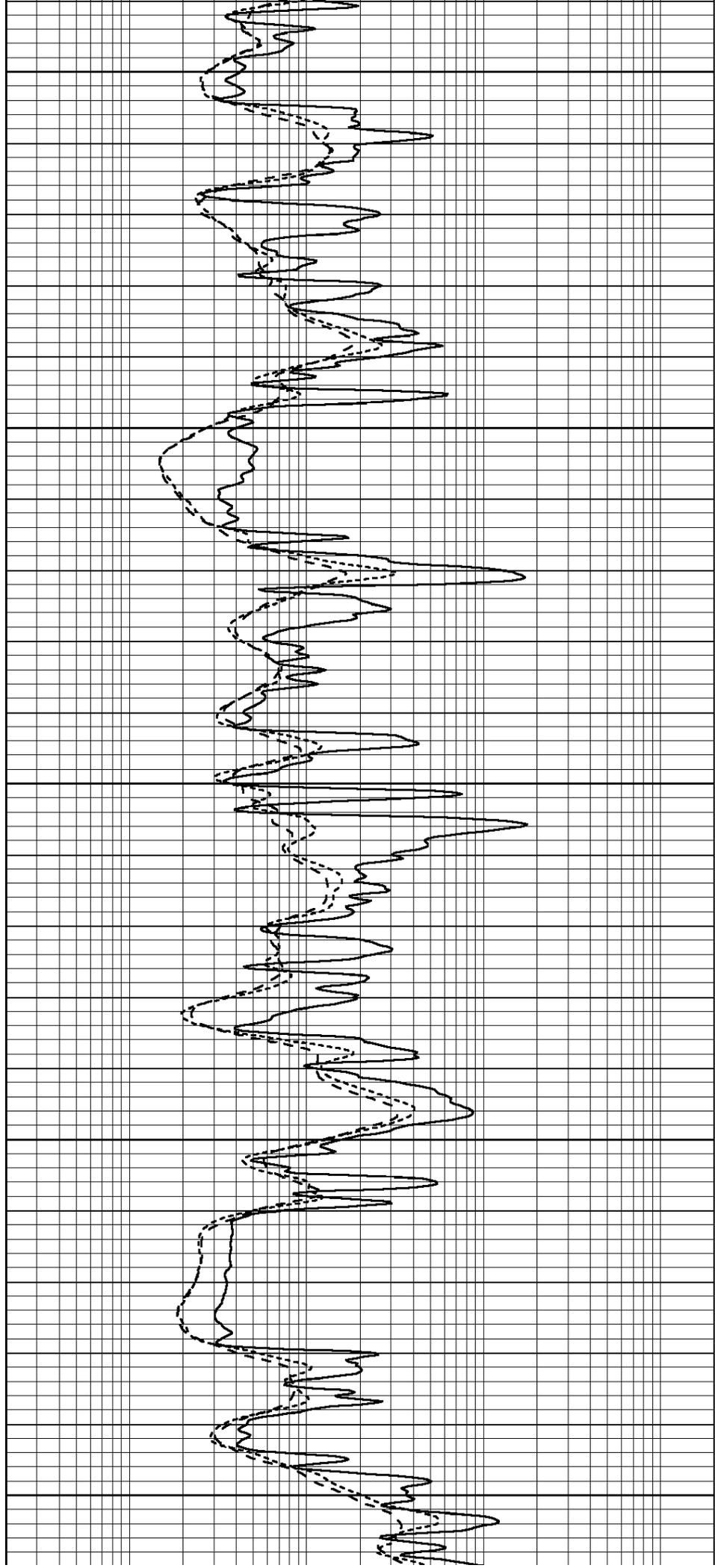
2850

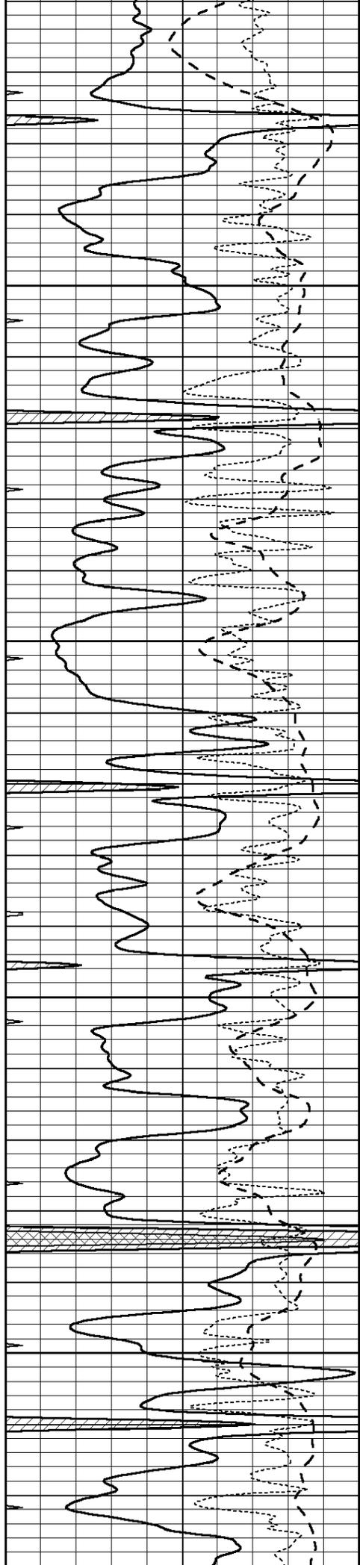
2900

2950

3000

3050



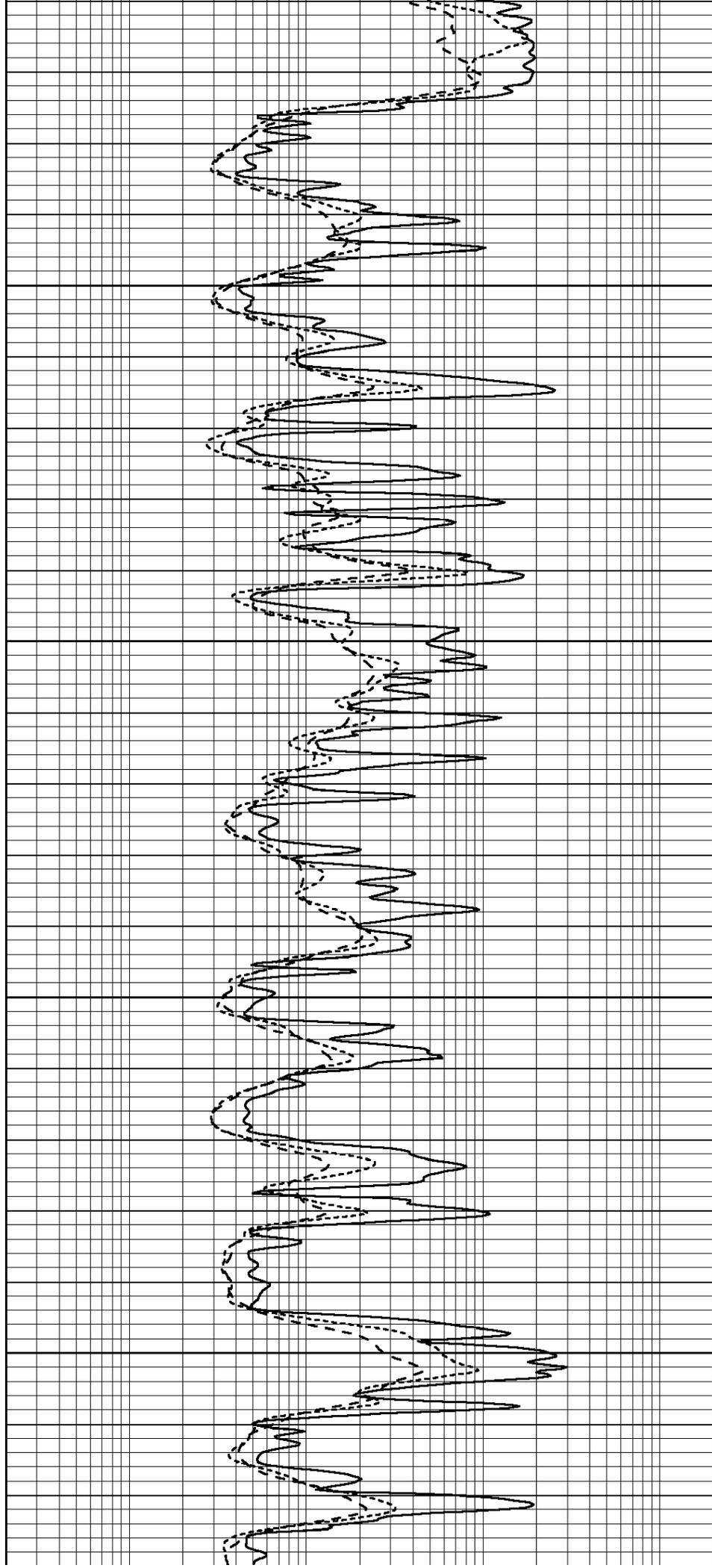


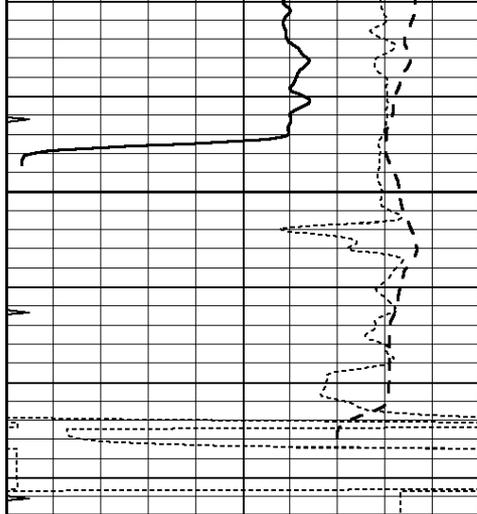
3100

3150

3200

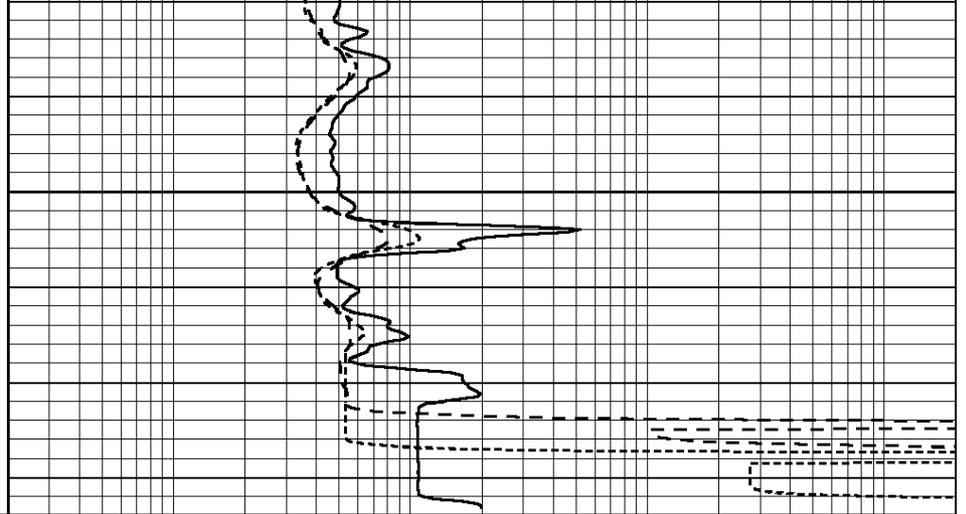
3250





3300

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

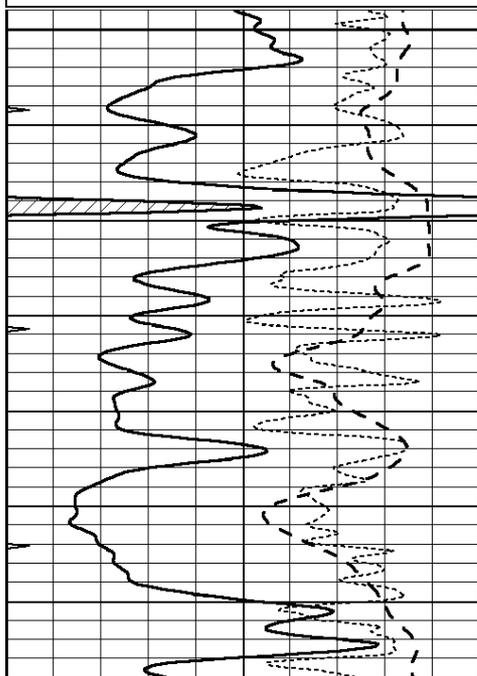


# REPEAT SECTION

Database File: 26505ddn.db  
 Dataset Pathname: pass2.2  
 Presentation Format: \_dil  
 Dataset Creation: Fri Mar 13 11:06:31 2015 by Calc SOC 120430  
 Charted by: Depth in Feet scaled 1:240

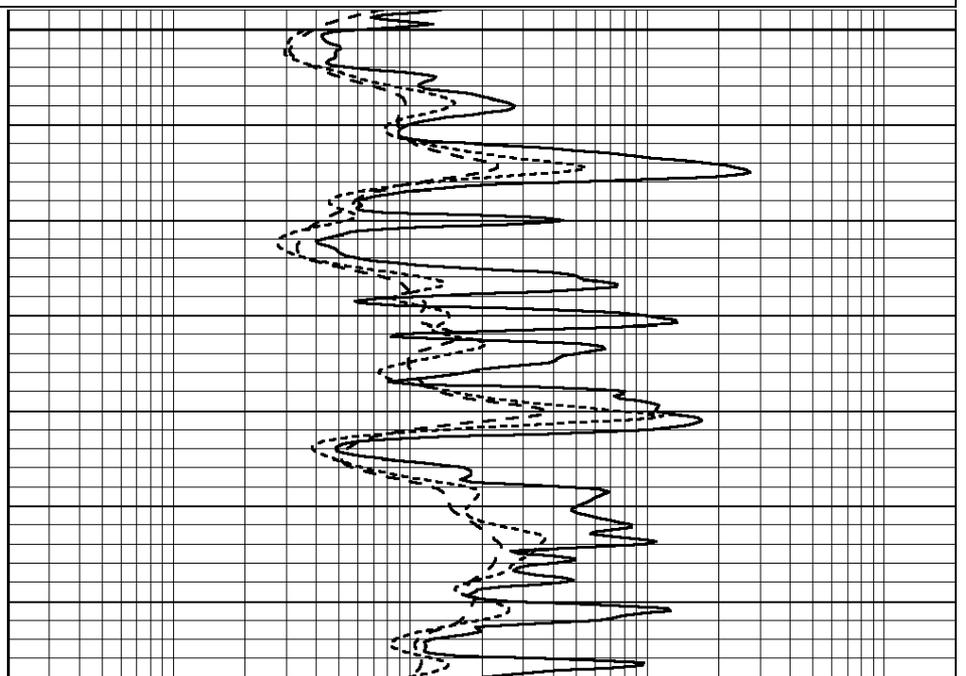
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

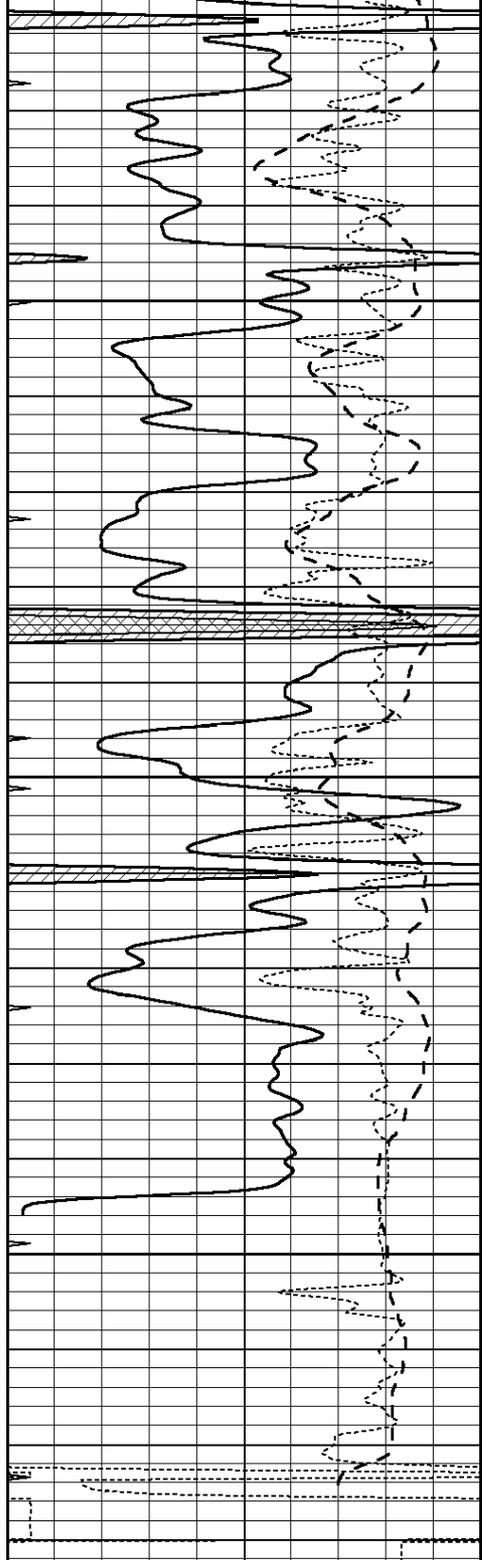
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3100

3150



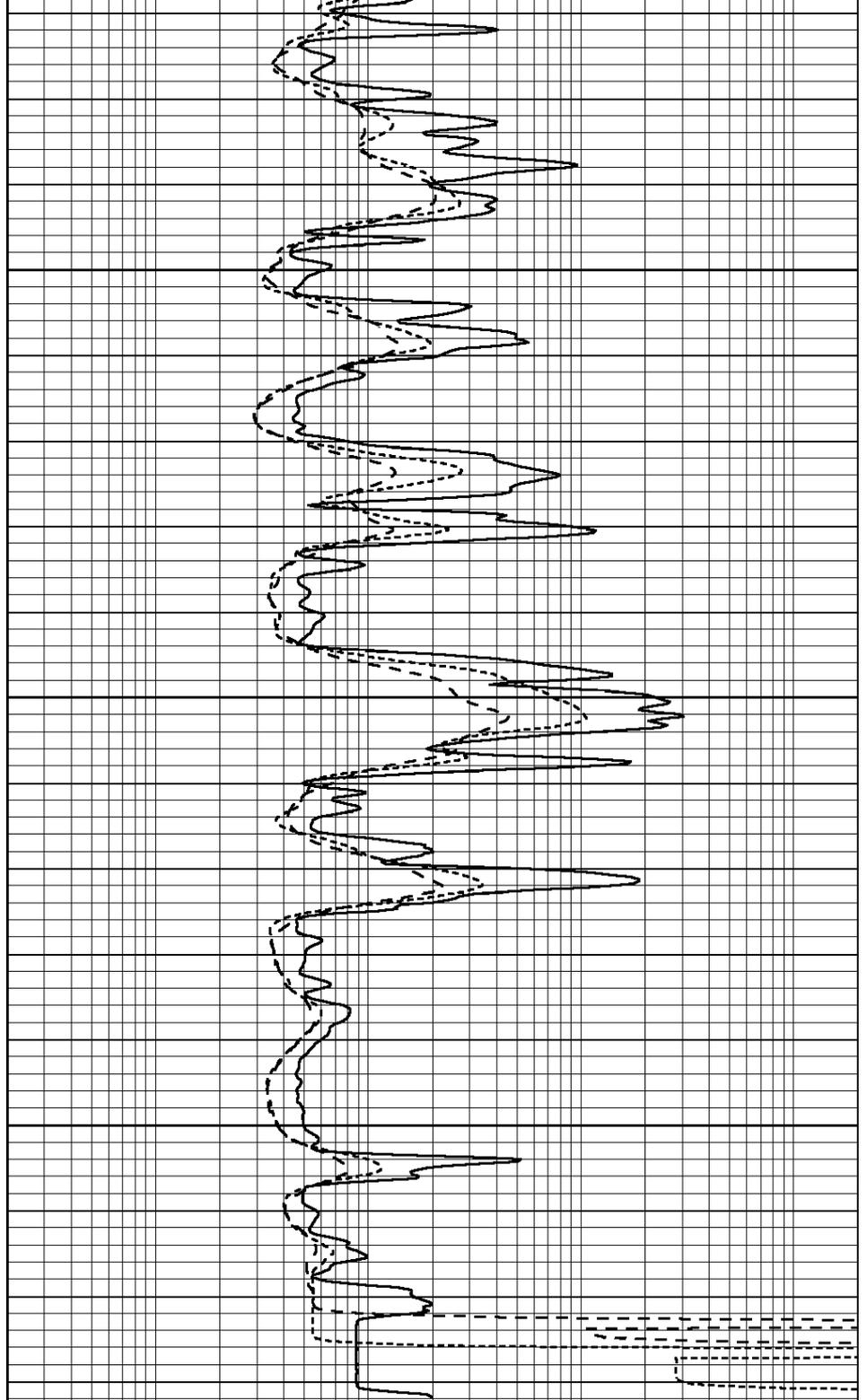


3200

3250

3300

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Calibration Report

Database File: 26505ddn.db  
 Dataset Pathname: pass3.3  
 Dataset Creation: Fri Mar 13 11:59:09 2015 by Calc SOC 120430

Dual Induction Calibration Report

Serial Model:

PROBE DILG

Serial-Model: PROBE9-DLIS  
 Surface Cal Performed: Wed Feb 11 17:36:36 2015  
 Downhole Cal Performed: Mon Jul 28 12:02:56 2008  
 After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration								
Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	670.000	-15.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	670.000	-28.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration								
	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	mmho-m		

After Survey Verification								
	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report  
 Serial: 003N Model: PRB

Master Calibration					Performed Tue Sep 08 14:14:44 2009			
	Background	Magnesium	Aluminum	Sandstone				
Window 1	2042.6	12312.8	4225.8	13758.4				cps
Window 2	1855.8	10134.7	3624.2	11113.1				cps
Window 3	1639.4	6760.2	2716.3	7260.3				cps
Window 4	466.4	469.2	466.1	476.5				cps
Long Space	0.0	8278.9	1768.4	9257.4				cps
Short Space	2.2	2377.3	1544.1	2574.2				cps
Rho		1.7100	2.5900	1.3800				g/cc
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio				: 0.549
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept				: -18.8

Before Survey Verification					Performed Wed Dec 31 18:00:00 1969			
	Background	Magnesium	Aluminum	Sandstone				
Window 1	0.0	0.0	0.0	0.0				cps
Window 2	0.0	0.0	0.0	0.0				cps
Window 3	0.0	0.0	0.0	0.0				cps
Window 4	0.0	0.0	0.0	0.0				cps
Long Space	0.0	0.0	0.0	0.0				cps
Short Space	0.0	0.0	0.0	0.0				cps

Measured Rho	0.0000	0.0000	0.0000	g/cc
Measured Correction	0.0000	0.0000	0.0000	g/cc
Measured Pe		0.0000	0.0000	

After Survey Verification

Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

Compensated Neutron Calibration Report

Serial Number: 070808  
 Tool Model: Probe

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 070558  
 Tool Model: OPEN\_GR  
 Performed: Fri Jan 30 18:19:46 2015

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.2600 GAPI/cps