



**Notice:** Fill out COMPLETELY and return to Conservation Division at the address below within 60 days from plugging date.

KANSAS CORPORATION COMMISSION 1239495  
OIL & GAS CONSERVATION DIVISION

Form CP-4  
March 2009

Type or Print on this Form  
Form must be Signed  
All blanks must be Filled

WELL PLUGGING RECORD  
K.A.R. 82-3-117

OPERATOR: License #: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Address 1: \_\_\_\_\_  
 Address 2: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_  
 Contact Person: \_\_\_\_\_  
 Phone: ( \_\_\_\_\_ ) \_\_\_\_\_  
 Type of Well: (Check one)  Oil Well  Gas Well  OG  D&A  Cathodic  
 Water Supply Well  Other: \_\_\_\_\_  SWD Permit #: \_\_\_\_\_  
 ENHR Permit #: \_\_\_\_\_  Gas Storage Permit #: \_\_\_\_\_  
 Is ACO-1 filed?  Yes  No If not, is well log attached?  Yes  No  
 Producing Formation(s): List All (If needed attach another sheet)  
 \_\_\_\_\_ Depth to Top: \_\_\_\_\_ Bottom: \_\_\_\_\_ T.D. \_\_\_\_\_  
 \_\_\_\_\_ Depth to Top: \_\_\_\_\_ Bottom: \_\_\_\_\_ T.D. \_\_\_\_\_  
 \_\_\_\_\_ Depth to Top: \_\_\_\_\_ Bottom: \_\_\_\_\_ T.D. \_\_\_\_\_

API No. 15 - \_\_\_\_\_  
 Spot Description: \_\_\_\_\_  
 \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West  
 \_\_\_\_\_ Feet from  North /  South Line of Section  
 \_\_\_\_\_ Feet from  East /  West Line of Section  
 Footages Calculated from Nearest Outside Section Corner:  
 NE  NW  SE  SW  
 County: \_\_\_\_\_  
 Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_  
 Date Well Completed: \_\_\_\_\_  
 The plugging proposal was approved on: \_\_\_\_\_ (Date)  
 by: \_\_\_\_\_ (KCC District Agent's Name)  
 Plugging Commenced: \_\_\_\_\_  
 Plugging Completed: \_\_\_\_\_

Show depth and thickness of all water, oil and gas formations.

Oil, Gas or Water Records		Casing Record (Surface, Conductor & Production)			
Formation	Content	Casing	Size	Setting Depth	Pulled Out

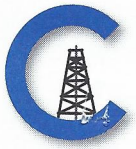
Describe in detail the manner in which the well is plugged, indicating where the mud fluid was placed and the method or methods used in introducing it into the hole. If cement or other plugs were used, state the character of same depth placed from (bottom), to (top) for each plug set.

Plugging Contractor License #: \_\_\_\_\_ Name: \_\_\_\_\_  
 Address 1: \_\_\_\_\_ Address 2: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_  
 Phone: ( \_\_\_\_\_ ) \_\_\_\_\_  
 Name of Party Responsible for Plugging Fees: \_\_\_\_\_  
 State of \_\_\_\_\_ County, \_\_\_\_\_, ss.  
 \_\_\_\_\_  Employee of Operator or  Operator on above-described well,  
 (Print Name)

being first duly sworn on oath, says: That I have knowledge of the facts statements, and matters herein contained, and the log of the above-described well is as filed, and the same are true and correct, so help me God.

Submitted Electronically

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202



**CONSOLIDATED**  
Oil Well Services, LLC

**REMIT TO**  
P INV  
Consolidated Oil Well Services, LLC  
Dept. 970  
P.O. Box 4346  
Houston, TX 77210-4346

**MAIN OFFICE**  
P.O. Box 884  
Chanute, KS 66720  
620/431-9210 • 1-800/467-8676  
Fax 620/431-0012

INVOICE

Invoice # 271772

=====  
Invoice Date: 10/16/2014 Terms: 10/10/10,n/30 Page 1  
=====

NAE, INC.  
317 SIDNEY BAKER SOUTH, PMB 137  
KERRVILLE TX 78028  
(830) 370-1500

RJ SUTTON 1-13  
13-17-29  
47717  
10/09/2014  
KS

=====

Description	Hours	Unit Price	Total
CEMENT PUMP (SURFACE)	1.00	1150.00	1150.00
EQUIPMENT MILEAGE (ONE WAY)	40.00	5.25	210.00

Part Number	Description	Qty	Unit Price	Total
1104S	CLASS "A" CEMENT (SALE)	165.00	18.5500	3060.75
1102	CALCIUM CHLORIDE (50#)	465.00	.9400	437.10
1118B	PREMIUM GEL / BENTONITE	310.00	.2700	83.70

Sublet Performed	Description	Total
9995-130	CEMENT EQUIPMENT DISCOUNT	-190.32
9996-130	CEMENT MATERIAL DISCOUNT	-358.15

Description	Hours	Unit Price	Total
693 MIN. BULK DELIVERY	1.00	543.20	543.20

*pd ck  
1400  
10-24-14  
5166.74*

Amount Due 5740.82 if paid after 10/26/2014

=====  
Parts: 3581.55 Freight: .00 Tax: 230.46 AR 5166.74  
Labor: .00 Misc: .00 Total: 5166.74  
Sublt: -548.47 Supplies: .00 Change: .00  
=====

Signed \_\_\_\_\_ Date \_\_\_\_\_



**CONSOLIDATED**  
Oil Well Services, LLC

271777

TICKET NUMBER 47717  
LOCATION Oakley, K.  
FOREMAN Darren

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

Ks.

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY	
10/9/14	5035	RJ Sutton 1-13	13	17	29	Lane	
CUSTOMER NAE Inc.			Shields				
MAILING ADDRESS 317 Sidney Baker S			3 S				
CITY Kerrville			1 W				
STATE Tx.			Ninto				
ZIP CODE 78028							
TRUCK #		DRIVER		TRUCK #		DRIVER	
731		Cory					
693		Cody					

JOB TYPE Surface HOLE SIZE 12 1/4 HOLE DEPTH 226 CASING SIZE & WEIGHT 8 5/8 20'  
 CASING DEPTH 226 DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 14.8 SLURRY VOL 1.36 WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING 20'  
 DISPLACEMENT 13.43 DISPLACEMENT PSI 200\* MIX PSI 150\* RATE mix 4 bbl Per min. Dis. 6 bbl

REMARKS: Safety Meeting Rig upon H2\*2 Run Casing Break Circulation with Rig  
Pump Hook up to Pump truck mix 165 sks Com 3%CC 2%Gel Washup Pump Lines  
Displace with 13.43 bbls Water Shut in

Cement Did Circulate

Approx 1 bbl To Pit

Thanks Darren + Crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401 S	1	PUMP CHARGE	\$ 1150.00	\$ 1150.00
5406	40	MILEAGE	\$ 5.25	\$ 210.00
5407 A	7.76	Ton Mileage Delivery	\$ 1.75	\$ 13.58
1104 S	165 sks	Class "A" Cement	\$ 18.55	\$ 3060.75
1102	465 #	Calcium Chloride	\$ .94	\$ 437.10
1118 B	310 #	Bentonite	\$ .27	\$ 83.70
			Sub Total	\$ 5184.75
			Less 10%	\$ 518.48
			Sub Total 1	\$ 4666.27
			SALES TAX	230.40
			ESTIMATED TOTAL	5166.74

Rawin 3737 P.H. 785-662-8000

AUTHORIZATION [Signature]

TITLE [Signature]

DATE \_\_\_\_\_

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.



**REMIT TO**  
**FINV**  
 Consolidated Oil Well Services, LLC  
 Dept. 970  
 P.O. Box 4346  
 Houston, TX 77210-4346

**MAIN OFFICE**  
 P.O. Box 884  
 Chanute, KS 66720  
 620/431-9210 • 1-800/467-8676  
 Fax 620/431-0012

INVOICE Invoice # 271895  
 =====  
 Invoice Date: 10/21/2014 Terms: 10/10/10,n/30 Page 1  
 -----

NAE, INC.  
 317 SIDNEY BAKER SOUTH, PMB 137  
 KERRVILLE TX 78028  
 (830) 370-1500

RJ SUTTON #1-13  
 13-17S-29W  
 46741  
 10/17/2014  
 KS

Part Number	Description	Qty	Unit Price	Total
1107	FLO-SEAL (25#)	75.00	2.9700	222.75
1118B	PREMIUM GEL / BENTONITE	1032.00	.2700	278.64
1131	60/40 POZ MIX	300.00	15.8600	4758.00

Sublet Performed	Description	Total
9995-130	CEMENT EQUIPMENT DISCOUNT	-265.50
9996-130	CEMENT MATERIAL DISCOUNT	-525.93

Description	Hours	Unit Price	Total
399 P & A NEW WELL	1.00	1395.00	1395.00
399 EQUIPMENT MILEAGE (ONE WAY)	45.00	5.25	236.25
529 TON MILEAGE DELIVERY	1.00	1023.75	1023.75

*PAID  
 #1402  
 10-29-14*

Amount Due 8290.44 if paid after 10/31/2014

Parts:	5259.39	Freight:	.00	Tax:	338.45	AR	7461.41
Labor:	.00	Misc:	.00	Total:	7461.41		
Sublt:	-791.43	Supplies:	.00	Change:	.00		

Signed \_\_\_\_\_ Date \_\_\_\_\_



**CONSOLIDATED**  
Oil Well Services, LLC

271895

TICKET NUMBER 46741  
LOCATION Oakley KS  
FOREMAN Miles Shaw

PO Box 884, Chanute, KS 66720  
620-431-9210 or 800-467-8676

**FIELD TICKET & TREATMENT REPORT**  
**CEMENT**

Lane KS

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
10-17-14	15635	RJ Sutton #1-13	13	17S	29W	Lane
CUSTOMER			Dighton KS			
MAILING ADDRESS			TRUCK #	DRIVER	TRUCK #	DRIVER
1306 OAK ST			399	Scoban		
CITY			597127	Rob S		
STATE						
ZIP CODE						
Hays						
KS						
67601						

JOB TYPE PTA HOLE SIZE 45 8/16" HOLE DEPTH \_\_\_\_\_ CASING SIZE & WEIGHT \_\_\_\_\_  
 CASING DEPTH \_\_\_\_\_ DRILL PIPE \_\_\_\_\_ TUBING \_\_\_\_\_ OTHER \_\_\_\_\_  
 SLURRY WEIGHT 13.8 SLURRY VOL 1.4 WATER gal/sk \_\_\_\_\_ CEMENT LEFT in CASING \_\_\_\_\_  
 DISPLACEMENT \_\_\_\_\_ DISPLACEMENT PSI \_\_\_\_\_ MIX PSI \_\_\_\_\_ RATE \_\_\_\_\_

REMARKS: Safety meeting and rig up on H2 drilling Rig #2 plug as ordered  
1<sup>st</sup> plug 50 Sks @ 2180'  
2<sup>nd</sup> plug 80 Sks @ 1320'  
3<sup>rd</sup> plug 50 Sks @ 700'  
4<sup>th</sup> plug 50 Sks @ 250'  
5<sup>th</sup> plug 20 Sks @ 60'  
MH 70 Sks RH 20 Sks  
300 Sks Colson per 4 8 1/2" 1/4" Hosen

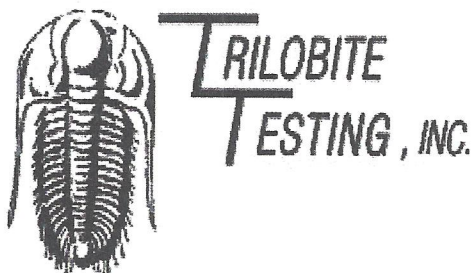
Thanks Miles & Crew

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5405W	1	PUMP CHARGE	1395. <sup>00</sup>	1395. <sup>00</sup>
5406	45	MILEAGE	5.25	236.25
5407A	13 Tons	Ton Mileage delivery	1.75	1023.75
1107	75 #	Fl seal	2.97	222.75
118B	10.32 #	Bentonite gel	1.27	278.64
1131	300 Sks	60/40 per	15.86	4758. <sup>00</sup>
			Subtotal	7914.35
			less 10% discount	791.43
			Subtotal	7122.96
			SALES TAX	338.45
			ESTIMATED TOTAL	7461.41

Form 3737

AUTHORIZATION Jeff Crawford TITLE \_\_\_\_\_ DATE \_\_\_\_\_

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form.



## DRILL STEM TEST REPORT

Prepared For: **NAE Inc**

317 Sidney Baker S  
Kerville, TX 78028

ATTN: Frank Taggart

**RJ Sutton #1-13**

**13-17s-29w Lane,KS**

Start Date: 2014.10.16 @ 05:26:01

End Date: 2014.10.16 @ 14:37:01

Job Ticket #: 59046                      DST #: 1

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.19 @ 14:45:24

NAE Inc

13-17s-29w Lane,KS

RJ Sutton #1-13

DST # 1

Johnson - Cong L

2014.10.16



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

NAE Inc  
317 Sidney Baker S  
Kerrville, TX 78028  
  
ATTN: Frank Taggart

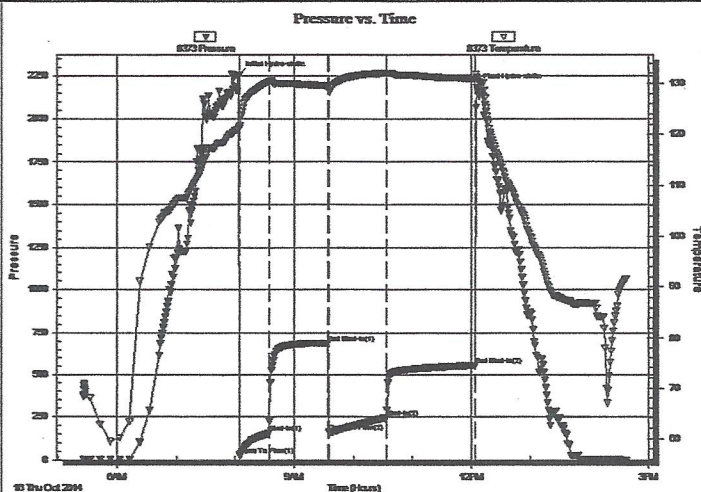
13-17s-29w Lane,KS  
**RJ Sutton #1-13**  
Job Ticket: 59046      DST#: 1  
Test Start: 2014.10.16 @ 05:26:01

## GENERAL INFORMATION:

Formation: **Johnson - Cong L**  
Deviated: No Whipstock: ft (KB)  
Time Tool Opened: 08:04:31  
Time Test Ended: 14:37:01  
  
Interval: **4493.00 ft (KB) To 4520.00 ft (KB) (TVD)**  
Total Depth: 4520.00 ft (KB) (TVD)  
Hole Diameter: 7.88 inches Hole Condition: Good  
  
Test Type: Conventional Bottom Hole (Initial)  
Tester: Brandon Turley  
Unit No: 60  
  
Reference Elevations: 2754.00 ft (KB)  
2743.00 ft (CF)  
KB to GR/CF: 11.00 ft

**Serial #: 8373      Inside**  
Press@RunDepth: 245.00 psig @ 4494.00 ft (KB)      Capacity: 8000.00 psig  
Start Date: 2014.10.16      End Date: 2014.10.16      Last Calib.: 2014.10.16  
Start Time: 05:26:06      End Time: 14:37:01      Time On Btm: 2014.10.16 @ 08:04:01  
Time Off Btm: 2014.10.16 @ 12:05:31

TEST COMMENT: IF: 1/4" blow BOB in 11 min.  
IS: Surface blow built to 8" in 60 min.  
FF: BOB in 12 min.  
FS: BOB in 20 min.



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2256.52	121.39	Initial Hydro-static
1	26.77	121.11	Open To Flow (1)
31	153.29	130.41	Shut-In(1)
90	689.68	129.46	End Shut-In(1)
91	161.93	128.66	Open To Flow (2)
150	245.00	132.05	Shut-In(2)
240	553.54	130.97	End Shut-In(2)
242	2182.57	131.35	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
186.00	mcw 90%w 10%m	0.91
124.00	w cm 30%w 70%m	1.15
124.00	gocm 20%g 20%o 60%m	1.74
134.00	go 30%g 70%o	1.88
0.00	672 GIP	0.00

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**FLUID SUMMARY**

NAE Inc  
317 Sidney Baker S  
Kerrville, TX 78028  
ATTN: Frank Taggart

13-17s-29w Lane,KS  
**RJ Sutton #1-13**  
Job Ticket: 59046      **DST#: 1**  
Test Start: 2014.10.16 @ 05:26:01

## Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 36 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 22000 ppm
Viscosity: 61.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.99 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig	
Salinity: 2000.00 ppm		
Filter Cake: 1.00 inches		

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
186.00	mcw 90%w 10%m	0.915
124.00	w cm 30%w 70%m	1.147
124.00	gocm 20%g 20%o 60%m	1.739
134.00	go 30%g 70%o	1.880
0.00	672 GIP	0.000

Total Length: 568.00 ft      Total Volume: 5.681 bbl  
 Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:  
 Laboratory Name:      Laboratory Location:  
 Recovery Comments: 39@90=36  
    .27@81=22000





## DRILL STEM TEST REPORT

Prepared For: **NAE Inc**

317 Sidney Baker S  
Kerrville, TX 78028

ATTN: Frank Taggart

**RJ Sutton #1-13**

**13-17s-29w Lane,KS**

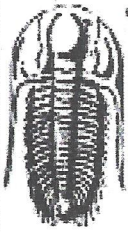
Start Date: 2014.10.17 @ 03:54:21

End Date: 2014.10.17 @ 11:19:21

Job Ticket #: 59047                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.19 @ 14:45:02



**TRILOBITE TESTING, INC.**

## DRILL STEM TEST REPORT

NAE Inc  
317 Sidney Baker S  
Kerrville, TX 78028  
ATTN: Frank Taggart

13-17s-29w Lane, KS  
RJ Sutton #1-13  
Job Ticket: 59047      **DST#: 2**  
Test Start: 2014.10.17 @ 03:54:21

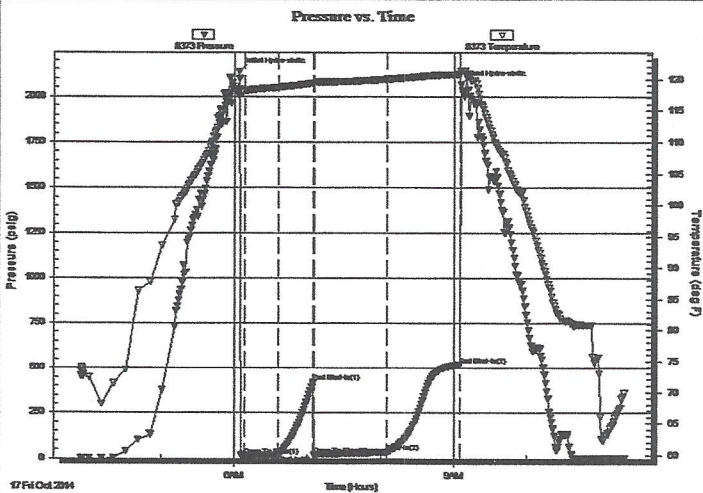
### GENERAL INFORMATION:

Formation: **LKC K**  
 Deviated: No      Whipstock:      ft (KB)  
 Time Tool Opened: 06:08:21  
 Time Test Ended: 11:19:21  
 Interval: **4183.00 ft (KB) To 4210.00 ft (KB) (TVD)**  
 Total Depth: 4587.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches      Hole Condition: Good

Test Type: Conventional Straddle (Reset)  
 Tester: Brandon Turley  
 Unit No: 60  
 Reference Elevations: 2754.00 ft (KB)  
 2743.00 ft (CF)  
 KB to GR/CF: 11.00 ft

**Serial #: 8373**      **Inside**  
 Press@RunDepth: 37.30 psig @ 4184.00 ft (KB)      Capacity: 8000.00 psig  
 Start Date: 2014.10.17      End Date: 2014.10.17      Last Calib.: 2014.10.17  
 Start Time: 03:54:26      End Time: 11:19:20      Time On Btm: 2014.10.17 @ 06:03:51  
 Time Off Btm: 2014.10.17 @ 09:05:21

**TEST COMMENT:** IF: 1/4" blow built to 7" in 30 min.  
 IS: No return.  
 FF: 2" blow BOB in 43 min.  
 FS: No return.



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2137.65	118.35	Initial Hydro-static
5	15.81	118.07	Open To Flow (1)
33	20.73	118.70	Shut-In(1)
61	422.04	119.34	End Shut-In(1)
62	19.77	119.27	Open To Flow (2)
121	37.30	119.98	Shut-In(2)
181	519.91	120.78	End Shut-In(2)
182	2064.96	121.35	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
40.00	ocm 10%o 90%m	0.20
0.00	392 GIP	0.00

\* Recovery from multiple tests

### Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE  
TESTING, INC**

## DRILL STEM TEST REPORT

**FLUID SUMMARY**

NAE Inc

13-17s-29w Lane, KS

317 Sidney Baker S  
Kerrville, TX 78028

**RJ Sutton #1-13**

Job Ticket: 59047

**DST#: 2**

ATTN: Frank Taggart

Test Start: 2014.10.17 @ 03:54:21

### Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

0 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

0 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in<sup>3</sup>

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
40.00	ocm 10%o 90%m	0.197
0.00	392 GIP	0.000

Total Length: 40.00 ft

Total Volume: 0.197 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

**ROBERT T. HOPKINS, L.G., C.P.G.**  
**709 Harold Ave.**  
**Salina, Kansas 67401**  
**cell (785) 819-2460**

October 20, 2014

Frank Taggart, President  
NAE, Inc.  
317 Sidney Baker St.  
Kerrville, Texas 78028

*NAE, Inc. – R.J. Sutton 1-13, ap. SE NW SE, Section 13, T17S, R29W, Lane County, Ks.*

Frank:

Attached to this summary letter is my lithologic log for the above-captioned well. Based on the poor pressures and marginal oil recovery from the two DSTs, operator has elected to plug and abandon this test.

Significant sample shows and overall quality were as follows (log corrected depths). Slight, fleeting odor (only) in samples is not considered significant:

LKC K	4199-4202'	poor
LKC K	4202-4220'	very poor
top Marmaton	4290-4296'	poor
top Cherokee	4464-4468'	poor
top Cherokee	4474-4478'	poor
Johnson zone	4500-4504'	good

Following is a log top comparison of your well to the nearby Slawson Sutton 1-13 and the Gear Virginia 1-13 open-hole logs. These wells are located north and south (respectively) of the subject well:

**LOG TOP COMPARISON:**

<u>Formation</u>	<u>NAE Sutton1-13 O-H log tops</u>	<u>comp to Slawson O-H log tops</u>	<u>comp to Gear O-H log tops</u>
top Anhydrite	2131(+626)	+1 (+625)	+4 (+622)
base Anhydrite	2158(+599)	+3 (+596)	+3 (+596)
Topeka Ls.	3658(-901)	-1 (-900)	-1 (-900)
Heebner Sh.	3900(-1143)	-1 (-1142)	-0- (-1143)
LKC "A"	3938(-1181)	-0- (-1181)	-0- (-1181)
G zone Sh.	4093(-1336)	+8 (-1344)	+4 (-1340)
Stark Sh.	4189(-1432)	+2 (-1434)	+1 (-1433)
Base KC	4270(-1513)	+7 (-1520)	+6 (-1519)
top Marmaton	4290(-1533)	+7 (-1540)	+6 (-1539)
Pawnee Ls.	4384(-1627)	+8 (-1635)	+3 (-1630)
Ft. Scott Ls.	4436(-1679)	+9 (-1688)	+3 (-1682)
top Cherokee	4459(-1702)	+9 (-1711)	+4 (-1706)
Johnson zone	4500(-1743)	+11 (-1754)	+4 (-1747)
top Mississippian RTD 4586'	4534(-1777)	+9 (-1786)	+4 (-1781)

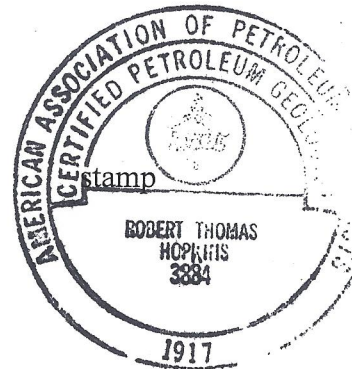
If you have any questions, please call me at 785-819-2460. Thank you for this opportunity to serve you!

Sincerely,



Robert T. Hopkins, L.G., C. P. G.

attachments



# LITHOLOGIC LOG

ROBERT HOPKINS-consulting geologist

Operator NAE, INC.

Location ap. SE NW SE Sec. 13-17S-29W

Lease / Well SUTTON 1-13

County LANE State KS

scale 1" = 20'

GL 2746 KB 2757 \*(measure from \*)

depth this sheet - from 3500' to 3680'

page 1 of 7

DRILLING TIME (min/ft)								DEPTH	tops shows	lith graph	DESCRIPTION (lithology, DSTs, mud properties)
1	2	3	4	5	6	7	8				
								3500			<p>ANHYDRITE 2135-2162' (+622)</p> <p>gry sh.</p> <p>wh fuxln tite lst, no show</p> <p>MUD VIS 60; wt 8.7</p>
								50			<p>gry-red sh.</p> <p>wh fuxln fossiliferous lst, tite, n.s.</p>
											<p>bf fuxln foss. lst, tite, n.s.</p> <p>gry sh., w/lt. gry siltstone, tite, n.s.</p>
											<p>gry fuxln foss. lst, tite, n.s.</p> <p>dk gry sh.</p>
								3600			<p>lst, a/a, n.s.</p> <p>gry sh.</p>
											<p>gry fuxln sl. foss. lst, tite, n.s.</p>
											<p>blk sh.</p> <p>MUD VIS 57; wt 8.7</p>
											<p>brn-gry fuxln foss. lst, tite, n.s.</p> <p>gry sh.</p>
								50			<p>lst, a/a, n.s.</p>
								Top			<p>dk gry-blk sh.</p> <p>dk gry fuxln foss. lst, tite, n.s.</p> <p>Topoka 3658(-901)</p>
											<p>dk gry-blk sh.</p>
								80			<p>lst, bf-gry, tite, n.s.</p> <p>gry sh.</p>

SH. TESTS  
 226' -  $\frac{3}{4}$ "  
 730' -  $\frac{3}{4}$ "  
 1700' -  $\frac{3}{4}$ "

# LITHOLOGIC LOG

ROBERT HOPKINS-consulting geologist

Operator NAE, Inc.  
 Lease / Well SUTTON 1-13  
 GL KB 2757' (measure from \*)

Location ap. SE NW SE Sec. 13-17S-29W  
 County LANE State KS scale 1" = 20'  
 depth this sheet - from 3680' to 3860' page 2 of 7

DRILLING TIME (min/ft)								DEPTH	tops shows	lith graph	DESCRIPTION (lithology, DSTs, mud properties)
1	2	3	4	5	6	7	8				
								380			wh fuxln fite lst., n.s. <span style="float: right;">MUD VIS 55; wt 8.8</span> gry sh.
								3700			gry sh.
											bf gry fuxln fite lst., n.s.
											dk gry sh.
											bf fuxln chalky lst., sl. φ, n.s.
								50			bf fuxln foss. lst., fite, n.s. <span style="float: right;">MUD VIS 54; wt 8.8</span>
											bf fuxln granular lst., fite, n.s.
											blk sh. <span style="float: right;">Kinghill Sh. 3773'</span>
											gry siltstone, fite, n.s.
											gray fuxln foss. lst., sl. cherty, fite, n.s.
								3800			bf fuxln chalky lst., sl.-fr φ, n.s.
											gry sh.
											bf fuxln sandy lst., fite, n.s.
											dk gry-blk carb. sh. <span style="float: right;">Queenhill Sh. 3840'</span>
								50			bf fuxln lst., chalky, sl.-fr φ, n.s.
								60			

# LITHOLOGIC LOG

ROBERT HOPKINS-consulting geologist

Operator NAE, Inc.  
 Lease / Well SUTTON 1-13  
 GL KB 2757' (measure from \*)

Location ap. SE NW SE Sec. 13-17s-29w  
 County LANE State KS scale 1" = 20'  
 depth this sheet - from 3860 to 4040' page 3 of 7

DRILLING TIME (min/ft)								DEPTH	tops shows	lith graph	DESCRIPTION (lithology, DSTs, mud properties)
1	2	3	4	5	6	7	8				
								60			bf chalky lst, fair $\phi$ , n.s. <span style="float:right">MUD VIS 56; wt. 8.8</span>
											gry sh, w/ lt. gry siltstone
											dk gry - brn fuxlw lst, very foss., tite, n.s.
								HB 3900			blk carb sh. <span style="float:right">Heebner Sh. 3898(-1141)</span>
											dk brn foss lst, carb, w/ stylolites, tite, n.s.
											grn vfg r sst., sl. $\phi$ , n.s.
								Tor			gry sh. <span style="float:right">Toronto 3913'</span>
											wh fuxlw lst, chalky, sl. $\phi$ , n.s.
											lst, a/a, tite, n.s.
								LKC			dk gry sh. <span style="float:right">LKC 3937(-1180)</span>
				A							wh-bf fuxlw sl. sdy lst, tite, n.s. — sl. cherty
								50			↓
											<span style="float:right">MUD VIS 50; wt 9.0</span>
											gry sh, w/ dk gry siltstone, n.s.
											bf fuxlw very cherty lst, tite, n.s.
											dk gry sh.
											wh fuxlw chalky lst, sl. $\phi$ , n.s.
								4000			wh fuxlw cherty lst, tite, n.s.
				D							
											gry sh. to sandy sh.
											bf fw-matrix oolitic lst., sl. $\phi$ , n.s.
											bf fuxlw oomoldic lst., sl.-fr $\phi$ , n.s.
								40			<span style="float:right">MUD VIS 48; wt 9.0</span>



# LITHOLOGIC LOG

ROBERT HOPKINS-consulting geologist

Operator NAE, INC.  
 Lease / Well SUTTON 1-13  
 GL KB 2757' (measure from \*)

Location ap. SE NW SE SEC. 13-17s-29w  
 County LANE State KS scale 1" = 20'  
 depth this sheet - from 4040 to 4220 page 4 of 7

DRILLING TIME (min/ft)								DEPTH	tops shows	lith graph	DESCRIPTION (lithology, DSTs, mud properties)
1	2	3	4	5	6	7	8				
								40			oo moldic lst., a/a, n.s. <span style="float:right">MUD VIS 50; wt. 9.0</span>
								50			bf fuxls cherty lst., lite, n.s.
											wh fuxls lite lst., n.s.; w/ some wh. chert.
											↓
											bf fuxls lite lst., n.s.
								4100	sl. odor		dk gry-blk sh. <span style="float:right">A shale 4095'</span>
											taw fuxls cherty foss. lst., lite, v. sl. odor, n.s.
											dk gry sh.
											bf fuxls oolitic lst., lite, n.s. <span style="float:right">MUD VIS 51; wt. 9.1</span>
											wh fuxls cherty lst., lite, n.s.
											dk gry sh.
								50			bf lite lst., n.s.
											gry sh.
											wh-lens oolitic lst., sl. φ @ top, n.s.
											dk gry sh.
											brn-gry granular lst., sl. cherty, lite, n.s.
											bf fuxls very cherty lst., sl. φ, n.s.
											a/a, oolitic to vuggy φ, n.s.
											bf lite lst., n.s. <span style="float:right">MUD VIS 56; wt. 9.2</span>
											blk sh.
								4200			gry sh, w/ lt. grn siltstone, n.s. <span style="float:right">STARK SH 4191(-1434)</span>
									sl. show		bf fuxls lite lst., n.s.; v. sl. odor, trc stn & free oil
								20	sl. show		lst., v. sl. stn & odor; trc free oil, no fluorescence

circ for repairs

CFS

CFS

CFS

STARK

DST #12 STRADDLE

K

# LITHOLOGIC LOG

ROBERT HOPKINS-consulting geologist

Operator NAE, INC.  
 Lease / Well SUTTON 1-13  
 GL KB 2757' (measure from \*)

Location ap. SE NW SE Sec. 13-17s-29w  
 County \_\_\_\_\_ State \_\_\_\_\_ scale 1" = 20'  
 depth this sheet - from 4220 to 4400' page 5 of 7

DRILLING TIME (min/ft)								DEPTH	tops shows	lith graph	DESCRIPTION (lithology, DSTs, mud properties)
1	2	3	4	5	6	7	8				
								20	sl. show	[Lithology]	oolitic lst., sl. $\phi$ , free oil, v. sl. str, no fluor., v. sl. odor blk sh. bf tite lst., n.s., sl. cherty gry sh.
								50		[Lithology]	bf fuxls tite lst., n.s. gry limy sh; sl. sdy, n.s.
								BKC		[Lithology]	bf fuxls lst., sl. foss., tite, n.s. blk sh., carb.
								CFS MARM		[Lithology]	gry sandy shale dk gry fuxls very foss. lst., gd vug $\phi$ , n.s., no odor gry sh.
								4300	v. sl. show	[Lithology]	wh fuxls lst., tite, v. sl. odor, no free oil, free str, no fluorescence dk gry - blk sh. bf fuxls tite lst., n.s.
								AIT		[Lithology]	dk gry sh. bf-gry fuxls tite lst., n.s. dk gry sh.
								50		[Lithology]	bf tite lst., n.s. bf-gry med xls. lst., sl. foss., tite, n.s.
								PN		[Lithology]	blk sh.
								4400	sl. odor only	[Lithology]	H gry very cherty lst (blue chl), fracture $\phi$ , v. sl. odor, n.s. Bf-tan fuxls tite lst., n.s.

Buse-K

L

Hushpuck near 4222  
mud vis 55; wt 9.2

BKC 4275 (-1518)

Pleasanton 4283

Marmaton 4294 (-1537)

mud vis 59; wt 9.2

Altamont Ls. 4347'

mud vis 53; wt 9.3

Pawnee Ls. 4385'



# LITHOLOGIC LOG

ROBERT HOPKINS-consulting geologist

Operator N.A.E., INC.

Location ap. SE NW SE SEC. 13-17S-29W

Lease / Well SUTTON 1-13

County LANE State KS

scale 1" = 20'

GL KB 2757 \* (measure from \*)

depth this sheet - from 4580 to 4586' RTD

page 7 of 7

DRILLING TIME (min/ft)								DEPTH	tops	lith	DESCRIPTION (lithology, DSTs, mud properties)	
1	2	3	4	5	6	7	8		shows	graph		
X								80			dolomite, a/a, n.s.	DST #2 4183-4212
								RTD	4586			STRADDLE-K ZONE
												REC: 392' GIP, 40'
												OCM (10% oil)
												30"-30"-60"-60"
												FP: 15-20", 19-37"
												SIP: 422-519 #
												HP: 2137-2064 #
												at TD, ran Gemini OH logs, GIP, MICRO, SONIC
												Followed by straddle DST; P <sub>1</sub> A



**COMPENSATED DENSITY  
NEUTRON  
LOG**

Company NAE, INC.		Company NAE, INC.	
Well	RJ Sutton #1-13	Well	RJ Sutton #1-13
Field	Walnut Fork Southwest	Field	Walnut Fork Southwest
County	Lane	County	Lane
State	Kansas	State	Kansas
Location:	API #: 15 101 22540	Other Services	DIL ML
Permanent Datum	SEC 13 TWP 17S RGE 29W	Elevation	
Log Measured From	1474' FSL & 1970' FEL	K.B. 2757'	
Drilling Measured From	KB	D.F. 2756'	
		G.L. 2746'	

Date	10-17-14
Run Number	One
Depth Driller	4586'
Depth Logger	4587'
Bottom Logged Interval	4564'
Top Log Interval	3600'
Casing Driller	8 5/8" @ 226'
Casing Logger	226'
Bit Size	7 7/8"
Type Fluid in Hole	Chemical
Density / Viscosity	9.3/53
PH / Fluid Loss	10.5/7.6
Source of Sample	Pit
Rm @ Meas. Temp	1.1@72degf
Rmf @ Meas. Temp	.82@72degf
Rmc @ Meas. Temp	1.32@72degf
Source of Rmf / Rmc	Calculated
Rm @ BHT	.70@112degf
Time Circulation Stopped	10:00 p.m.
Time Logger on Bottom	12:01 a.m.
Maximum Recorded Temperature	112degf
Equipment Number	T127
Location	Hays, KS
Recorded By	Gus Pfanenstiel
Witnessed By	Mr. Bob Hopkins

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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**

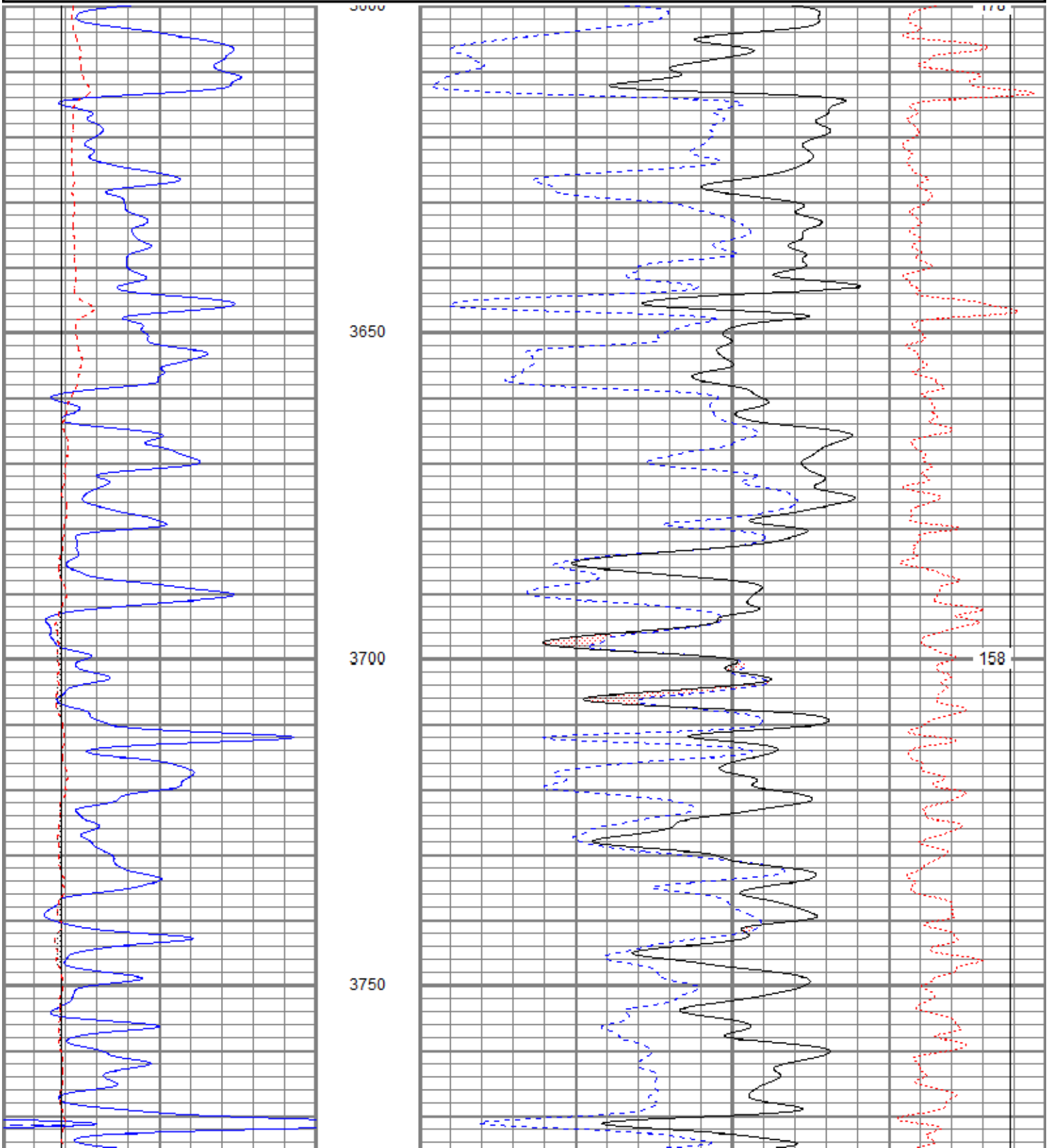


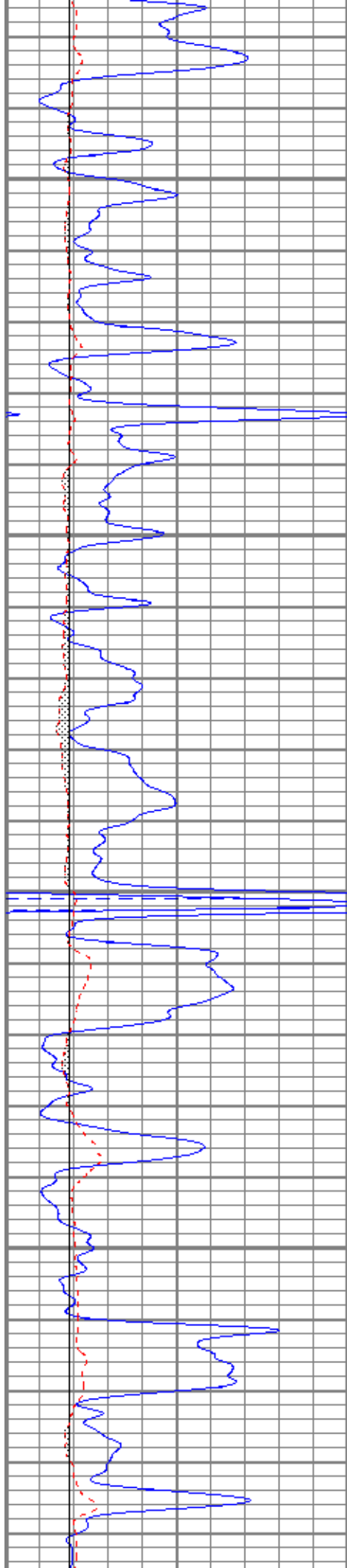
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Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass2  
 Presentation Format kcdnl  
 Dataset Creation Fri Oct 17 00:21:42 2014  
 Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150
6	BOREID (in)	16
6	DCAL (in)	16

30	NPOR (pu)	-10
30	DPOR (pu)	-10
70	DPOR (pu)	30
8000	LTEN (lb)	0
	RHOC (g/cc)	0.25
	ABHV (ft3)	



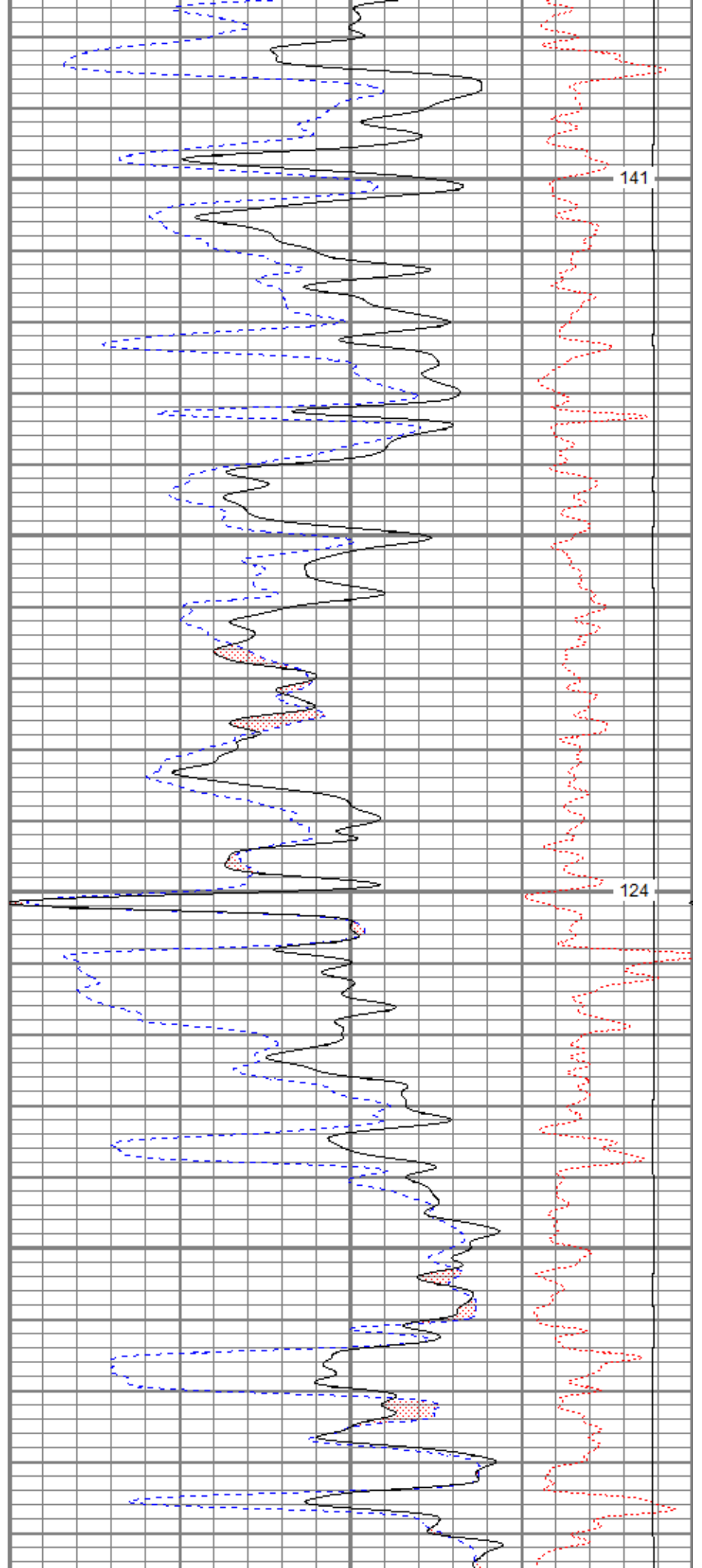


3800

3850

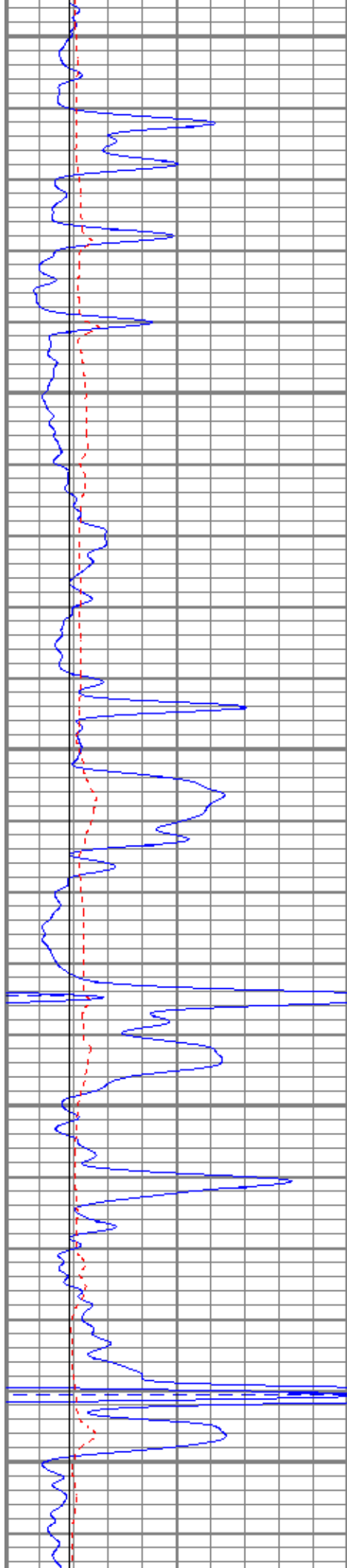
3900

3950



141

124



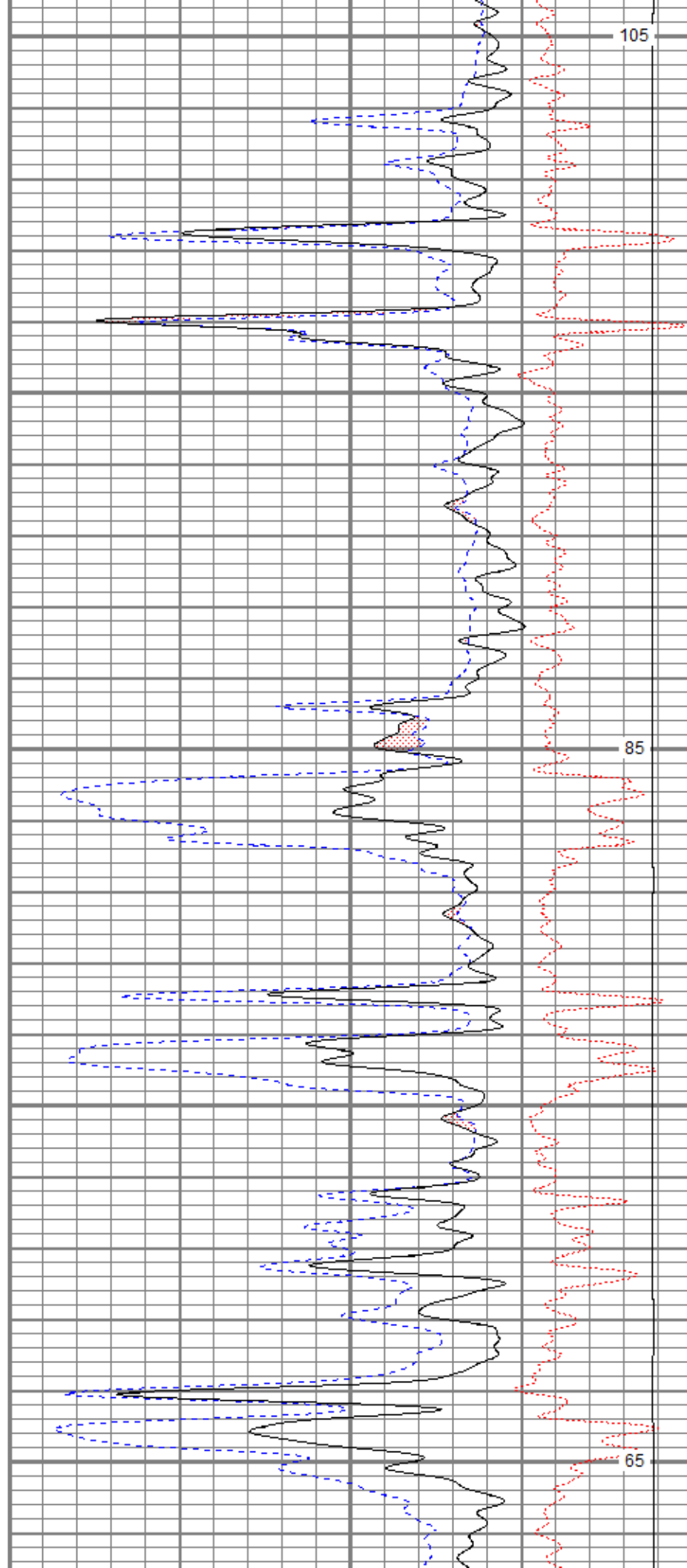
4000

4050

4100

4150

4200



105

85

65



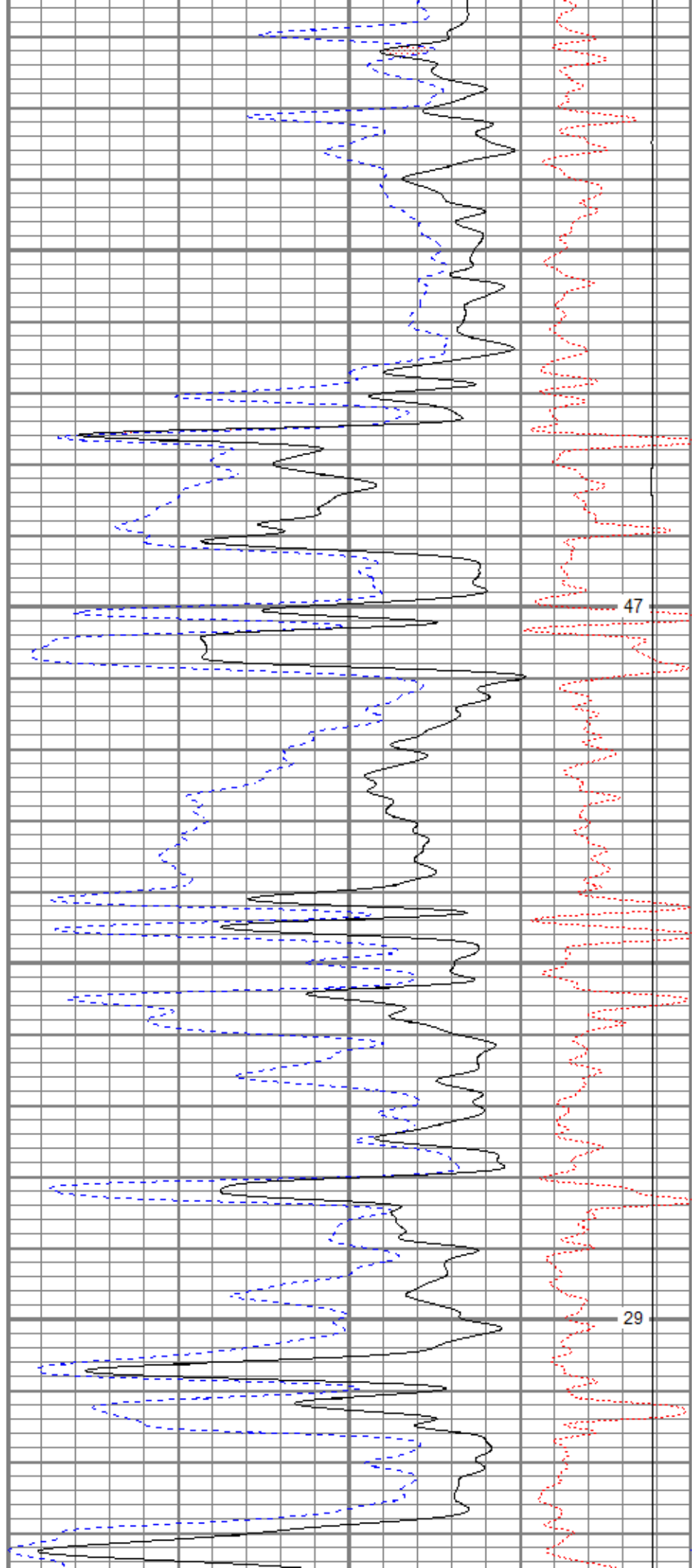


4250

4300

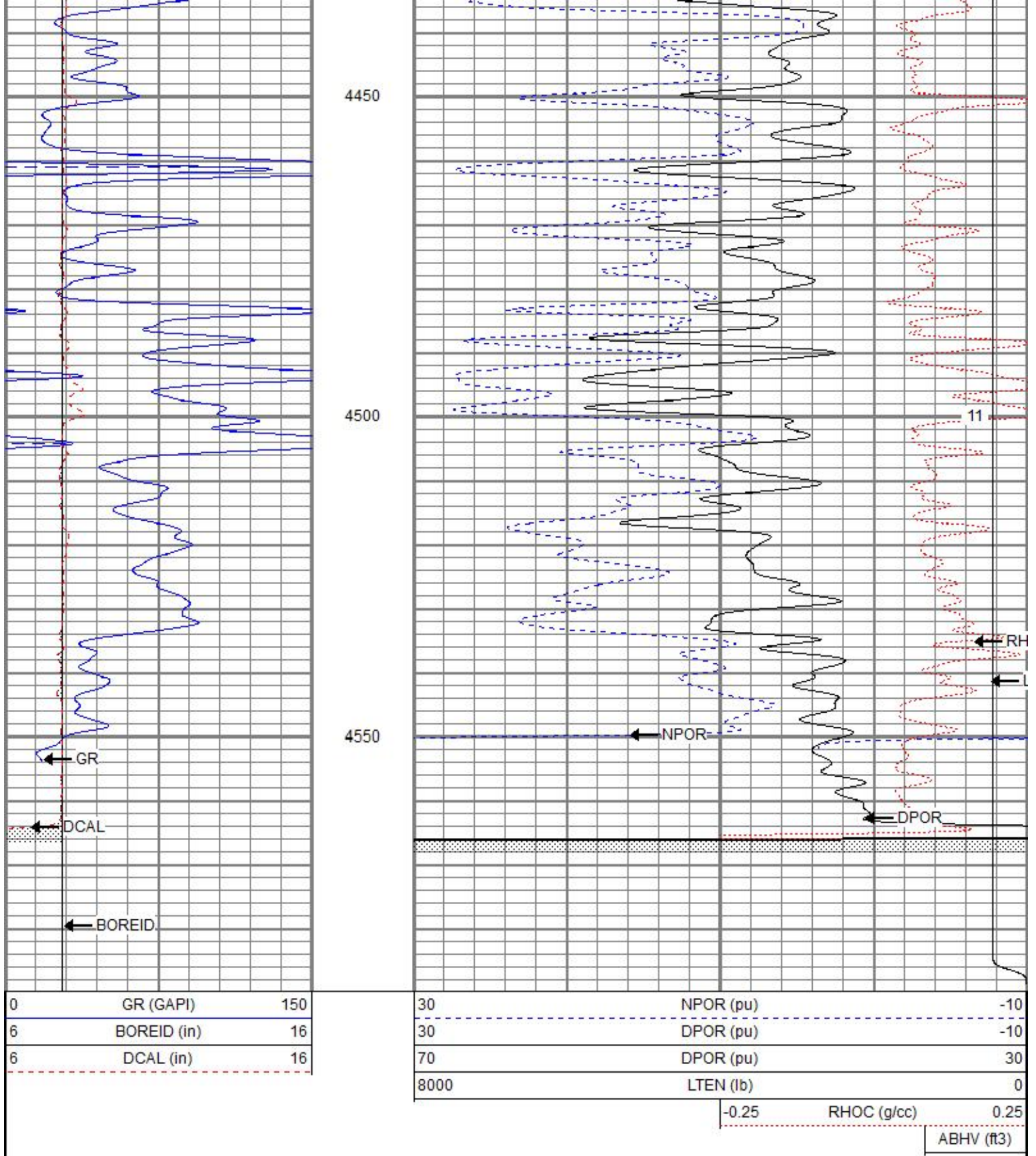
4350

4400



47

29

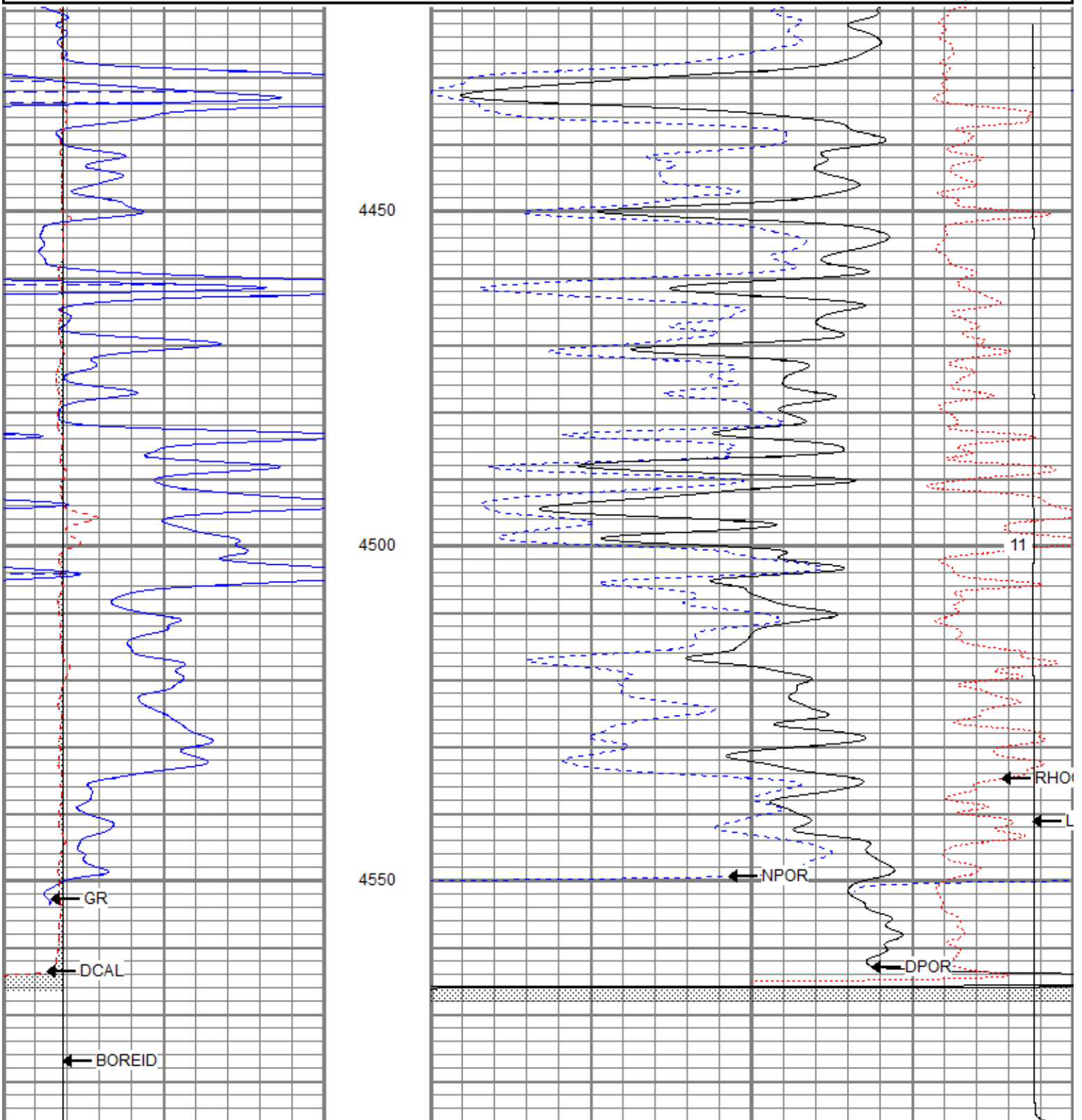


# Repeat Pass

Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass1  
 Presentation Format kcdnl  
 Dataset Creation Fri Oct 17 00:15:04 2014

0	GR (GAPI)	150
6	BOREID (in)	16
6	DCAL (in)	16

30	NPOR (pu)	-10
30	DPOR (pu)	-10
70	DPOR (pu)	30
8000	LTEN (lb)	0
	RHOC (g/cc)	-0.25 0.25
	ABHV (ft3)	



0	GR (GAPI)	150
6	BOREID (in)	16
6	DCAL (in)	16

30	NPOR (pu)	-10
30	DPOR (pu)	-10
70	DPOR (pu)	30
8000	LTEN (lb)	0
	RHOC (g/cc)	-0.25 0.25
	ABHV (ft3)	

## Calibration Report

Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass1  
 Dataset Creation Fri Oct 17 00:15:04 2014

## Dual Induction Calibration Report

Serial-Model: 1842-ADM  
 Surface Cal Performed: Thu Apr 10 16:42:08 2014  
 Downhole Cal Performed: Thu Apr 10 16:42:12 2014  
 After Survey Verification Performed: Thu Apr 10 16:42:14 2014

## Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.014	0.660	V	0.000	350.000	mmho/m	541.845	-7.742
Medium	0.003	0.761	V	0.000	400.000	mmho/m	527.924	-1.569
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.013	0.663	V	0.000	350.000	mmho/m	538.740	-6.964
Medium	0.003	0.761	V	0.000	550.000	mmho/m	726.060	-2.265

## Downhole Calibration

Internal:	Readings			References			Results	
	Zero	Cal		Zero	Cal		m	b
Deep	-0.857	351.396	mmho/m	-0.737	351.280	mmho/m	0.999	0.118
Medium	0.187	400.090	mmho/m	0.077	399.987	mmho/m	1.000	-0.110
Shallow	2.543	0.024	V	500.000	2.000	Ohm-m	197.760	-3.000

## After Survey Verification

Internal:	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.857	351.396	mmho/m	0.999	0.118
Medium	0.000	0.000	mmho/m	0.187	400.090	mmho/m	1.000	-0.110
Shallow	0.000	0.000	Ohm-m	500.000	2.000	Ohm-m	1.000	0.000

## Compensated Density Calibration Report

Serial-Model: 2501DHT-DHT  
 Source / Verifier: csv-j12 /  
 Master Calibration Performed: Thu Oct 02 12:56:38 2014  
 Before Survey Verification Performed:  
 After Survey Verification Performed:

## Master Calibration

	Density		Far Detector	Near Detector
Magnesium	1.750	g/cc	711.36	284.22 cps
Aluminum	2.660	g/cc	133.07	183.42 cps
Spine Angle = 75.36			Density/Spine Ratio = 0.525	
	Size		Reading	
Small Ring	7.80	in	6234.28	
Large Ring	14.00	in	10469.70	

## Before Survey Verification

Target

g/cc  
g/cc  
g/cc

Measured

g/cc  
g/cc  
g/cc

After Survey Verification

Target

g/cc  
g/cc  
g/cc

Measured

g/cc  
g/cc  
g/cc

Gamma Ray Calibration Report

Serial Number: 2001  
 Tool Model: OH  
 Performed: Thu Oct 09 11:41:16 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.2300 GAPI/cps

Neutron Calibration Report

Serial Number: 5108  
 Tool Model: PROBE  
 Performed: Tue Jun 03 06:35:57 2014

Calibrator Value: 1 NAPI

Calibrator Reading: 1 cps

Sensitivity: 1 NAPI/cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
NEU	36.50		None	0.75	1.50	5.00
			NEU-PROBE (5108) Probe	4.92	3.63	85.00
GR	30.56		GR-OH (2001) 2001	3.56	3.25	40.00
			DHT (2501DHT) Digital High Temp CDL Tool	9.69	4.00	201.00
LSD	22.02					
DCAL	21.73					
SSD	21.48					
HEADVOLT	19.71					
SP	10.60					
CILD	10.60			DIL-ADM (1842) Dual Induction	19.71	4.00
CILM	6.89					
RLL3	1.70					

Dataset: naerjsutton#1-13oh.db: field/well/run1/pass1  
 Total length: 38.63 ft  
 Total weight: 631.00 lb  
 O.D.: 4.00 in



**DUAL  
INDUCTION  
LOG**

Company NAE, INC.  
 Well RJ Sutton #1-13  
 Field Walnut Fork Southwest  
 County Lane  
 State Kansas

**Company NAE, INC.**  
**Well RJ Sutton #1-13**  
**Field Walnut Fork Southwest**  
**County Lane State Kansas**

**Location:** API #: 15 101 22540  
 1474' FSL & 1970' FEL

SEC 13 TWP 17S RGE 29W  
 Permanent Datum Ground Level Elevation 2746'  
 Log Measured From KB 11' AGL  
 Drilling Measured From KB

Other Services  
 CDNL  
 ML  
 Elevation  
 K.B. 2757'  
 D.F. 2756'  
 G.L. 2746'

Date	10-17-14
Run Number	One
Depth Driller	4586'
Depth Logger	4587'
Bottom Logged Interval	4585
Top Log Interval	200'
Casing Driller	8 5/8" @ 226'
Casing Logger	226'
Bit Size	7 7/8"
Type Fluid in Hole	Chemical
Density / Viscosity	9.3/53
PH / Fluid Loss	10.5/7.6
Source of Sample	Pit
Rm @ Meas. Temp	1.1@72degf
Rmf @ Meas. Temp	.82@72degf
Rmc @ Meas. Temp	1.32@72degf
Source of Rmf / Rmc	Calculated
Rm @ BHT	.70@112degf
Time Circulation Stopped	10:00 p.m.
Time Logger on Bottom	12:01 a.m.
Maximum Recorded Temperature	112degf
Equipment Number	T127
Location	Hays, KS
Recorded By	Gus Pfanenstiel
Witnessed By	Mr. Bob Hopkins

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**Comments**



# Main Pass

Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass2  
 Presentation Format kdillin2  
 Dataset Creation Fri Oct 17 00:21:42 2014  
 Charted by Depth in Feet scaled 1:600

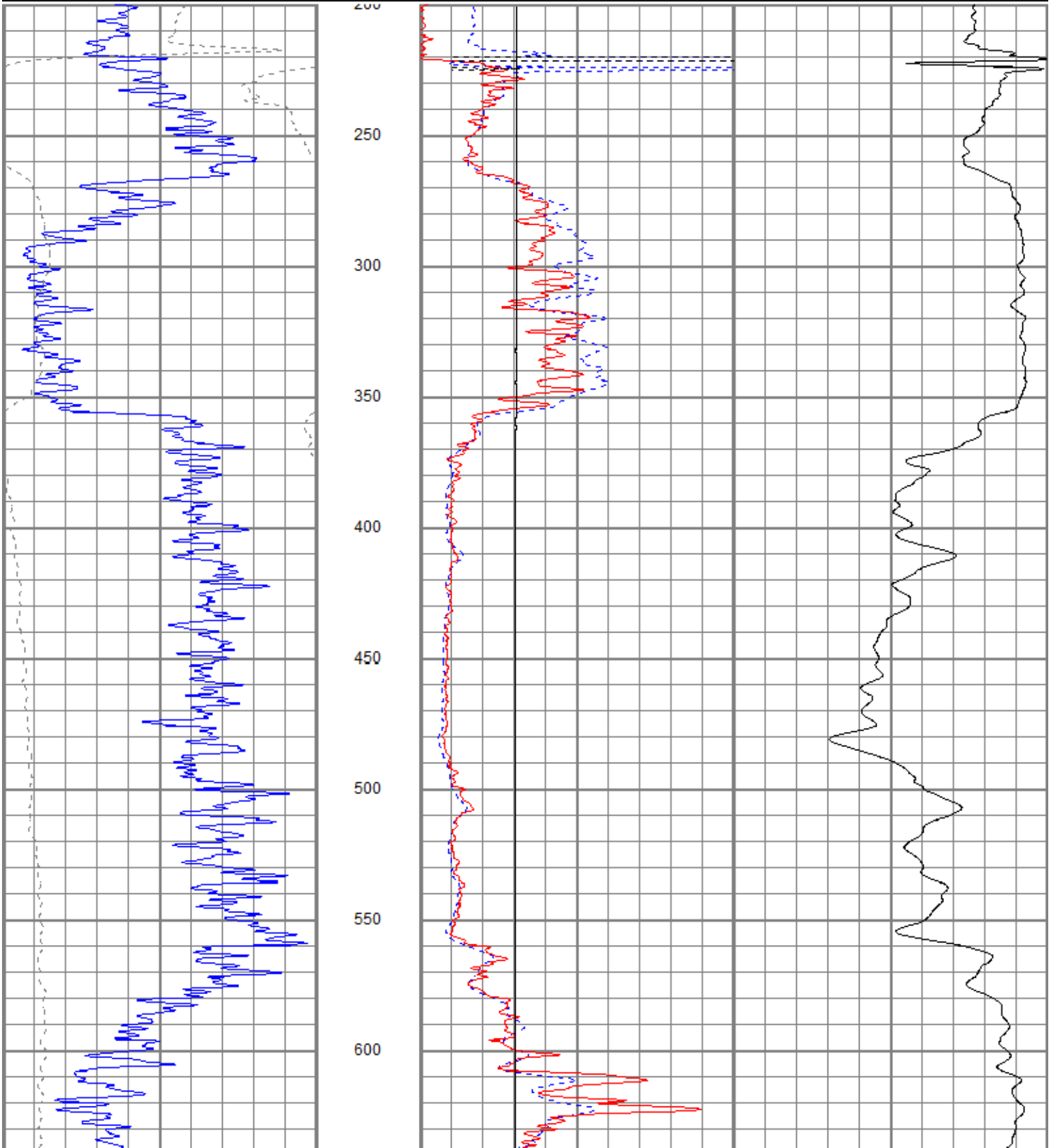
0	GR (GAPI)	150
-200	SP (mV)	0

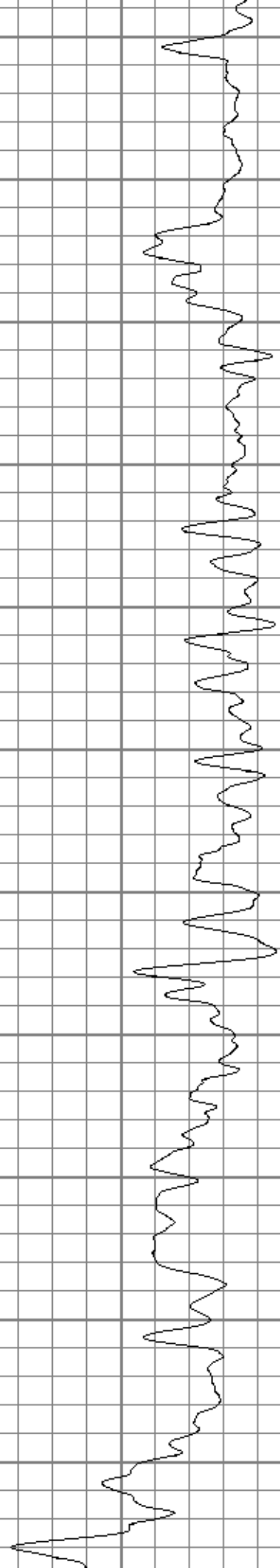
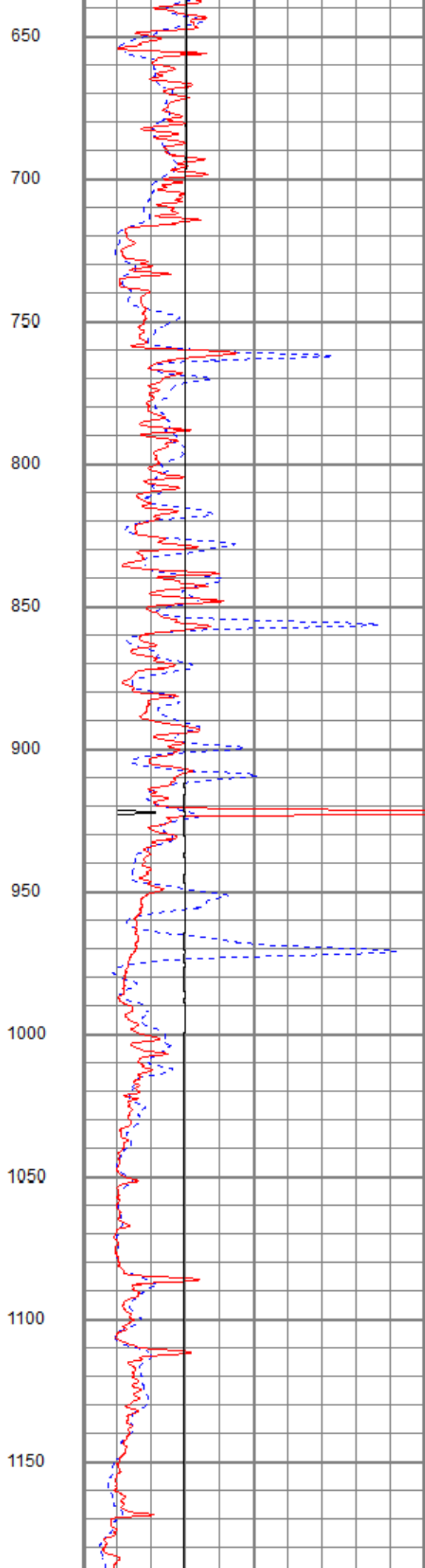
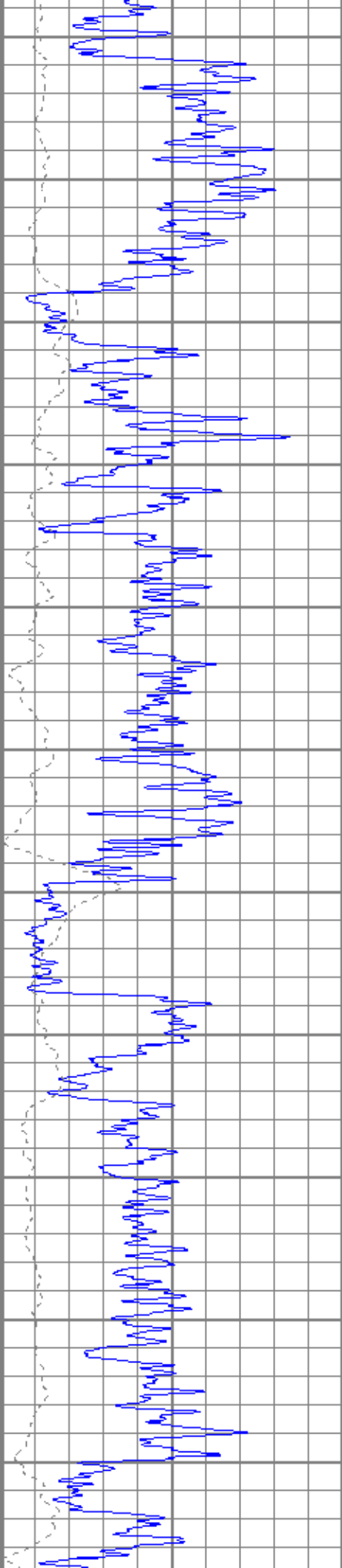
0	RILD (Ohm-m)	50
0	RLL3 (Ohm-m)	50

1000	CILD (mmho/m)	0
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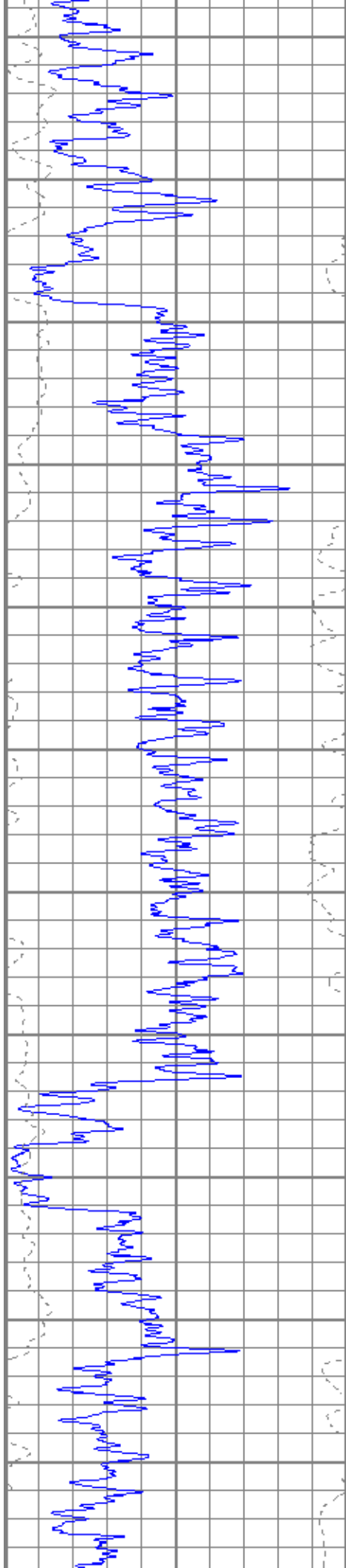
10000	LTEN (lb)	0
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50	RILD x 10 (Ohm-m)	500
50	RLL3 x 10 (Ohm-m)	500









1200

1250

1300

1350

1400

1450

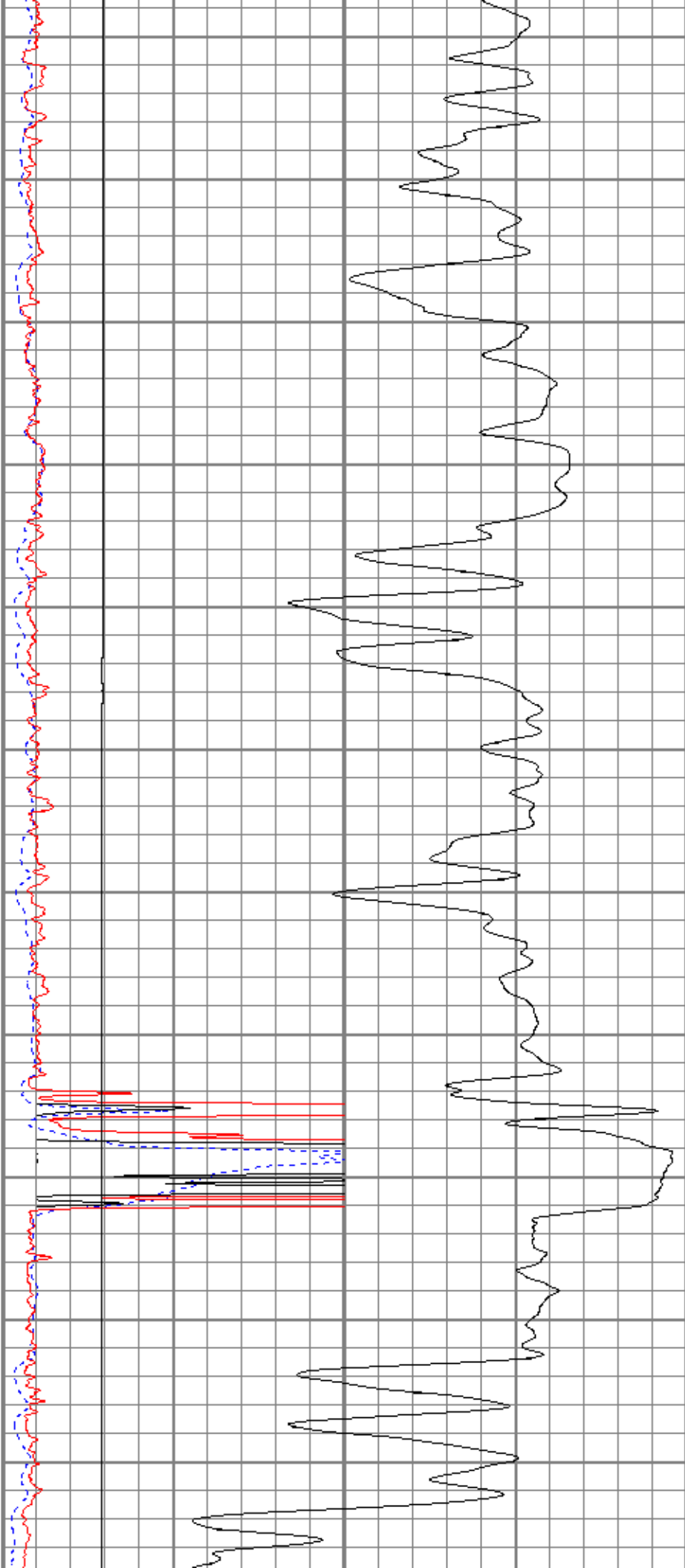
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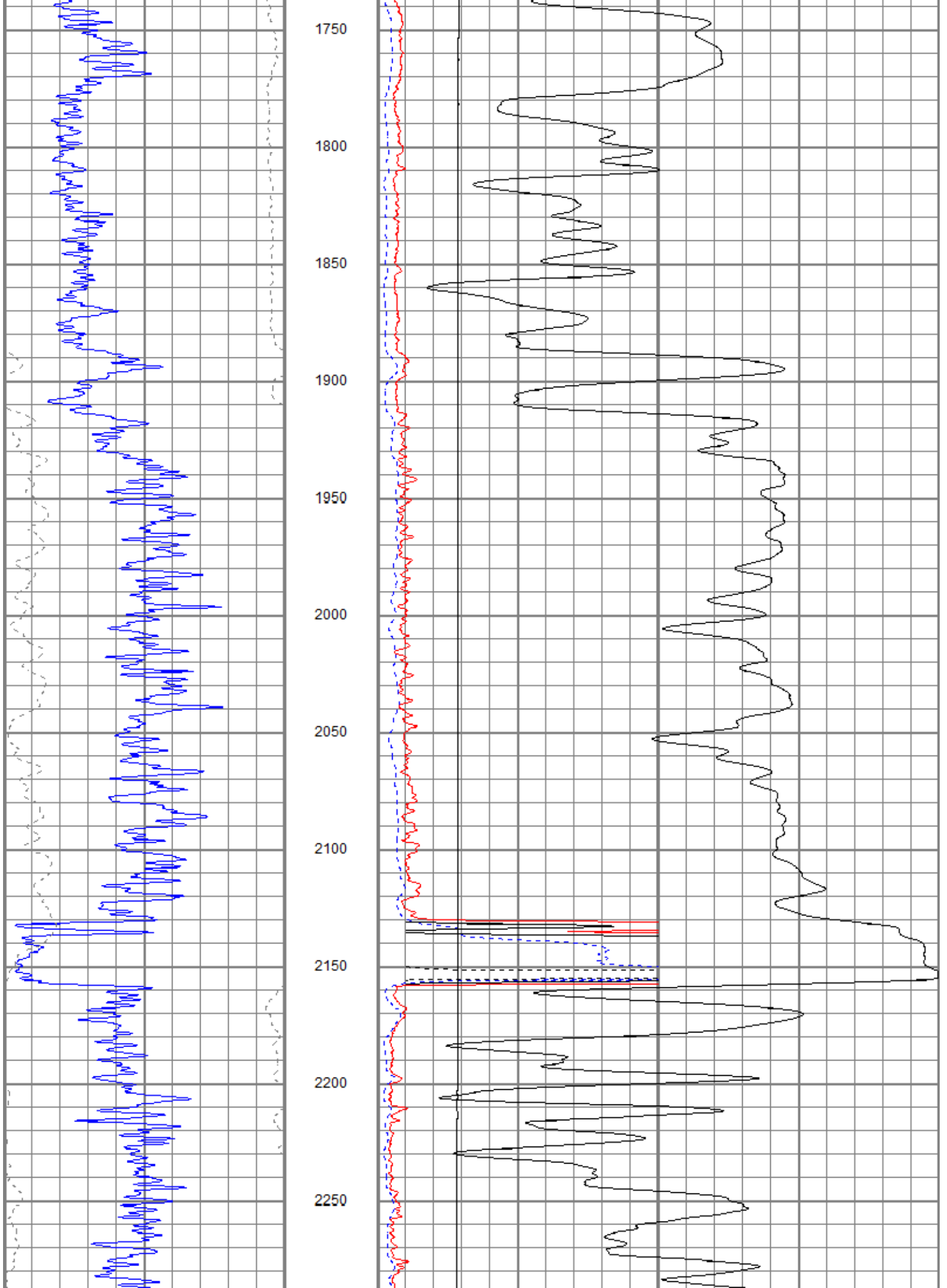
1550

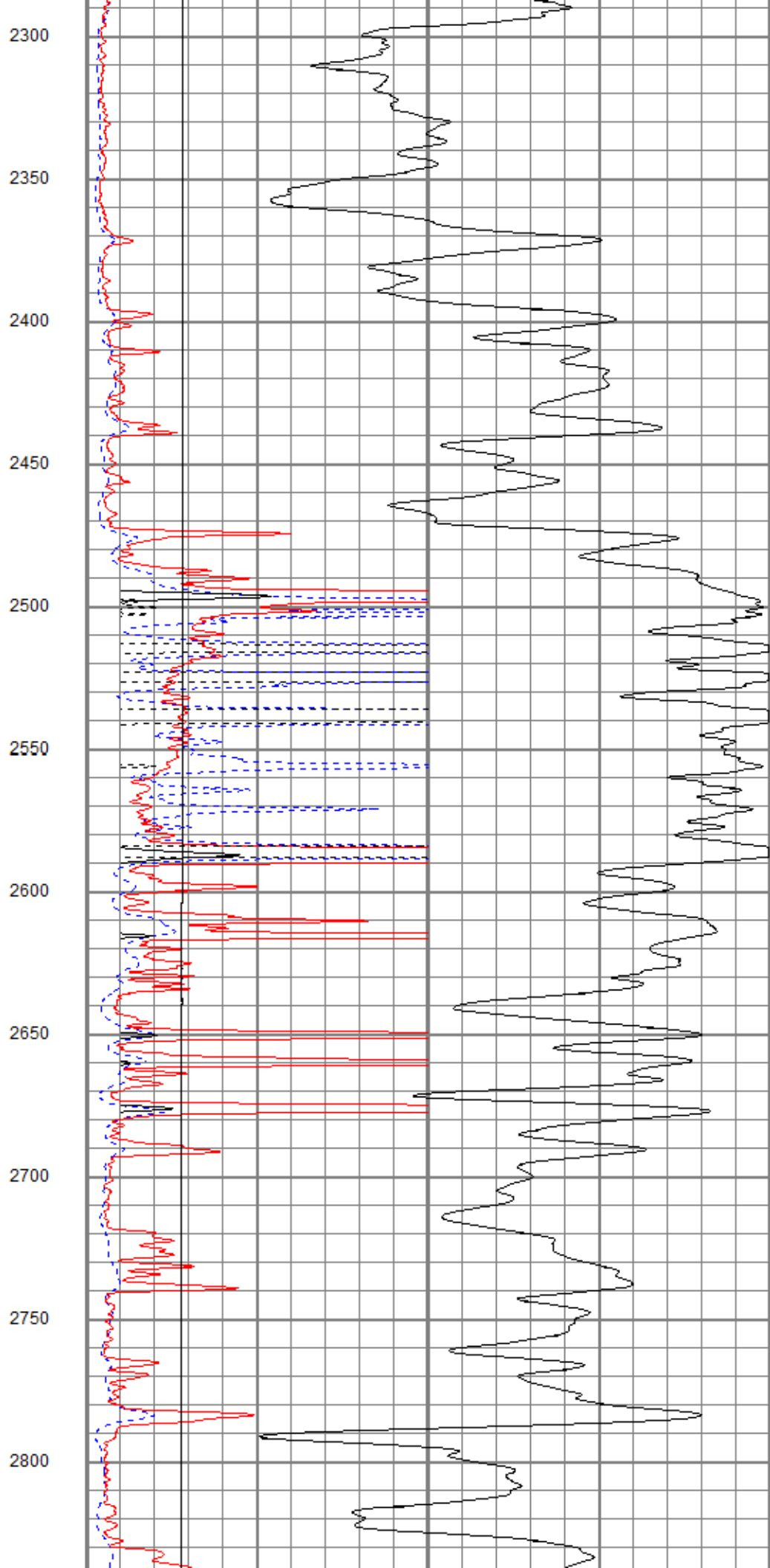
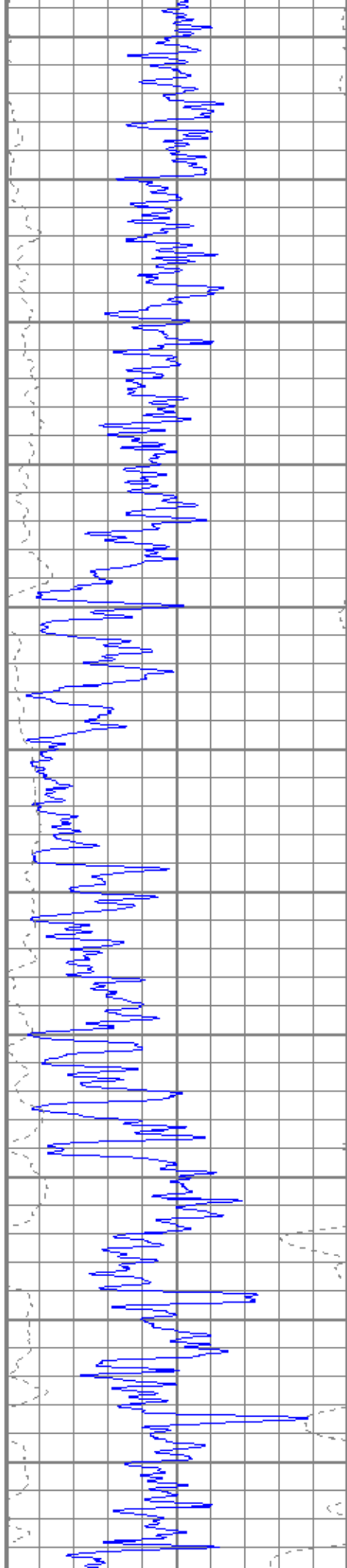
1600

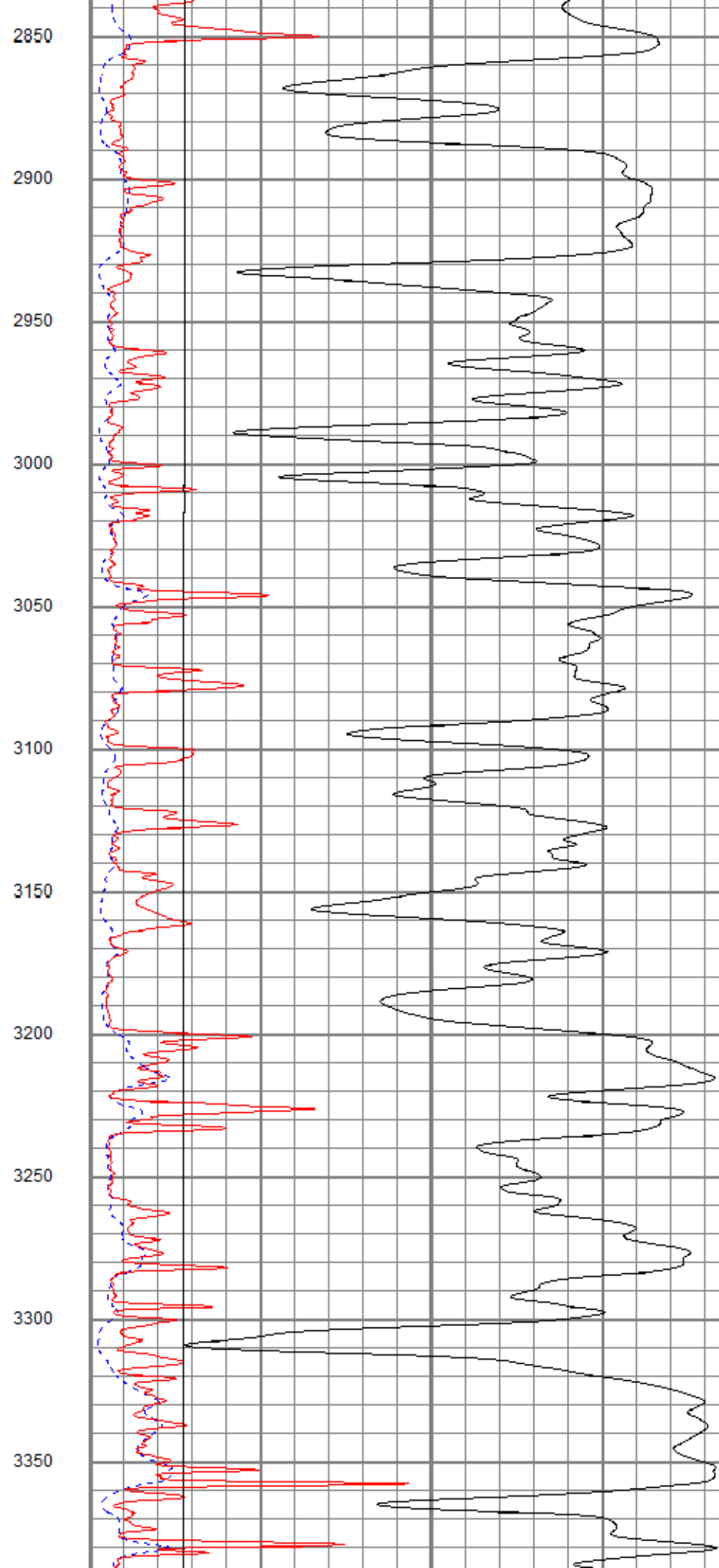
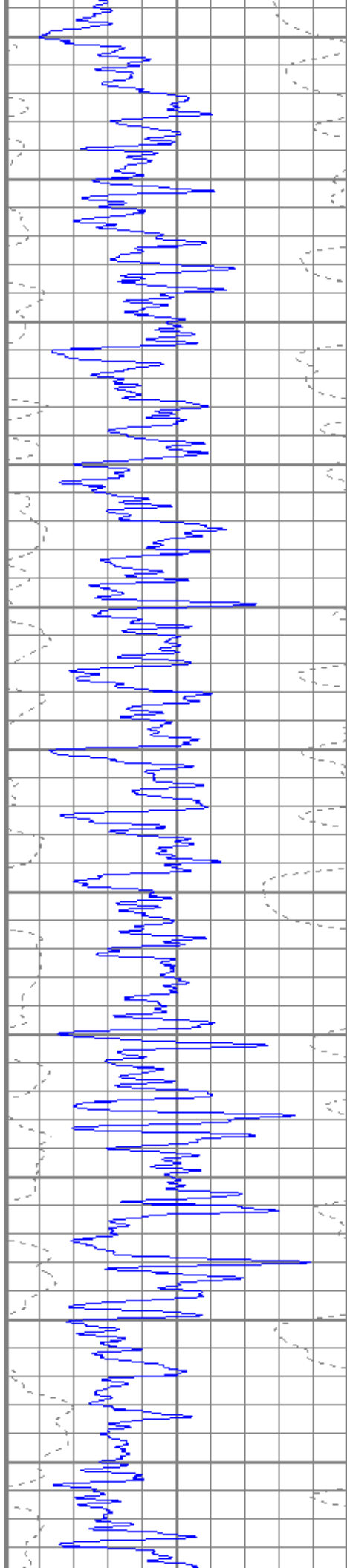
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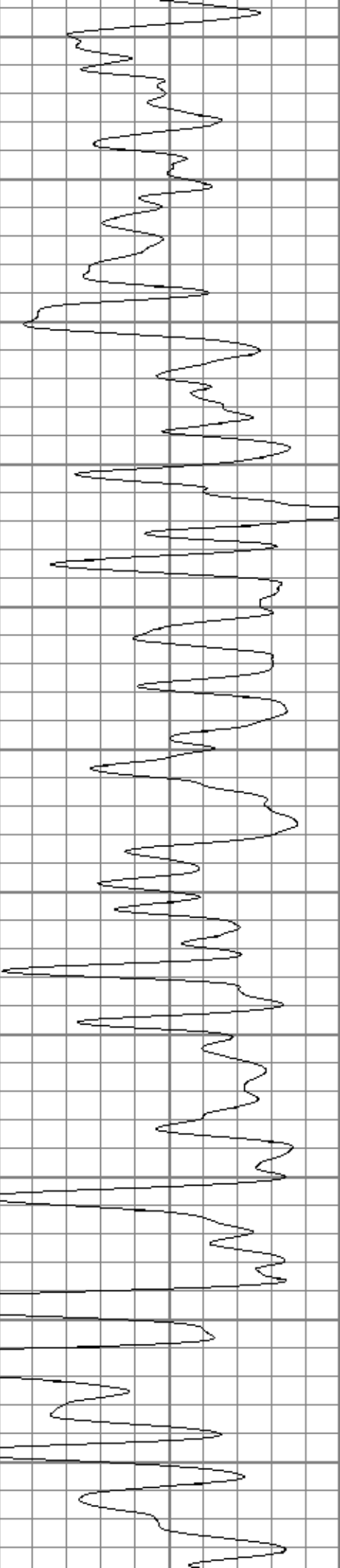
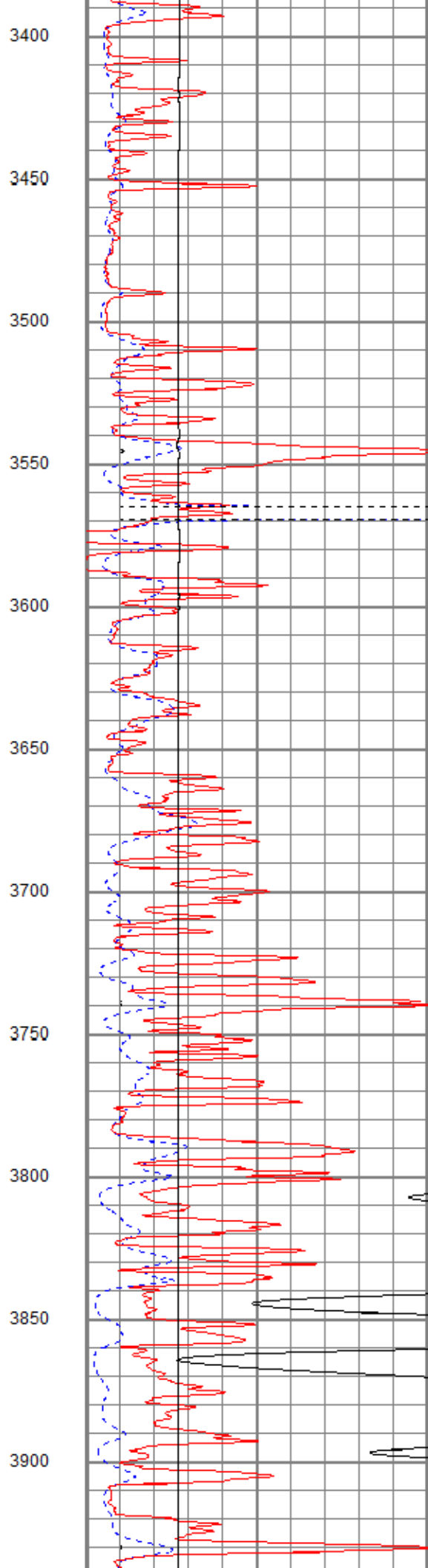
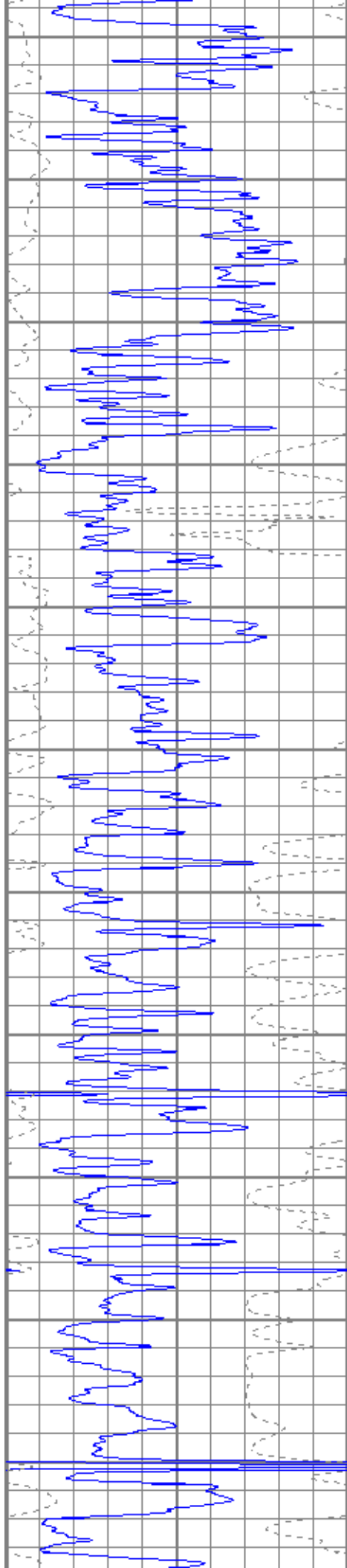
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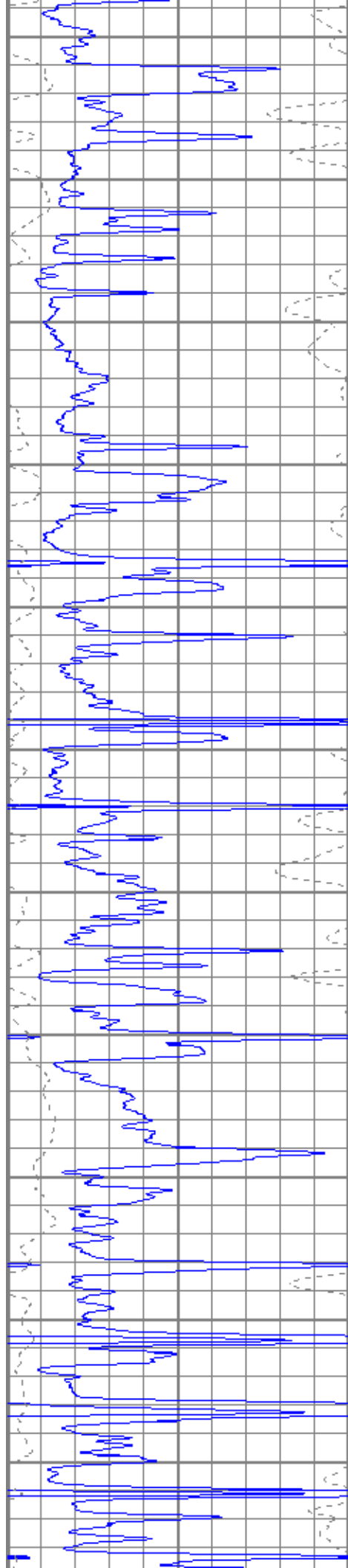




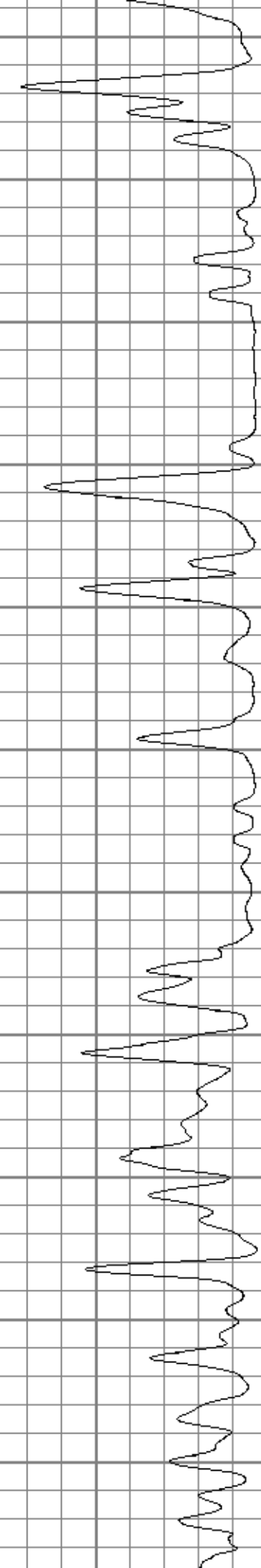
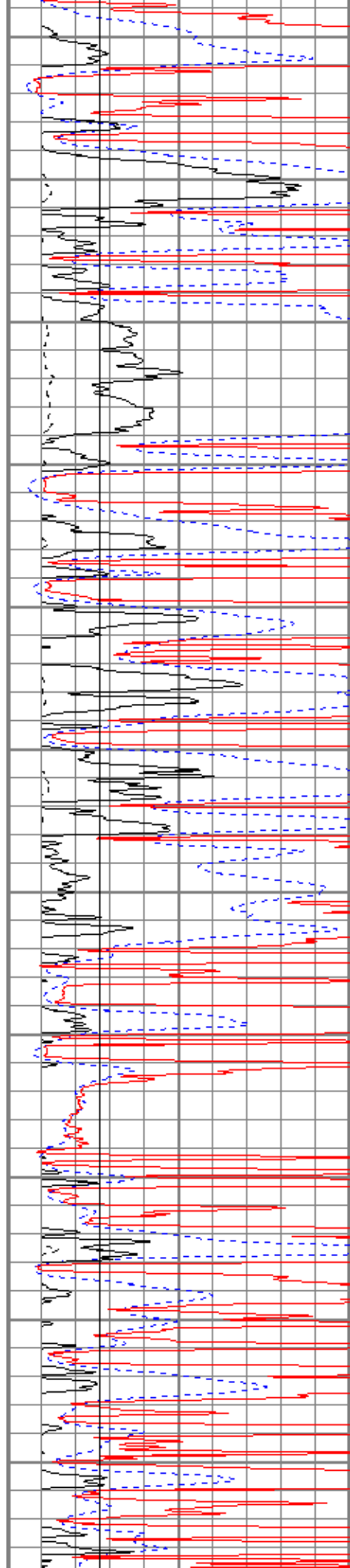


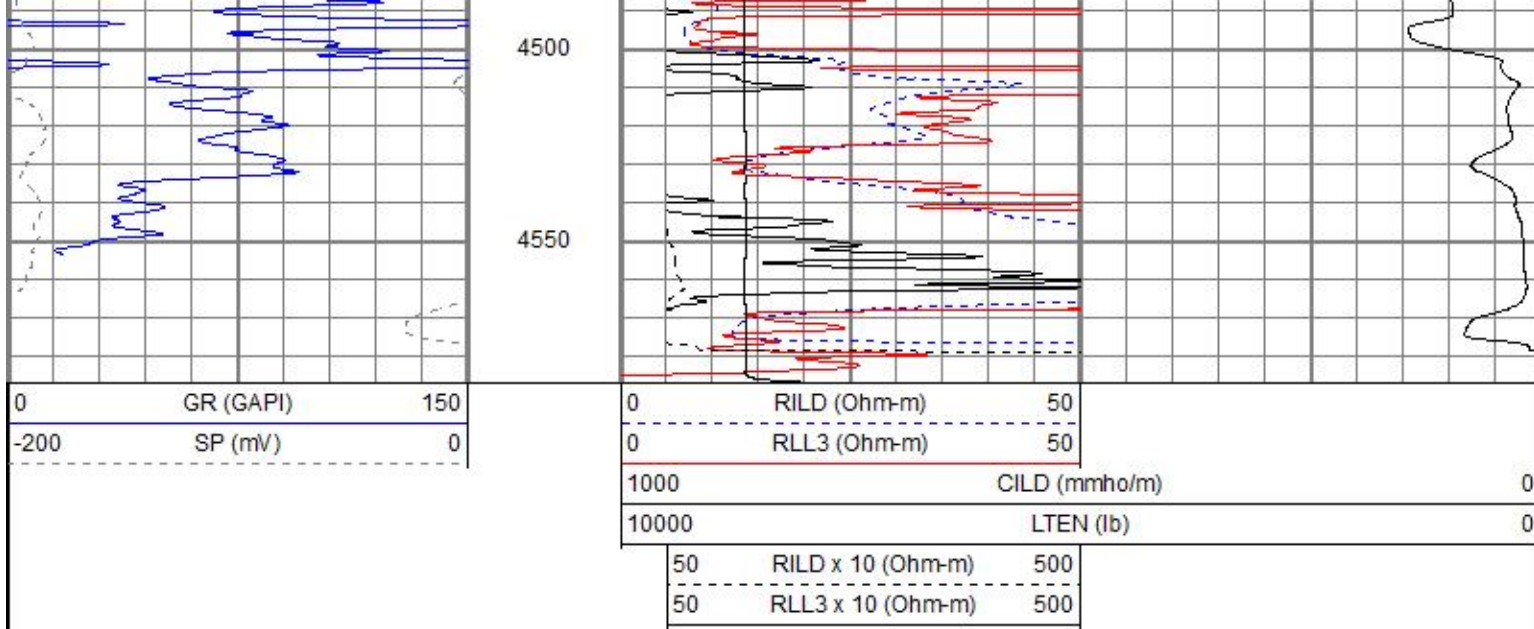






3950  
4000  
4050  
4100  
4150  
4200  
4250  
4300  
4350  
4400  
4450

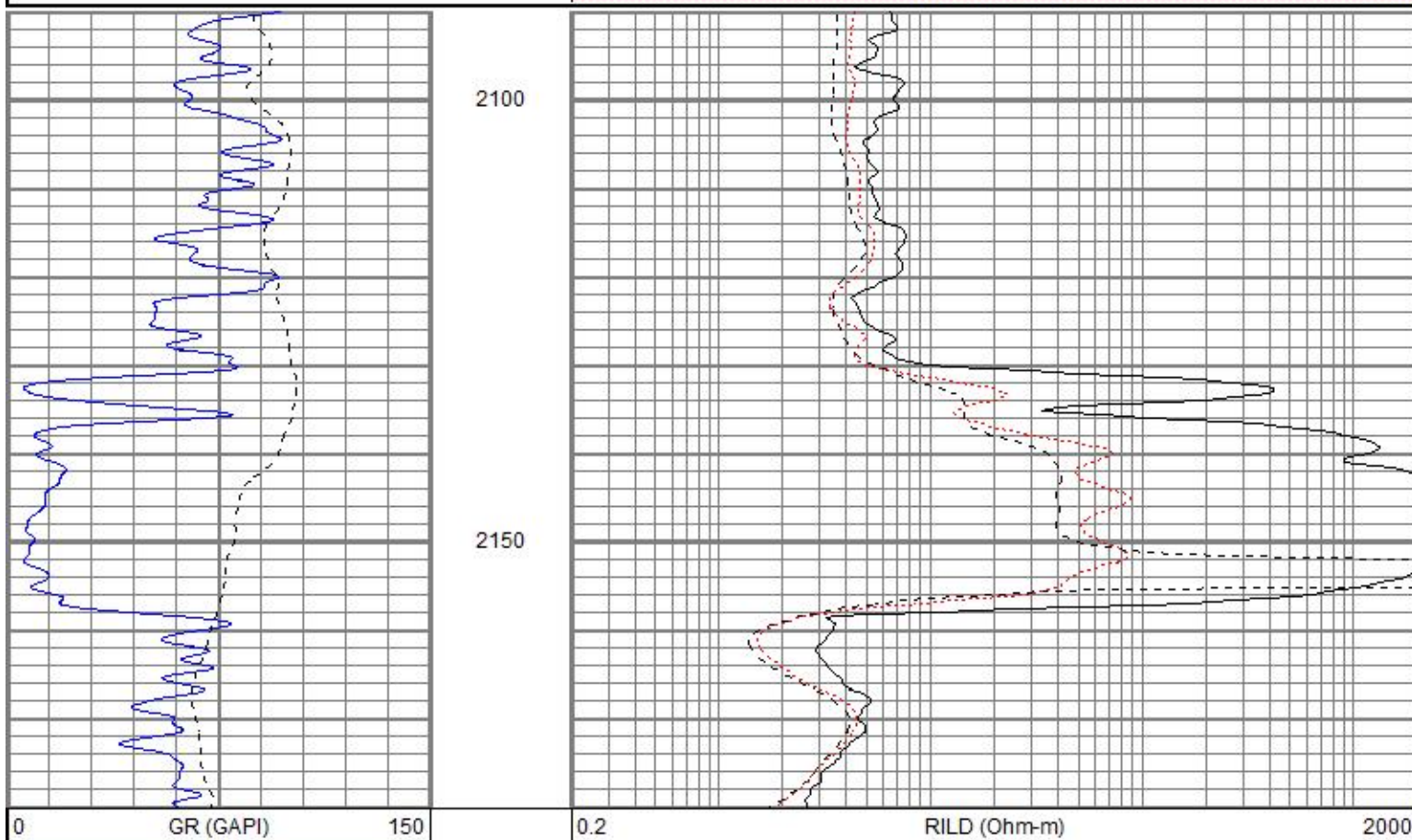




# Main Pass

Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass2  
 Presentation Format kdil  
 Dataset Creation Fri Oct 17 00:21:42 2014  
 Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150	0.2	RILD (Ohm-m)	2000
-100	SP (mV)	100	0.2	RLL3 (Ohm-m)	2000
			0.2	RILM (Ohm-m)	2000



-100 SP (mV) 100

0.2 RLL3 (Ohm-m) 2000

0.2 RILM (Ohm-m) 2000



# Main Pass

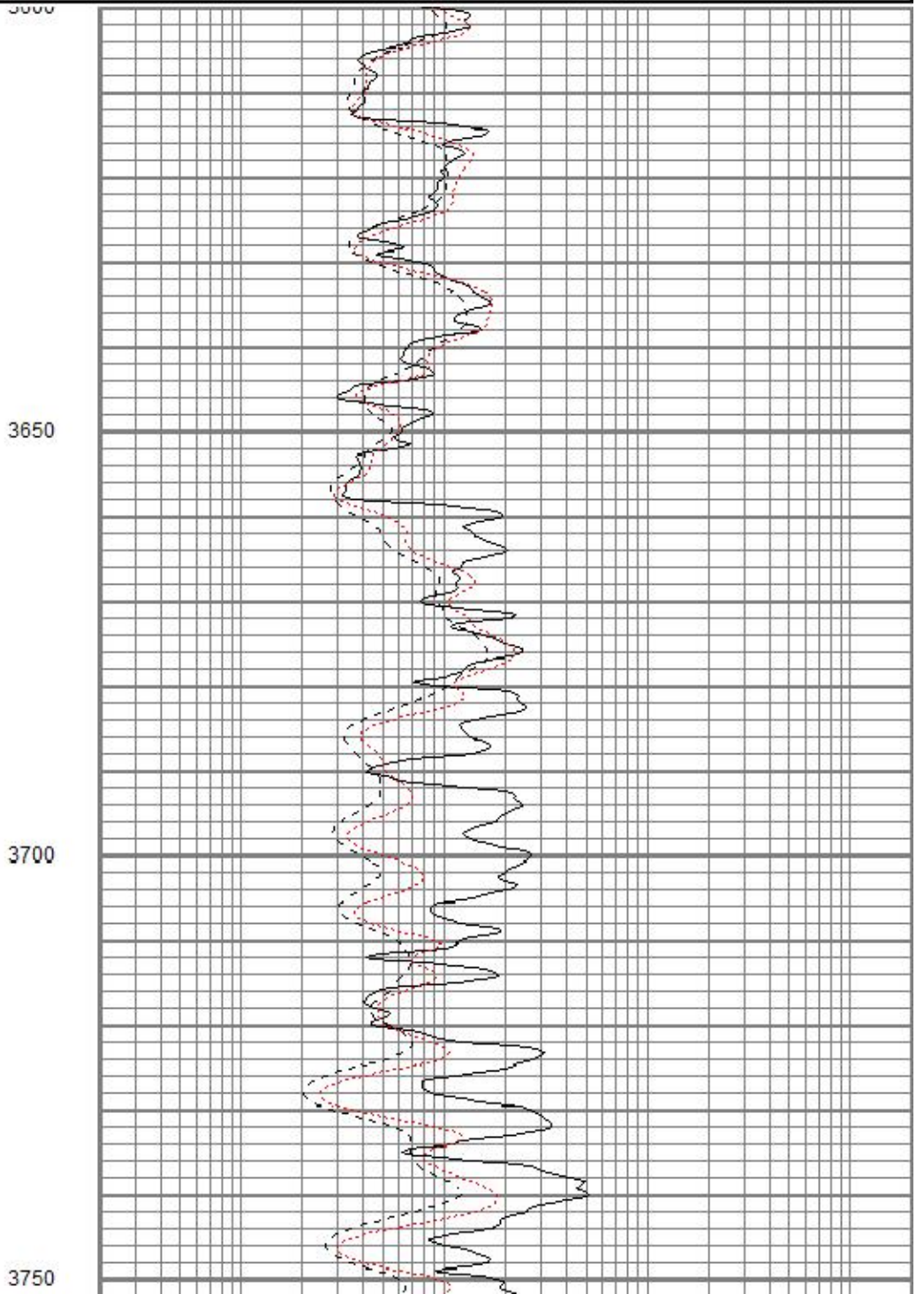
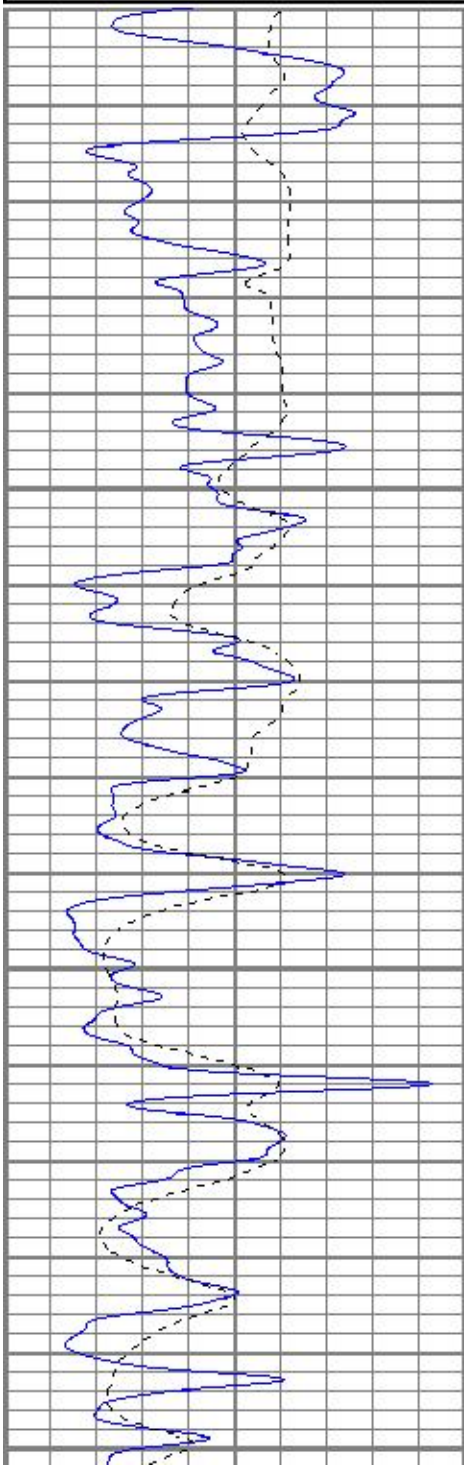
Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass2  
 Presentation Format kdil  
 Dataset Creation Fri Oct 17 00:21:42 2014  
 Charted by Depth in Feet scaled 1:240

0 GR (GAPI) 150  
 -100 SP (mV) 100

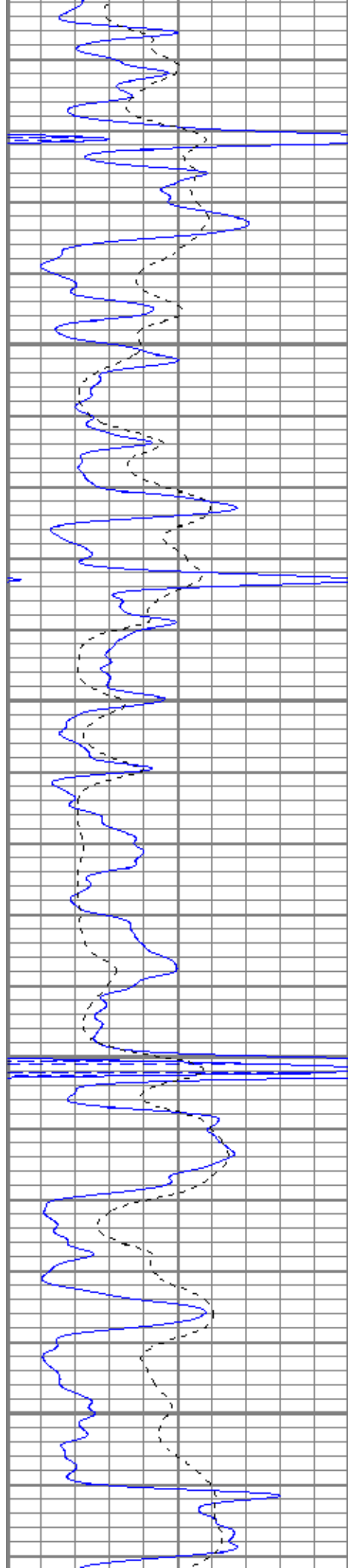
0.2 RILD (Ohm-m) 2000

0.2 RLL3 (Ohm-m) 2000

0.2 RILM (Ohm-m) 2000





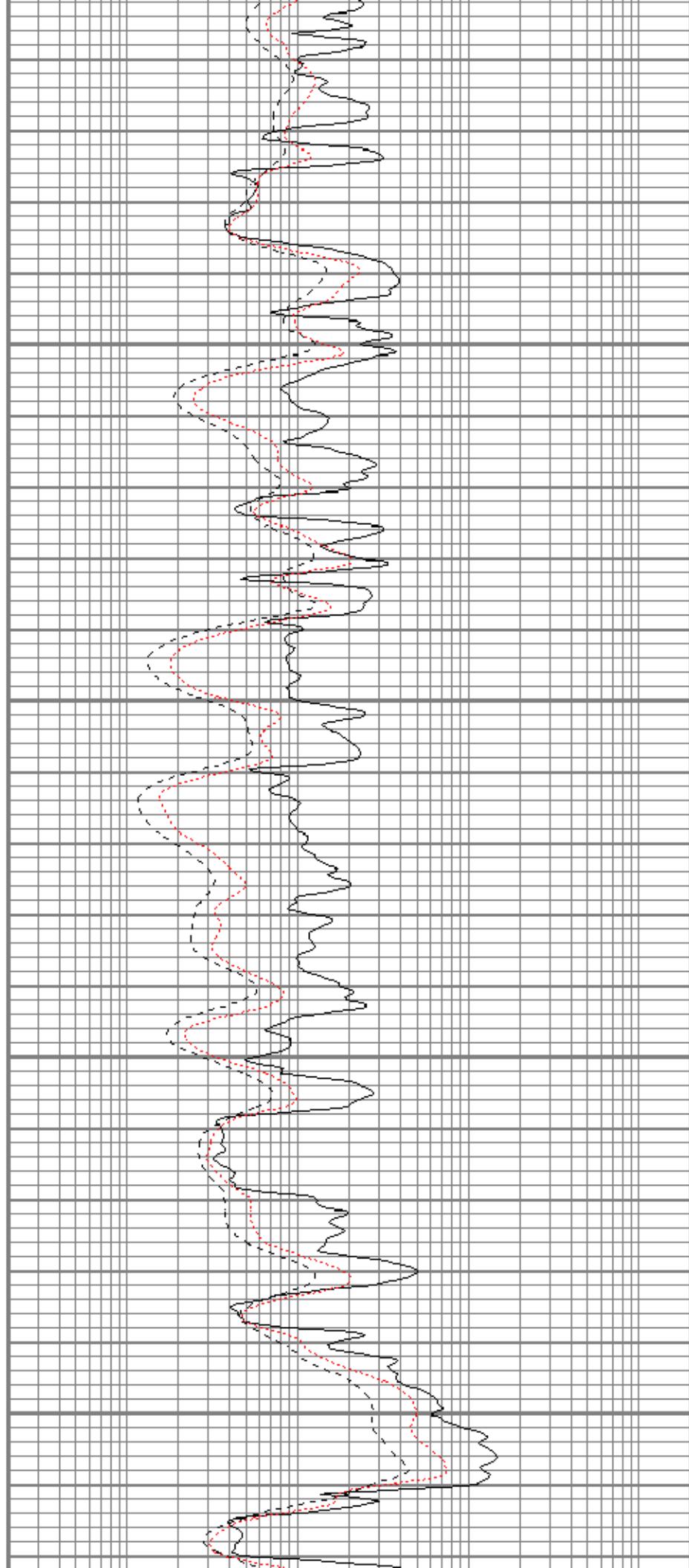


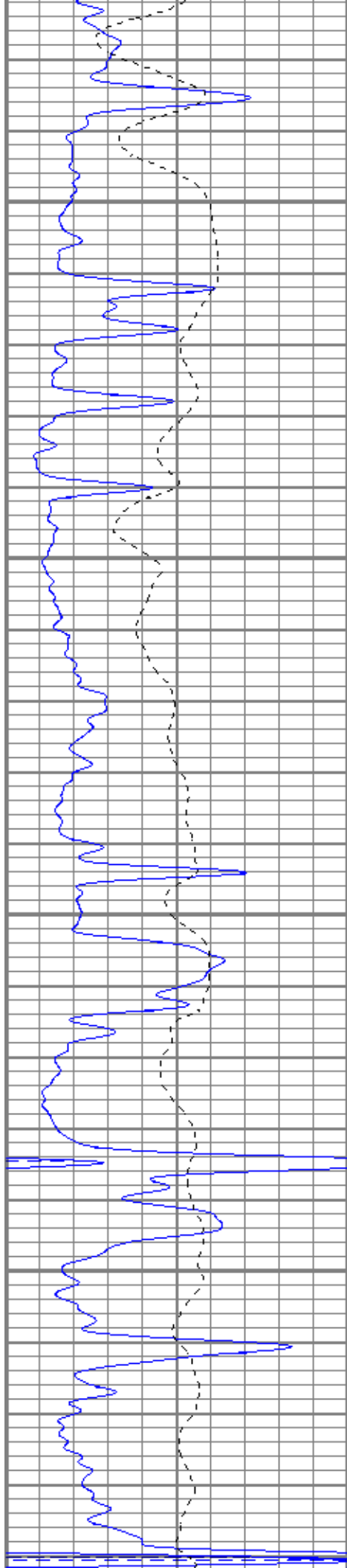
3800

3850

3900

3950



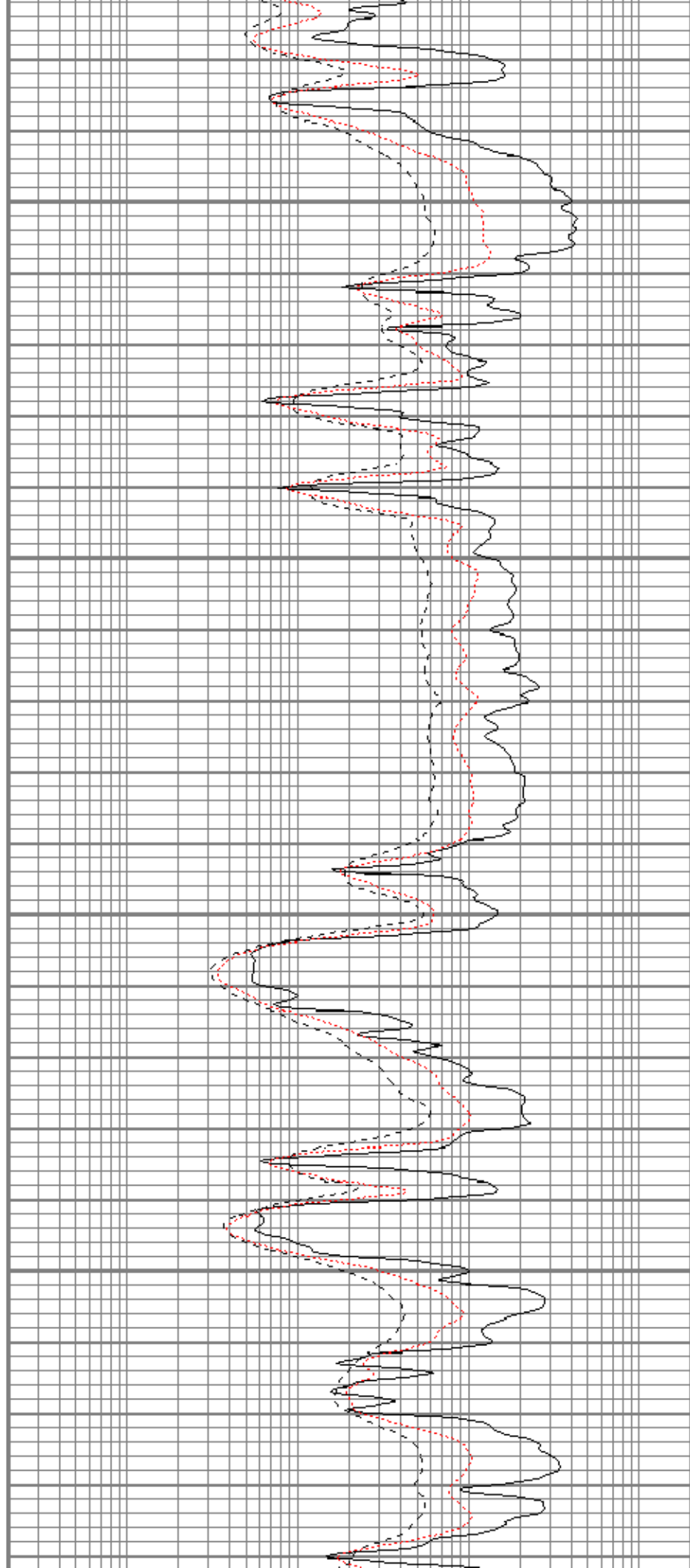


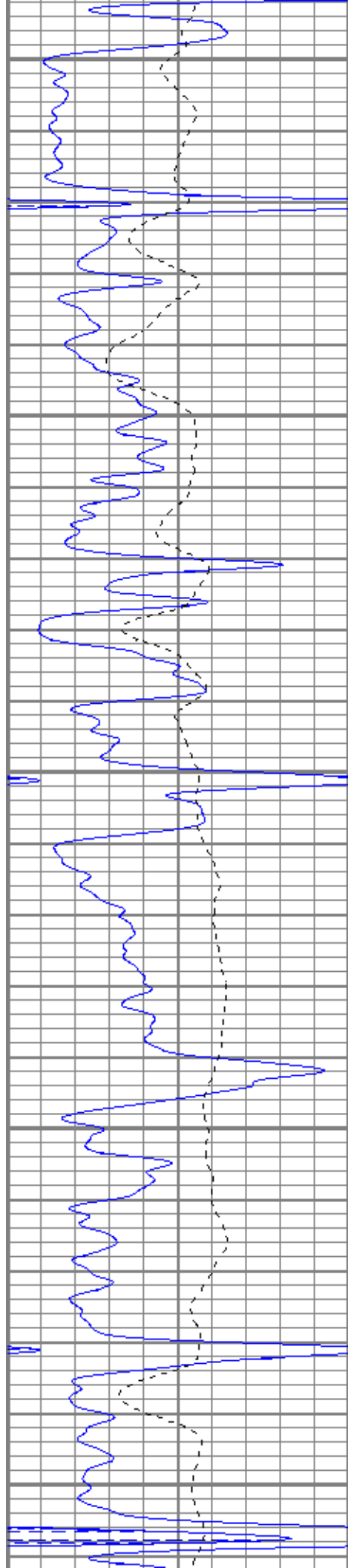
4000

4050

4100

4150





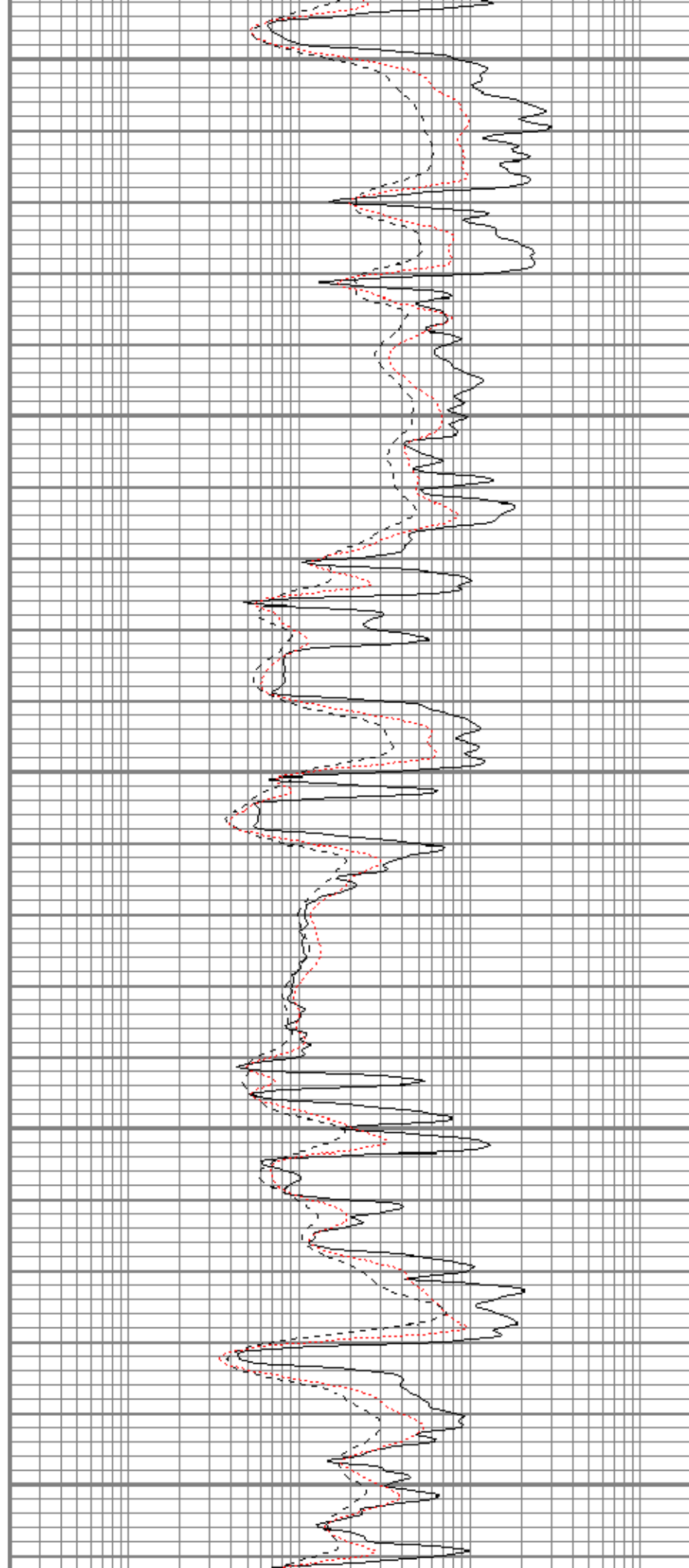
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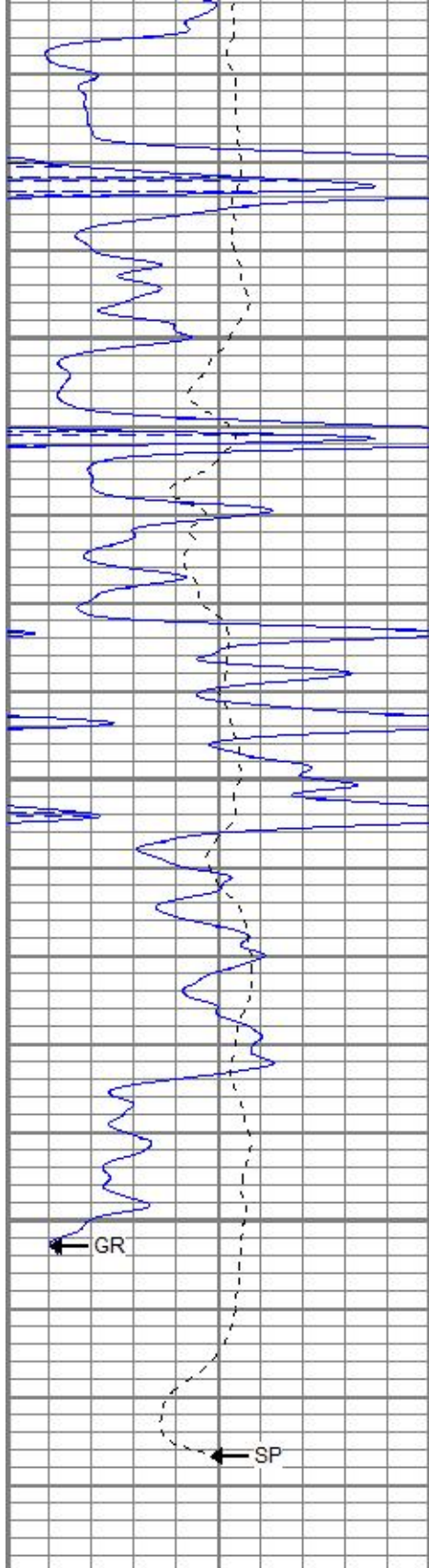
4250

4300

4350

4400



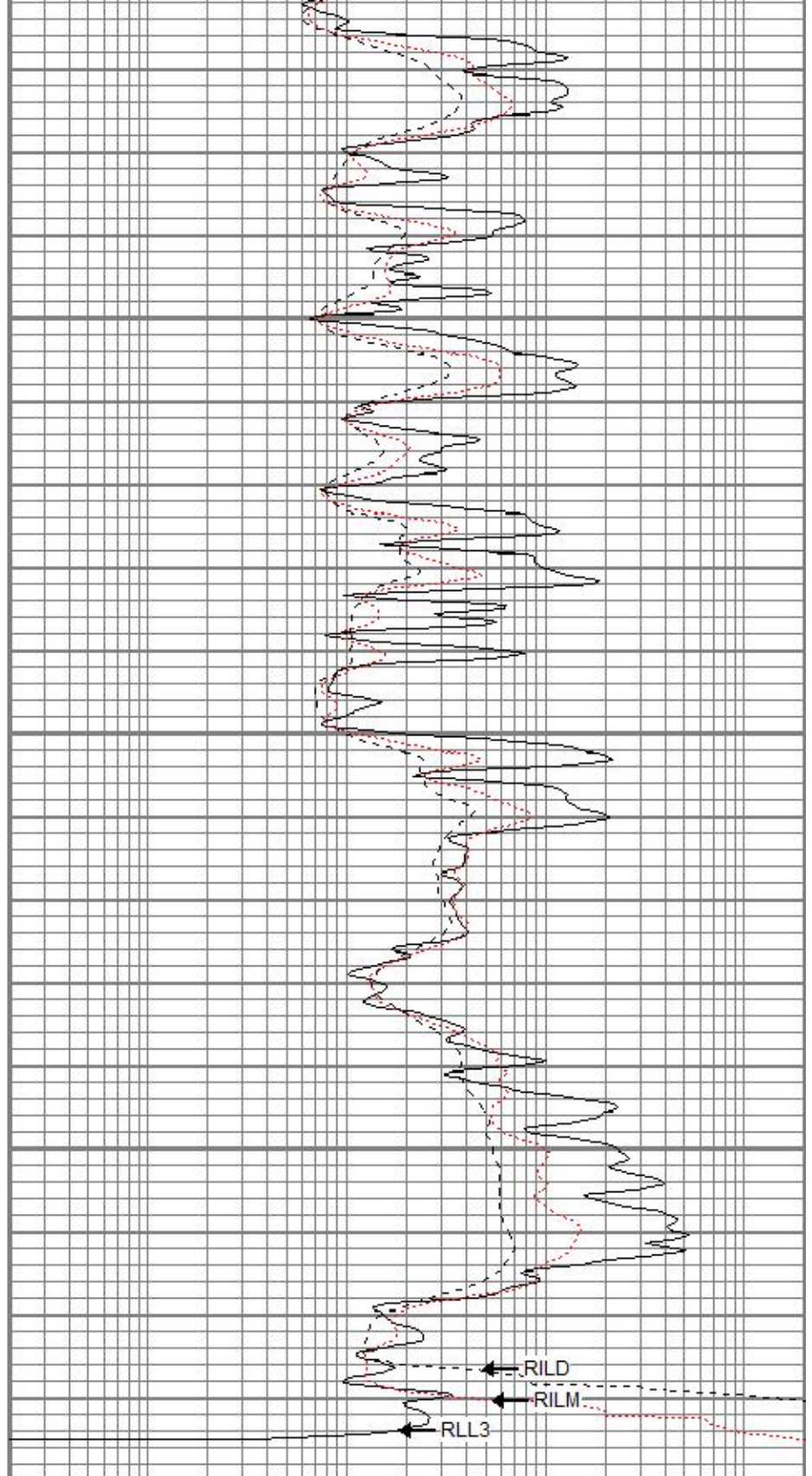


0	GR (GAPI)	150
-100	SP (mV)	100

4450

4500

4550



0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000

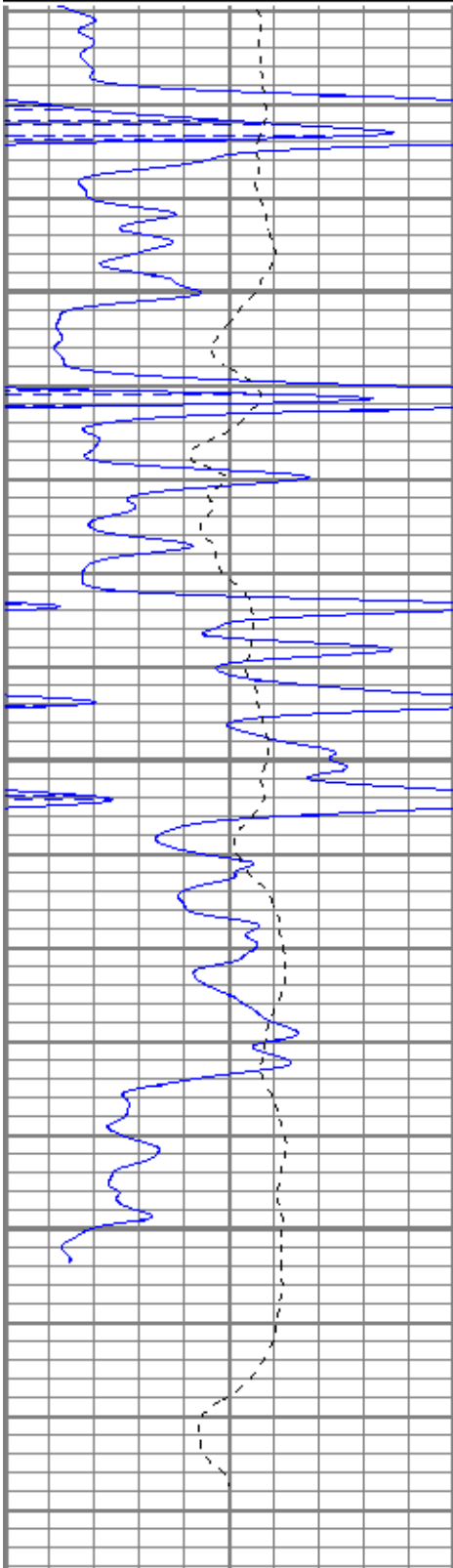


Repeat Pass

Database File naerjstun#1-130n.db  
 Dataset Pathname pass1  
 Presentation Format kdil  
 Dataset Creation Fri Oct 17 00:15:04 2014  
 Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150
-100	SP (mV)	100

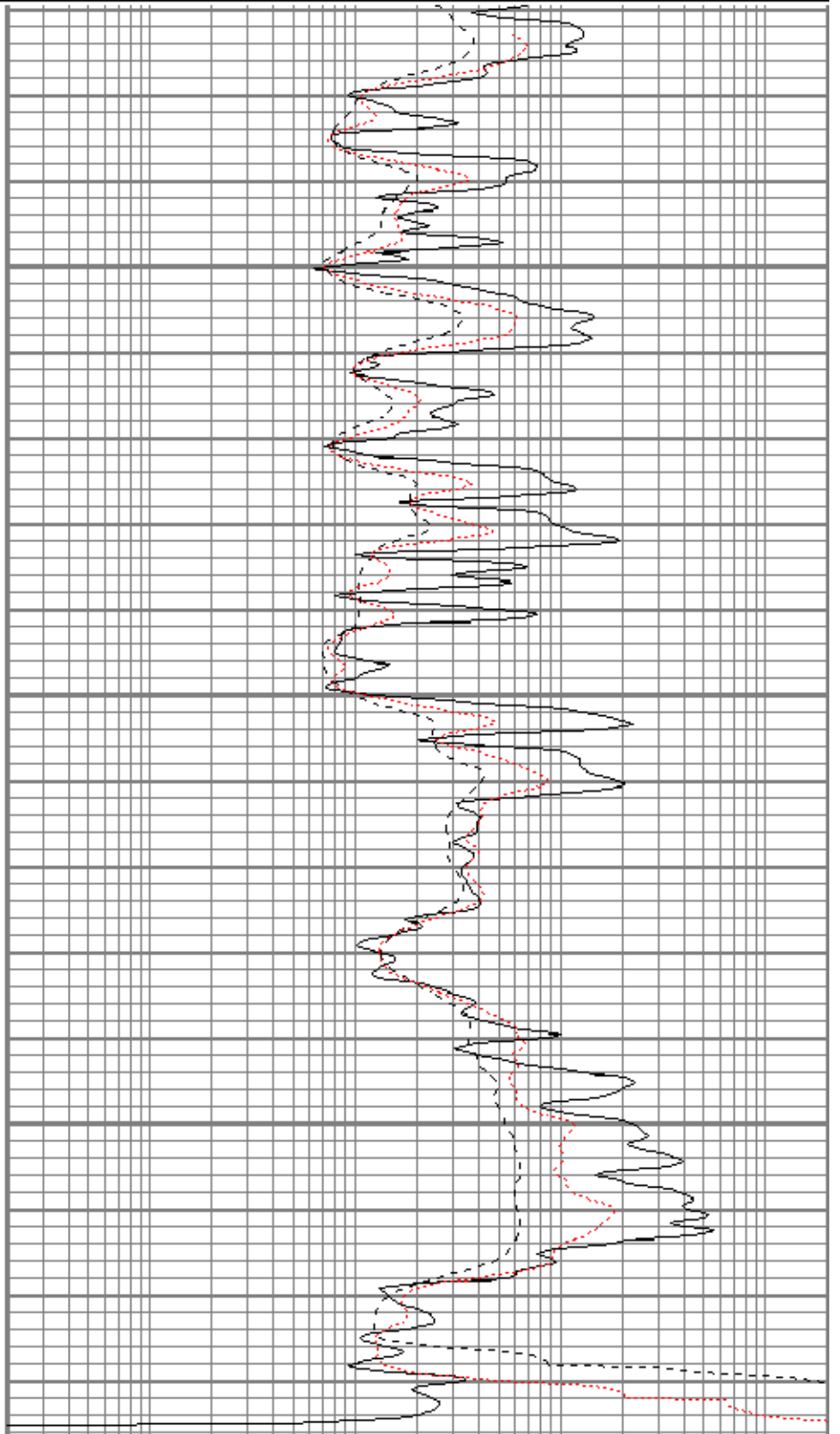
0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000



4450

4500

4550



0	GR (GAPI)	150
-100	SP (mV)	100

0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000

Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass1  
 Dataset Creation Fri Oct 17 00:15:04 2014

Dual Induction Calibration Report

Serial-Model: 1842-ADM  
 Surface Cal Performed: Thu Apr 10 16:42:08 2014  
 Downhole Cal Performed: Thu Apr 10 16:42:12 2014  
 After Survey Verification Performed: Thu Apr 10 16:42:14 2014

Surface Calibration

		Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b	
Deep	0.014	0.660	V	0.000	350.000	mmho/m	541.845	-7.742	
Medium	0.003	0.761	V	0.000	400.000	mmho/m	527.924	-1.569	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	0.013	0.663	V	0.000	350.000	mmho/m	538.740	-6.964	
Medium	0.003	0.761	V	0.000	550.000	mmho/m	726.060	-2.265	

Downhole Calibration

		Readings			References			Results	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	-0.857	351.396	mmho/m	-0.737	351.280	mmho/m	0.999	0.118	
Medium	0.187	400.090	mmho/m	0.077	399.987	mmho/m	1.000	-0.110	
Shallow	2.543	0.024	V	500.000	2.000	Ohm-m	197.760	-3.000	

After Survey Verification

		Readings			Targets			Results	
Internal:	Zero	Cal		Zero	Cal		m'	b'	
Deep	0.000	0.000	mmho/m	-0.857	351.396	mmho/m	0.999	0.118	
Medium	0.000	0.000	mmho/m	0.187	400.090	mmho/m	1.000	-0.110	
Shallow	0.000	0.000	Ohm-m	500.000	2.000	Ohm-m	1.000	0.000	

Compensated Density Calibration Report

Serial-Model: 2501DHT-DHT  
 Source / Verifier: csv-j12 /  
 Master Calibration Performed: Thu Oct 02 12:56:38 2014  
 Before Survey Verification Performed:  
 After Survey Verification Performed:

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.750	g/cc	711.36	284.22	cps
Aluminum	2.660	g/cc	133.07	183.42	cps
Spine Angle = 75.36			Density/Spine Ratio = 0.525		
	Size		Reading		
Small Ring	7.80	in	6234.28		
Large Ring	14.00	in	10469.70		

Before Survey Verification

	Target		Measured	
		g/cc		g/cc
		g/cc		g/cc

g/cc  
g/ccg/cc  
g/cc

After Survey Verification

TargetMeasuredg/cc  
g/cc  
g/ccg/cc  
g/cc  
g/cc

## Gamma Ray Calibration Report

Serial Number: 2001  
 Tool Model: OH  
 Performed: Thu Oct 09 11:41:16 2014

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.2300 GAPI/cps

## Neutron Calibration Report

Serial Number: 5108  
 Tool Model: PROBE  
 Performed: Tue Jun 03 06:35:57 2014

Calibrator Value: 1 NAPI

Calibrator Reading: 1 cps

Sensitivity: 1 NAPI/cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
NEU	36.50		None	0.75	1.50	5.00	
			NEU-PROBE (5108) Probe	4.92	3.63	85.00	
GR	30.56		GR-OH (2001) 2001	3.56	3.25	40.00	
			DHT (2501DHT) Digital High Temp CDL Tool	9.69	4.00	201.00	
LSD	22.02						
DCAL	21.73						
SSD	21.48						
HEADVOLT	19.71						
SP	10.60			DIL-ADM (1842) Dual Induction	19.71	4.00	300.00
CILD	10.60						
CILM	6.89						
RLL3	1.70						

Dataset: naerjsutton#1-13oh.db: field/well/run1/pass1  
 Total length: 38.63 ft  
 Total weight: 631.00 lb  
 O.D.: 4.00 in



**MICRO  
RESISTIVITY  
LOG**

**Company** NAE, INC.

**Well** RJ Sutton #1-13

**Field** Walnut Fork Southwest

**County** Lane **State** Kansas

**Location:** API #: 15 101 22540

1474' FSL & 1970' FEL

SEC 13 TWP 17S RGE 29W

Permanent Datum Ground Level Elevation 2746'

Log Measured From KB 11' AGL

Drilling Measured From KB

Other Services  
CDNL  
DIL

Elevation

K.B. 2757'

D.F. 2756'

G.L. 2746'

Date	10-17-14		
Run Number	One		
Depth Driller	4586'		
Depth Logger	4587'		
Bottom Logged Interval	4585'		
Top Log Interval	3600'		
Casing Driller	8 5/8" @ 226'		
Casing Logger	226'		
Bit Size	7 7/8"		
Type Fluid in Hole	Chemical		
Density / Viscosity	9.3/53		
PH / Fluid Loss	10.5/7.6		
Source of Sample	Pit		
Rm @ Meas. Temp	1.1@72degf		
Rmf @ Meas. Temp	.82@72degf		
Rmc @ Meas. Temp	1.32@72degf		
Source of Rmf / Rmc	Calculated		
Rm @ BHT	.70@112degf		
Time Circulation Stopped	10:00 p.m.		
Time Logger on Bottom	1:31 a.m.		
Maximum Recorded Temperature	112degf		
Equipment Number	T127		
Location	Hays, KS		
Recorded By	Gus Pfanenstiel		
Witnessed By	Mr. Bob Hopkins		

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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**



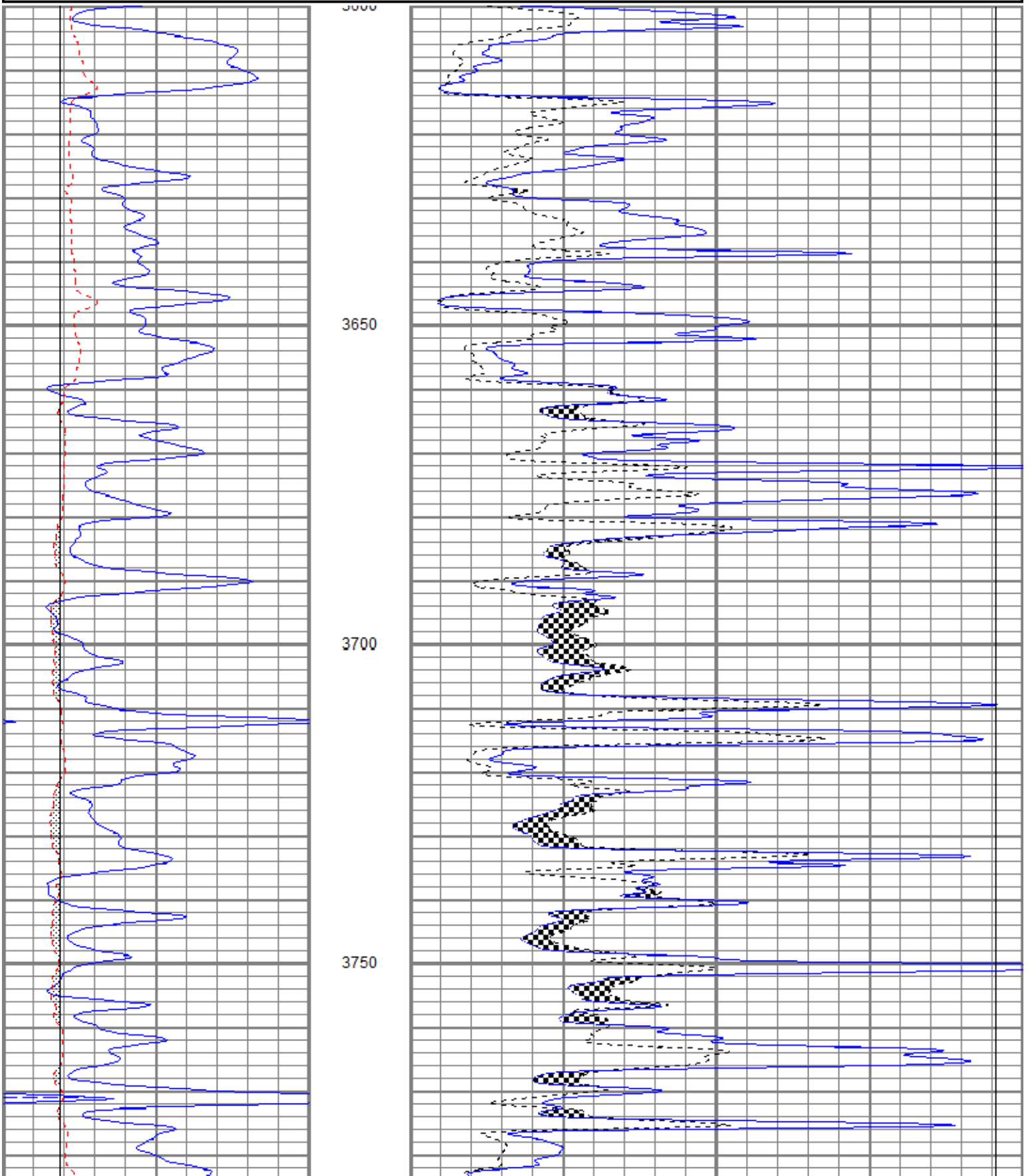
**Main Pass**

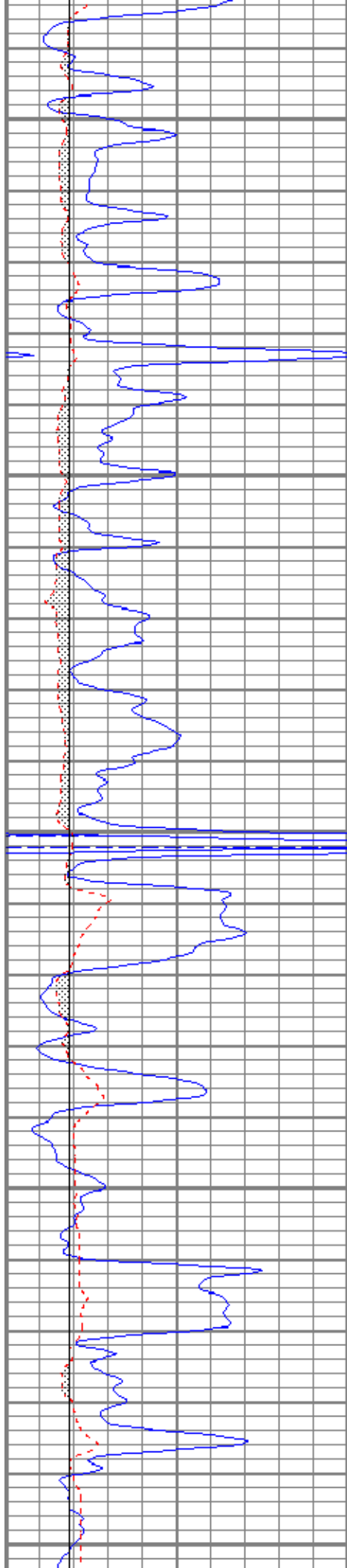


Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass4  
 Presentation Format kml  
 Dataset Creation Fri Oct 17 01:43:06 2014  
 Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150
6	MCAL (in)	16
6	BOREID (in)	16

0	MN 2" (Ohm-m)	20
0	MI 1" (Ohm-m)	20
10000	LTEN (lb)	0





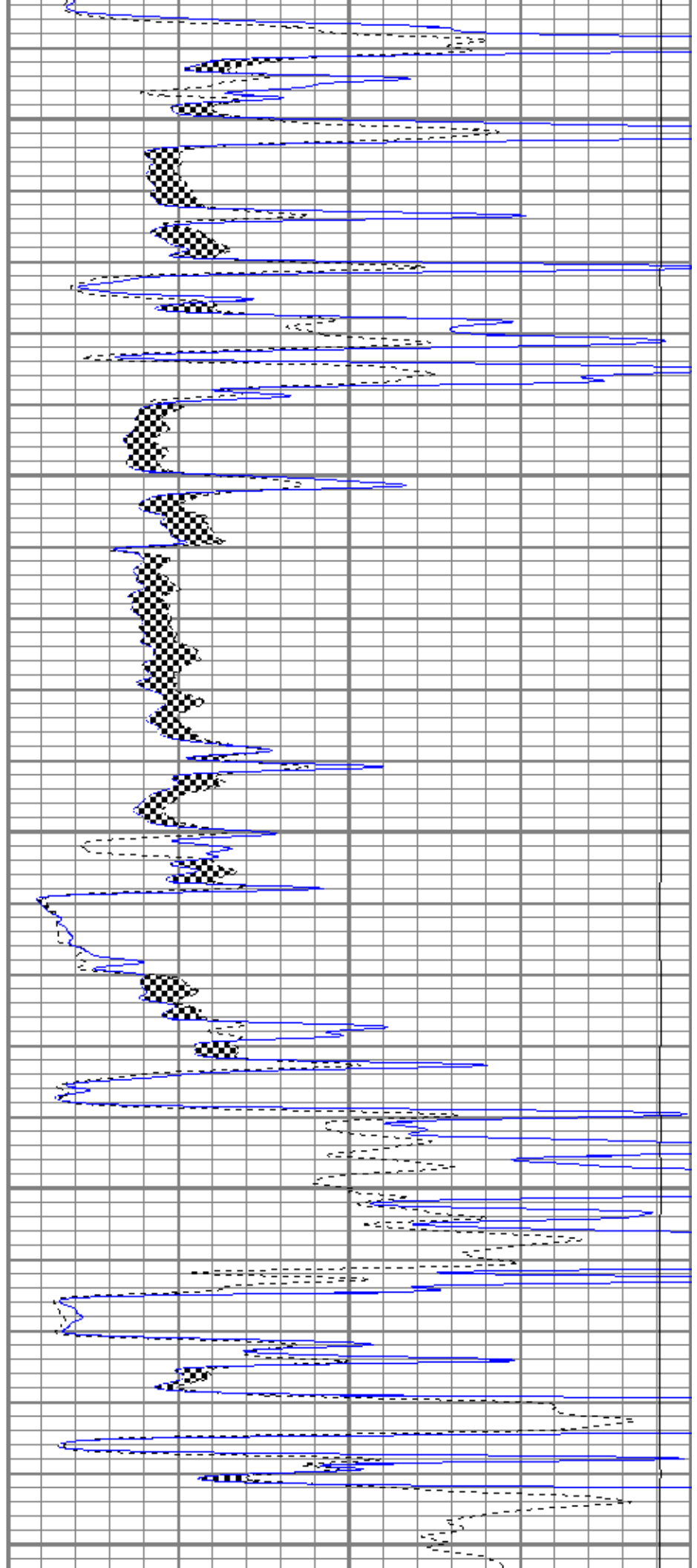
3800

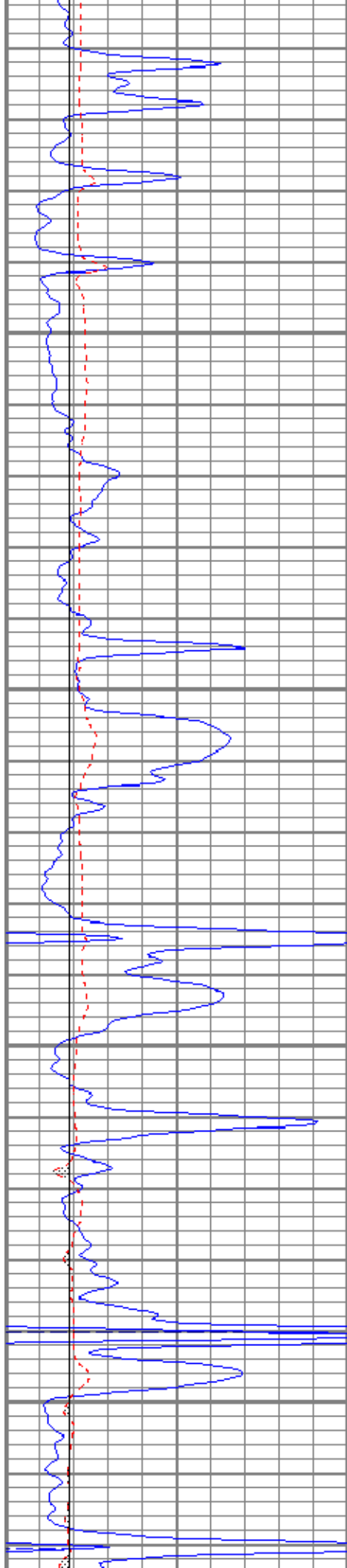
3850

3900

3950

4000



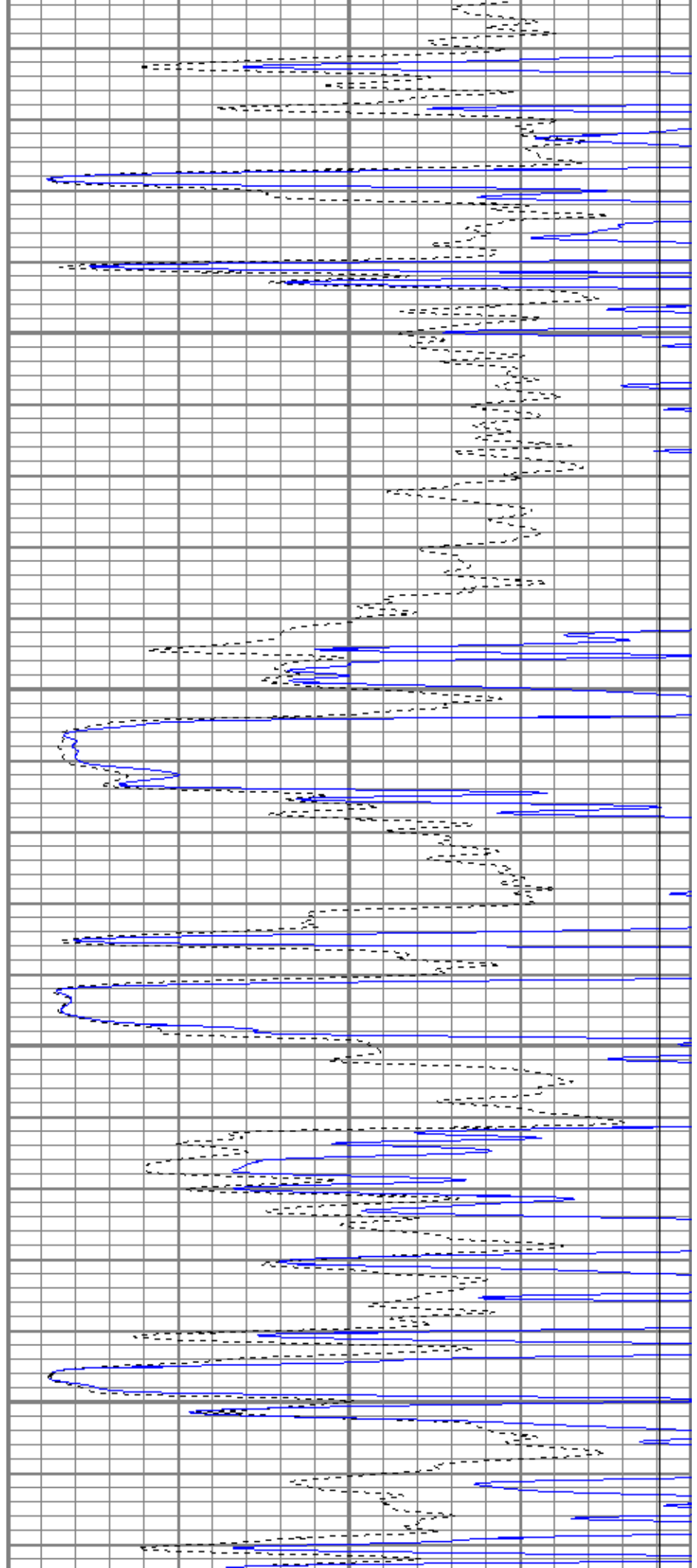


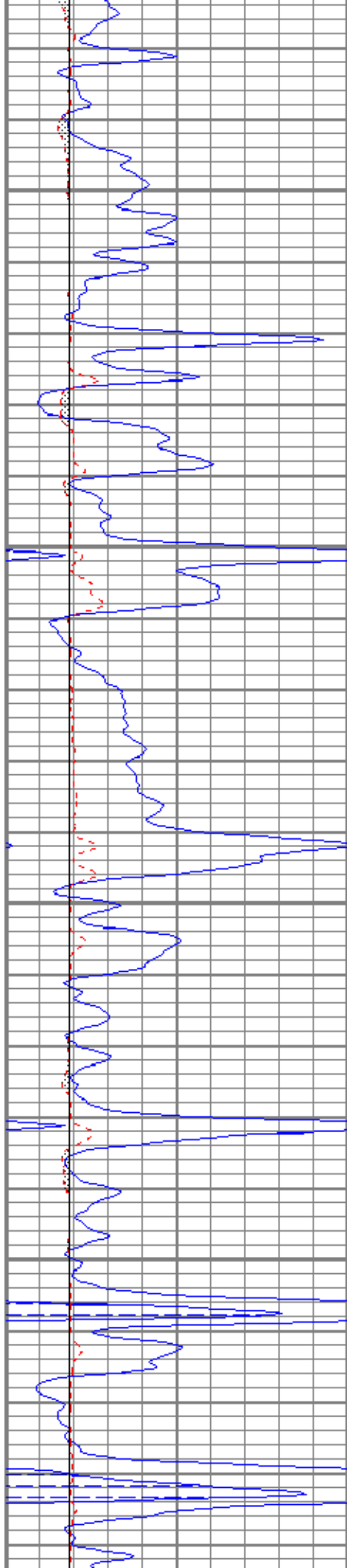
4050

4100

4150

4200



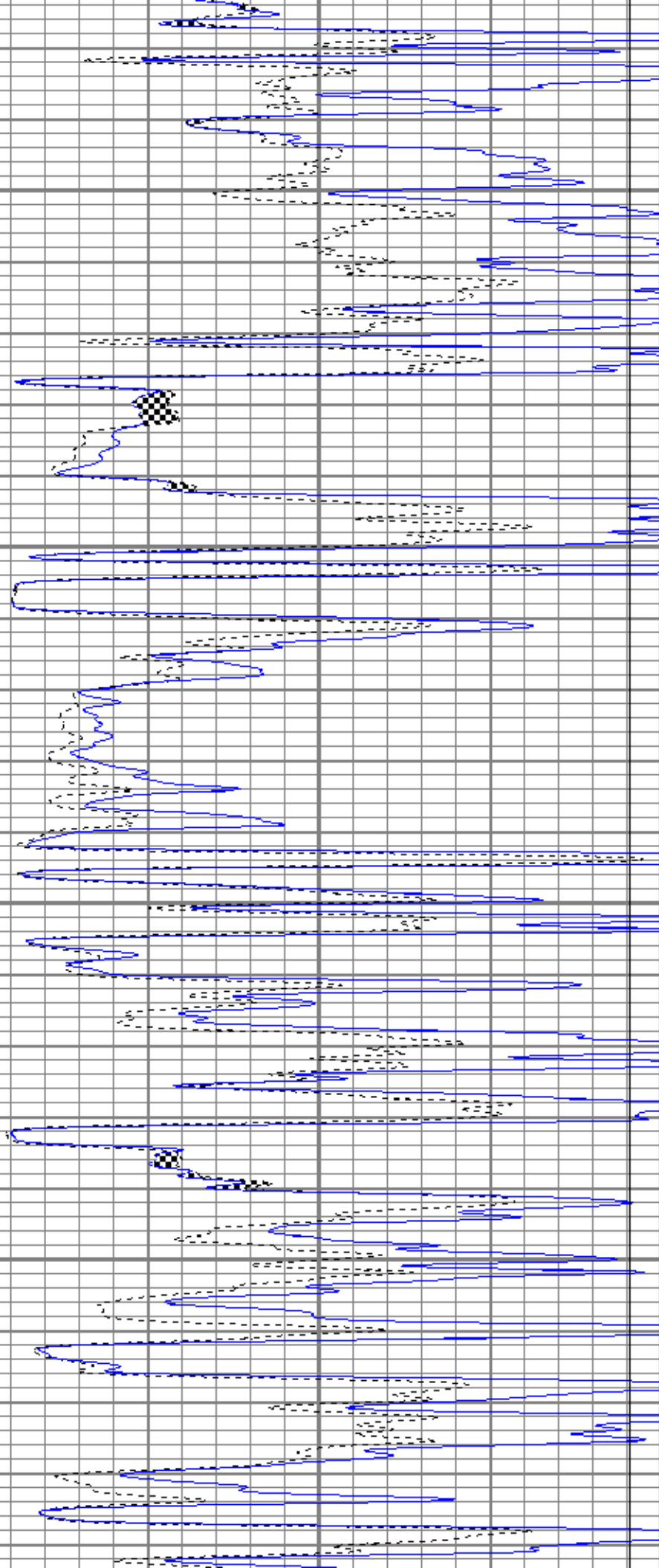


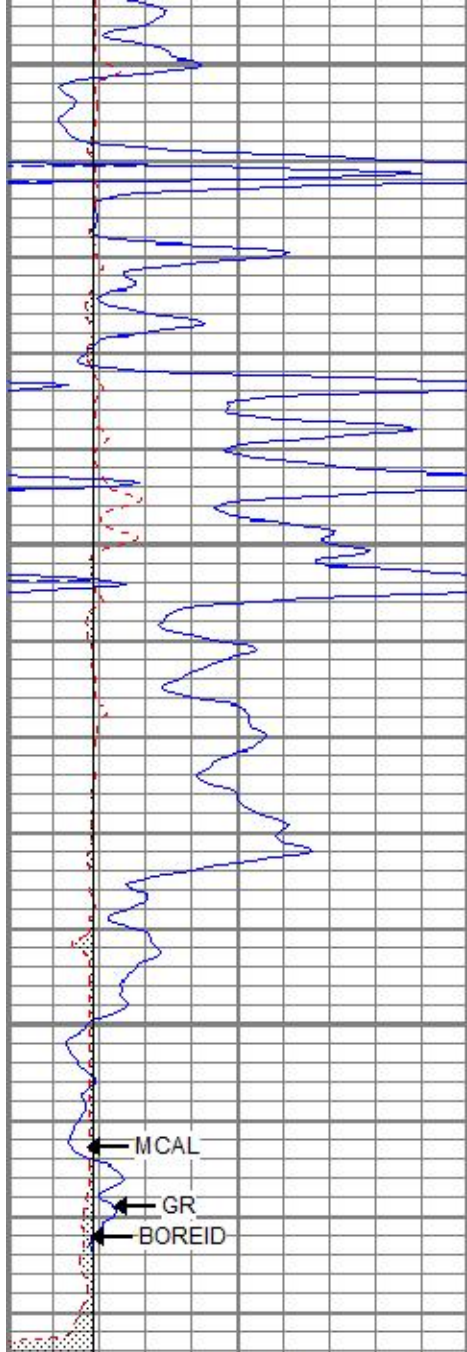
4250

4300

4350

4400





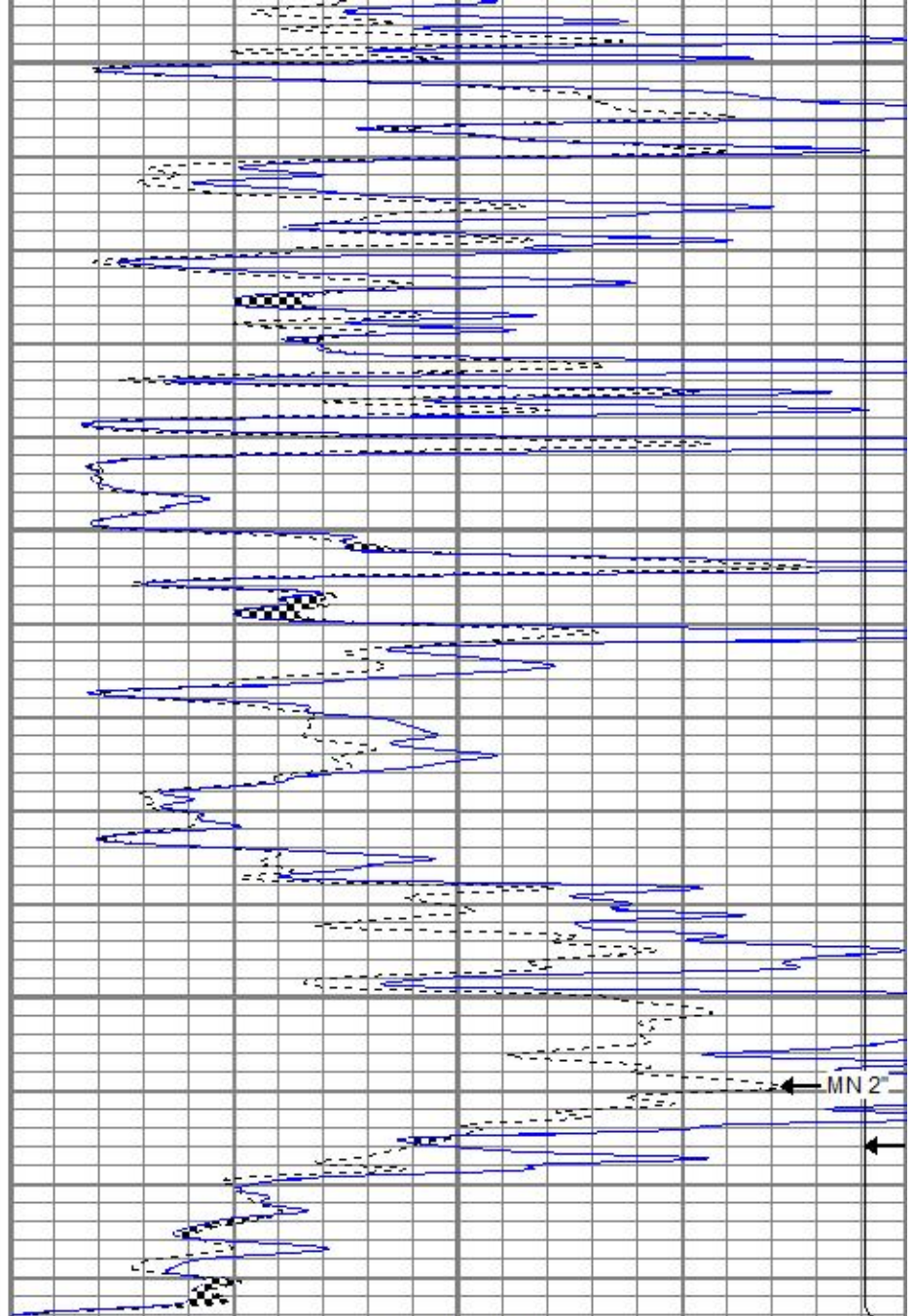
4450

4500

4550

← MCAL  
← GR  
← BOREID

0	GR (GAPI)	150
6	MCAL (in)	16
6	BOREID (in)	16



← MN 2"

0	MN 2" (Ohm-m)	20
0	MI 1" (Ohm-m)	20
10000	LTEN (lb)	0

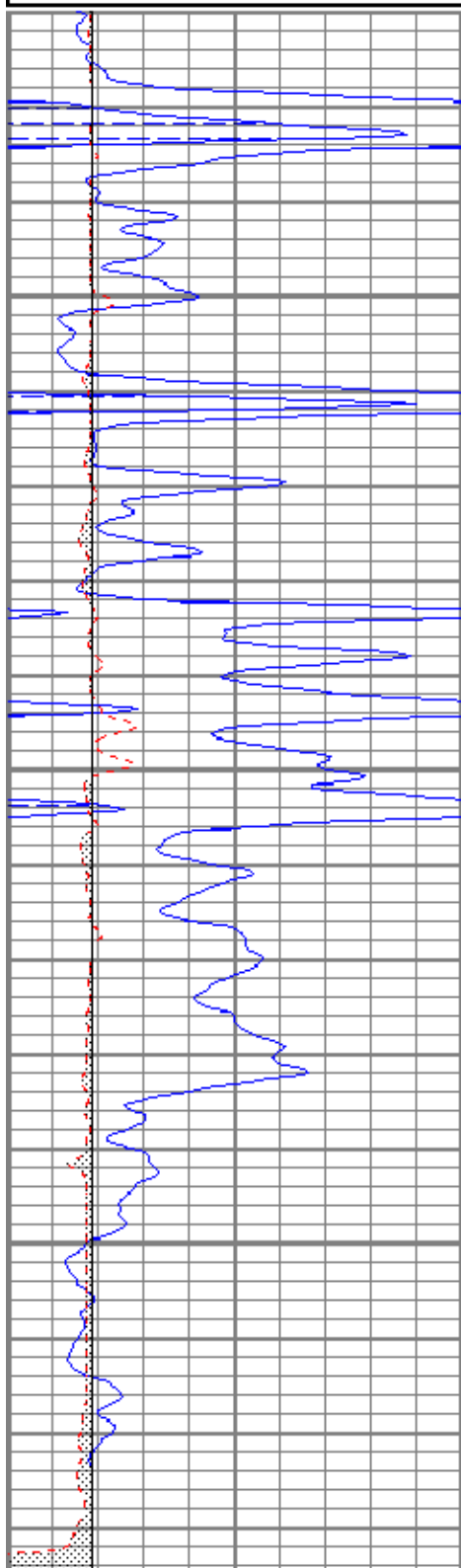


# Repeat Pass

Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass3.1  
 Presentation Format kml  
 Dataset Creation Fri Oct 17 01:54:41 2014  
 Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150
6	MCAL (in)	16
6	BOREID (in)	16

0	MN 2" (Ohm-m)	20
0	MI 1" (Ohm-m)	20
10000	LTEN (lb)	0

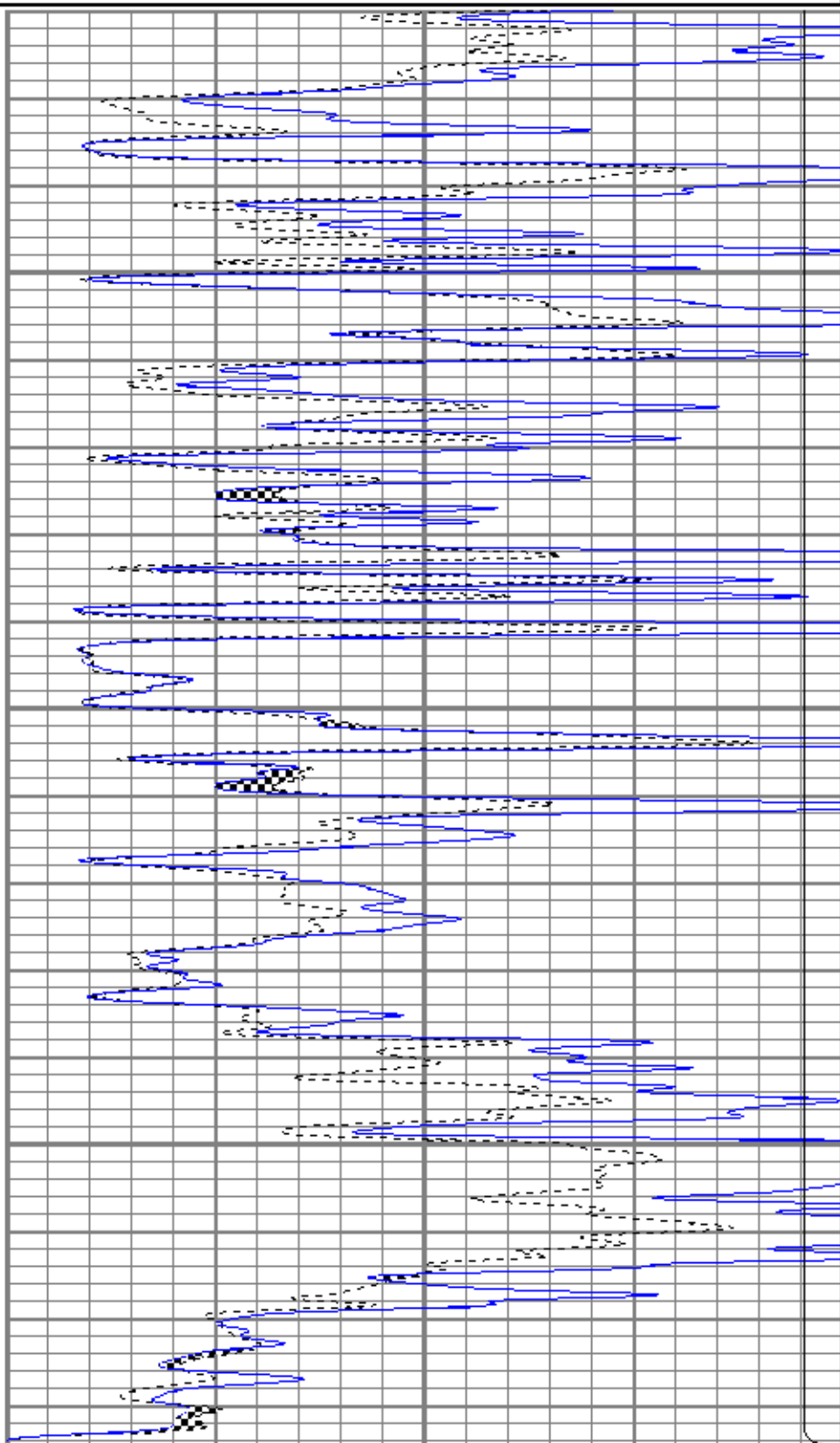


4450

4500

4550

0	GR (GAPI)	150
6	MCAL (in)	16
6	BOREID (in)	16



0	MN 2" (Ohm-m)	20
0	MI 1" (Ohm-m)	20
10000	LTEN (lb)	0

Calibration Report

Database File naerjsutton#1-13oh.db  
 Dataset Pathname pass3.1  
 Dataset Creation Fri Oct 17 01:54:41 2014

Microlog Calibration Report

Serial-Model: 012-Pengo  
 Performed: Fri Oct 17 01:32:43 2014

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m	b
Normal	0.0057	0.4380	V	0.0000	10.0000	Ohm-m	23.1300	-0.1320
Inverse	0.0079	0.5640	V	0.0000	8.3000	Ohm-m	14.9261	-0.1182
Caliper	2.6540	5.4386	V	6.9000	14.0000	in	2.5497	0.1329

**Gamma Ray Calibration Report**

Serial Number: 2000  
 Tool Model: P2000  
 Performed: Fri Nov 01 23:01:15 2013  
  
 Calibrator Value: 1.0 GAPI  
  
 Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps  
  
 Sensitivity: 0.2200 GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
GR	8.38		GR-P2000 (2000)	3.67	3.25	40.00	
MCAL	1.30		ML-Pengo (012)	6.97	3.50	100.00	
MI	1.30						
MN	1.30						

Dataset: naerjsutton#1-13oh.db: field/well/run1/pass3.1  
 Total length: 10.63 ft  
 Total weight: 140.00 lb  
 O.D.: 3.50 in