

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

November 2016

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD
 Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

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

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top _____ Bottom _____
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	ESP Development, Inc.
Well Name	EULERT 3-2
Doc ID	1376408

All Electric Logs Run

Dual Induction Log
Micro Resistivity Log
Compensated Density Neutron Log
Cement Bond Log

Form	ACO1 - Well Completion
Operator	ESP Development, Inc.
Well Name	EULERT 3-2
Doc ID	1376408

Tops

Name	Top	Datum
Anhydrite	783	938
Tarkio	2362	-641
Topeka	2609	-888
Heebner	2827	-1106
Toronto	2846	-1125
Lansing	2877	-1156
B/KC	3134	-1413
Arbuckle	3193	-1472
RTD	3247	-1526

Form	ACO1 - Well Completion
Operator	ESP Development, Inc.
Well Name	EULERT 3-2
Doc ID	1376408

Perforations

Shots Per Foot	Perforation Top	Perforation Bottom	BridgePlugType	BridgePlugSet At	Material Record
4	3190	3200	CIBP Cast Iron Bridge Plug	3121	400 Gal 15% Ne w/ 3% solvent
2	3088	3202			1500 g 15% Ne
2	3070	3074			zones all communicated
2	2921	2926			zones all communicated
2	2906	2910			zones all communicated
2	2880	2890			zones all communicated
2	2848	2852			zones all communicated
2	2635	2640			zones all communicated
2	2610	2612			zones all communicated



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

ESP Development Inc.

17498 250th Ave
Hays KS 67601-9460

ATTN: Bud Eulerl, Austin K

3-12s-15w Russell,KS

Eulerl #3-2

Job Ticket: 63227

DST#: 3

Test Start: 2017.11.13 @ 20:45:23

GENERAL INFORMATION:

Formation: LKC LK

Deviated: No Whipstock ft (KB)

Time Tool Opened: 72:38:33

Time Test Endcd: 02:09:47

Interval: 3078.00 ft (KB) To 3112.00 ft (KB) (TVD)

Total Depth: 3112.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Reset)

Tester: Roy Schwager

Unit No: 77

Reference Elevations: 1721.00 ft (KB)

1713.00 ft (CF)

KB to CRICF: 8.00 ft

Serial #: 8360

Inside

Press@RunDepth: 23.14 psig @ 3030.00 ft (KB)

Start Date: 2017.11.13

End Date:

2017.11.14

Start Time: 20:45:23

End Time:

02:09:47

Capacity: 8000.00 psig

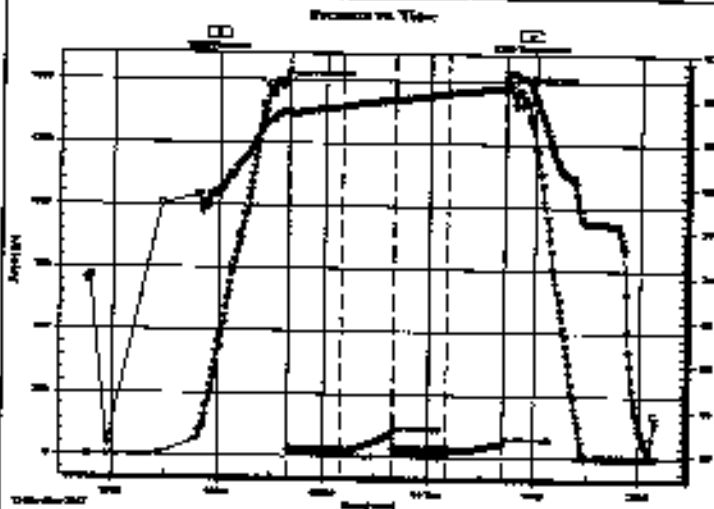
Last Chg: 2017.11.14

Time On Bore: 2017.11.13 @ 22:38:03

Time Off Bore: 2017.11.14 @ 00:45:03

TEST COMMENT: 30-FIP-wk bl thru-out surface to 1/4" hl
30-ESP-no bl bk
30-FIP-no bl
30-FSP-no bl

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1479.61	88.45	Initial Hydro-static
2	19.44	88.12	Open To Flow (1)
32	21.17	89.06	Shut-in(1)
62	96.56	89.86	End Shut-in(1)
62	23.74	89.84	Open To Flow (2)
92	23.14	90.56	Shut-in(2)
125	56.30	91.28	End Shut-in(2)
127	1468.00	92.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OCM 5% O95%M	0.04

Gas Rates

Flow (inches)	Pressure (psig)	Gas Rate (MDD)

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

ESP Development Inc

17498 250th Ave
Hays KS 67601-9400

ATTN: Bud Euler, Austin K

3-12s-15w Russell, KS

Euler #3-2

Job Ticket: 63226

DST#: 2

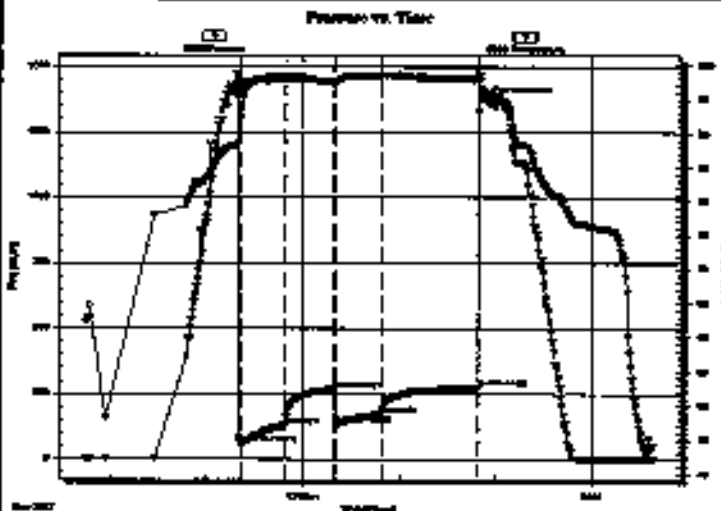
Test Start: 2017.11.12 @ 21:45:20

GENERAL INFORMATION:

Formation: **LKC "D"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:21:00
 Time Test Ended: 03:38:14
 Interval: 2914.00 ft (KB) To 2936.00 ft (KB) (TVD)
 Total Depth: 2936.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1721.00 ft (KB)
 1713.00 ft (CF)
 KB to GRCCF: 8.00 ft

Serial #: 8360 Inside
 Press@RunDepth: 172.61 psig @ 2915.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.11.12 End Date: 2017.11.13 Last Calib.: 2017.11.13
 Start Time: 21:45:20 End Time: 03:38:14 Time On Bore: 2017.11.12 @ 23:18:15
 Time Off Bore: 2017.11.13 @ 01:53:30

TEST COMMENT: 30-FRP-BOB in 3 min
 30-FRP-3" bit bk
 30-FRP-BOB in 3 min
 60-FRP-1/2" bit bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1399.80	98.27	Initial Hydro-static
3	63.15	92.20	Open To Flow (1)
31	130.19	98.30	Shut-in (1)
62	266.06	97.47	End Shut-in (1)
62	135.70	97.47	Open To Flow (2)
92	172.61	98.60	Shut-in (2)
152	276.49	97.98	End Shut-in (2)
156	1370.33	95.88	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
248.00	Water	1.82
62.00	O&GW 5% O20% M75% W	0.87
30.00	O&GW 10% O10% G5% W75% M	0.42
0.00	465' GP	0.00

* Recovery from multiple tests

Gas Rates

Core (inches)	Pressure (psig)	Gas Rate (Mcf/D)
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QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025

Home Office P.O. Box 32 Russell, KS 67665

No. 560

Cell 785-324-1041

Date	Sec.	Twp.	Range	County	State	On Location	Finish
12-5-17				Russell	KS		12:00pm

Location Edert Ranch 1/2 E into

Lease	Well No.	Owner
<u>Edert</u>	<u>3-2</u>	To Quality Oilwell Cementing, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.
Contractor		Charge To
<u>Lifestory well</u>		<u>E.S.P.</u>
Type Job		Street
<u>Port Collar</u>		
Hole Size	T.D.	City
<u>7 7/8</u>		State
Csg.	Depth	
<u>5 1/2</u>		
Tbg. Size	Depth	
<u>2 7/8</u>	<u>1239</u>	
Tool	Shoe Joint	The above was done to satisfaction and supervision of owner agent or contractor.
<u>Dan's Packer</u>		Cement Amount Ordered <u>200 80/20 QMDC 1/4# F10</u>
Cement Left in Csg.		
Meas Line	Displace	
	<u>13L</u>	

EQUIPMENT

Pumptrk	No.	Cementer	Common
<u>18</u>		<u>Chris</u>	<u>used 180</u>
		Helper	Poz. Mix
Bulktrk	No.	Driver	Gel.
		<u>Brett</u>	
		Driver	Calcium
Bulktrk	No.	Driver	
<u>3</u>		<u>Tony</u>	
		Driver	

JOB SERVICES & REMARKS

Remarks:	Hulls
<u>KCC Roy Dinkel</u>	Salt
Rat Hole	Flowseal <u>50#</u>
Mouse Hole	Kol-Seal
Centralizers	Mud CLR 48
Baskets	CFL-117 or CD110 CAF 38
D/V or Port Collar	Sand
<u>Test 5 1/2 to 800# open tool.</u>	Handling
<u>Min 180SK & Displace.</u>	Mileage
<u>Cement Circulator?</u>	
<u>Close Tool test to 800#</u>	
<u>Run 5 joints & wash clean</u>	

FLOAT EQUIPMENT

Guide Shoe
Centralizer
Baskets
AFU Inserts
Float Shoe
Latch Down

USED 180SK

Thanks

Pumptrk Charge	<u>port collar job</u>
Mileage	<u>19</u>

X Signature Am W...

Tax
Discount
Total Charge

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

345

Phone 785-483-2025

Home Office P.O. Box 32 Russell, KS 67665

No.

Cell 785-324-1041

Date	11-15-17	Sec.	3	Twp.	12	Range	15	County	Russell	State	KS	On Location		Finish	9:45pm
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Location *Carman v Eckert Ranch 1/20 Einto*

Lease *Ewert* Well No. *3-2* Owner

Contractor *D. Spaven #2* To Quality Oilwell Cementing, Inc.

Type Job *Production String* You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Hole Size *7 7/8* T.D. *3250* Charge To *E.S.P.*

Csg. *5 1/2 14#* Depth *3249* Street

Tbg. Size Depth City State

Tool *Port Calc #50* Depth *1245* The above was done to satisfaction and supervision of owner agent or contractor.

Cement Left in Csg. *19.51* Shoe Joint *19.51* Cement Amount Ordered *200 am 10/salt 5/6/sen etc*

Meas Line Displace *79.8L* *500 gal mud clear 20BL KCL*

EQUIPMENT Common *200*

Pumptrk *20* No. Cementer *raig* Poz. Mix

Bulktrk No. Helper *Best* Gel. *KCL 2 gal*

Bulktrk No. Driver *raig* Calcium

Bulktrk *15* No. Driver *raig* Hulls

JOB SERVICES & REMARKS Salt *17*

Remarks: Flowseal

Rat Hole *30SK* Kol-Seal *800 gal*

Mouse Hole *15SK* Mud CLR 48 *500 gal*

Centralizers CFL-117 or CD110 CAF 38

Baskets Sand

D/V or Port Collar Handling *22.5*

5 1/2 csg @ 3249. Bottle @ 3229 Mileage

Best Circulation Pump 500 gal mud **FLOAT EQUIPMENT** *5 1/2*

Clear 20BL KCL. Guide Shoe *Limit Clamp*

Plug Rehole a mouse hole. Centralizer *7*

Cement 5 1/2 with 155SK Baskets *2*

Clear line Displace Plug AFU Inserts *Port Collar*

Plug packed @ 1500# Float Shoe *1*

L.H. pressure 800# Latch Down *1*

Pumptrk Charge *prod String*

Mileage *19*

Tax

Discount

Total Charge

Signature *[Signature]*

QUALITY OILWELL CEMENTING, INC.

Federal Tax I.D.# 20-2886107

Phone 785-483-2025
Cell 785-324-1041

Home Office P.O. Box 32 Russell, KS 67665

No. 349

Date	Sec.	Twp.	Range	County	State	On Location	Finish
11-8-17	3	12	15	Russell	KS		11/004
Lease				Location		Well No.	
Egmont				Egmont Ranch 1/2 E 10th St		3-2	
Contractor				Owner			
D. Scott				To Quality Oilwell Cementing, Inc.			
Type Job				You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.			
Surface				Charge To			
Hole Size				To			
12 1/4				ESP			
Csg.				Street			
8 5/8				City			
Tbg. Size				State			
Tool				The above was done to satisfaction and supervision of owner agent or contractor.			
Cement Left in Csg.				Cement Amount Ordered			
30				250 8/20 3/11 2/11			
Meas Line				Displace			
				31 RBC			
EQUIPMENT				Common			
Pumptrk	No.	Cementer		Poz. Mix			
20		Helper		Gel.			
Bulktrk	No.	Driver		Calcium			
15		Driver		Hulls			
JOB SERVICES & REMARKS				Salt			
Remarks:				Flowseal			
Rat Hole				Kol-Seal			
Mouse Hole				Mud CLR 48			
Centralizers				CFL-117 or CD110 CAF 38			
Baskets				Sand			
D/V or Port Collar				Handling			
8 3/8 on bottom. 1st Centralizer.				Mileage			
Mix 250 8/20 3/11 2/11				FLOAT EQUIPMENT			
Cement 250 8/20 3/11 2/11				Guide Shoe			
				8 5/8 Plug			
				Centralizer			
				Baskets			
				AFU Inserts			
				Float Shoe			
				Latch Down			
				Pumptrk Charge			
				Mileage			
				Tax			
				Discount			
				Total Charge			
Signature							



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

ESP Development Inc

17498 250th Ave
Hays KS 67601-9460

ATTN: Bud Eulert, Austin K

3-12s-15w Russell, KS

Eulert #3-2

Job Ticket: 63228

DST#: 4

Test Start: 2017.11.14 @ 17:55:42

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: **No** Whipstock: **ft (KB)**
 Time Tool Opened: 19:32:52
 Time Test Ended: 22:50:21

Test Type: **Conventional Straddle (Reset)**
 Tester: **Ray Schwager**
 Unit No: **77**

Interval: **3154.00 ft (KB) To 3210.00 ft (KB) (TVD)**
 Total Depth: **3250.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **1721.00 ft (KB)**
1713.00 ft (CF)
KB to GRQP: 8.00 ft

Serial #: **8360**

Inside

Press@RunDepth: **24.04 psig @ 3158.00 ft (KB)**

Start Date: **2017.11.14**

End Date:

2017.11.14

Capacity: **8000.00 psig**

Start Time: **17:55:42**

End Time:

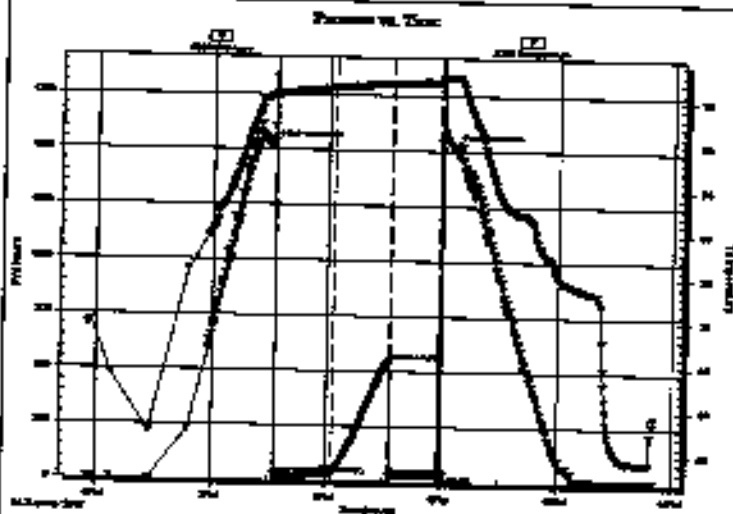
22:50:21

Last Calib.: **2017.11.14**

Time On Blm: **2017.11.14 @ 19:30:37**

Time Off Blm: **2017.11.14 @ 21:05:22**

TEST COMMENT: 30-IFP-wk bl thru-out 1/2" bl
 30-ISIP-no bl bk
 15-FFP-no bl
 pull tool



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1519.16	95.27	Initial Hydro-static
3	20.77	95.44	Open To Flow (1)
33	24.04	96.34	Shut-in(1)
62	543.64	96.89	End Shut-in(1)
63	26.76	96.70	Open To Flow (2)
88	28.83	97.12	Shut-in(2)
95	1513.88	97.63	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OCM 8% C92% M	0.04

* Recovery from multiple tests

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mscfd)



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

ESP Development Inc

3-12s-15w Russell

17498 250th Ave

Hays Ks 67601-9460

Eulert #3-2

Job Ticket: 63230

DST#: 6

ATTN: Bud Eulert, Austin

Test Start: 2017.11.15 @ 07:10:58

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:00:23

Time Test Ended: 12:22:52

Test Type: Conventional Straddle (Reset)

Tester: Ray Schwager

Unit No: 77

Interval: **3153.00 ft (KB) To 3220.00 ft (KB) (TVD)**

Total Depth: 3220.00 ft (KB) (TVD)

Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 1721.00 ft (KB)

1713.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: **8360**

Inside

Press@RunDepth: 395.52 psig @ 3160.00 ft (KB)

Start Date: 2017.11.15

End Date:

2017.11.15

Start Time: 07:10:58

End Time:

12:22:52

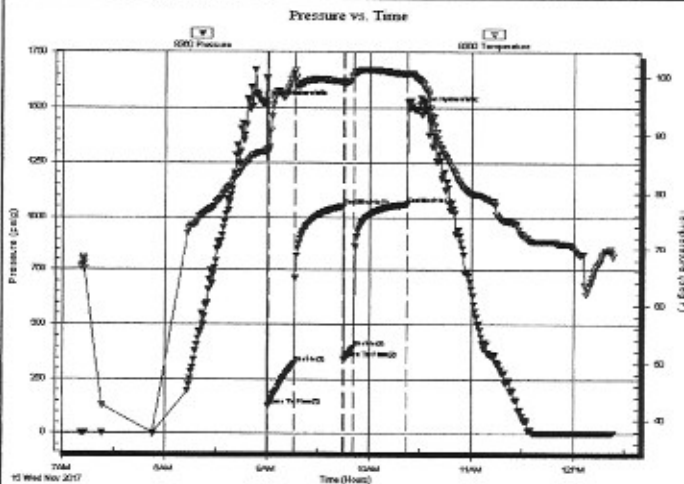
Capacity: 8000.00 psig

Last Calib.: 2017.11.15

Time On Btm: 2017.11.15 @ 08:57:38

Time Off Btm: 2017.11.15 @ 10:26:23

TEST COMMENT: 15-IFP-BOB in 2 min
30-ISIP-no bl bk
5-FFP-BOB in 2 min
30-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1519.06	87.09	Initial Hydro-static
3	126.37	87.23	Open To Flow (1)
19	322.80	100.70	Shut-In(1)
48	1051.95	99.24	End Shut-In(1)
48	344.90	99.07	Open To Flow (2)
53	395.52	100.35	Shut-In(2)
85	1061.02	100.55	End Shut-In(2)
89	1494.25	100.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
760.00	Water	9.00

* Recovery from multiple tests

Gas Rates

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



**MICRO
RESISTIVITY
LOG**

Company ESP Development, INC.
Well Eulert #3-2
Field Eulert Southwest
County Russell
State KS

Company ESP Development, INC.
Well Eulert #3-2
Field Eulert Southwest
County Russell State KS

Location: 1108' FNL & 1283' FWL
API #: 15 167 24068
SEC 3 TWP 12S RGE 15W
Permanent Datum Ground Level Elevation 1713'
Log Measured From KB 8' AGL
Drilling Measured From KB
Elevation
DIL
CDNL
K.B. 1721'
D.F. 1720'
G.L. 1713'

Date	11-14-17
Run Number	Two
Depth Driller	3250'
Depth Logger	3247'
Bottom Logged Interval	3245'
Top Log Interval	2300'
Casing Driller	8 5/8" @ 517'
Casing Logger	517'
Bit Size	7 7/8"
Type Fluid in Hole	Chemical Mud
Density / Viscosity	9.2/50
PH / Fluid Loss	10/10.2
Source of Sample	Pit
Rm @ Meas. Temp	.3@73degf
Rmf @ Meas. Temp	.24@73degf
Rmc @ Meas. Temp	0.38@73degf
Source of Rmf / Rmc	Calculated
Rm @ BHT	0.23@97degf
Time Circulation Stopped	12:15 p.m.
Time Logger on Bottom	4:15 p.m.
Maximum Recorded Temperature	97 degf
Equipment Number	T-127
Location	Hays, KS.
Recorded By	C. Patterson
Witnessed By	Mr. Austin Klaus

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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

Gorham Fairport Rd North to Saline Ln.
then East to North on Saline Ln. 0.8 mi., Then East on road on side going up hill.
(left at fist Y and Left @ second Y

Thank you for using Gemini Wireline
785-625-1182

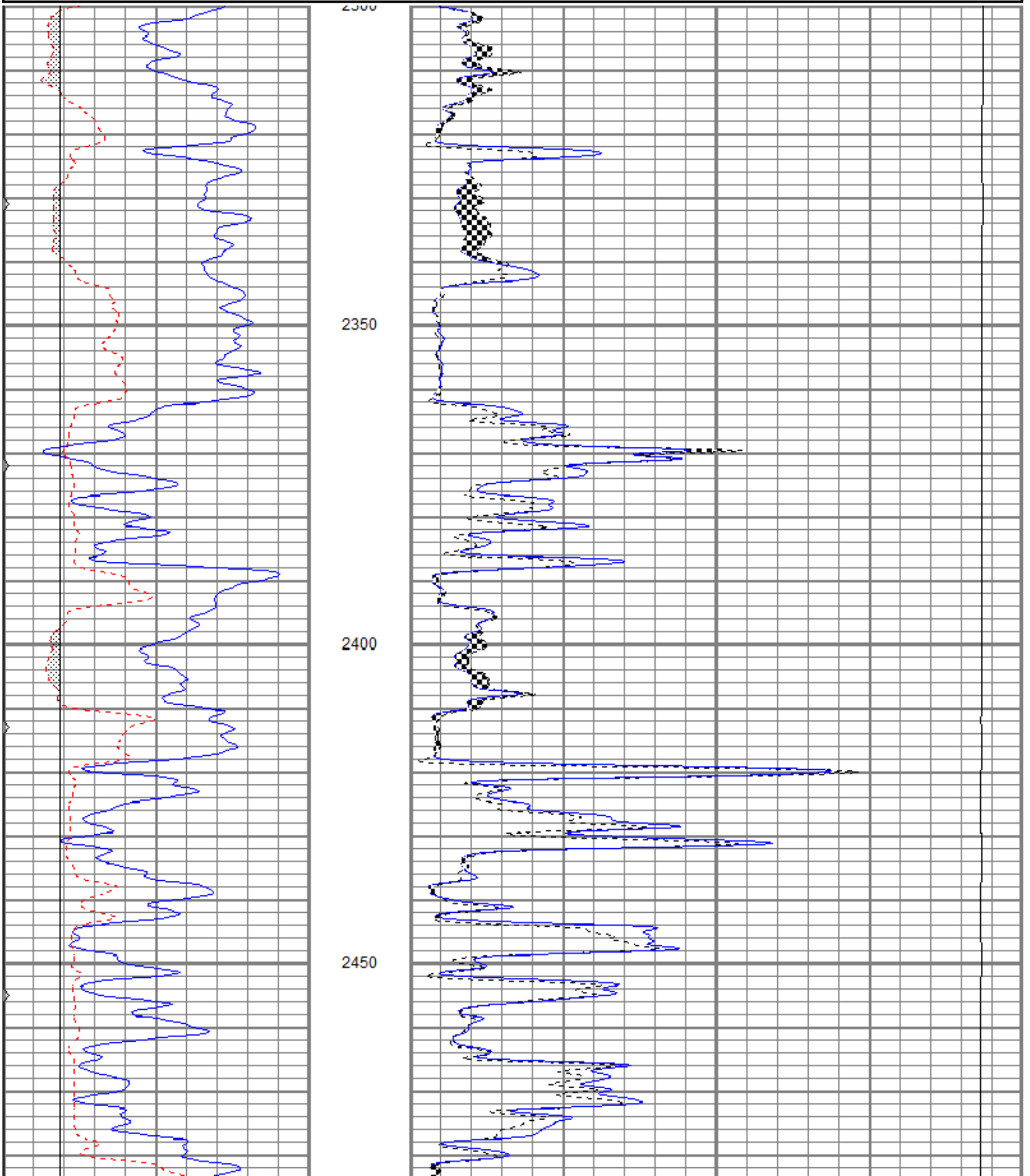


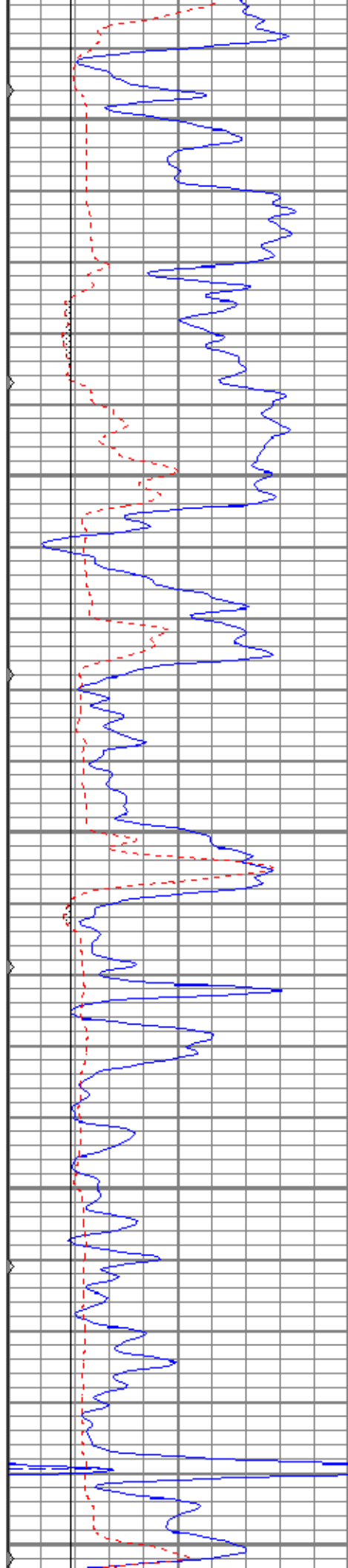
MAIN PASS

Database File espeulert3-2oh.db
 Dataset Pathname pass7
 Presentation Format kml
 Dataset Creation Tue Nov 14 16:54:17 2017
 Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150
6	MCAL (in)	16
6	BOREID (in)	16
0	MINMK	50

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





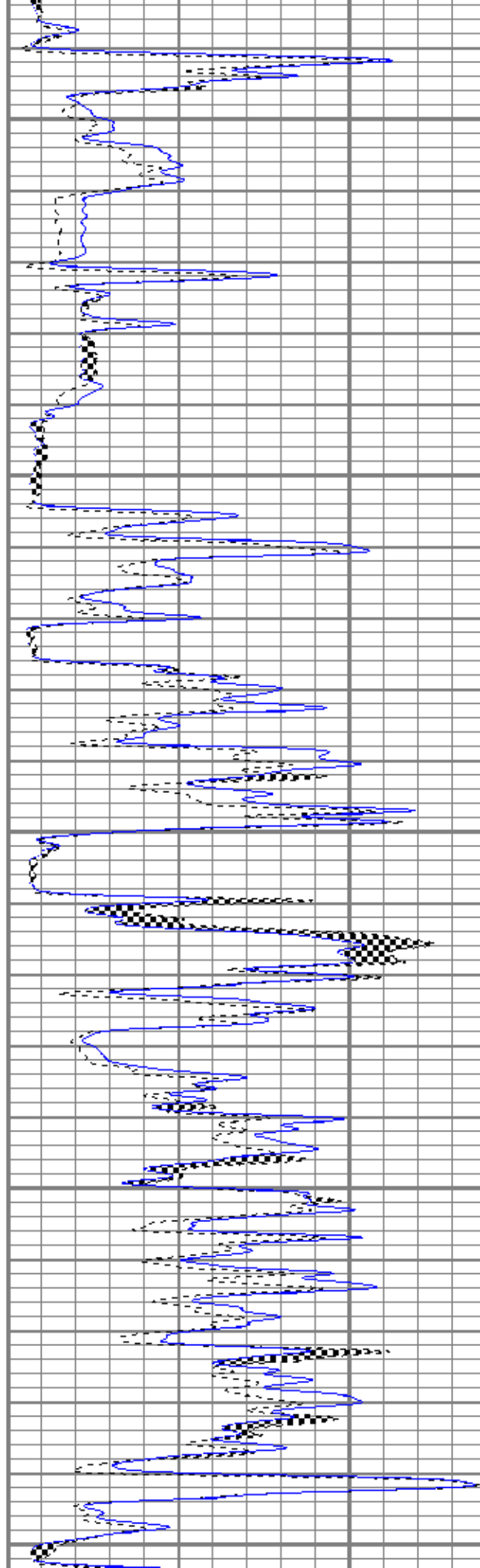
2500

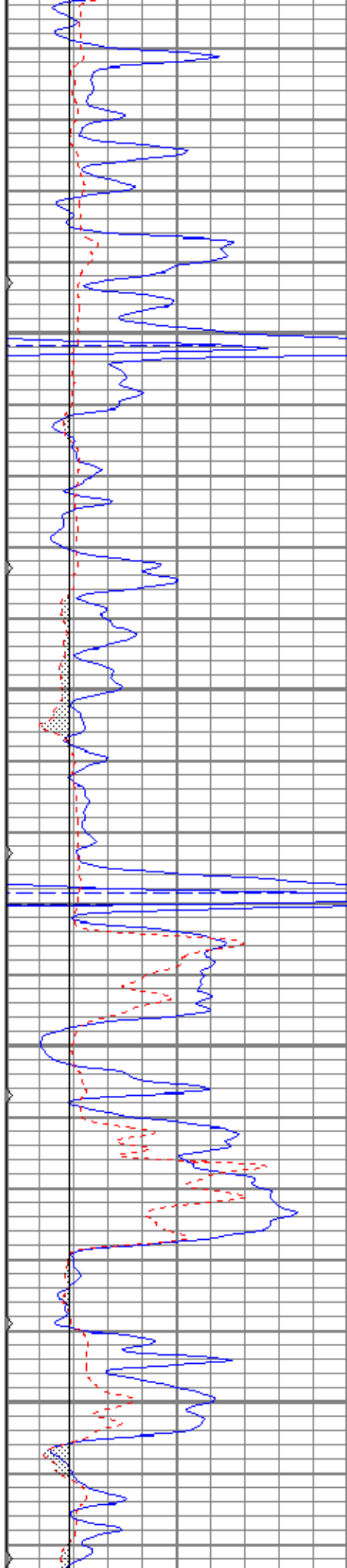
2550

2600

2650

2700



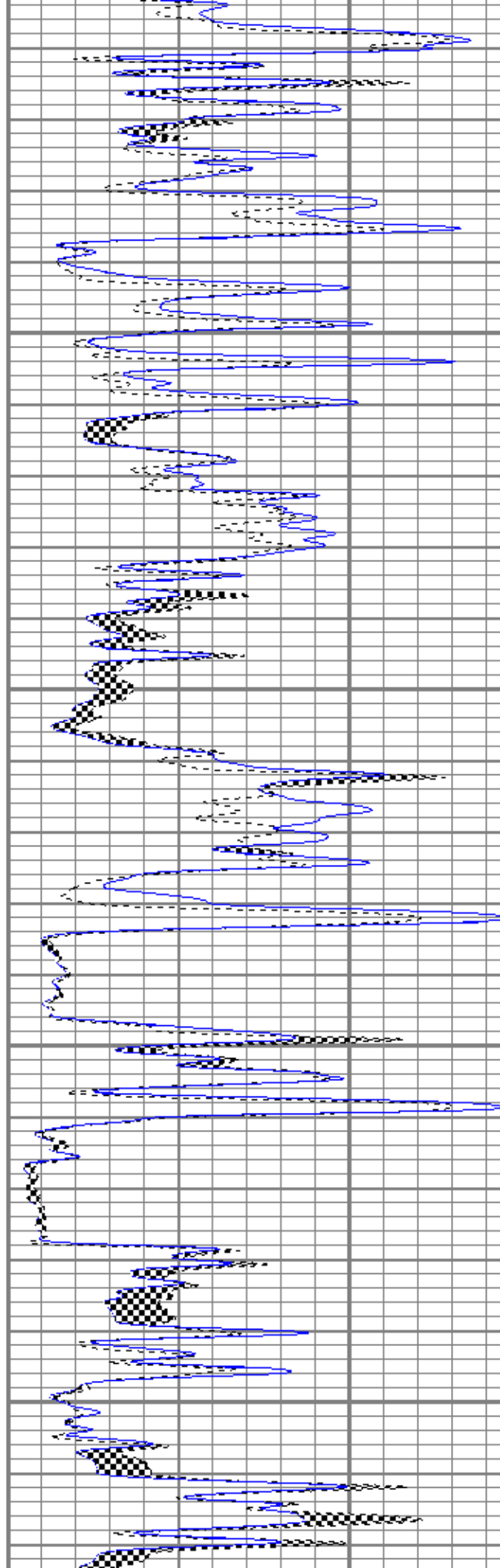


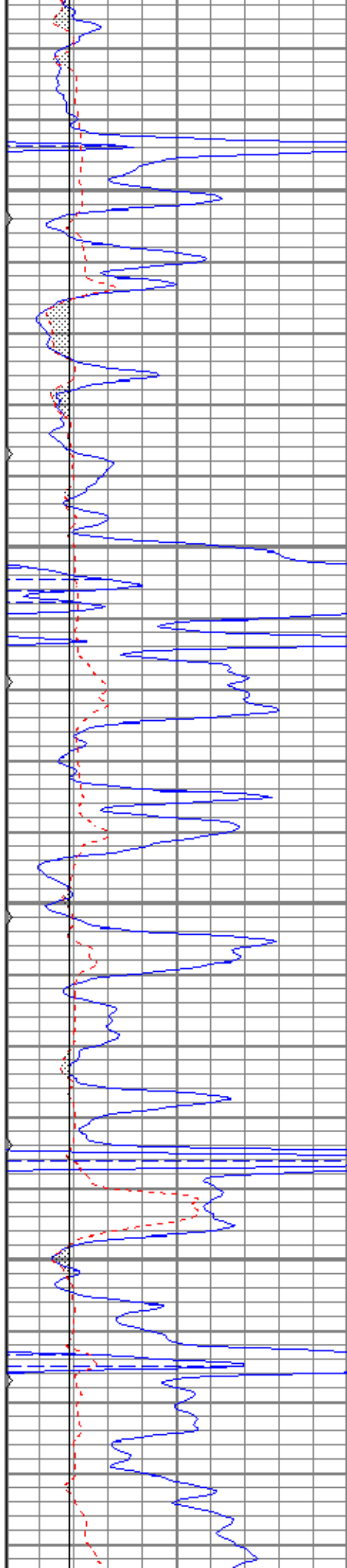
2750

2800

2850

2900



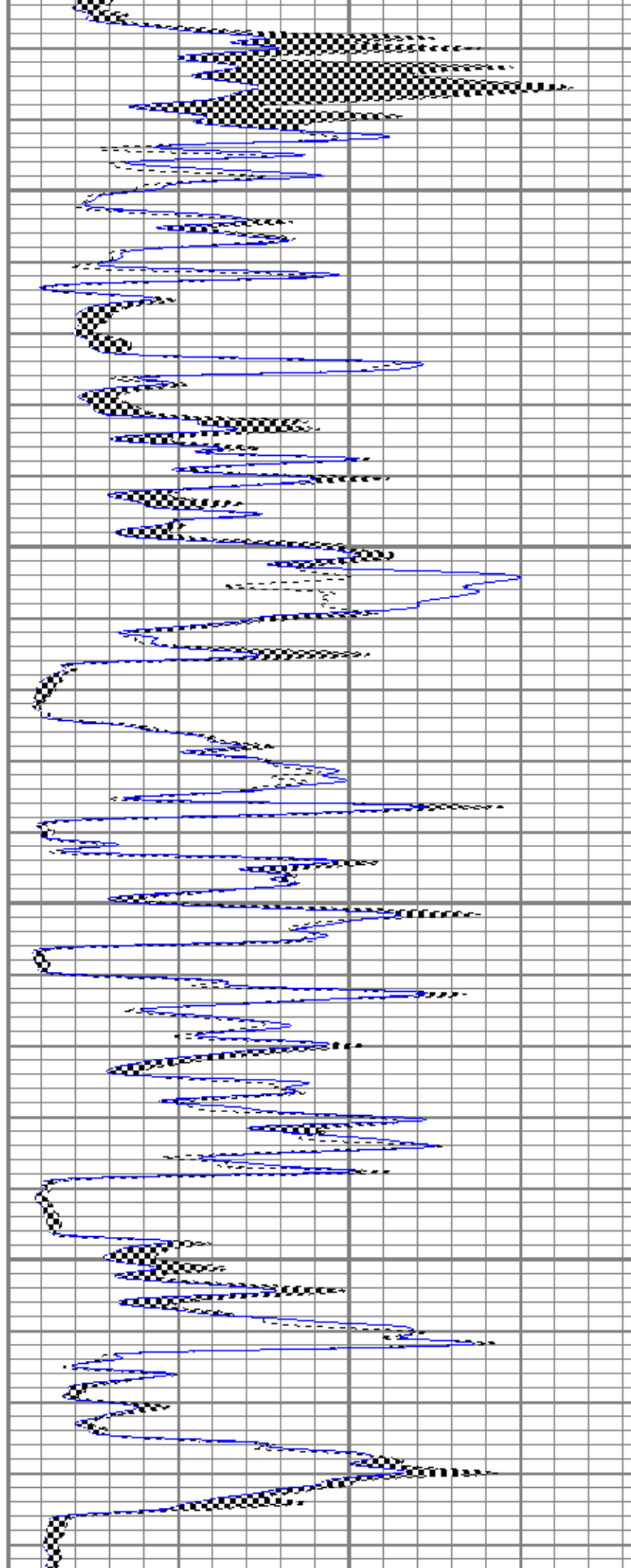


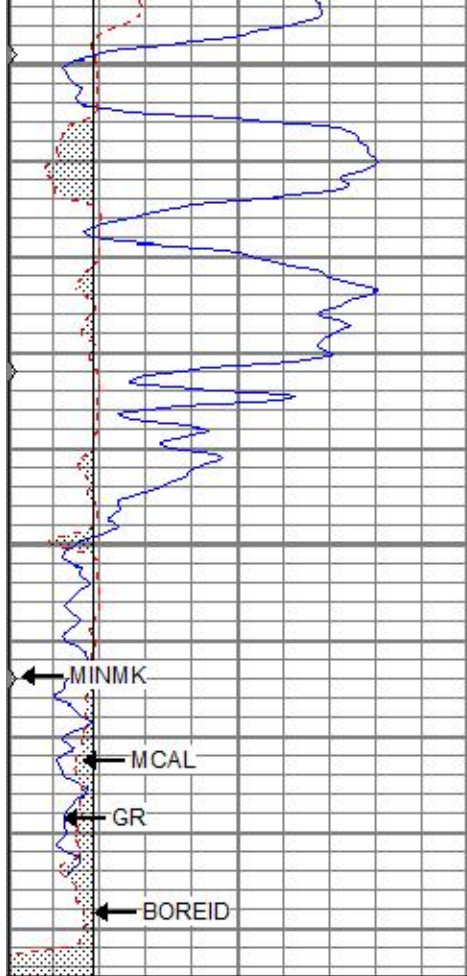
2950

3000

3050

3100

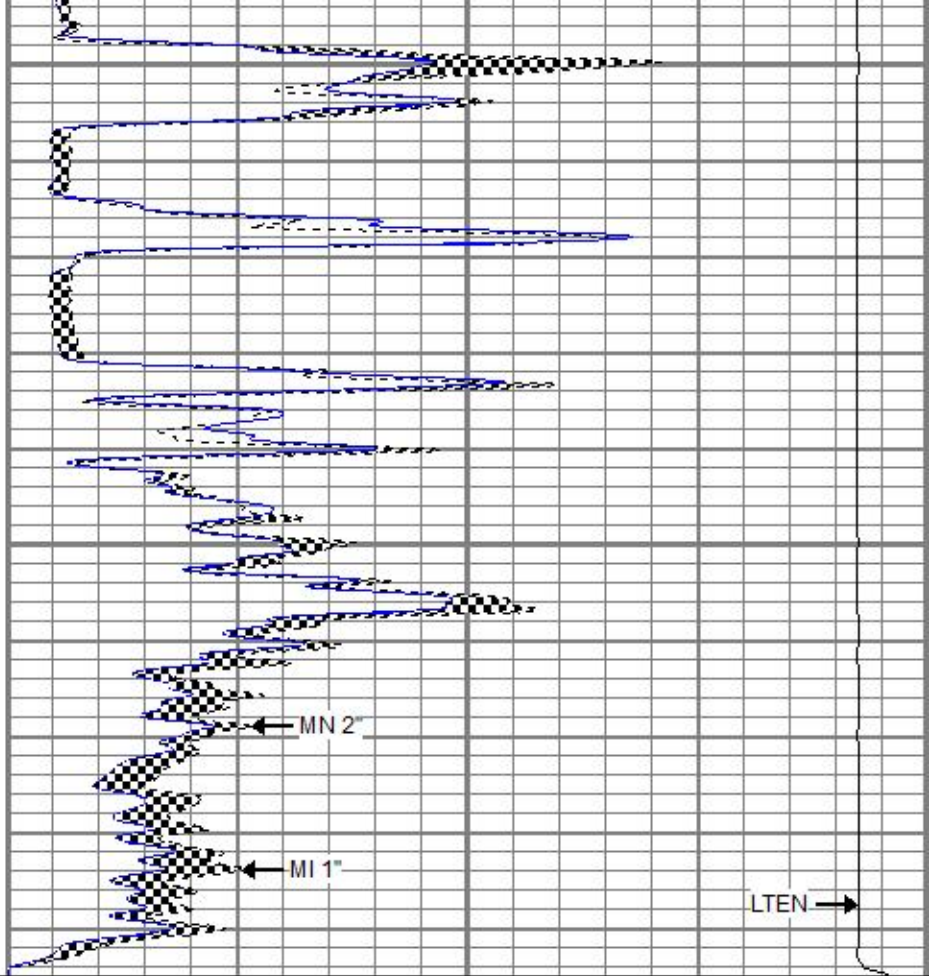




3150

3200

0	GR (GAPI)	150
6	MCAL (in)	16
6	BOREID (in)	16
0	MINMK	50



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

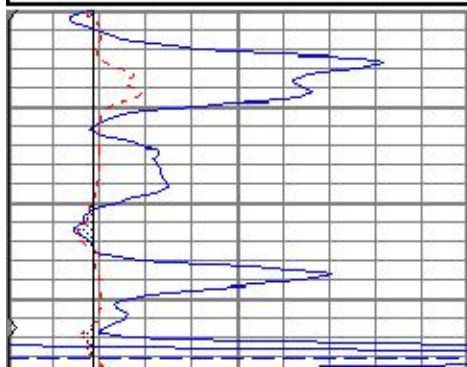


REPEAT PASS

Database File espeulert3-2oh.db
 Dataset Pathname pass6.1
 Presentation Format kml
 Dataset Creation Tue Nov 14 17:21:47 2017
 Charted by Depth in Feet scaled 1:240

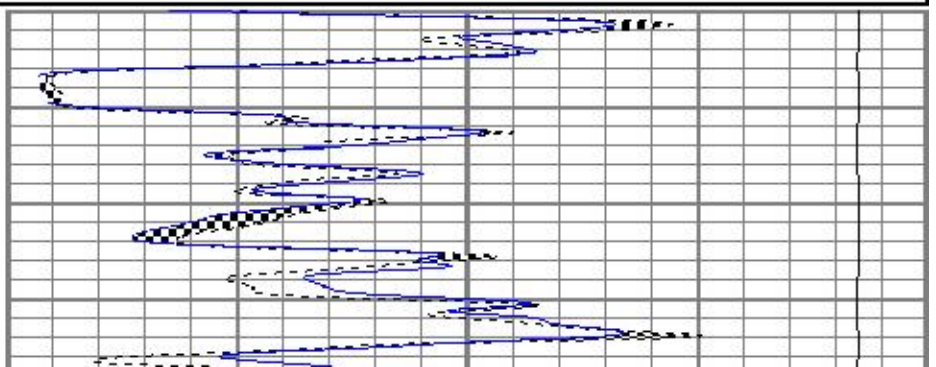
0	GR (GAPI)	150
6	MCAL (in)	16
6	BOREID (in)	16
0	MINMK	50

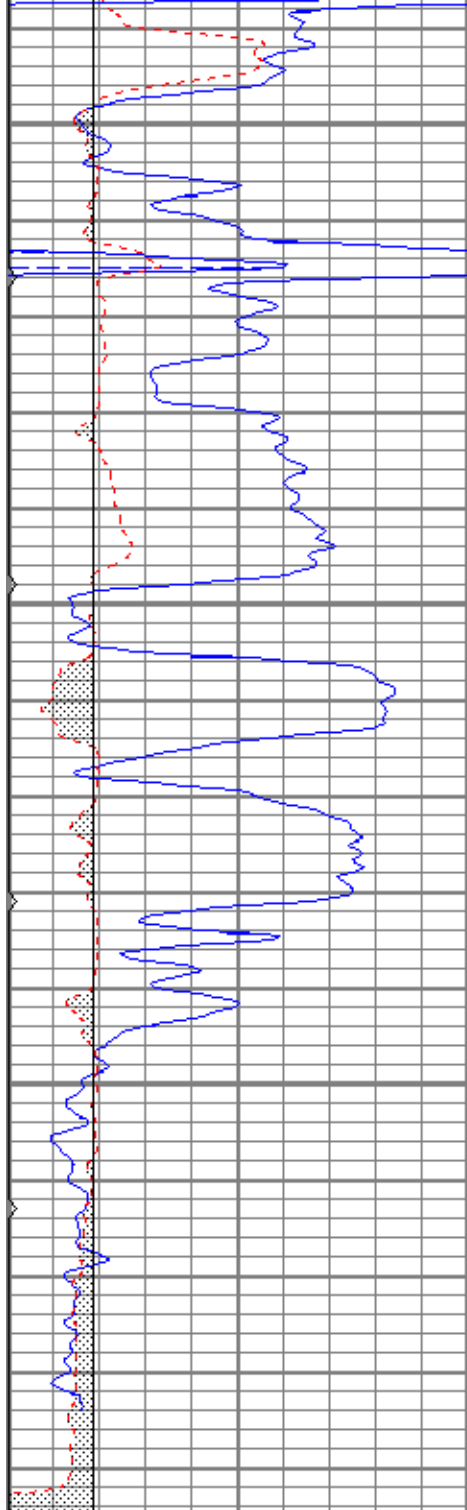
0	MN 2" (Ohm-m)	20
0	MI 1" (Ohm-m)	20
10000	LTEN (lb)	0



3150

3200



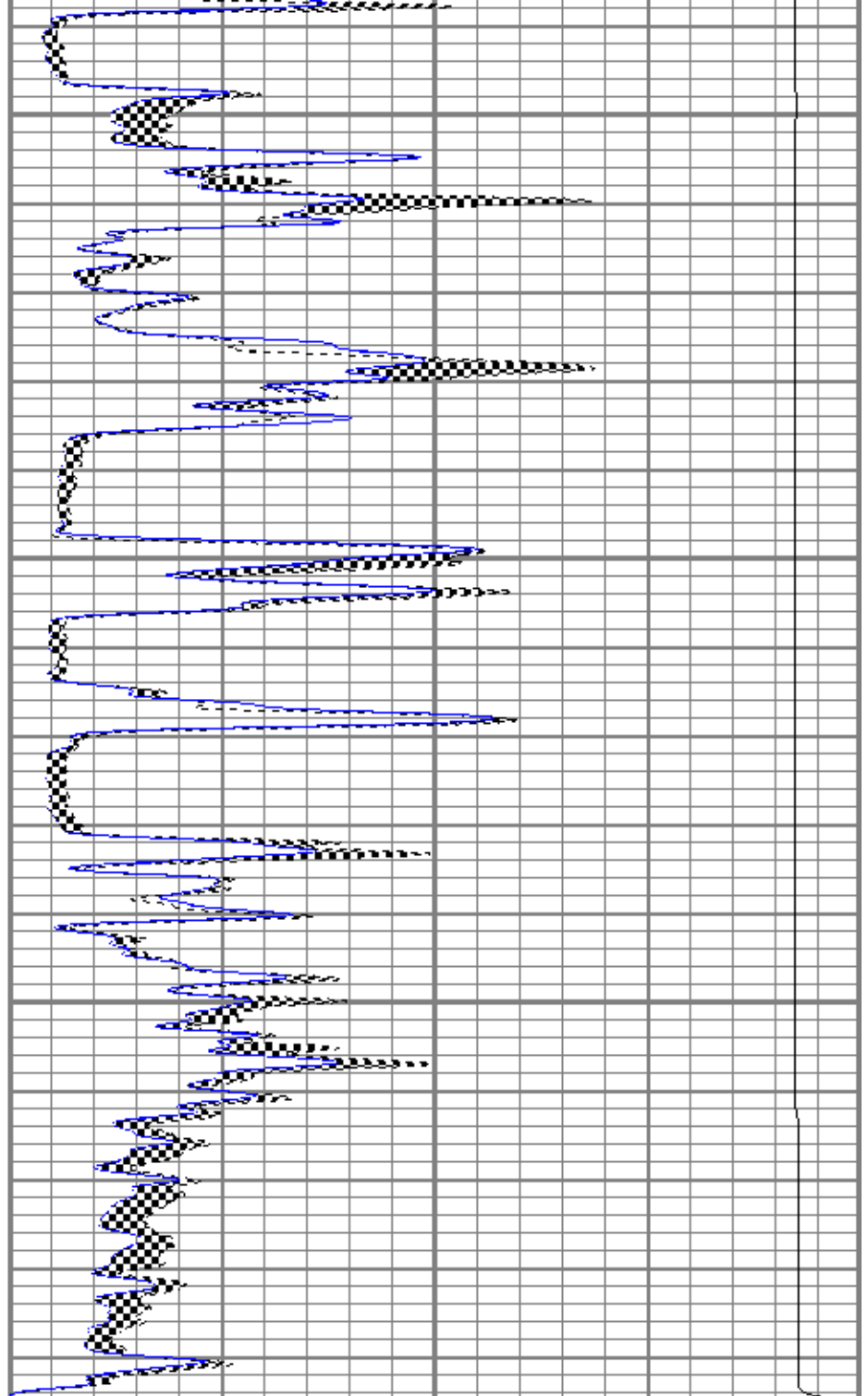


3100

3150

3200

0	GR (GAPI)	150
6	MCAL (in)	16
6	BOREID (in)	16
0	MINMK	50



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

Calibration Report

Database File espeulert3-2oh.db
 Dataset Pathname pass7
 Dataset Creation Tue Nov 14 16:54:17 2017

Microlog Calibration Report

Serial-Model: 1600-Pengo
 Performed: Tue Nov 14 16:40:47 2017

Readings

References

Results

	Zero	Cal		Zero	Cal		m	b
Normal	0.0008	0.5963	V	0.0000	10.0000	Ohm-m	16.7912	-0.0127
Inverse	0.0021	0.7758	V	0.0000	8.5000	Ohm-m	10.9864	-0.0231
Caliper	1.3663	2.2079	V	6.7000	14.0000	in	8.6733	-5.1501

Gamma Ray Calibration Report

Serial Number: 2001
 Tool Model: OH
 Performed: Sun Nov 12 16:26:41 2017

 Calibrator Value: 1.0 GAPI

 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

 Sensitivity: 0.7000 GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	8.13		CHD-None	0.75	1.50	5.00
MCAL	1.30		GR-OH (2001)	3.56	3.25	40.00
MI	1.30		2001			
MN	1.30		ML-Pengo (1600)	6.97	3.50	100.00

Dataset: espeulert3-2oh.db: field/well/run1/pass7
 Total length: 11.28 ft
 Total weight: 145.00 lb
 O.D.: 3.50 in



**DUAL
INDUCTION
LOG**

Company	ESP Development, INC.	
Well	Eulert #3-2	
Field	Eulert Southwest	
County	Russell	
State	KS	
Company	ESP Development, INC.	
Well	Eulert #3-2	
Field	Eulert Southwest	
County	Russell	
State	KS	
Location:	API #: 15 167 24068 1108' FNL & 1283' FWL	
Permanent Datum	SEC 3 TWP 12S RGE 15W	Elevation 1713'
Log Measured From	Ground Level	Elevation 1713'
Drilling Measured From	KB 8' AGL	Elevation 1721'
	KB	D.F. 1720'
		G.L. 1713'
Other Services	ML CDNL	

Date	11-14-17
Run Number	One
Depth Driller	3250'
Depth Logger	3247'
Bottom Logged Interval	3245'
Top Log Interval	500'
Casing Driller	8 5/8" @ 517'
Casing Logger	517'
Bit Size	7 7/8"
Type Fluid in Hole	Chemical Mud
Density / Viscosity	9.2/50
PH / Fluid Loss	10/10.2
Source of Sample	Pit
Rm @ Meas. Temp	.3@73degf
Rmf @ Meas. Temp	.24@73degf
Rmc @ Meas. Temp	0.38@73degf
Source of Rmf / Rmc	Calculated
Rm @ BHT	0.23@97degf
Time Circulation Stopped	12:15 p.m.
Time Logger on Bottom	2:20 p.m.
Maximum Recorded Temperature	97 degf
Equipment Number	T-127
Location	Hays, KS.
Recorded By	C. Patterson
Witnessed By	Mr. Austin Klaus

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then East to North on Saline Ln. 0.8 mi., Then East on road on side going up hill.
(left at fist Y and Left @ second Y)

Thank you for using Gemini Wireline
785-625-1182



Main Pass

Database File espeulert3-2oh.db
 Dataset Pathname pass5.2
 Presentation Format kdillinn
 Dataset Creation Thu Nov 16 09:51:06 2017
 Charted by Depth in Feet scaled 1:600

0 GR (GAPI) 150

1000 CILD (mmho/m) 0

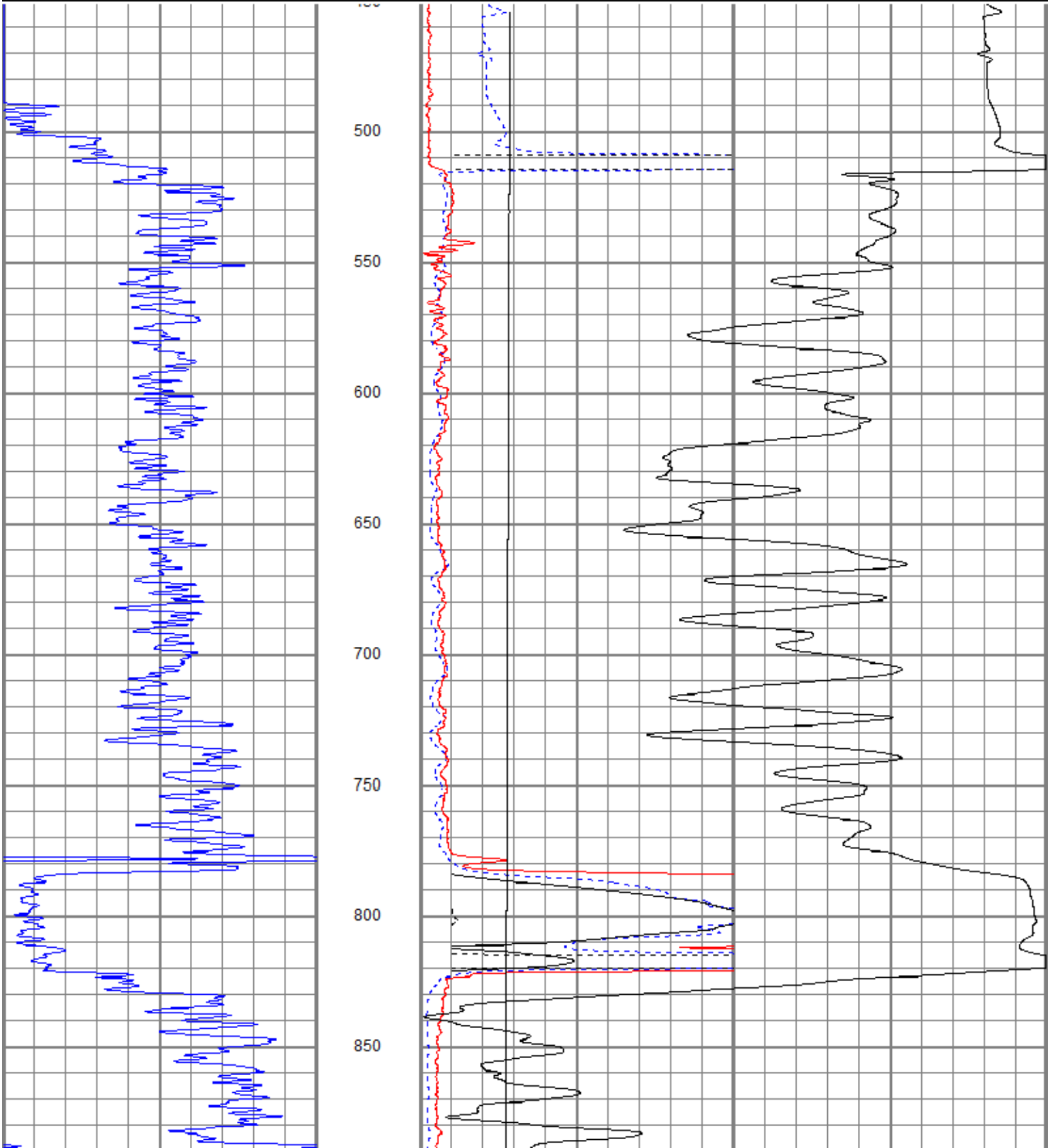
10000 LTEN (lb) 0

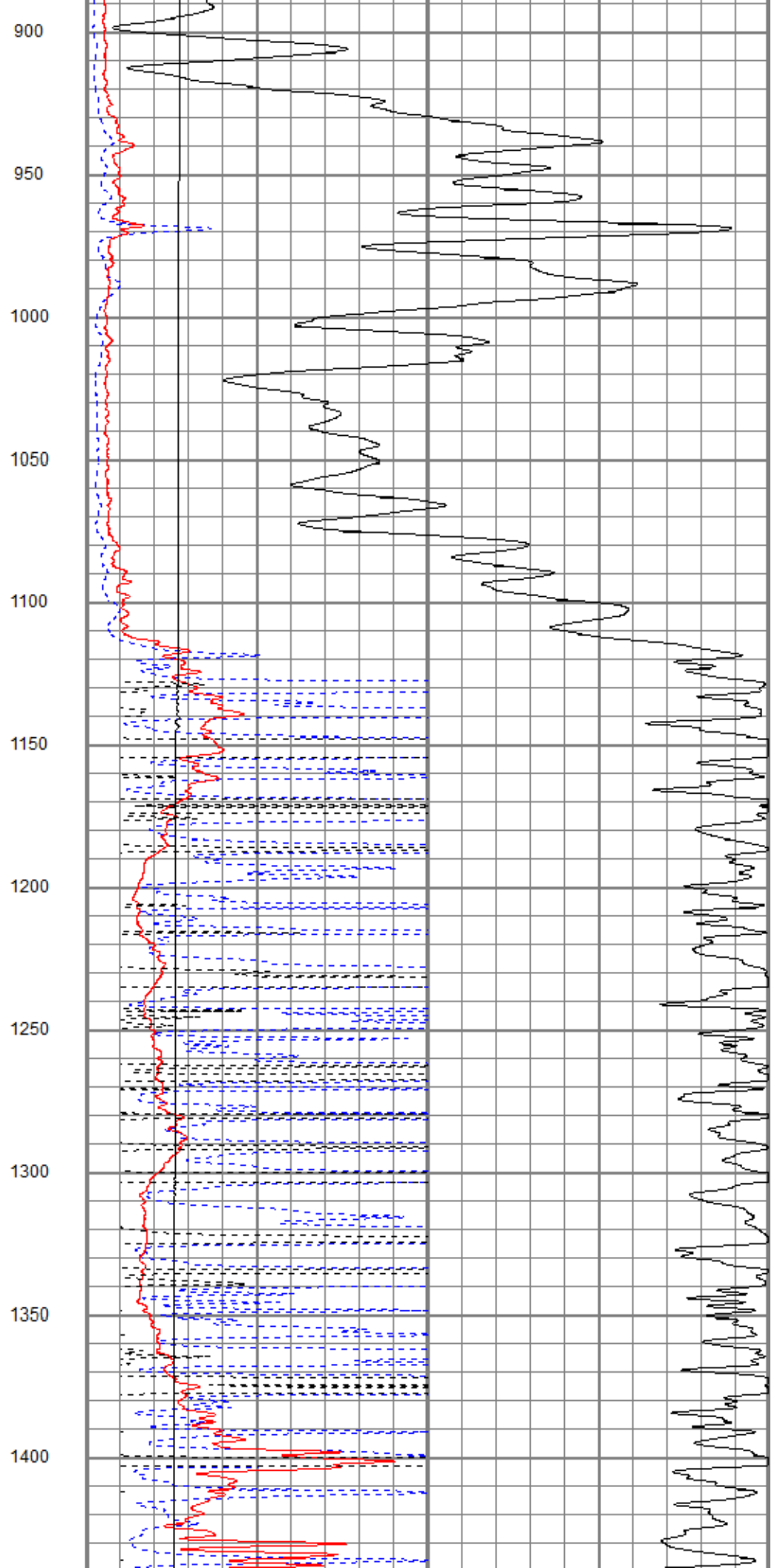
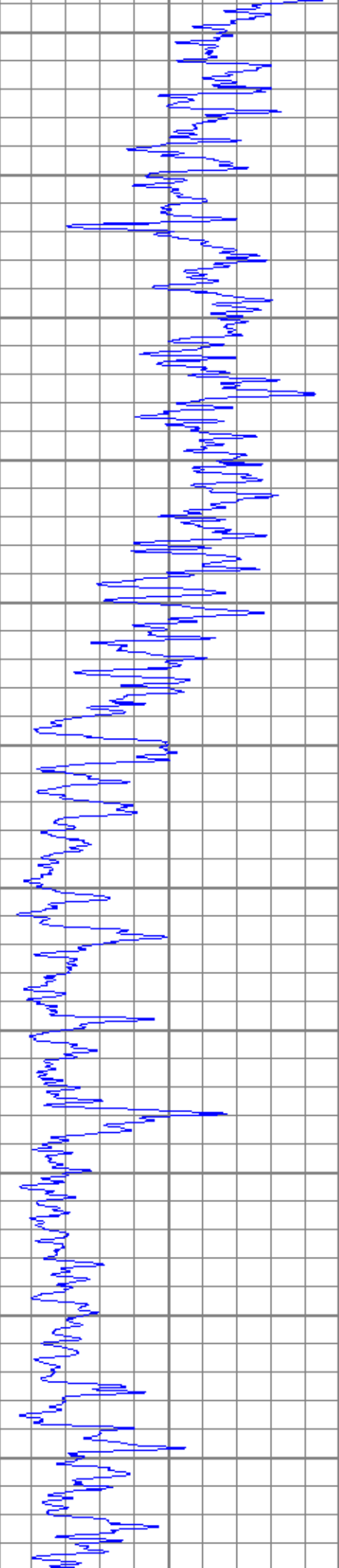
0 RILD (Ohm-m) 50

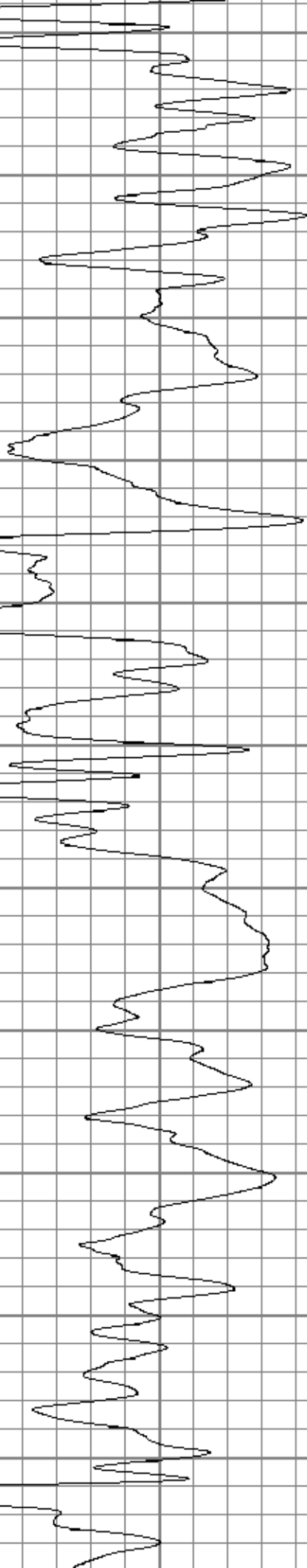
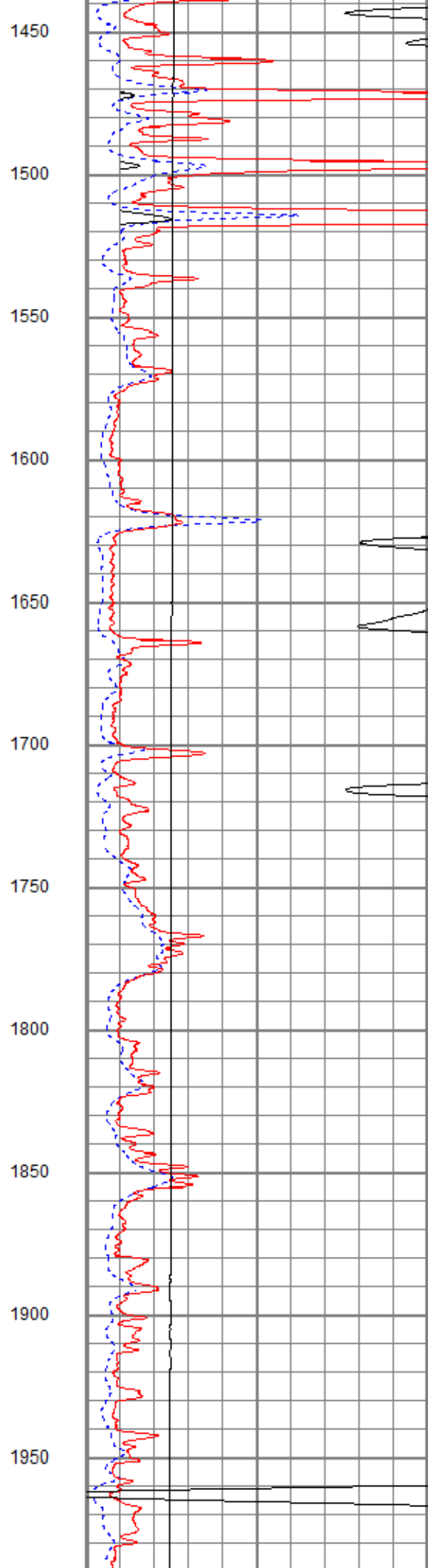
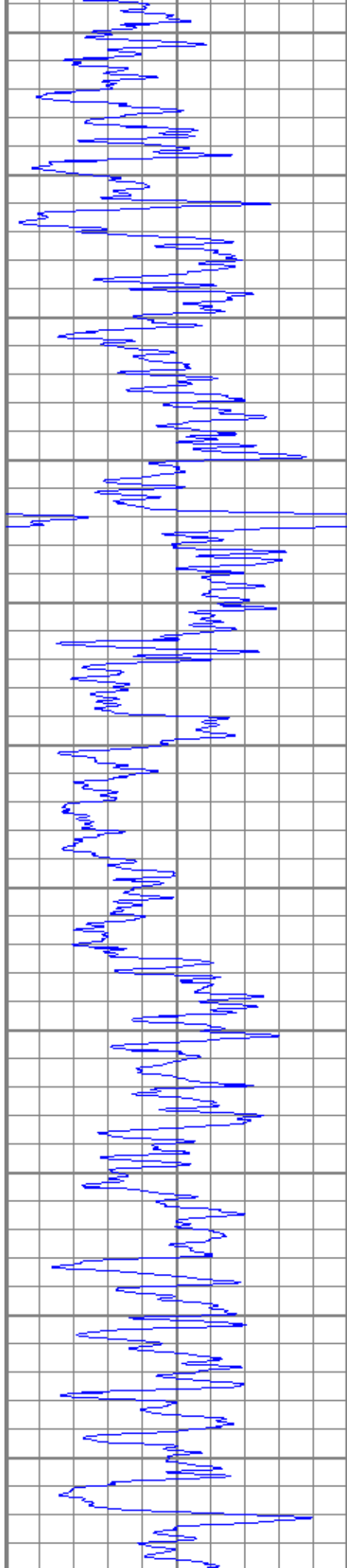
0 RLL3 (Ohm-m) 50

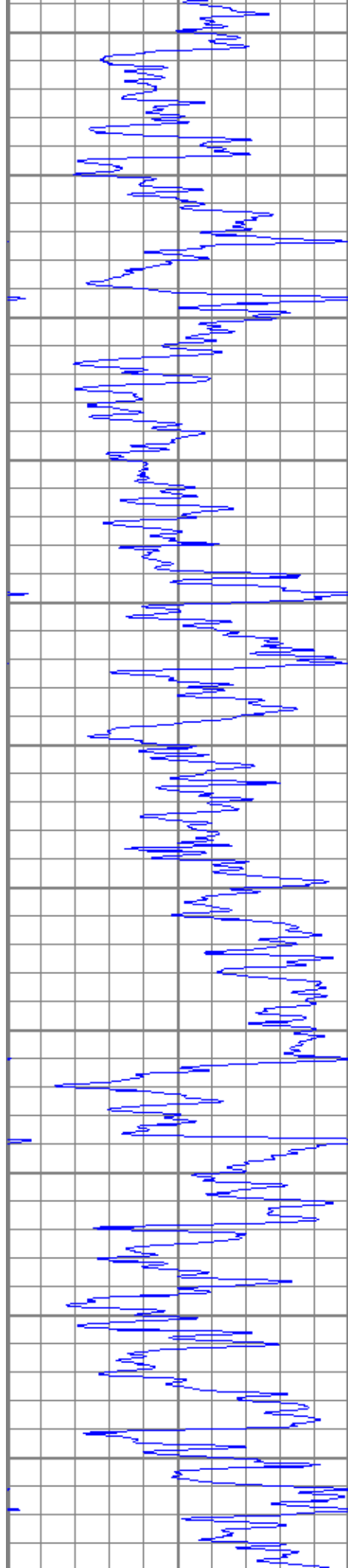
50 RILD x 10 (Ohm-m) 500

50 RLL3 x 10 (Ohm-m) 500

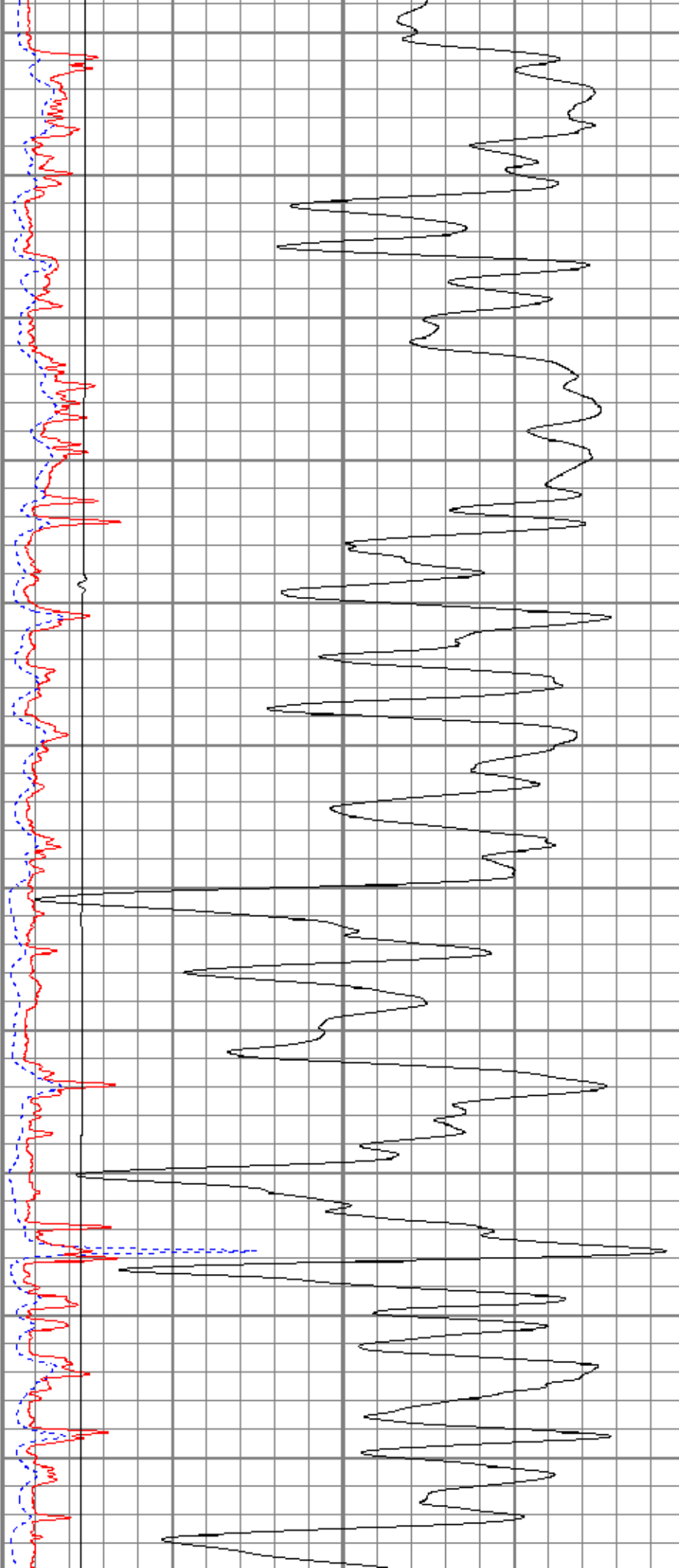


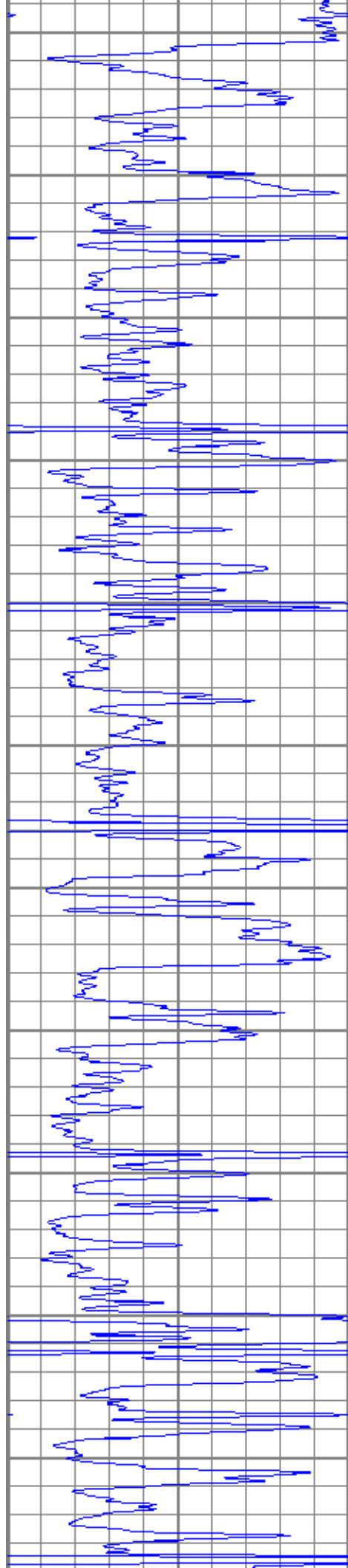




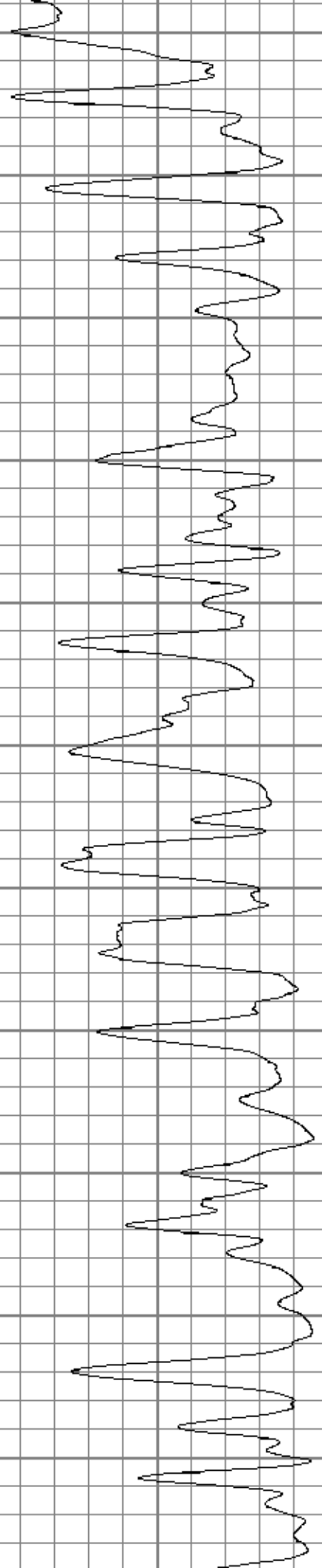
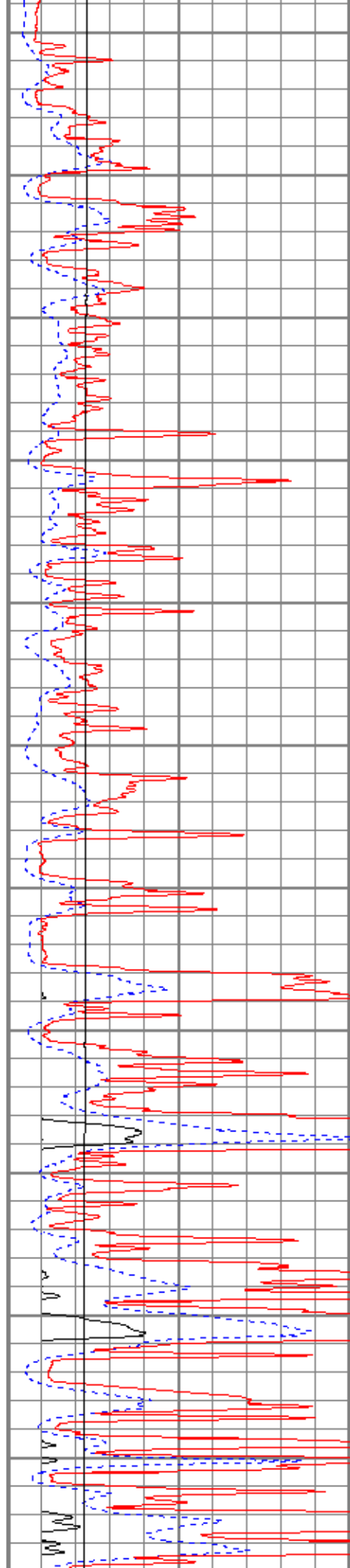


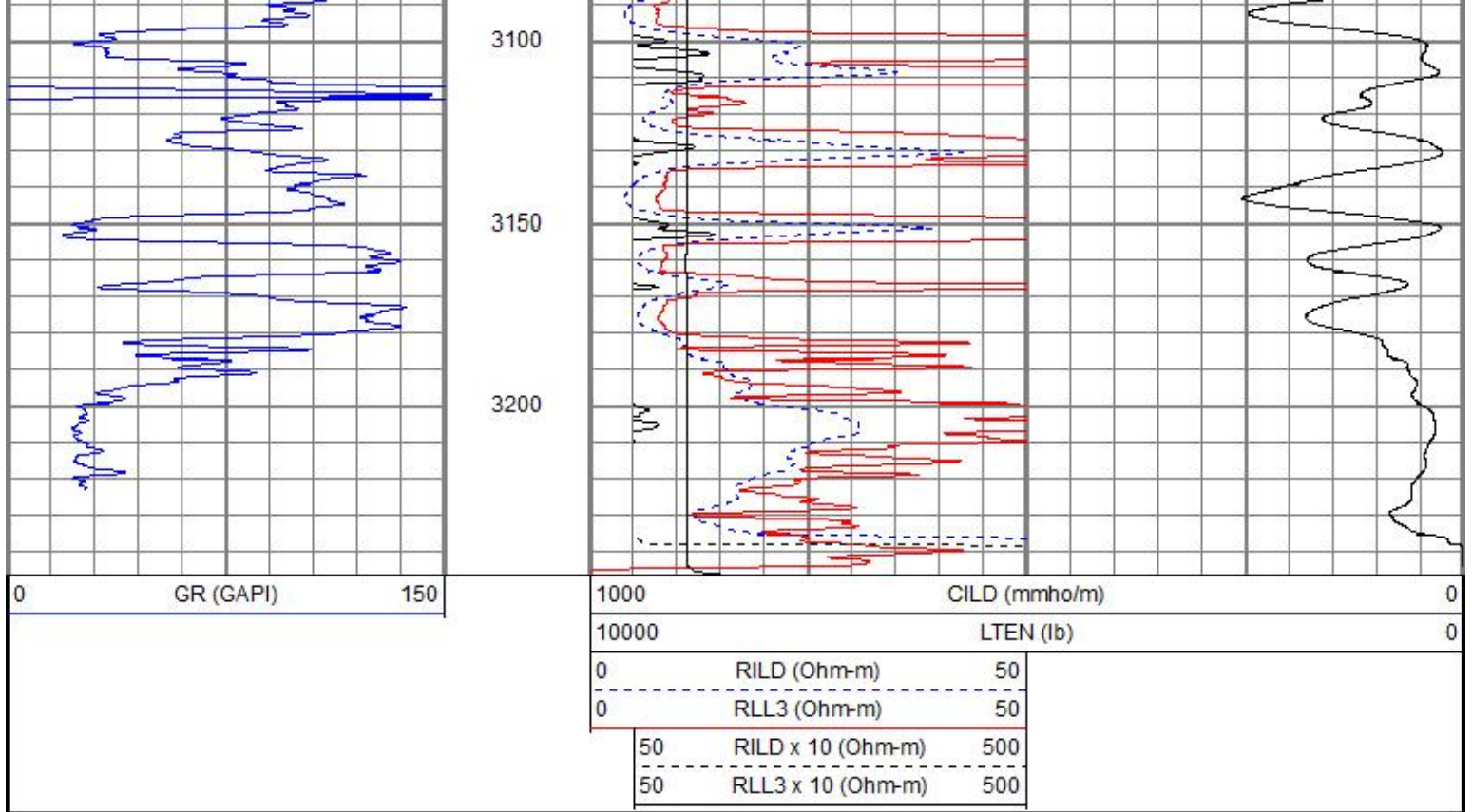
2000
2050
2100
2150
2200
2250
2300
2350
2400
2450
2500





2550
2600
2650
2700
2750
2800
2850
2900
2950
3000
3050

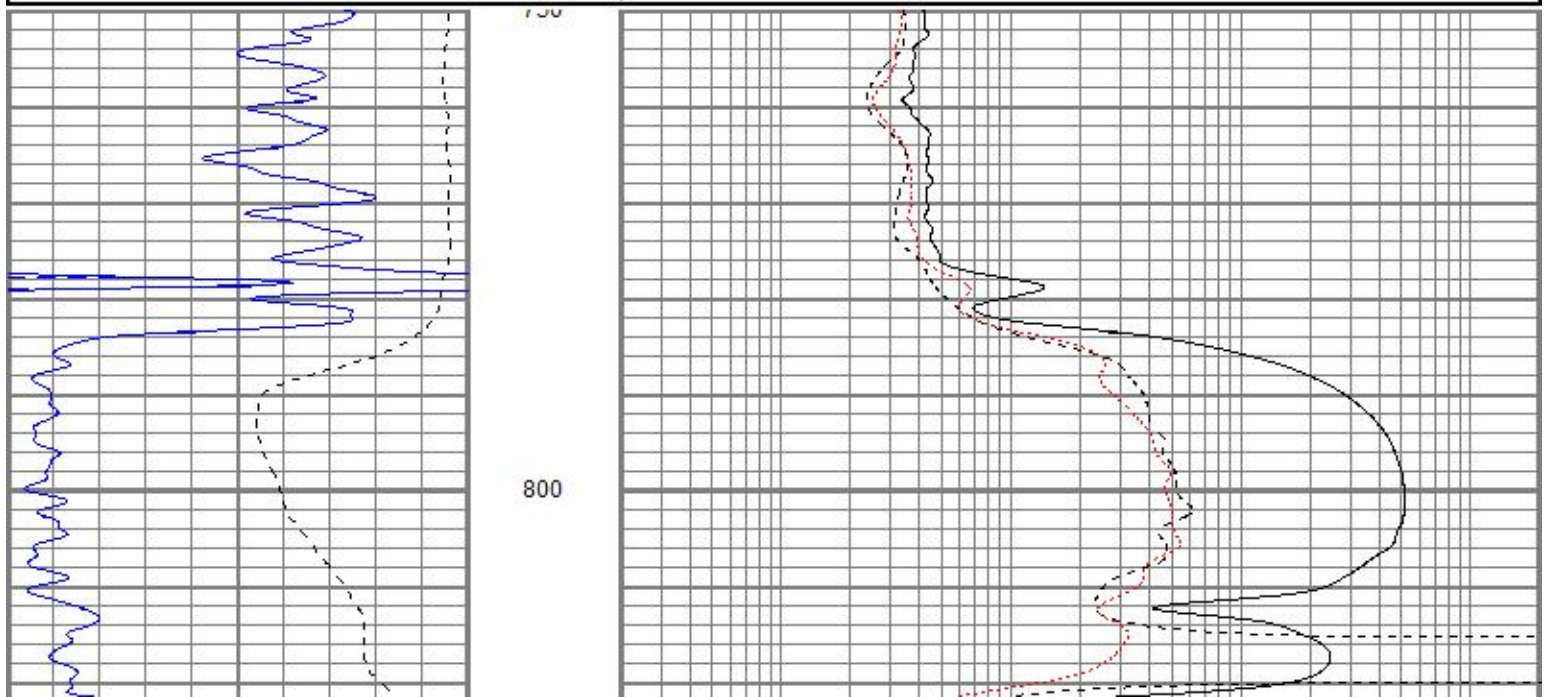


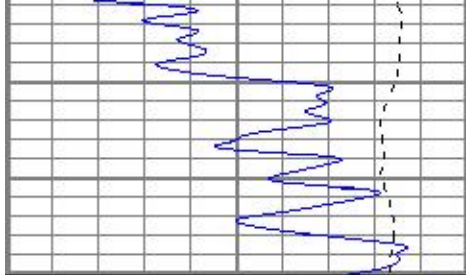


Main Pass

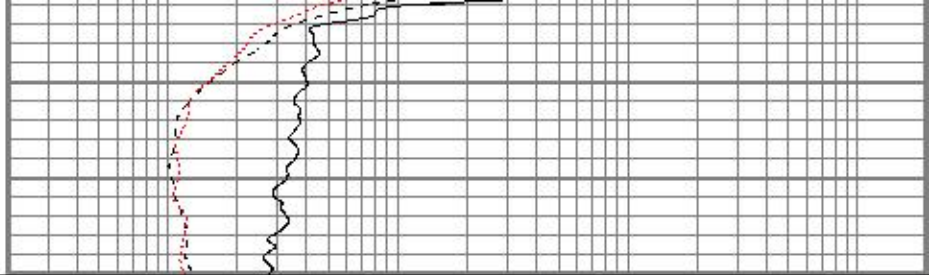
Database File: espeulert3-2oh.db
 Dataset Pathname: pass5.2
 Presentation Format: kdil
 Dataset Creation: Thu Nov 16 09:51:06 2017
 Charted by: Depth in Feet scaled 1:240

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





850



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

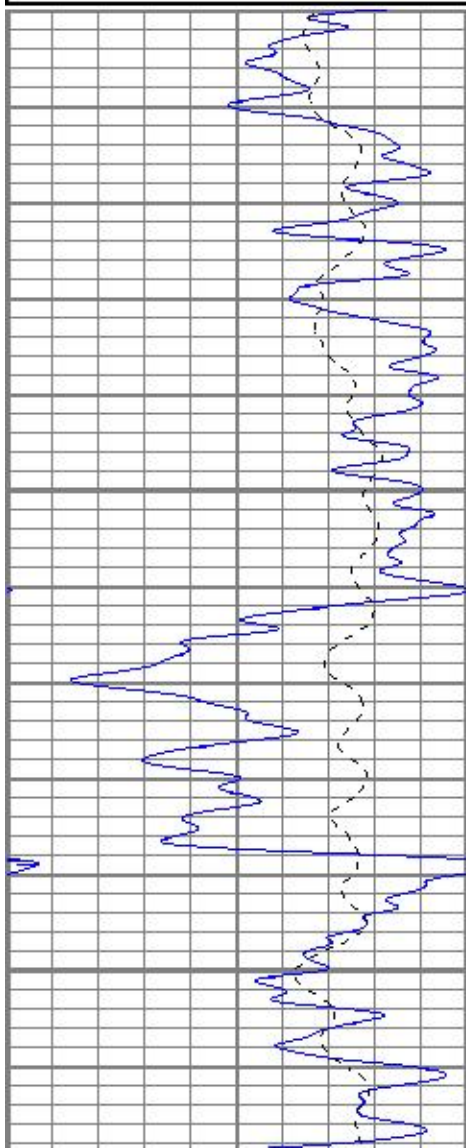


Main Pass

Database File espeulert3-2oh.db
 Dataset Pathname pass5.2
 Presentation Format kdil
 Dataset Creation Thu Nov 16 09:51:06 2017
 Charted by Depth in Feet scaled 1:240

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

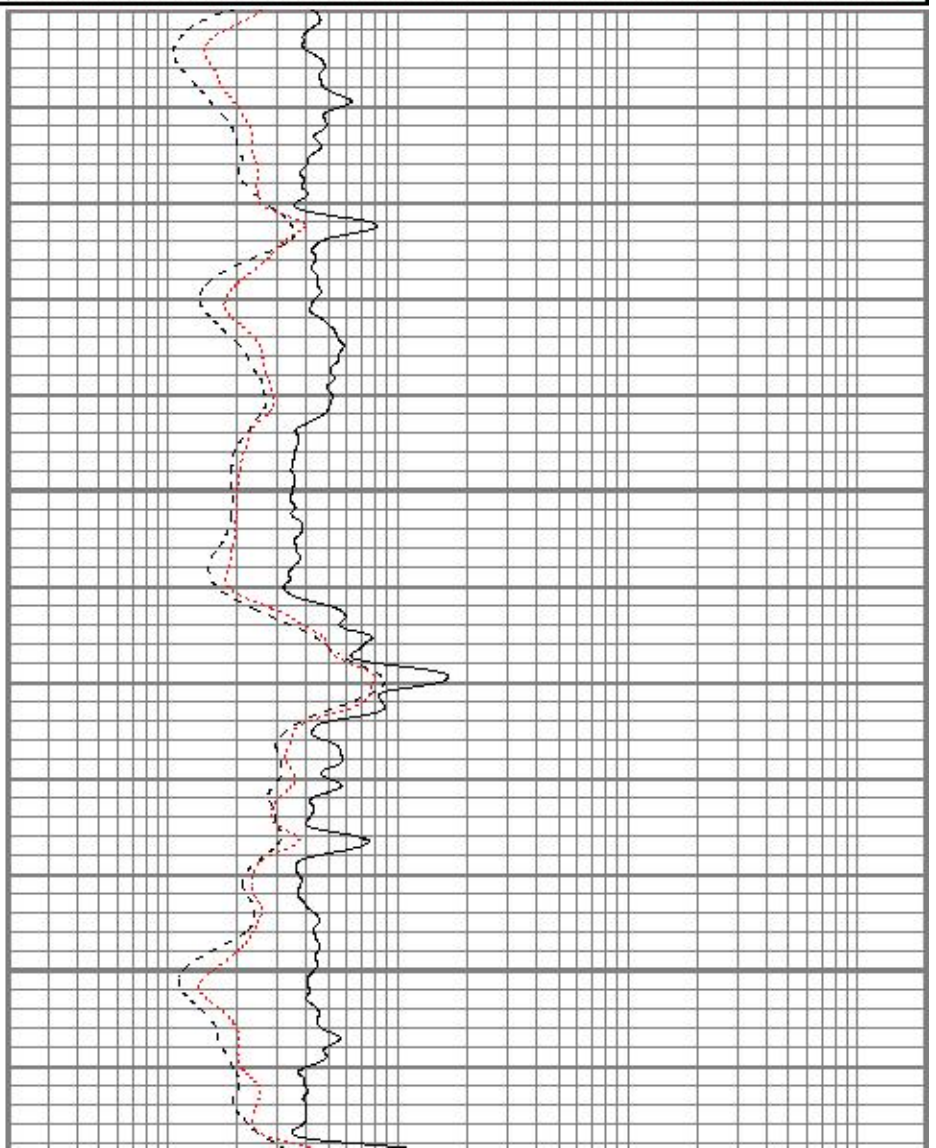
0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000

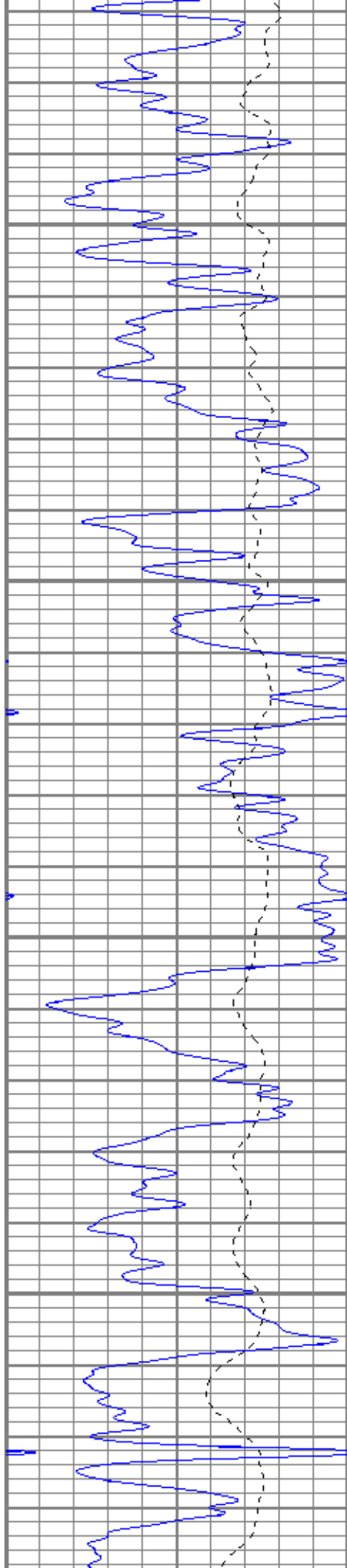


2300

2350

2400



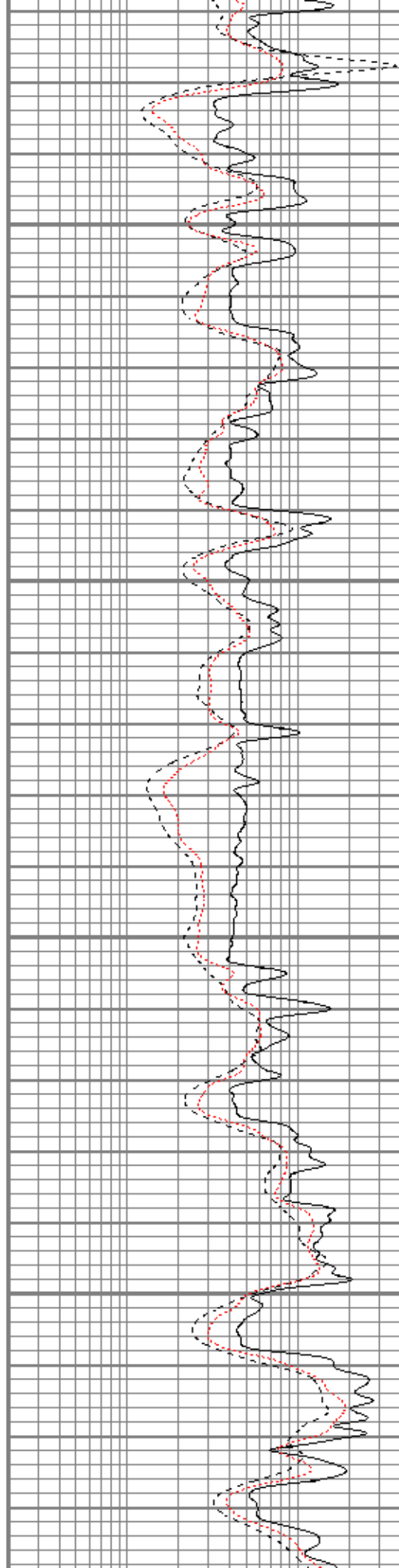


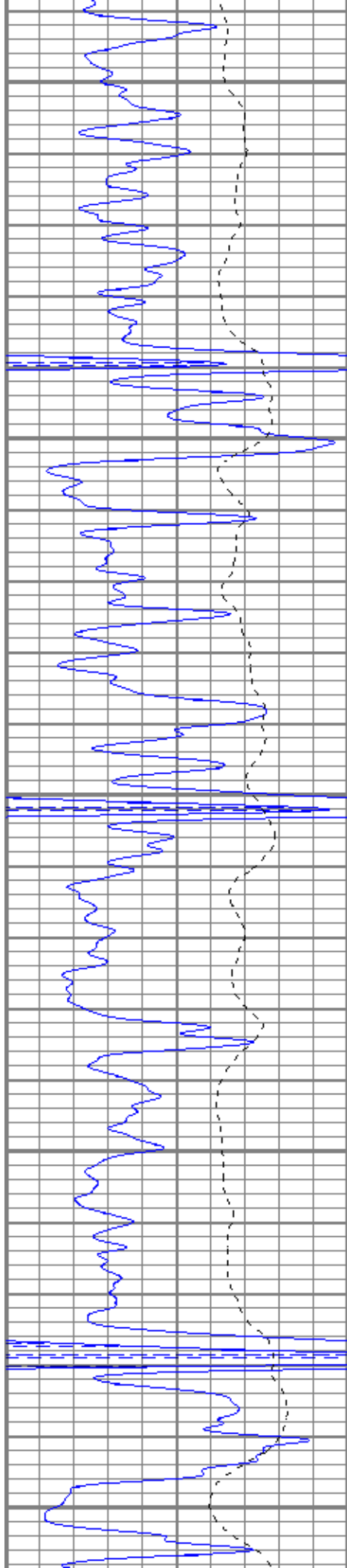
2450

2500

2550

2600





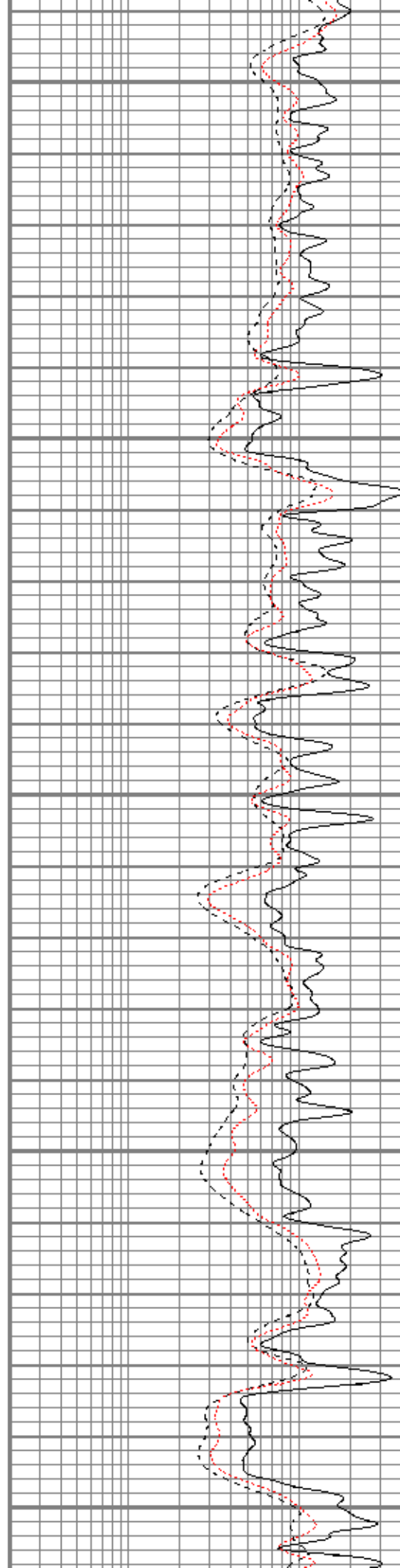
2650

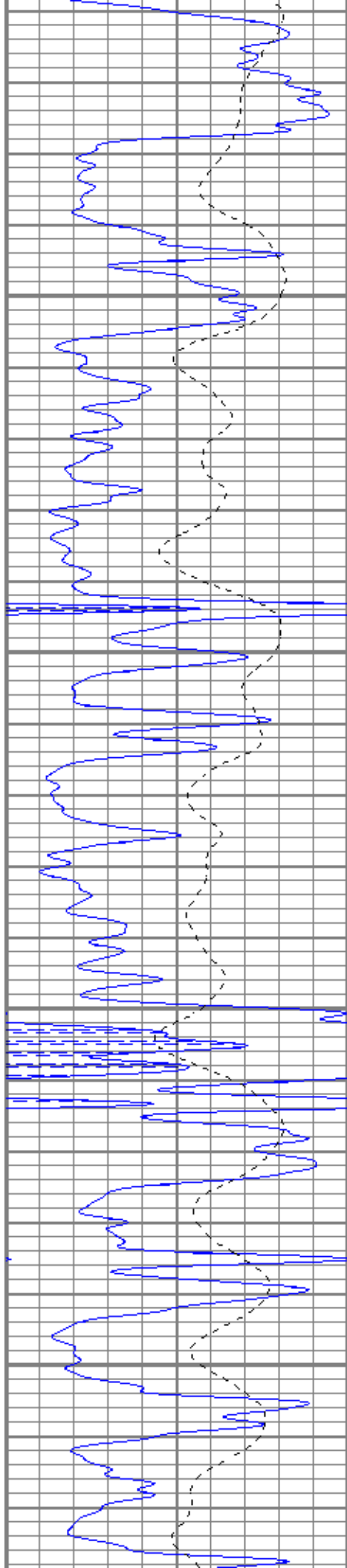
2700

2750

2800

2850



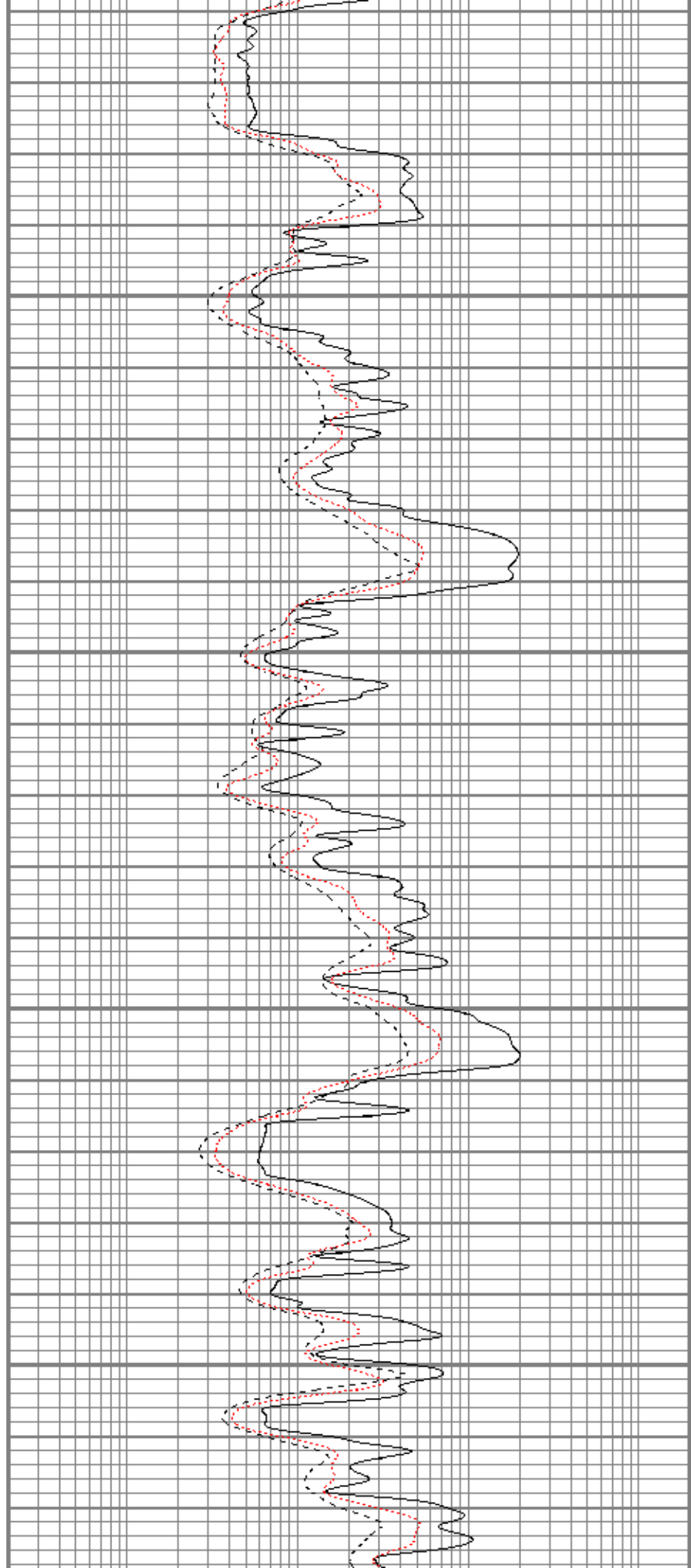


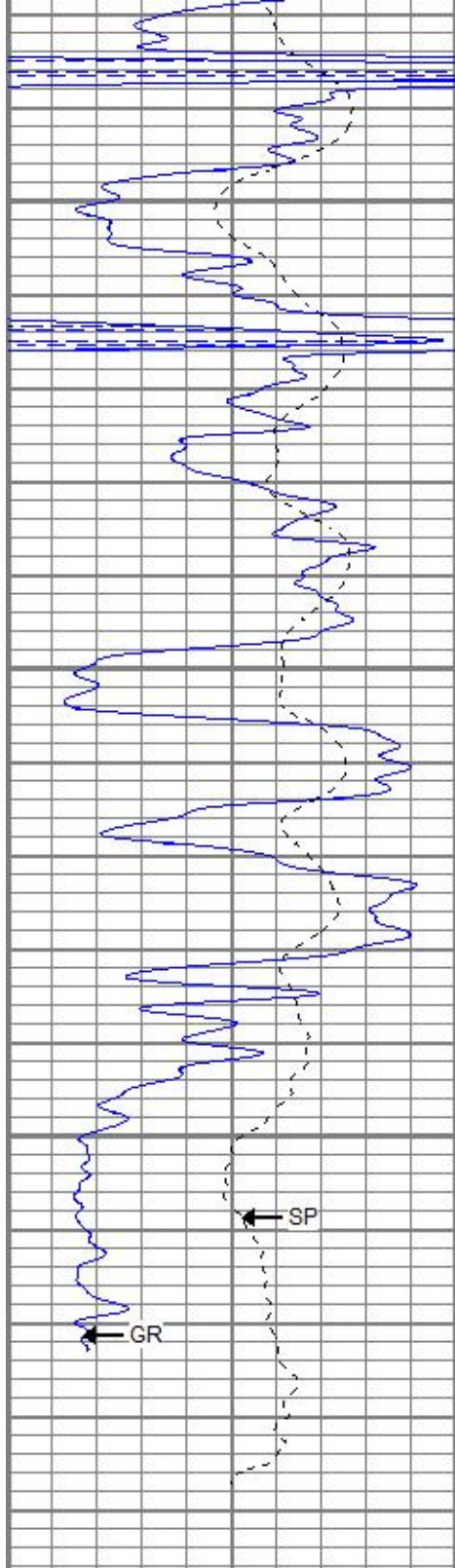
2900

2950

3000

3050



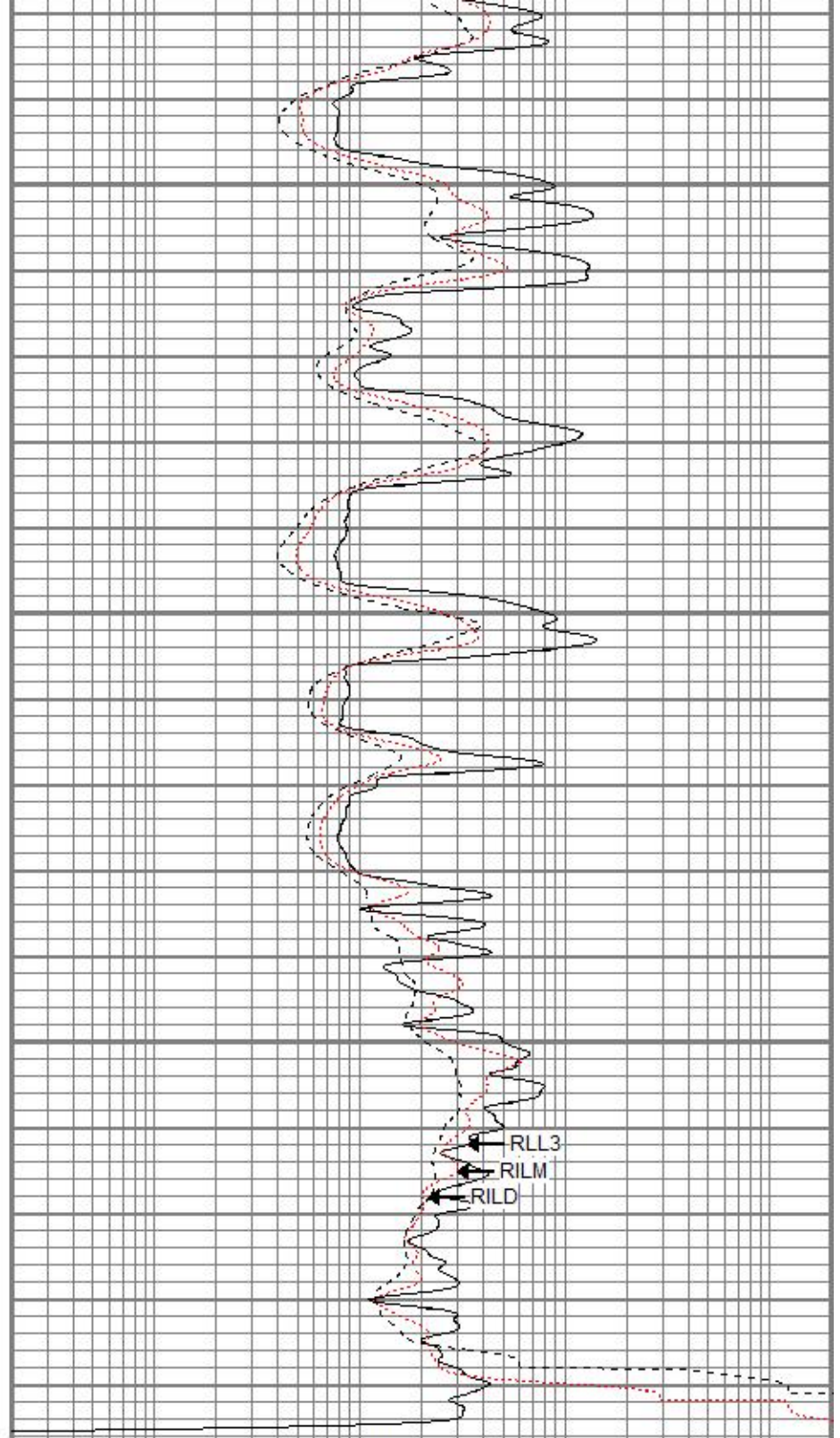


0	GR (GAPI)	150
-100	SP (mV)	100

3100

3150

3200



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

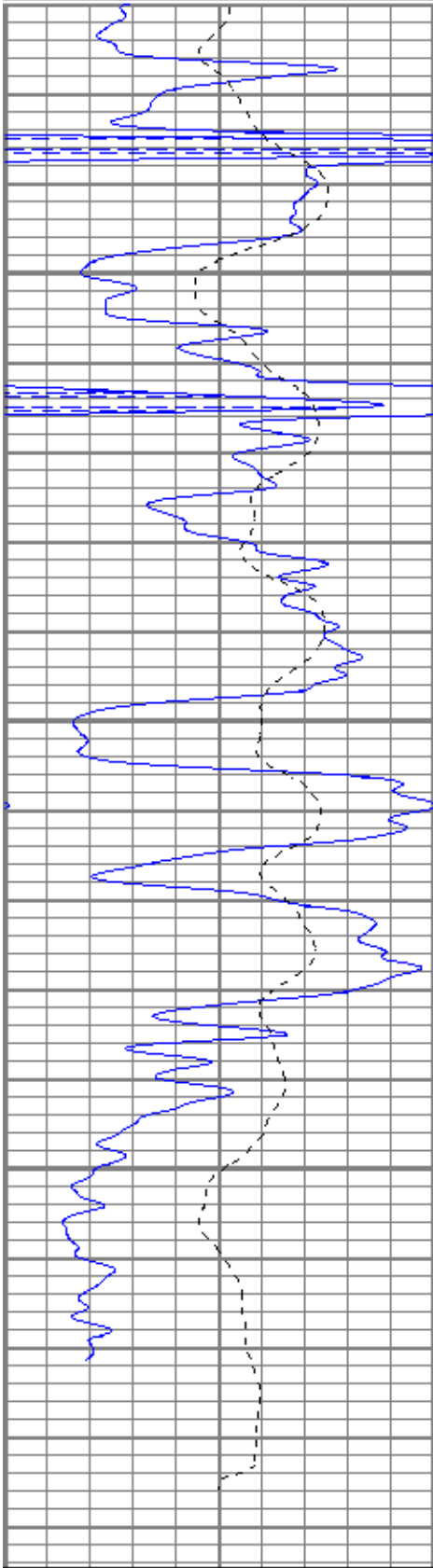


Repeat Pass

Database File espeulert3-2oh.db
 Dataset Pathname pass4.1
 Presentation Format kdil
 Dataset Creation Thu Nov 16 09:52:23 2017

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

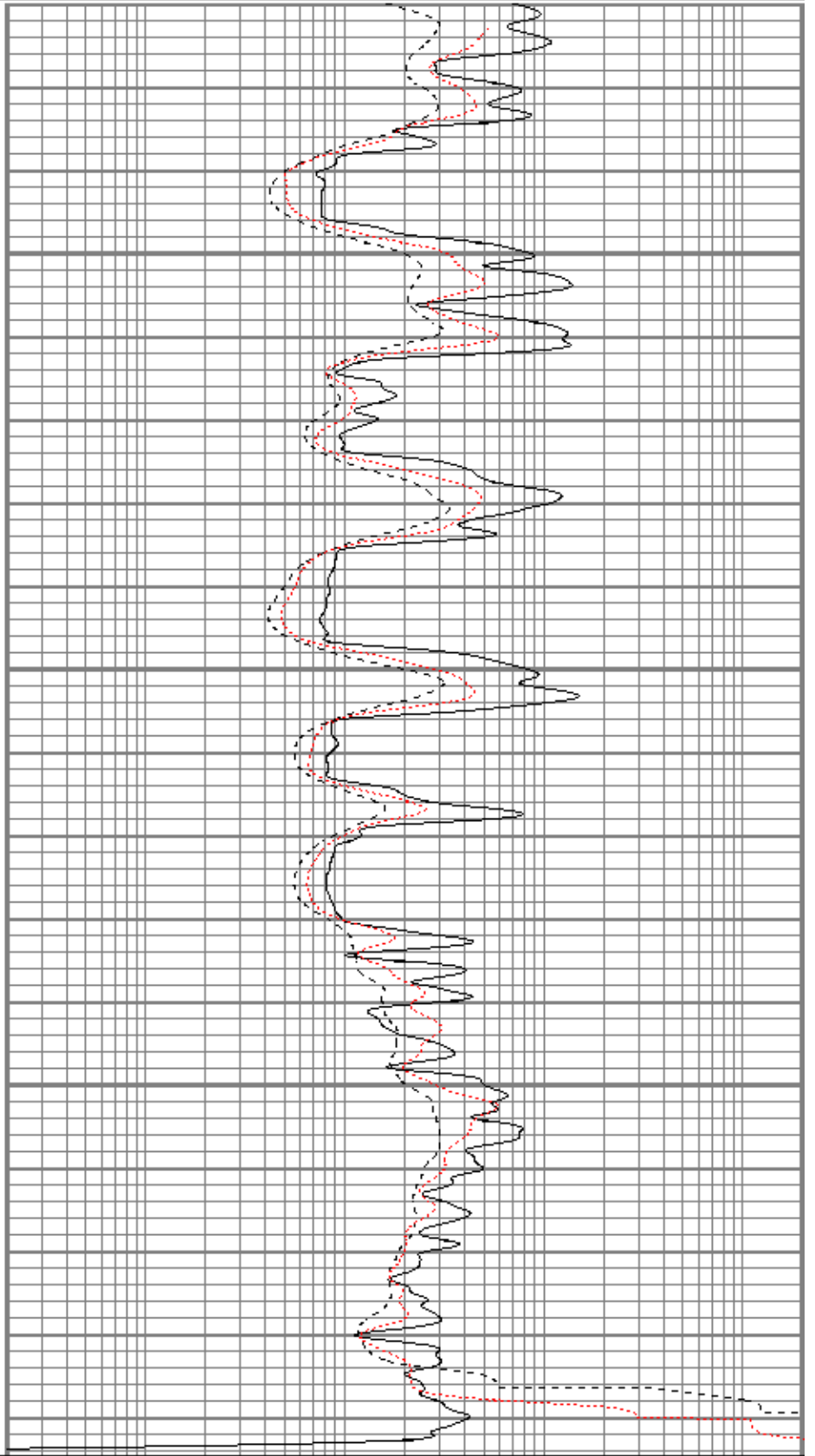
0.2	RILD (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
0.2	RILM (Ohm-m)	2000



3100

3150

3200



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

Dual Induction Calibration Report

Serial-Model: 1842-ADM
 Surface Cal Performed: Wed Aug 03 17:16:29 2016
 Downhole Cal Performed: Wed Aug 03 17:17:02 2016
 After Survey Verification Performed: Wed Aug 03 17:17:02 2016

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.014	0.663	V	0.000	350.000	mmho/m	539.465	-7.399
Medium	0.003	0.762	V	0.000	400.000	mmho/m	527.181	-1.487
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.014	0.663	V	0.000	350.000	mmho/m	538.689	-7.371
Medium	0.003	0.762	V	0.000	550.000	mmho/m	724.507	-1.906

Downhole Calibration

Internal:	Readings			References			Results	
	Zero	Cal		Zero	Cal		m	b
Deep	-0.777	350.471	mmho/m	-0.016	350.487	mmho/m	0.998	0.759
Medium	-0.106	399.968	mmho/m	-0.100	400.103	mmho/m	1.000	0.006
Shallow	2.533	0.034	V	500.000	2.000	Ohm-m	199.290	-3.000

After Survey Verification

Internal:	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	-0.777	350.471	mmho/m	0.998	0.759
Medium	0.000	0.000	mmho/m	-0.106	399.968	mmho/m	1.000	0.006
Shallow	0.000	0.000	Ohm-m	500.000	2.000	Ohm-m	1.000	0.000

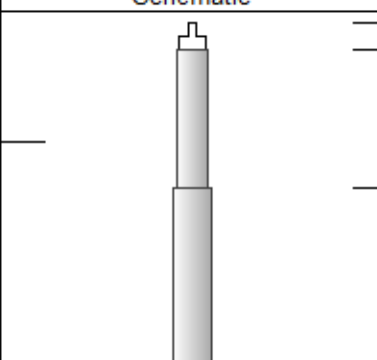
Gamma Ray Calibration Report




Serial Number: 2001
 Tool Model: OH
 Performed: Sun Nov 12 16:26:41 2017

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps

Sensitivity: 0.7000 GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	20.88		CHD-None	0.75	1.50	5.00
			GR-OH (2001)	3.56	3.25	40.00

SP	10.60						
CILD	10.60			DIL-ADM (1842) Dual Induction	19.71	4.00	300.00
CILM	6.89						
RLL3	1.70						

Dataset: espeulert3-2oh.db: field/well/run1/pass5
 Total length: 24.02 ft
 Total weight: 345.00 lb
 O.D.: 4.00 in



**COMPENSATED DENSITY
NEUTRON
LOG**

Company	ESP Development, INC.		
Well	Eulert #3-2		
Field	Eulert Southwest		
County	Russell	State	KS
Company	ESP Development, INC.	Well	Eulert #3-2
Field	Eulert Southwest	County	Russell
Location:	API #: 15 167 24068	State	KS
Permanent Datum	SEC 3 TWP 12S RGE 15W	Other Services	ML DIL
Log Measured From	Ground Level	Elevation	1713'
Drilling Measured From	KB	Elevation	K.B. 1721' D.F. 1720' G.L. 1713'

Date	11-14-17
Run Number	One
Depth Driller	3250'
Depth Logger	3247'
Bottom Logged Interval	3225'
Top Log Interval	2300'
Casing Driller	8 5/8" @ 517'
Casing Logger	517'
Bit Size	7 7/8"
Type Fluid in Hole	Chemical Mud
Density / Viscosity	9.2/50
PH / Fluid Loss	10/10.2
Source of Sample	Pit
Rm @ Meas. Temp	.3@73degf
Rmf @ Meas. Temp	.24@73degf
Rmc @ Meas. Temp	0.38@73degf
Source of Rmf / Rmc	Calculated
Rm @ BHT	0.23@97degf
Time Circulation Stopped	12:15 p.m.
Time Logger on Bottom	2:20 p.m.
Maximum Recorded Temperature	97 degf
Equipment Number	T-127
Location	Hays, KS.
Recorded By	C. Patterson
Witnessed By	Mr. Austin Klaus

<<< Fold Here >>>

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then East to North on Saline Ln. 0.8 mi., Then East on road on side going up hill.
(left at fist Y and Left @ second Y)

Thank you for using Gemini Wireline
785-625-1182



MAIN PASS

Database File espeulert3-2oh.db
 Dataset Pathname pass3.1
 Presentation Format digital_kcdnl
 Dataset Creation Tue Nov 14 15:59:46 2017
 Charted by Depth in Feet scaled 1:240

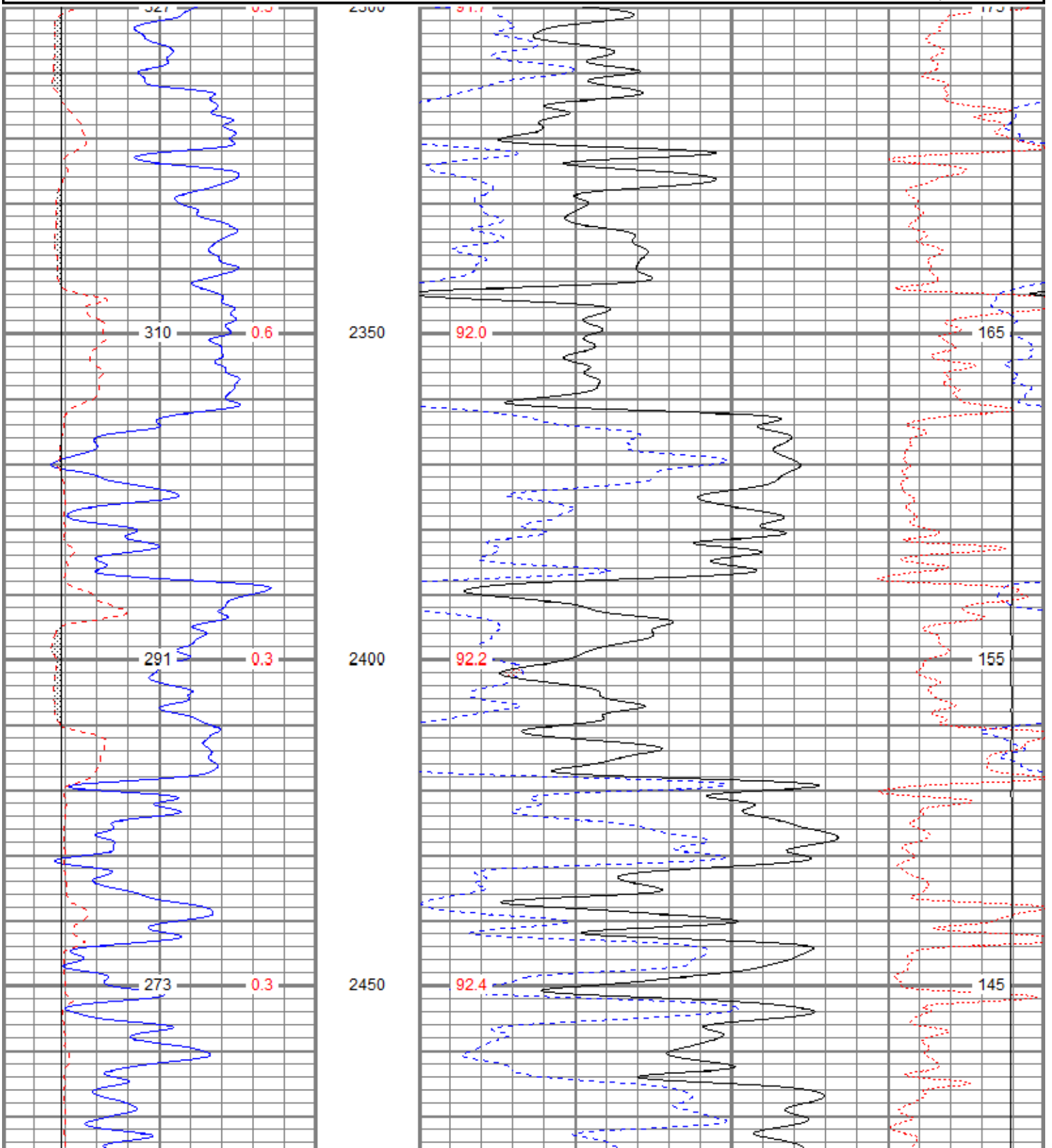
0	GR (GAPI)	150
6	DCAL (in)	16
6	BOREID (in)	16

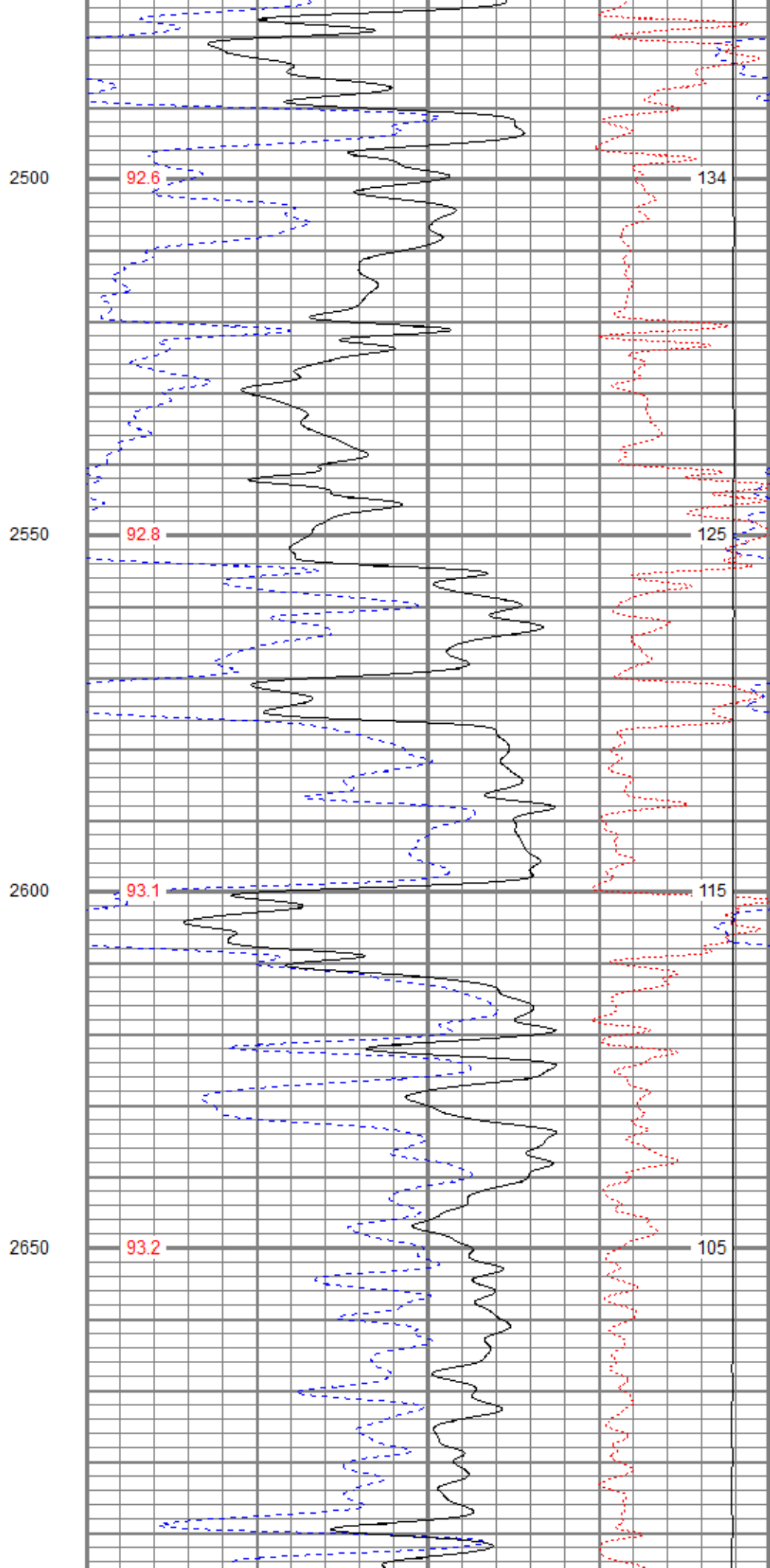
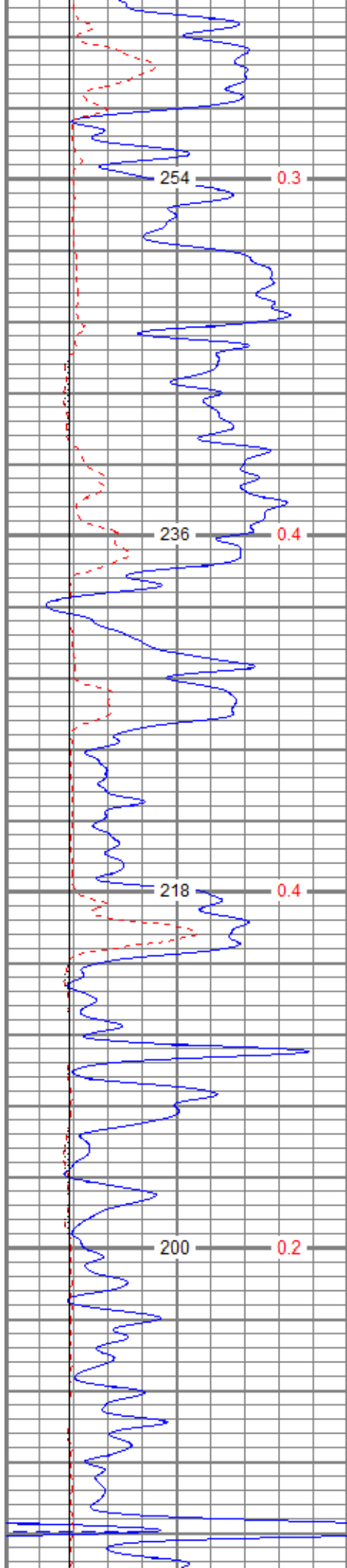
30	NPOR (pu)	-10
30	DPOR (pu)	-10
70	DPOR (pu)	30

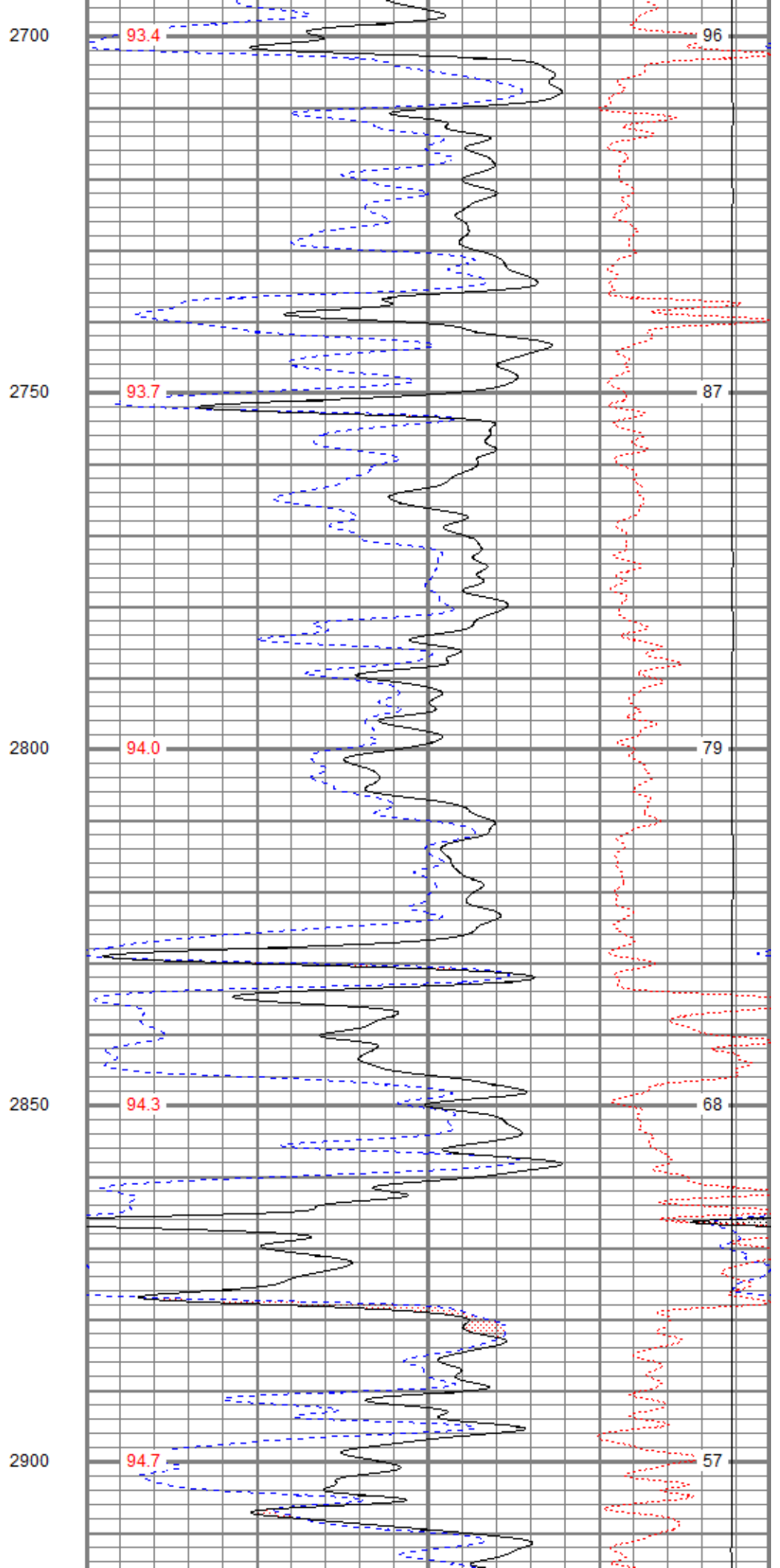
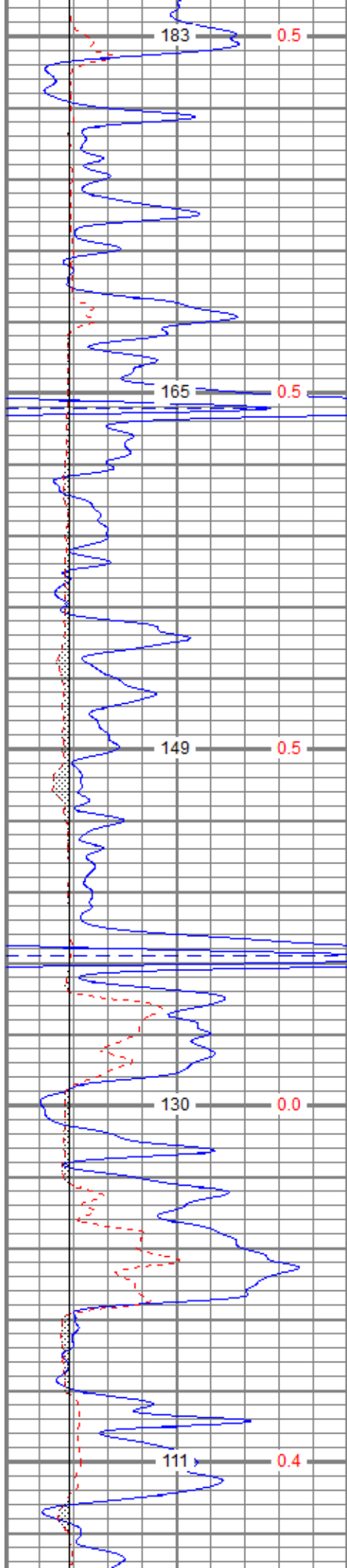
TBHV (ft3)	DEVI (deg)
------------	------------

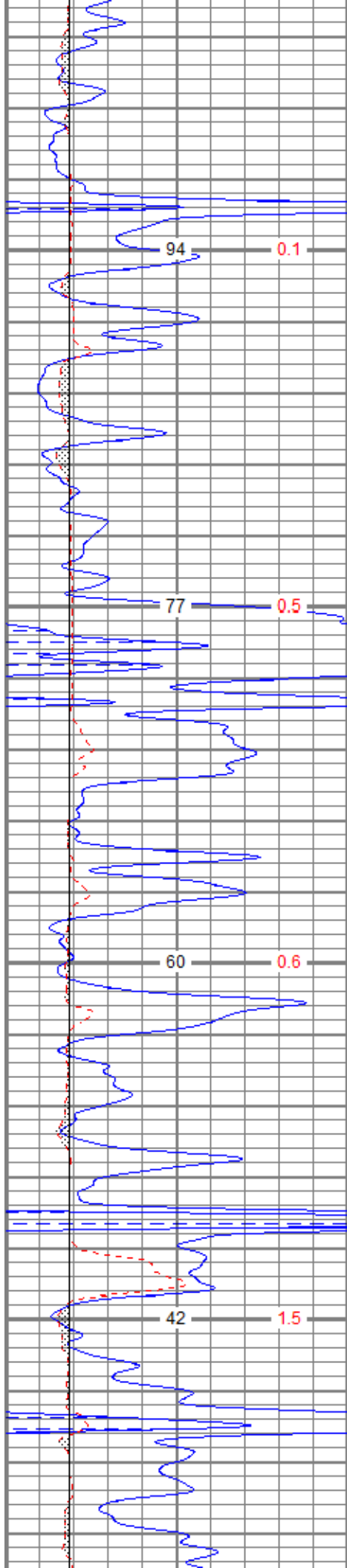
TEMP (degF)	-0.25	RHOC (g/cc)	0.25
	8000	LTEN (lb)	0

ABHV (ft3)









2950

95.0

49

3000

95.3

40

3050

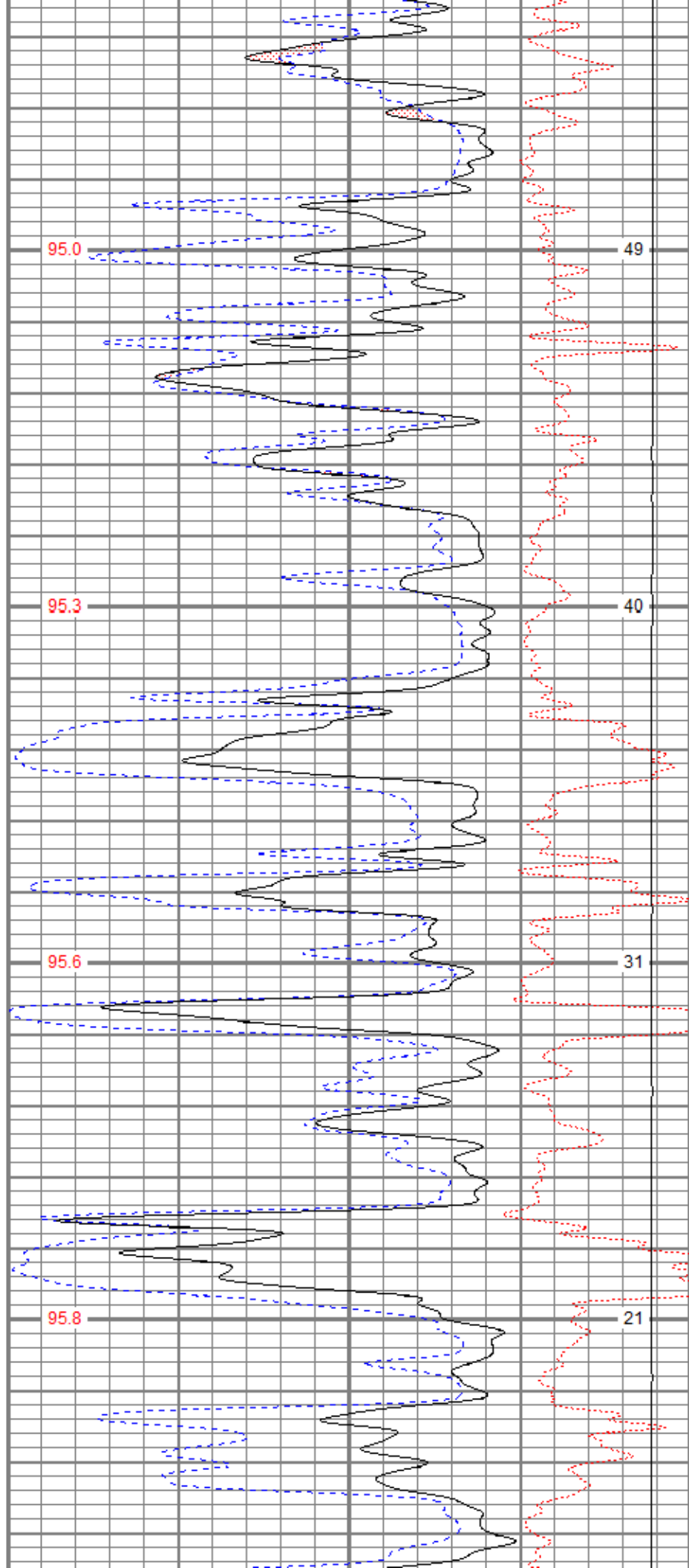
95.6

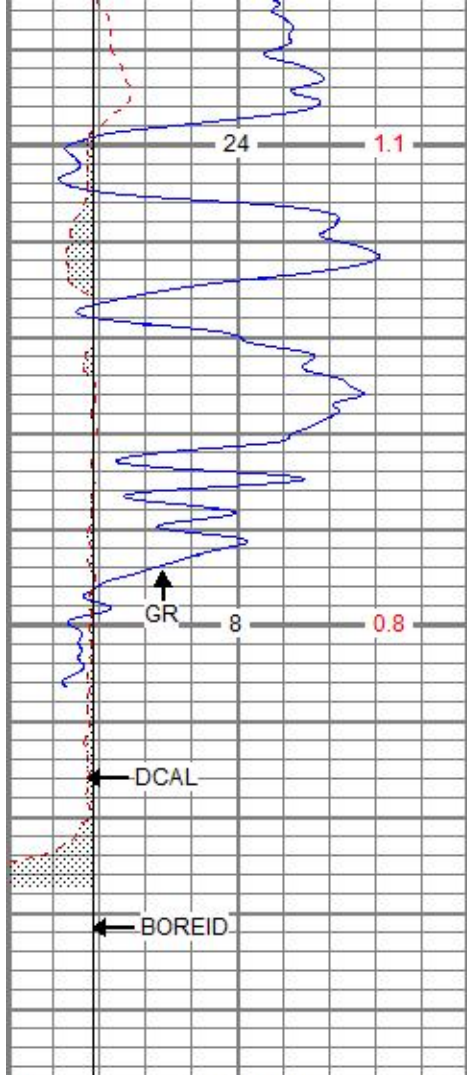
31

3100

95.8

21

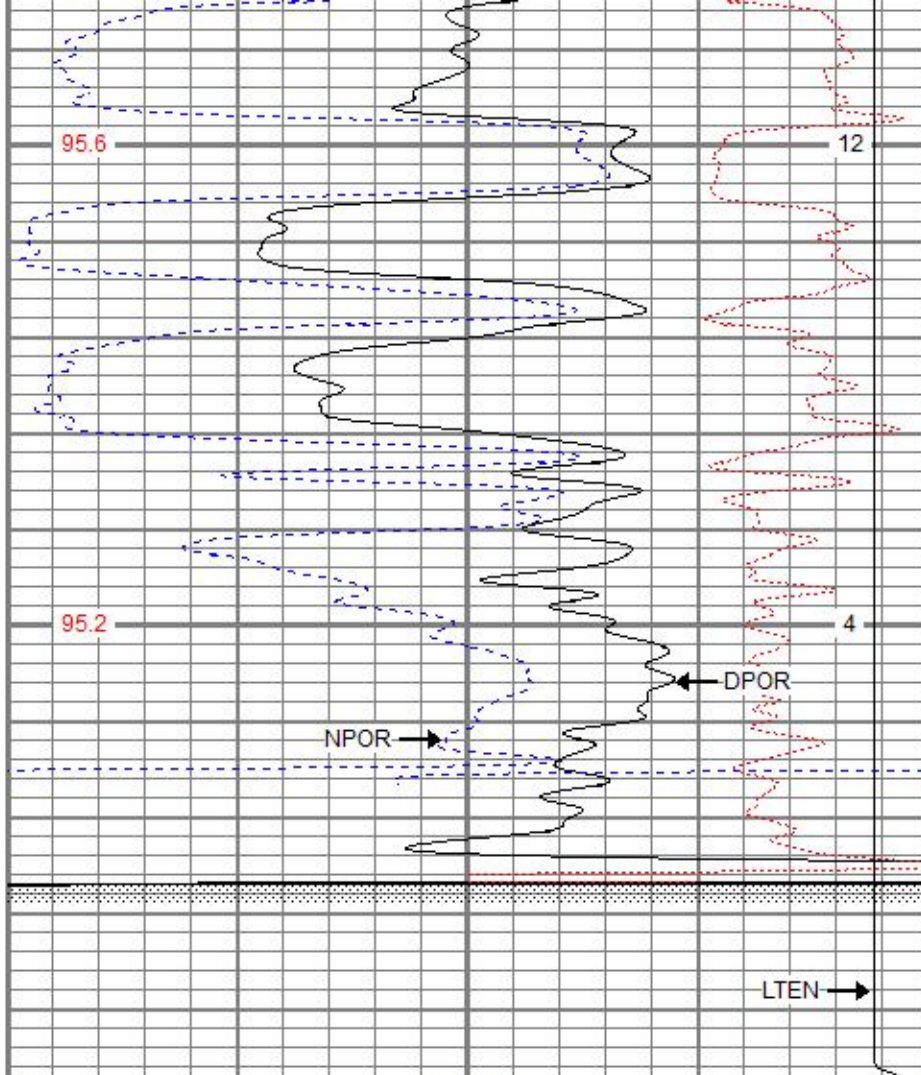




3150

3200

0	GR (GAPI)	150
6	DCAL (in)	16
6	BOREID (in)	16
	TBHV (ft3)	DEVI (deg)



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

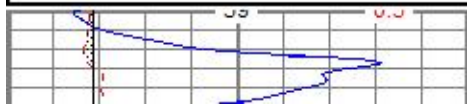


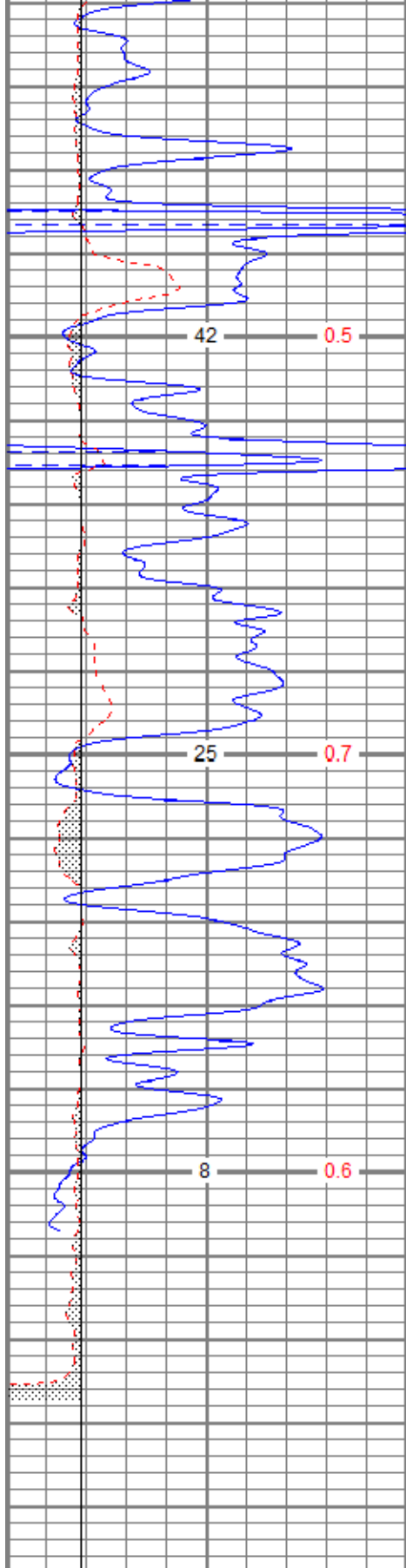
REPEAT SECTION

Database File espeulert3-2oh.db
 Dataset Pathname pass2.1
 Presentation Format digital_kcdnl
 Dataset Creation Tue Nov 14 15:58:58 2017
 Charted by Depth in Feet scaled 1:240

0	GR (GAPI)	150
6	DCAL (in)	16
6	BOREID (in)	16
	TBHV (ft3)	DEVI (deg)

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





3100

42

0.5

3150

25

0.7

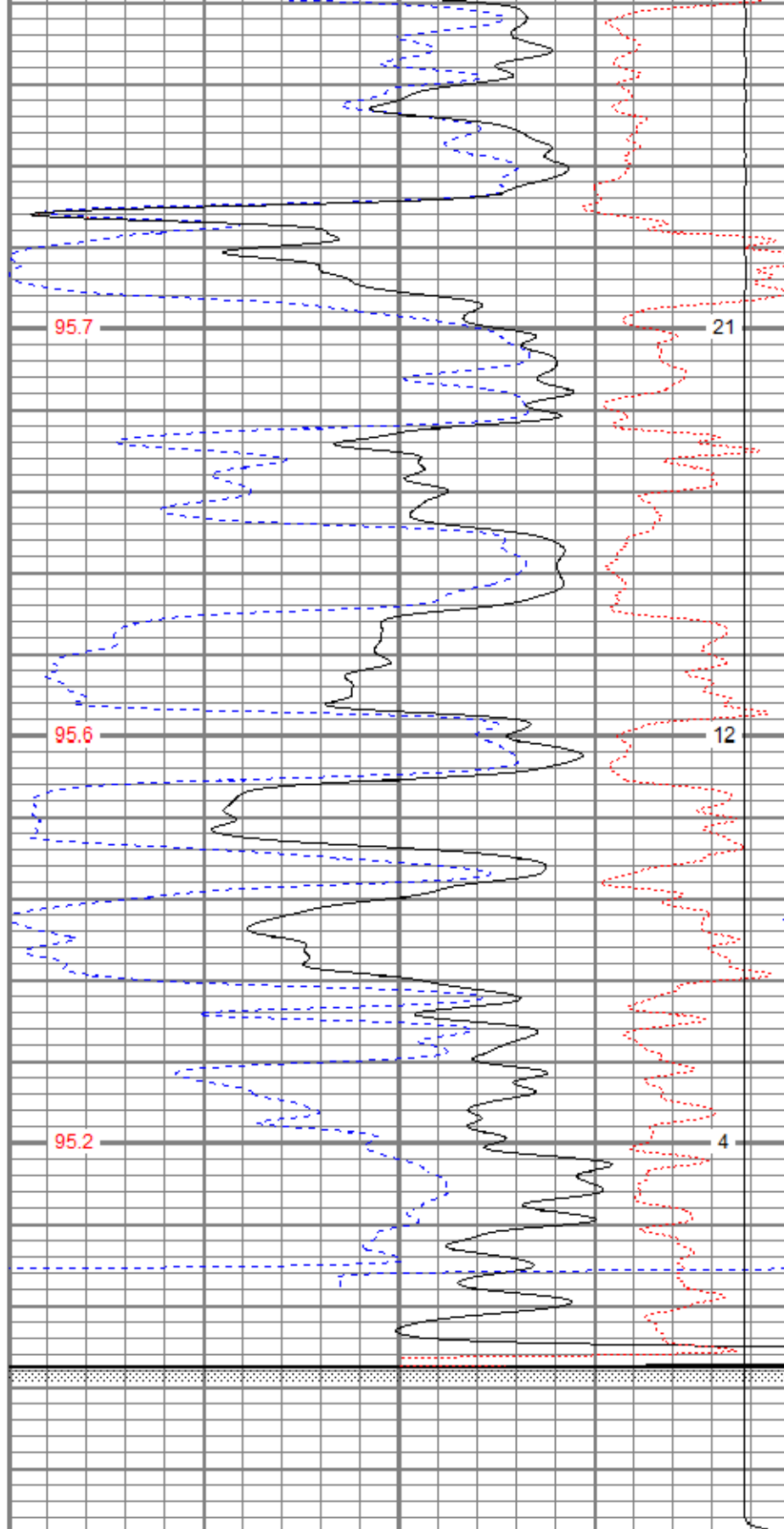
3200

8

0.6

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

TBHV (ft3)	DEVI (deg)
------------	------------



95.7

21

95.6

12

95.2

4

30	NPOR (pu)	-10
30	DPOR (pu)	-10
70	DPOR (pu)	30

TEMP (degF)	-0.25	RHOC (g/cc)	0.25
	8000	LTEN (lb)	0

ABHV (ft3)

Calibration Report

Database File espeulert3-2oh.db
 Dataset Pathname pass3.1
 Dataset Creation Tue Nov 14 15:59:46 2017

Dual Induction Calibration Report

Serial-Model: 1989-ADM
 Surface Cal Performed: Sun Aug 13 21:54:00 2017
 Downhole Cal Performed: Sun Aug 13 21:54:27 2017
 After Survey Verification Performed: Sun Aug 13 21:54:27 2017

Surface Calibration

		Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b	
Deep	-0.008	0.666	V	0.000	350.000	mmho/m	518.739	4.350	
Medium	-0.006	0.751	V	0.000	400.000	mmho/m	528.269	3.363	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	-0.011	0.669	V	0.000	350.000	mmho/m	515.266	5.469	
Medium	-0.006	0.751	V	0.000	550.000	mmho/m	726.669	4.533	

Downhole Calibration

		Readings			References			Results	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	-1.463	351.561	mmho/m	-1.156	351.203	mmho/m	0.998	0.304	
Medium	-0.135	400.564	mmho/m	0.068	399.903	mmho/m	0.998	0.203	
Shallow	2.502	0.049	V	500.000	2.000	Ohm-m	203.025	-8.007	

After Survey Verification

		Readings			Targets			Results	
Internal:	Zero	Cal		Zero	Cal		m'	b'	
Deep	0.000	0.000	mmho/m	-1.463	351.561	mmho/m	0.998	0.304	
Medium	0.000	0.000	mmho/m	-0.135	400.564	mmho/m	0.998	0.203	
Shallow	0.000	0.000	Ohm-m	500.000	2.000	Ohm-m	1.000	0.000	

Neutron Calibration Report

Serial Number: 2017
 Tool Model: lithogearhart
 Performed: (Not Performed)

Calibrator Value: 1 NAPI
 Calibrator Reading: 1 cps
 Sensitivity: 1 NAPI/cps

Temperature Calibration Report

Serial Number: WithMC
 Tool Model: WMC
 Performed: (Not Performed)

	Reference	Reading
Low Reference:	0.00 degF	0.00 degF
High Reference:	1.00 degF	1.00 degF
Gain:	1.00	
Offset:	0.00	
Delta Coefficient:	1	

Inclinometer Calibration Report

Performed:	Mon Aug 07 11:02:07 2017				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	205.00	1843.00	-1.00	1.00	gee
Y Accelerometer	205.00	1843.00	-1.00	1.00	gee
Z Accelerometer					gee

Gamma Ray Calibration Report

Serial Number:	WithMC		
Tool Model:	WMC		
Performed:	Mon Aug 07 11:03:41 2017		
Calibrator Value:	1.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	1.0	cps	
Sensitivity:	0.9000	GAPI/cps	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
GR	38.31		CHD-STD	0.50	1.69	1.00
ACCY	37.15		ADT-WMC (WithMC) Admyr Telemetry With Mudcell	4.58	3.50	120.00
ACCX	37.15					
SSTAT	36.73					
PSTAT	35.90					
ASTAT	35.90					
GRD	35.06		NEU-lithogearhart (2017)	5.65	3.50	85.00
TEMP	35.06					
NEU	31.70					
LStat	22.54					
LS8	21.88					
LS7	21.88					
LS6	21.88		ADT1LITH-A (1) Admyr Litho Density Tool	9.29	3.50	240.00
LS5	21.88					
LS4	21.88					
LS3	21.88					
LS2	21.88					
LS1	21.88					
LSV	21.88					
LSD	21.86					
SSV	21.67					
SS8	21.67					
SS7	21.67					
SS6	21.67	DIL-ADM (1989) Dual Induction	19.71	4.00	300.00	
SS5	21.67					
SS4	21.67					
SS3	21.67					
SS2	21.67					
SS1	21.67					
DCAI	21.61					

DCAL	21.01					
SSD	21.27					
SP	10.60					
CILD	10.60					
CILM	6.89		Dataset:	espeulert3-2oh.db: field/well/run1/pass3.1		
RLL3	1.70		Total length:	39.73 ft		
TR_Mon	0.00		Total weight:	746.00 lb		
			O.D.:	4.00 in		

AUSTIN B. KLAUS

Cell 785.650.3629
Work 785.483.3145
Ext 225

PO BOX 352
Russell, KS 67665
austin.klaus@johnofarmer.com

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Eulert #3-2
Location: Russell County
License Number: API #15-167-24068-00-00
Spud Date: 11/7/17
Surface Coordinates: Section 3, Township 12 South, Range 15 West
1,108' FNL & 1,283' FWL
Bottom Hole Coordinates: Vertical well w/ minimal deviation, same as above
Ground Elevation (ft): 1,713
Logged Interval (ft): 2300 To: 3247
Formation: Lansing, Arbuckle
Type of Drilling Fluid: Chemical (Andy's)

Region: Kansas
Drilling Completed: 11/14/17
K.B. Elevation (ft): 1,721
Total Depth (ft): 3250

Printed by STRIP.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: ESP Development, Inc.
Address: 1749B 250th Ave.
Hays, KS 67601

GEOLOGIST

Name: Austin Klaus
Company: John O. Farmer, Inc.
Address: 370 W. Wichita Ave.
Russell, KS 67665

Comments

The Eulert #3-2 well was drilled by Discovery Drilling Rig #2 (Tool Pusher: Terry Wickham).

The location for the Eulert #3-2 well was found via 3-D seismic survey. Geologic samples were collected and evaluated from 2,300'-3,250'.

Structurally, the Eulert #3-2 encountered the Tarkio & Topeka formations 1' high - flat, in relation to the Eulert #3-1 (comparison well). Slight oil shows were noted in the Tarkio Sand (3rd sand) and Topeka 30' zone. The Lansing formation was picked flat to the comparison well. Three bottom-hole tests were conducted: Toronto - LKC C, LKC D, & LKC I-K (see recovery below). Thickening occurred in the lower Lansing and directly above the Arbuckle; B/KC & Arbuckle formations were picked 4' & 15' low respectively.

The 3D seismic indicated this location had complete closure (isolation from surrounding production), thus the low structural position could not alone condemn the Arbuckle. Upon completion of the logging operation, two straddle tests were conducted over the top 17' & 27' of the Arbuckle. After all sample, log, and drill stem test data was gathered and evaluated, the decision was made to set 5 1/2" production casing to further evaluate Tarkio, Topeka, Toronto, & Lansing zones in the Eulert #3-2 well on 11/15/17.

ROCK TYPES

	Anhy		Clyst		Gyp		Mrlst		Shgy
	Bent		Coal		Igne		Salt		Slstst
	Brec		Congl		Lmst		Shale		Ss
	Cht		Dol		Meta		Shcol		Till

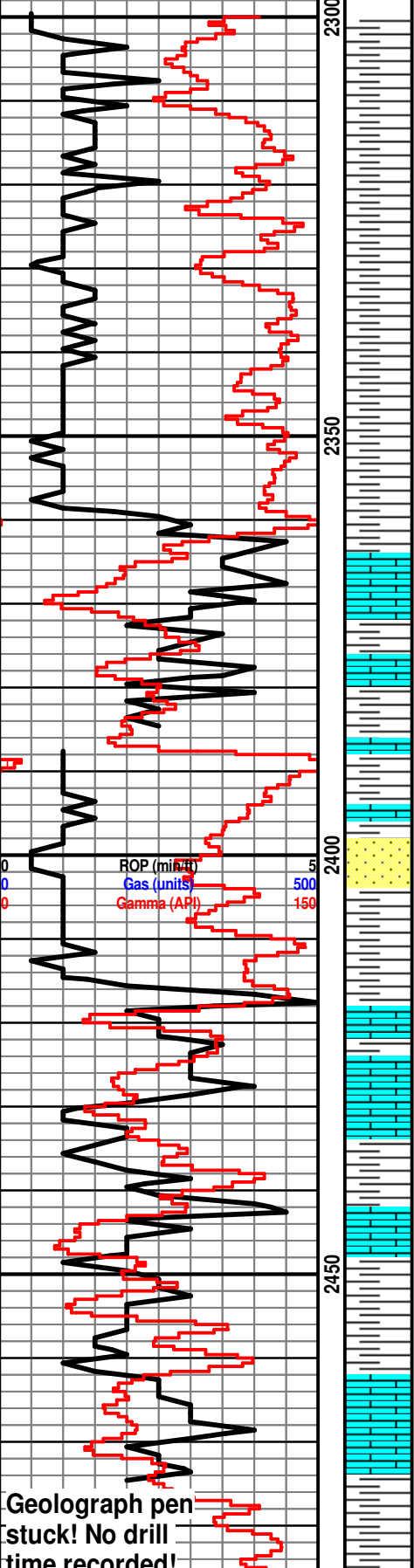
OTHER SYMBOLS

POROSITY	<input type="checkbox"/> Vuggy	ROUNDING	<input type="checkbox"/> Spotted	EVENT
<input type="checkbox"/> Earthy		<input type="checkbox"/> Rounded	<input type="checkbox"/> Ques	<input type="checkbox"/> Rft
<input type="checkbox"/> Fenest	SORTING	<input type="checkbox"/> Subrnd	<input type="checkbox"/> Dead	<input type="checkbox"/> Sidewall
<input type="checkbox"/> Fracture	<input type="checkbox"/> Well	<input type="checkbox"/> Subang		
<input type="checkbox"/> Inter	<input type="checkbox"/> Moderate	<input type="checkbox"/> Angular	INTERVAL	
<input type="checkbox"/> Moldic	<input type="checkbox"/> Poor	<input type="checkbox"/> OIL SHOW	<input type="checkbox"/> Core	
<input type="checkbox"/> Organic		<input type="checkbox"/> Even	<input type="checkbox"/> Dst	
<input type="checkbox"/> Pinpoint				

Curve Track 1	Depth	Lithology	Geological Descriptions	DST/Mud/Survey																		
ROP (min/ft) ————— Gas (units) - - - - - Gamma (API) —————	22																					
0 ROP (min/ft) 5 0 Gas (units) 500 0 Gamma (API) 150																						
11/7/17 Spud @ 4:30pm			The open-hole logging was performed by Mr. Casey Patterson with Gemini Wireline, LLC (Hays, KS). Logs included: Compensated Density/ Compensated Neutron, Dual Induction, and Micro Resistivity. Formation tops and datums from the open-hole logs include the following: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Formation</th> <th>E-Log</th> <th>Datum</th> </tr> </thead> <tbody> <tr> <td>Anhydrite</td> <td>783</td> <td>938</td> </tr> <tr> <td>Tarkio</td> <td>2362</td> <td>-641</td> </tr> <tr> <td>Topeka</td> <td>2609</td> <td>-888</td> </tr> <tr> <td>Heebner</td> <td>2827</td> <td>-1106</td> </tr> <tr> <td>Toronto</td> <td>2846</td> <td>-1125</td> </tr> </tbody> </table>	Formation	E-Log	Datum	Anhydrite	783	938	Tarkio	2362	-641	Topeka	2609	-888	Heebner	2827	-1106	Toronto	2846	-1125	Tester: Ray Schwager Mud Engineer: Dennis Rector
Formation	E-Log	Datum																				
Anhydrite	783	938																				
Tarkio	2362	-641																				
Topeka	2609	-888																				
Heebner	2827	-1106																				
Toronto	2846	-1125																				
11/8/17 @ 7:00am CTCH, 517'																						
11/9/17 @ 7:00am Drlg, 1,134'																						
11/10/17 @ 7:00am Drlg, 2,092'																						
11/11/17 @ 7:00am Drlg, 2,562'																						
11/12/17 @ 7:00am DST #1, 2,910'	2250																					
11/13/17 @ 7:00am Drlg, 2,956'																						

11/14/17 @ 7:00am
 Drig, 3,170'
 11/15/17 @ 7:00am
 DST #6, 3,250'
 11/15/17 @ 9:45pm
 Completed, 3,250'

Lansing	2877	-1156
B/KC	3134	-1413
Arbuckle	3193	-1472
LTD	3247	-1526



Sh: lt gry-drk gry

Sh: ala

Sh: lt gry-drk gry, scat rd

Sh: ala

Tarkio 2359' (-638)

Ls: tan-gry-fn-sub xln, mostly DNS, NSFO

Sh: lt - drk gry

Ss: qtz, off wh-gry, fn-vry fn grn, well sorted, poor-fair int grn porosity, scat oil stn, VSSF0

Sh: ala

Ls: tan-gry, fn-sub xln, mostly DNS, NSFO

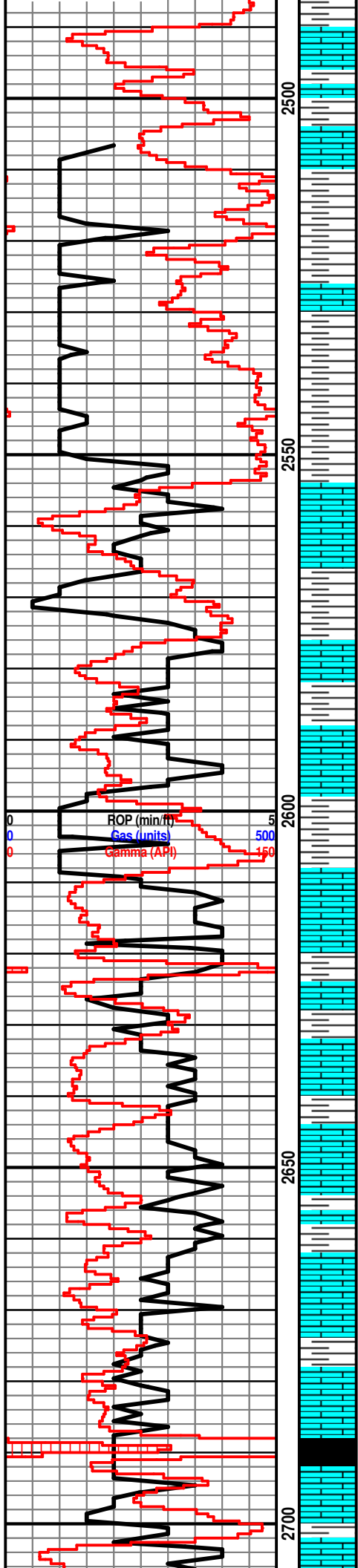
Ls: ala

Sh: drk gry-brn

Ls: tan-gry, fn xln, mostly DNS, NSFO

Sh: ala

Geolograph pen
 stuck! No drill
 time recorded!



Sh: lt gry-drk gry

Sh: ala

Ls: tan-gry, fn-sub xln, mostly DNS, NSFO

Ls: tan-gry, fn xln, scat foss, mostly DNS, NSFO

Sh: lt gry-drk gry

Topeka 2605' (-884)

Ls: tan-gry, fn xln, few pcs w/ fair int xln & vuggy porosity, scat oil stn in porosity, NSFO

Sh: lt gry

Ls: off wh-tan, vry fn-fn xln, poor int xln & scat pp vuggy porosity, good oil sat, SSFO, fair odor

Ls: tan-gry, fn xln, mostly DNS, NSFO, scat fossil

Sh: lt gry

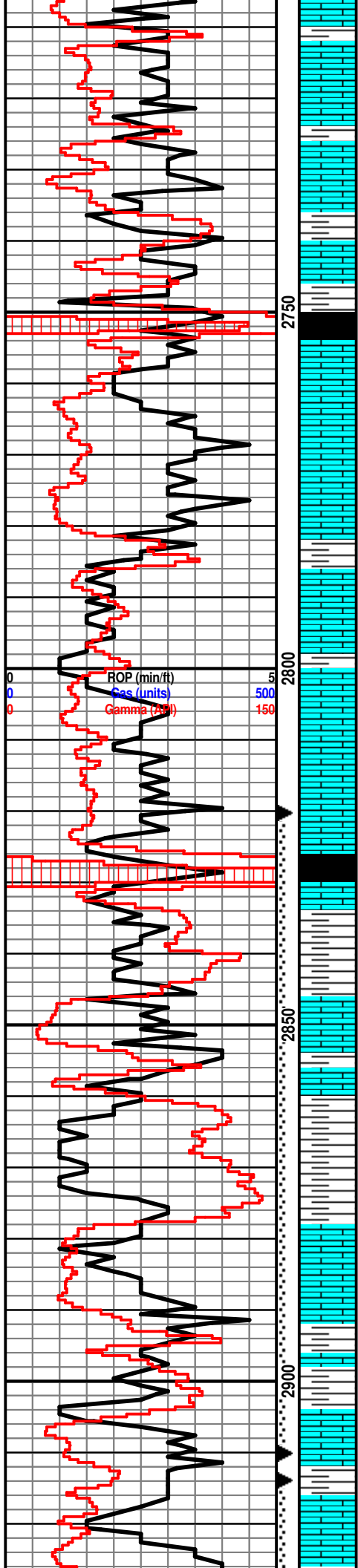
Ls: ala

Ls: tan-gry, fn xln, mostly DNS, NSFO, scat chert-off wh

Sh: drk gry, scat blk

Sh: lt gry-drk gry

Ls: tan-gry, fn-sub xln, mostly DNS, NSFO



Sh: lt gry-drk gry

Ls: tan-gry, fn xln, scat oil stn, scat foss

Sh: lt gry-drk gry

Sh: drk gry-blk, carb

Ls: off wh-tan, fn xln, fair int xln porosity, scat foss, scat-fair oil stn, VSSFO, sl odor

Ls: tan-gry, fn-sub xln, mostly DNS, NSFO

Sh: drk gry

Sh: ala

Ls: tan-gry, fn xln, foss, fair int xln & scat foss porosity, fair oil sat, SSFO, sl-fair odor

Heebner 2823' (-1102)
Sh: drk gry-blk, carb, fissile

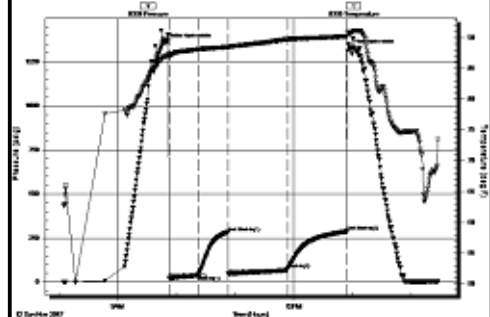
Toronto 2841' (-1120)
Ls: off wh-tan, fn xln, poor-fair int xln porosity, fair-good oil stn, SSFO, fair odor
Ls: off wh-tan, fn xln, mostly DNS, NSFO
Sh: lt gry-grn, soft

Lansing 2873' (-1152)
Ls: off wh-tan, fn xln, poor-fair int xln & scat pp vuggy porosity, scat foss, fair oil stn in porosity, SSFO, sl-fair odor
Sh: lt - drk gry, soft

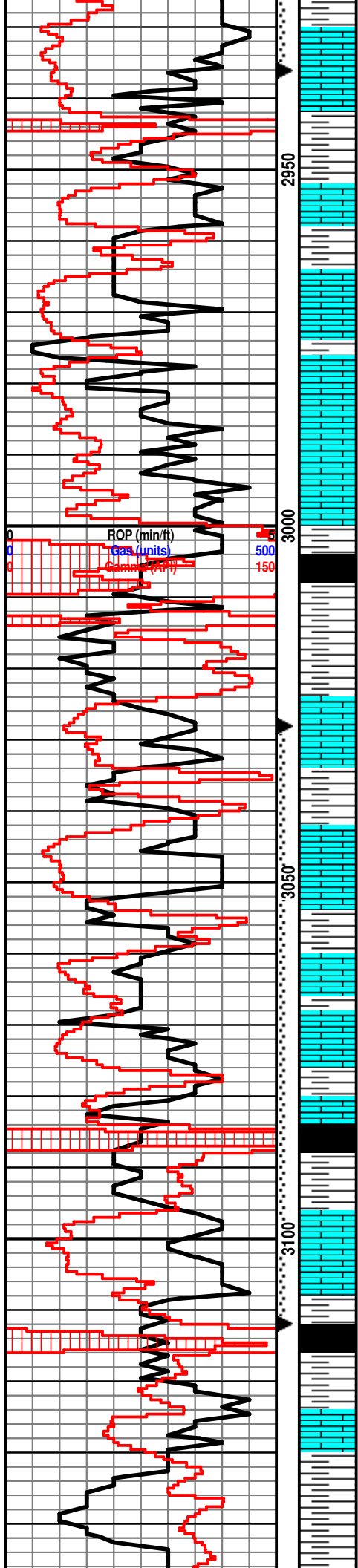
Ls: off wh-tan, fn xln, ool, poor-fair ool porosity, scat vuggy porosity, fair-good oil sat, SSFO, fair odor
Sh: lt gry

Ls: off wh-tan, fn xln, scat foss, fair int xln & vuggy porosity, fair-good oil sat, SSFO, fair odor

DST #1 2,820-2,910' (Toronto - LKC C)
30"-30"-60"-60"
IF: Weak blow, built to 4"
FF: Weak blow, built to 4"
Rec: 215' GIP, 90' SOCM (1%O, 99%M)
FP: 20-37, 46-74#
SIP: 283-287#
HP: 1357-1324#



DST #2 2,914-2,936' (LKC D)
30"-30"-60"-60"
IF: BOB in 3 min, no blow back
FF: BOB in 3 min, no blow back
Rec: 465' GIP, 62' OCMW (5%O, 20%M, 75%WA), 30' O&GCM (10%O



Ls: off wh-tan, fn-sub xln, mostly DNS, NSFO

Sh: lt gry-drk gry

Ls: off wh-tan, fn xln, scat int xln porosity, scat oil stn, NSFO, sl odor, chalky

Sh: lt gry-brn

Ls: off wh-tan, fn xln, fair int xln porosity, scat pp vuggy porosity, fair oil sat, SSFO, fair odor, chalky

Ls: off wh-tan, fn xln, ool, fair-good oom porosity, scat dead oil stn, VSSFO, sl-fair odor, scat chert-off wh

Ls: off wh-tan, fn xln, poor int vuggy porosity, scat dead oil stn, NSFO

Sh: drk gry-blk

Ls: tan-lt gry, fn xln, poor int xln porosity, mostly DNS, NSFO, no odor, scat chert-off wh

Sh: lt gry

Ls: off wh-tan, fn xln, few pcs ool, poor int xln porosity, sl oil stn, VSSFO, sl odor, scat chert-off wh

Sh: lt gry-drk gry, brn

Ls: off wh-tan, fn xln, fair int xln & vuggy porosity, scat foss, good oil sat, FSFO, few pcs w/ GSFO, fair-good odor

Sh: drk gry-blk

Sh: lt gry-drk gry

Ls: off wh-tan, fn xln, poor-fair int xln porosity, fair-good oil sat, FSFO, fair-good odor

Sh: drk gry-blk

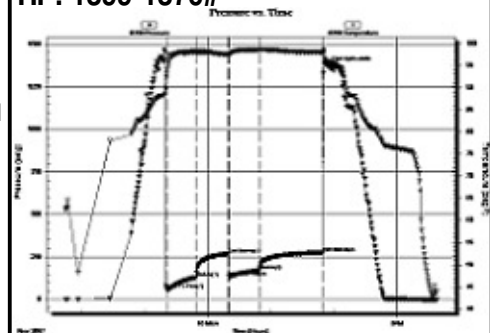
Sh: drk gry-brn

Ls: tan-gry, fn-sub xln, mostly DNS, NSFO

B/KC 3132' (-1411)

Sh: drk gry-brn

20%G, 15%W, 50 O&GCM (10%O, 10%G, 5%W, 75%M), 248' Water
 FP: 63-130, 135-172#
 SIP: 268-276#
 HP: 1399-1370#



DST #3 3,028-3,112' (LKC I-K)

30"-30"-30"-30"

IF: surface blow, built to 1/4"

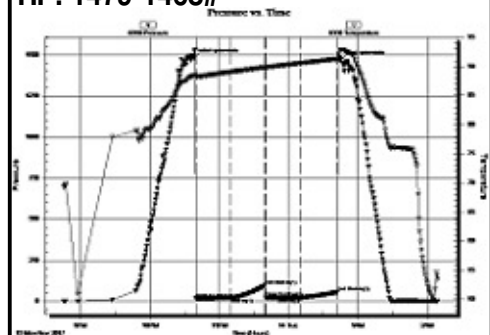
FF: No blow

FP: 19-21, 23-23#

Rec: 5' OCM (5%O, 95%M)

SIP: 96-56#

HP: 1479-1468#



DST #4 3,154-3,210' (Arbuckle)

30"-30"-15"- pull tool

IF: weak blow, 1/2"

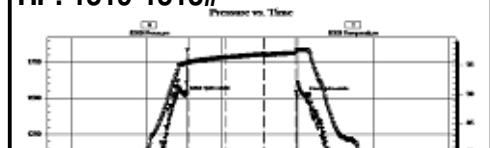
FF: No blow

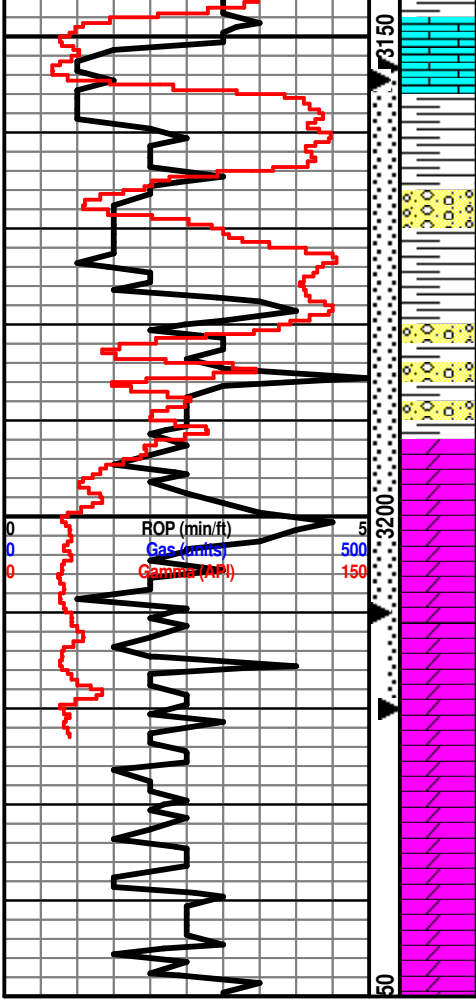
Rec: 5' OCM (8%O, 92%M)

FP: 20-24, 26-29#

SIP: 543-29#

HP: 1519-1513#





Ls: tan-gry, fn-sub xln, mostly DNS, NSFO, scat chalky, scat chert-off wh-gry

Sh: lt gry-brn

Cong: tan-brn, mostly DNS, scat sh: drk gry-grn

Arbuckle 3180' (-1459)

Cong: tan-gry, fn-sub xln, mostly DNS, scat sh: drk gry-grn

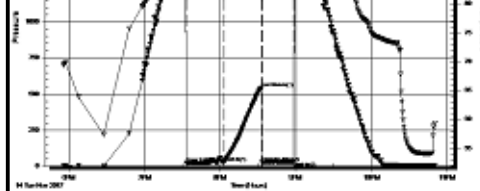
Dolo: off wh-tan, fn xln, fair suc xln porosity, good oil sat, GSFO, good odor, fair yel fluor, scat chert-off wh

Dolo: off wh-tan, fn-md xln, fair int xln porosity, fair-good oil sat, FSFO, good odor, dull yel fluor

Dolo: off wh-tan, fn-md xln, fair int xln porosity, fair-good oil sat, FSFO, good odor, fair yel fluor, scat chert-off wh

Dolo: off wh-tan, fn-md xln, fair int xln porosity, fair-good oil sat, VSSFO, fair odor, dull yel fluor

Dolo: off wh-tan, fn-md xln, fair-good int xln porosity, NSFO



DST #5 3,168-3,220' (Arbuckle)
7' of fill in the hole, packers failed

DST #6 3,153-3,220' (Arbuckle)
15"-30"-5"-30"

IF: BOB in 2 min, no blow back
FF: BOB in 2 min, no blow back

Rec: 760' Water
FP: 126-322, 344-395#
SIP: 1051-1061#
HP: 1519-1494#

