



INTEGRITY EXPLORERSM
GAMMA RAY LOG
CASING COLLAR LOCATOR

FILE NO: US205663
 COMPANY: Antero Resources Corporation
 WELL: Elk Lick Unit 2H
 FIELD: Cashew Pad
 COUNTY: Ritchie STATE WV

API NO: 47-085-10420-0000
 LOCATION: TWP: West Union
 LAT 39.180581 LONG -80.850453
 OTHER SERVICES: NA

Version: Eclipse 7 up1p7
 PERMANENT DATUM: GL. ELEVATION NA
 LOG MEASURED FROM: KB. 30 FT ABOVE P.D.
 DRILL. MEAS. FROM: Kelly Bushing
 ELEVATIONS: KB 30 FT, DF NA, GL NA

DATE	TRIP	17-Oct-2022	1
RUN			
SERVICE ORDER		US205663	
DEPTH DRILLER		20905 FT	
DEPTH LOGGER		6675 FT	
BOTTOM LOGGED INTERVAL		6671 FT	
TOP LOGGED INTERVAL		15 FT	
TIME STARTED		16:45	
TIME FINISHED		21:15	
OPERATOR RIG TIME		NA	
TYPE OF FLUID IN HOLE		Fresh Water	
FLUID DENSITY		NA	
FLUID SALINITY		NA	
FLUID LEVEL		45 FT	
LOGGED CEMENT TOP		NA	
WELLHEAD PRESSURE		0 PSI	
MAXIMUM HOLE DEVIATION		60 DEG	
NOMINAL LOGGING SPEED		35 F/MIN	
MAX. RECORDED TEMP.		NA	
REFERENCE LOG		NA	
REFERENCE LOG DATE		NA	
EQUIP. NO.	LOCATION	9778	Buckhannon
RECORDED BY		C. Cutright/H. Raza	
WITNESSED BY		Daniel Martinez	

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE THE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

BOREHOLE RECORD

BIT SIZE	FROM	TO

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
5 IN	18 LB/F	P-110	30 FT	20855 FT
6.75 IN	NA	NA	2657 FT	20905 FT
9.875 IN	NA	NA	390 FT	2657 FT
13.5 IN	NA	NA	130 FT	390 FT
20 IN	NA	NA	30 FT	130 FT

REMARKS

RUN 1 TRIP 1: Crew: C. Cutright, H. Raza, R. Black, C. Godwin, N. Adams, J. Sattler.

Log was correlated to maker joint set from KB.

Wellhead: 7 1/16" 10K flange.

Top of decent cement was 3100'.

Depth was shifted 31.5' to match rig KB.

Borehole conditions effected the tool data

RECEIVED
 Office of Oil and Gas
 APR 07 2023
 WV Department of Environmental Protection

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	CCL	2330XA	13257703	SLICK
1	1	GR	1339XA	11904286	CENTRALIZED
1	1	ELEC	1401EA	14064456	CENTRALIZED
1	1	INTEX	1401MA	13892667	PAD TOOL
1	1	VDL	1424PA	Z173892	CENTRALIZED

**INTEGRITY eXplorer CEMENT EVALUATION SERVICE
MAIN PASS**

PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1a\ElkLick-2_Antero_INTEX_Cashew_10_17_22\p333b03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 13.898 ft BOTTOM DEPTH: 6654.242 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
INTeX	FILTER, 2pf	medium (1)		"	"
	FILTER, 4pf	medium (1)		"	"

INTeX

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING PARAMETERS	Casing ID	4.285	in	TOP	BOTTOM
	Pipe Thickness	0.358	in	"	"
	CCL Gain	0.4		"	"
ATTENUATION	Use Thickness	Yes		"	"
	SH0 Pipe Range	Short Path		"	"
	A0 Pipe Range	Short Path		"	"

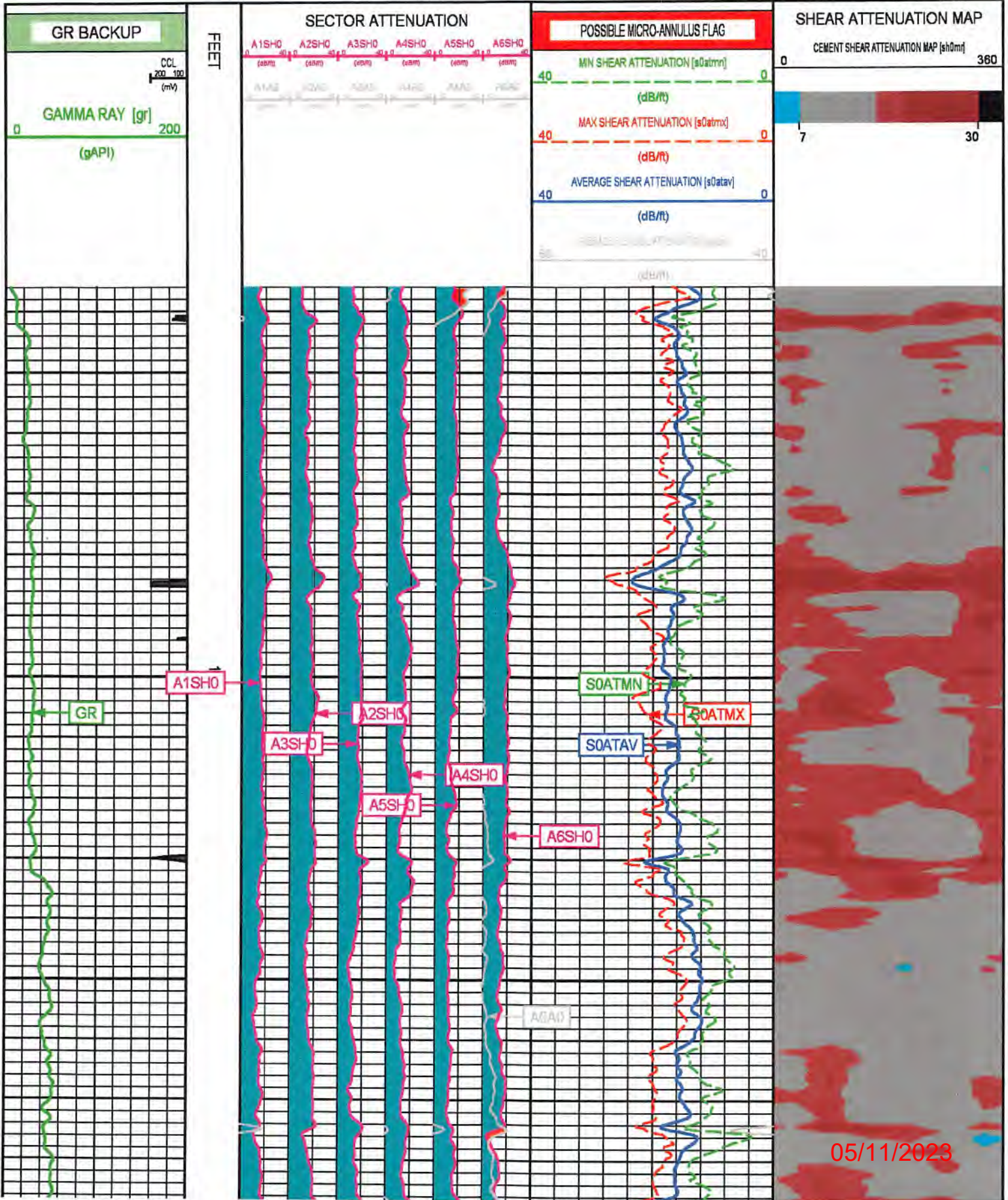
CURVE DESCRIPTION REPORT

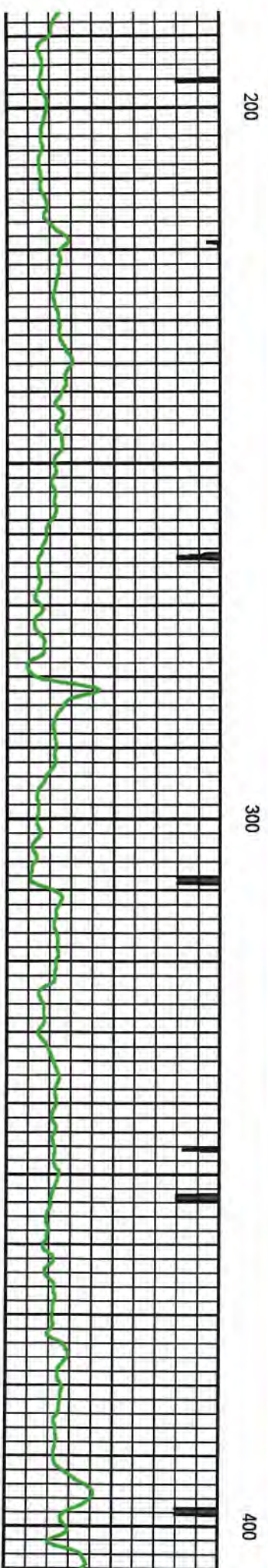
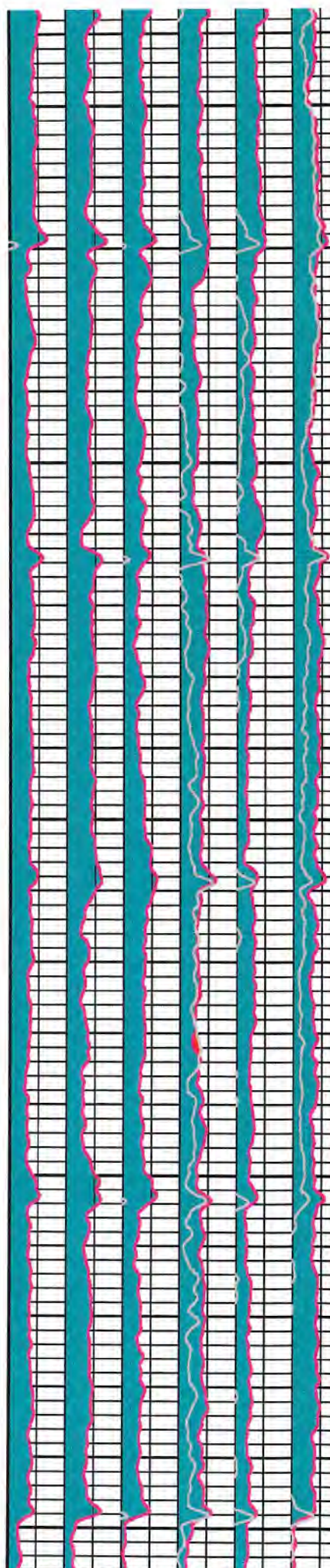
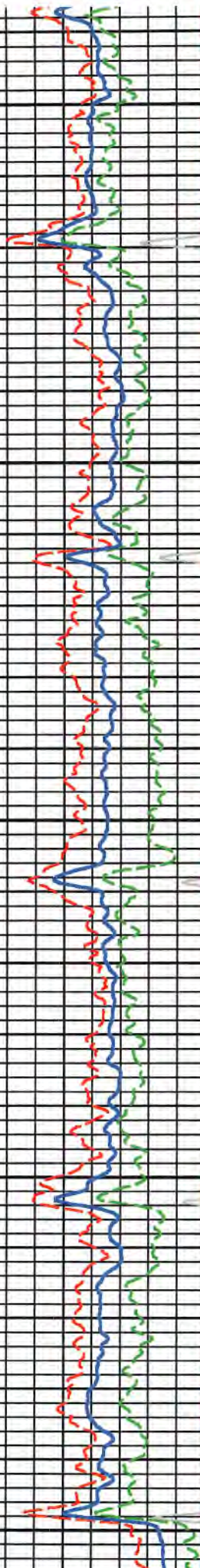
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
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F1:A1SH0	Oct 17 17:46:03 2022	ATTN, SECTOR 1, SHEAR SH0
F1:A2A0	Oct 17 17:46:03 2022	ATTN, SECTOR 2, LAMB A0
F1:A2SH0	Oct 17 17:46:03 2022	ATTN, SECTOR 2, SHEAR SH0
F1:A3A0	Oct 17 17:46:03 2022	ATTN, SECTOR 3, LAMB A0
F1:A3SH0	Oct 17 17:46:03 2022	ATTN, SECTOR 3, SHEAR SH0
F1:A4A0	Oct 17 17:46:03 2022	ATTN, SECTOR 4, LAMB A0
F1:A4SH0	Oct 17 17:46:03 2022	ATTN, SECTOR 4, SHEAR SH0
F1:A5A0	Oct 17 17:46:03 2022	ATTN, SECTOR 5, LAMB A0
F1:A5SH0	Oct 17 17:46:03 2022	ATTN, SECTOR 5, SHEAR SH0
F1:A6A0	Oct 17 17:46:03 2022	ATTN, SECTOR 6, LAMB A0
F1:A6SH0	Oct 17 17:46:03 2022	ATTN, SECTOR 6, SHEAR SH0
F1:CCL	Oct 17 17:46:03 2022	CASING COLLAR LOCATOR
F1:GR	Oct 17 17:46:03 2022	GAMMA RAY
F1:LAATAV	Oct 17 17:46:03 2022	AVG ATTN, LAMB A0
F1:S0ATAV	Oct 17 17:46:03 2022	AVG ATTN, SHEAR SH0
F1:S0ATMN	Oct 17 17:46:03 2022	MIN ATTN, SHEAR SH0
F1:S0ATMX	Oct 17 17:46:03 2022	MAX ATTN, SHEAR SH0
F1:SHOMR	Oct 17 17:46:03 2022	CEMENT MAP RAW VALUES, SHEAR S0

Presentation : BAKER-75650:C:\dat1a\ElkLick-2_Antero_INTEX_Cashew_10_17_22\
 Intex_Main+p333b03.fvpdf [5"/100' Scale]
Plot Interval : 36 - 6672 Feet

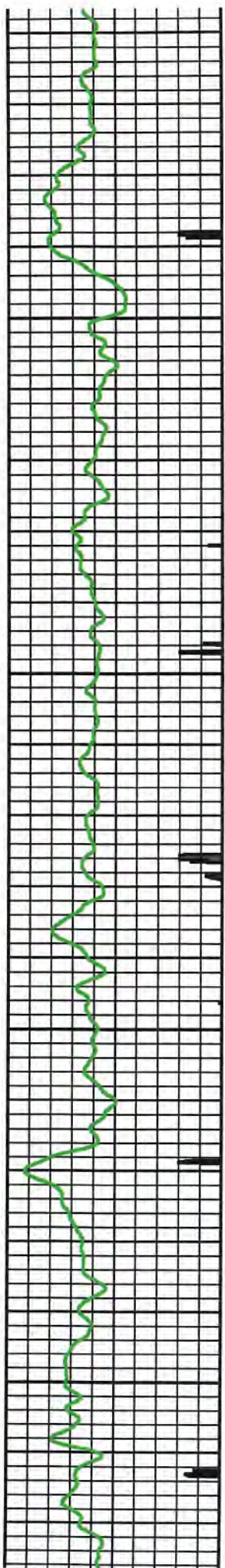
05/11/2023

Data File 1 : F1 : BAKER-75650:C:\dat1a\ElkLick-2_Antero_INTEX_Cashew_10_17_22\p333b03.xtf
 Created On : Oct 17 17:46:03 2022
 Company : Antero
 Well : Elk Lick 2
 Field : Cashew
 File Interval : 11 - 6684.5 Feet
 OCT : p333b



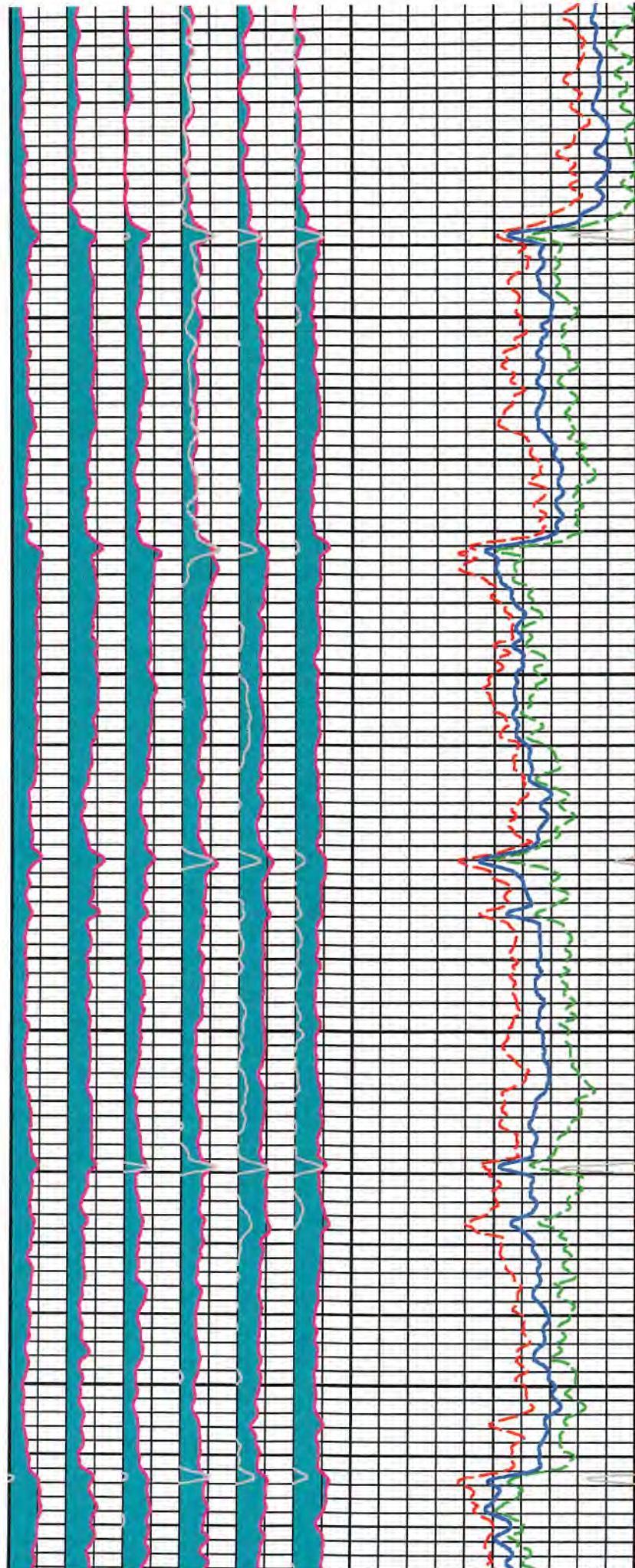


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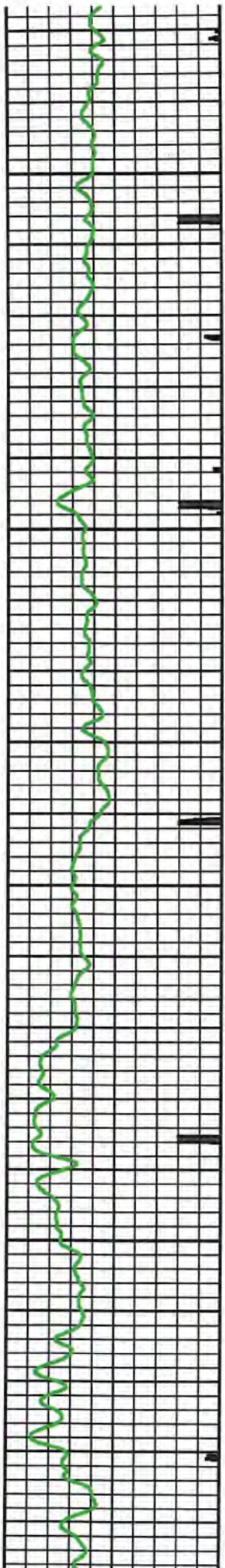


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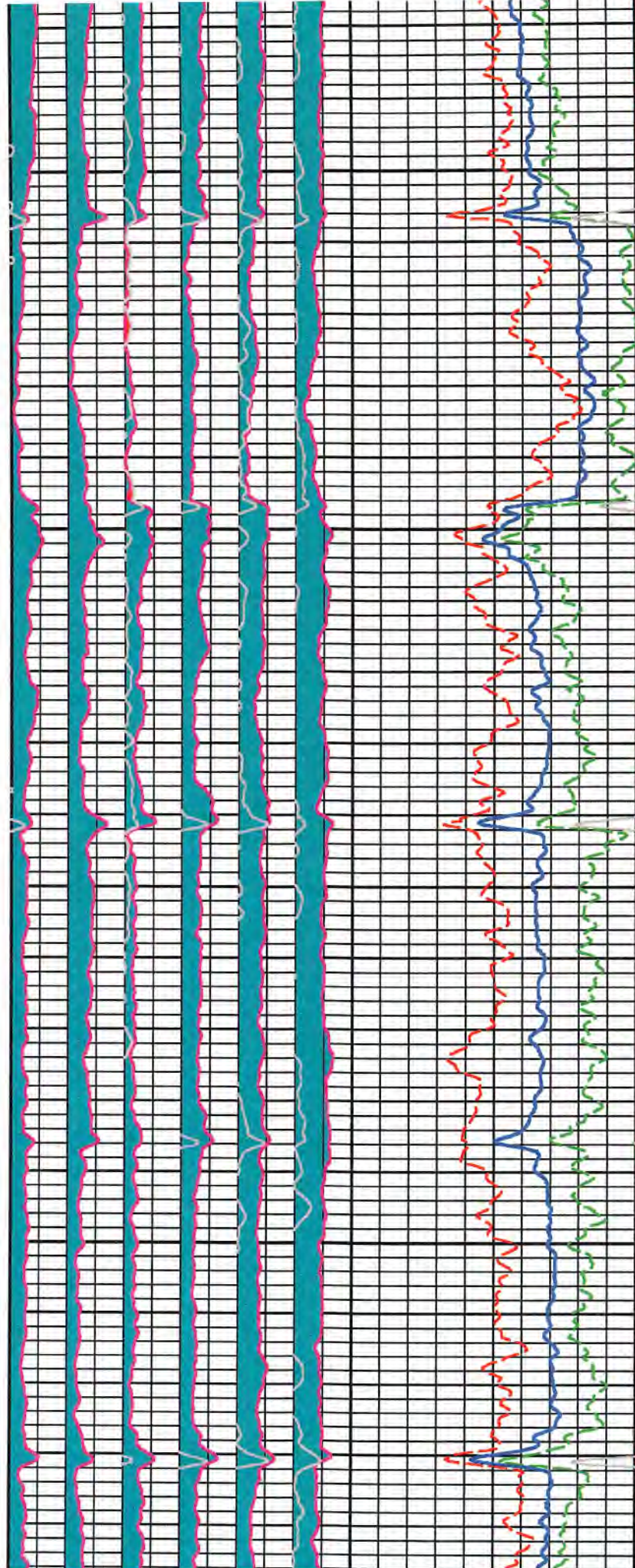


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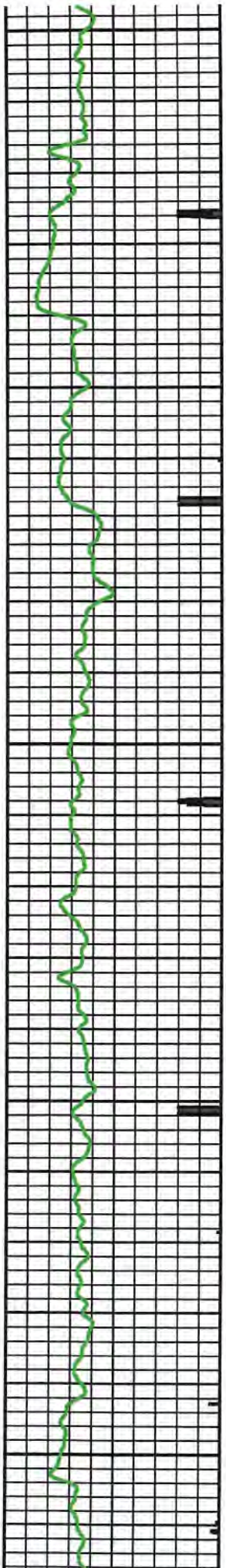


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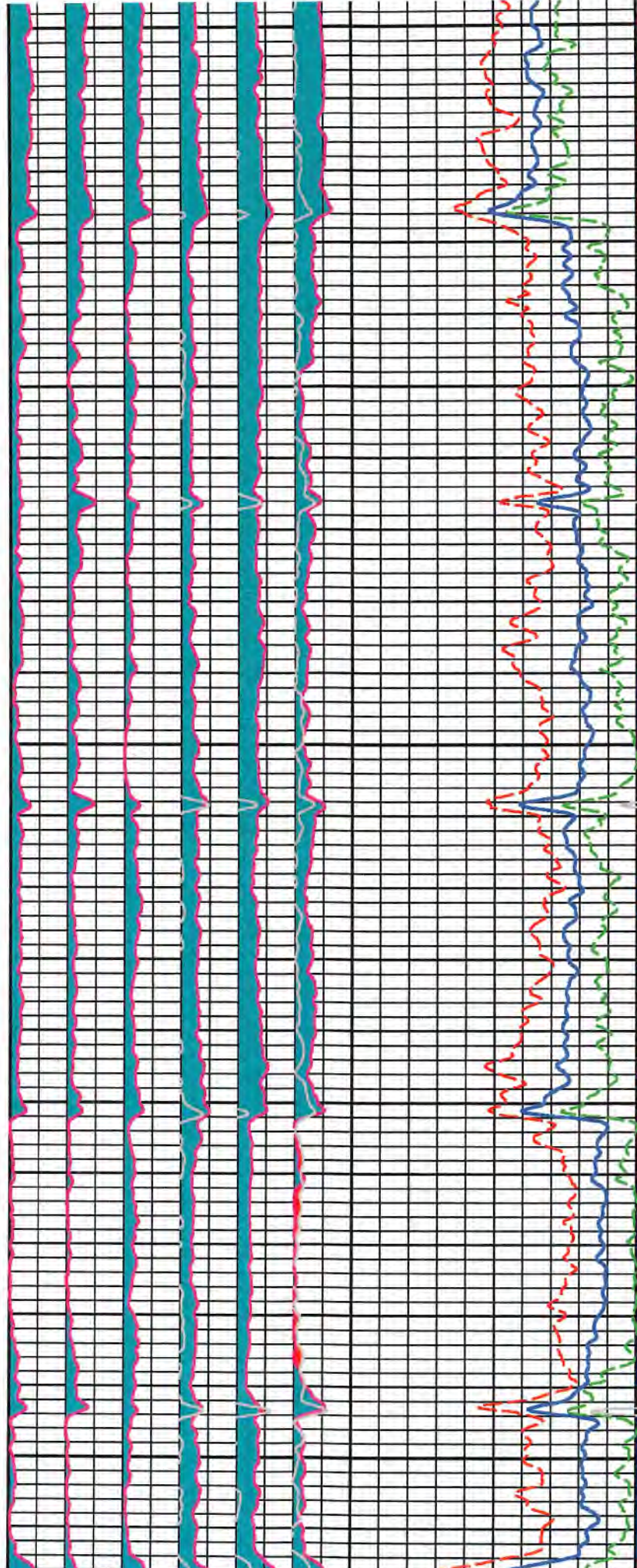


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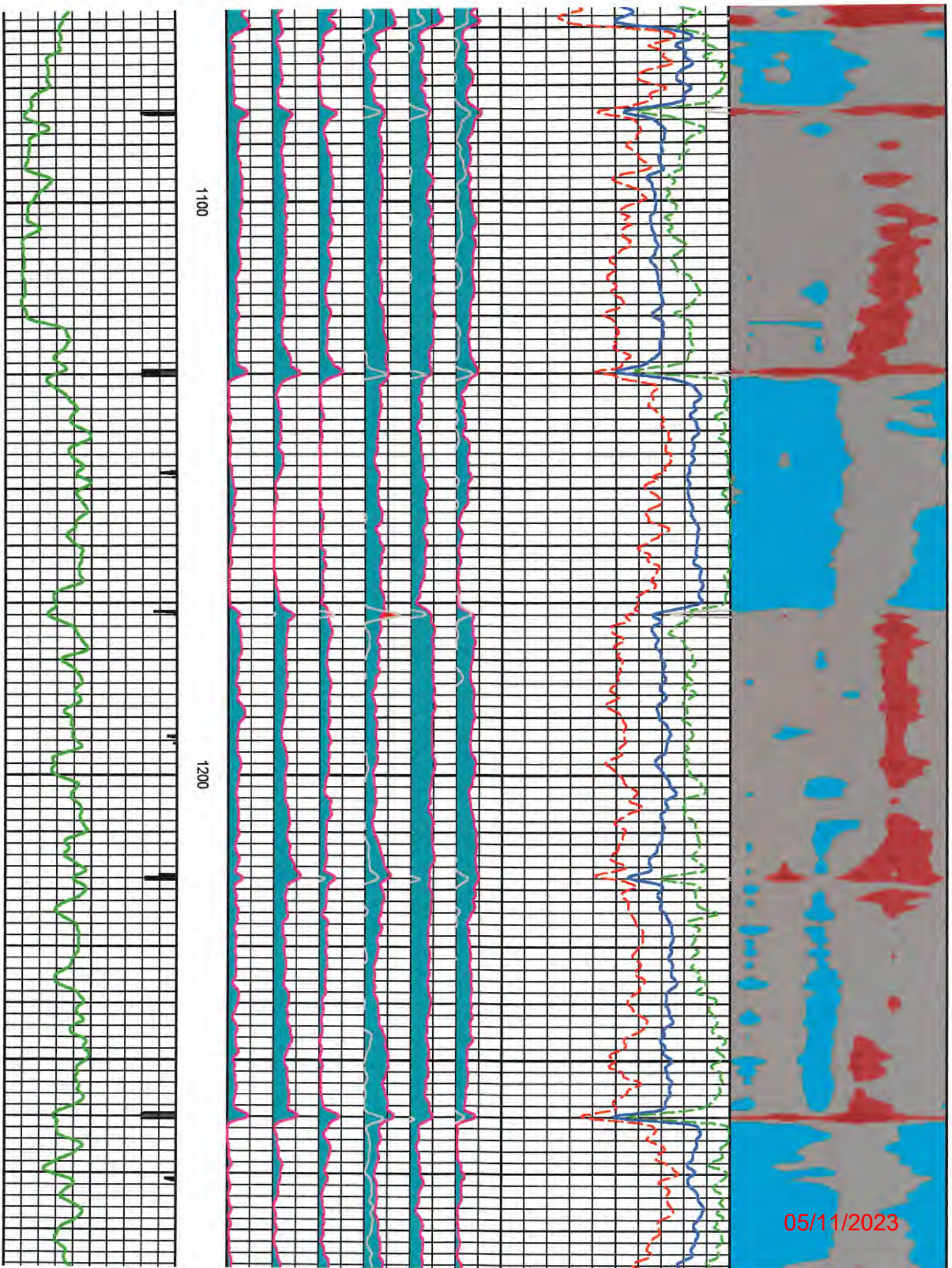


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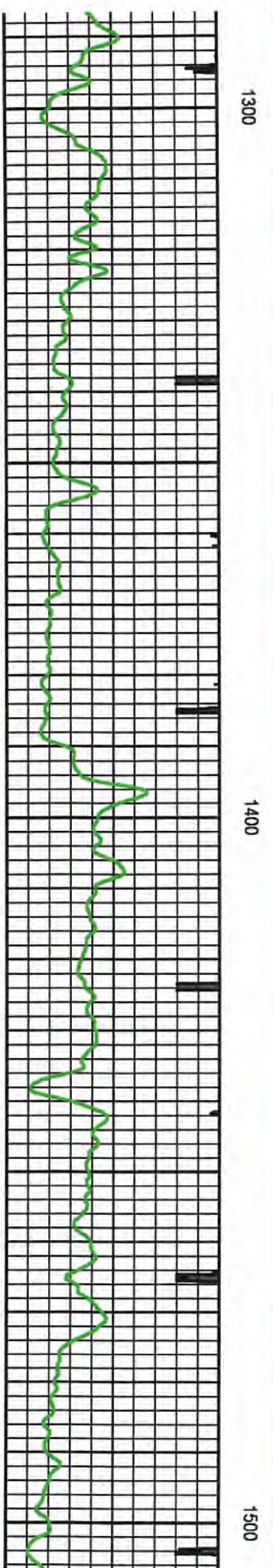
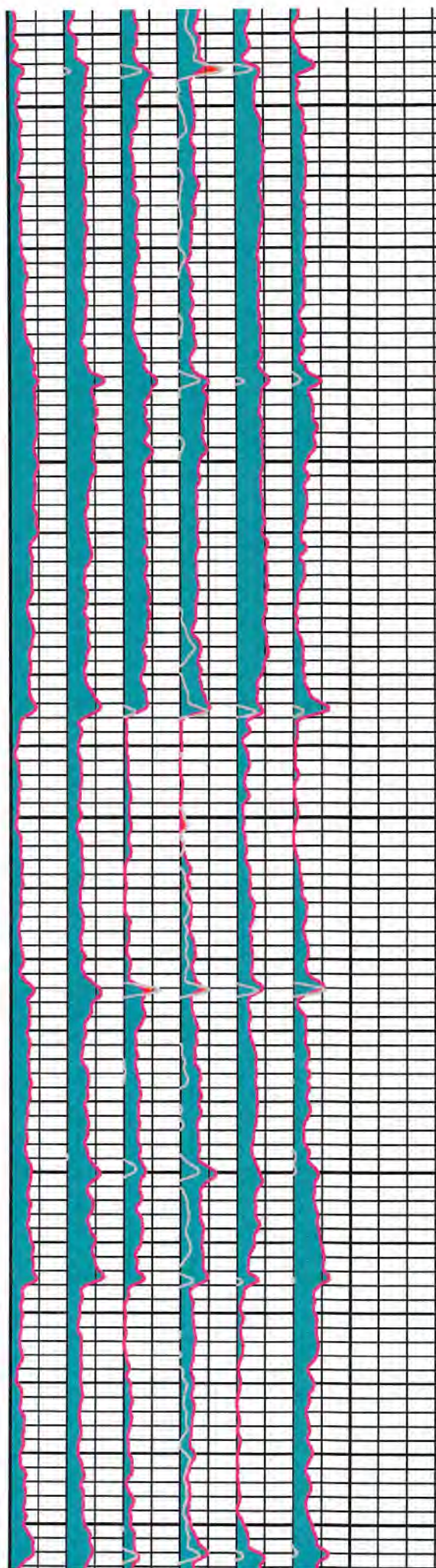
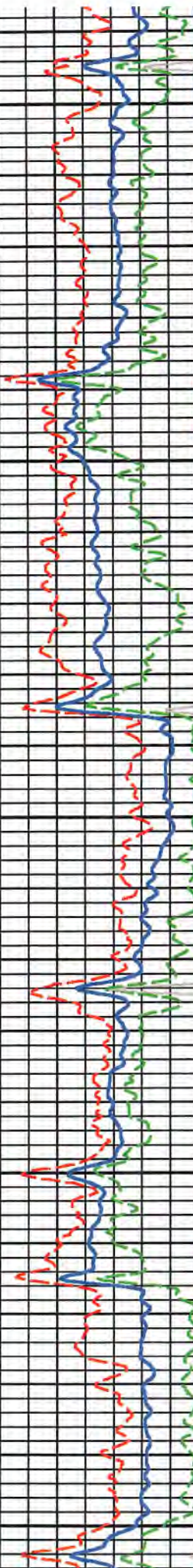
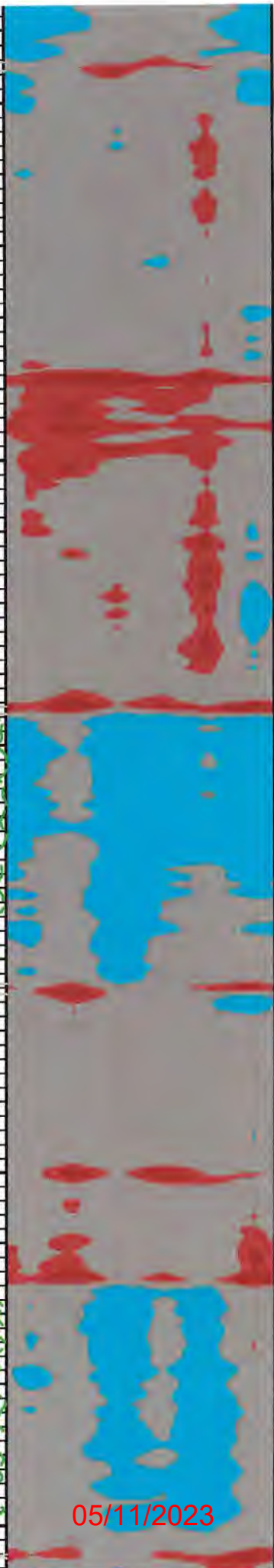
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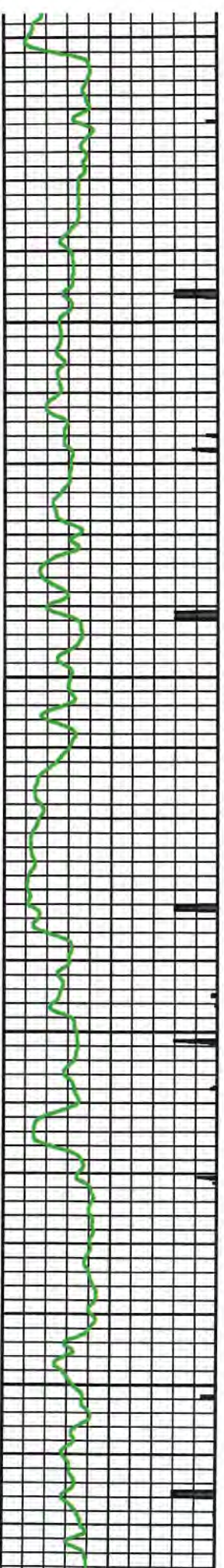


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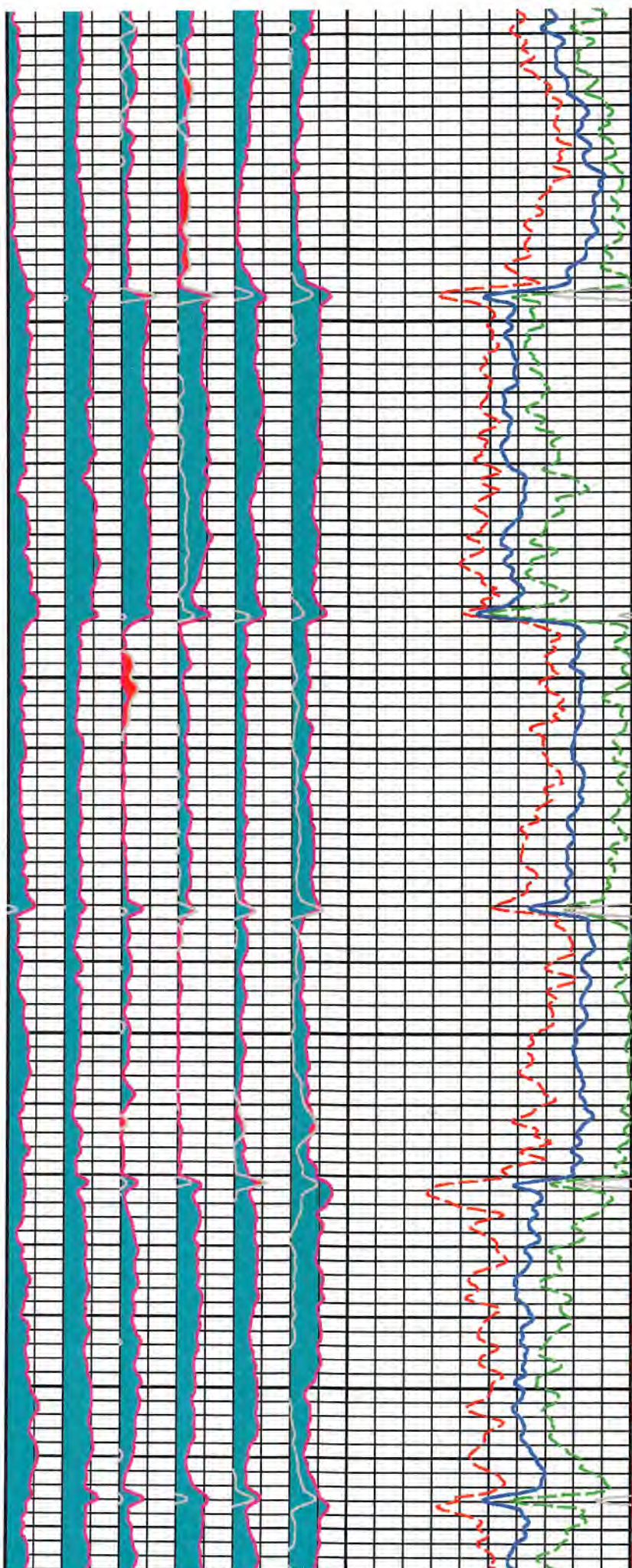
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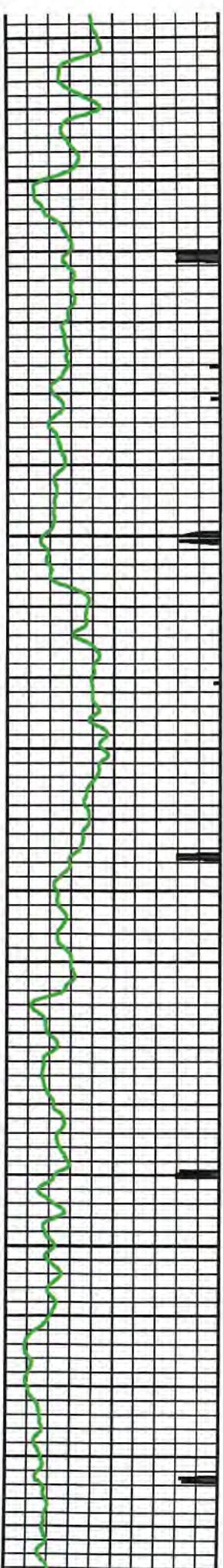


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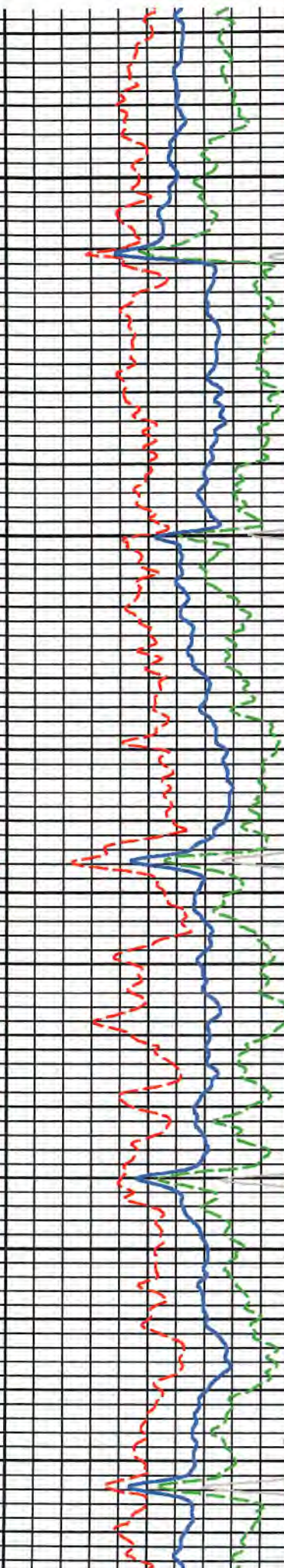
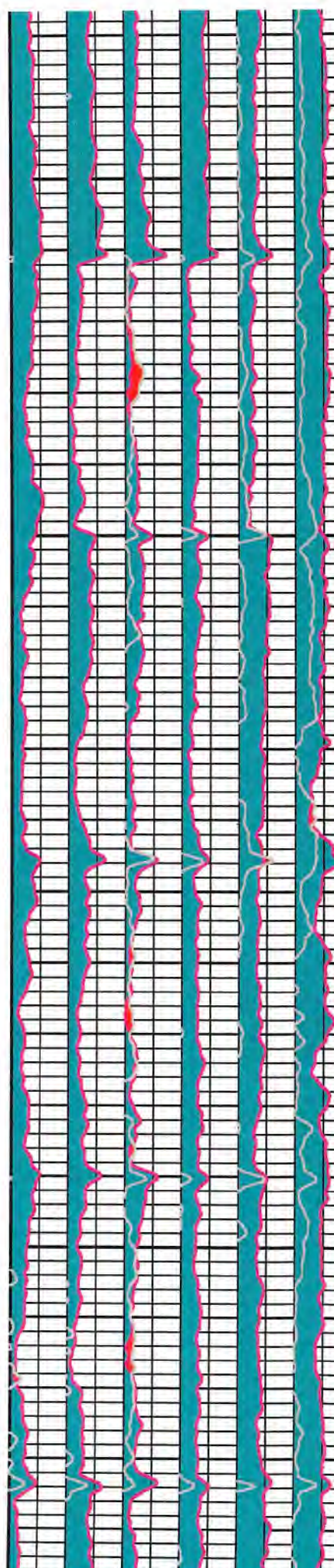


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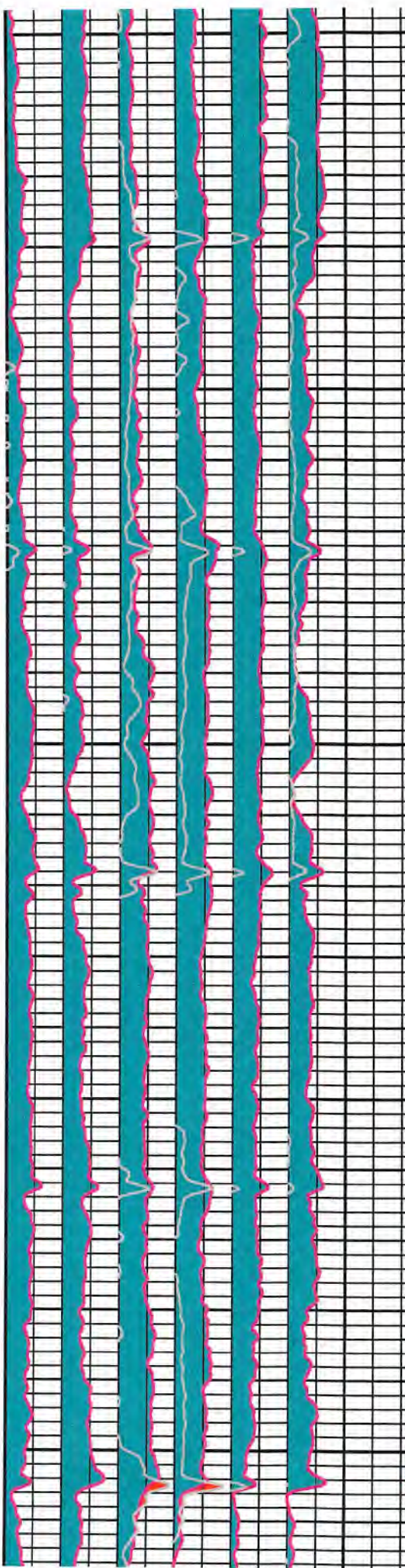
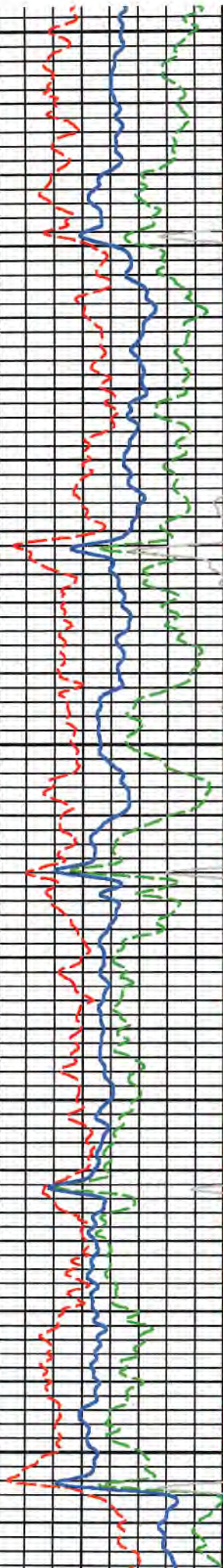
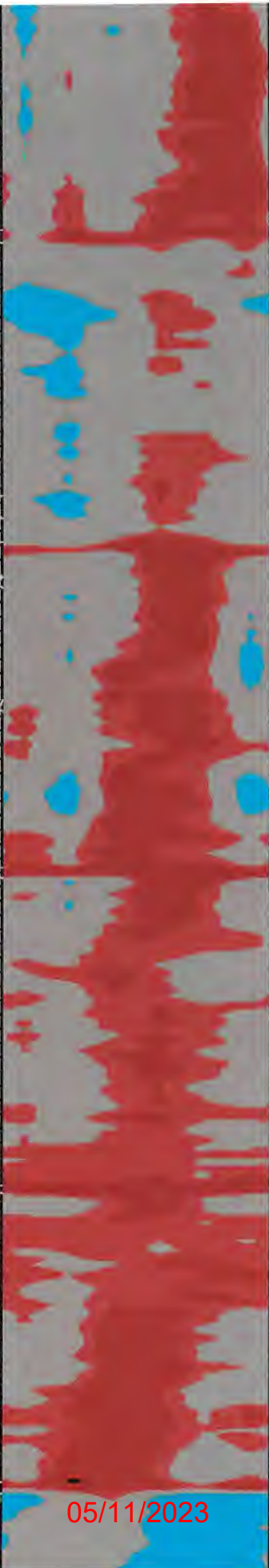


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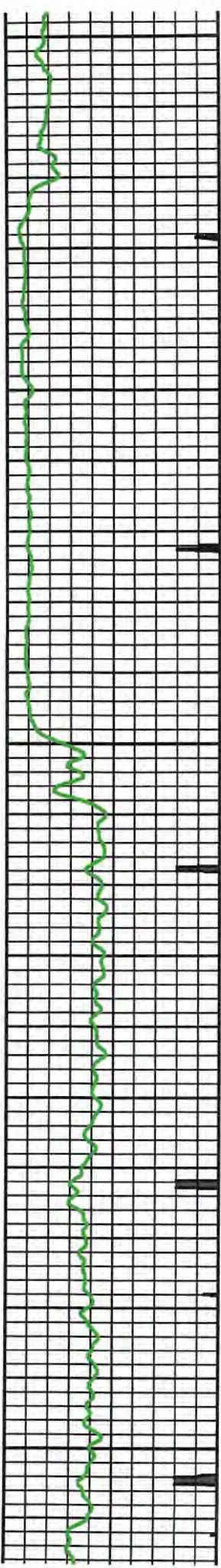


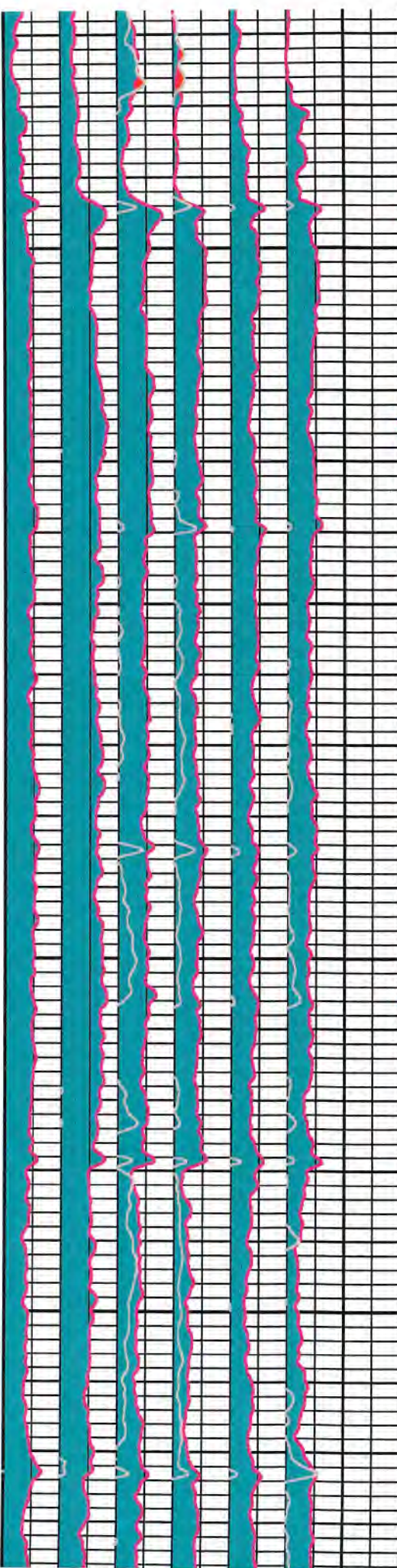
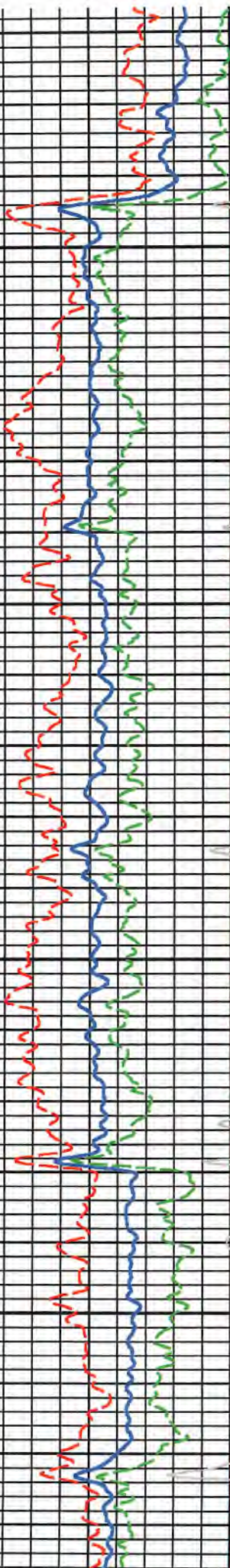
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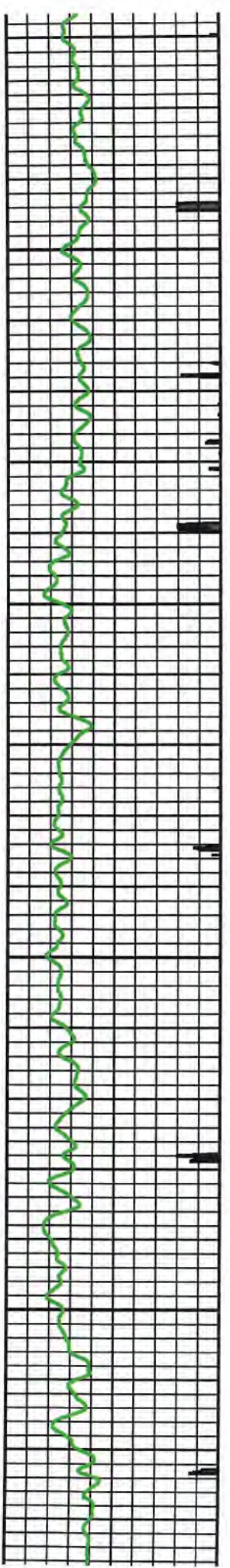
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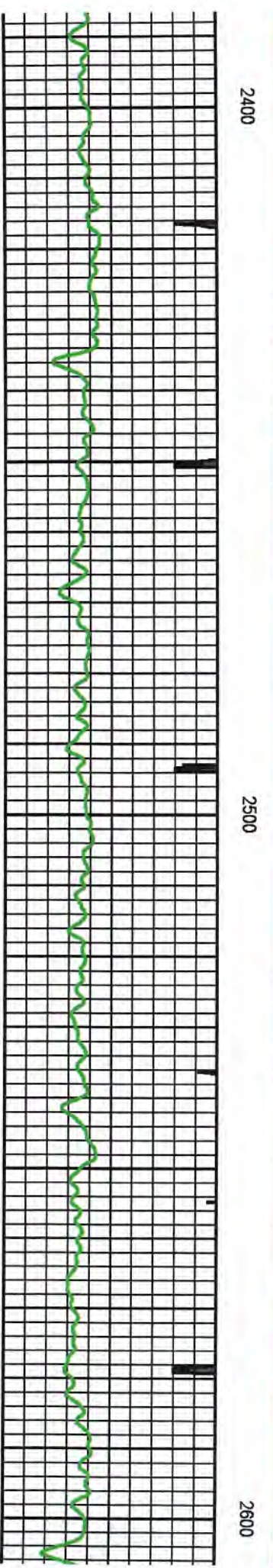
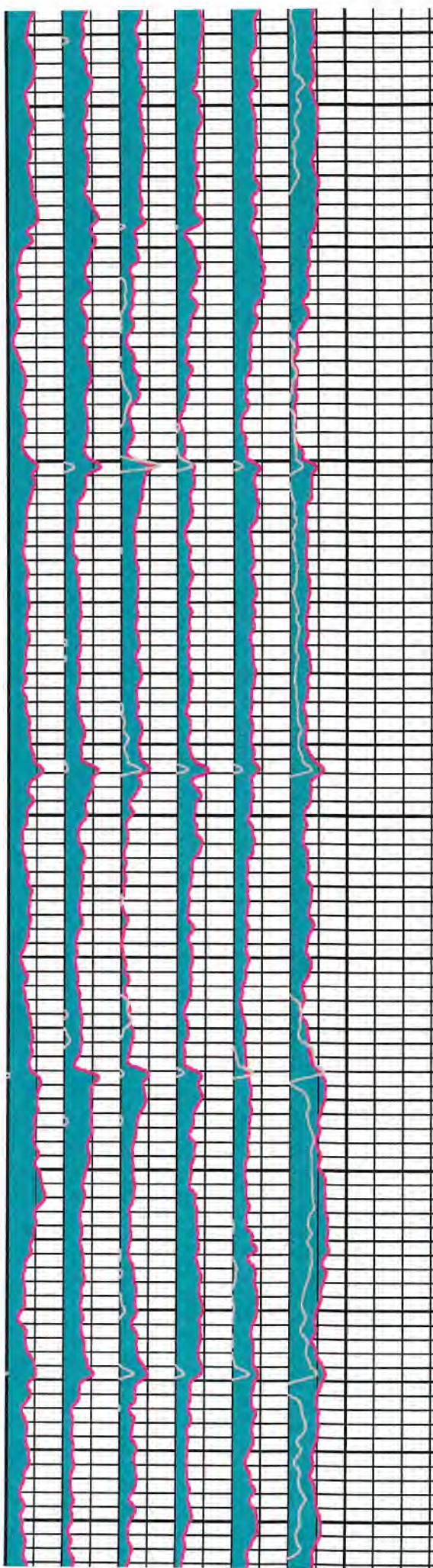
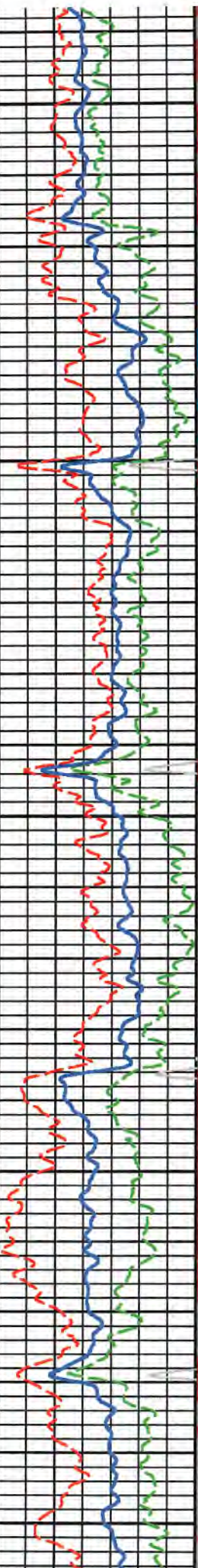




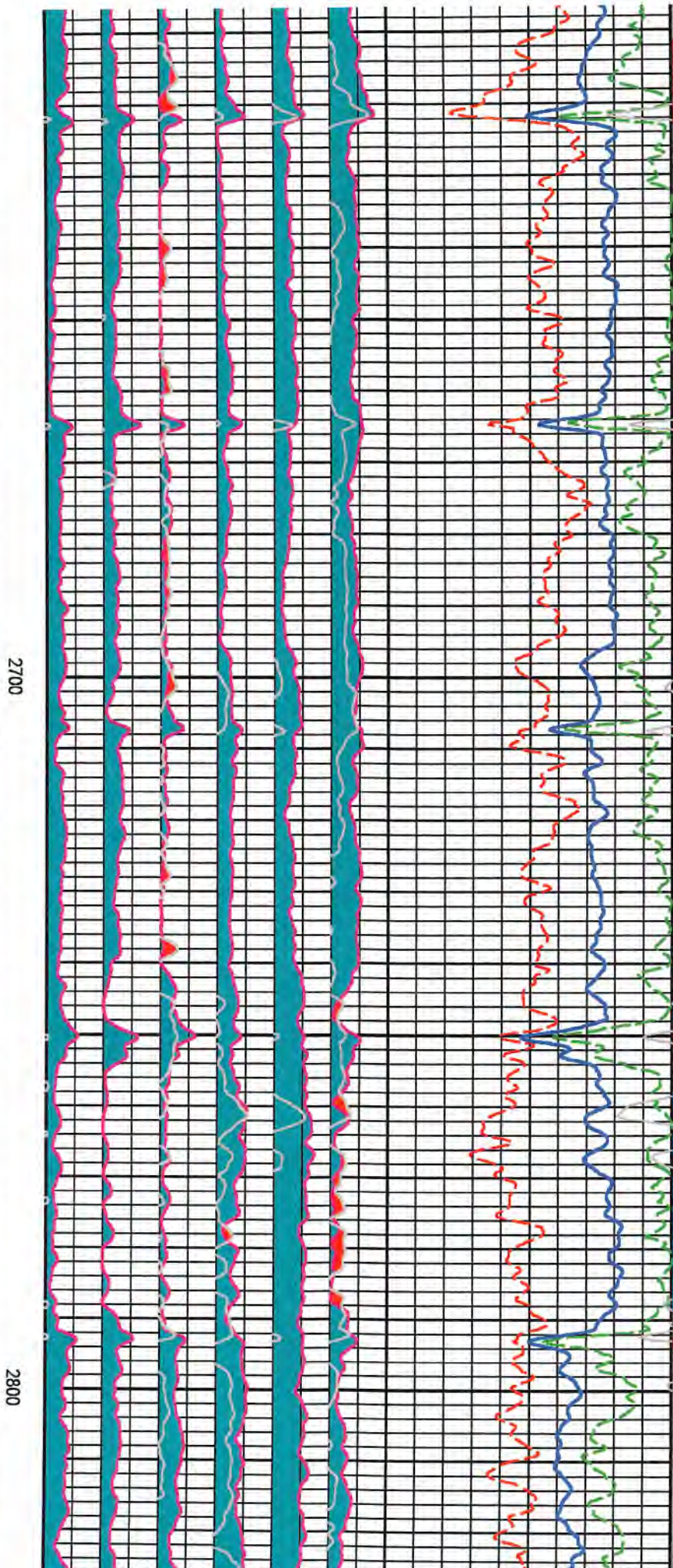
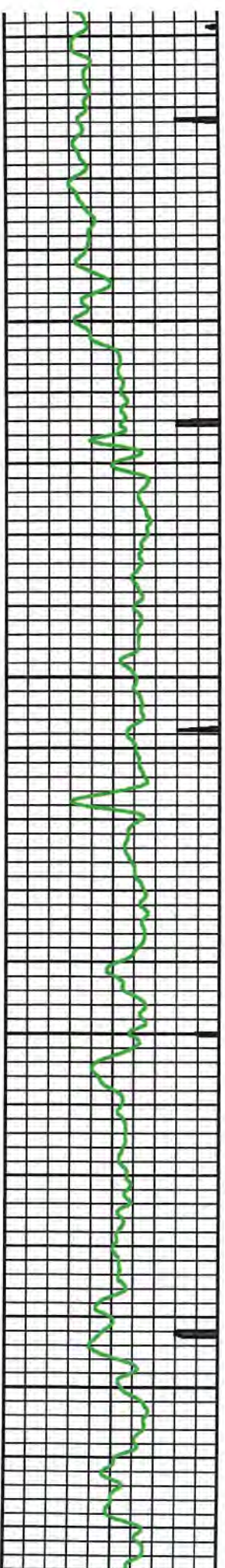
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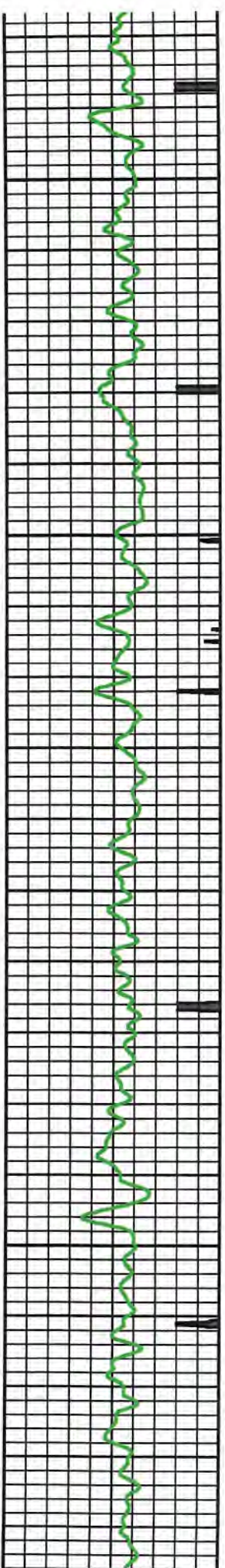




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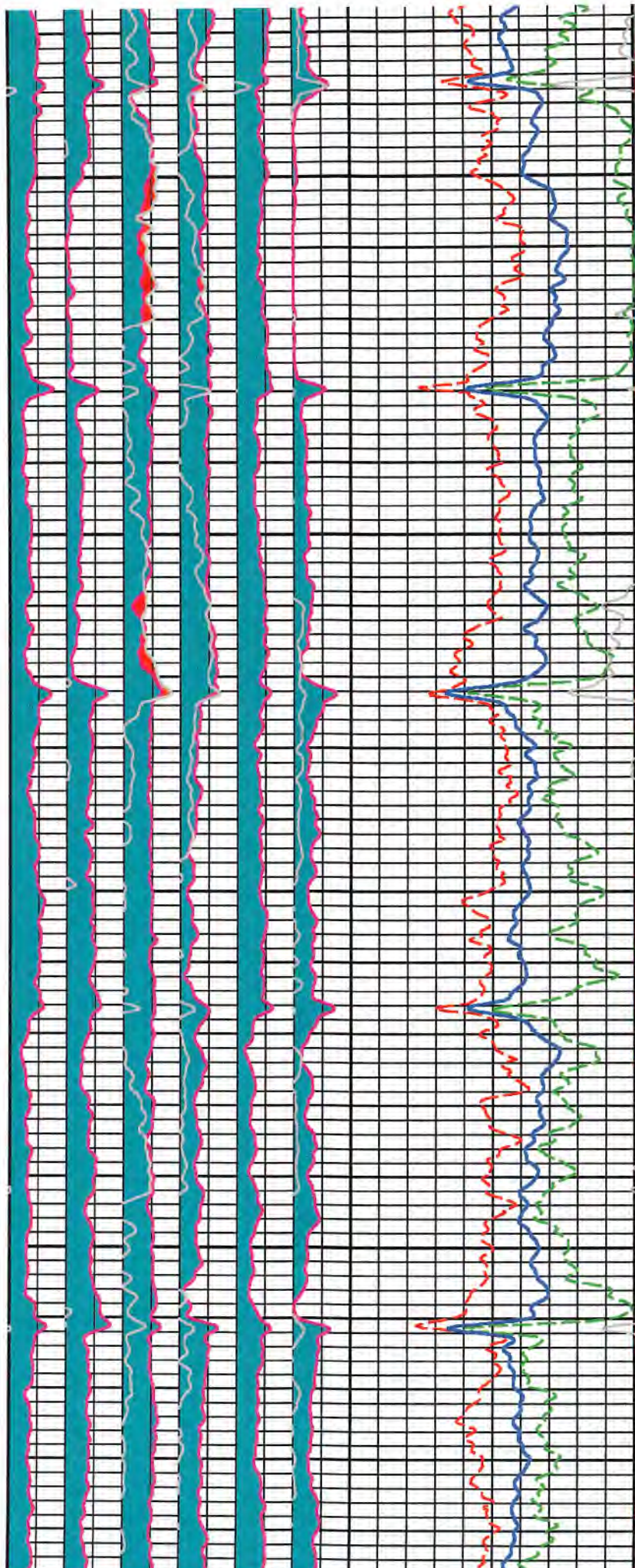


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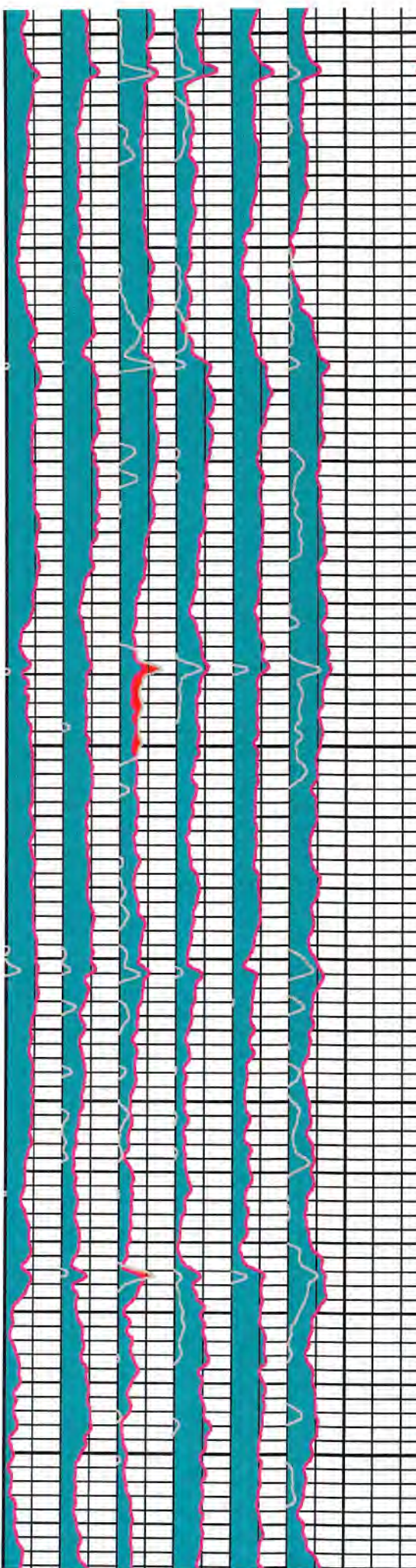
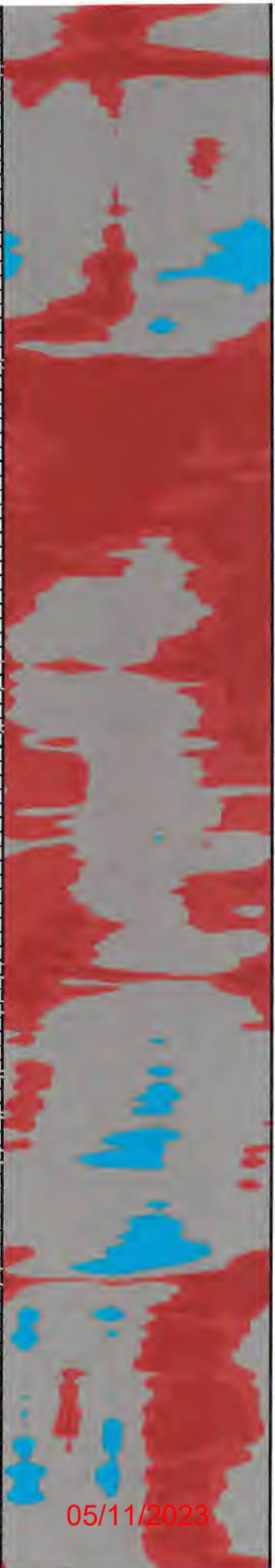


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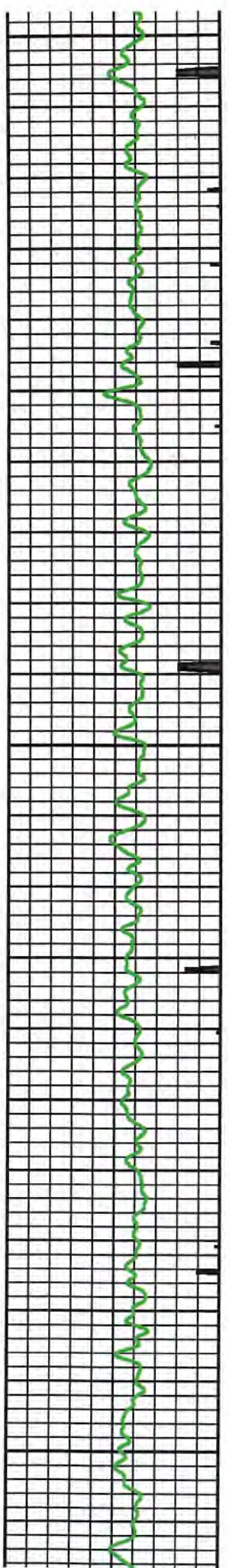


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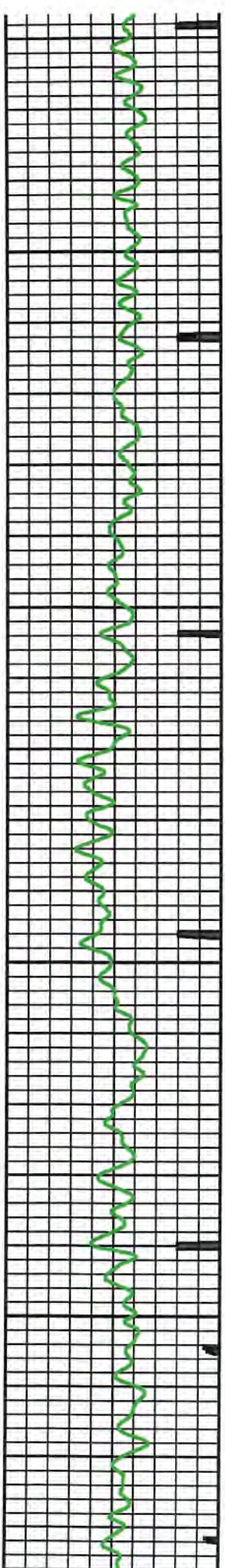


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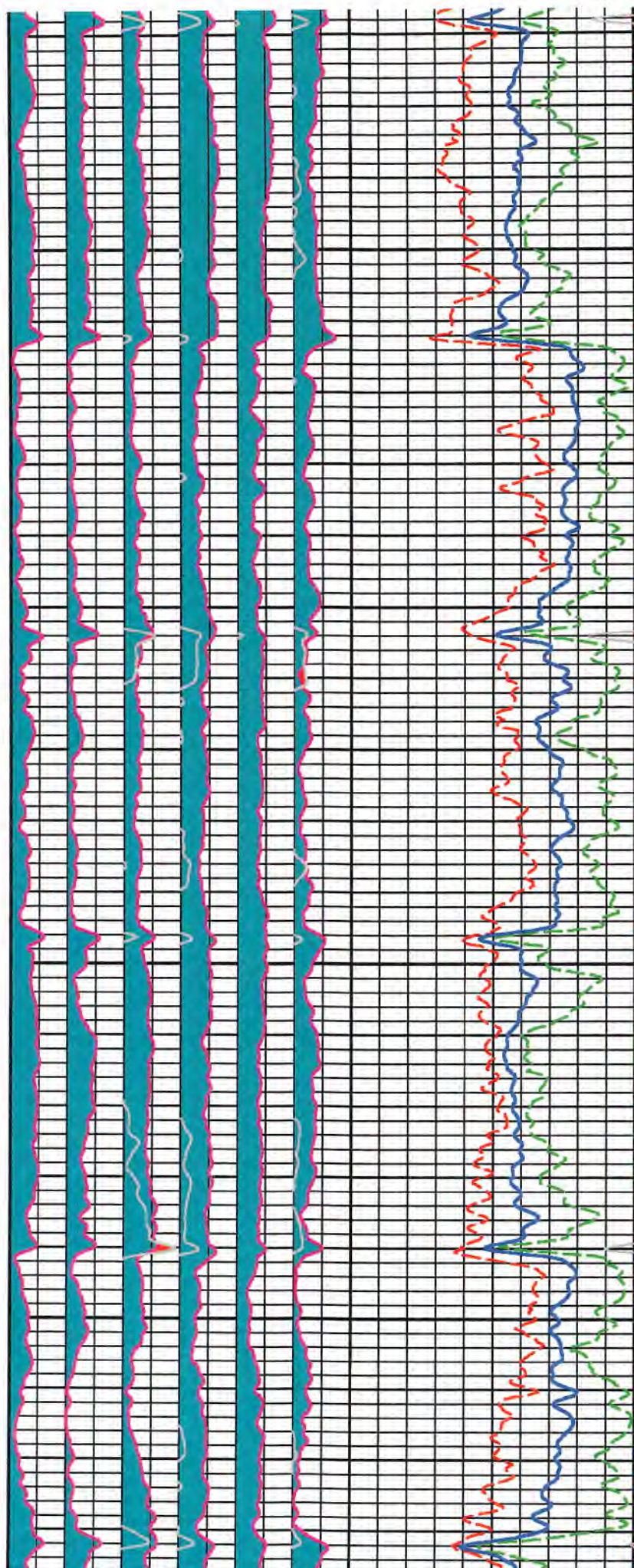


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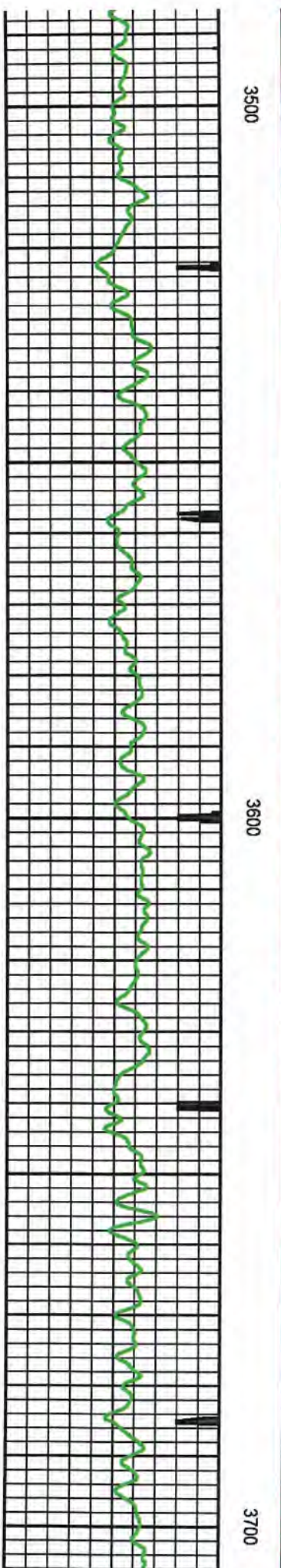
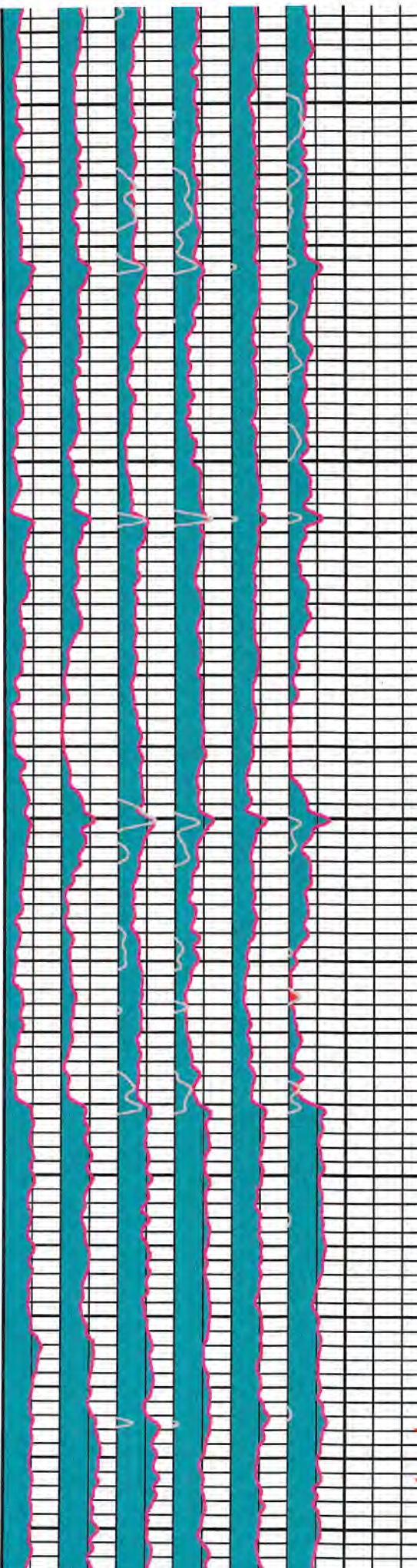
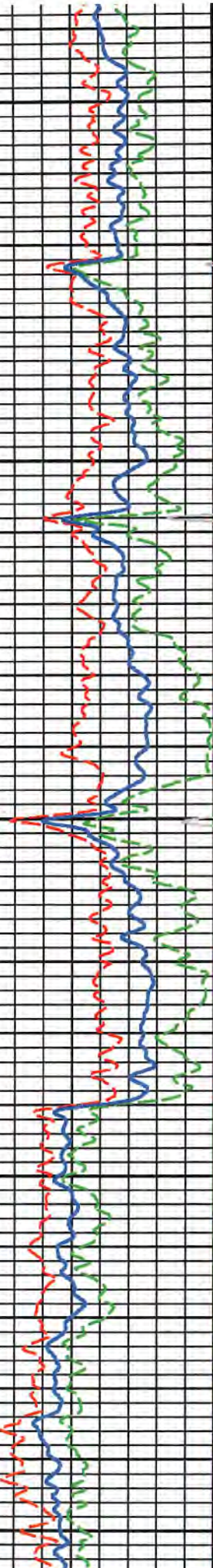


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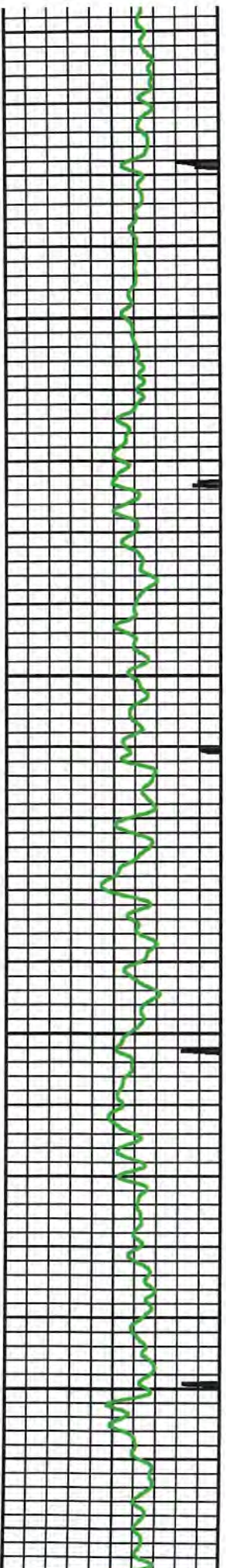


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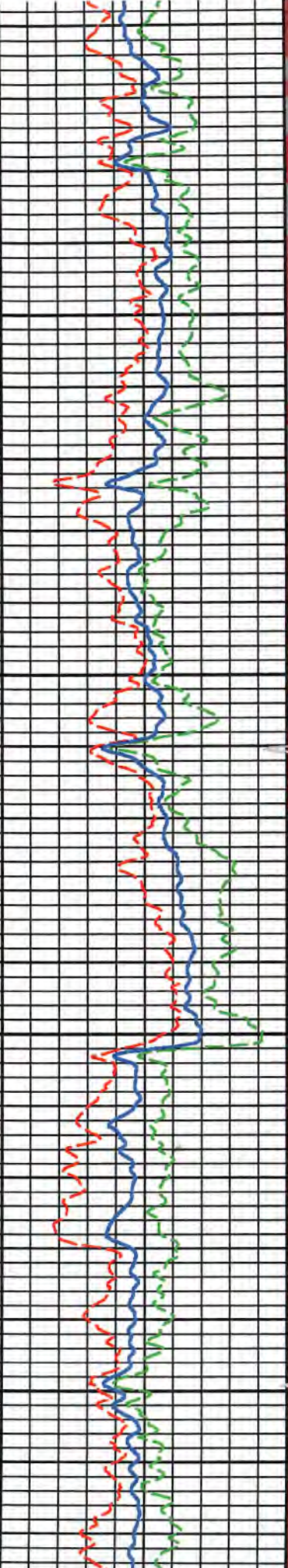
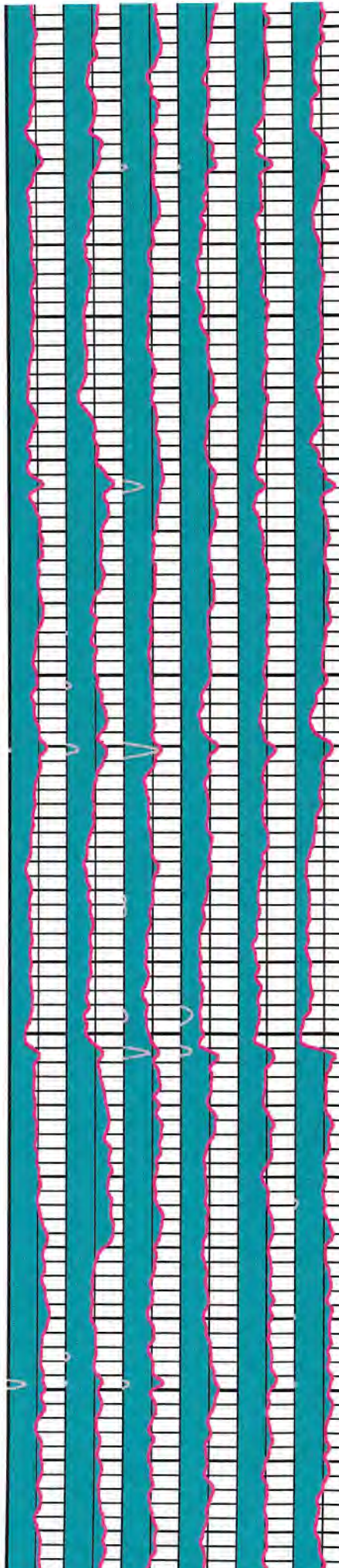
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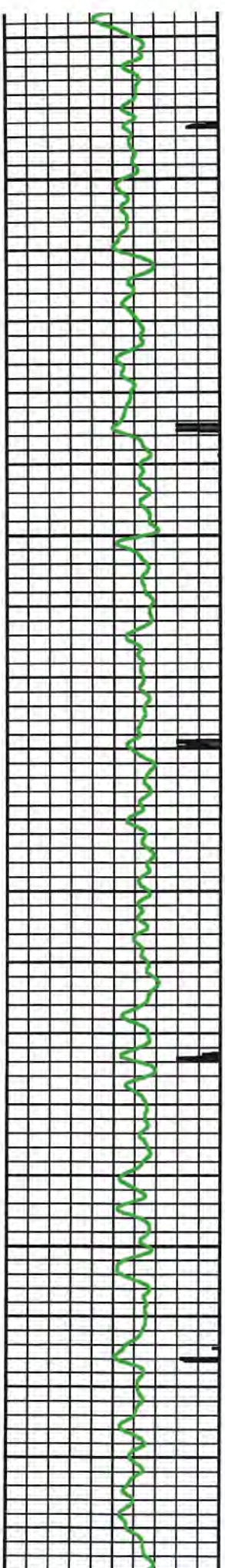


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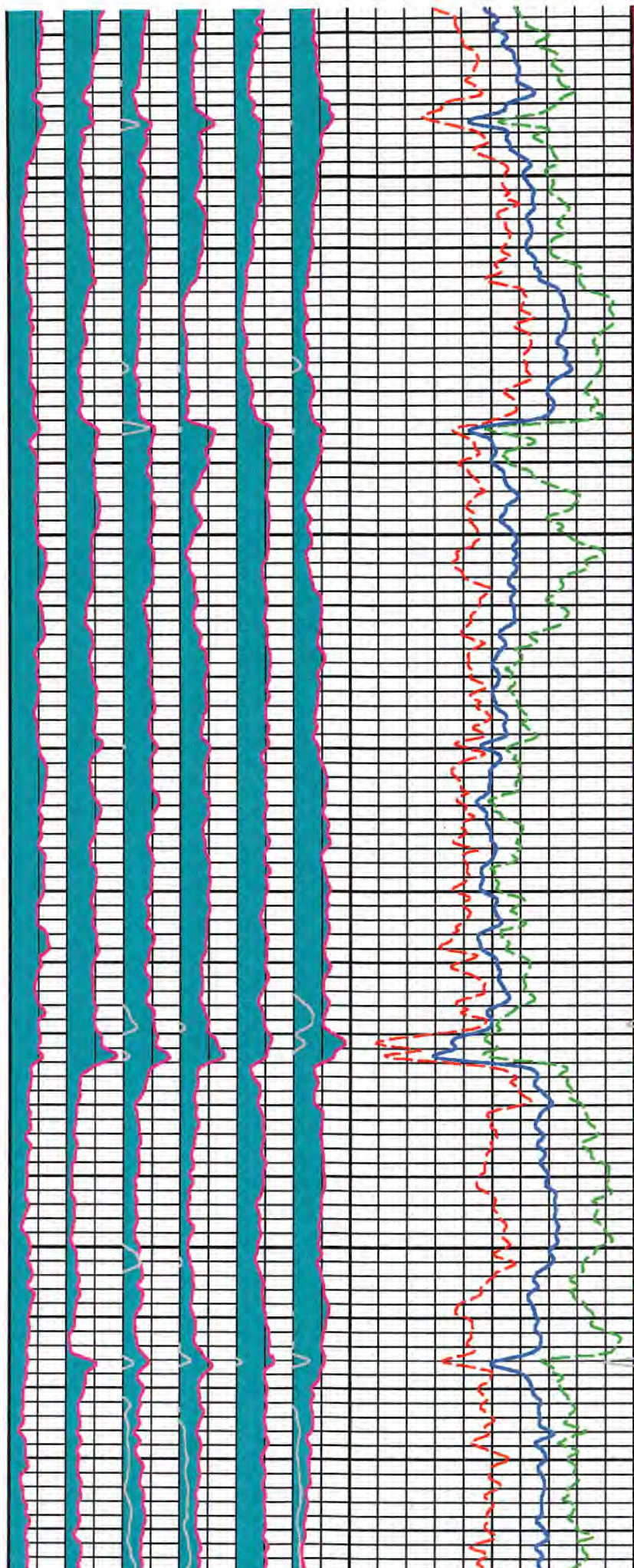


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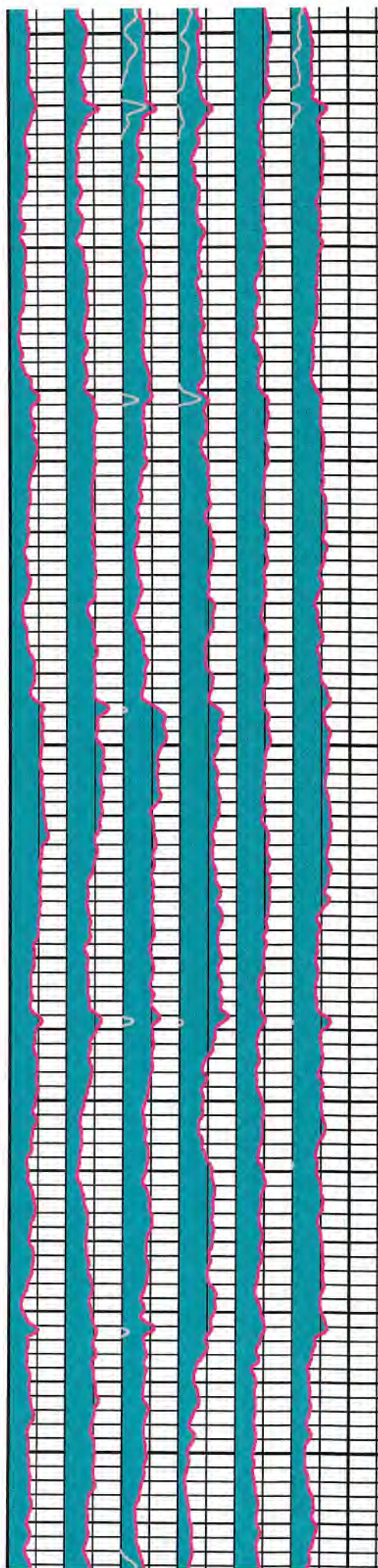
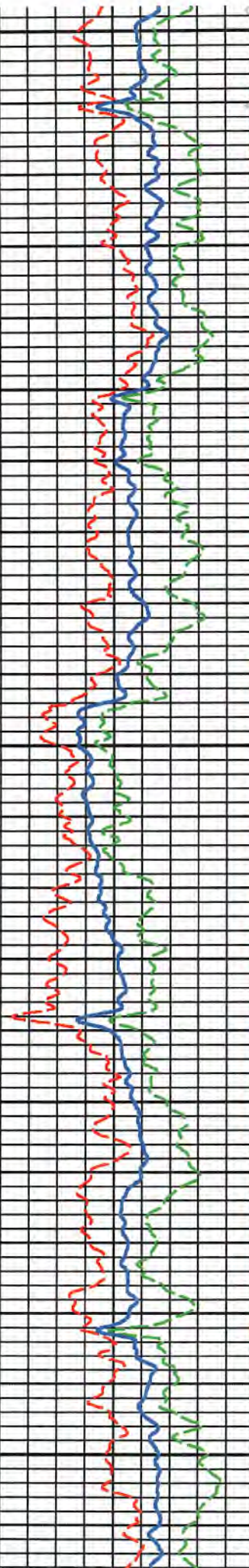


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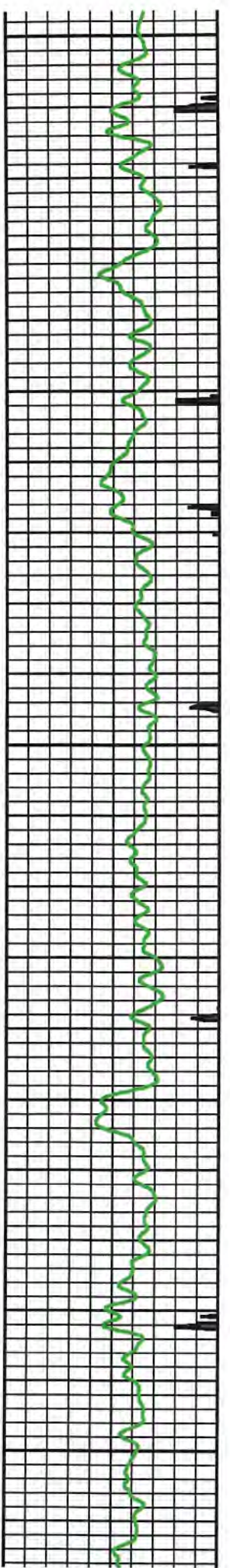


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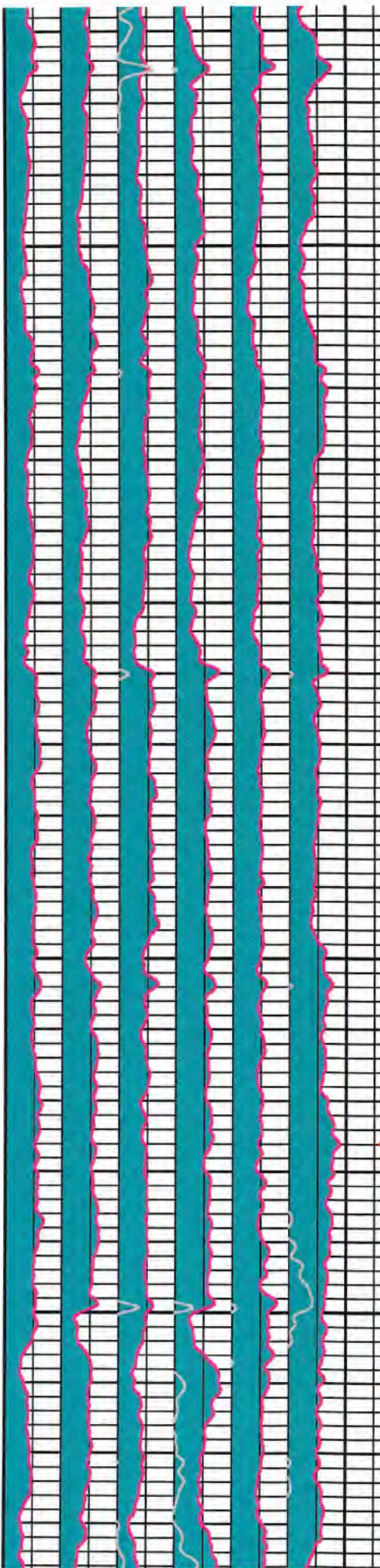
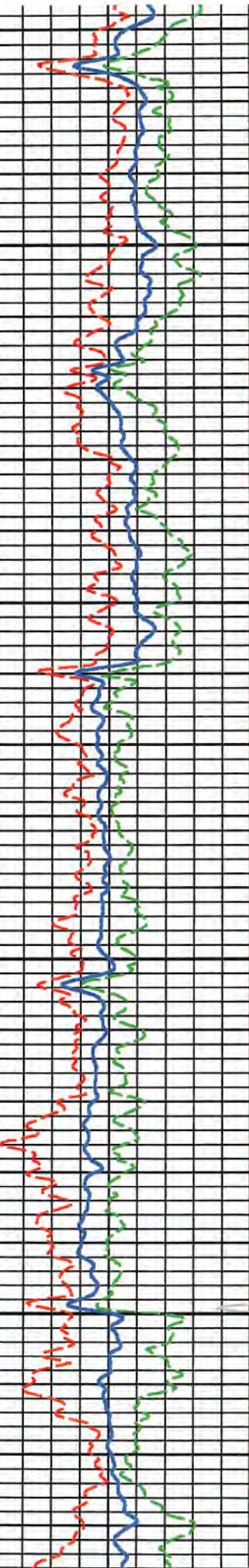


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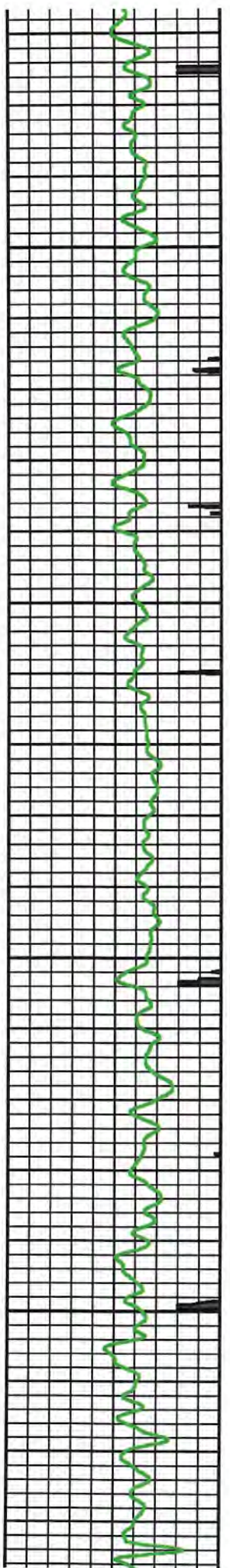


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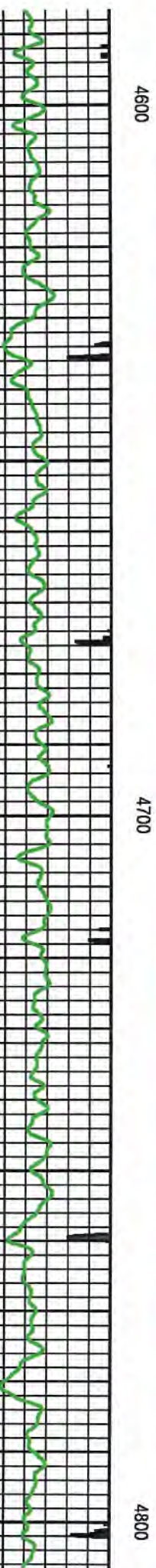
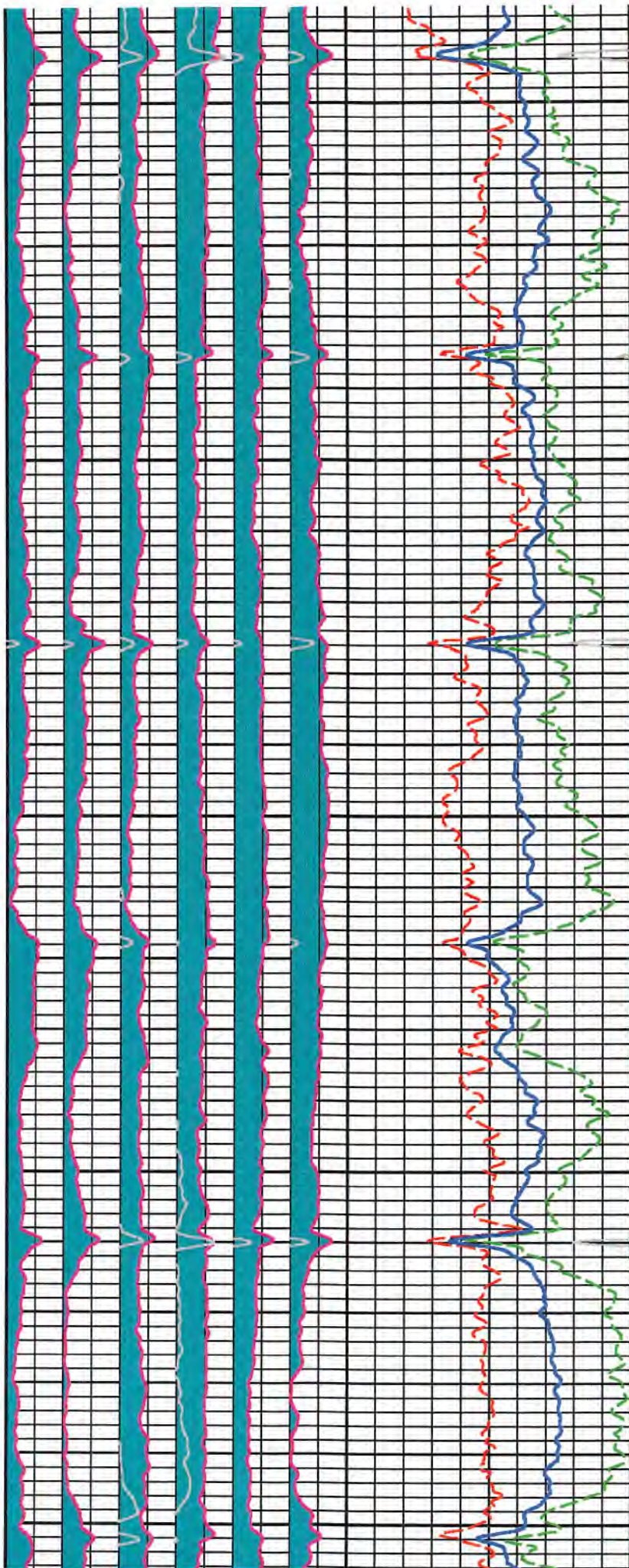


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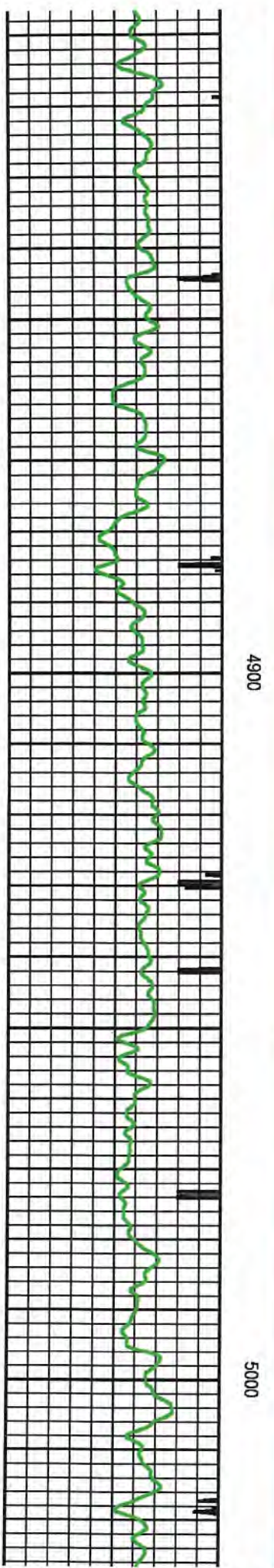
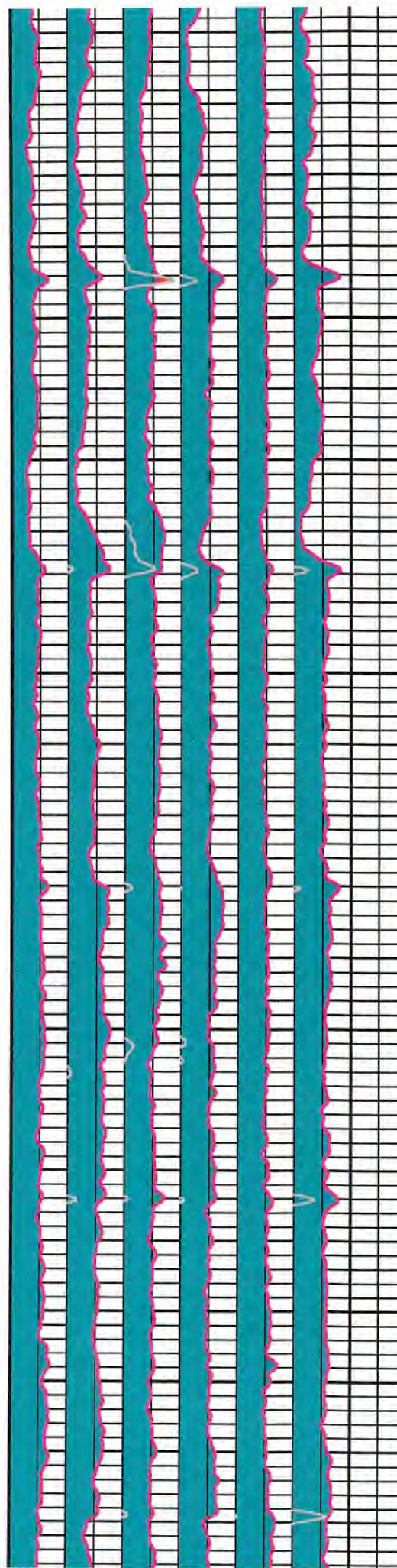
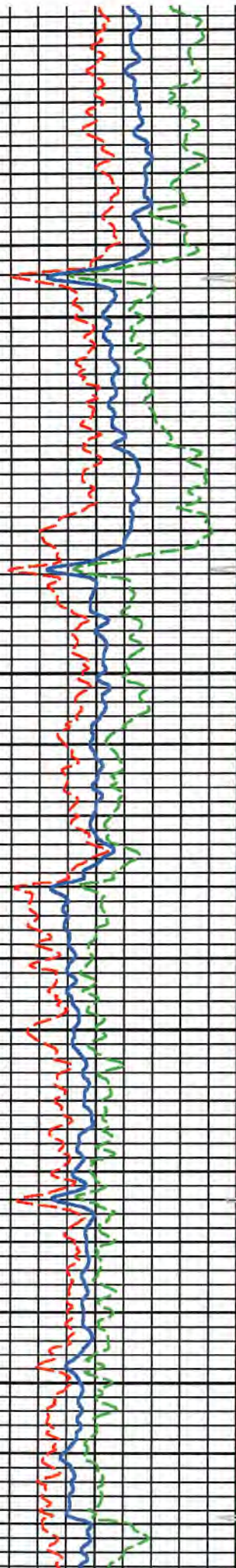


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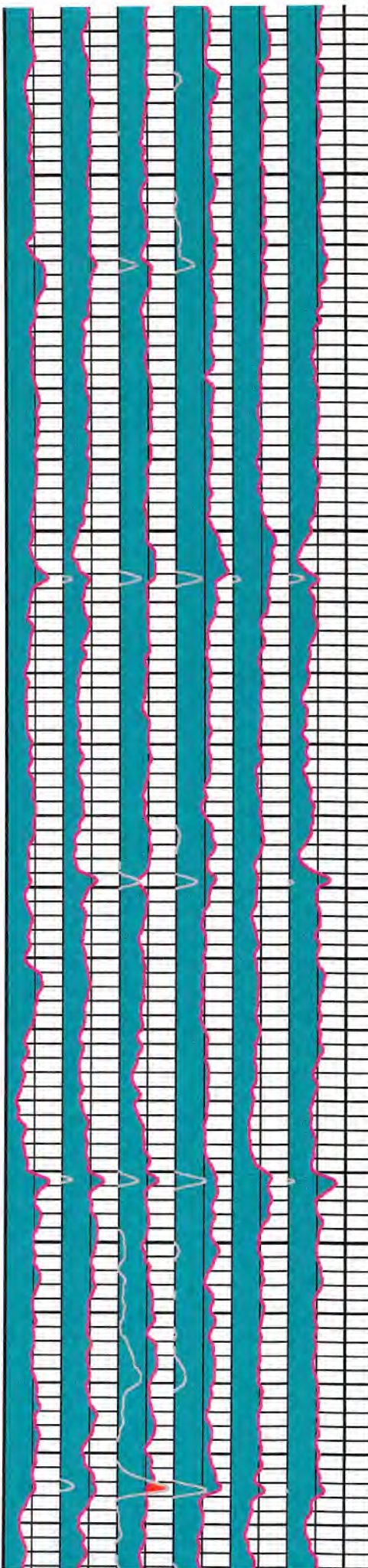
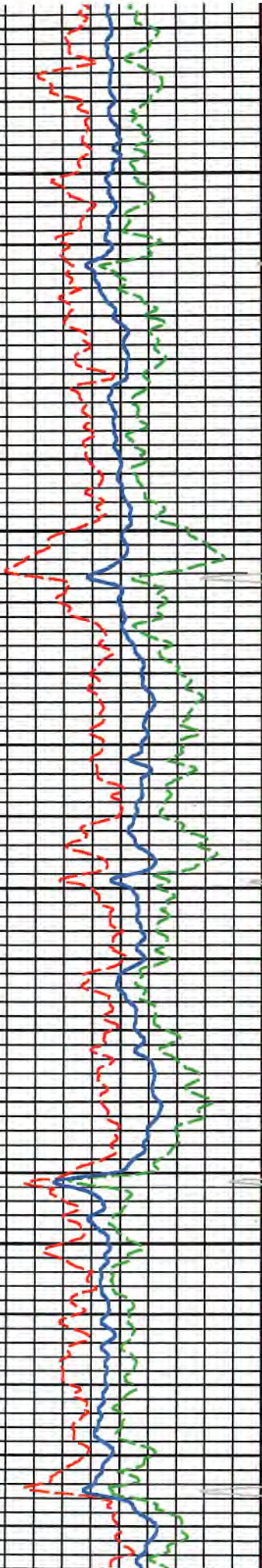
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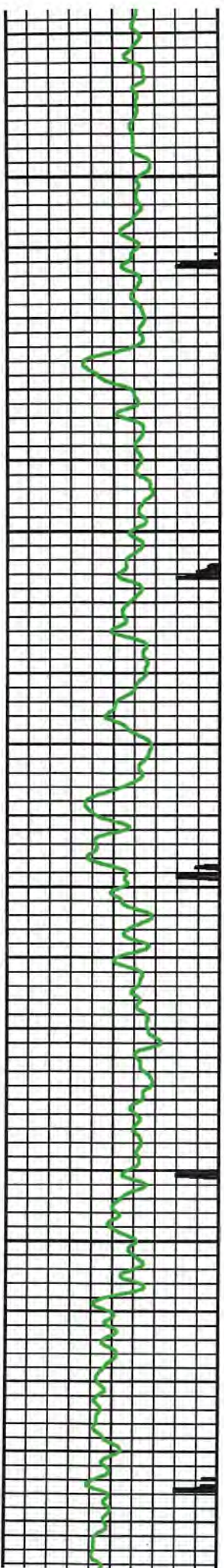
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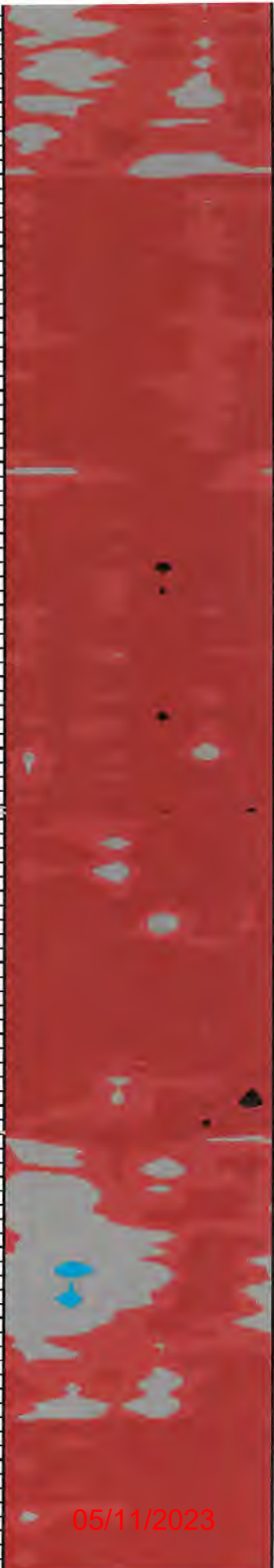
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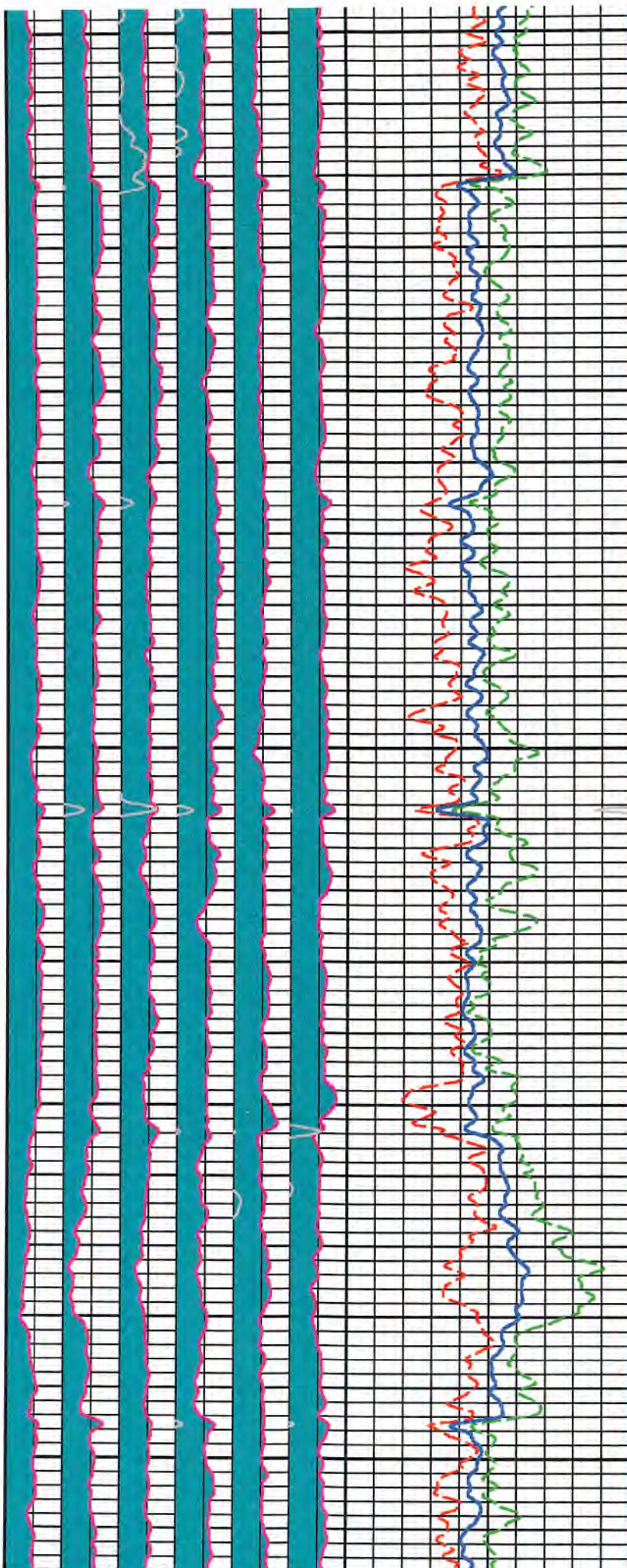
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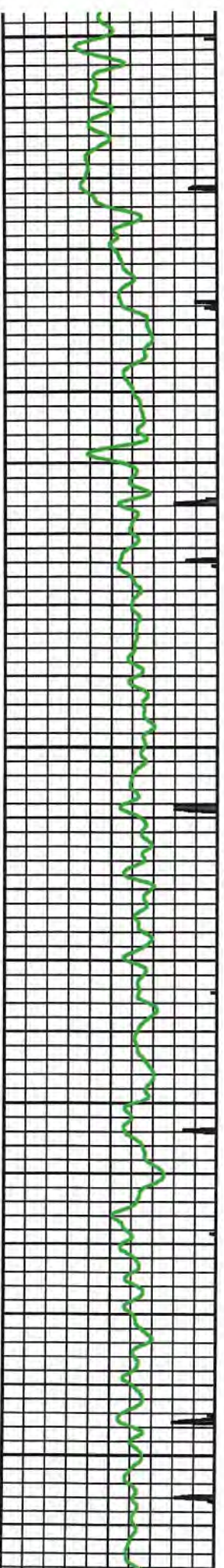


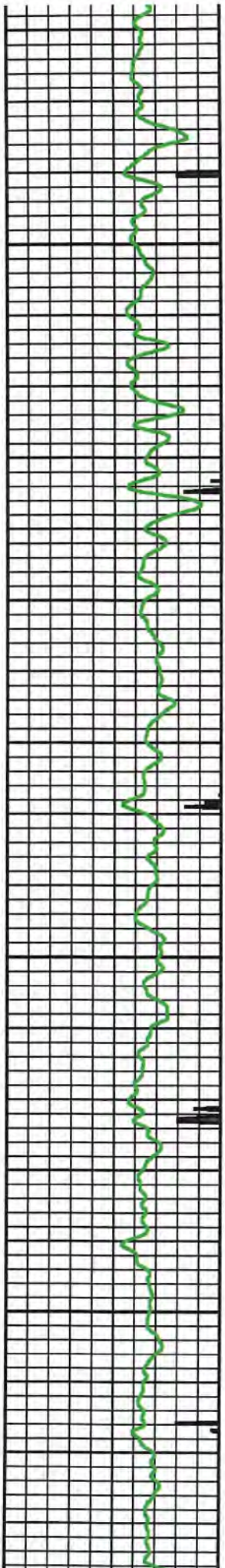
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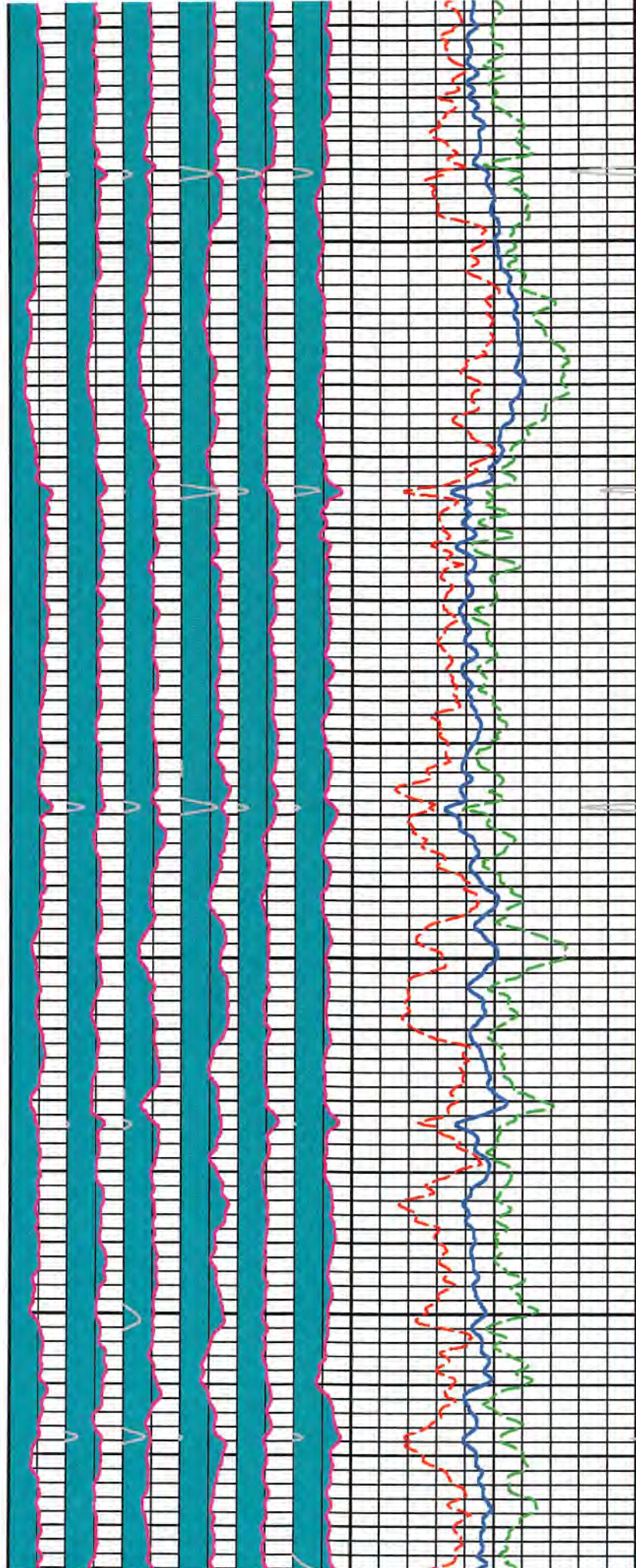
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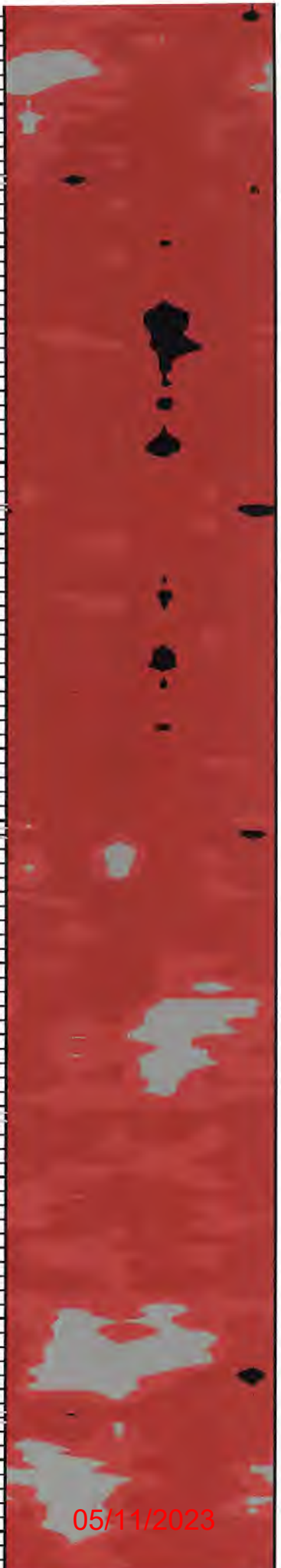


5500

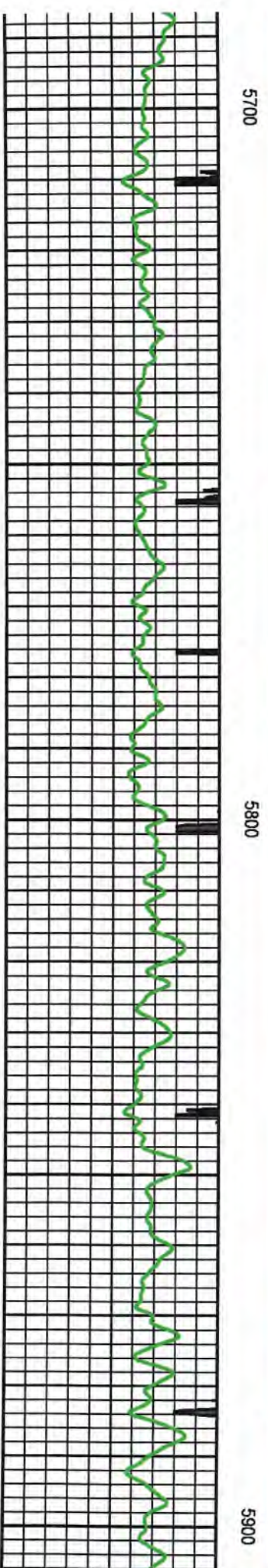
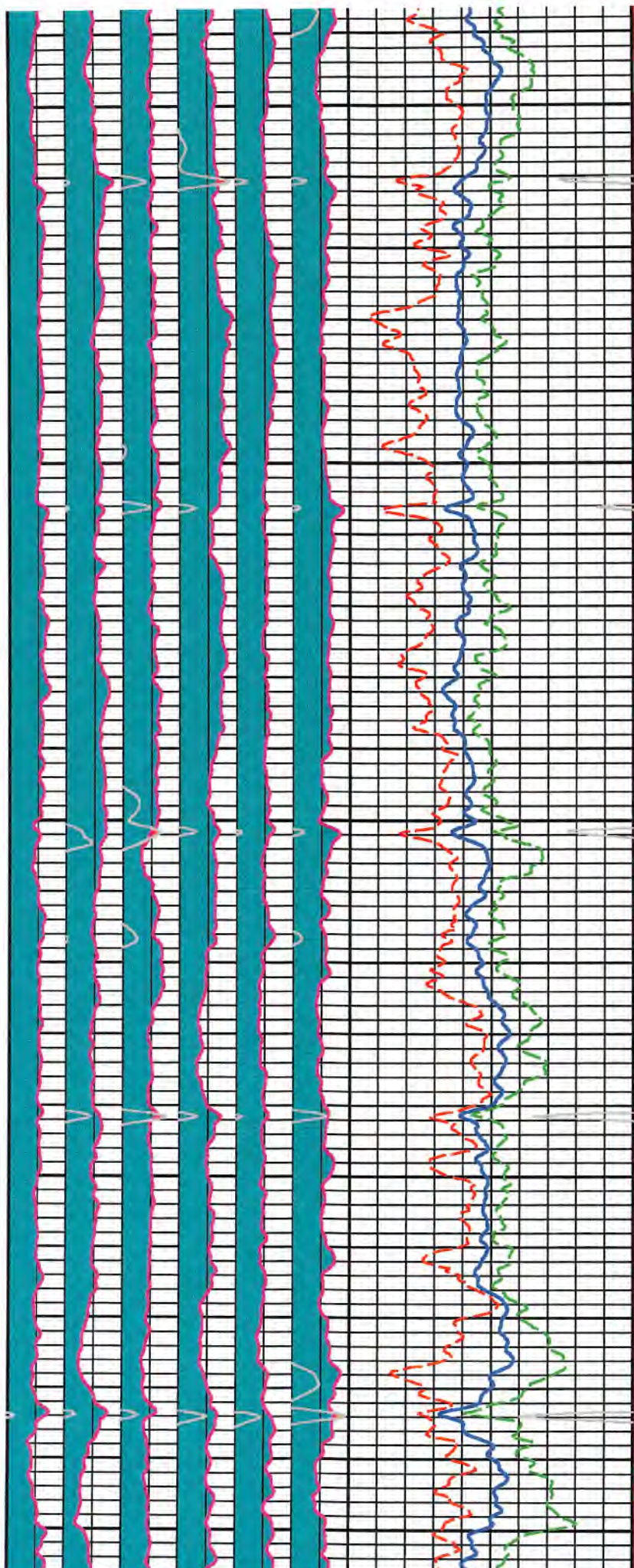
5600



05/11/2023



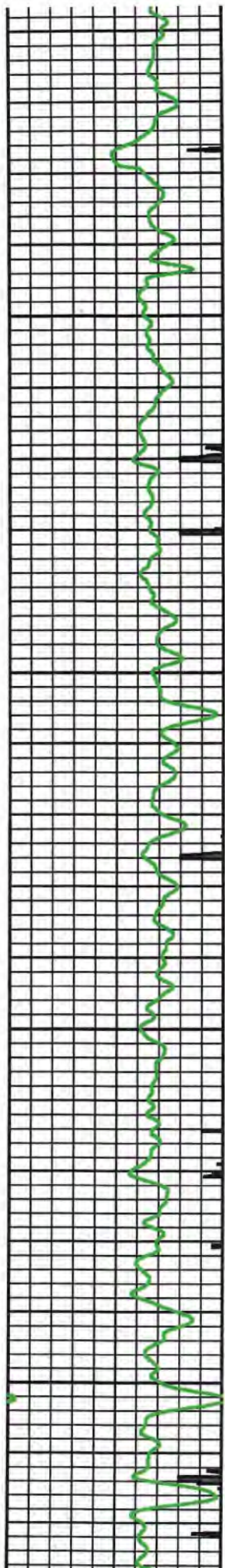
05/11/2023



5700

5800

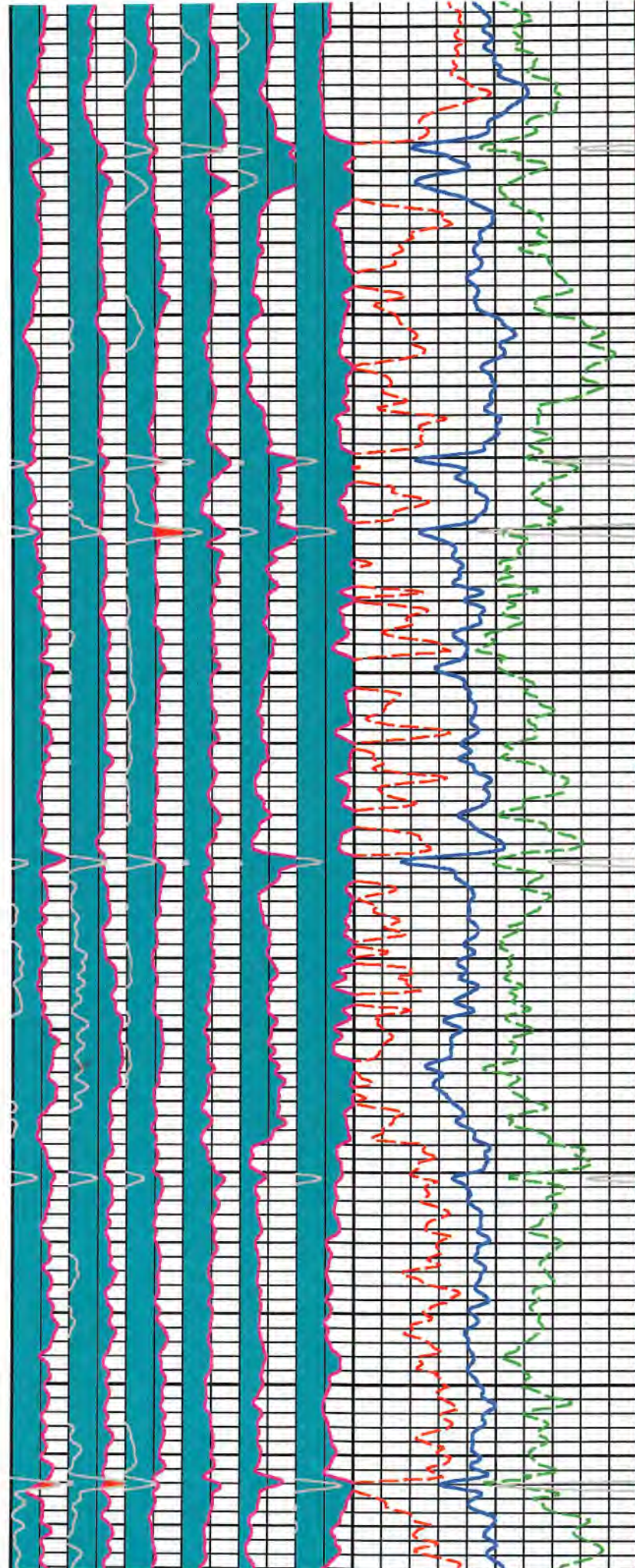
5900



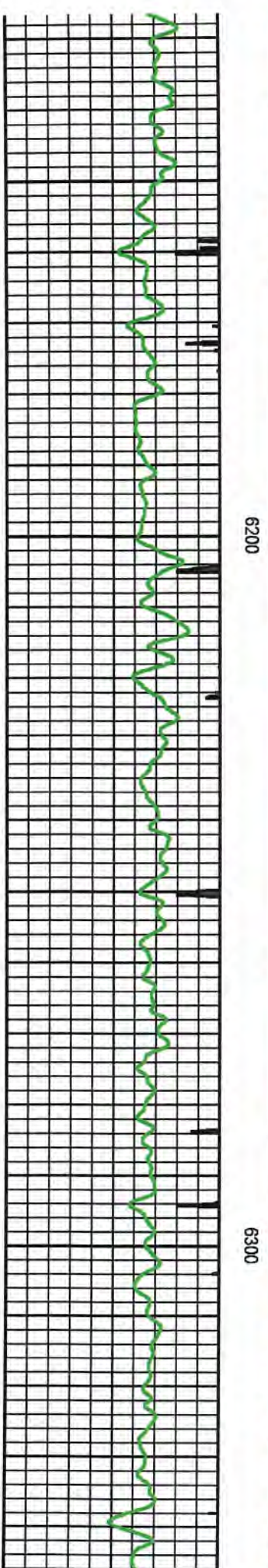
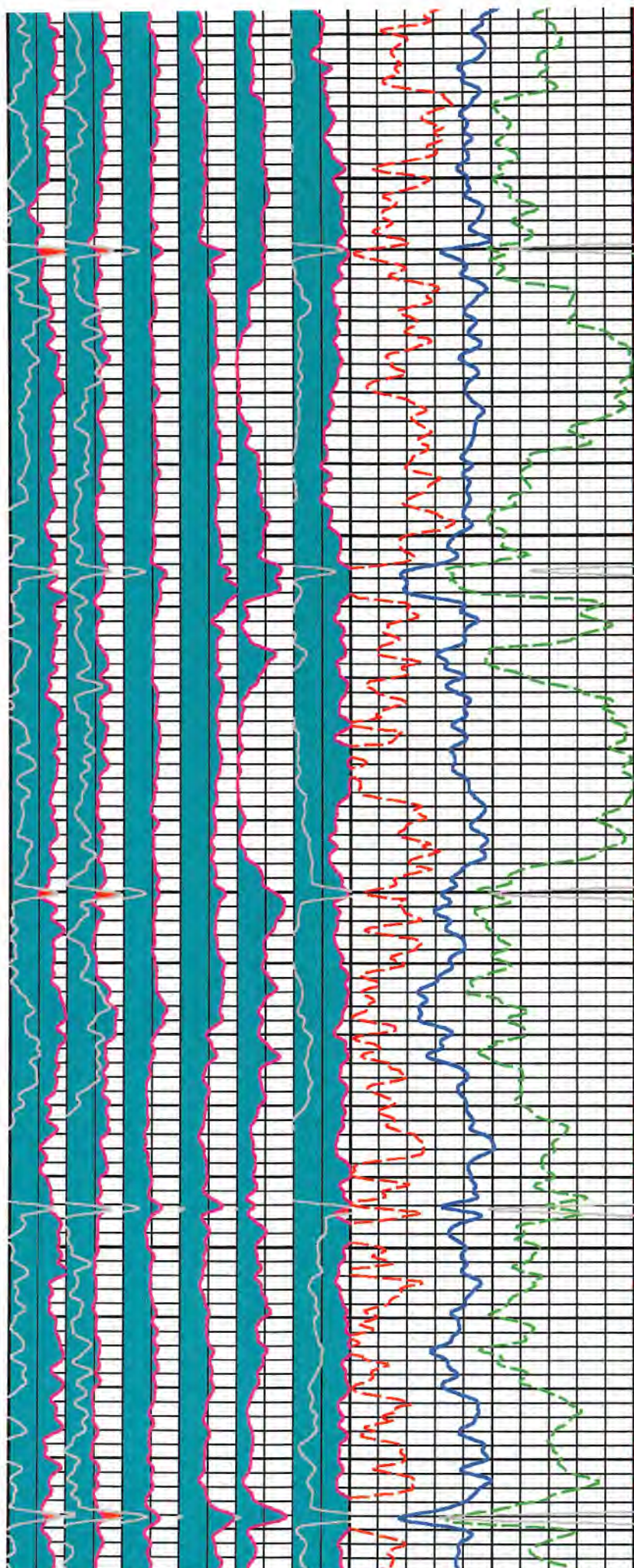
001:9

0009

Marker joint 5970-5980 ft



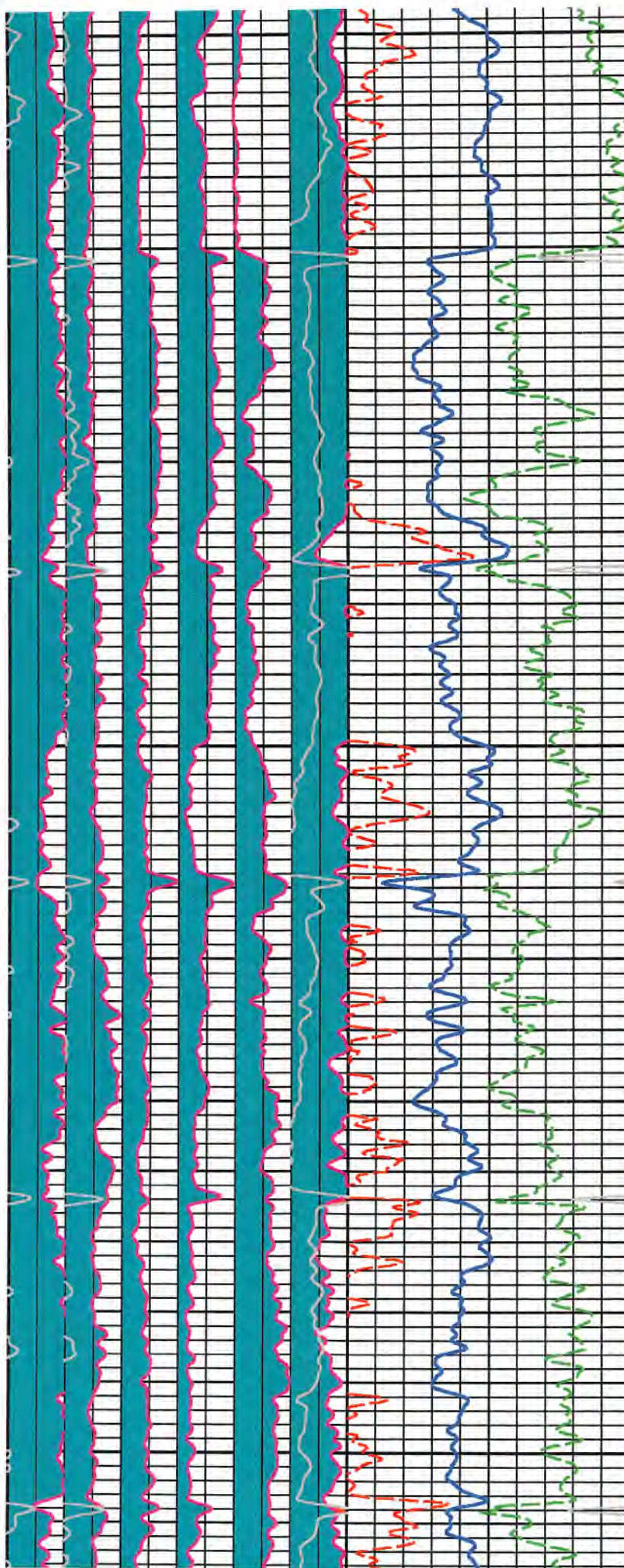
05/11/2023



6200

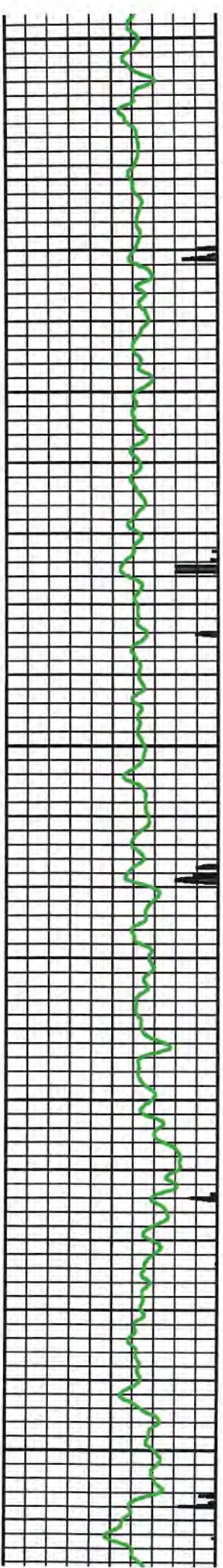
6300

05/11/2023

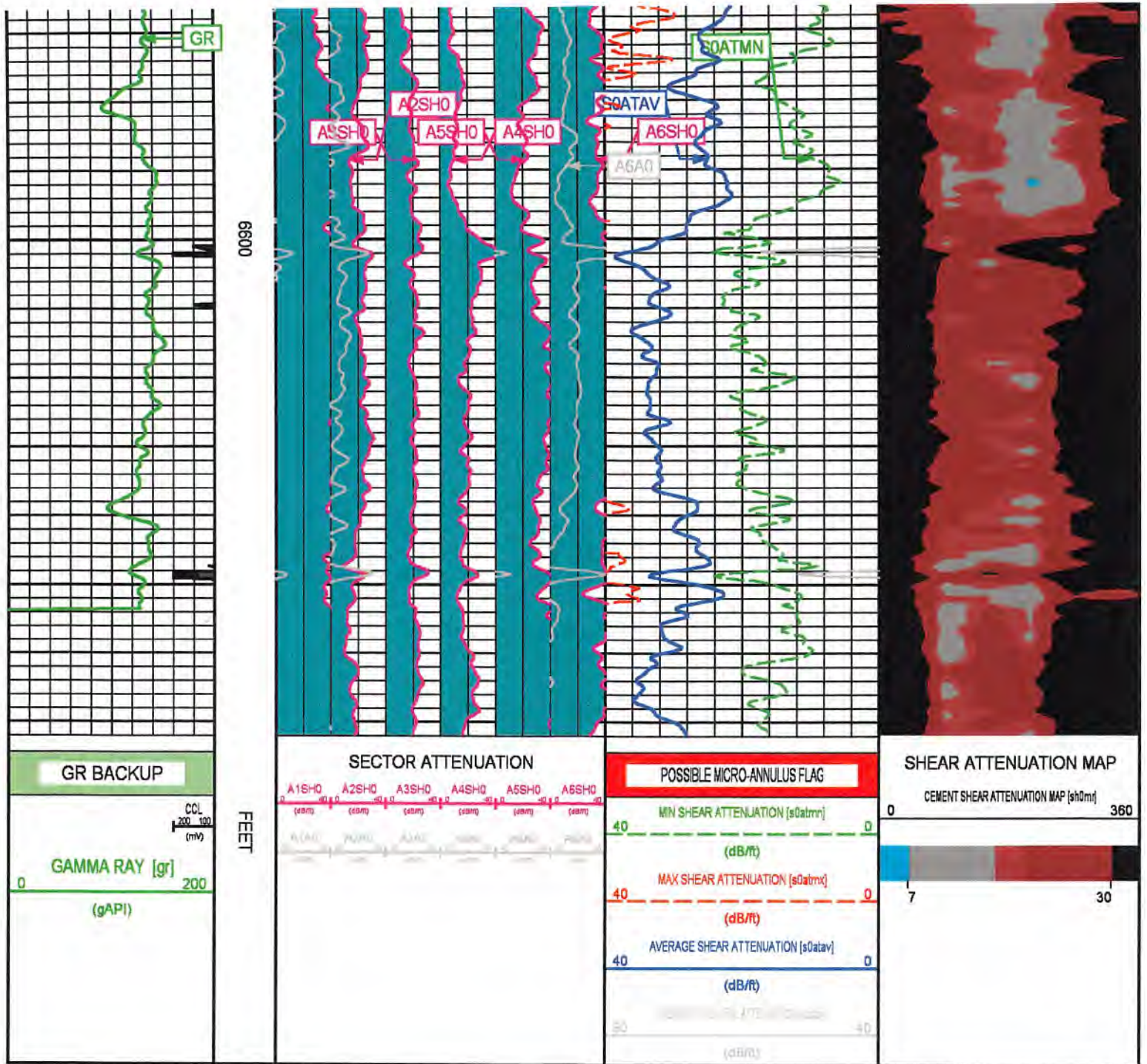


6400

6500



05/11/2023



**INTEGRITY eXplorer CEMENT EVALUATION SERVICE
REPEAT PASS**

PARAMETER AND FILTER SUMMARY REPORT

FILE: C:\dat1\aleiklick-2_Antero_INTEX_Cashew_10_17_22\p333b01.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 476.180 ft BOTTOM DEPTH: 552.480 ft

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SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
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MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ()	medium (1)		TOP BOTTOM
INTeX	FILTER, 2pf	medium (1) light (2)		TOP 504.000 BOTTOM
	FILTER, 4pf	medium (1) light (2)		TOP 502.750 BOTTOM

INTeX				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
CASING PARAMETERS	Casing ID	4.285	in	TOP BOTTOM
	Pipe Thickness	0.358	in	" "
	CCL Gain	0.4		" "
ATTENUATION	Use Thickness	Yes		" "
	SH0 Pipe Range	Short Path		" "
	A0 Pipe Range	Short Path		" "

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:A1A0	Oct 17 16:53:03 2022	ATTN, SECTOR 1, LAMB A0
F1:A1SH0	Oct 17 16:53:03 2022	ATTN, SECTOR 1, SHEAR SH0
F1:A2A0	Oct 17 16:53:03 2022	ATTN, SECTOR 2, LAMB A0
F1:A2SH0	Oct 17 16:53:03 2022	ATTN, SECTOR 2, SHEAR SH0
F1:A3A0	Oct 17 16:53:03 2022	ATTN, SECTOR 3, LAMB A0
F1:A3SH0	Oct 17 16:53:03 2022	ATTN, SECTOR 3, SHEAR SH0
F1:A4A0	Oct 17 16:53:03 2022	ATTN, SECTOR 4, LAMB A0
F1:A4SH0	Oct 17 16:53:03 2022	ATTN, SECTOR 4, SHEAR SH0
F1:A5A0	Oct 17 16:53:03 2022	ATTN, SECTOR 5, LAMB A0
F1:A5SH0	Oct 17 16:53:03 2022	ATTN, SECTOR 5, SHEAR SH0
F1:A6A0	Oct 17 16:53:03 2022	ATTN, SECTOR 6, LAMB A0
F1:A6SH0	Oct 17 16:53:03 2022	ATTN, SECTOR 6, SHEAR SH0
F1:CCL	Oct 17 16:53:03 2022	CASING COLLAR LOCATOR
F1:GR	Oct 17 16:53:03 2022	GAMMA RAY
F1:LAATAV	Oct 17 16:53:03 2022	AVG ATTN, LAMB A0
F1:S0ATAV	Oct 17 16:53:03 2022	AVG ATTN, SHEAR SH0
F1:S0ATMN	Oct 17 16:53:03 2022	MIN ATTN, SHEAR SH0
F1:S0ATMX	Oct 17 16:53:03 2022	MAX ATTN, SHEAR SH0
F1:SHOMR	Oct 17 16:53:03 2022	CEMENT MAP RAW VALUES, SHEAR S0

Presentation : BAKER-75650:C:\dat1a\ElkLick-2_Antero_INTEX_Cashew_10_17_22\Intex_RPT+p333b01.fvpdf [5"/100' Scale]

Plot Interval : 495 - 570 Feet

Data File 1 : F1 : BAKER-75650:C:\dat1a\ElkLick-2_Antero_INTEX_Cashew_10_17_22\p333b01.tif

Created On : Oct 17 16:53:03 2022

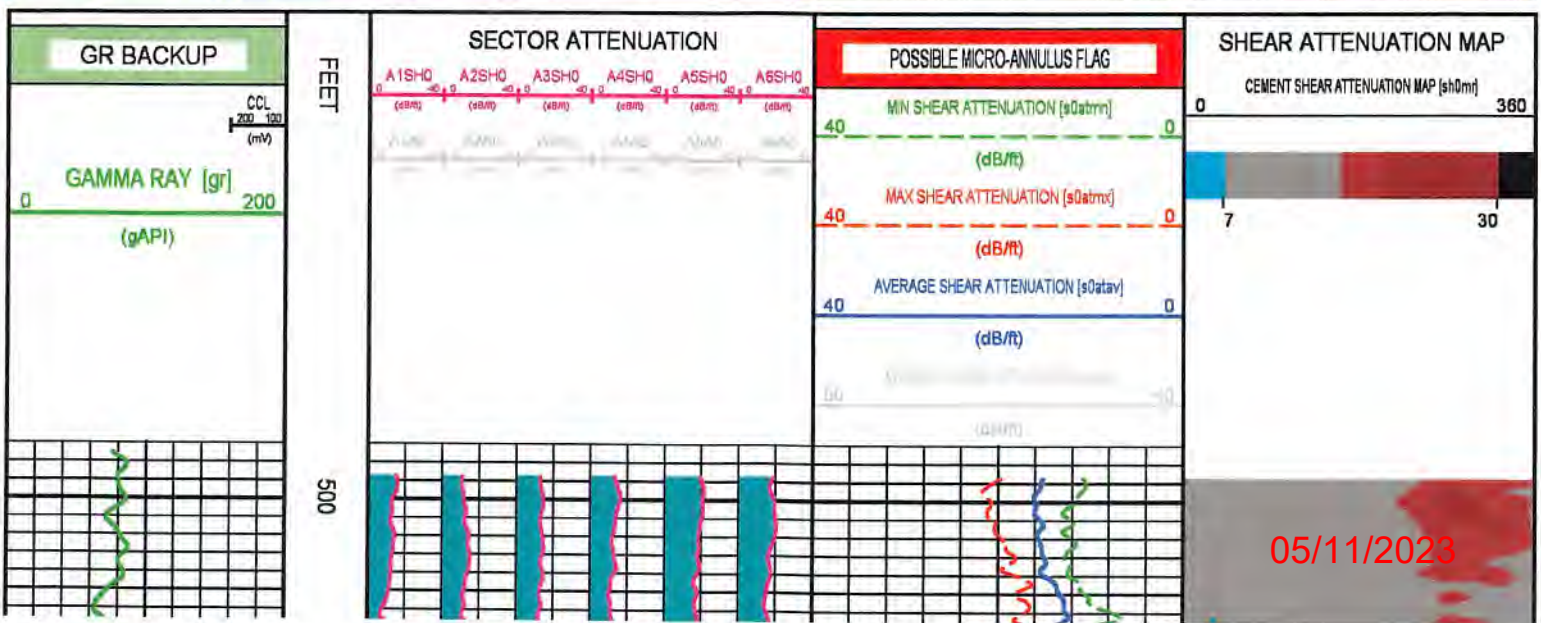
Company : Antero

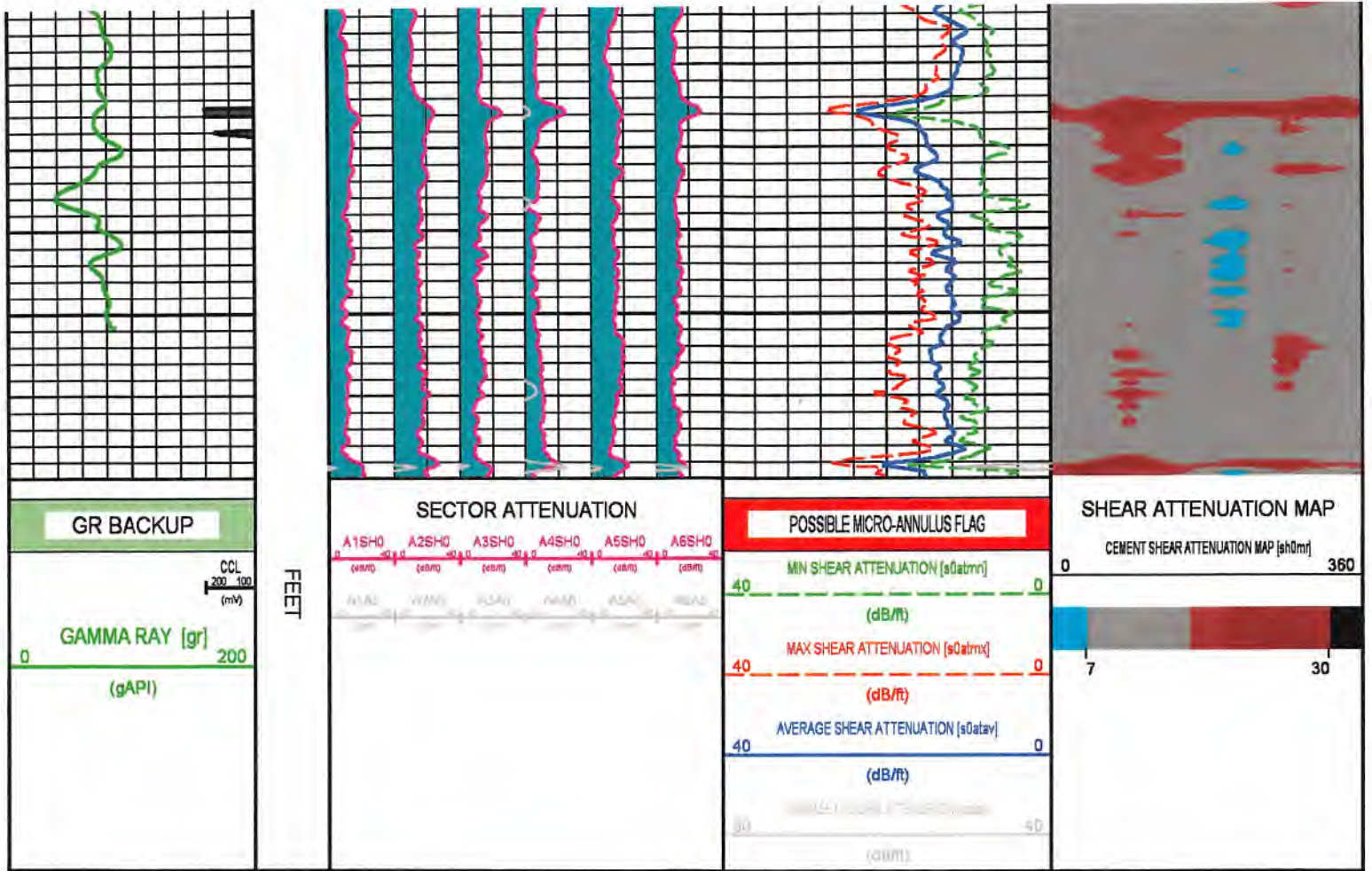
Well : Elk Lick 2

Field : Cashew

File Interval : 473.25 - 582.5 Feet

OCT : p333b





CALIBRATION / VERIFICATION SUMMARY

Source File: C:\dat1a\EikLick-2_Antero_INTEX_Cashew_10_17_22\p333b.tp1

PAD_CHECK PRIMARY CALIBRATION SUMMARY

TOOL #: 1401MA 13892667

DATE/TIME PERFORMED: Mon Oct 17 16:31:11 2022

UNIT #: 4570LB 13646667

	CW Near (mV)	CCW Near (mV)	CW Far (mV)	CCW Far (mV)
Shear Sect 1 Zero	93.40	89.60	97.70	83.90
	40.00 144.00	40.00 144.00	40.00 144.00	40.00 144.00
Shear Sect 2 Zero	87.90	79.50	98.70	83.40
	40.00 144.00	40.00 144.00	40.00 144.00	40.00 144.00
Shear Sect 3 Zero	94.00	79.90	83.70	87.50
	40.00 144.00	40.00 144.00	40.00 144.00	40.00 144.00
Shear Sect 4 Zero	84.90	108.20	88.30	98.80
	40.00 144.00	40.00 144.00	40.00 144.00	40.00 144.00
Shear Sect 5 Zero	100.30	74.20	91.10	92.60

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	40.00	144.00	40.00	144.00	40.00	144.00	40.00	144.00
Shear Sect 6 Zero	92.60		83.50		93.30		84.10	
	40.00	144.00	40.00	144.00	40.00	144.00	40.00	144.00
Lamb Sect 1 Zero	59.60		58.80		71.50		62.60	
	40.00	144.00	40.00	144.00	40.00	144.00	40.00	144.00
Lamb Sect 2 Zero	61.20		56.20		45.10		59.90	
	40.00	144.00	40.00	144.00	40.00	144.00	40.00	144.00
Lamb Sect 3 Zero	63.10		54.20		53.90		60.20	
	40.00	144.00	40.00	144.00	40.00	144.00	40.00	144.00
Lamb Sect 4 Zero	64.00		65.70		60.70		60.60	
	40.00	144.00	40.00	144.00	40.00	144.00	40.00	144.00
Lamb Sect 5 Zero	60.70		67.50		59.20		55.90	
	40.00	144.00	40.00	144.00	40.00	144.00	40.00	144.00
Lamb Sect 6 Zero	59.80		77.10		54.70		60.60	
	40.00	144.00	40.00	144.00	40.00	144.00	40.00	144.00

	CW Near (mV)	CCW Near (mV)	CW Far (mV)	CCW Far (mV)
Shear Sect 1 Shuck	7011.80	7688.20	4437.80	5855.40
	2000.00 6400.00	2000.00 6400.00	2050.00 6400.00	2050.00 6400.00
Shear Sect 2 Shuck	4305.90	6909.30	6659.40	8822.90
	2000.00 6400.00	2000.00 6400.00	2050.00 6400.00	2050.00 6400.00
Shear Sect 3 Shuck	3137.10	4445.10	4473.50	4614.20
	2000.00 6400.00	2000.00 6400.00	2050.00 6400.00	2050.00 6400.00
Shear Sect 4 Shuck	4906.10	2860.40	6793.10	6501.30
	2000.00 6400.00	2000.00 6400.00	2050.00 6400.00	2050.00 6400.00
Shear Sect 5 Shuck	6704.70	4746.60	5436.20	3979.30
	2000.00 6400.00	2000.00 6400.00	2050.00 6400.00	2050.00 6400.00
Shear Sect 6 Shuck	6446.50	6049.20	7872.50	6025.40
	2000.00 6400.00	2000.00 6400.00	2050.00 6400.00	2050.00 6400.00
Lamb Sect 1 Shuck	2720.40	3191.70	2507.40	2839.40
	1200.00 3600.00	1200.00 3600.00	1255.00 3600.00	1255.00 3600.00
Lamb Sect 2 Shuck	2193.10	2671.50	2533.50	2899.00
	1200.00 3600.00	1200.00 3600.00	1255.00 3600.00	1255.00 3600.00
Lamb Sect 3 Shuck	1905.70	2267.40	2526.40	2473.40
	1200.00 3600.00	1200.00 3600.00	1255.00 3600.00	1255.00 3600.00
Lamb Sect 4 Shuck	2388.20	1794.10	2386.50	2431.60
	1200.00 3600.00	1200.00 3600.00	1255.00 3600.00	1255.00 3600.00
Lamb Sect 5 Shuck	3167.70	2428.70	2747.00	2499.90
	1200.00 3600.00	1200.00 3600.00	1255.00 3600.00	1255.00 3600.00
Lamb Sect 6 Shuck	3262.60	3319.90	3090.80	2589.70
	1200.00 3600.00	1200.00 3600.00	1255.00 3600.00	1255.00 3600.00

RB_OFF PRIMARY CALIBRATION SUMMARY

TOOL #: 1401MA 13892667

DATE/TIME PERFORMED: Fri Aug 19 15:55:39 2022

UNIT #: 4570LB 13646667

Offset
(deg)
Relative Bearing 284.33

05/11/2023

INSTRUMENT CONFIGURATION

Source File: C:\dat1a\EIKlick-2_Antero_INTEX_Cashew_10_17_22\p333b_Slick_VDL~-tdg.meta

A3 CABLEHEAD

Diameter : 1.37"

CCL

Diameter : 3.38"

Length : 2.19'

Weight : 47 lbs

Series : 2330NA

Mnemonic : CCL

Measure Point: 1.13': CCL MP

GAMMA RAY

Diameter : 3.38"

Length : 5.49'

Weight : 110 lbs

Series : 1339XA

Mnemonic : GR

Measure Point: 1.43': GR MP

INTEGRITY EXPLORER ELECTRONICS

Diameter : 3.38"

Length : 7.98'

Weight : 96 lbs

Series : 1401EA

Mnemonic : INTX



36.57'

CCL MP 34.78'

GR MP 29.59'

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INTEGRITY EXPLORER PAD SECTION

Diameter : 3.63"
 Length : 11.96'
 Weight : 203 lbs
 Series : 1401MA
 Mnemonic : INTX
 Measure Point: 3.54': Shear
 Measure Point: 2.62': Lamb



Shear — 11.77'

Lamb — 10.85'

SEGMENTED BOND TOOL VDL SUB


Diameter : 3.38"
 Length : 7.89'
 Weight : 108 lbs
 Series : 1424PA
 Mnemonic : SBT
 Measure Point: 4.00': SBT MP

SBT MP — 4.34'

BULL PLUG 3/8

0.00'

TOTAL LENGTH: 36.57'
 TOTAL WEIGHT: 568 lbs
 MAX DIAMETER: 0'3.63"

	COMPANY <u>Antero Resoures Corporation</u> WELL <u>Elk Lick Unit 2H</u> FIELD <u>Cashew Pad</u> COUNTY <u>Ritchie</u> STATE <u>WV</u>	FILE NO: <u>US205663</u> API NO: <u>47-085-10420-0000</u>
	LOCATION: TWP: West Union LAT <u>39.180581</u> LONG <u>-80.850453</u>	ELEVATIONS: KB 30 FT DF NA GL NA DATE <u>17-Oct-2022</u>