

Company: **ESSO Australia Pty. Ltd.**

**Well: BMA A20A**

Field: Bream A

Rig: ISDL 453

State: **Victoria**

# Victoria

## Gamma Ray Service

## 1:500 Measured Depth

## Real Time Log

Location	
Total depth:	2326.0 m
Spud date:	12-October-2005
Runs:	1 To 2
Permanent datum:	Mean Sea Level
Log measured from:	Drill Floor
Depth reference:	Driller's Depth
	Elev.: 0 m
	32.82 m above Perm. datum

ISDL 453

## Bream A

## Bass Strait

BMA A20A

Company: ESSO Australia Pty. Ltd.

Service Order  
ASQ-05-15

Service Order no.

$$Y = 5738458.02 \text{ m}$$
$$X = 567338.25 \text{ m}$$
Longitudinal  
E147° 41' 00" E

Longitude      Latitude

Depth logged:	1123.0 m	To	2326.0 m
Date logged:	12-Oct-05	To	17-Oct-05

Mag decl: 13.06 deg.  
Mag dip: -69.03 deg.

**Other services:**  
**Directional Drilling, D&I**

## Bore hole record

### Casing record

Hole size	from	to	Size	Density	from	to
8-1/2 in.	1123.0 m	2326.0 m	10-3/4 in.	40.5 lb/ft	Surface	1123.0 m

[illegible]

Type	Mud record		Borehole deviation record			
	from	to	Min	Max	from	to
KCl/HPA/Glycol	1123.0 m	2326.0 m	29.31 deg	50.12 deg	1123.0 m	1320.0 m
			5.03 deg.	25.98 deg	1320.0 m	2100.0 m
			5.37 deg.	6.58 deg.	2100.0 m	2326.0 m

## Surface equipment

Software record

Unit	11 FEB 2024	IDEAL W/ie	IM10 2C M	

Drift	ULU-FB-924	IDLAL WIS	IDL020-01	
Depth system	DES-CA-ASQ04-01SPM		HSPM10_1C_05	

	LWD	N/A	
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	MWD	V8.0B96	

## Bit Run Summary

Run number		1	2							
Bit size	in.	8.5	8.5							
Bit start depth	m	1123.0	1123.0							
Bit end depth	m	1193.0	2326.0							
Top interval logged	m	1123.0	1123.0							
Bottom interval logged	m	1174.1	2307.1							
Begin log: time		12:50	15:05							
Begin log: date		12-Oct-05	14-Oct-05							
End log: time		15:20	16:55							
End log: date		12-Oct-05	17-Oct -05							
<b>Mud data</b>										
Depth	m	1193.0	2326.0							
Type		KCl/PHPA/Gly.	KCl/PHPA/Gly.							
Mud weight	ppg	9.6	10.10							
Solids	%	4.9	7.4							
Chlorides	mg/l	38,500	56,000							
Rm		N/A	N/A							
Rmf		N/A	N/A							
Rmc		N/A	N/A							

Potassium	%	1.1	1.2								
<b>Environmental data</b>											
<b>GR</b>											
Mud weight	ppg	9.6	10.10								
Bit size	in.	8.5	8.5								
<b>Resistivity</b>											
<b>Neutron porosity</b>											
Hole Size		N/A	N/A								
Mud weight		N/A	N/A								
Temperature		N/A	N/A								
Mud salinity		N/A	N/A								
Formation salinity		N/A	N/A								
Recording rate 1	SEC	3.83	3.83								
Recording rate 2	SEC	N/A	N/A								
Filtering GR		3 pt.	3 pt.								
Filtering density		N/A	N/A								
Filtering Neutron		N/A	N/A								
Company representative		B. Davis	W. Westman	G. Campbell							
Schlumberger D&M Personnel		R. Borjas	B. Pattarakorn	C. Soper	L. Muskett						

<p style="text-align: center;"><b>DISCLAIMER</b></p> <p>THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.</p>		
<b>OTHER SERVICES FOR RUN1</b> Directional Drilling Directional Surveys D&I	<b>OTHER SERVICES FOR RUN2</b> Directional Drilling Directional Surveys D&I	<b>OTHER SERVICES FOR RUN</b>
<b>REMARKS: RUN NUMBER 1</b> Depth is referenced to driller's depth  Gamma Ray corrected for Tool Size, Bit Size and Mud weight  Gamma Ray not corrected for Potasium  Mud type is KCl/PHPA/Glycol.  8-1/2 in. hole was drilled from 1123.0m to 1193.0m  POOH due to bad cement condition.	<b>REMARKS: RUN NUMBER 2</b> Depth is referenced to driller's depth  Gamma Ray corrected for Tool Size, Bit Size and Mud weight  Gamma Ray not corrected for Potasium  Mud type is KCl/PHPA/Glycol.  8-1/2 in. hole was drilled from 1123.0m to 2326.0m  POOH due to TD of BMA A20A	<b>REMARKS: RUN NUMBER</b>

<b>EQUIPMENT DESCRIPTION</b>		
RUN1	RUN2	RUN
<p>DOWNHOLE F/</p>	<p>DOWNHOLE F/</p>	

DOWNHOLE EQUIPMENT

6-3/4 in. Pov

MDC: 4C  
MEC: 1  
MDI: 1!  
MGR: '   
DHS: V8.

D&I

GR

— 19.5

— 18.9

6-5/8 in. NI  
S/N: ASS'

6-5/8 in. NI  
S/N: ANA-

6-5/8 in. NM Ro  
S/N: GU

7 in. PowerPa

A700GT  
S/N: N07  
1.5 deg. Bent  
8-3/8 in. Motr

Smith PD

OD: 8-1

S73PX S/N: .

— 0.0(

0.2%

Maximum string diar  
All lengths in

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6-3/4 in. Pov

MDC: 4C  
MEC: 1  
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— 0.0(

0.2%

Maximum string diar  
All lengths in

# BMA A20A RT 1:500 MD

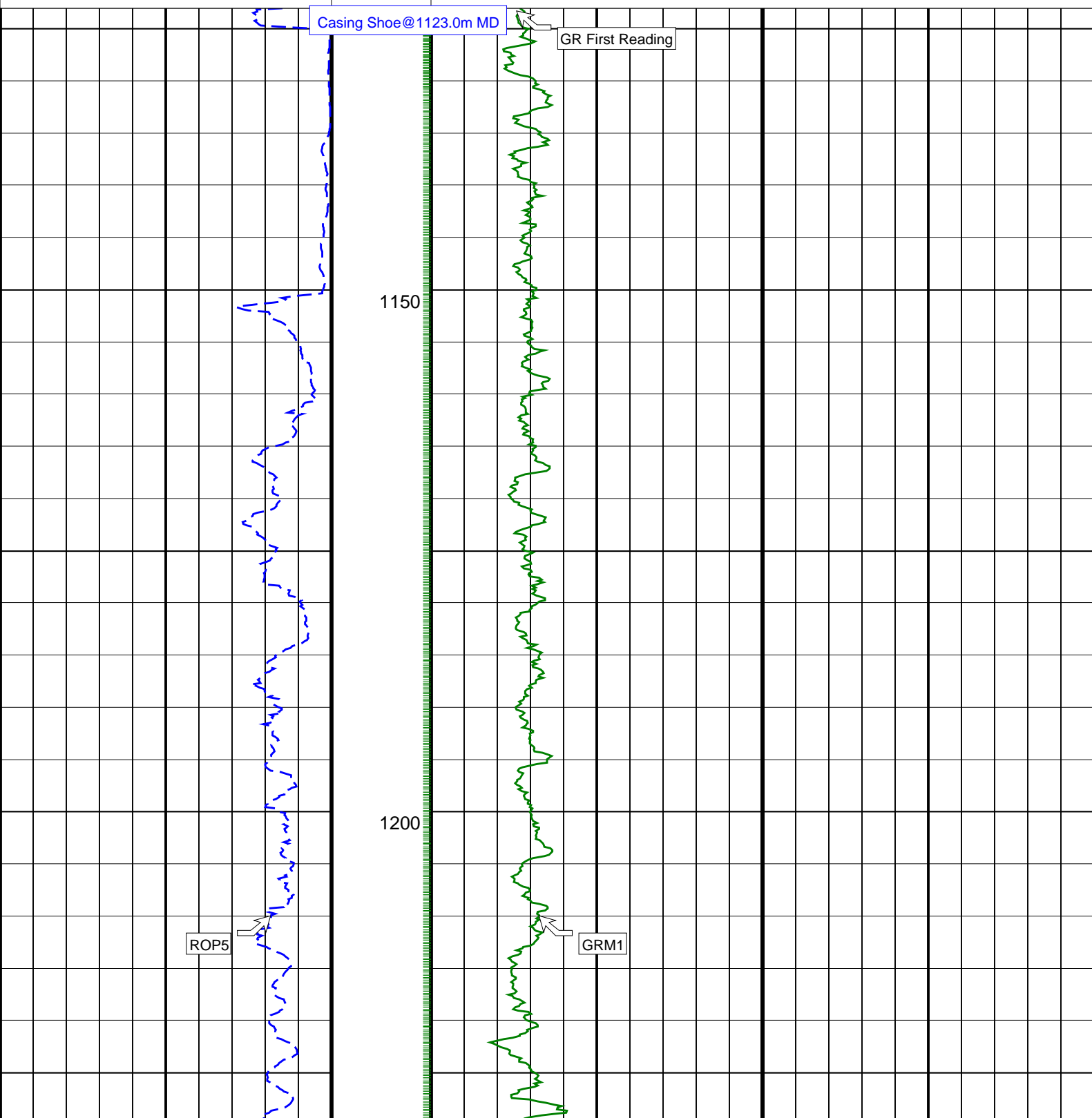
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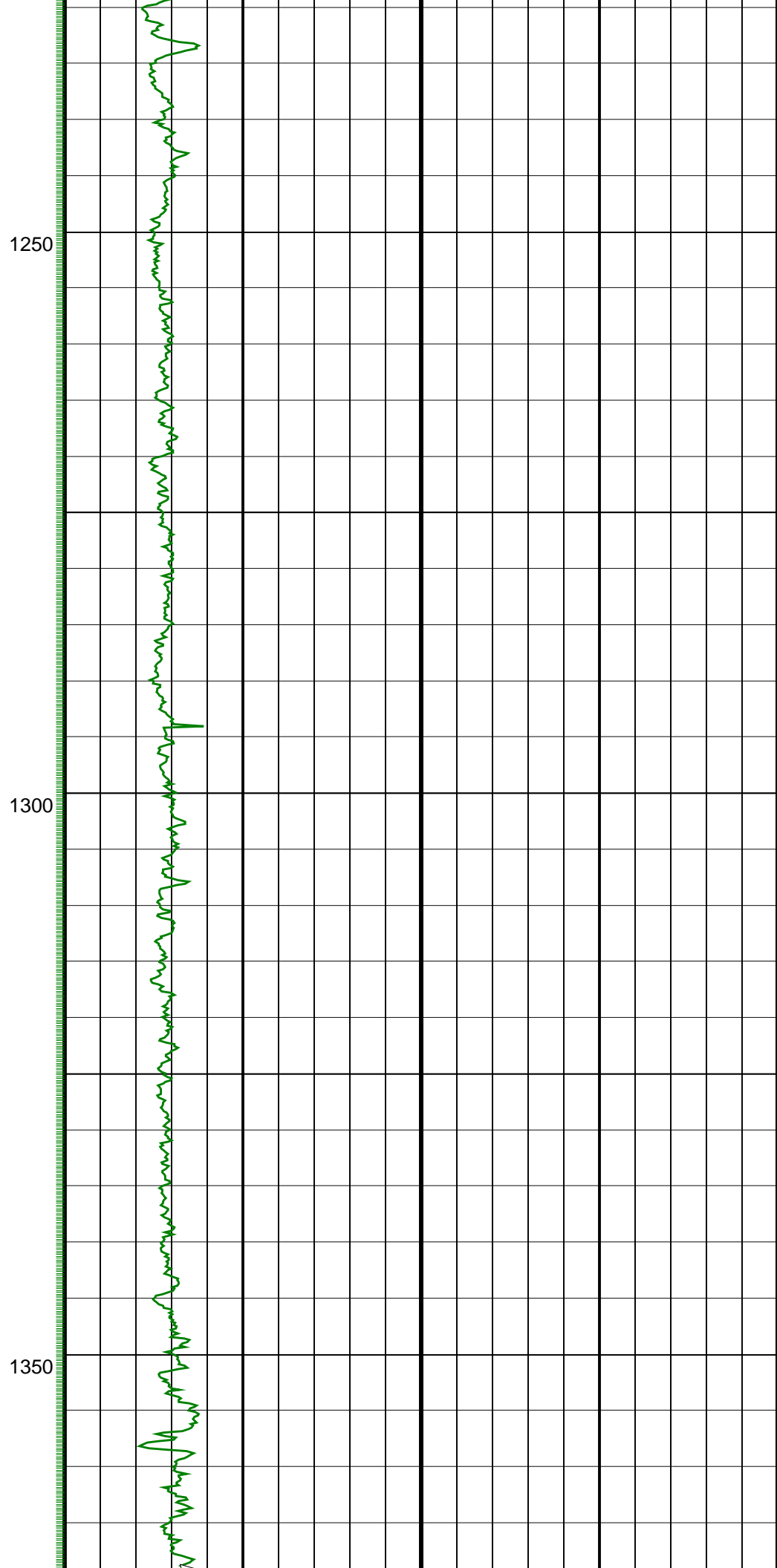
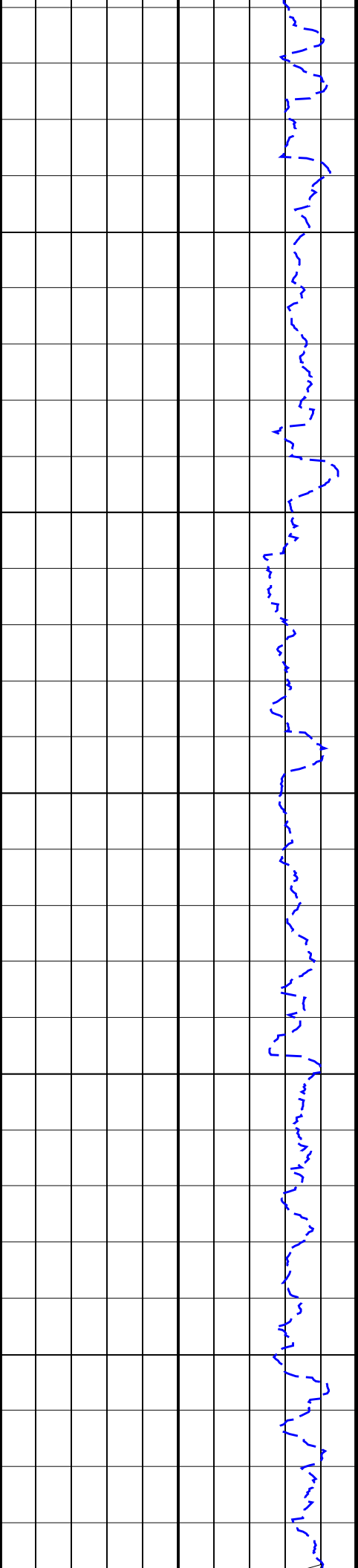
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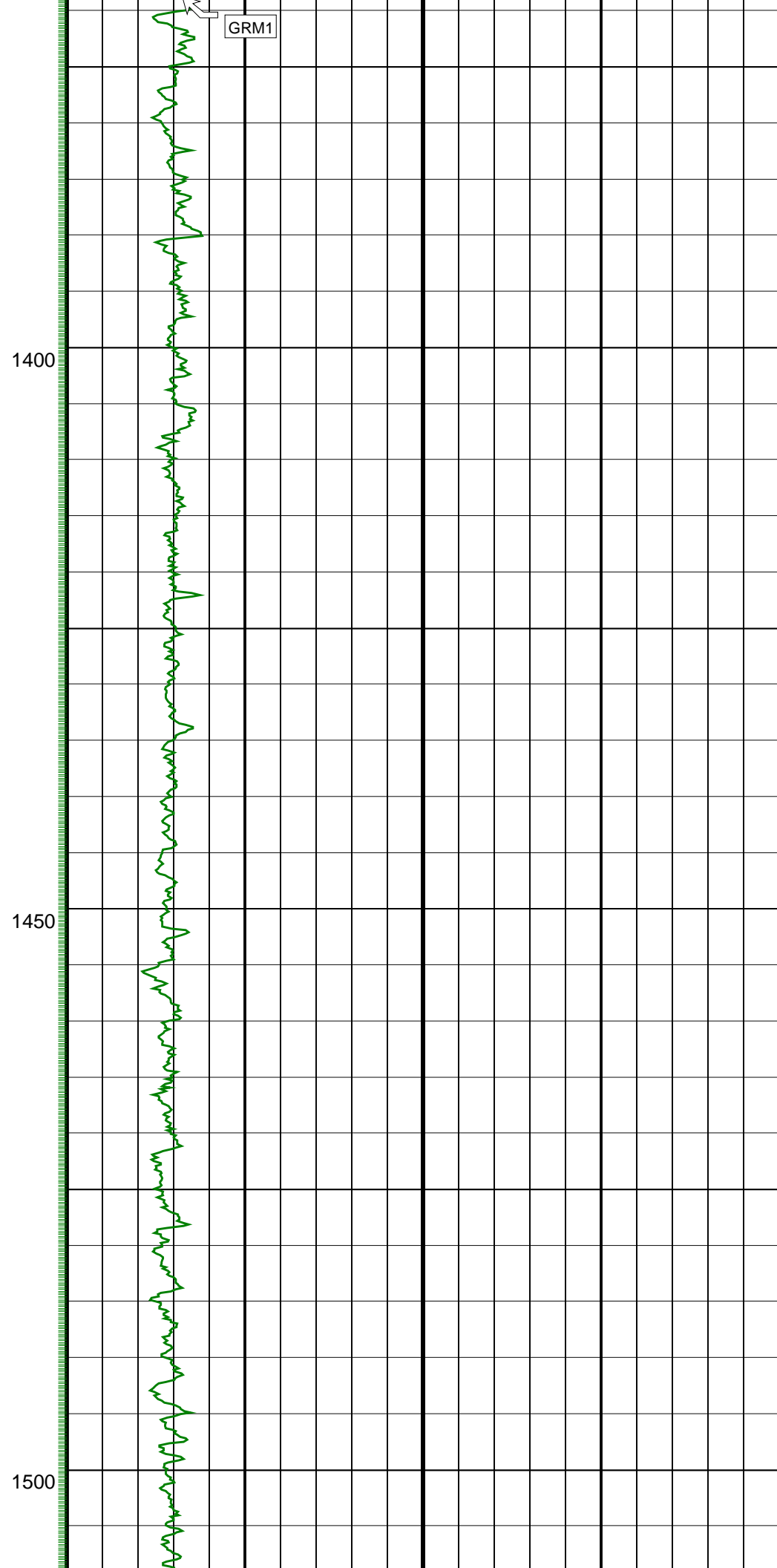
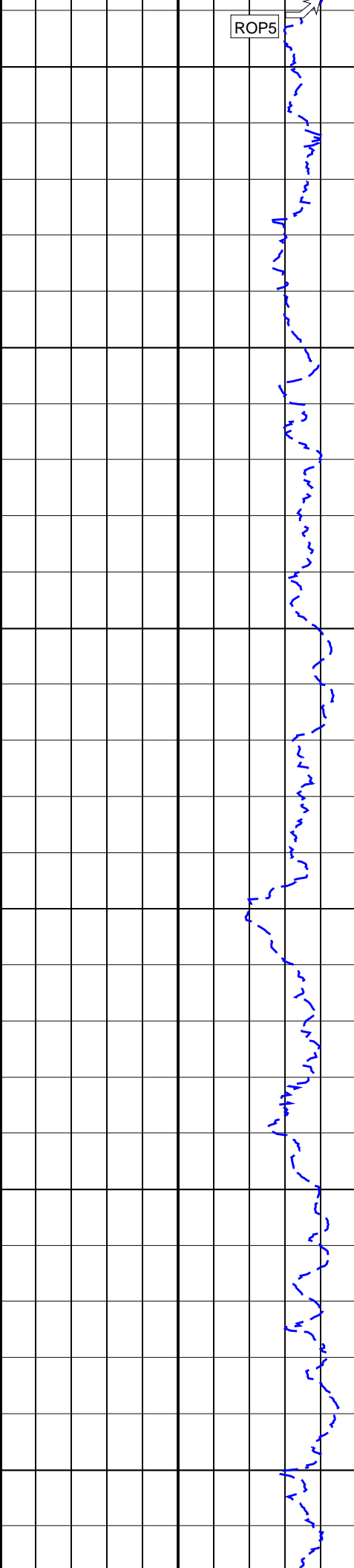
## PIP SUMMARY

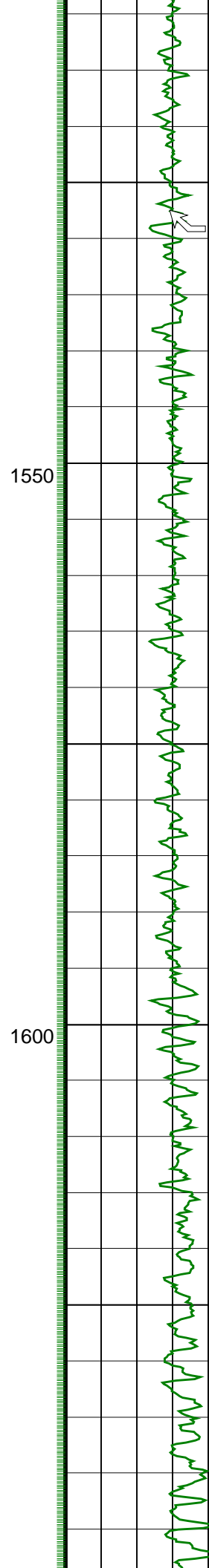
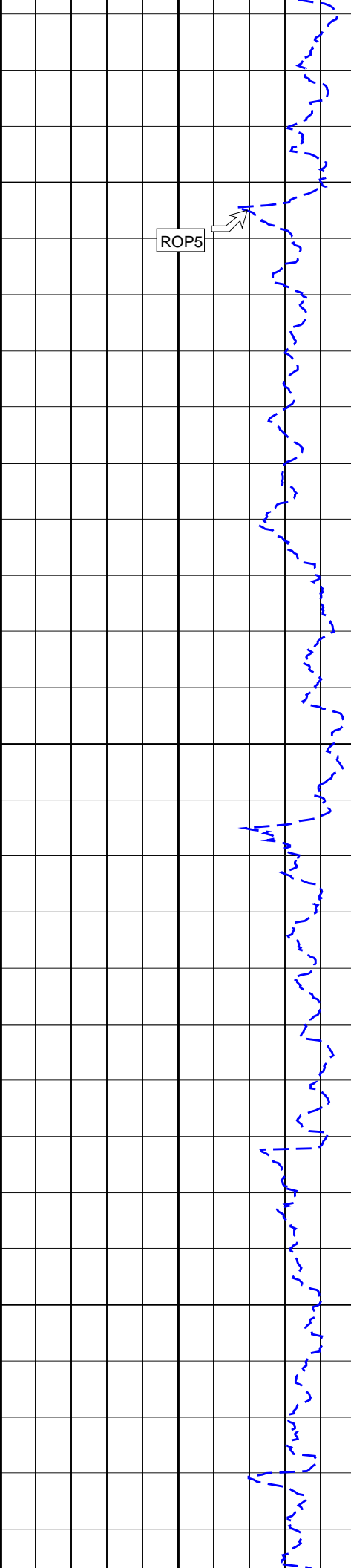
GR(TM) PIP

ROP\*5 (ROP5) (M/HR) 200 0 GR(TM) (GRM1) (GAPI) 0 400



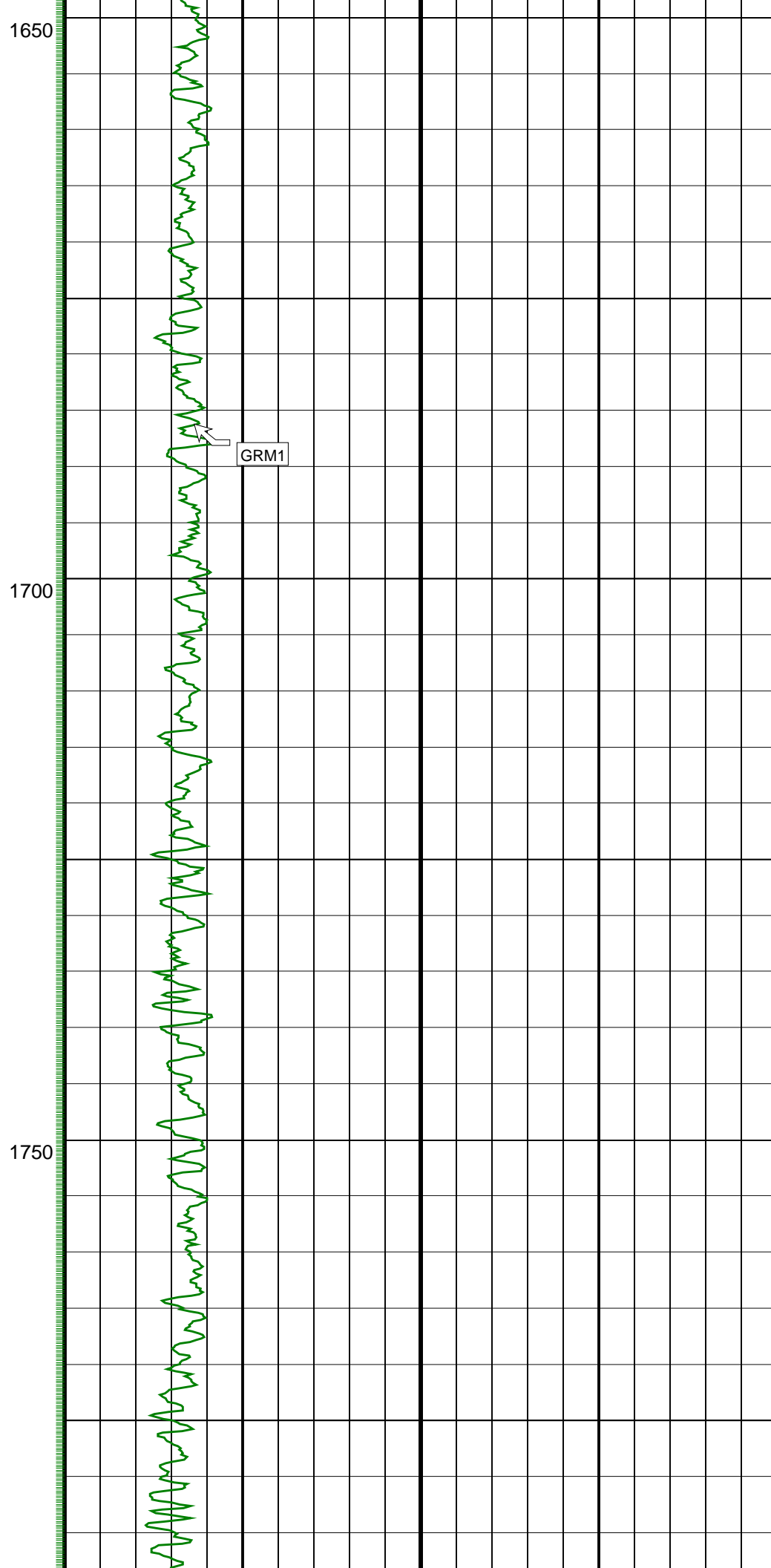
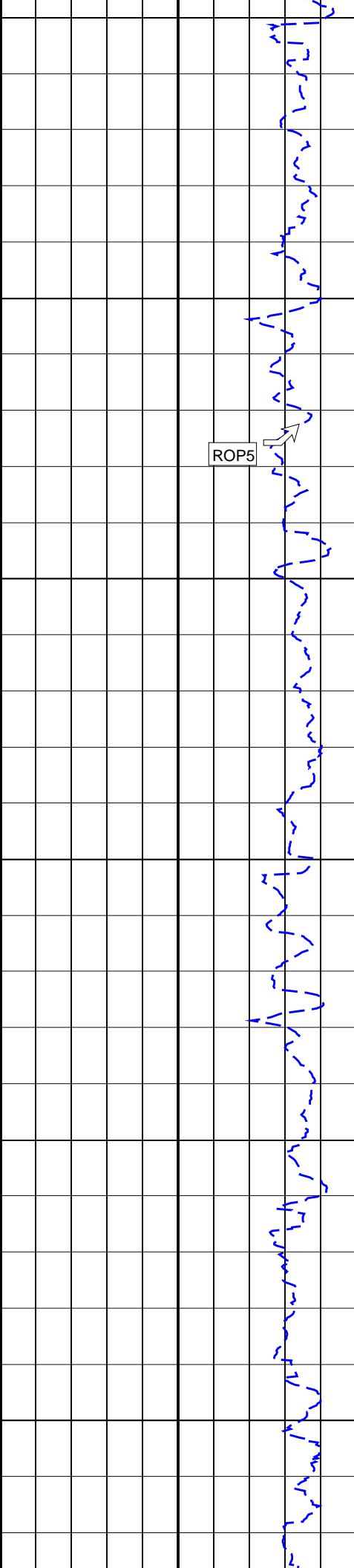




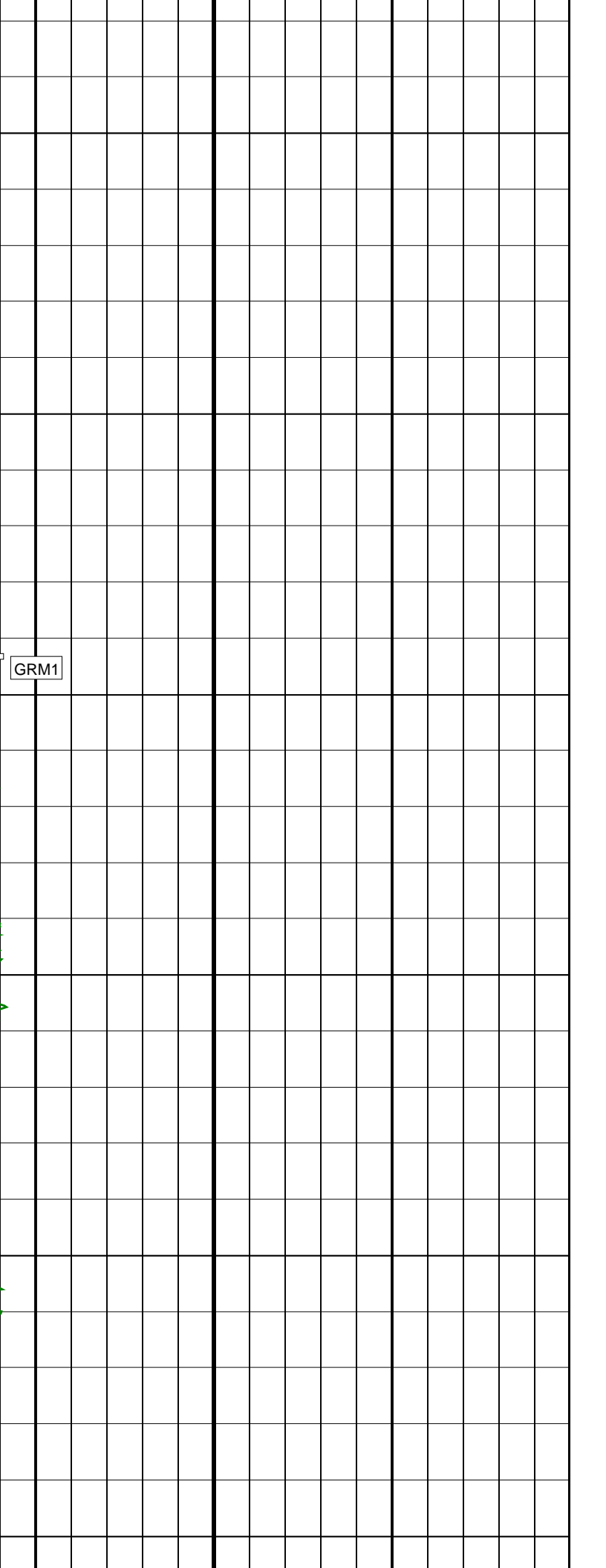
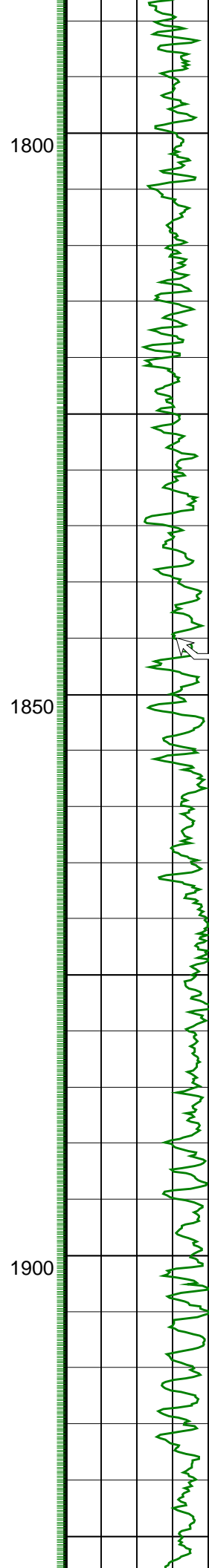
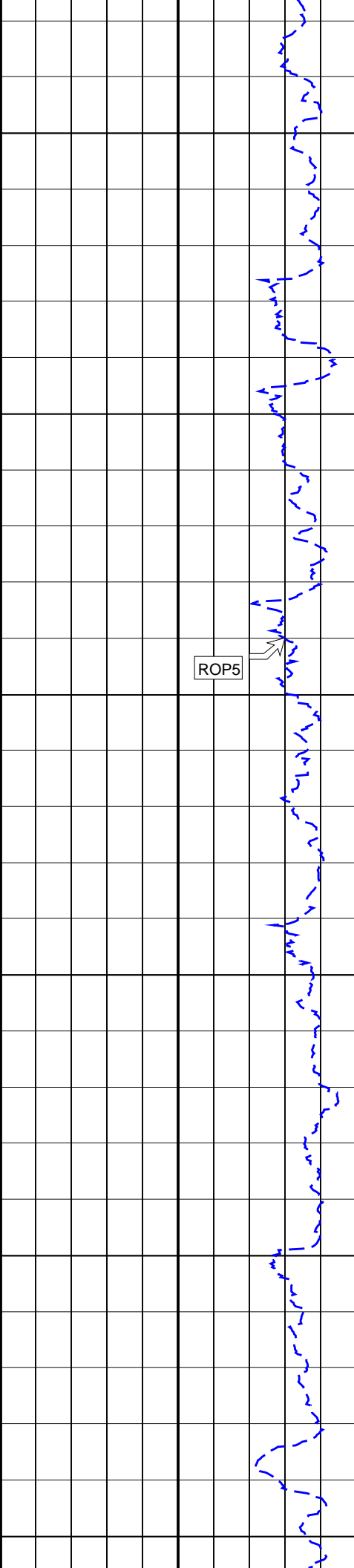


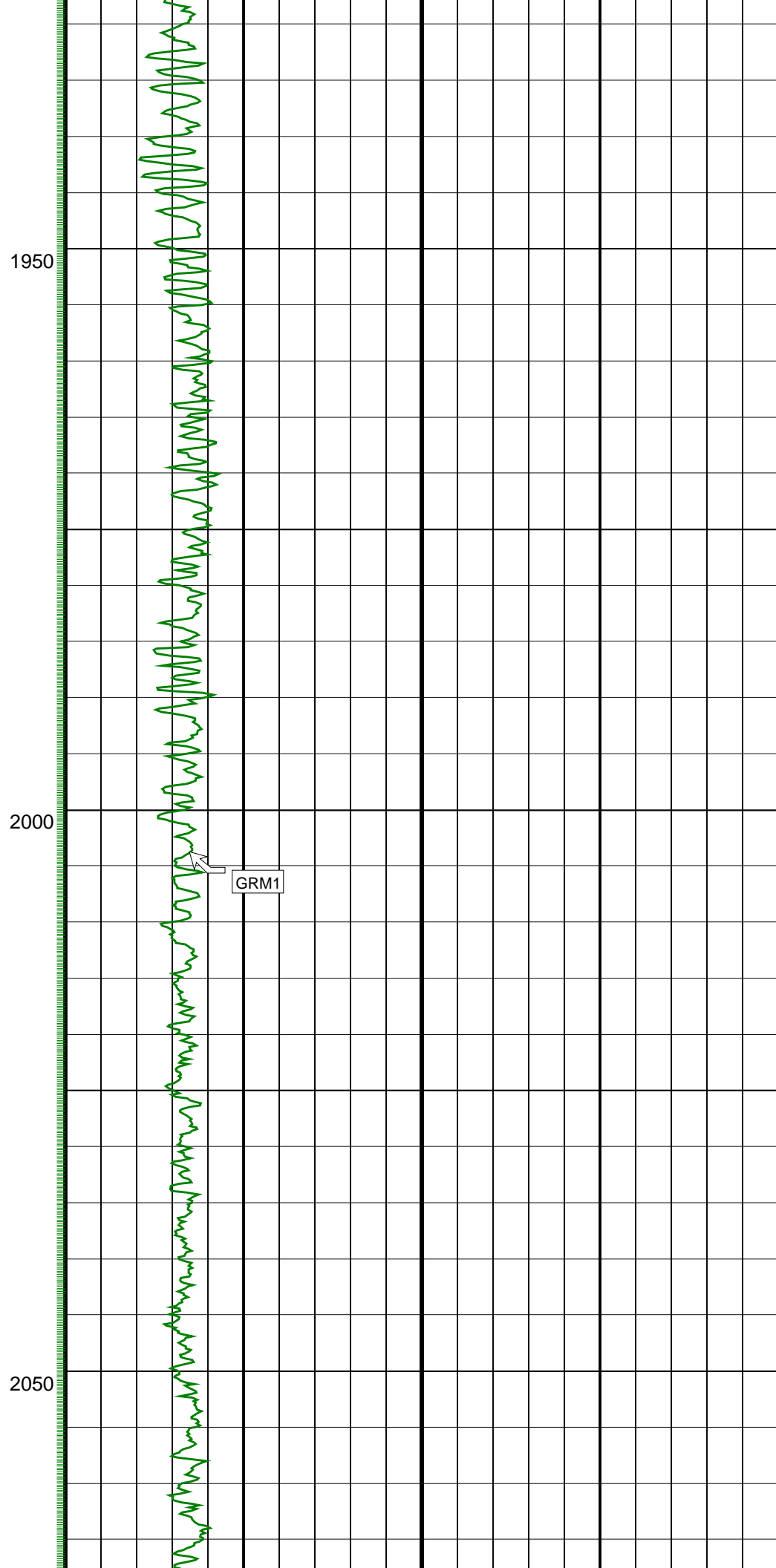
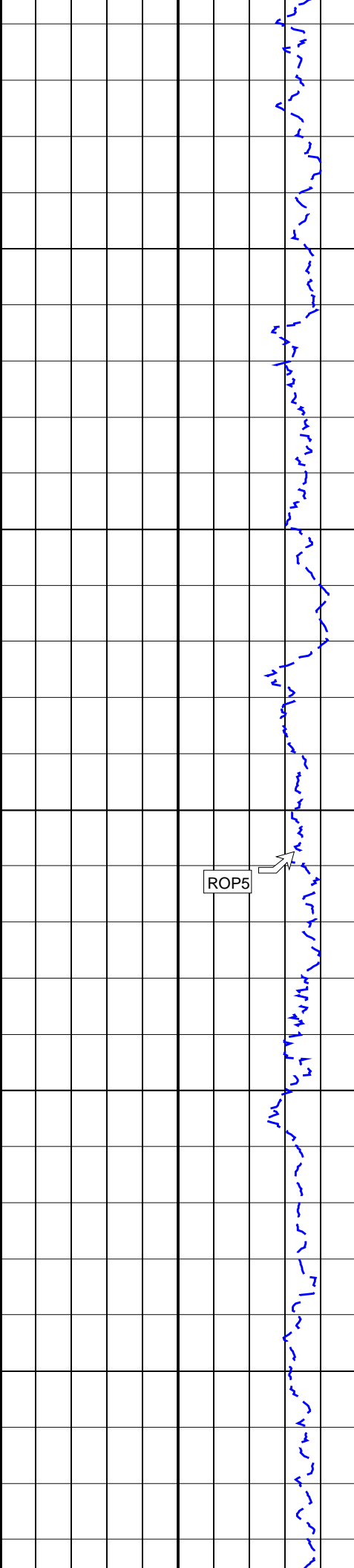
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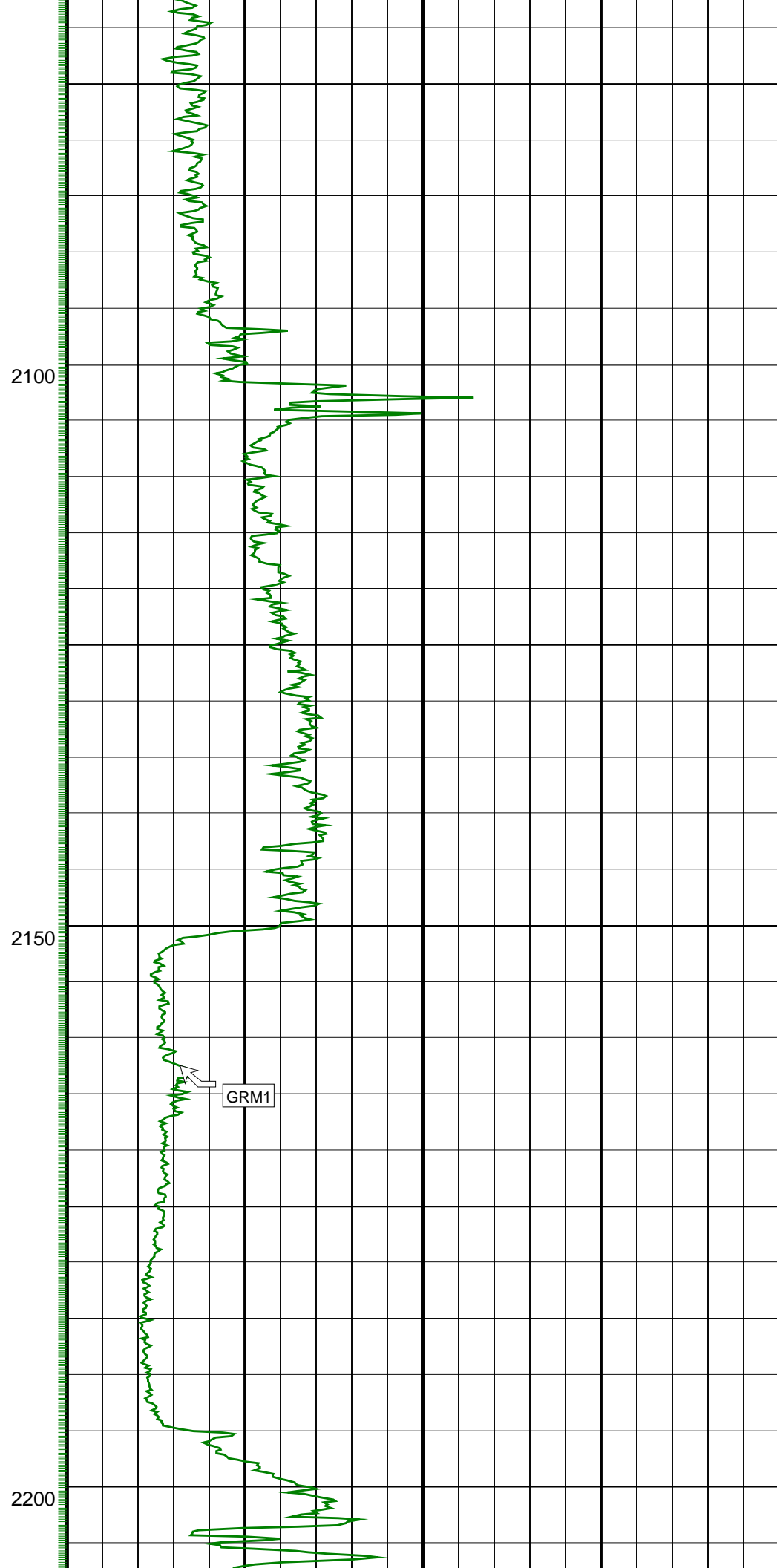
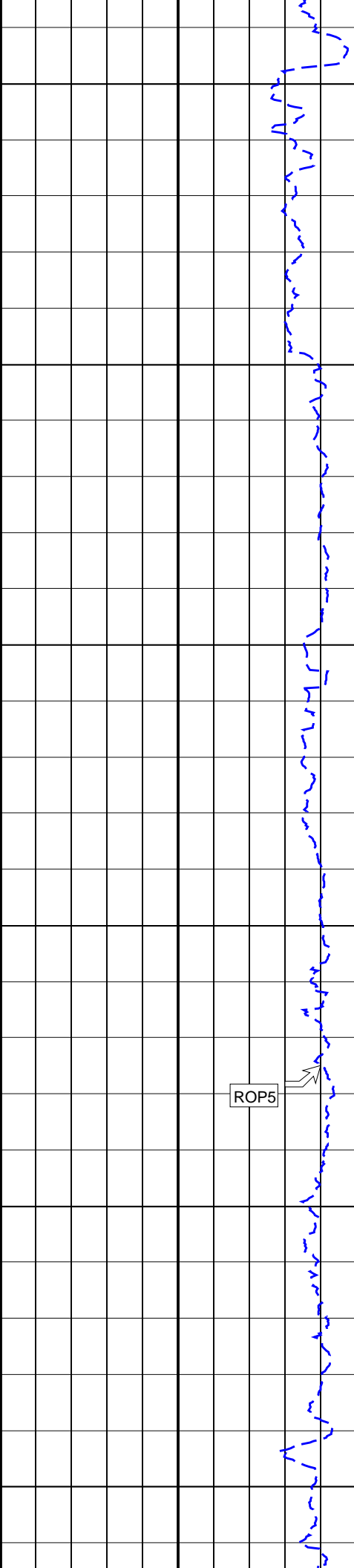
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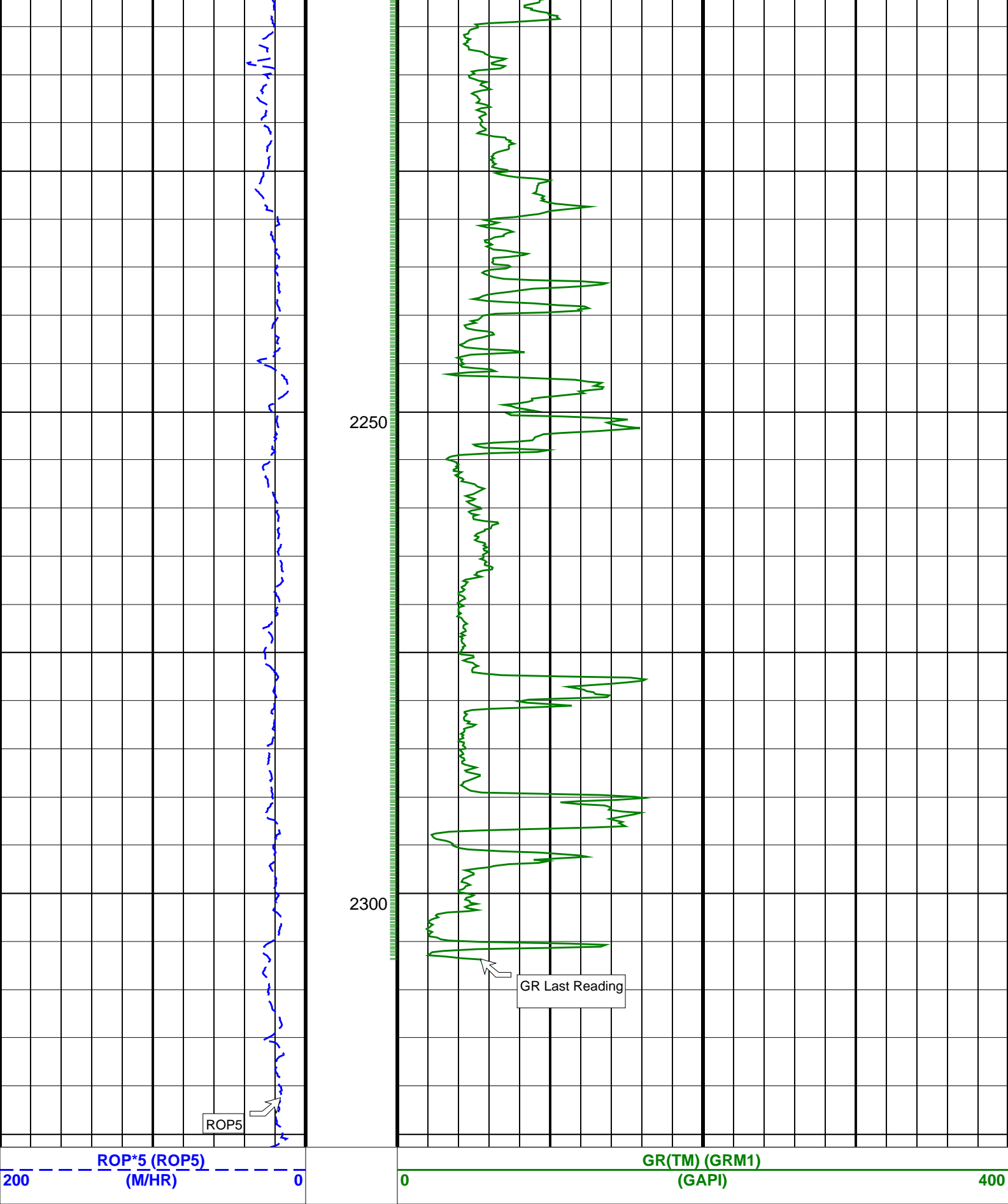












PIP SUMMARY

GR(TM) PIP

Client..... ESSO Australia Pty. Ltd.  
Field..... Bream A

Well..... BMA A20A  
API number.....  
Engineer..... R. Borjas, B. Pattarakorn

Rig..... ISDL 453  
STATE..... Victoria

Spud date..... 12-Oct-05  
Last survey date..... 17-Oct-05  
Total accepted surveys.... 44  
MD of first survey..... 1123.20 m  
MD of last survey..... 2326.00 m

----- Survey calculation methods-----  
Method for positions..... Minimum curvature  
Method for DLS..... Mason & Taylor

----- Depth reference -----  
Permanent datum..... Mean Sea Level  
Depth reference..... Driller's Depth  
GL above permanent..... -59.40 m  
KB above permanent..... 32.82 m  
DF above permanent..... 32.82 m

----- Vertical section origin-----  
Latitude (+N/S-)..... -4.44 m  
Departure (+E/W-)..... 1.75 m

----- Geomagnetic data -----  
Magnetic model..... BGGM version 2005  
Magnetic date..... 10-Oct-2005  
Magnetic field strength... 1202.80 HCNT  
Magnetic dec (+E/W-)..... 13.06 degrees  
Magnetic dip..... -69.03 degrees

----- MWD survey Reference Criteria -----  
Reference G..... 1000.05 mGal  
Reference H..... 1202.80 HCNT  
Reference Dip..... -69.03 degrees  
Tolerance of G..... (+/-) 2.50 mGal  
Tolerance of H..... (+/-) 6.00 HCNT  
Tolerance of Dip..... (+/-) 0.45 degrees

----- Corrections -----  
Magnetic dec (+E/W-)..... 13.06 degrees  
Grid convergence (+E/W-).. -0.48 degrees  
Total az corr (+E/W-)..... 13.54 degrees  
(Total az corr = magnetic dec - grid conv)

Azimuth from Vsect Origin to target: 230.92 degrees

Survey Correction Type ...:  
I=Sag Corrected Inclination  
M=Schlumberger Magnetic Correction  
S=Shell Magnetic Correction  
F=Failed Axis Correction  
R=Magnetic Resonance Tool Correction  
D=Dmag Magnetic Correction

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SCHLUMBERGER Survey Report

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Seq #	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 100f)	Srvy tool type	Tool Corr (deg)
1	1123.20	50.12	222.56	0.00	877.72	592.09	-407.56	-433.62	595.09	226.77	0.00	TIP	None
2	1130.05	47.49	222.04	6.85	882.23	597.19	-411.37	-437.09	600.23	226.74	0.39	MWD	None
3	1158.55	41.35	225.01	28.50	902.58	616.95	-425.84	-450.80	620.13	226.63	0.23	MWD	None
4	1186.68	36.10	227.21	28.13	924.52	634.48	-438.05	-463.46	637.72	226.61	0.19	MWD	None
5	1215.77	35.19	227.08	29.09	948.16	651.39	-449.58	-475.89	654.67	226.63	0.03	MWD	None
6	1244.76	33.70	227.07	28.99	972.06	667.75	-460.75	-487.89	671.07	226.64	0.05	MWD	None
7	1273.63	30.94	226.91	28.87	996.46	683.15	-471.28	-499.18	686.50	226.65	0.10	MWD	None
8	1302.40	29.31	226.75	28.77	1021.34	697.55	-481.15	-509.71	700.94	226.65	0.06	MWD	None
9	1331.20	25.98	228.95	28.80	1046.85	710.89	-490.13	-519.60	714.29	226.67	0.12	MWD	None
10	1359.76	21.86	230.77	28.56	1072.95	722.47	-497.60	-528.44	725.85	226.72	0.15	MWD	None
11	1388.77	19.17	232.97	29.01	1100.12	732.63	-503.89	-536.43	735.98	226.79	0.10	MWD	None
12	1417.01	15.02	239.52	28.24	1127.11	740.88	-508.54	-543.29	744.16	226.89	0.16	MWD	None
13	1445.36	10.81	249.92	28.35	1154.74	747.03	-511.32	-548.96	750.20	227.03	0.17	MWD	None
14	1474.78	9.02	260.03	29.42	1183.72	751.66	-512.66	-553.82	754.68	227.21	0.08	MWD	None
15	1502.94	7.99	258.30	28.16	1211.57	755.32	-513.44	-557.91	758.21	227.38	0.04	MWD	None
16	1531.72	7.61	252.76	28.78	1240.09	758.87	-514.41	-561.69	761.65	227.52	0.03	MWD	None
17	1560.64	7.50	256.14	28.92	1268.76	762.35	-515.43	-565.35	765.05	227.64	0.02	MWD	None
18	1588.81	7.68	254.24	28.17	1296.68	765.75	-516.39	-568.95	768.35	227.77	0.01	MWD	None
19	1617.61	7.60	252.84	28.80	1325.22	769.28	-517.47	-572.62	771.80	227.90	0.01	MWD	None
20	1646.36	7.28	251.97	28.75	1353.73	772.74	-518.59	-576.17	775.18	228.01	0.01	MWD	None
21	1675.14	7.18	253.68	28.78	1382.28	776.10	-519.66	-579.63	778.47	228.12	0.01	MWD	None
22	1703.77	6.89	255.33	28.63	1410.70	779.32	-520.60	-583.01	781.62	228.24	0.01	MWD	None
23	1733.18	6.64	254.42	29.41	1439.90	782.48	-521.51	-586.35	784.71	228.35	0.01	MWD	None
24	1761.59	6.22	258.30	28.41	1468.13	785.36	-522.26	-589.44	787.52	228.46	0.02	MWD	None
25	1790.90	6.07	260.30	29.31	1497.28	788.12	-522.84	-592.52	790.22	228.57	0.01	MWD	None
26	1819.91	5.75	257.97	29.01	1526.13	790.75	-523.40	-595.46	792.79	228.68	0.01	MWD	None
27	1848.48	5.62	256.99	28.57	1554.56	793.28	-524.02	-598.22	795.27	228.78	0.01	MWD	None
28	1877.30	5.53	257.37	28.82	1583.24	795.79	-524.64	-600.95	797.74	228.88	0.00	MWD	None
29	1906.02	5.55	256.59	28.72	1611.83	798.28	-525.26	-603.65	800.18	228.97	0.00	MWD	None
30	1934.96	5.39	257.55	28.94	1640.64	800.76	-525.88	-606.34	802.62	229.06	0.01	MWD	None

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SCHLUMBERGER Survey Report

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Seq #	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 100f)	Srvy tool type	Tool Corr (deg)
31	1963.74	5.23	257.27	28.78	1669.29	803.14	-526.46	-608.94	804.96	229.15	0.01	MWD	None
32	1993.31	5.19	255.69	29.57	1698.74	805.56	-527.09	-611.55	807.35	229.24	0.01	MWD	None
33	2020.70	5.03	254.63	27.39	1726.02	807.79	-527.71	-613.91	809.54	229.32	0.01	MWD	None
34	2049.27	5.09	254.20	28.57	1754.48	810.10	-528.39	-616.33	811.83	229.39	0.00	MWD	None
35	2077.81	5.37	254.60	28.54	1782.90	812.48	-529.09	-618.84	814.19	229.47	0.01	MWD	None
36	2106.43	5.47	255.61	28.62	1811.40	814.95	-529.78	-621.45	816.62	229.55	0.00	MWD	None
37	2134.94	5.59	253.27	28.51	1839.77	817.47	-530.52	-624.10	819.12	229.63	0.01	MWD	None
38	2163.87	5.60	251.38	28.93	1868.57	820.09	-531.38	-626.79	821.72	229.71	0.01	MWD	None
39	2192.89	6.08	250.96	29.02	1897.43	822.87	-532.33	-629.58	824.47	229.78	0.02	MWD	None
40	2221.62	6.23	249.36	28.73	1926.00	825.77	-533.38	-632.48	827.36	229.86	0.01	MWD	None
41	2250.35	6.42	249.94	28.73	1954.55	828.77	-534.48	-635.44	830.33	229.93	0.01	MWD	None

42	2278.98	6.58	249.35	28.63	1983.00	831.84	-535.60	-638.48	833.39	230.01	0.01	MWD	None
43	2305.83	6.41	248.34	26.85	2009.68	834.73	-536.70	-641.32	836.26	230.07	0.01	MWD	None
44	2326.00	6.35	248.00	20.17	2029.72	836.87	-537.53	-643.40	838.39	230.12	0.00	Proj.	to TD

[(c)2005 IDEAL ID10\_2C\_01]

Company:
**ESSO Australia Pty. Ltd.**



Well:
**BMA A20A**

Field:
**Bream A**

Rig:
**ISDL 453**

State:
**Victoria**

**Gamma Ray Service**  
**1:500 Measured Depth**  
**Real Time Log**