



Build & Lateral

16191566

MD

Well Site Information

Crestone Peak Resources

S33-T3N-R67W

Herren 1G-33H-H367

API	05-123-47731
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Field	DJ BASIN
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State	CO
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Country	USA
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Surface Coordinates

Horizontal

40° 10' 59.4696 N

104° 53' 13.8948 W

1,310,171.56 us/ft

3,171,224.04 us/ft

True North

MWD Engineers

Deric Group

David Lindberg

Elevation

above perm datum.

c/24/2018

8.95 ft

Bore Hole Record

To

2,012.00 ft

8.50 in	2,012.00 ft	11,921.00 ft
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Casing Record

To

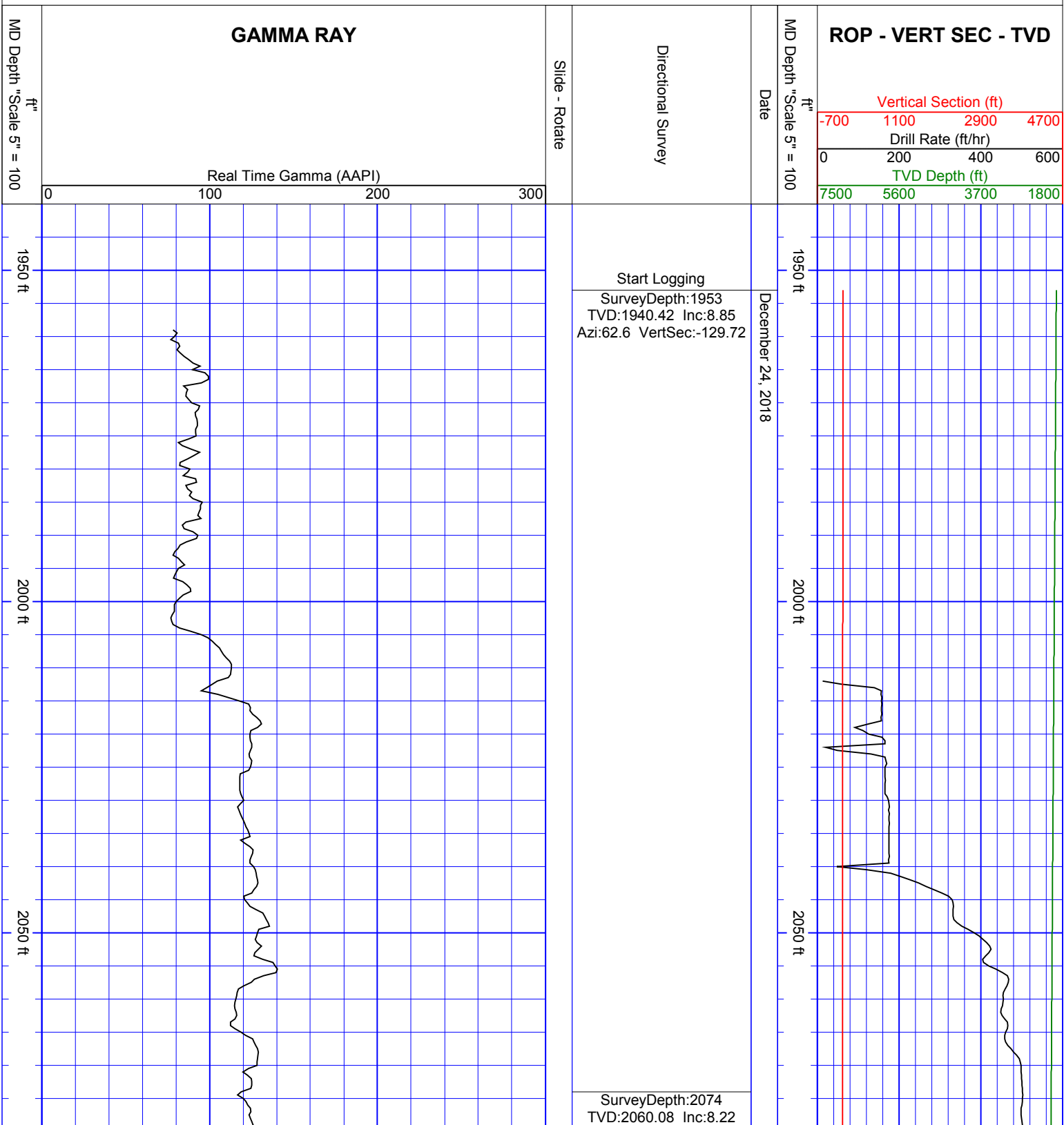
1,974.00 f

Run Data

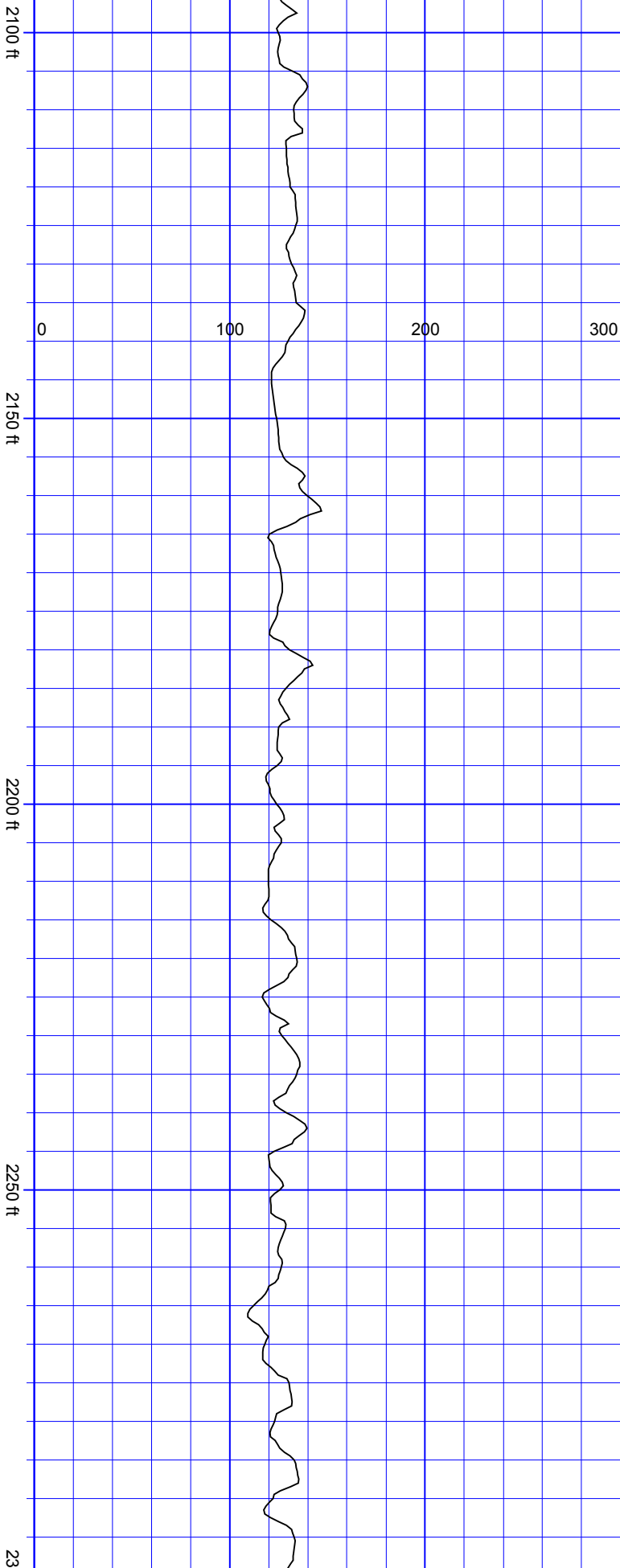
Run Data					
Bit Run Number	1	2			
Start Date & Time	Dec/24/2018 12:00:00	Dec/26/2018 21:00:00			
End Date & Time	Dec/26/2018 19:30:00	Dec/27/2018 12:30:00			
Run Hours	55.50	15.5			
Depth In	2,012.00 ft	11,921.00 ft			
Depth Out	11,921.00 ft	11,921.00 ft			
Total Gamma Correction	5.77	5.77			
Gamma to Bit	54.60 ft	60.64 ft			
Resistivity to Bit	-	-			
Mud Type	OBM	OBM			
Density	10.60 ppg	10.60 ppg			
Viscosity	50.00 sec/qt	50.00 sec/qt			
PH	-	-			
Fluid Loss	-	-			
K+ ppm	-	-			
CL- ppm	201,387.00 ppm	201,387.00 ppm			
Max Mud Temp	235.00 °F	239.00 °F			
Mud Report Depth	11,921.00 ft	11,921.00 ft			

Remarks

Interpretations of this data by Cathedral Energy Services will be of best judgment as to correctness. Cathedral Energy Services cannot and does not guarantee the accuracy or correctness of interpretations or any surveys derived therefrom. Cathedral Energy Services makes no warranties of performance, results, fitness or suitability for any particular purposes with respect to the goods being furnished under the terms and conditions. Cathedral Energy Services warrants that the equipment furnished will conform to Cathedral Energy Services published specifications in effect at the time and be in good working order.

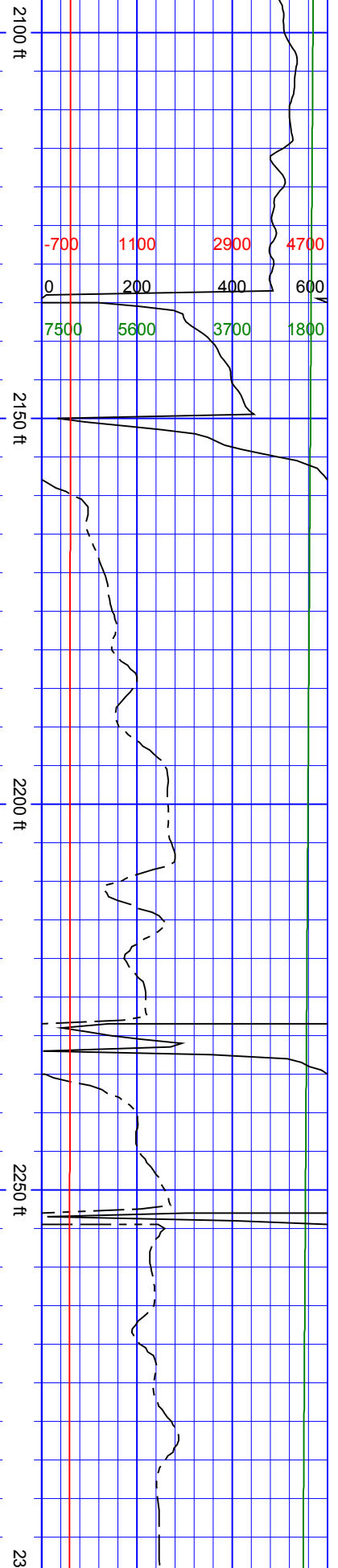


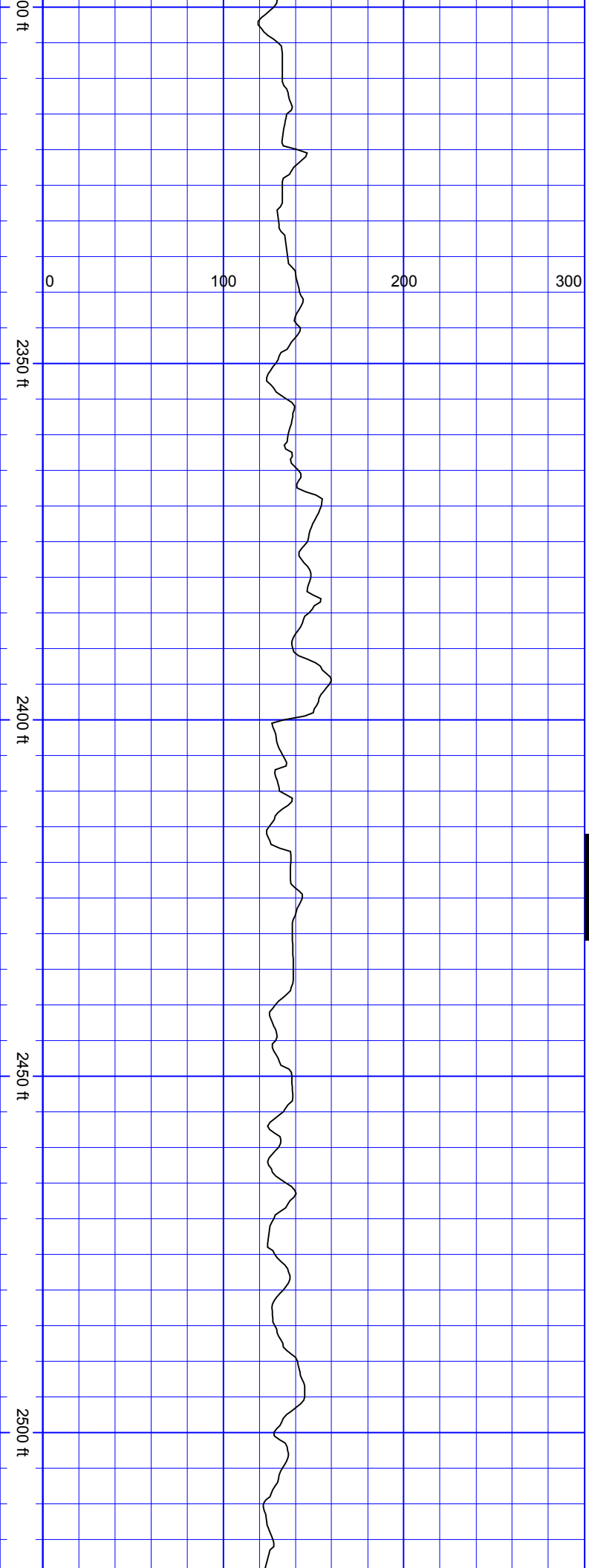
Azi:59.11 VertSec:-144



SurveyDepth:2168
TVD:2152.99 Inc:9.27
Azi:60.87 VertSec:-
155.23

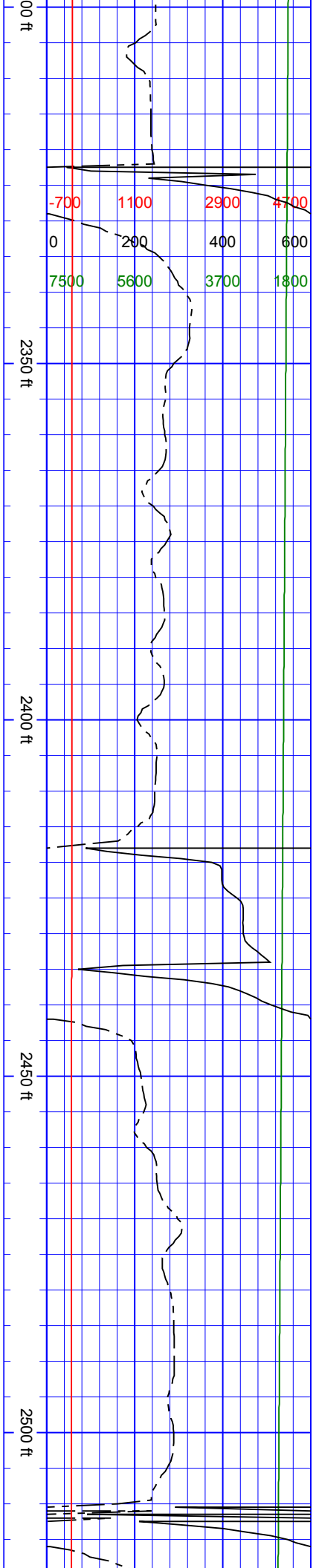
SurveyDepth:2262
TVD:2245.83 Inc:8.75
Azi:56.48 VertSec:-
166.59

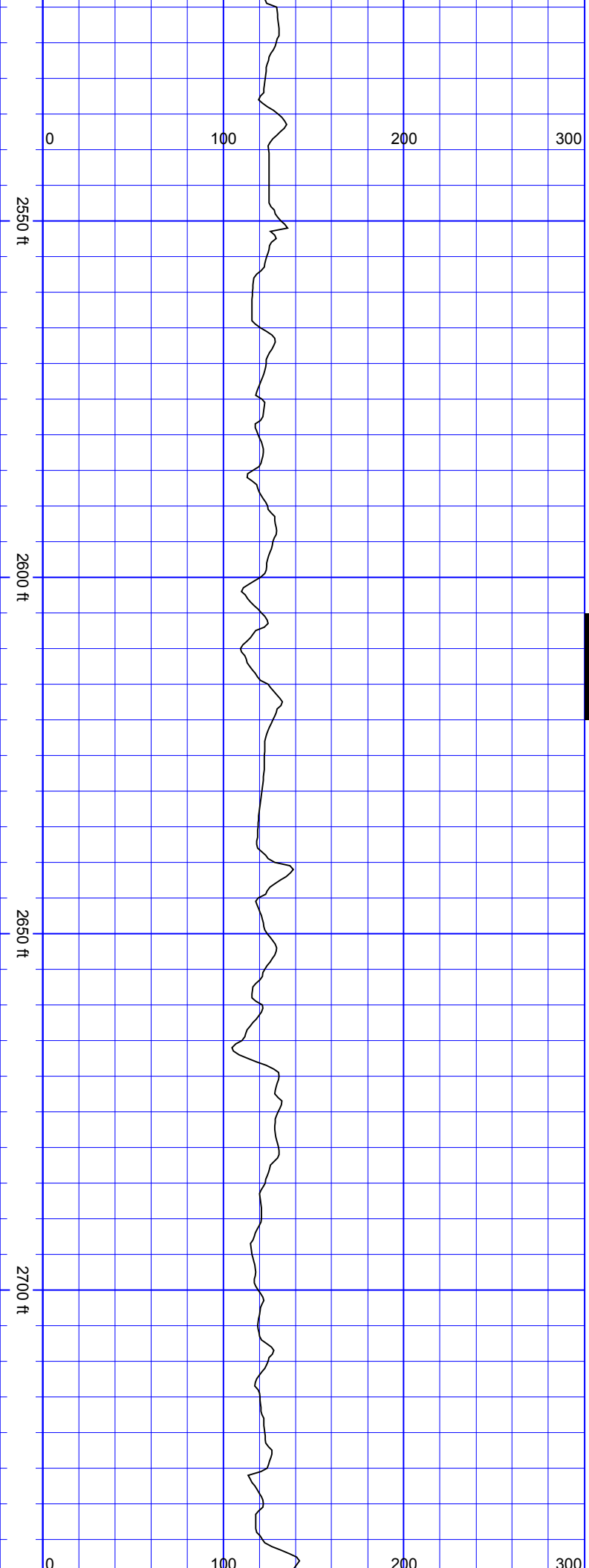




SurveyDepth:2356
TVD:2338.85 Inc:7.82
Azi:52.79 VertSec:-
176.41

SurveyDepth:2450
TVD:2431.89 Inc:8.53
Azi:51.47 VertSec:-
185.68

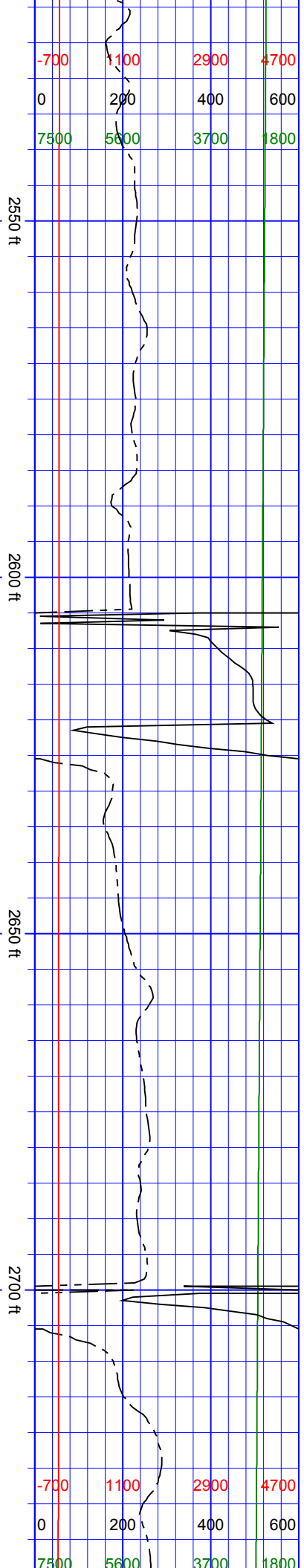


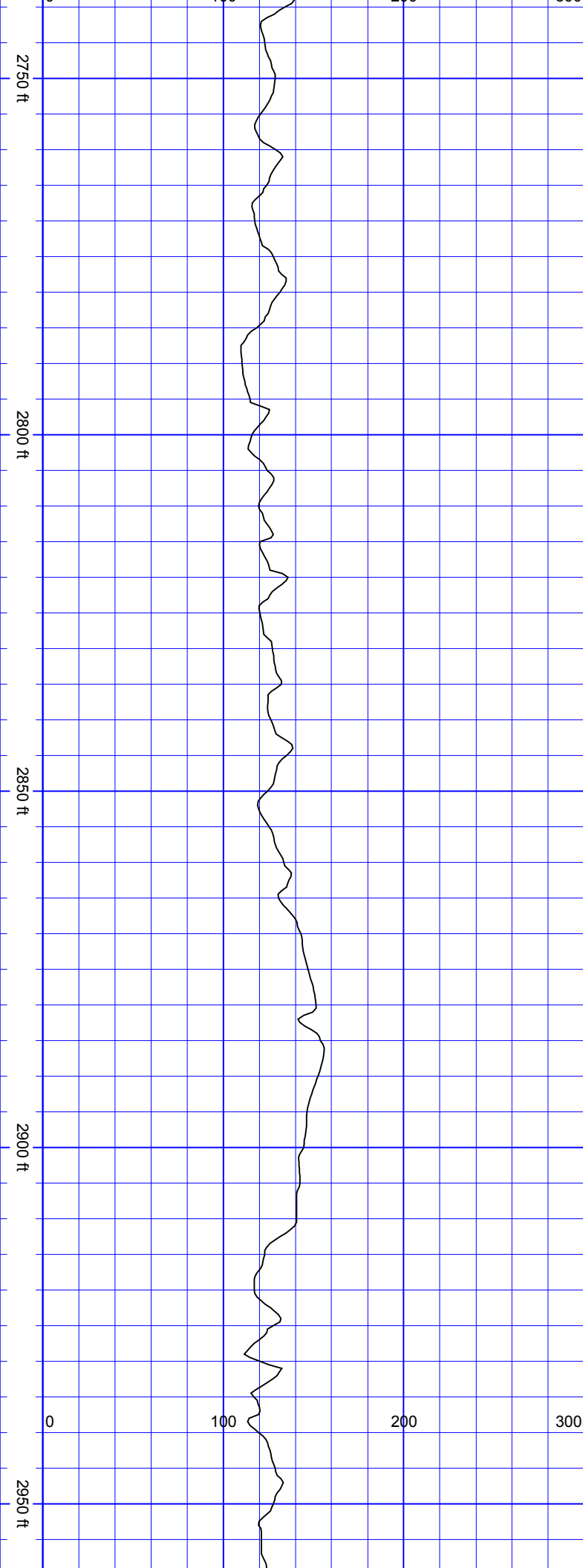


SurveyDepth:2545
TVD:2525.92 Inc:7.82
Azi:47.51 VertSec:-194.6

SurveyDepth:2639
TVD:2618.93 Inc:8.88
Azi:52.96 VertSec:-203.76

SurveyDepth:2734
TVD:2712.86 Inc:8.35



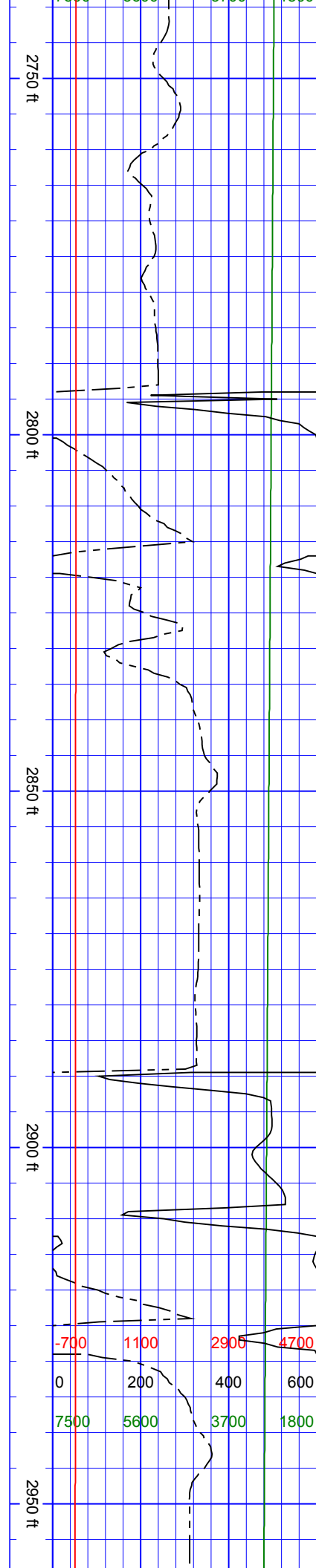


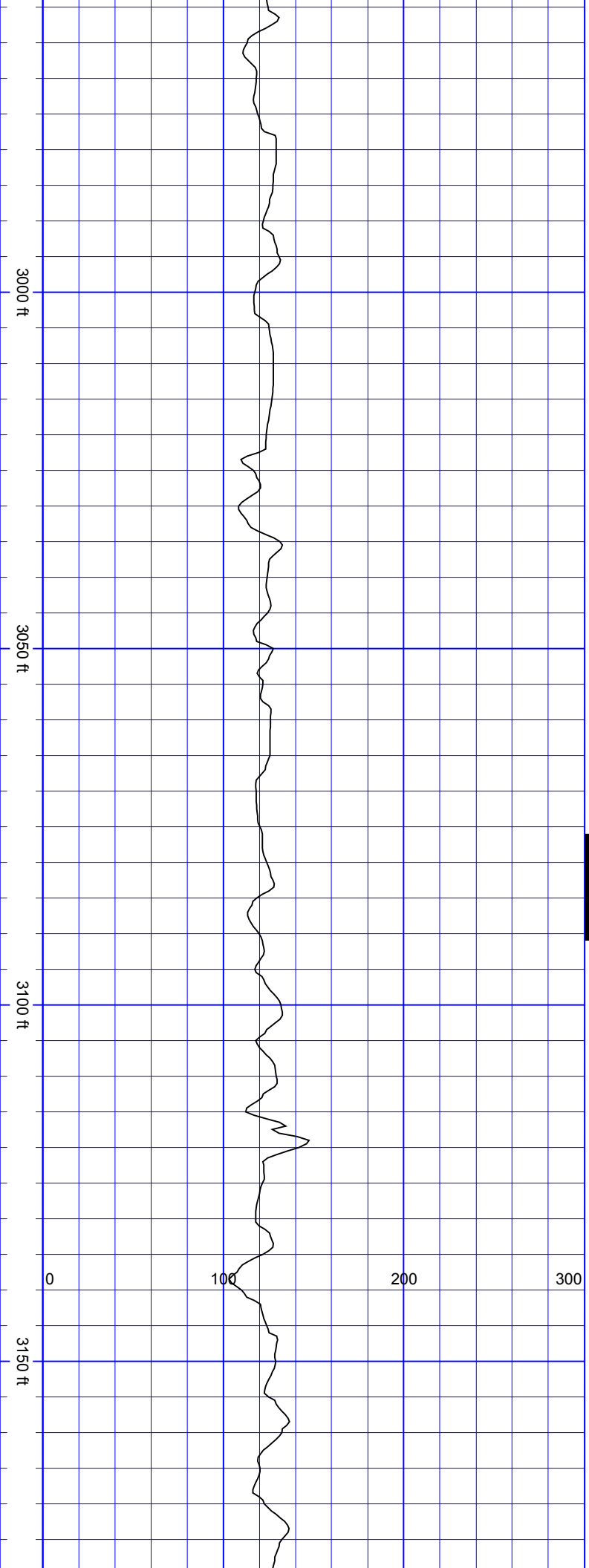
Azi:51.73 VertSec:-
213.67

SurveyDepth:2828
TVD:2805.93 Inc:7.73
Azi:49.01 VertSec:-222.5

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SurveyDepth:2922
TVD:2899.01 Inc:8.35
Azi:46.28 VertSec:-
230.84

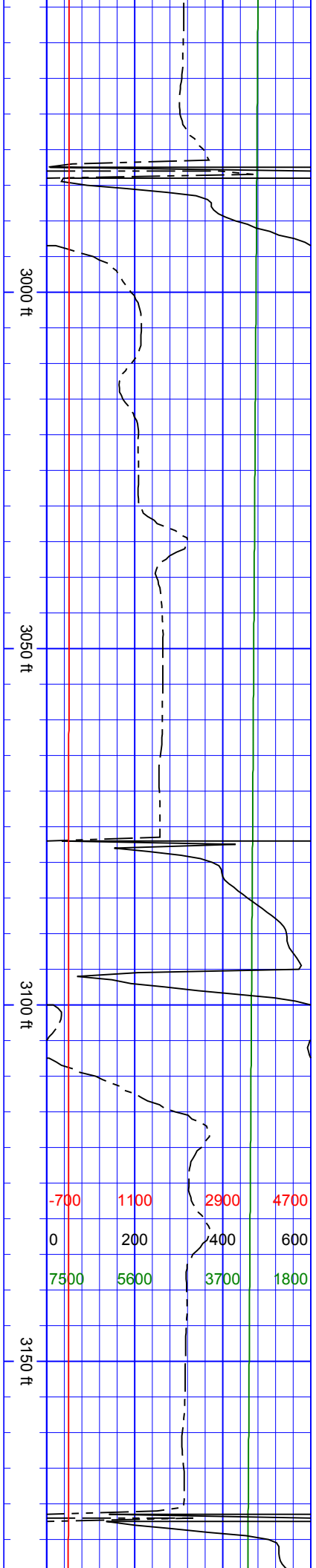


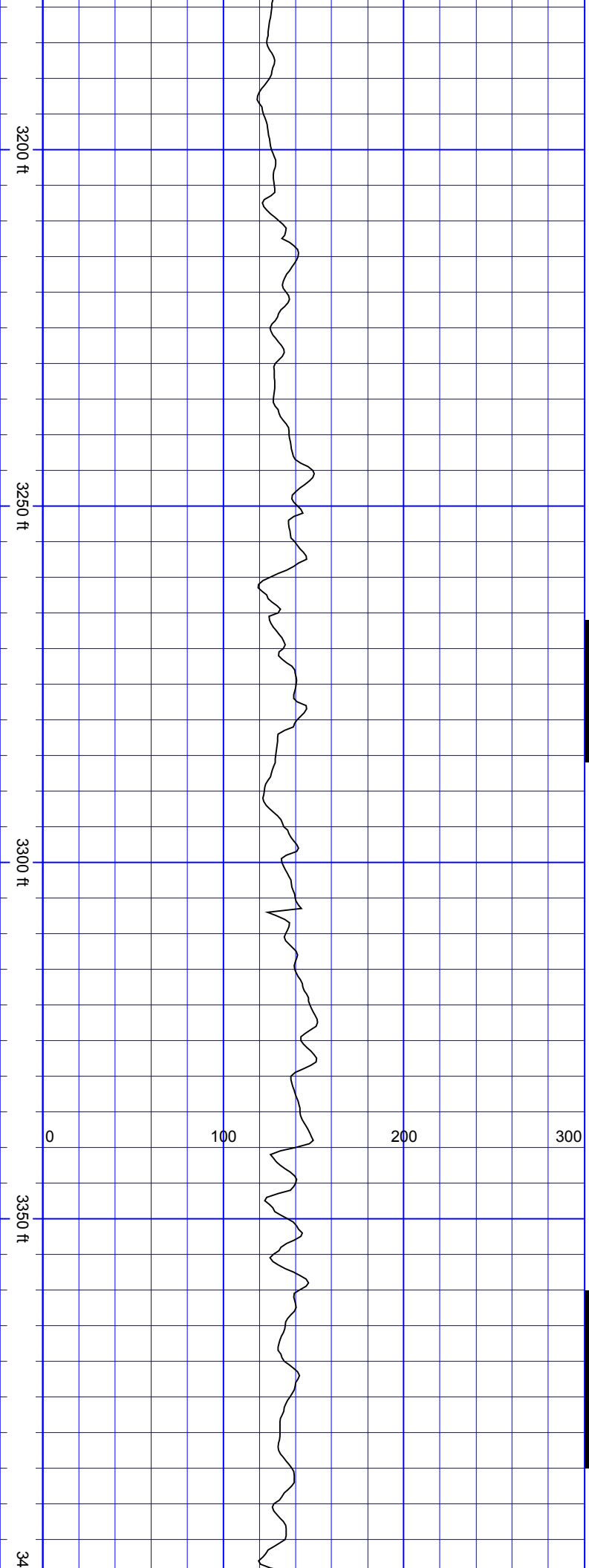


SurveyDepth:3016
TVD:2992.09 Inc:7.65
Azi:44.08 VertSec:-
238.72

SurveyDepth:3111
TVD:3086.1 Inc:8.92
Azi:46.63 VertSec:-247

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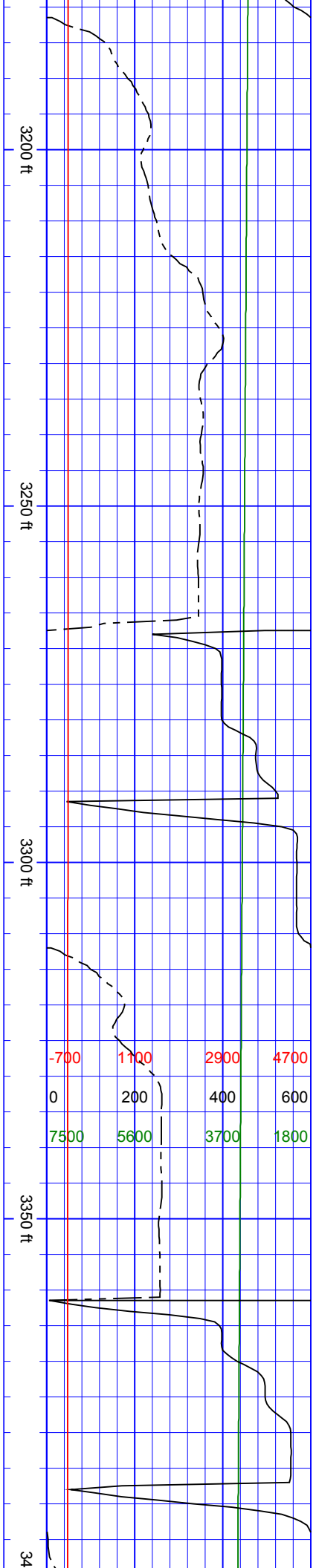


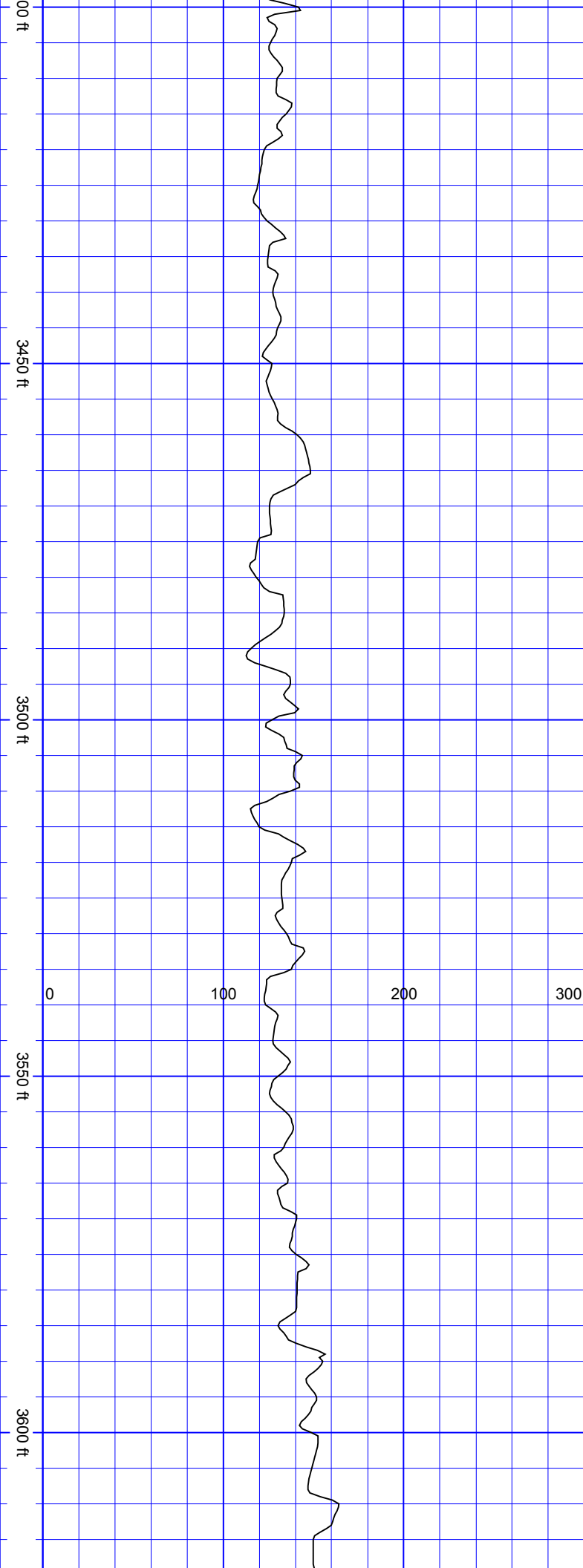


SurveyDepth:3206
TVD:3180.16 Inc:7.16
Azi:44.44 VertSec:-
255.08

SurveyDepth:3300
TVD:3273.39 Inc:7.52
Azi:39.25 VertSec:-
261.71

SurveyDepth:3395
TVD:3367.37 Inc:9.36
Azi:39.25 VertSec:-
261.71

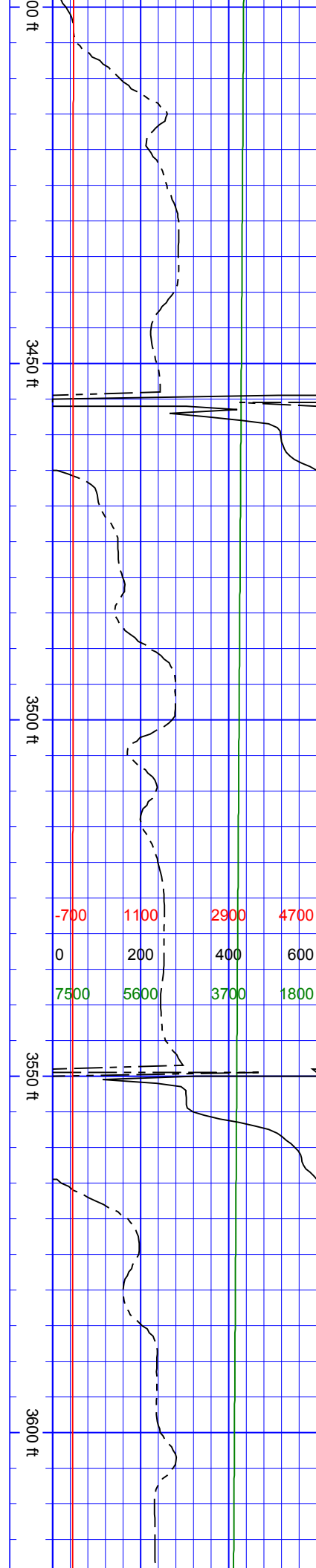


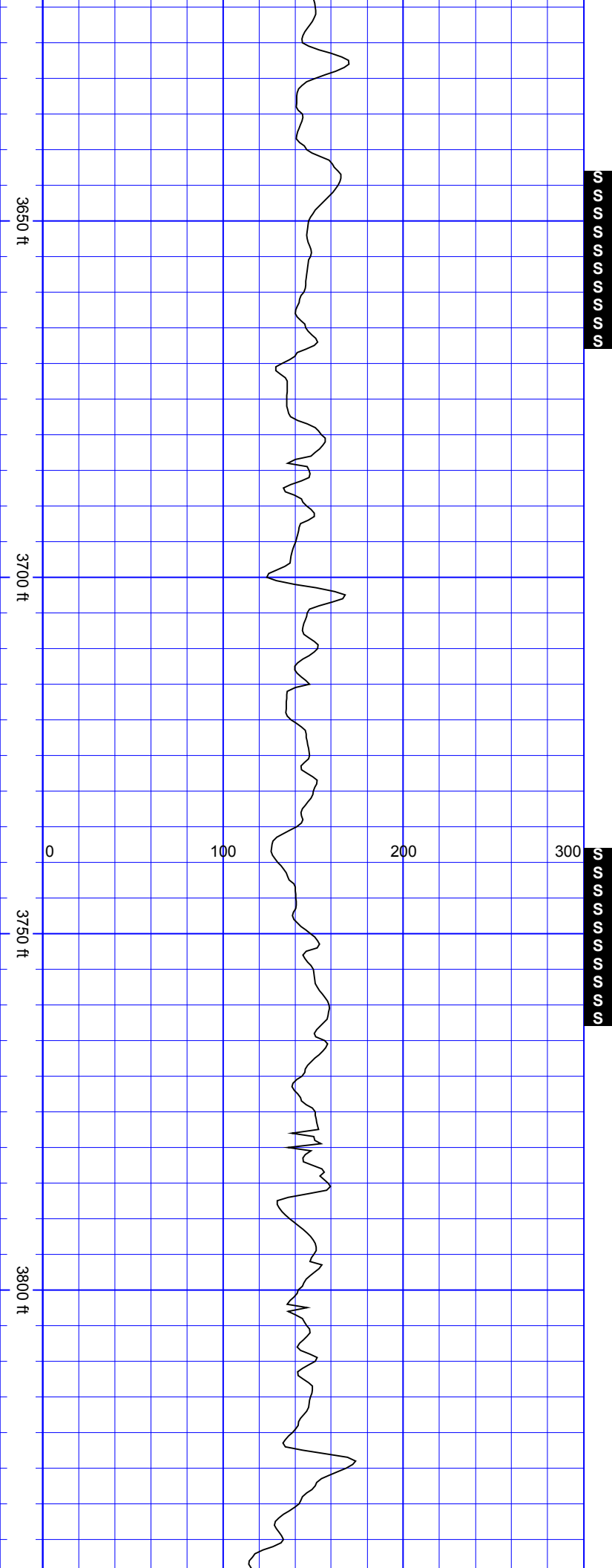


TVD:3367.97 Inc:9.86
Azi:49.8 VertSec:-270.04

SurveyDepth:3489
TVD:3460.3 Inc:7.87
Azi:51.29 VertSec:-
279.51

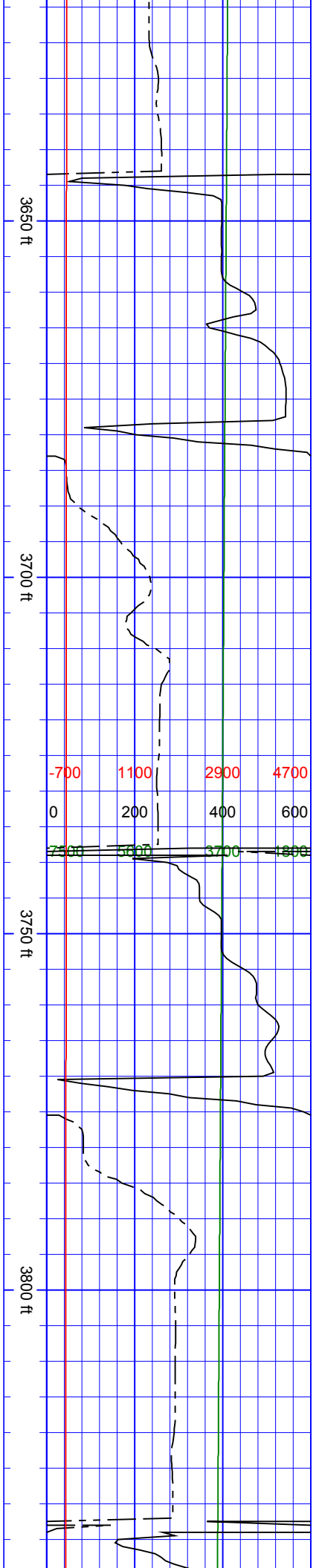
SurveyDepth:3583
TVD:3553.65 Inc:5.63
Azi:49.8 VertSec:-286.97



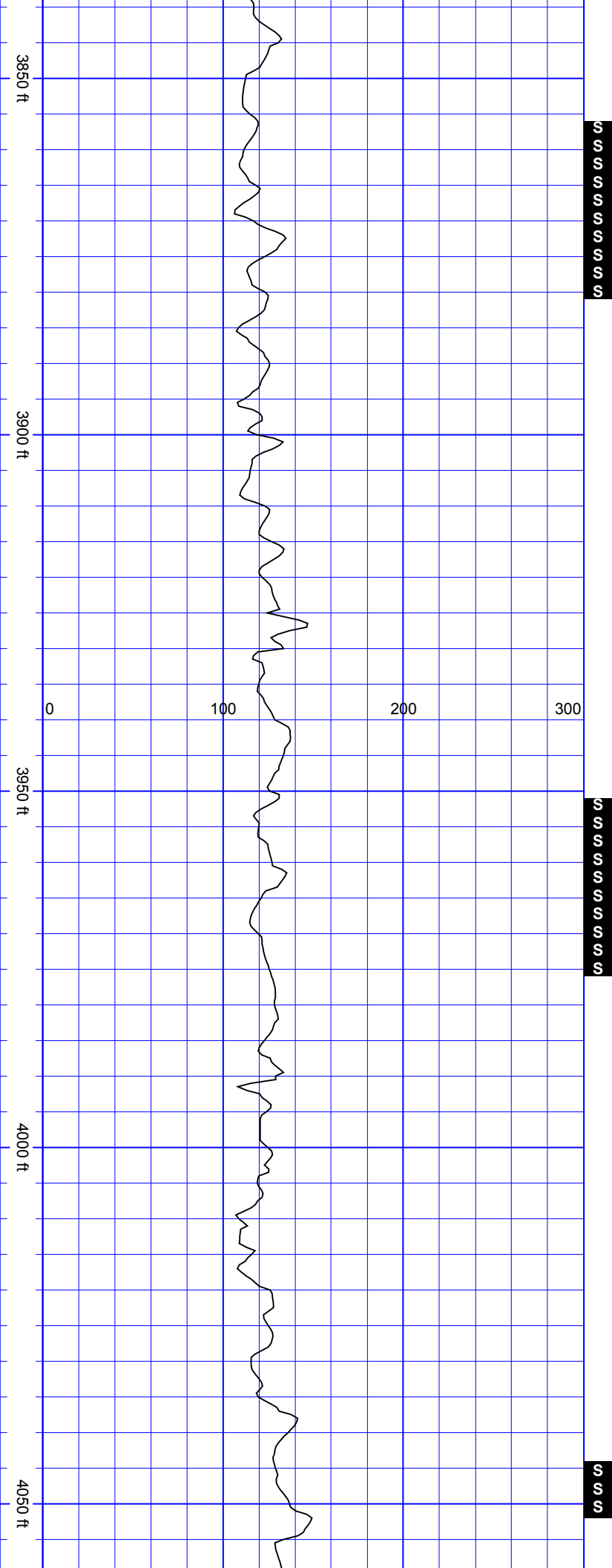


SurveyDepth:3678
TVD:3648.16 Inc:6.02
Azi:53.22 VertSec:-293.59

SurveyDepth:3796
TVD:3765.39 Inc:6.99
Azi:57.8 VertSec:-303.43

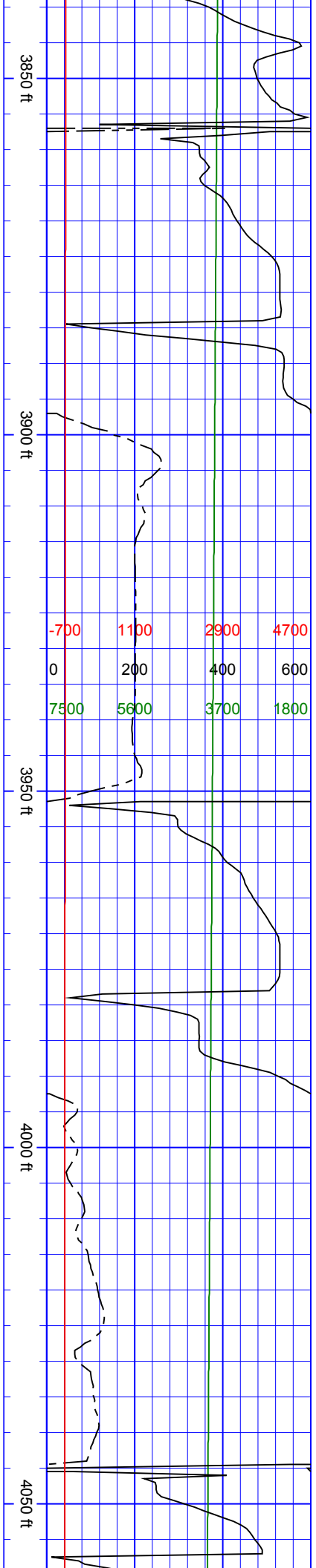


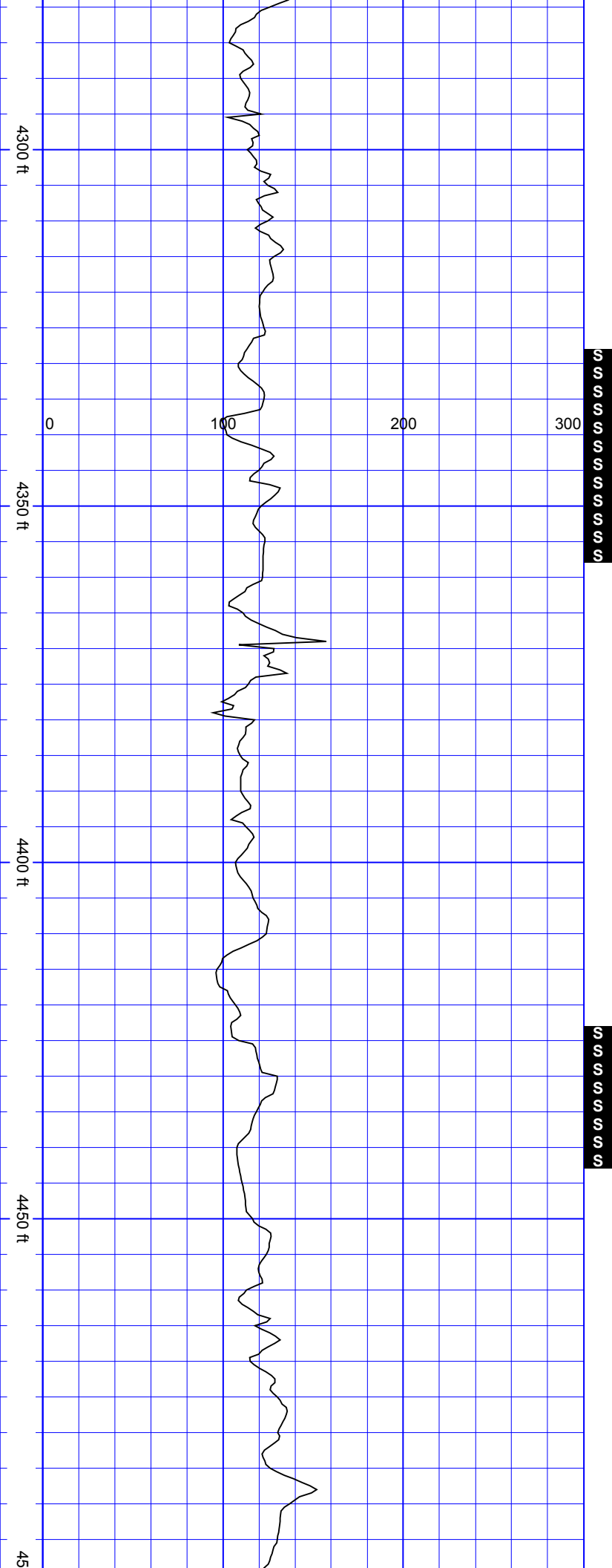
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0 200 400 600
7500 5000 3700 1800



SurveyDepth:3891
TVD:3859.56 Inc:8.22
Azi:50.32 VertSec:-312.39

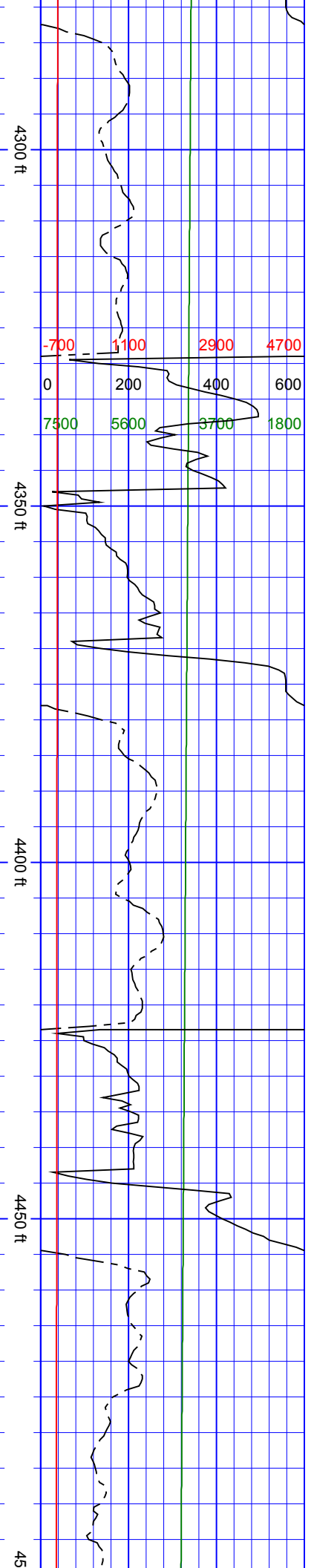
SurveyDepth:3984
TVD:3951.36 Inc:10.2
Azi:52.08 VertSec:-322.55

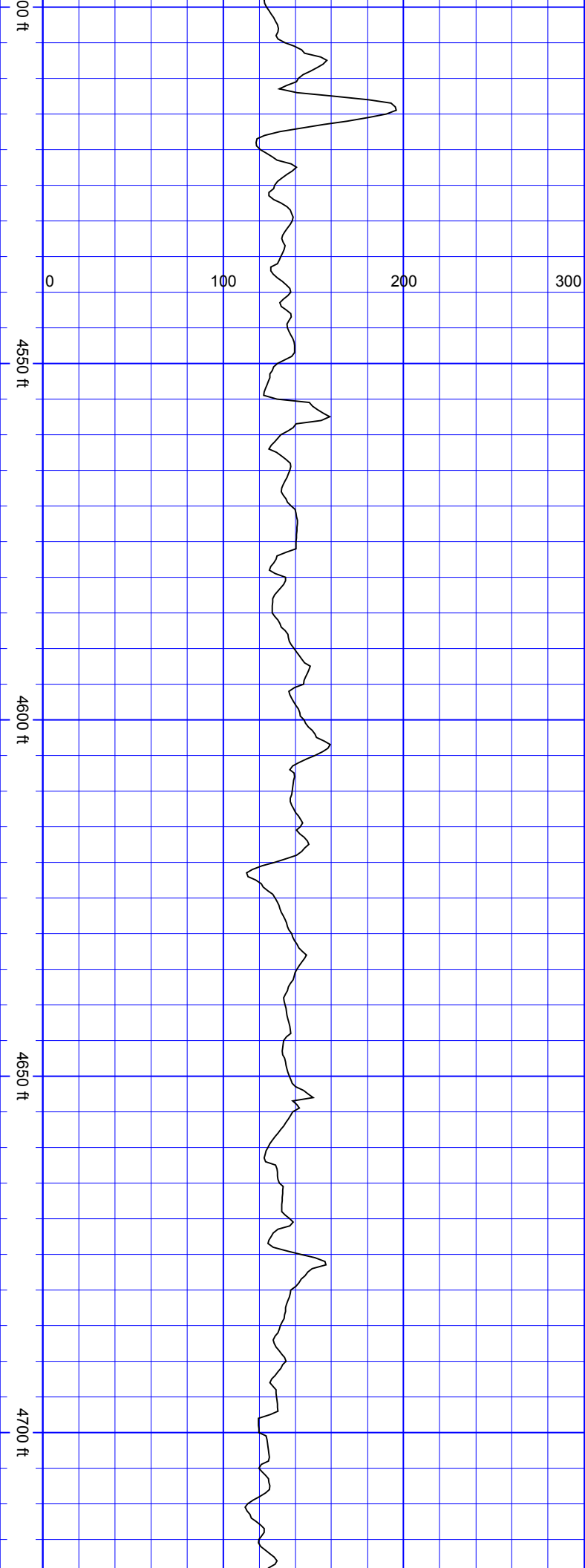




SurveyDepth:4363
TVD:4326.46 Inc:7.87
Azi:60.34 VertSec:-
356.65

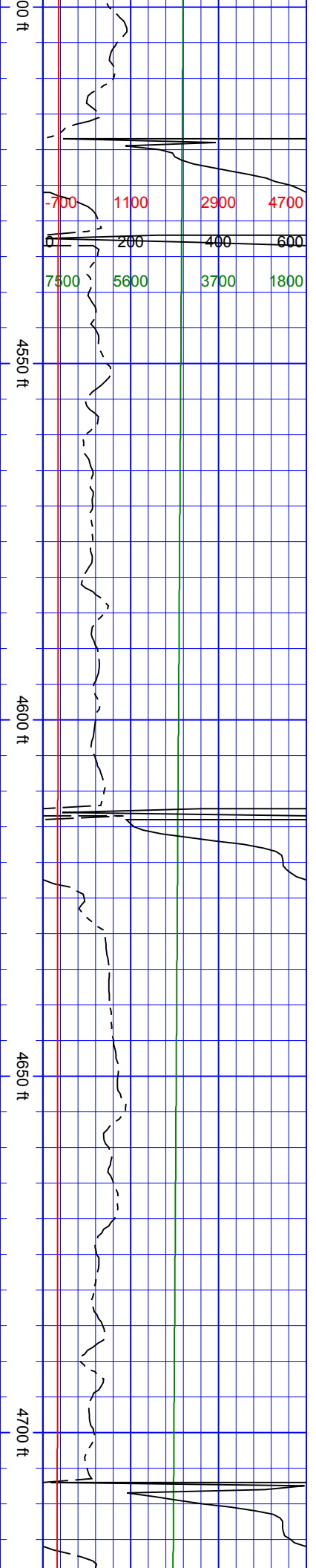
SurveyDepth:4458
TVD:4420.25 Inc:10.37
Azi:61.13 VertSec:-
368.61

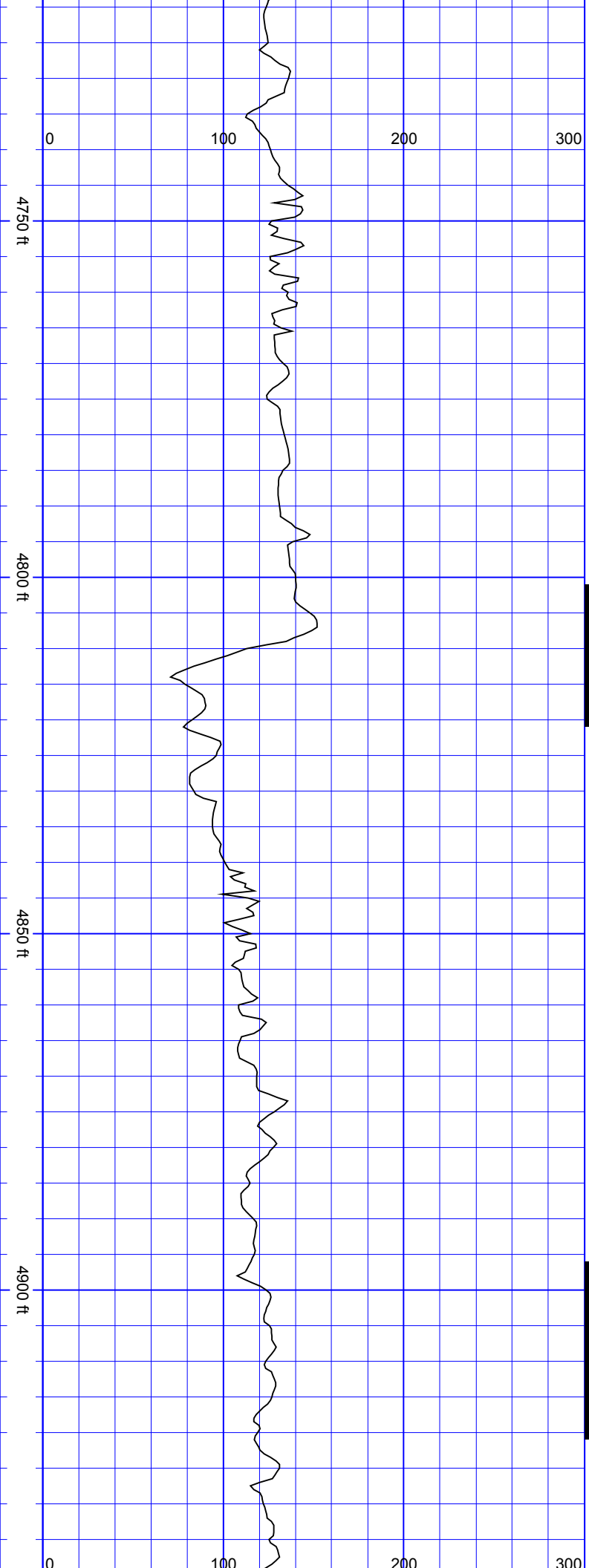




SurveyDepth:4552
TVD:4512.84 Inc:9.49
Azi:60.34 VertSec:-
381.48

SurveyDepth:4646
TVD:4605.71 Inc:8.31
Azi:58.41 VertSec:-
392.81

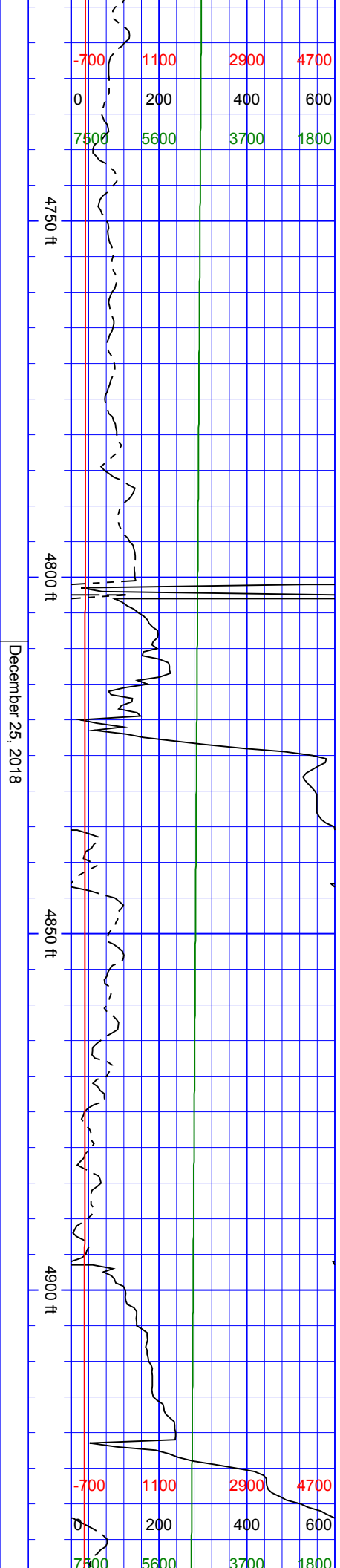




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SurveyDepth:4741 TVD:4699.89 Inc:6.77 Azi:55.25 VertSec:- 402.19	
SurveyDepth:4836 TVD:4794.14 Inc:7.65 Azi:56.92 VertSec:- 411.04	
SurveyDepth:4930 TVD:4886.94 Inc:10.59 Azi:56.13 VertSec:- 422.15	

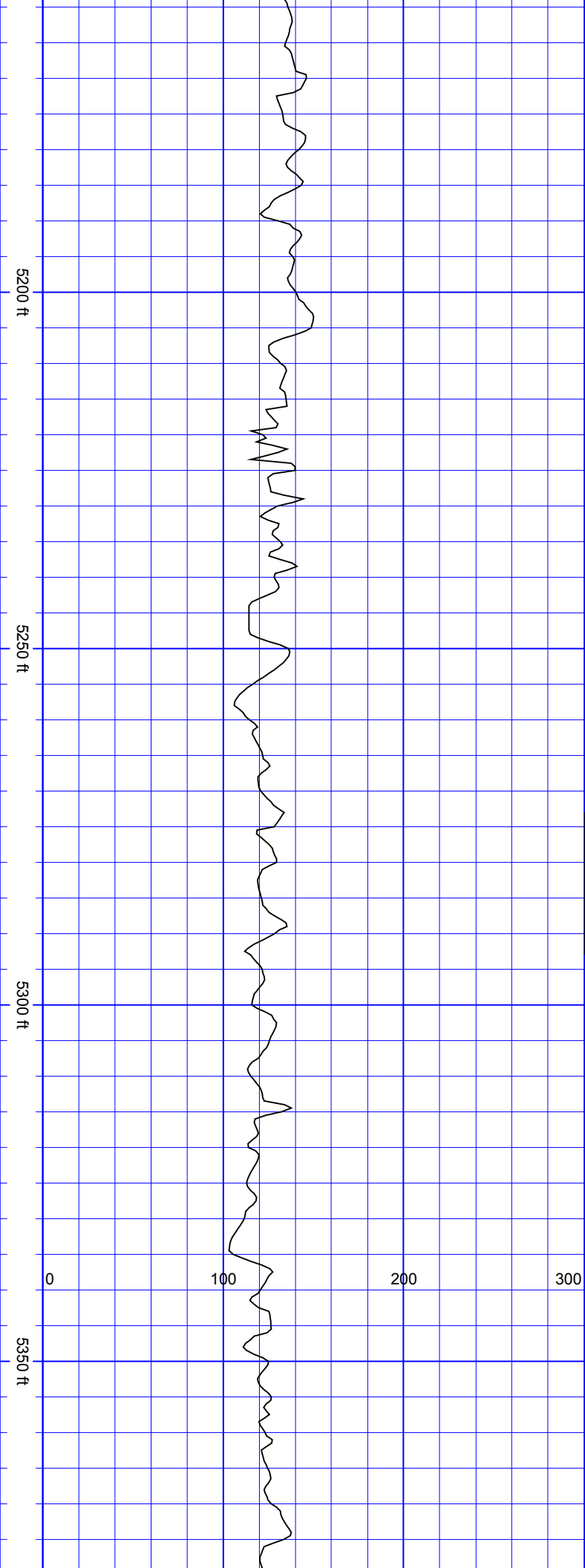


SurveyDepth:5024
TVD:4979.61 Inc:8.66
Azi:51.38 VertSec:-433.4

SurveyDepth:5119
TVD:5073.43 Inc:9.4
Azi:52.7 VertSec:-443.73

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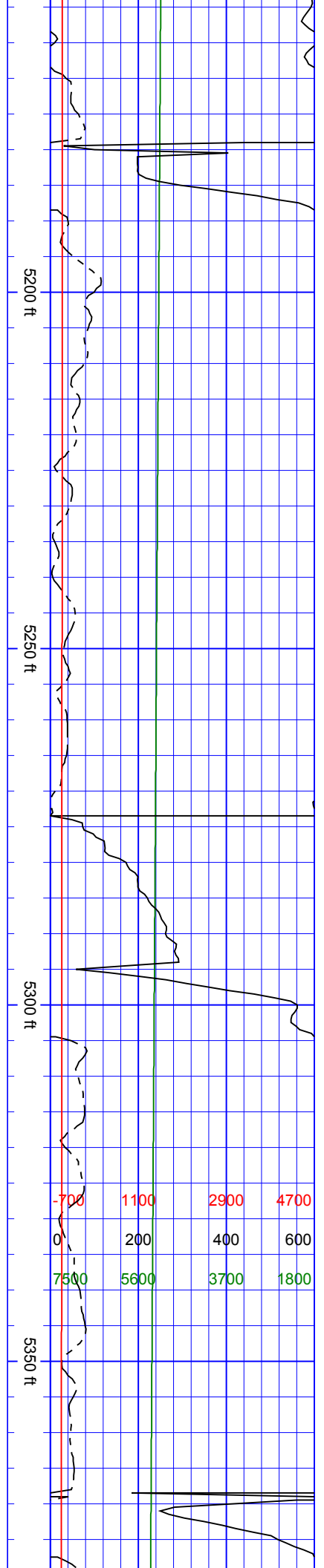
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0	200	400	600
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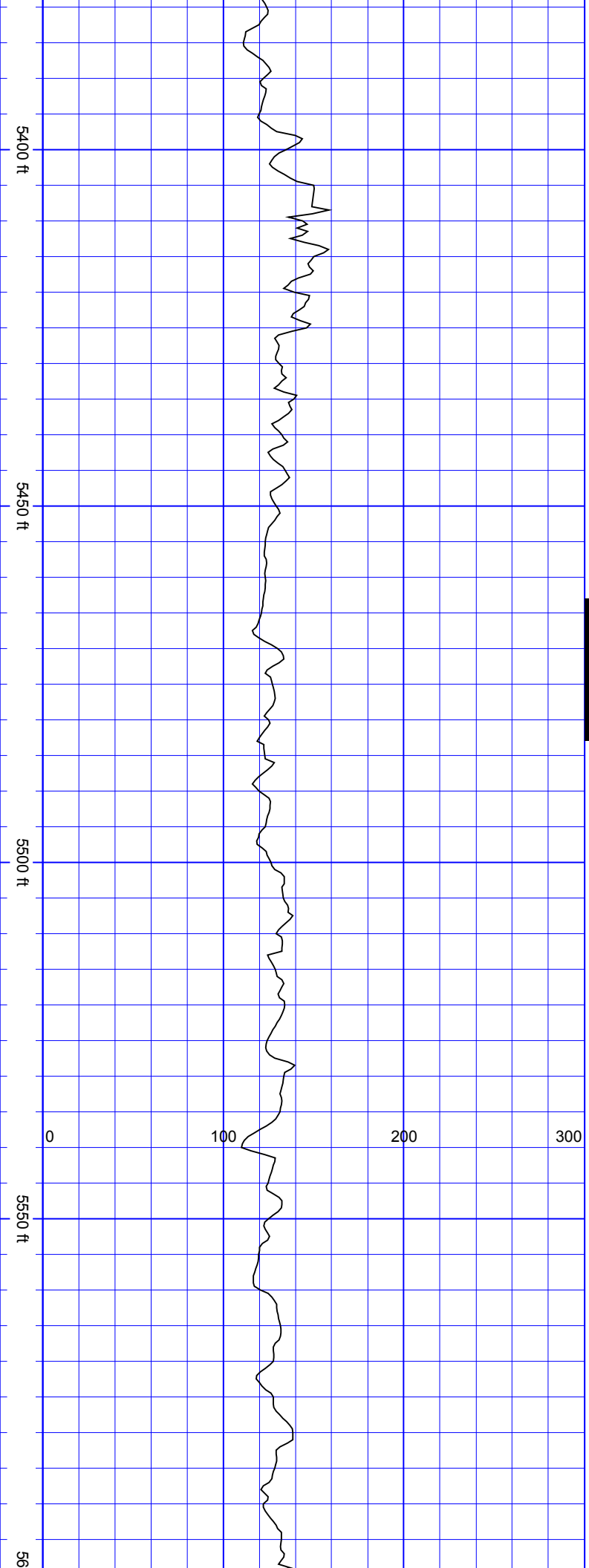


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SurveyDepth:5213
TVD:5166.41 Inc:7.52
Azi:48.48 VertSec:-
453.09

SurveyDepth:5308
TVD:5260.35 Inc:9.54
Azi:53.4 VertSec:-462.7

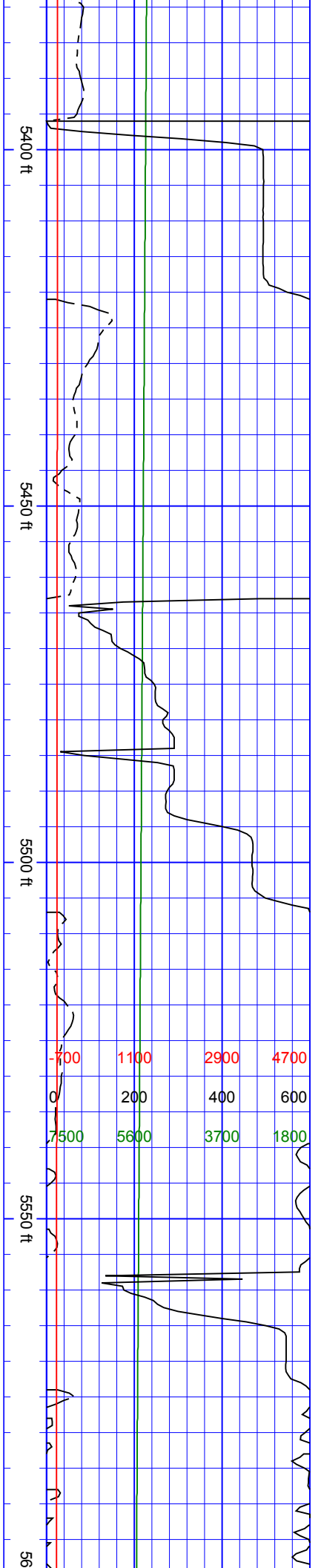


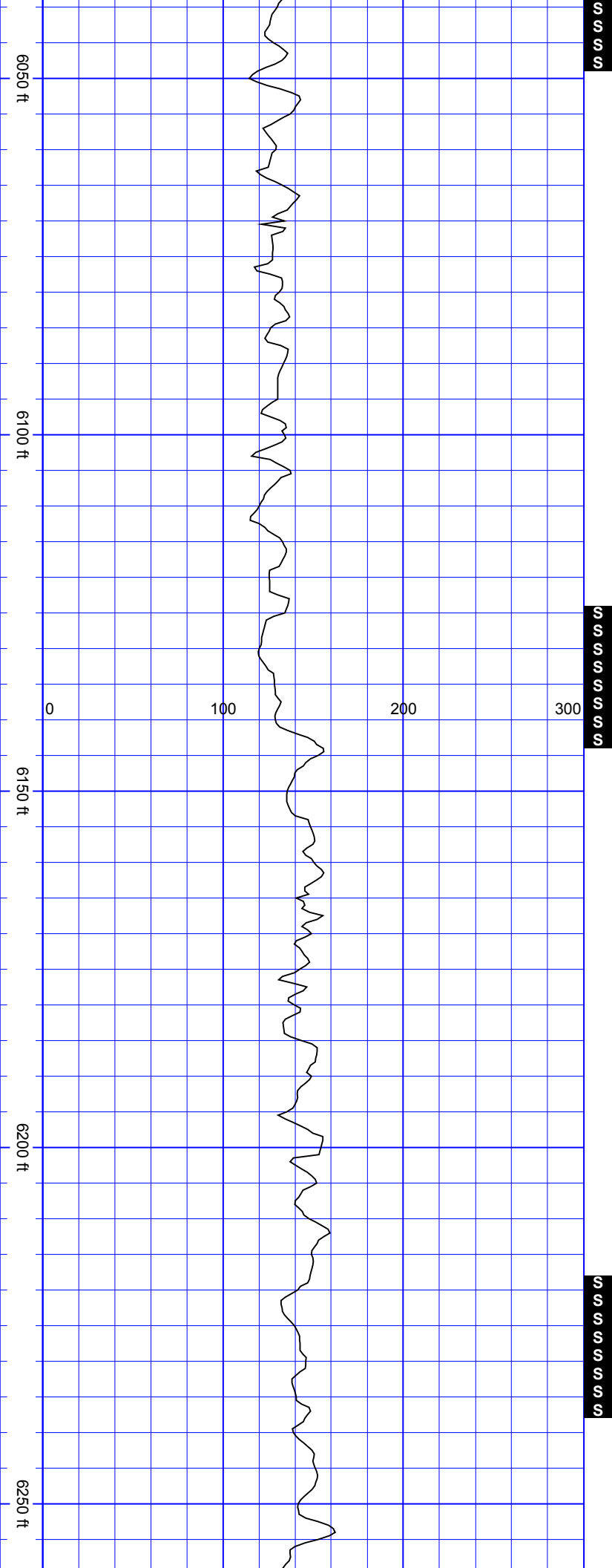


SurveyDepth:5403
TVD:5354.32 Inc:7.34
Azi:49.01 VertSec:-
472.25

SurveyDepth:5498
TVD:5448.38 Inc:8.83
Azi:58.41 VertSec:-
481.82

SurveyDepth:5592
TVD:5541.51 Inc:6.72
Azi:53.05 VertSec:-

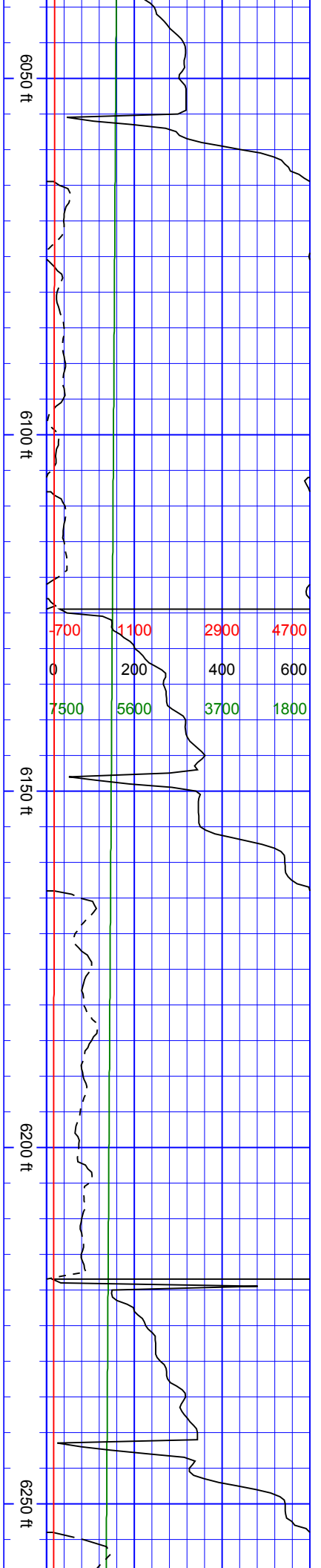


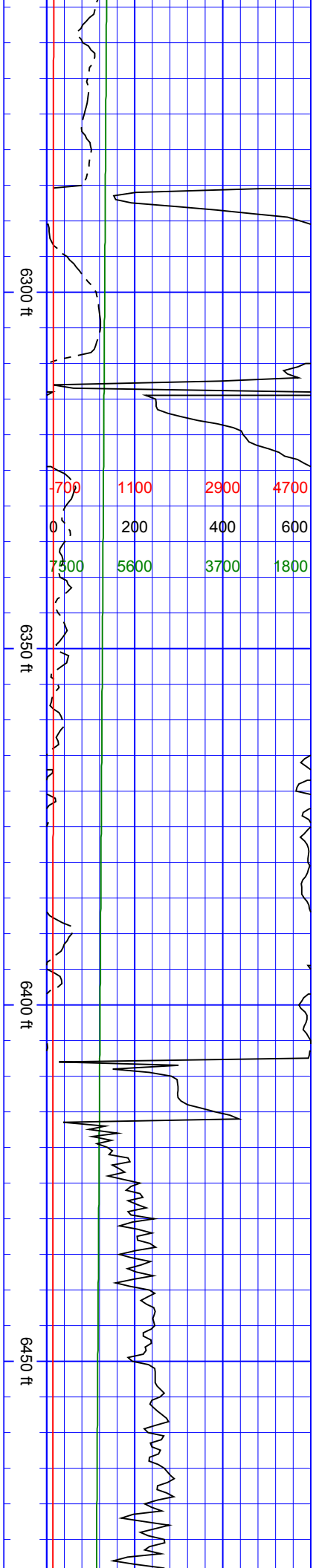
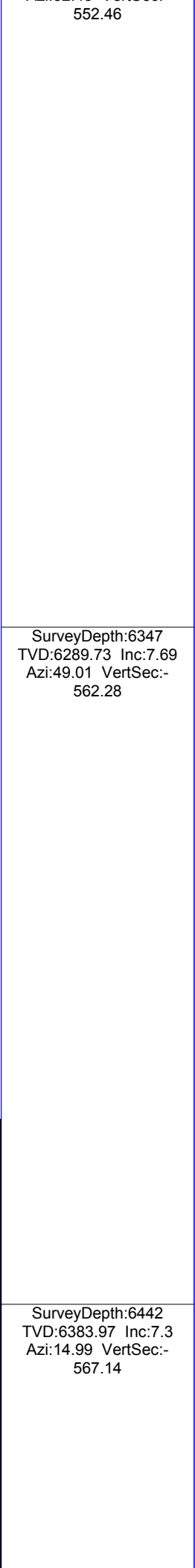
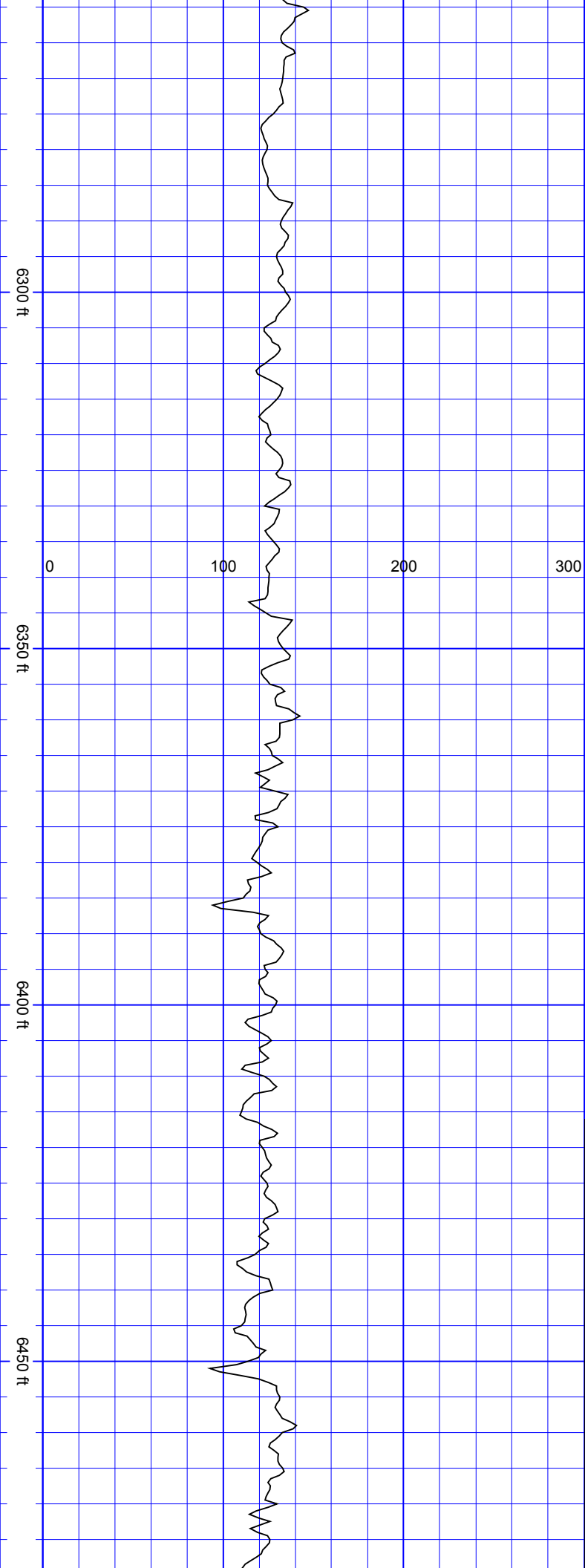


SurveyDepth:6064
TVD:6009.89 Inc:7.16
Azi:50.94 VertSec:-
533.17

SurveyDepth:6158
TVD:6103.03 Inc:8.35
Azi:53.58 VertSec:-542

SurveyDepth:6252
TVD:6195.85 Inc:9.84
Azi:52.43 VertSec:-





6500 ft

6550 ft

6600 ft

6650 ft

67

0 100 200 300

SurveyDepth:6489
TVD:6430.39 Inc:10.81
Azi:352.76 VertSec:-
566.32

SurveyDepth:6536
TVD:6476.25 Inc:14.37
Azi:349.15 VertSec:-
563.24

SurveyDepth:6583
TVD:6521.63 Inc:15.86
Azi:339.05 VertSec:-
558.21

SurveyDepth:6631
TVD:6567.49 Inc:18.46
Azi:334.56 VertSec:-
550.8

SurveyDepth:6678
TVD:6611.71 Inc:21.18
Azi:325.86 VertSec:-
540.95

6500 ft

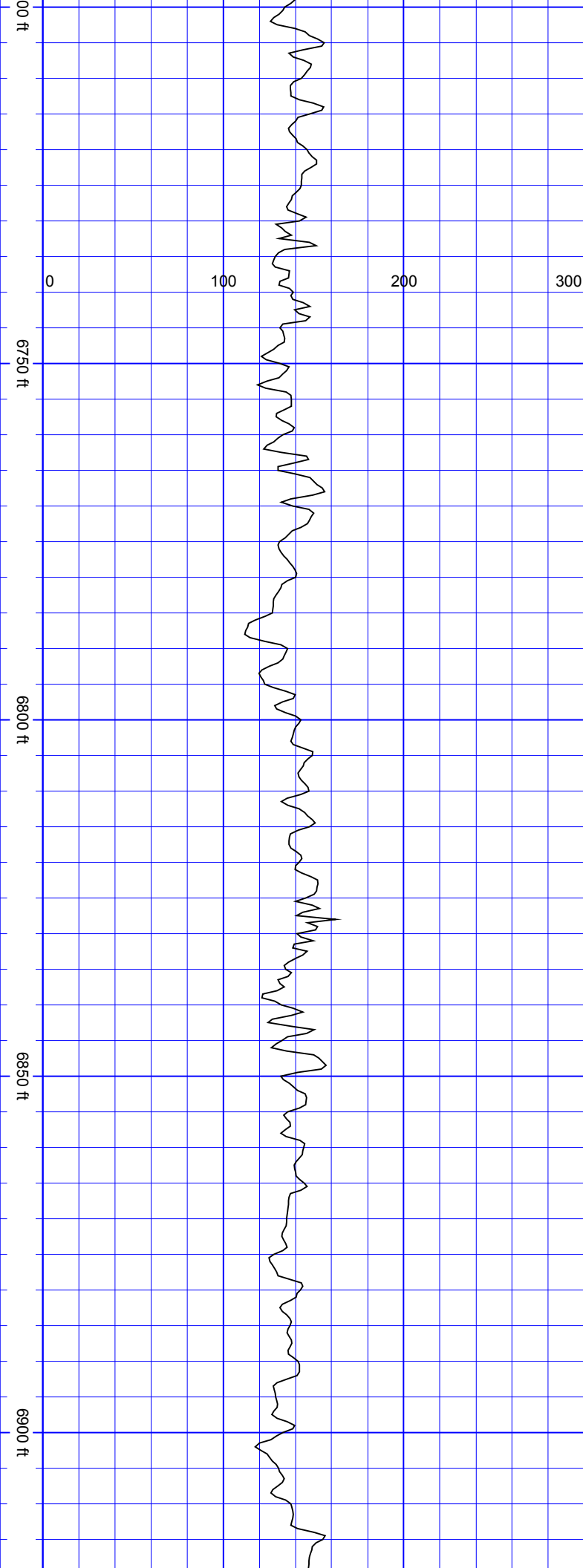
6550 ft

6600 ft

6650 ft

67

-700	1100	2900	4700
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7500	5600	3700	1800



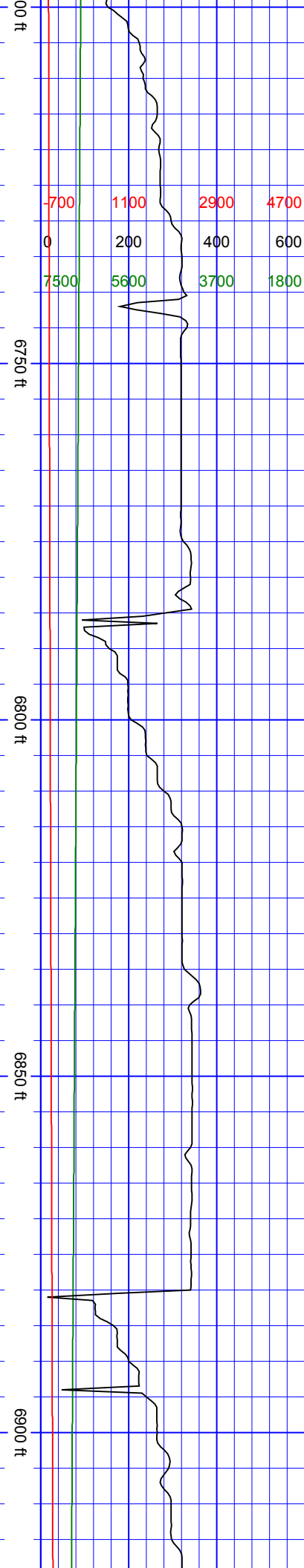
SurveyDepth:6725
TVD:6655.33 Inc:22.72
Azi:313.91 VertSec:-
527.85

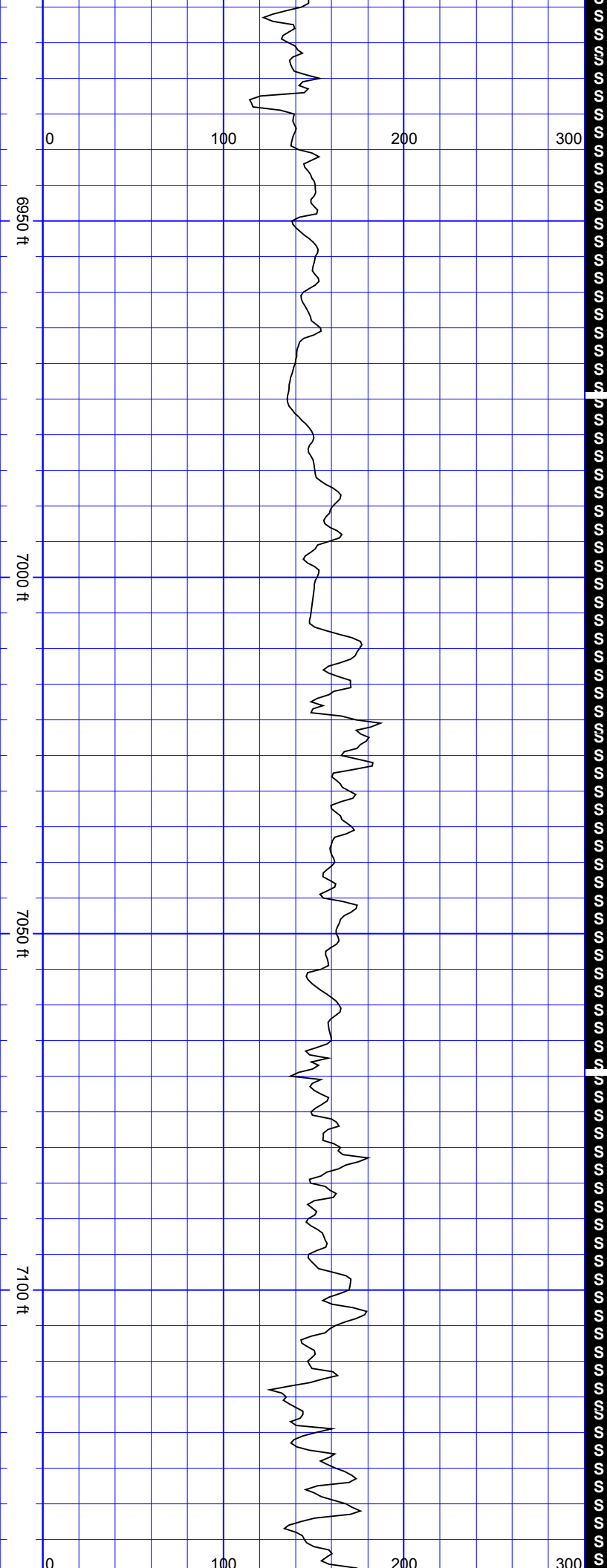
SurveyDepth:6772
TVD:6698.45 Inc:24.3
Azi:301.34 VertSec:-
511.58

SurveyDepth:6820
TVD:6742.02 Inc:25.44
Azi:290.09 VertSec:-
492.4

SurveyDepth:6867
TVD:6784.13 Inc:27.42
Azi:279.98 VertSec:-
471.69

SurveyDepth:6915
TVD:6826.12 Inc:30.54
Azi:268.81 VertSec:-
449.95





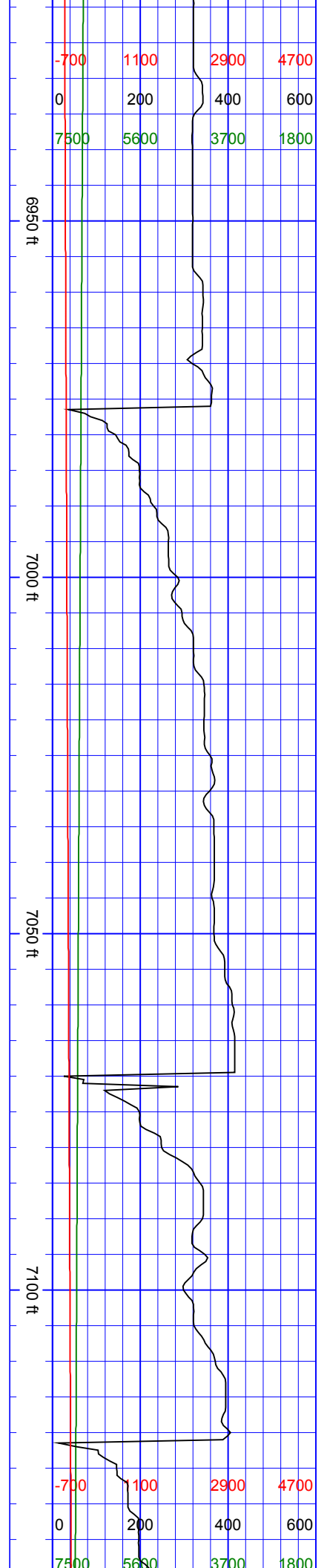
TVD:6820.12 Inc:30.97
Azi:274.53 VertSec:-448.46

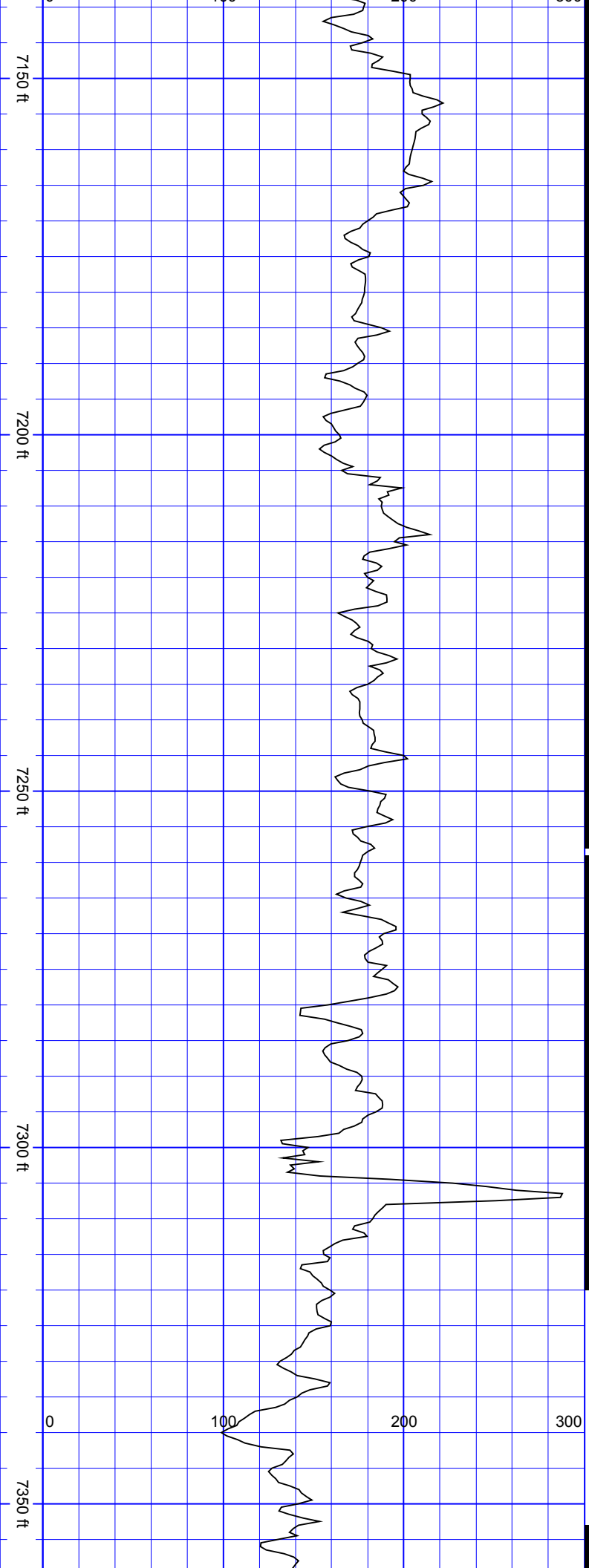
SurveyDepth:6962
TVD:6865.78 Inc:34.37
Azi:270.49 VertSec:-423.39

SurveyDepth:7010
TVD:6904.57 Inc:37.79
Azi:267.68 VertSec:-395.49

SurveyDepth:7057
TVD:6940.91 Inc:40.91
Azi:264.95 VertSec:-366.34

SurveyDepth:7104
TVD:6975.76 Inc:43.37
Azi:263.72 VertSec:-335.74





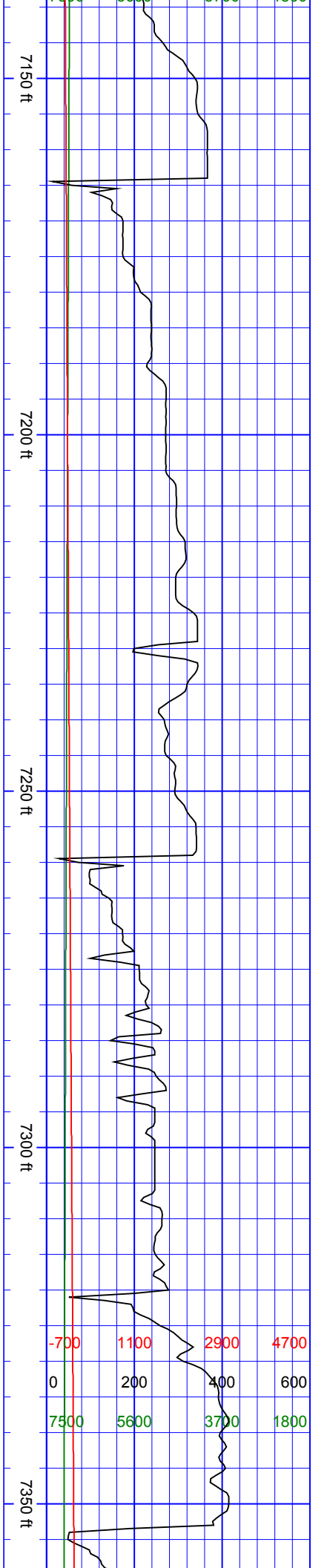
SurveyDepth:7151
TVD:7008.55 Inc:48.12
Azi:266.1 VertSec:-302.98

SurveyDepth:7199
TVD:7038.86 Inc:53.53
Azi:266.97 VertSec:-266.55

SurveyDepth:7246
TVD:7065.58 Inc:57.17
Azi:267.33 VertSec:-228.61

SurveyDepth:7293
TVD:7089.29 Inc:62.23
Azi:266.36 VertSec:-188.85

SurveyDepth:7340
TVD:7110.39 Inc:64.42
Azi:266.45 VertSec:-147.74



-700 1100 2900 4700
0 200 400 600
7500 5600 3700 1800

7400 ft

7450 ft

7500 ft

7550 ft

0 100 200 300



SurveyDepth:7387
TVD:7128.85 Inc:69.3
Azi:266.8 VertSec:-105.41

SurveyDepth:7434
TVD:7145.22 Inc:69.92
Azi:266.8 VertSec:-62.23

SurveyDepth:7482
TVD:7160.23 Inc:73.65
Azi:267.06 VertSec:-17.52

SurveyDepth:7529
TVD:7173.34 Inc:73.96
Azi:267.77
VertSec:26.81

SurveyDepth:7577

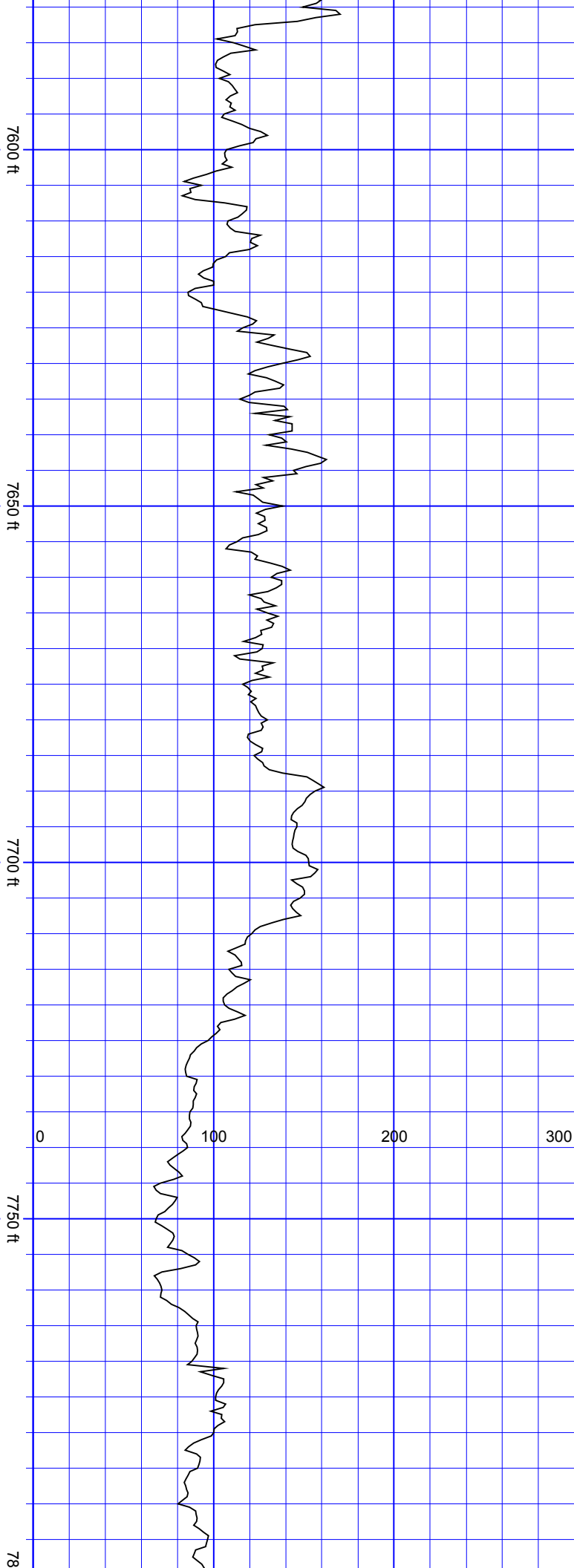
7400 ft

7450 ft

7500 ft

7550 ft

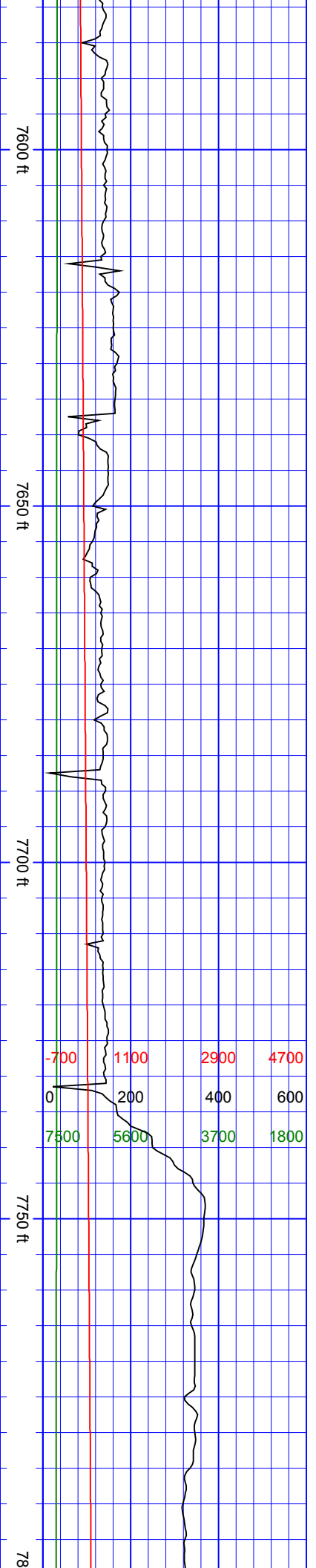
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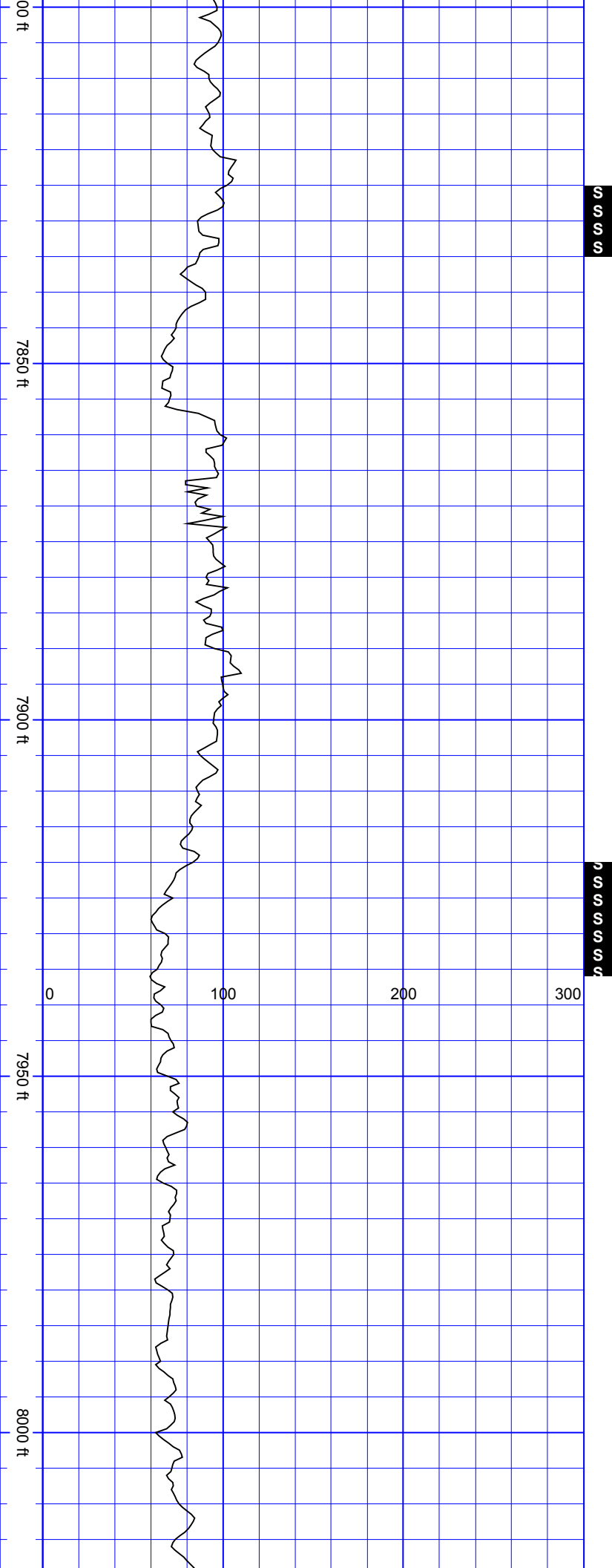


TVD:7185.21 Inc:77.39
Azi:270.4 VertSec:72.72

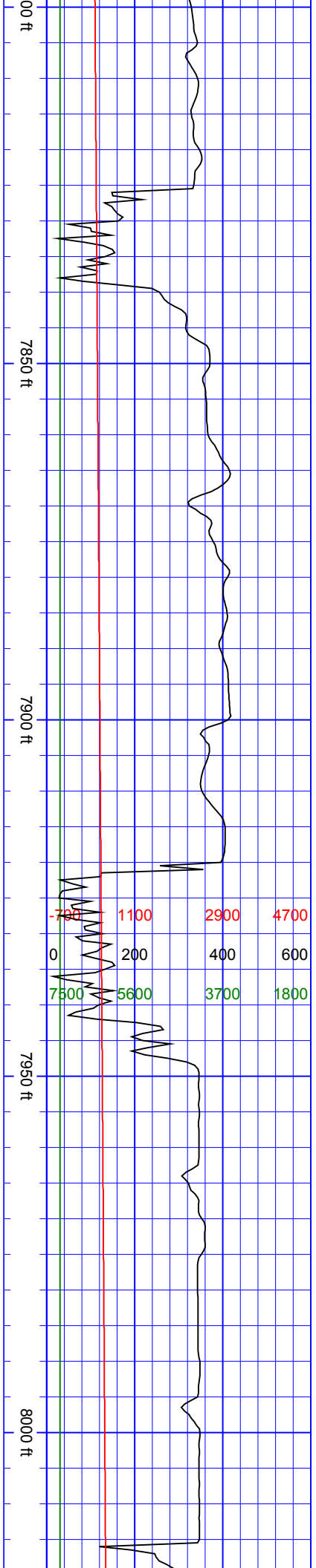
SurveyDepth:7671
TVD:7198.13 Inc:86.79
Azi:271.81
VertSec:165.01

SurveyDepth:7765
TVD:7202.53 Inc:87.85
Azi:271.72
VertSec:258.31





SurveyDepth:7860
TVD:7207 Inc:86.75
Azi:272.25
VertSec:352.64



SurveyDepth:7955
TVD:7209.95 Inc:89.69
Azi:271.9
VertSec:447.04

8050 ft

8100 ft

8150 ft

8200 ft

0 100 200 300

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SurveyDepth:8049
TVD:7210.82 Inc:89.25
Azi:270.93
VertSec:540.38

SurveyDepth:8143
TVD:7210.9 Inc:90.66
Azi:270.4
VertSec:633.56

SurveyDepth:8239

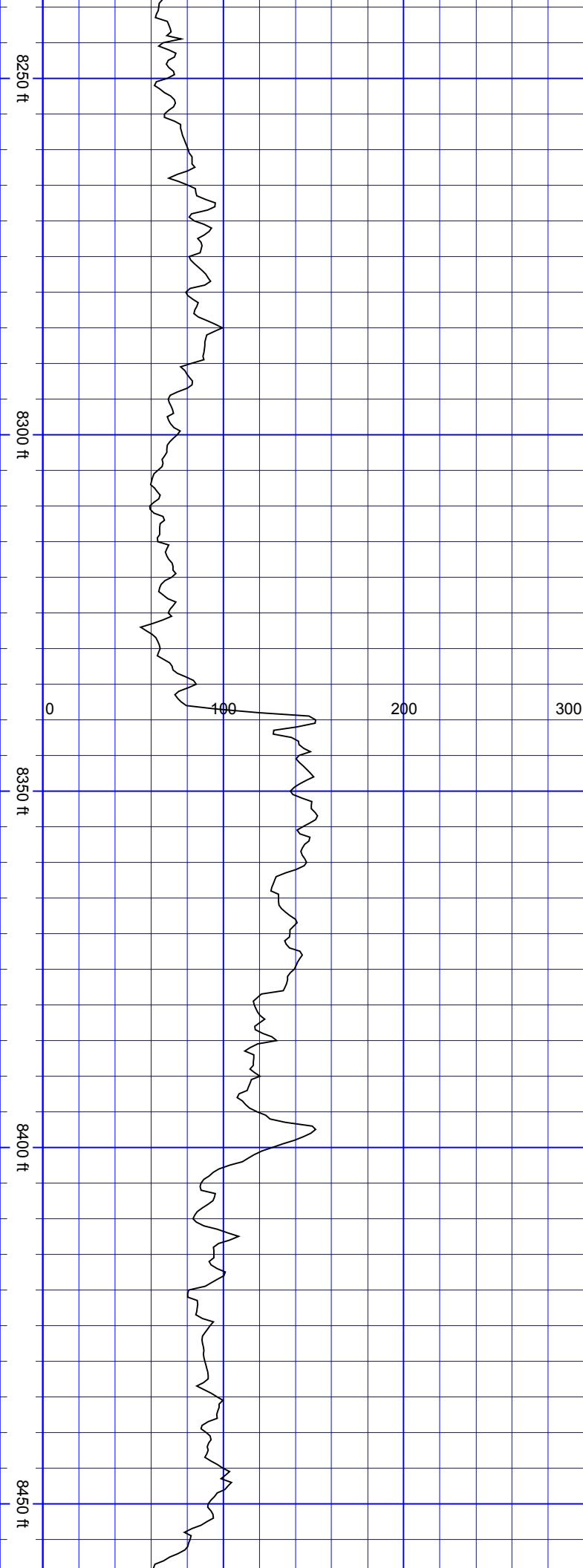
8050 ft

8100 ft

8150 ft

8200 ft

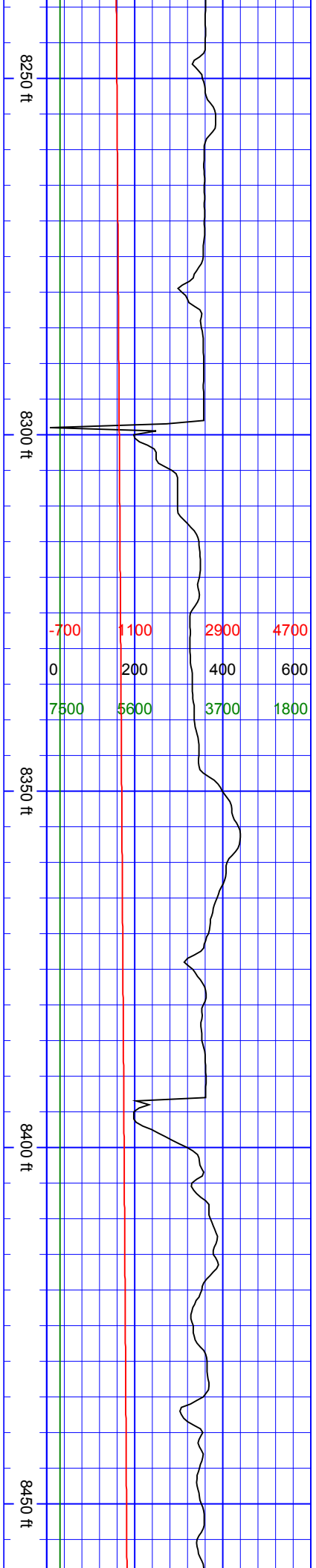
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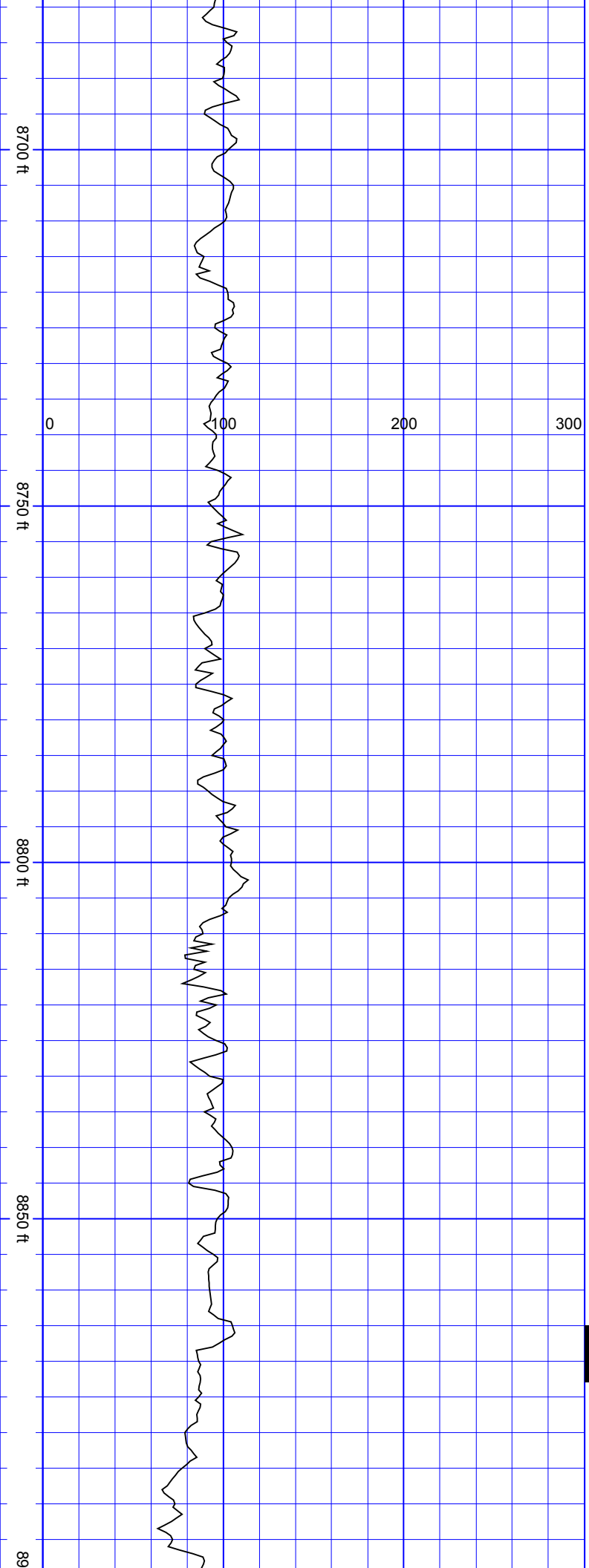


SurveyDepth:8238
TVD:7209.51 Inc:91.01
Azi:269.96
VertSec:727.62

SurveyDepth:8333
TVD:7207.98 Inc:90.84
Azi:268.91
VertSec:821.49

SurveyDepth:8427
TVD:7206.93 Inc:90.44
Azi:268.73
VertSec:914.23

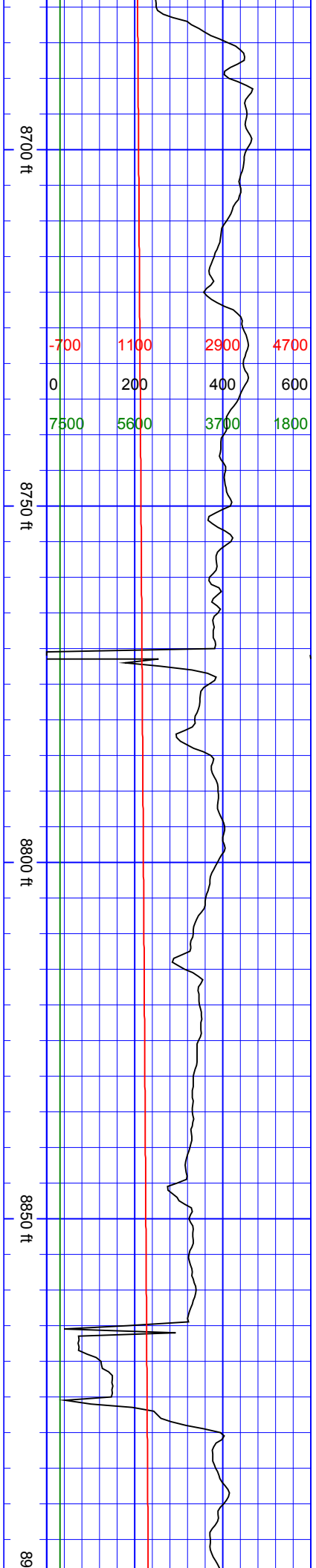


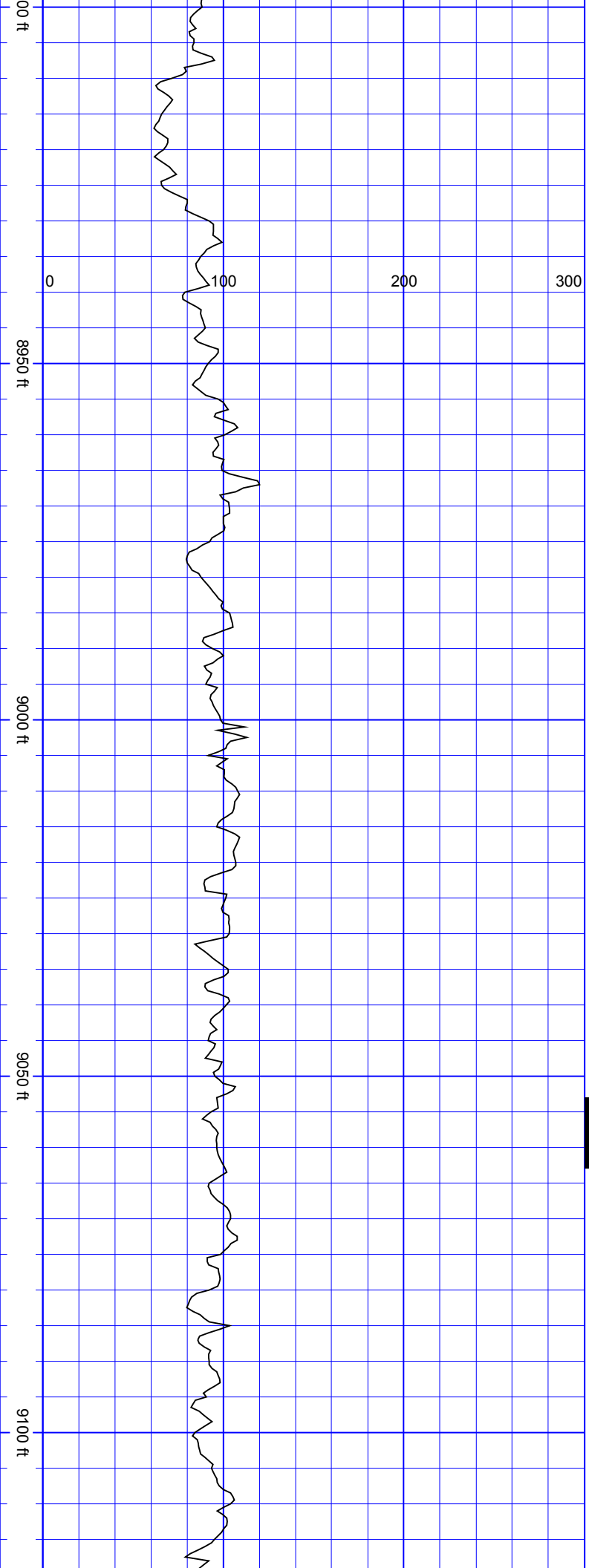


SurveyDepth:8710
TVD:7205.05 Inc:90.53
Azi:270.05
VertSec:1193.62

SurveyDepth:8805
TVD:7203.88 Inc:90.88
Azi:270.84
VertSec:1287.74

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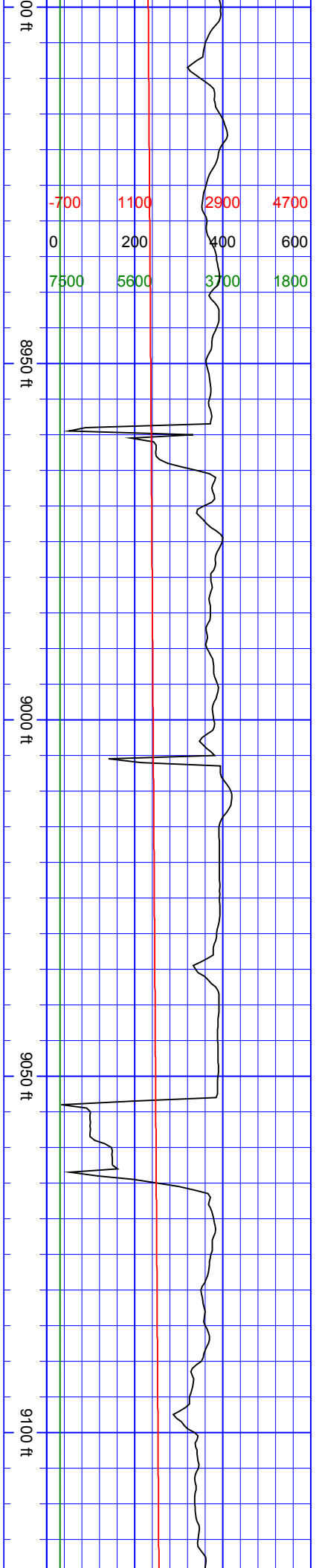


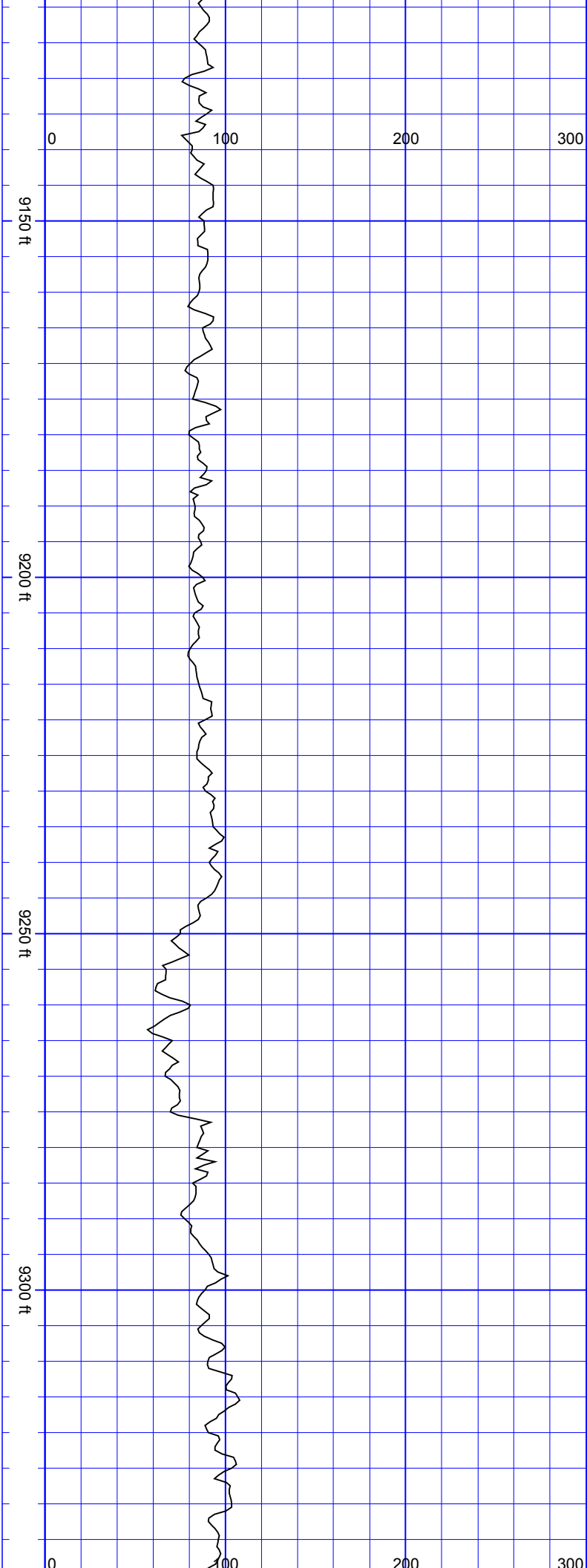


SurveyDepth:8899
TVD:7203.88 Inc:89.12
Azi:270.67
VertSec:1380.94

SurveyDepth:8993
TVD:7205.46 Inc:88.95
Azi:270.58
VertSec:1474.11

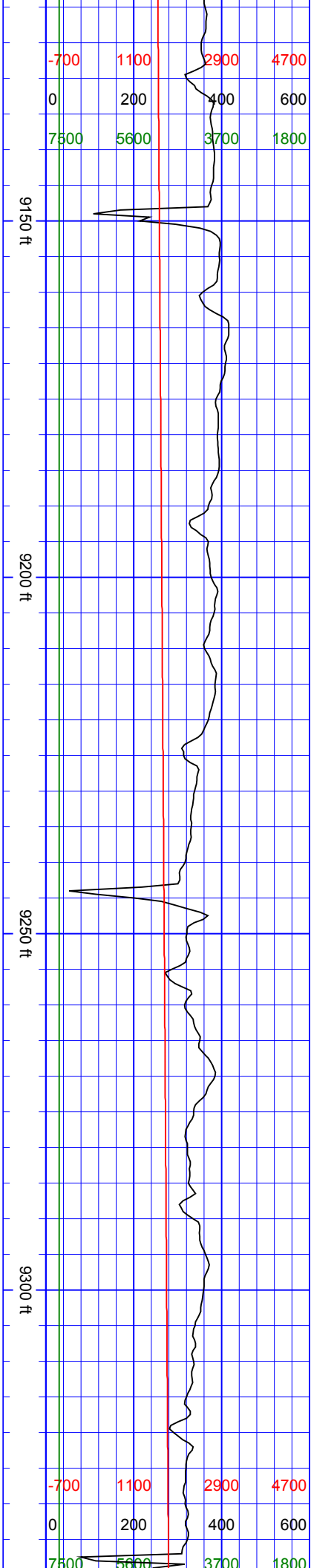
SurveyDepth:9088
TVD:7206 Inc:90.4
Azi:270.93
VertSec:1568.3

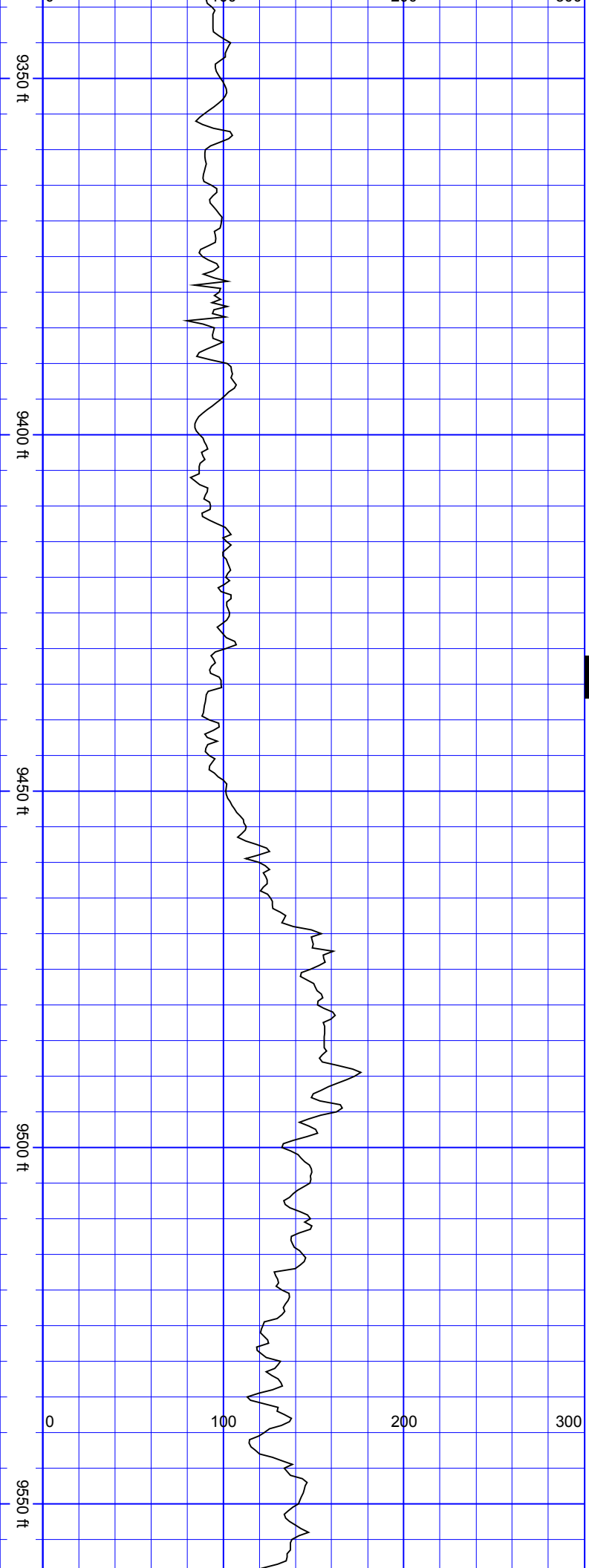




SurveyDepth:9183
TVD:7205.56 Inc:90.13
Azi:271.11
VertSec:1662.55

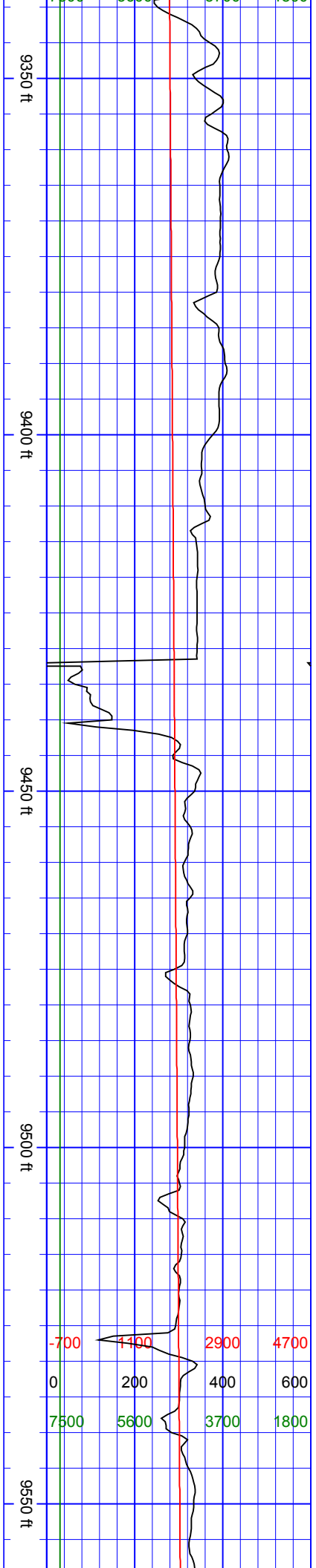
SurveyDepth:9277
TVD:7205.71 Inc:89.69
Azi:270.84
VertSec:1755.8

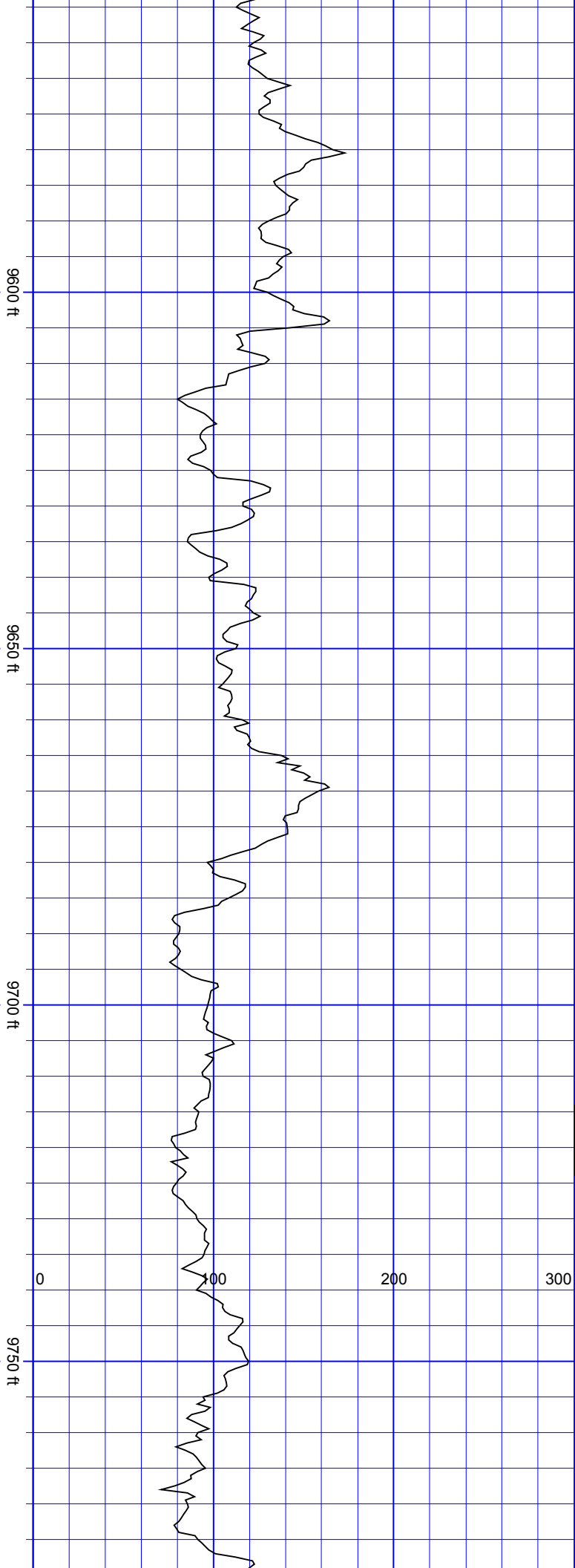




SurveyDepth:9371
TVD:7205.96 Inc:90
Azi:270.4
VertSec:1848.98

SurveyDepth:9466
TVD:7205.6 Inc:90.44
Azi:271.02
VertSec:1943.16



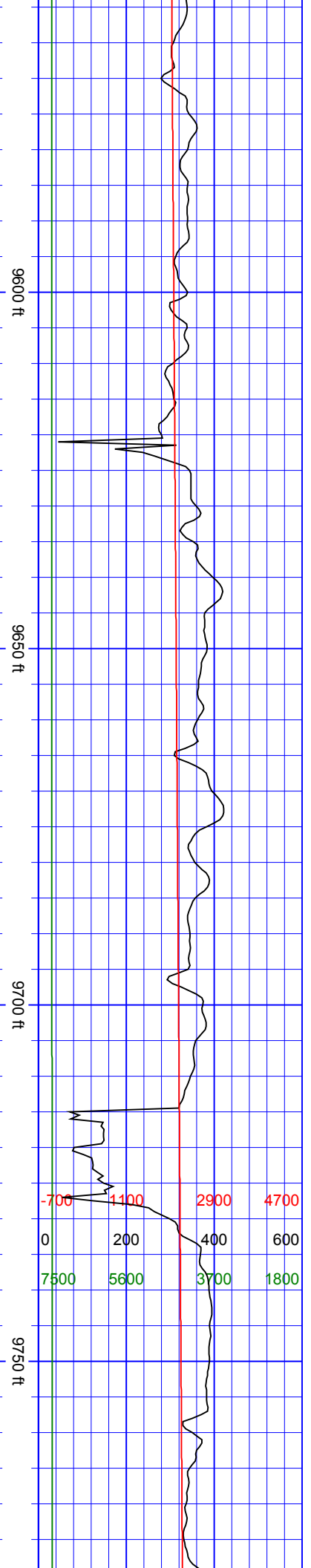


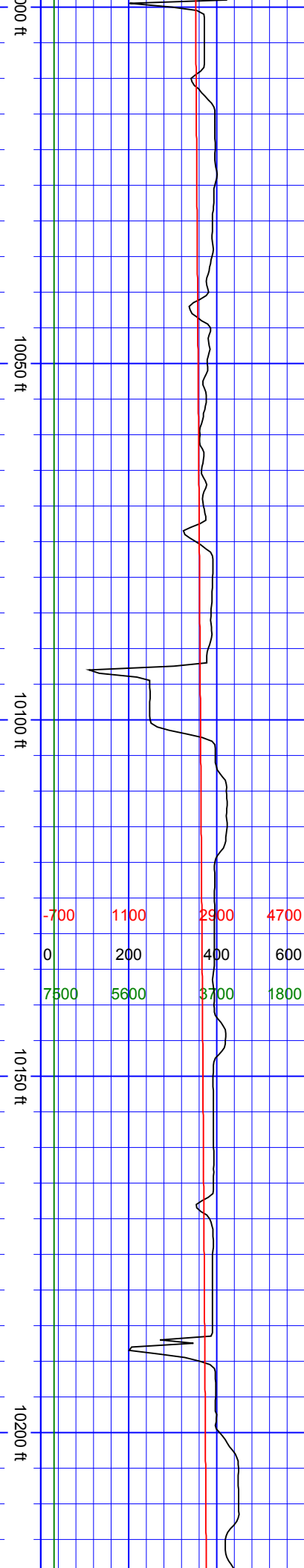
SurveyDepth:9560
TVD:7204.8 Inc:90.53
Azi:270.75
VertSec:2036.39

SurveyDepth:9654
TVD:7203.29 Inc:91.32
Azi:270.58
VertSec:2129.57

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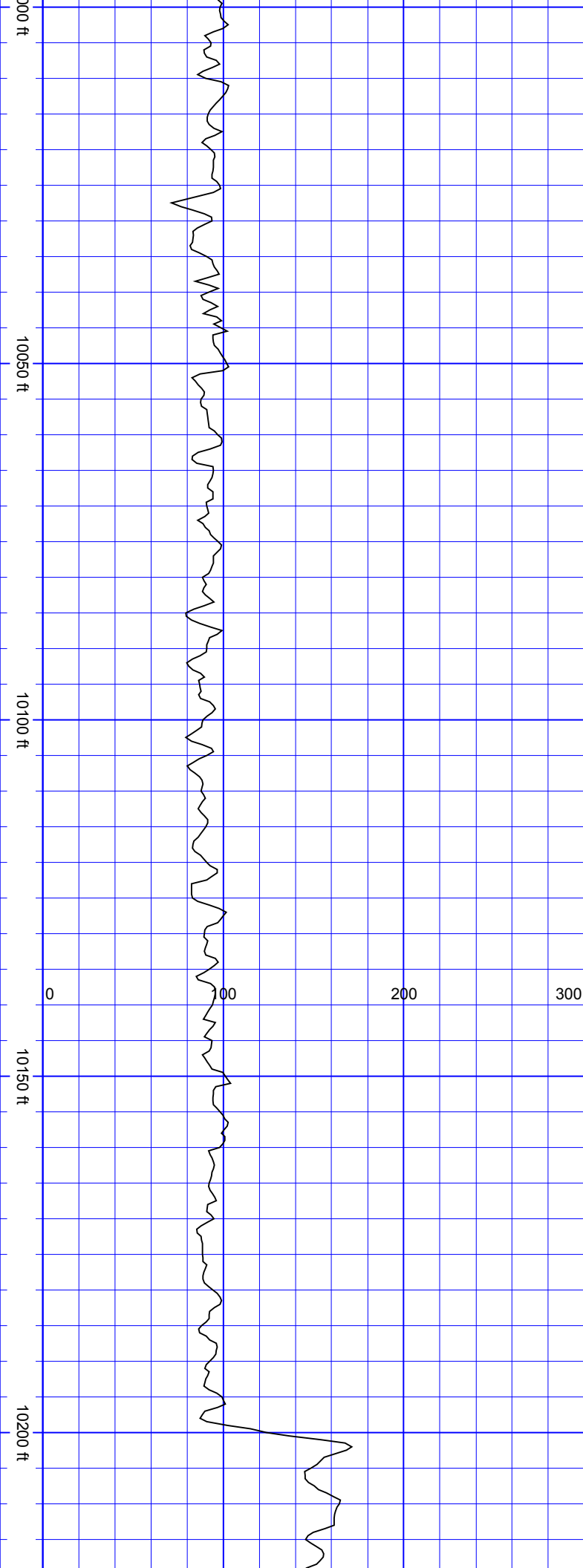
SurveyDepth:9749
TVD:7201.28 Inc:91.1
Azi:271.02
VertSec:2223.75





SurveyDepth:10032
TVD:7204.49 Inc:88.46
Azi:272.34
VertSec:2505.01

SurveyDepth:10126
TVD:7206.94 Inc:88.55
Azi:272.16
VertSec:2598.47



10250 ft

10300 ft

10350 ft

10400 ft

0 100 200 300

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S
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SurveyDepth:10221
TVD:7209.42 Inc:88.46
Azi:272.07
VertSec:2692.9

SurveyDepth:10315
TVD:7211.44 Inc:89.08
Azi:271.81
VertSec:2786.32

SurveyDepth:10410
TVD:7213.66 Inc:88.24
Azi:271.9
VertSec:2880.71

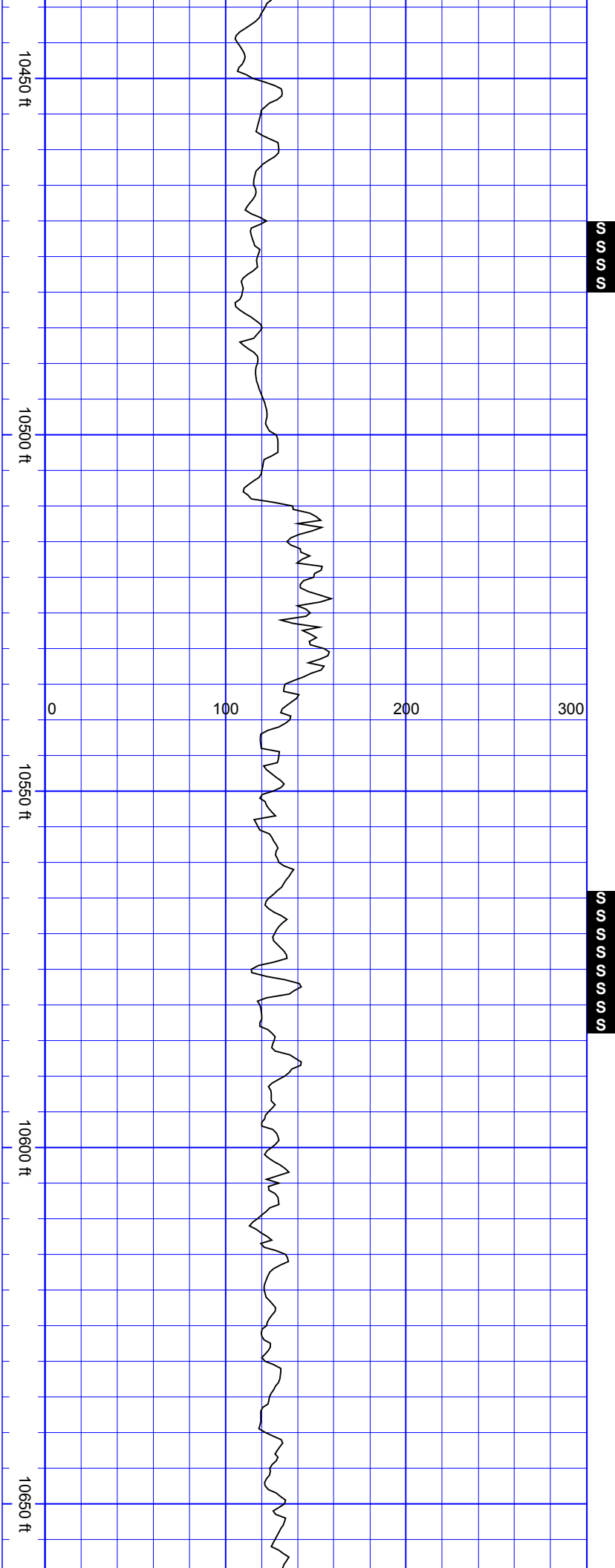
10250 ft

10300 ft

10350 ft

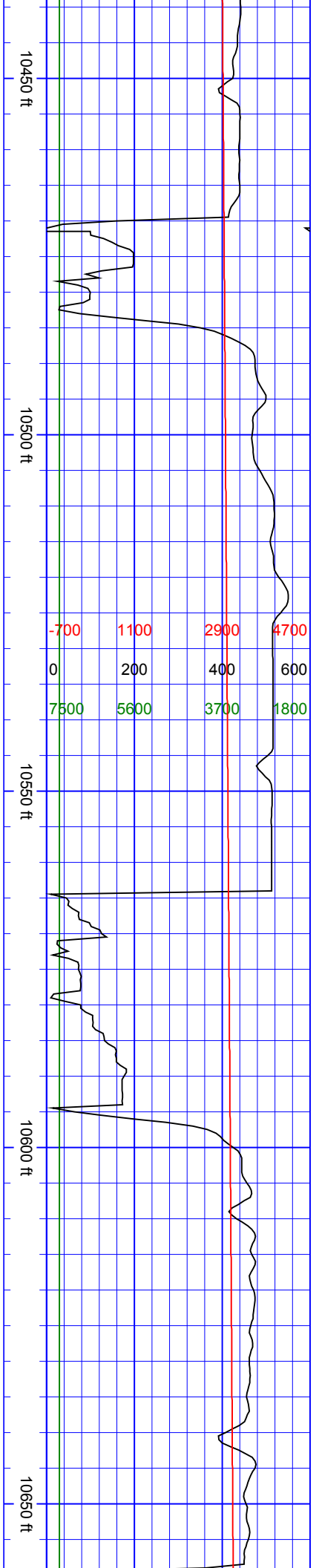
10400 ft

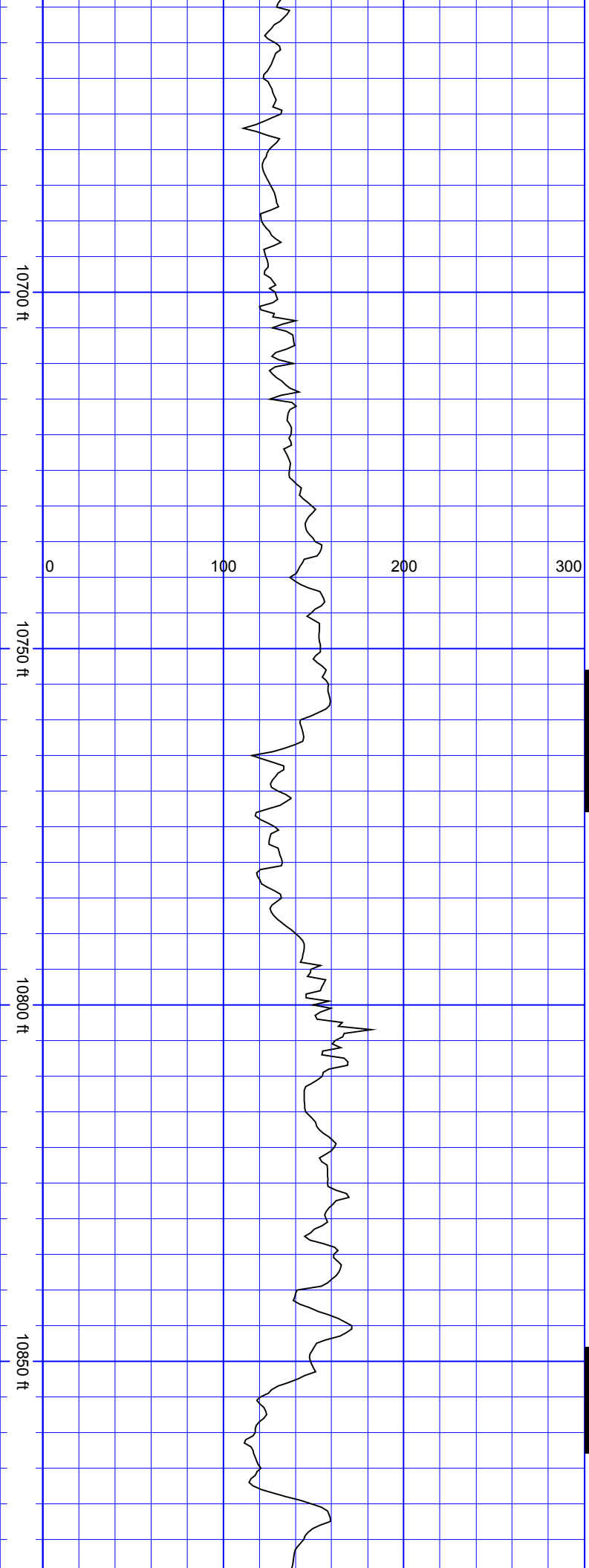
-700	1100	2900	4700
0	200	400	600
7500	5600	3700	1800



SurveyDepth:10504
TVD:7217.09 Inc:87.58
Azi:272.16
VertSec:2974.1

SurveyDepth:10599
TVD:7219.6 Inc:89.39
Azi:271.81
VertSec:3068.5



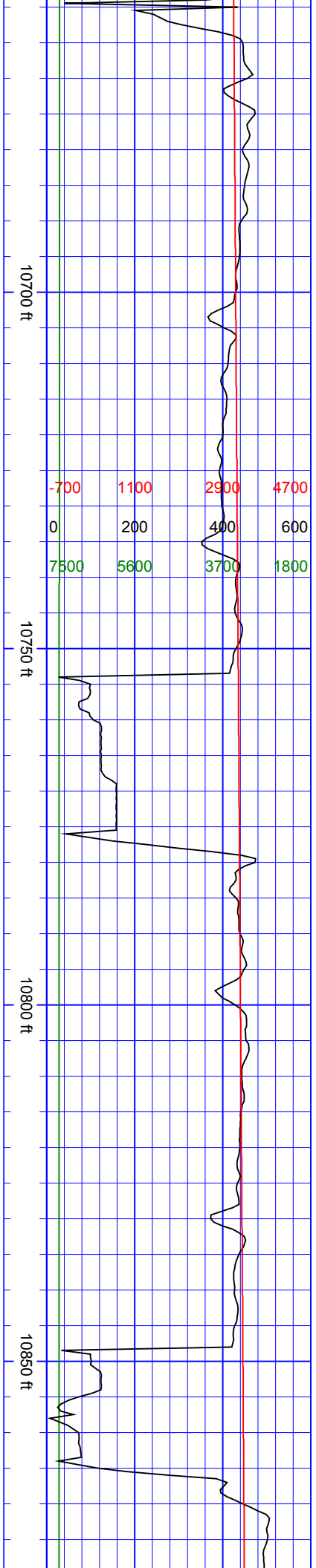


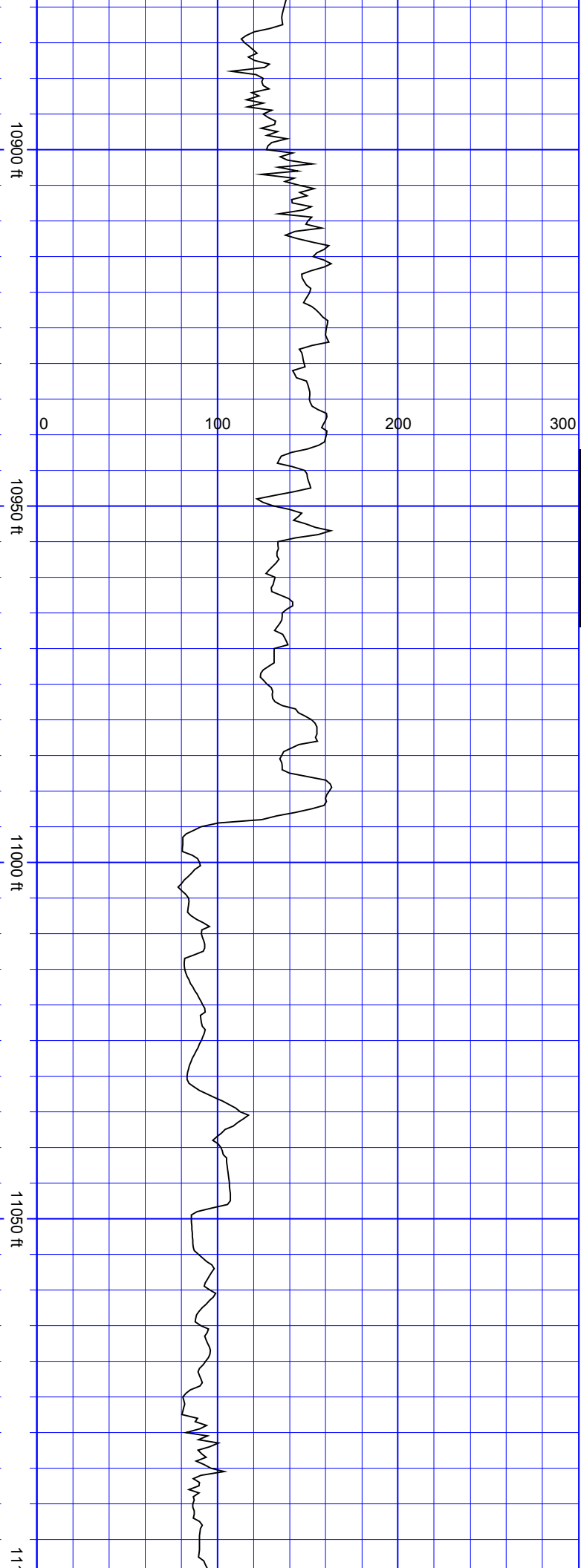
SurveyDepth:10693
TVD:7221.62 Inc:88.15
Azi:272.42
VertSec:3161.95

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SurveyDepth:10788
TVD:7223.77 Inc:89.25
Azi:270.23
VertSec:3256.23

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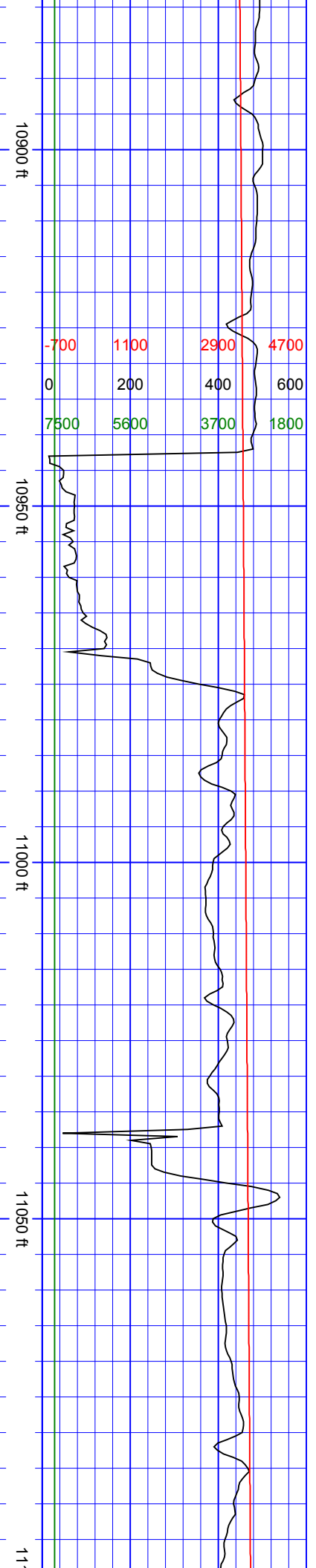


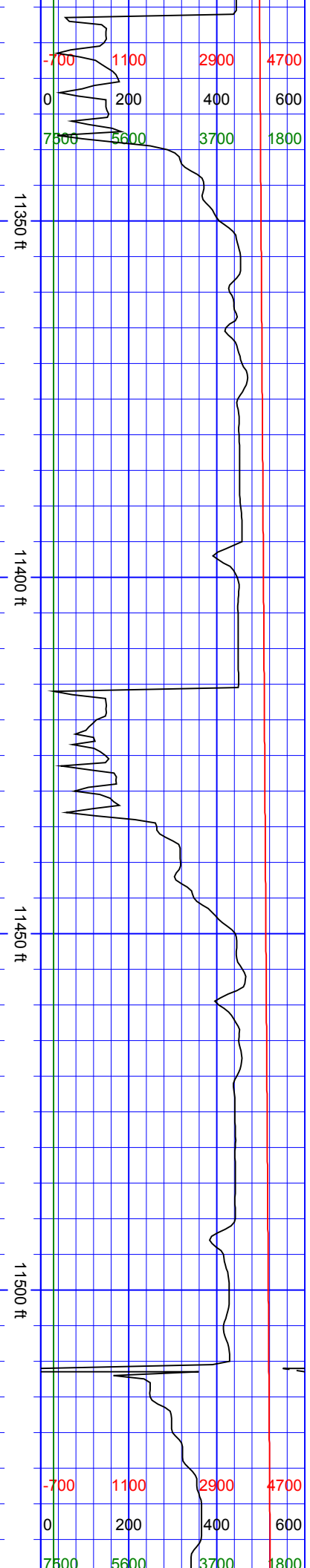
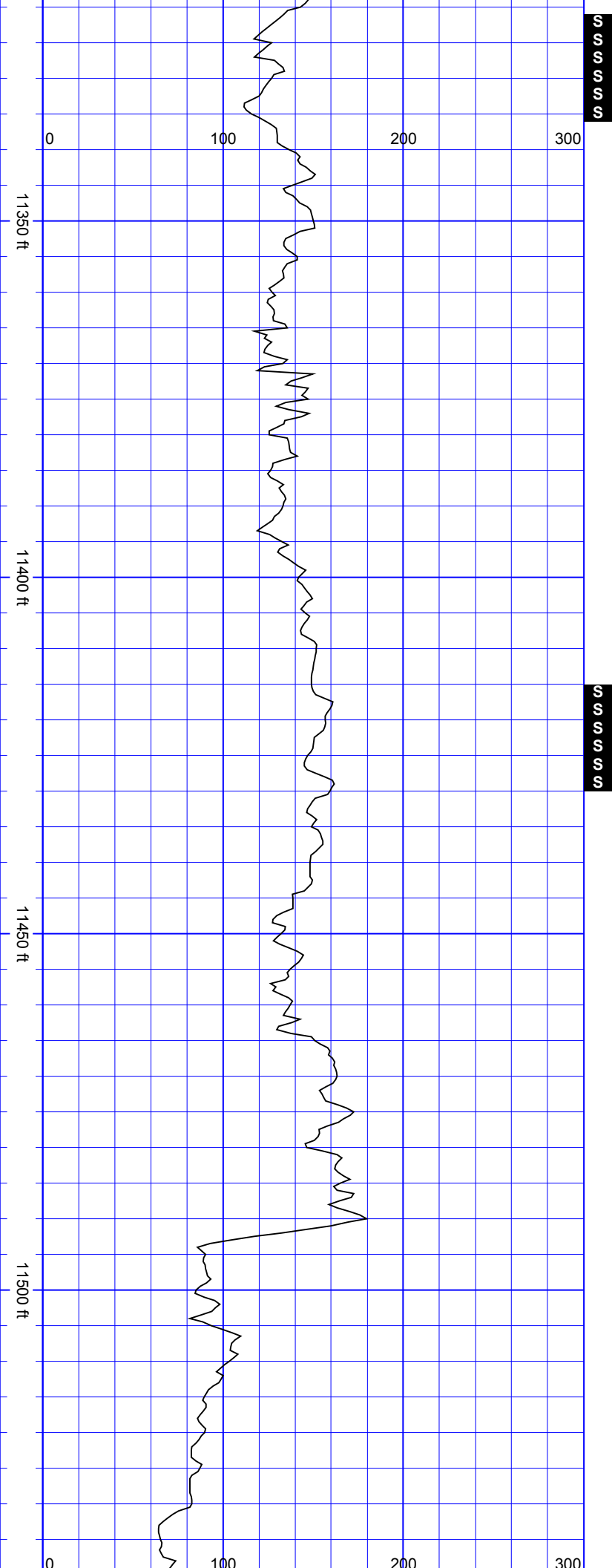


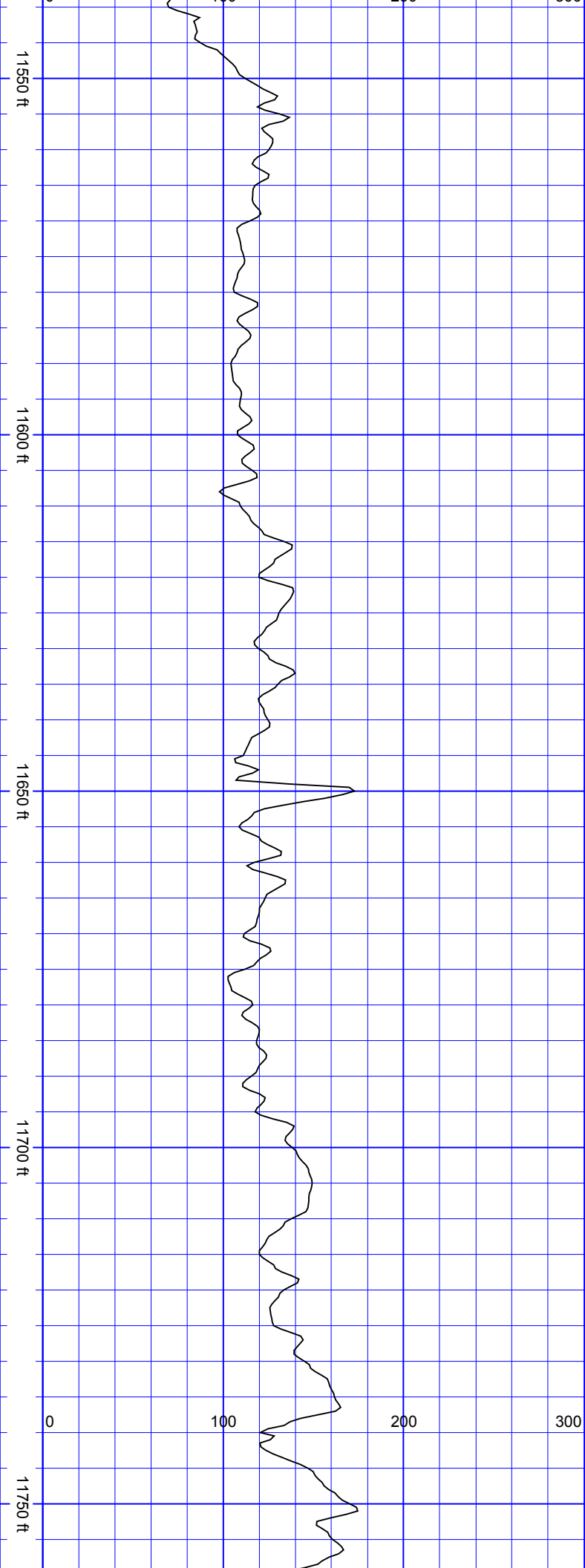
SurveyDepth:10882
TVD:7225.4 Inc:88.77
Azi:270.93
VertSec:3349.38

SurveyDepth:10977
TVD:7225.03 Inc:91.67
Azi:268.21
VertSec:3443.28

SurveyDepth:11072
TVD:7223.13 Inc:90.62
Azi:267.5
VertSec:3536.72

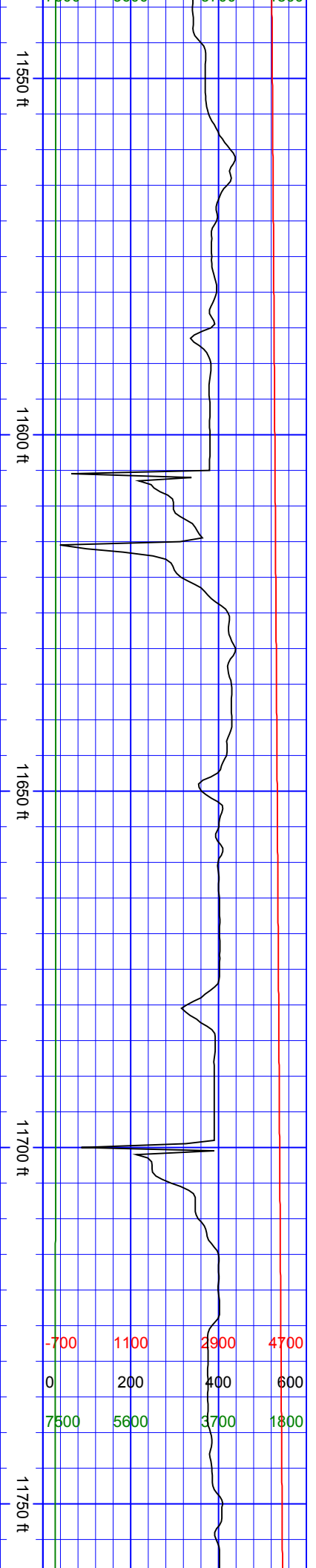


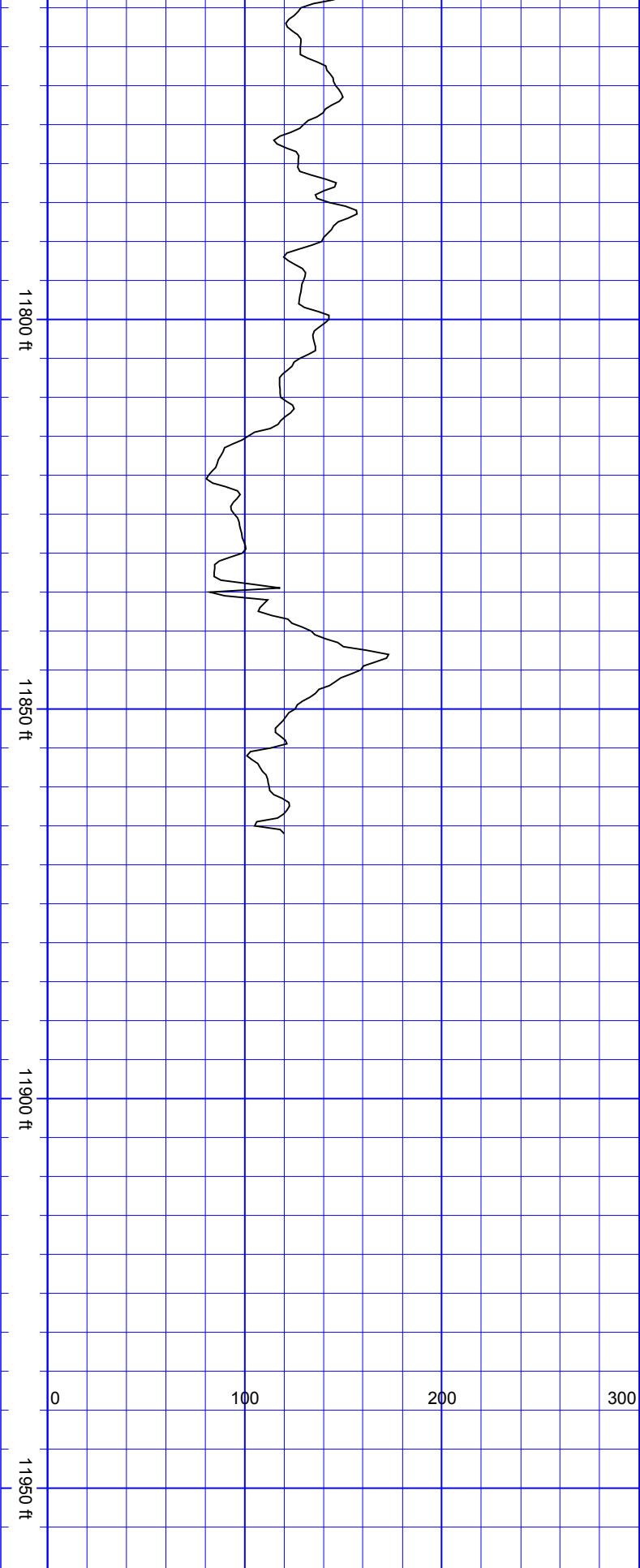




SurveyDepth:11610
TVD:7221.06 Inc:89.39
Azi:270.58
VertSec:4067.82

SurveyDepth:11704
TVD:7222.46 Inc:88.9
Azi:271.11
VertSec:4161.04





SurveyDepth:11799
TVD:7224.97 Inc:88.07
Azi:270.84
VertSec:4255.25

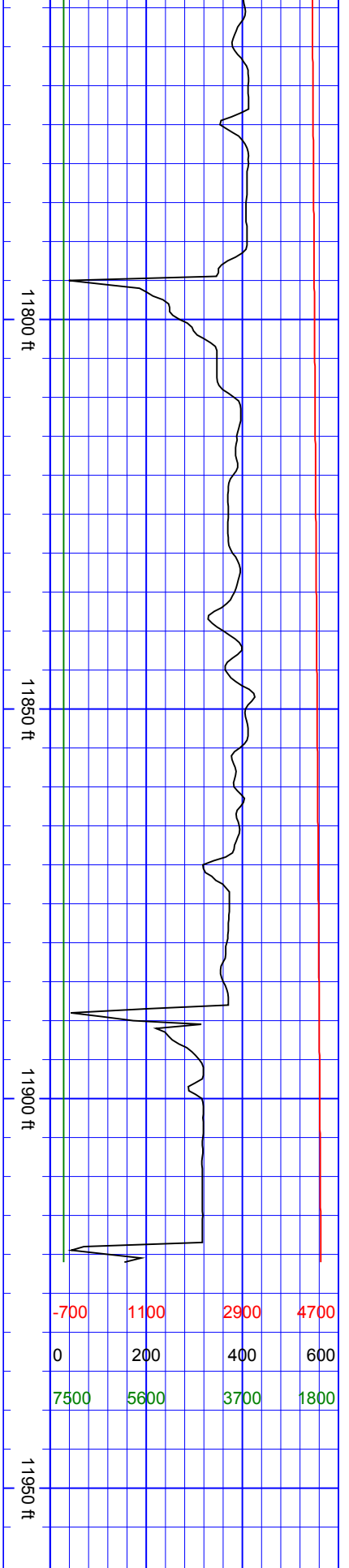
SurveyDepth:11855
TVD:7227.39 Inc:86.97
Azi:270.4
VertSec:4310.7

Extrapolation to Bit
SurveyDepth:11921
TVD:7230.88 Inc:86.97
Azi:270.4 VertSec:4376

Slide - Rot

Directional S

Date



-700	1100	2900	4700
0	200	400	600
7500	5600	3700	1800

7500	5600	3700	1800
TVD Depth (ft)			
0	200	400	600
Drill Rate (ft/hr)			
-700	1100	2900	4700
Vertical Section (ft)			

5" = 100	GAMMA RAY	ate	urvey	5" = 100	ROP - VERT SEC - TVD
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