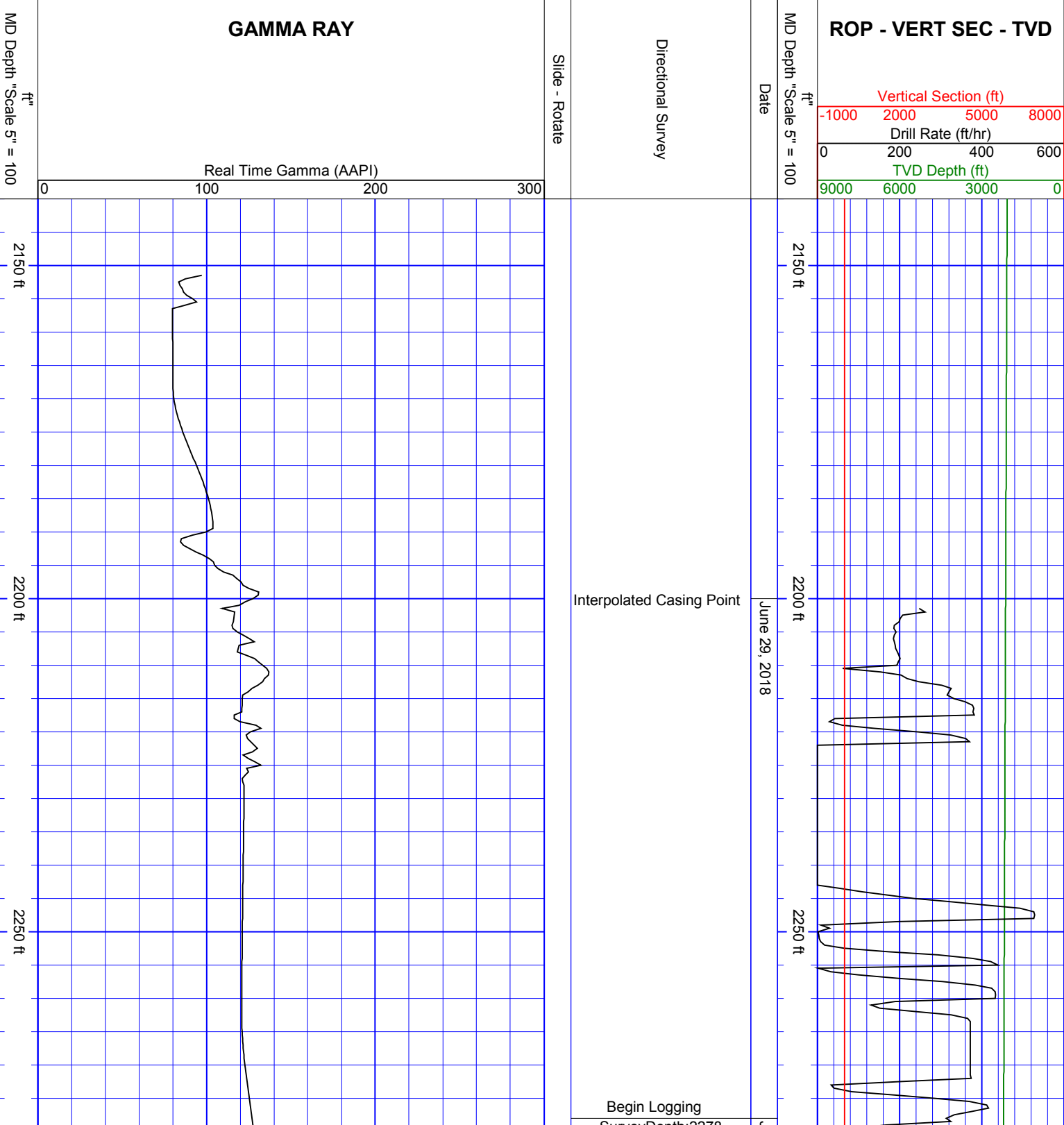


EM Tool and surface gear ran well with no issues.

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.



SurveyDepth:2278
TVD:2195.34 Inc:21.05
Azi:251.38 VertSec:-0.38

June 29, 2018

2300 ft

2350 ft

2400 ft

2450 ft

25

0 100 200 300

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SurveyDepth:2373
TVD:2283.56 Inc:22.5
Azi:250.67 VertSec:0.61

2300 ft

2350 ft

2400 ft

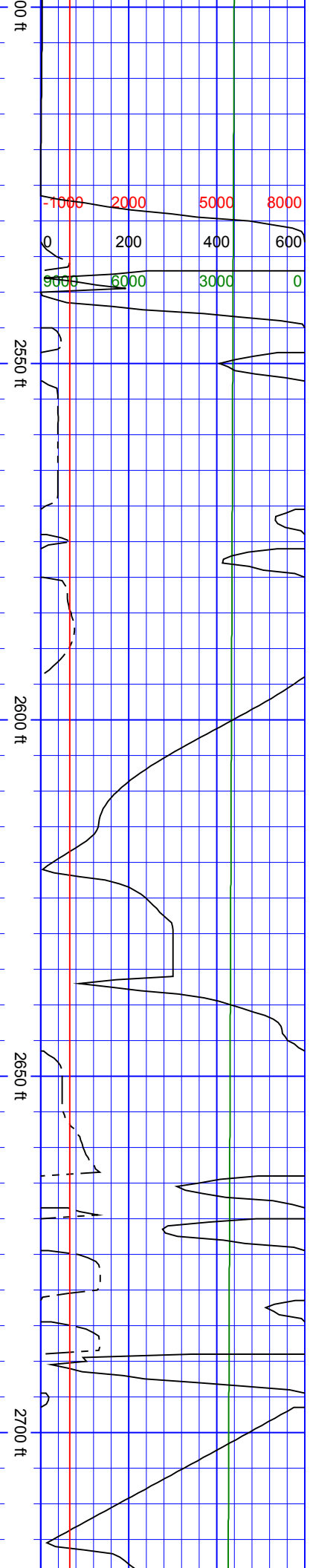
2450 ft

25

-1000 2000 5000 8000
0 200 400 600
9000 6000 3000 0

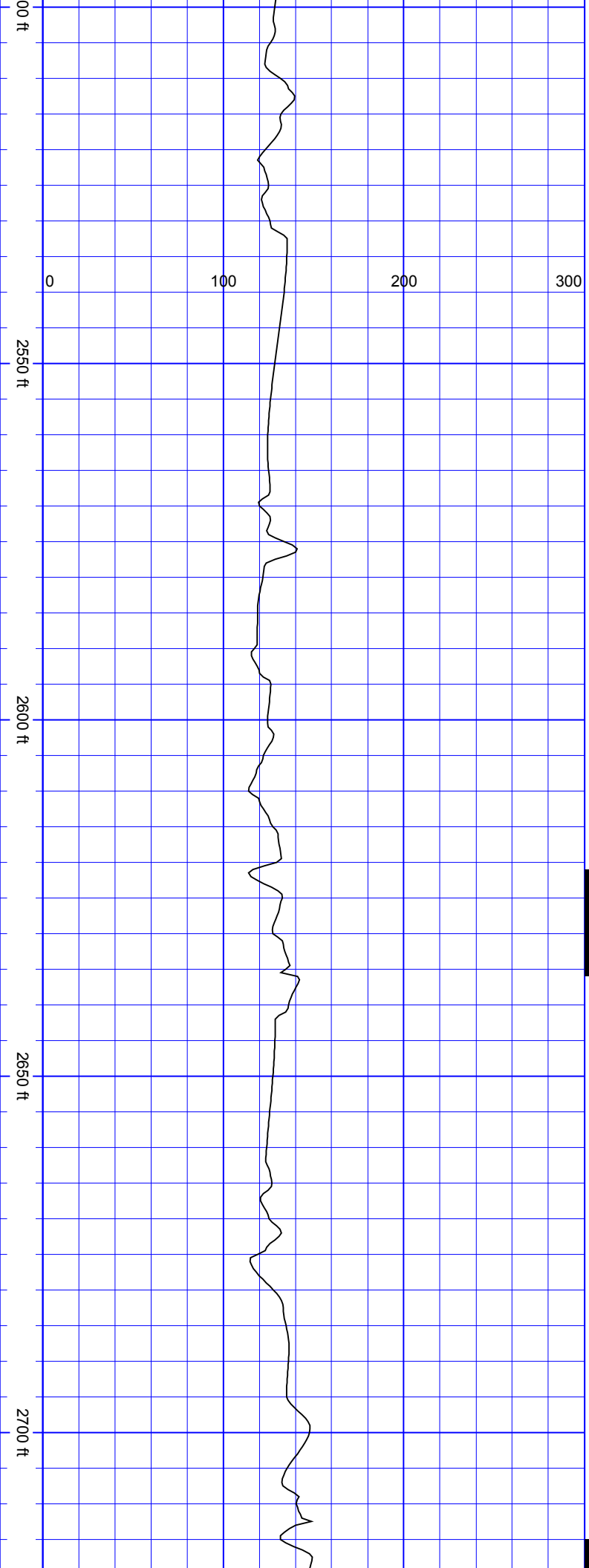
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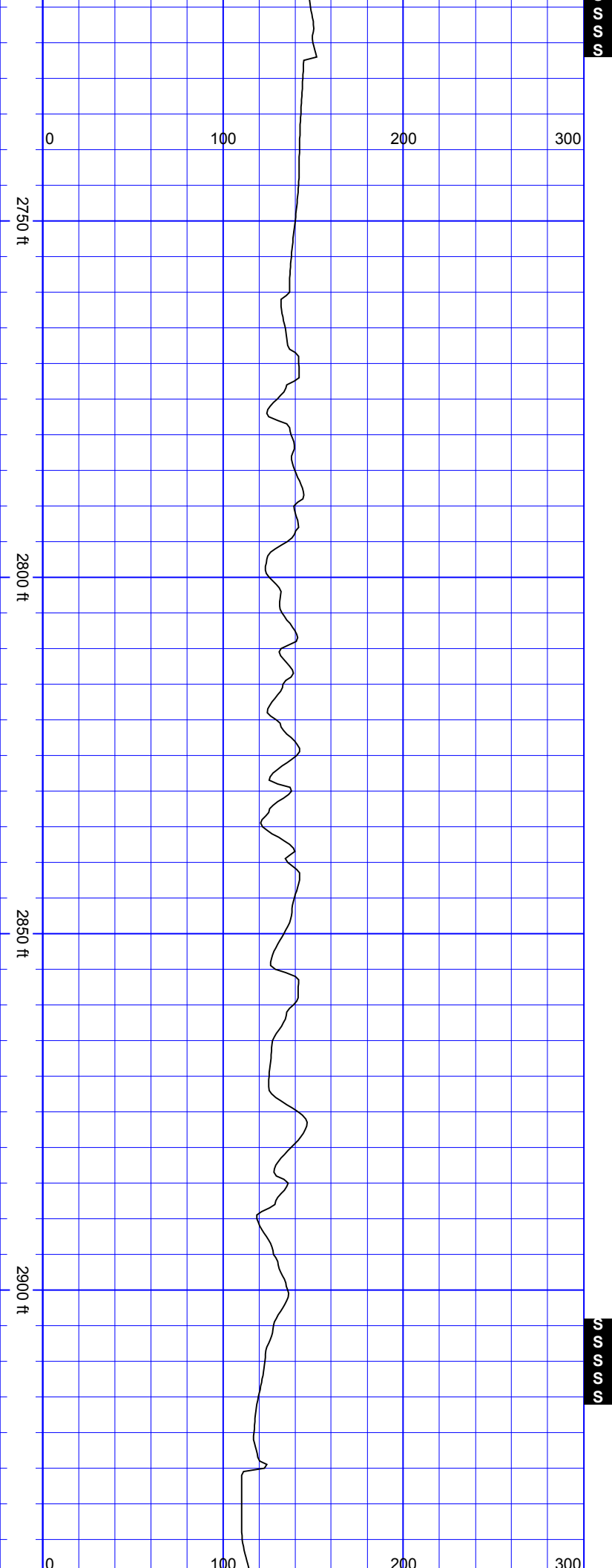
SurveyDepth:2467
TVD:2369.88 Inc:24.13
Azi:250.23 VertSec:1.28



SurveyDepth:2562
TVD:2457.01 Inc:22.85
Azi:249.35 VertSec:1.53

SurveyDepth:2656
TVD:2543.42 Inc:23.51
Azi:248.48 VertSec:1.21



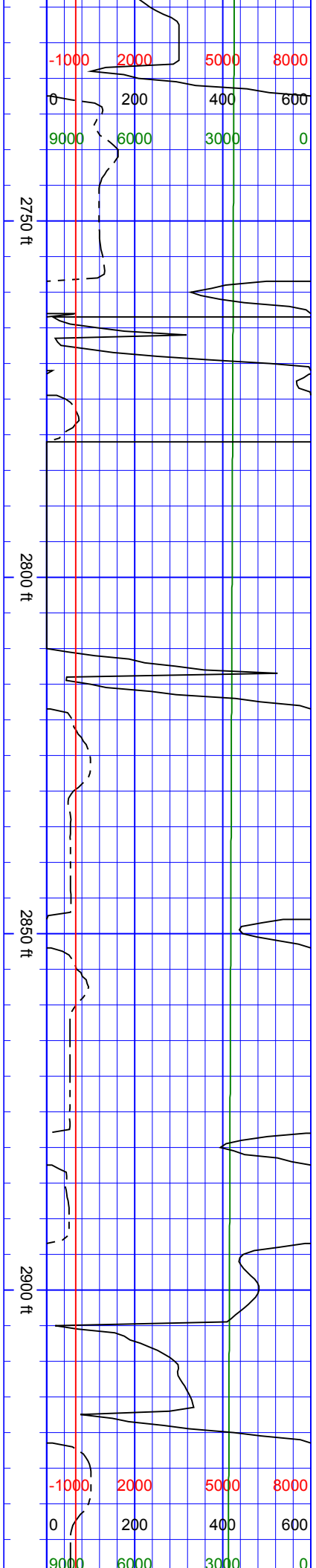


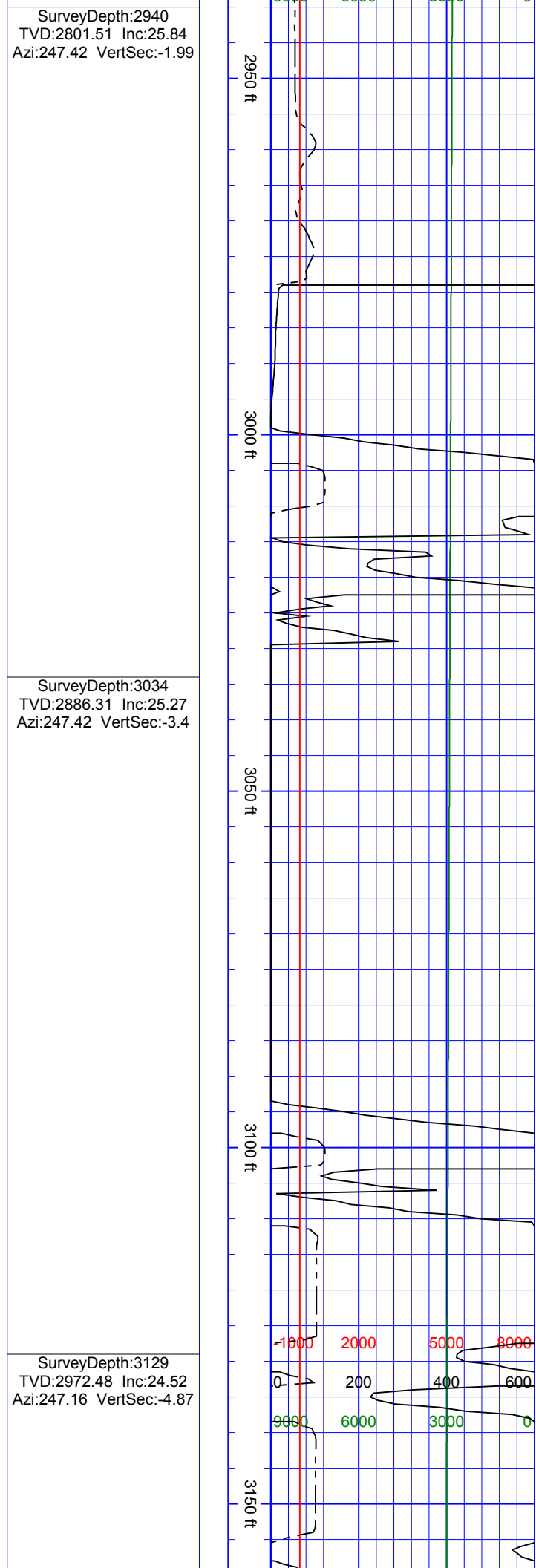
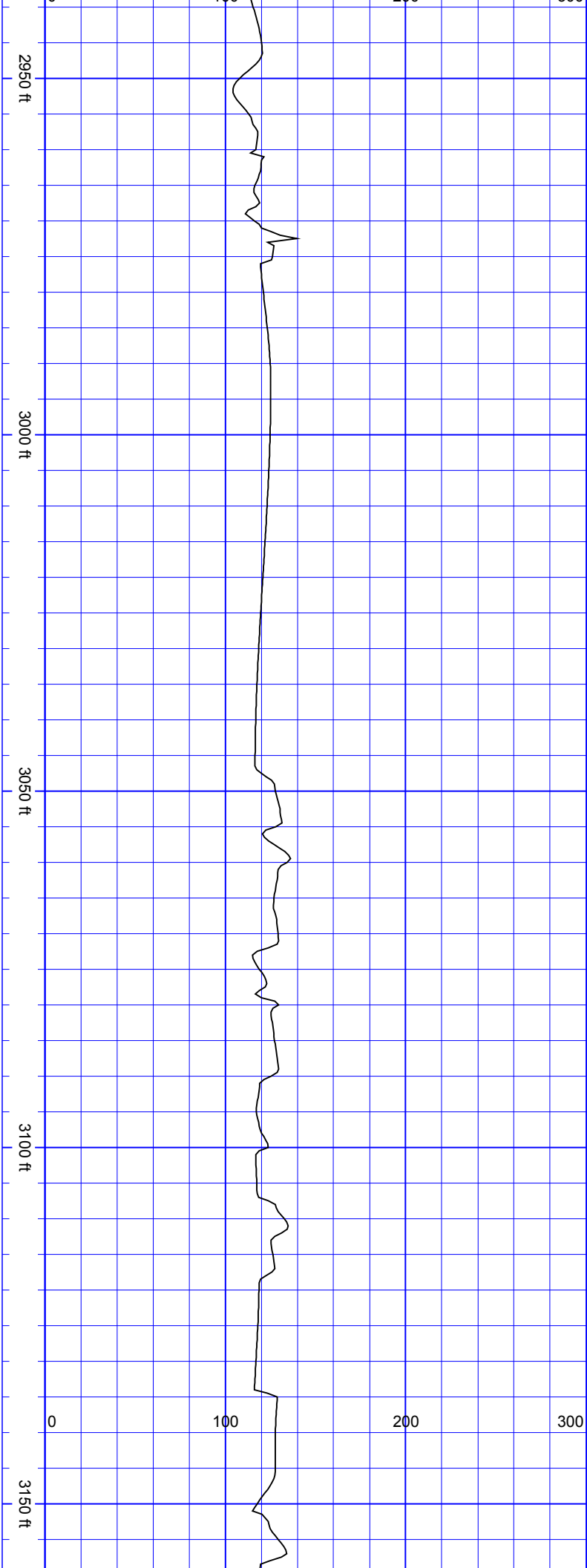
SurveyDepth:2751
TVD:2629.97 Inc:25.18
Azi:248.39 VertSec:0.54

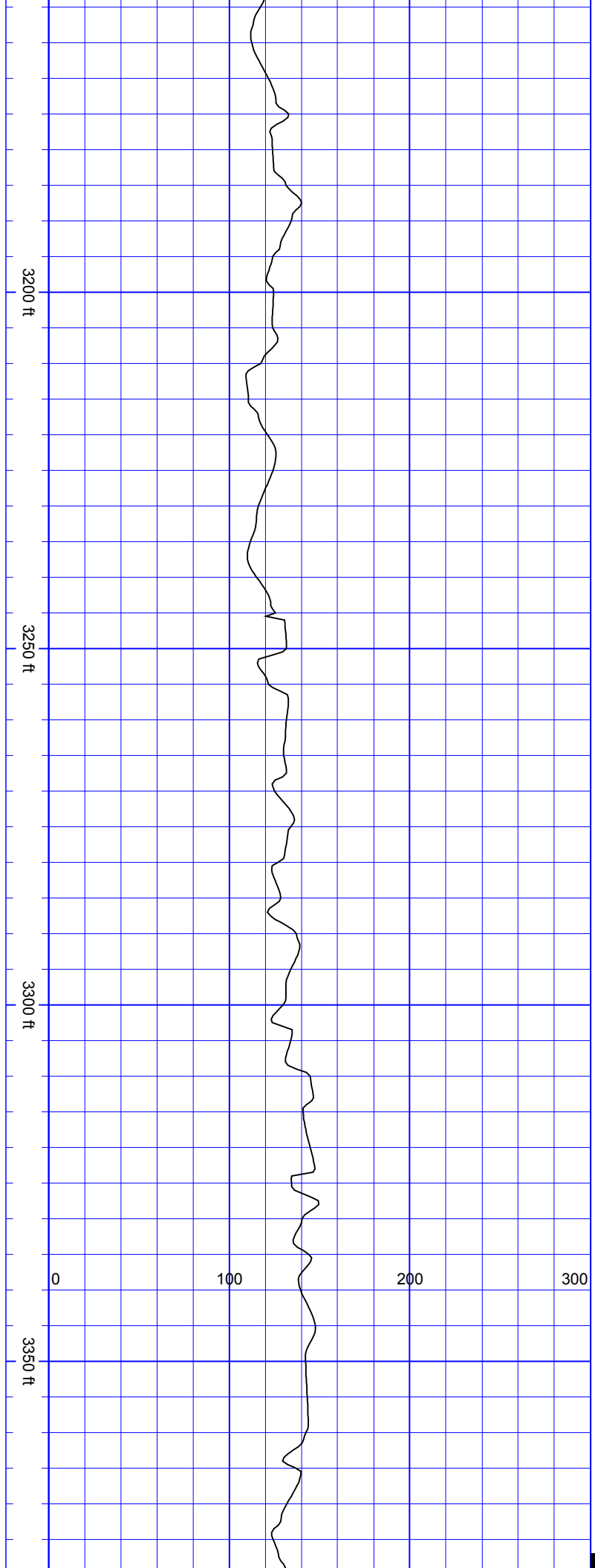
SurveyDepth:2845
TVD:2715.4 Inc:24.13
Azi:247.25 VertSec:-0.54

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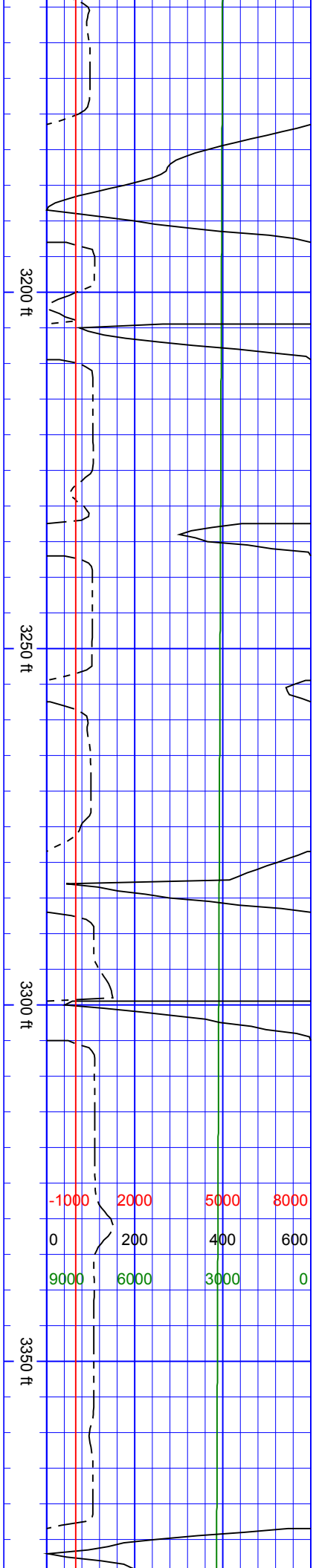




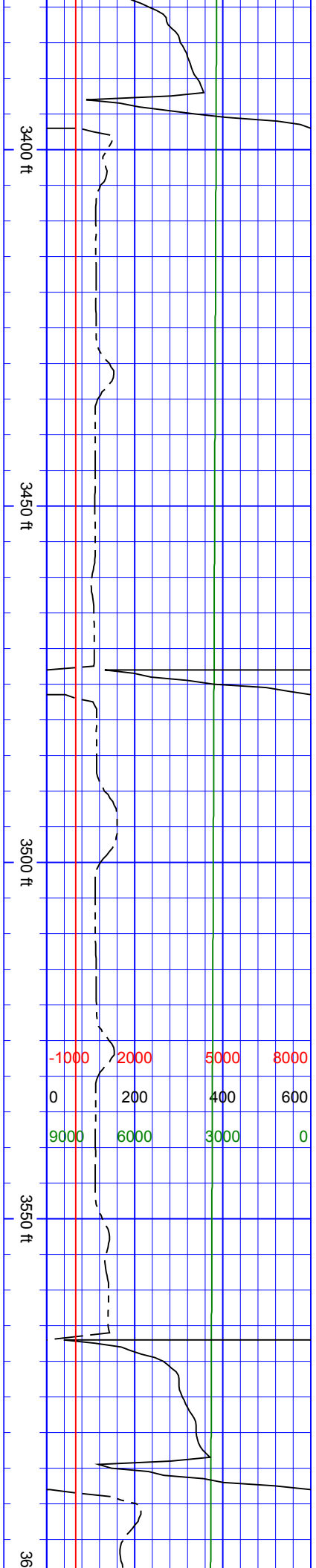
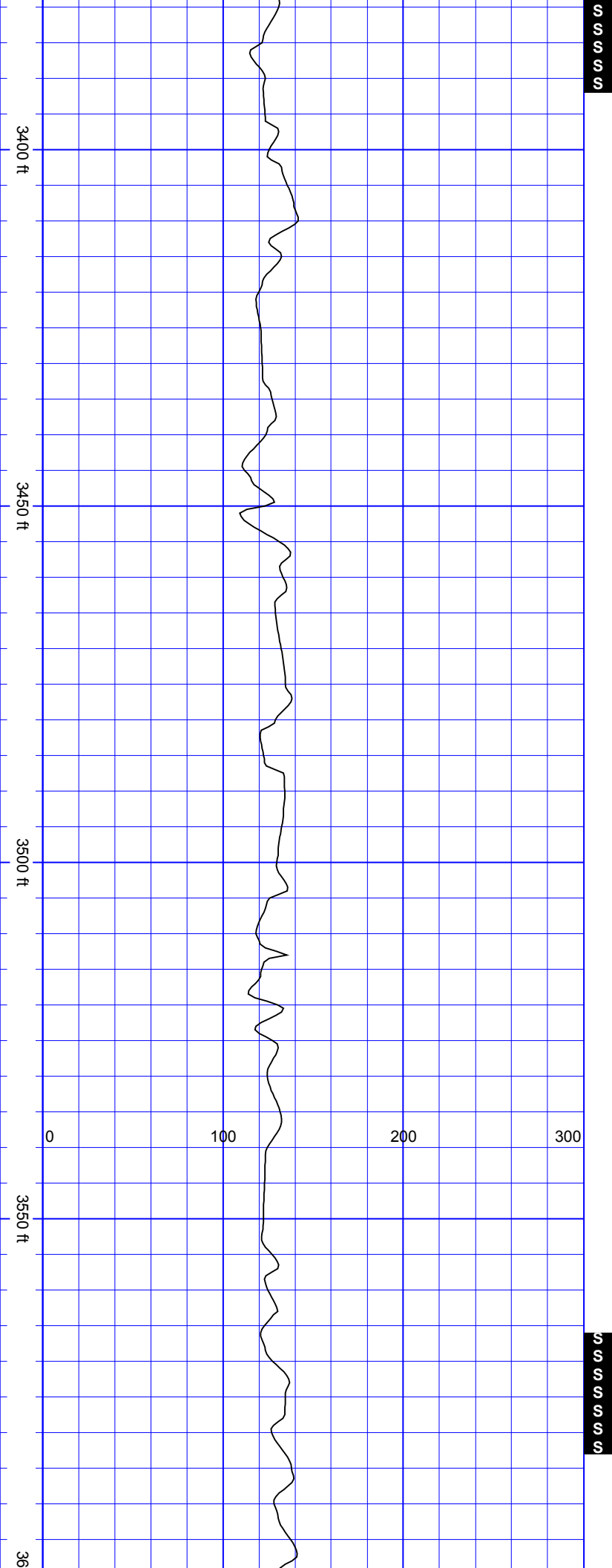


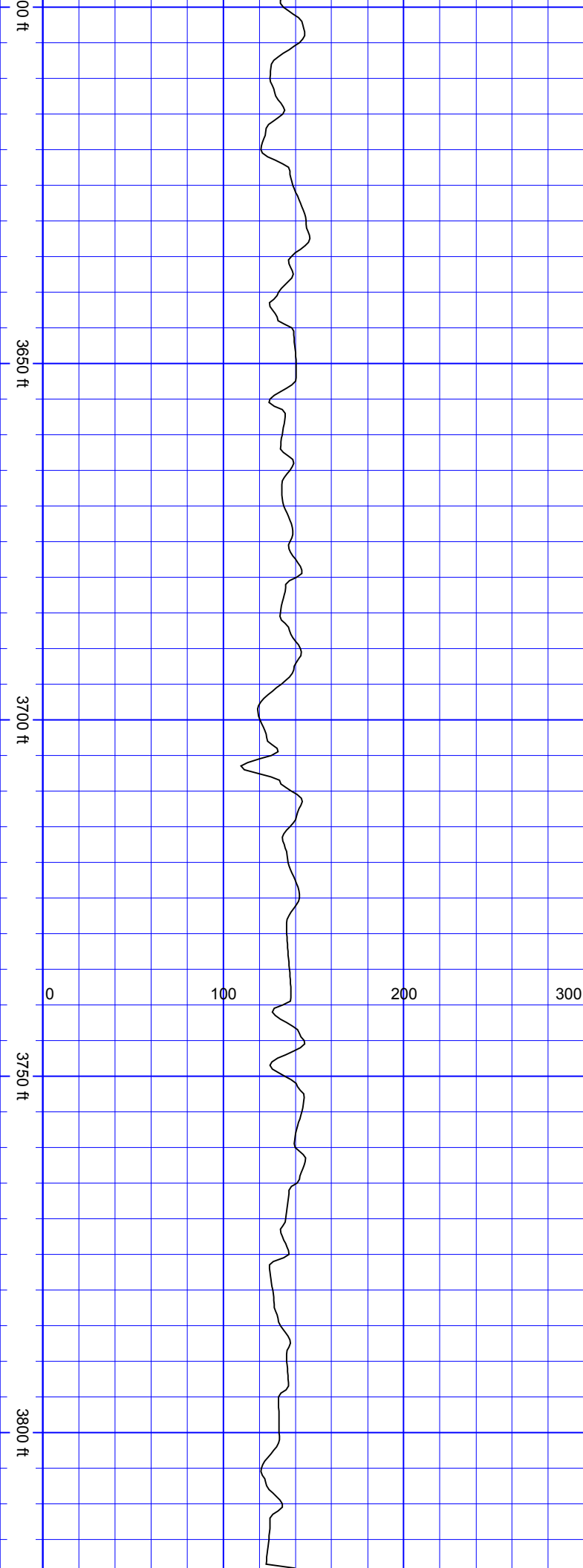
SurveyDepth:3223
TVD:3058.34 Inc:23.51
Azi:246.89 VertSec:-6.46

SurveyDepth:3318
TVD:3145.87 Inc:22.24
Azi:246.45 VertSec:-8.22



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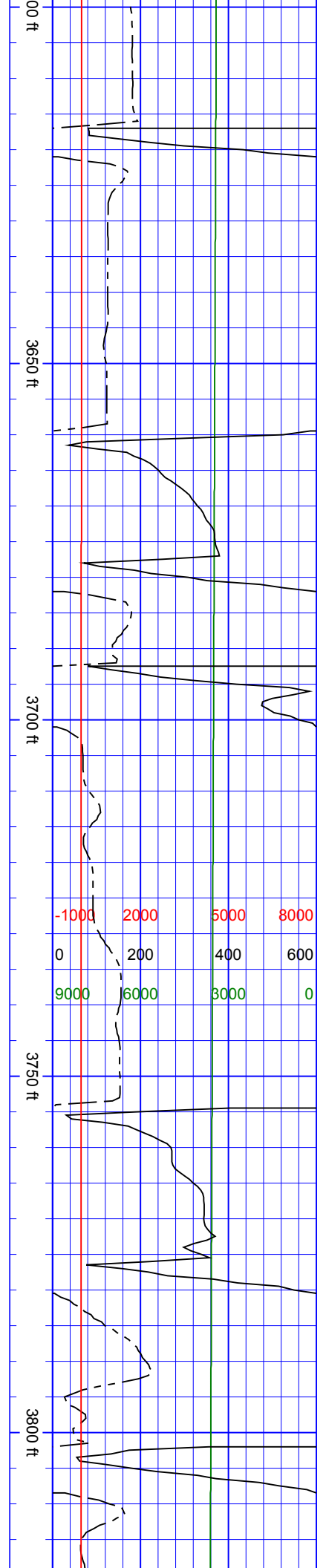


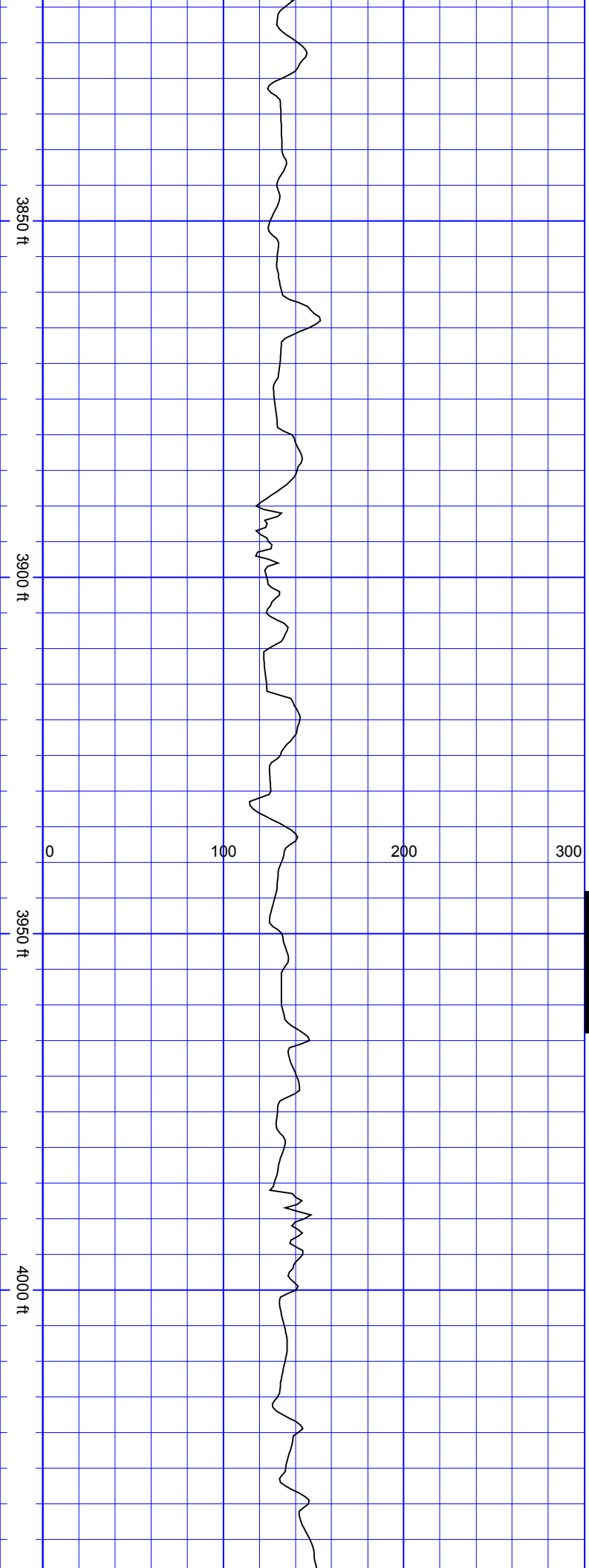


SurveyDepth:3602
TVD:3409.05 Inc:21.49
Azi:248.83 VertSec:-10.43

SurveyDepth:3696
TVD:3496.38 Inc:21.93
Azi:248.39 VertSec:-10.92

SurveyDepth:3791
TVD:3584.02 Inc:23.47
Azi:248.12 VertSec:-11.66

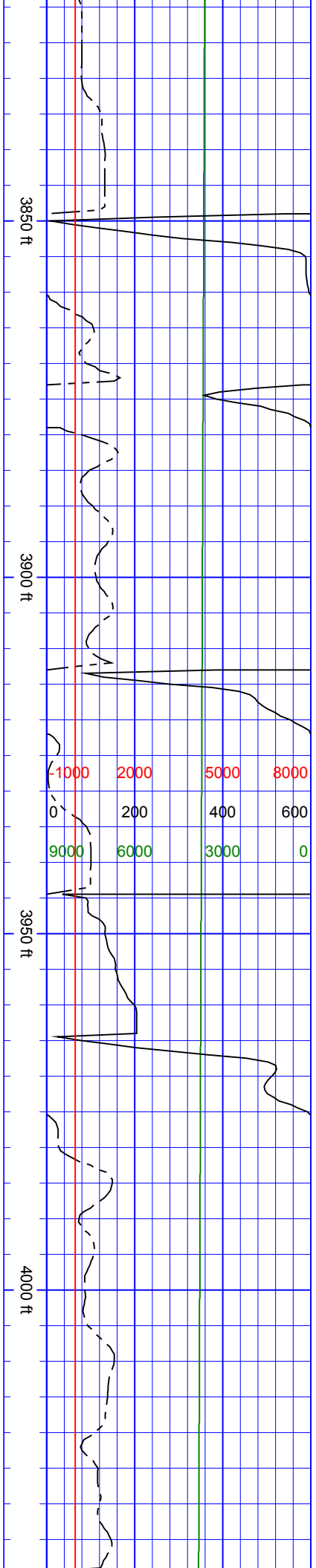




SurveyDepth:3885
TVD:3670.92 Inc:21.36
Azi:247.68 VertSec:-12.6

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SurveyDepth:3980
TVD:3758.92 Inc:22.9
Azi:247.86 VertSec:-13.62

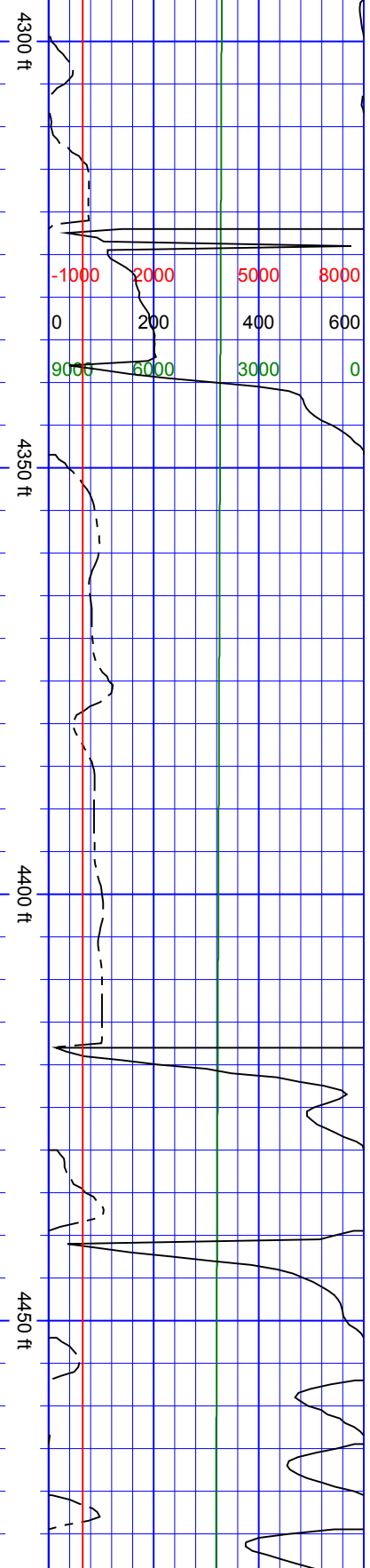
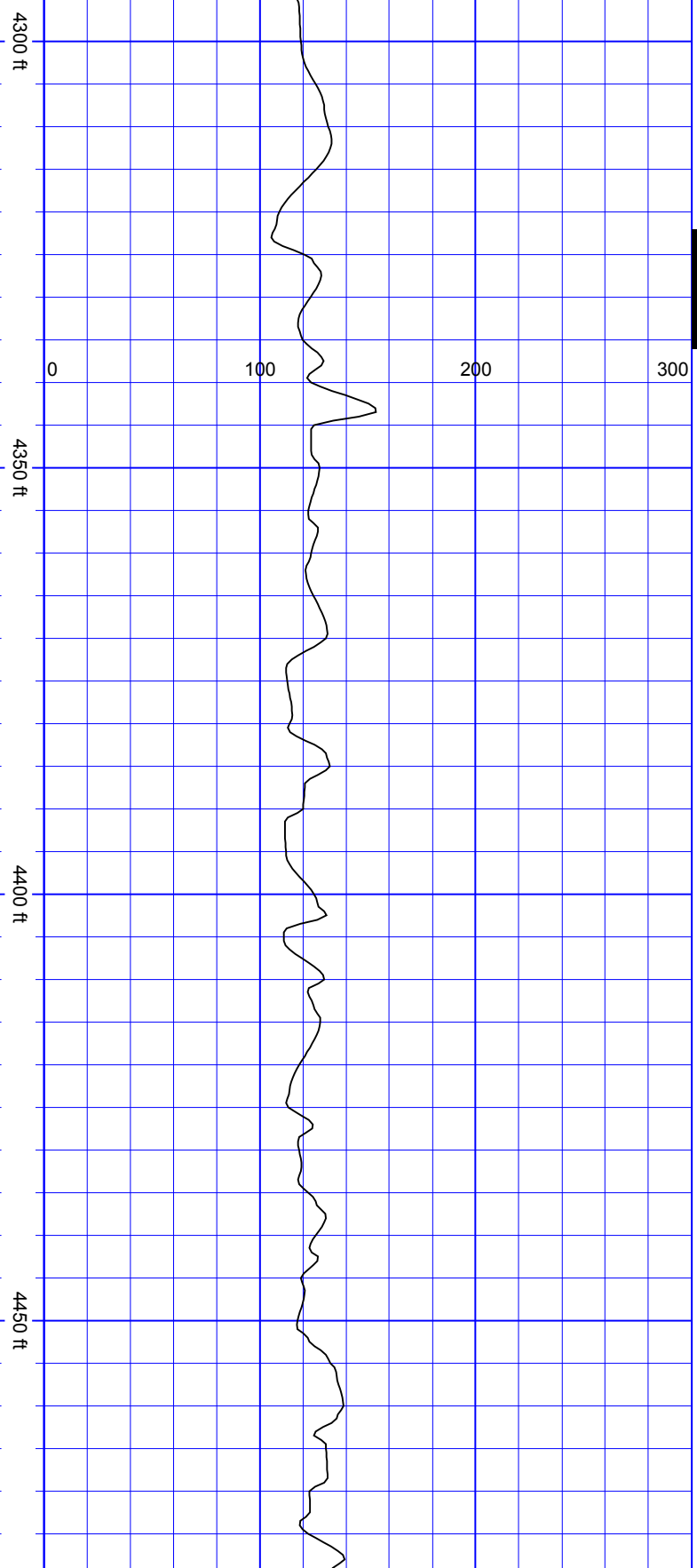


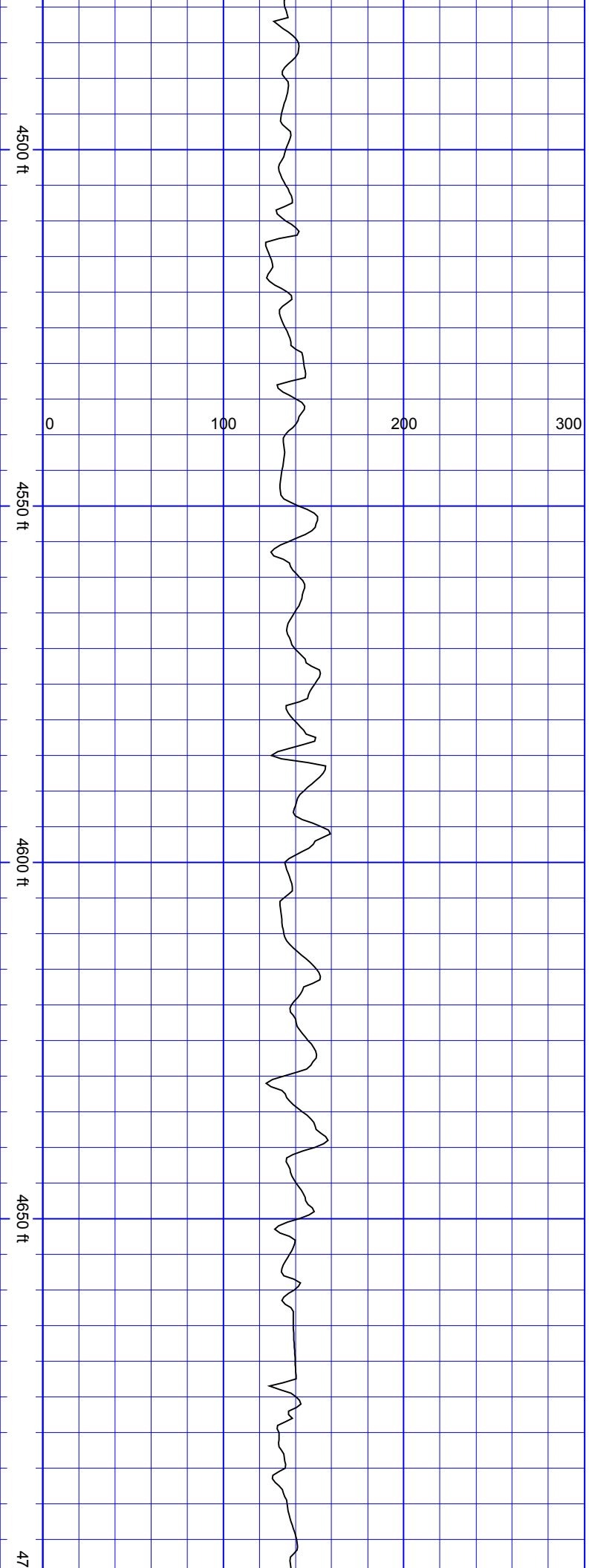
SurveyDepth:4263
TVD:4019.3 Inc:23.25
Azi:251.73 VertSec:-
15.61

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SurveyDepth:4381
TVD:4127.01 Inc:24.96
Azi:249.62 VertSec:-
14.58

SurveyDepth:4476

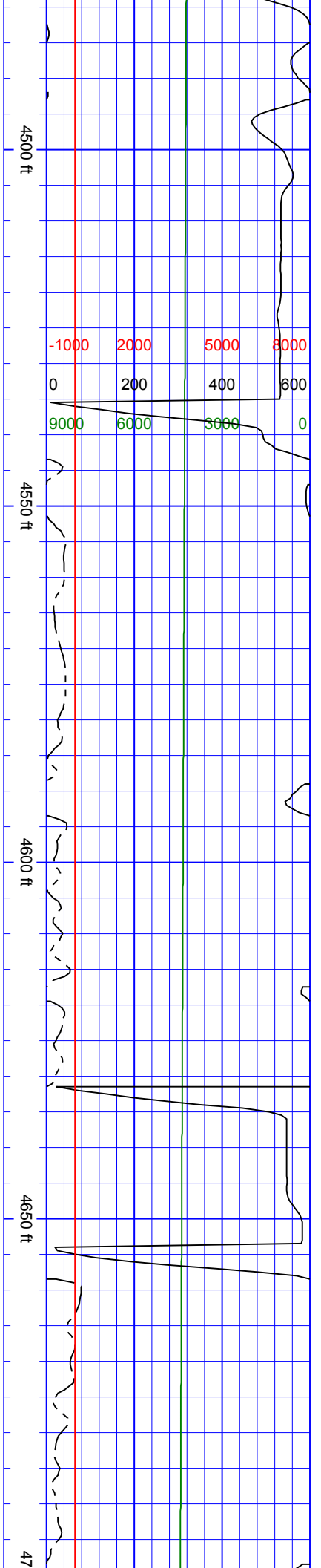


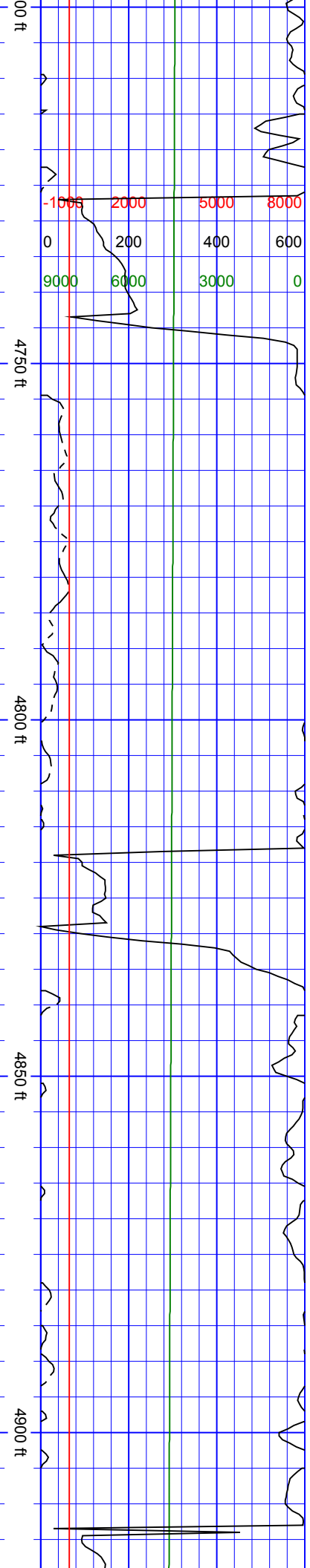


TVD:4213.27 Inc:24.57
Azi:249.27 VertSec:-14.55

SurveyDepth:4570
TVD:4299.18 Inc:23.34
Azi:248.04 VertSec:-15.05

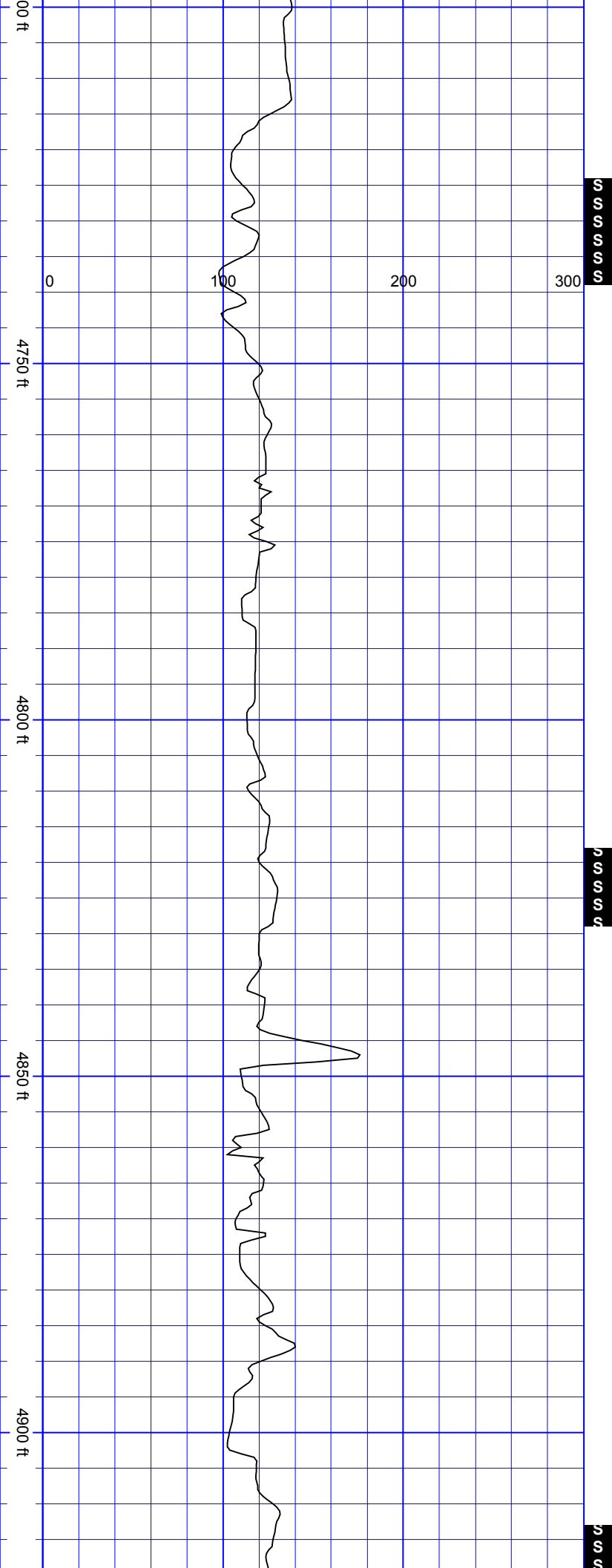
SurveyDepth:4665
TVD:4387.1 Inc:21.14
Azi:247.42 VertSec:-16.09

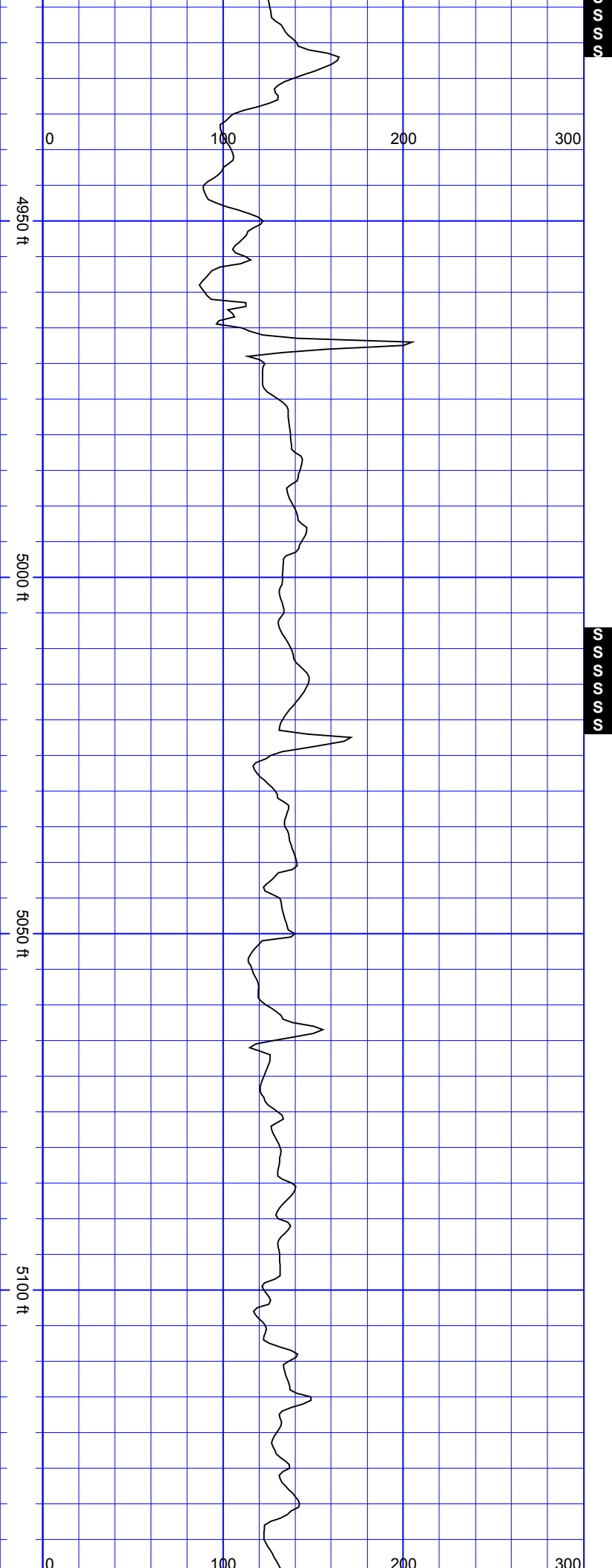




SurveyDepth:4759
TVD:4474.2 Inc:23.03
Azi:247.25 VertSec:-
17.37

SurveyDepth:4854
TVD:4561.93 Inc:22.1
Azi:249.09 VertSec:-
18.17





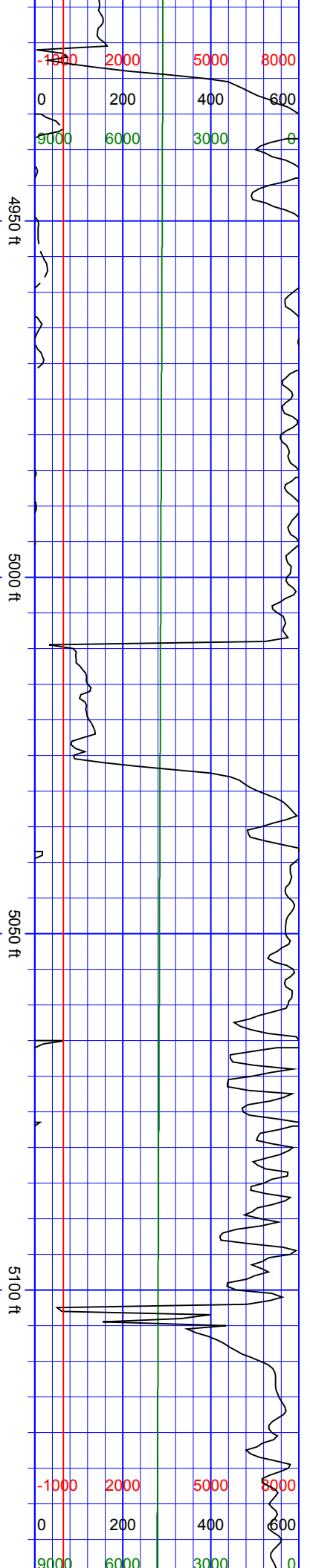
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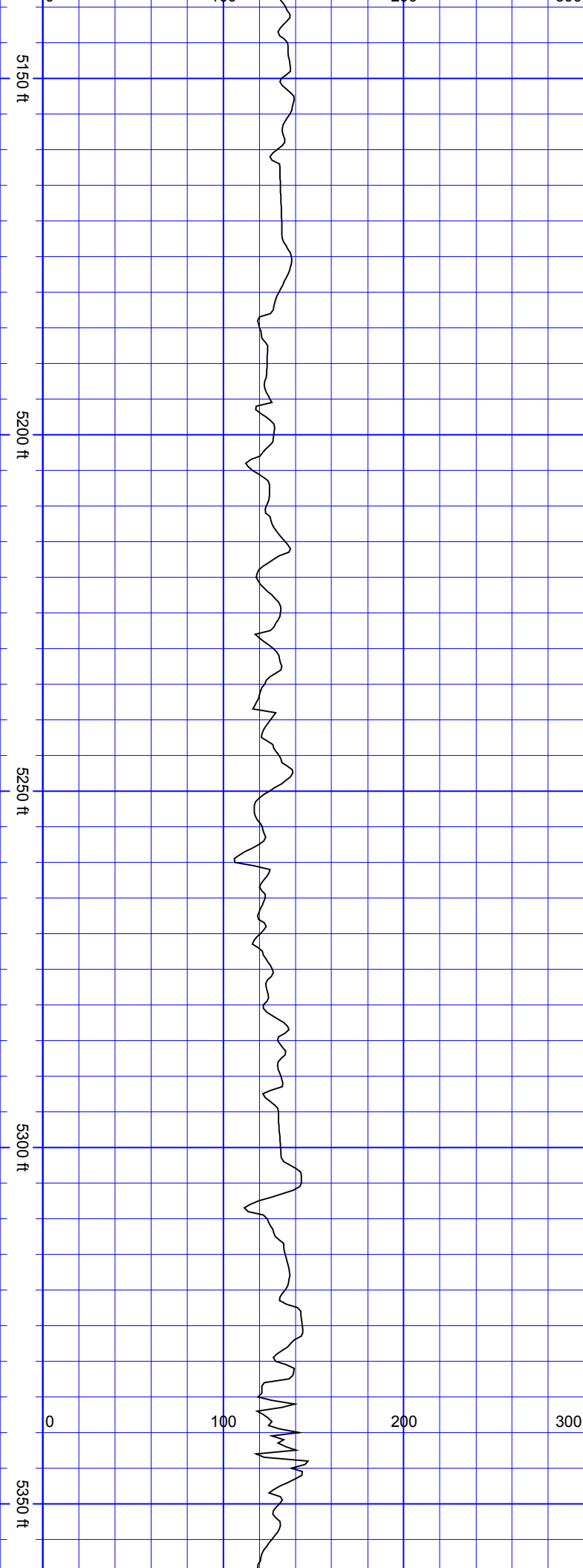
SurveyDepth:4948
TVD:4648.83 Inc:22.72
Azi:251.29 VertSec:-
17.68

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SurveyDepth:5043
TVD:4735.77 Inc:24.83
Azi:249.88 VertSec:-
16.91

SurveyDepth:5133

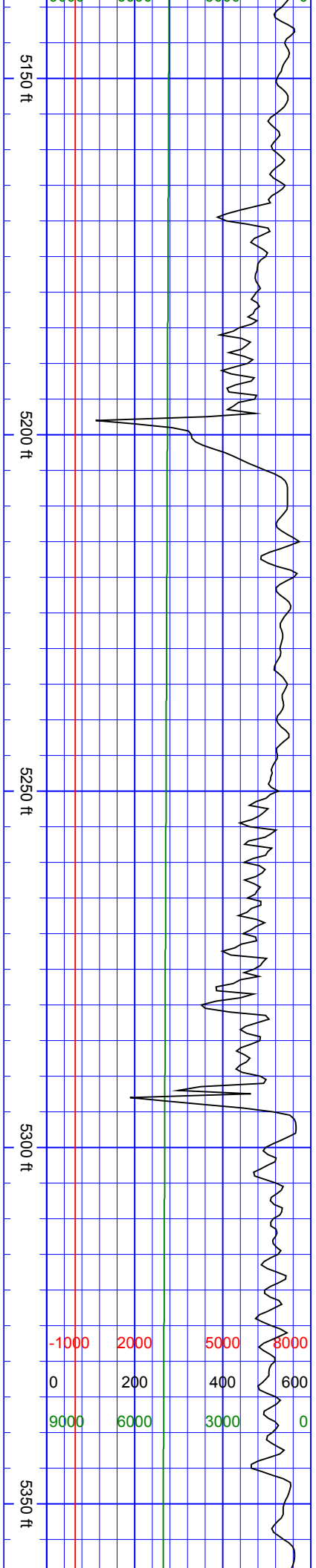


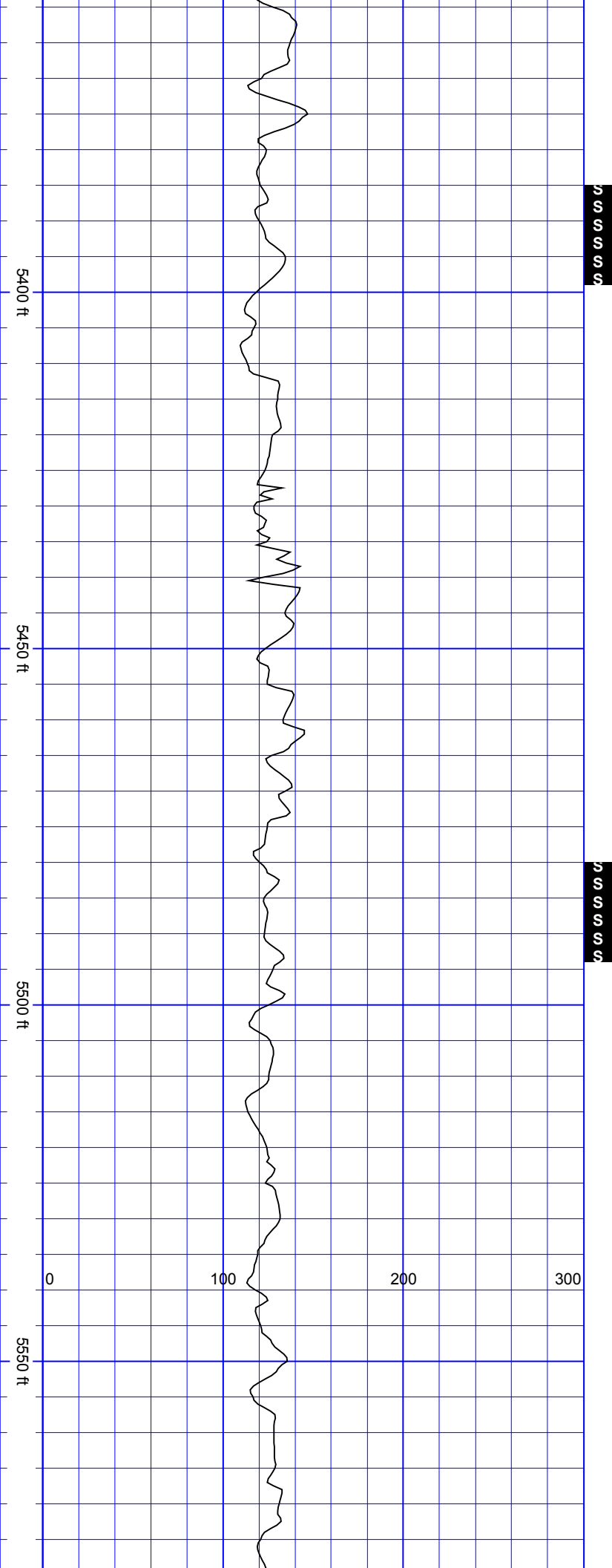


SurveyDepth:5138
TVD:4822.24 Inc:24.08
Azi:249.88 VertSec:-16.59

SurveyDepth:5232
TVD:4908.51 Inc:22.72
Azi:249.71 VertSec:-16.33

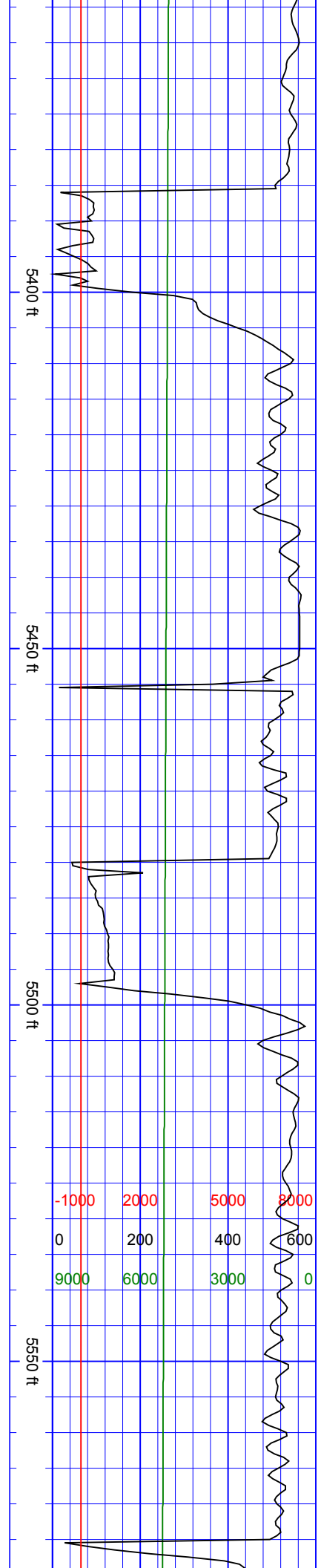
SurveyDepth:5326
TVD:4995.54 Inc:21.67
Azi:250.32 VertSec:-15.96



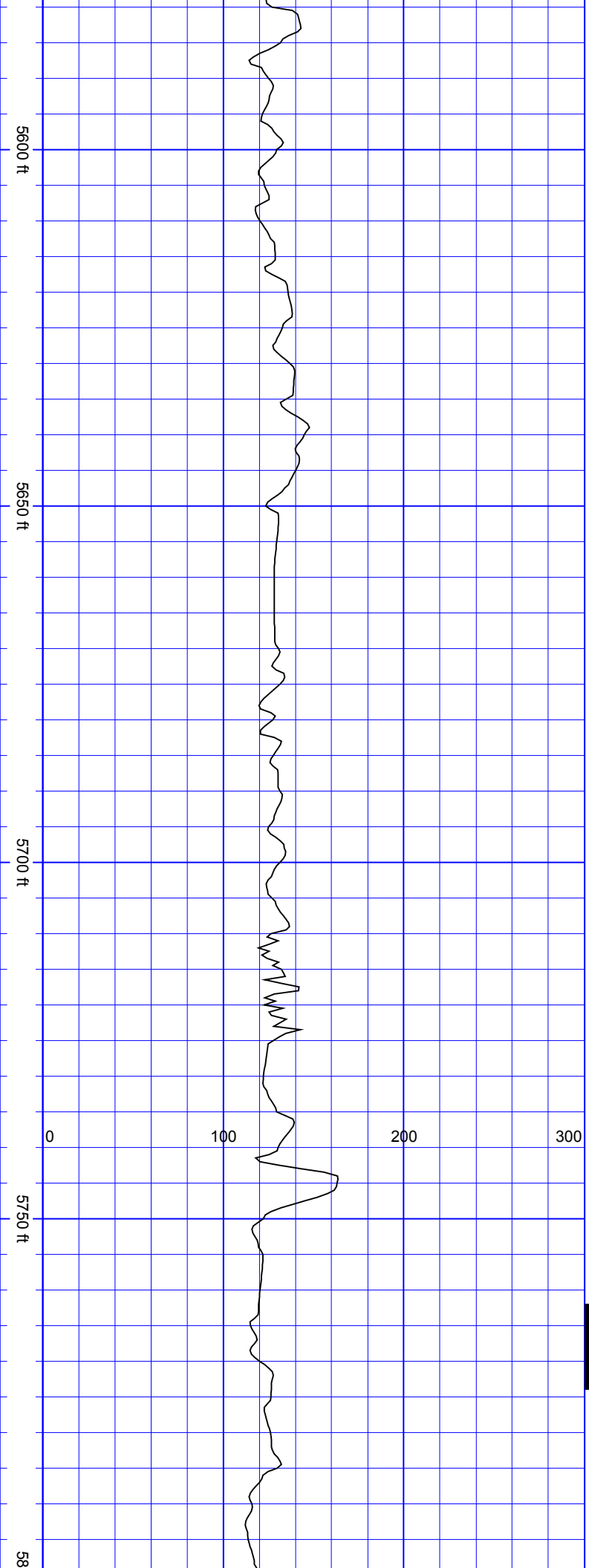


SurveyDepth:5421
TVD:5083.93 Inc:21.36
Azi:247.77 VertSec:-
16.18

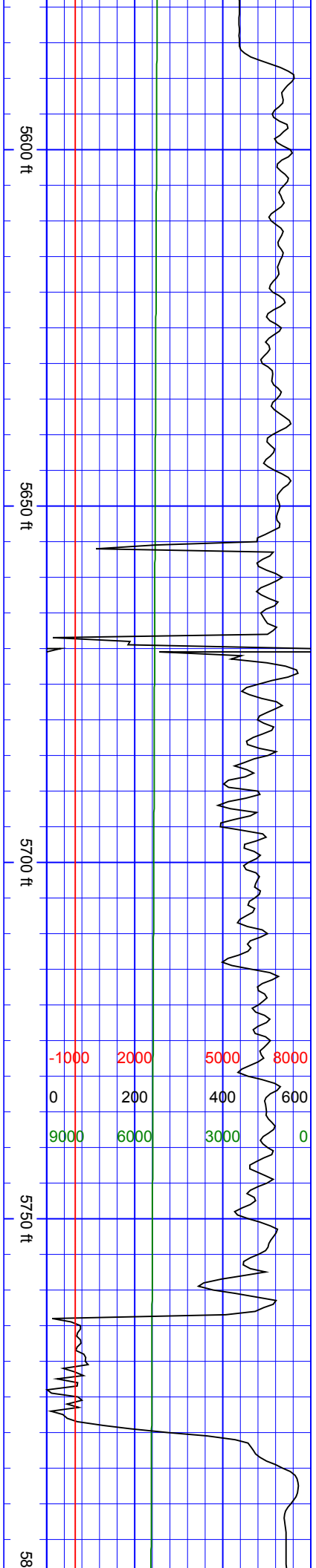
SurveyDepth:5515
TVD:5170.71 Inc:23.82
Azi:249.79 VertSec:-
16.54



-1000	2000	5000	8000
0	200	400	600
9000	6000	3000	0



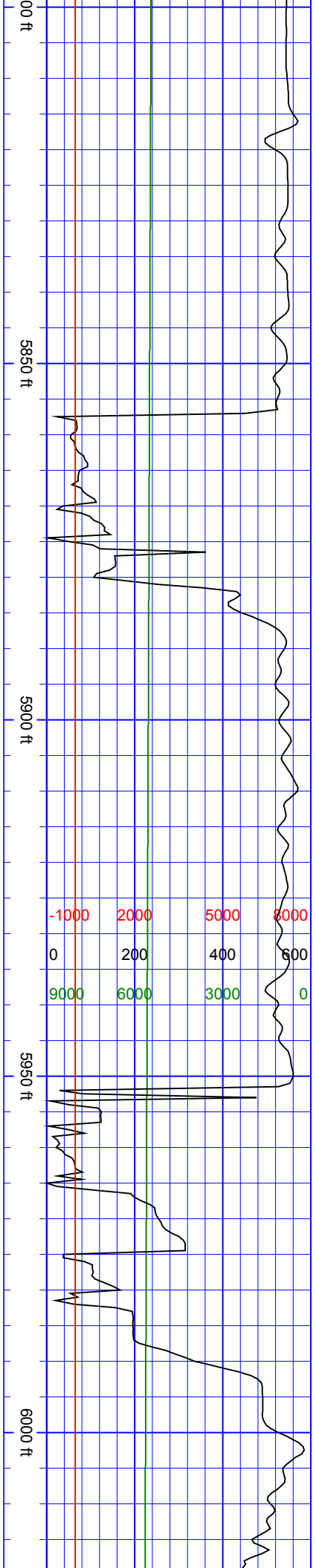
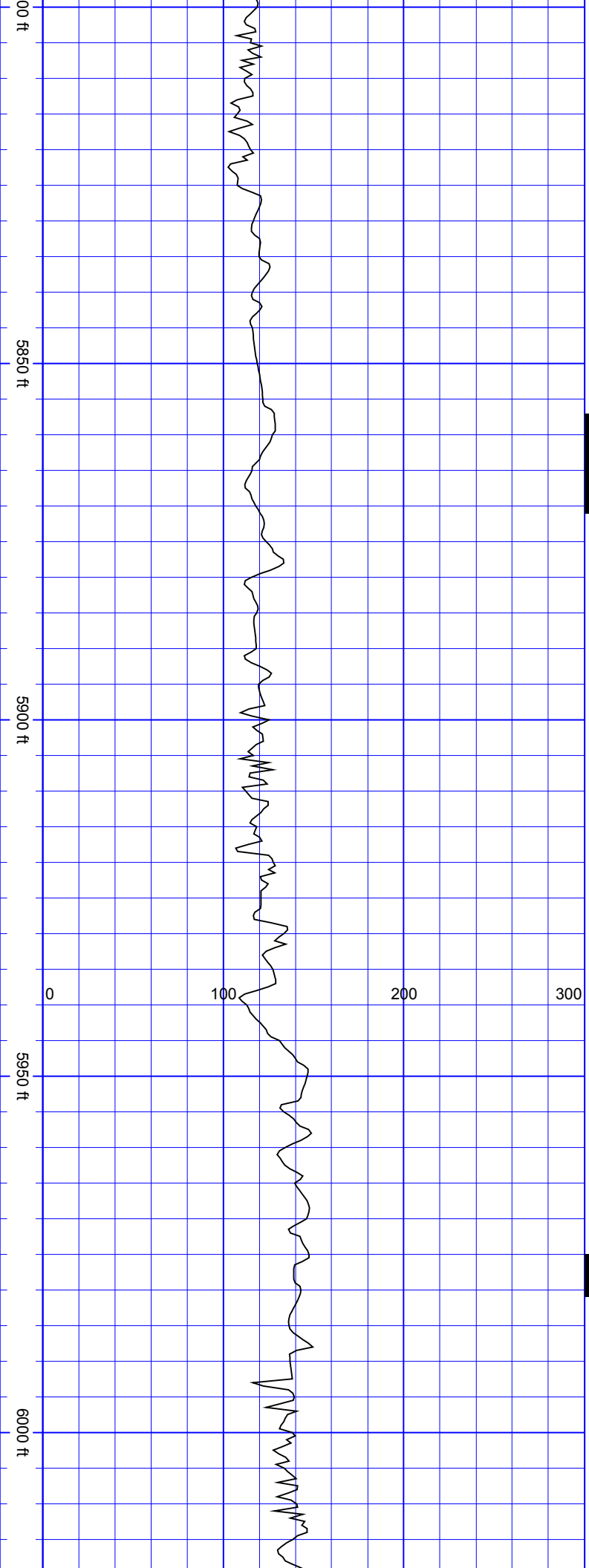
SurveyDepth:5609 TVD:5257.16 Inc:22.41 Azi:249.44 VertSec:- 16.41
SurveyDepth:5703 TVD:5344.71 Inc:20.26 Azi:248.83 VertSec:- 16.56
SurveyDepth:5703

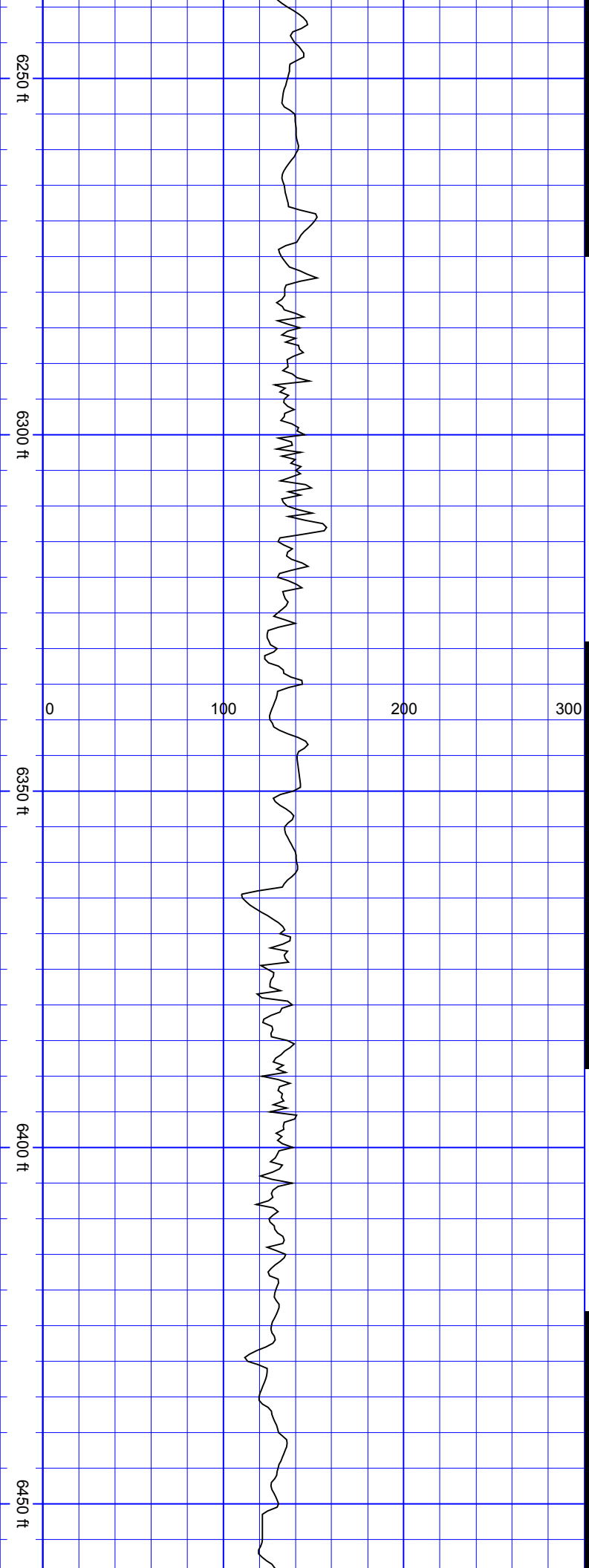


SurveyDepth:5798
TVD:5433.9 Inc:20.04
Azi:245.66 VertSec:-17.8

SurveyDepth:5892
TVD:5521.74 Inc:21.67
Azi:247.6 VertSec:-19.4

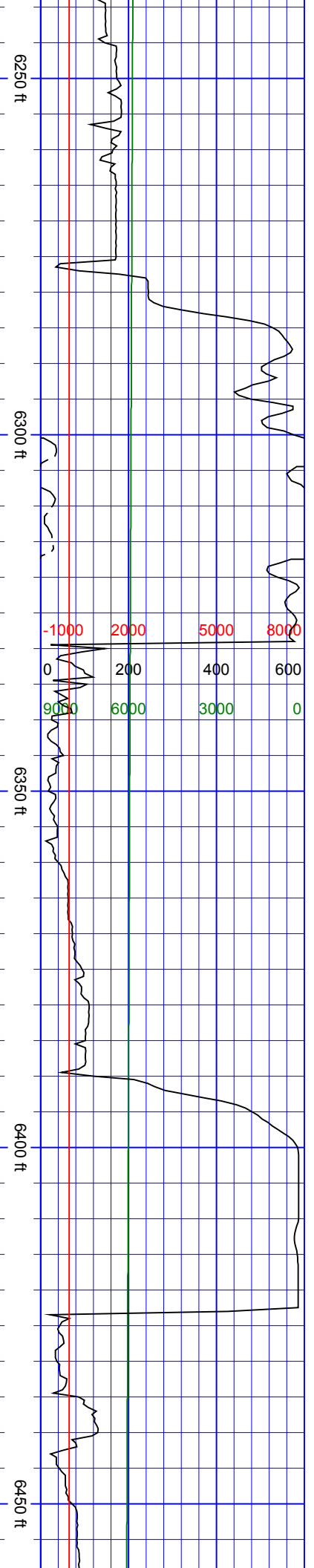
SurveyDepth:5987
TVD:5610.45 Inc:20.26
Azi:246.89 VertSec:-20.67



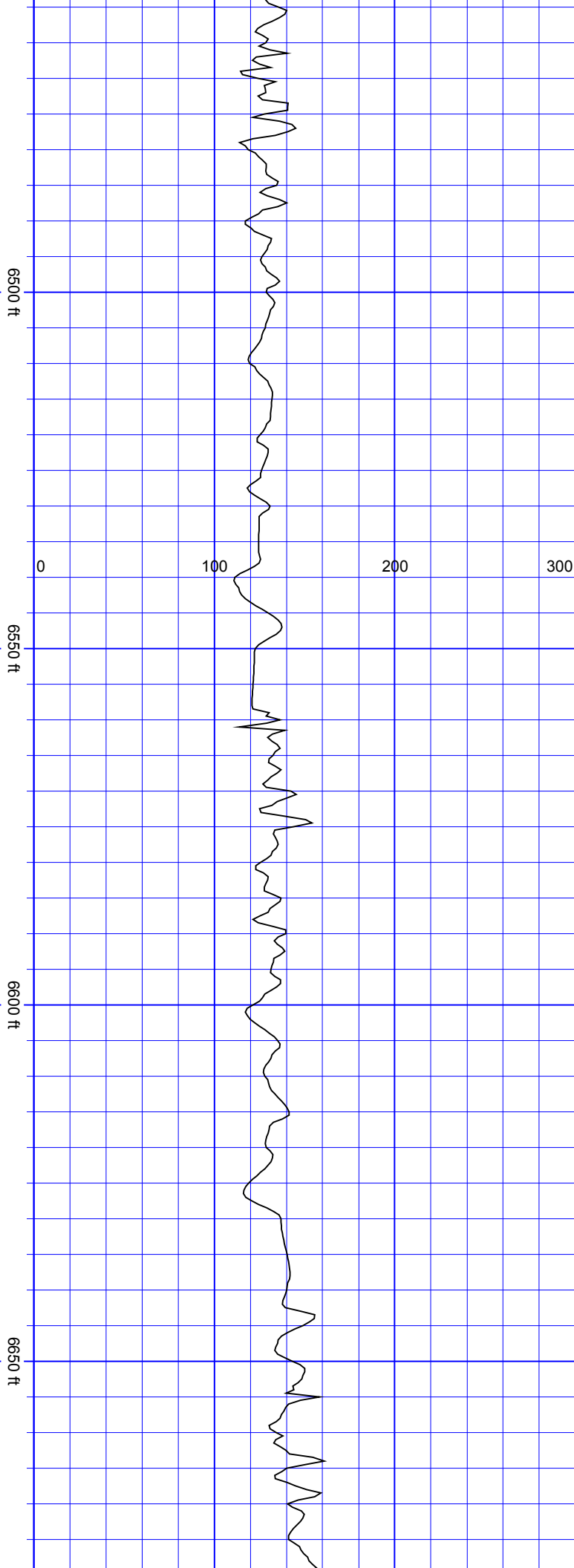


SurveyDepth:6270
TVD:5878.08 Inc:19.78
Azi:251.29 VertSec:-
21.61

SurveyDepth:6364
TVD:5966.41 Inc:20.22
Azi:249.79 VertSec:-
20.98

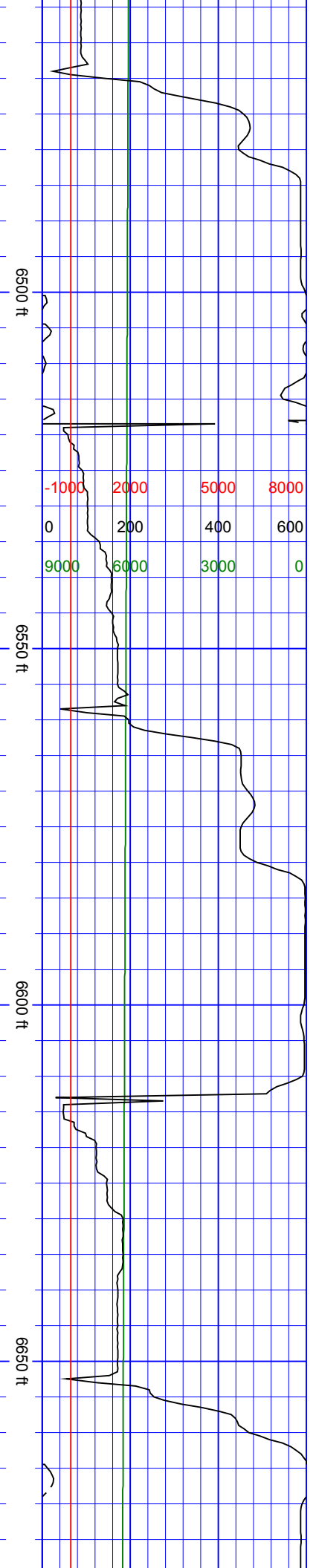


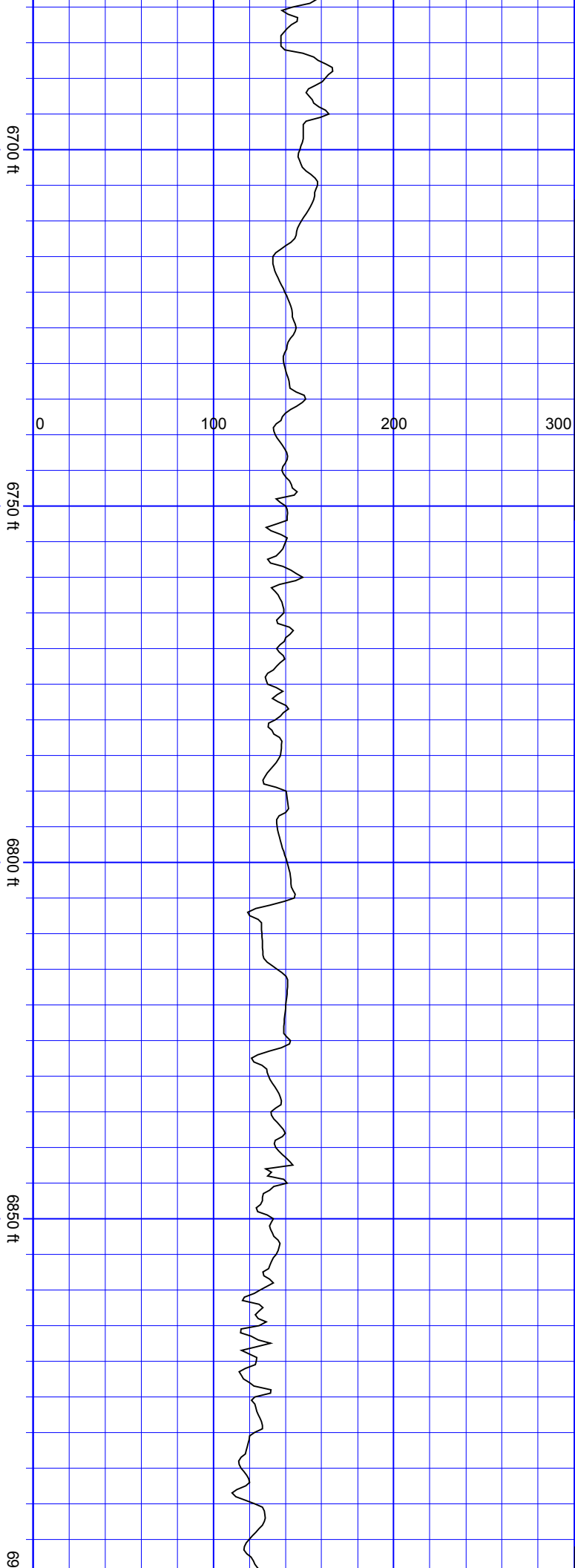
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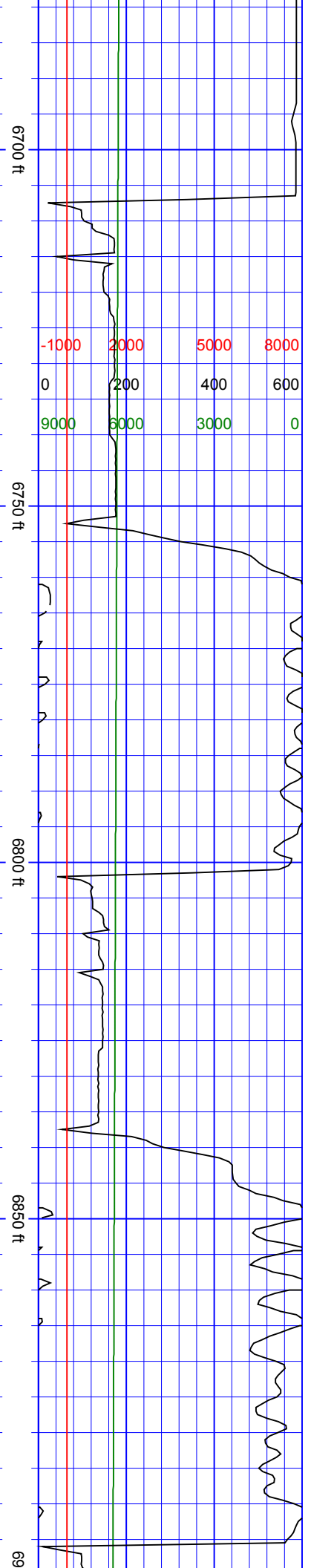


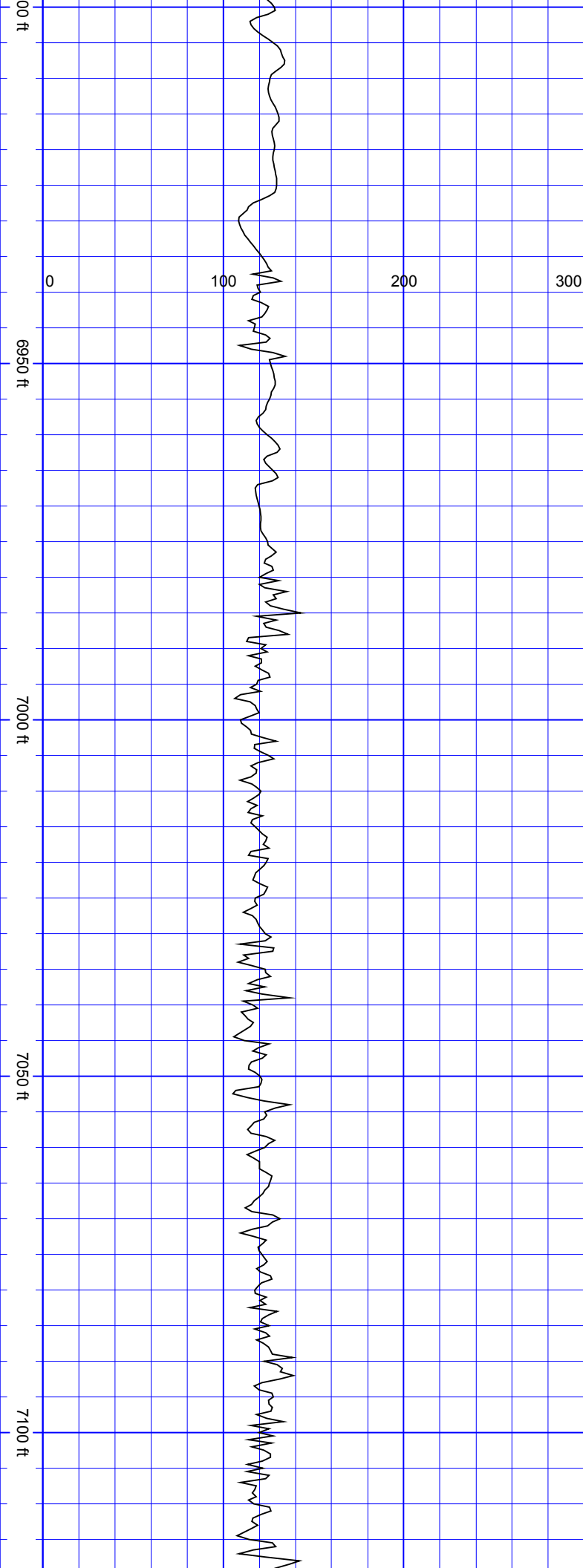


SurveyDepth:6742
TVD:6309.39 Inc:27.2
Azi:252.87 VertSec:-
15.26

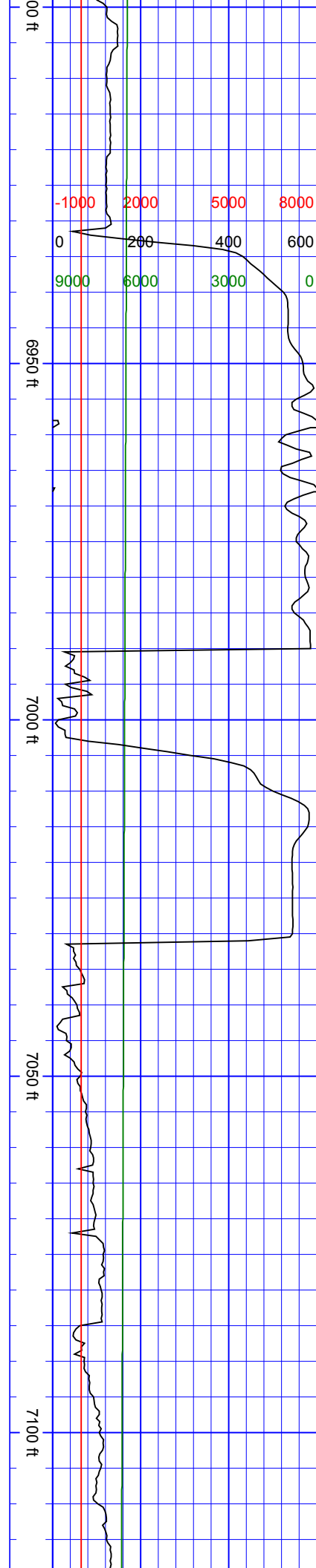


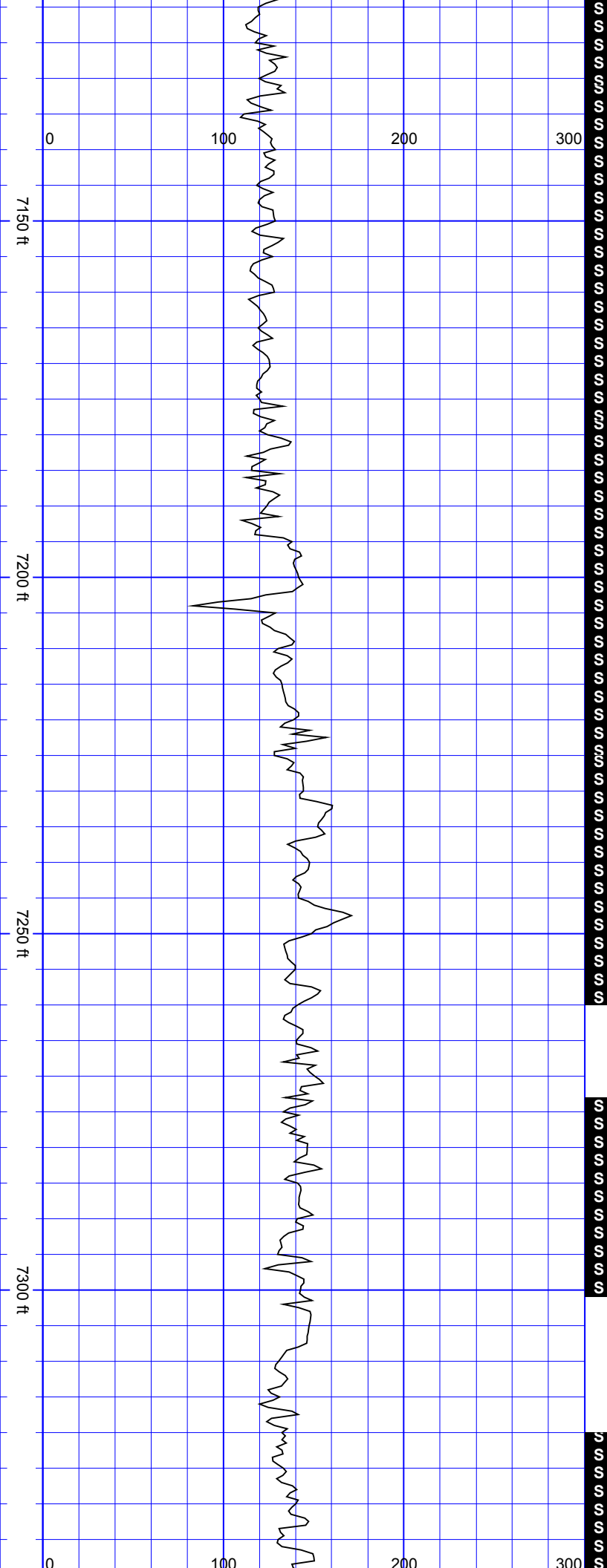
SurveyDepth:6837
TVD:6393.43 Inc:28.39
Azi:249.18 VertSec:-
14.04





SurveyDepth:6931 TVD:6476.07 Inc:28.52 Azi:249.09 VertSec:-14.26
SurveyDepth:6972 TVD:6512.36 Inc:26.98 Azi:248.04 VertSec:-14.53
SurveyDepth:7025 TVD:6559.83 Inc:25.84 Azi:246.54 VertSec:-15.4
SurveyDepth:7072 TVD:6601.7 Inc:28.21 Azi:252.78 VertSec:-15.26





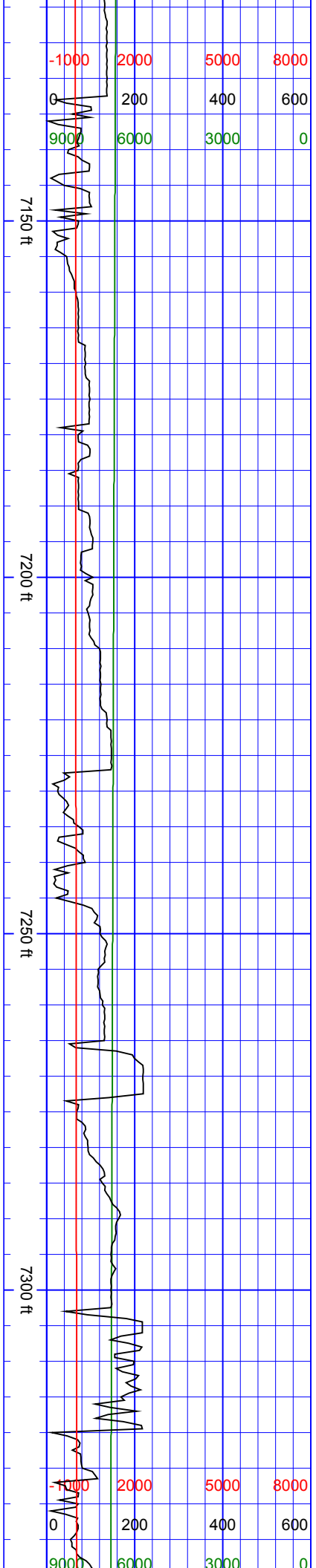
SurveyDepth:7119
TVD:6642.26 Inc:32.48
Azi:258.67 VertSec:-12.57

SurveyDepth:7166
TVD:6681.07 Inc:36.17
Azi:263.24 VertSec:-7.23

SurveyDepth:7214
TVD:6718.53 Inc:41.22
Azi:267.64 VertSec:1.11

SurveyDepth:7261
TVD:6753.19 Inc:43.77
Azi:271.68
VertSec:12.12

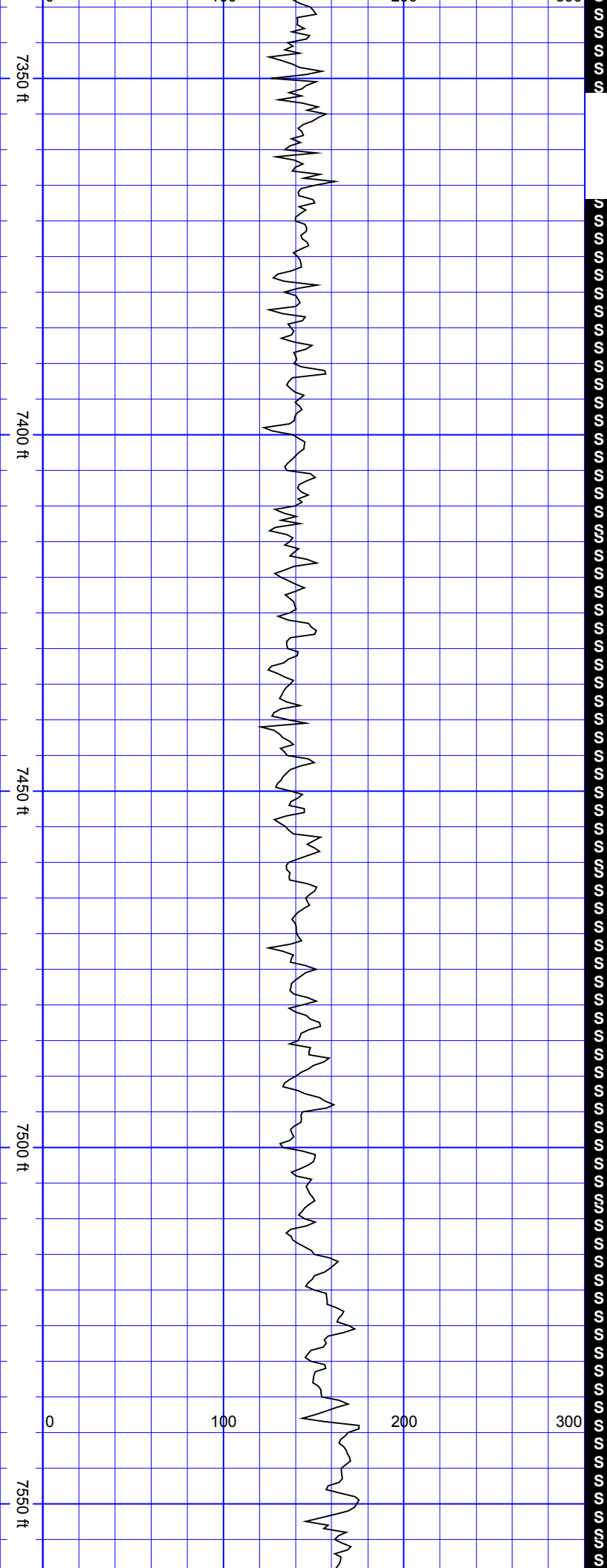
SurveyDepth:7308
TVD:6786.36 Inc:46.45
Azi:274.05
VertSec:25.39



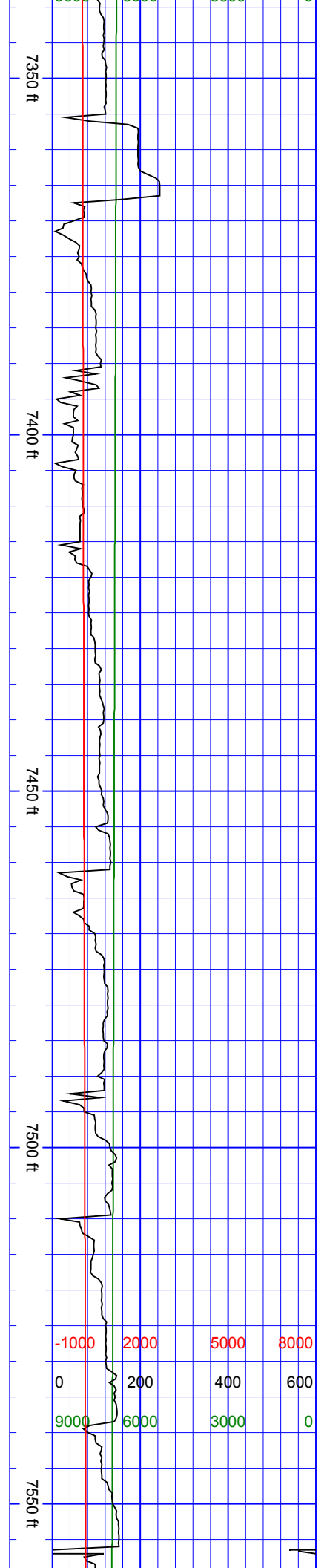
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0 200 400 600
9000 6000 3000 0

-1000 2000 5000 8000
0 200 400 600
9000 6000 3000 0



SurveyDepth:7355 TVD:6818.42 Inc:47.55 Azi:278.89 VertSec:41.03
SurveyDepth:7402 TVD:6850.33 Inc:47.02 Azi:285.83 VertSec:59.78
SurveyDepth:7449 TVD:6882.59 Inc:46.41 Azi:295.41 VertSec:82.26
SurveyDepth:7496 TVD:6915.26 Inc:45.66 Azi:305.08 VertSec:108.42
SurveyDepth:7543 TVD:6947.89 Inc:46.54 Azi:314.22 VertSec:137.76



7600 ft

7650 ft

7700 ft

7750 ft

0 100 200 300

SurveyDepth:7591
TVD:6981.08 Inc:46.06
Azi:323.36
VertSec:170.17

SurveyDepth:7638
TVD:7013.81 Inc:45.84
Azi:333.73
VertSec:203.26

SurveyDepth:7685
TVD:7047.05 Inc:44.25
Azi:343.22
VertSec:236.43

SurveyDepth:7732
TVD:7080.93 Inc:43.64
Azi:352.98
VertSec:268.6

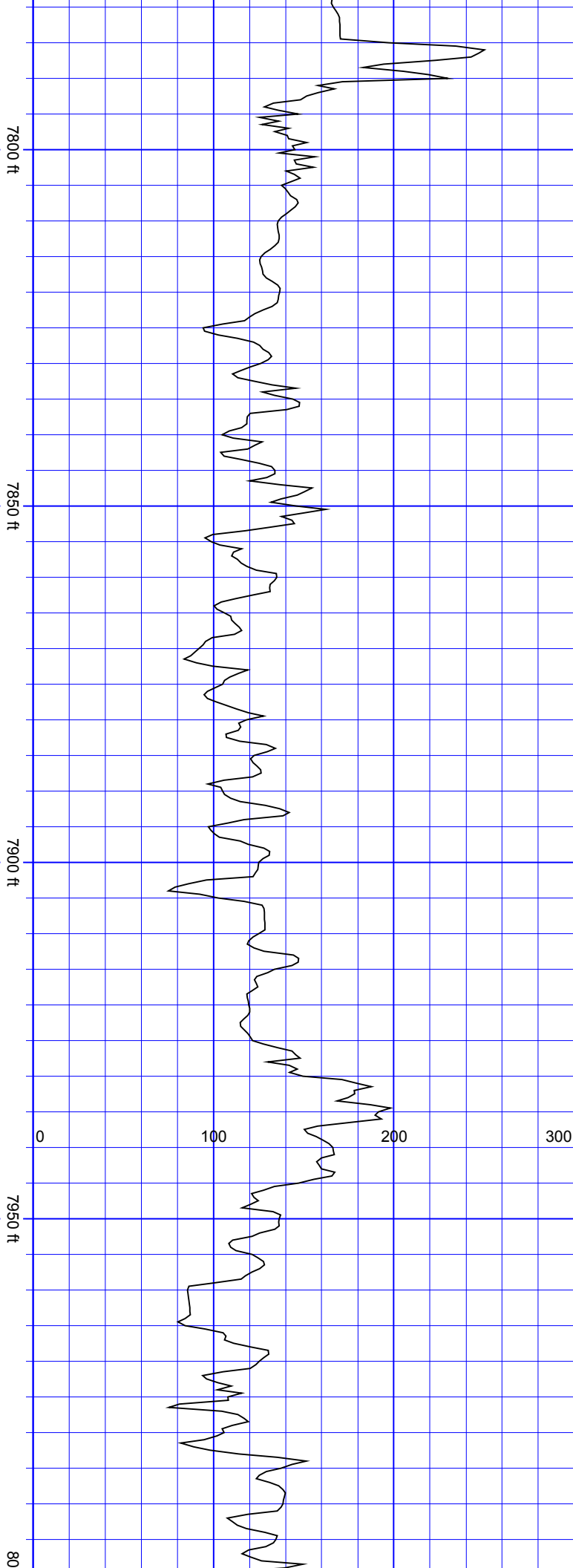
7600 ft

7650 ft

7700 ft

7750 ft

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0 200 400 600
9000 6000 3000 0



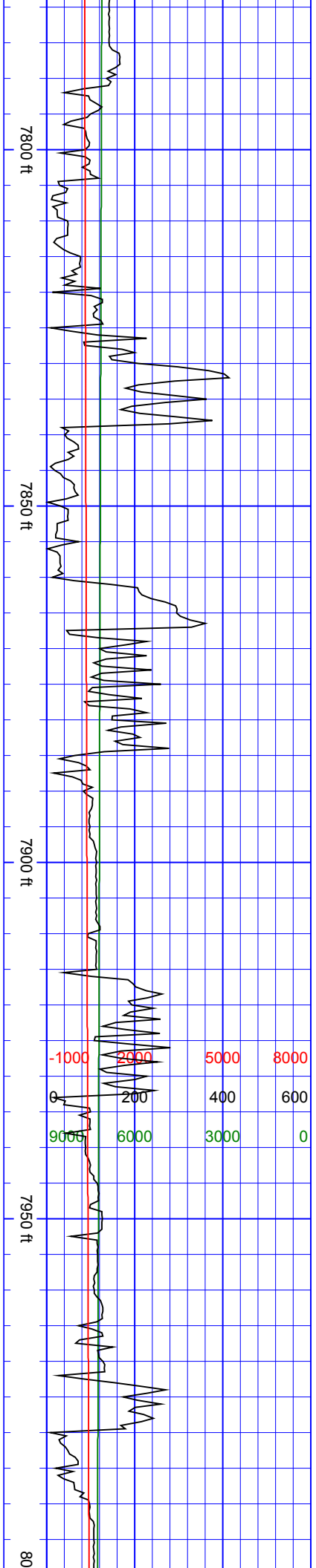
SurveyDepth:7779
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Azi:1.77 VertSec:299.83

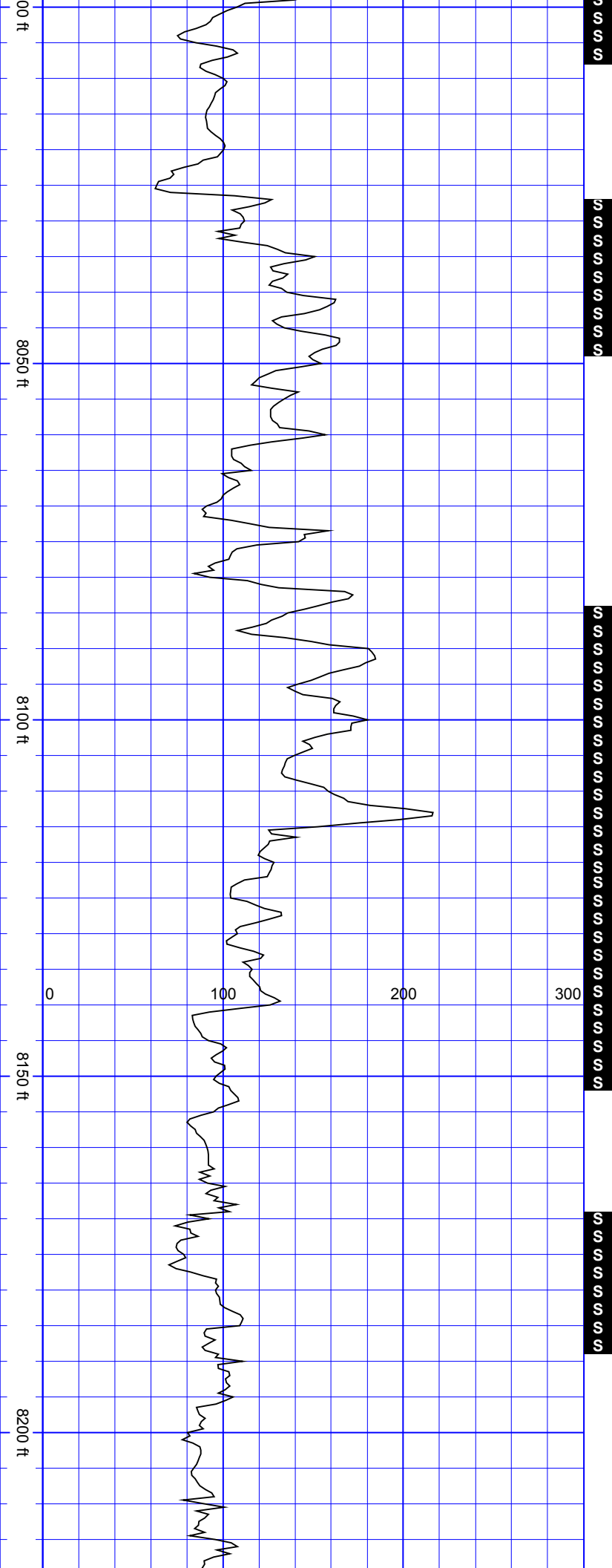
SurveyDepth:7826
TVD:7147.4 Inc:45.97
Azi:4.84 VertSec:330.53

SurveyDepth:7874
TVD:7180.72 Inc:46.1
Azi:5.72 VertSec:361.62

SurveyDepth:7921
TVD:7212.26 Inc:49.57
Azi:5.72 VertSec:392.84

SurveyDepth:7968
TVD:7241.36 Inc:53.92
Azi:6.42 VertSec:425.81





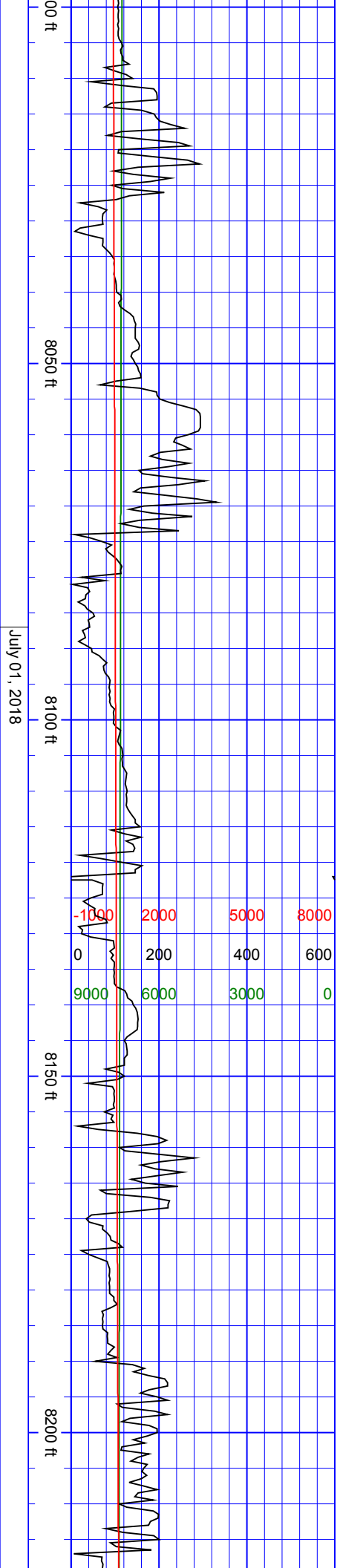
SurveyDepth:8015
TVD:7268.02 Inc:56.95
Azi:5.99 VertSec:460.36

SurveyDepth:8063
TVD:7293.27 Inc:59.55
Azi:5.63 VertSec:496.92

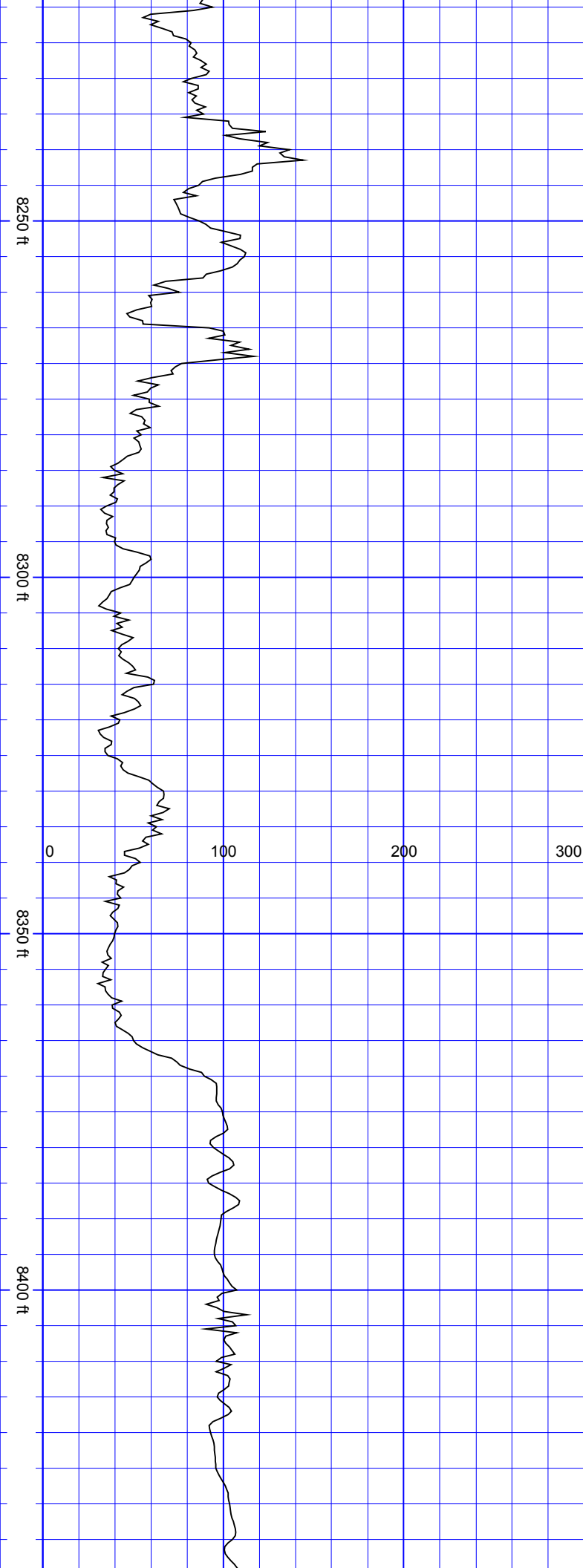
SurveyDepth:8110
TVD:7315.61 Inc:63.68
Azi:5.28 VertSec:534.06

SurveyDepth:8157
TVD:7335.17 Inc:67.15
Azi:2.56 VertSec:572.94

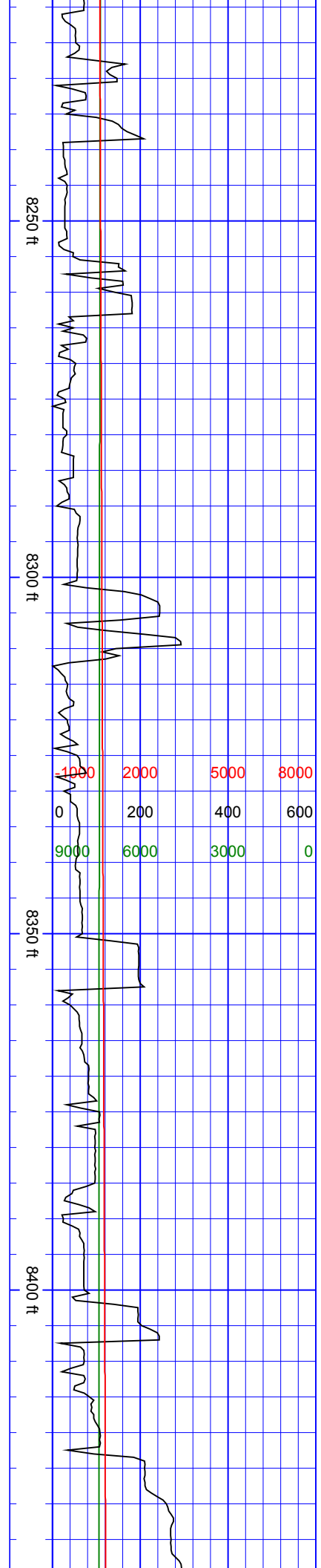
SurveyDepth:8204
TVD:7352.83 Inc:68.69
Azi:1.85 VertSec:613.09

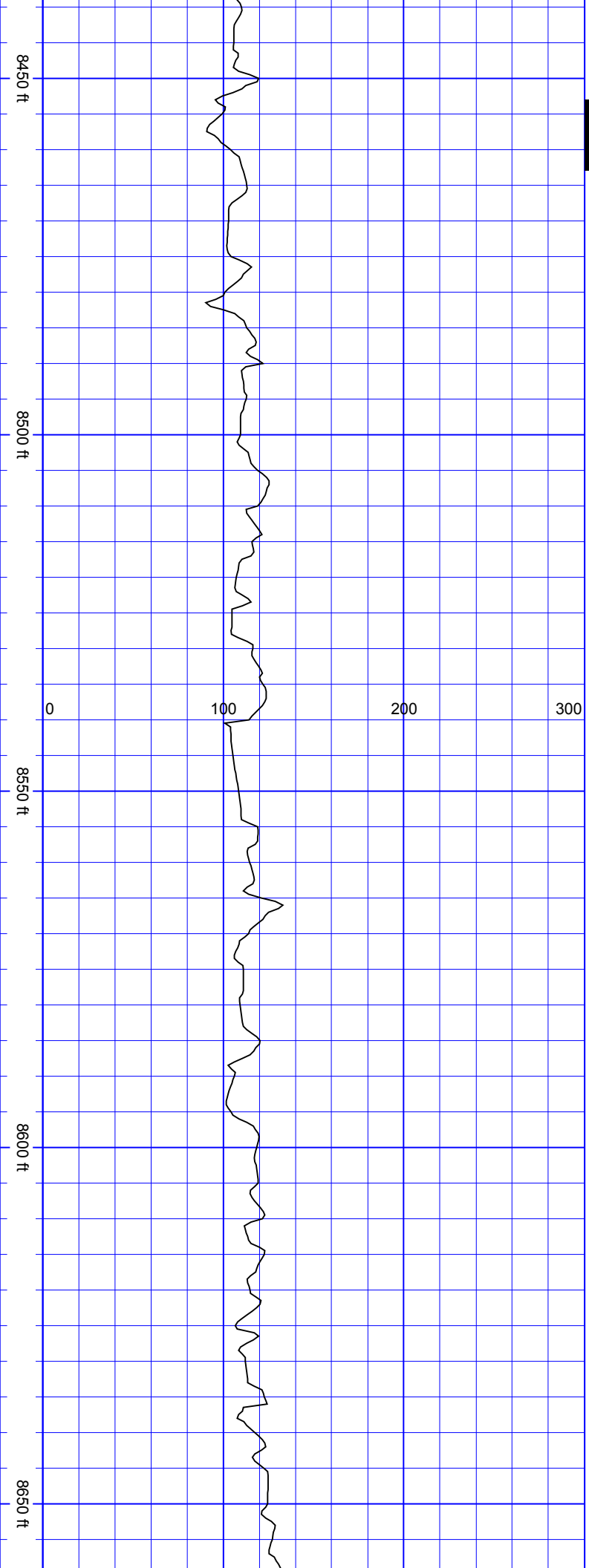


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SurveyDepth:8252 TVD:7369.52 Inc:70.62 Azi:1.42 VertSec:654.75
SurveyDepth:8299 TVD:7383.83 Inc:73.92 Azi:0.98 VertSec:696.32
SurveyDepth:8347 TVD:7395.33 Inc:78.35 Azi:0.8 VertSec:739.67
SurveyDepth:8394 TVD:7402.59 Inc:83.89 Azi:359.13 VertSec:783.14



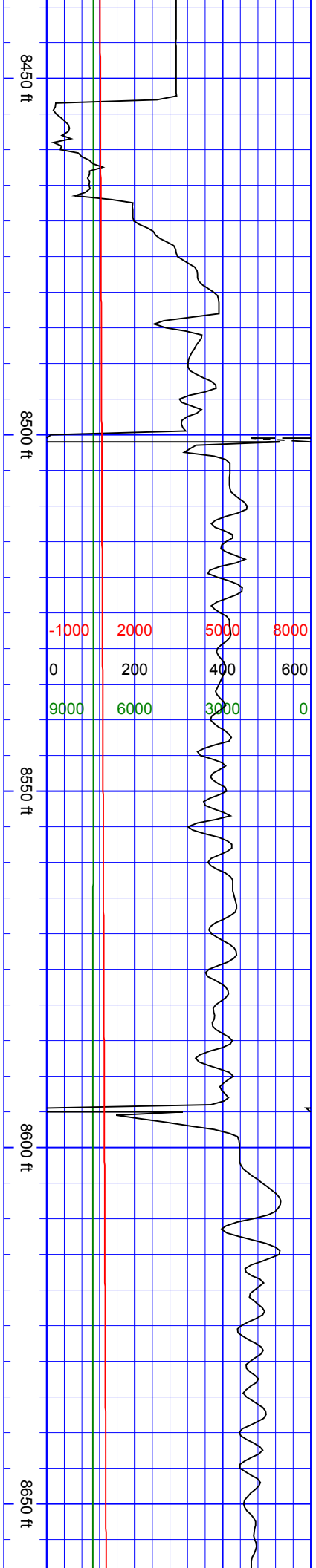


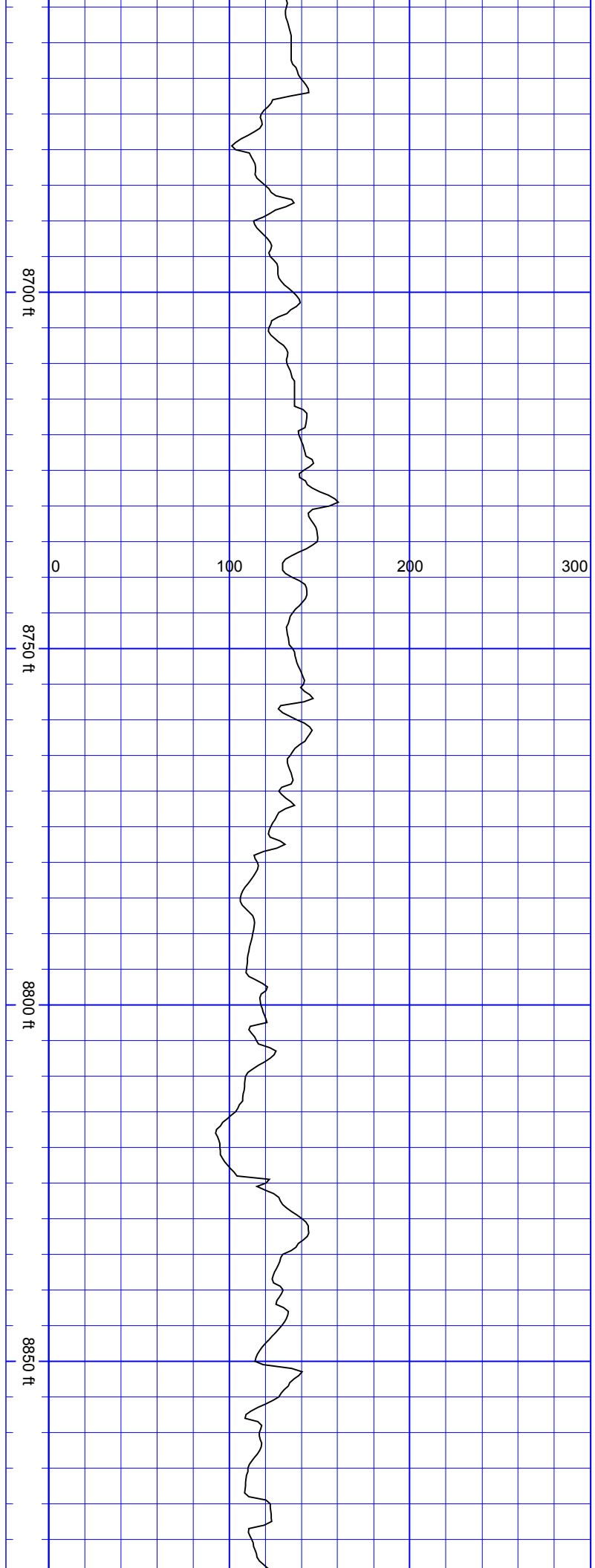
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SurveyDepth:8441
TVD:7406.37 Inc:86.88
Azi:359.13
VertSec:827.23

SurveyDepth:8535
TVD:7410.15 Inc:88.51
Azi:359.66
VertSec:915.5

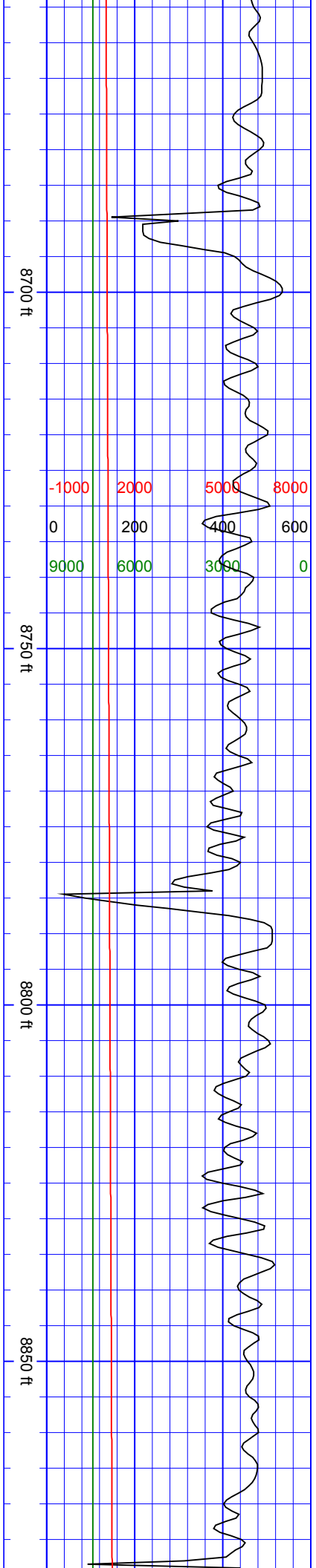
SurveyDepth:8629
TVD:7412.35 Inc:88.81
Azi:359.66
VertSec:1003.66

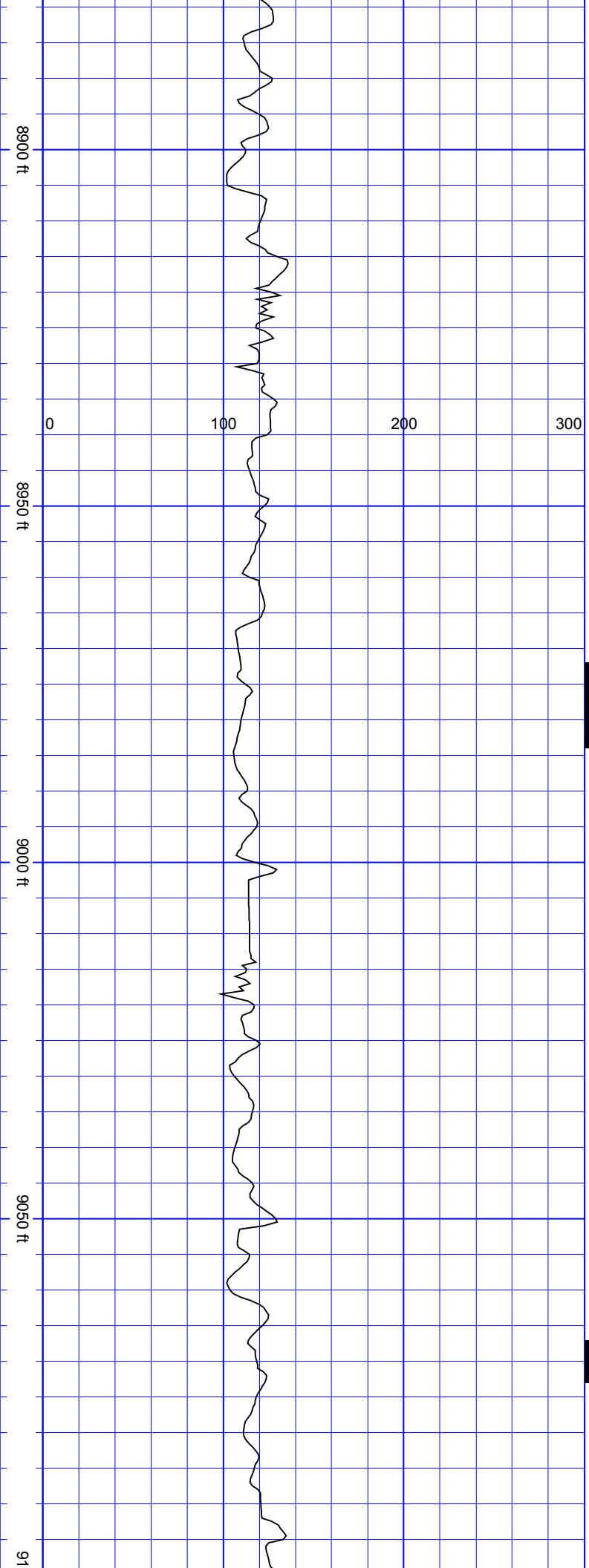




SurveyDepth:8724
TVD:7414.06 Inc:89.12
Azi:359.75
VertSec:1092.75

SurveyDepth:8819
TVD:7415.92 Inc:88.64
Azi:358.78
VertSec:1182.08



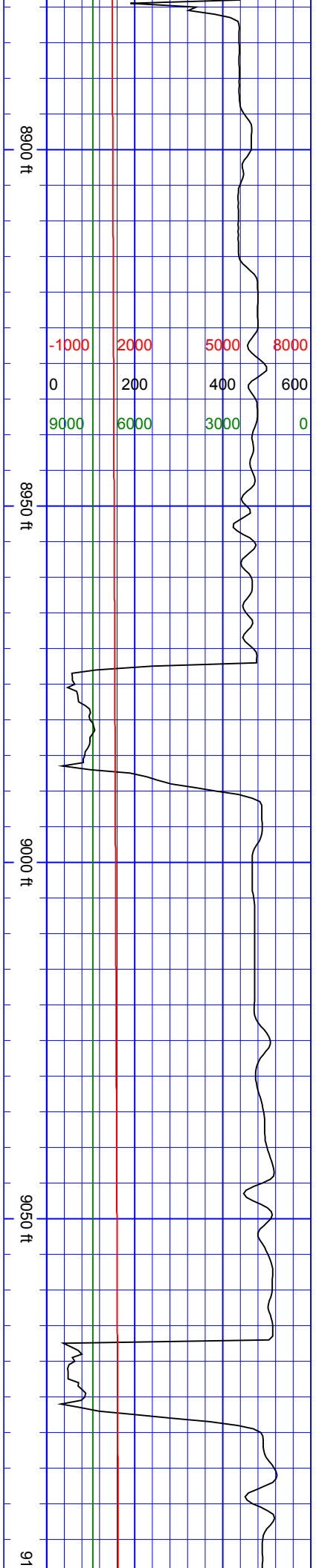


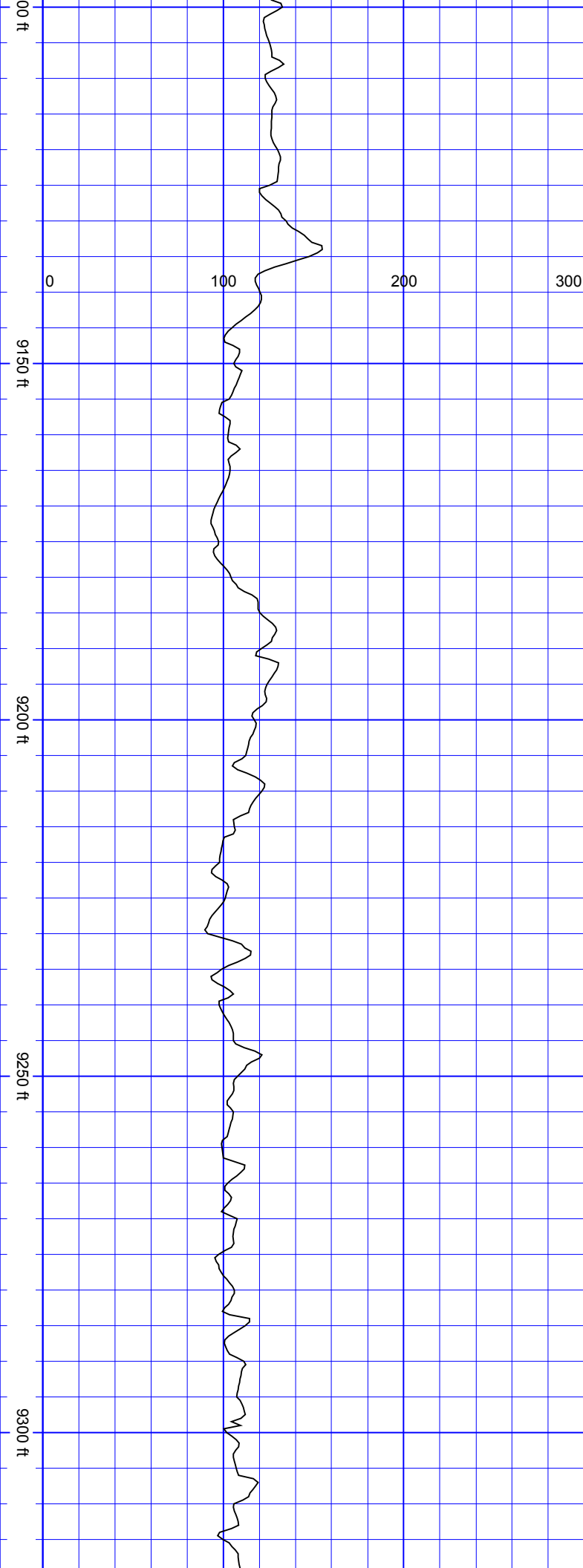
SurveyDepth:8913
TVD:7418.94 Inc:87.67
Azi:357.55
VertSec:1271.04

SurveyDepth:9008
TVD:7421.32 Inc:89.47
Azi:358.16
VertSec:1361.13

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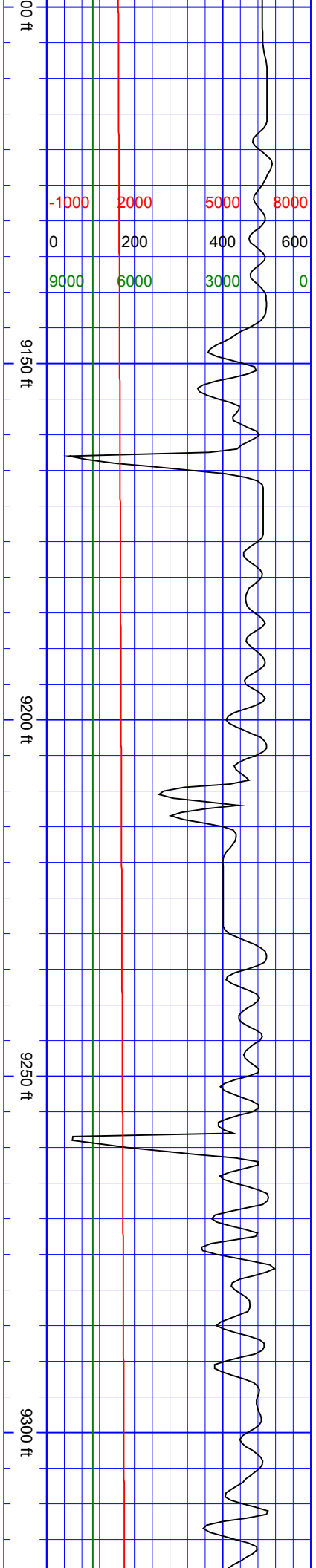


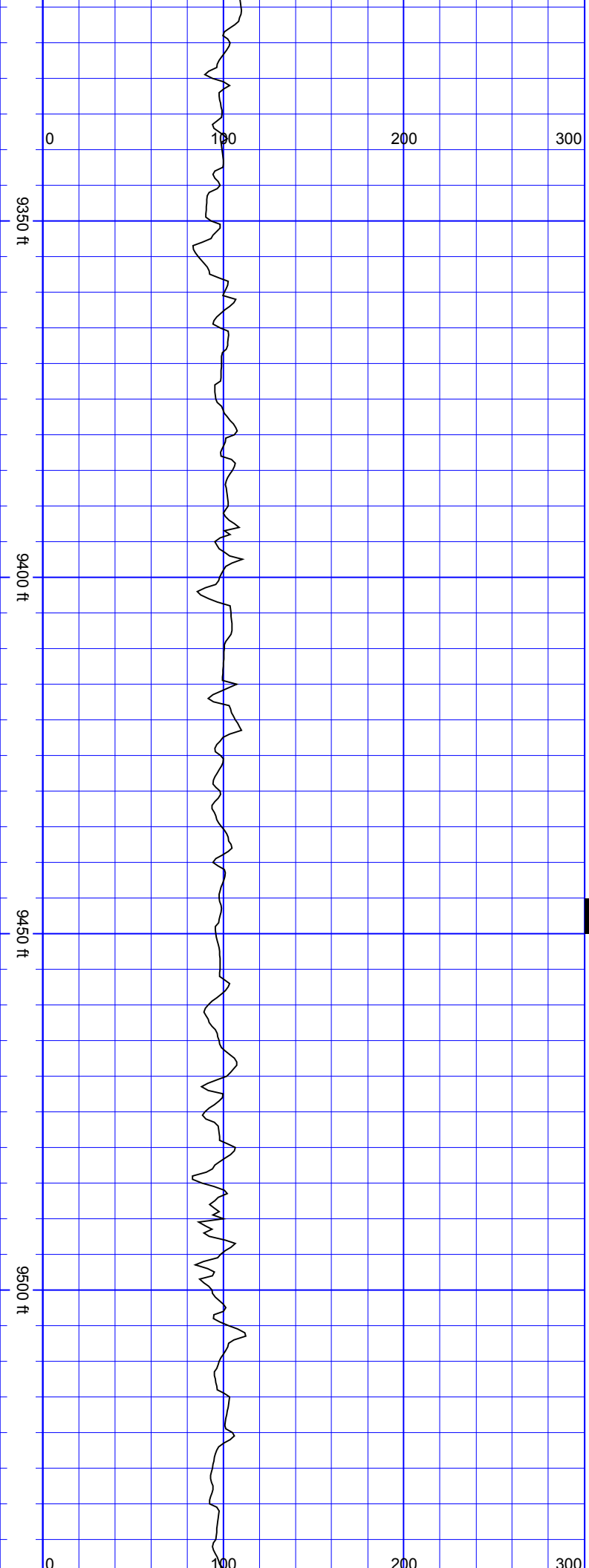


SurveyDepth:9102
TVD:7421.24 Inc:90.62
Azi:358.69 VertSec:1450

SurveyDepth:9197
TVD:7419.89 Inc:91.01
Azi:358.95
VertSec:1539.59

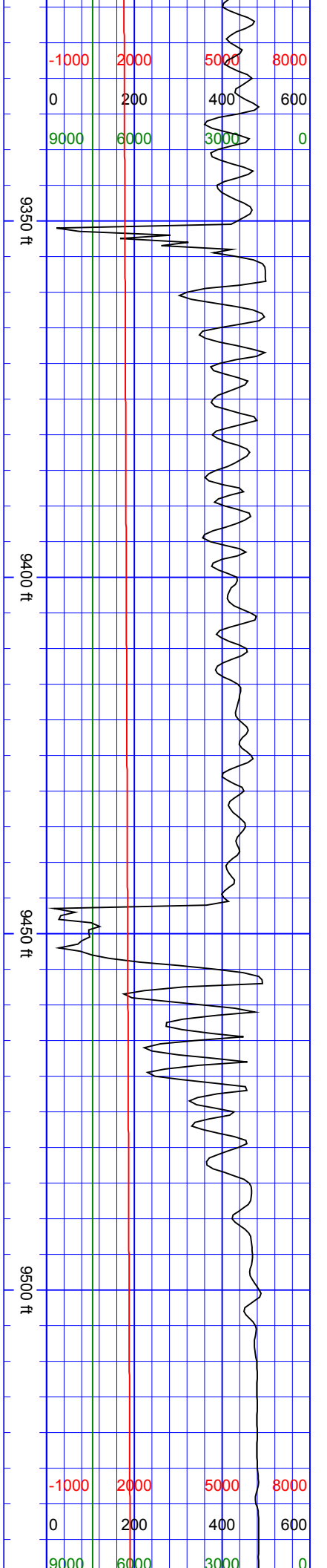
SurveyDepth:9291
TVD:7418.13 Inc:91.14
Azi:358.51
VertSec:1628.28

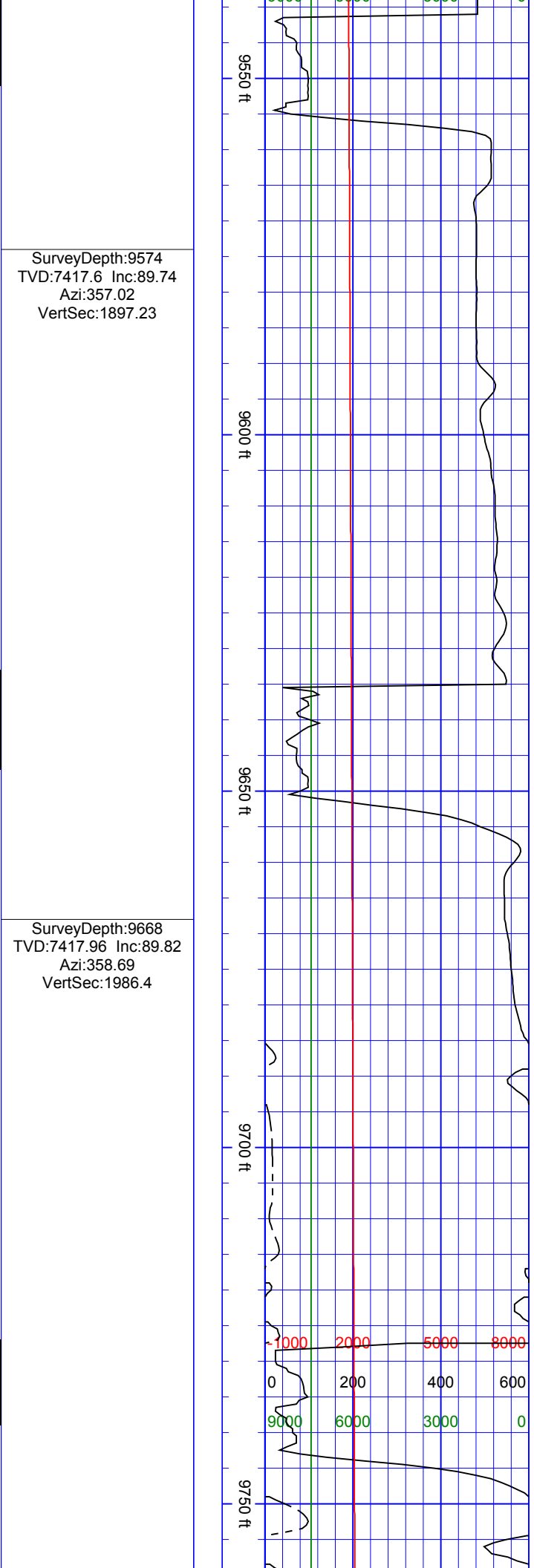
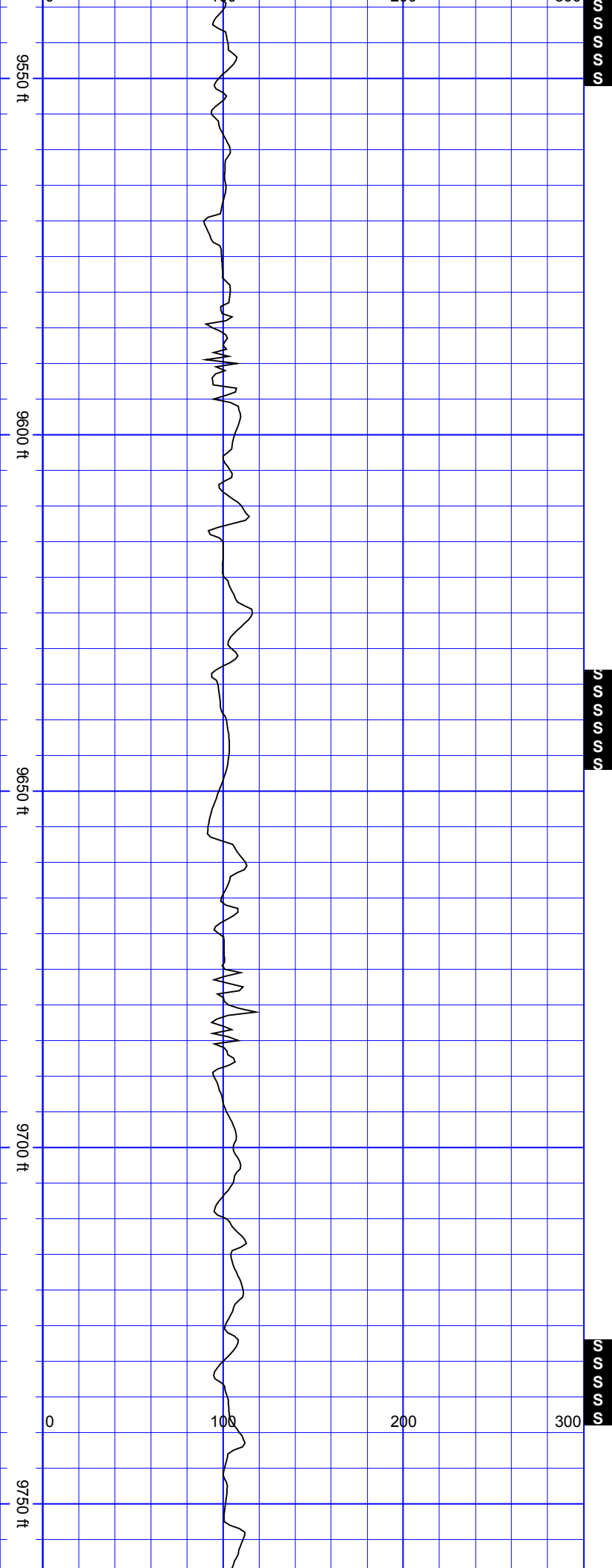


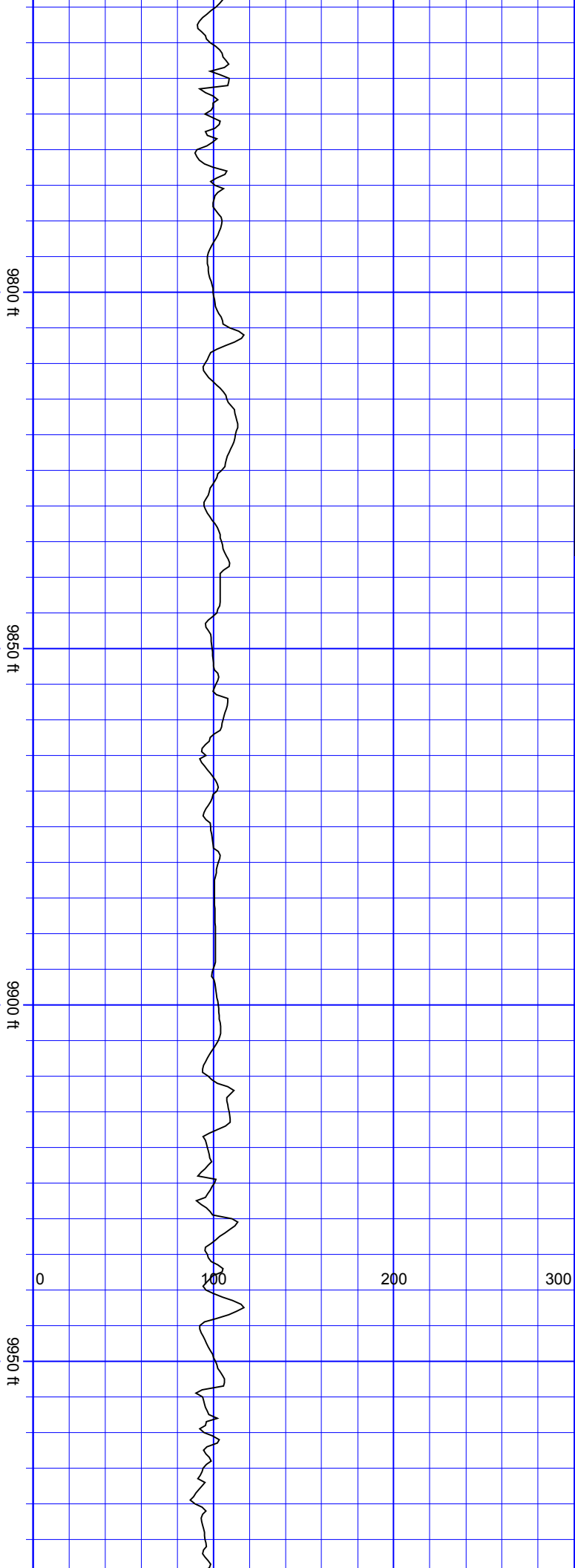


SurveyDepth:9386
TVD:7416.3 Inc:91.06
Azi:358.25
VertSec:1718.11

SurveyDepth:9480
TVD:7416.41 Inc:88.81
Azi:356.49
VertSec:1807.52





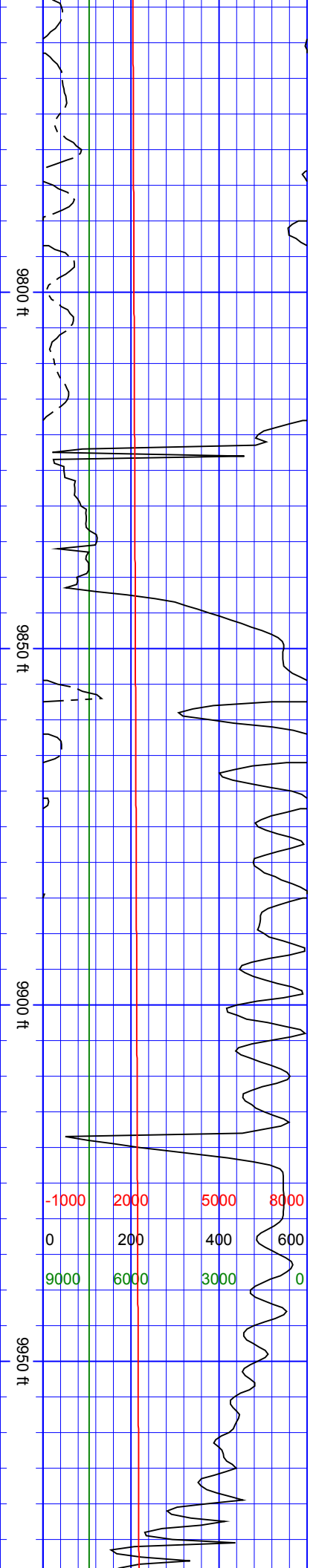


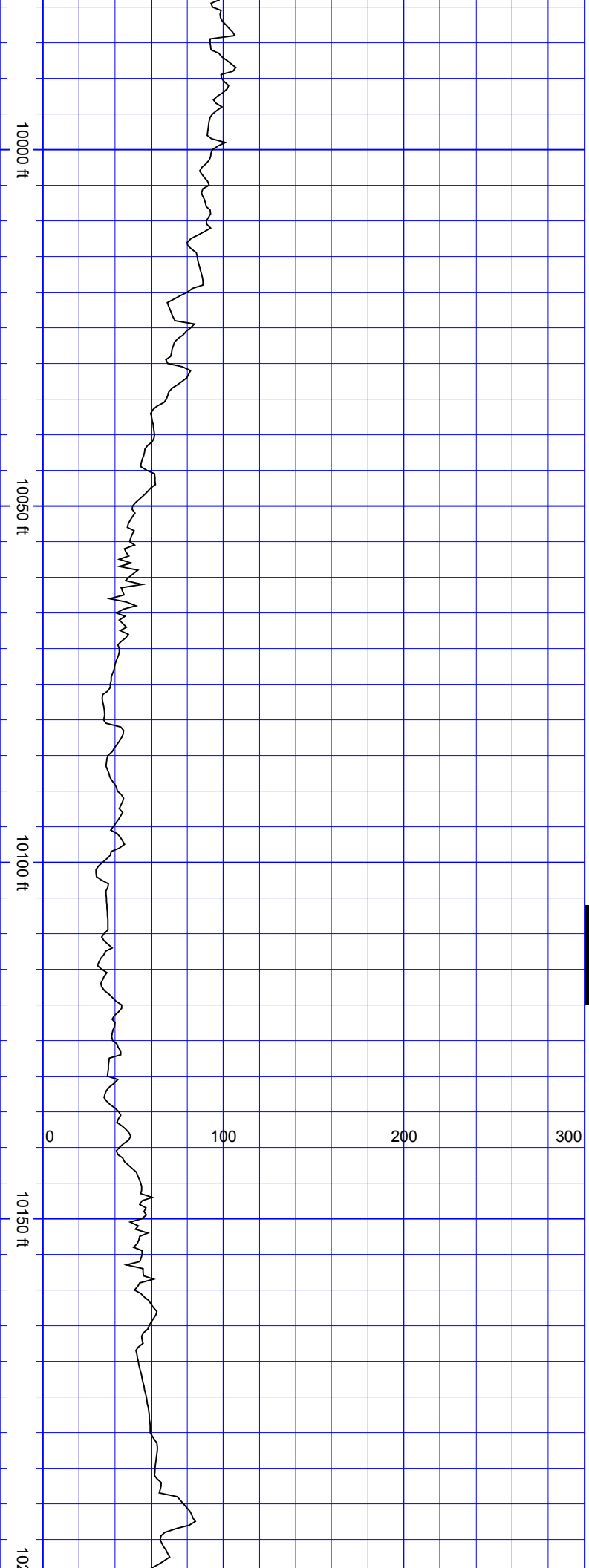
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SurveyDepth:9763
TVD:7417.16 Inc:91.14
Azi:359.04
VertSec:2075.97

SurveyDepth:9857
TVD:7415.47 Inc:90.92
Azi:0.98
VertSec:2163.94

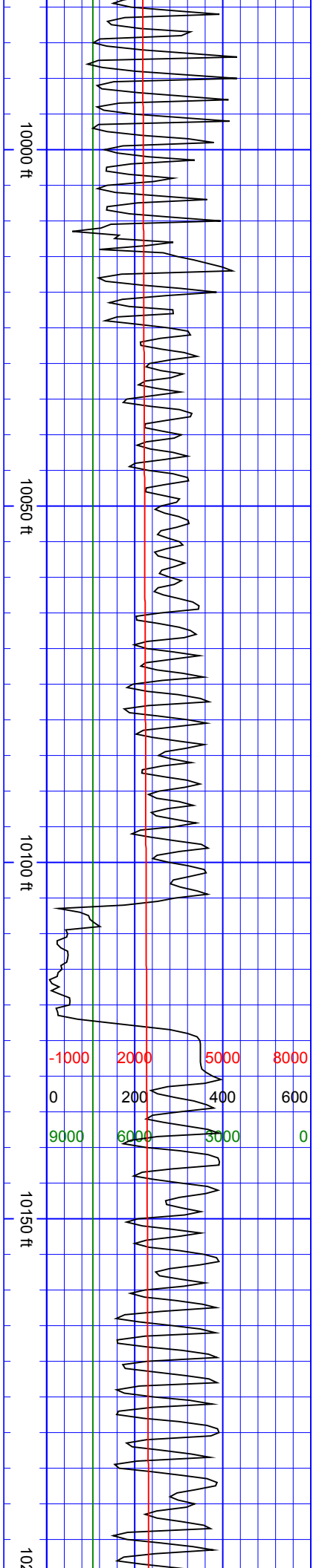
SurveyDepth:9952
TVD:7414.13 Inc:90.7
Azi:0.1 VertSec:2252.54

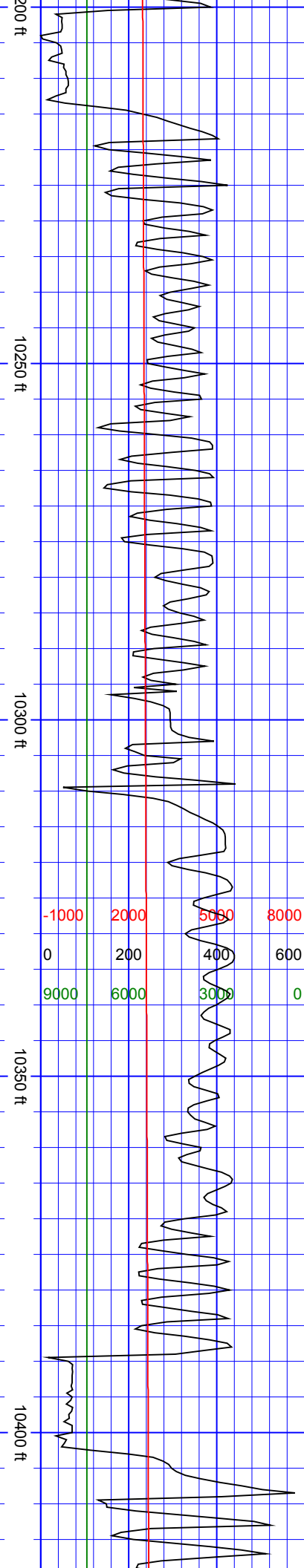




SurveyDepth:10047
TVD:7413.66 Inc:89.87
Azi:358.95
VertSec:2341.75

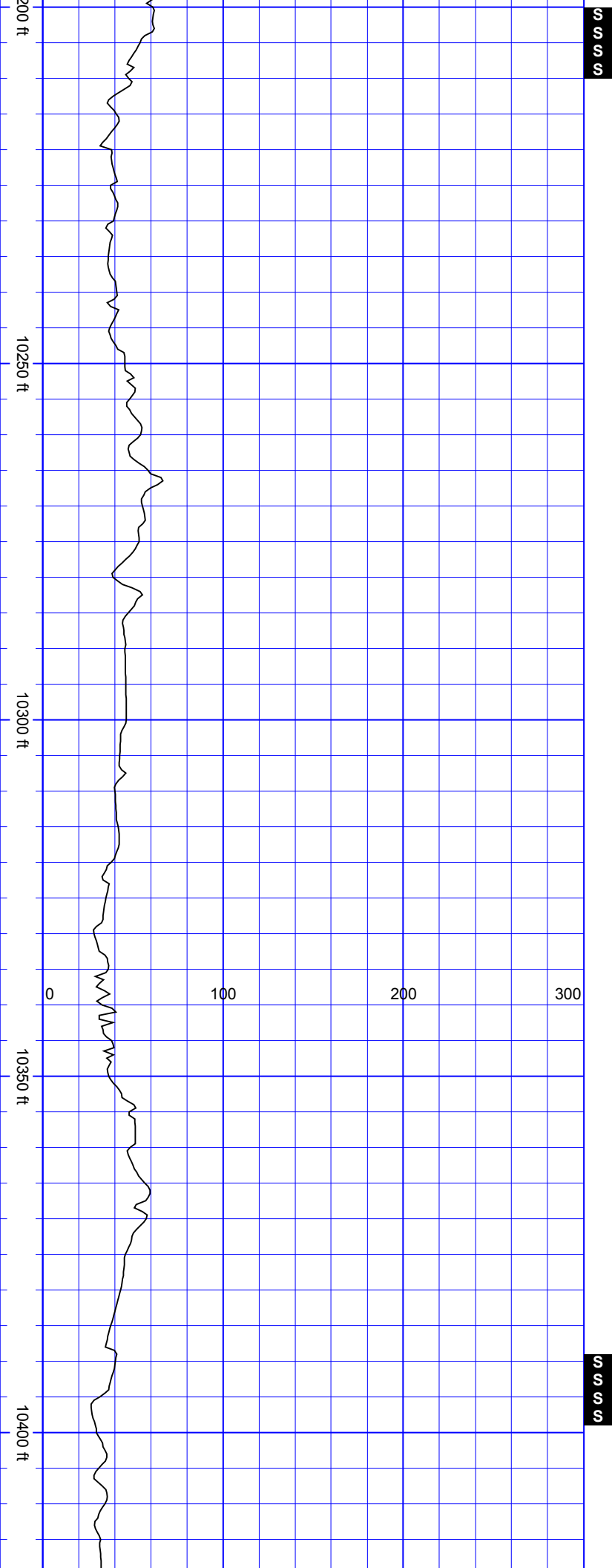
SurveyDepth:10141
TVD:7413.59 Inc:90.22
Azi:0.54
VertSec:2429.88

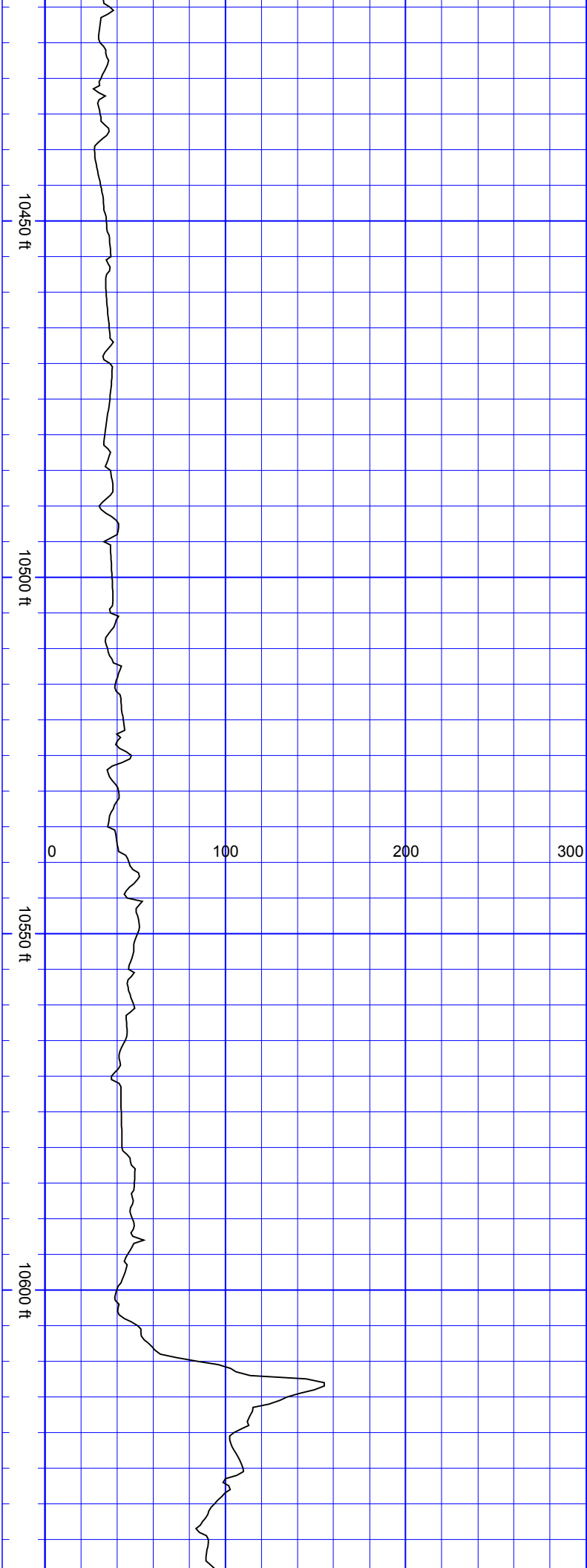




SurveyDepth:10236
TVD:7413.73 Inc:89.6
Azi:1.42
VertSec:2518.23

SurveyDepth:10330
TVD:7413.78 Inc:90.35
Azi:0.8 VertSec:2605.57

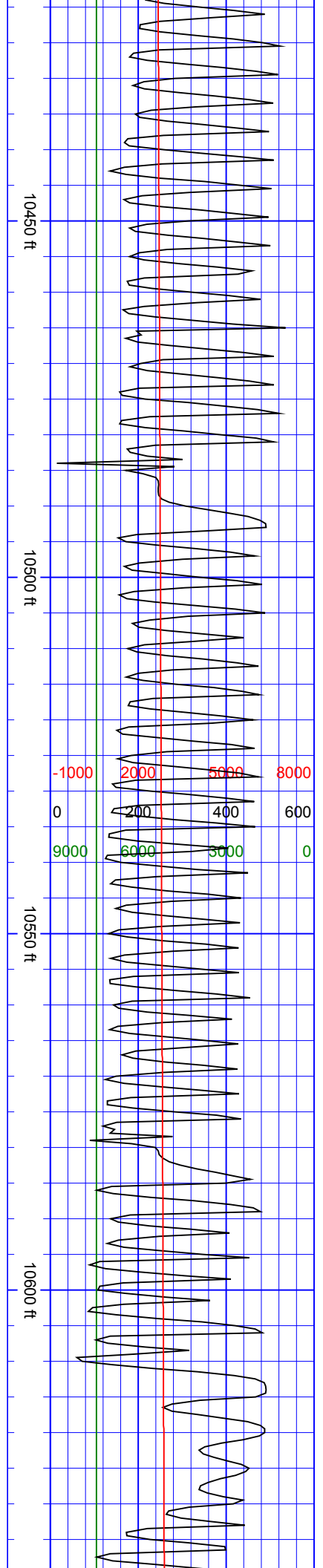


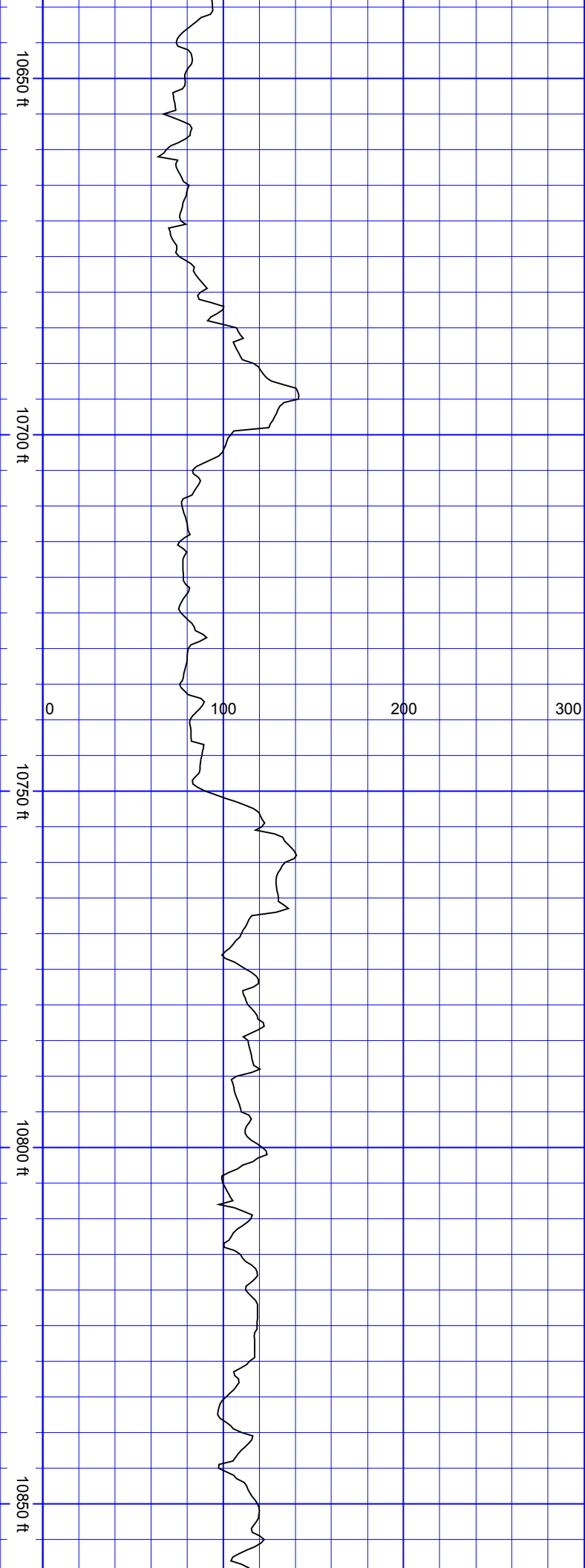


SurveyDepth:10424
TVD:7414.6 Inc:88.64
Azi:0.45
VertSec:2693.19

SurveyDepth:10519
TVD:7416.46 Inc:89.12
Azi:0.18
VertSec:2781.92

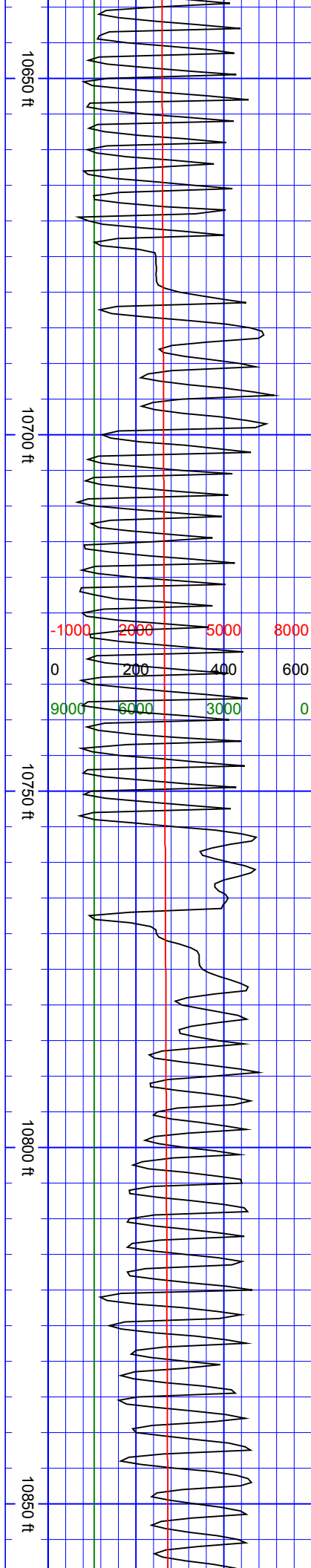
SurveyDepth:10613
TVD:7417.22 Inc:89.96
Azi:0.54 VertSec:2869.7

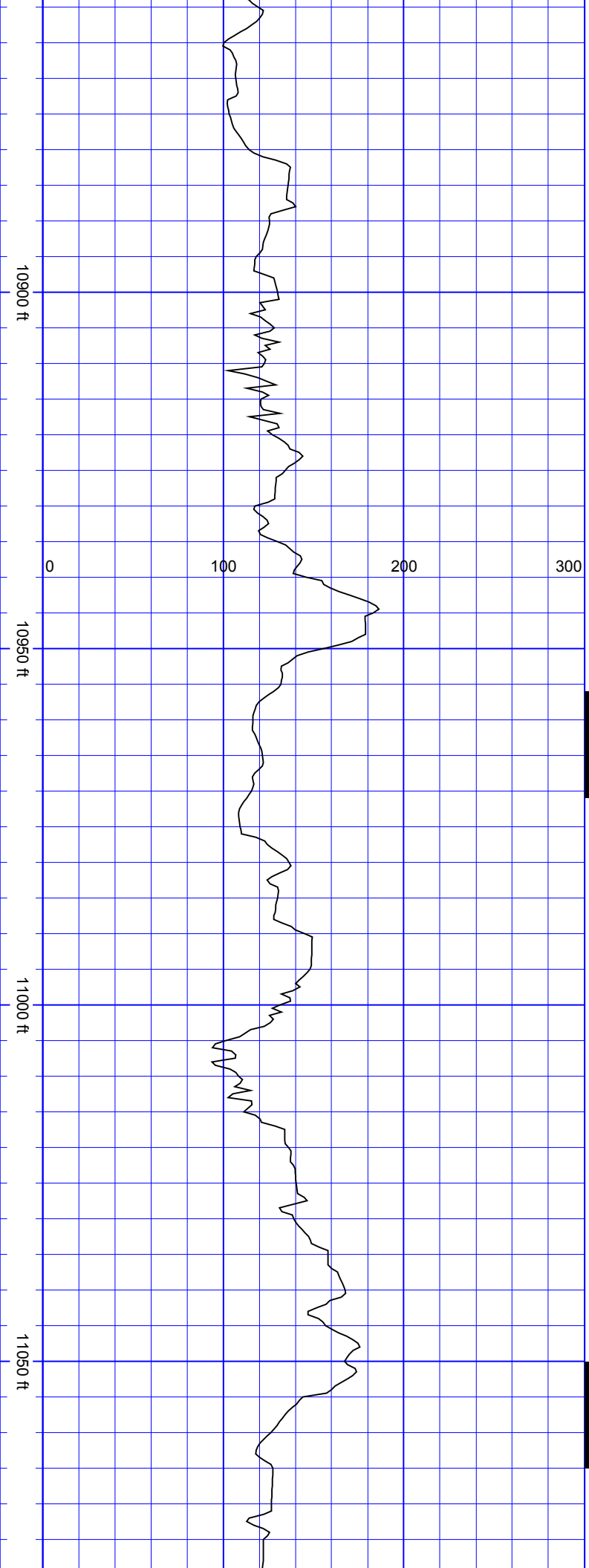




SurveyDepth:10708
TVD:7417.54 Inc:89.65
Azi:359.48
VertSec:2958.63

SurveyDepth:10802
TVD:7417.86 Inc:89.96
Azi:358.87
VertSec:3047.09



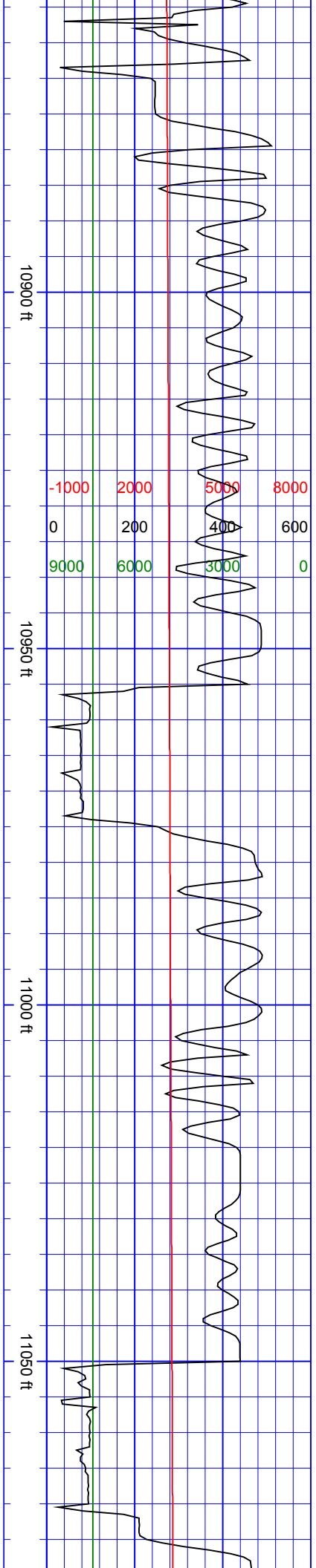


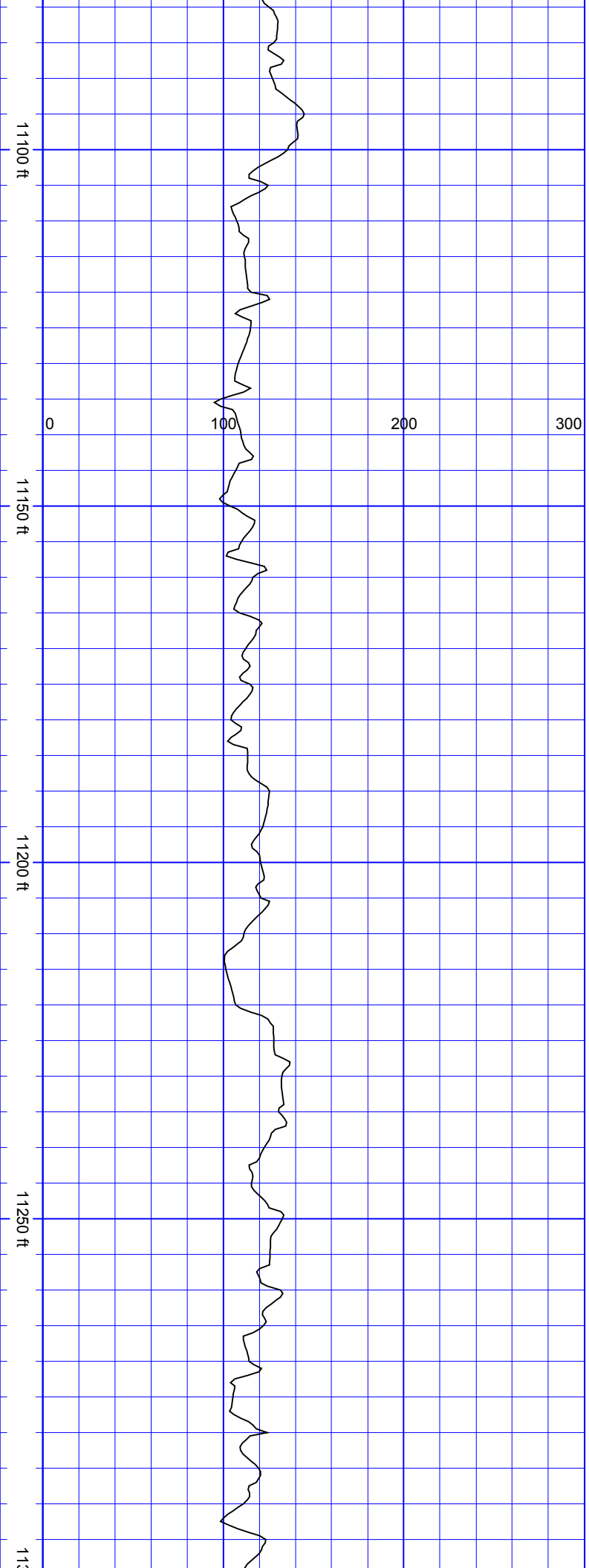
SurveyDepth:10897
TVD:7417.82 Inc:90.09
Azi:358.69
VertSec:3136.71

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SurveyDepth:10991
TVD:7416.84 Inc:91.1
Azi:0.36
VertSec:3224.97

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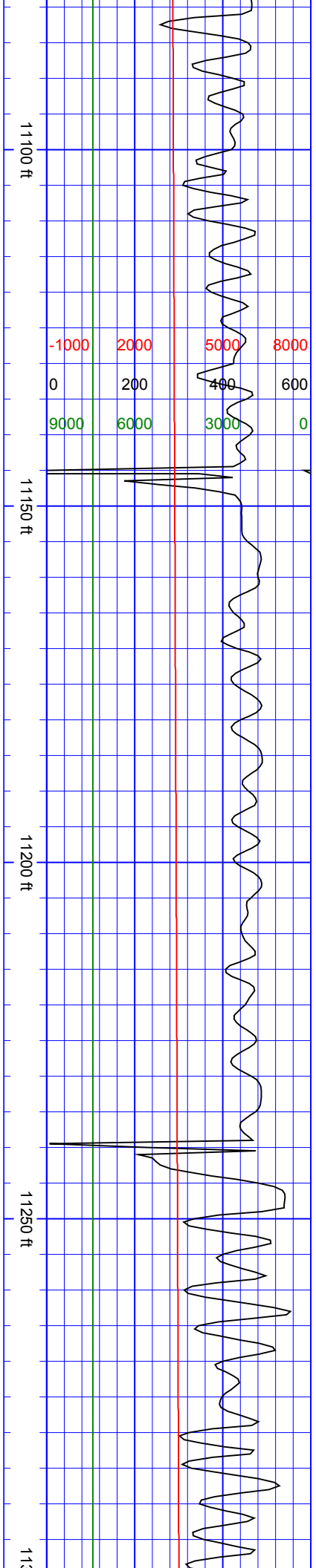


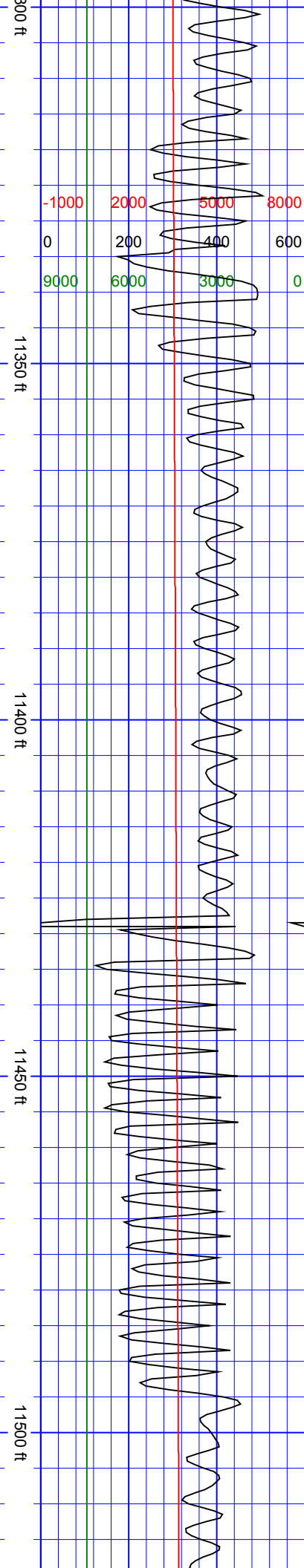


SurveyDepth:11085
TVD:7416.09 Inc:89.82
Azi:0.8 VertSec:3312.62

SurveyDepth:11180
TVD:7416.24 Inc:90
Azi:0.27
VertSec:3401.23

SurveyDepth:11274
TVD:7415.87 Inc:90.44
Azi:0.18 VertSec:3489.1

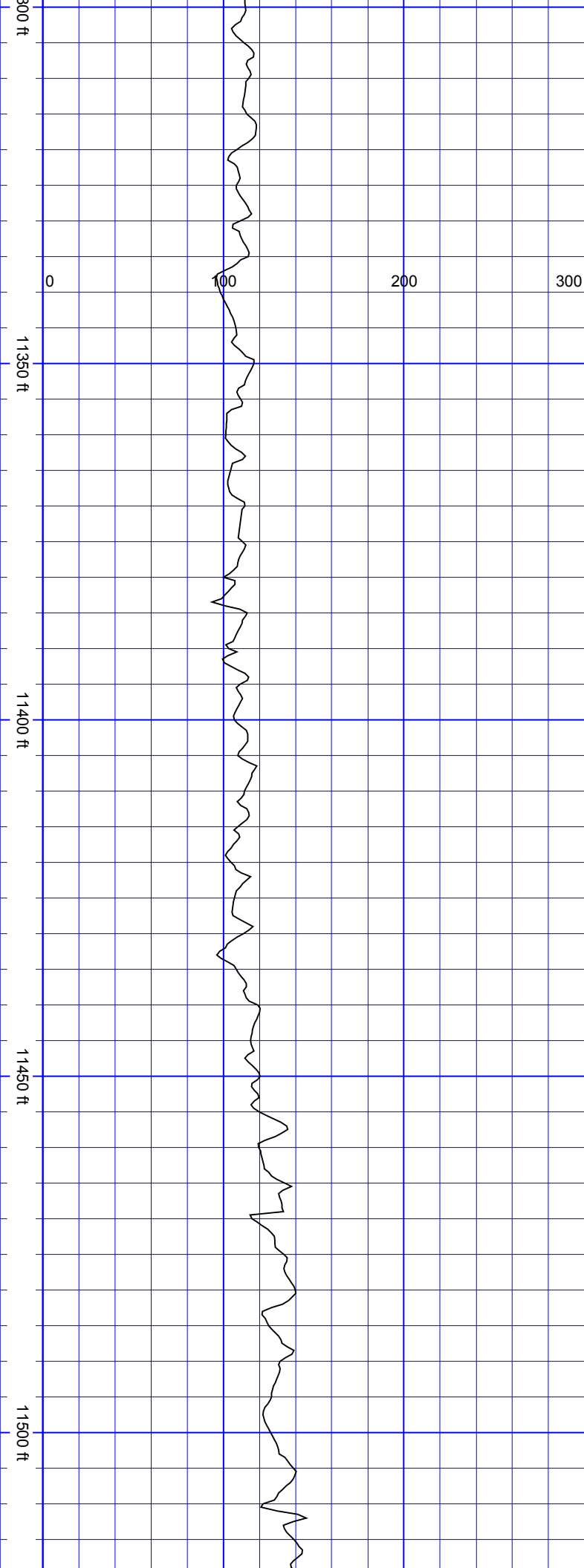


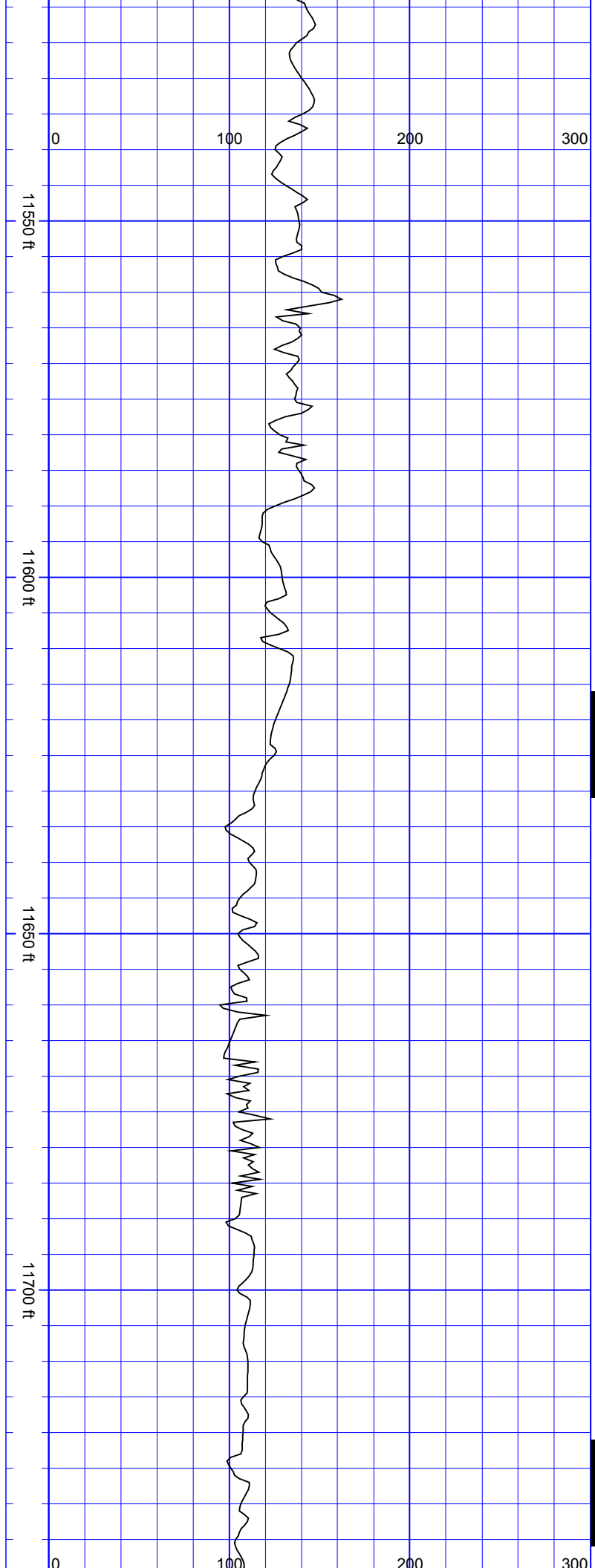


SurveyDepth:11369
TVD:7414.81 Inc:90.84
Azi:0.36
VertSec:3577.86

SurveyDepth:11463
TVD:7413.12 Inc:91.23
Azi:0.18
VertSec:3665.69

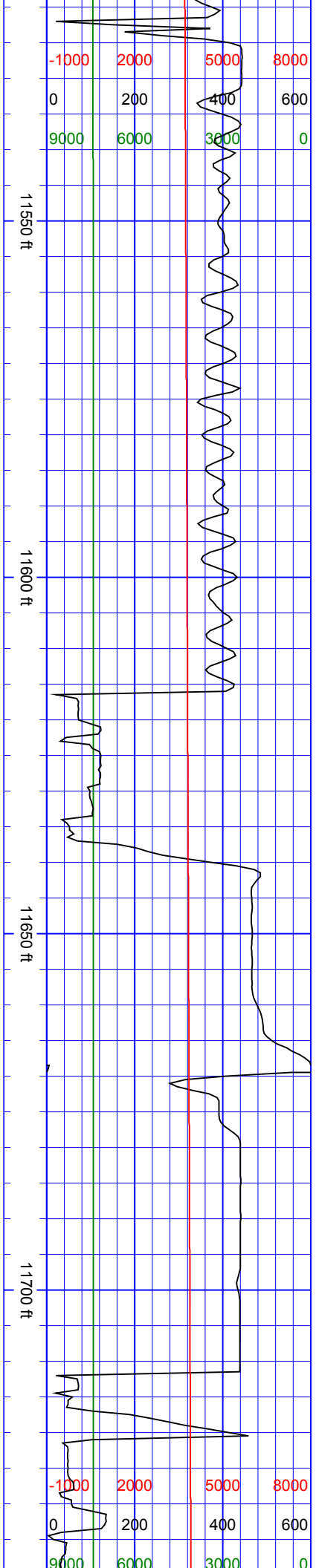
July 02, 2018

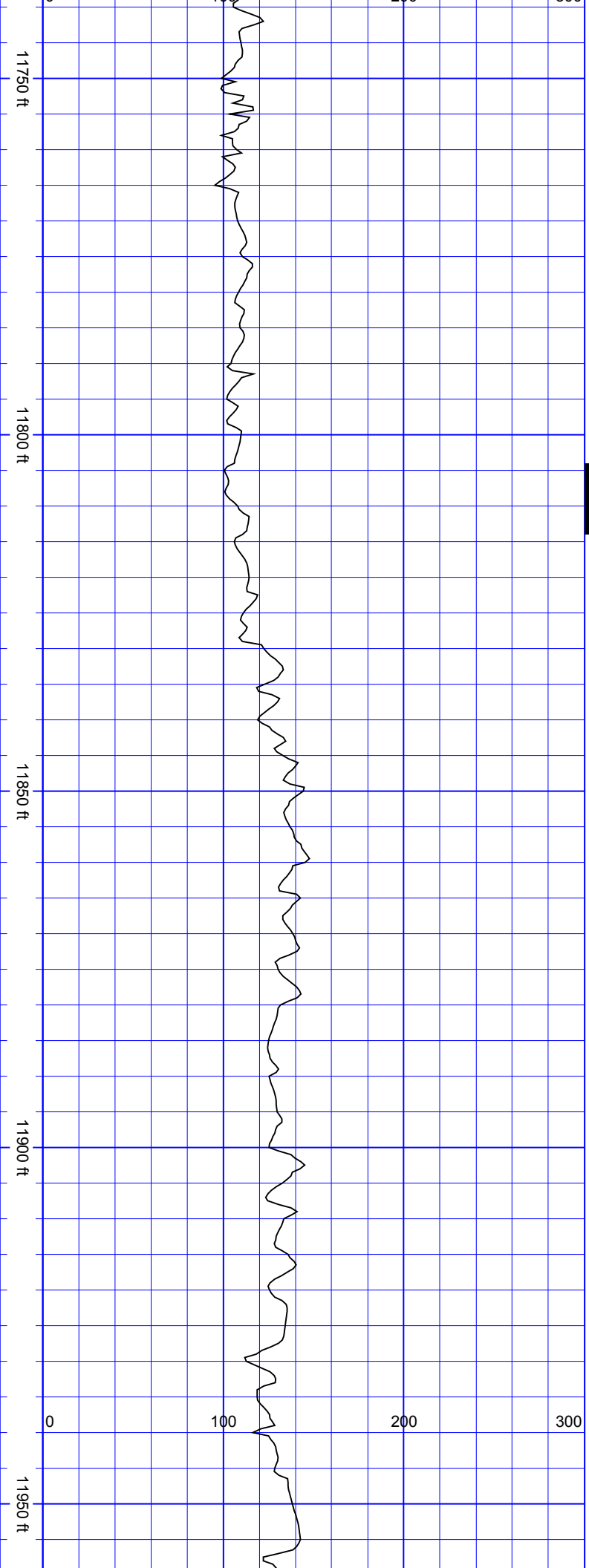




SurveyDepth:11557
TVD:7410.34 Inc:92.15
Azi:0.8 VertSec:3753.36

SurveyDepth:11651
TVD:7406.82 Inc:92.15
Azi:0.71
VertSec:3840.85



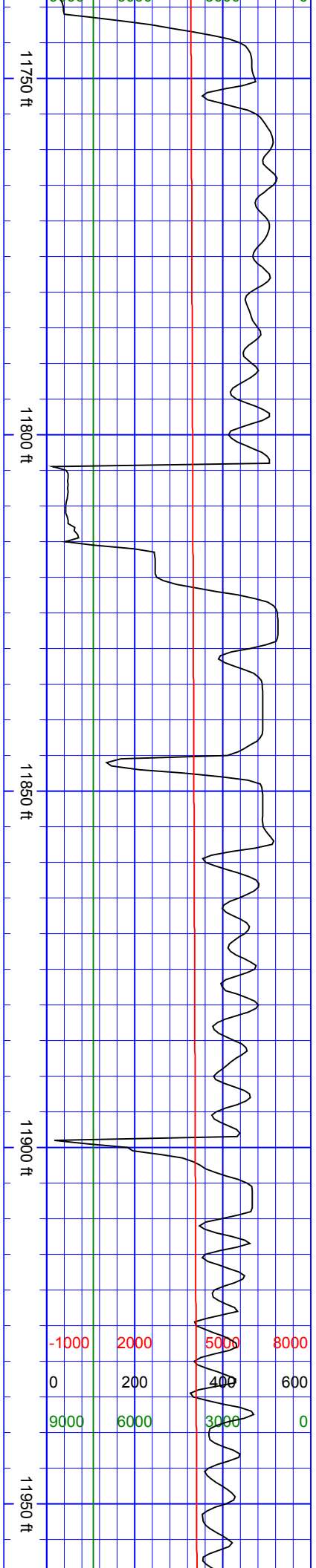


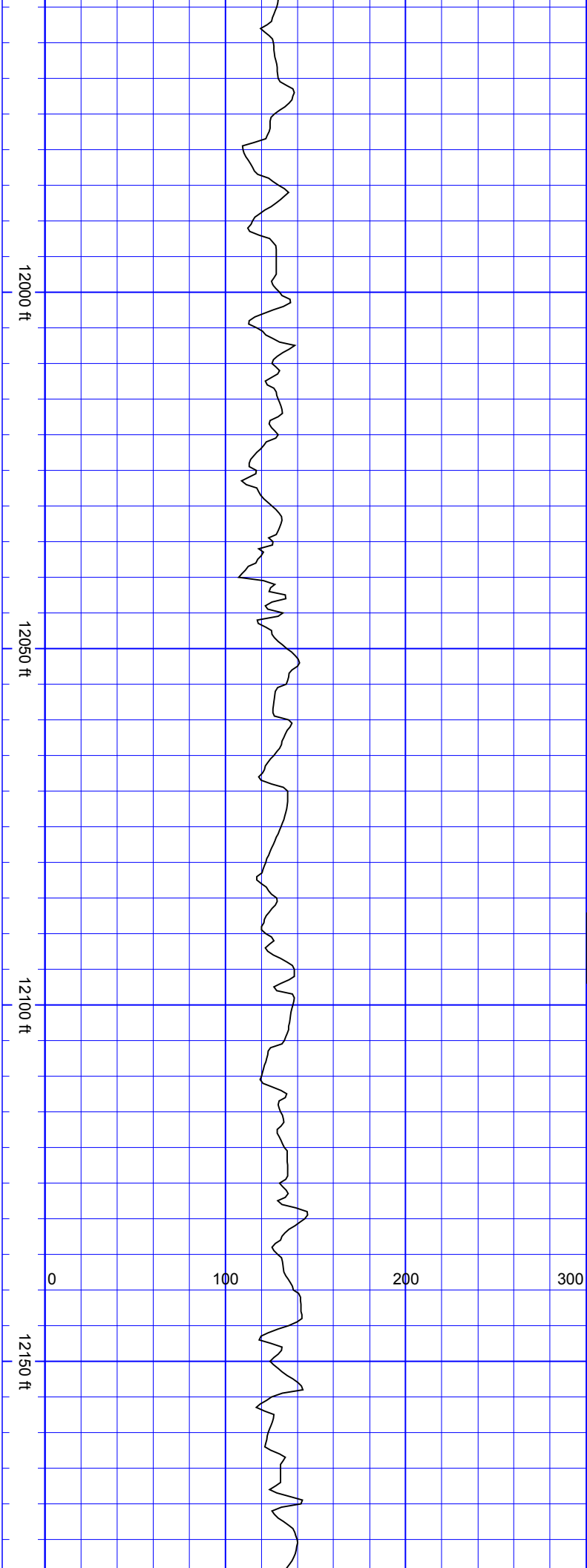
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SurveyDepth:11745
TVD:7405.05 Inc:90
Azi:1.85
VertSec:3928.06

SurveyDepth:11839
TVD:7405.81 Inc:89.08
Azi:1.33 VertSec:4015.1

SurveyDepth:11934
TVD:7407.04 Inc:89.43
Azi:1.24
VertSec:4103.25

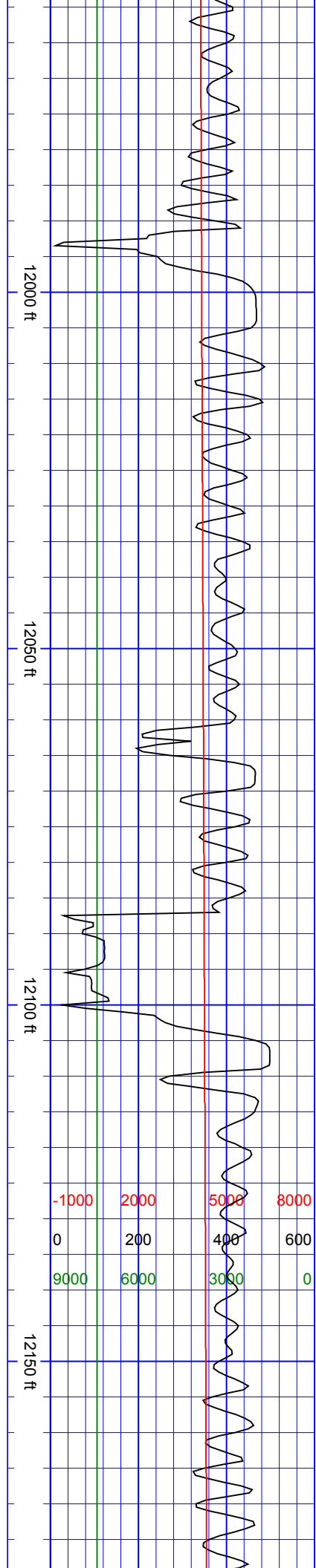


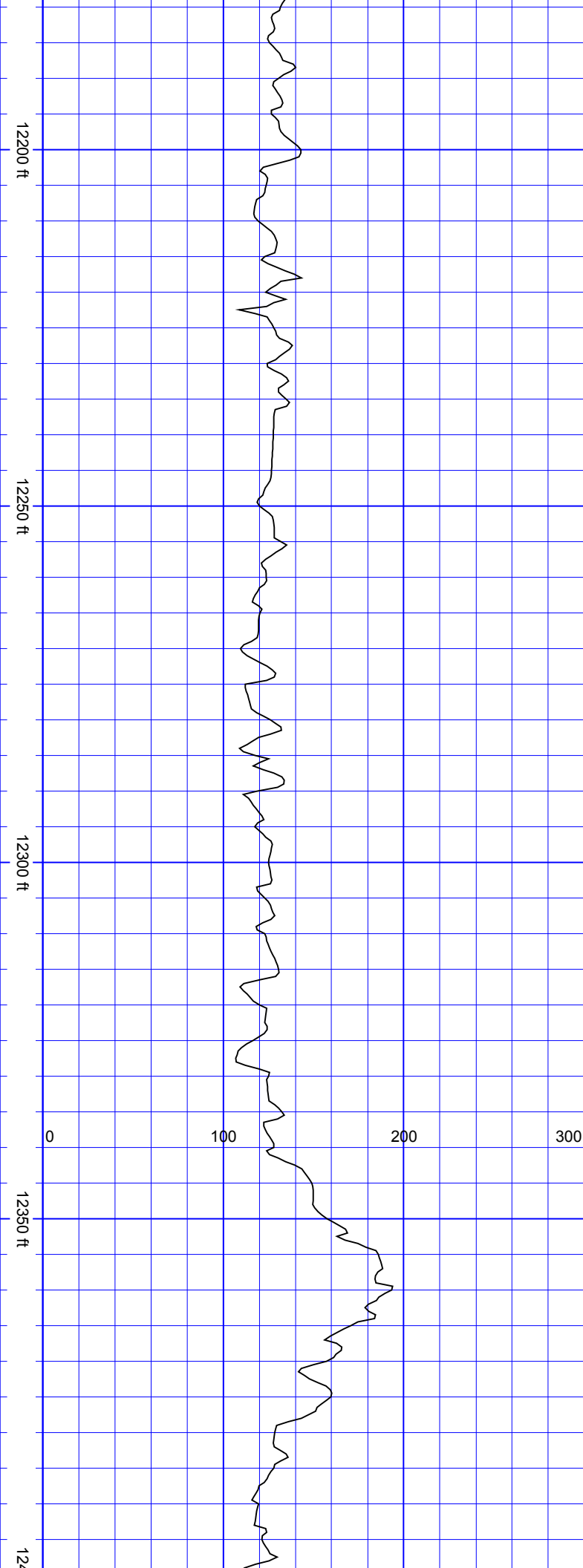


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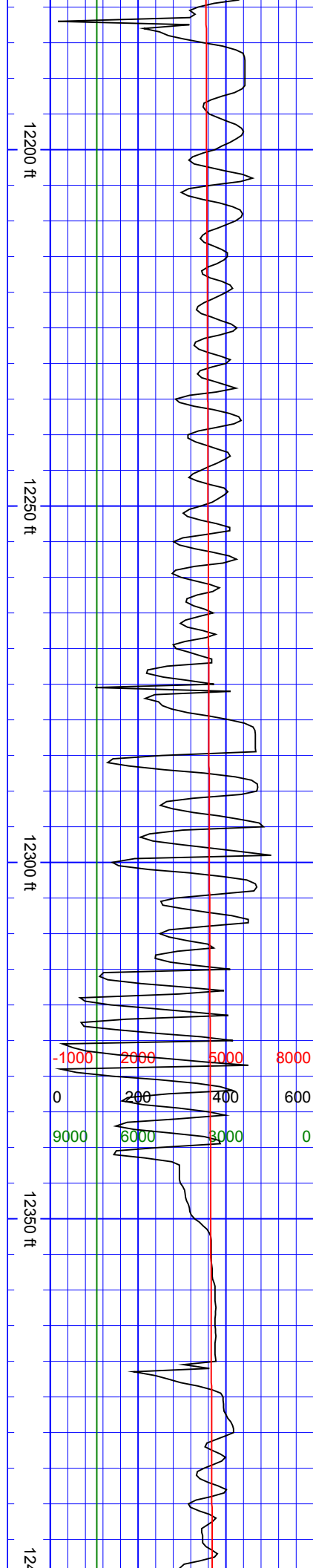
SurveyDepth:12028
TVD:7407.69 Inc:89.78
Azi:1.24
VertSec:4190.51

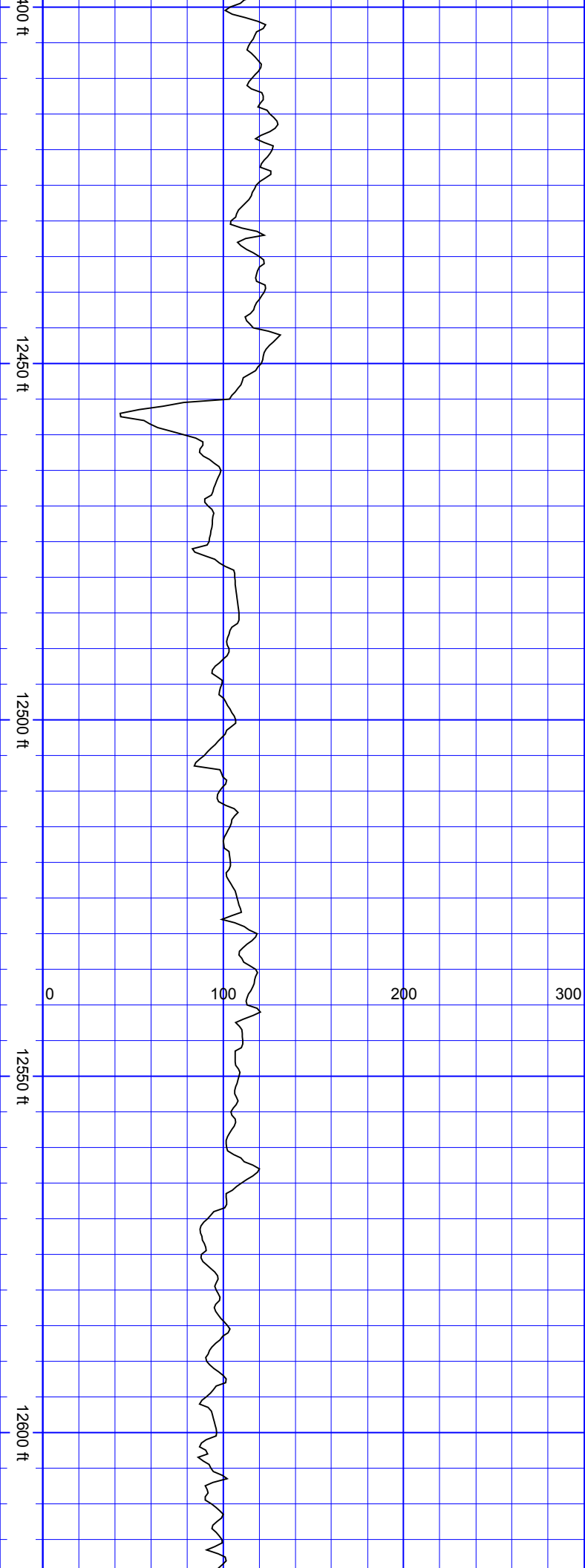
SurveyDepth:12122
TVD:7408.49 Inc:89.25
Azi:0.1 VertSec:4278.11





SurveyDepth:12216 TVD:7409.5 Inc:89.52 Azi:0.27 VertSec:4365.99
SurveyDepth:12311 TVD:7410 Inc:89.87 Azi:359.66 VertSec:4454.94

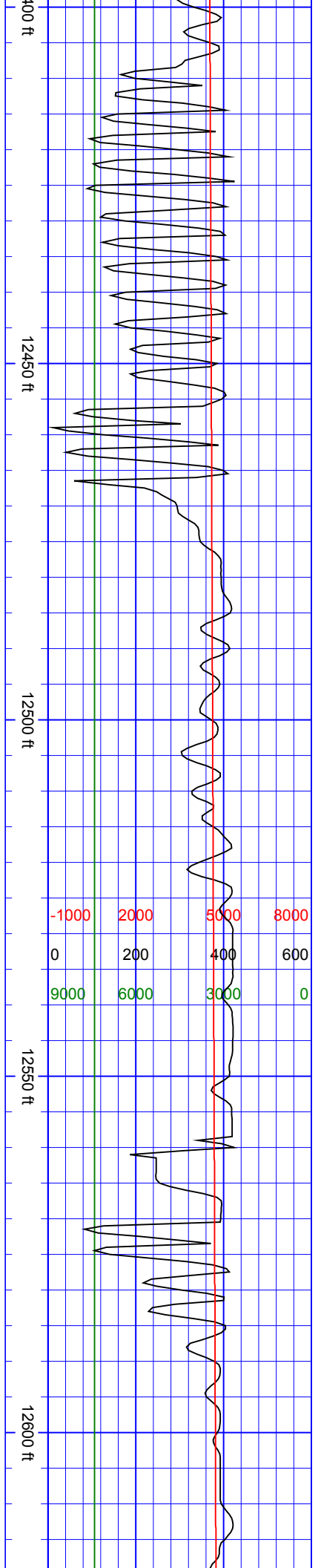


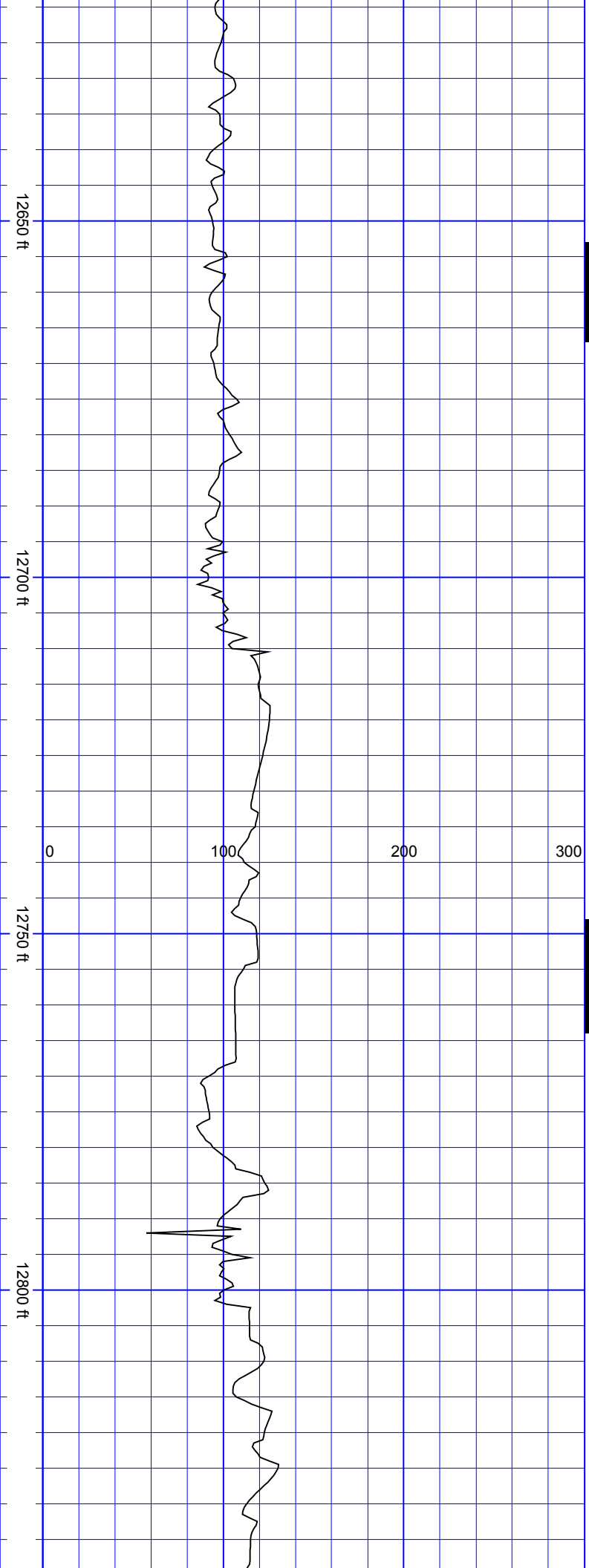


SurveyDepth:12405
TVD:7410.29 Inc:89.78
Azi:358.6
VertSec:4543.43

SurveyDepth:12500
TVD:7410.44 Inc:90.04
Azi:358.51
VertSec:4633.17

SurveyDepth:12594
TVD:7410.51 Inc:89.87
Azi:357.28
VertSec:4722.32



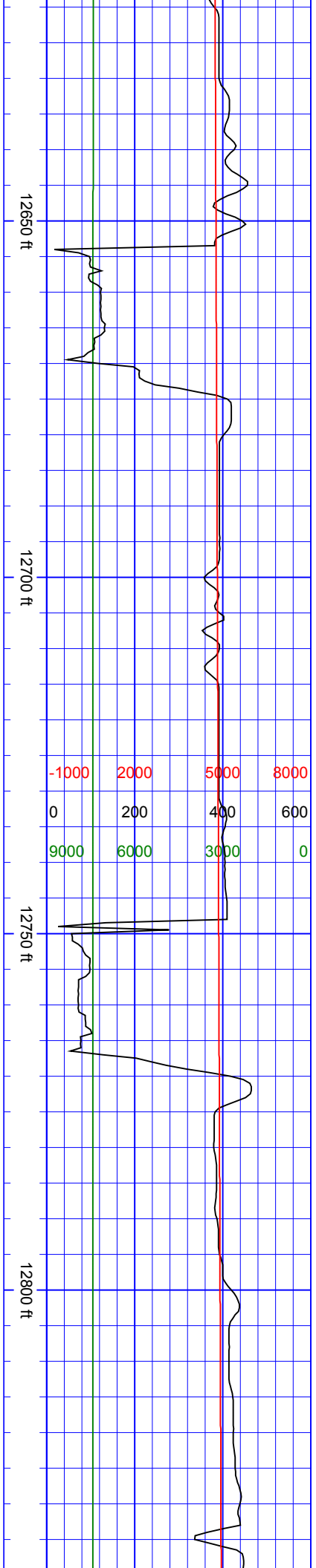


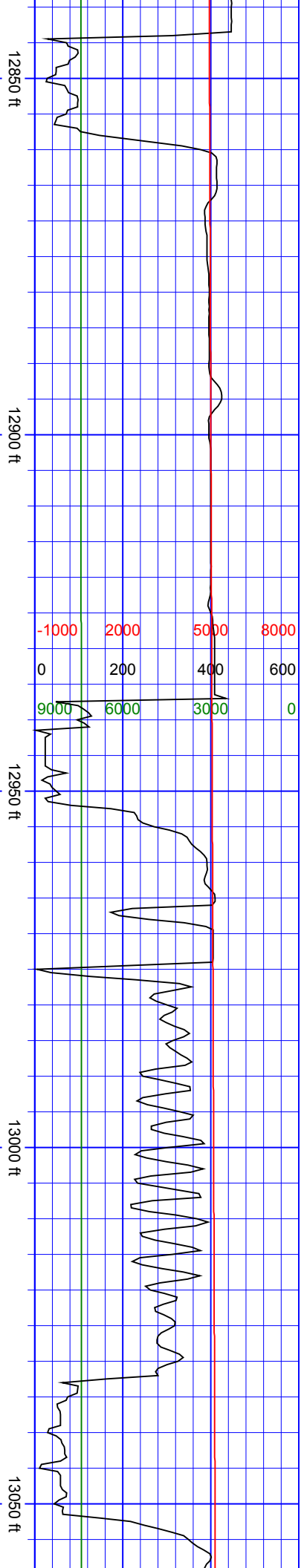
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SurveyDepth:12689
TVD:7411.06 Inc:89.47
Azi:357.81
VertSec:4812.6

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SurveyDepth:12783
TVD:7411.57 Inc:89.91
Azi:359.39
VertSec:4901.37





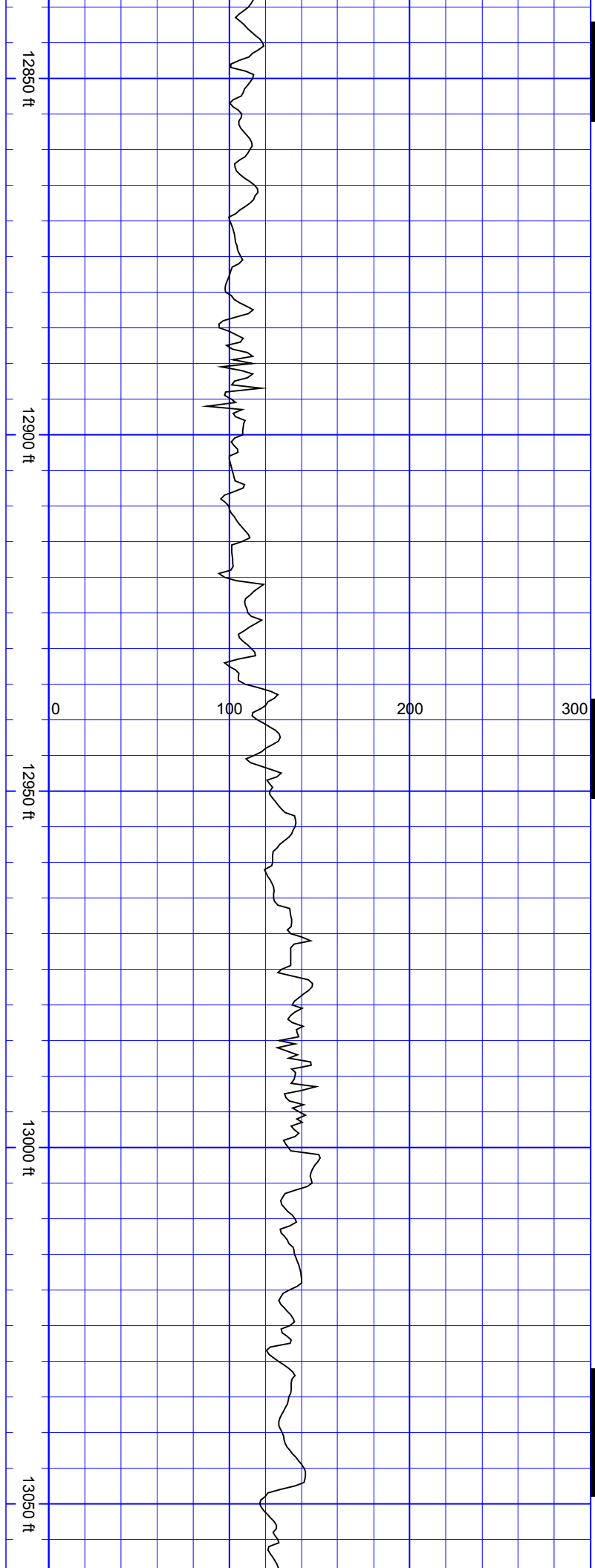
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TVD:7411.2 Inc:90.53
Azi:0.18
VertSec:4990.43

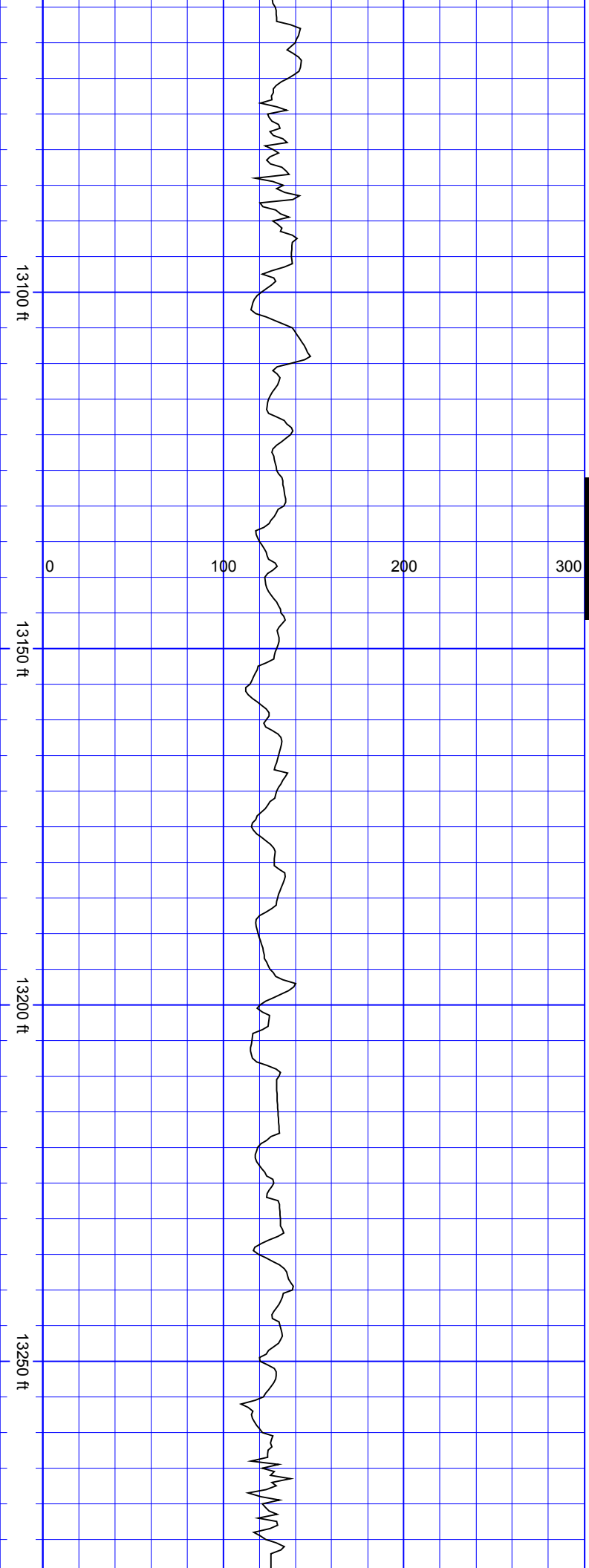
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SurveyDepth:12972
TVD:7410.44 Inc:90.4
Azi:359.04
VertSec:5078.64

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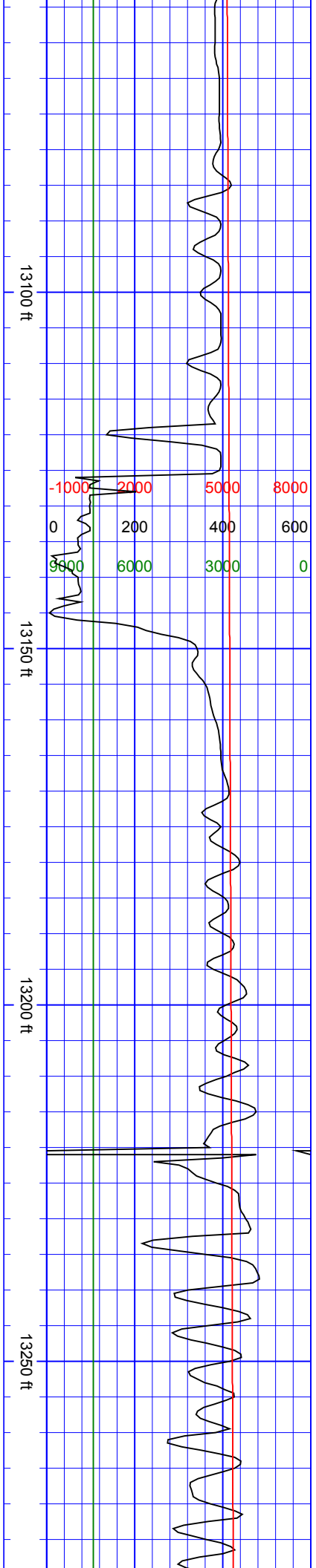


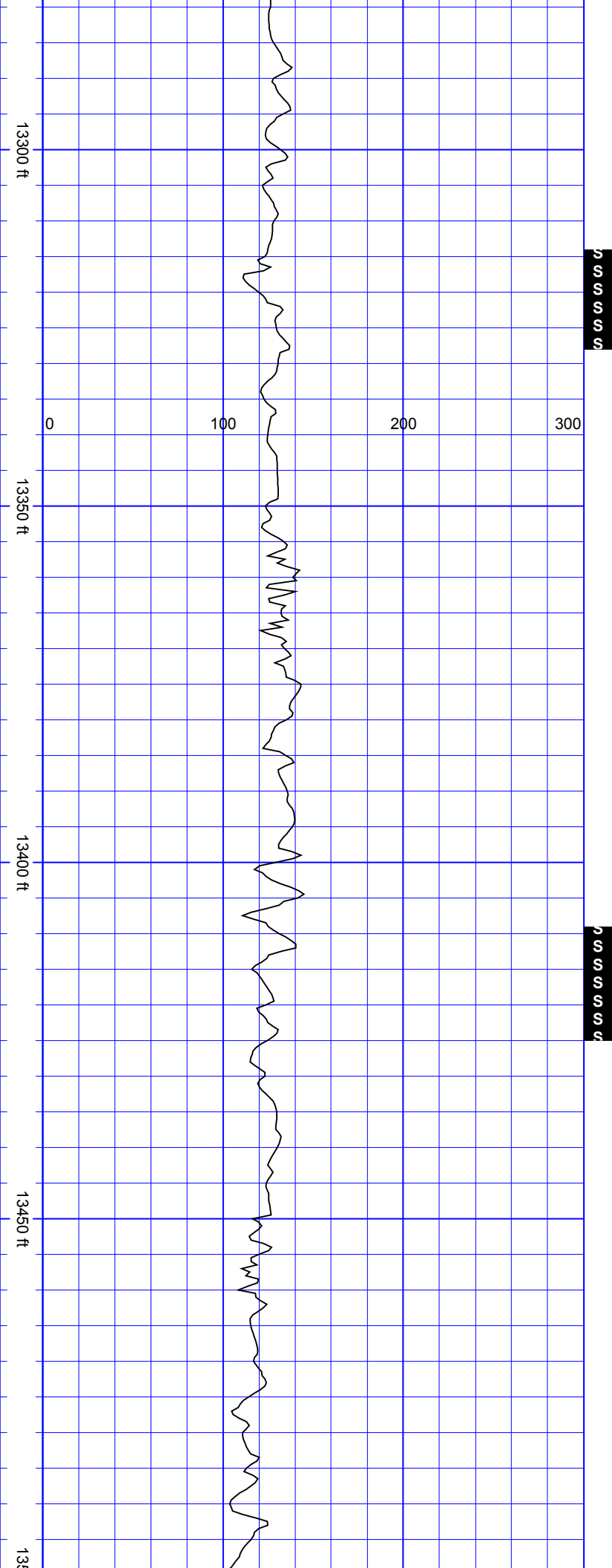
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SurveyDepth:13067
TVD:7409.09 Inc:91.23
Azi:0.36
VertSec:5167.74

SurveyDepth:13161
TVD:7407.64 Inc:90.53
Azi:1.77
VertSec:5255.09

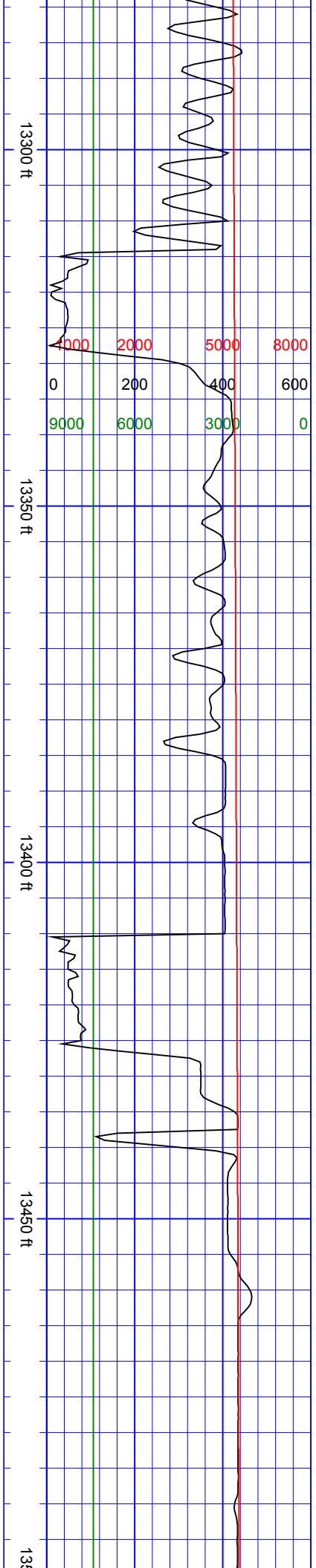
SurveyDepth:13255
TVD:7406.38 Inc:91.01
Azi:1.59
VertSec:5342.07

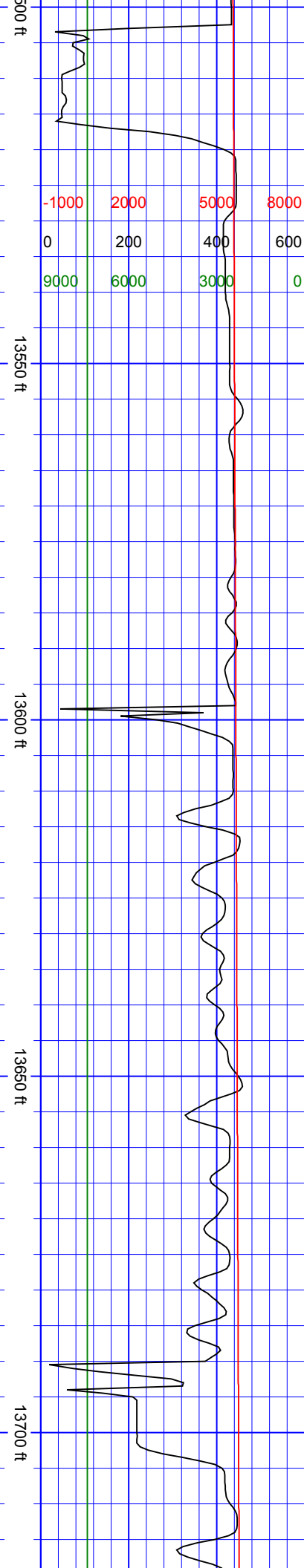




SurveyDepth:13350
TVD:7404.49 Inc:91.27
Azi:2.47
VertSec:5429.74

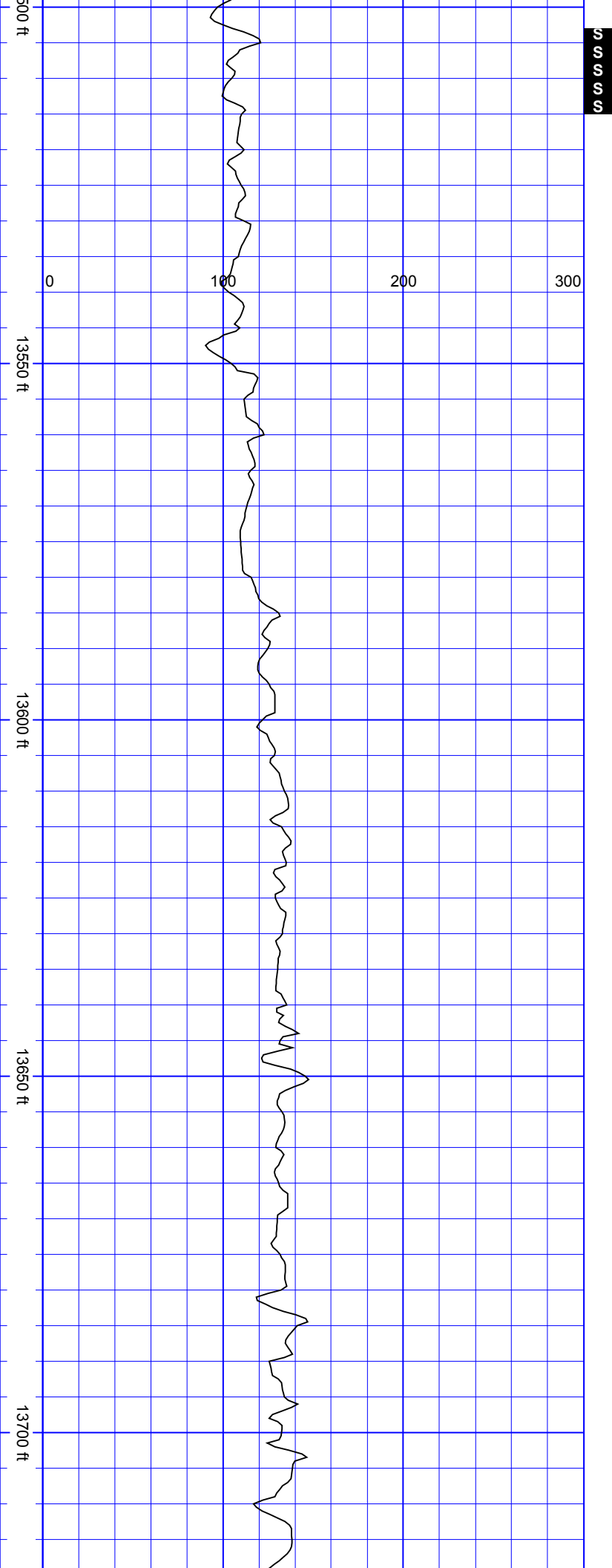
SurveyDepth:13444
TVD:7403.3 Inc:90.18
Azi:2.21
VertSec:5516.31

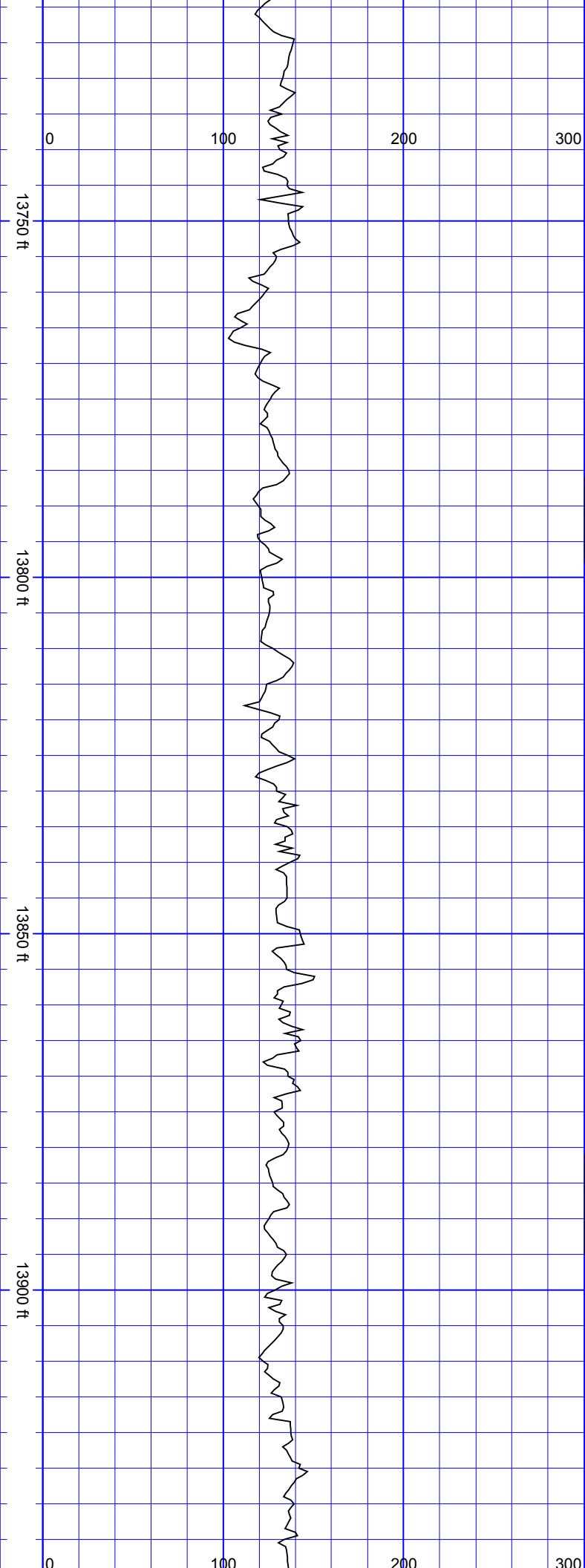




SurveyDepth:13539
TVD:7404.1 Inc:88.86
Azi:2.65
VertSec:5603.74

SurveyDepth:13633
TVD:7405.65 Inc:89.25
Azi:1.77
VertSec:5690.38

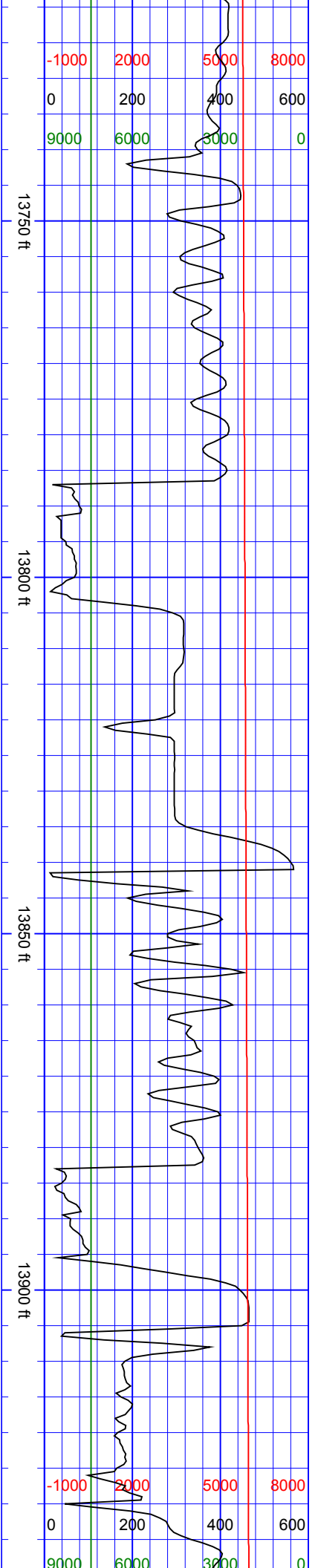


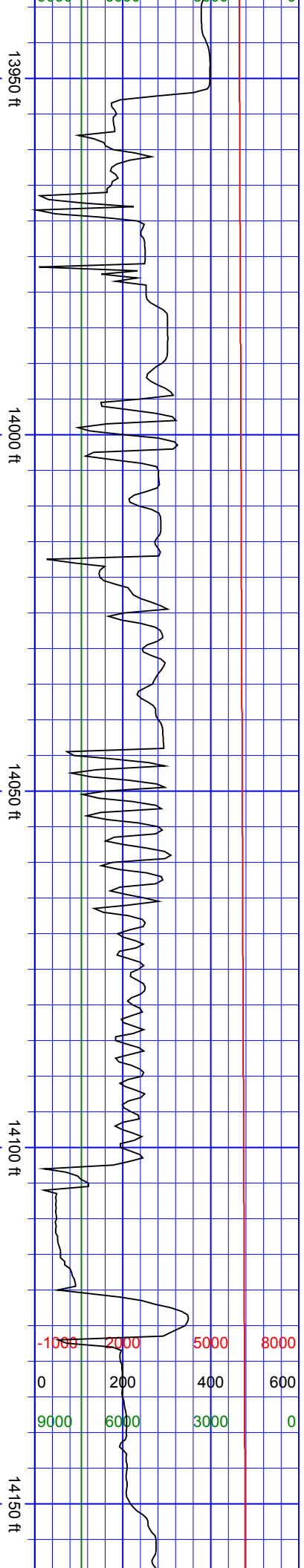


SurveyDepth:13727
TVD:7406.05 Inc:90.26
Azi:1.59
VertSec:5777.36

SurveyDepth:13822
TVD:7405.25 Inc:90.7
Azi:0.1 VertSec:5865.79

SurveyDepth:13917
TVD:7404.86 Inc:89.78
Azi:358.6
VertSec:5955.09



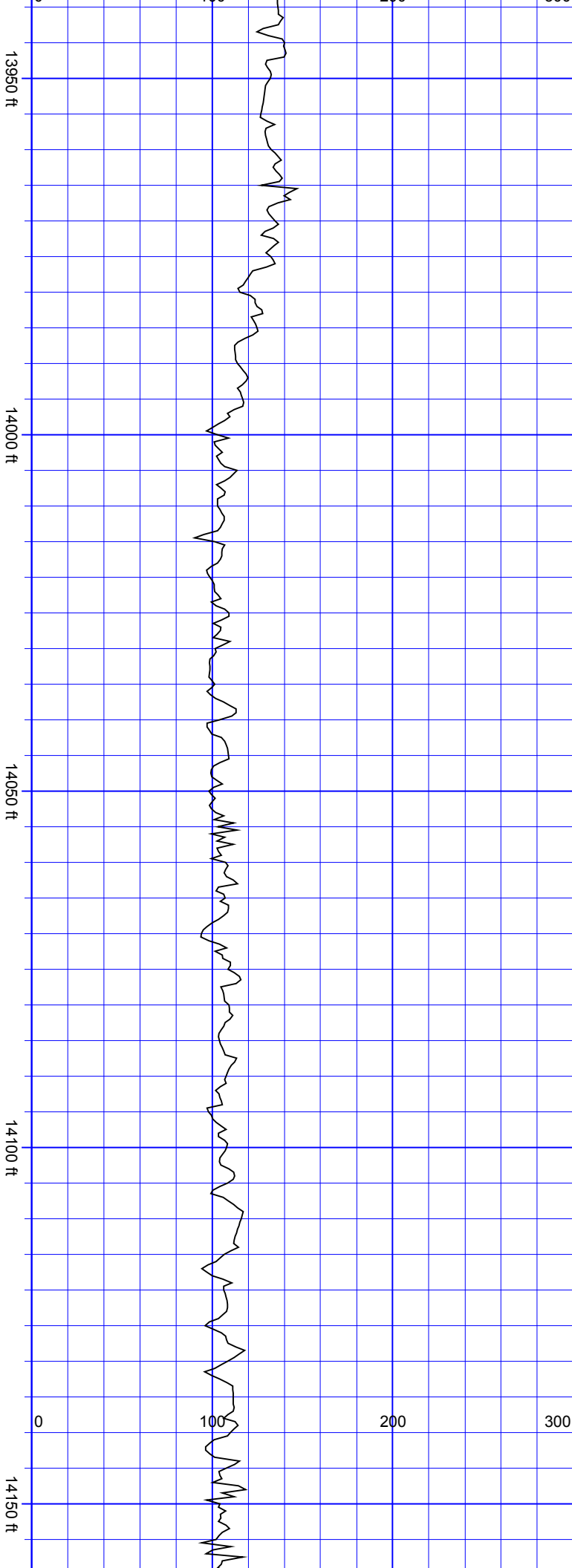


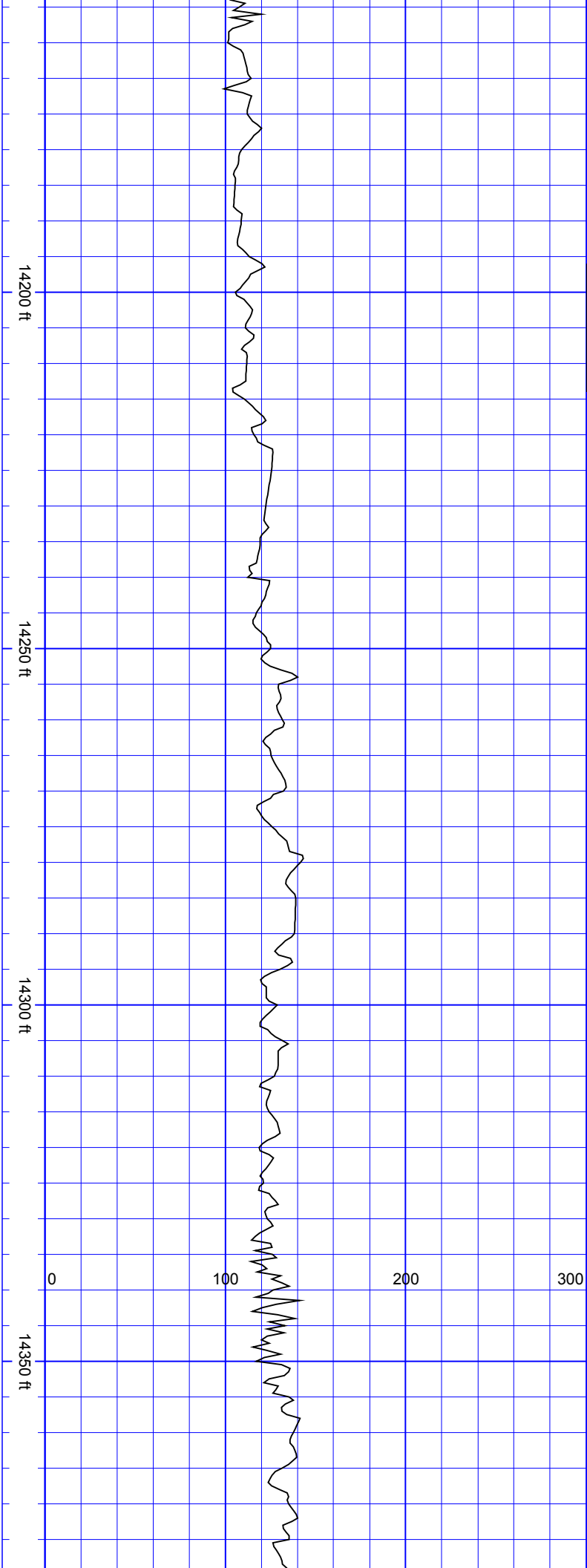
July 03, 2018

SurveyDepth:14042
TVD:7403.99 Inc:91.01
Azi:358.51
VertSec:6073.17

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SurveyDepth:14137
TVD:7402.72 Inc:90.53
Azi:358.87
VertSec:6162.83

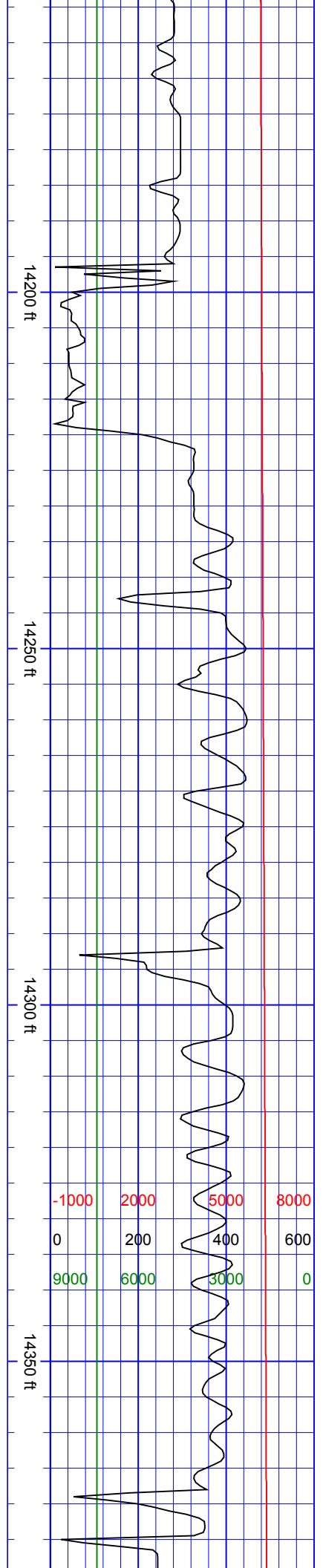


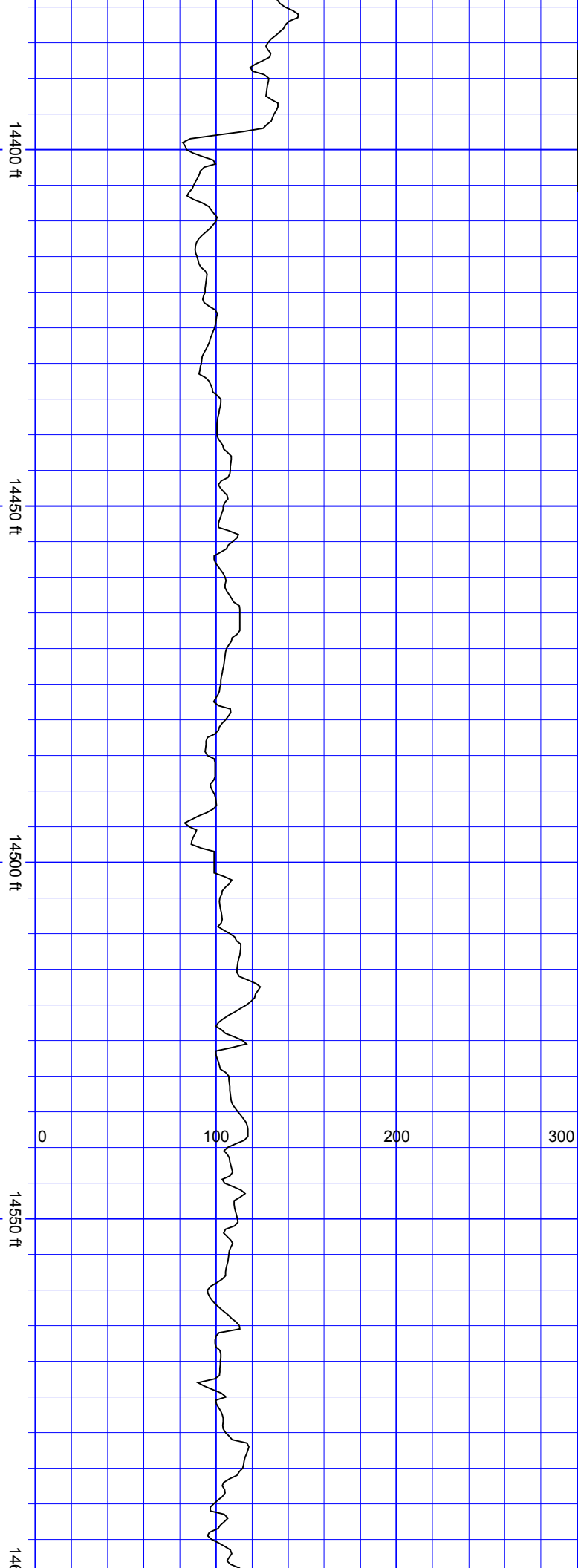


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SurveyDepth:14232
TVD:7402.35 Inc:89.91
Azi:0.27
VertSec:6252.01

SurveyDepth:14327
TVD:7401.99 Inc:90.53
Azi:359.13
VertSec:6341.11

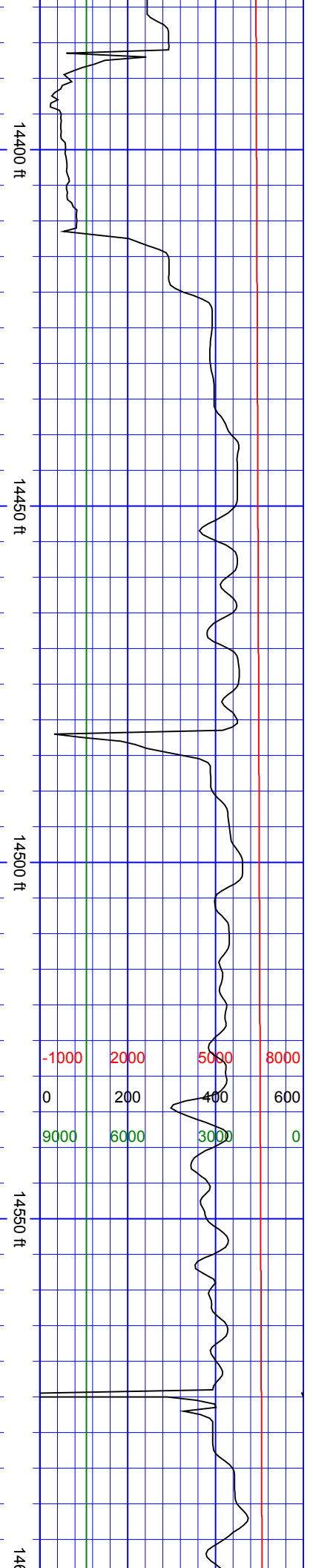




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SurveyDepth:14421
TVD:7402.67 Inc:88.64
Azi:0.18 VertSec:6429.3

SurveyDepth:14515
TVD:7404.58 Inc:89.03
Azi:359.92
VertSec:6517.25

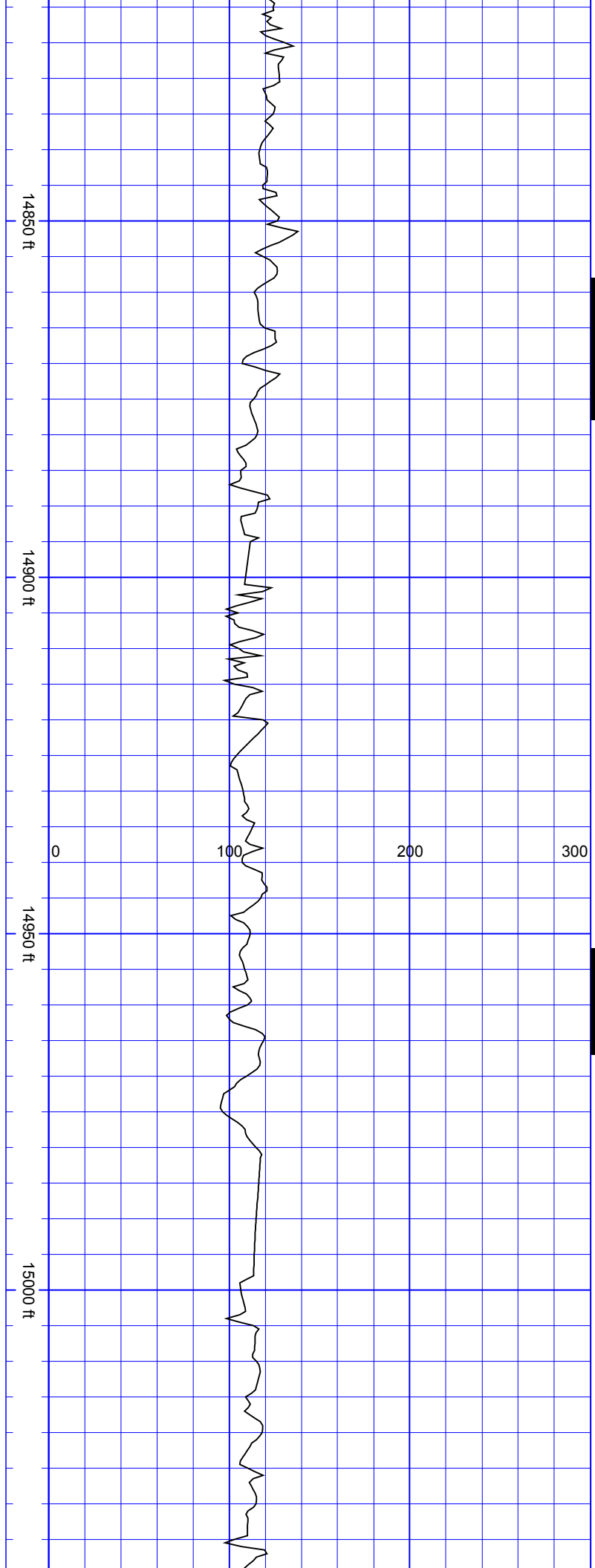


SurveyDepth:14609
TVD:7406.02 Inc:89.21
Azi:359.31
VertSec:6605.45

SurveyDepth:14704
TVD:7407.18 Inc:89.39
Azi:358.78
VertSec:6694.92

SurveyDepth:14799
TVD:7407.98 Inc:89.65
Azi:358.6
VertSec:6784.59

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9000 6000 3000 0

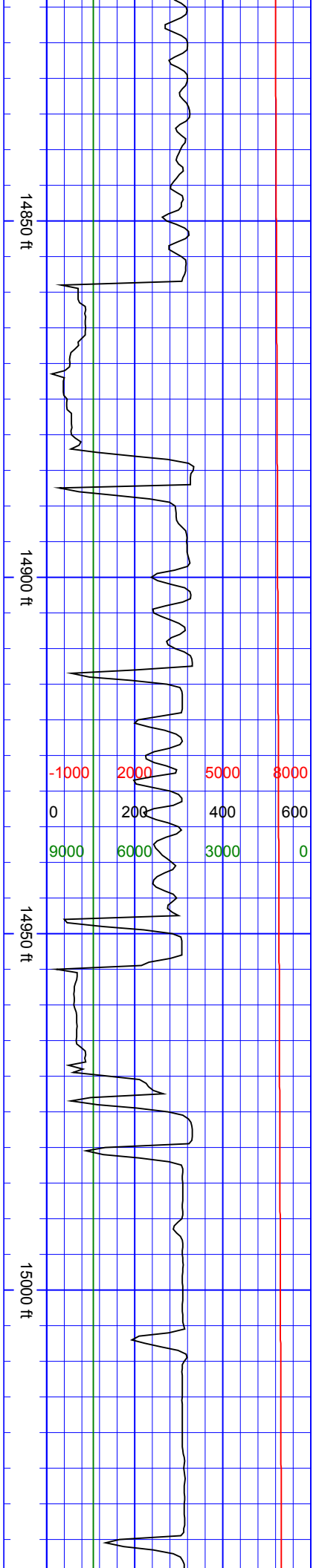


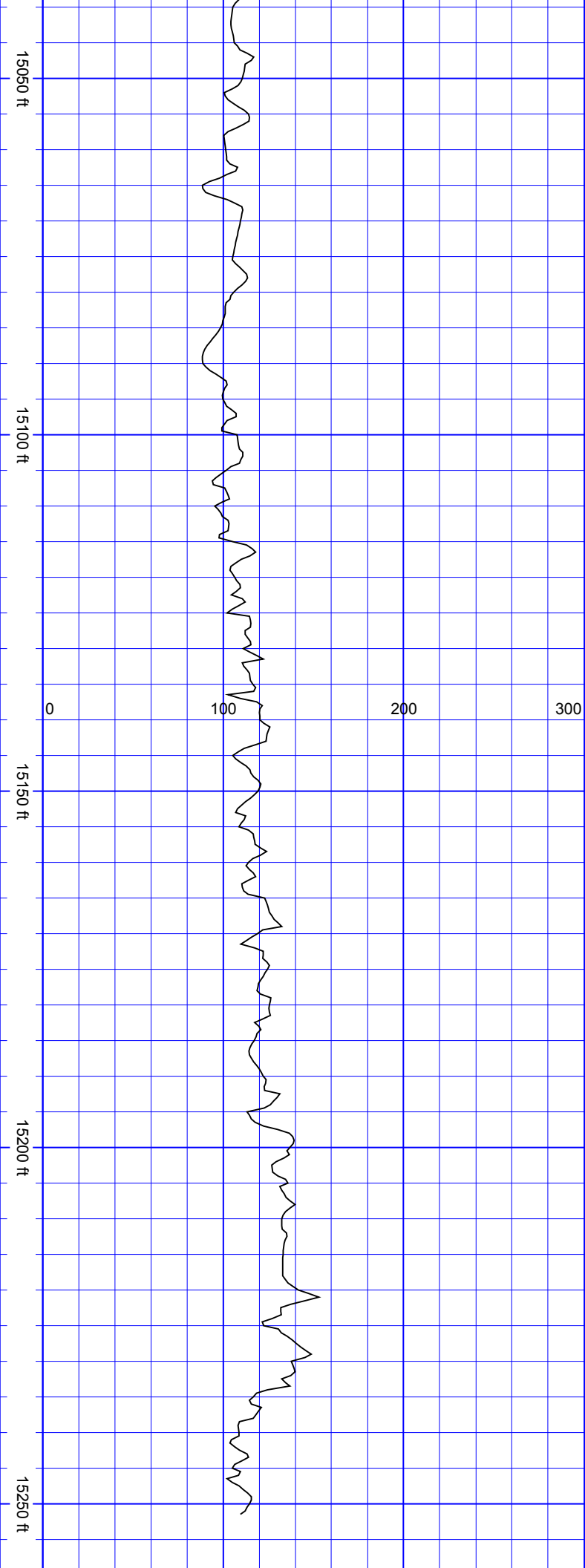
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SurveyDepth:14893
TVD:7408.19 Inc:90.09
Azi:359.75
VertSec:6873.05

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SurveyDepth:14987
TVD:7407.97 Inc:90.18
Azi:3.26
VertSec:6960.13





SurveyDepth:15082 TVD:7407.13 Inc:90.84 Azi:4.93 VertSec:7046.44	SurveyDepth:15176 TVD:7405.28 Inc:91.41 Azi:6.25 VertSec:7130.78	SurveyDepth:15246 TVD:7403.38 Inc:91.71 Azi:5.46 VertSec:7193.43
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