

CATHEDRAL

Build & Lateral

Job #:185188Well ID:16190985

Scale:5" = 100 ftType:MD

Well Site Information

Oil CompanyCrestone Peak Resources

Surface LocationS4-T1N-R65W

Well NameRuegge 3I-4H-N165

API05-123-46559-00

FieldDJ Wattenburg

StateColorado

CountryUSA

Surface Coordinates

Well TypeHorizontal

Latitude40° 4' 31 N

Longitude104° 40' 15 W

N / S Coordinates1,271,343.05 us/ft

E / W Coordinates3,232,031.22 us/ft

Azimuth ReferenceTrue North

Grid Convergence0.54°

MWD Engineers

Lead HandBob Stahlecker

Second HandChad Vellad

Perm Datum

Ground

Elevation

4,916.00 ft

Log depth measured from KB is

23.00 ft

above perm datum.

KB =

4,939.00 ft

Total Depth

11,910.00 ft

Spud Date

Jun/20/2018

End Date

Jun/23/2018

(MD) Log Interval

Start Depth

2,375.00 ft

End Depth

11,910.90 ft

Bore Hole Record

Hole Size

From

To

13.50 in

0.00 ft

2,468.00 ft

8.50 in

2,468.00 ft

11,910.00 ft

Casing Record

Type

Size

WGT

From

To

LT&C

9.63 in

40.00 lbs/ft

0.00 ft

2,468.00 ft

LT&C

5.50 in

20.00 lbs/ft

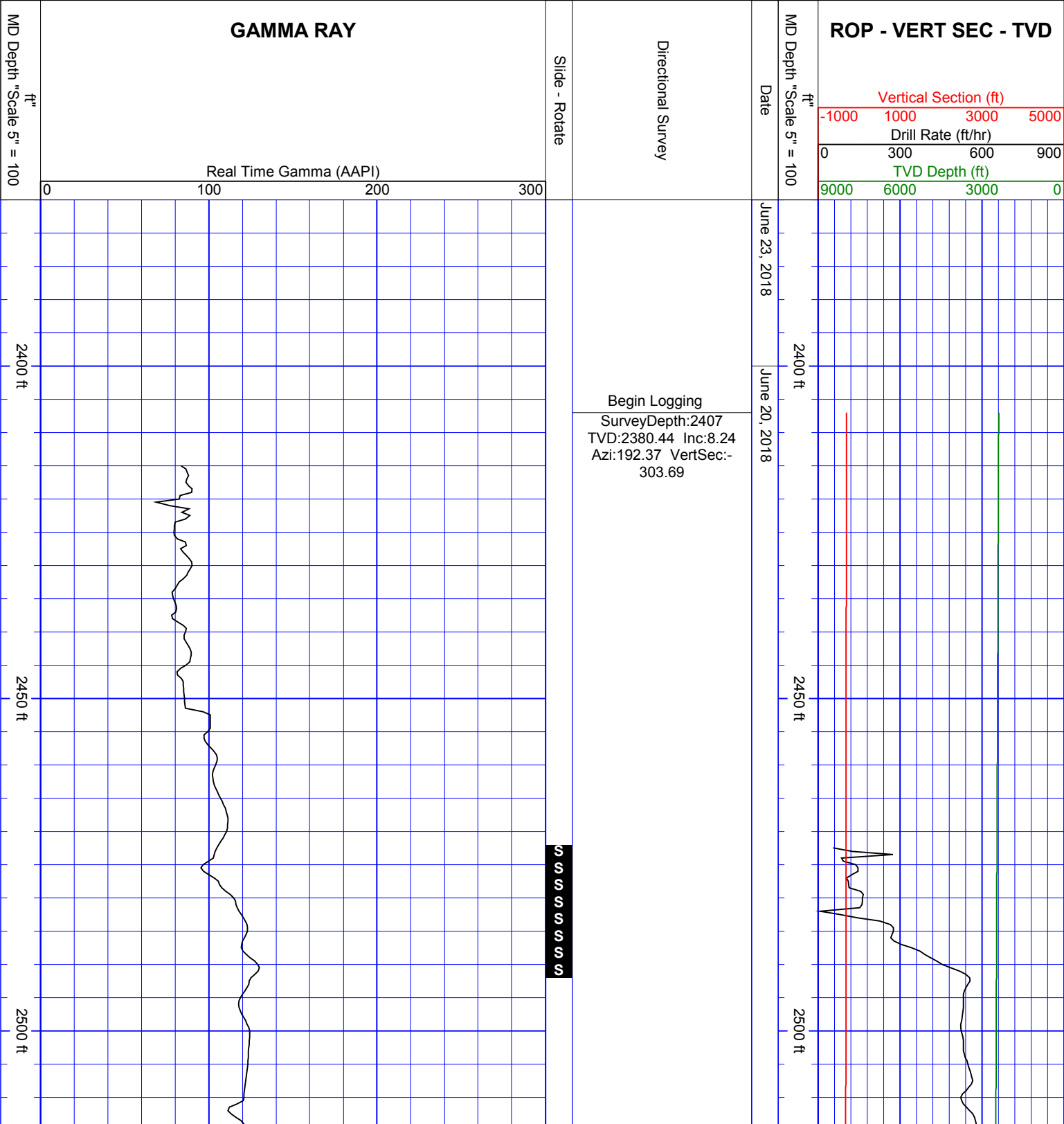
0.00 ft

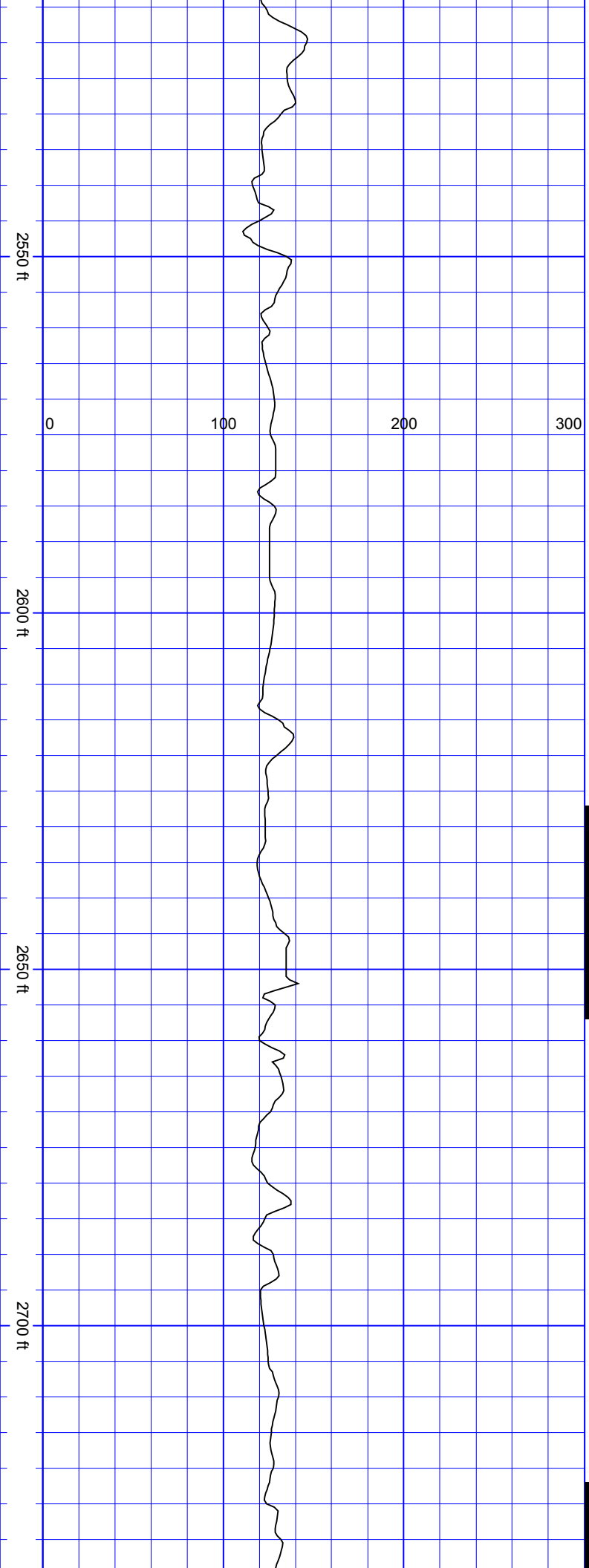
11,910.00 ft

Run Data					
Bit Run Number	1	2			
Start Date & Time	Jun/15/2018 21:00:00	Jun/22/2018 01:30:00			
End Date & Time	Jun/21/2018 23:00:00	Jun/23/2018 23:30:00			
Run Hours	31.00	46.00			
Depth In	2,472.00 ft	6,934.00 ft			
Depth Out	6,934.00 ft	11,910.00 ft			
Total Gamma Correction	5.06	5.06			
Gamma to Bit	58.93 ft	55.12 ft			
Resistivity to Bit	-	-			
Mud Type	Oil Based Mud	Oil Based Mud			
Density	9.80 ppg	9.80 ppg			
Viscosity	41.00 sec/qt	41.00 sec/qt			
PH	-	-			
Fluid Loss	16.80 cc	16.80 cc			
K+ ppm	-	-			
CL- ppm	238,409.00 ppm	238,409.00 ppm			
Max Mud Temp	176.00 °F	240.00 °F			
Mud Report Depth	6,934.00 ft	11,910.00 ft			

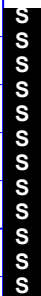
Remarks

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.

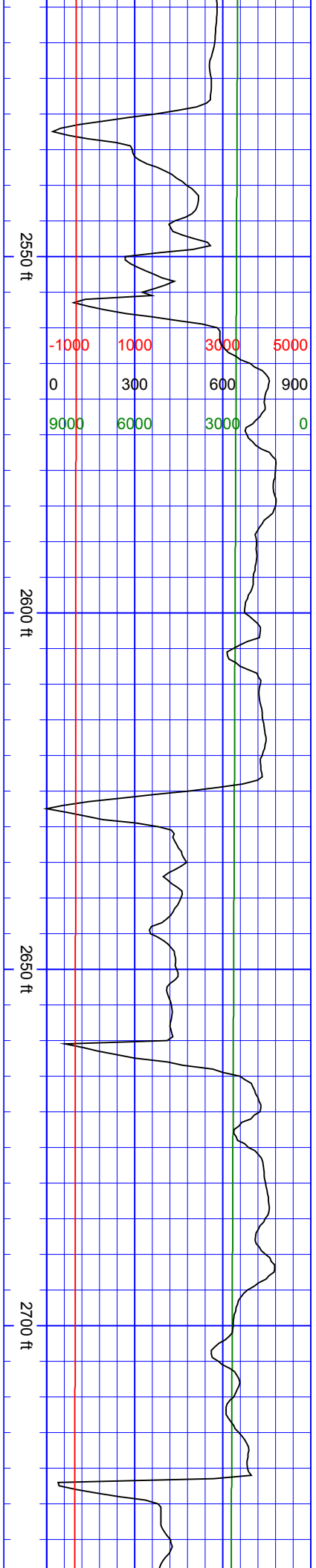


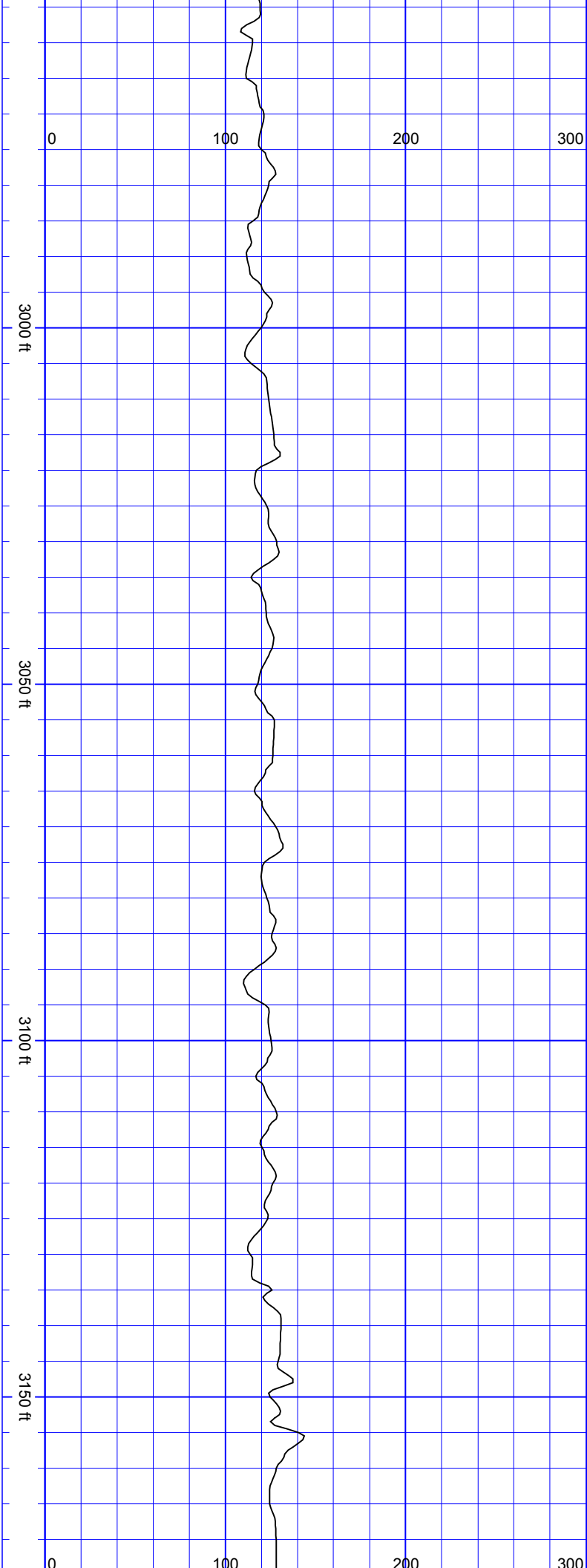


SurveyDepth:2563
TVD:2534.62 Inc:9.27
Azi:185.62 VertSec:-327.14



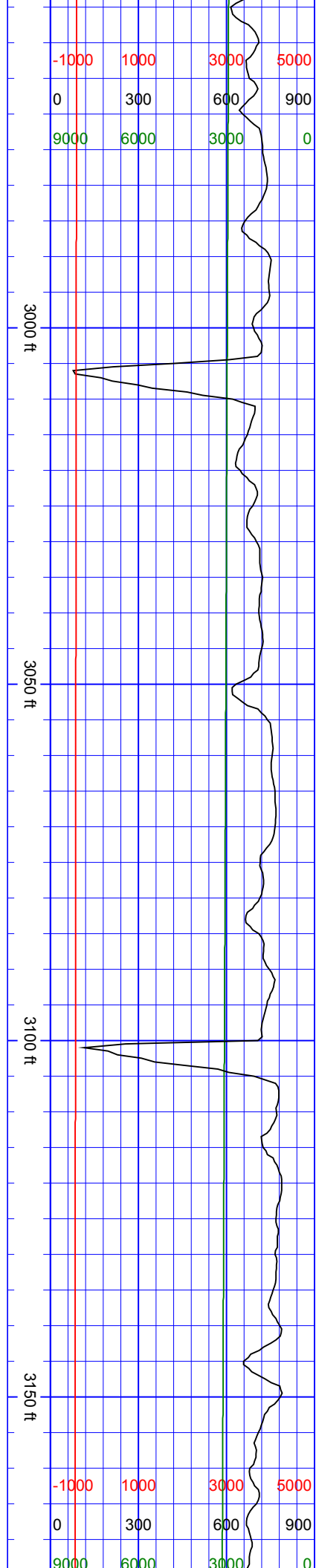
SurveyDepth:2658
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Azi:188.43 VertSec:-342.66

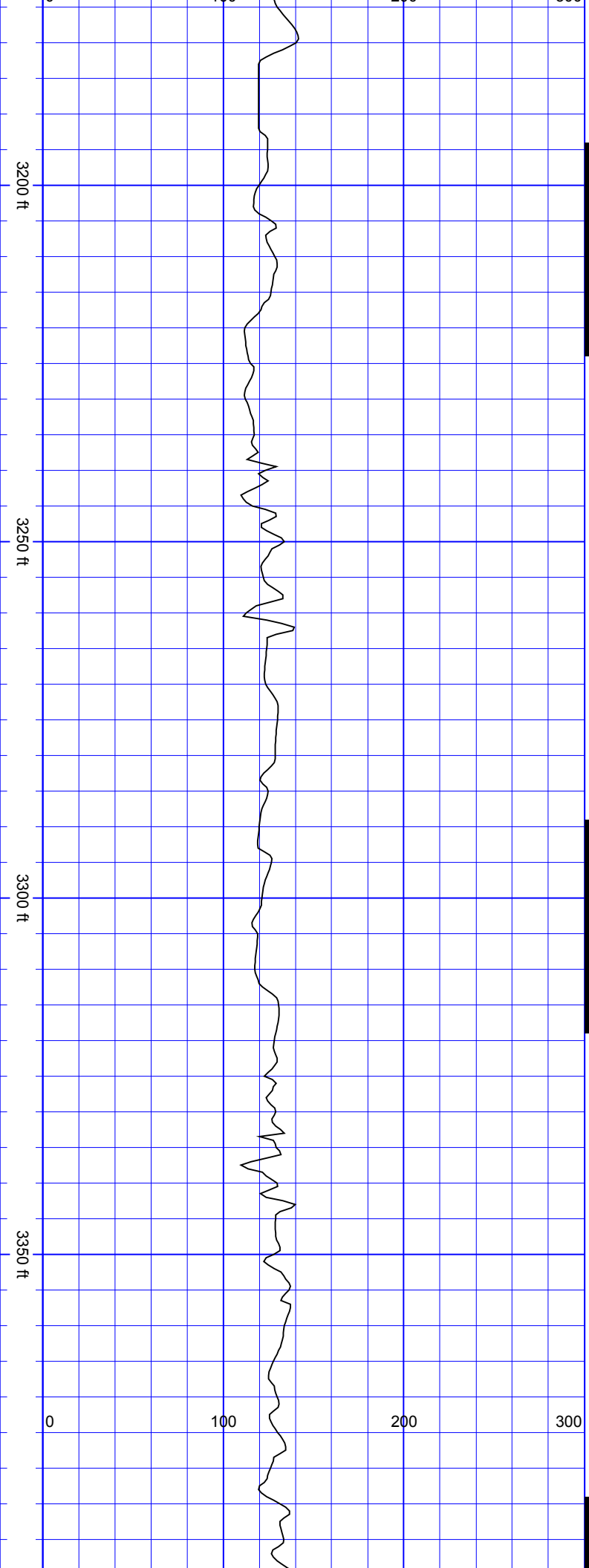




SurveyDepth:3036
TVD:2998.65 Inc:10.81
Azi:196.34 VertSec:-414.51

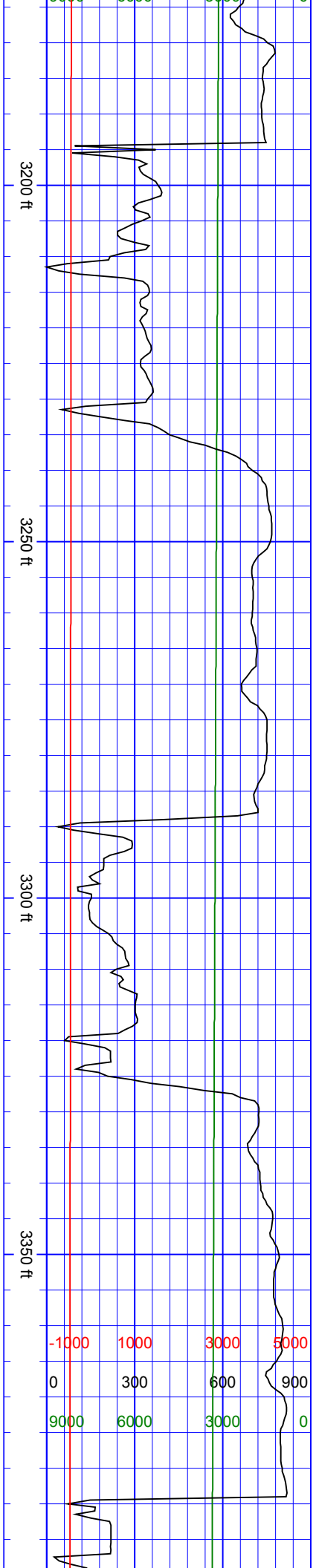
SurveyDepth:3130
TVD:3091.23 Inc:9.1
Azi:195.38 VertSec:-430.18

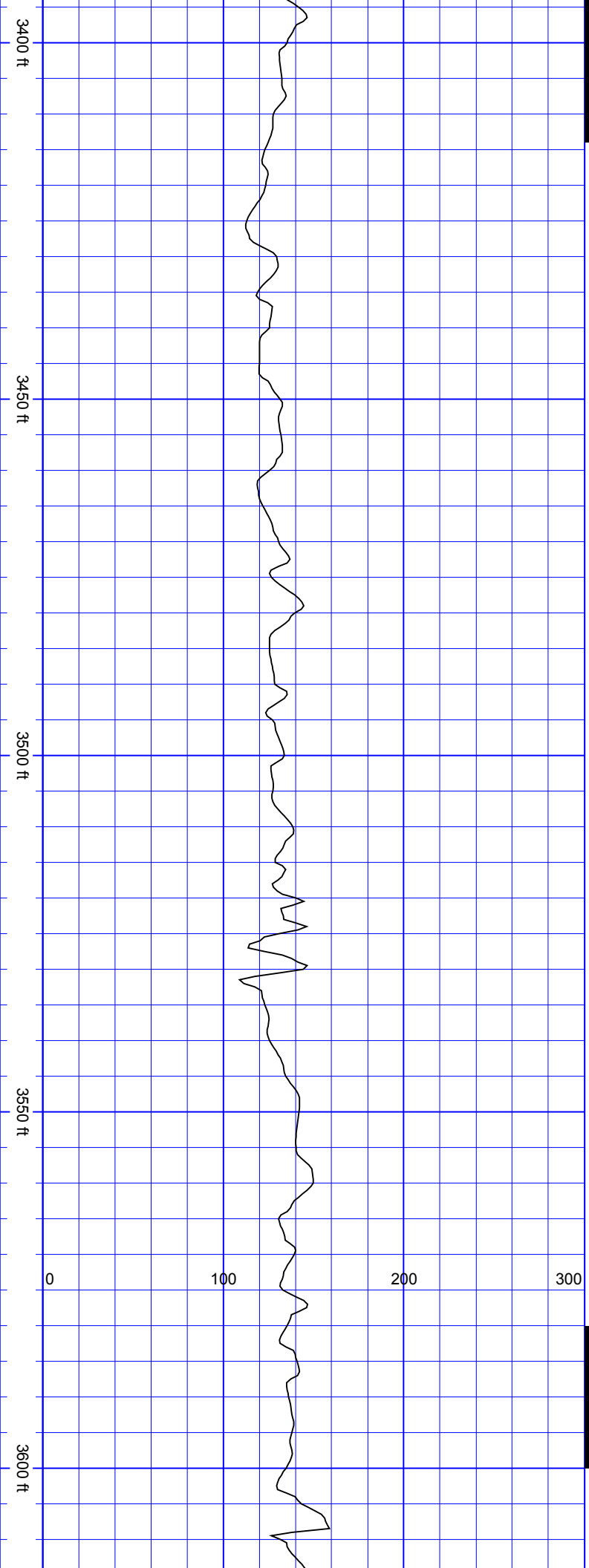




SurveyDepth:3225
TVD:3185.08 Inc:8.92
Azi:215.42 VertSec:-443.48

SurveyDepth:3320
TVD:3278.63 Inc:11.12
Azi:216.56 VertSec:-456.92

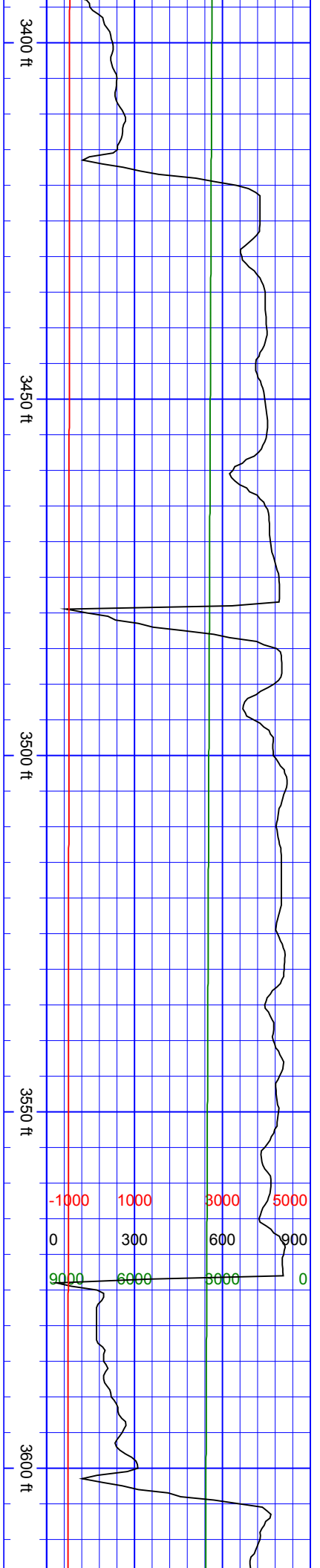


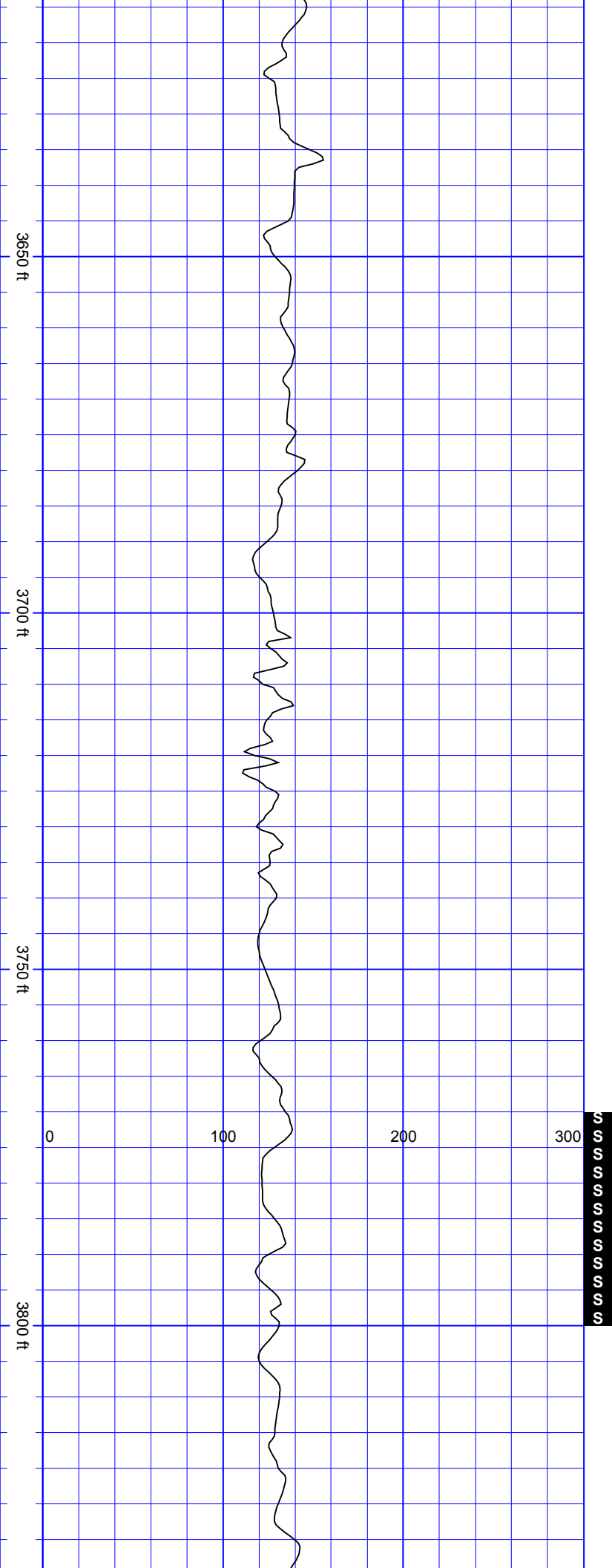


SurveyDepth:3414
TVD:3370.6 Inc:12.79
Azi:206.1 VertSec:-
473.63

SurveyDepth:3509
TVD:3463.59 Inc:10.77
Azi:204.78 VertSec:-
491.2

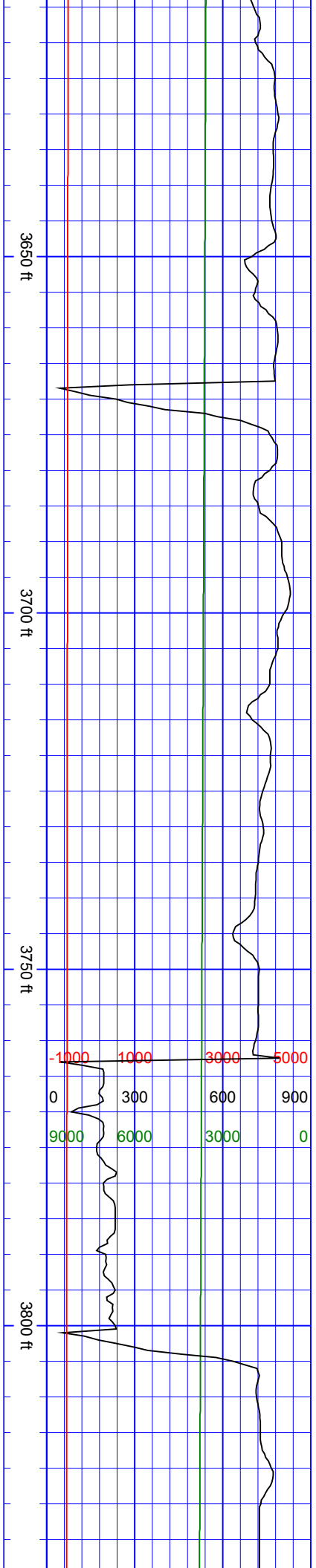
SurveyDepth:3604
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Azi:193.18 VertSec:-
507.73

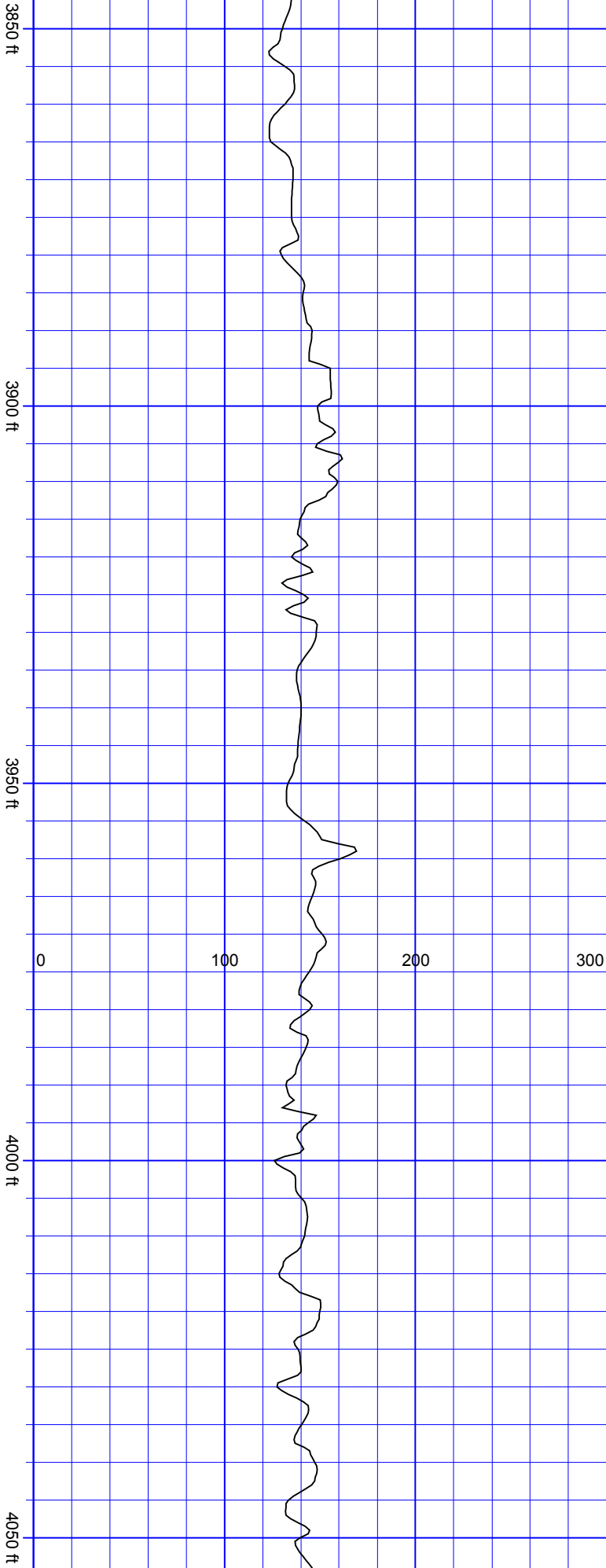




SurveyDepth:3698
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Azi:194.76 VertSec:-
523.29

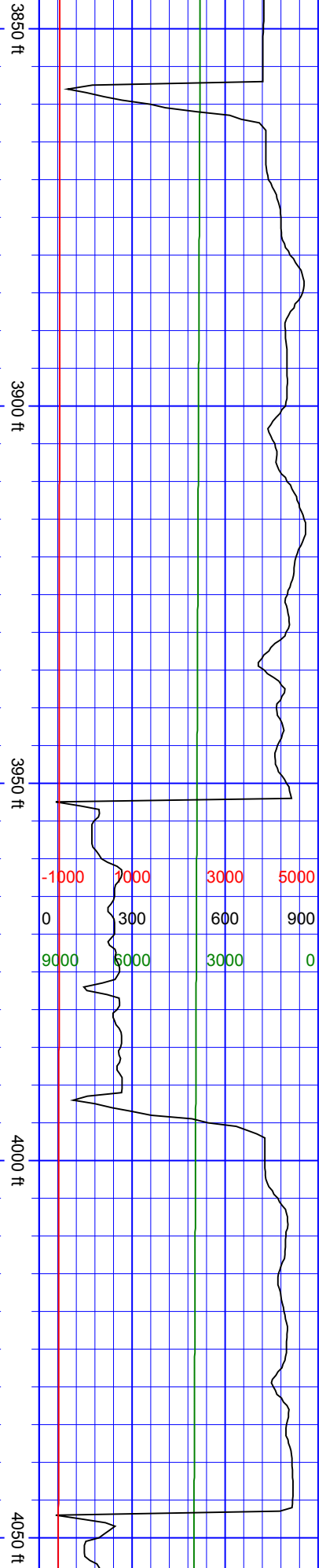
SurveyDepth:3793
TVD:3743.28 Inc:10.02
Azi:184.74 VertSec:-
538.82



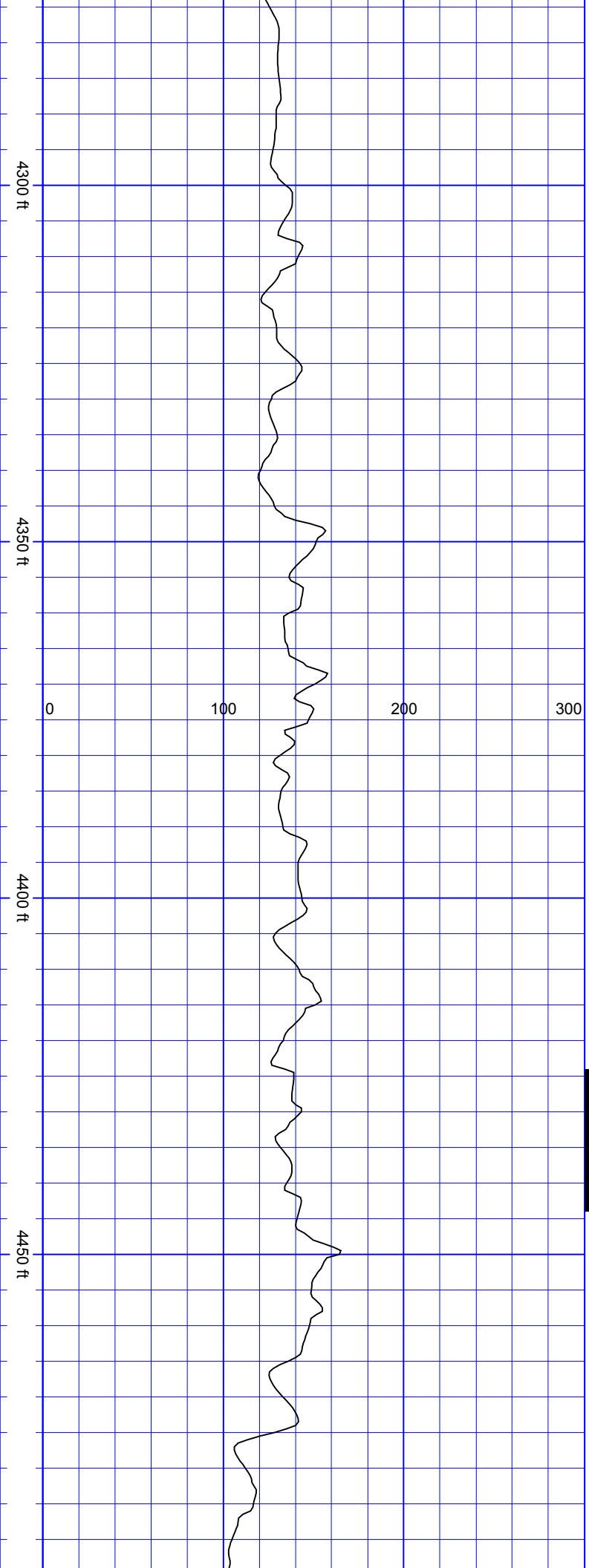


SurveyDepth:3888
TVD:3837.12 Inc:7.87
Azi:183.07 VertSec:-
553.56

SurveyDepth:3982
TVD:3930.13 Inc:8.83
Azi:194.76 VertSec:-
566.98

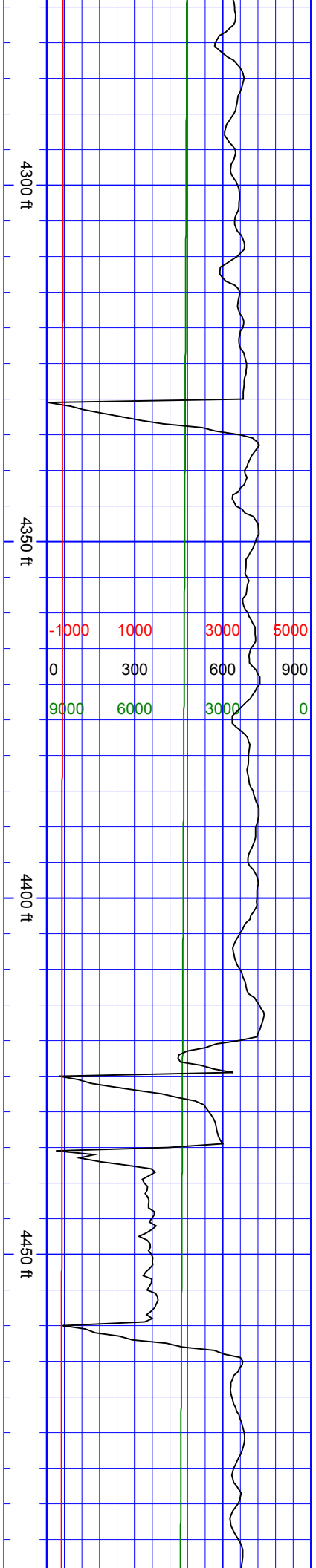


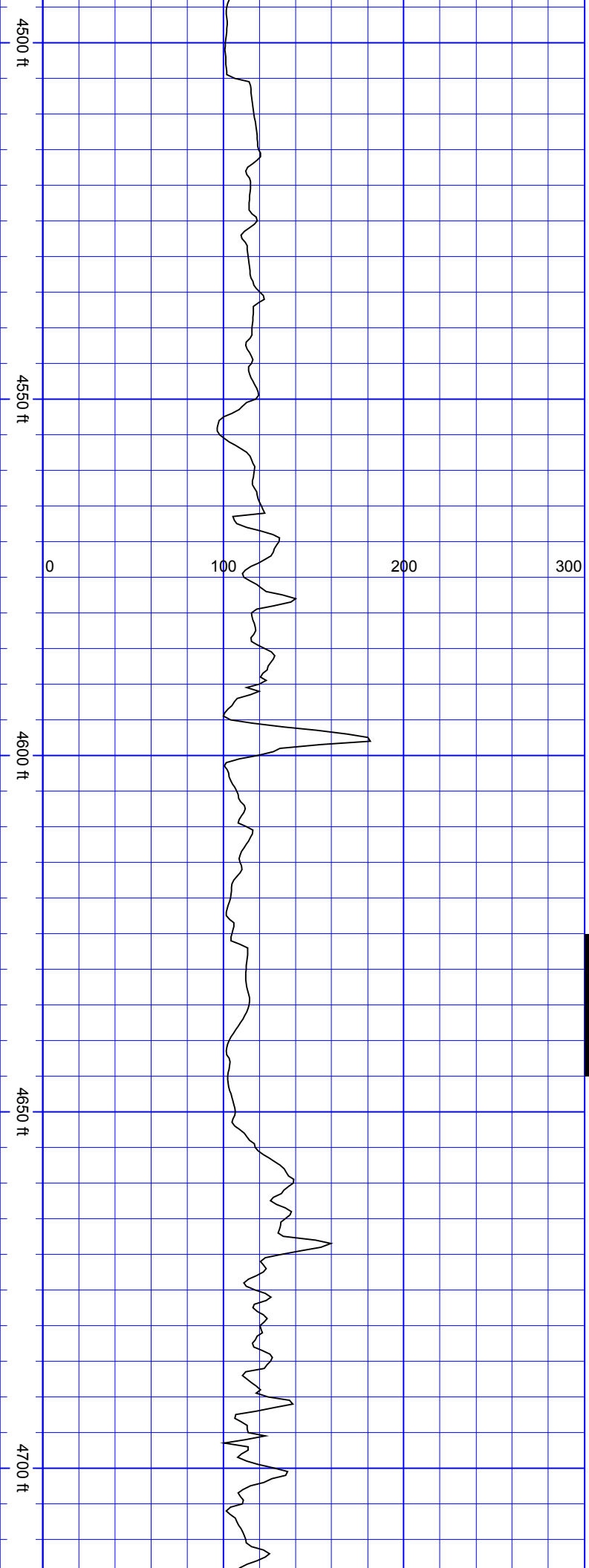
623.15



SurveyDepth:4360
TVD:4300.67 Inc:8.88
Azi:190.9 VertSec:-
639.57

SurveyDepth:4466
TVD:4405.32 Inc:9.45
Azi:190.46 VertSec:-
656.18

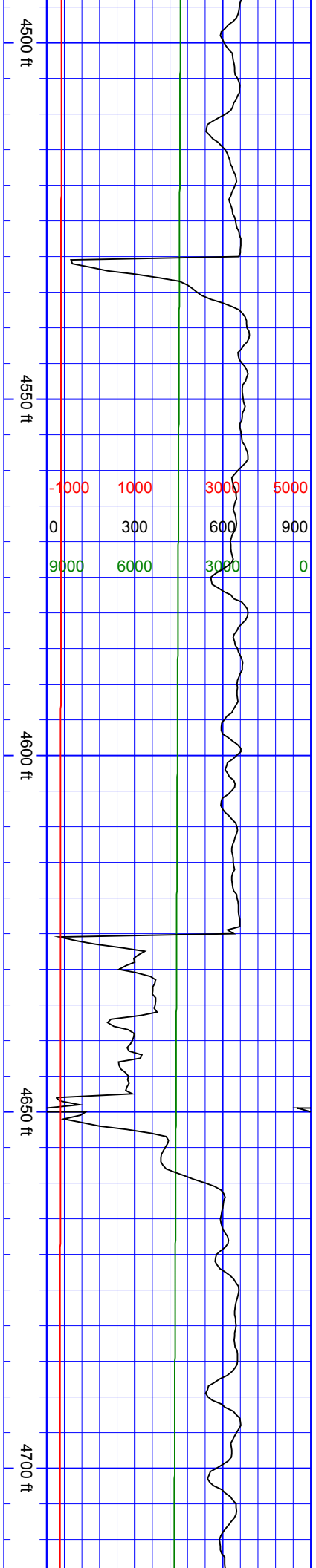


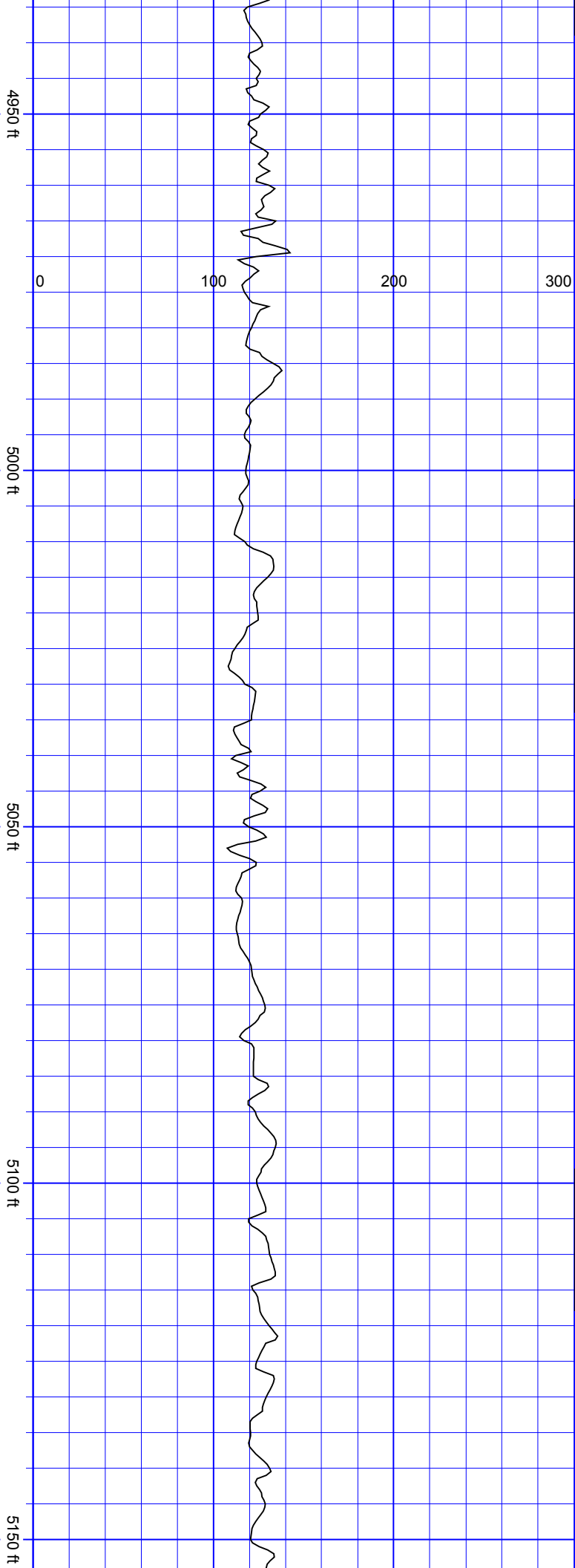


SurveyDepth:4561
TVD:4499.13 Inc:8.66
Azi:190.28 VertSec:-
670.91

SSSSSSSS

SurveyDepth:4656
TVD:4593.04 Inc:8.79
Azi:198.01 VertSec:-
684.88





S

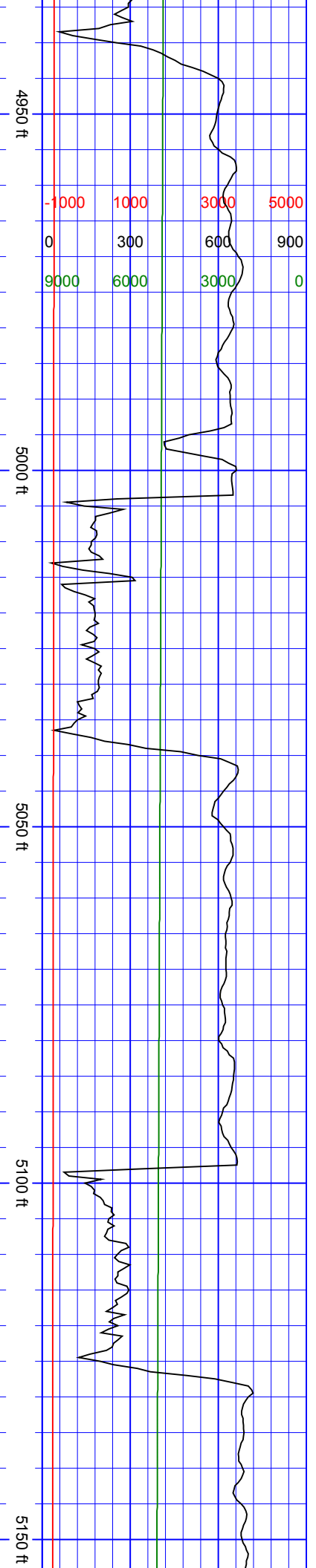
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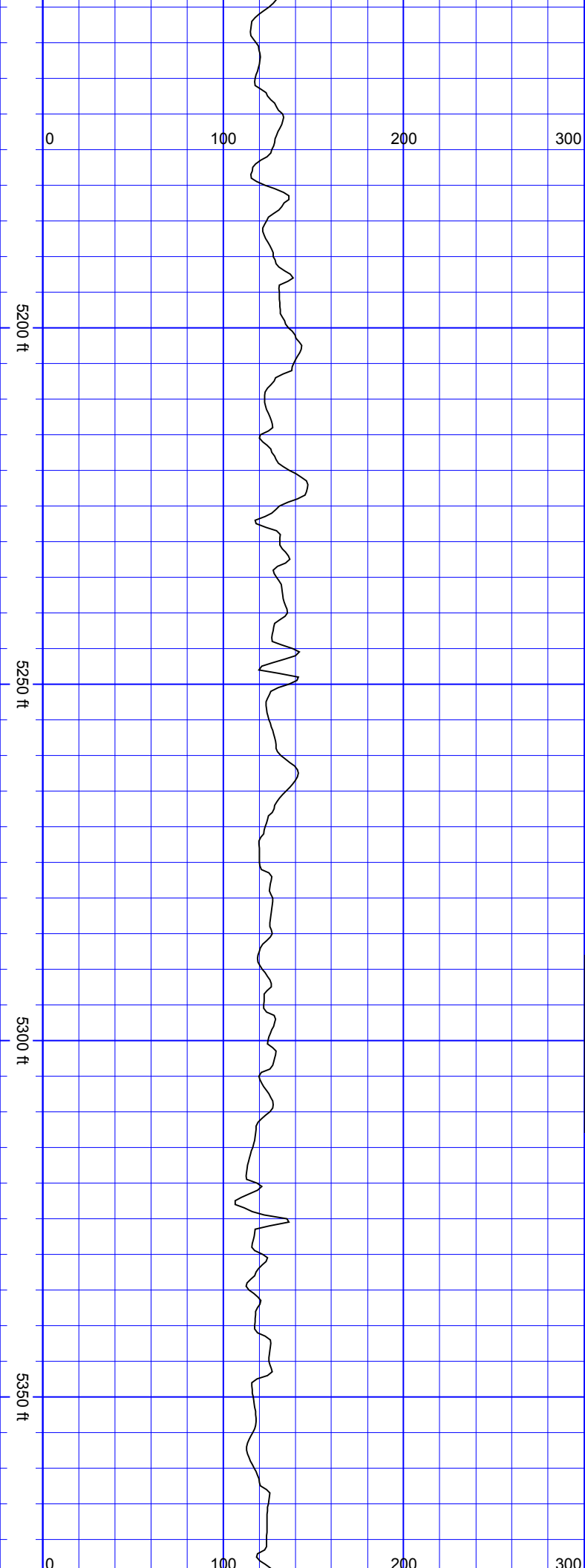
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SurveyDepth:4940
TVD:4873.45 Inc:12.57
Azi:221.04 VertSec:-
723.62

SurveyDepth:5034
TVD:4965.65 Inc:10.06
Azi:201.79 VertSec:-
739.05

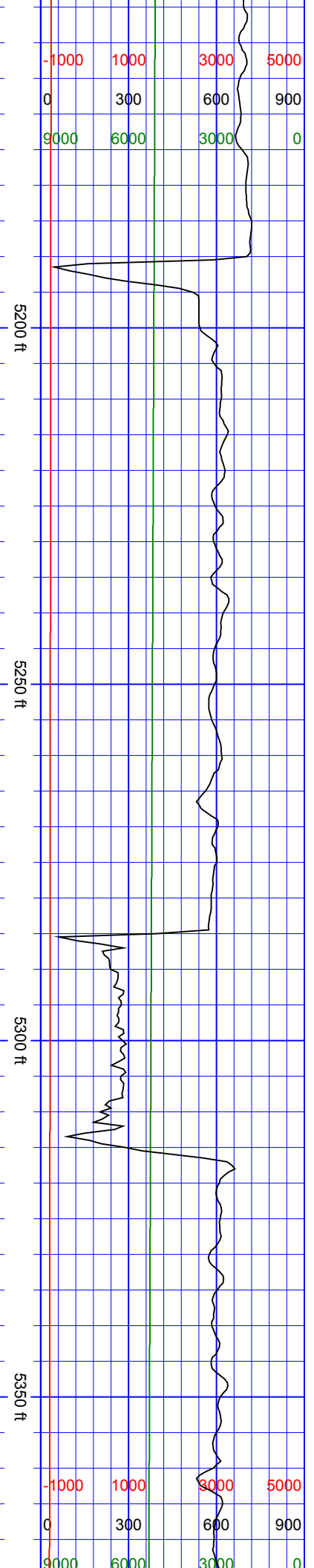
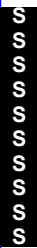
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TVD:5059.19 Inc:10.24
Azi:182.19 VertSec:-
755.22

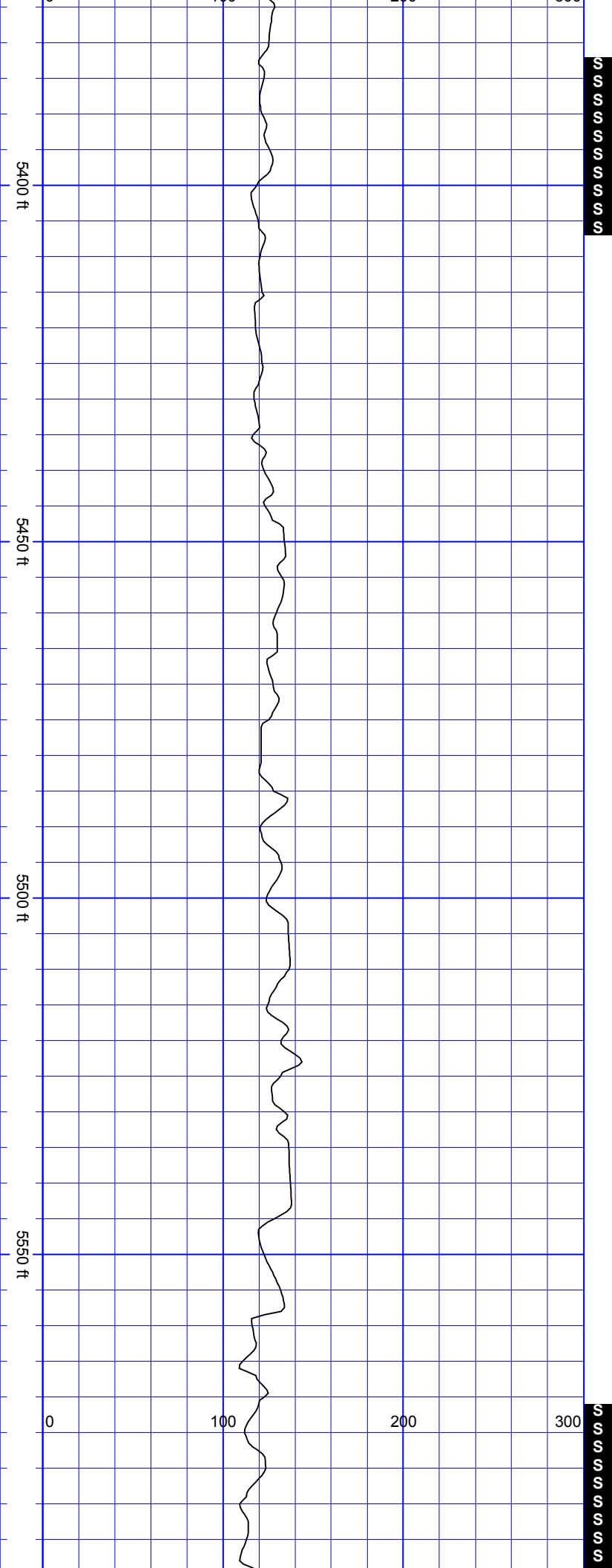




SurveyDepth:5224
TVD:5153.01 Inc:7.87
Azi:170.33 VertSec:-
770.07

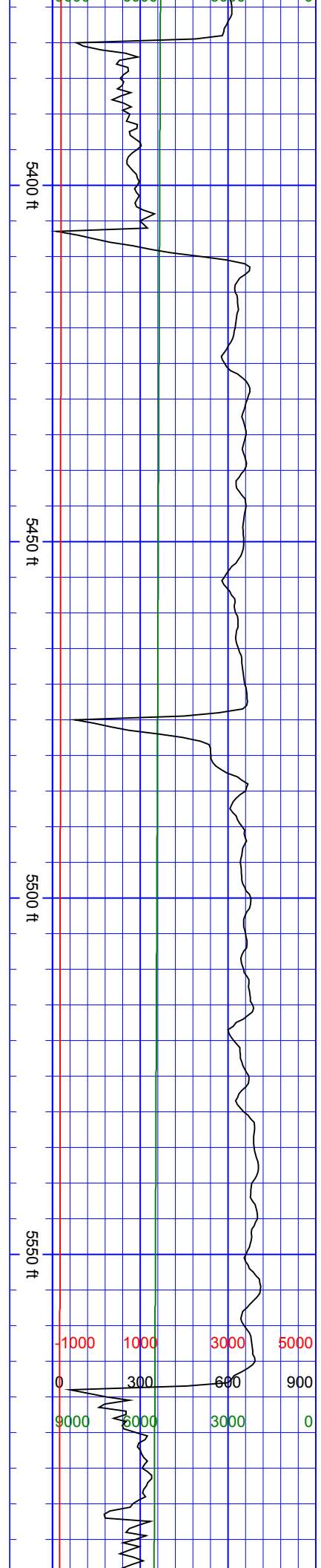
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TVD:5245.86 Inc:10.11
Azi:185.09 VertSec:-
784.63

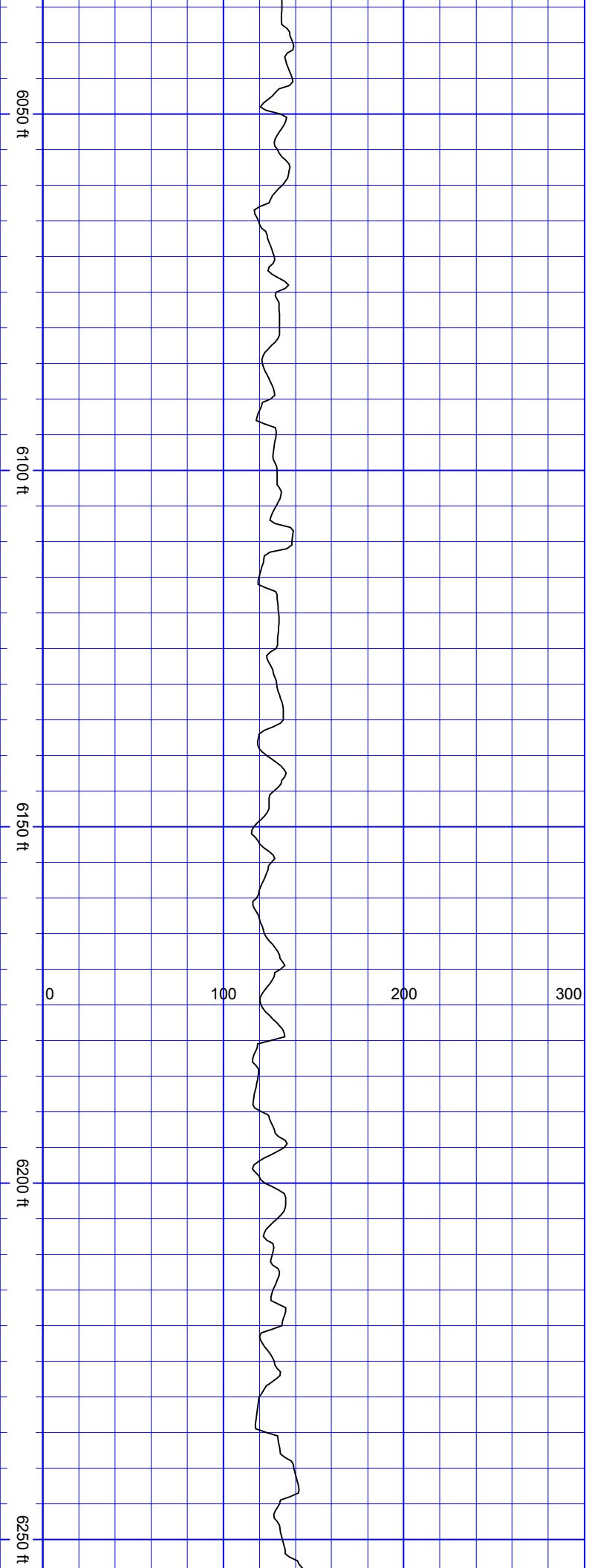




SurveyDepth:5413
TVD:5339.13 Inc:11.82
Azi:193.97 VertSec:-802.4

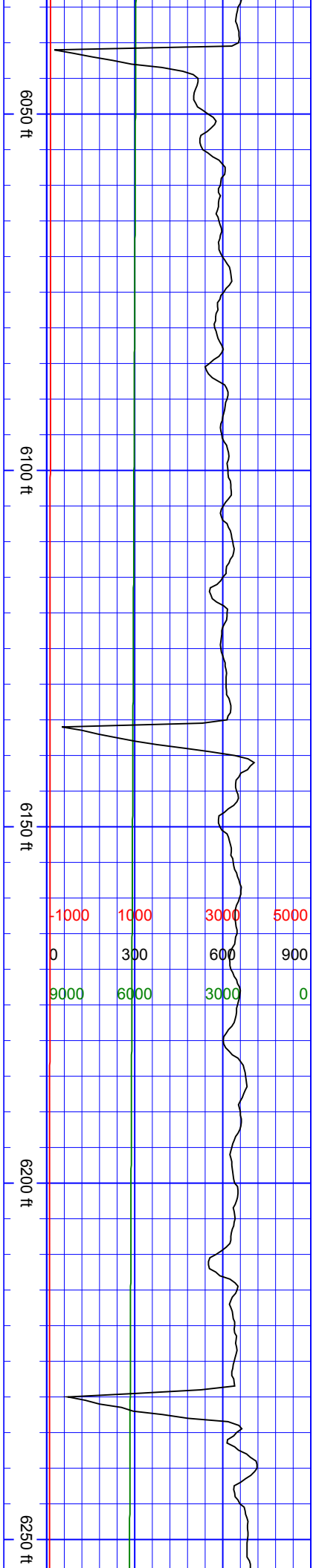
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TVD:5431.53 Inc:9.32
Azi:190.37 VertSec:-819.27

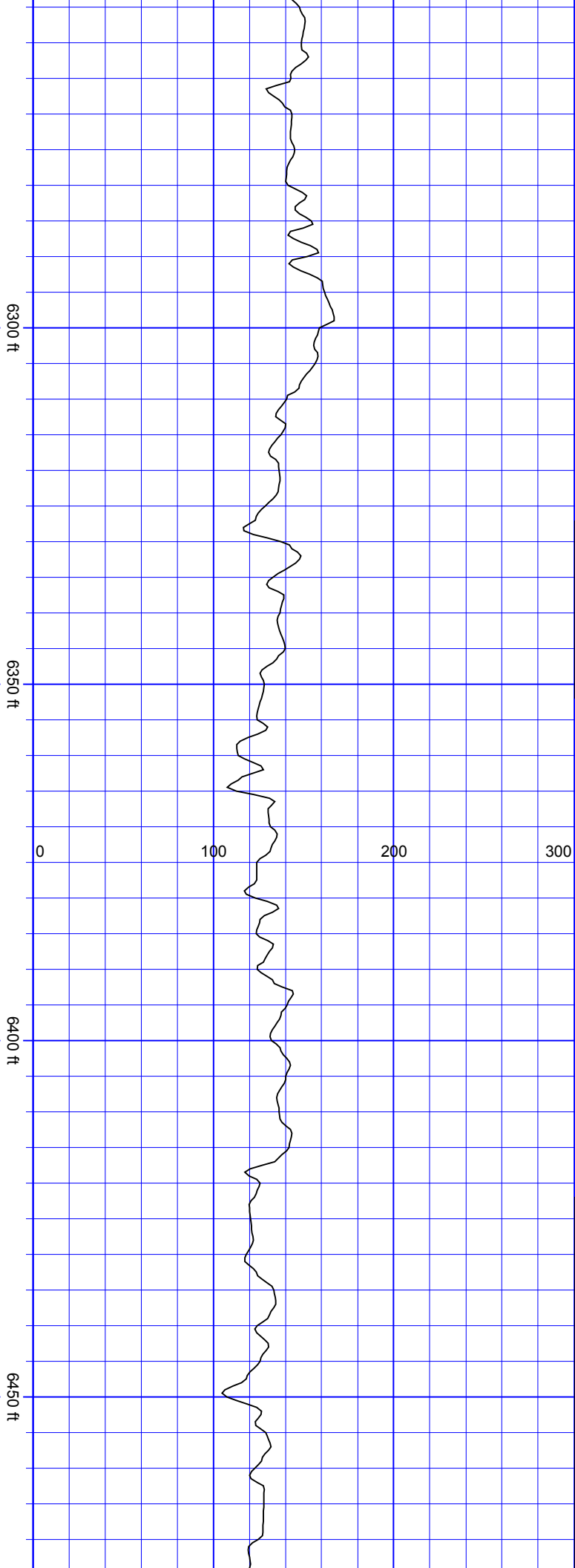




SurveyDepth:6075
TVD:5991.66 Inc:9.01
Azi:181.49 VertSec:-
909.98

SurveyDepth:6169
TVD:6084.76 Inc:6.81
Azi:177.8 VertSec:-
922.91

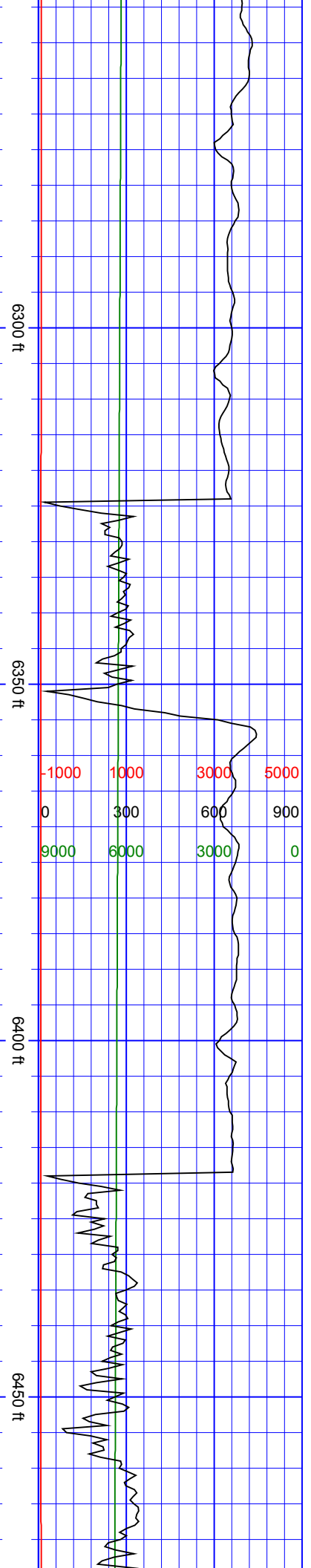


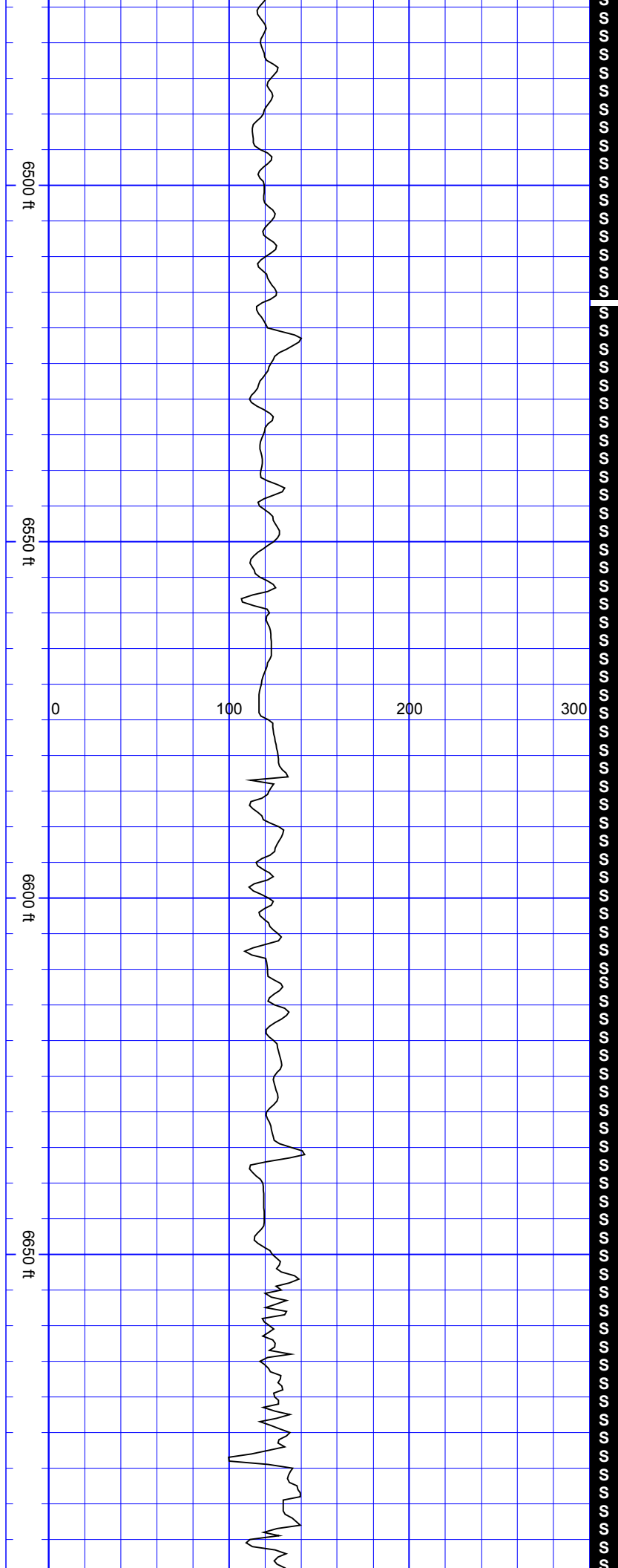


SurveyDepth:6263
TVD:6178.29 Inc:4.66
Azi:171.38 VertSec:-
932.25

SurveyDepth:6358
TVD:6273.14 Inc:1.49
Azi:191.33 VertSec:-
937.27

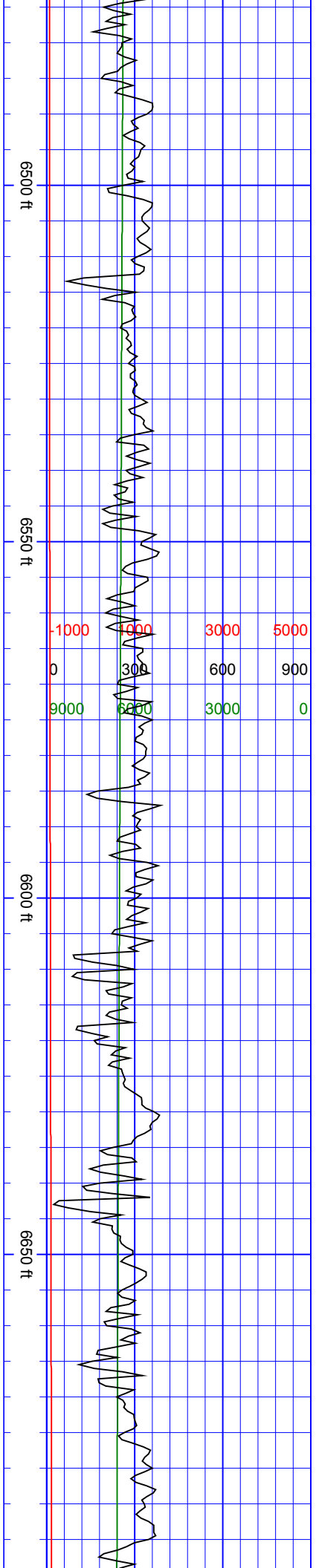
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TVD:6368.12 Inc:1.93
Azi:345.14 VertSec:-
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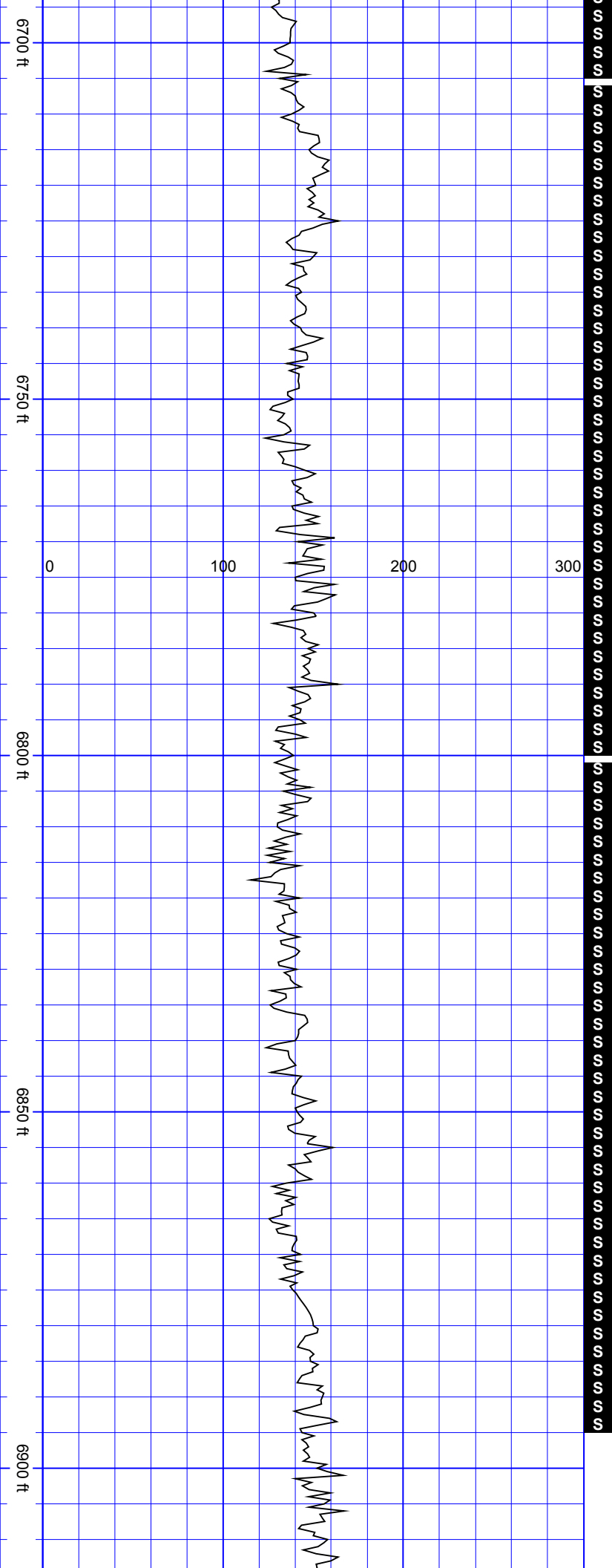




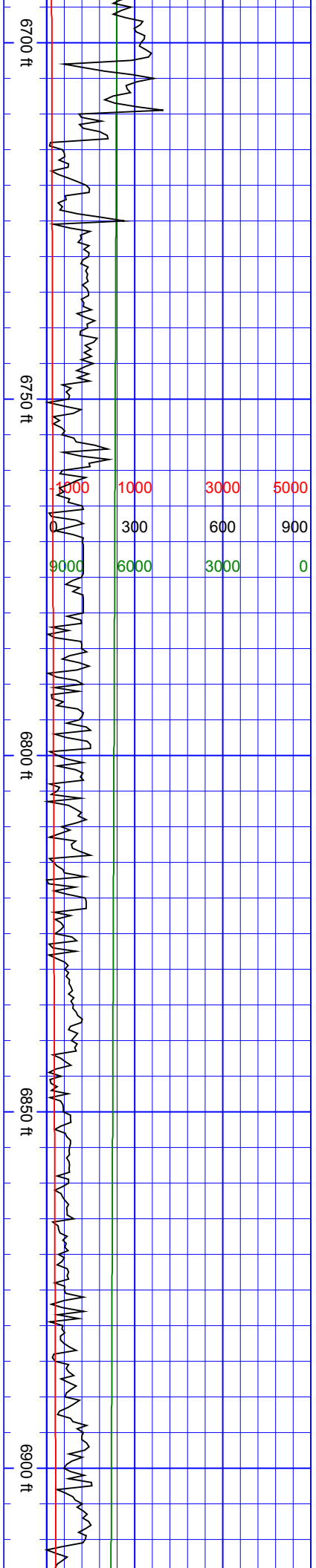
SurveyDepth:6547
TVD:6461.29 Inc:12.17
Azi:359.47 VertSec:-
925.48

SurveyDepth:6642
TVD:6552.84 Inc:18.63
Azi:7.29 VertSec:-900.37

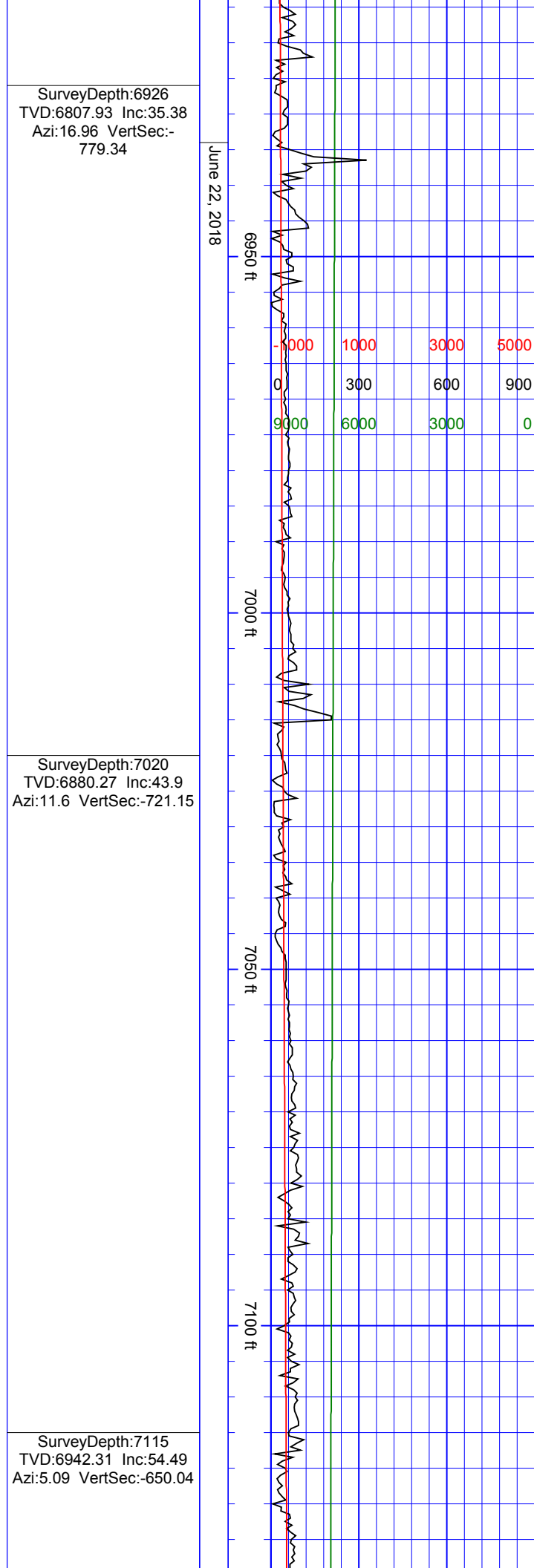
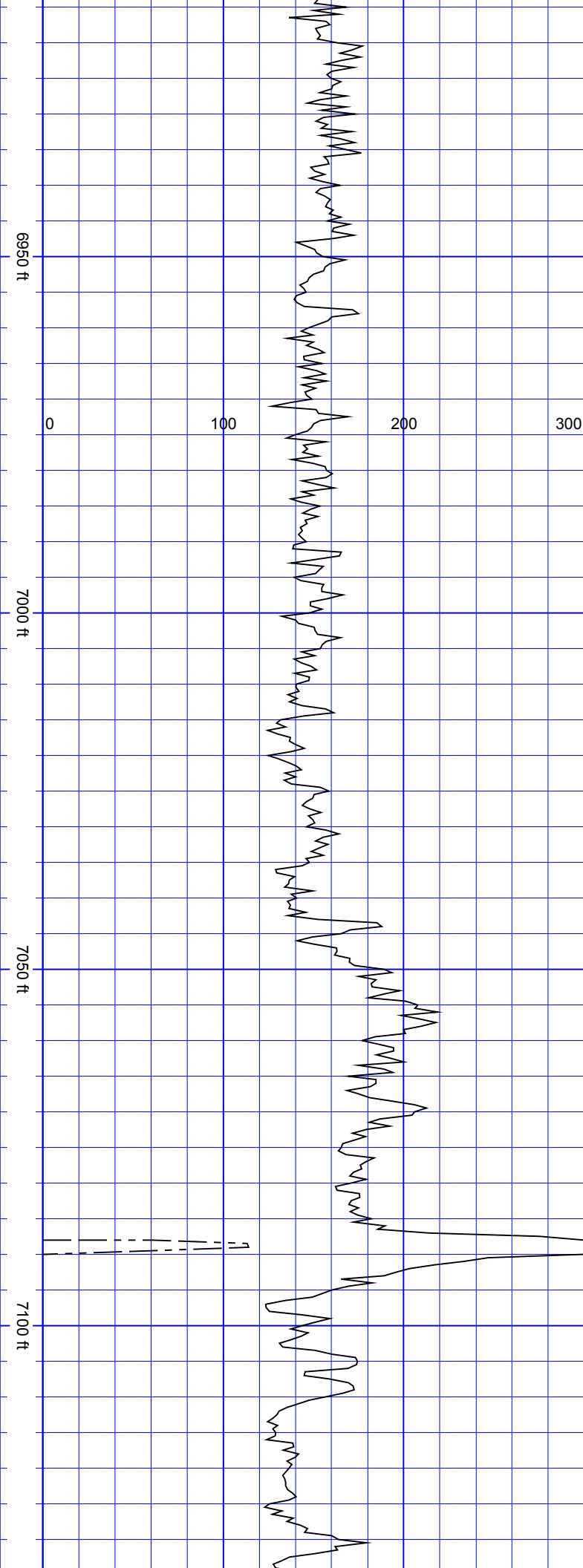


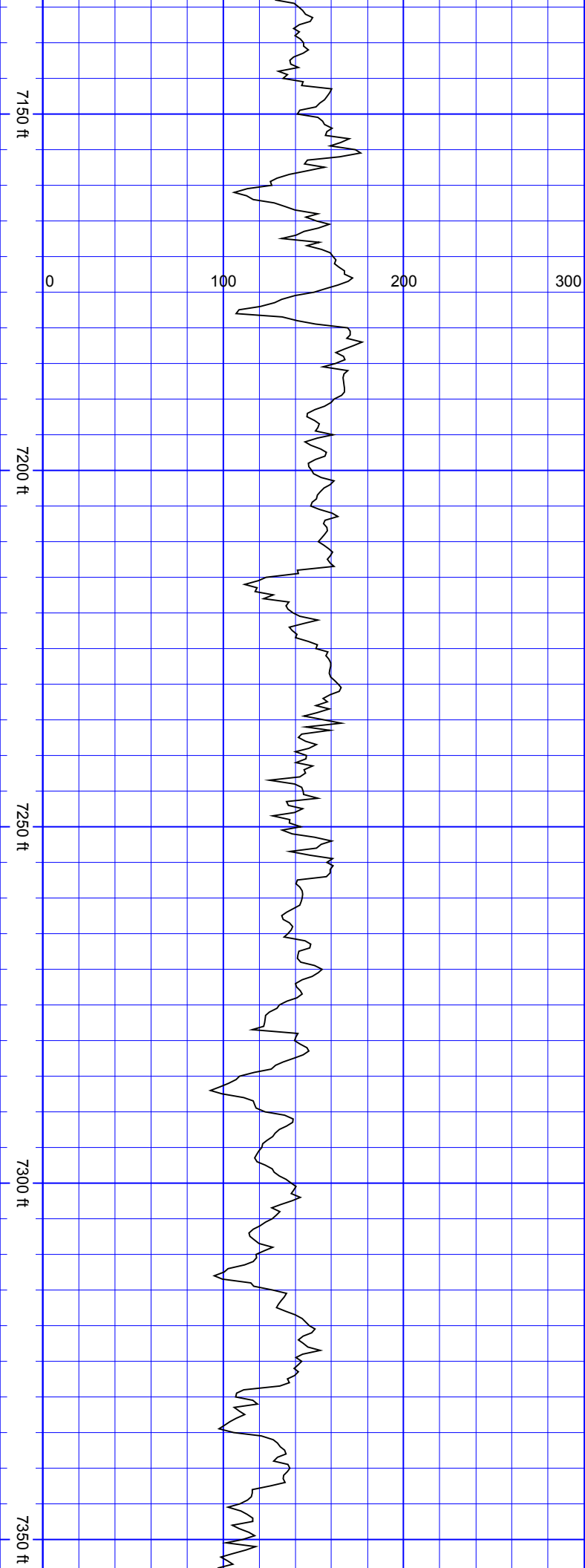


SurveyDepth:6737
TVD:6641.46 Inc:23.51
Azi:7.82 VertSec:-866.49



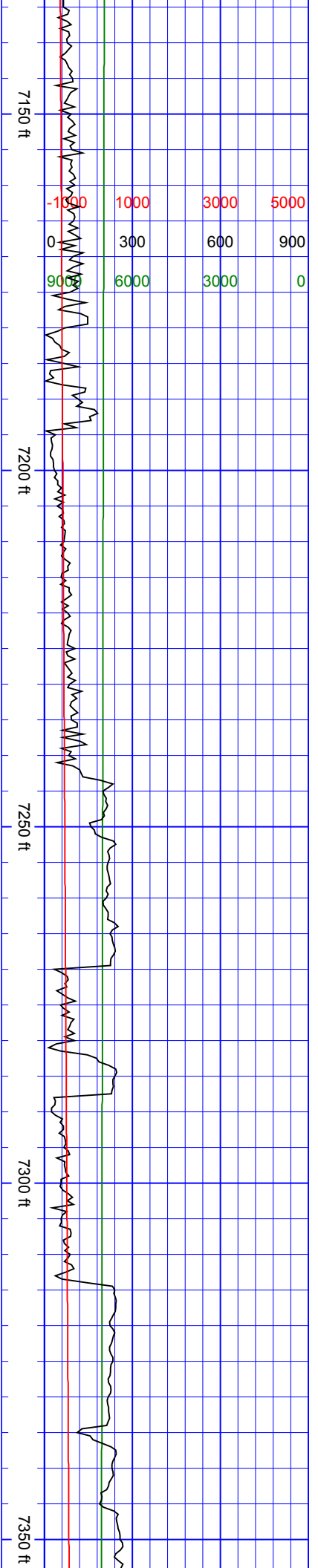
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Azi:8.43 VertSec:-826.51

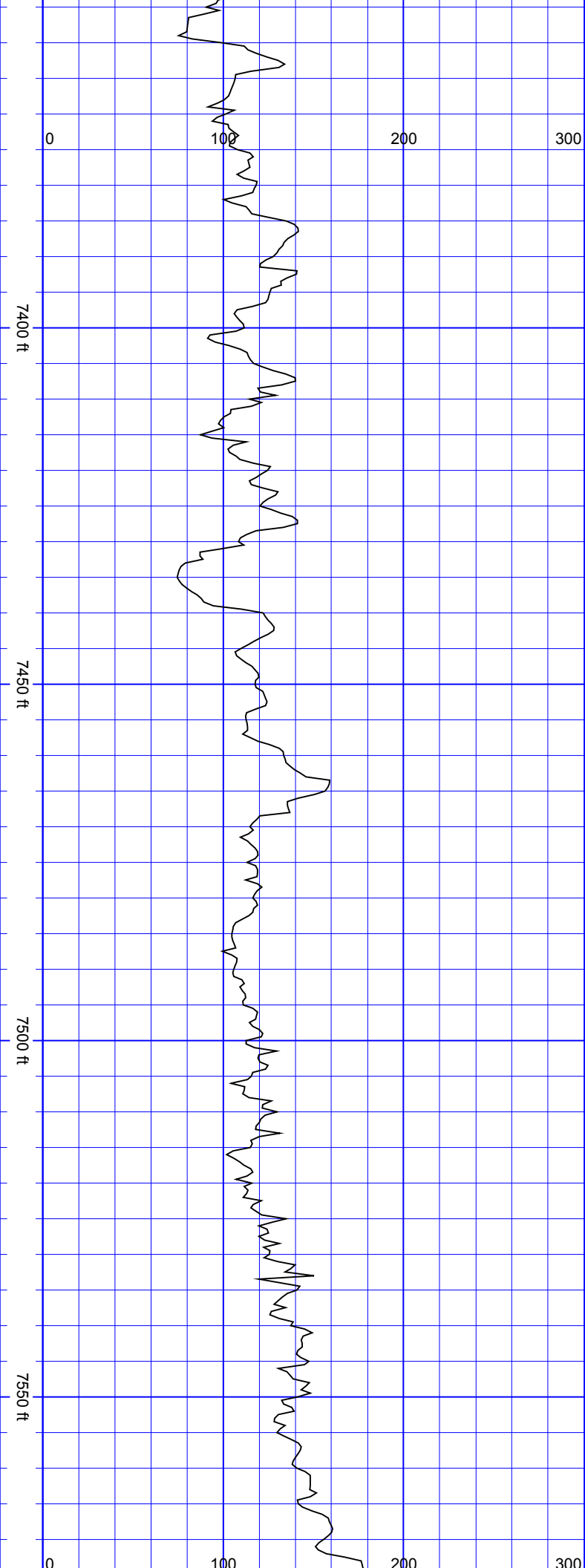




SurveyDepth:7209
TVD:6990.38 Inc:63.94
Azi:0.44 VertSec:-569.47

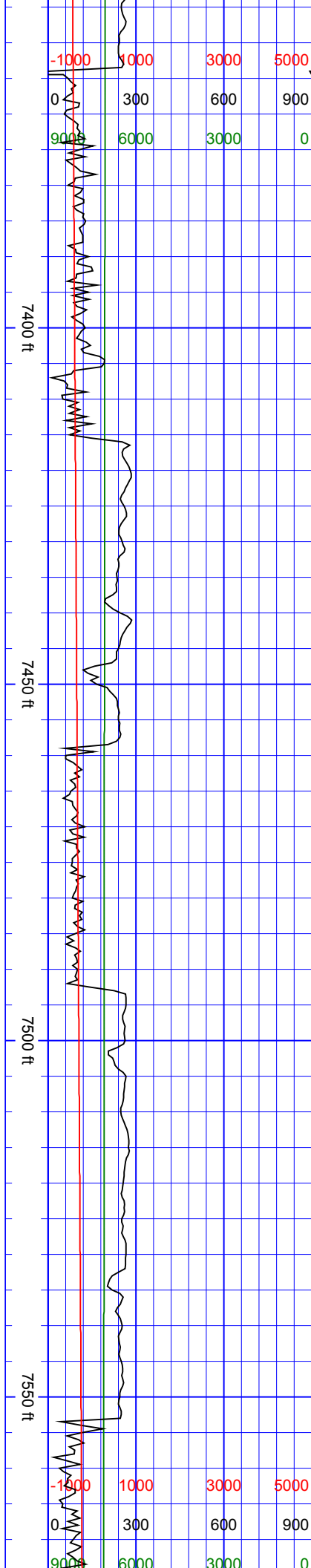
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TVD:7027.64 Inc:69.87
Azi:357.45 VertSec:-
482.17

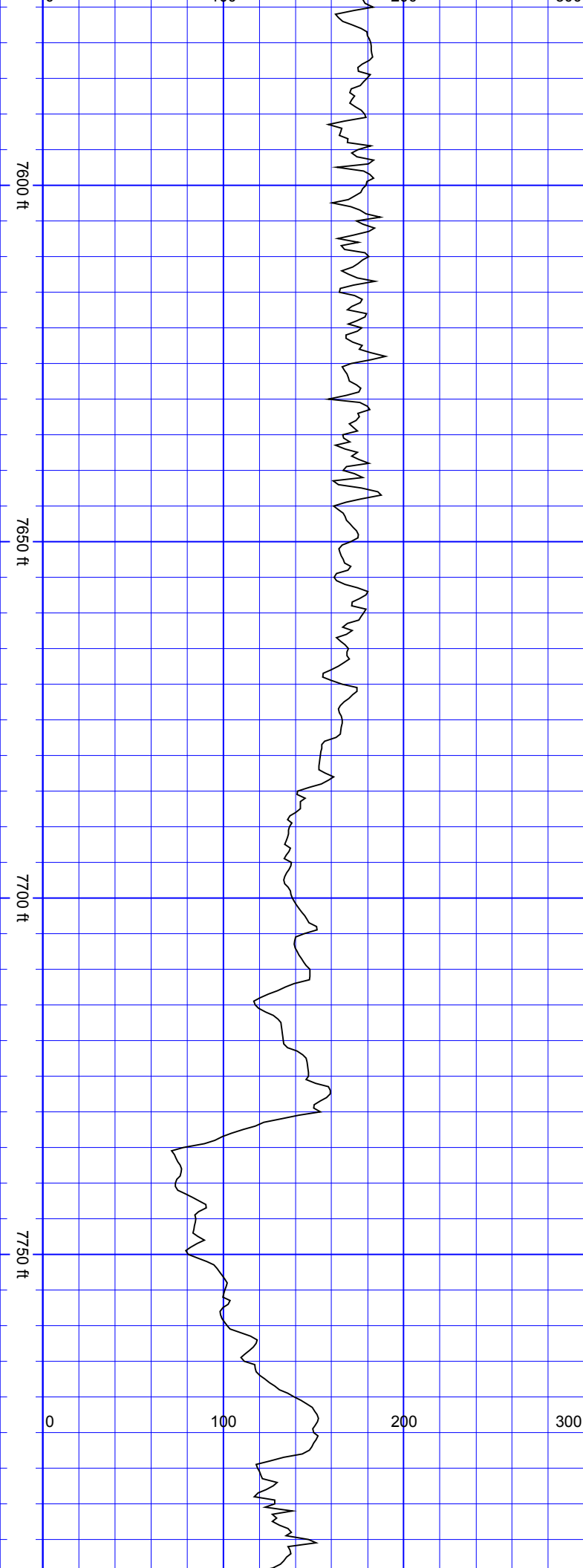




SurveyDepth:7399
TVD:7056.74 Inc:74.44
Azi:356.83 VertSec:-
391.92

SurveyDepth:7493
TVD:7078.78 Inc:78.44
Azi:355.87 VertSec:-
300.8

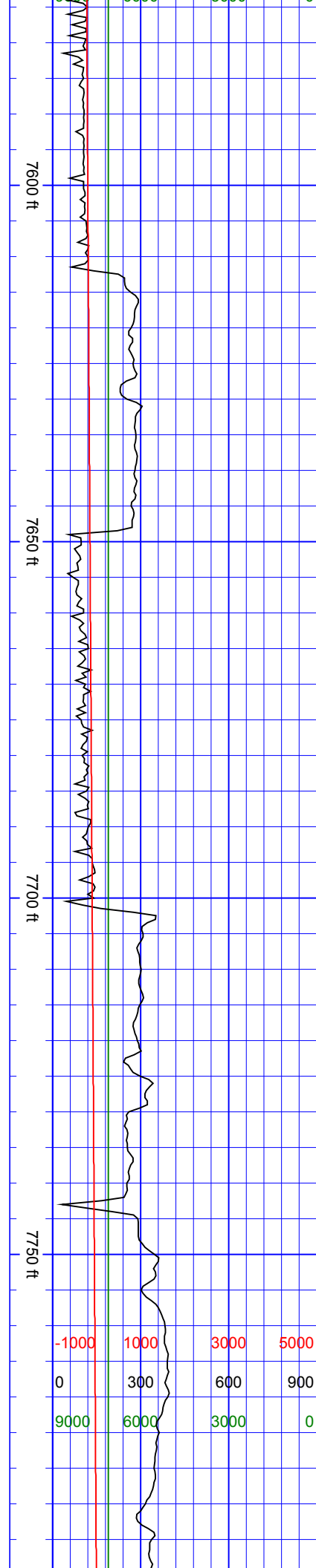


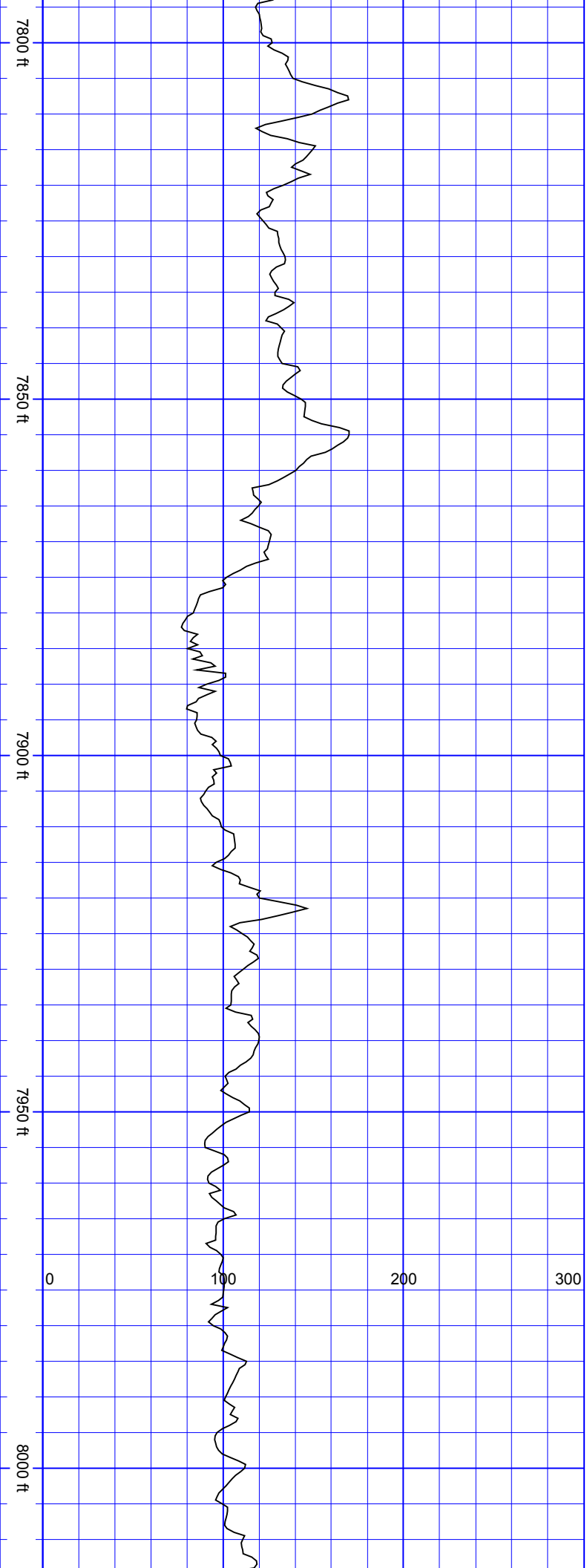


SurveyDepth:7588
TVD:7095.02 Inc:81.87
Azi:354.55 VertSec:-207.61

SurveyDepth:7683
TVD:7102.14 Inc:89.52
Azi:355.25 VertSec:-113.39

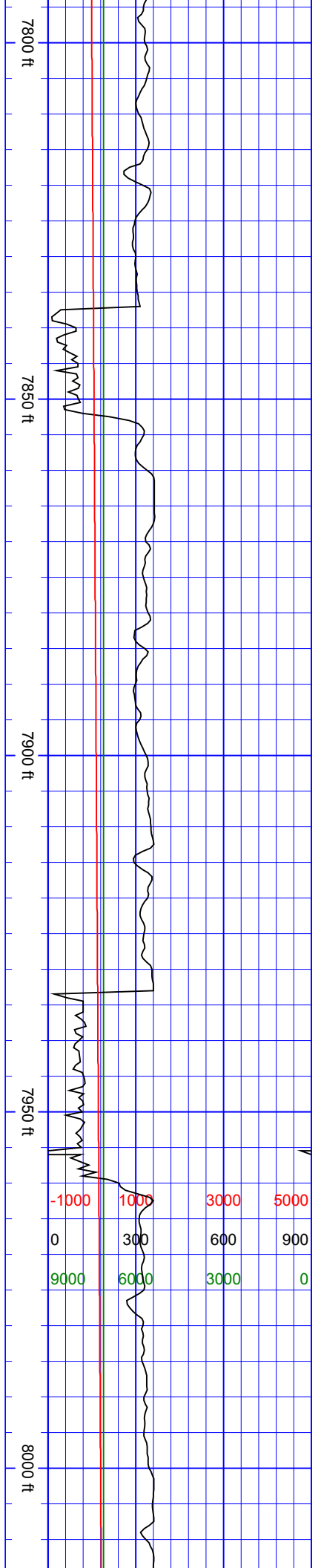
SurveyDepth:7777
TVD:7101.09 Inc:91.76
Azi:355.87 VertSec:-19.75





SurveyDepth:7872
TVD:7098.22 Inc:91.71
Azi:356.39
VertSec:74.94

SurveyDepth:7967
TVD:7097.56 Inc:89.08
Azi:356.92
VertSec:169.71



8050 ft

8100 ft

8150 ft

8200 ft

0 100 200 300

SurveyDepth:8061
TVD:7099.18 Inc:88.95
Azi:356.39
VertSec:263.49

SurveyDepth:8156
TVD:7101.43 Inc:88.33
Azi:355.25
VertSec:358.15

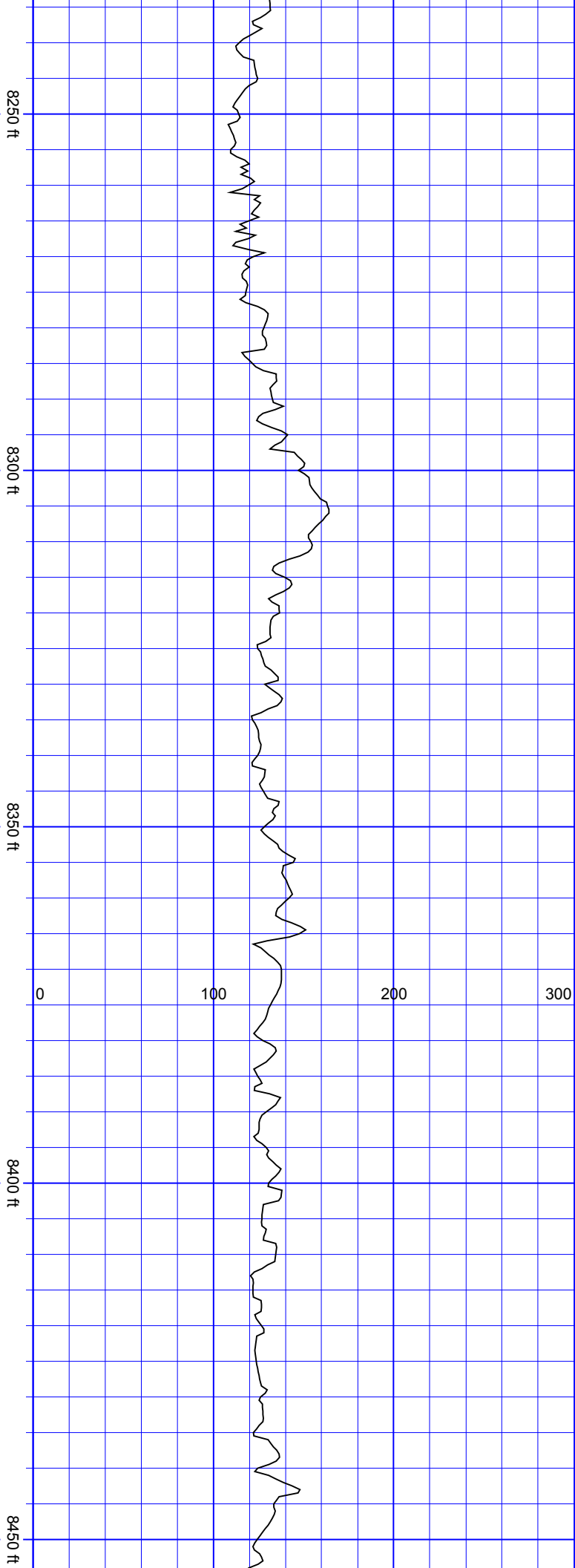
8050 ft

8100 ft

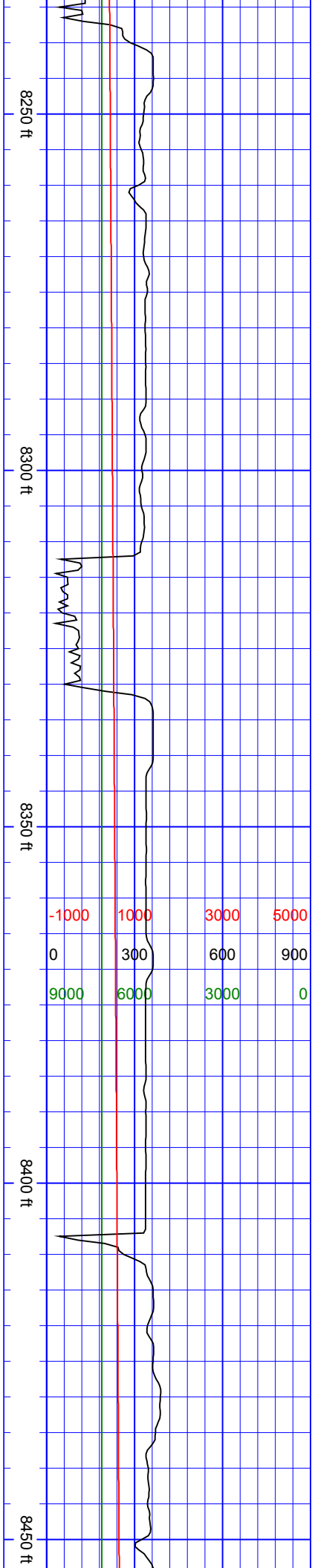
8150 ft

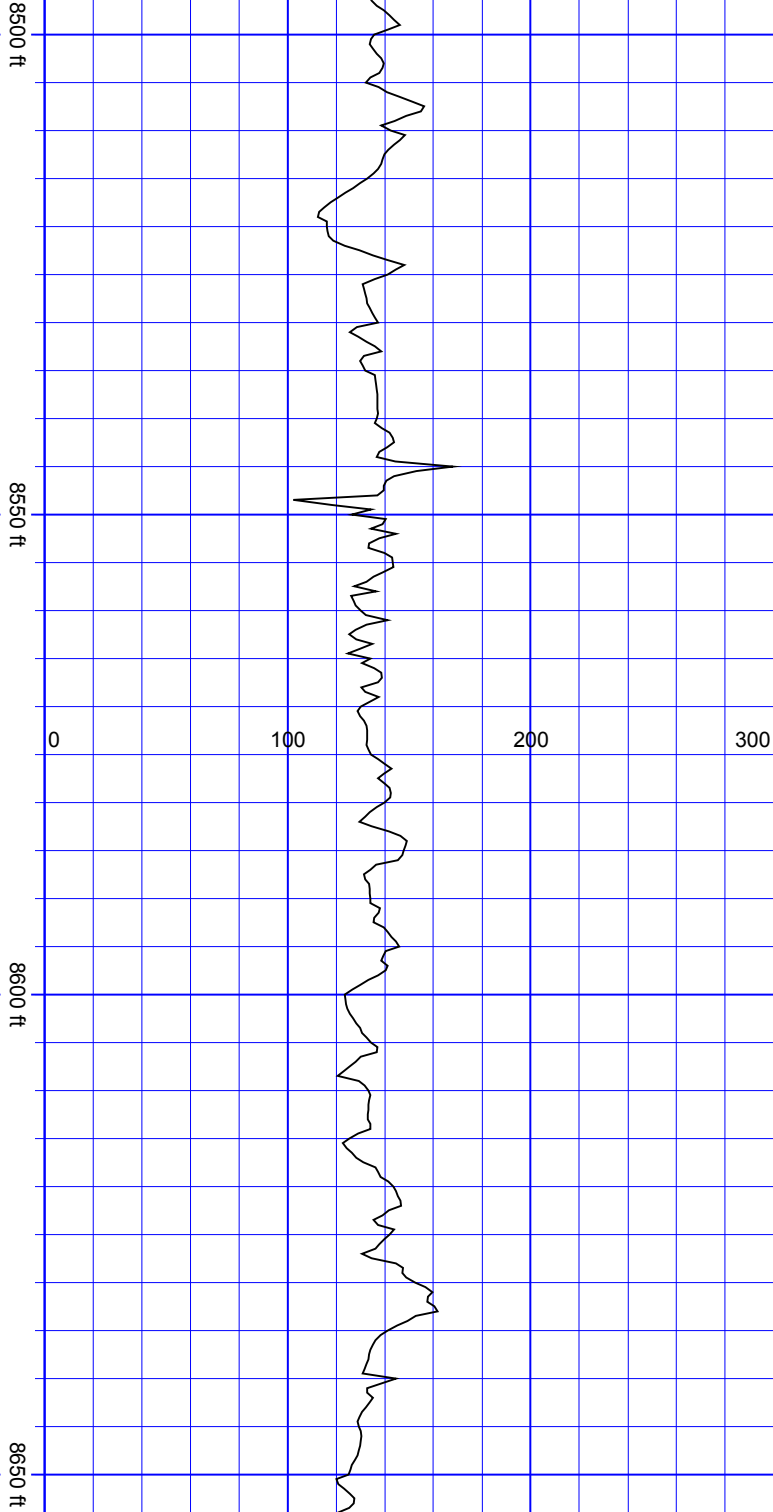
8200 ft

-1000	1000	3000	5000
0	300	600	900
9000	6000	3000	0



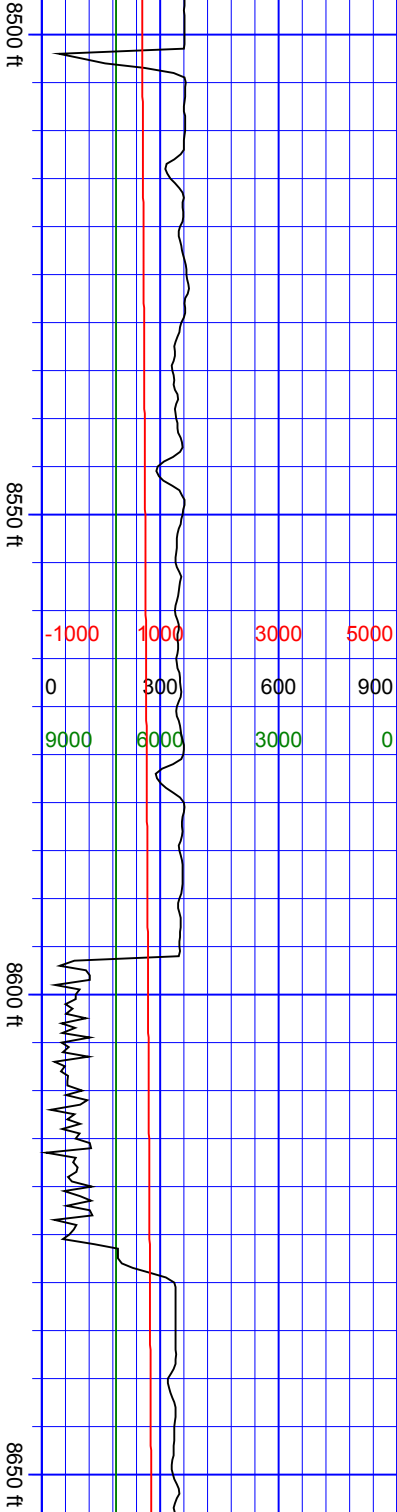
SurveyDepth:8251 TVD:7104.13 Inc:88.42 Azi:358.85 VertSec:452.93			
SurveyDepth:8346 TVD:7105.84 Inc:89.52 Azi:357.18 VertSec:547.82			
SurveyDepth:8440 TVD:7105.87 Inc:90.44 Azi:356.48 VertSec:641.63			

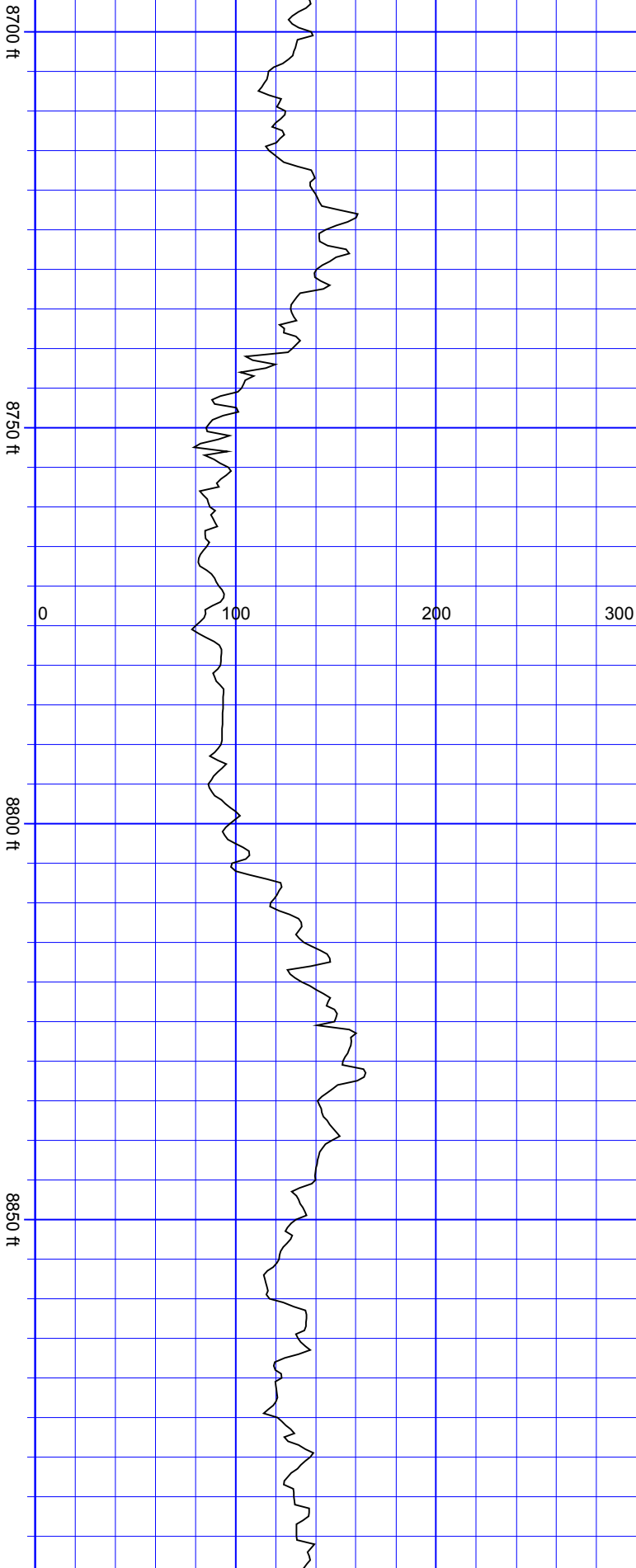




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TVD:7104.88 Inc:90.75
Azi:356.22
VertSec:736.38

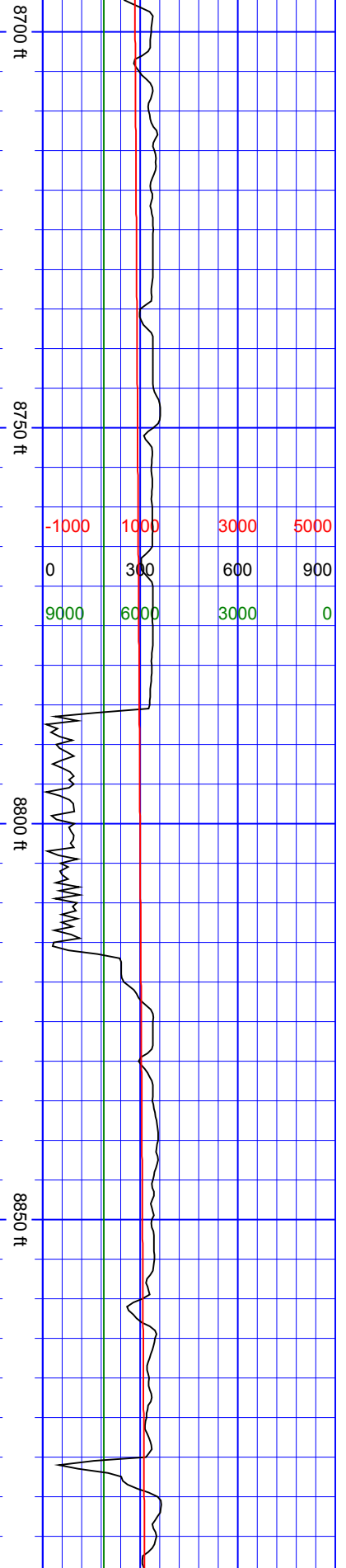
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TVD:7104.66 Inc:89.52
Azi:359.65
VertSec:831.27

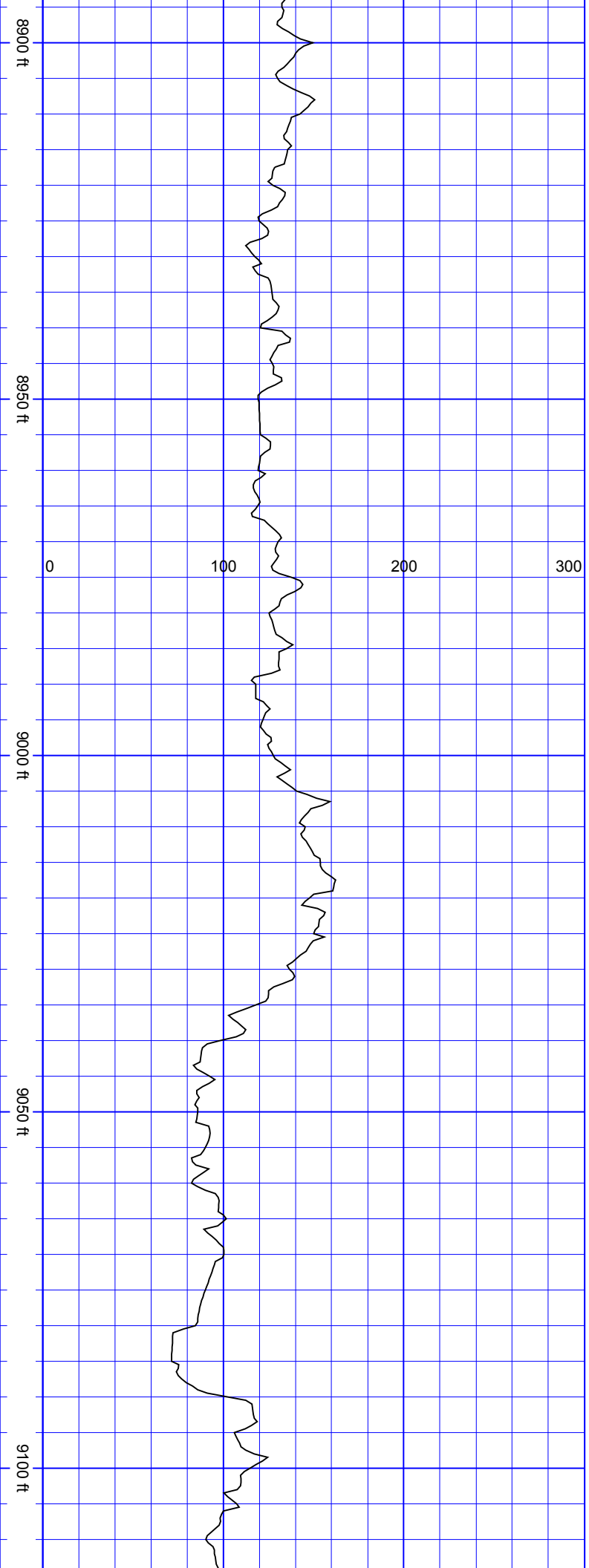




SurveyDepth:8725
TVD:7105.74 Inc:89.17
Azi:358.85
VertSec:926.24

SurveyDepth:8819
TVD:7106.43 Inc:90
Azi:1.4 VertSec:1020.23

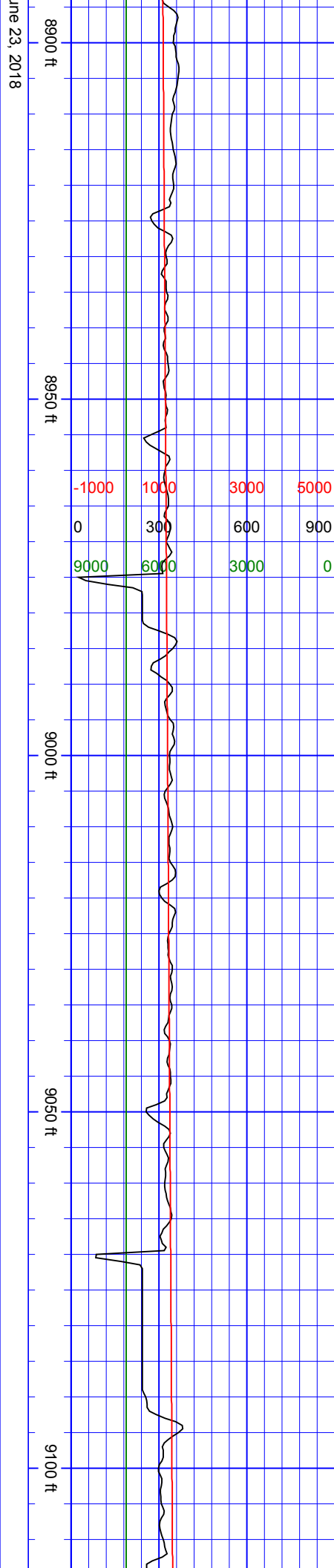


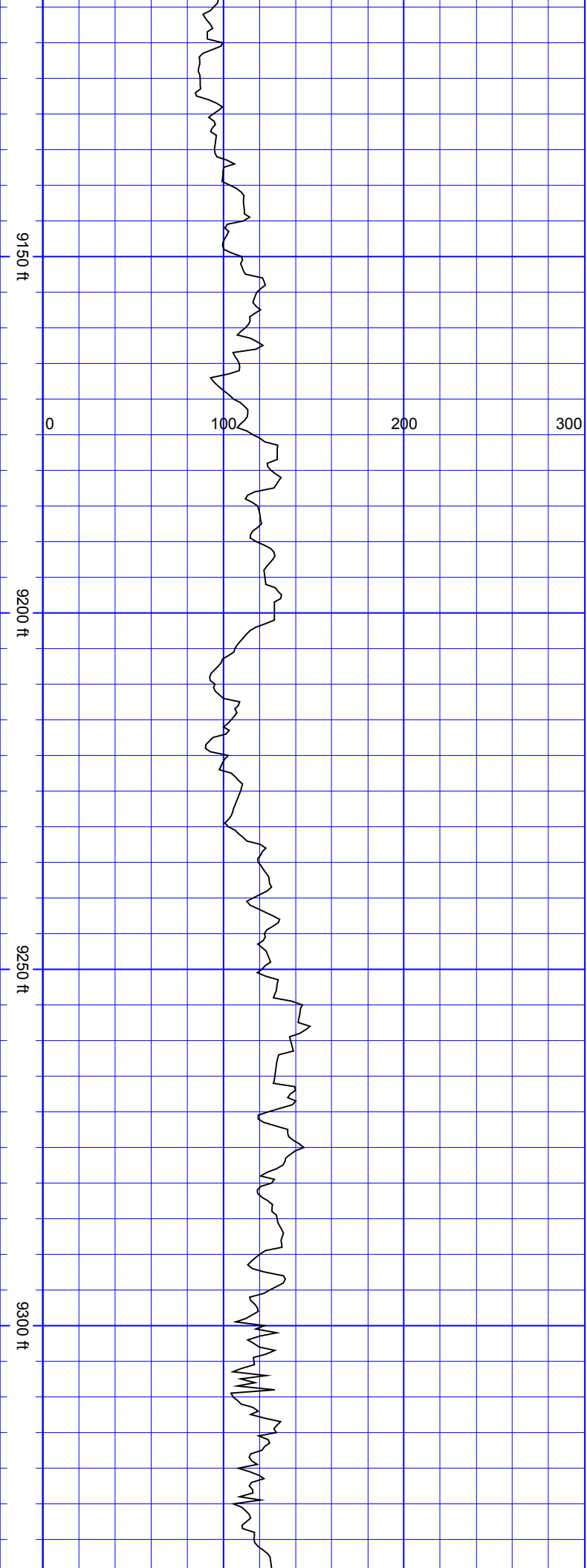


SurveyDepth:8914
TVD:7105.73 Inc:90.84
Azi:1.23
VertSec:1115.21

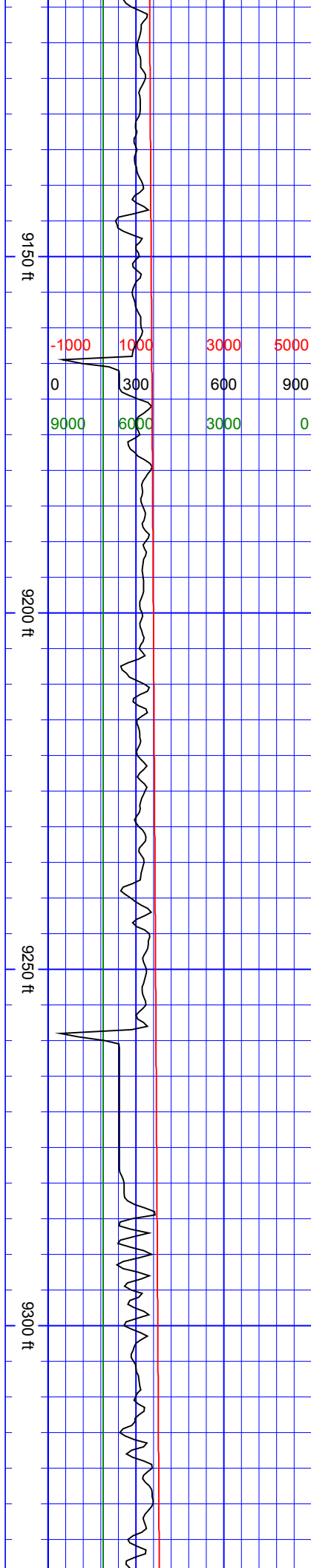
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TVD:7104.5 Inc:90.66
Azi:1.05 VertSec:1209.2

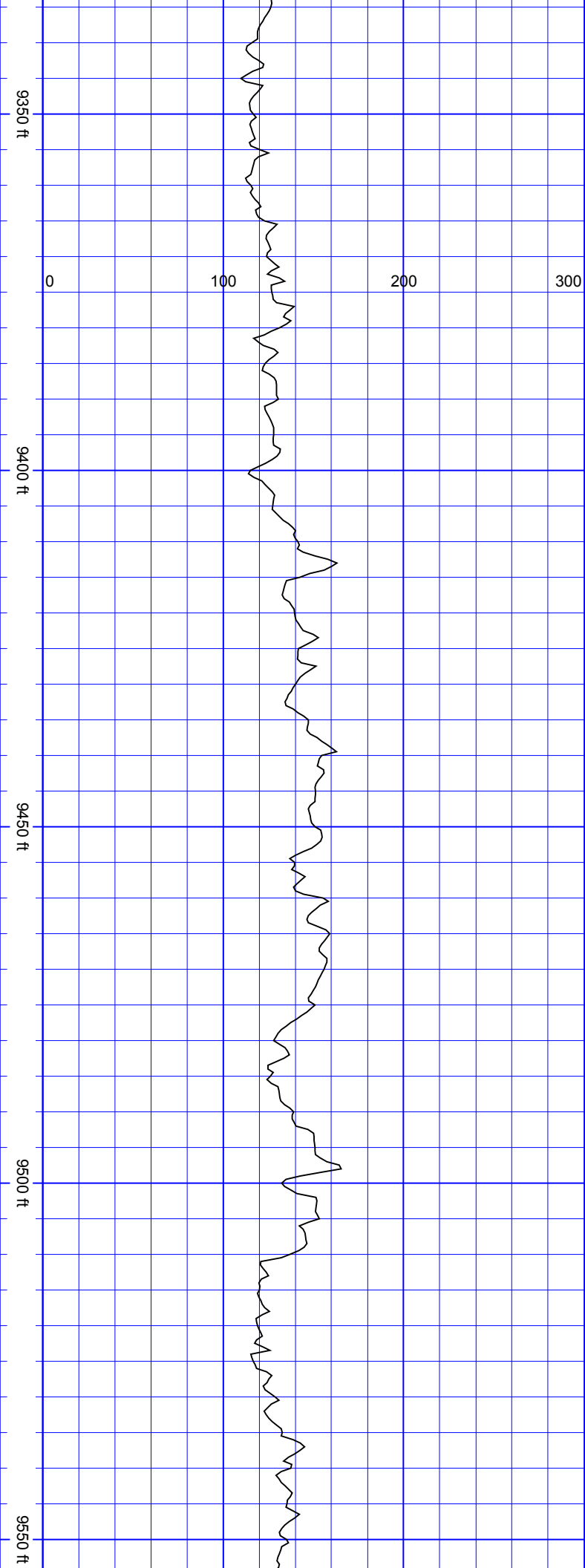
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TVD:7103.55 Inc:90.48
Azi:0.35
VertSec:1304.19





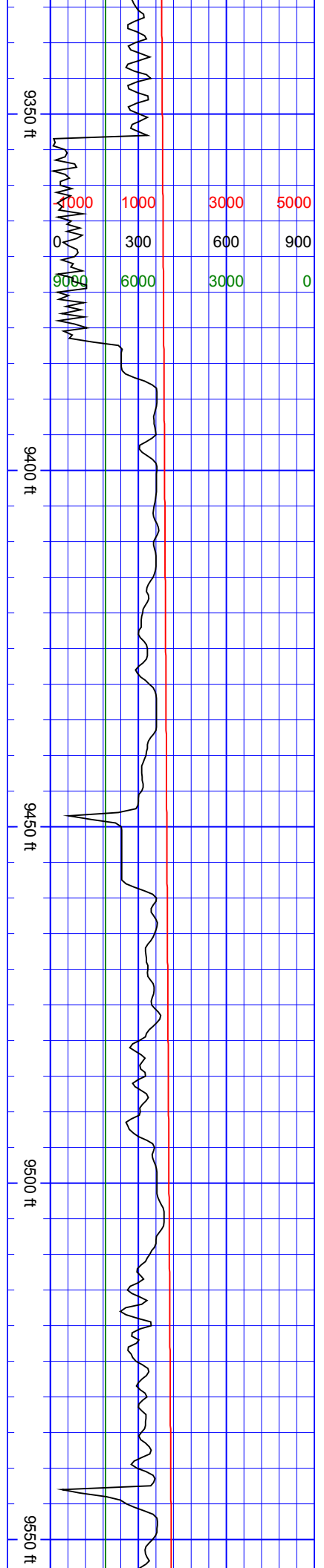
SurveyDepth:9197 TVD:7103.55 Inc:89.52 Azi:359.21 VertSec:1398.18	SurveyDepth:9292 TVD:7104.71 Inc:89.08 Azi:358.94 VertSec:1493.15
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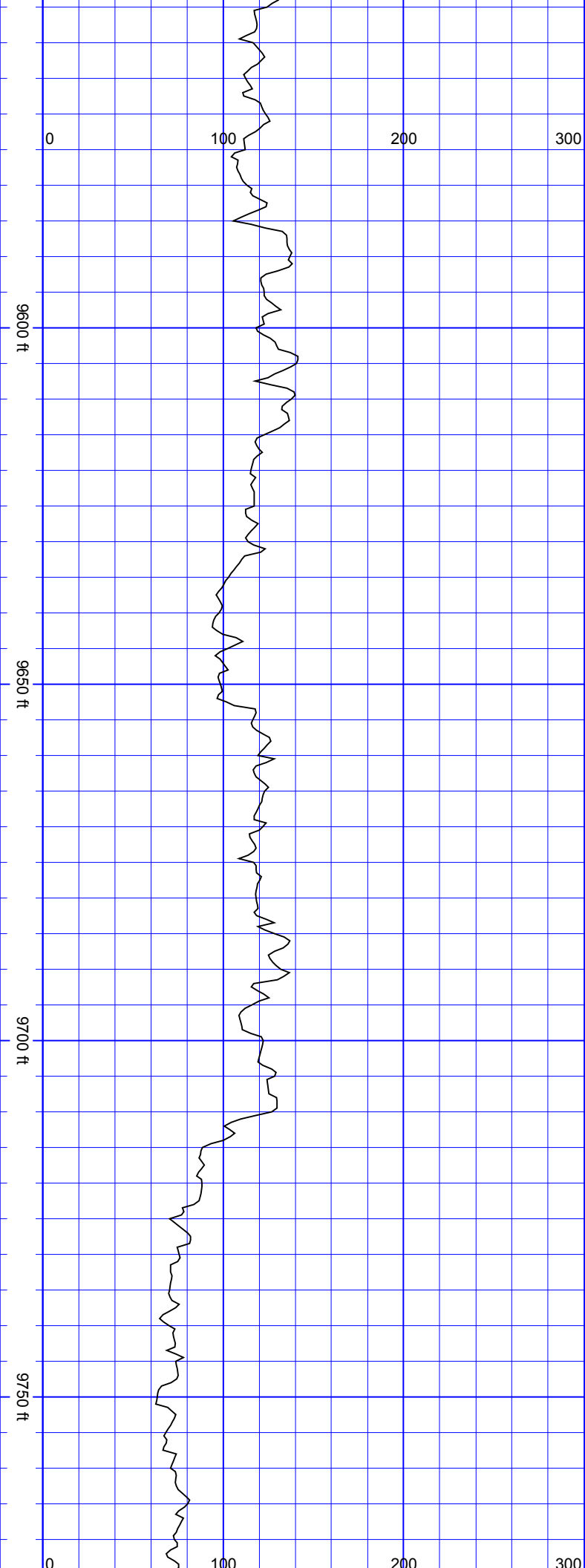




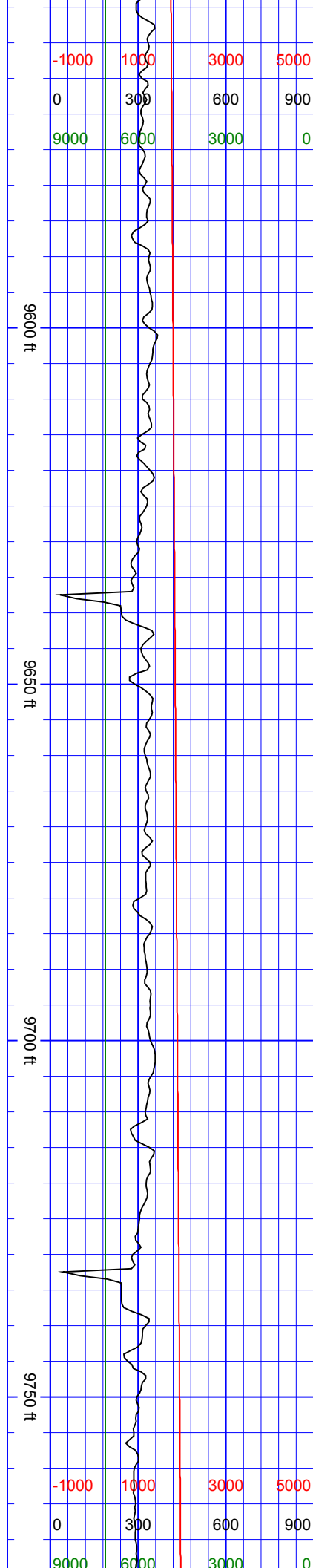
SurveyDepth:9386
TVD:7105.72 Inc:89.69
Azi:2.98
VertSec:1587.12

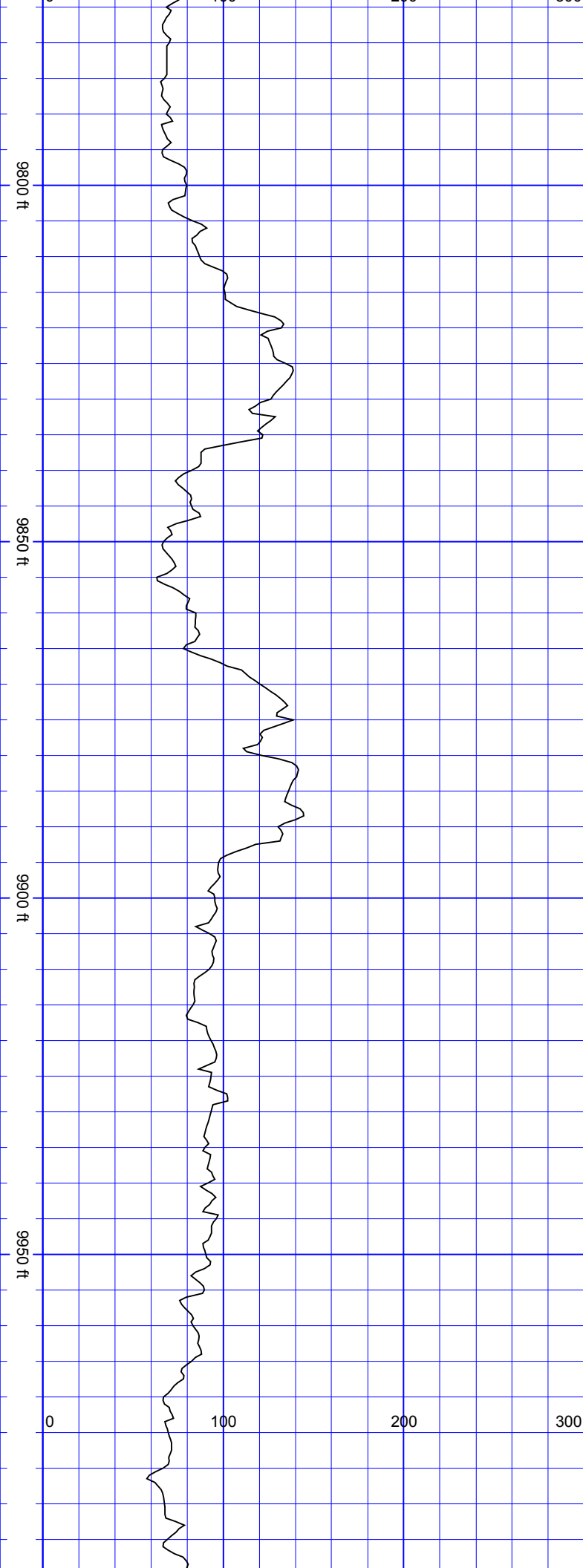
SurveyDepth:9481
TVD:7106.74 Inc:89.08
Azi:2.19
VertSec:1682.05





SurveyDepth:9576 TVD:7108.67 Inc:88.59 Azi:1.75 VertSec:1776.99
SurveyDepth:9671 TVD:7111.26 Inc:88.29 Azi:1.4 VertSec:1871.94
SurveyDepth:9766 TVD:7113.88 Inc:88.55 Azi:1.49

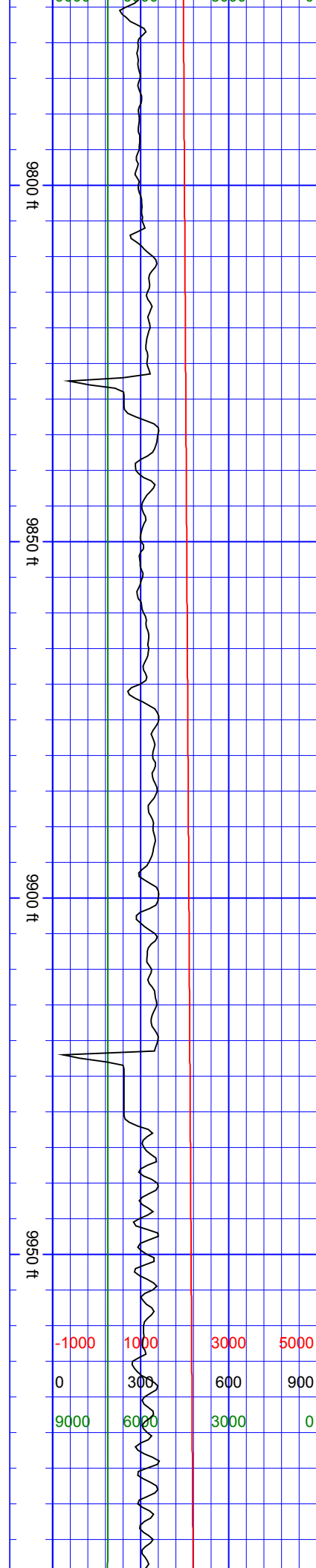


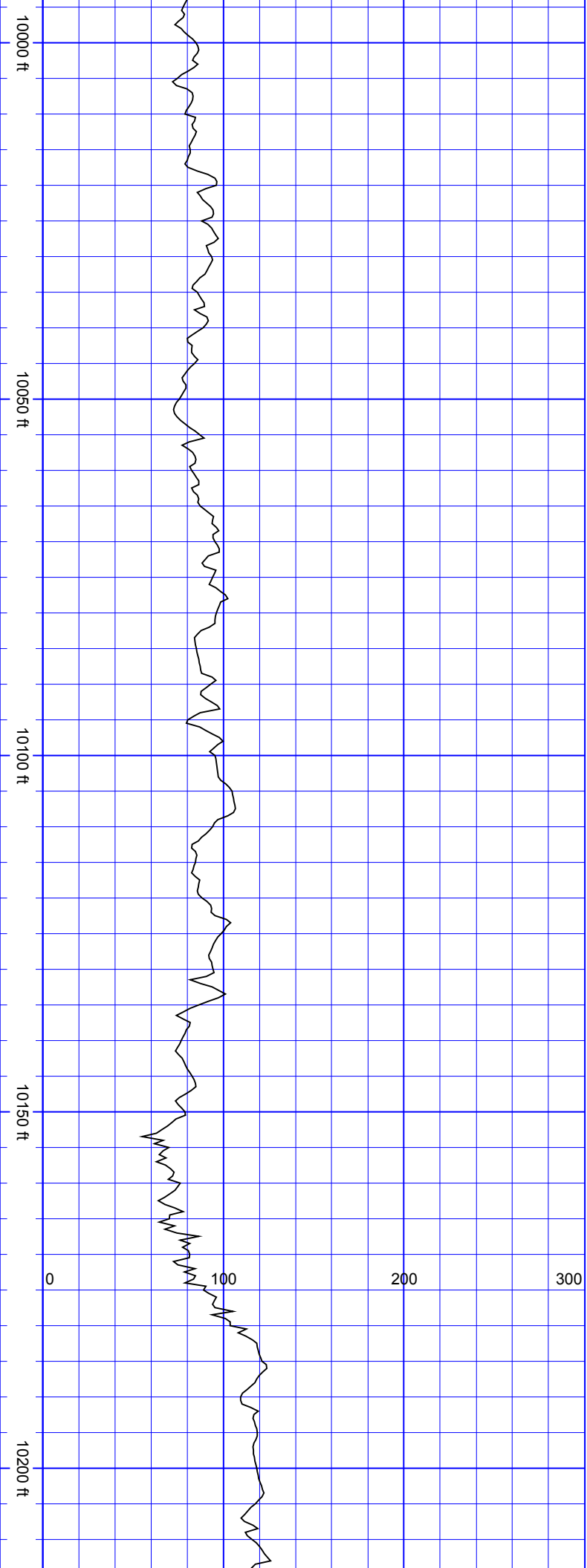


VertSec:1966.89

SurveyDepth:9860
TVD:7115.64 Inc:89.3
Azi:1.4 VertSec:2060.86

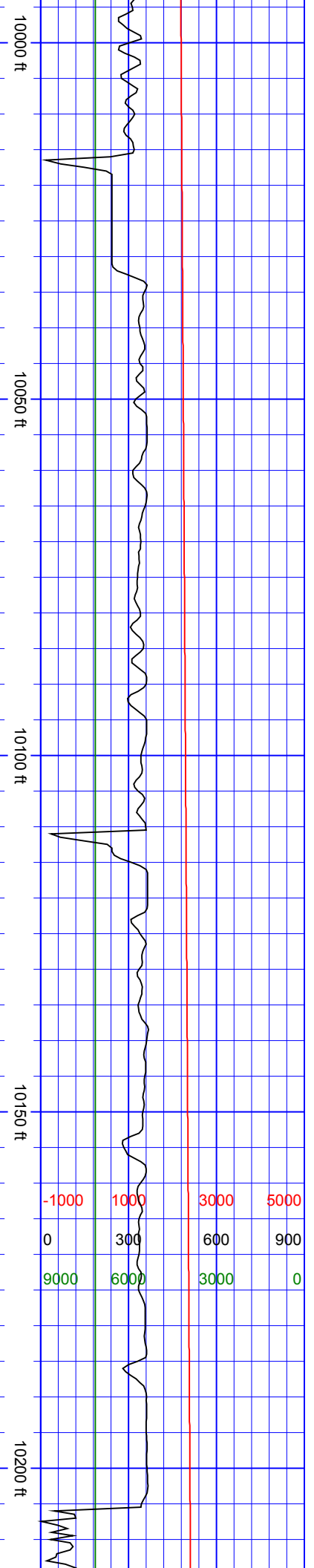
SurveyDepth:9955
TVD:7117.72 Inc:88.2
Azi:0.96 VertSec:2155.83

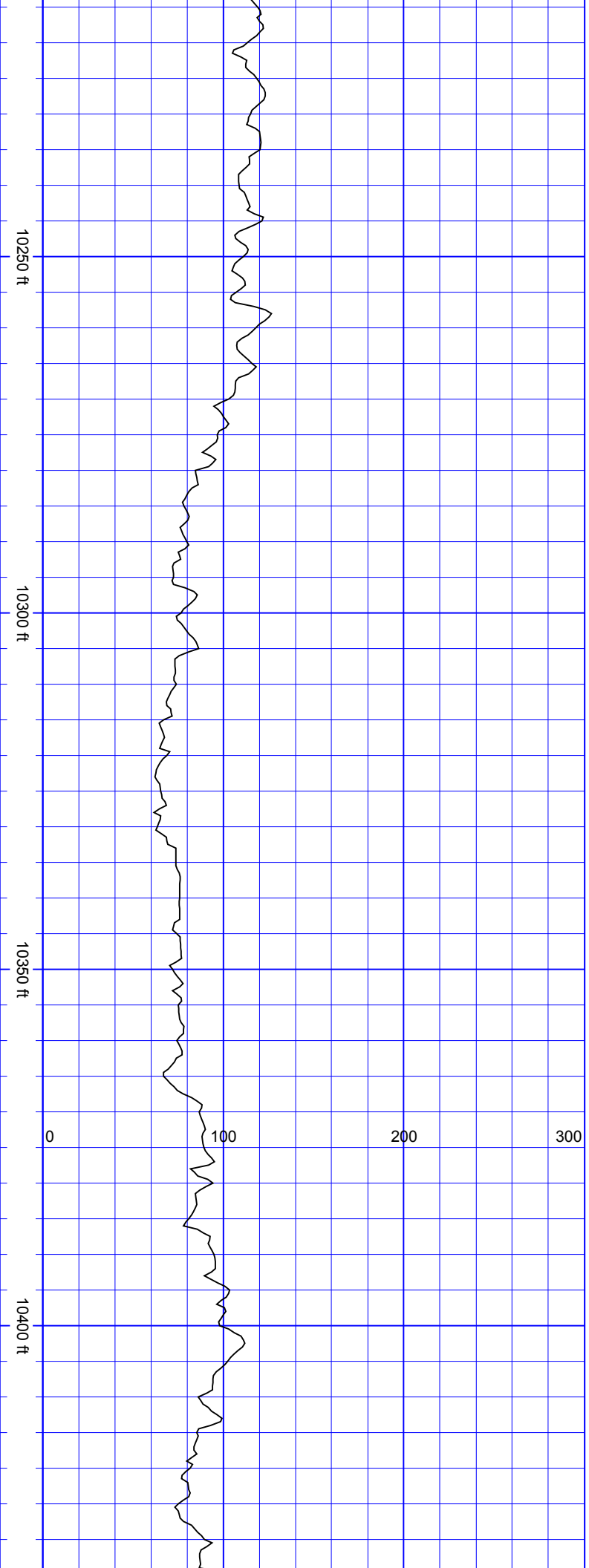




SurveyDepth:10049
TVD:7120.67 Inc:88.2
Azi:0.17
VertSec:2249.78

SurveyDepth:10144
TVD:7123.8 Inc:88.02
Azi:359.91
VertSec:2344.73

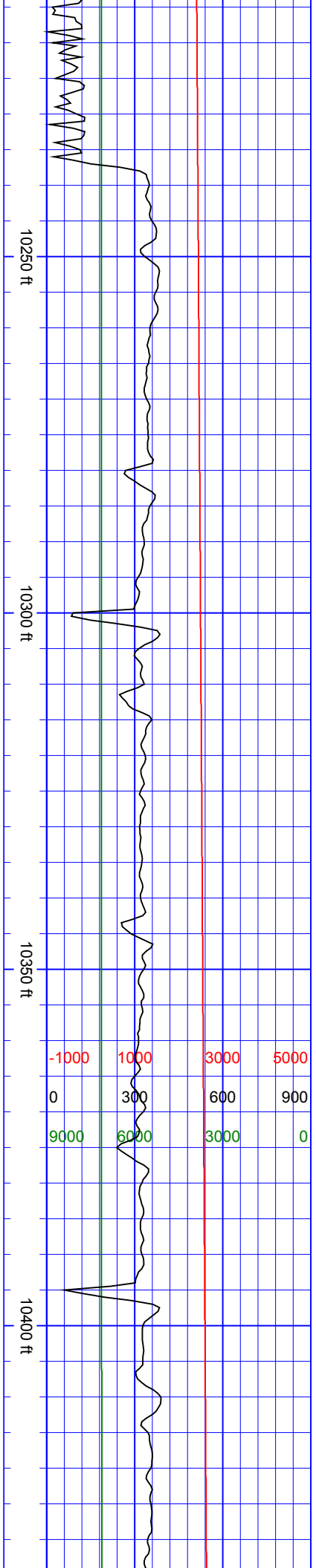


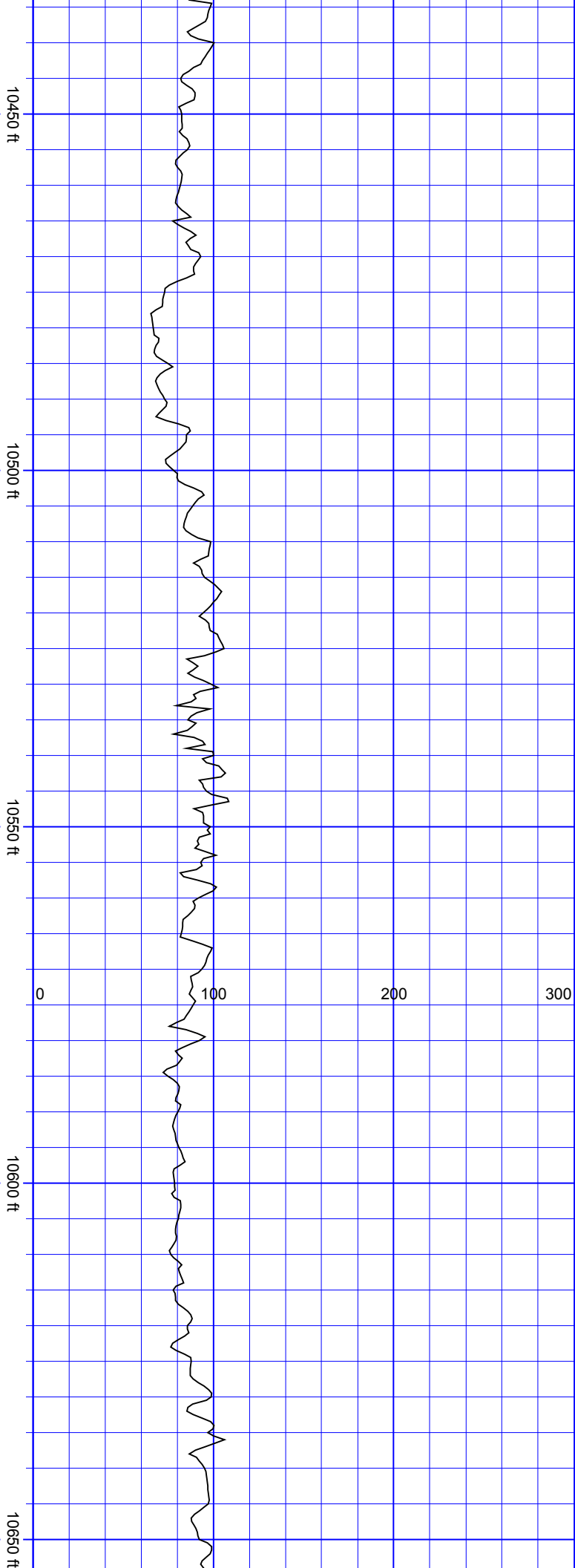


SurveyDepth:10239
TVD:7124.13 Inc:91.58
Azi:1.32
VertSec:2439.71

SurveyDepth:10333
TVD:7121.39 Inc:91.76
Azi:0.88
VertSec:2533.66

SurveyDepth:10428
TVD:7118.19 Inc:92.11
Azi:1.32 VertSec:2638.0

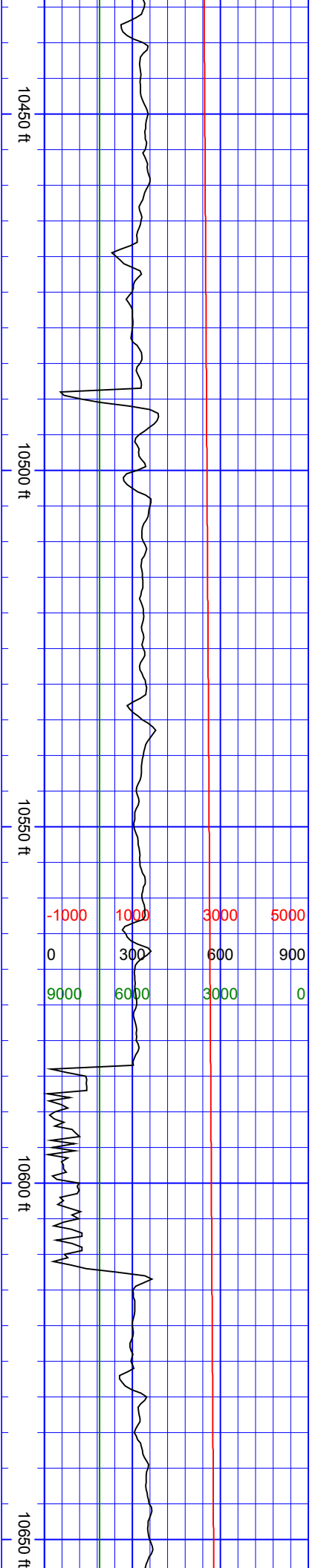


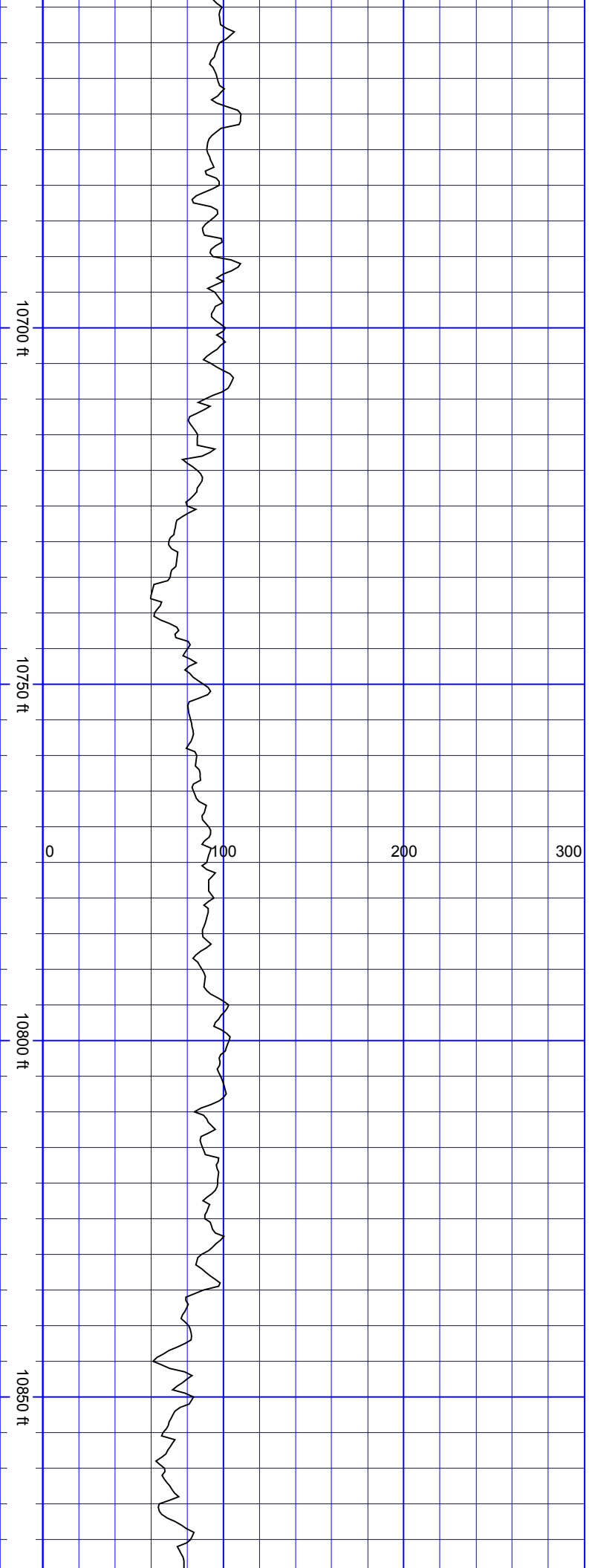


Azi:1.32 VertSec:2628.6

SurveyDepth:10523
TVD:7114.11 Inc:92.81
Azi:1.23
VertSec:2723.51

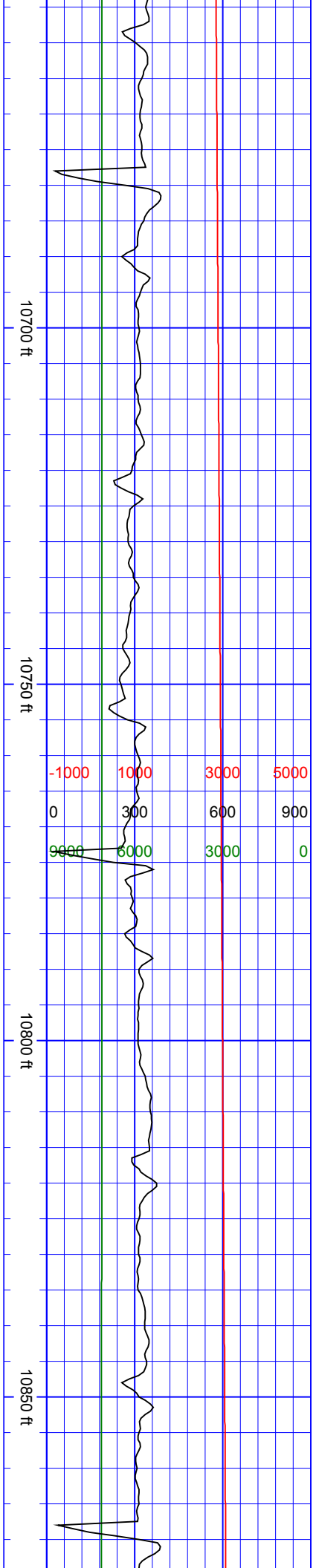
SurveyDepth:10618
TVD:7112.72 Inc:88.86
Azi:1.4 VertSec:2818.47

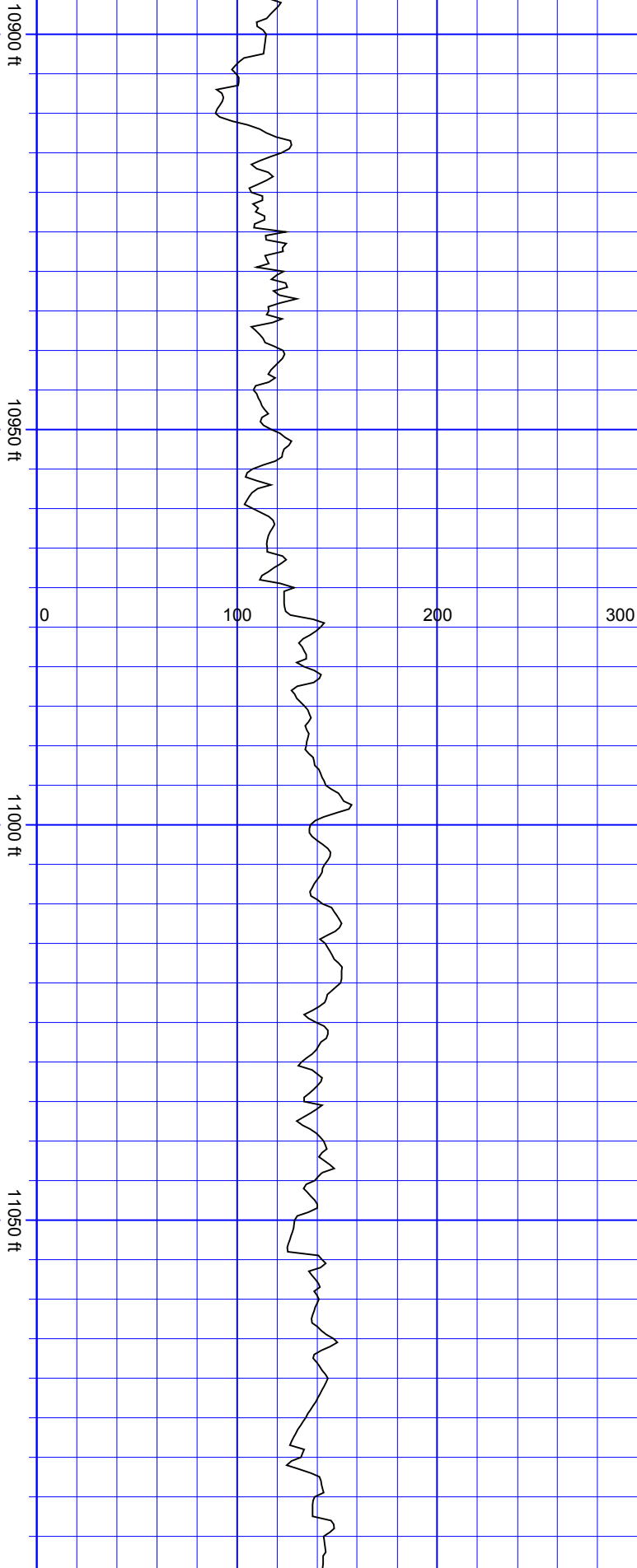




SurveyDepth:10712
TVD:7115 Inc:88.37
Azi:1.23
VertSec:2912.43

SurveyDepth:10807
TVD:7117.99 Inc:88.02
Azi:0.79
VertSec:3007.38

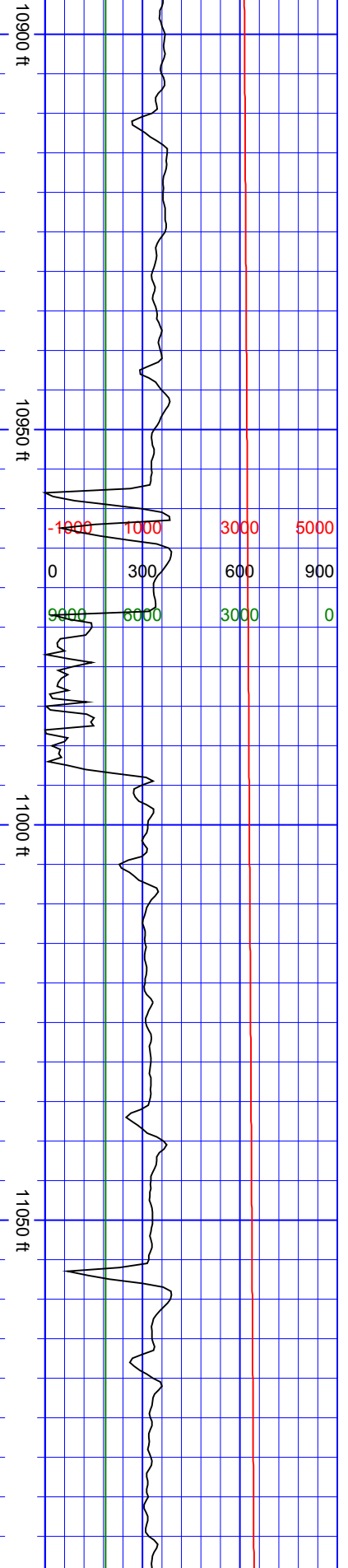


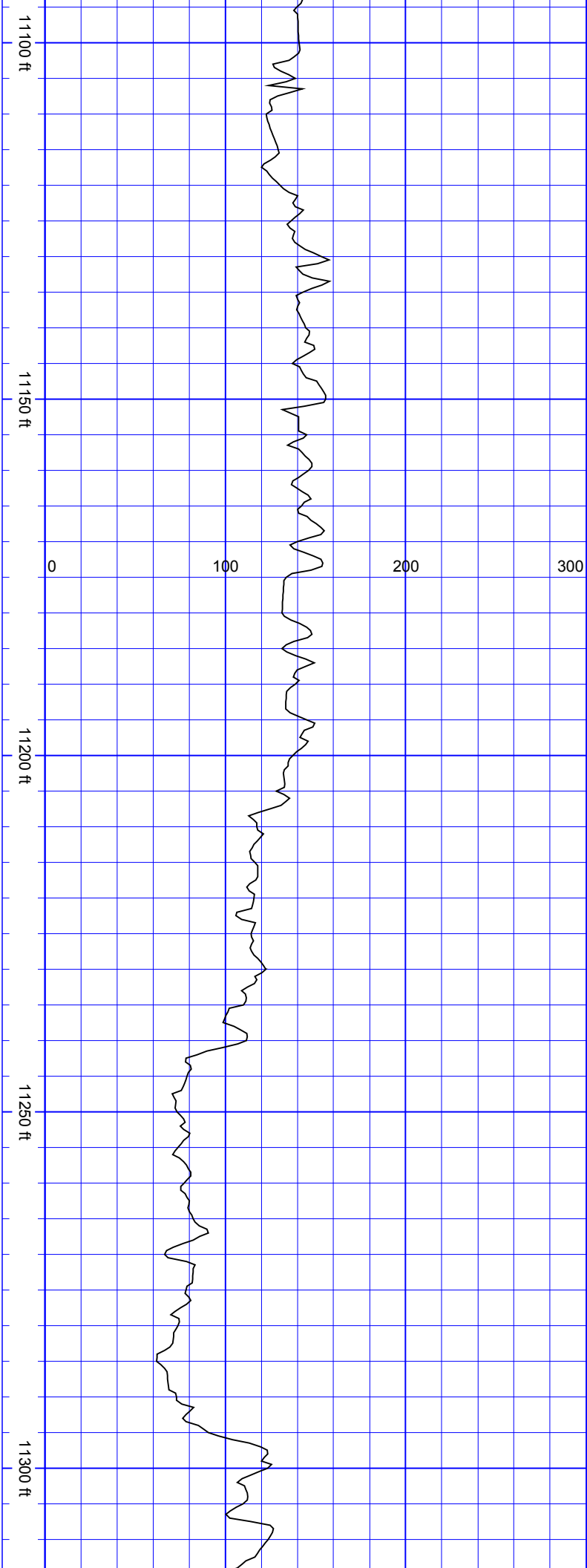


SurveyDepth:10902
TVD:7121.3 Inc:87.98
Azi:0.17
VertSec:3102.32

SurveyDepth:10996
TVD:7122.67 Inc:90.35
Azi:359.38
VertSec:3196.29

SurveyDepth:11090
TVD:7122.03 Inc:90.44

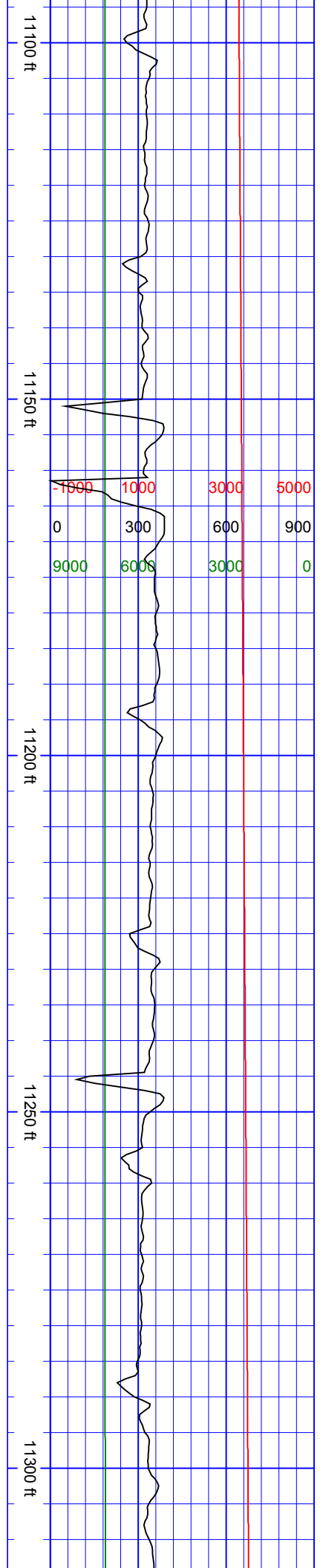


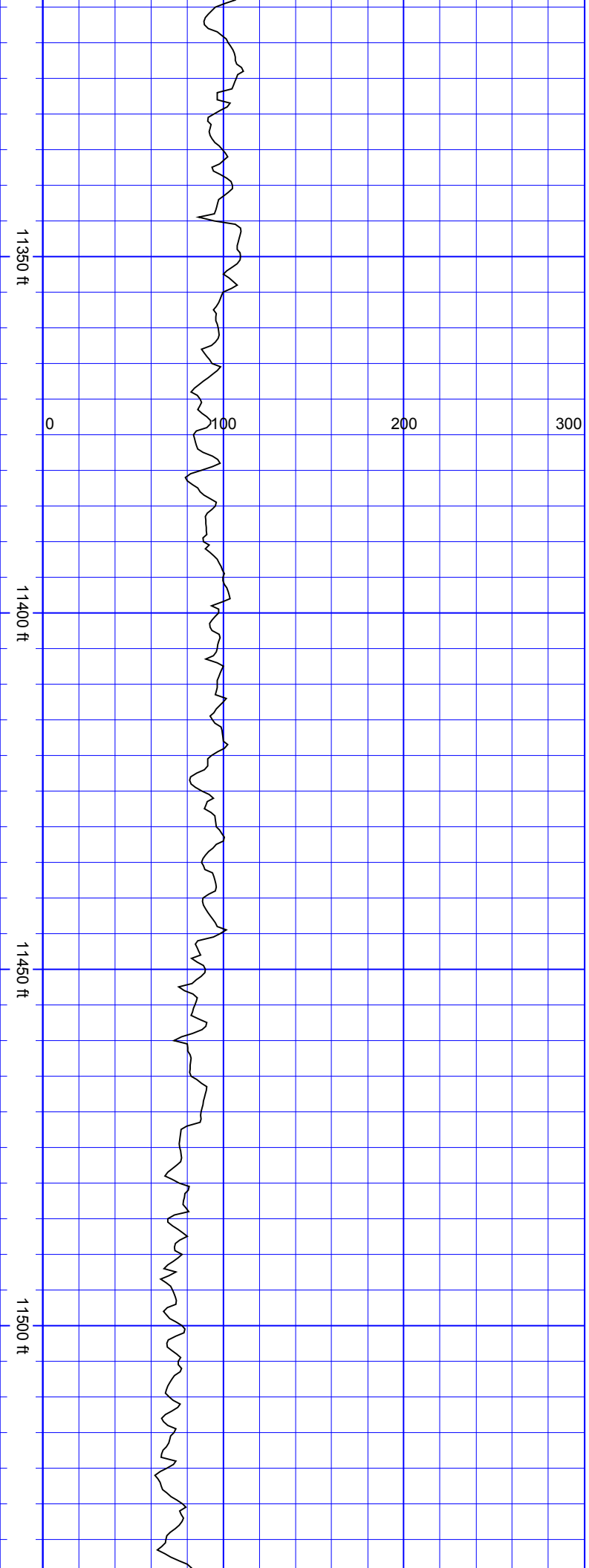


TVD:7122.88 Inc:90.47
Azi:359.29
VertSec:3290.27

SurveyDepth:11185
TVD:7121.04 Inc:90.75
Azi:360 VertSec:3385.26

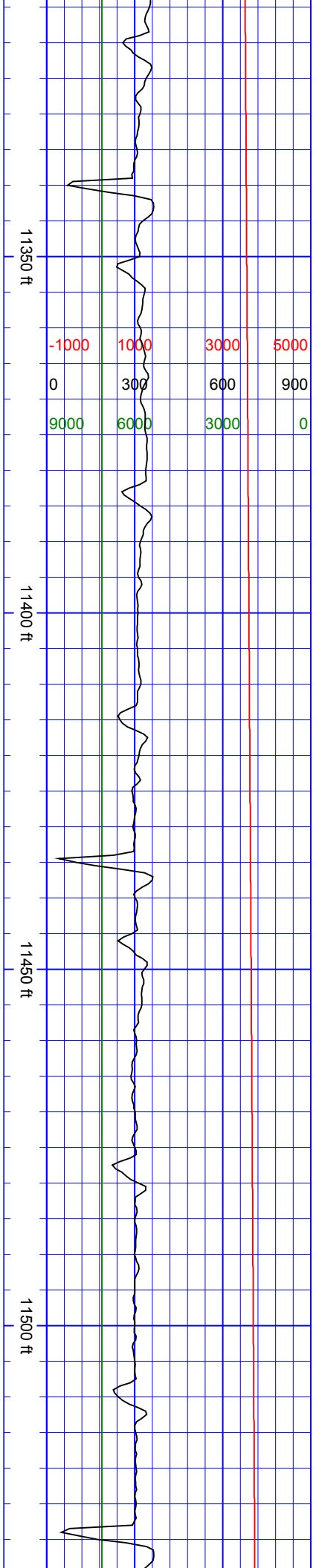
SurveyDepth:11279
TVD:7119.27 Inc:91.41
Azi:0.88
VertSec:3479.24

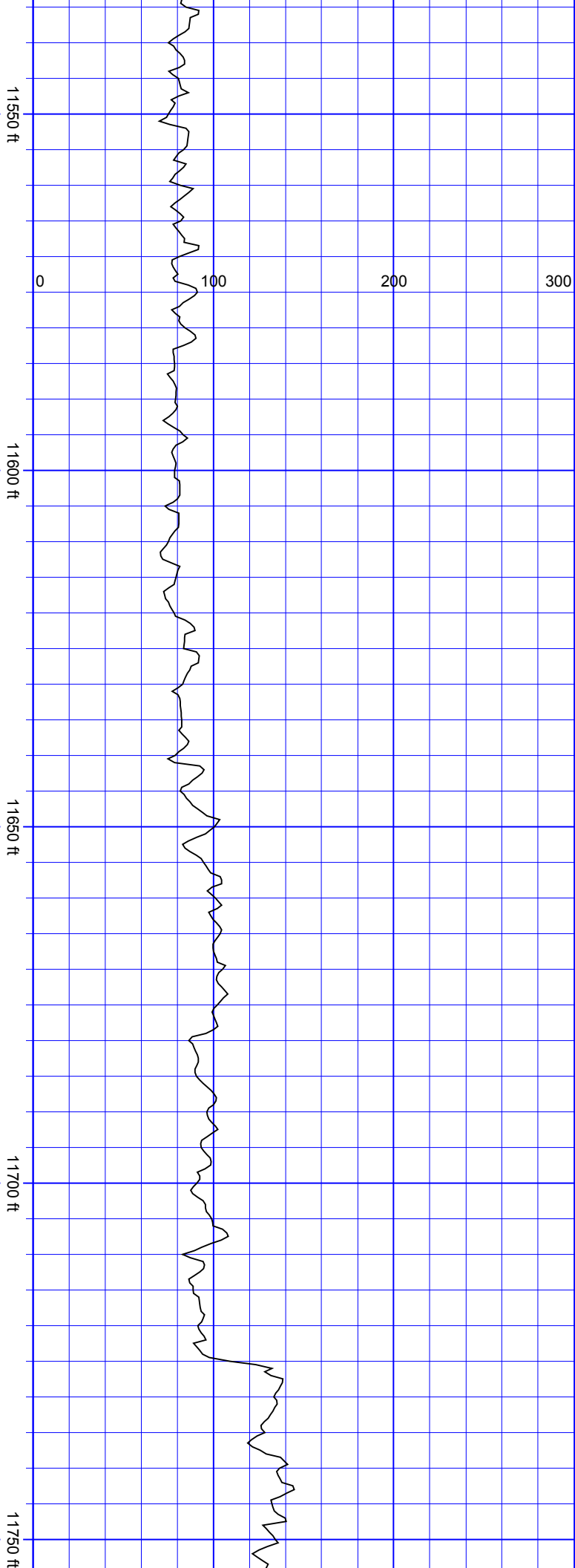




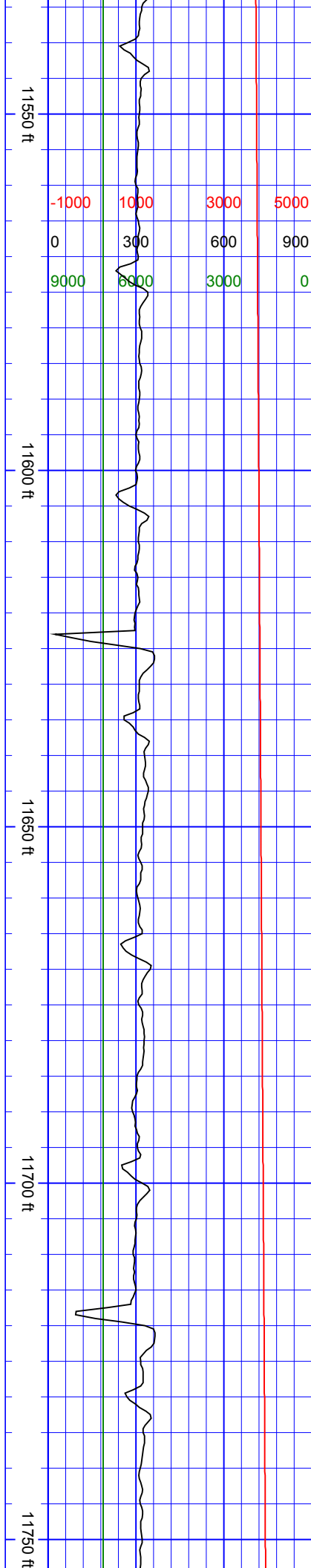
SurveyDepth:11374
TVD:7117.3 Inc:90.97
Azi:0.44
VertSec:3574.22

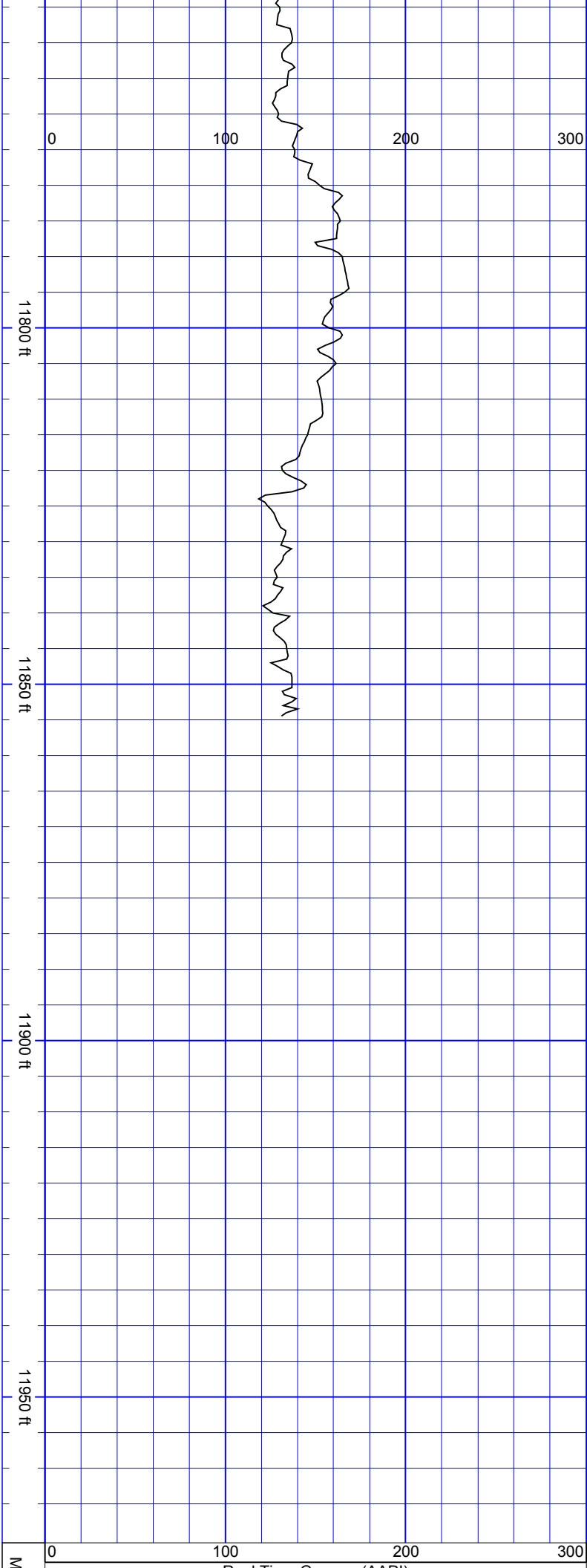
SurveyDepth:11469
TVD:7115.73 Inc:90.92
Azi:0.17 VertSec:3669.2





SurveyDepth:11563 TVD:7113.93 Inc:91.27 Azi:358.15 VertSec:3763.16				
SurveyDepth:11657 TVD:7111.77 Inc:91.36 Azi:357.36 VertSec:3857.03				
SurveyDepth:11752				

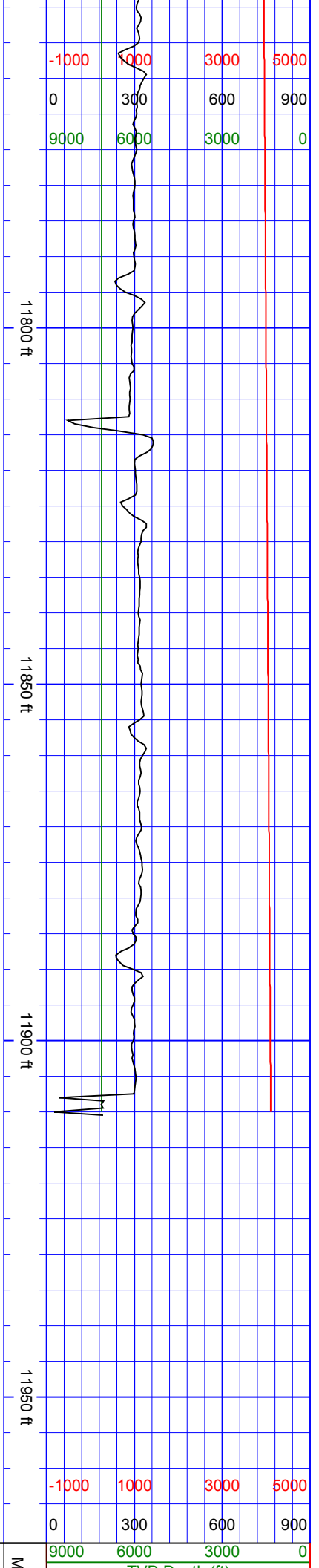




TVD:7109.59 Inc:91.27
Azi:357.54
VertSec:3951.87

SurveyDepth:11849
TVD:7107.03 Inc:91.76
Azi:357.27
VertSec:4048.7

Extrapolation of Bit
SurveyDepth:11910
TVD:7105.16 Inc:91.76
Azi:357.27
VertSec:4109.57



Real Time Gamma (AAPI)

GAMMA RAY

Slide - Rotate

Directional Survey

Date

ID Depth "Scale 5" = 100
ft"

TVD Depth (ft)				
0	300	600	900	
Drill Rate (ft/hr)				
-1000	1000	3000	5000	
Vertical Section (ft)				
ROP - VERT SEC - TVD				

ID Depth "Scale 5" = 100
ft"