

CONFIDENTIAL

QES

Grama 8817 JV-P Fed Com #2H

Scale 2":100' - MD

10/15/2016 3:03 PM

Oper. Company: BTA Oil Producers

Well: Grama 8817 JV-P Fed Com #2H

Field: Grama Field

Rig: Nomac # 94

Well ID: 30-025-42808

Job Number: WT-160390

State: N.M.

County: Lea

Country: USA

Location: Sec 16, T22-S, R34-E

Start Date: 10/02/2016 03:30:00

End Date: 10/15/2016 15:00:00

Latitude: 32° 23' 6.826 N

Longitude: 103° 28' 54.589 W

Elev GL: 3,476'

Elev DF: 3,501'

Elev KB:

Operator 1: D.Longoria

Operator 2: B.Perdew

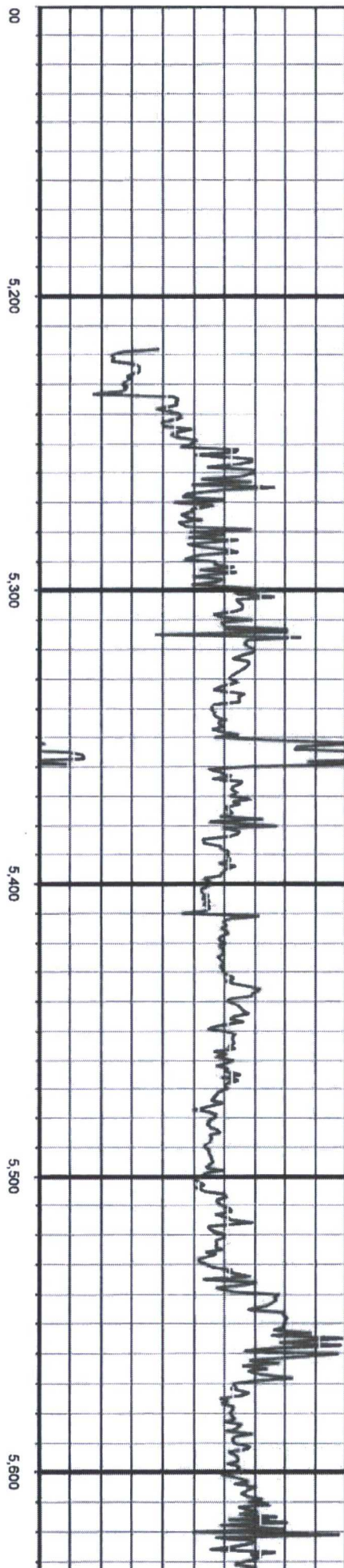
Tool Run Data	Run #1	Run #2	Run #3	Run #4	Run #5
Tool S/N	721	1515	1515	1515	721
Bit Size	8 3/4	8 3/4	8 3/4	8 3/4	8 3/4
Cal Factor	4.00	3.20	3.20	3.20	4.00
Survey Offset	54.00	54.00	54.00	50.00	50.00
Gamma Offset	42.00	42.00	42.00	37.00	37.00
Resistivity Offset	0.00	0.00	0.00	0.00	0.00
Start Depth	5205.00	7900.00	9381.00	9800.00	10822.00
StartDate	10/1/2016	10/3/2016	10/5/2016	10/5/2016	10/6/2016
StartTime	23:30	16:00	01:30	18:30	16:30
EndDepth	7900.00	9381.00	9800.00	10822.00	15882.00
EndDate	10/3/2016	10/5/2016	10/5/2016	10/6/2016	10/10/2016
EndTime	16:00	00:30	16:30	16:00	17:00
Tool Run Data	Run #6	Run #7	Run #8	Run #9	Run #10
Tool S/N	525				
Bit Size	8 3/4				
Cal Factor	4.00				
Survey Offset	51.00				
Gamma Offset	38.00				
Resistivity Offset	0.00				
Start Depth	15882.00				
StartDate	10/10/2016				
StartTime	17:30				
EndDepth	20168.00				
EndDate	10/15/2016				
EndTime	15:00				
Hole Data			Casing Data		
Size	From	To	Size	From	To
12 1/4	1754.00	5205.00	20	0.00	80.00
8 3/4	5205.00	20168.00	13 3/8	0.00	1754.00
			9 5/8	0.00	5205.00

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.

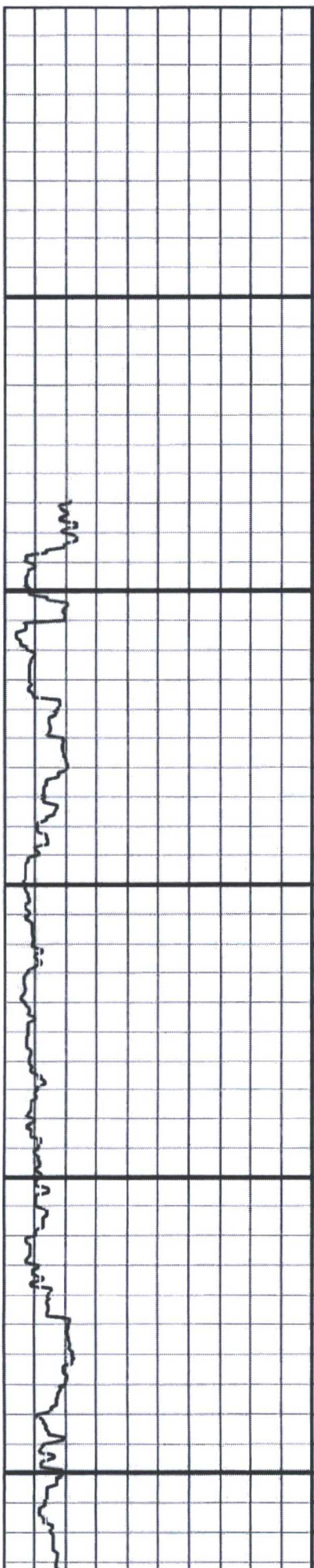
0.00 GR_1(API) 255.00 MD 0.00 ROP(FT/HR) 250.00 Surveys (MD/INC/AZ/TVD/VS)

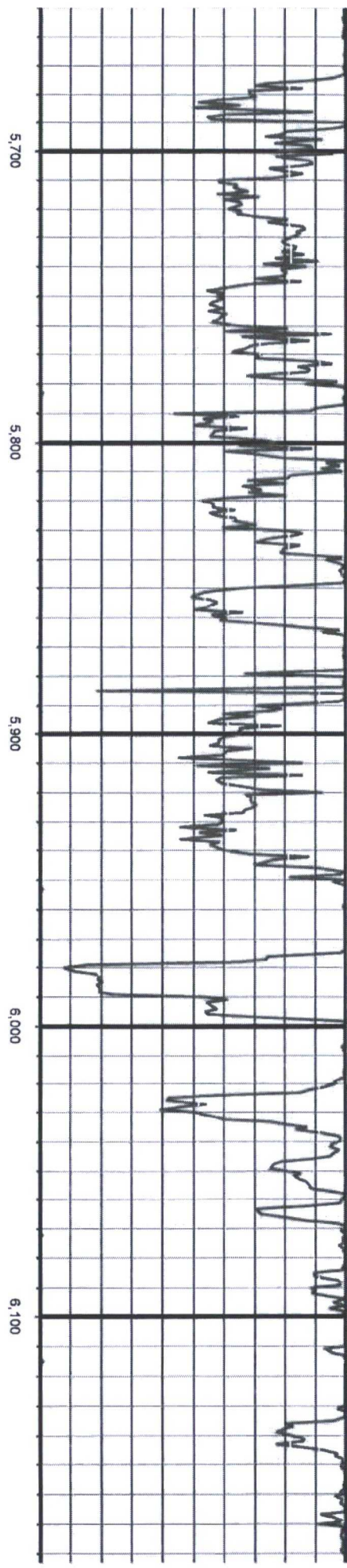
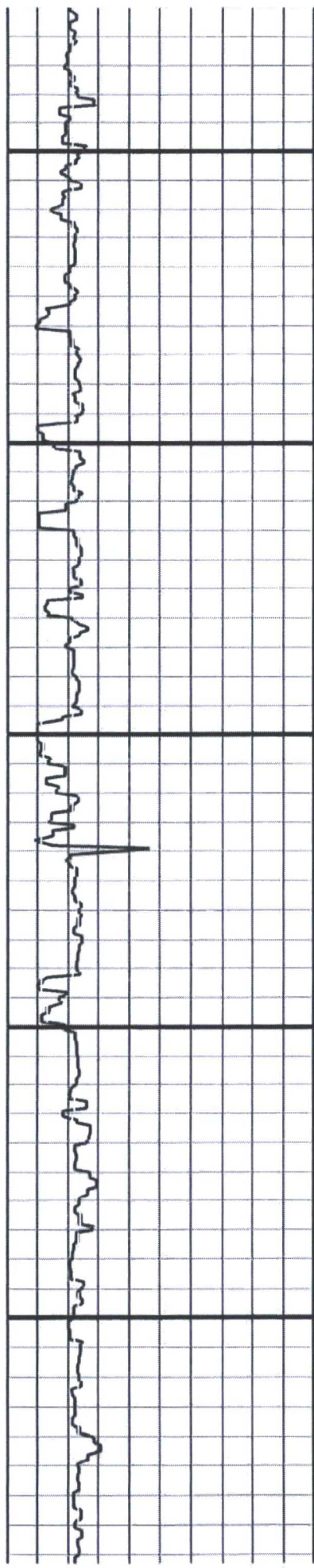
FT 250.00 2 500.00

MD: 5071.00 INC: 0.81 AZ: 156.15 TVD: 5070.07 VS: 6.25



MD: 5451.00 INC: 0.80 AZ: 124.70 TVD: 5450.03 VS: 2.66





MD: 5831.00 INC: 0.60 AZ: 116.90 TVD: 5830.01 VS: 1.28

MD: 6021.00 INC: 1.00 AZ: 214.70 TVD: 6020.00 VS: -0.53

MD: 6211.00 INC: 0.80 AZ: 205.20 TVD: 6209.97 VS: -3.08

MD: 6401.00 INC: 0.90 AZ: 212.70 TVD: 6399.95 VS: -5.53

MD: 6591.00 INC: 0.70 AZ: 223.10 TVD: 6589.93 VS: -7.62

6,200

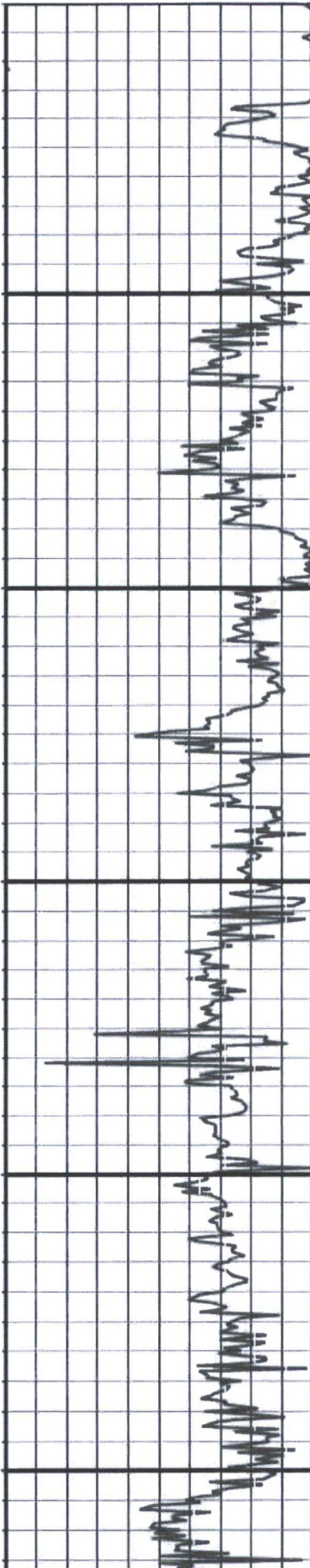
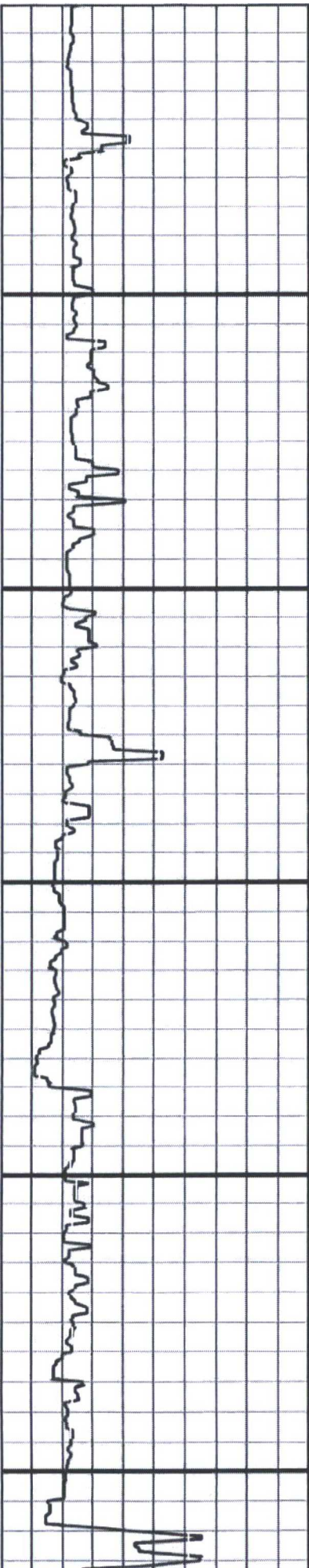
6,300

6,400

6,500

6,600

6,700



MD: 6781.00 INC: 0.70 AZ: 225.80 TVD: 6779.92 VS: -9.27

MD: 6971.00 INC: 0.70 AZ: 227.30 TVD: 6969.90 VS: -10.85

MD: 7161.00 INC: 1.00 AZ: 235.60 TVD: 7159.88 VS: -12.56

6,800

6,900

7,000

7,100

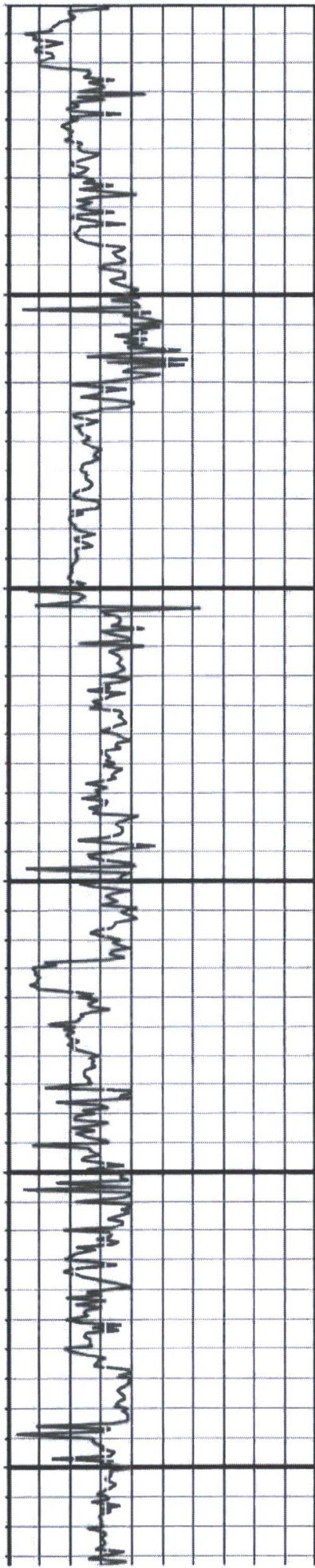
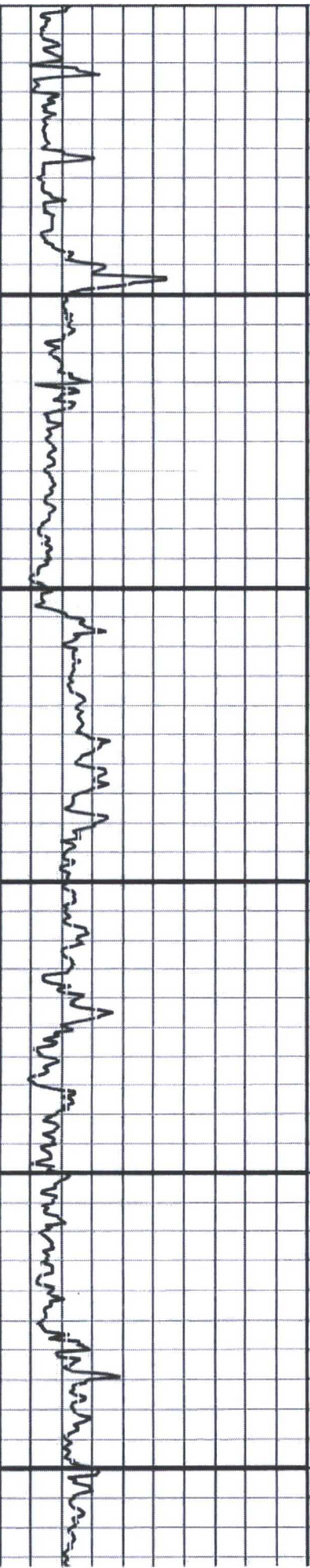
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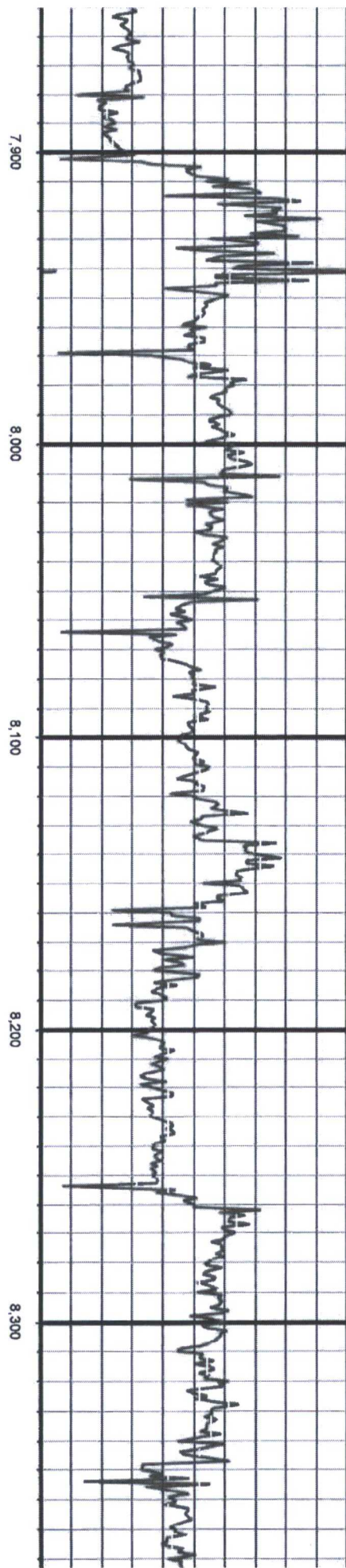
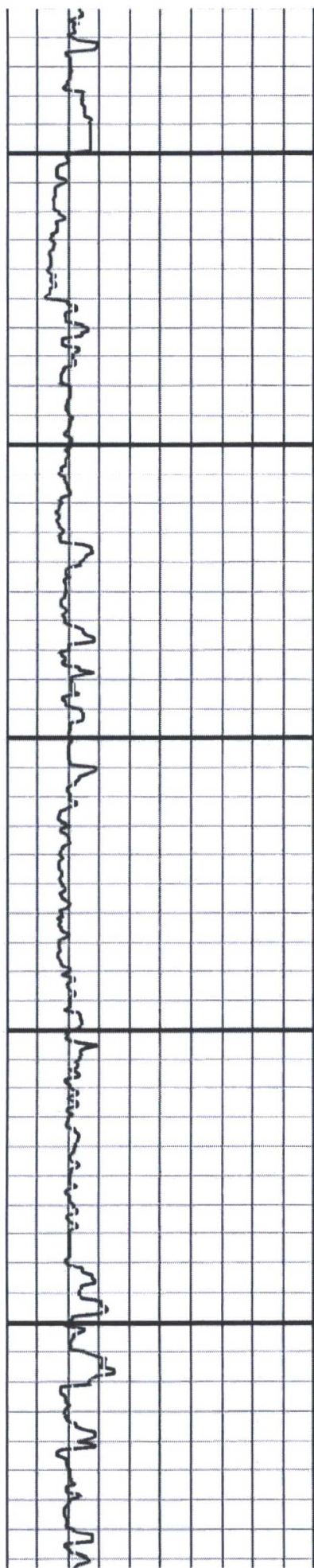
MD: 7351.00 INC: 1.40 AZ: 257.20 TVD: 7349.84 VS: -13.99

MD: 7541.00 INC: 1.30 AZ: 262.80 TVD: 7539.79 VS: -14.75

MD: 7731.00 INC: 1.00 AZ: 283.80 TVD: 7729.75 VS: -14.80

7,400 7,500 7,600 7,700 7,800

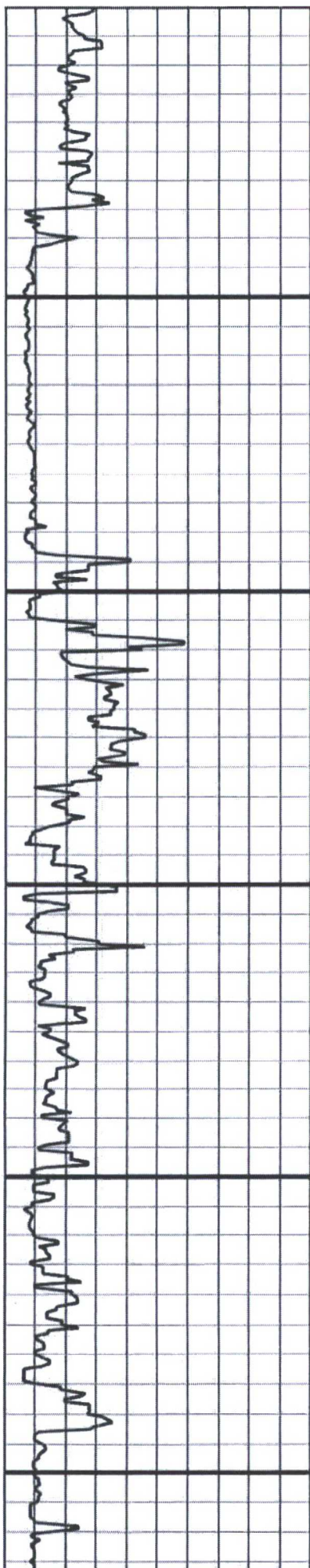




MD: 7915.00 INC: 1.10 AZ: 288.00 TVD: 7913.72 VS: -13.65

MD: 8104.00 INC: 1.10 AZ: 292.70 TVD: 8102.69 VS: -12.36

MD: 8294.00 INC: 1.10 AZ: 288.10 TVD: 8292.65 VS: -11.07



00

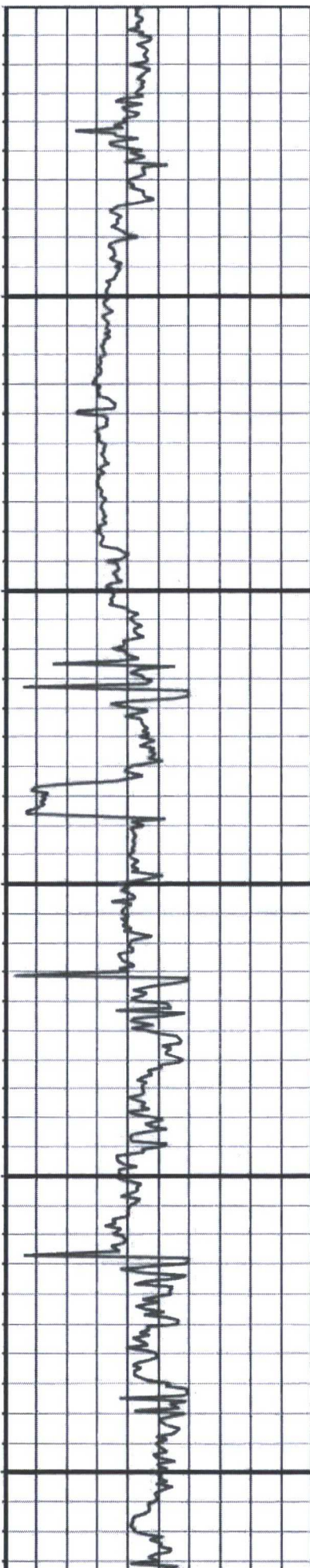
8,500

8,600

8,700

8,800

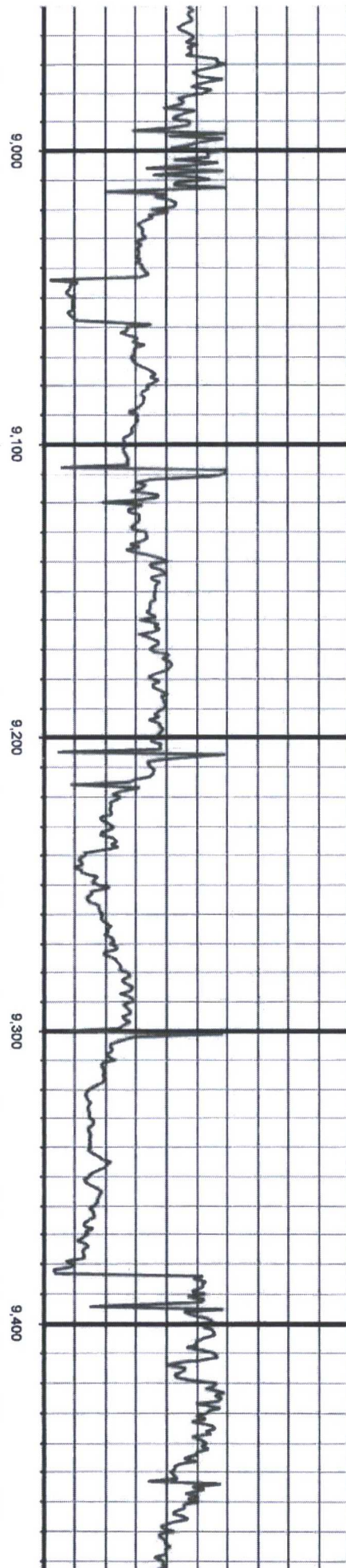
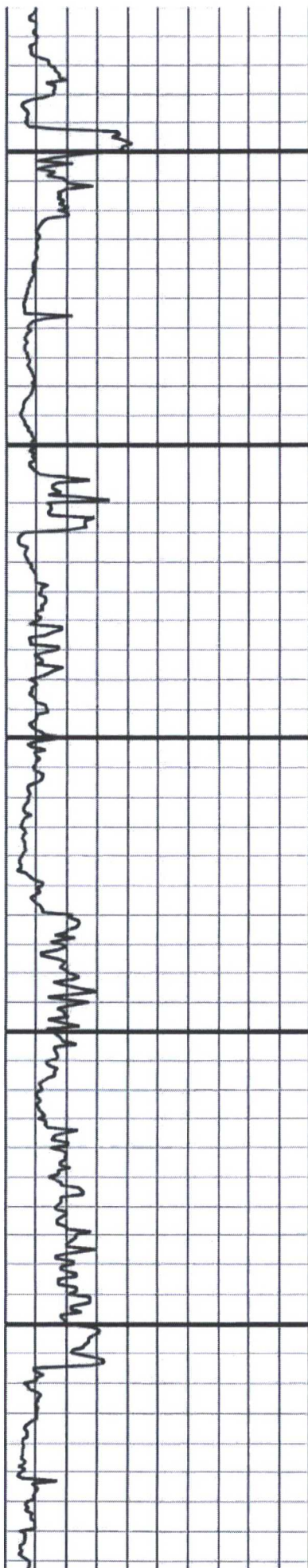
8,900



MD: 8484.00 INC: 1.30 AZ: 300.30 TVD: 8482.61 VS: -9.39

MD: 8674.00 INC: 0.60 AZ: 281.60 TVD: 8672.58 VS: -8.09

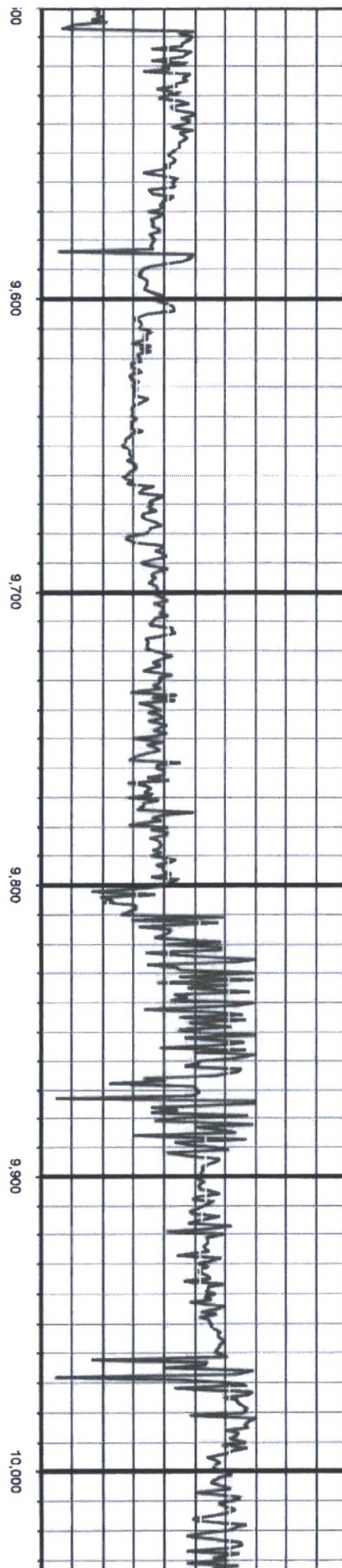
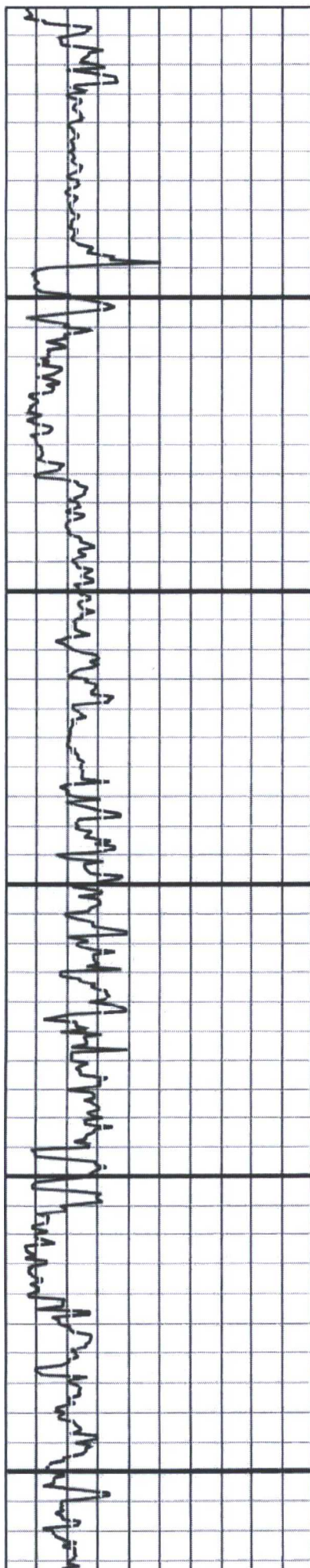
MD: 8865.00 INC: 0.50 AZ: 296.80 TVD: 8863.57 VS: -7.50



MD: 9055.00 INC: 0.50 AZ: 195.70 TVD: 9053.57 VS: -7.92

MD: 9245.00 INC: 1.40 AZ: 241.80 TVD: 9243.54 VS: -9.80

MD: 9435.00 INC: 2.60 AZ: 253.50 TVD: 9433.43 VS: -12.08



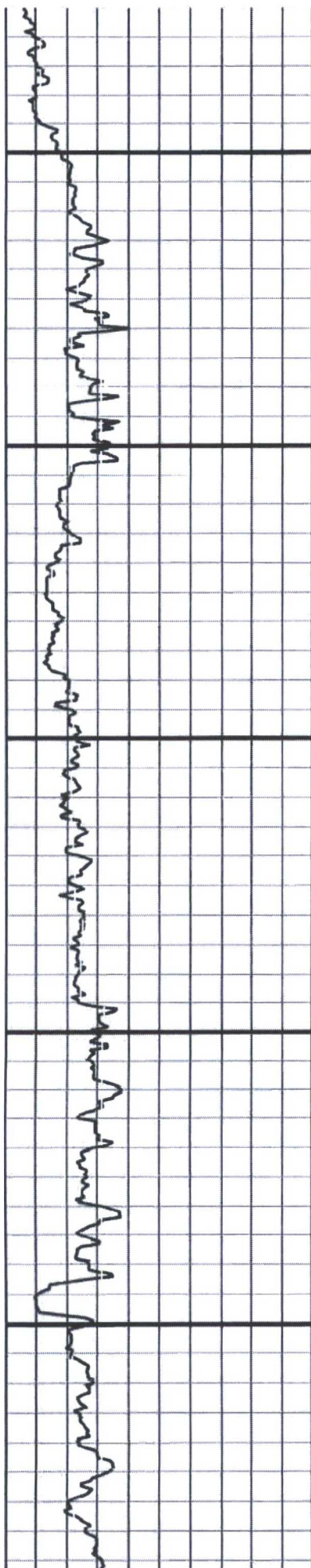
MD: 9625.00 INC: 1.20 AZ: 272.30 TVD: 9623.32 VS: -13.19

MD: 9720.00 INC: 1.50 AZ: 275.70 TVD: 9718.29 VS: -13.01

MD: 9822.00 INC: 3.30 AZ: 334.70 TVD: 9820.21 VS: -10.20

MD: 9917.00 INC: 14.60 AZ: 342.80 TVD: 9913.90 VS: 3.78

MD: 10012.00 INC: 27.60 AZ: 350.40 TVD: 10002.36 VS: 37.11



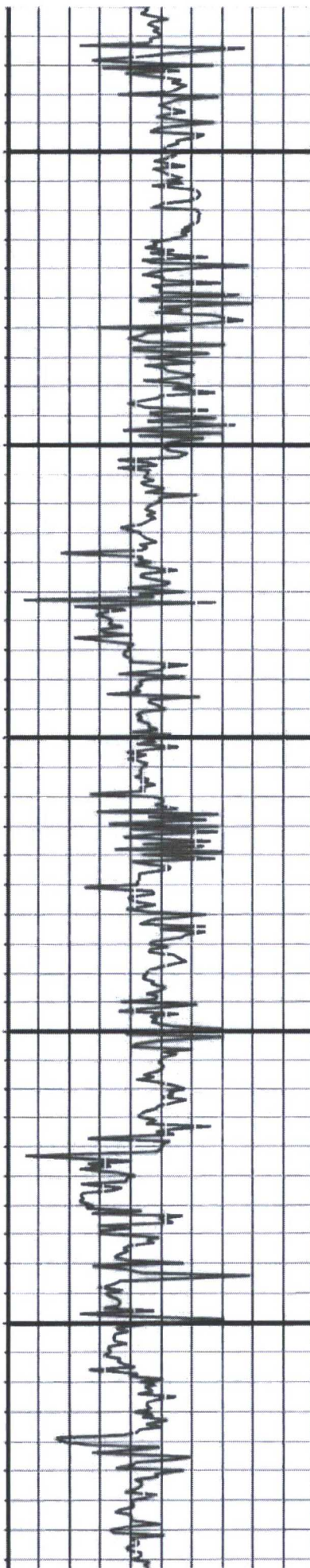
10,100

10,200

10,300

10,400

10,500



MD: 10107.00 INC: 37.10 AZ: 353.40 TVD: 10082.53 VS: 87.44

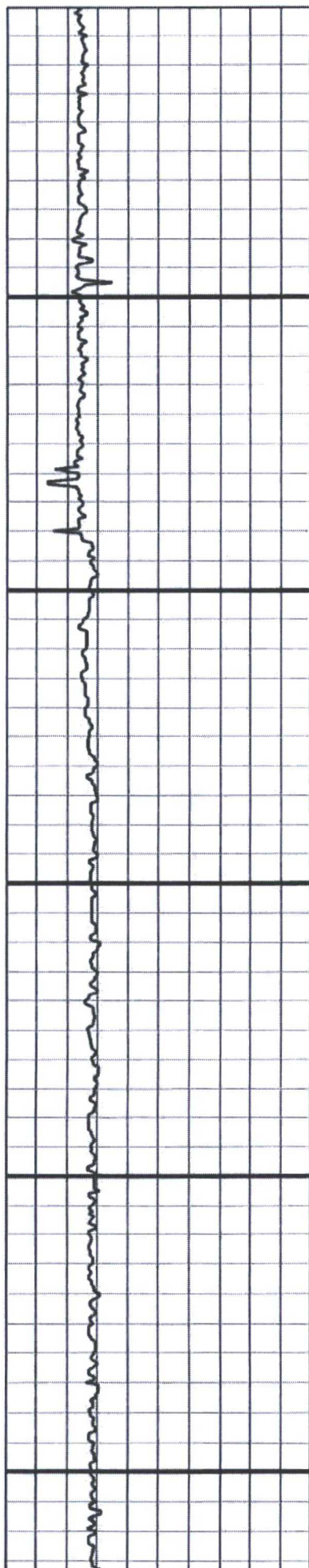
MD: 10202.00 INC: 43.30 AZ: 358.10 TVD: 10155.07 VS: 148.56

MD: 10297.00 INC: 47.80 AZ: 1.80 TVD: 10221.59 VS: 216.34

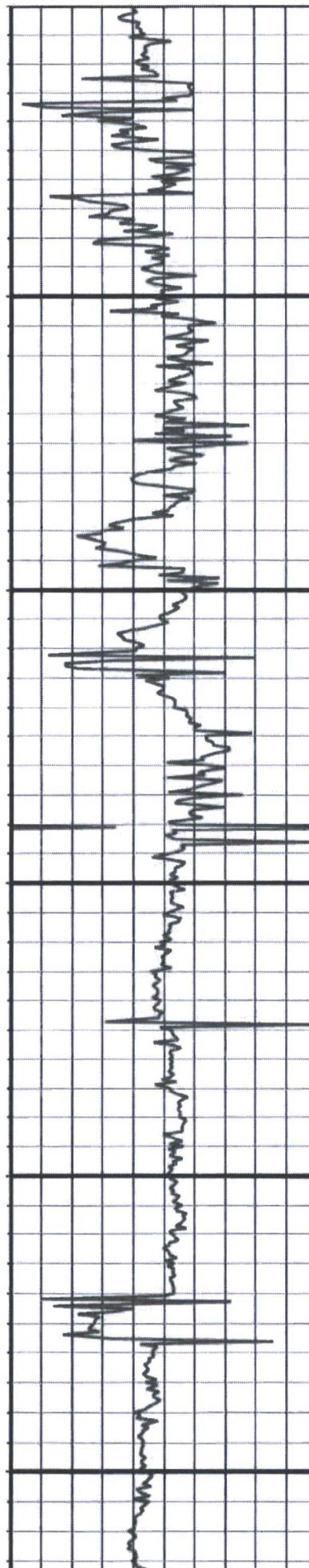
MD: 10392.00 INC: 52.80 AZ: 5.80 TVD: 10282.27 VS: 289.19

MD: 10487.00 INC: 61.80 AZ: 2.50 TVD: 10333.55 VS: 368.79

MD: 10582.00 INC: 76.10 AZ: 0.90 TVD: 10367.59 VS: 457.16



300
10,700
10,800
10,900
11,000
11,100



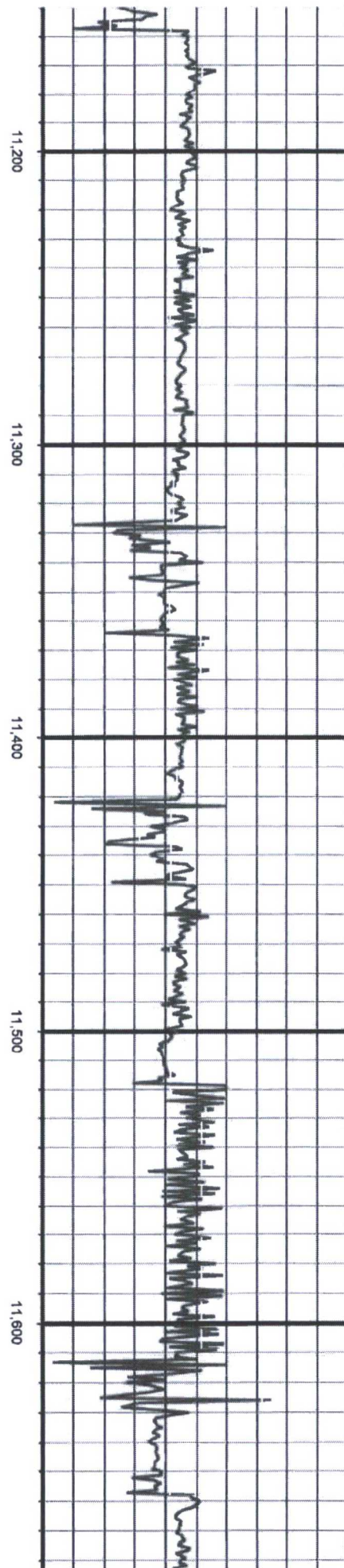
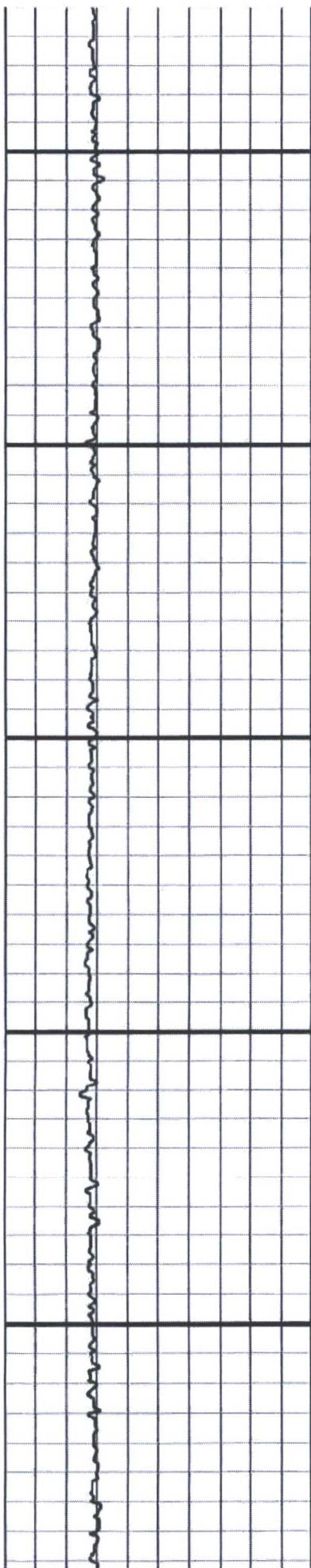
MD: 10677.00 INC: 84.30 AZ: 4.30 TVD: 10383.75 VS: 550.55

MD: 10772.00 INC: 86.90 AZ: 5.10 TVD: 10391.04 VS: 644.89

MD: 10896.00 INC: 89.50 AZ: 2.70 TVD: 10394.93 VS: 768.47

MD: 10991.00 INC: 90.60 AZ: 2.50 TVD: 10394.85 VS: 863.34

MD: 11086.00 INC: 90.40 AZ: 2.30 TVD: 10394.02 VS: 958.22



MD: 11181.00 INC: 90.00 AZ: 1.80 TVD: 10393.69 VS: 1053.15

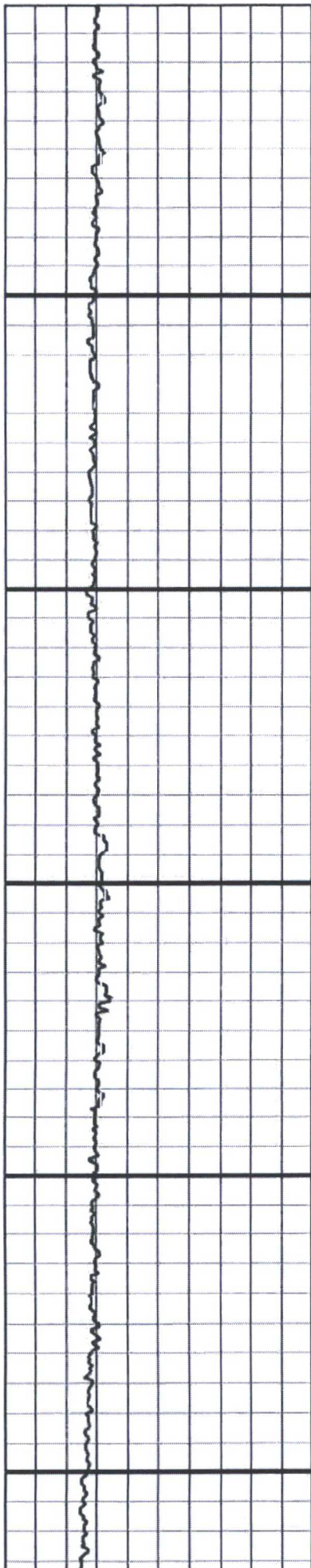
MD: 11276.00 INC: 91.20 AZ: 0.90 TVD: 10392.69 VS: 1148.10

MD: 11371.00 INC: 88.80 AZ: 0.40 TVD: 10391.86 VS: 1243.08

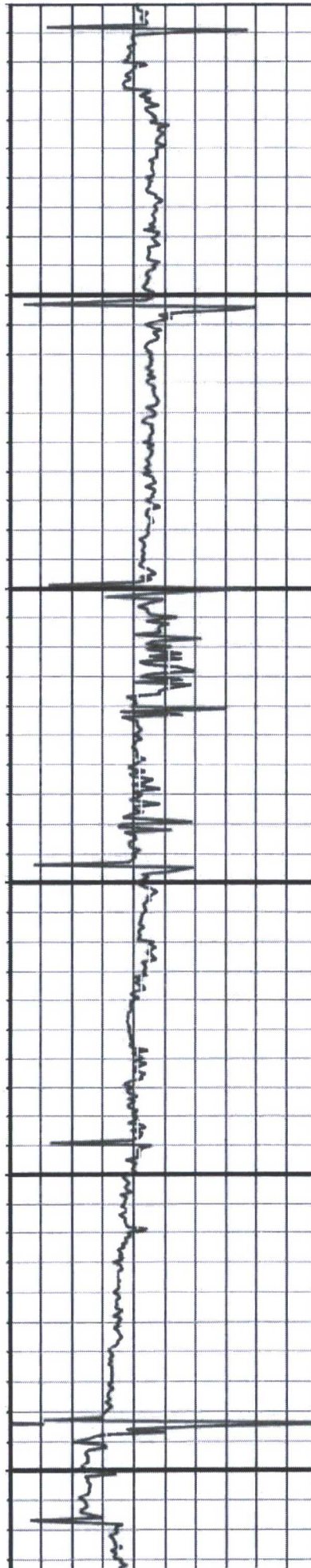
MD: 11466.00 INC: 88.70 AZ: 0.10 TVD: 10393.11 VS: 1338.06

MD: 11561.00 INC: 90.00 AZ: 359.70 TVD: 10394.18 VS: 1433.05

MD: 11656.00 INC: 87.80 AZ: 359.50 TVD: 10396.01 VS: 1528.03



700
11,800
11,900
12,000
12,100
12,200



MD: 11751.00 INC: 88.60 AZ: 359.50 TVD: 10398.99 VS: 1622.98

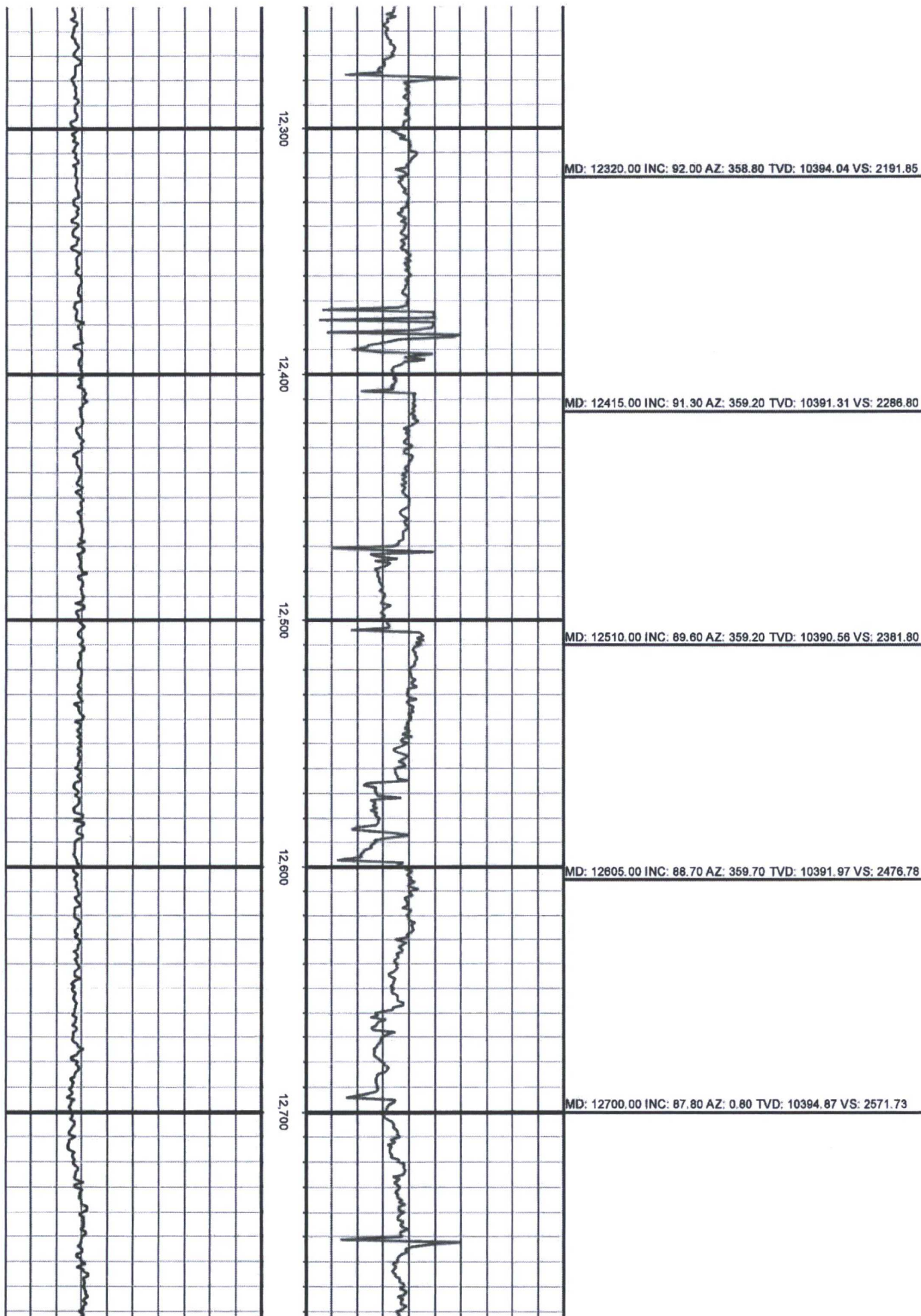
MD: 11846.00 INC: 89.20 AZ: 359.50 TVD: 10400.82 VS: 1717.98

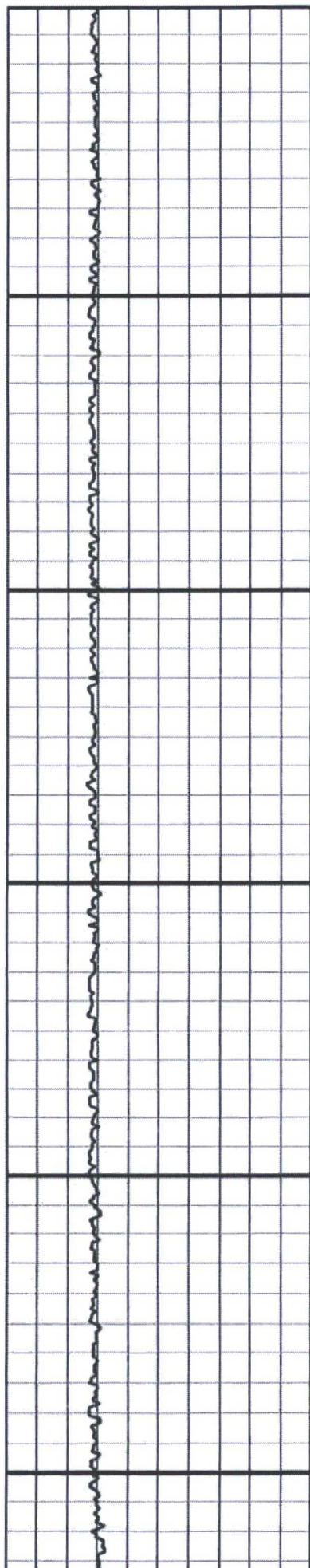
MD: 11941.00 INC: 90.00 AZ: 359.30 TVD: 10401.48 VS: 1812.98

MD: 12036.00 INC: 90.80 AZ: 359.20 TVD: 10400.82 VS: 1907.98

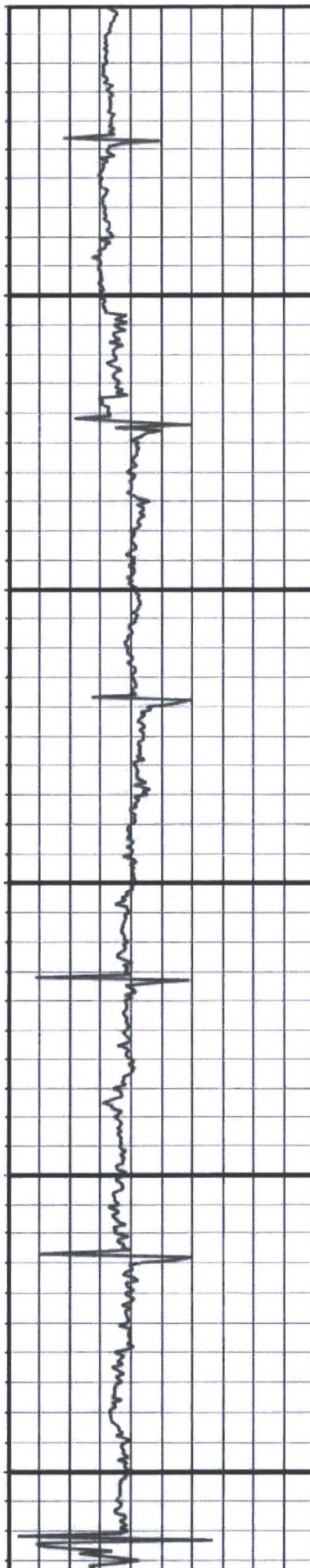
MD: 12131.00 INC: 91.50 AZ: 358.80 TVD: 10398.91 VS: 2002.93

MD: 12225.00 INC: 91.20 AZ: 359.00 TVD: 10396.69 VS: 2096.90





300
12,900
13,000
13,100
13,200
13,300



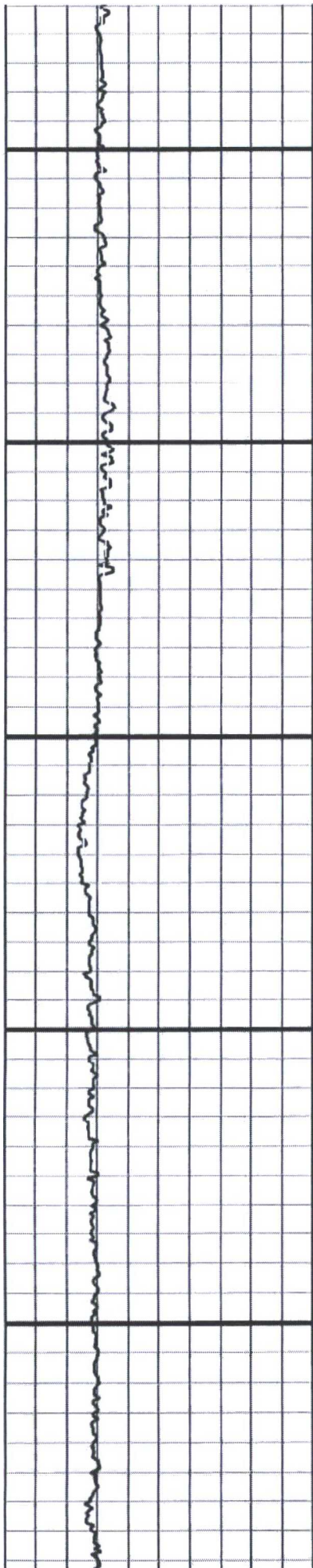
MD: 12890.00 INC: 88.90 AZ: 0.40 TVD: 10400.26 VS: 2761.62

MD: 12985.00 INC: 89.80 AZ: 0.20 TVD: 10401.34 VS: 2856.61

MD: 13080.00 INC: 90.60 AZ: 0.10 TVD: 10401.01 VS: 2951.61

MD: 13175.00 INC: 91.40 AZ: 359.50 TVD: 10399.35 VS: 3046.59

MD: 13270.00 INC: 92.10 AZ: 359.10 TVD: 10396.45 VS: 3141.54



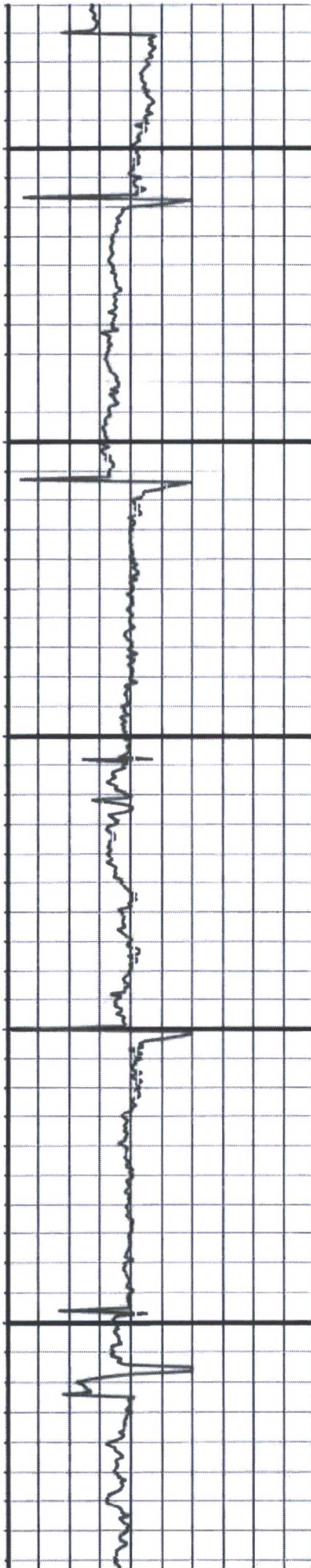
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13,500

13,600

13,700

13,800



MD: 13365.00 INC: 90.00 AZ: 359.50 TVD: 10394.71 VS: 3236.52

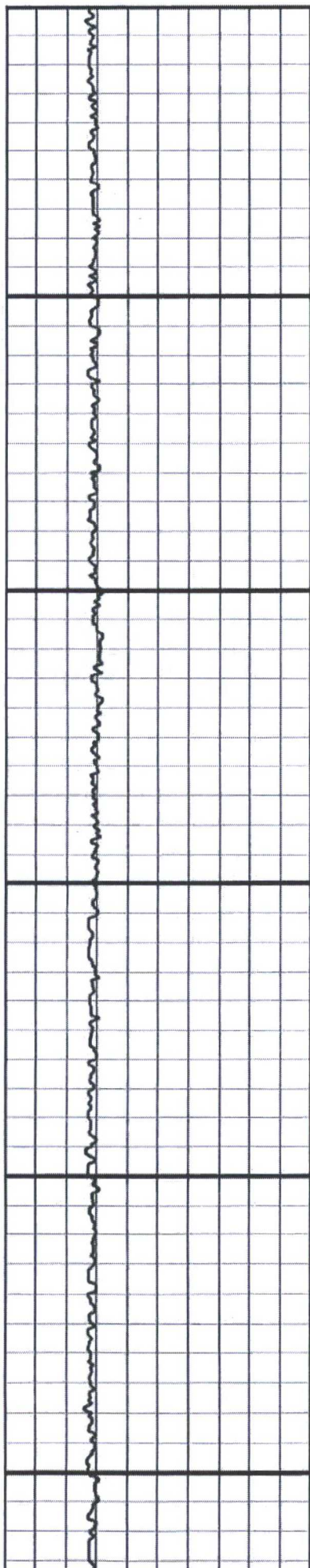
MD: 13460.00 INC: 90.50 AZ: 359.90 TVD: 10394.29 VS: 3331.52

MD: 13555.00 INC: 91.10 AZ: 359.50 TVD: 10392.96 VS: 3426.51

MD: 13650.00 INC: 91.60 AZ: 359.30 TVD: 10390.73 VS: 3521.48

MD: 13745.00 INC: 92.30 AZ: 359.00 TVD: 10387.49 VS: 3616.42

MD: 13839.00 INC: 92.70 AZ: 359.00 TVD: 10383.39 VS: 3710.33



300

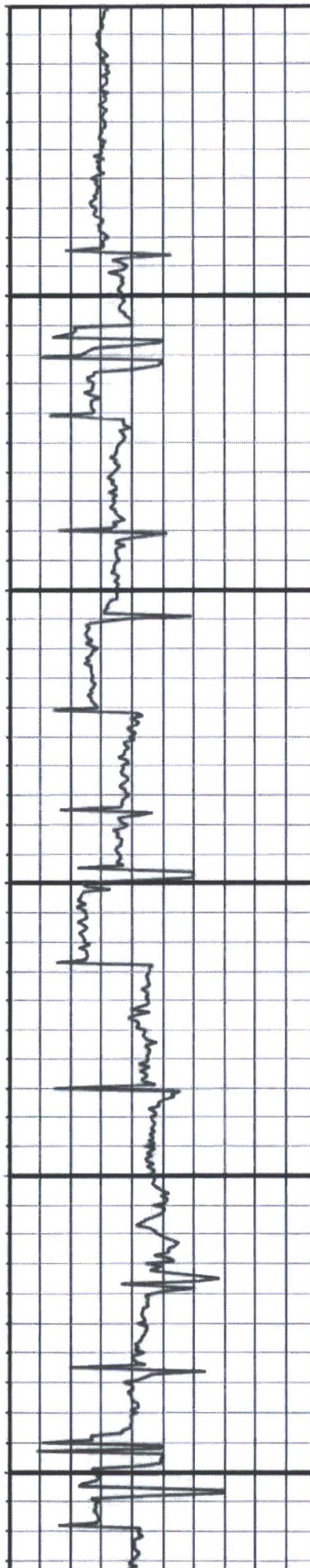
14,000

14,100

14,200

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14,400



MD: 13934.00 INC: 93.70 AZ: 358.80 TVD: 10378.09 VS: 3805.17

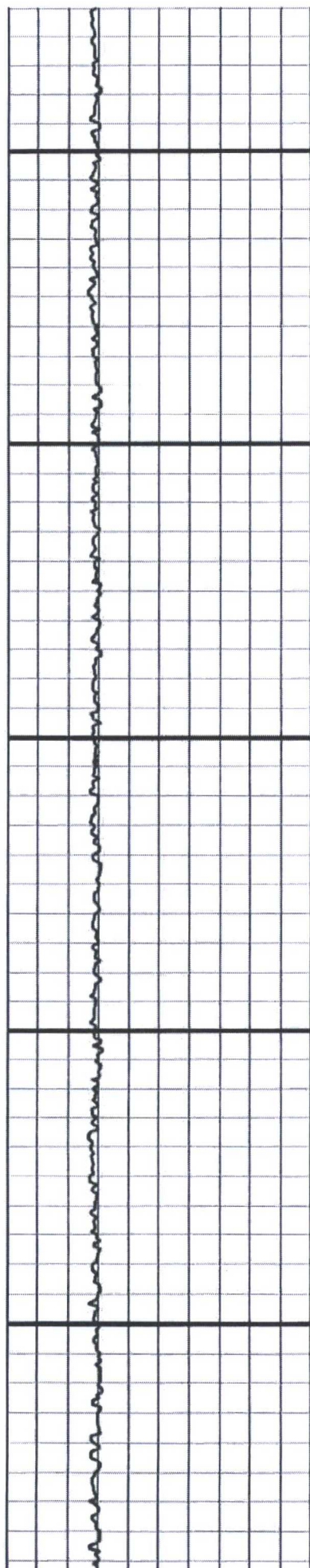
MD: 14029.00 INC: 92.50 AZ: 359.50 TVD: 10372.95 VS: 3900.02

MD: 14124.00 INC: 91.40 AZ: 359.50 TVD: 10369.72 VS: 3994.96

MD: 14219.00 INC: 90.30 AZ: 359.90 TVD: 10368.31 VS: 4089.95

MD: 14313.00 INC: 91.00 AZ: 359.70 TVD: 10367.24 VS: 4183.94

MD: 14408.00 INC: 90.20 AZ: 0.40 TVD: 10366.25 VS: 4278.93



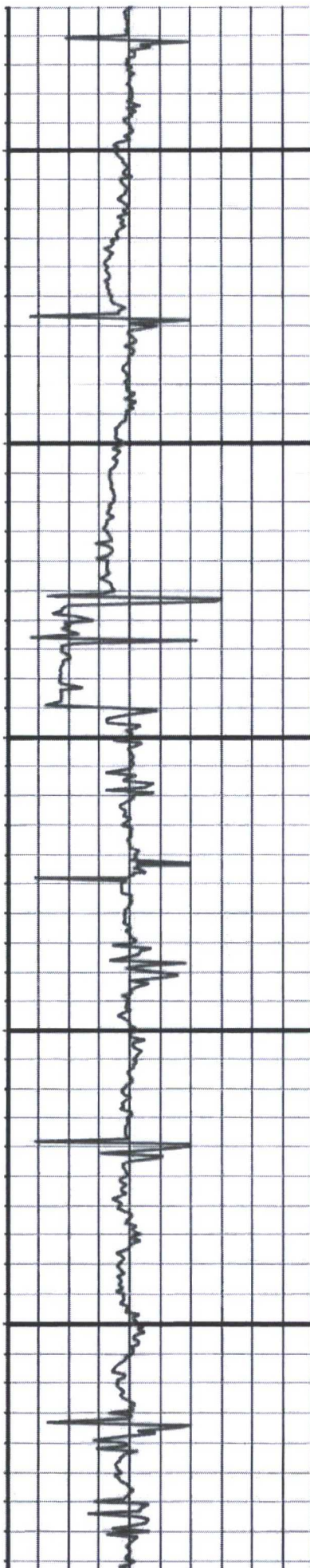
14,500

14,600

14,700

14,800

14,900



MD: 14503.00 INC: 91.10 AZ: 0.40 TVD: 10365.17 VS: 4373.92

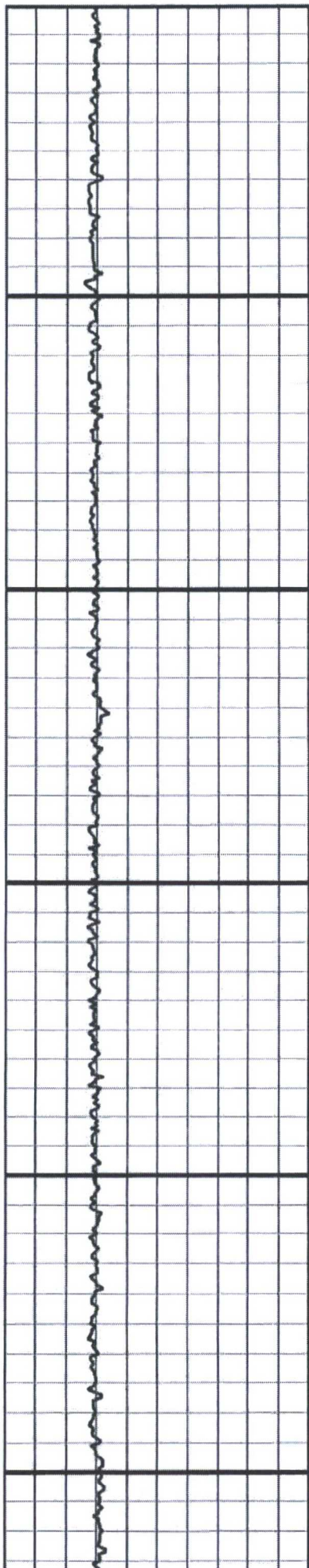
MD: 14598.00 INC: 91.60 AZ: 0.20 TVD: 10362.93 VS: 4468.89

MD: 14693.00 INC: 89.40 AZ: 0.10 TVD: 10362.11 VS: 4563.87

MD: 14788.00 INC: 90.10 AZ: 359.90 TVD: 10362.52 VS: 4658.87

MD: 14883.00 INC: 90.80 AZ: 0.10 TVD: 10361.77 VS: 4753.86

MD: 14978.00 INC: 91.40 AZ: 0.10 TVD: 10359.95 VS: 4848.84



300

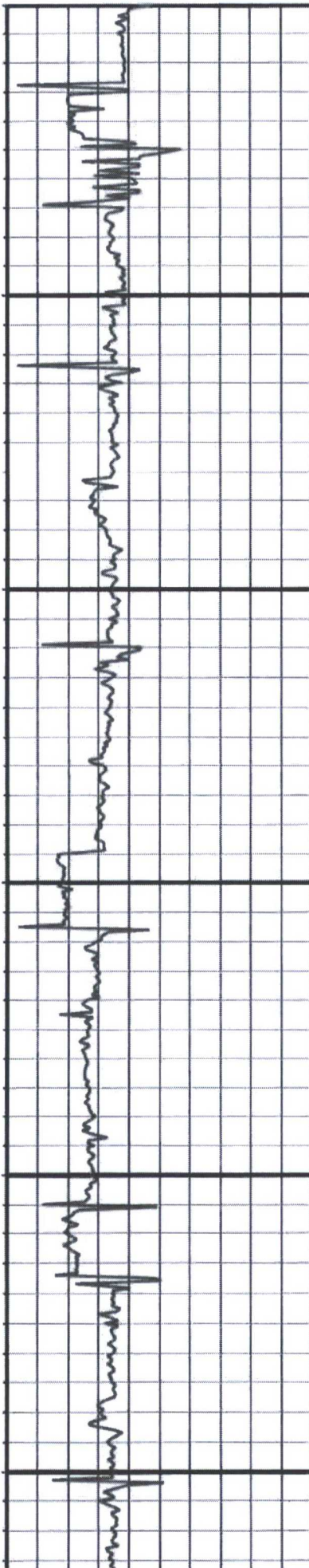
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15,200

15,300

15,400

15,500



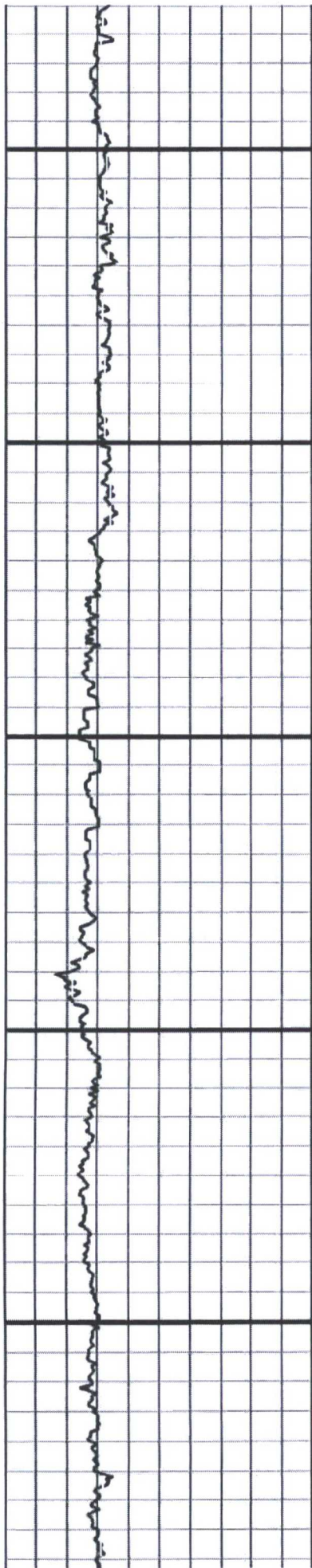
MD: 15073.00 INC: 91.90 AZ: 0.10 TVD: 10357.21 VS: 4943.80

MD: 15168.00 INC: 92.20 AZ: 359.70 TVD: 10353.82 VS: 5038.74

MD: 15263.00 INC: 92.50 AZ: 359.30 TVD: 10349.92 VS: 5133.66

MD: 15358.00 INC: 90.50 AZ: 359.30 TVD: 10347.43 VS: 5228.62

MD: 15453.00 INC: 91.00 AZ: 359.00 TVD: 10346.19 VS: 5323.61



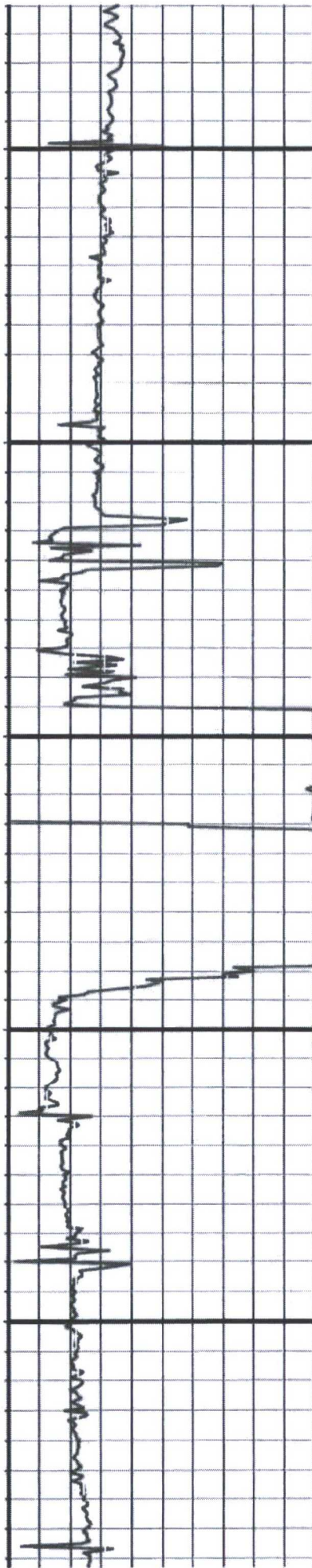
15,600

15,700

15,800

15,900

16,000



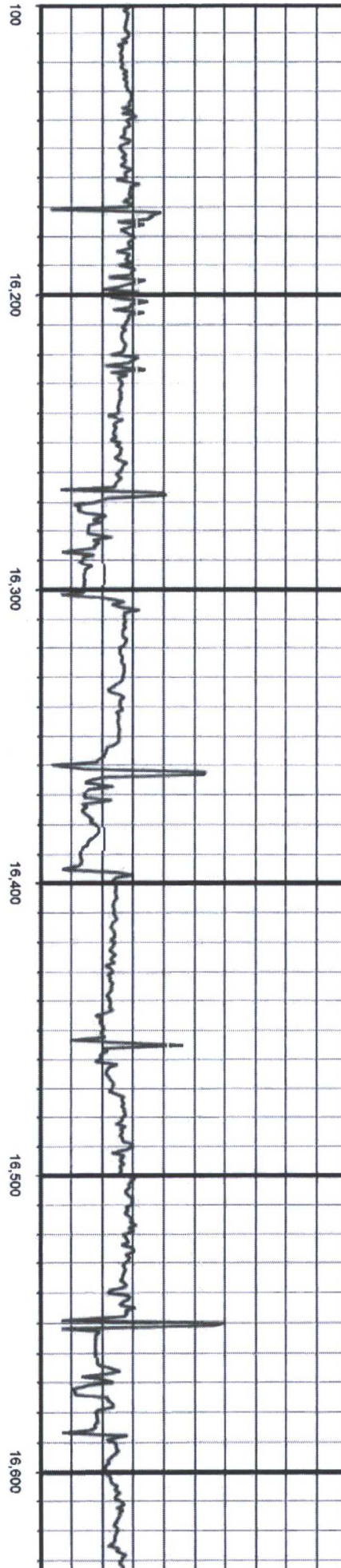
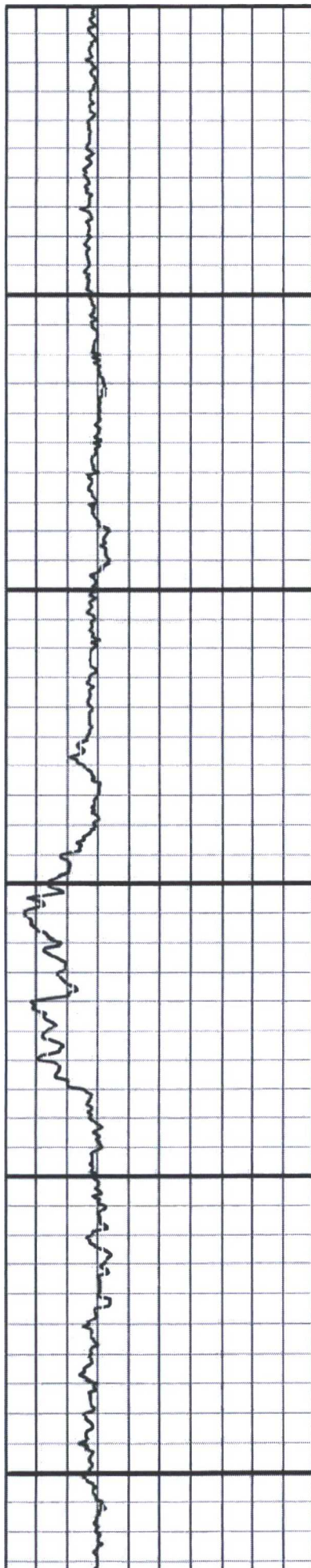
MD: 15642.00 INC: 92.70 AZ: 358.60 TVD: 10339.83 VS: 5512.47

MD: 15737.00 INC: 92.40 AZ: 358.50 TVD: 10335.61 VS: 5607.38

MD: 15831.00 INC: 91.70 AZ: 357.60 TVD: 10332.25 VS: 5701.26

MD: 15926.00 INC: 88.60 AZ: 357.60 TVD: 10331.99 VS: 5798.19

MD: 16023.00 INC: 89.20 AZ: 357.40 TVD: 10333.82 VS: 5893.11



MD: 16118.00 INC: 90.50 AZ: 357.40 TVD: 10334.08 VS: 5988.03

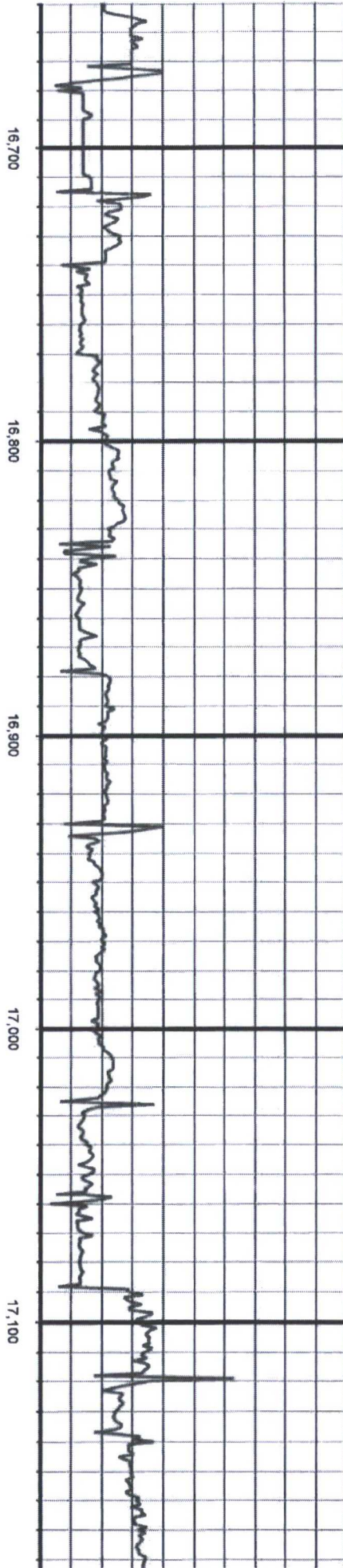
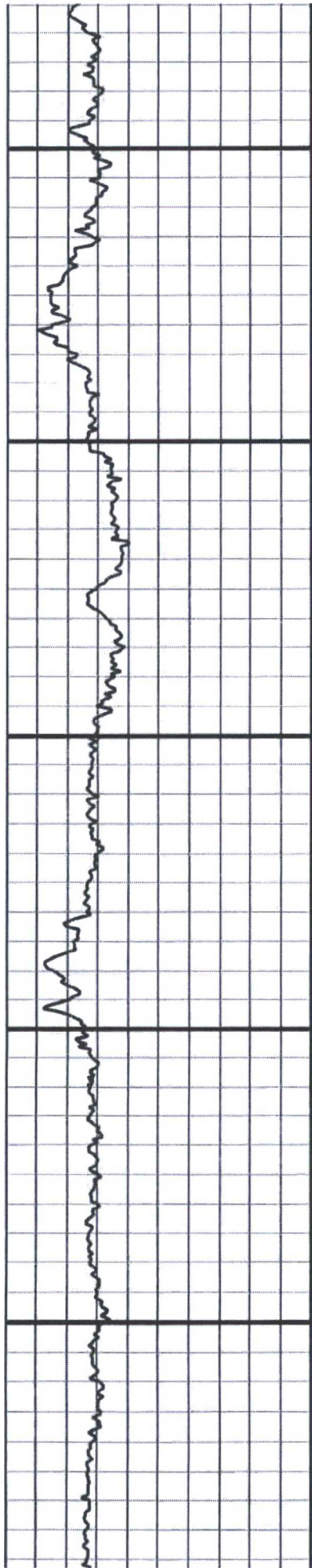
MD: 16213.00 INC: 91.90 AZ: 357.80 TVD: 10332.07 VS: 6082.95

MD: 16308.00 INC: 91.50 AZ: 359.90 TVD: 10329.26 VS: 6177.89

MD: 16402.00 INC: 90.20 AZ: 0.60 TVD: 10327.88 VS: 6271.88

MD: 16497.00 INC: 91.60 AZ: 359.70 TVD: 10328.37 VS: 6366.86

MD: 16592.00 INC: 90.20 AZ: 0.40 TVD: 10324.88 VS: 6461.84



MD: 16687.00 INC: 89.30 AZ: 0.60 TVD: 10325.29 VS: 6556.83

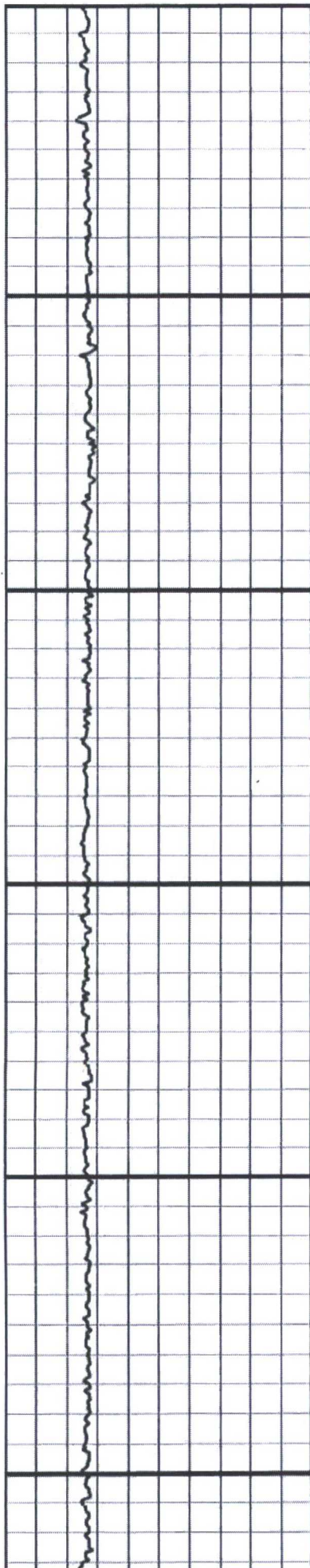
MD: 16782.00 INC: 89.70 AZ: 0.60 TVD: 10326.12 VS: 6651.81

MD: 16877.00 INC: 87.70 AZ: 0.40 TVD: 10328.28 VS: 6746.77

MD: 16972.00 INC: 89.00 AZ: 0.60 TVD: 10331.01 VS: 6841.71

MD: 17067.00 INC: 88.10 AZ: 0.20 TVD: 10333.42 VS: 6936.67

MD: 17162.00 INC: 87.90 AZ: 0.60 TVD: 10336.73 VS: 7031.60



200

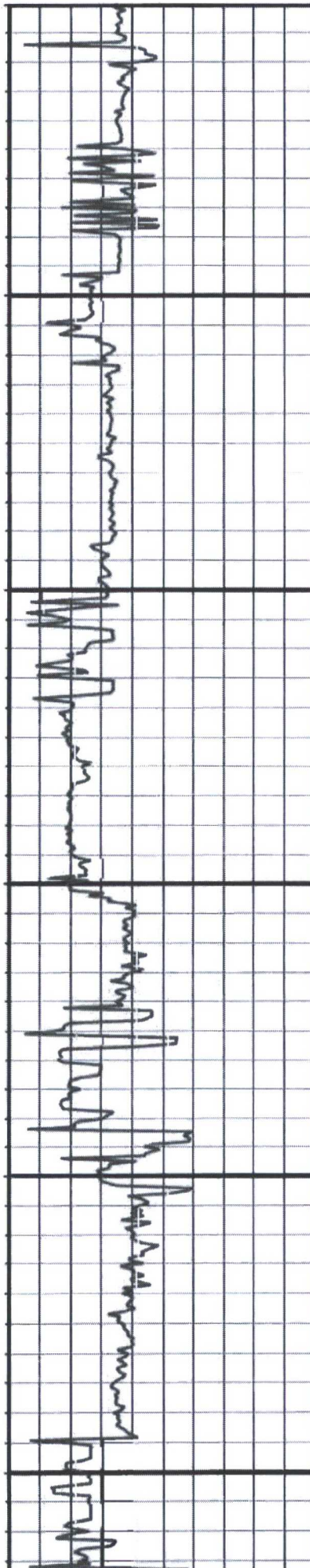
17,300

17,400

17,500

17,600

17,700



MD: 17256.00 INC: 89.30 AZ: 0.40 TVD: 10339.03 VS: 7125.56

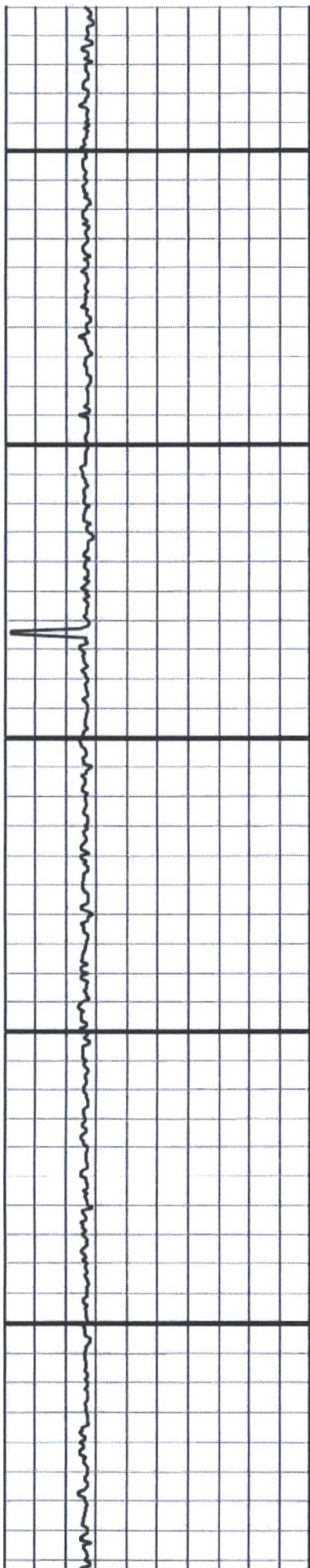
MD: 17351.00 INC: 90.60 AZ: 359.90 TVD: 10339.11 VS: 7220.56

MD: 17446.00 INC: 90.00 AZ: 0.40 TVD: 10338.61 VS: 7315.55

MD: 17541.00 INC: 90.80 AZ: 1.10 TVD: 10337.95 VS: 7410.63

MD: 17636.00 INC: 89.50 AZ: 1.50 TVD: 10337.70 VS: 7505.49

MD: 17730.00 INC: 87.90 AZ: 1.80 TVD: 10339.83 VS: 7599.40



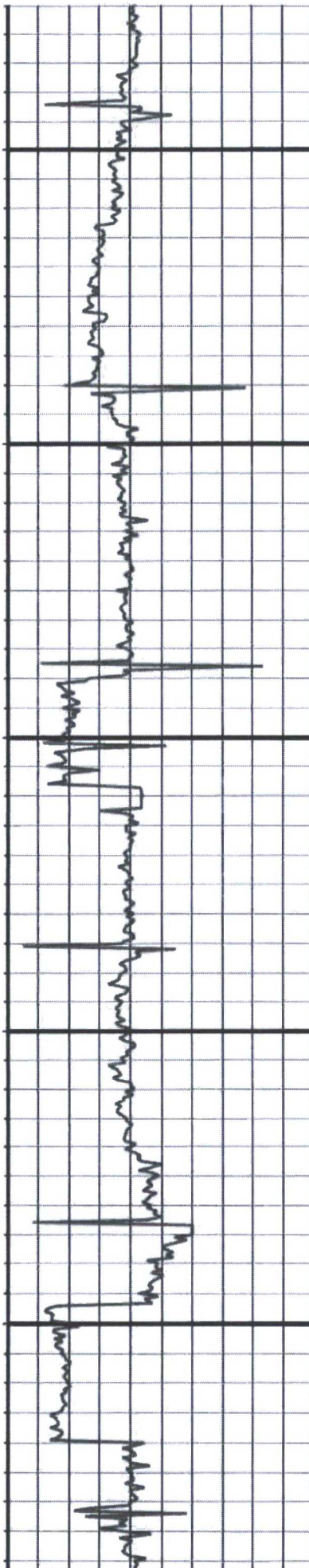
17,800

17,900

18,000

18,100

18,200



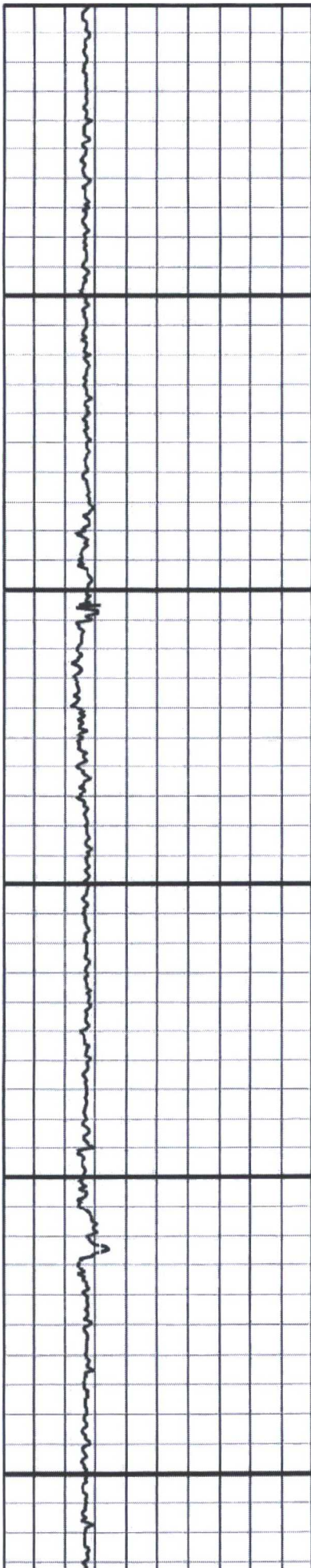
MD: 17825.00 INC: 89.30 AZ: 1.30 TVD: 10342.15 VS: 7684.32

MD: 17920.00 INC: 91.30 AZ: 1.60 TVD: 10341.66 VS: 7789.26

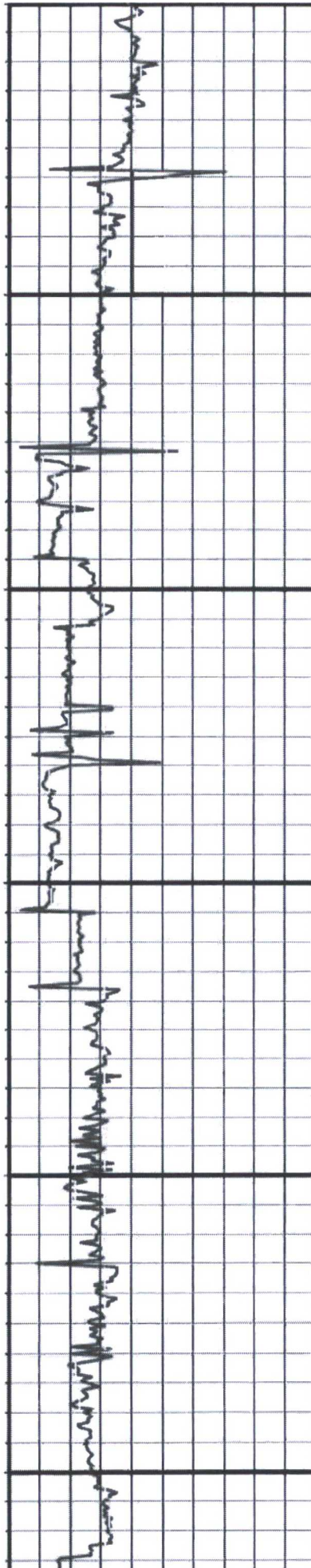
MD: 18015.00 INC: 89.80 AZ: 1.30 TVD: 10340.74 VS: 7884.21

MD: 18110.00 INC: 91.20 AZ: 1.60 TVD: 10339.92 VS: 7979.15

MD: 18205.00 INC: 90.40 AZ: 0.10 TVD: 10338.59 VS: 8074.12



300
18,400
18,500
18,600
18,700
18,800



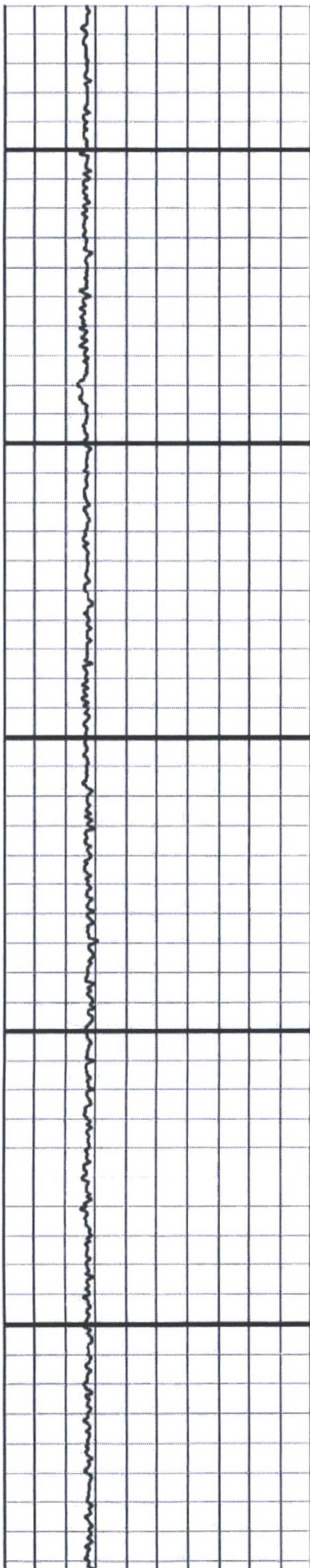
MD: 18394.00 INC: 91.70 AZ: 359.20 TVD: 10336.37 VS: 8263.10

MD: 18469.00 INC: 90.20 AZ: 359.20 TVD: 10334.79 VS: 8358.08

MD: 18584.00 INC: 89.40 AZ: 359.00 TVD: 10335.13 VS: 8453.07

MD: 18678.00 INC: 89.60 AZ: 359.00 TVD: 10335.95 VS: 8547.06

MD: 18773.00 INC: 91.50 AZ: 359.20 TVD: 10335.03 VS: 8642.05



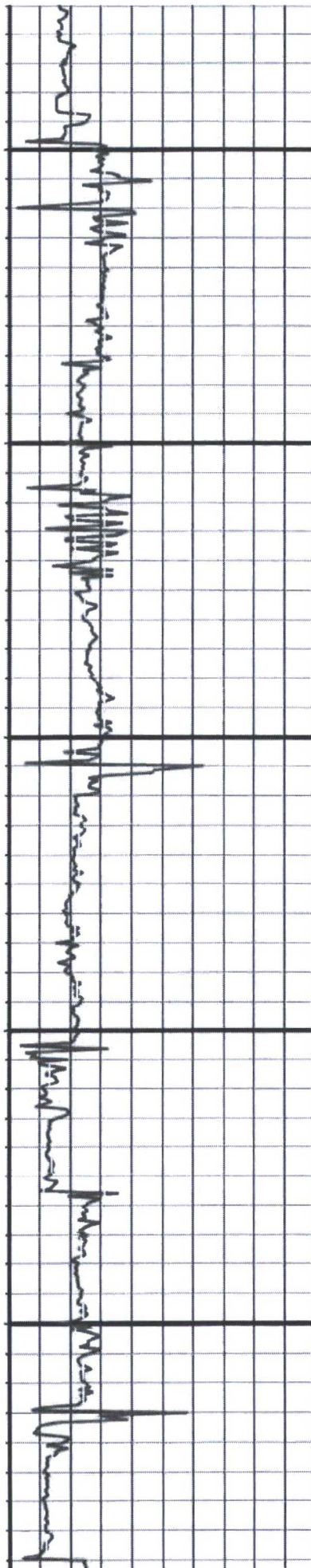
18,900

19,000

19,100

19,200

19,300



MD: 18868.00 INC: 89.40 AZ: 359.90 TVD: 10334.29 VS: 8737.04

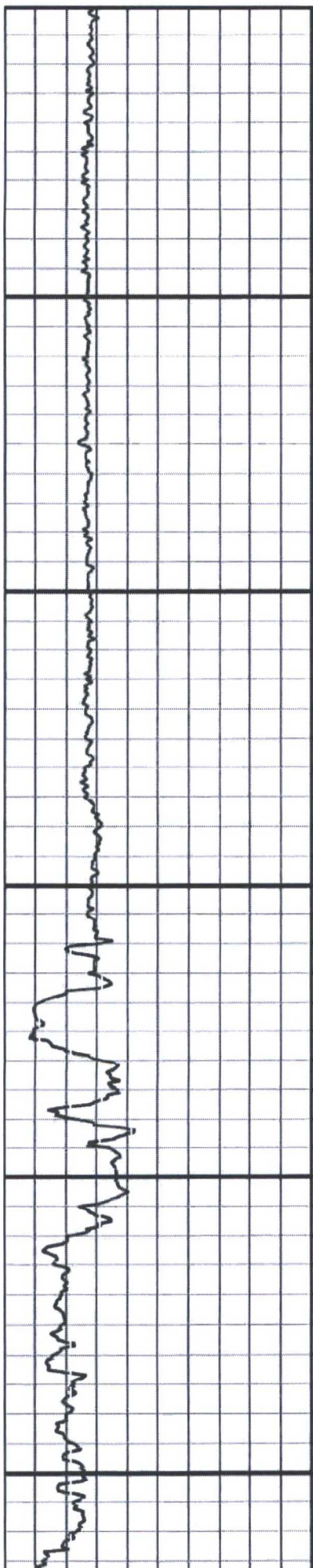
MD: 18963.00 INC: 89.50 AZ: 359.30 TVD: 10335.20 VS: 8832.04

MD: 19058.00 INC: 91.00 AZ: 359.20 TVD: 10334.78 VS: 8927.03

MD: 19153.00 INC: 92.40 AZ: 359.20 TVD: 10331.97 VS: 9021.98

MD: 19248.00 INC: 90.20 AZ: 359.30 TVD: 10329.81 VS: 9116.95

MD: 19342.00 INC: 89.60 AZ: 359.90 TVD: 10329.98 VS: 9210.95



400

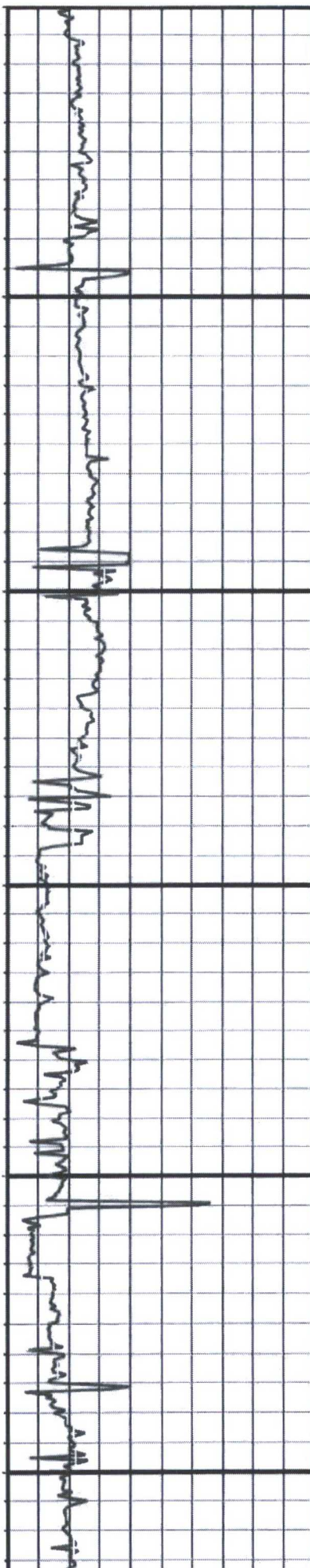
19,500

19,600

19,700

19,800

19,900



MD: 19437.00 INC: 89.30 AZ: 359.20 TVD: 10330.89 VS: 9305.95

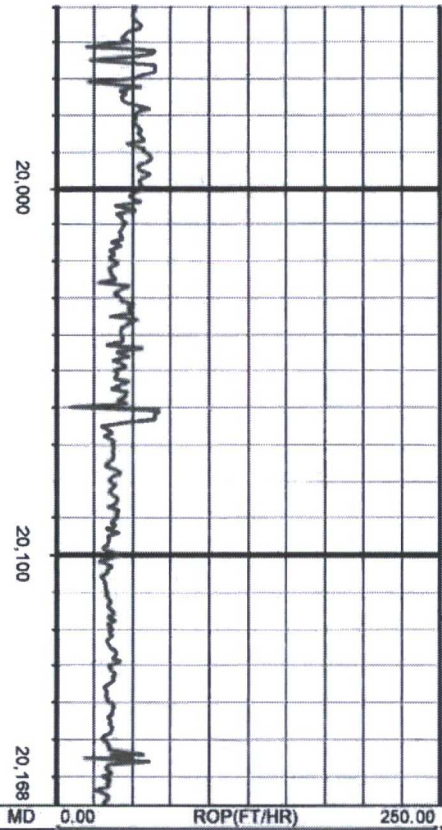
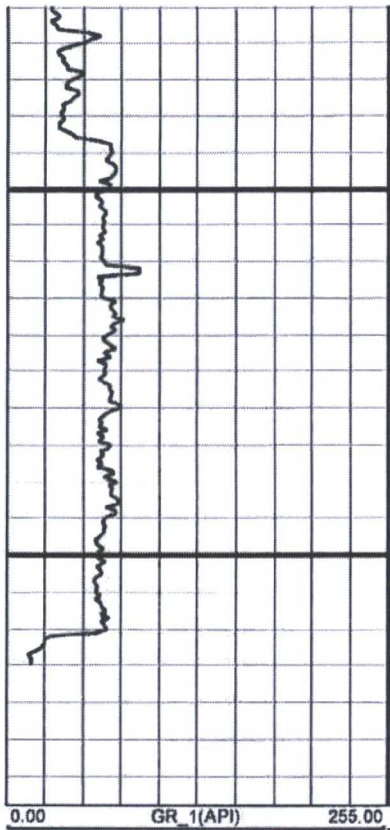
MD: 19532.00 INC: 90.30 AZ: 359.50 TVD: 10331.22 VS: 9400.94

MD: 19627.00 INC: 91.90 AZ: 359.50 TVD: 10329.40 VS: 9495.92

MD: 19722.00 INC: 90.00 AZ: 359.70 TVD: 10327.82 VS: 9590.90

MD: 19817.00 INC: 88.50 AZ: 359.00 TVD: 10329.06 VS: 9685.89

MD: 19912.00 INC: 89.60 AZ: 359.20 TVD: 10330.64 VS: 9780.87



MD: 20007.00 INC: 91.50 AZ: 359.50 TVD: 10329.73 VS: 9875.86

MD: 20117.00 INC: 93.30 AZ: 358.80 TVD: 10325.12 VS: 9985.76

Surveys (MD/INC/AZ/TVD/VS)