

Company: Noble Energy Inc

Well Name: Mahalo State AA09-72-1AHNB

API: 05-123-39012

Rig Id: Precision 828

State: Colorado

County/Parish: Weld

Country: USA

Survey Company: Ensign Directional

Job number: 207-P828-52

Company Man 1 Gary Stapleton

Directional Driller 1 Tyler Batchelder

Directional Driller 2 Nick Jones

MWD 1 Derek Saykally

MWD 2 Buster Snider

Log measurements: Gamma

Depth measured from: KB

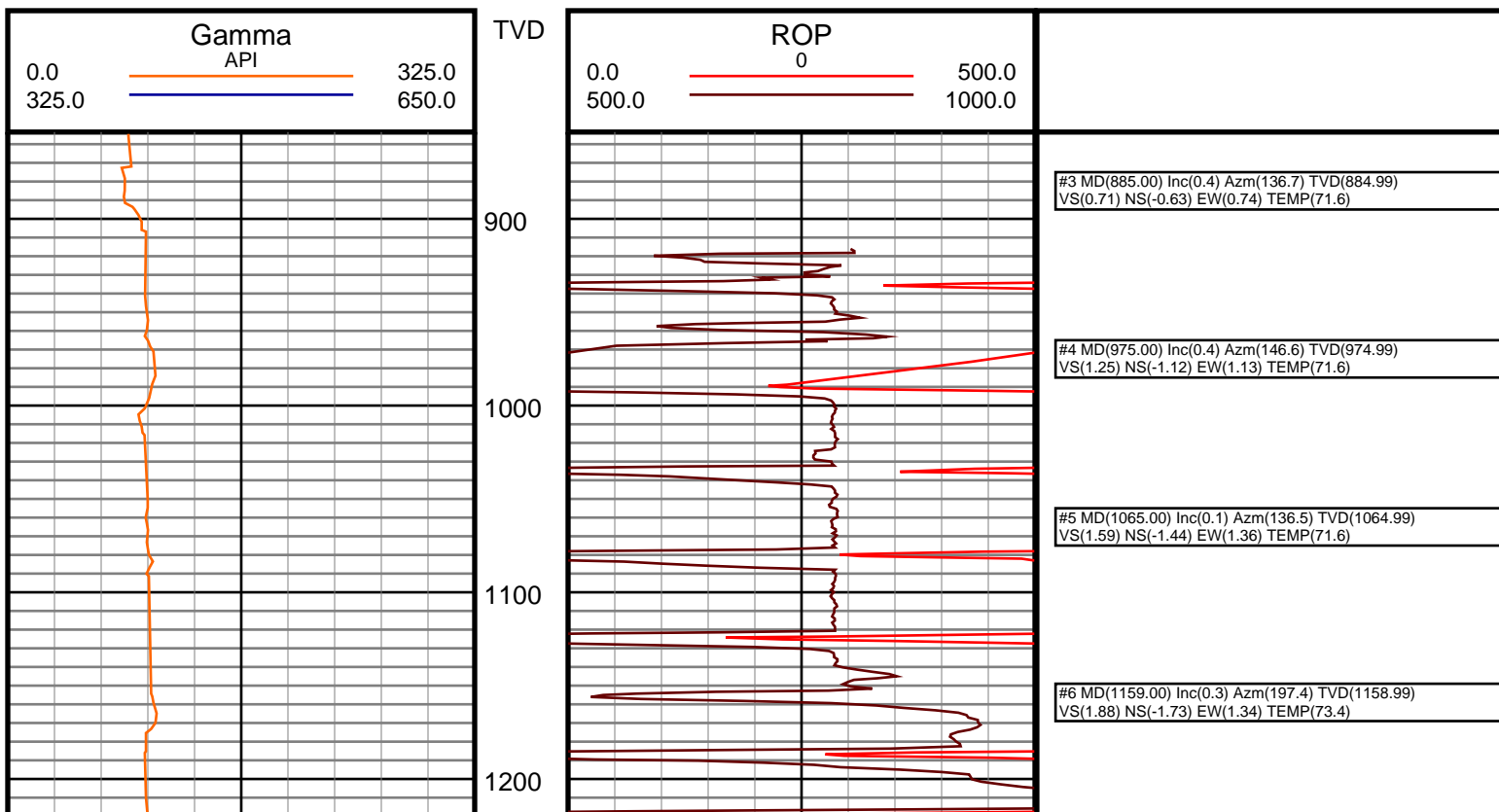
Maximum temperature:

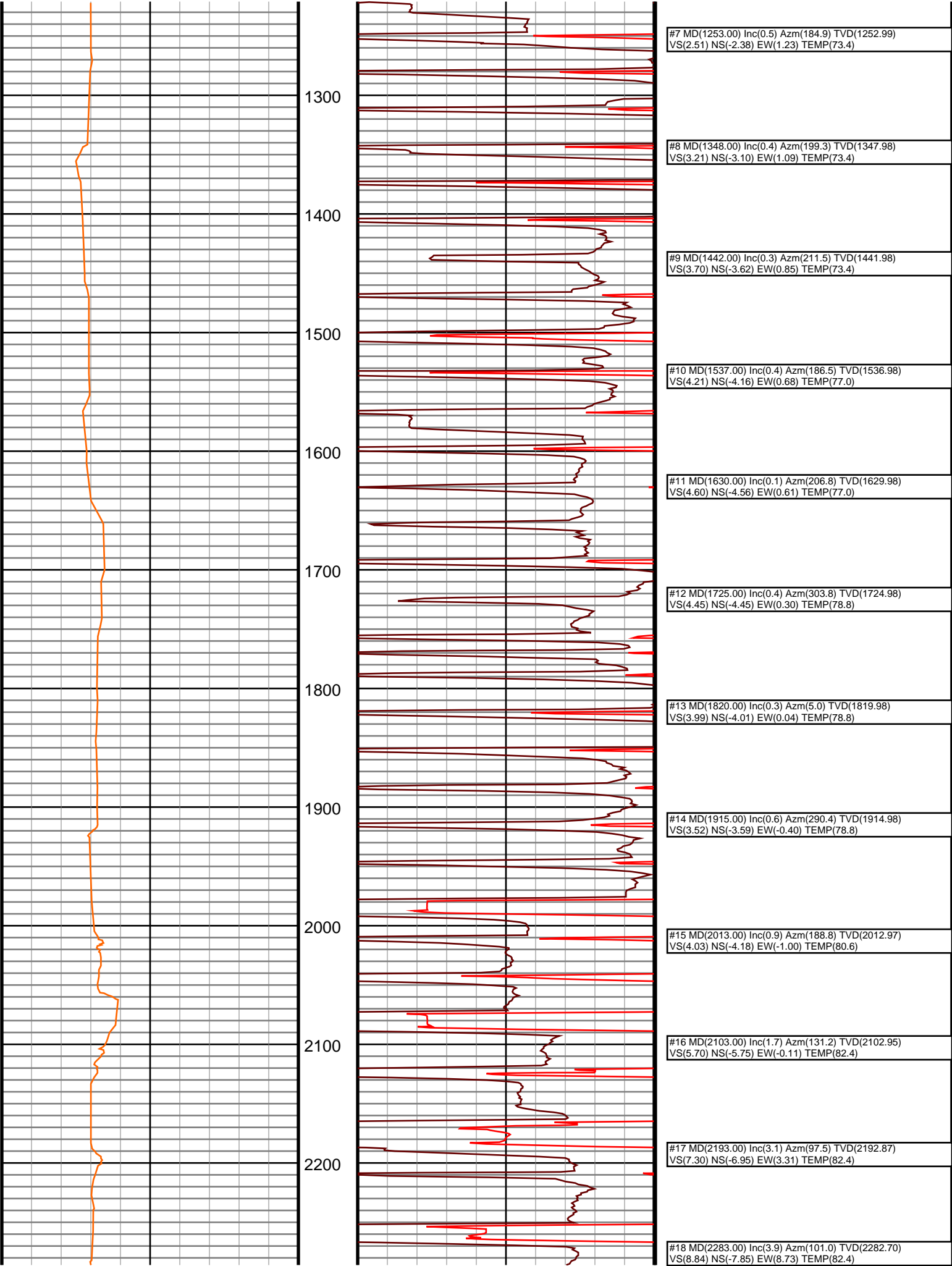
Depth Start: 831 ft 1/9/2015  
End: 11883 ft 1/16/2015

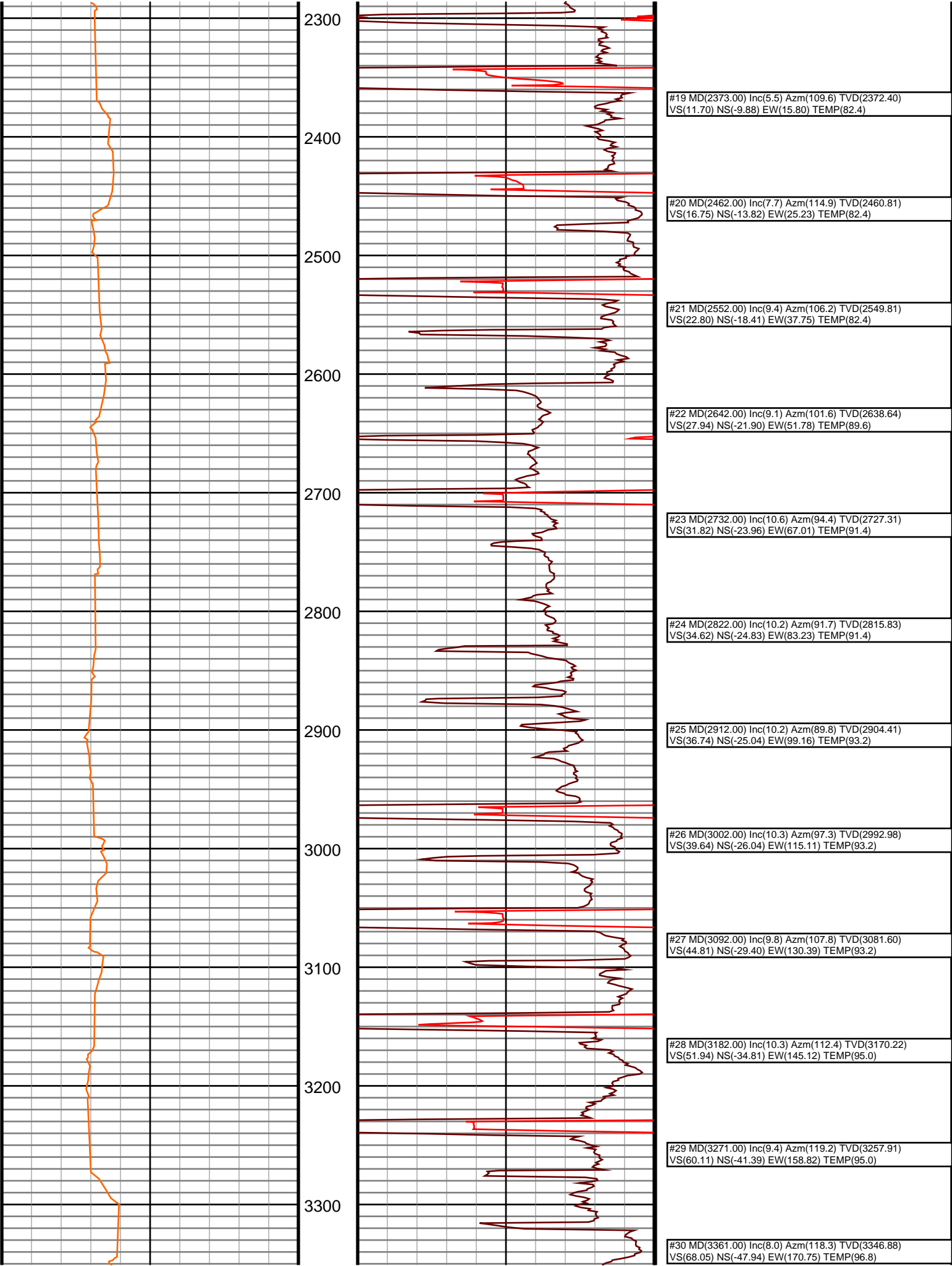
Casing	Depth	Size	Mud Type:	Water Based	Elevations
Surface:	831	9.625	Density:		KB: 4732
Intermediate:	7043	7.0	Viscosity:		GL: 4716
			Rm:	Rmf:	DF: 4732

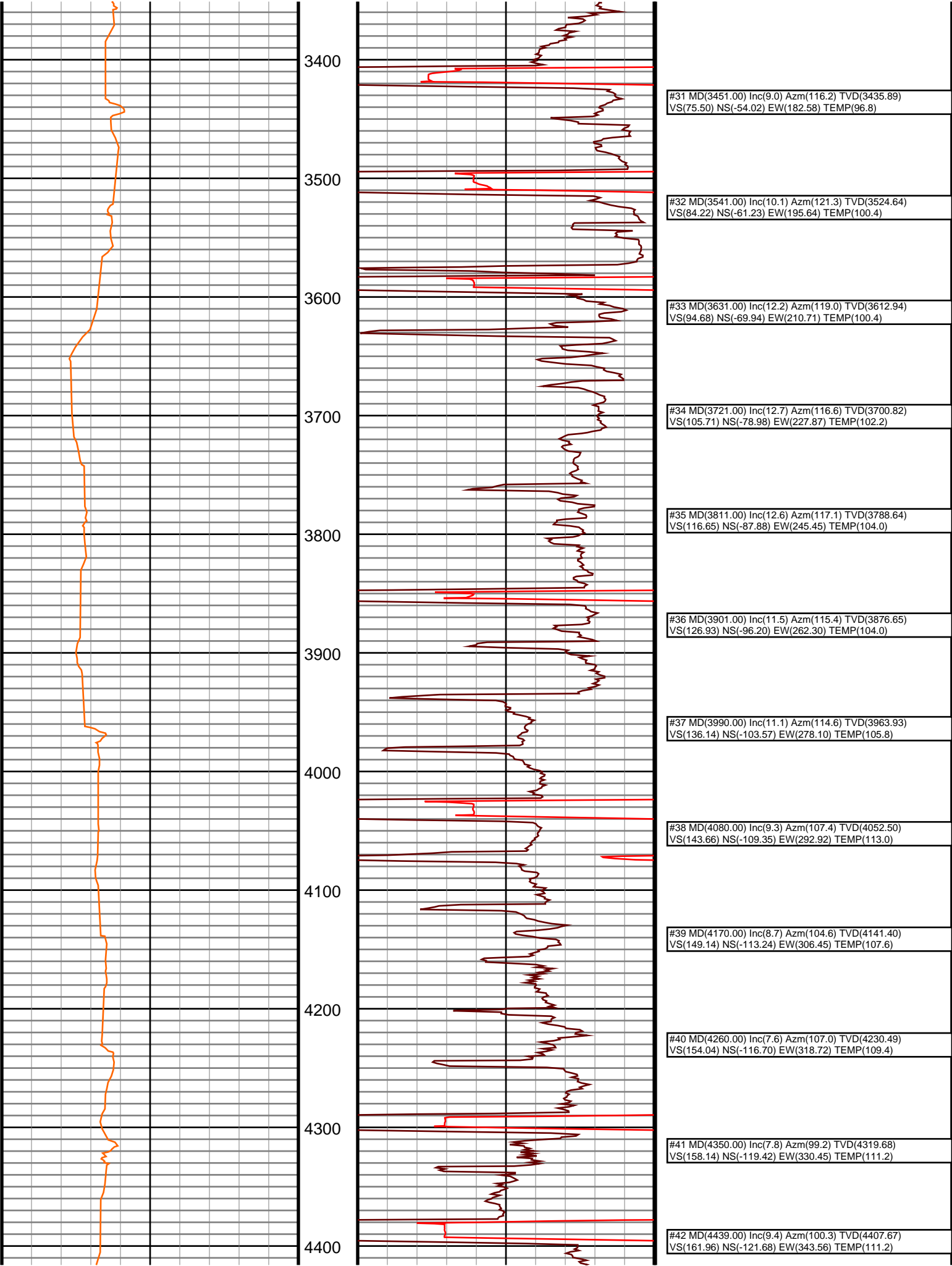
Run	Bit Size	Offsets	Gamma	Survey	Start	End	Start	End	Dates
1	8 3/4	61.50	56.50	831	7043	10850	1/9/2015	1/11/2015	
2	6 1/8	60.59	55.59	7043	10850	11883	1/12/2015	1/14/2015	
3	6 1/8	60.59	55.59	10850	11883		1/14/2015	1/16/2015	
4									
5									
6									
7									
8									
9									
10									

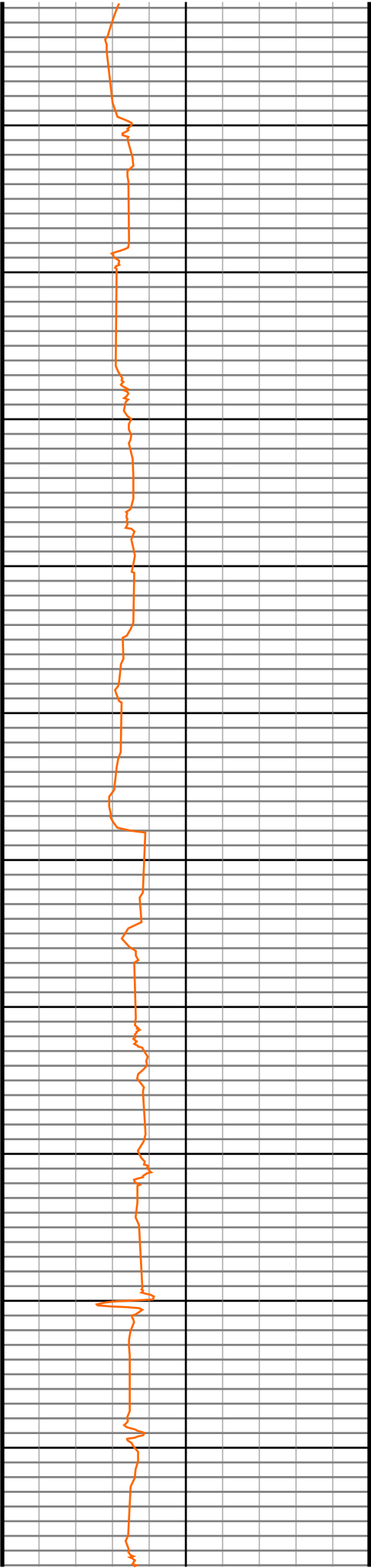
Ensign Directional uses its best efforts to provide its customers with accurate information and interpretations in conjunction with services performed but will not be held liable or responsible for the accuracy of such information or interpretation.











4500

4600

4700

4800

4900

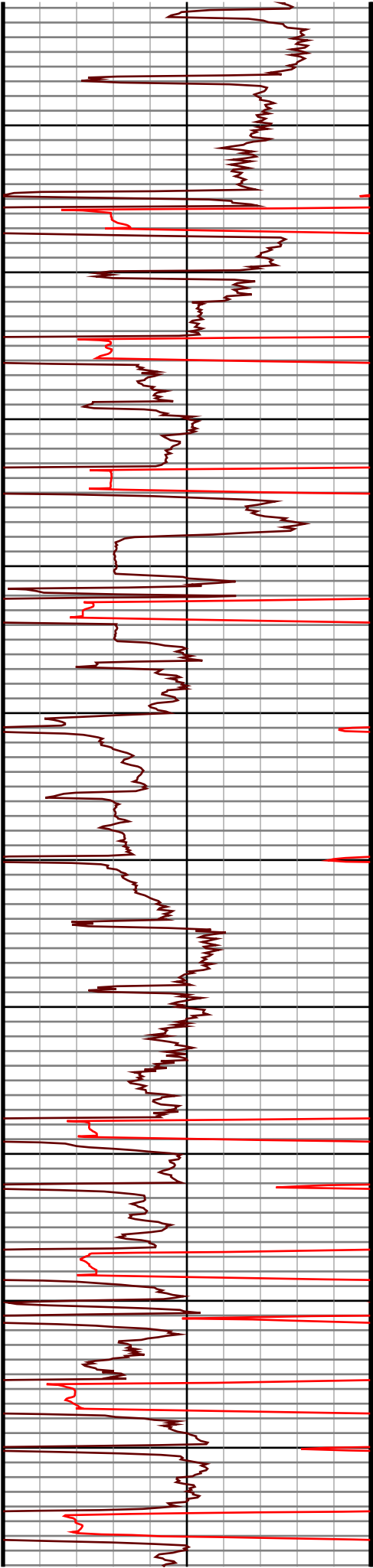
5000

5100

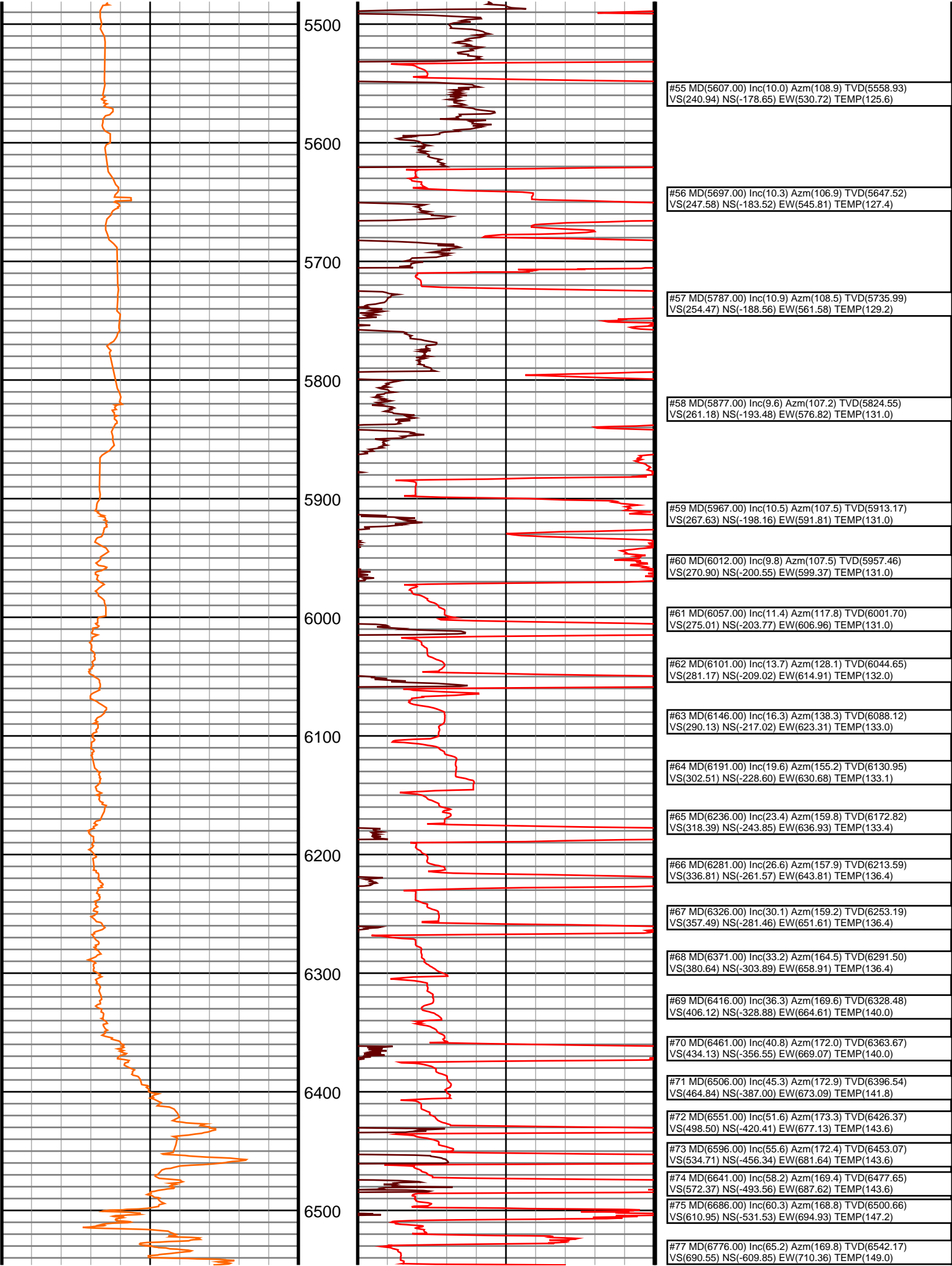
5200

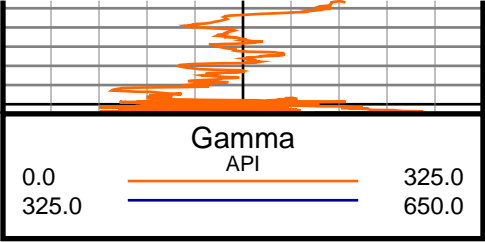
5300

5400

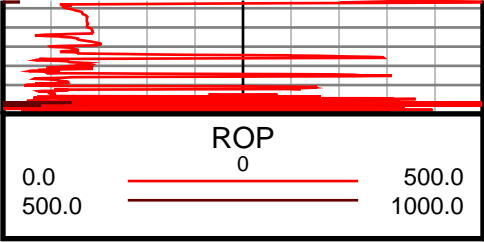


#43 MD(4529.00) Inc(9.0) Azm(97.3) TVD(4496.52) VS(165.86) NS(-123.89) EW(357.77) TEMP(113.0)
#44 MD(4619.00) Inc(10.1) Azm(100.0) TVD(4585.27) VS(169.87) NS(-126.16) EW(372.53) TEMP(114.8)
#45 MD(4709.00) Inc(10.2) Azm(103.0) TVD(4673.86) VS(174.87) NS(-129.32) EW(388.06) TEMP(114.8)
#46 MD(4799.00) Inc(10.6) Azm(103.0) TVD(4762.38) VS(180.40) NS(-132.97) EW(403.89) TEMP(116.6)
#47 MD(4888.00) Inc(11.0) Azm(109.3) TVD(4849.81) VS(186.93) NS(-137.62) EW(419.88) TEMP(120.2)
#48 MD(4978.00) Inc(10.5) Azm(110.4) TVD(4938.23) VS(194.48) NS(-143.32) EW(435.67) TEMP(120.2)
#49 MD(5068.00) Inc(10.1) Azm(108.3) TVD(5026.78) VS(201.59) NS(-148.65) EW(450.85) TEMP(120.2)
#50 MD(5158.00) Inc(8.6) Azm(106.2) TVD(5115.58) VS(207.59) NS(-153.01) EW(464.81) TEMP(123.8)
#51 MD(5248.00) Inc(8.6) Azm(108.4) TVD(5204.57) VS(213.10) NS(-157.01) EW(477.66) TEMP(122.0)
#52 MD(5338.00) Inc(8.3) Azm(113.0) TVD(5293.59) VS(219.21) NS(-161.67) EW(490.02) TEMP(123.8)
#53 MD(5427.00) Inc(9.2) Azm(117.3) TVD(5381.56) VS(226.41) NS(-167.45) EW(502.26) TEMP(123.8)
#54 MD(5517.00) Inc(10.0) Azm(110.1) TVD(5470.30) VS(233.99) NS(-173.43) EW(515.99) TEMP(127.4)





6600



#78 MD(6821.00) Inc(70.5) Azm(173.5) TVD(6559.13) VS(732.19) NS(-651.06) EW(716.39) TEMP(150.8)
#136 MD(11825.00) Inc(91.8) Azm(177.4) TVD(6596.64) VS(5691.86) NS(-5649.08) EW(696.78) TEMP(215.6)