

Décollement
Consulting
Inc.



Scale: 5" / 100'
Measured Depth Log

Well Name North Platte K-O-13HNC

Location NWNW Sec 13, T5N, R63W

State Colorado

Country USA

API Number 05-123-37062-00

County Weld

Rig Number Ensign 136

Field D.J. Basin

Drilling Completed 5/26/2013

Surface Coordinates 595 FNL X 1225 FWL

Ground Elevation 4,630

Logged Interval 5000 To 11275'

Formation Niobrara "C" Chalk

Type of Drilling Fluid WBM

K.B. Elevation 4,642

Total Depth 11275'

Company Bonanza Creek Energy

Address 410 17th Street, Suite 1100
Denver, CO 80202

Name Leo Carrasco/Chris Irwin

Company Décollement Consulting

Address 13300 Braun Road
Golden, CO 80401























































Operator

500

Accessories

Fossils

Fossils	
 FOSSIL	 ARGILLACEOUS
 GASTROPOD	 ARGILLITE GRAIN
 OOLITE	 GLAUCONITE
 OSTRACOD	 GYPSIFEROUS
 BELEMNITE	 HEAVY MINERAL
 BIOCLASTIC	 KAOLIN
 BRACHIOPOD	 MARLSTONE
 BRYOZOA	 MINERAL CRYSTALS
 CEPHALOPOD	 NODULES
 CORAL	 PHOSPHATE PELLET
 CRINOID	 PYRITE
 ECHINOID	 SALT CAST
 FISH	 SANDY
 FORAMINIFERA	 SILTY
 ANHYDRITIC	 TUFFACEOUS
Minerals	
 BENTONITE	 ANHYDRITE STRINGER
 BITUMINOUS SUBSTANCE	 BENTONITE STRINGER
 BRECCIA FRAGMENTS	 COAL STRINGER
 CALCAREOUS	 DOLOMITE STRINGER
 CARBONACEOUS FLAKES	 GYPSUM STRINGER
 NODULES	 LIMESTONE STRINGER
 CHTCK	 MARLSTONE (CALC.) STRG
 CHTCK	 MARLSTONE (DOL.) STRG
 COAL - THIN BEDS	 SANDSTONE STRINGER
 DOLOMITIC	 SHALE STRINGER
 FELDSPAR	 SILTSTONE STRINGER

Geologist

Inc.

Other Symbols

Oil Show

		
Oil Show	GAS SHOW	MX MICROX LN
		
ORGANIC	MINDEPTH MN DEPTH	MS MUDSTONE
		
P PINPOINT	ANGULAR	PS PACKSTONE
		
DEAD	NORMAL FAULT	B SUBANG
		
EVEN	OIL SHOW	U SUBUND
		
QUESTIONABLE	OVERTURNED STRATA	
		
Engineering		

Engineering

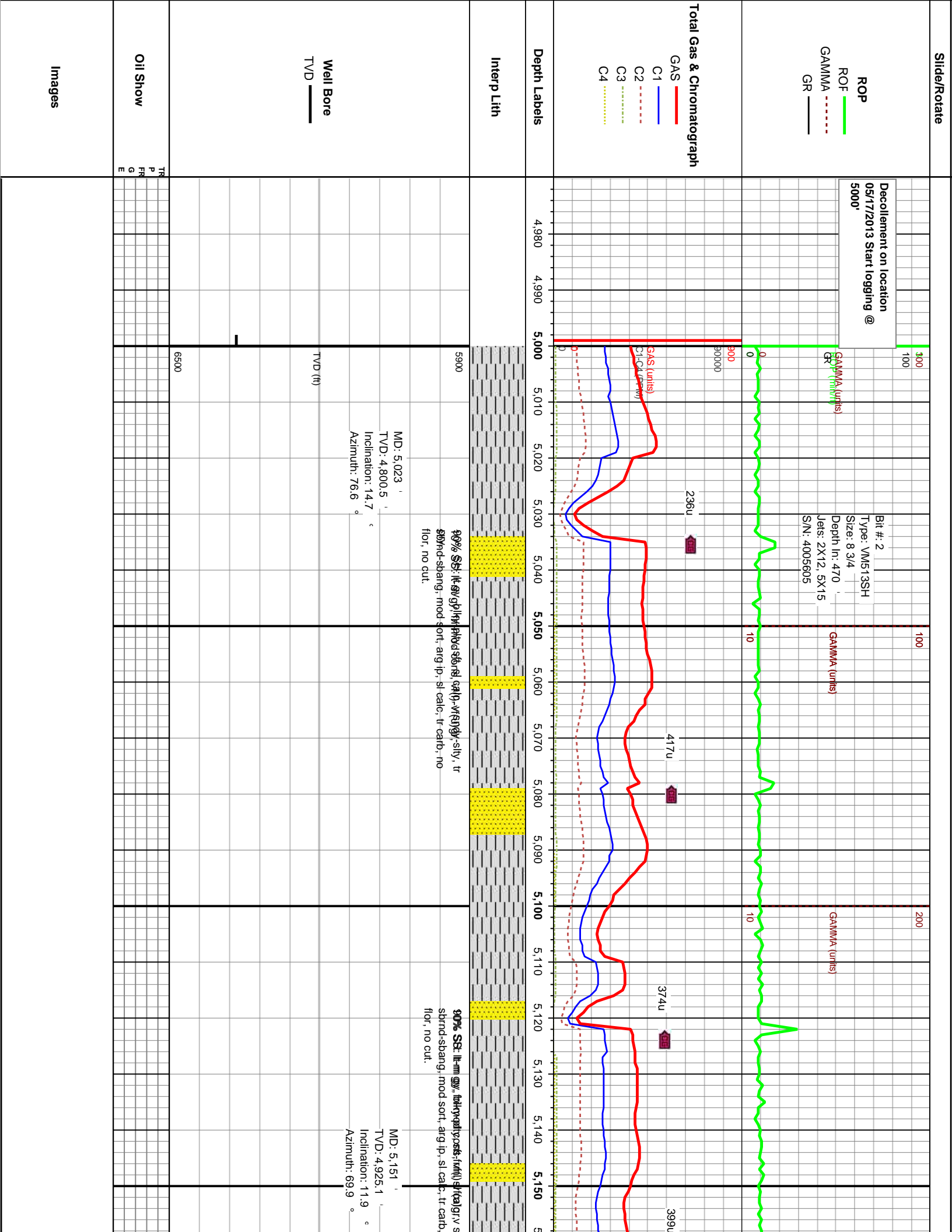
Porosity

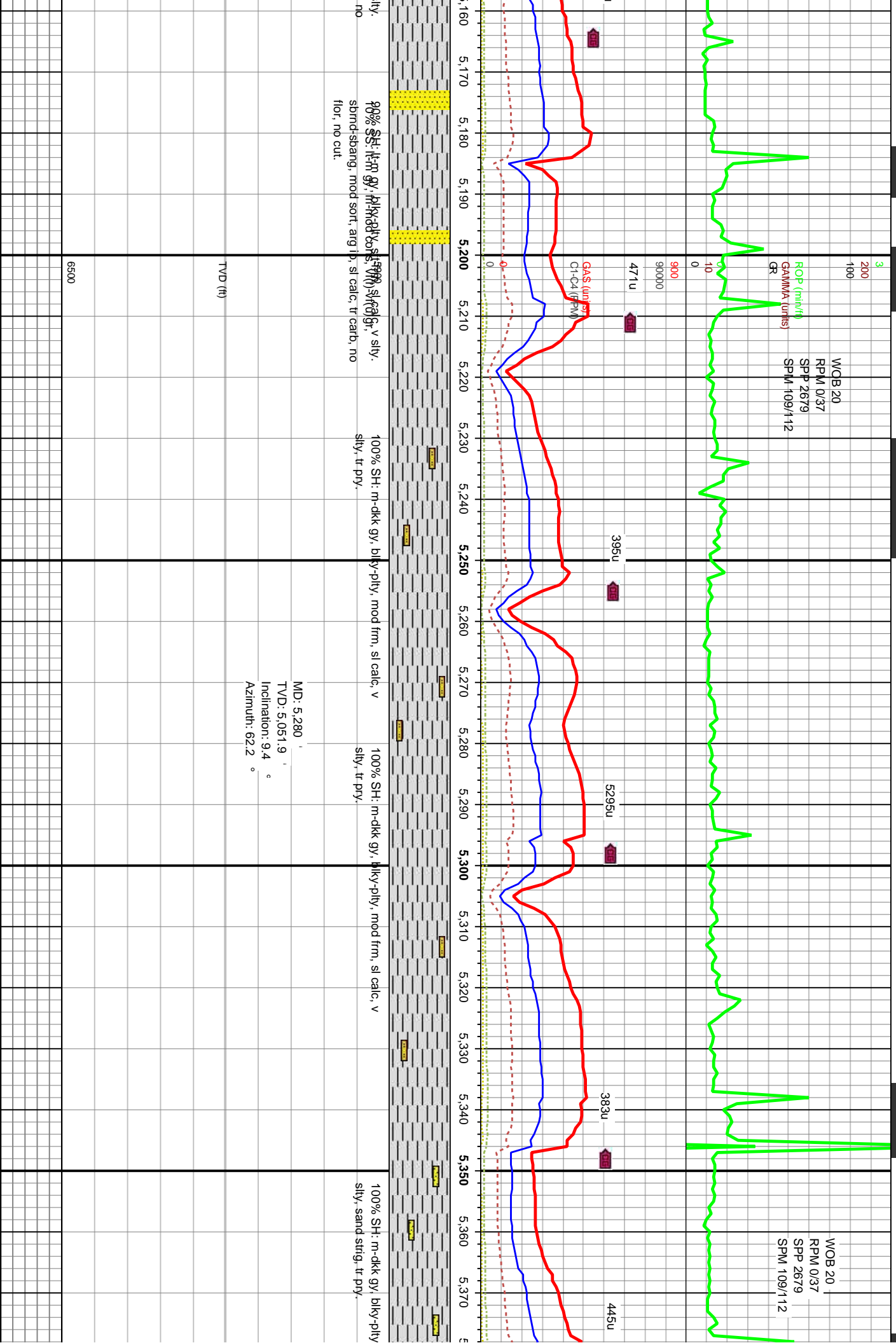
Porosity	
	CONNECTION (LEFT)
	SIDEWALL CORE (LEFT)
	CONNECTION (RIGHT)
	SIDEWALL CORE (RIGHT)
	CONNECTION GAS
	SLIDE
	FENESTRAL
	SURVEY
	CORE - LOST
	TRIP GAS
	CORE - RECOVERED
	DST INTERVAL
	WIRELINE TESTED - LEFT
	FAULT
	WIRELINE TESTED - RT
	MOLDIC
	FORMATION TOP

Rounding

Rock Types

DOLOMITE		SHALE GRAY	
CHERT		SHALE COLORED	
MARLSTONE		SILTSTONE	
CLAYSTONE		SANDSTONE	
		CONGLOMERATE	
SHALE		BRECCIA	





WOB 28
RPM 0/33
SPM 2992
SPM 108/111

MW 9.4/VIS 40

ROP (m/h)
GAMMA (units)
GR

3
200
100
0
9000
90000

NOTE SCALE CHANGE

1500
150000

GAS (units)
C1-C4 (PPM)

269u

381u

GAS (units)
C1-C4 (PPM)

255u

479u

427u

mod frm, sl calc, v
5900
100% SH: m-dkk gy, blk-y-pily, mod frm, sl calc, v
sily, sm tr-ss

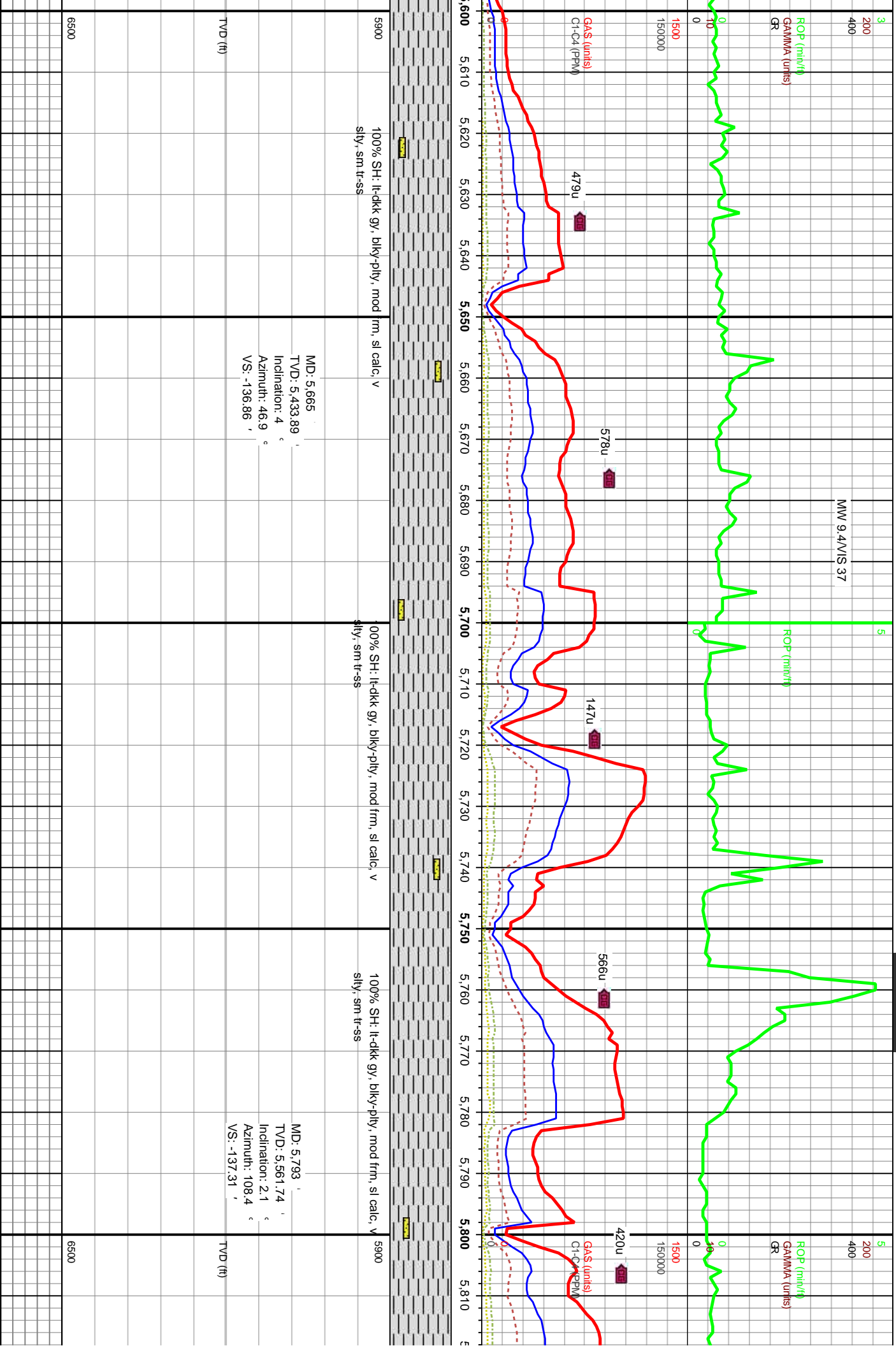
TVD (ft)

6500

100% SH: lt-dkk gy, blk-y-pily, mod frm, sl calc, v
sily, sm tr-ss

MD: 5.536 '
TVD: 5.305.43 '
Inclination: 6.4 °
Azimuth: 47.6 °
VS: -132.07 '

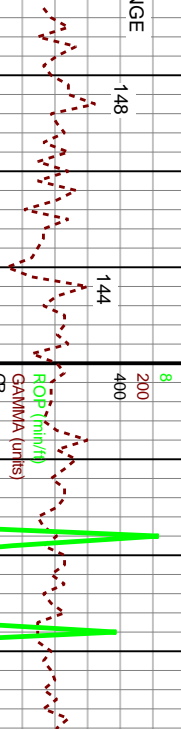
100% SH: lt-dkk gy, blk-y-pily, mod frm, sl calc, v
sily, sm tr-ss



WOB 12
RPM 0/33
SPM 3005
SPM 104/110

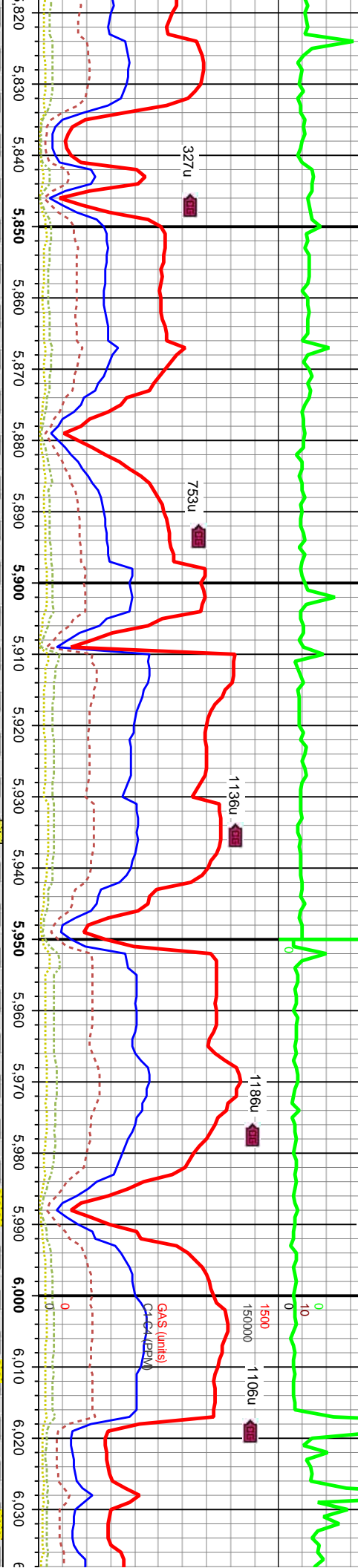
MND @ 5924' 05/19/013

NOTE SCALE CHANGE



MM 9.4/VIS 39

GAS (units)
GR-C4 (ppm)



100% SH: lt-dkk gy, blkly-sbblky, pily ip, sft-mod
frm, sl calc, v silty, sm tr-ss

100% SH: lt-dkk gy, blkly-sbblky, pily ip, sft-mod
frm, sl calc, v silty, sm tr-ss

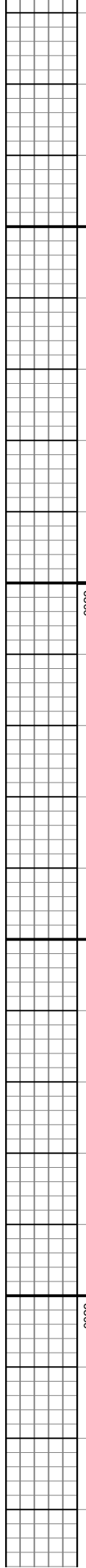
MD: 5.922
TVD: 5.690.66
Inclination: 1.7 °
Azimuth: 99.8 °
VS: -134.99

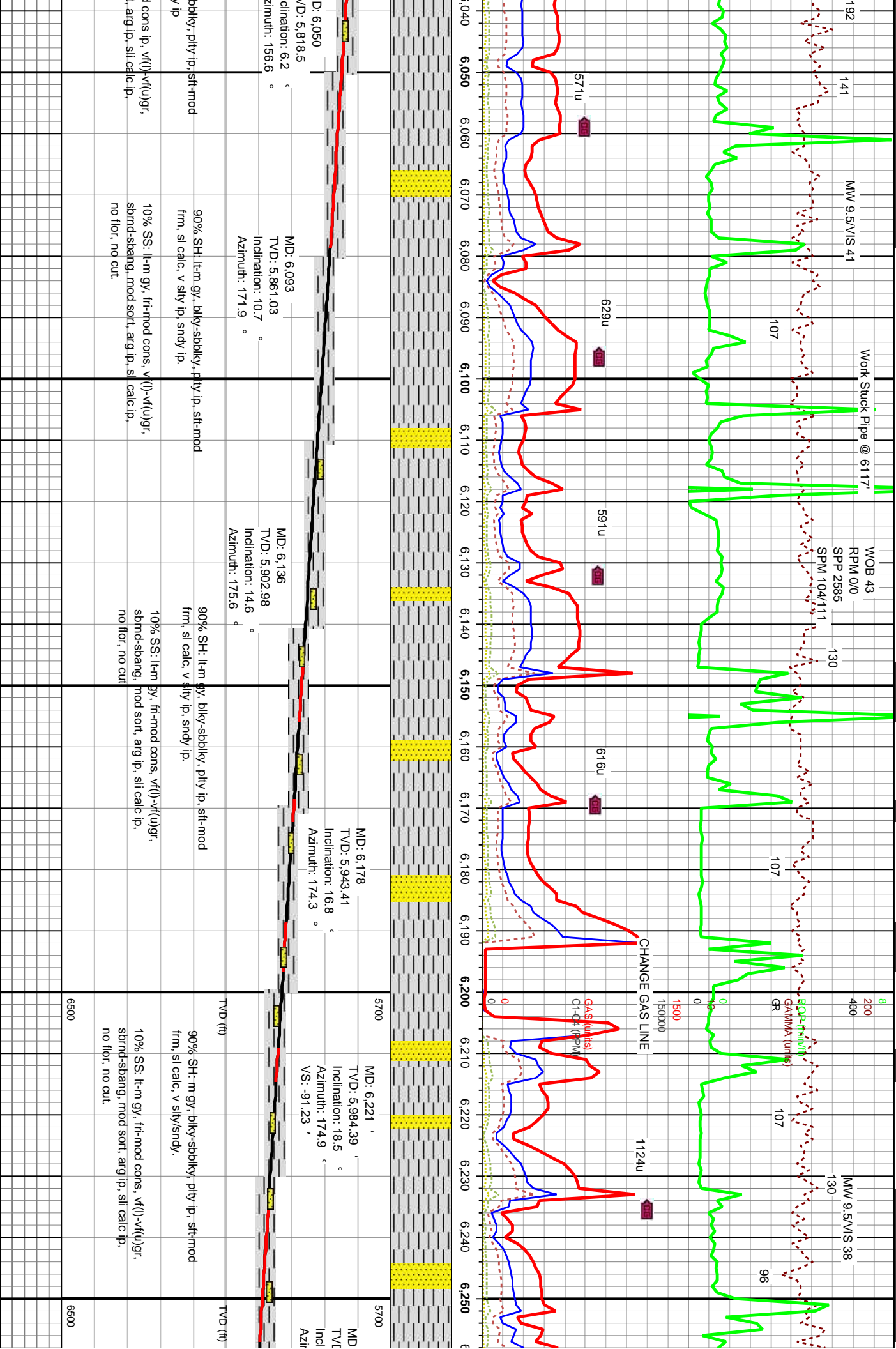
MD: 5.964
TVD: 5.732.65
Inclination: 1.8 °
Azimuth: 108.1 °
VS: -134.3

90% SH: lt-md gy, blkly-sbblky, pily ip, sft-mod
frm, sl calc, v silty ip, sandy ip
10% SS: lt-md gy, fri-mod cons ip, v(l)-v(lu)gr,
sb md-sb ang ip, mod sort, arg ip, sil calc ip,
no flor, no cut

MD: 6.007
TVD: 5.775.62
Inclination: 2.1 °
Azimuth: 119.3 °
VS: -133.32

90% SH: lt-md gy, blkly-s
frm, sl calc, v silty ip, snd
10% SS: lt-md gy, fri-moc
sb md-sb ang ip, mod sort
no flor, no cut





WOB 43
RPM 350
SPM 104/111

122

133

111

137

111

141

148

115

NOTE SCALE CHANGE MWD

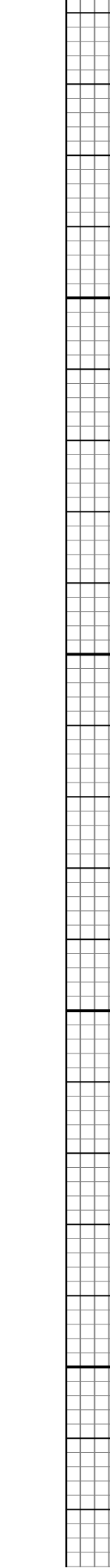
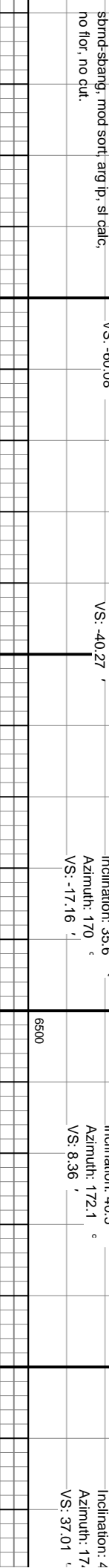
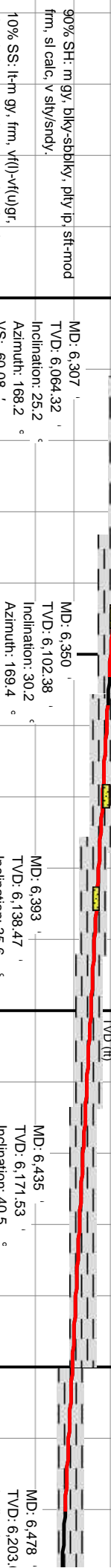
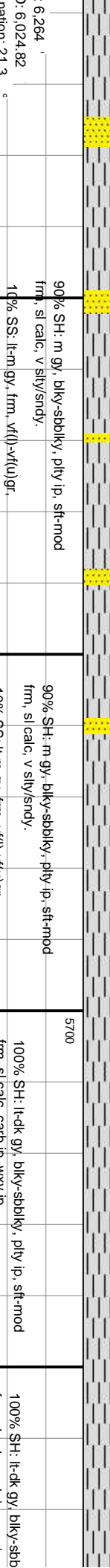
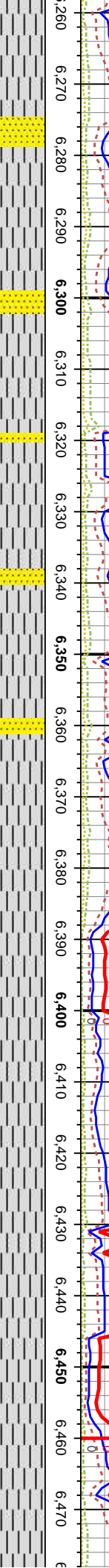
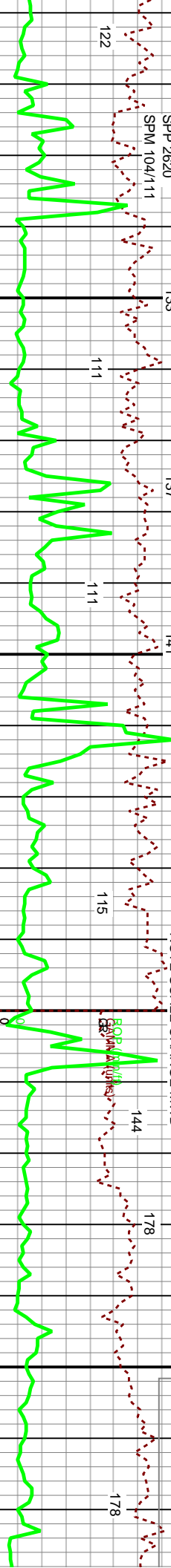
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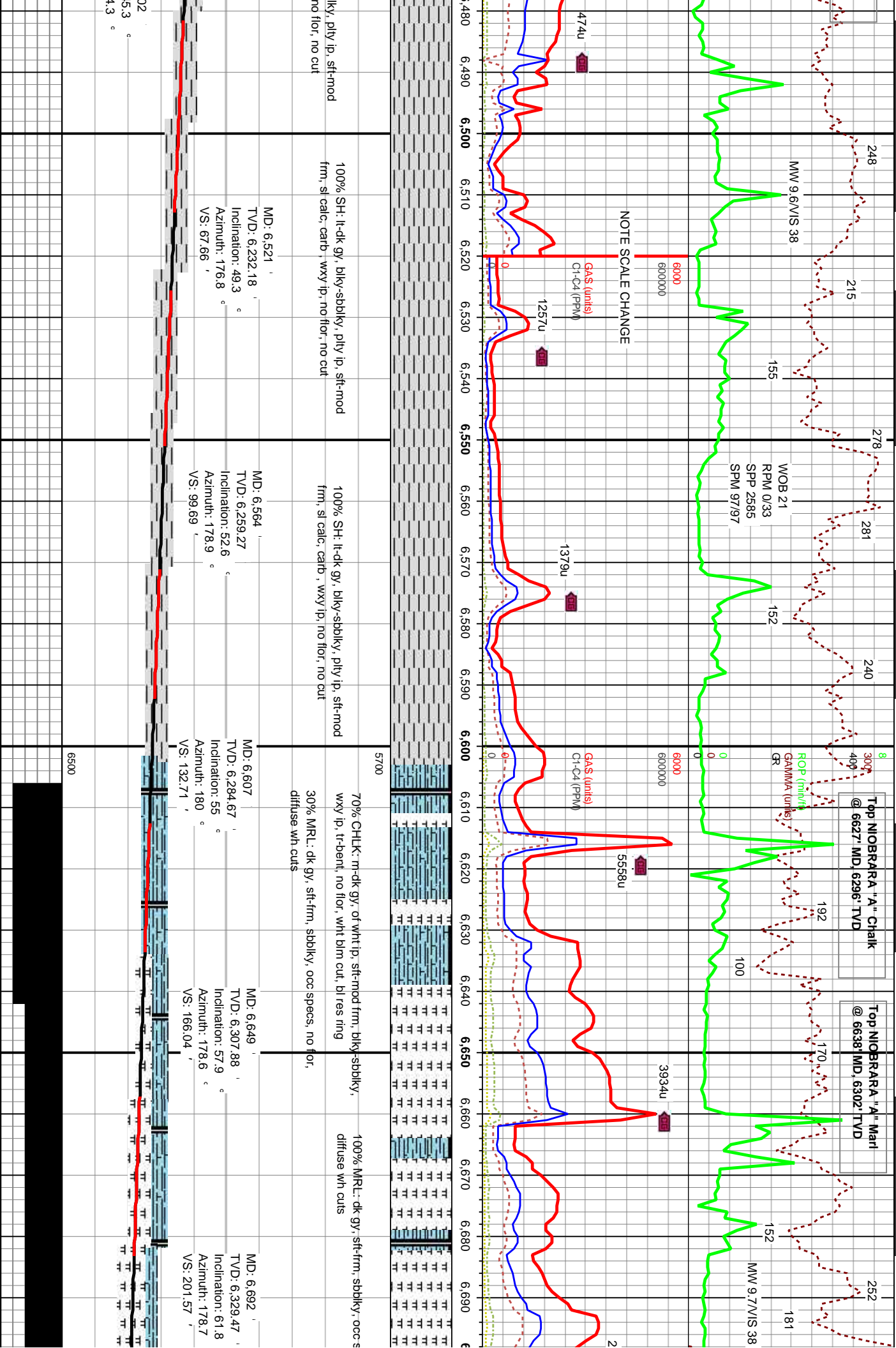
178

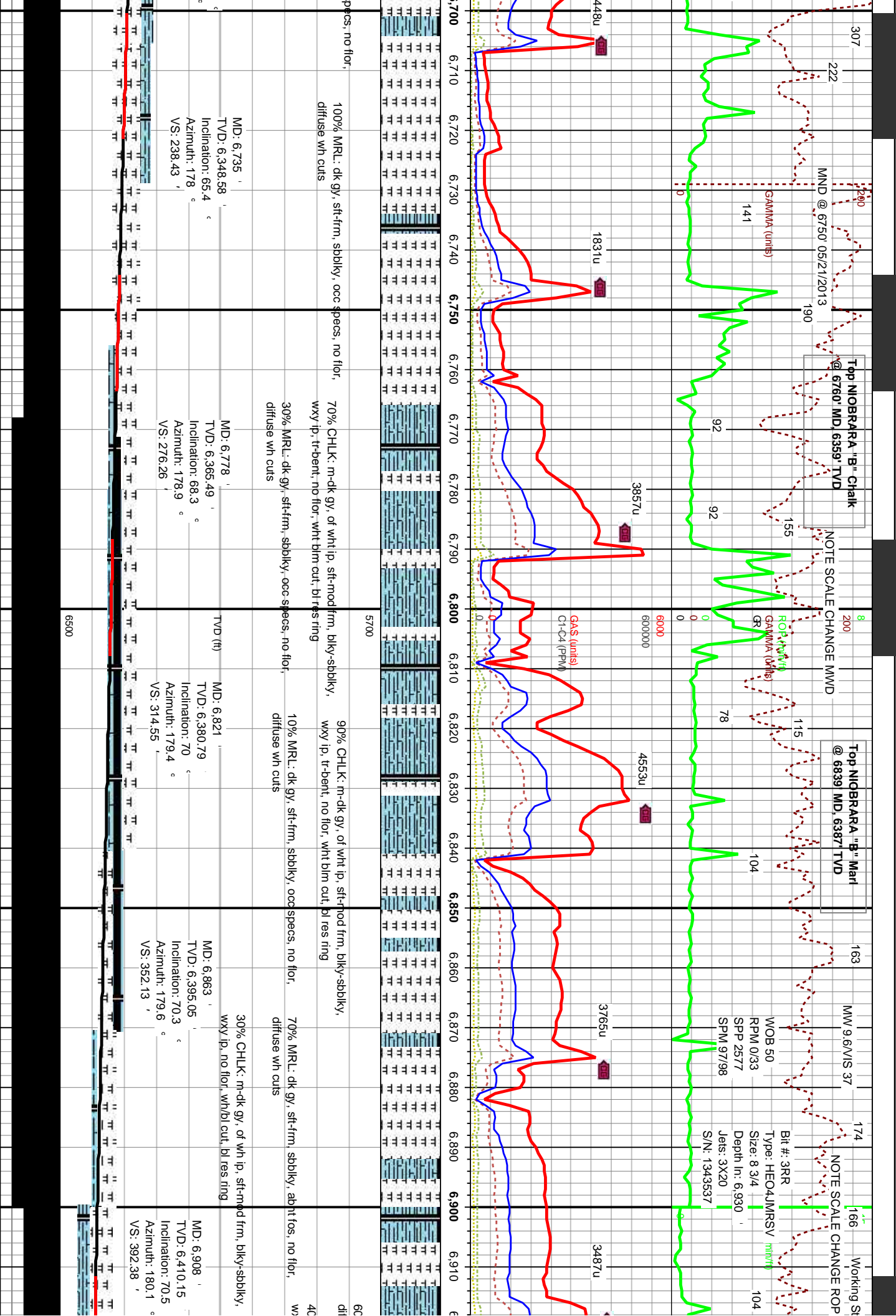
MND @ 6446 05/20/2013

Top Sharon Springs @
6457' MD, 6188' TVD

178







uck Pipe

MND @ 6933' 05/22/2013

TOOH For New Bit @ 6933'

Top NIOBRARA "C" Chalk
@ 6956' MD, 6425' TVD

MW In 9.5/VIS 42

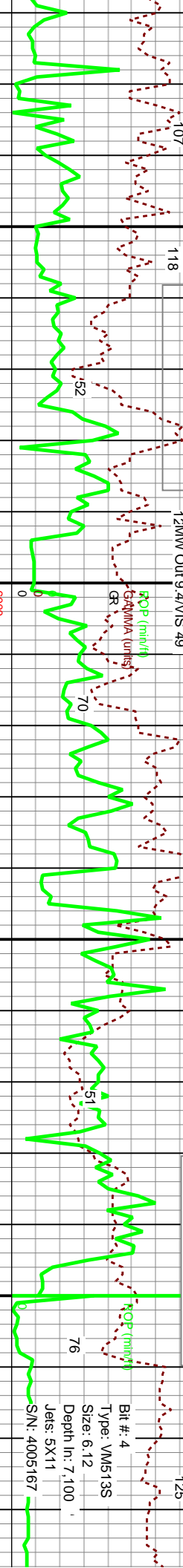
MND @ 7044' 05/22/2013

MW 9.5/VIS 40

Resume Drilling 05/24/2013
23:15 hr

5

Bit #: 4
Type: VM513S
Size: 6.12
Depth In: 7.100
Jets: 5X11
S/N: 4005167



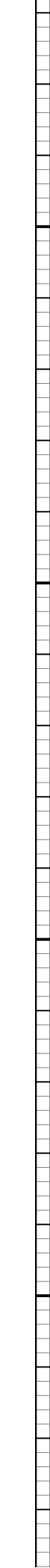
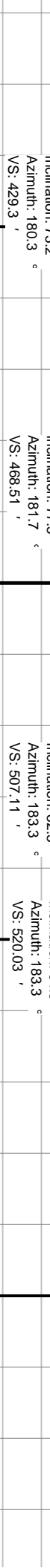
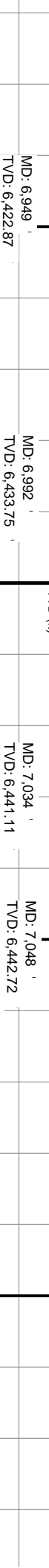
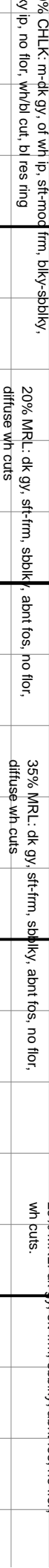
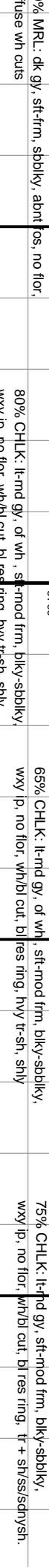
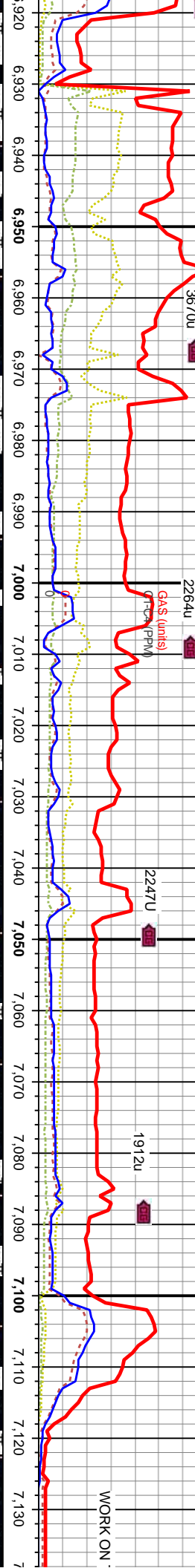
Add Asphasol to the Mud

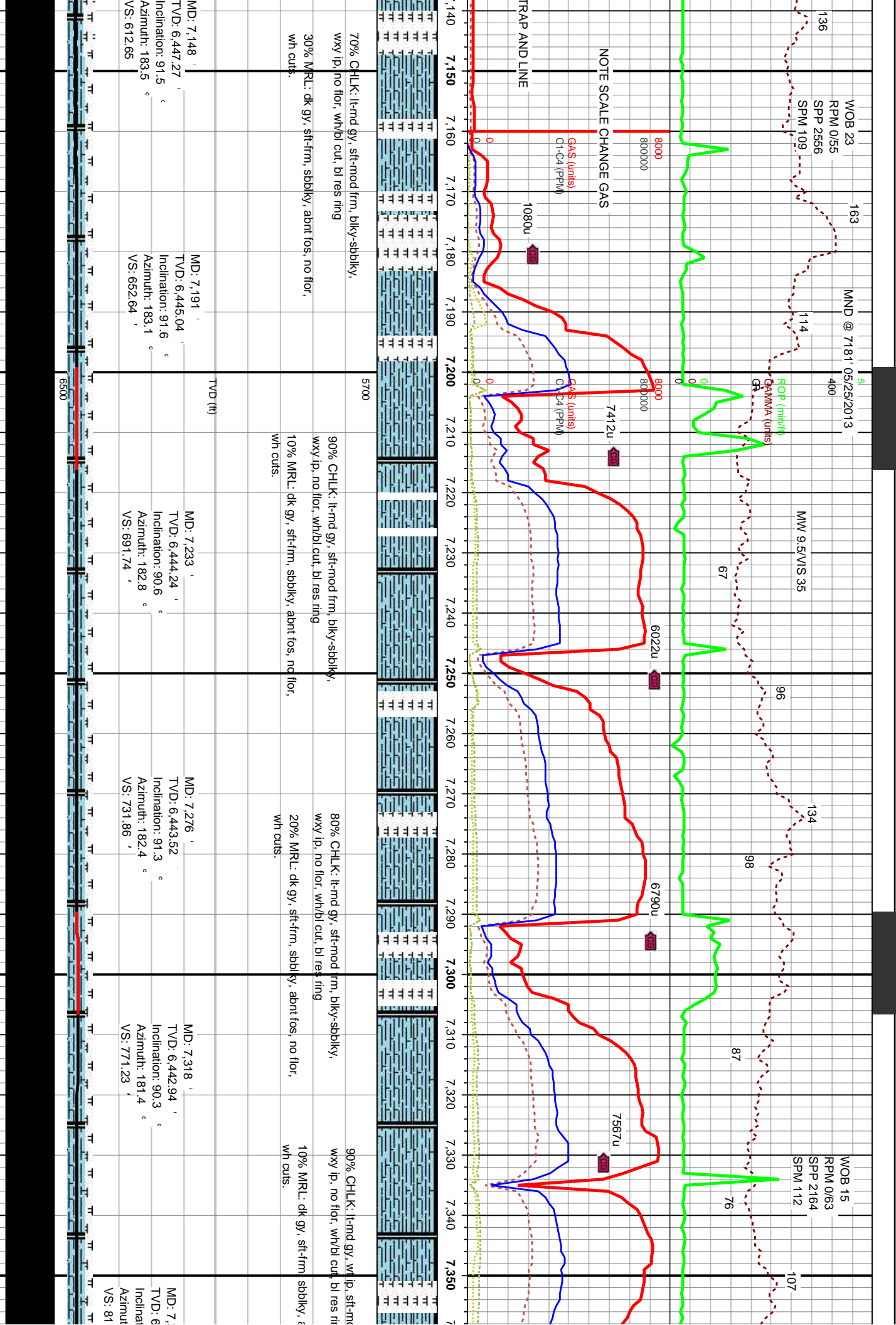
DRILLING ON ONE PUMP

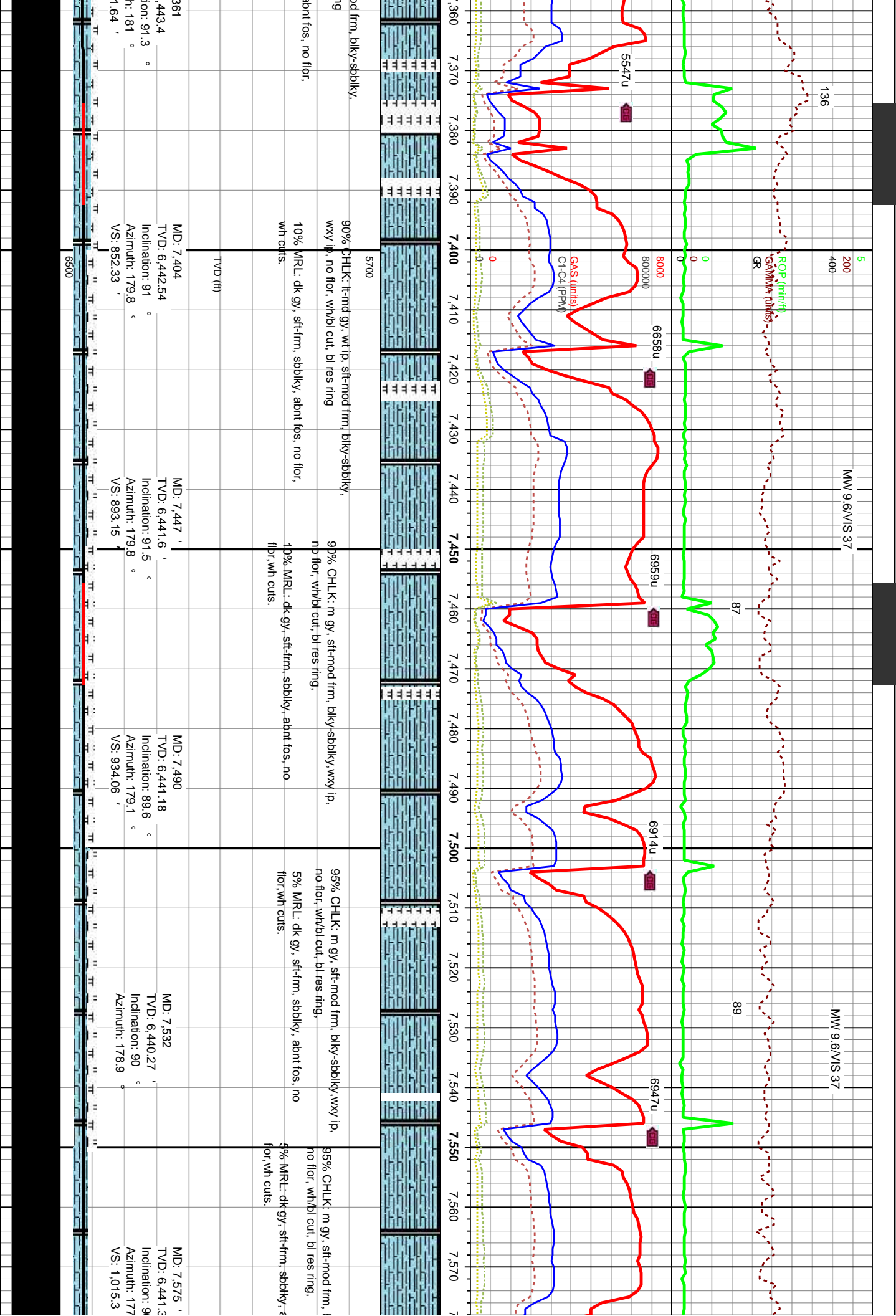
DRILLING ON ONE PUMP

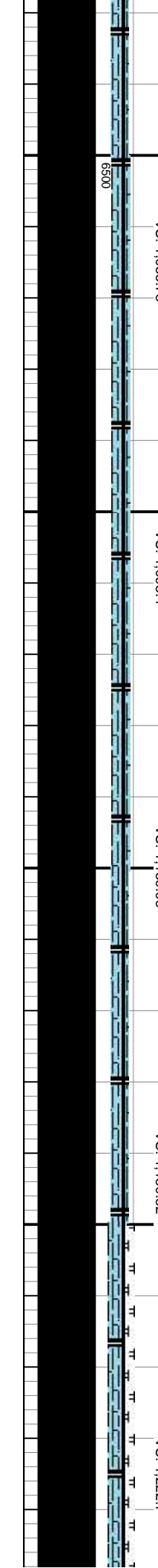
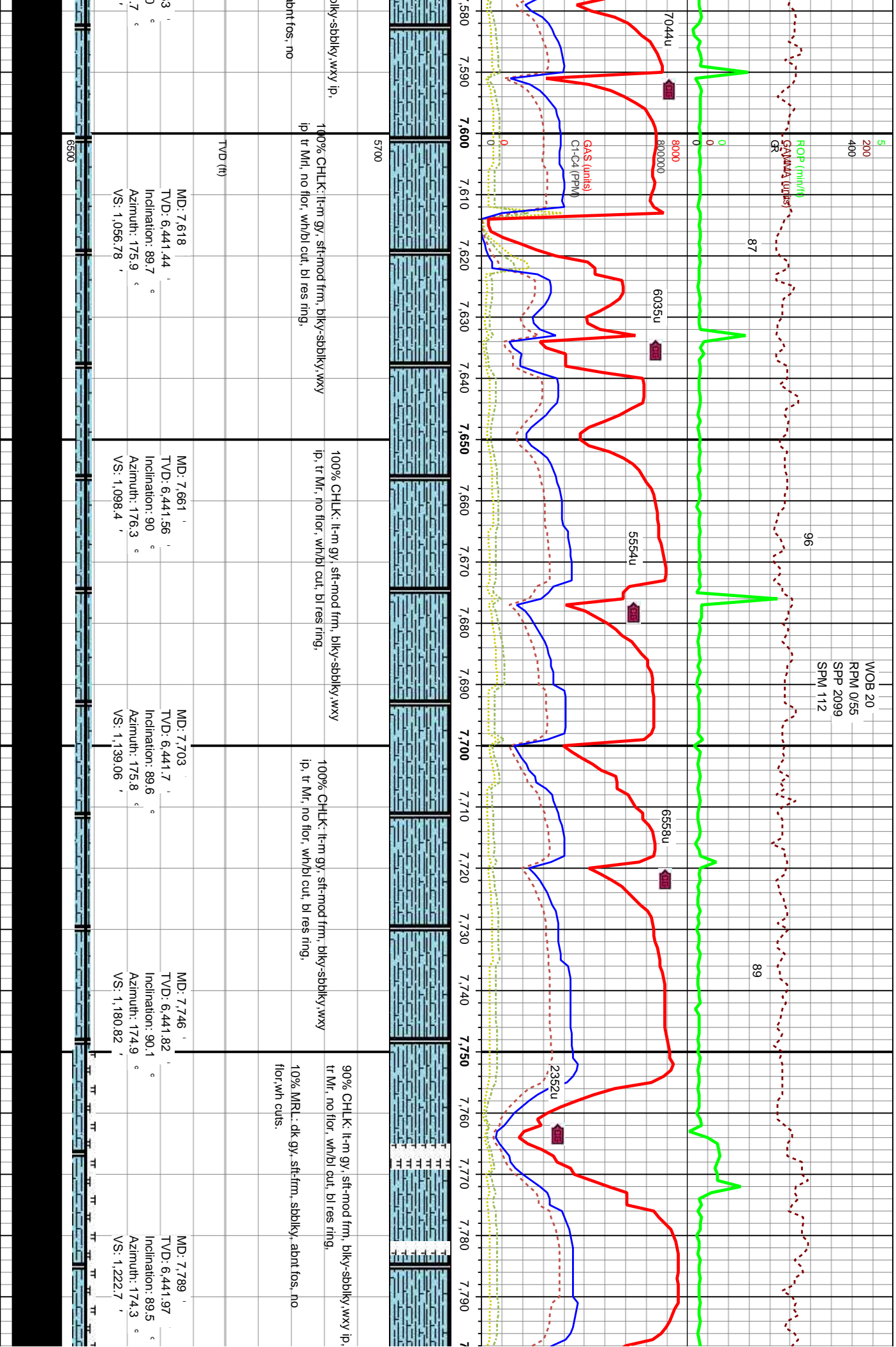
Set 7" Csg @ 7095'

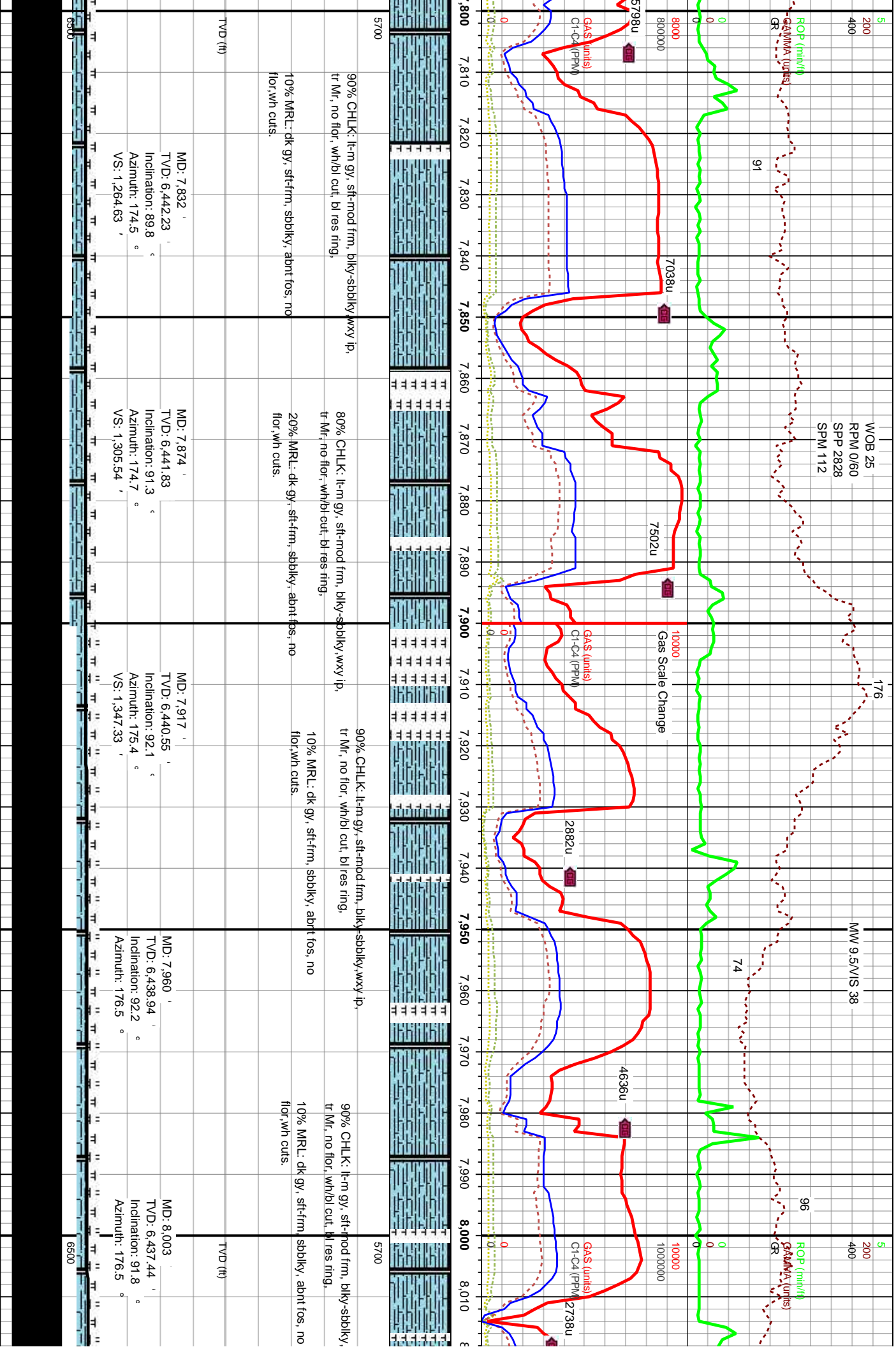
WORK ON











5

200

400

ROP (min/h)

GAMA (units)

GR

91

WOB 25
RPM 0/60
SPM 2828
SPM 112

176

MW 9.5/VIS 38

5

200

400

ROP (min/h)

GAMA (units)

GR

96

74

Gas Scale Change

7502u

7038u

6798u

GAS (units)
C1-C4 (PPM)

GAS (units)
C1-C4 (PPM)

2882u

4636u

GAS (units)
C1-C4 (PPM)

2738u

5700

90% CHLK: lt-m gy, sft-mod frm, blk-y-sbbkly, wxy ip,
tr Mf, no flor, wh/bl cut, bl res ring,

10% MRL: dk gy, sft-frm, sbbkly, abnt fos, no
flor, wh cuts.

TVD (ft)

MD: 7,832
TVD: 6,442.23
Inclination: 89.8
Azimuth: 174.5
VS: 1,264.63

80% CHLK: lt-m gy, sft-mod frm, blk-y-sbbkly, wxy ip,
tr Mf, no flor, wh/bl cut, bl res ring,

90% CHLK: lt-m gy, sft-mod frm, blk-y-sbbkly, wxy ip,
tr Mf, no flor, wh/bl cut, bl res ring,

90% CHLK: lt-m gy, sft-mod frm, blk-y-sbbkly,
tr Mf, no flor, wh/bl cut, bl res ring,

10% MRL: dk gy, sft-frm, sbbkly, abnt fos, no
flor, wh cuts.

TVD (ft)

MD: 7,874
TVD: 6,441.83
Inclination: 91.3
Azimuth: 174.7
VS: 1,305.54

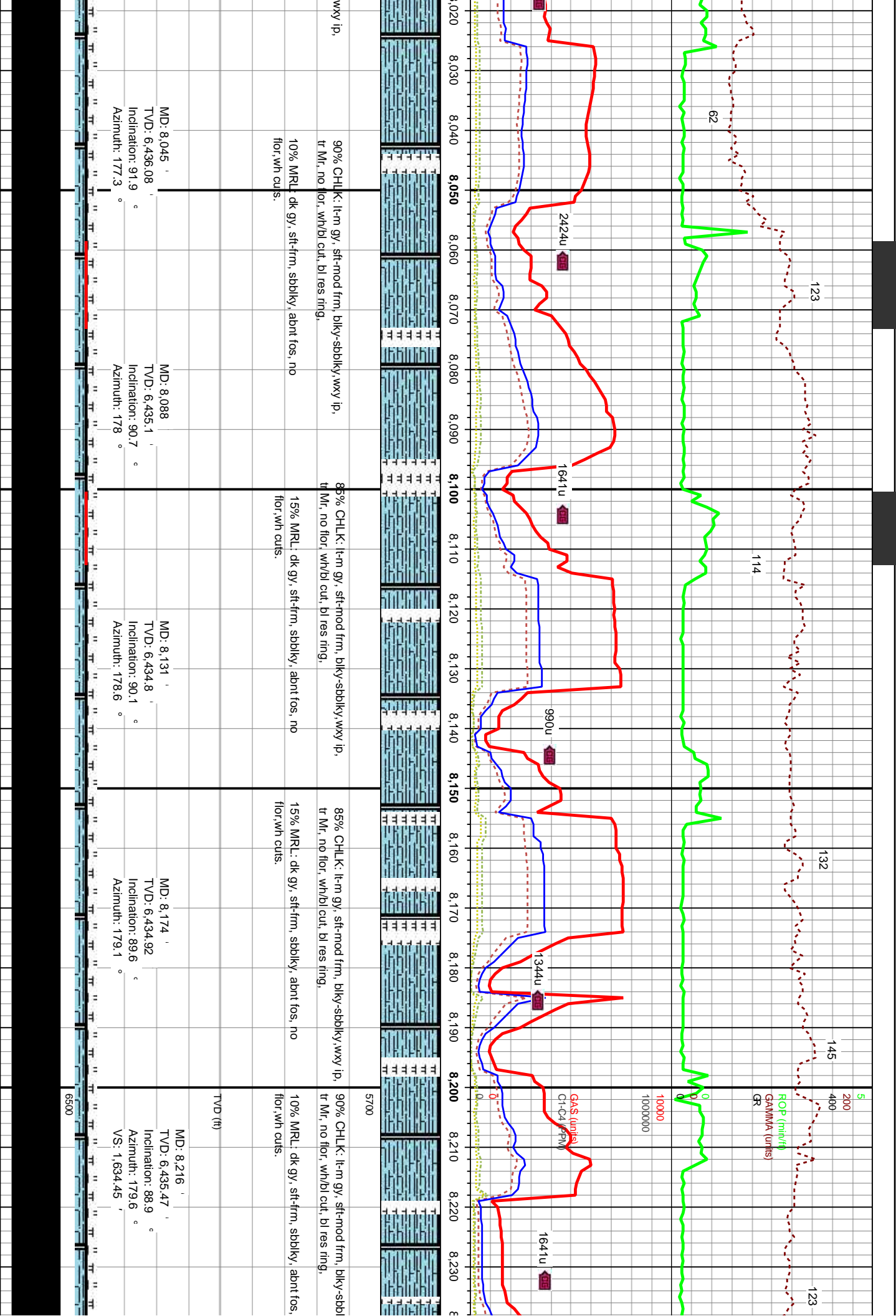
MD: 7,917
TVD: 6,440.55
Inclination: 92.1
Azimuth: 175.4
VS: 1,347.33

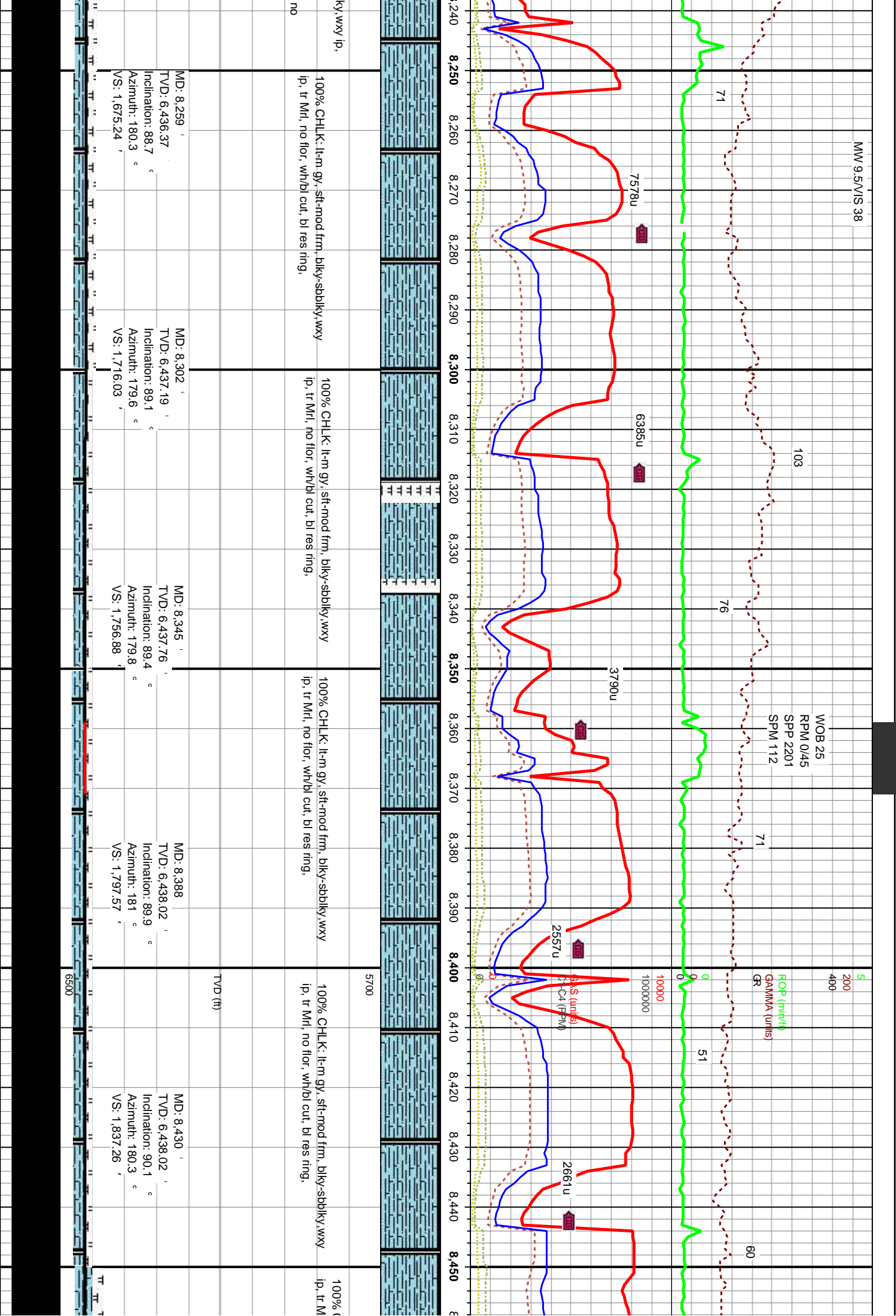
MD: 7,960
TVD: 6,438.94
Inclination: 92.2
Azimuth: 176.5

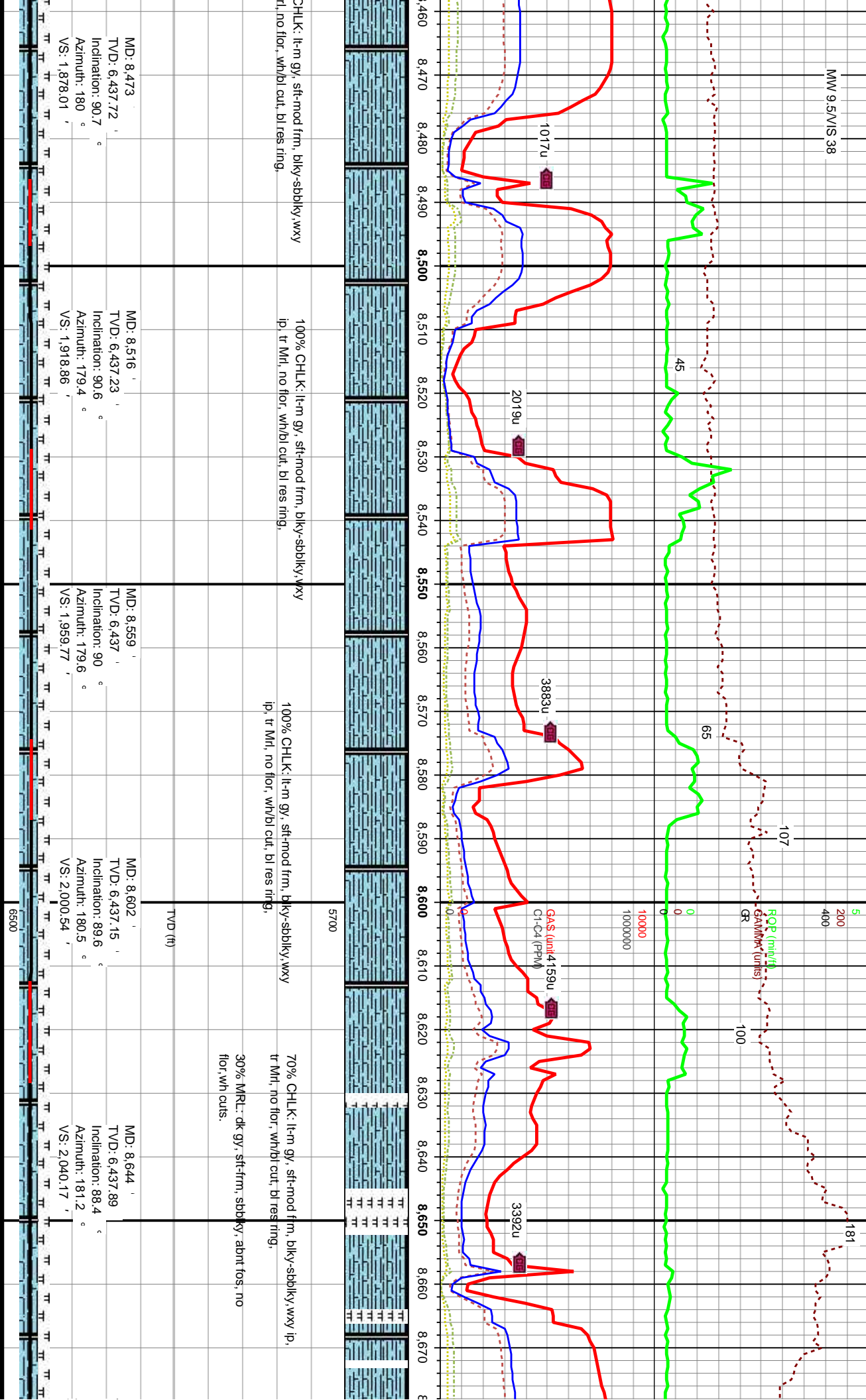
MD: 8,003
TVD: 6,437.44
Inclination: 91.8
Azimuth: 176.5

6500

6500







CHLK: lt-m gy, sft-mod frm, bkly-sbbkly, wxy
tr, no flr, wh/bl cut, bl res ring.

100% CHLK: lt-m gy, sft-mod frm, bkly-sbbkly, wxy
ip, tr Mrl, no flr, wh/bl cut, bl res ring.

100% CHLK: lt-m gy, sft-mod frm, bkly-sbbkly, wxy
ip, tr Mrl, no flr, wh/bl cut, bl res ring.

70% CHLK: lt-m gy, sft-mod frm, bkly-sbbkly, wxy ip,
tr Mrl, no flr, wh/bl cut, bl res ring.

30% MRL: dk gy, sft-frm, sbbkly, abnt fos, no
flr, wh cuts.

MD: 8.473
TVD: 6.437.72
Inclination: 90.7
Azimuth: 180
VS: 1.878.01

MD: 8.516
TVD: 6.437.23
Inclination: 90.6
Azimuth: 179.4
VS: 1.918.86

MD: 8.559
TVD: 6.437
Inclination: 90
Azimuth: 179.6
VS: 1.959.77

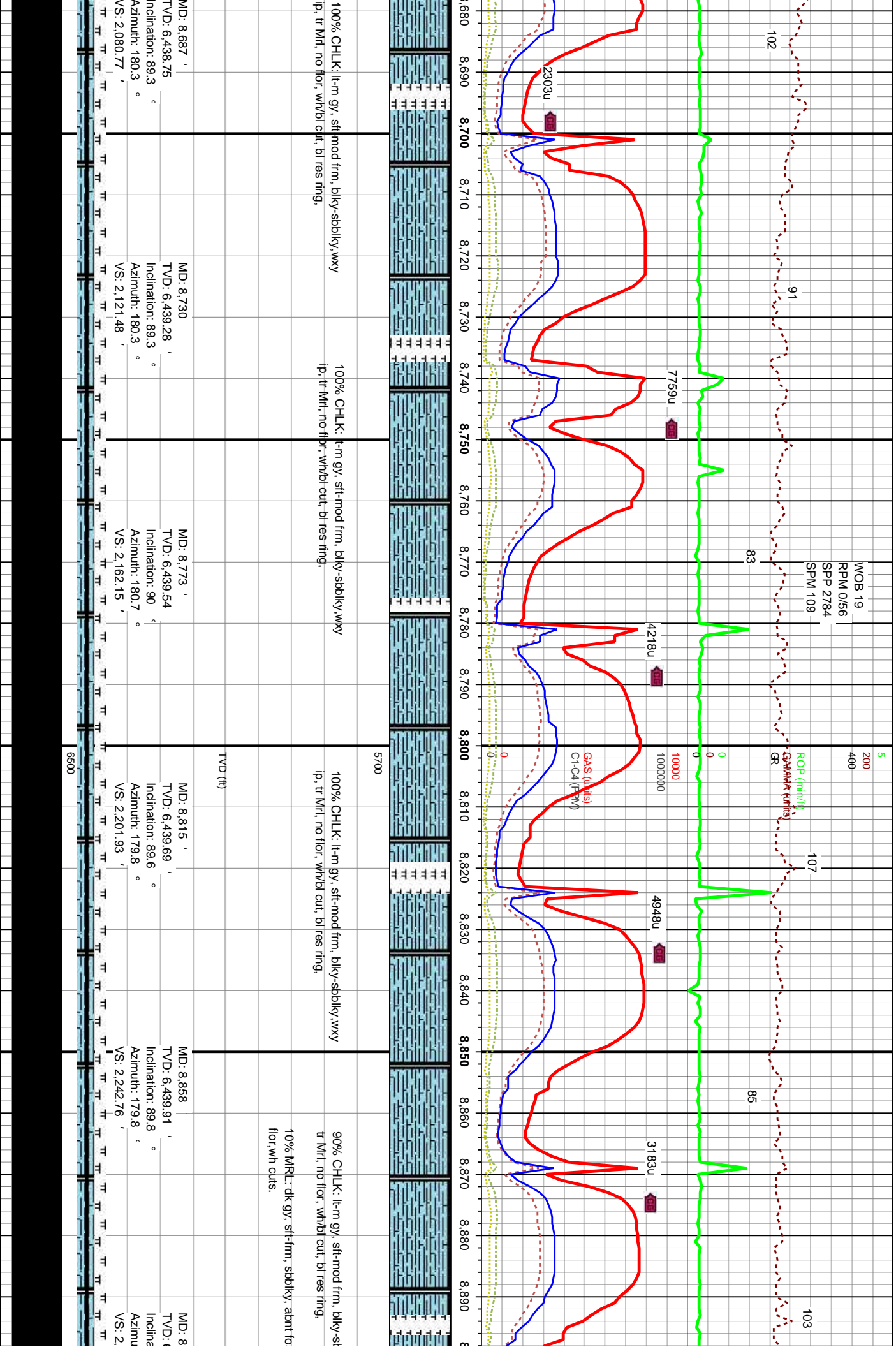
MD: 8.602
TVD: 6.437.15
Inclination: 89.6
Azimuth: 180.5
VS: 2.000.54

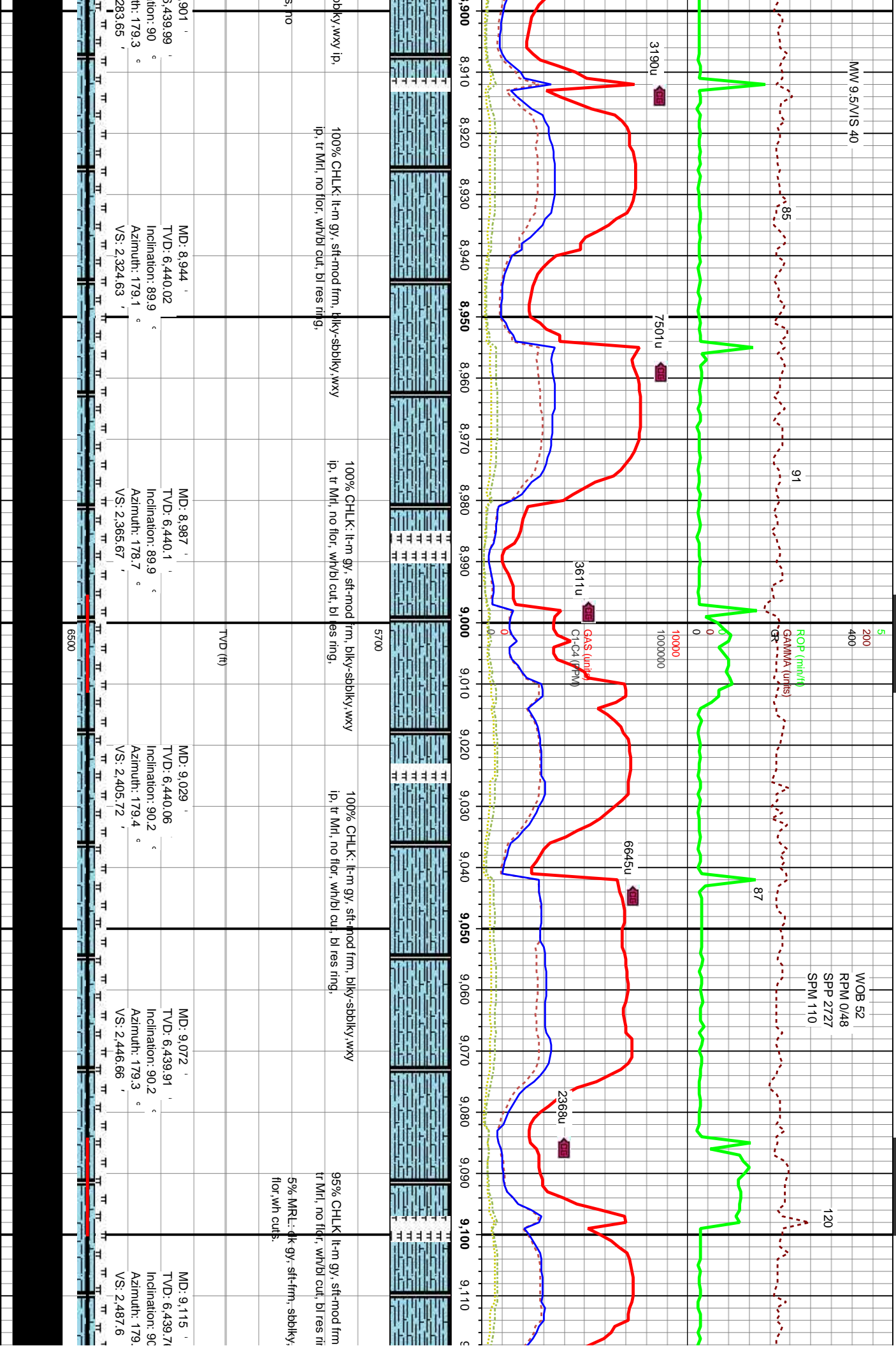
MD: 8.644
TVD: 6.437.89
Inclination: 88.4
Azimuth: 181.2
VS: 2.040.17

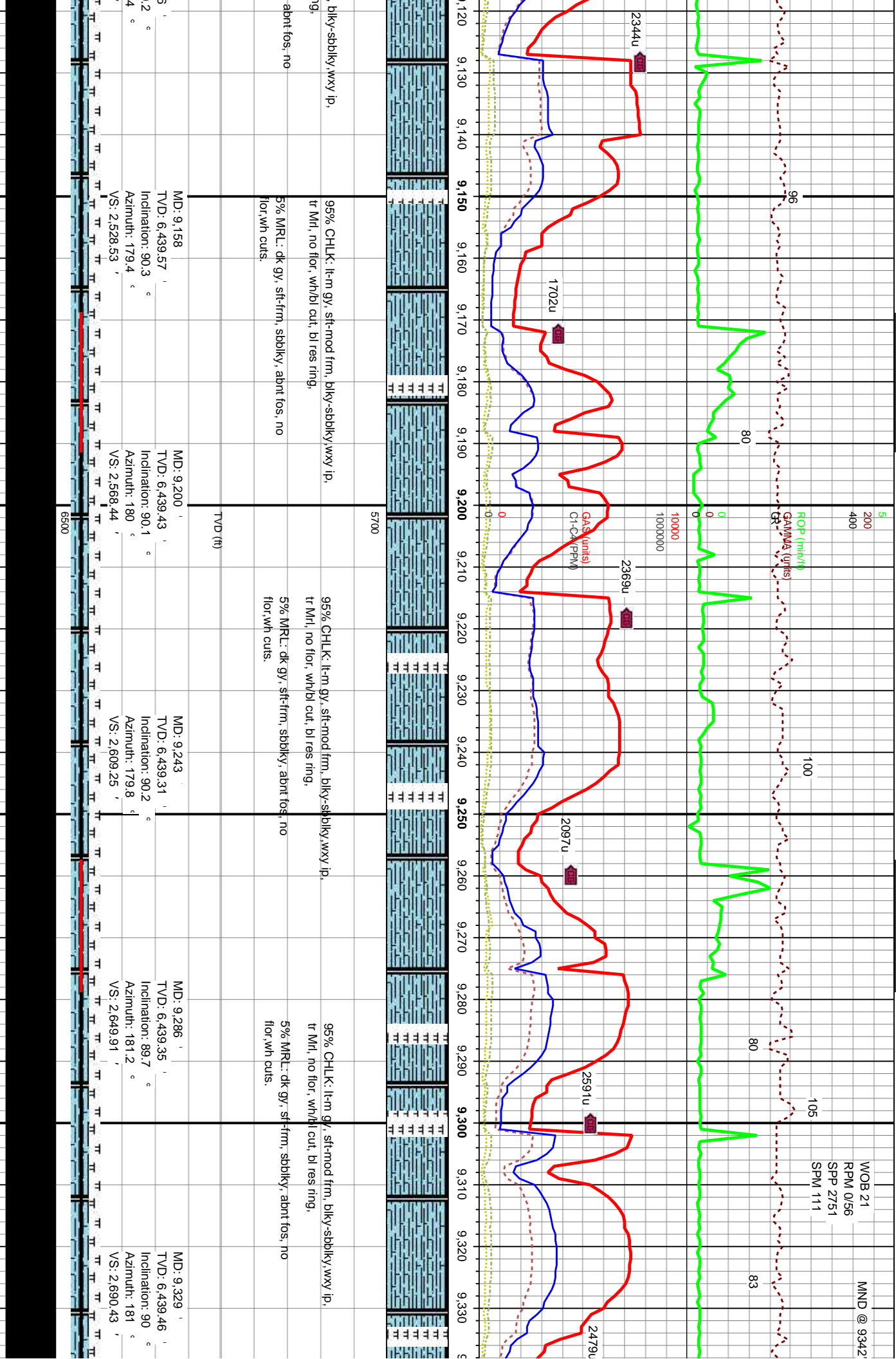
TVD (ft)

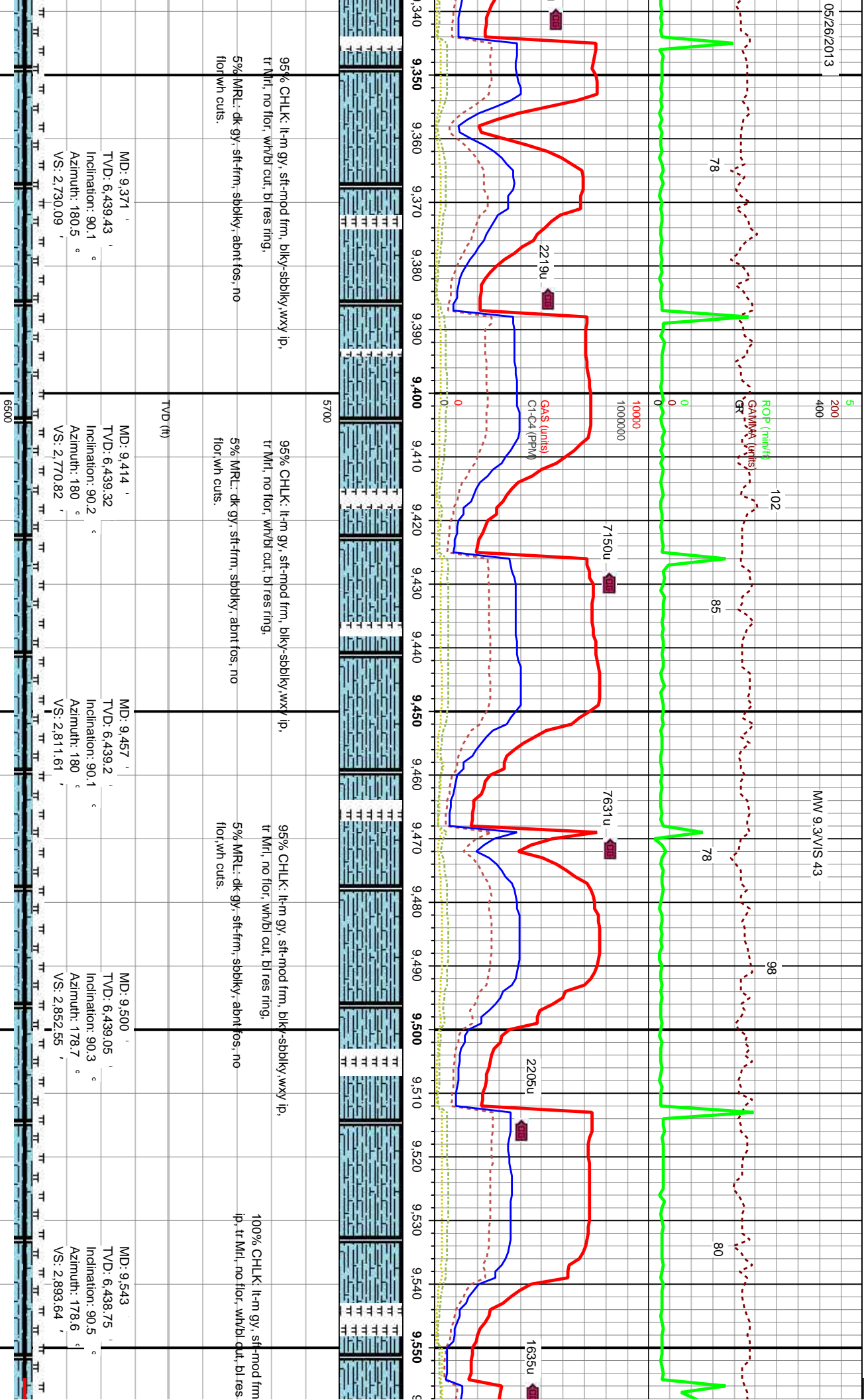
5700

6500







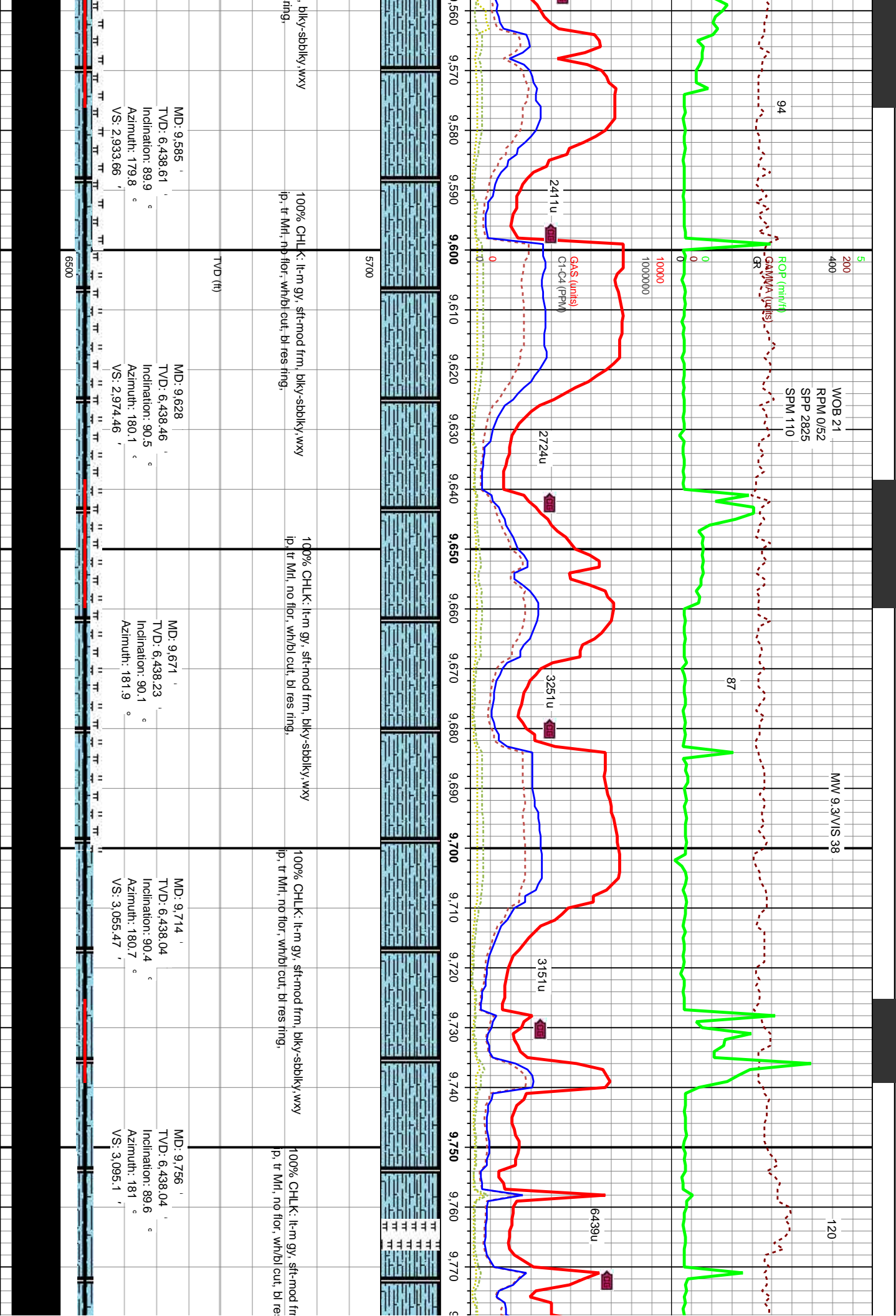


95% CHLK: lt-m gy, sft-mod frm, biky-sbblky, wxy ip, tr Mrl, no flor, wh/bl cut, bl res ring.
5% MRL: dk gy, sft-frm, sbblky, abnt fos, no flor,wh cuts.

95% CHLK: lt-m gy, sft-mod frm, biky-sbblky, wxy ip, tr Mrl, no flor, wh/bl cut, bl res ring.
5% MRL: dk gy, sft-frm, sbblky, abnt fos, no flor,wh cuts.

95% CHLK: lt-m gy, sft-mod frm, biky-sbblky, wxy ip, tr Mrl, no flor, wh/bl cut, bl res ring.
5% MRL: dk gy, sft-frm, sbblky, abnt fos, no flor,wh cuts.

100% CHLK: lt-m gy, sft-mod frm ip, tr Mrl, no flor, wh/bl cut, bl res



5
200
400

WOB 21
RPM 0/52
SPP 2825
SPM 110

MW 9.3/VIS 38

120

94

ROP (m/h)
GAMMA (units)
GAAS (units)
C1-C4 (PPM)

87

2411u

2724u

3251u

3151u

6439u

5700

100% CHLK: lt-m gy, sft-mod frm, bkly-sbdkly, wxy
ip, tr Mrl, no flr, wh/bl cut, bl res ring,

100% CHLK: lt-m gy, sft-mod frm, bkly-sbdkly, wxy
ip, tr Mrl, no flr, wh/bl cut, bl res ring,

100% CHLK: lt-m gy, sft-mod frm, bkly-sbdkly, wxy
ip, tr Mrl, no flr, wh/bl cut, bl res ring,

100% CHLK: lt-m gy, sft-mod frm
p, tr Mrl, no flr, wh/bl cut, bl re

MD: 9.585
TVD: 6.438.61
Inclination: 89.9
Azimuth: 179.8
VS: 2.933.66

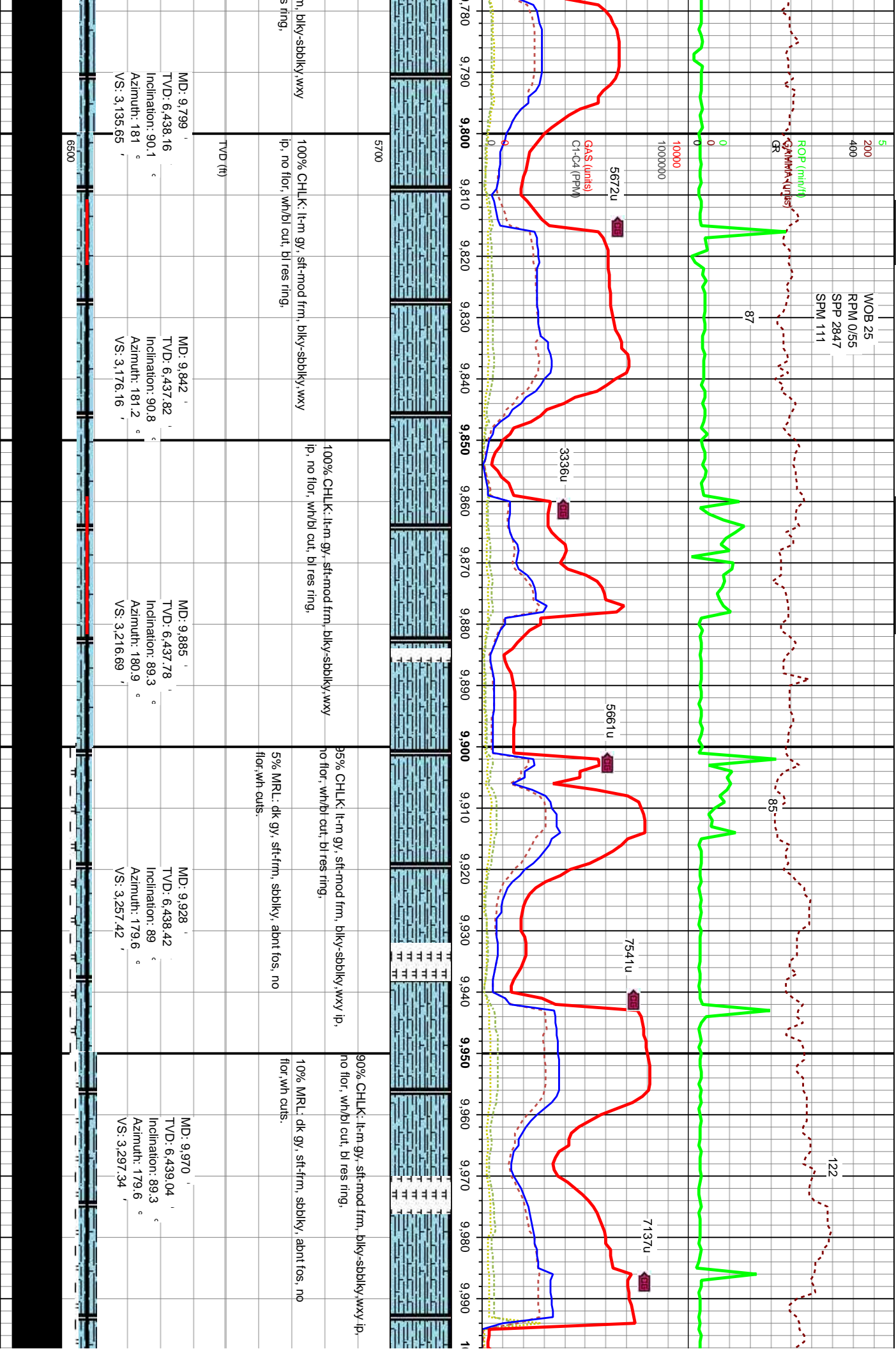
MD: 9.628
TVD: 6.438.46
Inclination: 90.5
Azimuth: 180.1
VS: 2.974.46

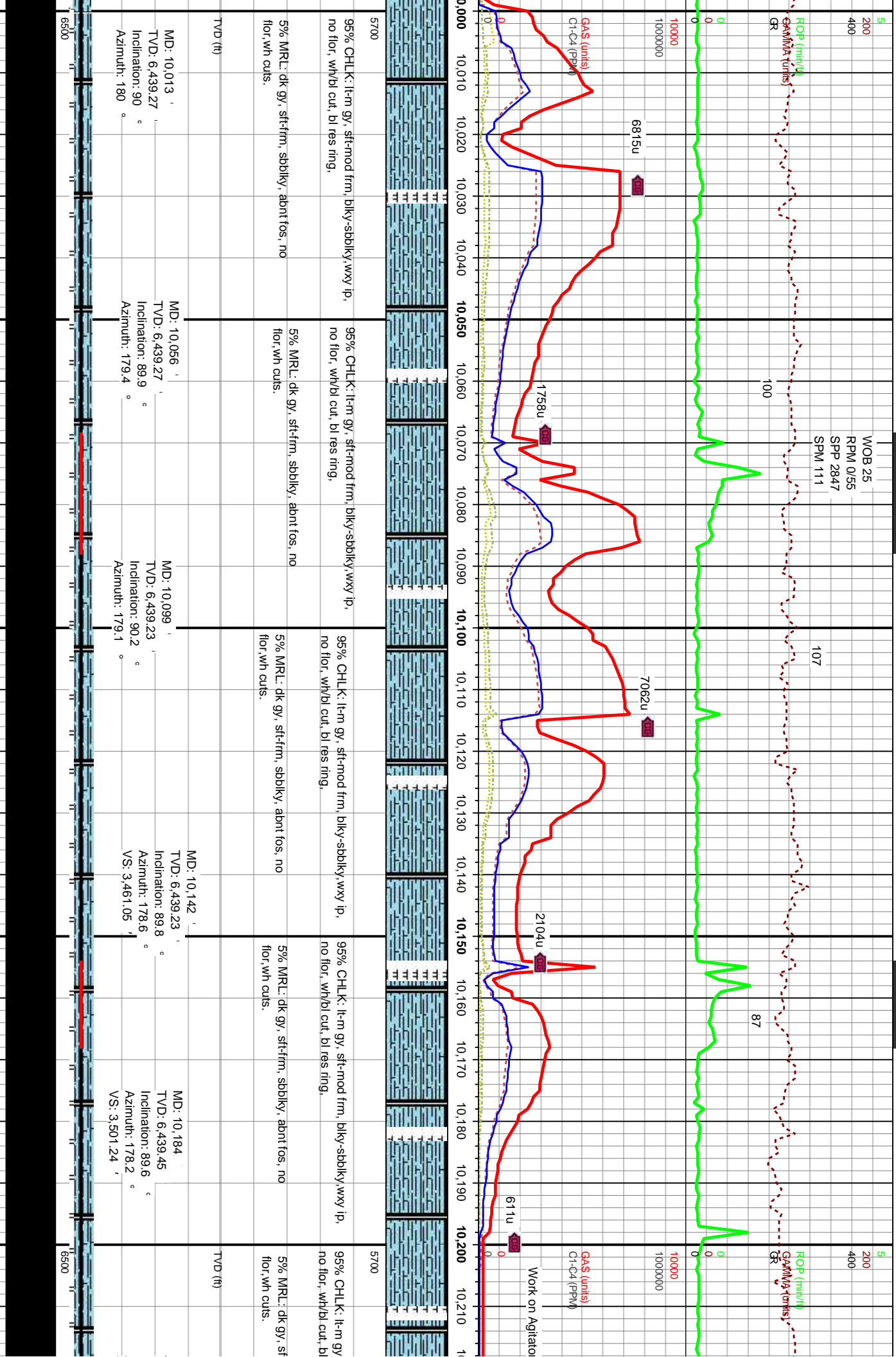
MD: 9.671
TVD: 6.438.23
Inclination: 90.1
Azimuth: 181.9

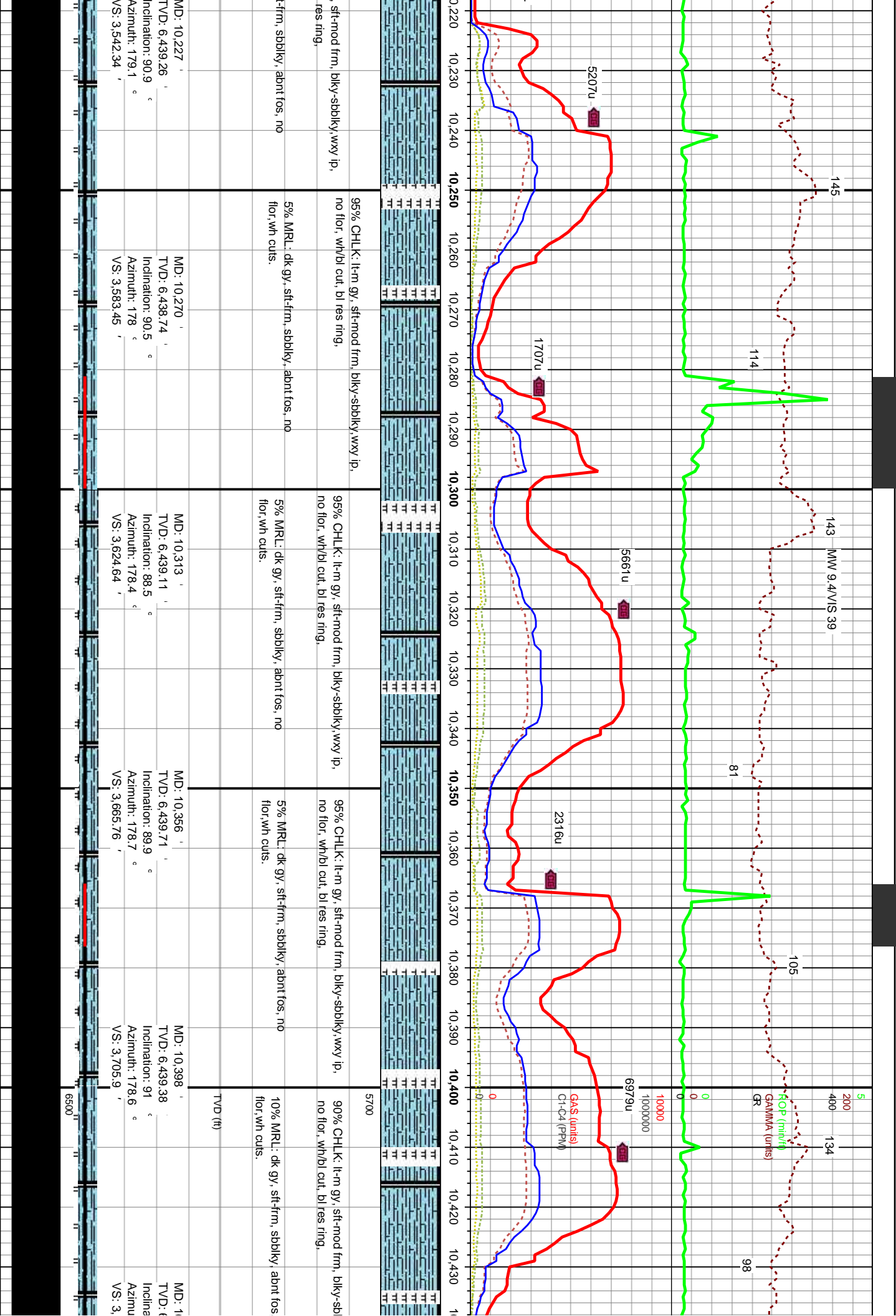
MD: 9.714
TVD: 6.438.04
Inclination: 90.4
Azimuth: 180.7
VS: 3.055.47

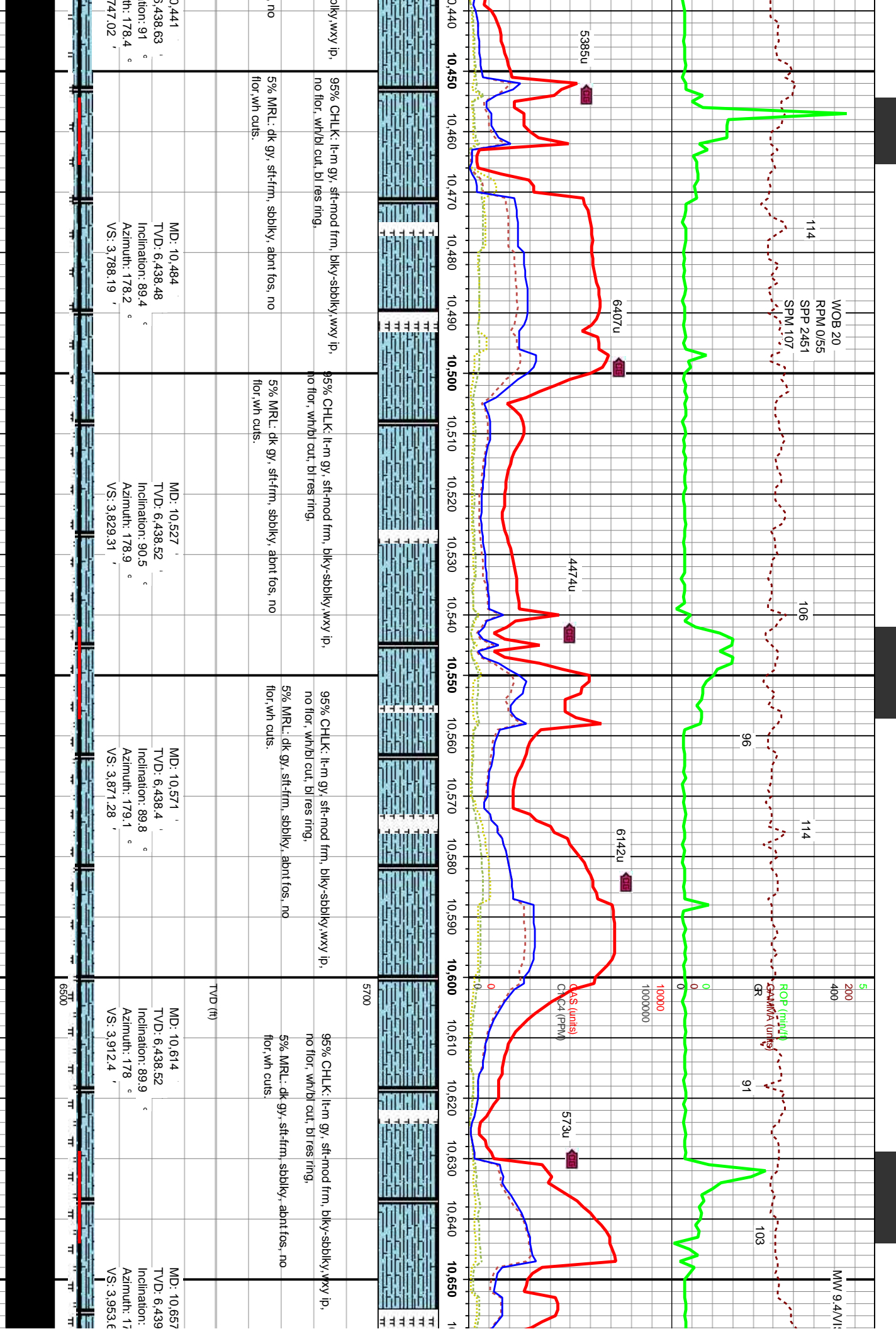
MD: 9.756
TVD: 6.438.04
Inclination: 89.6
Azimuth: 181
VS: 3.095.1

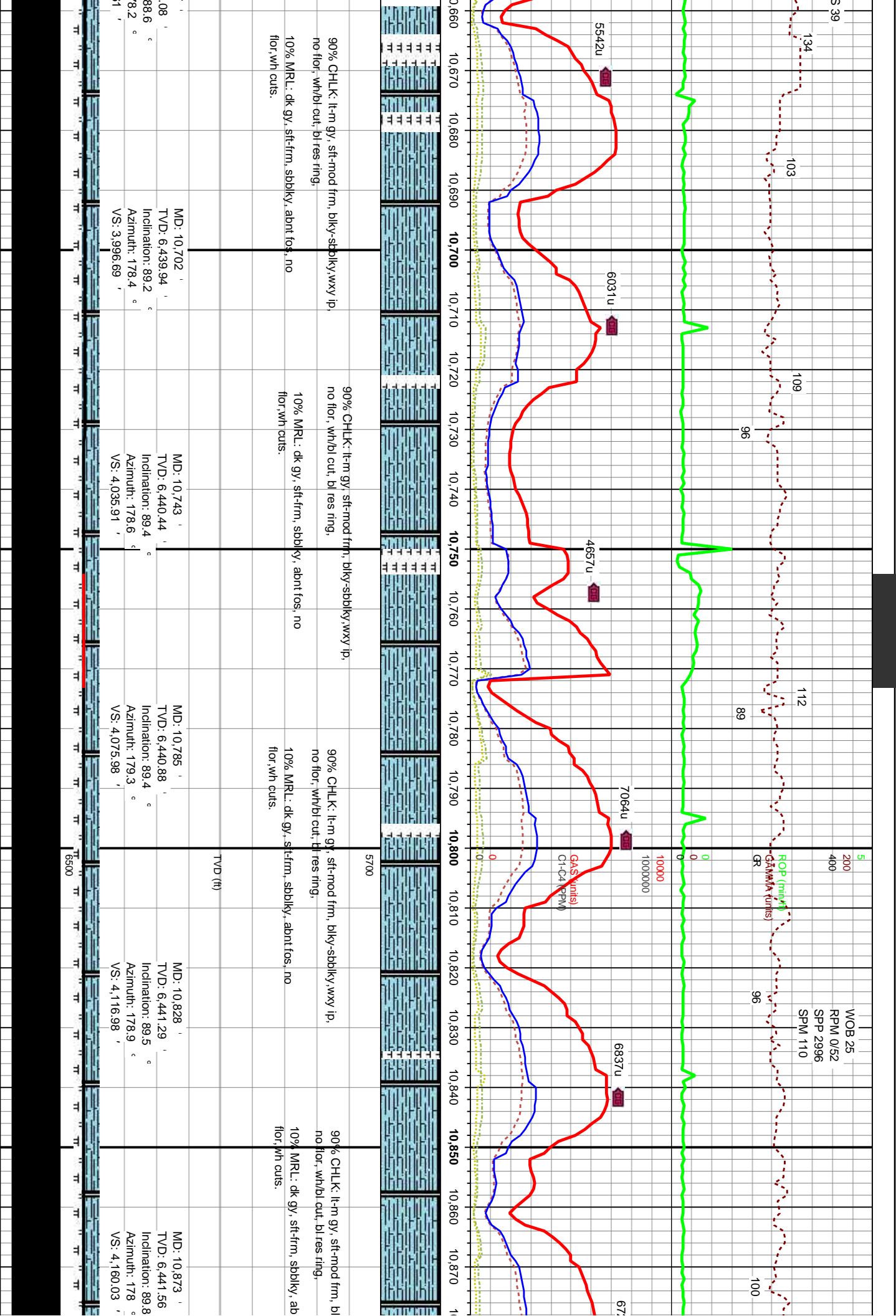
6500

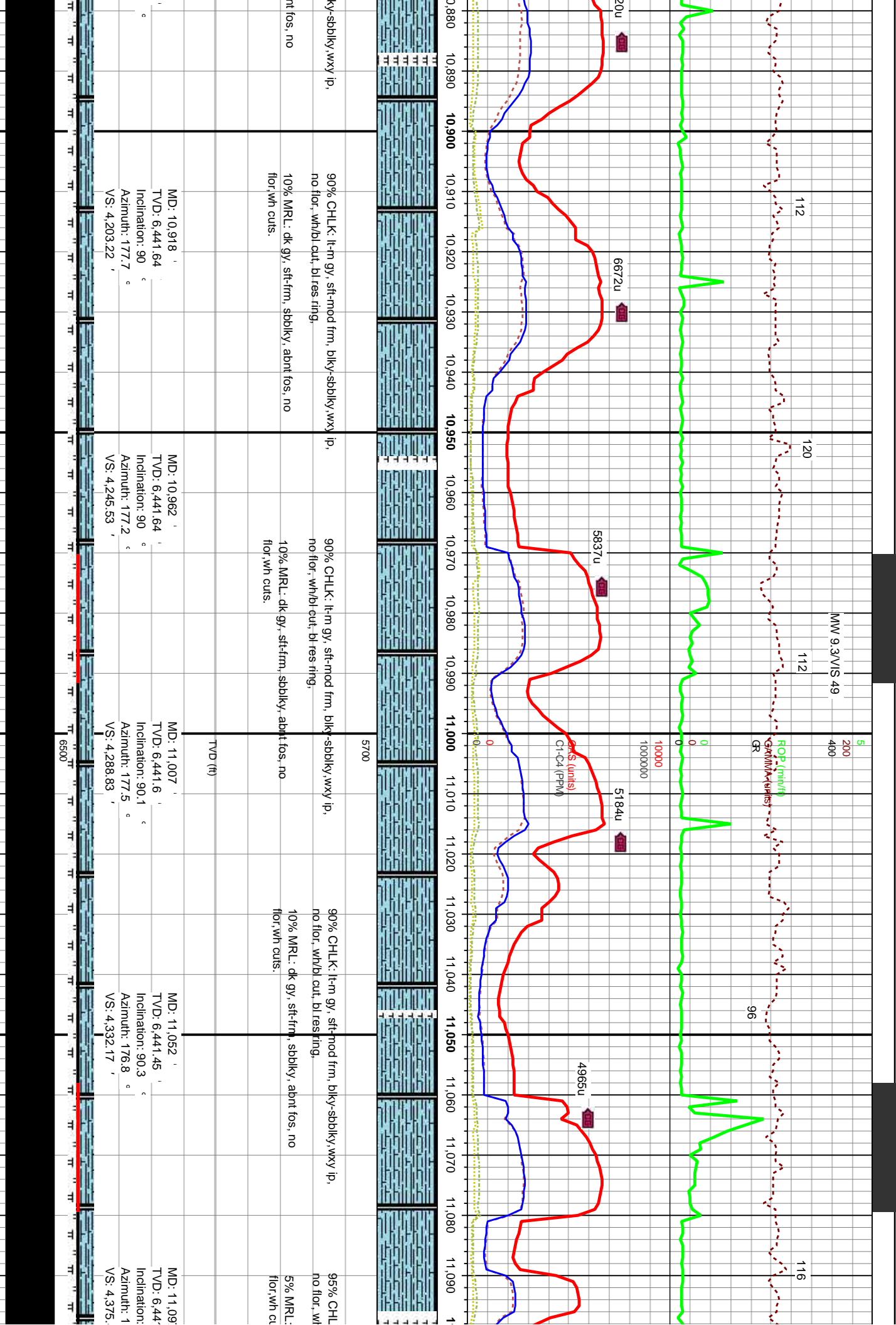












TD @ 11275' 05/26/2013
23:00 hr.

WOB 18
RPM 0/56
SPM 2940
SPM 111

MW 9.3/VIS 47

103

114

112

BOC (ppm/L)
GR
GAMMA (units)

0
0
100000
1000000

6636u

6318u

6404u

6389u

GA\$ (units)
C1-C4 (PPM)

11,100 11,110 11,120 11,130 11,140 11,150 11,160 11,170 11,180 11,190 11,200 11,210 11,220 11,230 11,240 11,250 11,260 11,270 11,280 11,290 11,300



lt-m gy, sft-mod frm, biky-sbbiky, wxy ip,
wh cut, bl res ring.

dk gy, sft-frm, sbbiky, abnt fos, no
for, wh cuts.

90% CHLK: lt-m gy, sft-mod frm, biky-sbbiky wxy ip,
no flor, wh/bl cut, bl res ring.

10% MRL: dk gy, sft-frm, sbbiky, abnt fos, no
for, wh cuts.

90% CHLK: lt-m gy, sft-mod frm, biky-sbbiky, wxy ip,
no flor, wh/bl cut, bl res ring.

10% MRL: dk gy, sft-frm, sbbiky, abnt fos, no
for, wh cuts.

Projection Bit

MD: 11,141 '
TVD: 6,441.41 '
Inclination: 89.8 °
Azimuth: 177.2 °
VS: 4,417.65 '

MD: 11,186 '
TVD: 6,441.56 '
Inclination: 89.8 °
Azimuth: 176.5 °
VS: 4,461.06 '

MD: 11,220 '
TVD: 6,441.74 '
Inclination: 89.6 °
Azimuth: 175.4 °
VS: 4,493.99 '

MD: 11,275 '
TVD: 6,442.12 '
Inclination: 89.6 °
Azimuth: 175.4 °
VS: 4,547.38 '

6500