

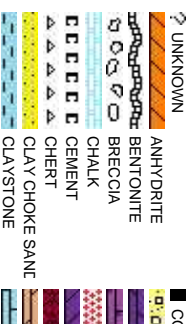


Scale: 5" / 100'
Measured Depth Log

Well Name	FERGE 3N-14HZ		
Location	SEC 14, T3N, R66W		
State	COLORADO	County	WELD
Country	USA	Rig Number	ENSIGN 132
API Number	05123363400000	AFE #	2073370
Region	DJ BASIN	Field	WATTENBERG
Spud Date	4/18/2014		
Surface Coordinates	281' FSL & 1118' FWL 40.21859 -104.7498		
Bottom Hole Coordinates	1' FNL & 1990' FWL 40.23224 -104.7467		
Ground Elevation	4913'	K.B. Elevation	4926'
Logged Interval	6744'		
Formation	NIOBRARA		
Type of Drilling Fluid	FSNL		

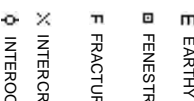
Company ANADARKO PE
Address 1099 18th St, S
Denver , CO 80

Name SHANA SWIRIN
Company COLUMBINE L

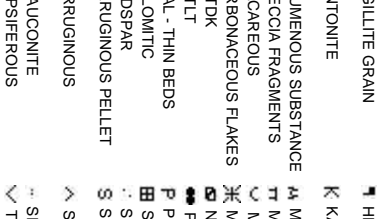


Accessories

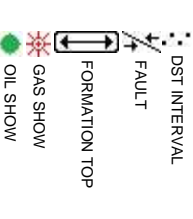
MN DEPTH (DOWN)



Springer



EXIT



Rounding



.....



S



Slide/Rotate

Columbine Logging Two Person
Rigged Up 1500hrs 04/18/2014
With Bloodhound Unit # 0624

ROP
ROF
GAMMA

Logging Started @
1330hrs on 04/19/2014
at 67'44' MD

Total Gas & Chromatograph

GAS
C1
C2
C3
C4

Bit Data
Bit #: 02
Type: SMITH SD1611MPX
Size: 8.75
Depth In: 1,255.
Depth Out: 7,110.
Jets: 3x16 3x18
S/N: JH4825

Depth Labels

% Lith

Begin in Sussex Formation

Well Bore
TVD

Acetone was used as the cutting agent with the dimple filled to the rim
The ratings are based on 7 descriptors:
None, Slight trace, Trace, Fair, Moderate, Good, and Excellent. The descriptor used is based on the loggers observations and best judgement of brilliance, color and longevity of the cut.

Oil Show

Images

ST
FM
CE

5 WT 10.0+ / VIS 45

WT 10.2 / VIS 45

ROP (min./ft)
GAMMA (API)

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

GAS (units)
C1-C4 (PPM)

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

5000

500000

3365u

2867u

2642u

6,750

6,800

6,850

MD: 6.734
TVD: 6.636.33
Inclination: 2.59
Azimuth: 341.09
VS: -204.29

MD: 6.781
TVD: 6.683.22
Inclination: 5.01
Azimuth: 348.28
VS: -201.29

TVD (ft)

TVD (ft)

TVD (ft)

SLTY SH: med-dk gy & blk, sb
pity-sb blk, mod stf-firm, w srt,
c- v c grs, sb rnd-sb ang, mod
fri, sting bl cut, dul bl ring

SLTY SH: med-dk gy & blk, sb
pity-sb blk, mod stf-firm, w srt,
c- v c grs, sb rnd-sb ang, mod
fri, sting bl cut, dul bl ring

SLTY SH: med-dk gy & blk, st
pity-sb blk, mod stf-firm, w srt,
c- v c grs, sb rnd-sb ang, mod
fri, sting bl cut, bri bl ring

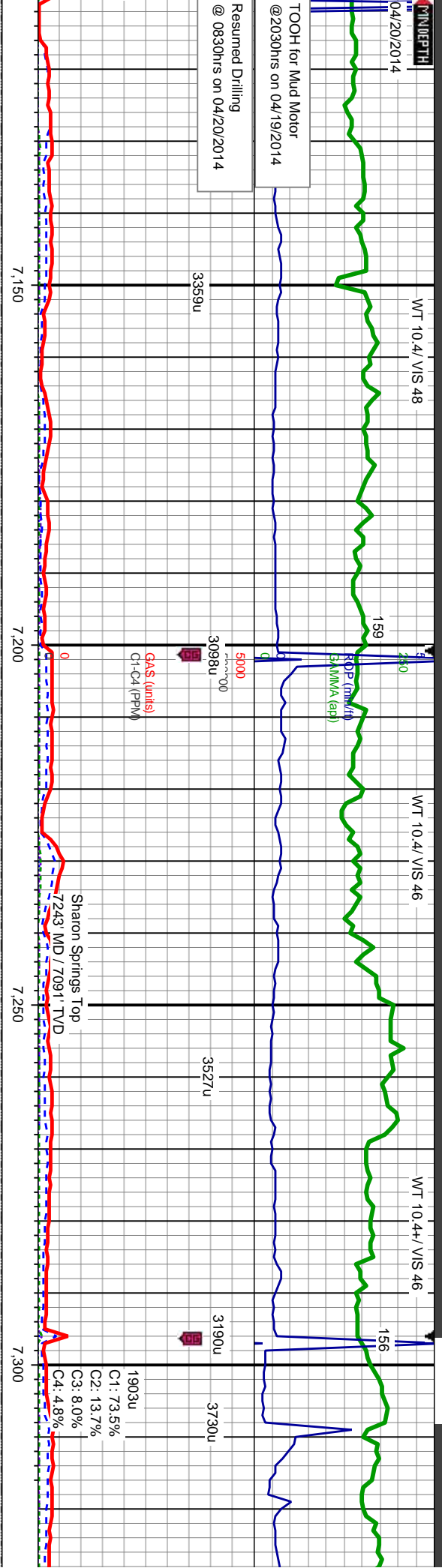
MD: 6.876
TVD: 6.777.07
Inclination: 12.3
Azimuth: 349.15
VS: -187.34



MD: 6.924 TVD: 6.823.58 Inclination: 16.27 Azimuth: 354.52 VS: -175.65		MD: 6.971 TVD: 6.868.17 Inclination: 20.51 Azimuth: 356.37 VS: -160.9		MD: 7.019 TVD: 6.912.48 Inclination: 24.68 Azimuth: 357.62 VS: -142.52		MD: 7.066 TVD: 6.954.44 Inclination: 28.8 Azimuth: 356.84 VS: -121.4	
SLTY SH: med-dk gy & blk, sb ply-sb blk, mod st-firm, w srl, c- v c grs, sb rnd-sb ang, mod fri, sting bl cut, bri bl ring		SLTY SH: med-dk gy & blk, sb ply-sb blk, mod st-firm, w srl, c- v c grs, sb rnd-sb ang, mod fri, sting bl cut, bri bl ring		SLTY SH: med-dk gy & blk, sb ply-sb blk, mod st-firm, w srl, c- v c grs, sb rnd-sb ang, mod fri, sting bl cut, bri bl ring		SLTY SH: med-dk gy & blk, sb ply-sb blk, mod st-firm, w srl, c- v c grs, sb rnd-sb ang, mod fri, sting bl cut, bri bl ring	
TVD (ft)		TVD (ft)		TVD (ft)		TVD (ft)	
6,900		6,950		7,000		7,050	
6,924		6,971		7,019		7,066	
6,950		7,000		7,050		7,100	

TOOH for Mud Motor
@2030hrs on 04/19/2014

Resumed Drilling
@ 0830hrs on 04/20/2014



SLTY SH: med-dk gy & blk, sb
ply-sb blkly, mod sft-firm, w srl,
c- v c grs, sb rnd-sb ang, mod
fri, sting bl cut, dul bl ring

SLTY SH: med-dk gy & blk, sb
ply-sb blkly, mod sft-firm, w srl,
c- v c grs, sb rnd-sb ang, mod
fri, rr bent, sting bl cut, dul bl
ring

SLTY SH: med-dk gy & blk, sb
ply-sb blkly, mod sft-firm, w srl,
c- v c grs, sb rnd-sb ang, mod
fri, occ bent, sting bl cut, dul
bl ring

SLTY SH: med-dk gy & blk, sb
ply-sb blkly, mod sft-firm, w srl,
c- v c grs, sb rnd-sb ang, mod
fri, abnt bent, sting bl cut, dul
bl ring

SLTY SH: med-dk
ply-sb blkly, mod i
c- v c grs, sb rnd-s
fri, CHK: med-dk g
blkly-sb ply, sft-fir
c grs, sb rd-sb ang
MRLST: med-dk g
blkly-sb ply, sft-fir
c grs, sb rd-sb ang
bent, sting bl cut,

MD: 7.162
TVD: 7.034.05
Inclination: 39.35
Azimuth: 359.07
VS: 68.03

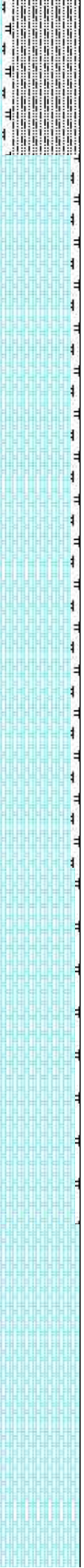
MD: 7.257
TVD: 7.100.21
Inclination: 52.16
Azimuth: 2.75
VS: -0.14

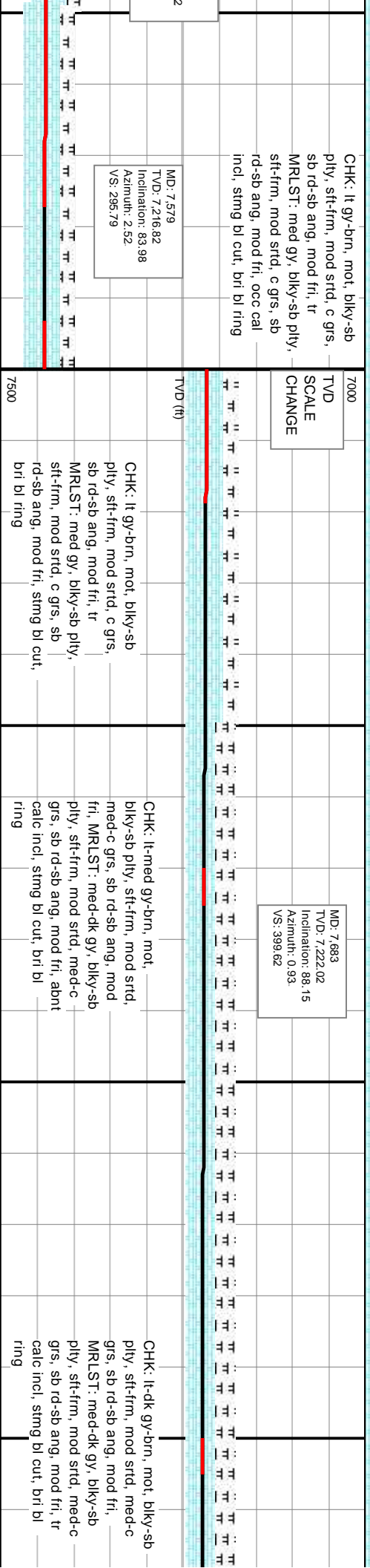
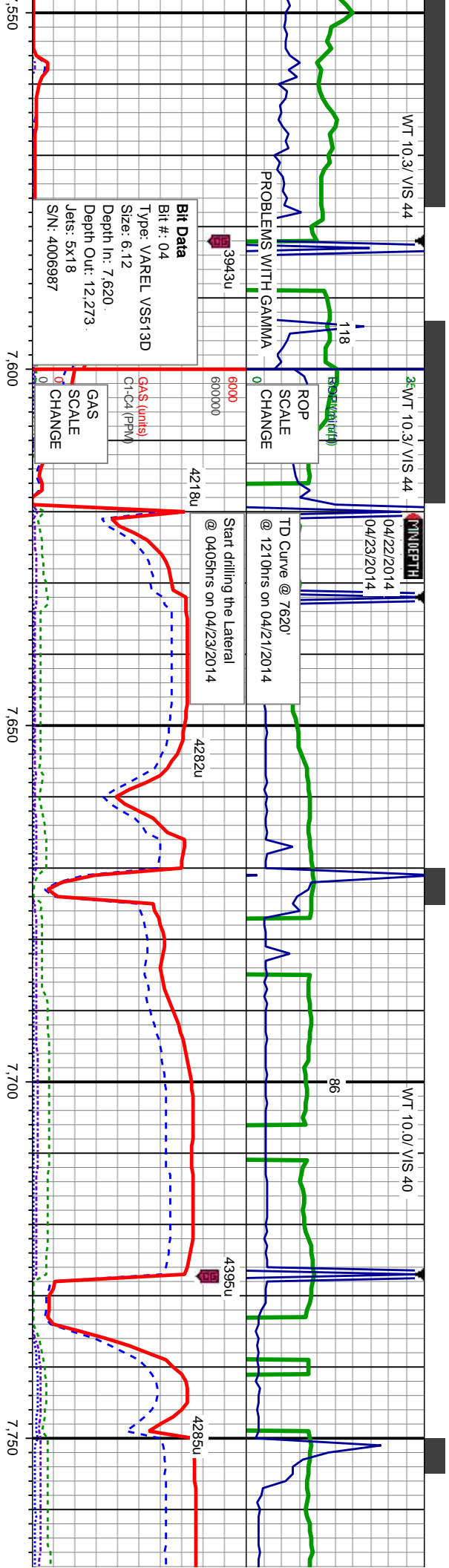
MD: 7.305
TVD: 7.127.6
Inclination: 58.23
Azimuth: 4.27
VS: 39.22

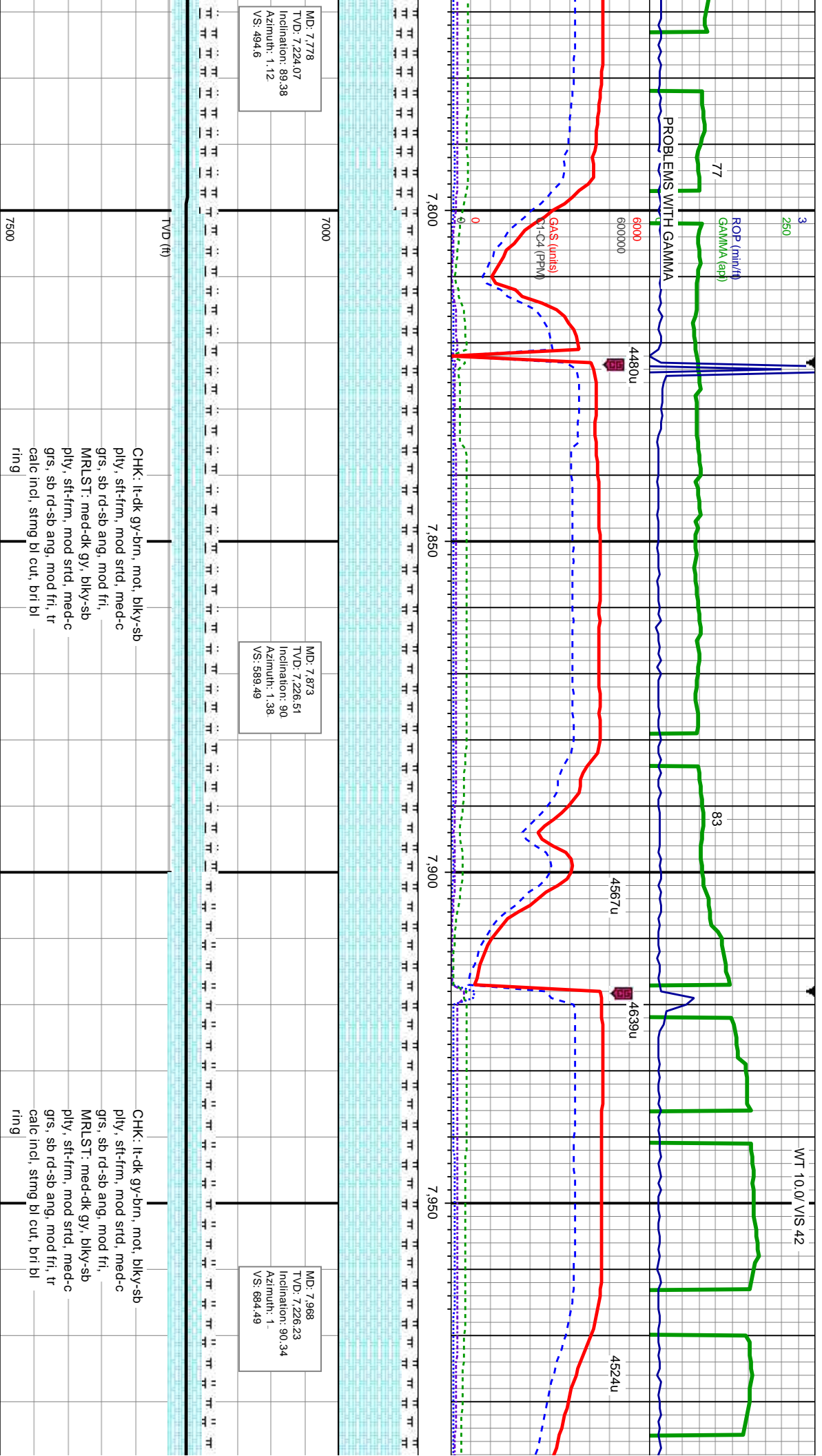
MD: 7.115
VD: 6.996.31
Inclination: 33.75
Azimuth: 359.05
VS: -95.99

TVD (ft)

7300



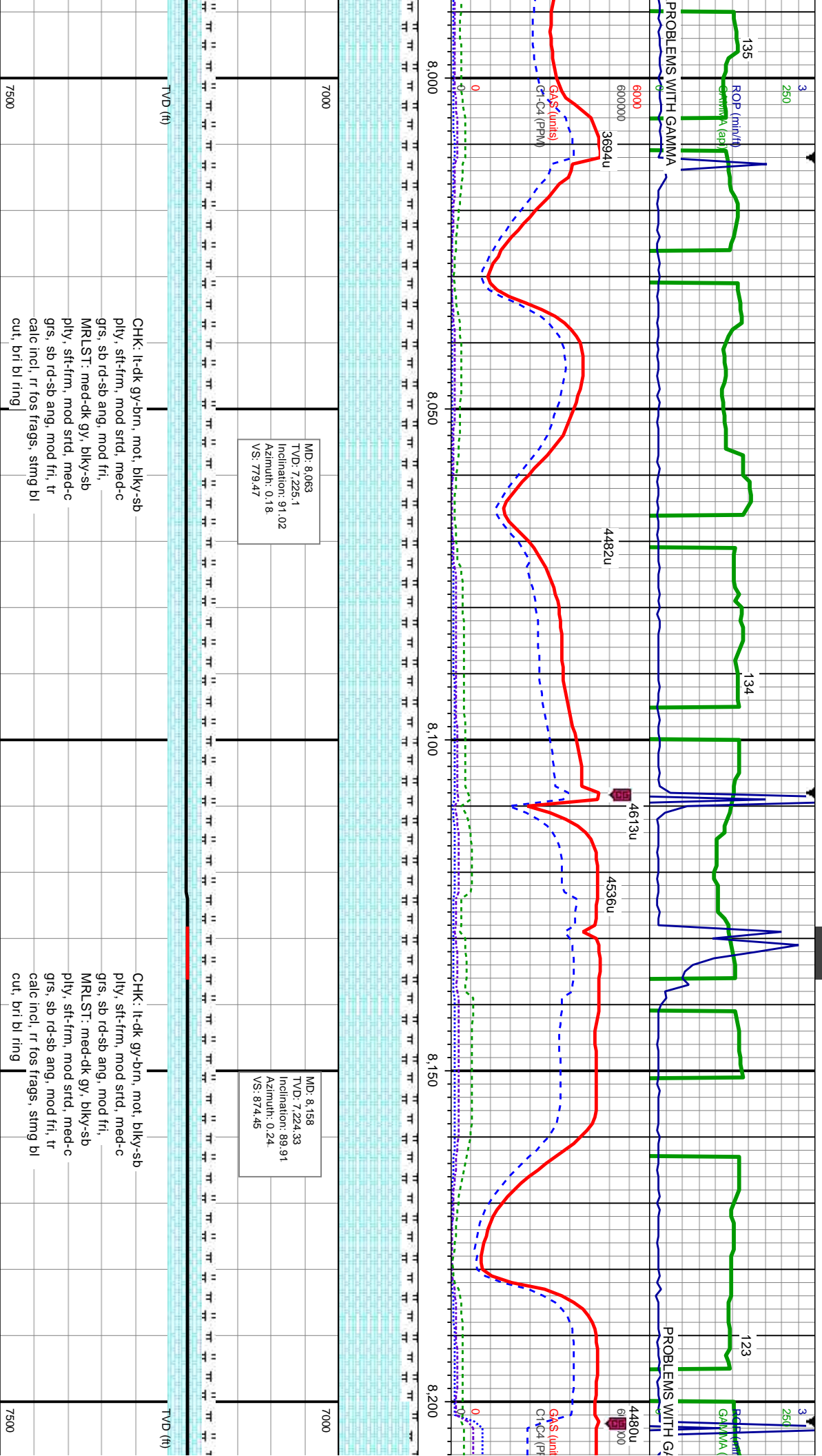


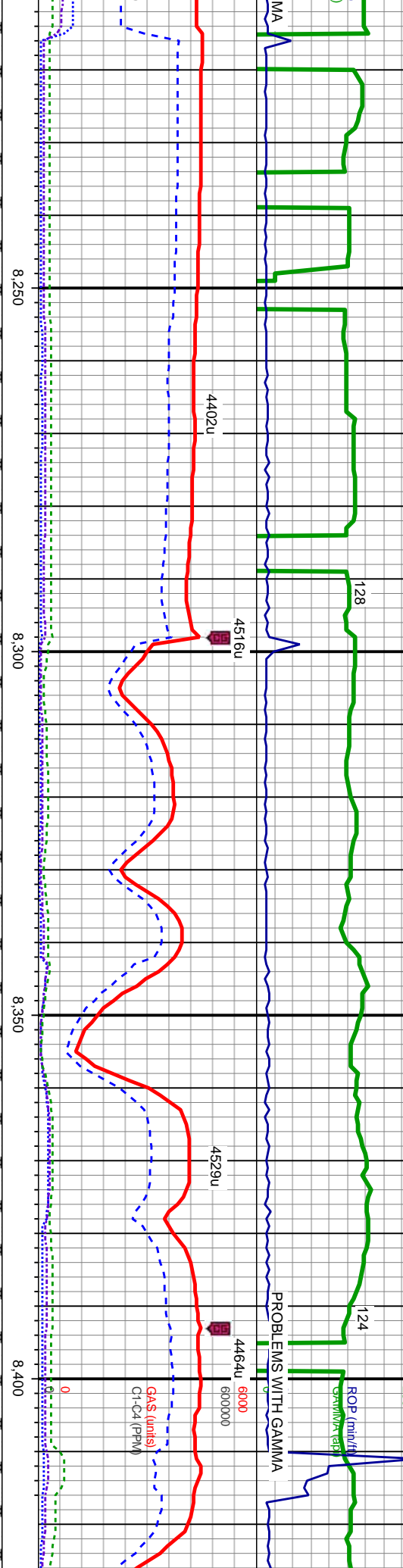


MD: 7.778
TVD: 7.224.07
Inclination: 89.38
Azimuth: 1.12
VS: 494.6

MD: 7.873
TVD: 7.226.51
Inclination: 90
Azimuth: 1.38
VS: 589.49

MD: 7.968
TVD: 7.226.23
Inclination: 90.34
Azimuth: 1
VS: 684.49

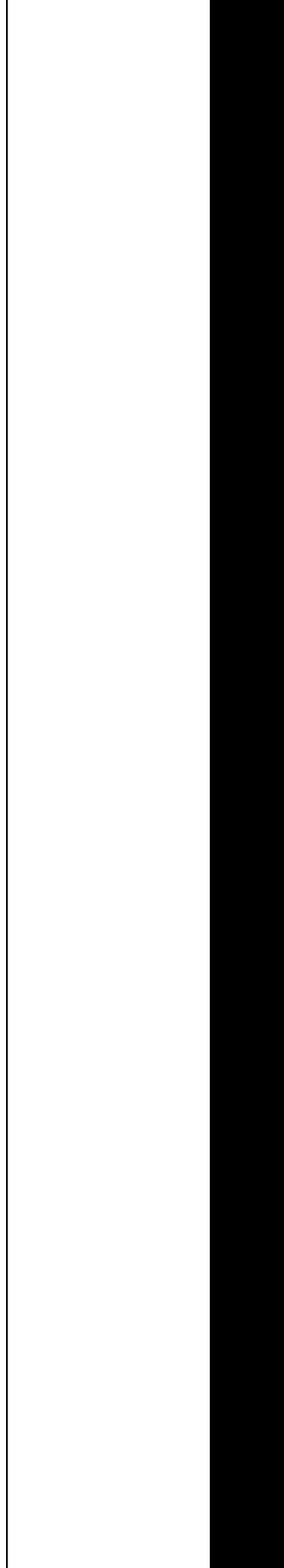


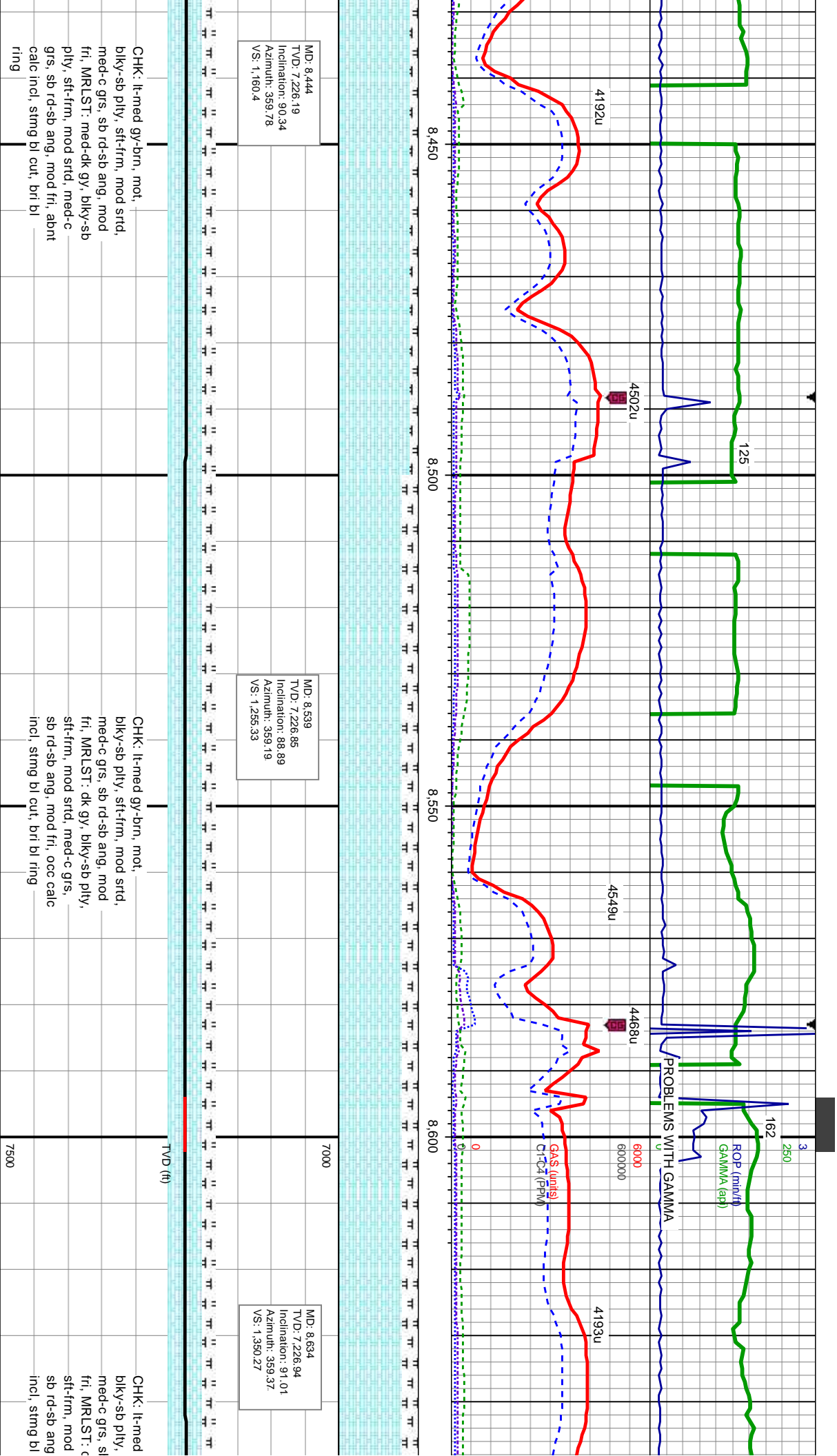


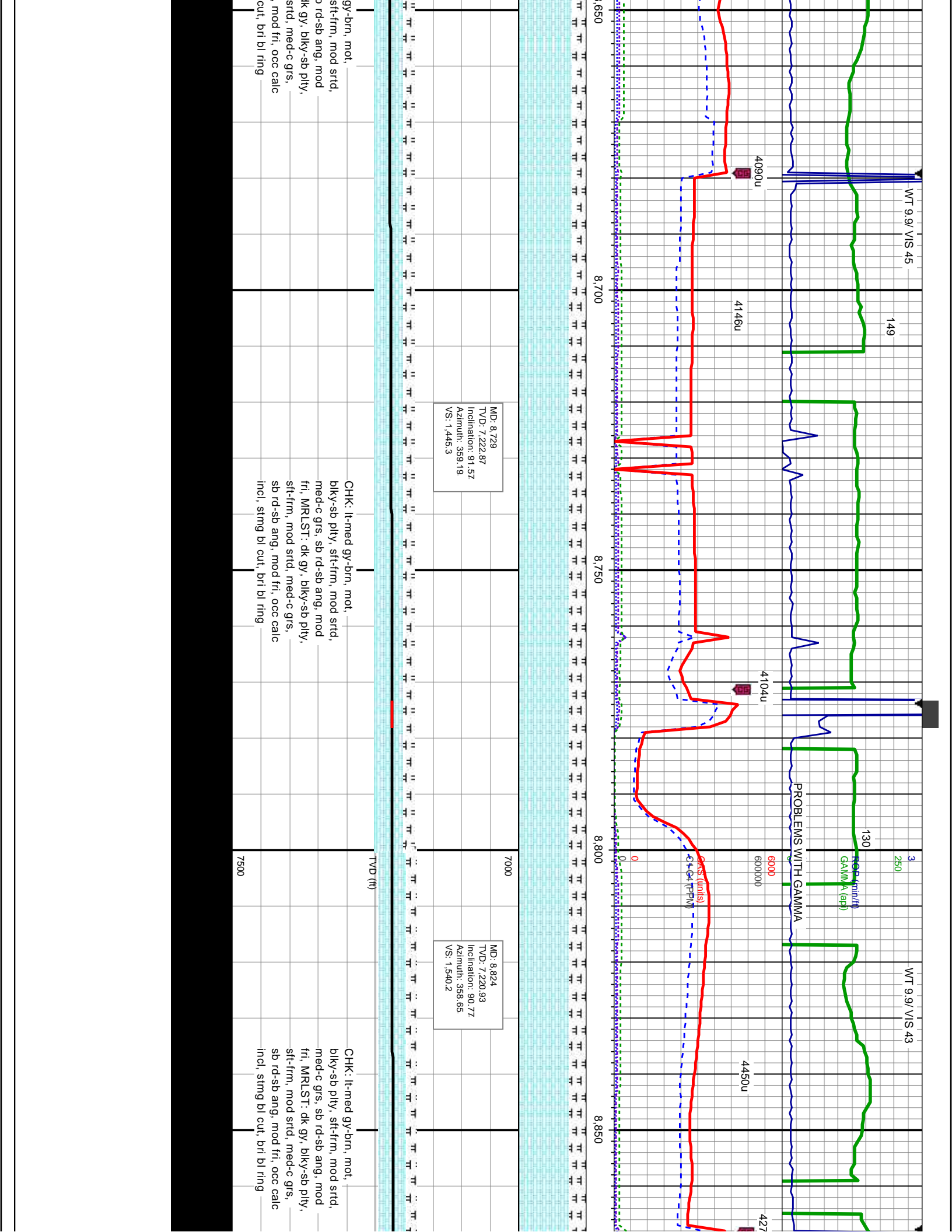
MD: 8,253
TVD: 7,224.56
Inclination: 89.81
Azimuth: 0.27
VS: 969.44

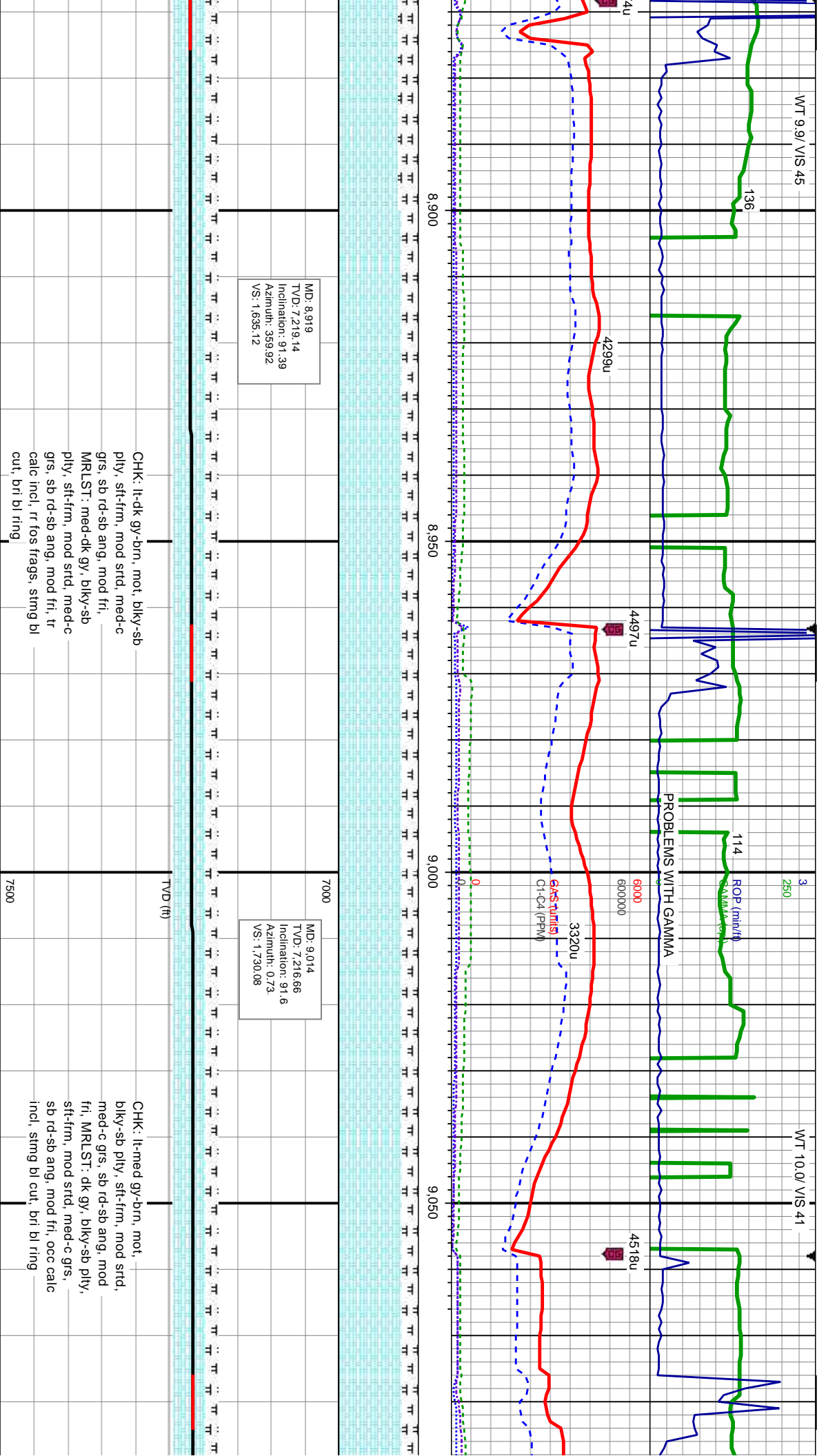
MD: 8,348
TVD: 7,225.59
Inclination: 88.95
Azimuth: 0.69
VS: 1,064.42

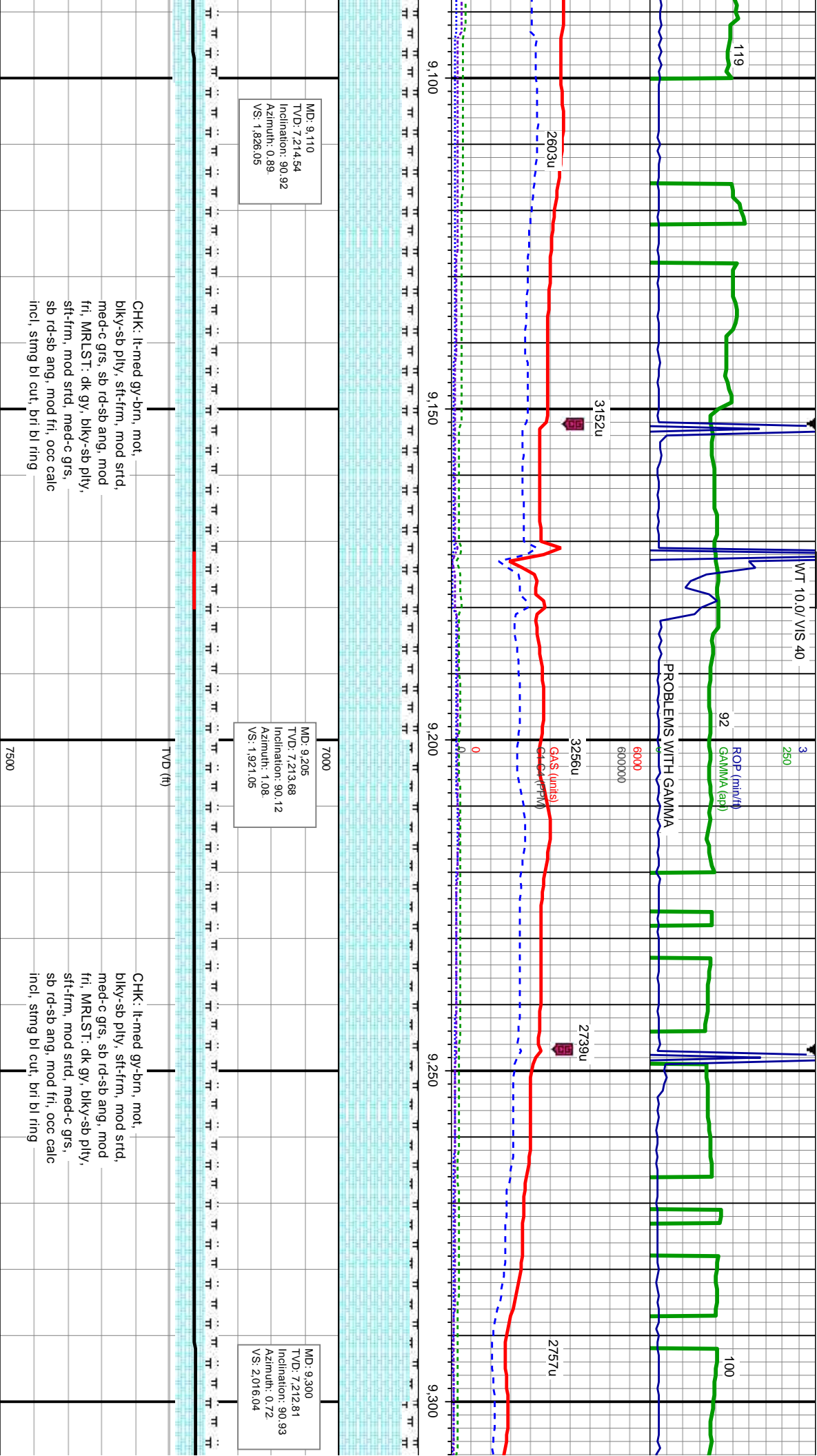
CHK: lt-med gy-brn, mot, blk-y-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, MRLST: med-dk gy, blk-y-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, abnt calc incl, stmg bl cut, bri bl ring	8,250	8,300	8,350	8,400	7000	7500
CHK: lt-med gy-brn, mot, blk-y-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, MRLST: med-dk gy, blk-y-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, abnt calc incl, stmg bl cut, bri bl ring	8,250	8,300	8,350	8,400	7000	7500











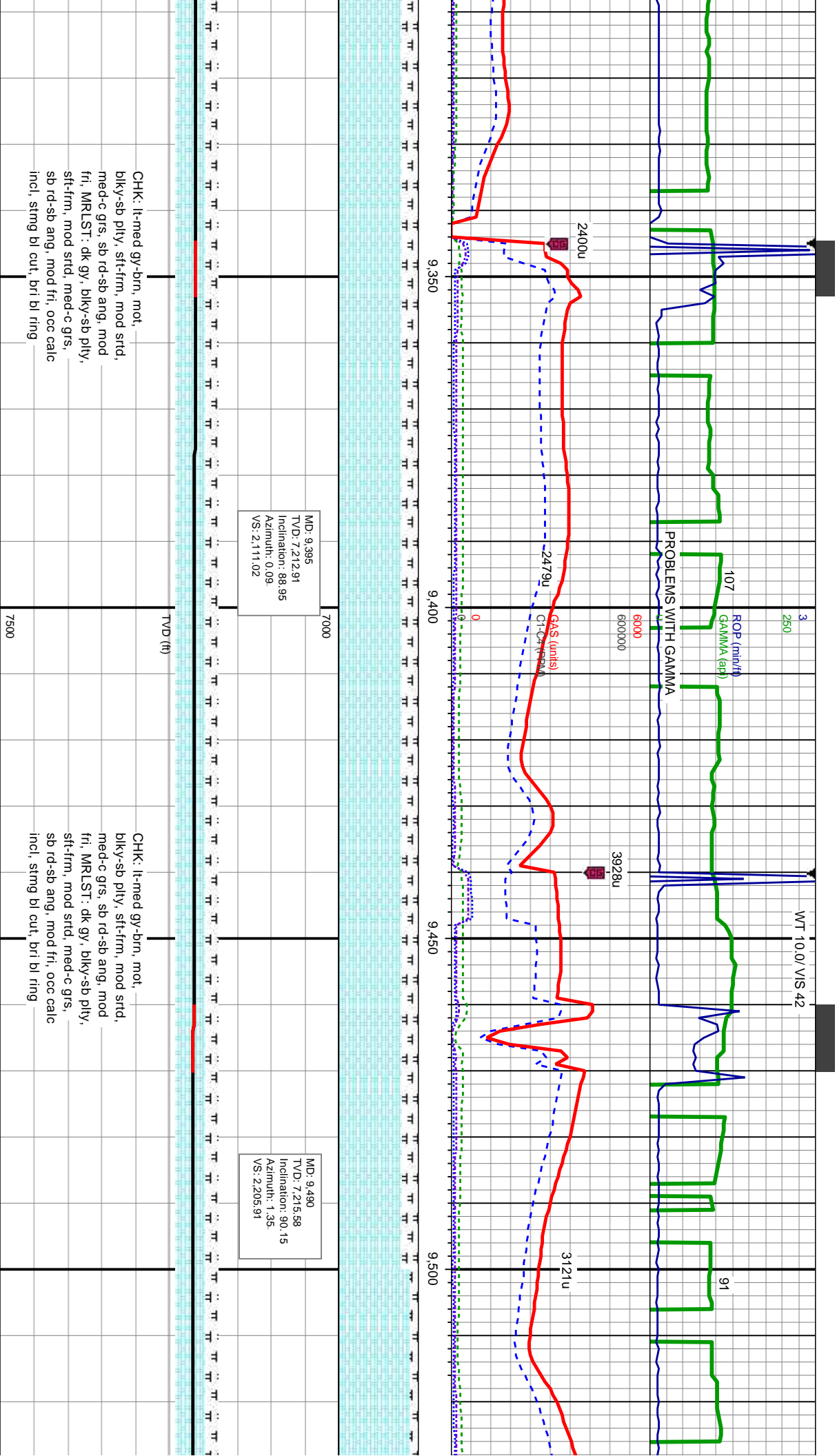
MD: 9,110
TVD: 7,214.54
Inclination: 90.92
Azimuth: 0.89
VS: 1,826.05

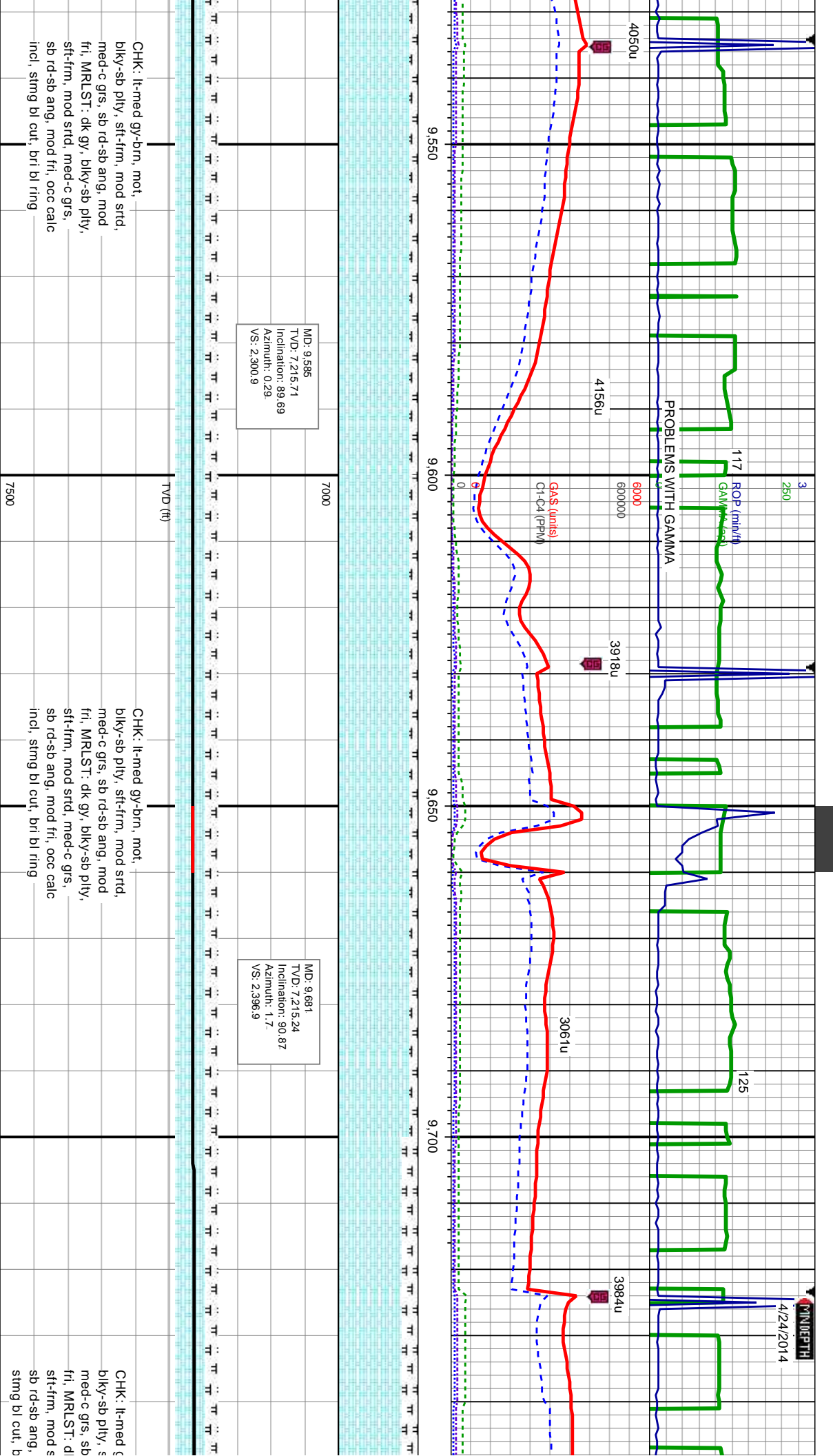
MD: 9,205
TVD: 7,213.68
Inclination: 90.12
Azimuth: 1.08
VS: 1,921.05

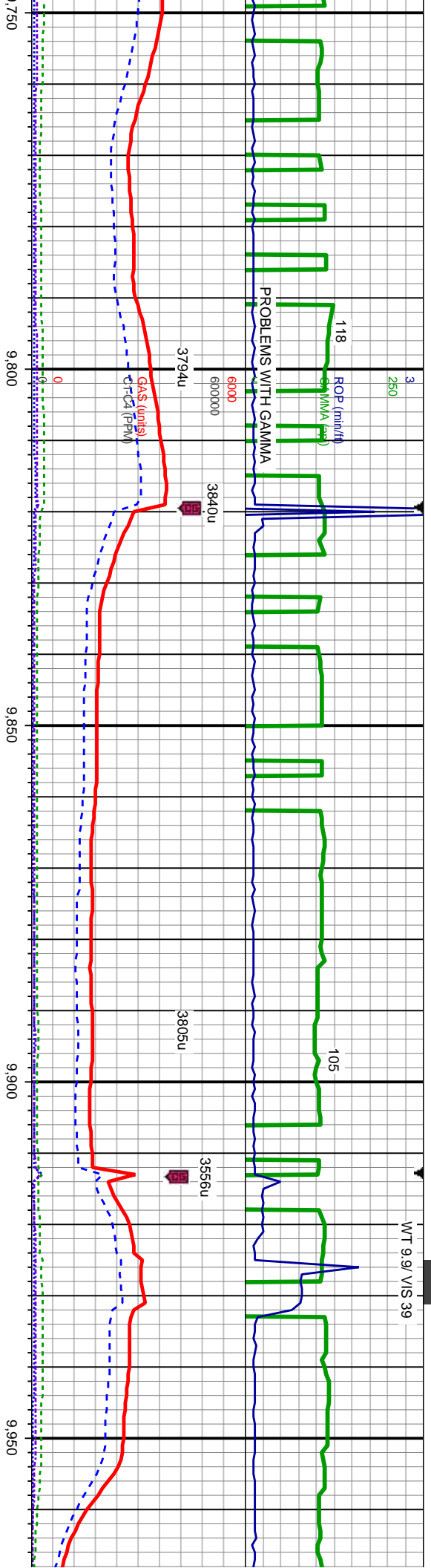
MD: 9,300
TVD: 7,212.81
Inclination: 90.93
Azimuth: 0.72
VS: 2,016.04

CHK: lt-med gy-brn, mot,
bkly-sb ply, sft-frn, mod strd,
med-c grs, sb rd-sb ang, mod
fri, MRLST: dk gy, bkly-sb ply,
sft-frn, mod strd, med-c grs,
sb rd-sb ang, mod fri, occ calc
incl, sting bl cut, bri bl ring

CHK: lt-med gy-brn, mot,
bkly-sb ply, sft-frn, mod strd,
med-c grs, sb rd-sb ang, mod
fri, MRLST: dk gy, bkly-sb ply,
sft-frn, mod strd, med-c grs,
sb rd-sb ang, mod fri, occ calc
incl, sting bl cut, bri bl ring







MD: 9.776
TVD: 7.213.65
Inclination: 91.05
Azimuth: 0.85
VS: 2.491.88

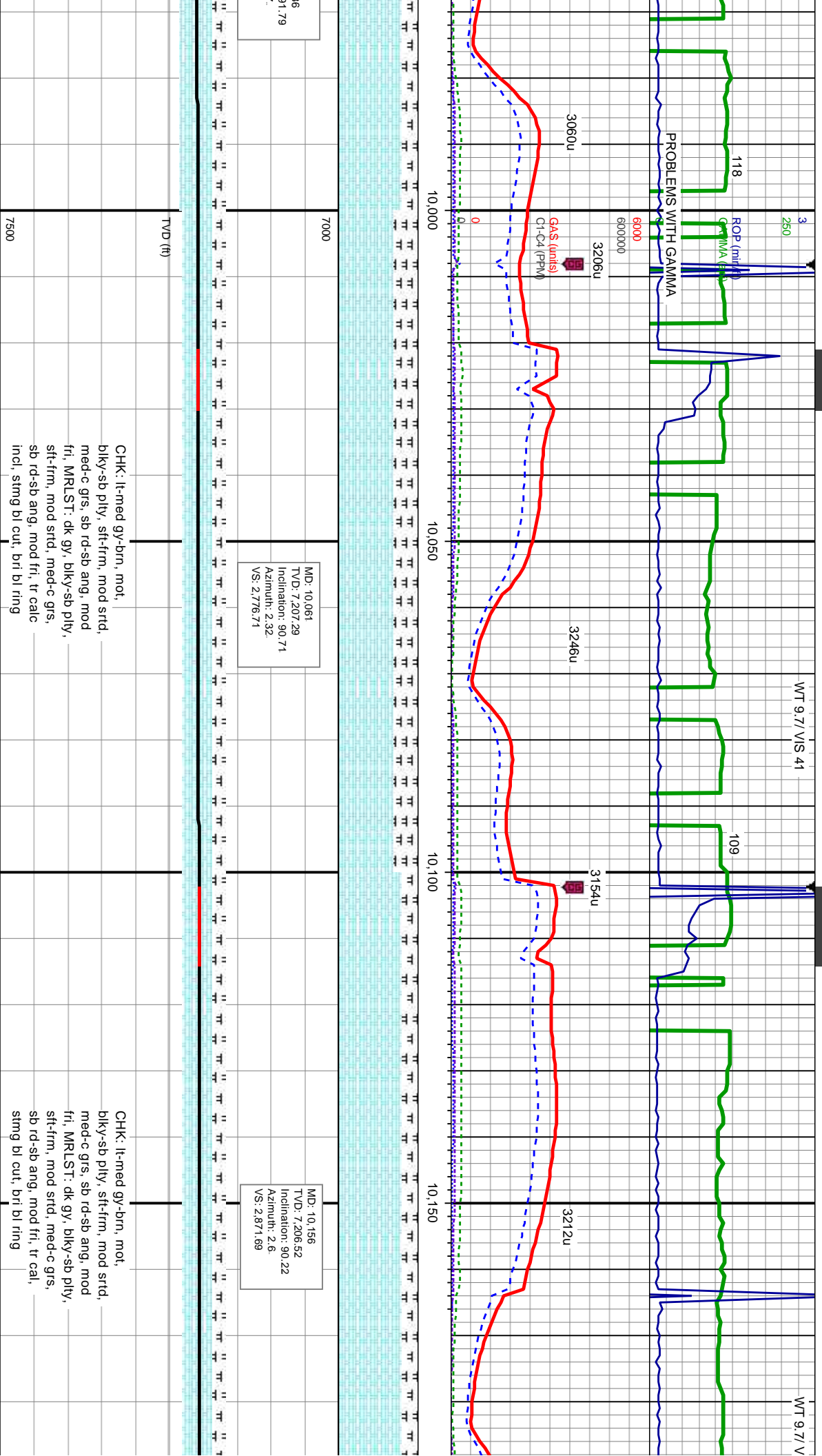
MD: 9.871
TVD: 7.211.81
Inclination: 91.17
Azimuth: 2.16
VS: 2.586.86

MD: 9.966
TVD: 7.209.3
Inclination: 91.17
Azimuth: 3.7
VS: 2.681.78

CHK: lt-med gy-brn, mot, blky-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, MRLST: dk gy, blky-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, occ cal, sting bl cut, bri bl ring

CHK: lt-med gy-brn, mot, blky-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, MRLST: dk gy, blky-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, occ cal, sting bl cut, bri bl ring

TVD (ft)



S 40

3

3

119 ROP (min/ft)

ROP (min/ft)

PROBLEMS WITH GAMMA

PROBLEMS WITH GAMMA

6000

6000

3231u

3600u

3540u

3527u

3741u

GAS (units)

GAS (units)

10,200

10,250

10,300

10,350

10,400

7000

7000

MD: 10.251
TVD: 7,207.14
Inclination: 89.04
Azimuth: 2.07
VS: 2.966.67

MD: 10.347
TVD: 7,206.37
Inclination: 89.48
Azimuth: 1.07
VS: 3.062.66

TVD (ft)

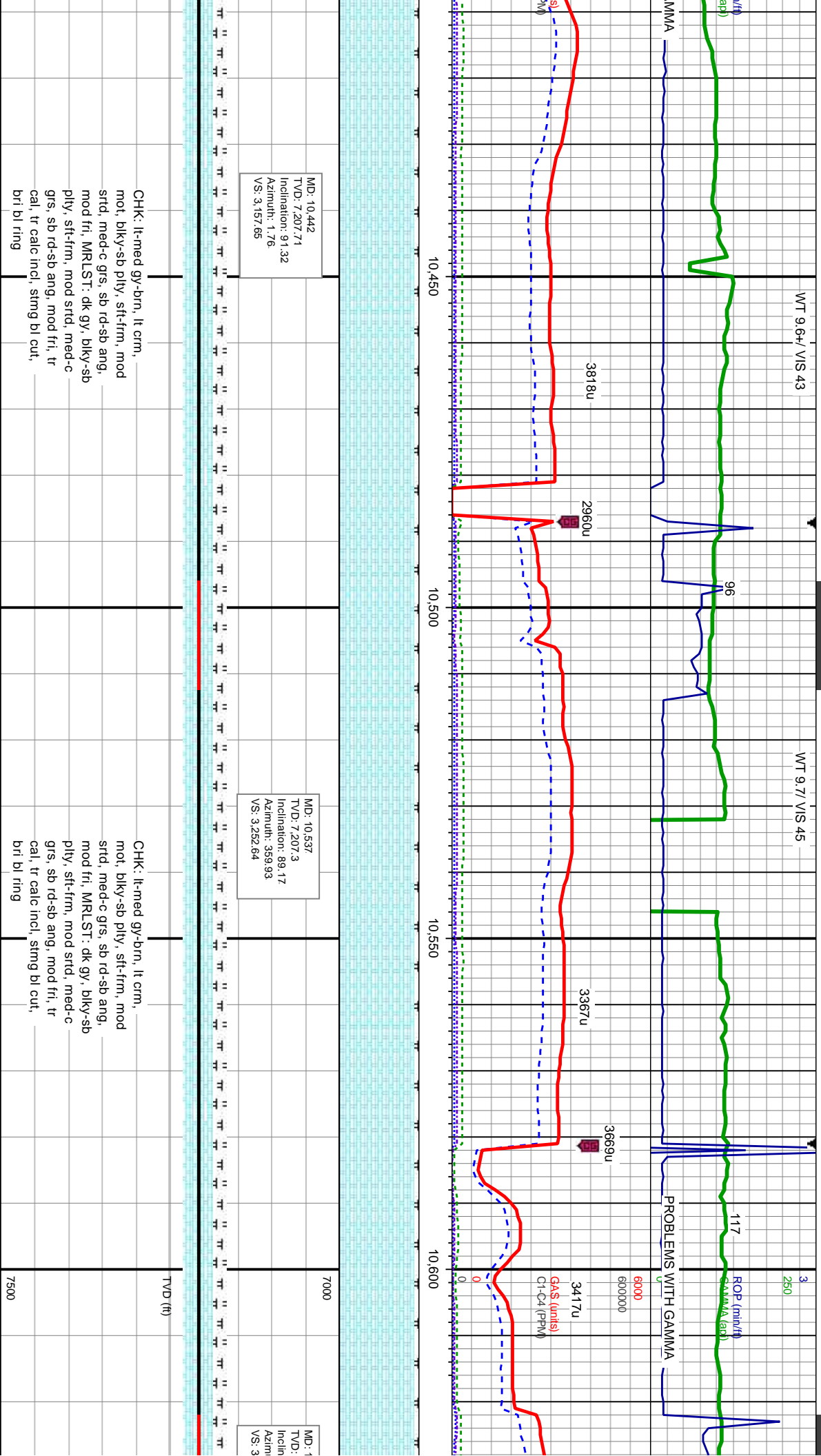
TVD (ft)

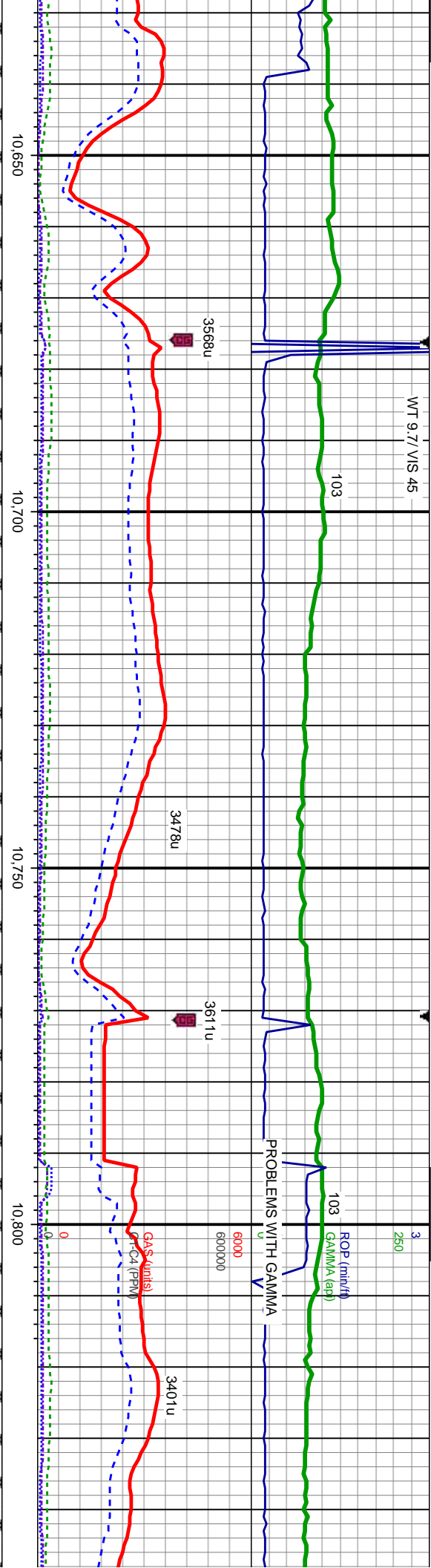
CHK: lt-med gy-brn, mot,
bkly-sb pily, sft-frm, mod strd,
med-c grs, sb rd-sb ang, mod
fri, MRLST: dk gy, bkly-sb pily,
sft-frm, mod strd, med-c grs,
sb rd-sb ang, mod fri, tr cal,
stmg bl cut, bri bl ring

CHK: lt-med gy-brn, mot,
bkly-sb pily, sft-frm, mod strd,
med-c grs, sb rd-sb ang, mod
fri, MRLST: dk gy, bkly-sb pily,
sft-frm, mod strd, med-c grs,
sb rd-sb ang, mod fri, tr cal,
stmg bl cut, bri bl ring

7500

7500





0.632
7.208.58
ation: 89.29
uth: 359.68
347.6

MD: 10.727
TVD: 7.209.09
Inclination: 90.09
Azimuth: 359.4
VS: 3.442.55

MD: 10.822
TVD: 7.209.14
Inclination: 89.85
Azimuth: 0.8
VS: 3.537.53

CHK: lt-med gy-brn, lt crm,
mot, biky-sb pty, sft-frm, mod
strd, med-c grs, sb rd-sb ang,
mod fri, MRLST: dk gy, biky-sb
pty, sft-frm, mod strd, med-c
grs, sb rd-sb ang, mod fri, tr
cal, tr calc incl, sting bl cut,
bri bl ring

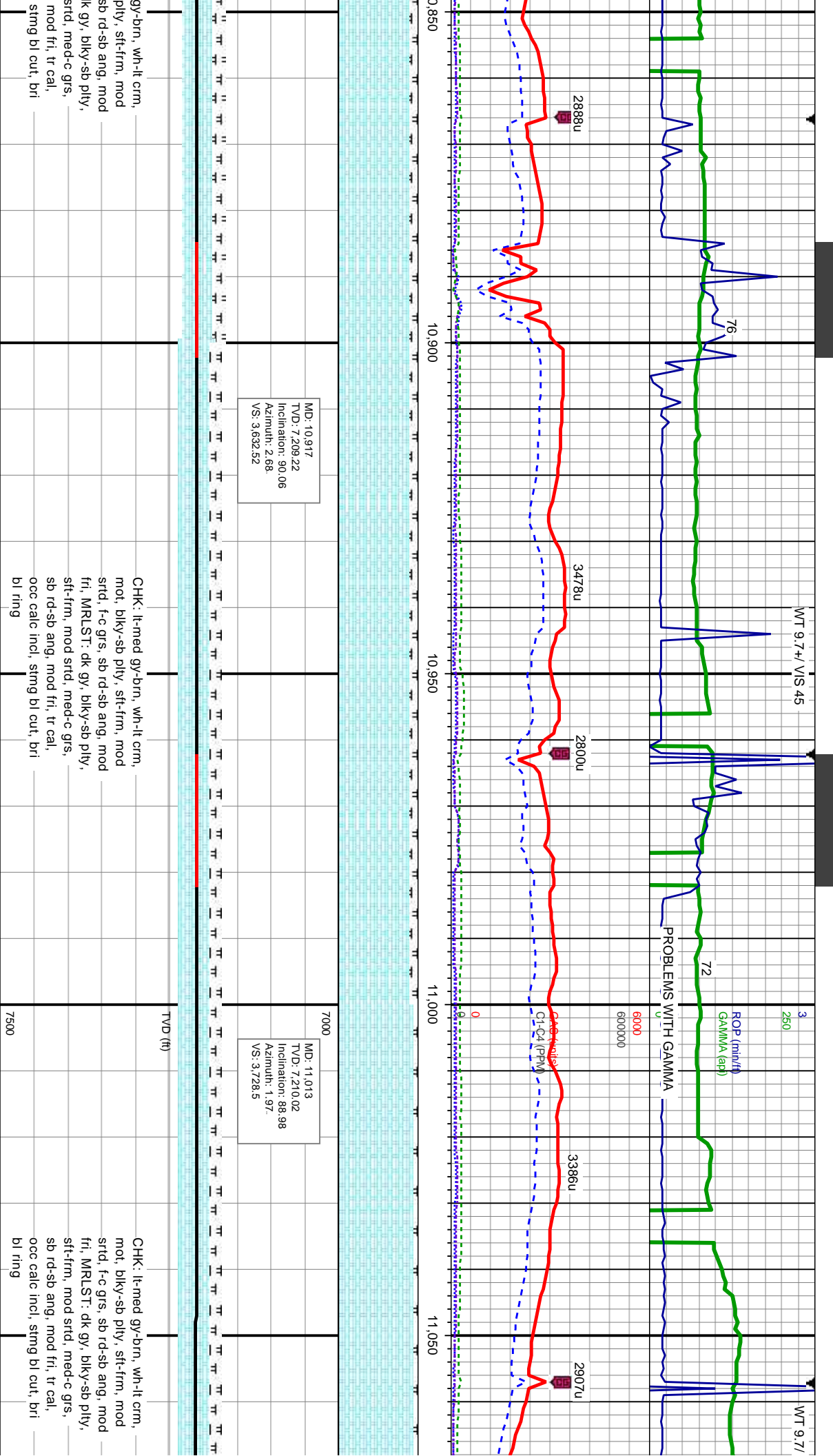
CHK: lt-med gy-brn, wh-lt crm,
mot, biky-sb pty, sft-frm, mod
strd, f-c grs, sb rd-sb ang, mod
fri, MRLST: dk gy, biky-sb pty,
sft-frm, mod strd, med-c grs,
sb rd-sb ang, mod fri, tr cal,
occ calc incl, sting bl cut, bri
bl ring

CHK: lt-med
mot, biky-sb
strd, f-c grs,
fri, MRLST: c
sft-frm, mod
sb rd-sb ang,
occ calc incl,
bl ring

TVD (ft)

7000

7500



VS 44

WT 9.6+ / VS 43

3
250

148

ROP (min./ft)
Gamma Ray (ppm)

PROBLEMS WITH GAMMA

6000
600000

3142u

2950u
GA\$ (units)
CI-C4 (ppm)

3318u

11,100

11,150

11,200

11,250

MD: 11,108
TVD: 7,212.56
Inclination: 87.96
Azimuth: 3.16
VS: 3.823.44

MD: 11,203
TVD: 7,215.88
Inclination: 88.03
Azimuth: 2.89
VS: 3.918.34

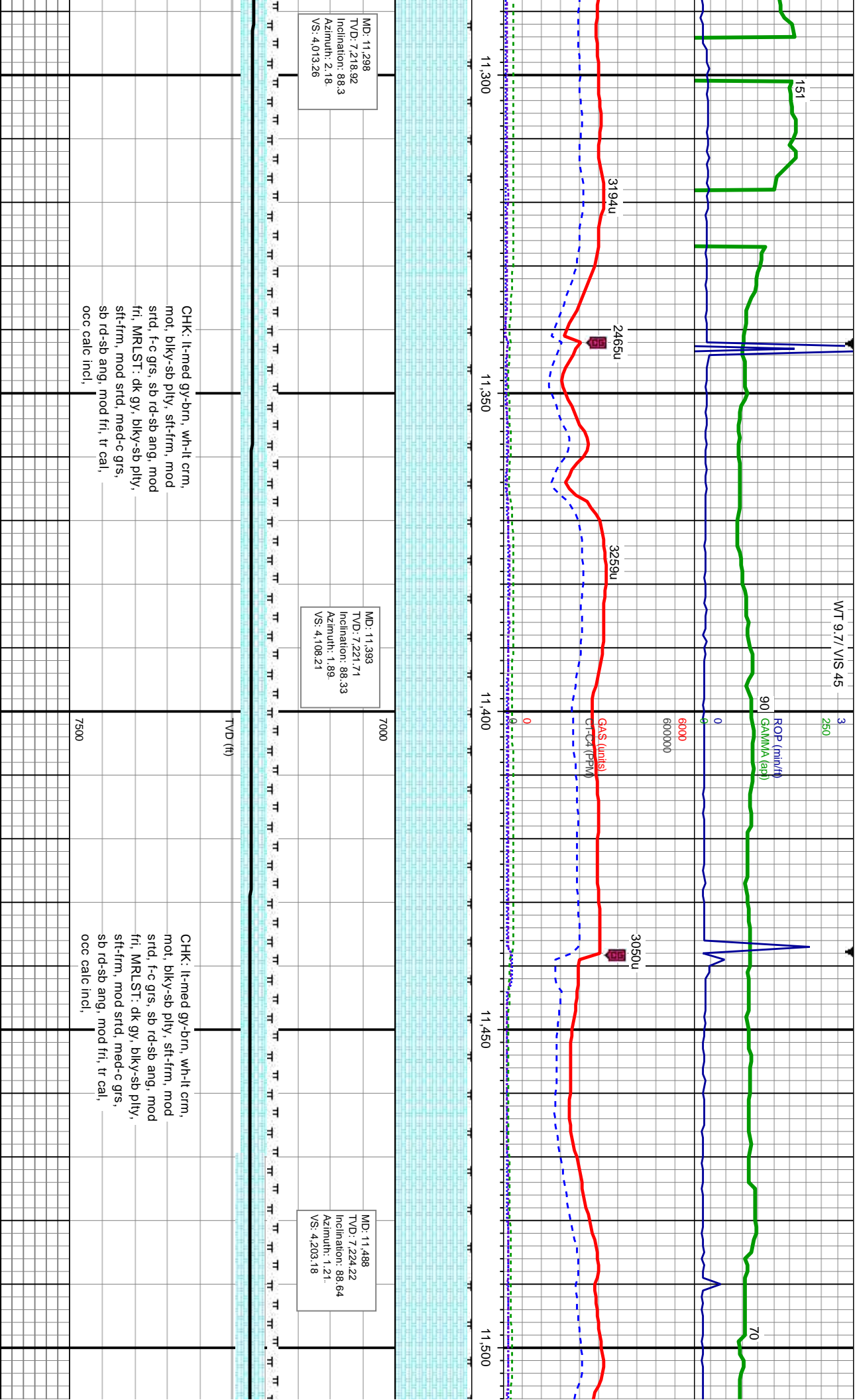
CHK: lt-med gy-brn, wh-lt crm,
mot, blk-y-sb ply, sft-frn, mod
srt'd, f-c grs, sb rd-sb ang, mod
fri, MRLST: dk gy, blk-y-sb ply,
sft-frn, mod srt'd, med-c grs,
sb rd-sb ang, mod fri, tr cal,
occ calc incl,

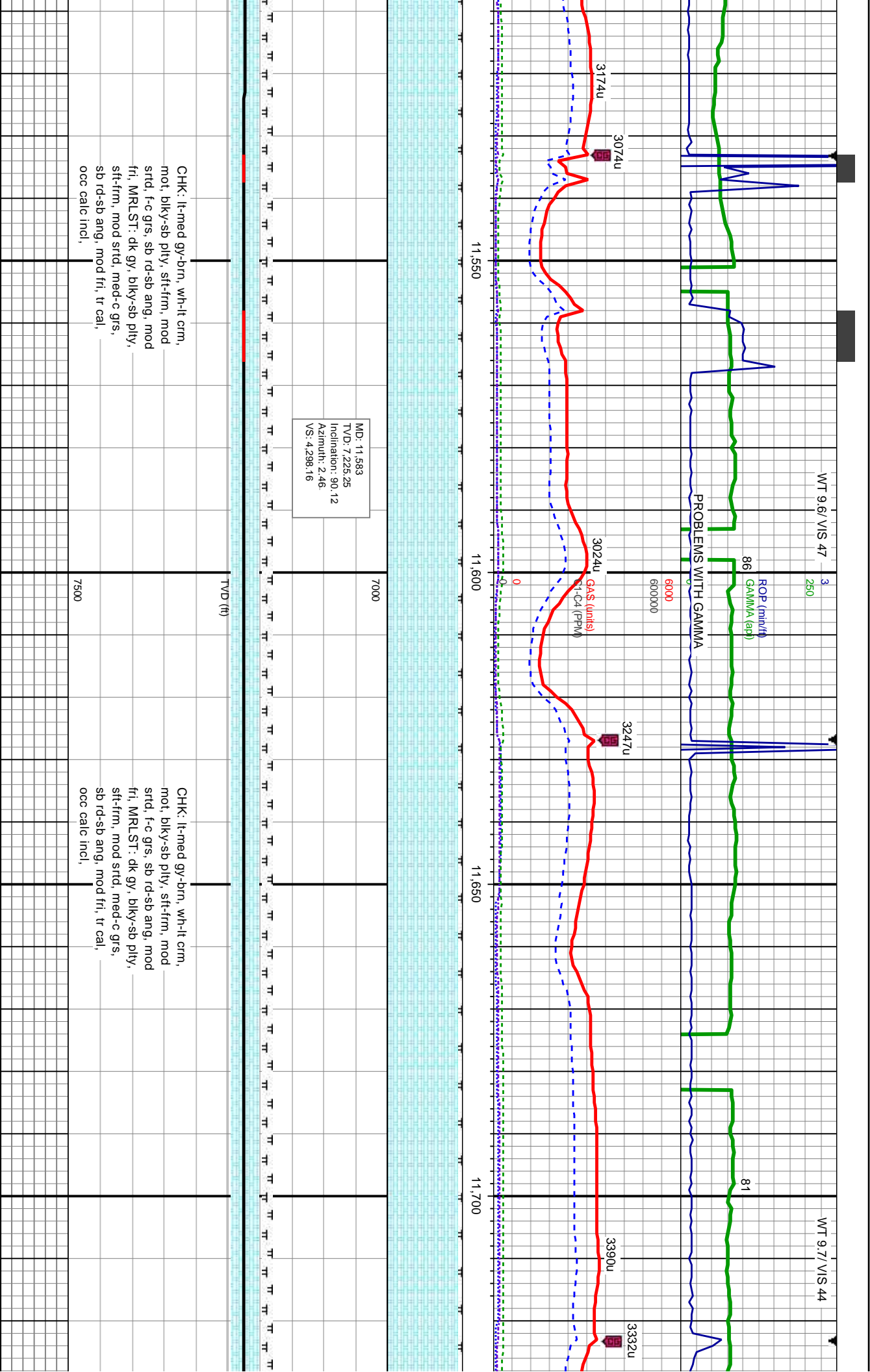
CHK: lt-med gy-brn, wh-lt crm,
mot, blk-y-sb ply, sft-frn, mod
srt'd, f-c grs, sb rd-sb ang, mod
fri, MRLST: dk gy, blk-y-sb ply,
sft-frn, mod srt'd, med-c grs,
sb rd-sb ang, mod fri, tr cal,
occ calc incl,

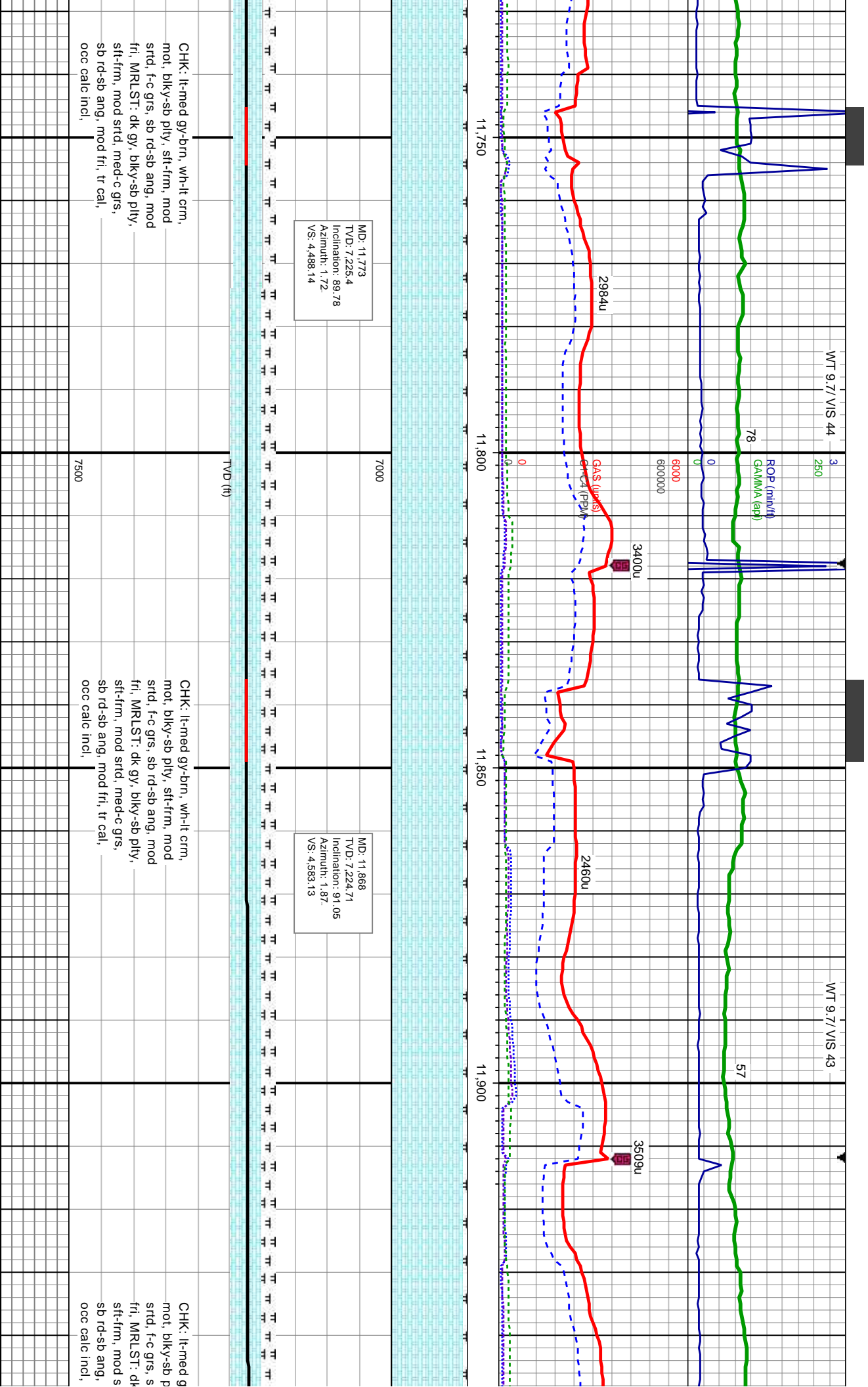
TVD (ft)

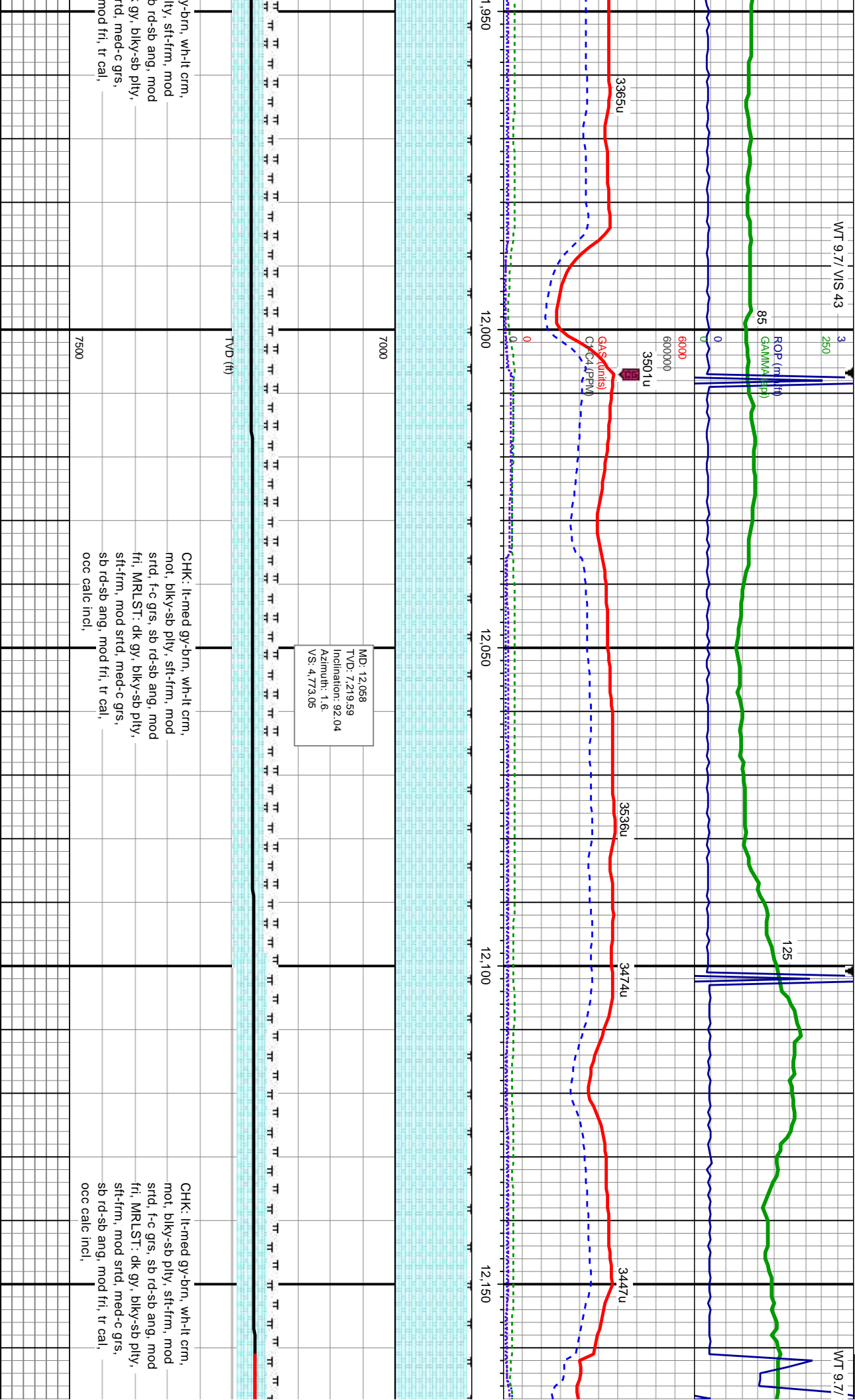
7500

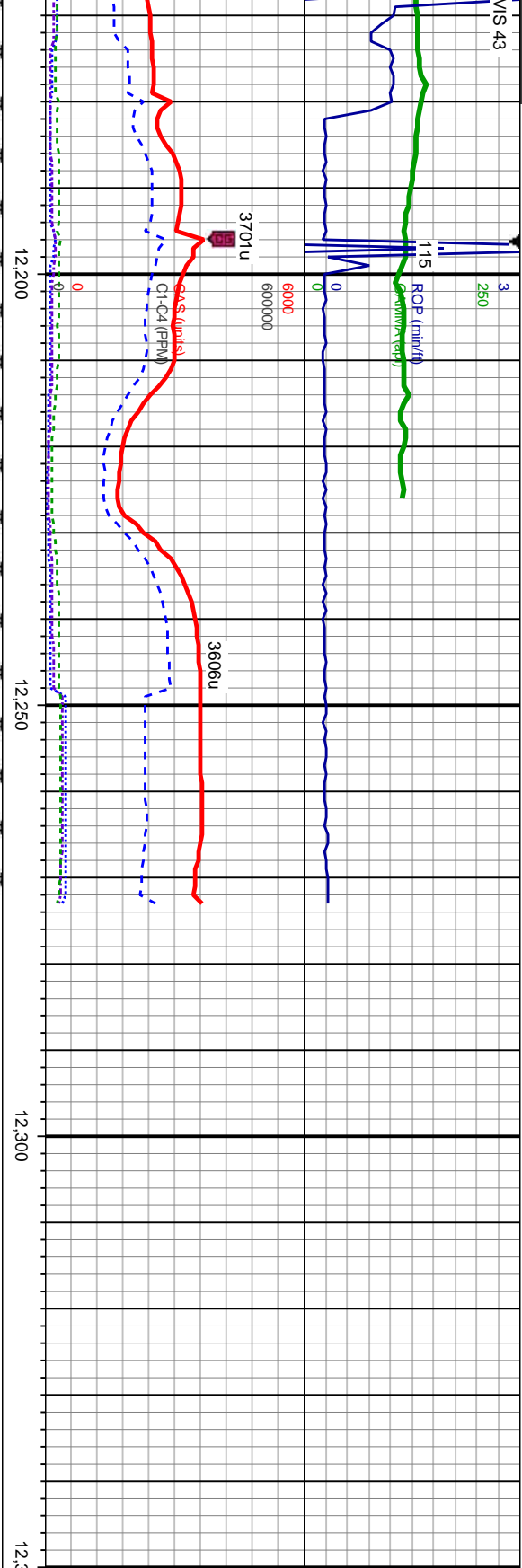
7000











MD: 12,228 TVD: 7,214.83 Inclination: 91.17 Azimuth: 0.84 VS: 4,942.98	PROJECTION TO BIT	MD: 12,273 TVD: 7,213.92 Inclination: 91.17 Azimuth: 0.84 VS: 4,987.97	ANADARKO FERGE 3N-14HZ WELL TD @ 12273 MD ON 04/24/2014 @ 2310HRS
CHK: lt-med gy-brn, wh-lt crm, mot, blk-y-sb ply, sft-frn, mod strd, f-c grs, sb rd-sb ang, mod fri, MRLST: dk gy, blk-y-sb ply, sft-frn, mod strd, med-c grs, sb rd-sb ang, mod fri, tr cal, occ calc incl,	THANK YOU FOR USING COLUMBINE LOGGING INC.		