



Scale: 5" / 100'
Measured Depth Log

Well Name Big Sandy 3-65 36-31 2CH

Location SEC 35 T3S-R65W

State COLORADO

County ADAMS

Country USA

Rig Number Nabors B16

API Number 05-001-10073000

AFE # WAY.CDR.0043

Geographic Region DJ BASIN

Field WILDCAT

Spud Date 3/2/2018

Drilling Completed /2018

Surface Coordinates 2585' FSL & 465' FEL SEC 35 T3S-R65W

SL Lat:
39° 44' 47.68" N (NAD 83)
SL Long:
104° 37' 24.57" W (NAD 83)

Bottom Hole Coordinates Proposed BHL: 1240' FNL & 325' FEL SEC 31 T3S-R64W

Ground Elevation 5524'

K.B. Elevation 5549'

Logged Interval 6000 To 18415

Total Depth 18415

Formation Niobrara D Chalk

Type of Drilling Fluid OBM

Operator

Company Conoco Phillips

Address 600 N. Dairy Ashford Rd.
Houston, TX 77079-1175



Geologist

Name Dave Aldridge

Company Conoco Phillips Central Rockies Implementat

Address Dave.E.Aldridge@conocophilips.com
Office: (832) 486-3983
600 N Dairy Ashford EC3 14-W134
Houston, TX 77079



Other

Columbine Logging Inc. Mud Logging Company

Geologists/Geosteers on Location: Todd Thiesse, Haynes Burnside

Gas Detection: Bloodhound chromatograph gas unit #311

DD/MWD: Baker Hughes

Columbine Computer 87A

- Fossils**
- ALGAE
 - AMPHIPH
 - BELEMN
 - BIOCCLAS
 - BRACHD
 - BRYOZO
 - CERPHAL
 - CORAL
 - CRINOID
 - ECHINOI
 - FISH
 - FORAMIN
 - F FOSSIL

Color Coding

- Oil
- Condensate
- Gas
- Note
- Core
- Pressure
- Error
- Water
- Seal

Rock Types

- UNKNOWN
- ANHYDRITE
- BENTONITE
- BRECCIA
- CHALK
- CEMENT
- CHERT
- CLAY CHOKE SAND
- CLAYSTONE
- COAL
- CONGLOMERATE
- DOLomite
- DOLOMITIC LIMESTONE
- GRANITE
- GYPSSUM
- IGNEOUS
- SIDERITE or LIMONITE
- LIMESTONE
- MARLSTONE
- METAMORPHIC
- NO SAMPLE
- SALT
- SANDSTONE
- SALT-PEPPER SAND
- SHALE
- SHALE COLORED
- SHALE GRAY
- SHALY SANDSTONE
- SHALY SILTSTONE
- SILTSTONE
- TILL
- TUFF
- WELDED TUFF

Porosi

- E EARTH
- FENESTR
- F FRACTUR
- INTERRO
- INTERRO
- MOLDIC
- ORGANIC

Oil Sho

- DEAD
- EVEN
- QUESTIO
- SPOTTE

Accessories

[illegible]

Other Symbols

P PINPOINT		WIRELINE TESTED - LEFT	E EARTHY
V VUGGY		WIRELINE TESTED - RT	FX FINELYXLN
Engineering		FORMATION TOP	ES GRAINSTONE
	GAS SHOW		L LITHOGRAPHIC
BIT		OIL SHOW	MX MICROXLN
DISABLE	MN DEPTH UP	MN DEPTH	MS MUDSTONE
D STAINING	MN DEPTH (DOWN)	MN DEPTH (DOWN)	PS PACKSTONE
CONNECTION (DOWN)		NORMAL FAULT	WIS WACKSTONE
CONNECTION GAS		OVERTURNED STRATA	Sorting
CONNECTION GAS (LEFT)		REVERSE FAULT	M MODERATE
TRIP GAS		CASING	P POOR
TRIP GAS (LEFT)		SIDEWALL CORE (LEFT)	W WELL
DOWN TIME GAS		SIDEWALL CORE (RIGHT)	Textures
DOWN TIME GAS (LEFT)		SLIDE	B3 BOUNDSTONE
DOWN TIME GAS (LEFT)		SURVEY	C CHALKY
CORE - LOST			CX CRYPTOXLN
CORE - RECOVERED			

Slide/Rotate



ROP

ROP

GAMMA

Columbine Logging Inc. Rigged Up 2 man logging 3/4/2018 Chromatograph Gas Unit #0311, began logging from 6000' MD at 1:15 PM, MDT on 3/6/18.

Gamma Data and Survey Data Provided by Baker Hughes

Total Gas & Chromatograph

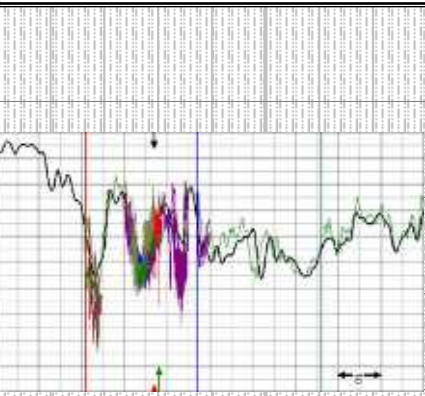
GAS
C1
C2
C3
C4

Depth Labels

% Lith

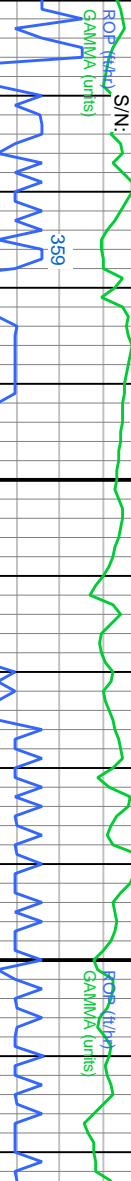
Well Bore
TVD

Target Formation/Member:
Niobrara D Chalk



Bit Data
Bit #: 2
Type: HCC AT505F
Size: 8.5
Depth In: 2108'
Depth Out: 18415'
Jets: 5x16
S/N:

ROP (ft/hr)
GAMMA (units)



ROP: 320 ft/hr
RPM: 80
SPR: 2993
STRK 1: 97 SPM
STRK 2: 97 SPM
WOB: 17 klbs

MUD WT IN: 9.7 V/S:
MUD WT OUT: 9.6+ V/S:

C1: 95.4%
C2: 4.1%
C3: 0.5%
C4: 0%

GAS (units)
C1-C4 (units)

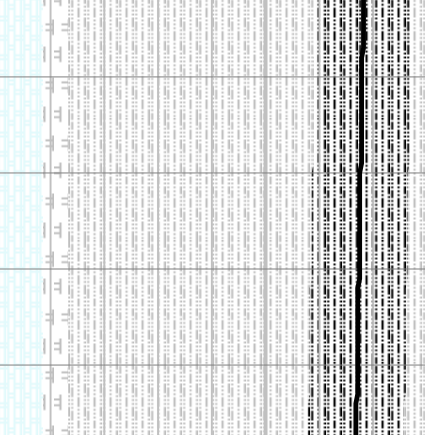
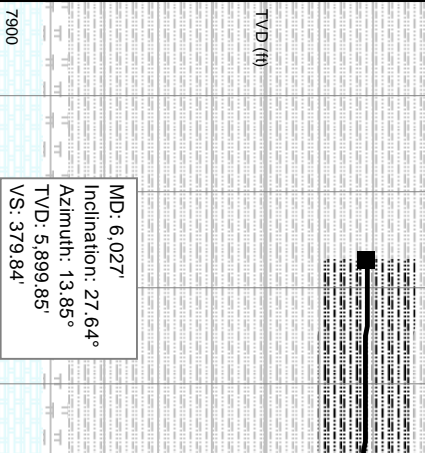
Depth Labels

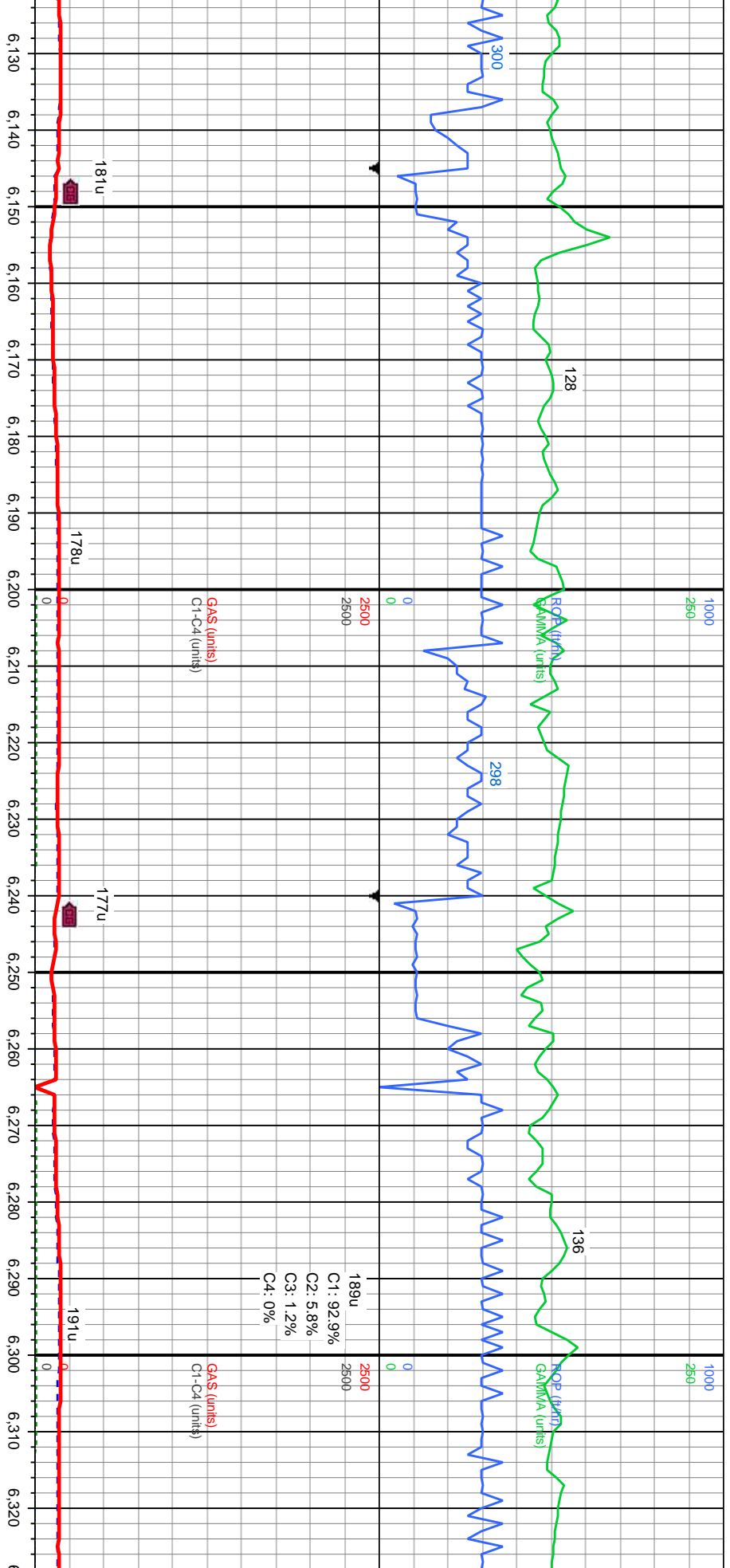
% Lith

SLTY SH: gy-dk gy, occ lt gy, v sft - sft, sb
ply-pty, silty to rthy tex, tr grdg to slst in pt, sl
calc with some tr SLTST: med gy- gy, sl frm, sb
biky- occ sb pty, rthy-silty tex, sl calc.

SLTY SH: gy-dk gy, occ lt gy, v sft - sft, sb
ply-pty, silty to rthy tex, tr grdg to slst in pt, sl
calc with some tr SLTST: med gy- gy, sl frm, sb
biky- occ sb pty, rthy-silty tex, sl calc.

SLTY SH: dk gy-gy, srty
ply-pty, silty-rthy tex,
calc.





SLTY SH: dk gy-gy, sme lt gy, v sft-sft, sb
ply-ply, stly-rthy tex, occ tr slst in pt, non-sl
calc.

SLTY SH: dk gy-gy, sme lt gy, v sft-sft, sb
ply-ply, stly-rthy tex, occ tr slst in pt, non-sl
calc.

SLTY SH: dk gy-gy, sme lt gy, v sft-sft, sb
ply-ply, stly-rthy tex, occ tr slst in pt, non-sl
calc.

SLTY SH: dk gy-gy, sme lt gy, v sft-sft, sb
ply-ply, stly-rthy tex, occ tr slst in pt, non-sl
calc.

SLTY SH: dk gy-gy, sme lt gy, v sft-sft, sb
ply-ply, stly-rthy tex, occ
non-sl calc.

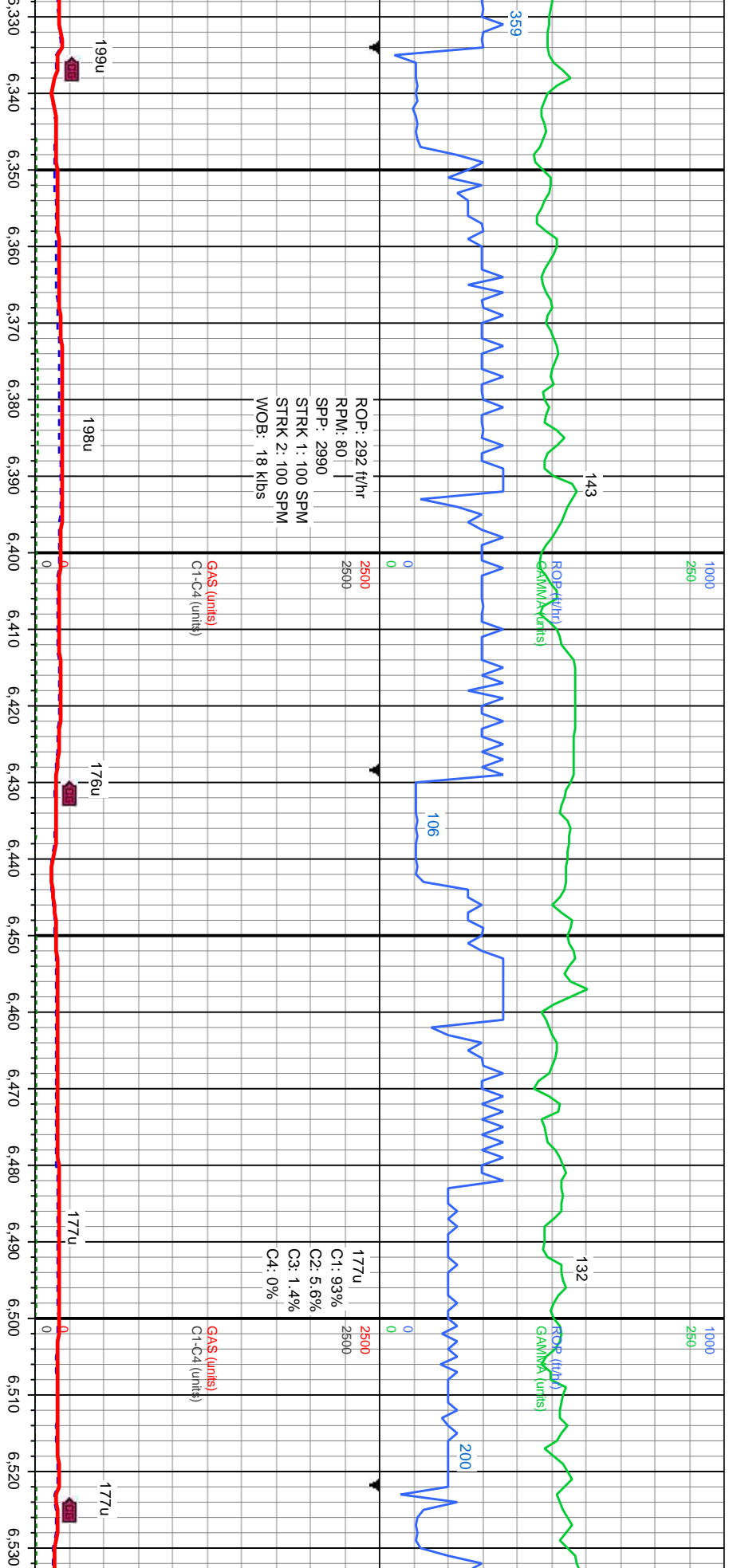
TVD (ft)

TVD (ft)

MD: 6.29.03°
Inclination: 28.94°
Azimuth: 1.91°
VS: 404.18'

MD: 6.217°
Inclination: 28.94°
Azimuth: 1.91°
VS: 404.18'

MD: 6.311°
Inclination: 28.92°
Azimuth: 358.35°
VS: 409.89'



gy, v sft-sft, sb
tr slst in pt,

SLTY SH: dk gy-gy, sme lt gy, v sft-sft, sb
ply-pty, silty-rthy tex, occ tr slst in pt, non-sl
calc.

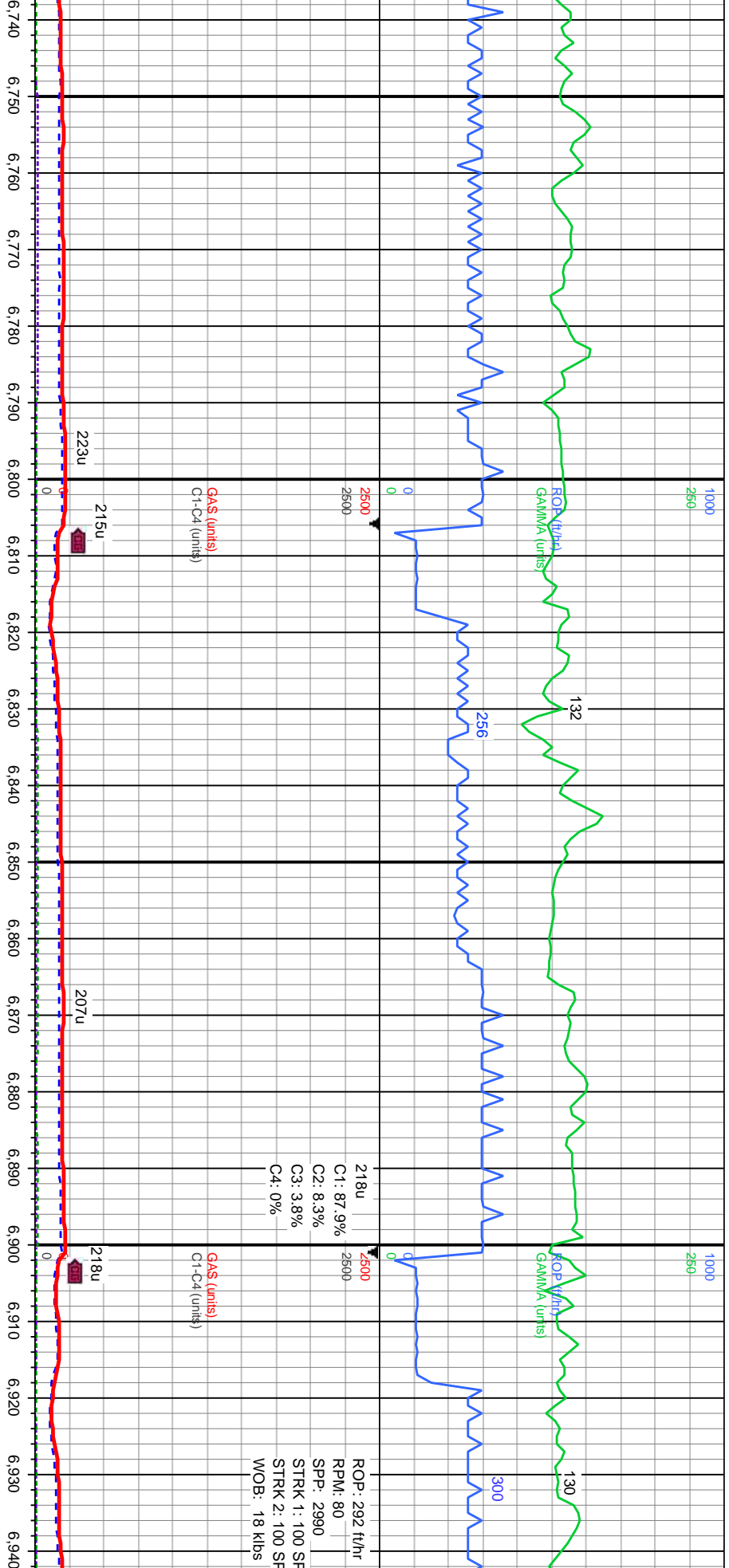
5000
SLTY SH: gy-dk gy, v sft-sft, sb
ply-pty, silty-rthy tex, occ tr slst in pt, non-sl
calc.

SLTY SH: gy-dk gy, v sft-sft, sb
ply-pty, silty-rthy tex, occ tr slst in pt, non-sl
calc.

5000
SLTY SH: gy-dk gy, v sft-sft, sb
ply-pty, silty-rthy tex, occ tr slst in pt, non-sl
calc.

MD: 6.405'
Inclination: 25.25°
Azimuth: 354.42°
TVD: 6.232.57'
VS: 412.56'

MD: 6.499'
Inclination: 23.96°
Azimuth: 355.94°
TVD: 6.318.03'
VS: 414.09'



ft-sft, occ
tr slst,

SLTY SH: dk gy-gy, sme lt gy, v sft-sft, occ
fri, sb ply-pty, slty-rthy tex, occ tr slst,
non-sl calc.

5000
SLTY SH: dk gy-gy, sme lt gy, sft-hd, sl brit,
occ, sb ply-pty, slty-rthy tex, occ tr slst,
non-sl calc, tr bent.

SLTY SH: dk gy-gy, sme lt gy, sft-hd, sl brit,
occ, sb ply-pty, slty-rthy tex, occ tr slst,
non-sl calc, tr bent.

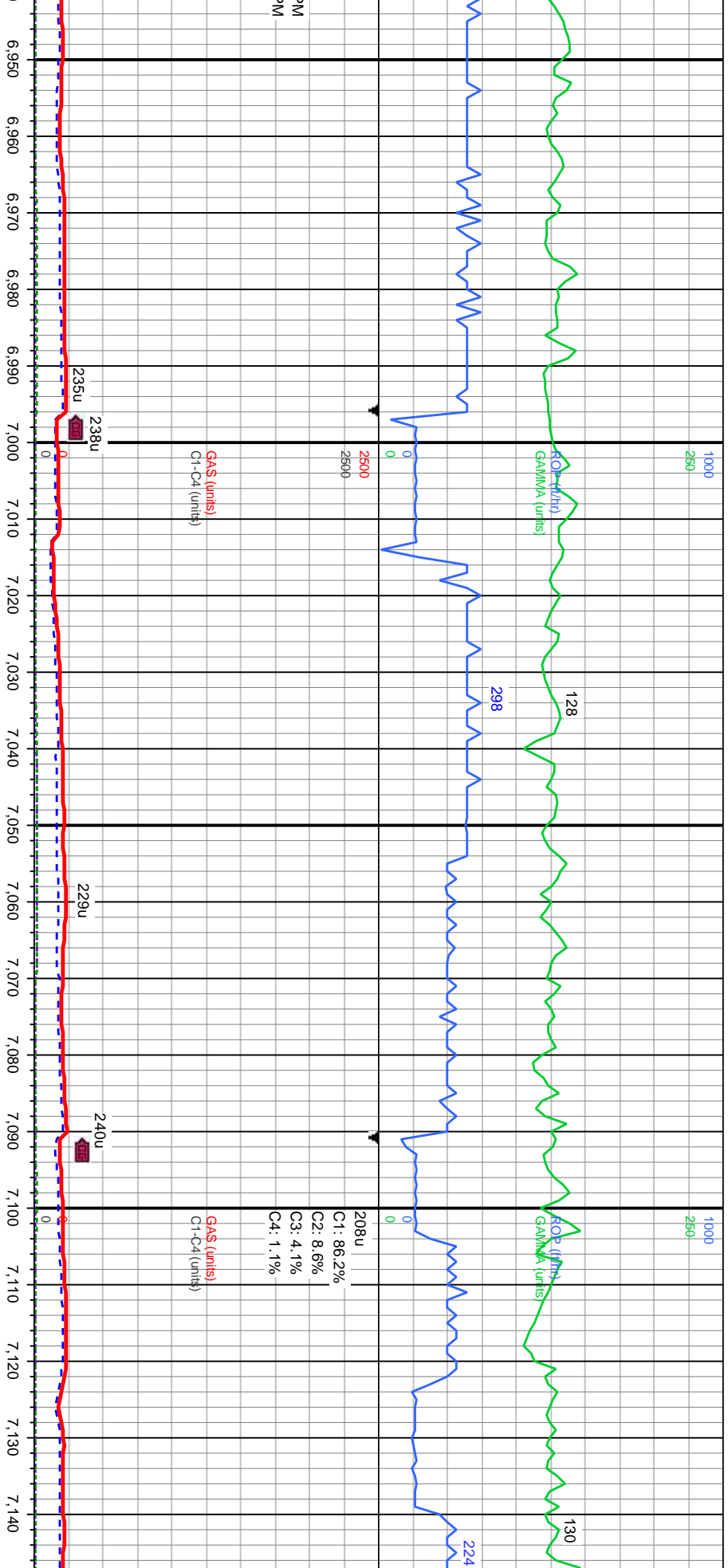
5000
SLTY SH: dk gy-gy, sme lt gy, v sft-hd,
brit, sme fss, sb ply-pty, slty-rthy tex,
tr slst, non-sl calc.

MD: 6,783'
Inclination: 23.29°
Azimuth: 6.52°
TVD: 6,579.08'
VS: 429.46'

7900

MD: 6,878'
Inclination: 25.66°
Azimuth: 6.39°
TVD: 6,665.54'
VS: 438.67'

7900



SLTY SH: dk gy-gy, sme lt gy, v sft-hd, sl
brlt, sme fiss, sb ply-ply, slty-rthy tex, occ
lr slst, non-sl calc.

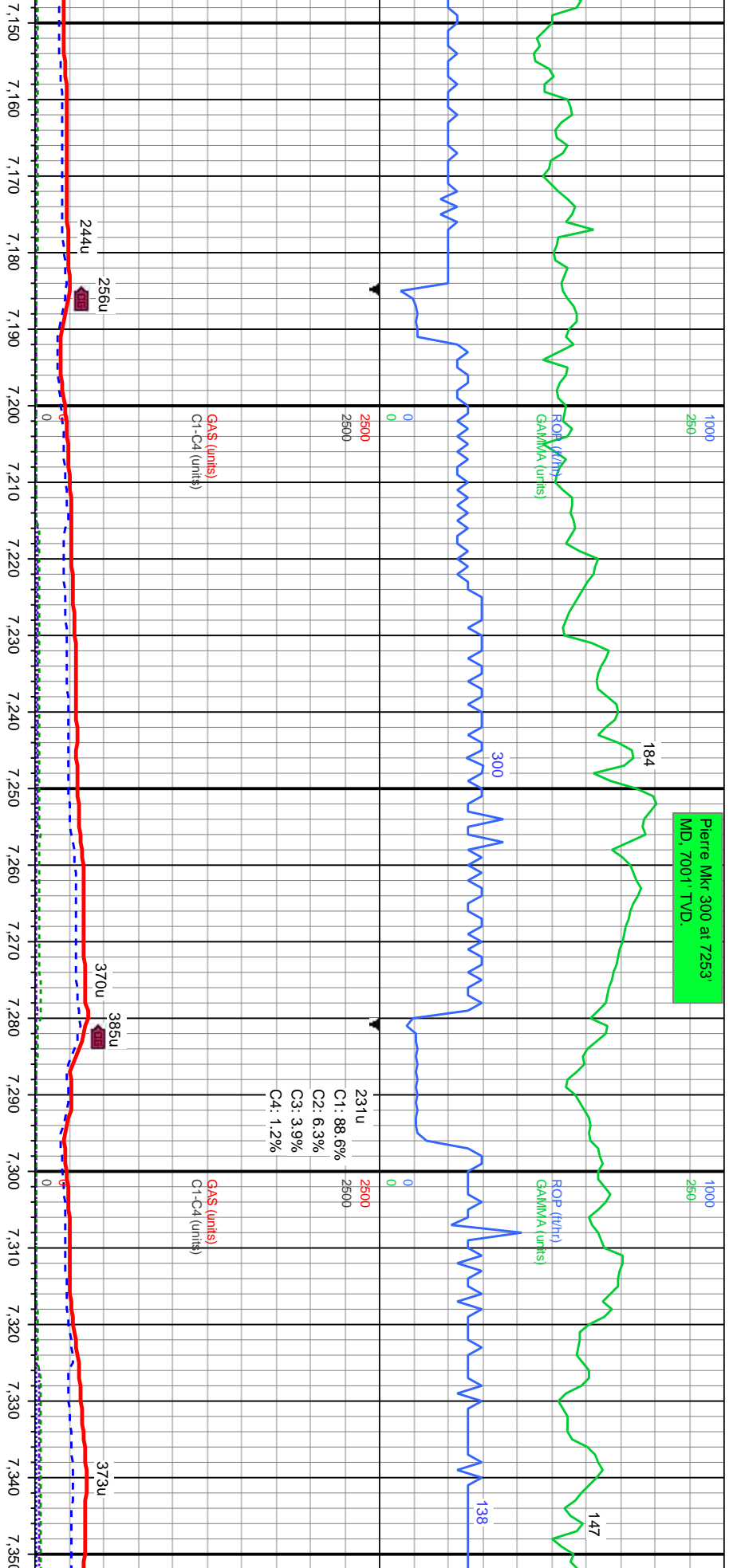
5000
SLTY SH: dk gy-gy, sme lt gy, v sft-hd, sme
fiss, sb ply-ply, slty-rthy-sm tex, non calc.

SLTY SH: dk gy-gy, sme lt gy, v sft-hd, sme
fiss, sb ply-ply, slty-rthy-sm tex, non calc.

6000
SLTY SH: dk gy-gy, sme lt gy, v sft-hd, sl
brlt, sme fiss, occ fri, sb ply-ply, slty-rthy
tex, non-sl calc.

MD: 6.973'
Inclination: 26.33°
Azimuth: 12.13°
TVD: 6,750.94'
VS: 450.4'

MD: 7.067'
Inclination: 26.44°
Azimuth: 20.52°
TVD: 6,835.18'
VS: 466.96'



SLTY SH: dk gy-gy, sme lt gy, v sft-hd, sl
brit, sme flss, occ fri, sb plty-plty, slty-rthy
tex, non-sl calc.

6000 SLTY SH: gy-lt gy, v sft-hd, sl brit, sme
flss, occ fri, sb plty-plty, slty-rthy tex,
non-sl calc.

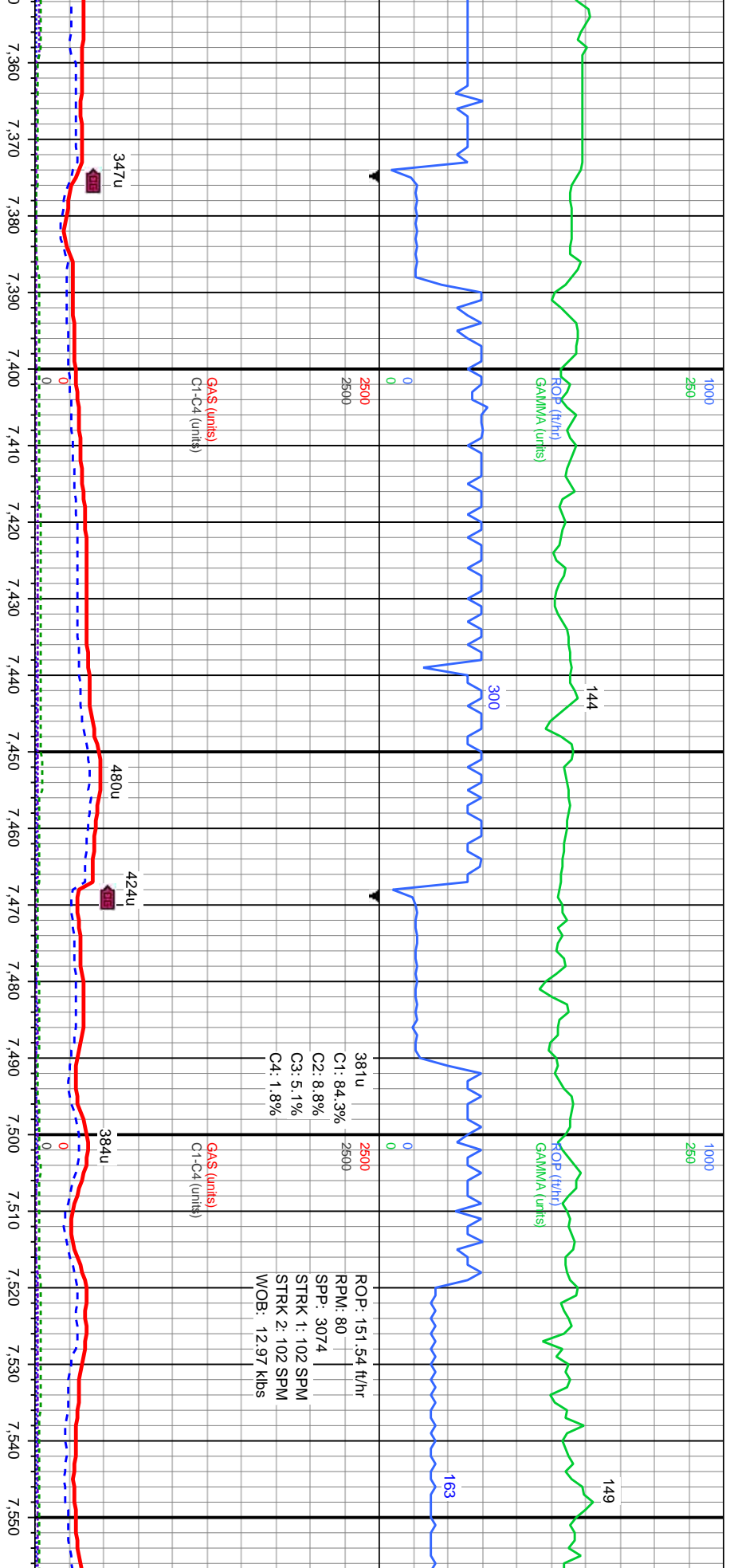
SLTY SH: gy-lt gy, v sft-hd, sl brit, sme
flss, occ fri, sb plty-plty, slty-rthy tex,
non-sl calc.

6000 SLTY SH: gy-lt gy, v sft-hd, sl brit, sme
flss, occ fri, sb plty-plty, slty-rthy tex,
non-sl calc, tr bent.

MD: 7,162'
Inclination: 26.99°
Azimuth: 20.5°
TVD: 6,920.04'
VS: 486.74'

MD: 7,256'
Inclination: 26.92°
Azimuth: 15.04°
TVD: 7,003.84'
VS: 504.63'

MD: 7,351'
Inclination: 26.92°
Azimuth: 15.04°
TVD: 7,081.99'
VS: 518.99'



SLTY SH: gy-ilt gy, v sft-hd, sl brit, sme
fiss, occ fri, sb pily-pily, silty-rthy tex,
non-sl calc, tr bent.

6000 SLTY SH: gy-ilt gy, sft-hd, sl brit, sme fiss,
occ fri, sb pily-pily, silty-rthy tex, sme wxy
lst, non-sl calc, com bent.

SLTY SH: gy-ilt gy, sft-hd, sl brit, sme fiss,
occ fri, sb pily-pily, silty-rthy tex, sme wxy
lst, non-sl calc, com bent.

6000 SLTY SH: gy, sb hd-hd, brit, sme fiss, occ
fri, sb pily-pily, silty-rthy tex, non calc, tr
bent.

25.85°
10.4°
8.95°

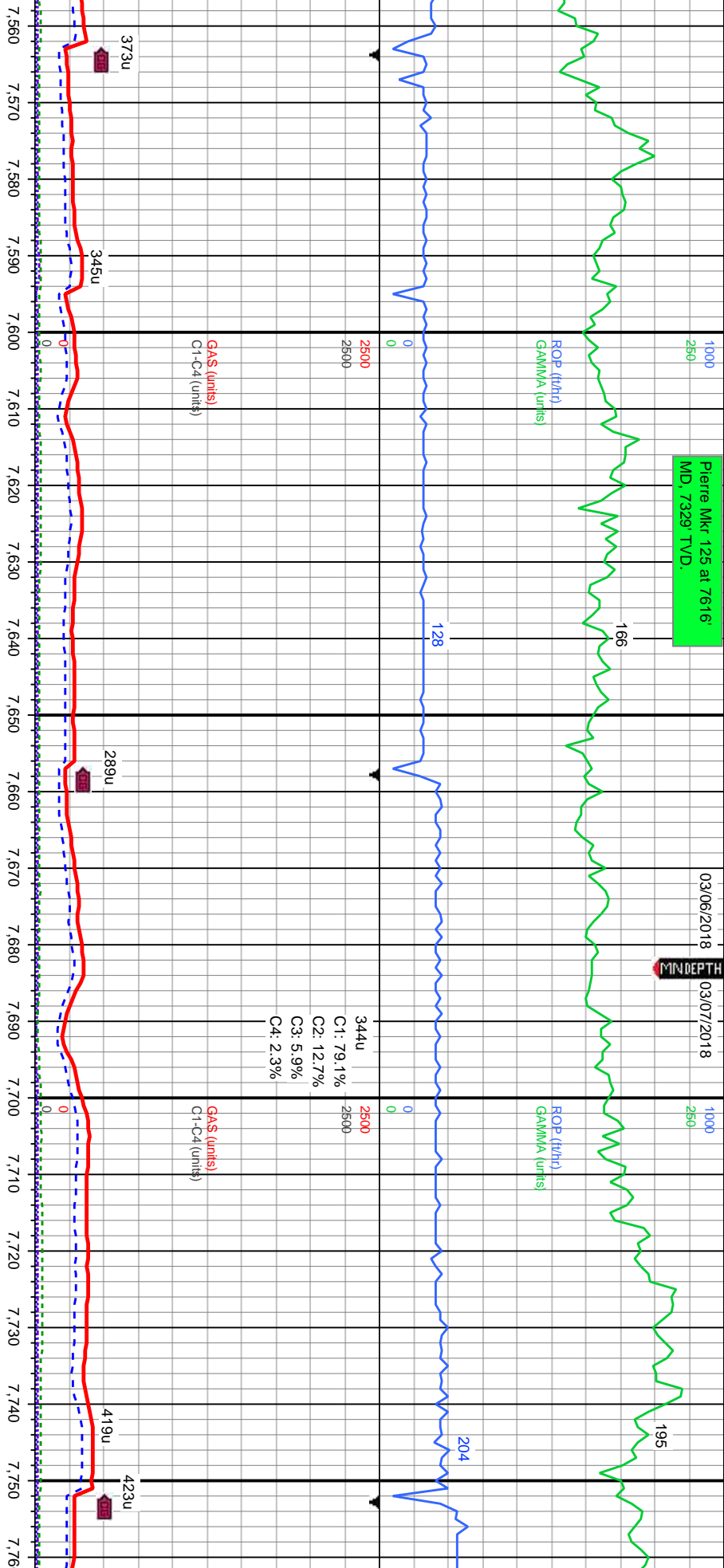
MD: 7,445'
Inclination: 25.56°
Azimuth: 9.28°
TVD: 7,173.65'
VS: 530.82'

MD: 7,540'
Inclination: 24.09°
Azimuth: 13.28°
TVD: 7,259.87'
VS: 543.34'

Pierre Mkr 125 at 7616
MD: 7329' TVD.

03/06/2018 03/07/2018

MINDEPTH



SLTY SH: gy, sb hd-hd, brit, sme flss, occ
i, sb ply-pty, sly-rthy tex, non calc, tr
ent.

SLTY SH: gy, sb hd-hd, brit, sme flss, occ
fri, sb ply-pty, sly-rthy-sm tex, non calc.

SLTY SH: gy, sb hd-hd, brit, sme flss, occ
fri, sb ply-pty, sly-rthy-sm tex, non calc.

SLTY SH: dk gy-gy, sft-hd, sl brit, sme flss,
occ fri, sb ply-pty, sly-rthy tex, non calc,
tr bent.

SLTY S
occ fri,
tr bent.

TVD (ft)

TVD (ft)

MD: 7,729'
Inclination: 31.16°
Azimuth: 54.13°
TVD: 7,428.49'
VS: 600.08'

8000

8000

MD: 7,634'
Inclination: 26.4°
Azimuth: 35.41°
TVD: 7,345.08'
VS: 564.18'

Sharon Spgs. Mkr at
7778 MD, 7469 TVD.

ROP (ft/hr)
GAMMA (units)

ROP (ft/hr)
GAMMA (units)

MUD WT IN: 9.5 V/S: 62
MUD WT OUT: 9.6+ V/S: 62

418u
C1: 80.8%
C2: 11.3%
C3: 5.8%
C4: 2.1%

GAS (units)
C1-C4 (units)

GAS (units)
C1-C4 (units)

ht: dk gy-gy, sft-hd, sl brit, sme flss,
sb pily-pily, sily-rthy tex, non calc.

MRLST: med-dk gy, silt gr, fri, frm-hd, brit,
sb pily-pily, gt tex, v calc, SLTY SH: gy-dk
gy, sft-frm, sb pily-pily, wxy lstr in pt, rthy
tex, tr bent.

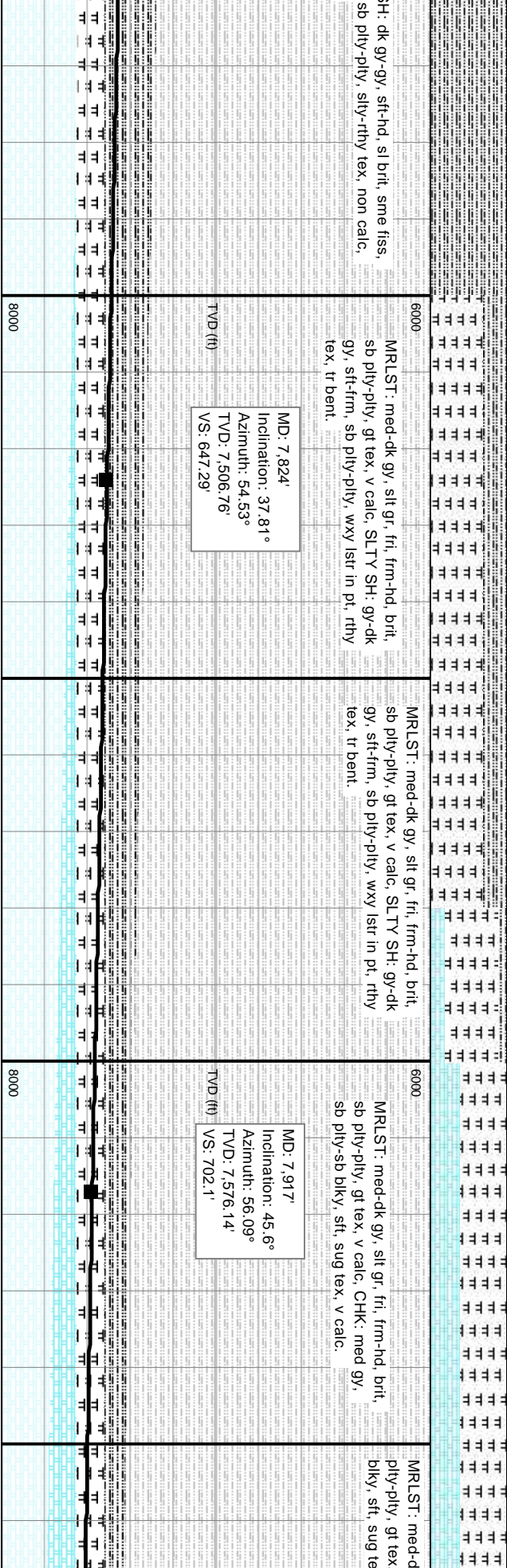
MRLST: med-dk gy, silt gr, fri, frm-hd, brit,
sb pily-pily, gt tex, v calc, SLTY SH: gy-dk
gy, sft-frm, sb pily-pily, wxy lstr in pt, rthy
tex, tr bent.

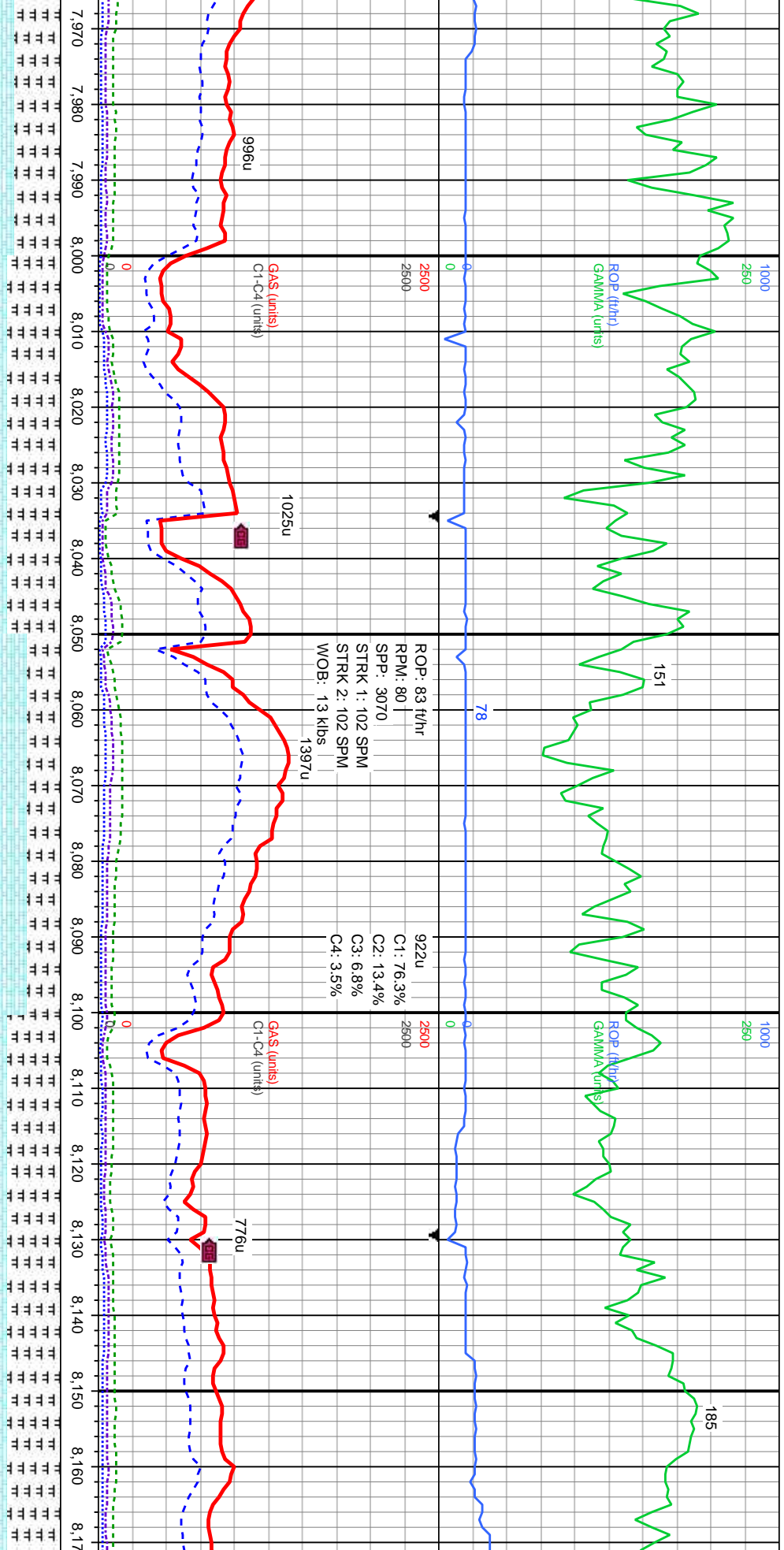
MRLST: med-dk gy, silt gr, fri, frm-hd, brit,
sb pily-pily, gt tex, v calc, CHK: med gy,
sb pily-sb blk, sft, sug tex, v calc.

MRLST: med-d-
pily-pily, gt tex
blk, sft, sug te

MD: 7,824'
Inclination: 37.81°
Azimuth: 54.53°
TVD: 7,506.76'
VS: 647.29'

MD: 7,917'
Inclination: 45.6°
Azimuth: 56.09°
TVD: 7,576.14'
VS: 702.1'





k gy, silt gr, fri, frm-hd, brit, sb
v calc, CHK: med gy, sb pty-sb
x, v calc.

6000
MRST: med-dk gy, silt gr, fri, frm-hd, brit, sb
pty-pty, gt tex, v calc, CHK: med gy, sb pty-sb
bkly, sft, sug tex, v calc.

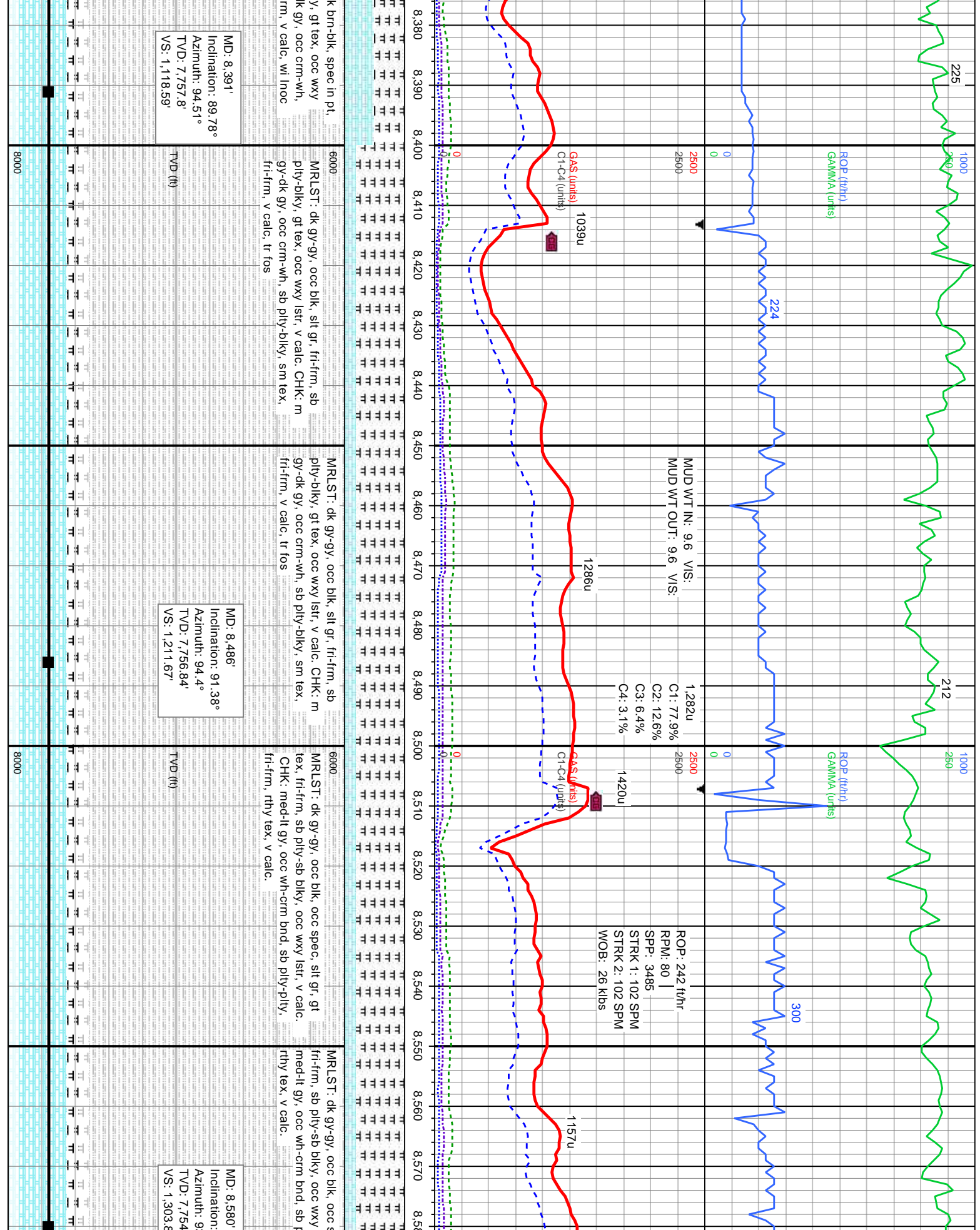
MD: 8.013'
Inclination: 53.68°
Azimuth: 65.73°
TVD: 7,638.34'
VS: 769.85'

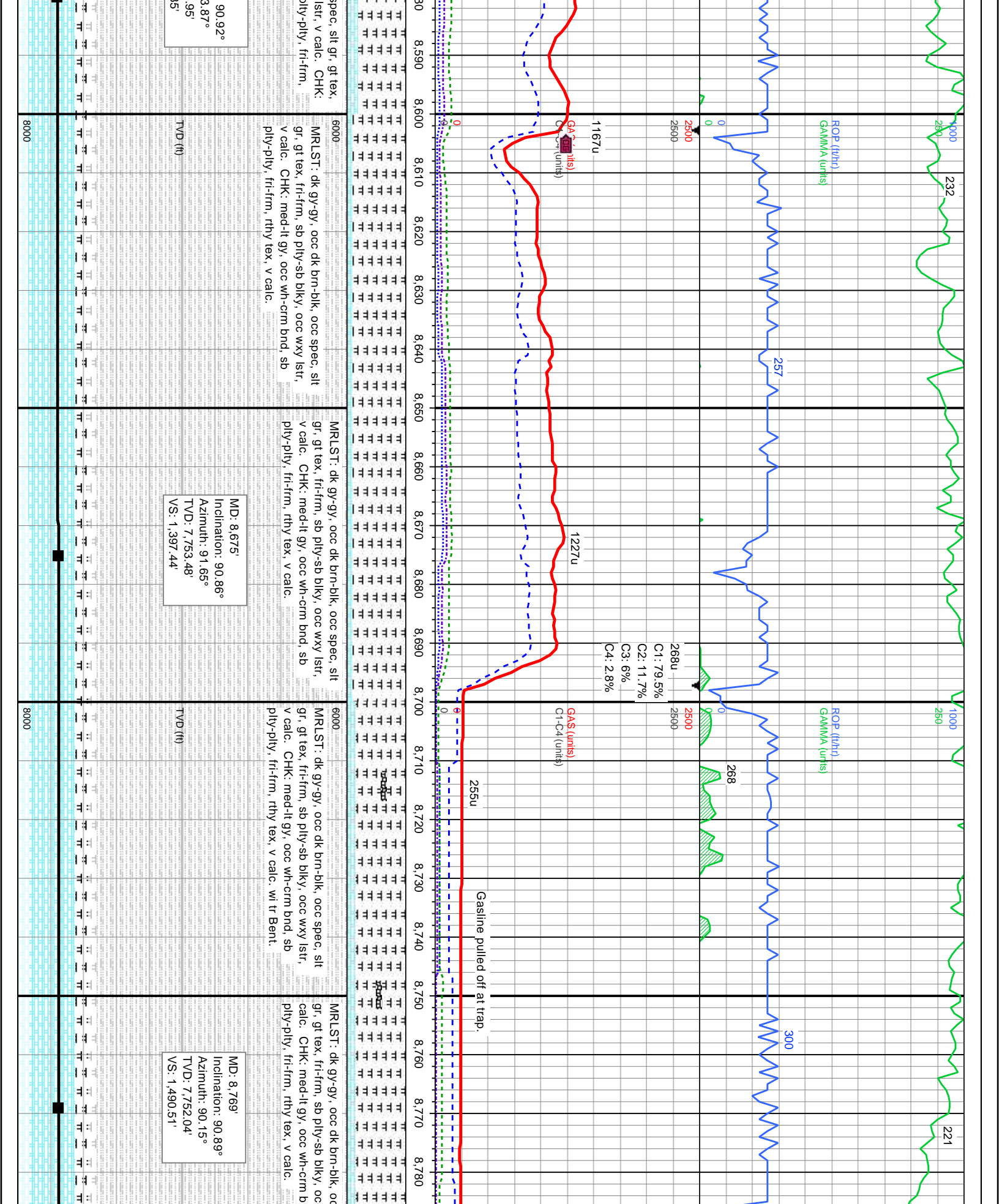
6000
MRST: med-dk gy, silt gr, fri, frm-hd, brit, sb
pty-pty, gt tex, v calc, CHK: med gy, sb pty-sb
bkly, sft, sug tex, v calc.

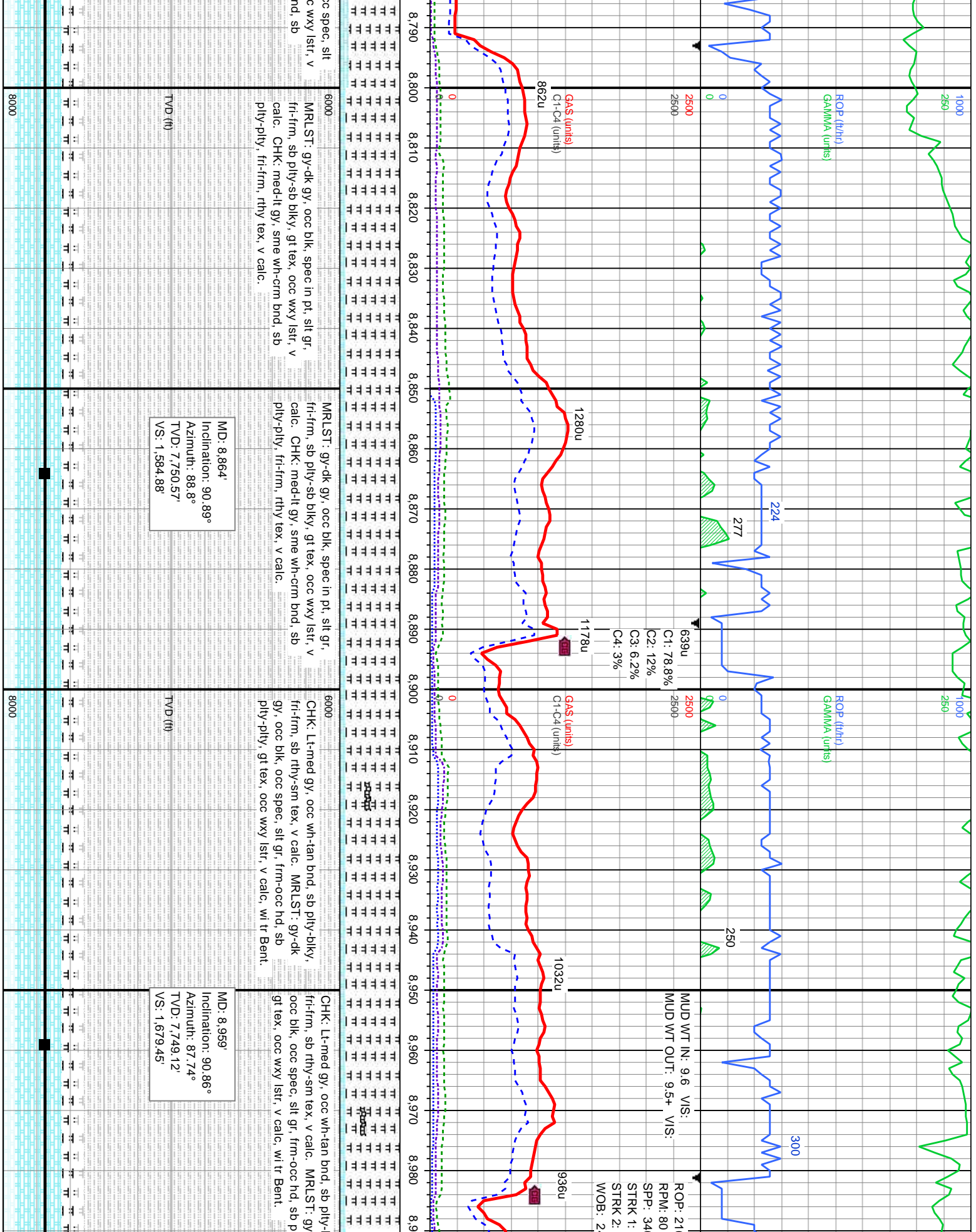
6000
MRST: med-dk gy, silt gr, fri, frm-hd, brit, sb
pty-pty, gt tex, v calc, CHK: med gy, sb
pty-sb bkly, sft, sug tex, v calc.

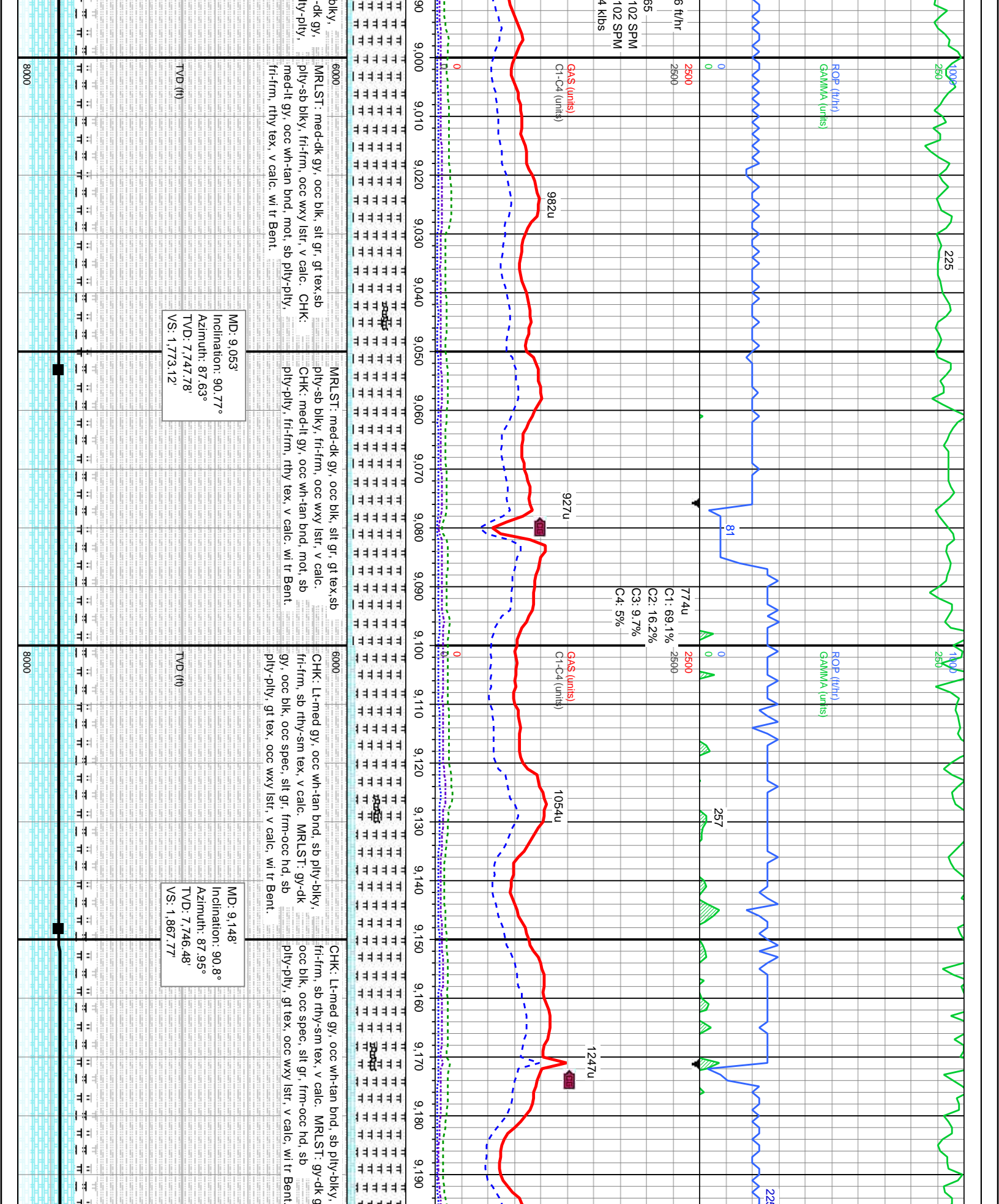
MD: 8.107'
Inclination: 62.32°
Azimuth: 75.66°
TVD: 7,688.19'
VS: 847.6'

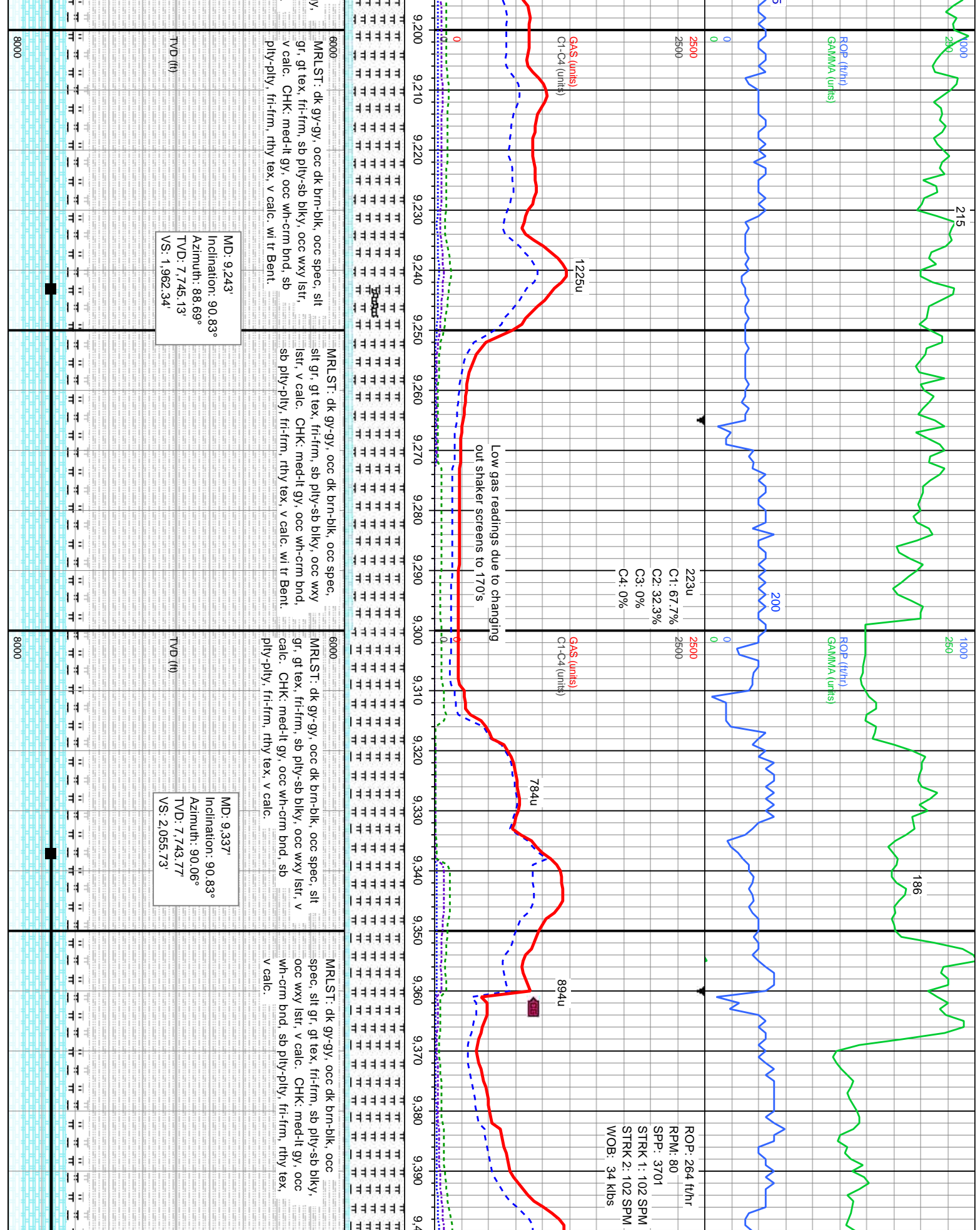
6000
MRST: med-dk gy, silt gr, fri, frm-hd, brit, sb
pty-pty, gt tex, v calc, CHK: med gy, sb
pty-sb bkly, sft, sug tex, v calc.

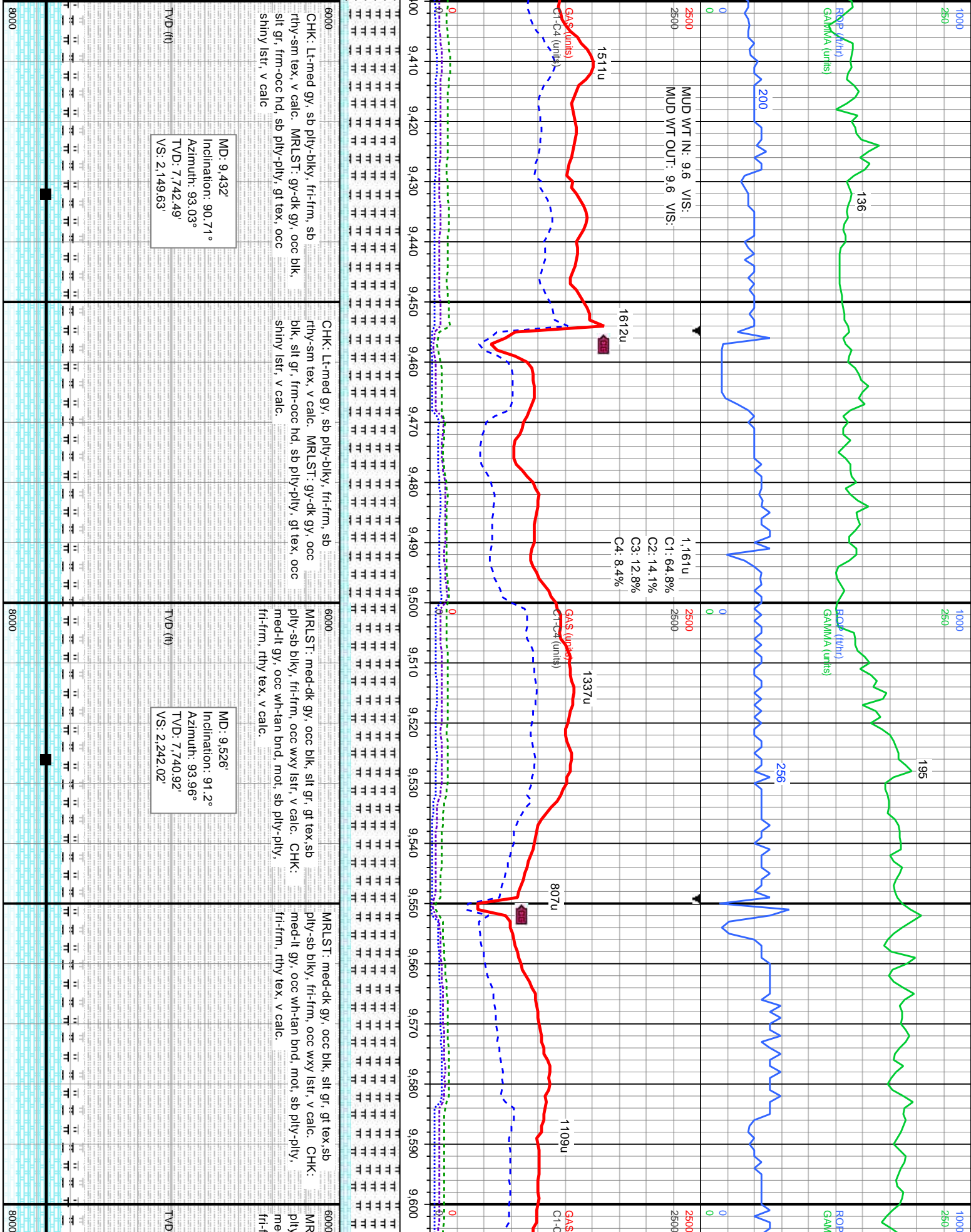


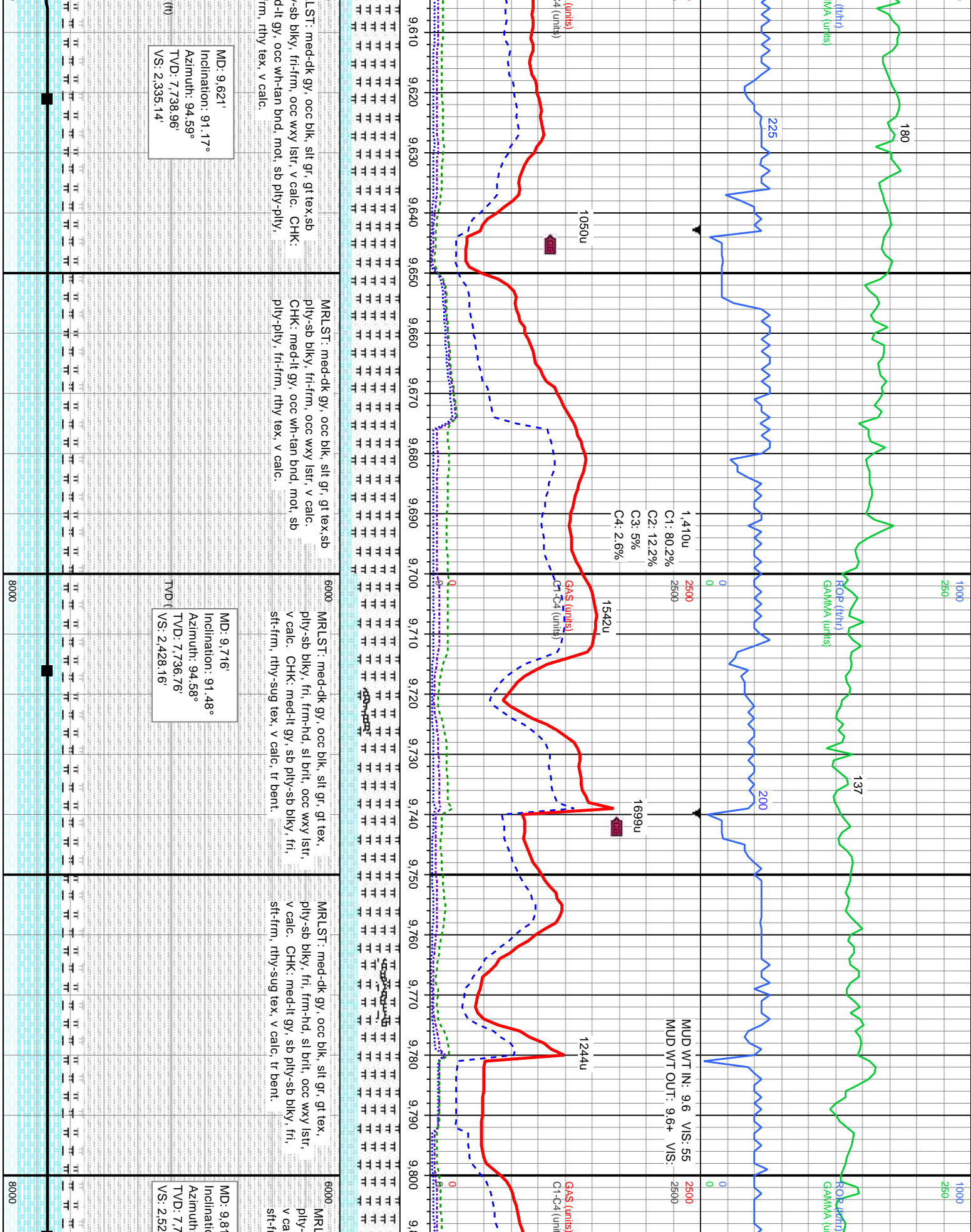


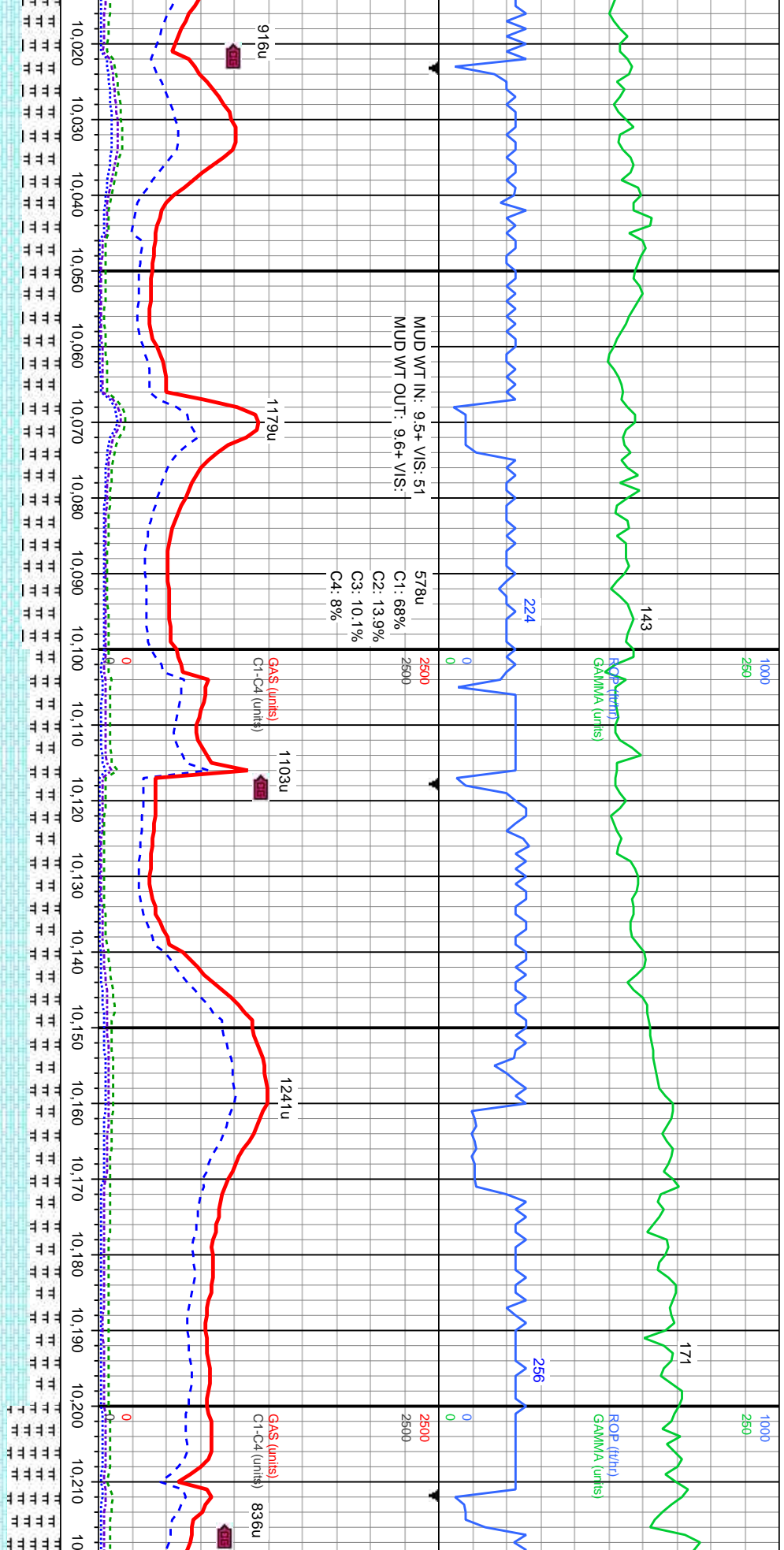












med-dk gy, silt gr, gt tex, pily-sb
m-hd, sl brit, occ wxy lstr, v calc,
K: med-lt gy, sb pily-sb blkly, fri, sft,
tex, v calc.

MRLST: med-dk gy, silt gr, gt tex, pily-sb
pily, fri, frm-hd, sl brit, occ wxy lstr, v calc,
mot. CHK: med-lt gy, sb pily-sb blkly, fri, sft,
rthy-sug tex, v calc.

MD: 10,094'
Inclination: 91.39°
Azimuth: 89.71°
TVD: 7,727.55'
VS: 2,800.57'

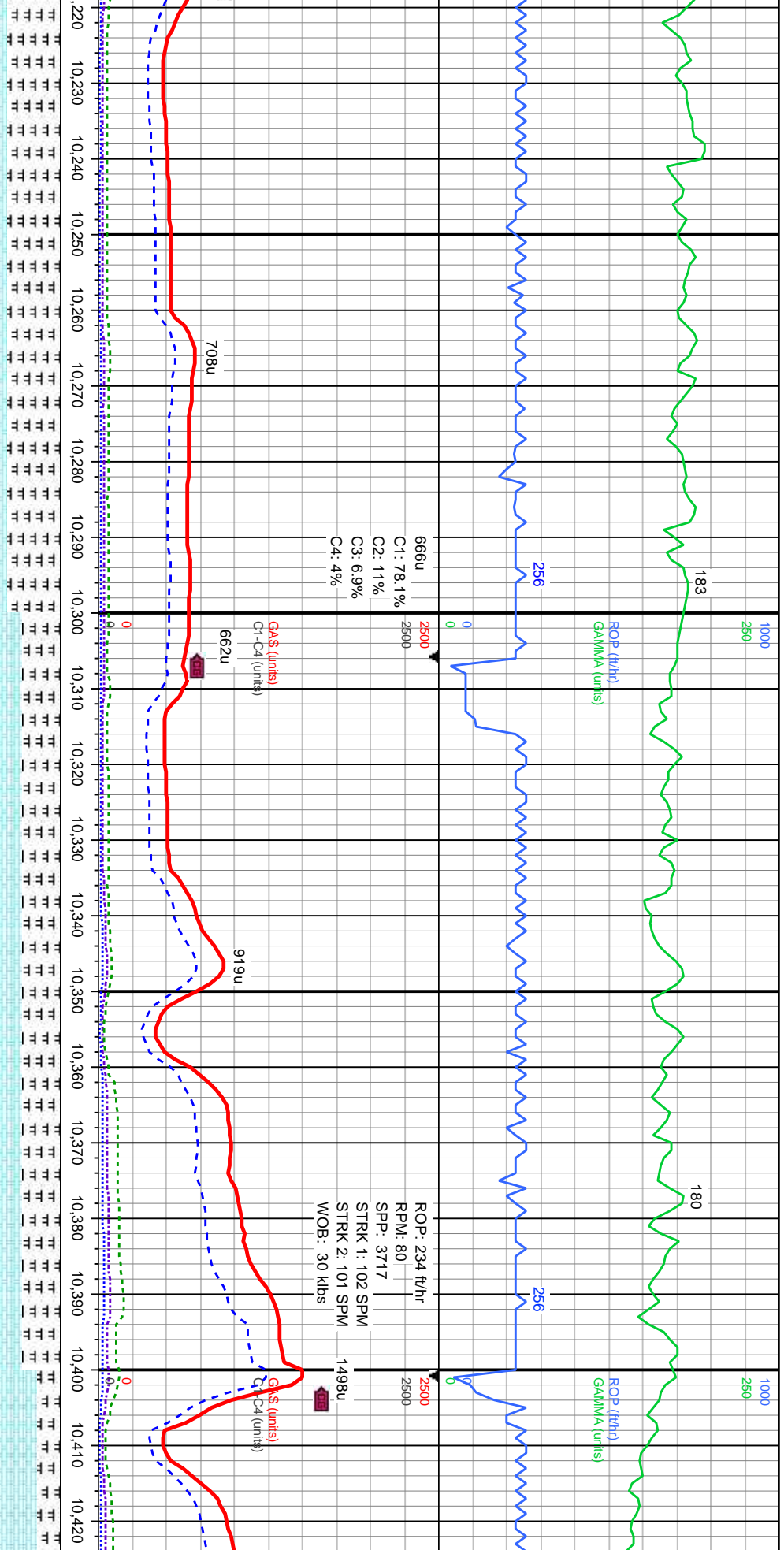
CHK: med-lt gy, sb pily-sb blkly, rd lt gy
clus, occ blk spec, fri, sft-frm, rthy tex, v
calc. MRLST: med-dk gy, silt gr, gt tex,
pily-sb pily, fri, frm-hd, sl brit, occ wxy lstr,
v calc, mot.

CHK: med-lt gy, sb pily-sb blkly, rd lt gy
clus, occ blk spec, fri, sft-frm, rthy tex, v
calc. MRLST: med-dk gy, silt gr, gt tex,
pily-sb pily, fri, frm-hd, sl brit, occ wxy lstr,
v calc, mot.

MD: 10,188'
Inclination: 91.32°
Azimuth: 89.63°
TVD: 7,725.33'
VS: 2,893.89'

MRLST: med-c
pily-sb pily, fri,
v calc. CHK: n
sft-frm, rthy-su

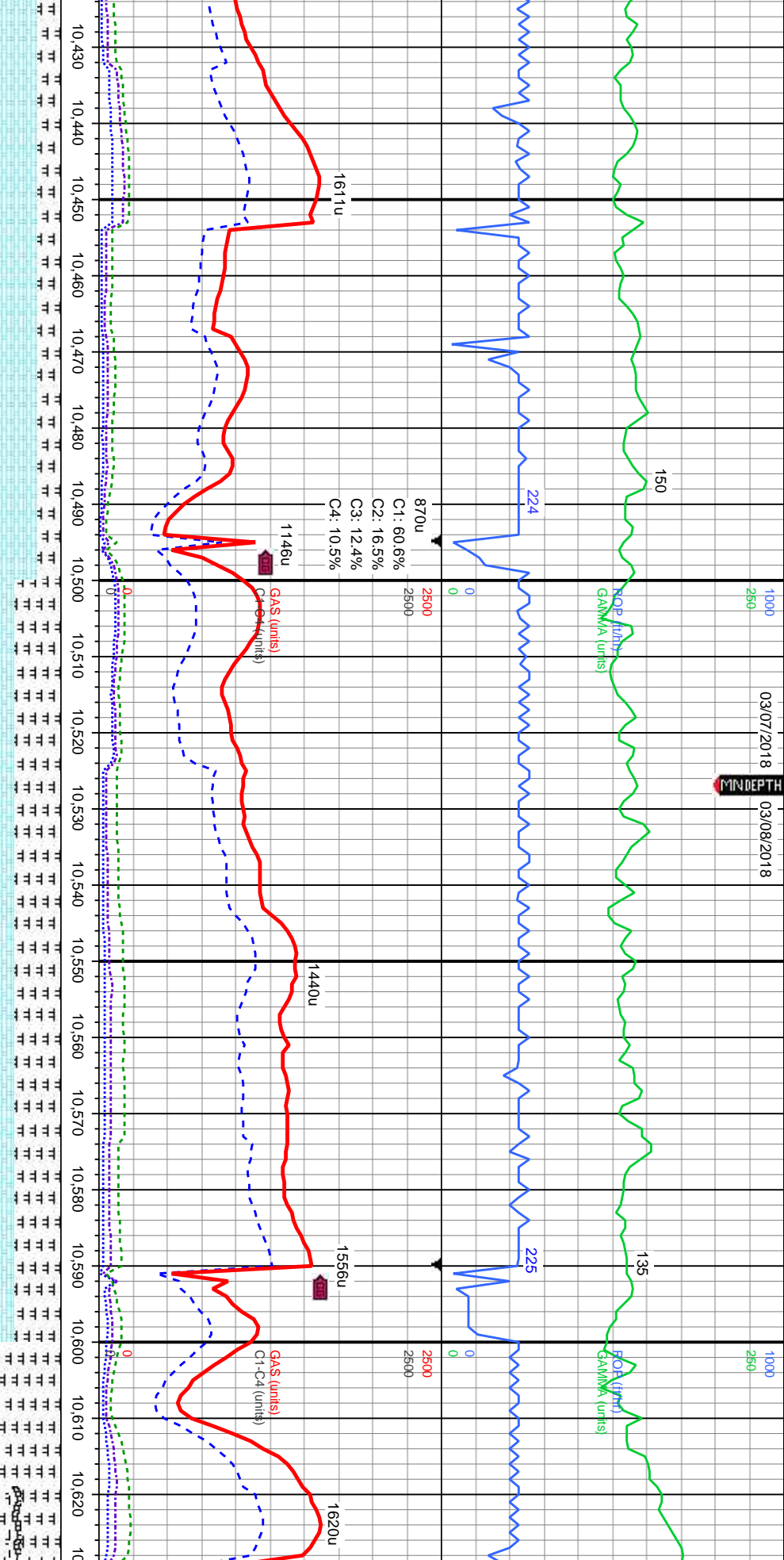
TVD (ft)



6000		6000		6000	
MRLST: med-dk gy, silt gr, rthy-gt tex, plty-sb plty, fri, frm-hd, sl brit, occ wxy istr, v calc. CHK: med-lt gy, sb plty-sb blkly, fri, sft-frm, rthy-sug tex, v calc.		MRLST: med-dk gy, silt gr, rthy-gt tex, plty-sb plty, fri, frm-hd, sl brit, v calc. CHK: med-lt gy, sb plty-sb blkly, tr rd lt gy clus, fri, sft-frm, rthy-sug tex, v calc.		MRLST: med-dk gy, silt gr, rthy-gt tex, plty-sb plty, fri, frm-hd, sl brit, v calc. CHK: med-lt gy, sb plty-sb blkly, tr rd lt gy clus, fri, sft-frm, rthy-sug tex, v calc.	
MD: 10.283° Inclination: 91.29° Azimuth: 87.7° TVD: 7.723.16' VS: 2.988.38'		MD: 10.377° Inclination: 91.45° Azimuth: 88.68° TVD: 7.720.91' VS: 3.081.96'		MD: 10.377° Inclination: 91.45° Azimuth: 88.68° TVD: 7.720.91' VS: 3.081.96'	
TVD (ft)		TVD (ft)		TVD (ft)	
8000		8000		8000	

03/07/2018 03/08/2018

MINDEPTH



rd-sb blkly, fri, sft-frm, MRLST: med-dk gy, silt gr, rthy-sug tex, v calc, MRLST: med-dk gy, silt gr, gt tex, ply-sb blkly, fri, frm-hd, sl brit, tr intbdd bent.

MD: 10,471'
Inclination: 91.26°
Azimuth: 87.85°
TVD: 7,718.69'
VS: 3,175.52'

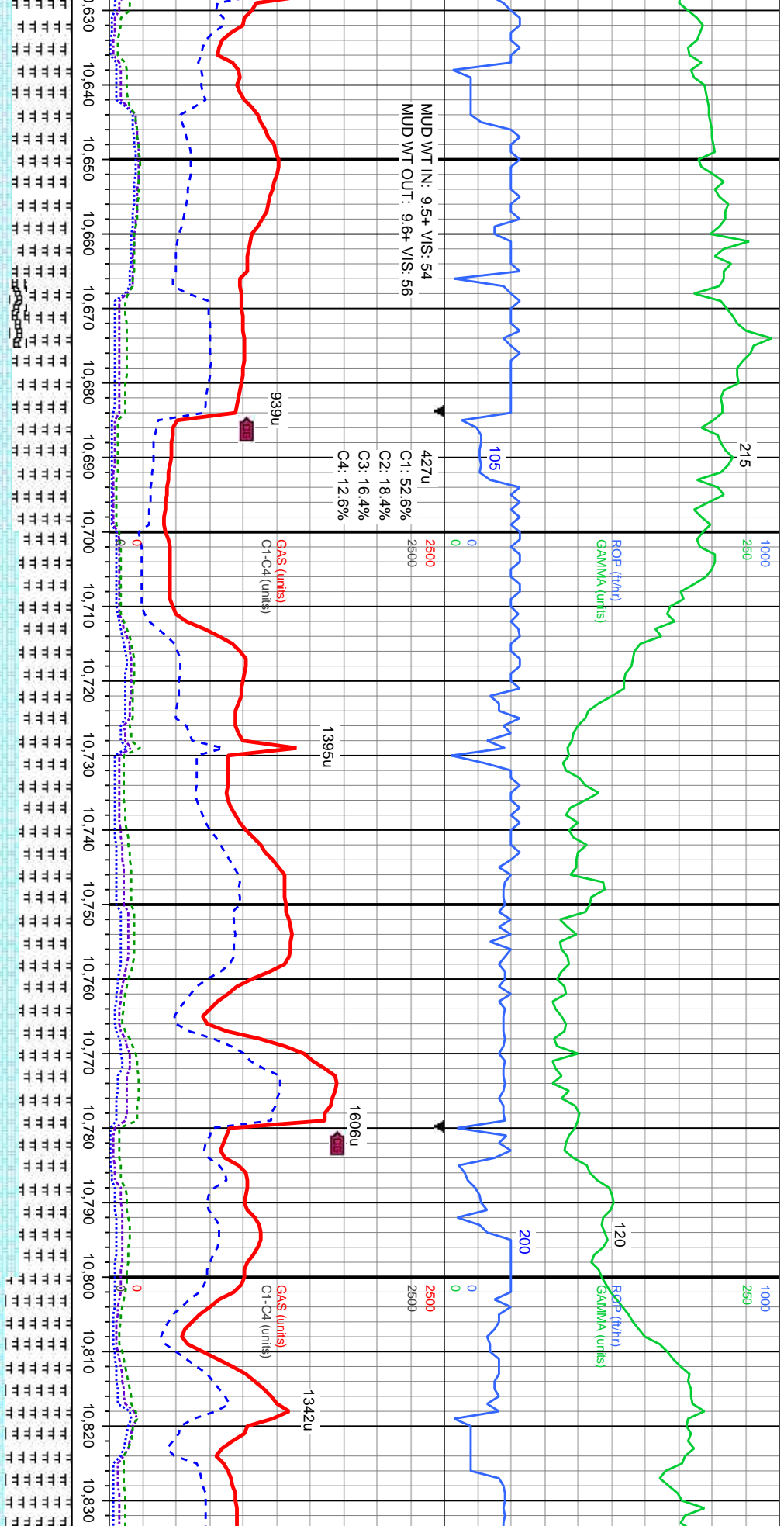
6000 MRLST: med-dk gy, silt gr, rthy-gt tex, ply-sb blkly, fri, frm-hd, sl brit, v calc, tr intbdd bent. CHK: med-lt gy, sb blkly, fri, sft-frm, rthy-sug tex, v calc, tr pyr.

MD: 10,566'
Inclination: 91.14°
Azimuth: 82.9°
TVD: 7,716.7'
VS: 3,270.39'

6000 MRLST: med-dk gy, silt gr, rthy-gt tex, ply-sb blkly, fri, frm-hd, sl brit, v calc, tr intbdd bent. CHK: med-lt gy, sb blkly, fri, sft-frm, rthy-sug tex, v calc, tr pyr.

MD: 10,620'
Inclination: 91.14°
Azimuth: 82.9°
TVD: 7,716.7'
VS: 3,270.39'

6000 MRLST: med-dk gy, silt gr, rthy-gt tex, ply-sb blkly, fri, frm-hd, sl brit, v calc, tr intbdd bent. CHK: med-lt gy, sb blkly, fri, sft-frm, rthy-sug tex, v calc, tr pyr.



fr, gt tex, pily-sb
calc, occ wxy lstr.
sb blkly, fri, sft-frm,
nt.

MRLST: med-dk gy, sft gr, gt tex, pily-sb
pily, fri, frm-hd, sl brit, v calc, occ wxy lstr.
CHK: med-lt gy, sb pily-sb blkly, fri, sft-frm,
rthy-sug tex, v calc, tr bent.

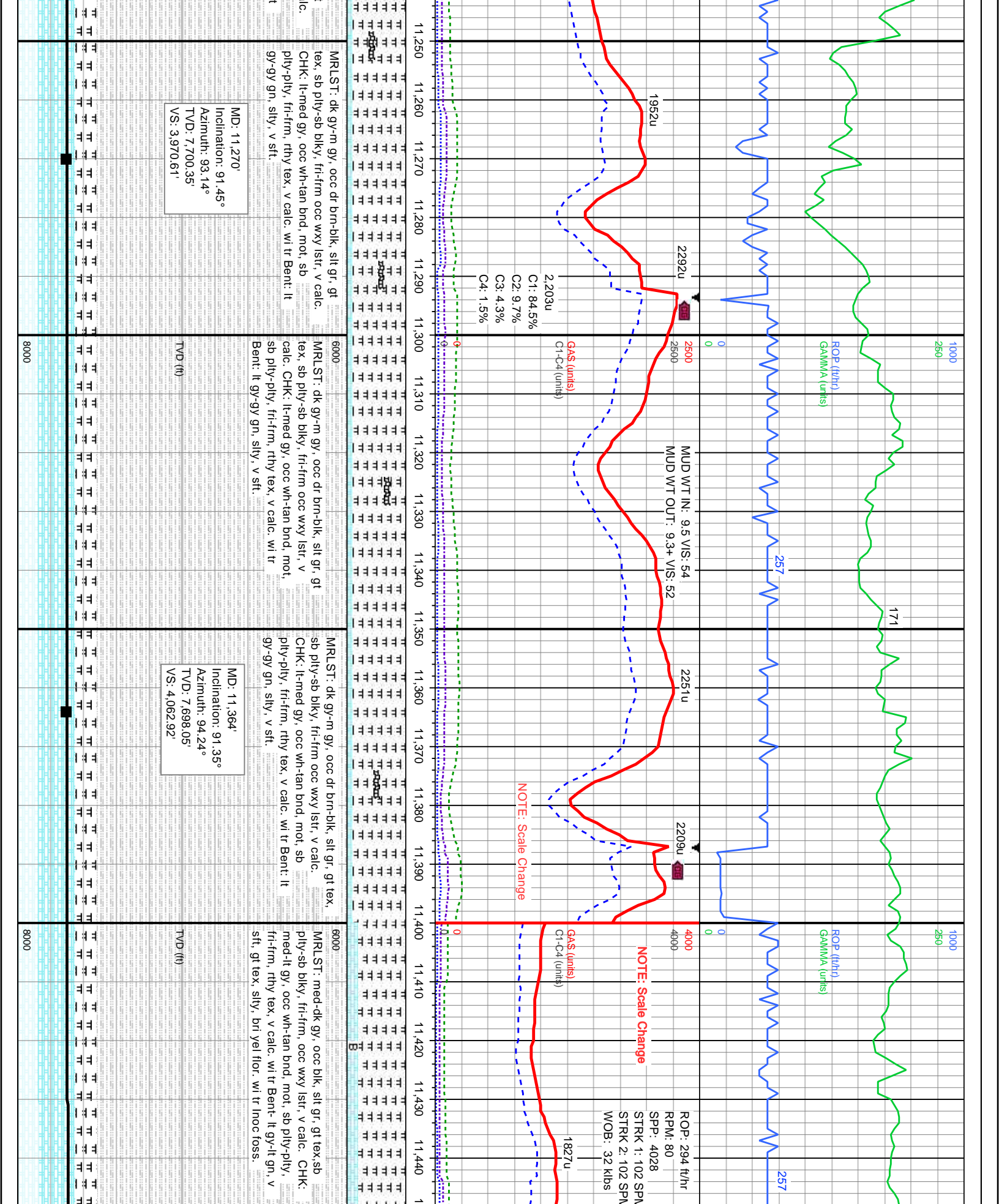
MD: 10,661'
Inclination: 91.35°
Azimuth: 82.79°
TVD: 7,714.64'
VS: 3,365.36'

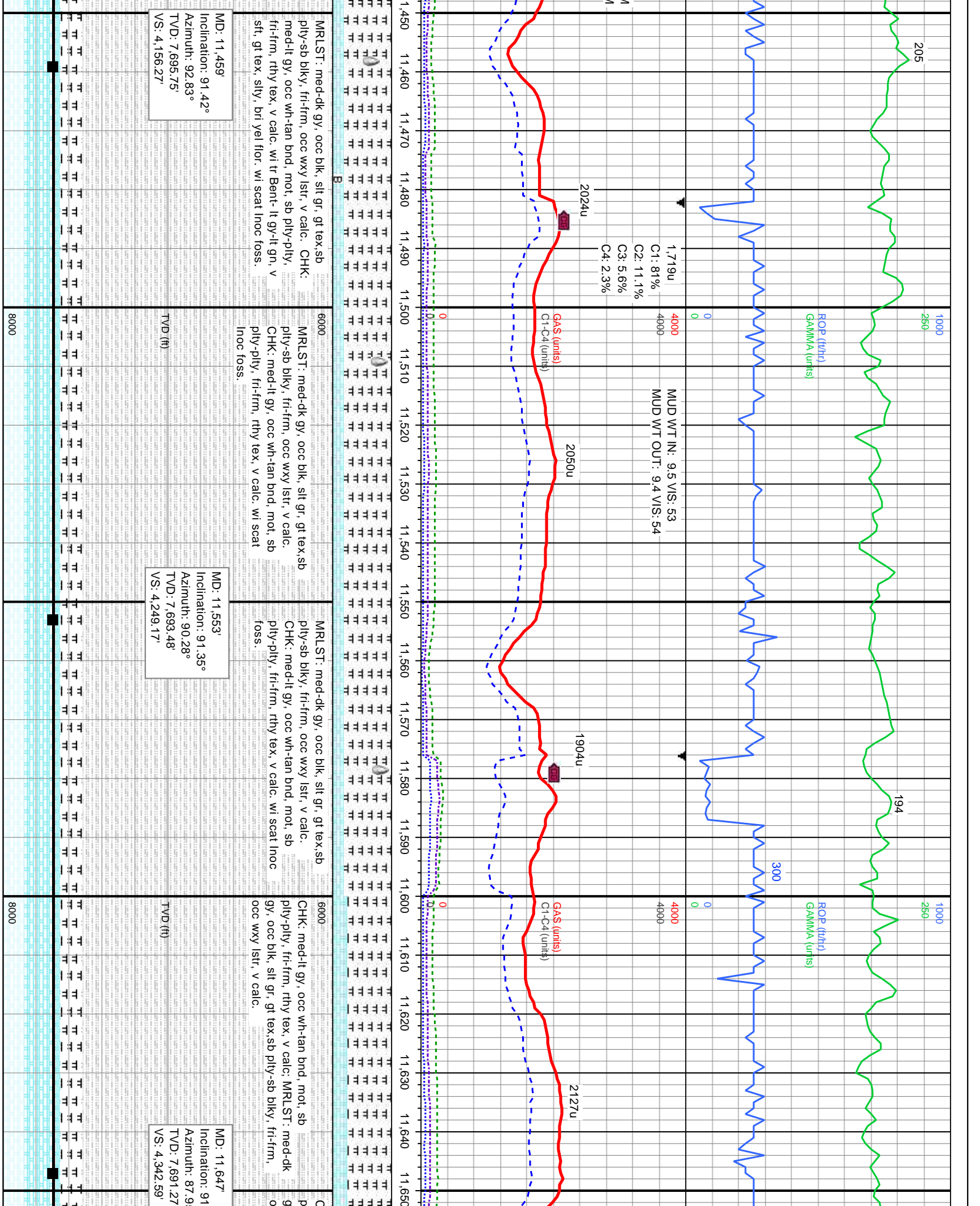
TVD (ft)

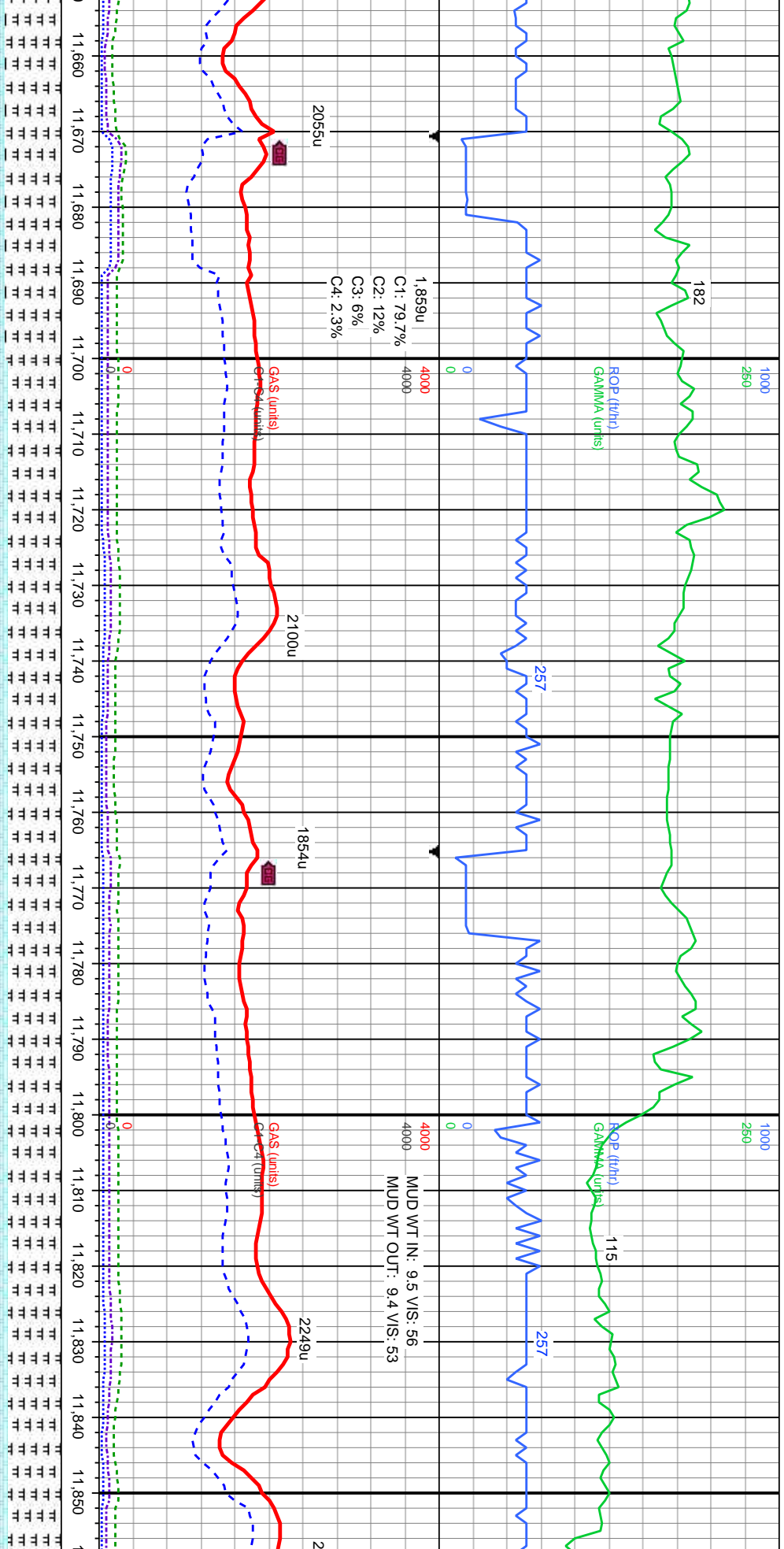
MD: 10,755'
Inclination: 91.26°
Azimuth: 84.31°
TVD: 7,712.5'
VS: 3,459.33'

TVD (ft)

MRLST: med-dk gy, sft gr, gt tex
pily, fri, frm-hd, sl brit, v calc, occ
CHK: med-lt gy, sb pily-sb blkly,
tex, v calc, occ wh bnd, tr bent







CHK: med-lt gy, occ wh-tan bnd, mot, sb
ply-ply, fri-frn, rthy tex, v calc; MRLST: med-dk
y, occ blk, slt gr, gt tex, sb ply-sb blk, fri-frn,
occ wxy lst, v calc.

6000
CHK: med-lt gy, occ wh-tan bnd, mot, sb
ply-ply, fri-frn, rthy tex, v calc; MRLST:
med-dk gy, occ blk, slt gr, gt tex, sb ply-sb
blk, fri-frn, occ wxy lst, v calc.

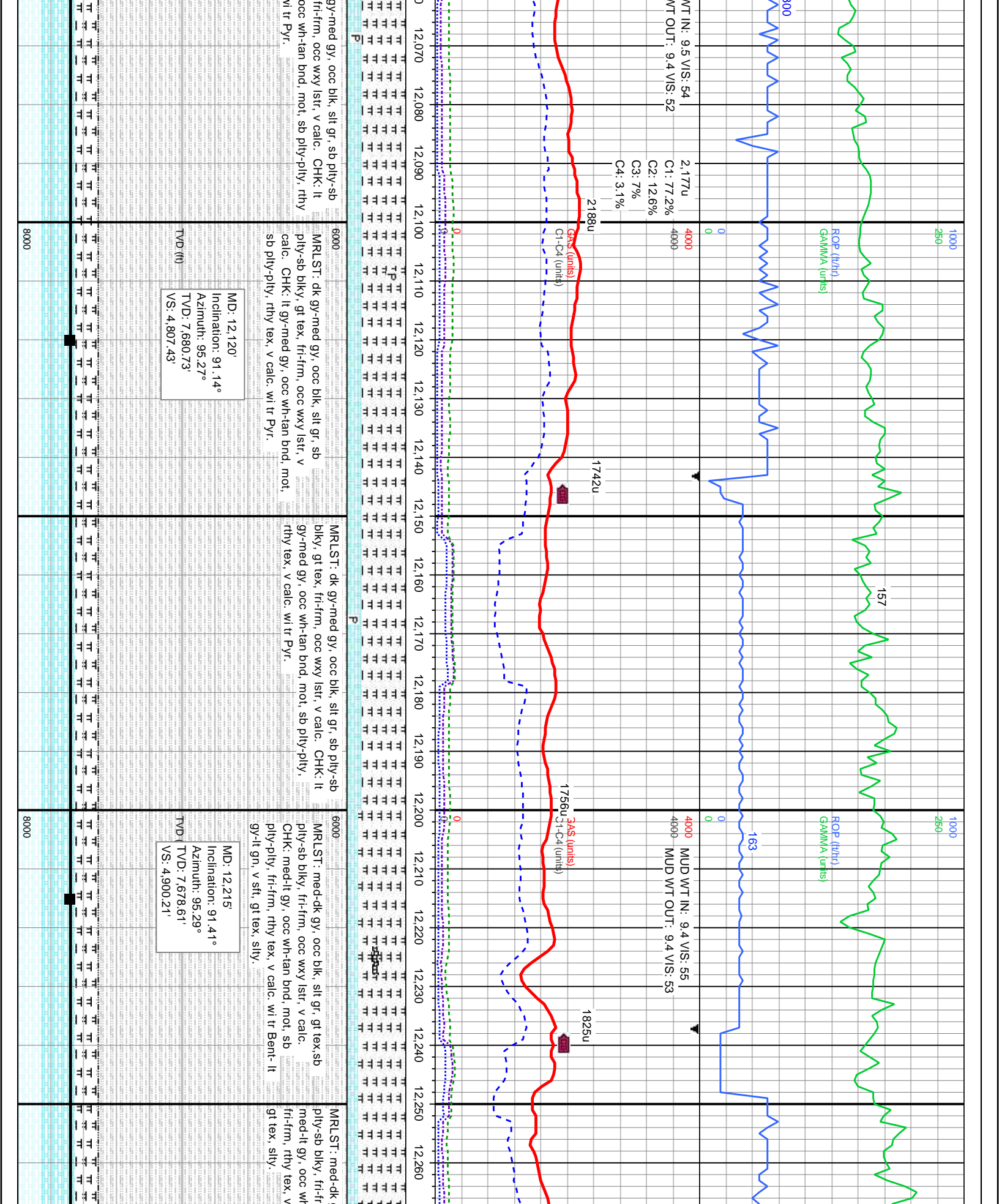
MD: 11,742'
Inclination: 91.05°
Azimuth: 90.98°
TVD: 7,689.28'
VS: 4,436.93'

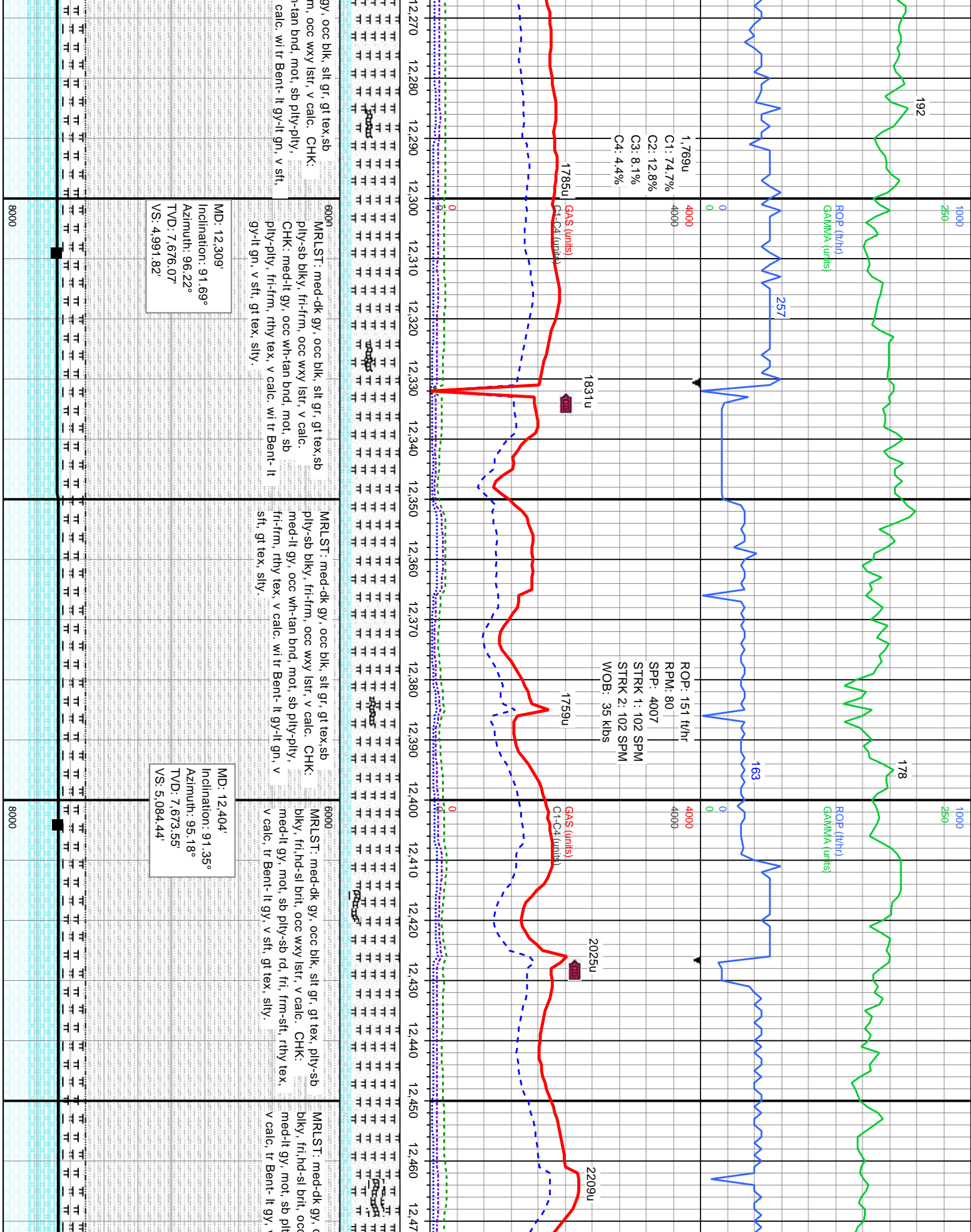
CHK: med-lt gy, occ wh-tan bnd, mot, sb ply-ply,
fri-frn, rthy tex, v calc; MRLST: med-dk gy, occ
blk, slt gr, gt tex, sb ply-sb blk, fri-frn, occ wxy
lst, v calc.

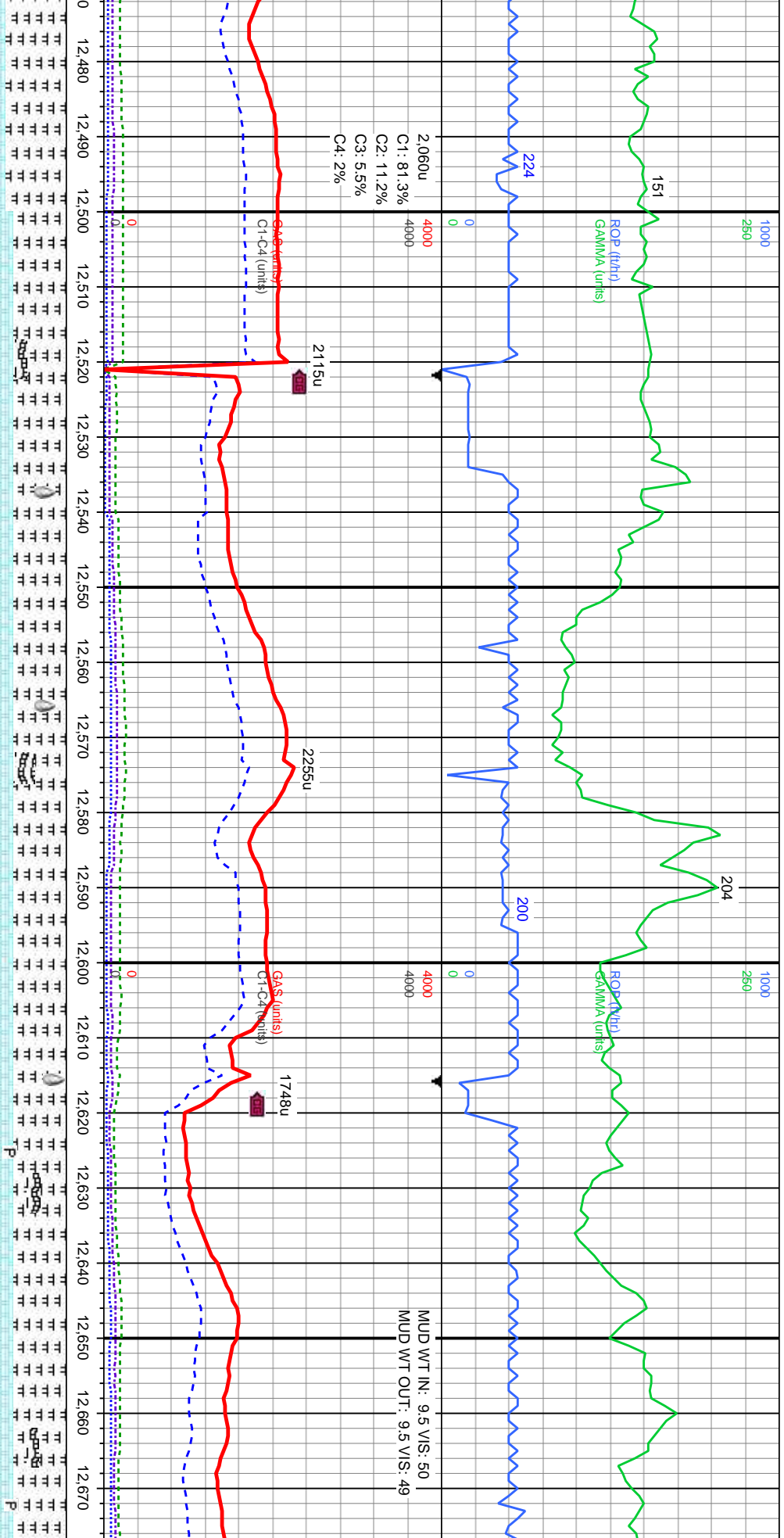
6000
CHK: med-lt gy, occ wh-tan bnd, mot, sb
ply-ply, fri-frn, rthy tex, v calc; MRLST:
med-dk gy, occ blk, slt gr, gt tex, sb ply-sb
blk, fri-frn, occ wxy lst, v calc.

MD: 11,837'
Inclination: 91.45°
Azimuth: 93.64°
TVD: 7,687.2'
VS: 4,530.63'

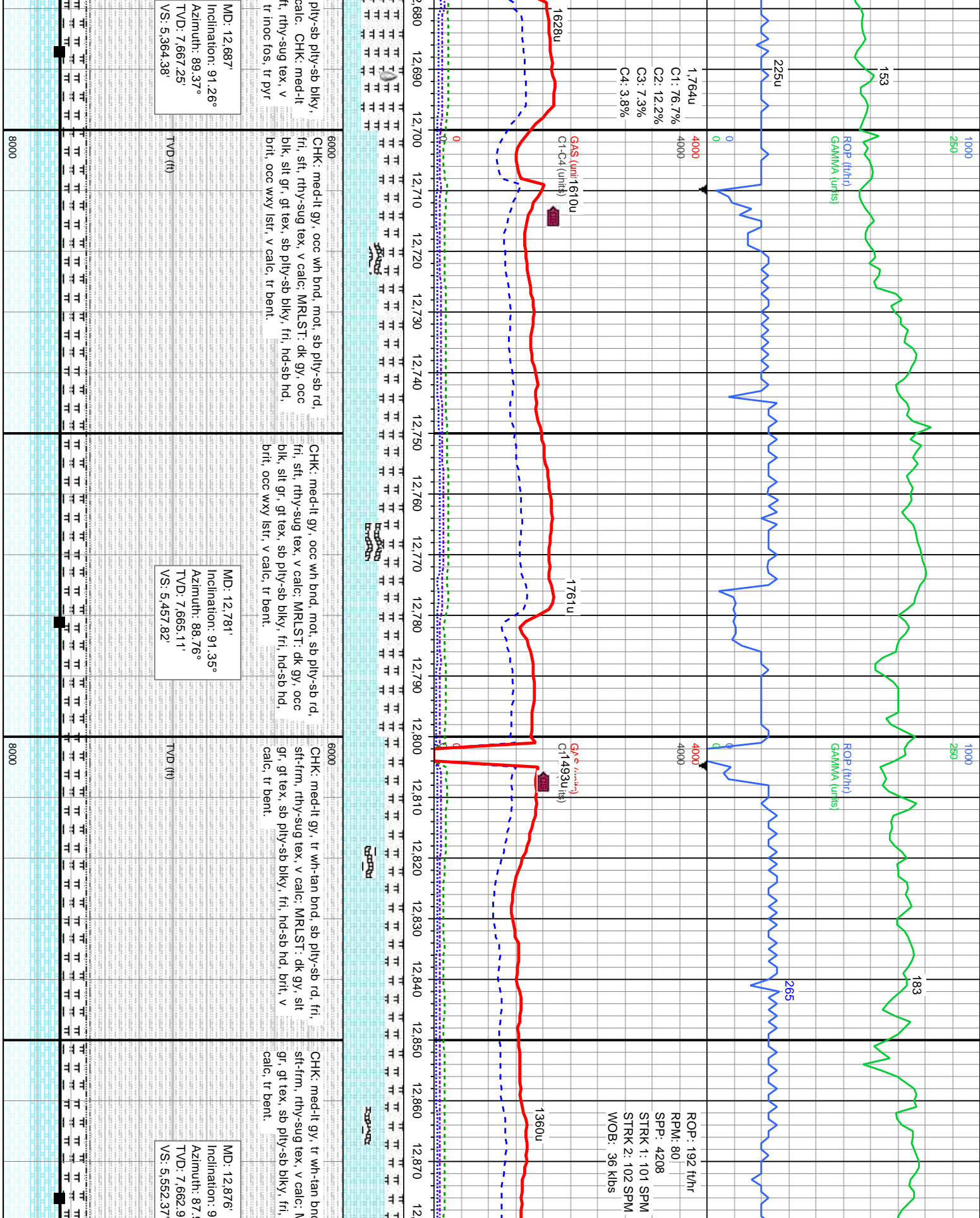
CHK:
ply-p
gy, oc
occ w







6000		MR LST: med-dk gy, occ blk, silt gr, gt tex, pily-sb blk, fri, hd-sl brit, occ wxy lstr, v calc. CHK: med-lt gy, tr lt brn, mot, sb pily-sb rd, fri, frm-slt, rthy-sug tex, v calc, tr bent, tr inoc fos	6000		MR LST: dk gy, silt gr, gt tex, pily-sb pily-sb blk, fri, hd-sl brit, occ wxy lstr, v calc. CHK: gy, sb pily-sb rd, fri, sl frm-slt, rthy-sug tex, v calc, tr bent-lt gy wi gn hue, tr inoc fos, tr pyr	6000		MR LST: dk gy, silt gr, gt tex, pily-sb blk, fri, hd-sl brit, occ wxy lstr, v calc. CHK: gy, sb pily-sb rd, fri, sl frm-slt, rthy-sug tex, v calc, tr bent-lt gy wi gn hu
MD: 12.498'		Inclination: 91.26°	MD: 12.592'		Inclination: 91.26°	MD: 12.592'		Inclination: 91.26°
Azimuth: 91.44°			Azimuth: 89.46°			Azimuth: 89.46°		
TVD: 7.671.41'			TVD: 7.669.34'			TVD: 7.669.34'		
VS: 5.176.85'			VS: 5.270.02'			VS: 5.270.02'		
8000			8000			8000		



MD: 12.687'
Inclination: 91.26°
Azimuth: 89.37°
TVD: 7.667.25'
VS: 5.364.38'

TVD (ft)

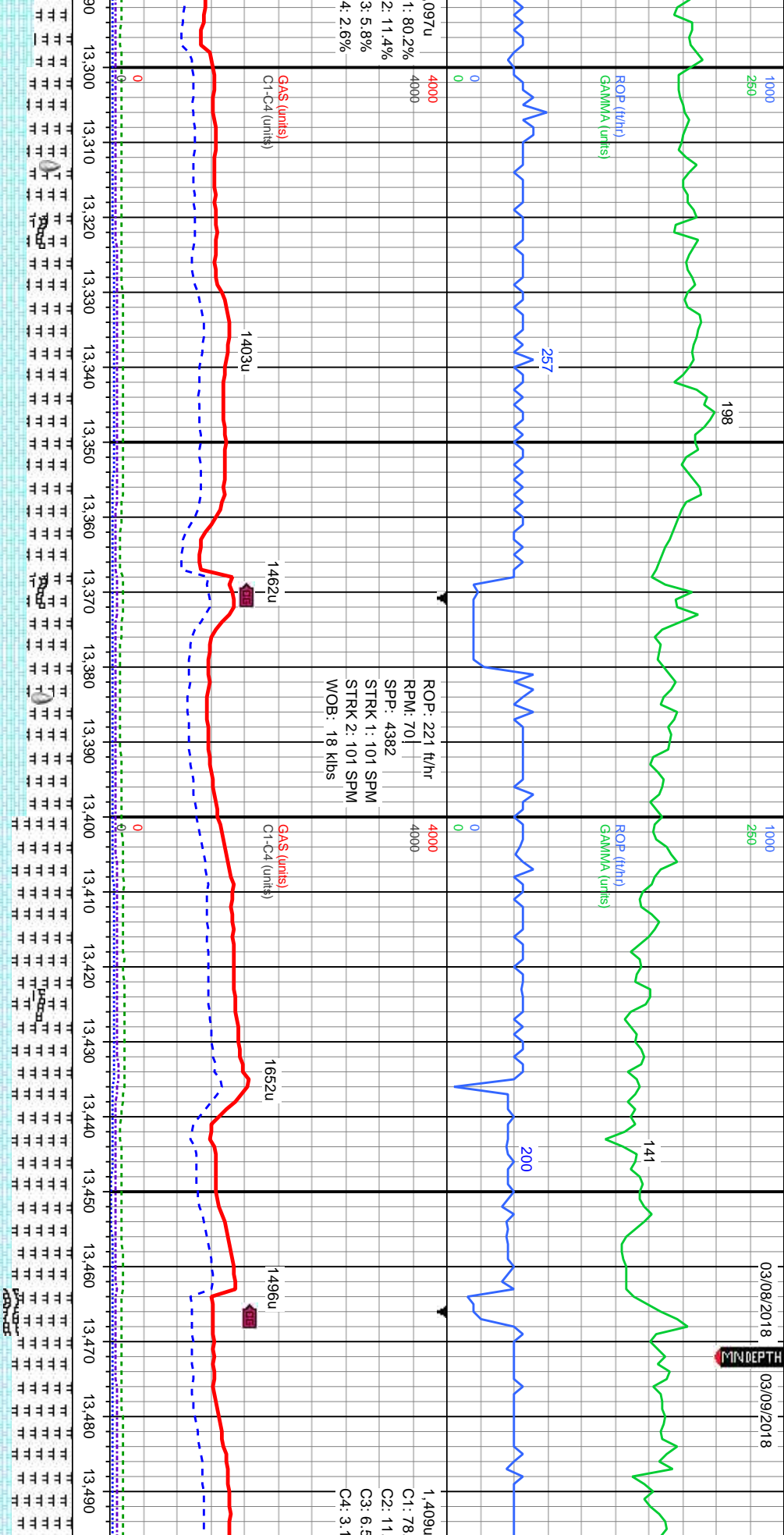
MD: 12.781'
Inclination: 91.35°
Azimuth: 88.76°
TVD: 7.665.11'
VS: 5.457.82'

TVD (ft)

ROP: 192 ft/hr
RPM: 80
SPP: 4208
STRK 1: 101 SPM
STRK 2: 102 SPM
WOB: 36 klbs

03/08/2018 03/09/2018

MINDEPTH



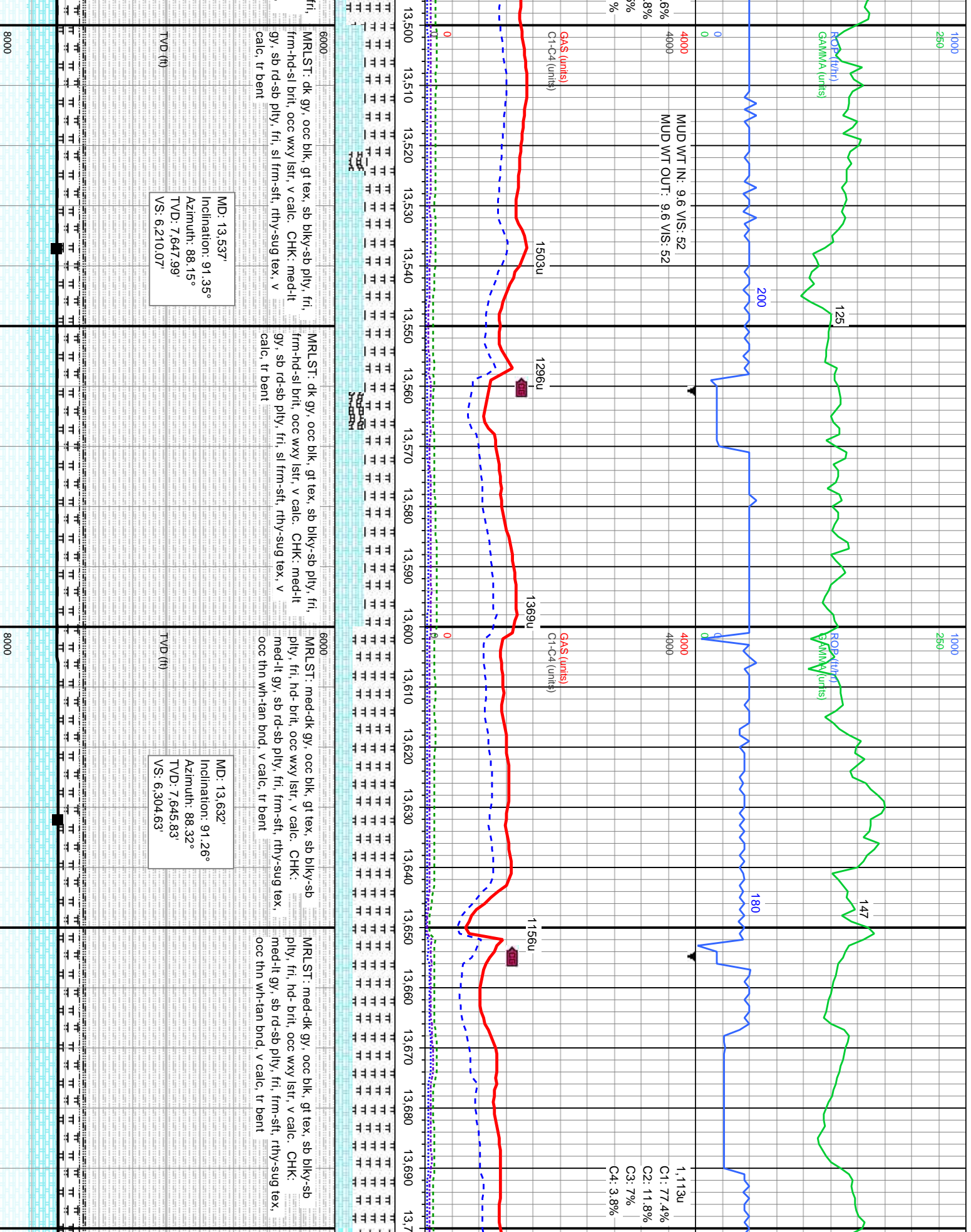
MRSLST: dk gy, occ blk, gt tex, sb blk-y-sb ply, fri,
hd-sl brit, occ wxy istr, v calc. CHK: med-lt-gy,
sb rd-sb blk-y, fri, sl frm-sft, rthy-sug tex, v calc,
tr bent, tr inoc fos

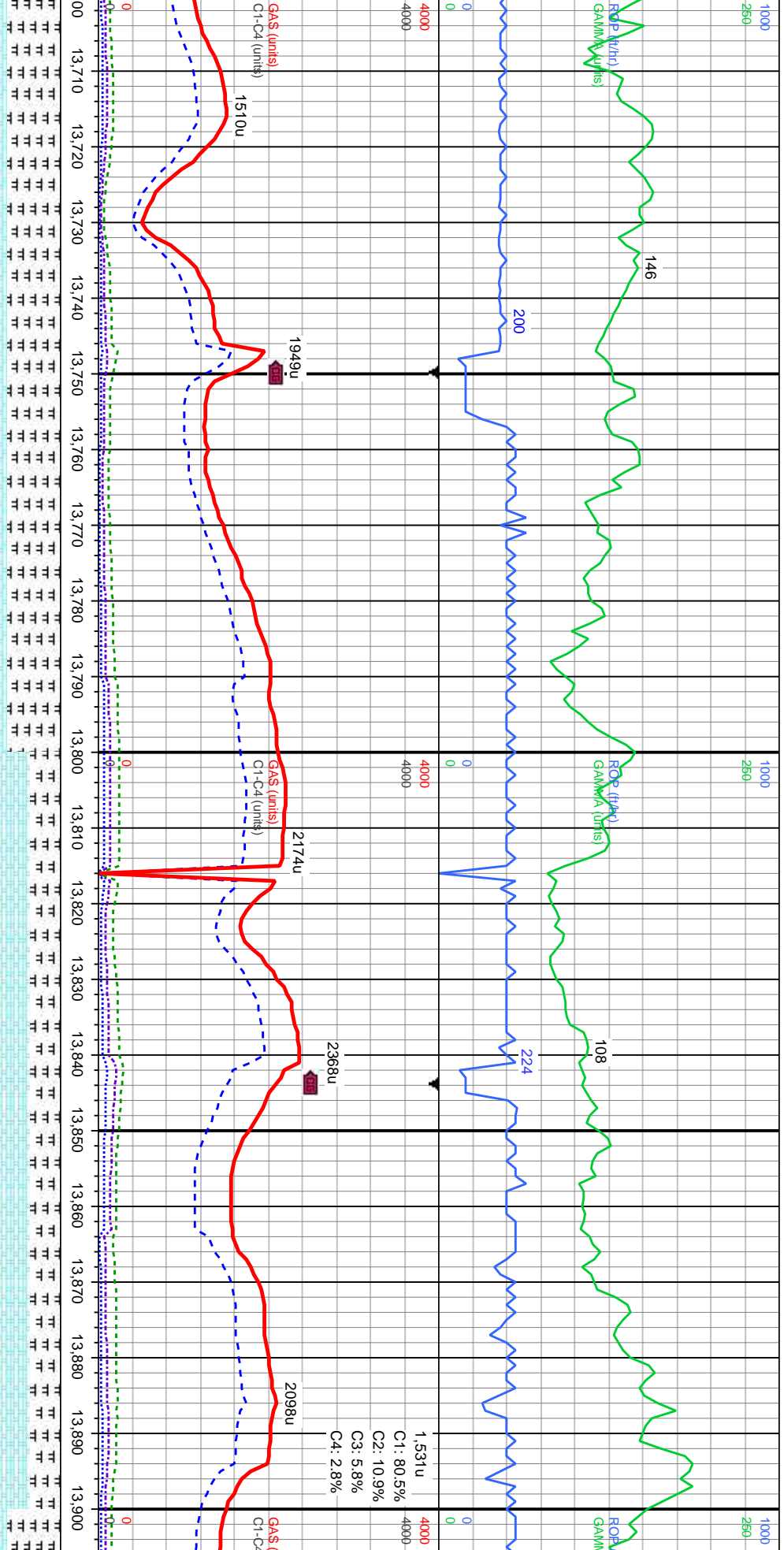
MD: 13,348'
Inclination: 91.35°
Azimuth: 88.69°
TVD: 7,652.4'
VS: 6,021.96'

MRSLST: dk gy, occ blk, gt tex, sb blk-y-sb ply, fri,
hd-sl brit, occ wxy istr, v calc. CHK: med-lt-gy,
sb rd-sb blk-y, fri, sl frm-sft, rthy-sug tex, v calc,
tr bent

MD: 13,442'
Inclination: 91.32°
Azimuth: 88.27°
TVD: 7,650.21'
VS: 6,115.5'

MRSLST: dk gy, occ blk, gt tex, sb blk-y-sb ply,
hd-sl brit, occ wxy istr, v calc. CHK: med-lt-gy,
sb rd-sb blk-y, fri, sl frm-sft, rthy-sug tex, v calc,
tr bent





6000
MRLST: med-dk gy, occ blk, gt tex, sb blk-y-sb
ply, fri, hd- brlt, occ wxy lstr, v calc, occ crm
bnd. CHK: med-lt gy, ply-sb ply, fri, frm-sft,
rthy-sug tex, occ thn wh-tan bnd, v calc, tr bent

6000
MRLST: med-dk gy, occ blk, gt tex, sb blk-y-sb
ply, fri, hd- brlt, occ wxy lstr, v calc, occ crm
bnd. CHK: med-lt gy, ply-sb ply, fri, frm-sft,
rthy-sug tex, occ thn wh-tan bnd, v calc, tr bent

6000
CHK: med-lt gy, ply-sb ply, fri, frm-sft, rthy-sug
tex, v calc, tr bent MRLST: dk gy, occ blk, gt tex,
sb blk-y-sb ply, fri, hd- brlt, v calc.

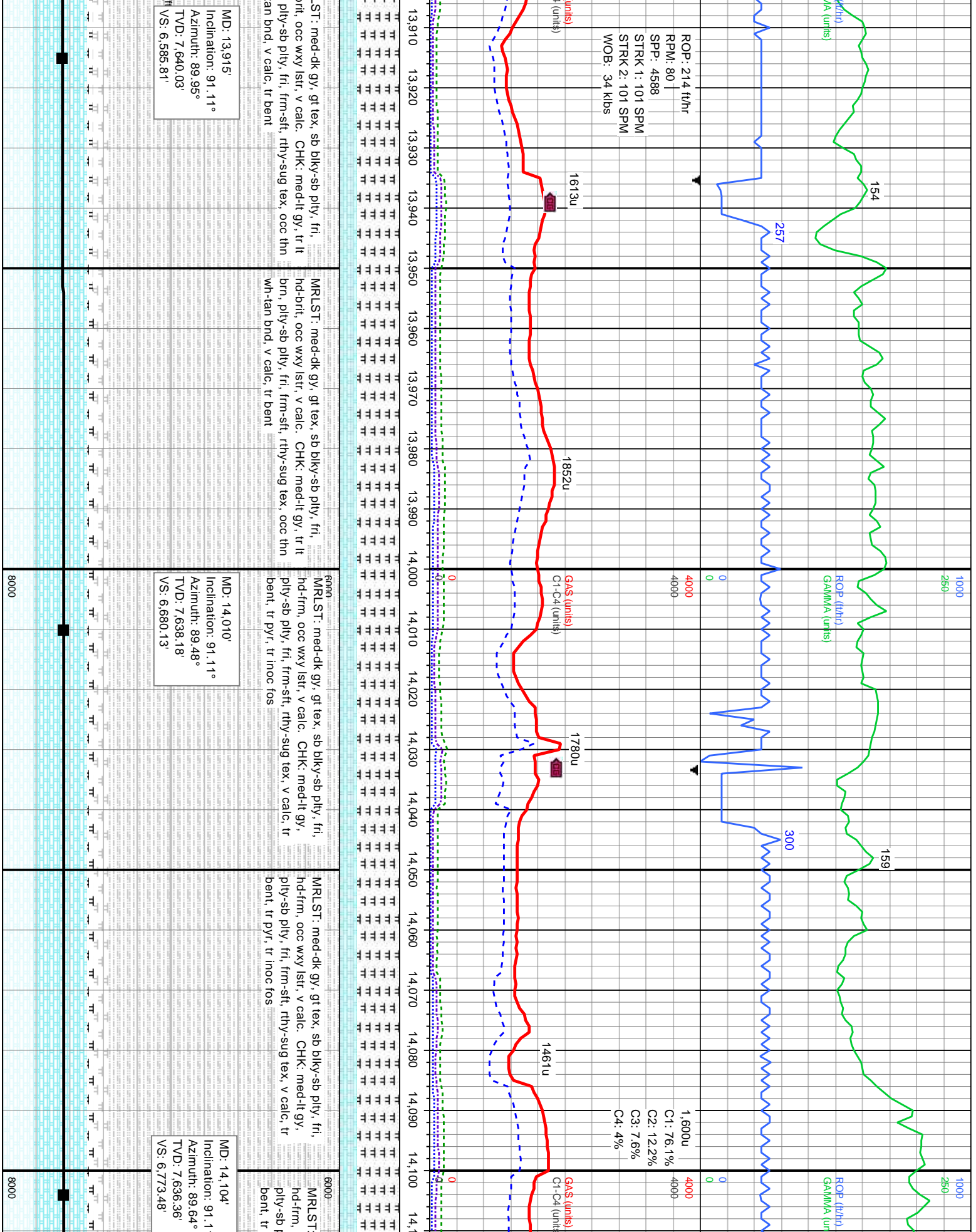
6000
CHK: med-lt gy, ply-sb ply, fri, frm-sft, rthy-sug
tex, v calc, tr bent MRLST: dk gy, occ blk, gt tex,
sb blk-y-sb ply, fri, hd- brlt, v calc.

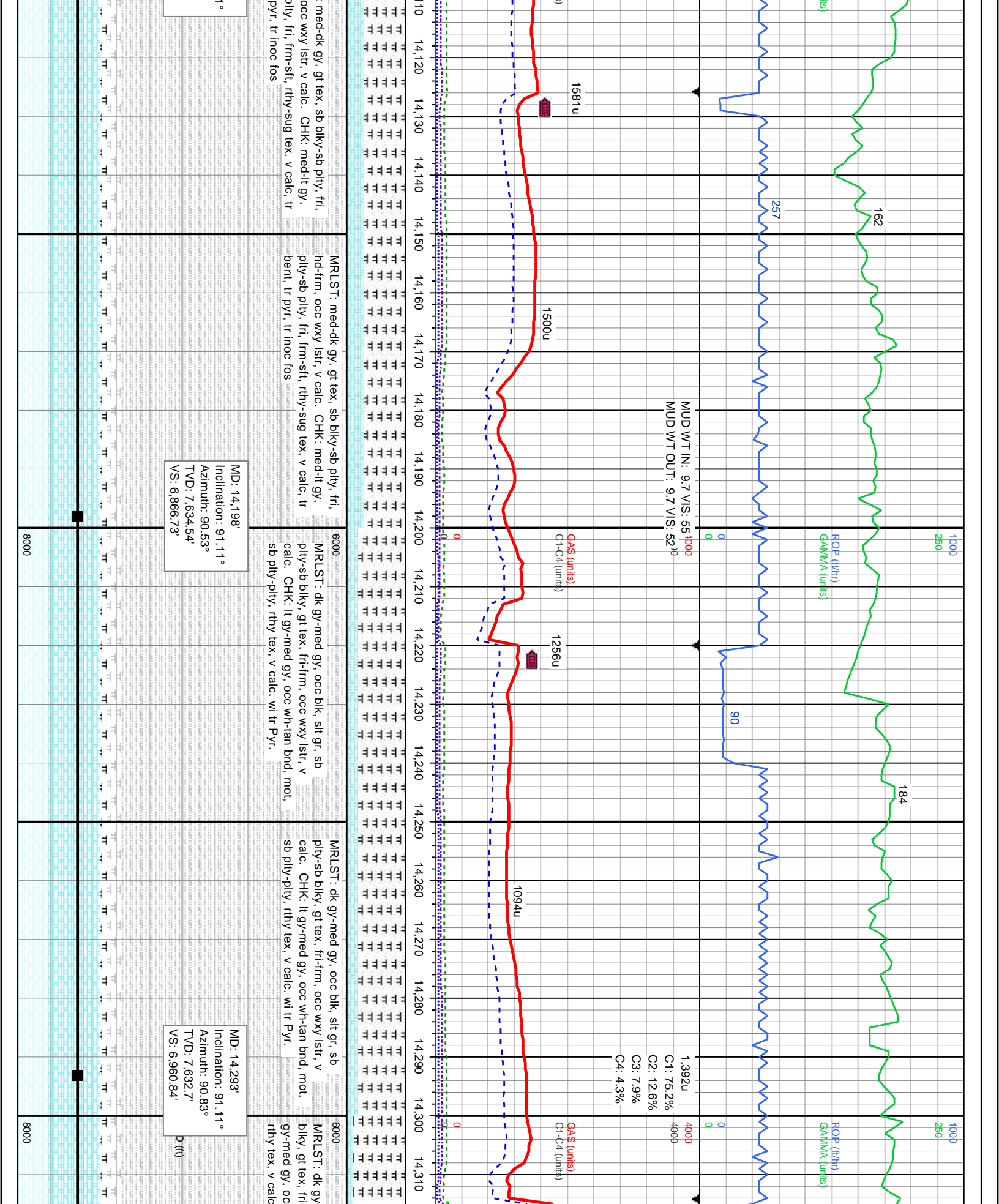
6000
MRLST: med-lt gy, occ blk, gt tex, sb blk-y-sb
ply, fri, hd- brlt, occ wxy lstr, v calc, occ crm
bnd. CHK: med-lt gy, ply-sb ply, fri, frm-sft,
rthy-sug tex, occ thn wh-tan bnd, v calc, tr bent

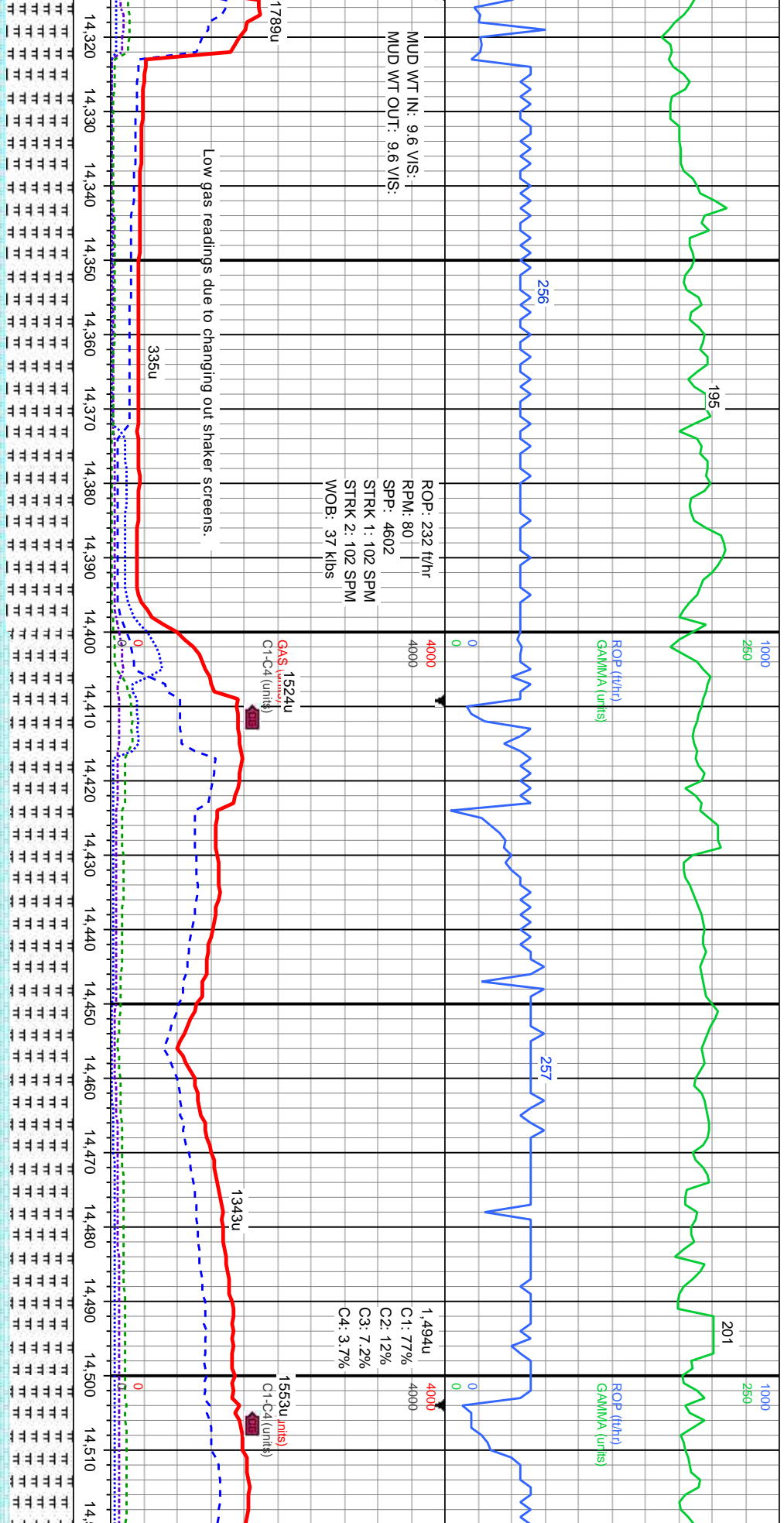
MD: 13,726'
Inclination: 91.26°
Azimuth: 89.2°
TVD: 7,643.76'
VS: 6,398.12

MD: 13,821'
Inclination: 91.08°
Azimuth: 89.57°
TVD: 7,641.82'
VS: 6,492.5

MD: 13,821'
Inclination: 91.08°
Azimuth: 89.57°
TVD: 7,641.82'
VS: 6,492.5







MUD WT IN: 9.6 VIS: |
MUD WT OUT: 9.6 VIS:

ROP: 232 ft/hr
RPM: 80 |
SPP: 4602
STRK 1: 102 SPM
STRK 2: 102 SPM
WOB: 37 klbs

1524u
GAS (units)
C1-C4 (units)

1553u **units**
C1-C4 (units)

1,494u
C1: 77%
C2: 12%
C3: 7.2%
C4: 3.7%

med gy, occ blk, slt gr, sb ply-sb
-firm, occ wxy lstr, v calc. CHK: It
c wh-tan bnd, mot, sb ply-pty,

MR.LST: dk gy-med gy, occ dlk, slt gr, sb ply-sb blk, gt tex, fri-frm, occ wxy lstr, v calc. **CHK:** lt gy-med gy, occ wh-tan brnd, mot, sb ply-pty, rthy tex, v calc.

MR.LS1: med gy-dk gy, occ blk, slt gr, sb
ply-sb blk, fri-fm, gt tex, occ wxy lstr, v
calc. CHK: lt-med gy, occ wh-tan bnd, mot, sb
ply-pty, rthy tex, v calc.

MRLEST: med gy-dk gy, occ blk, slt gr, sb plty-sb blkly, fr-frim, gt tex, occ wxy lstr, v calc. CHK: li-med gy, occ wh-tan bnd, mot, sb plty-plty, rhy tex, v calc.

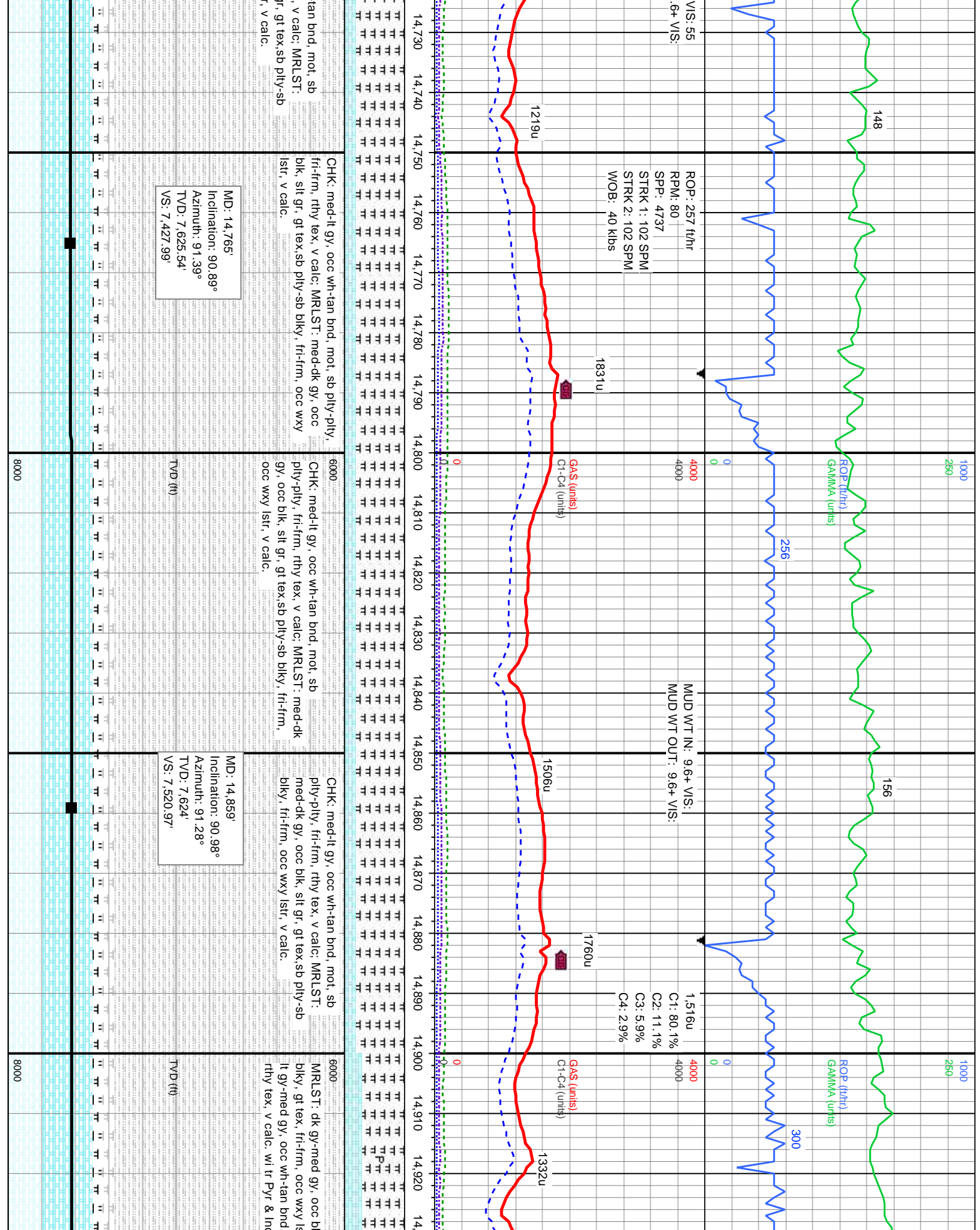
60000 MRLST: med gy-dk
biky, fri-frm, gt tex,
lt-med gy, occ wh-t
tex, v calc.

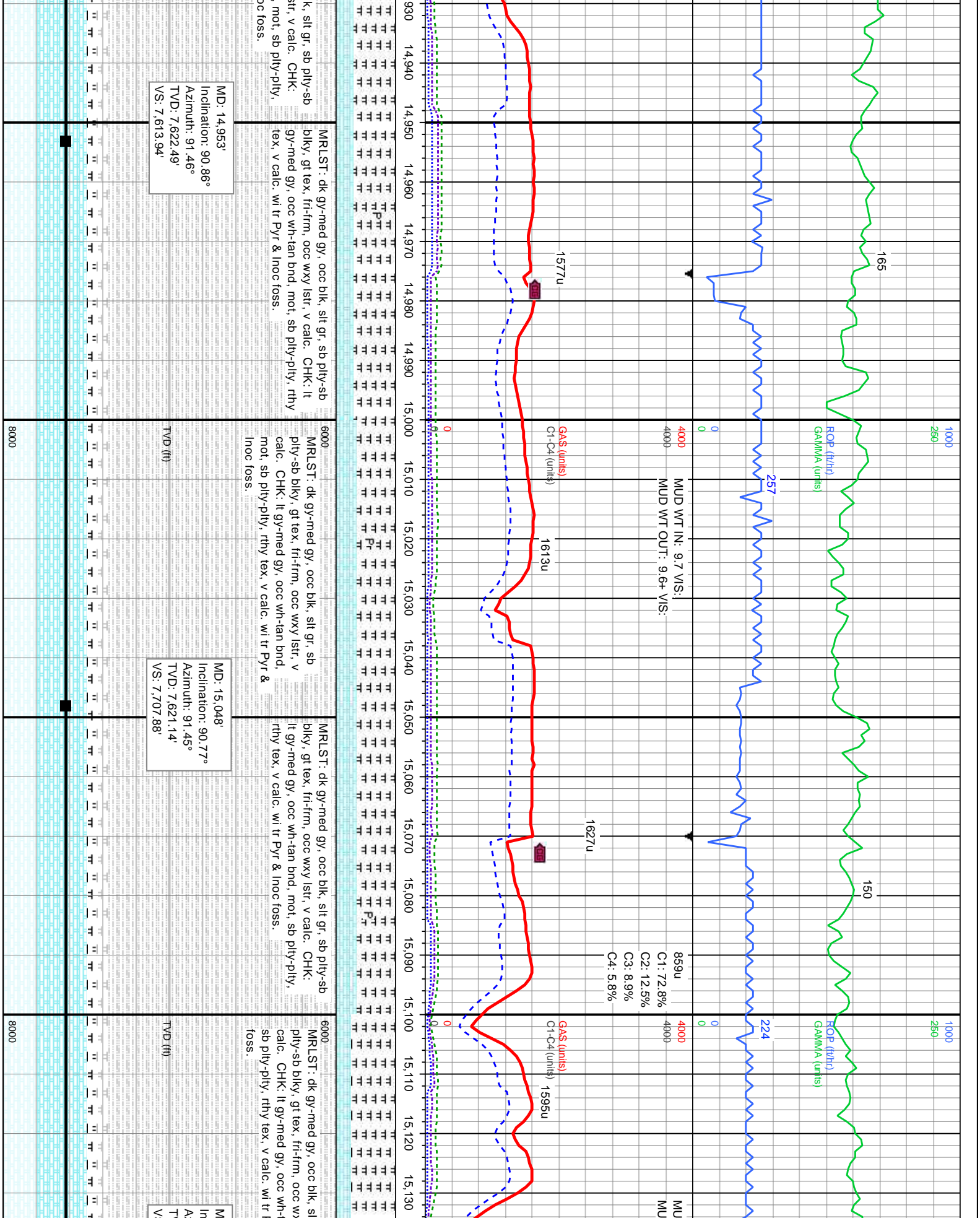
MD: 14,387'
Inclination: 90.86°
Azimuth: 90.84°
TVD: 7,631.09'
VS: 7,053.93'

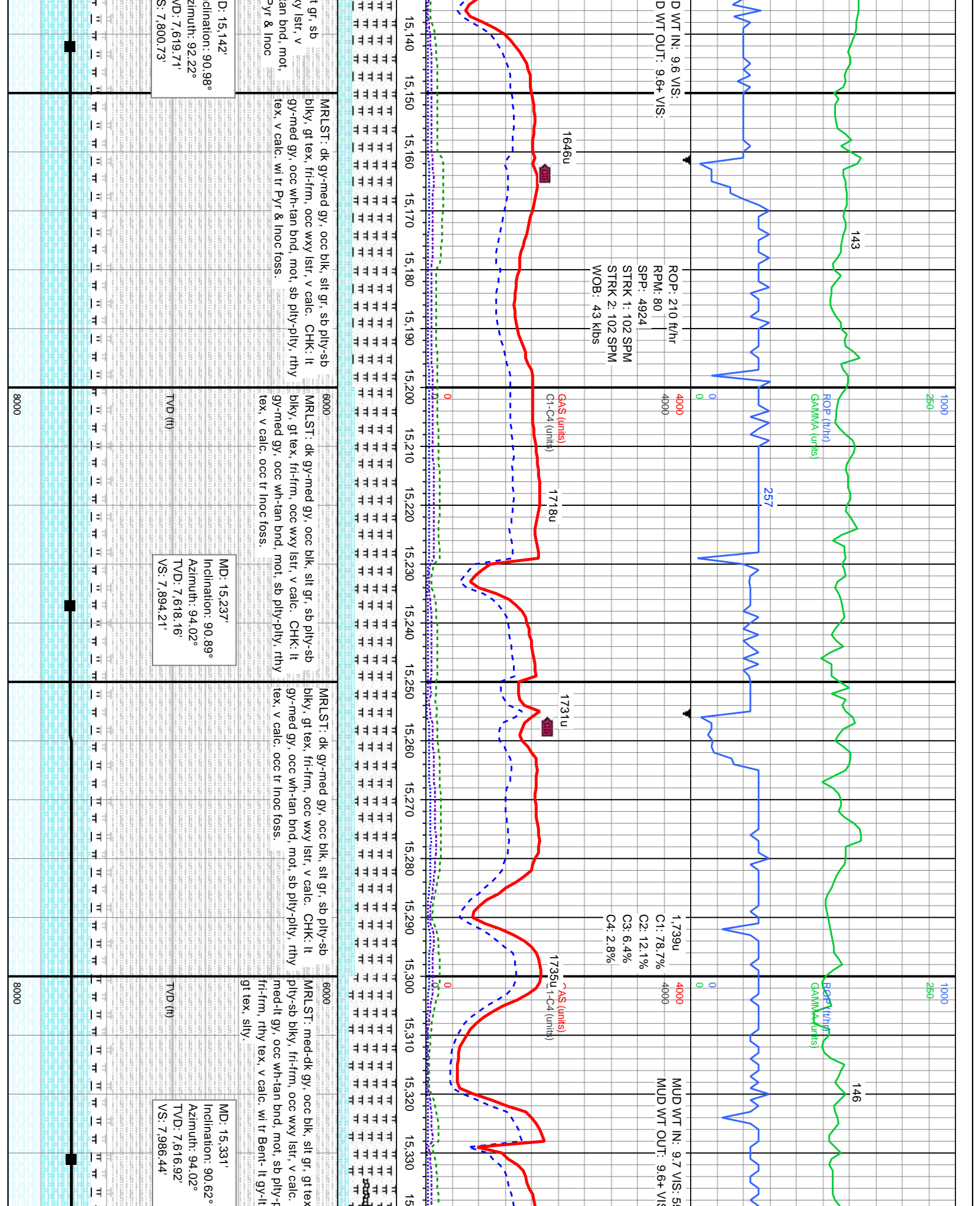
TVD (ft)

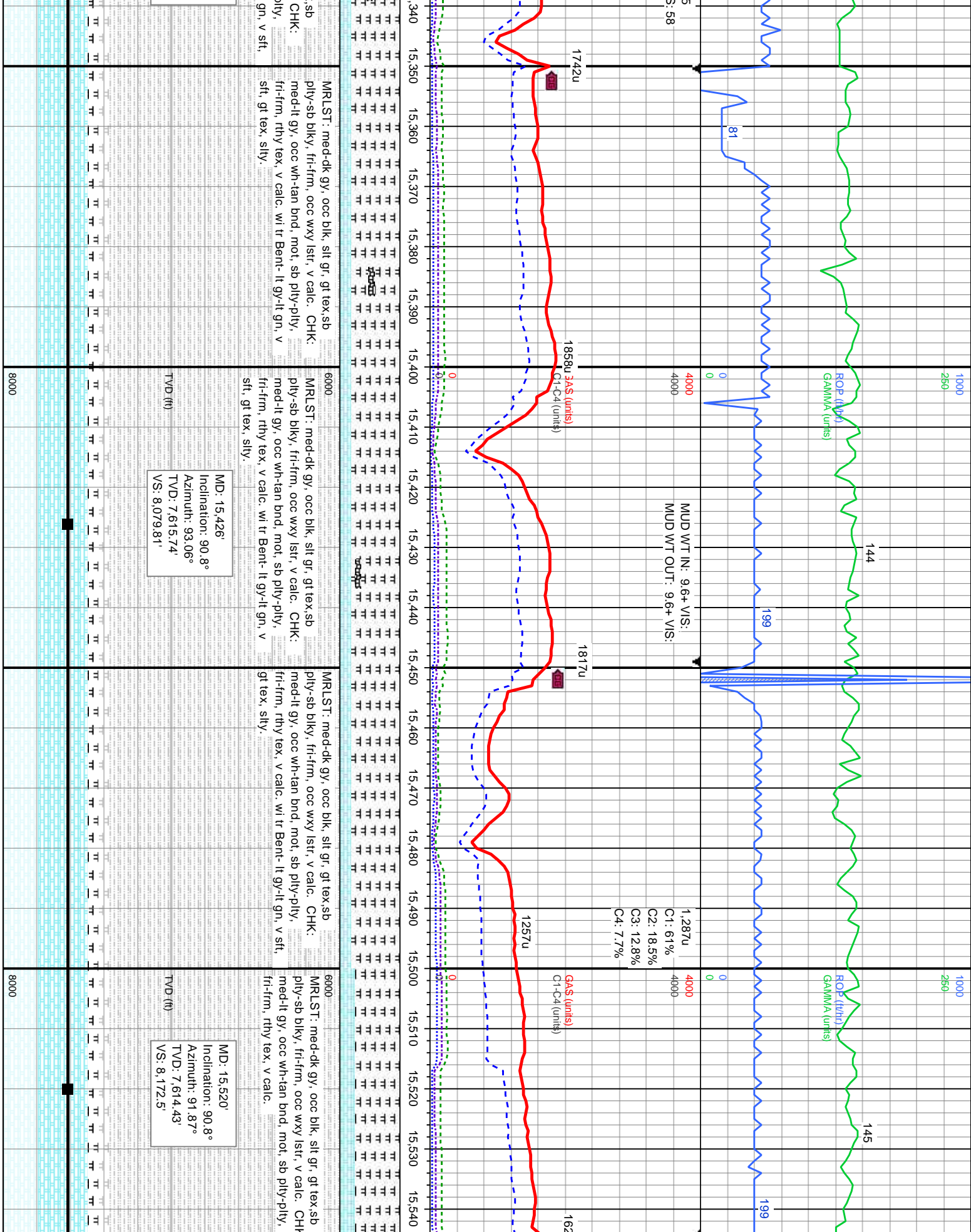
MD: 14,482'
Inclination: 90.77°
Azimuth: 91.07°
TVD: 7,629.74'
VS: 7,147.99'

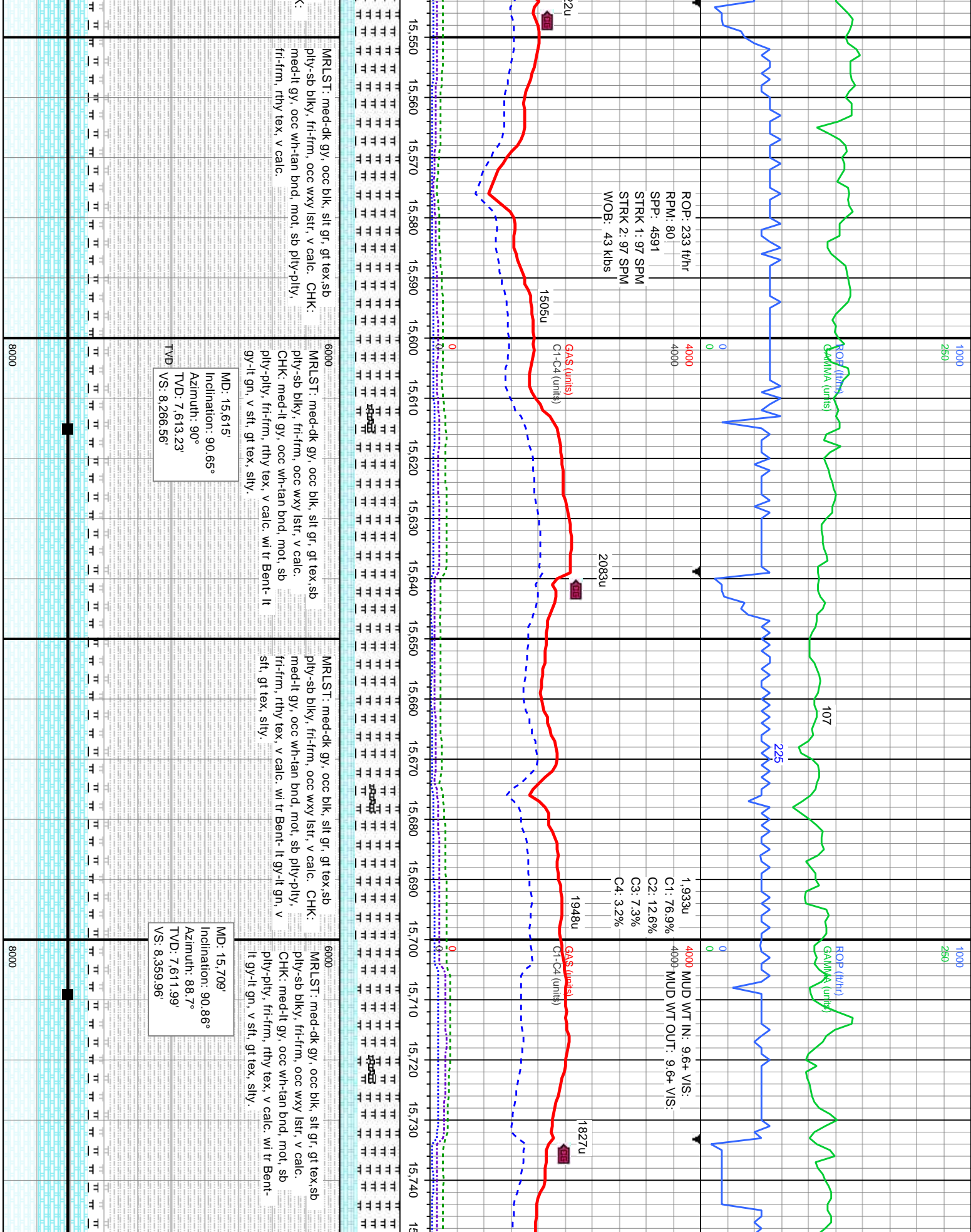
TV D (ft)

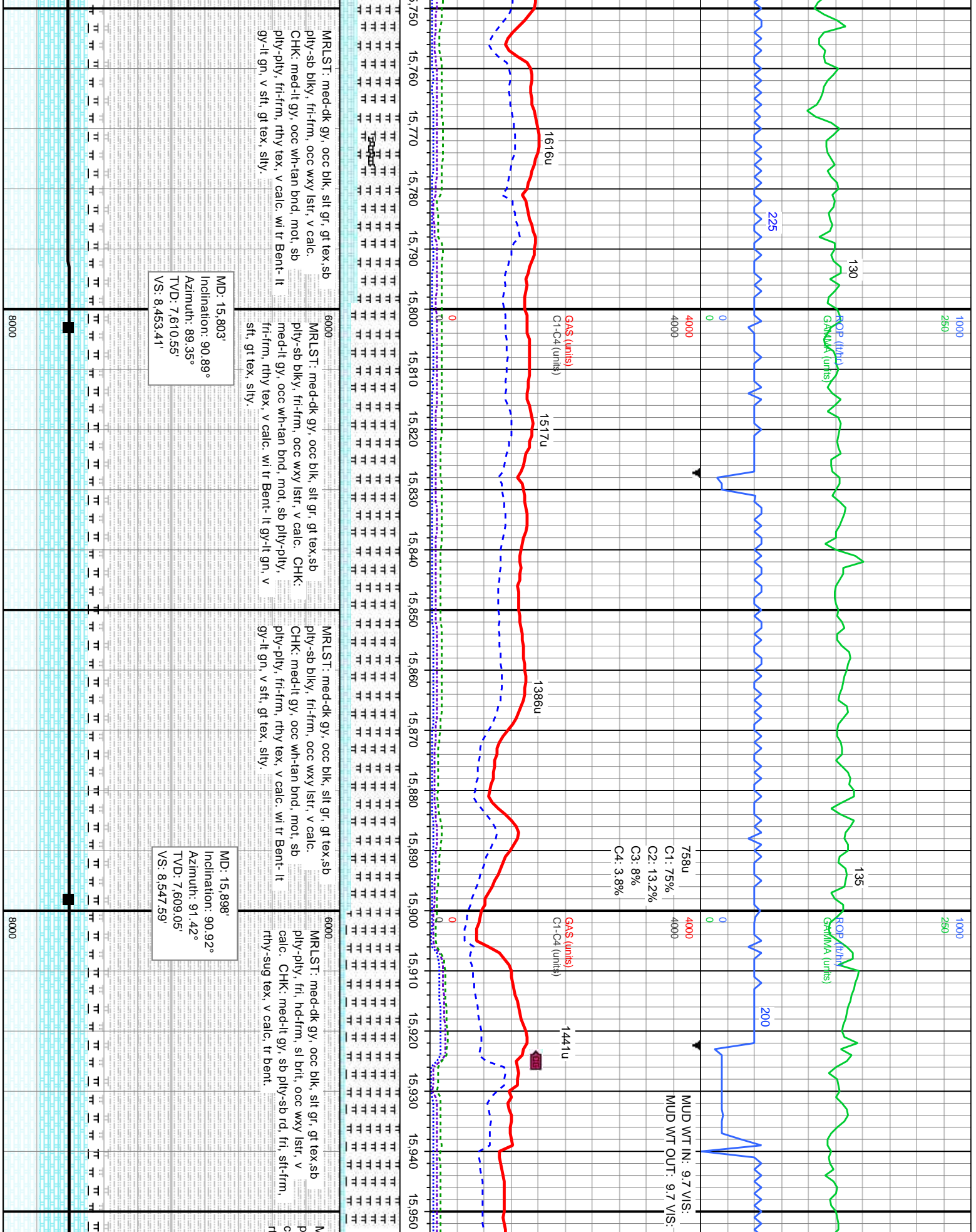


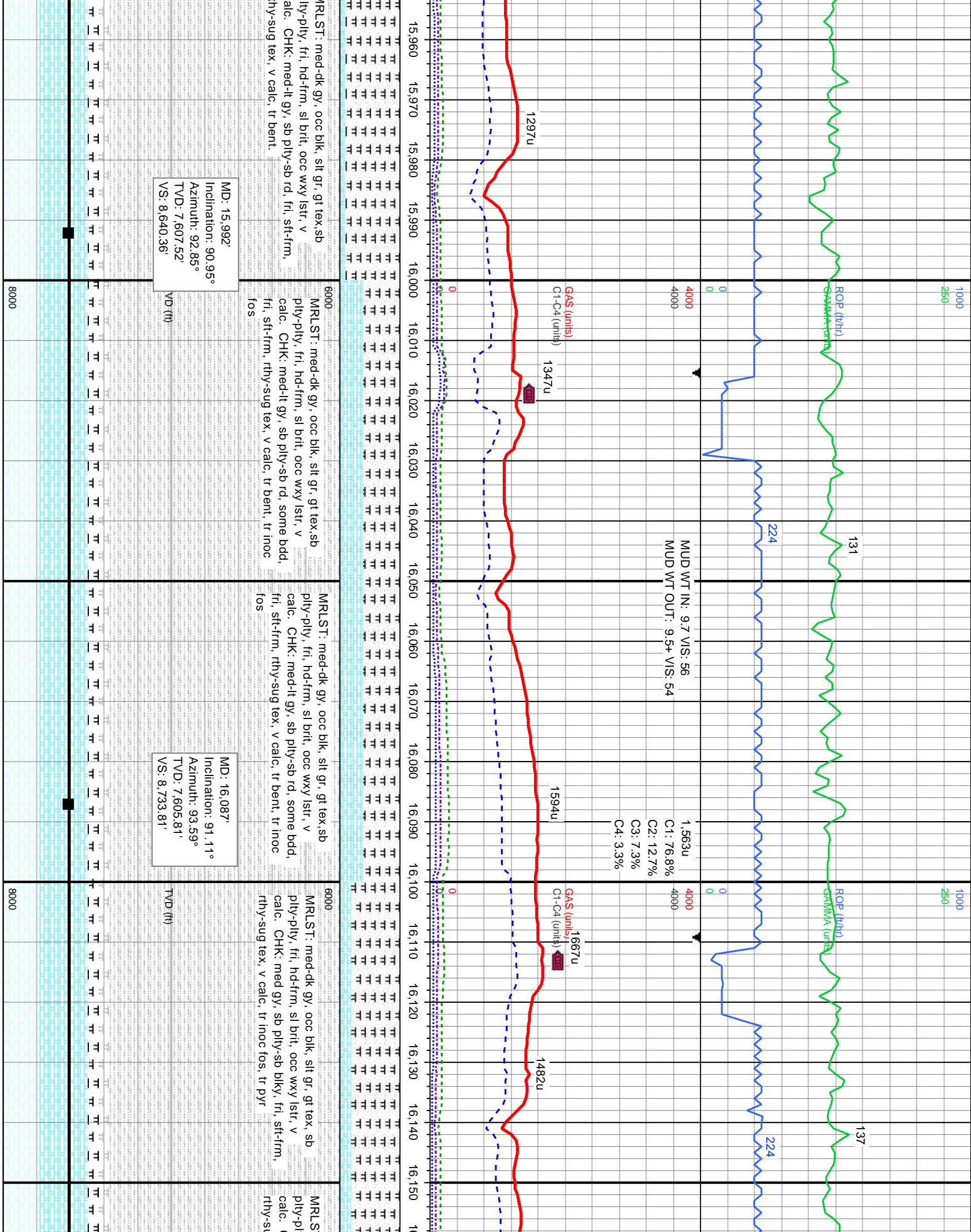


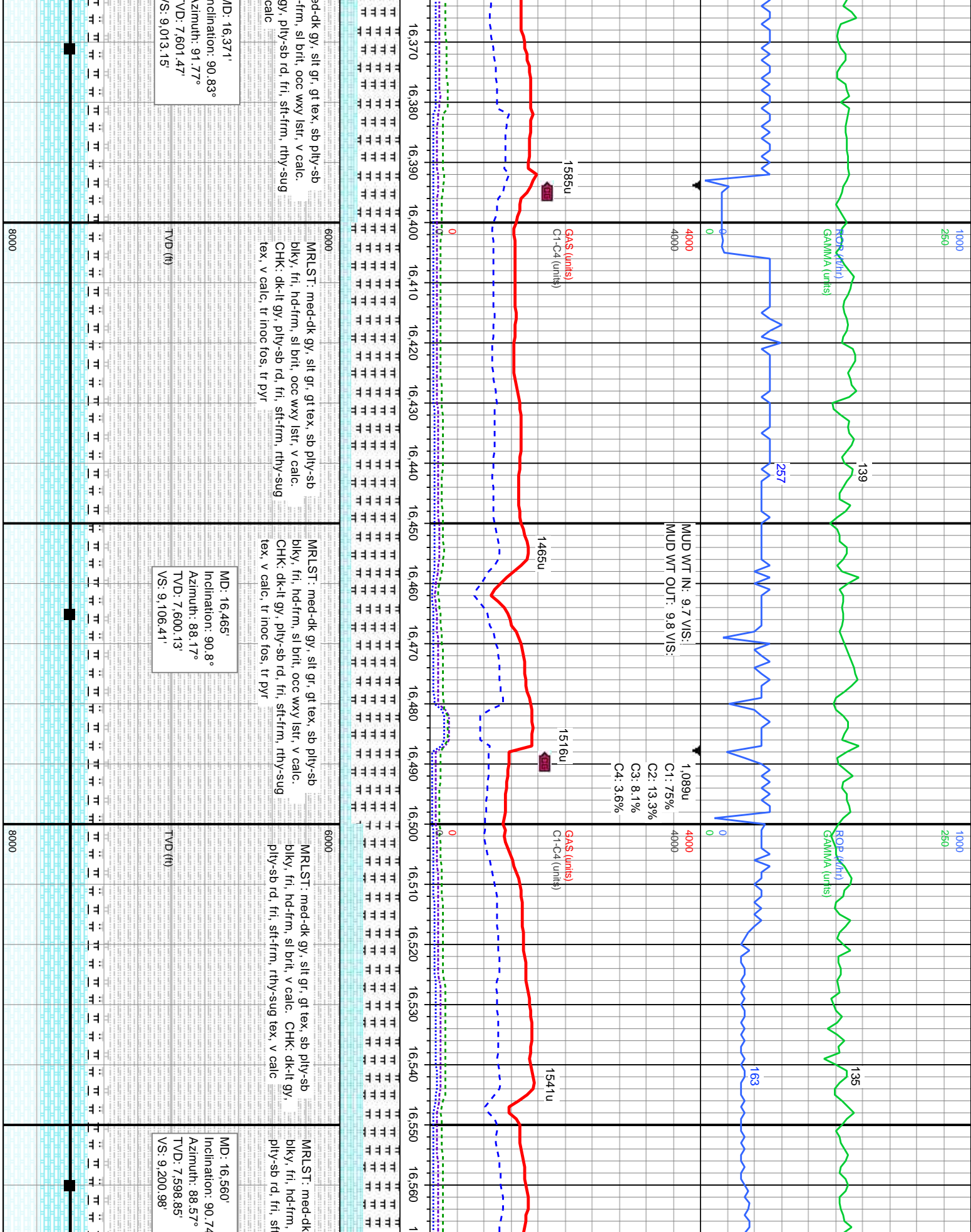














MD: 16,938'
Inclination: 91.05°
Azimuth: 90.34°
TVD: 7,592.95'
VS: 9,576.33'

03/10/2018

1000
250

ROP (ft/hr)
GAMMA (units)

156

ROP (ft/hr)
GAMMA (units)

151

225

224

4000 MUD WT IN: 9.8 VIS:55
4000 MUD WT OUT: 9.8 VIS:54

1,291u
C1: 74.8%
C2: 12.6%
C3: 8.3%
C4: 4.2%

GAS (units)
C1-C4 (units)

1566u

GAS (units)
C1-C4 (units)

1947u

1669u

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6,980

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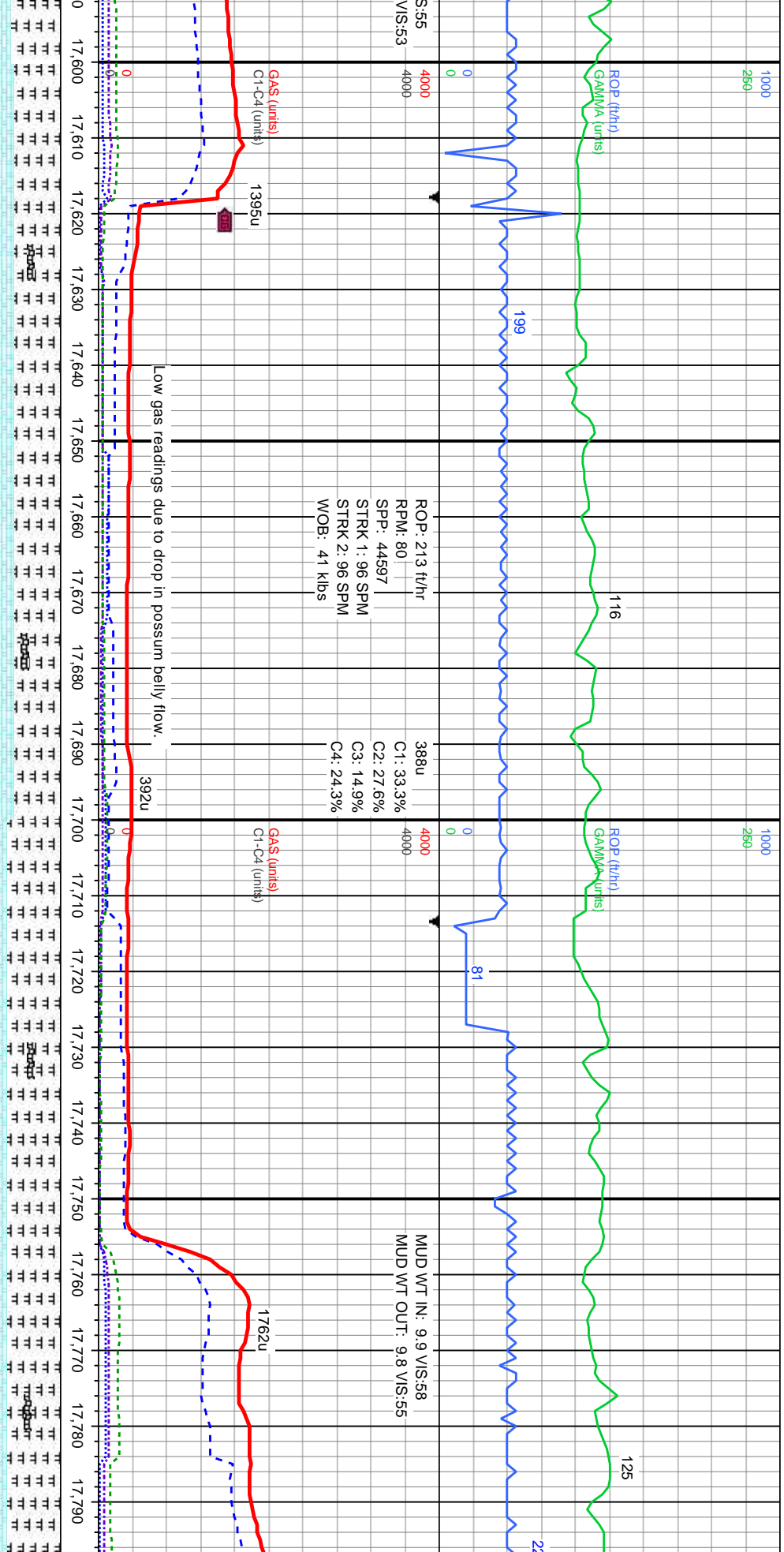
19,900

19,910

19,920

19,930

19,940

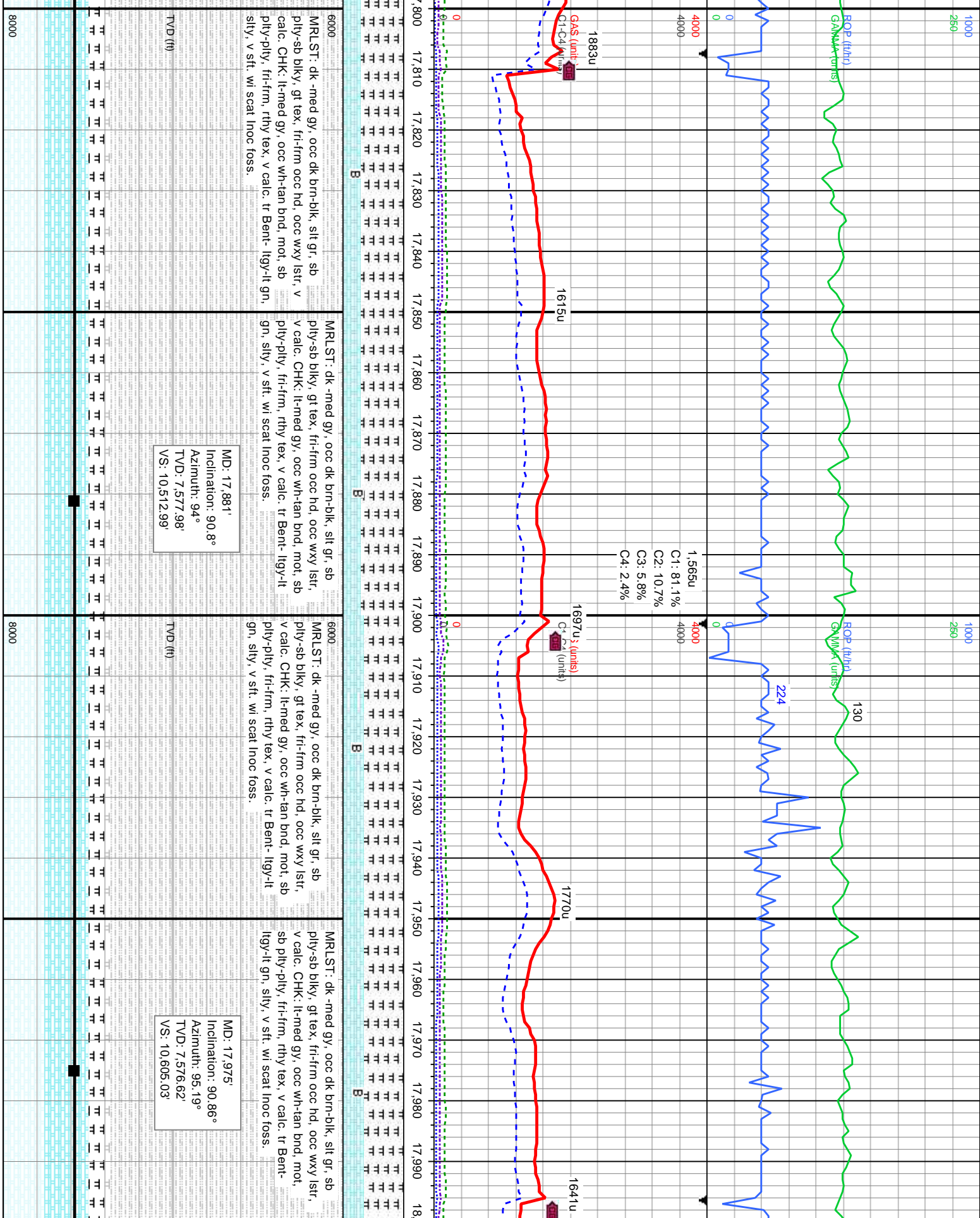


gt	6000		6000		6000		
MRLST: dk gy-m gy, occ dr brn-blk, slt gr, gt tex, sb ply-sb blk, fri-frn occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan bnd, mot, sb ply-ply, fri-frm, rthy tex, v calc. wi tr Bent: lt gy-gy gn, slty, v sft.							
MRLST: dk gy-m gy, occ dr brn-blk, slt gr, gt tex, sb ply-sb blk, fri-frn occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan bnd, mot, sb ply-ply, fri-frm, rthy tex, v calc. wi tr Bent: lt gy-gy gn, slty, v sft.							
MRLST: dk gy-m gy, occ dr brn-blk, slt gr, gt tex, sb ply-sb blk, fri-frn occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan bnd, mot, sb ply-ply, fri-frm, rthy tex, v calc. wi tr Bent: lt gy-gy gn, slty, v sft. wi occ inoc foss.							
MRLST: dk gy-m gy, occ dr brn-blk, slt gr, gt tex, sb ply-sb blk, fri-frn occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan bnd, mot, sb ply-ply, fri-frm, rthy tex, v calc. wi tr Bent: lt gy-gy gn, slty, v sft.							

D: 17.598°
Inclination: 90.92°
Azimuth: 85.97°
VD: 7.582.48
VS: 10.231.61

MD: 17.692°
Inclination: 90.92°
Azimuth: 85.69°
TVD: 7.580.97
VS: 10.325.47

MD: 17.786°
Inclination: 90.95°
Azimuth: 89.41°
TVD: 7.579.44
VS: 10.419.14



1000
250
1000
250

ROP (ft/hr)
GAMMA (units)

224
130

4000
4000

1,565u
C1: 81.1%
C2: 10.7%
C3: 5.8%
C4: 2.4%

1697u₃ (units)
C₁-C₄ (units)

1615u
1641u

1883u

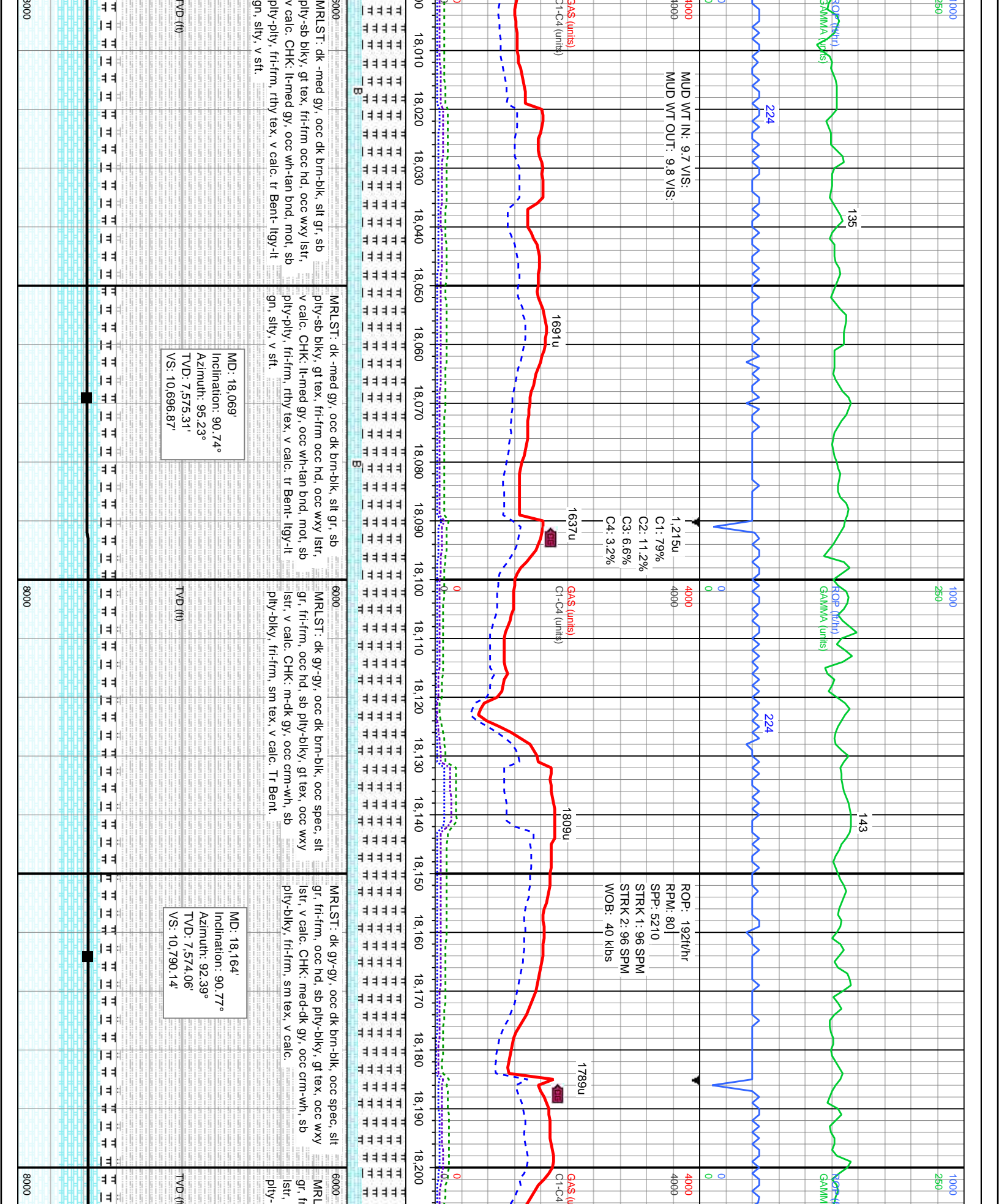
MRSLT: dk -med gy, occ dk brn-blk, slit gr, sb
ply-sb blk, gt tex, fri-firm occ hd, occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan brnd, mot, sb
ply-ply, fri-firm, rthy tex, v calc. tr Bent- lly-it gn, slty, v sft. wi scat inoc foss.

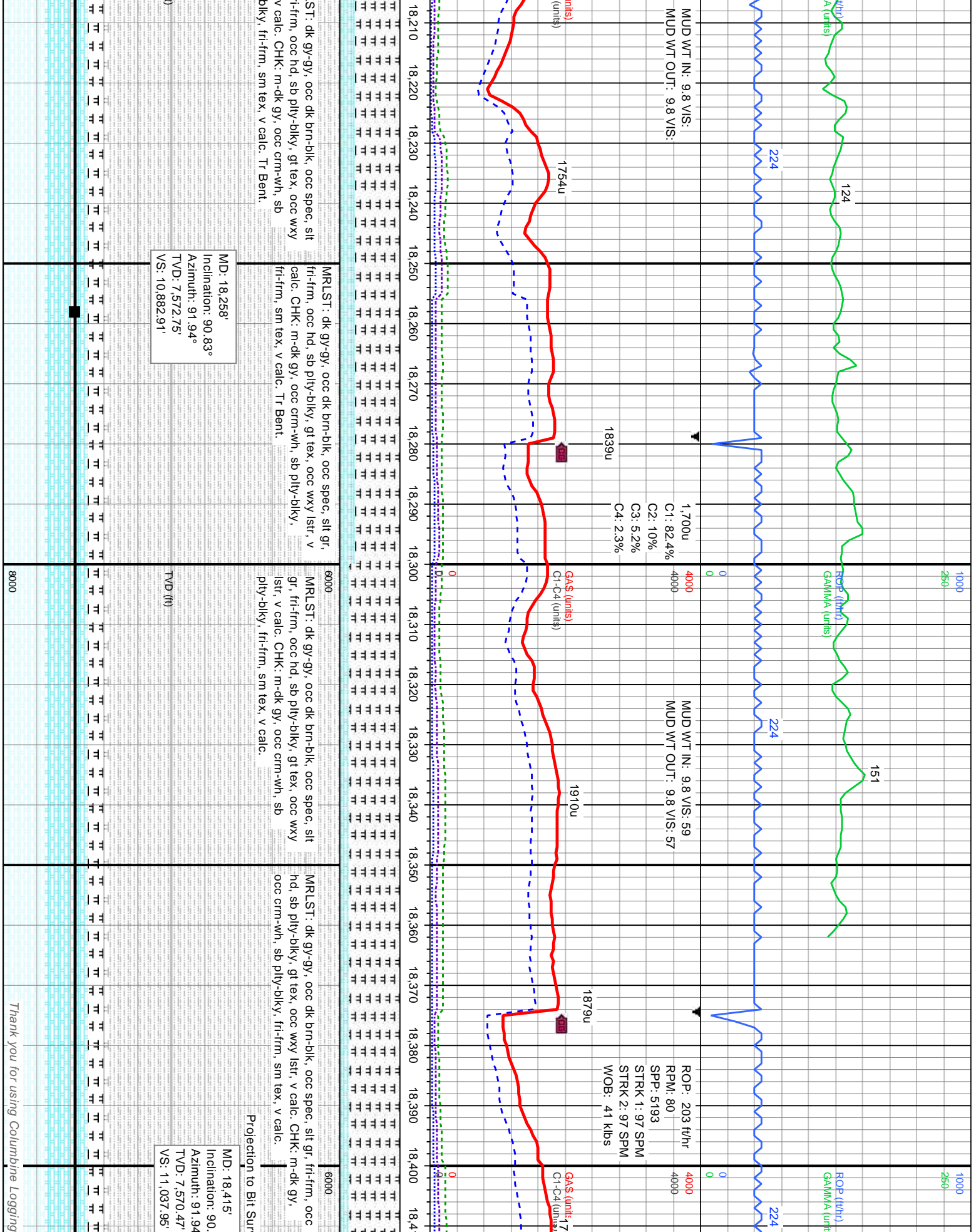
MRSLT: dk -med gy, occ dk brn-blk, slit gr, sb
ply-sb blk, gt tex, fri-firm occ hd, occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan brnd, mot, sb
ply-ply, fri-firm, rthy tex, v calc. tr Bent- lly-it gn, slty, v sft. wi scat inoc foss.

MRSLT: dk -med gy, occ dk brn-blk, slit gr, sb
ply-sb blk, gt tex, fri-firm occ hd, occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan brnd, mot, sb
ply-ply, fri-firm, rthy tex, v calc. tr Bent- lly-it gn, slty, v sft. wi scat inoc foss.

MRSLT: dk -med gy, occ dk brn-blk, slit gr, sb
ply-sb blk, gt tex, fri-firm occ hd, occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan brnd, mot, sb
ply-ply, fri-firm, rthy tex, v calc. tr Bent- lly-it gn, slty, v sft. wi scat inoc foss.

MRSLT: dk -med gy, occ dk brn-blk, slit gr, sb
ply-sb blk, gt tex, fri-firm occ hd, occ wxy lstr, v calc. CHK: lt-med gy, occ wh-tan brnd, mot, sb
ply-ply, fri-firm, rthy tex, v calc. tr Bent- lly-it gn, slty, v sft. wi scat inoc foss.





Reached TD at 1:05 PM
on 3/10/2018 at 18,415'
Drillers Depth.

