



Scale: 5" / 100'  
Measured Depth Log

**Well Name** ROHN STATE LD10-63HN HORZ

**Location** SEC 9 T9N R58W

**State** COLORADO **County** WELD

**Country** USA **Rig Number** H&P 273

**API Number** 05-123-37617 **AFE #** 200233

**Region** DJ BASIN **Field** WILDCAT

**Spud Date** 10/5/2014 **Drilling Completed** 10/12/2014

**Surface Coordinates** 885 FSL 330 FEL  
40.76101/-103.86107

**Ground Elevation** 4717' **K.B. Elevation** 4741

**Logged Interval** 1250' **To** 9952 **Total Depth** 9952'

**Formation** NIOBRARA A MARL

**Type of Drilling Fluid** LSND

## Operator

**Company** NOBLE ENERGY INC.

**Address** 1625 Broadway Suite 2200  
Denver, CO 80202

## Geologist

**Name** RENEE CLACKER

**Company** NOBLE ENERGY INC.




**Address** 1625 Broadway Suite 2200  
Denver, CO 80202

## Other

**WELLSITE GEOLOGISTS** JASON BEACH, NICK KOPIA





















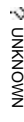












## Zone Color Coding

 Oil  
 Note  
 Error





















































 Condensate  
 Core  
 Water

 Gas  
 Pressure  
 Seal

Rock Types

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

Accessories













	F FOSSIL		ARGILLACEOUS		GLAUCONITE		TUFFACEOUS
	GASTROPOD		ARGILLITE GRAIN		GYPSIFEROUS		
	ALGAE		B BENTONITE		HEAVY MINERAL		
	AMPHIPORA		BITUMENOUS SUBSTANCE		INOCERAMUS		ANHYDRITE STRINGER
	BELEMNITE		BRECCIA FRAGMENTS		KAOLIN		BENTONITE STRINGER
	BIOCLASTIC		CALCAREOUS		MARLSTONE		COAL STRINGER
	BRACHIOPOD		CARBONACEOUS FLAKES		MINERAL CRYSTALS		DOLOMITE STRINGER
	BRYOZOA		CHERT		NODULES		GYPSUM STRINGER
	CEPHALOPOD		COAL - THIN BEDS		PHOSPHATE PELLETS		LIMESTONE STRINGER
	CORAL		DOLOMITIC		PYRITE		MARLSTONE (CALO) STRG
	CRINOID		FELDSPAR		SALT CAST		MARLSTONE (DOL) STRG
	ECHINOID		FERRUGINOUS PELLET		SANDY		SANDSTONE STRINGER
	FISH		FERRUGINOUS		SILTY		SHALE STRINGER
	FORAMINIFERA						SILTSTONE STRINGER

Minerals
















Stringer

Other

Oil Show

	MOLDIC		FAU
	ORGANIC		
	DEAD		PINPOINT
	EVEN		VUGGY
	QUESTIONABLE		PRINIFER
	SPOTTED STAINING		NOR
			OIL

Engineering

	CONNECTION (LEFT)		REV
	CONNECTION (RIGHT)		SLIDE
	EARTHY		FENESTRAL
	FRACTURE		CONNECTION GAS
	INTERCRYSTALLINE		CORE - LOST
	INTEROOLITIC		DST INTERVAL
			CORE - RECOVERED
			SLIDE
			TUFF

Porosity

TR

# Core Symbols

LT WIRELINE TESTED - LEFT E EARTHY

FORMATION TOP WIRELINE TESTED - RT FX FINELYXLN

SHOW BS GRAINSTONE

## Rounding

TH MN DEPTH L LITHOGRAPHIC

SMAL FAULT A ANGULAR MX MICROXLN

SHOW R ROUNDED MS MUDSTONE

RETURNED STRATA B SUBANG PS PACKSTONE

VERSE FAULT F SUBRND WS WACKESTONE

SMALL CORE (LEFT)

TexturesSorting

SMALL CORE (RIGHT)

E BS BOUNDSTONE M MODERATE

CRVEY C CHALKY P POOR

IP GAS CX CRYPTOXLN W WELL

## Slide/Rotate

## ROP

P

### Total Gas & Chromatograph

GAS

C1

C2 .....

3

C4

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## Depth Labels

**% Lith**

## Gamma

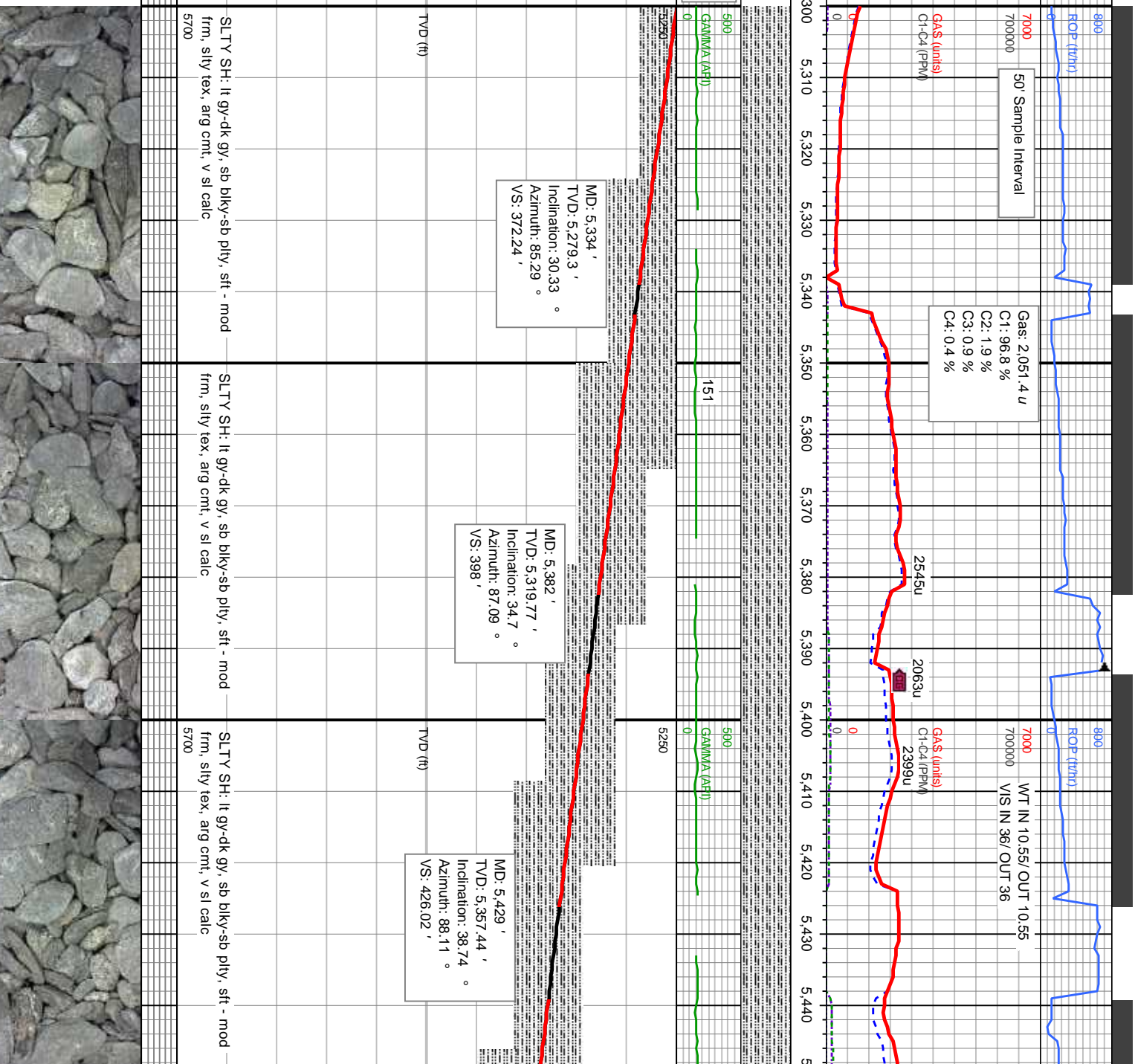
HOLES IN GAMMA  
DUE TO HIGH ROP

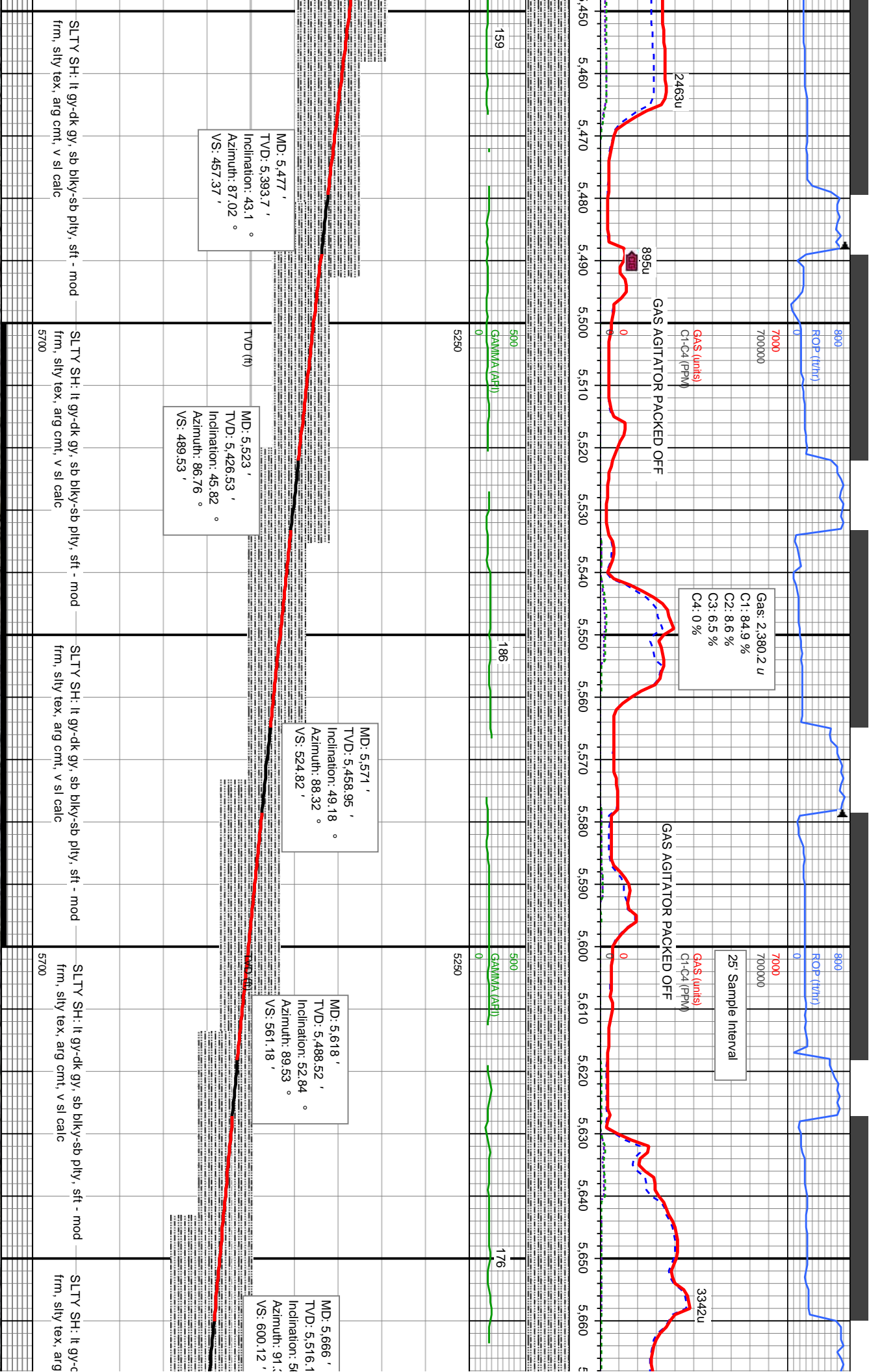
**Well Bore** —  
**TV D**

TVD

## Oil Show

## Images





SLTY SH: lt gy-dk gy, sb blk-y-sb pily, sft - mod  
frm, silty tex, arg cnt, v sl calc

SLTY SH: lt gy-dk gy, sb blk-y-sb pily, sft - mod  
frm, silty tex, arg cnt, v sl calc

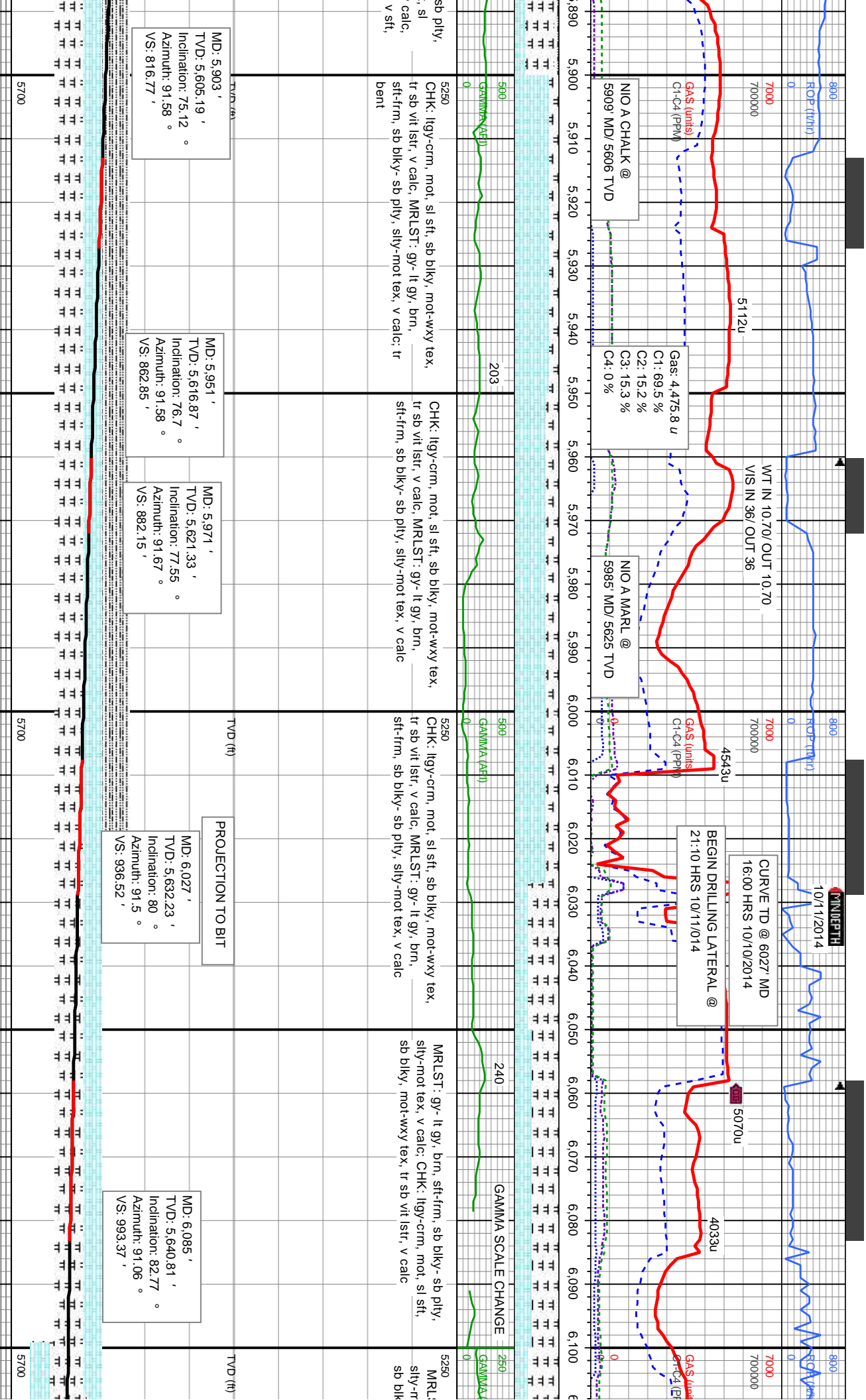
SLTY SH: lt gy-dk gy, sb blk-y-sb pily, sft - mod  
frm, silty tex, arg cnt, v sl calc

SLTY SH: lt gy-dk gy, sb blk-y-sb pily, sft - mod  
frm, silty tex, arg cnt, v sl calc

SLTY SH: lt gy-c-  
frm, silty tex, arg



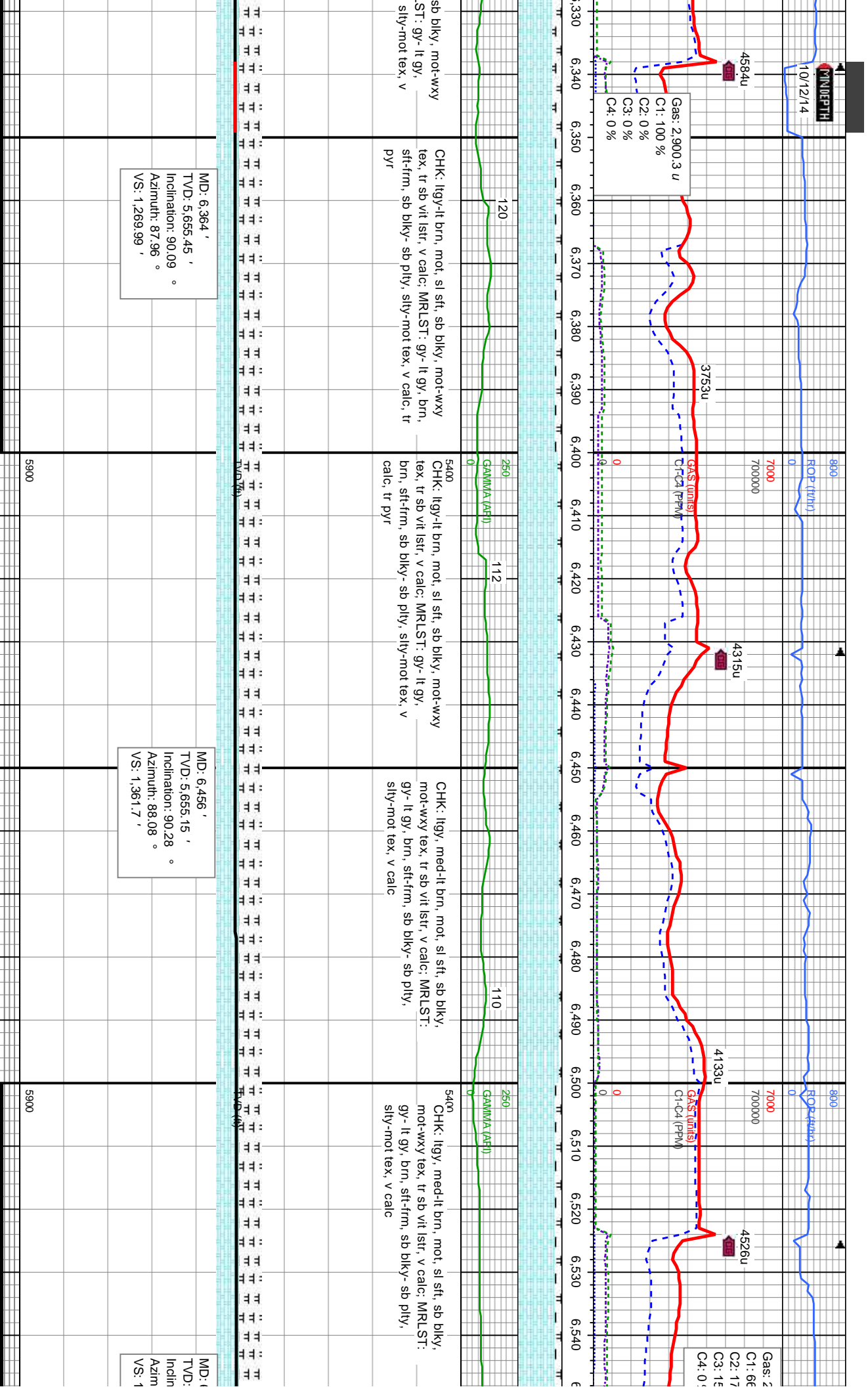


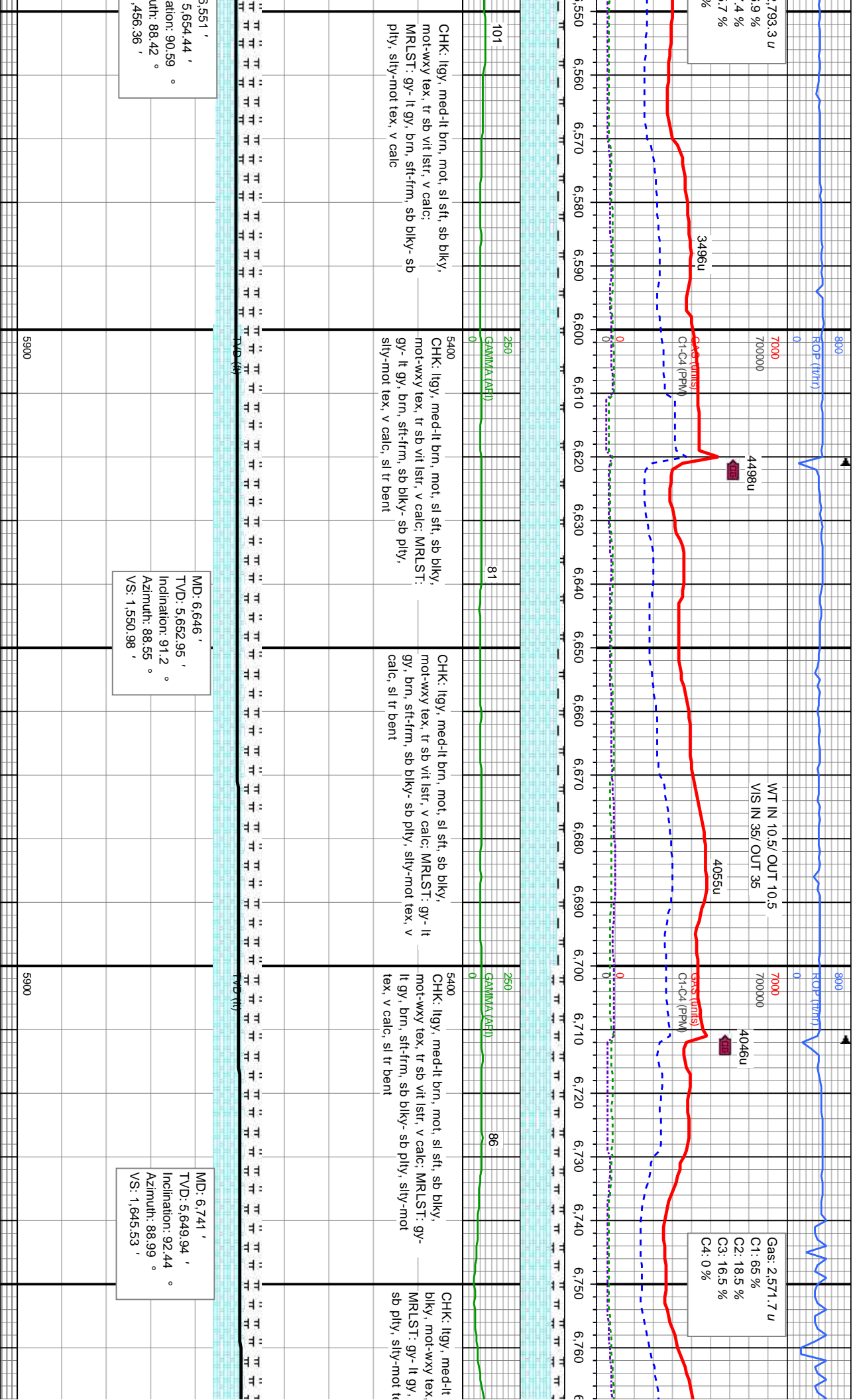












793.3 u  
9 %  
4 %  
7 %  
%

Gas: 2.571.7 u  
C1: 65 %  
C2: 18.5 %  
C3: 16.5 %  
C4: 0 %

CHK: ltgy, med-lt brn, mot, sl sft, sb blk, mot-wxy tex, tr sb vit lsfr, v calc;  
MRLST: gy-lt gy, brn, sft-frm, sb blk- sb ply, silty-mot tex, v calc

CHK: ltgy, med-lt brn, mot, sl sft, sb blk, mot-wxy tex, tr sb vit lsfr, v calc; MRLST: gy-lt gy, brn, sft-frm, sb blk- sb ply, silty-mot tex, v calc, sl tr bent

CHK: ltgy, med-lt brn, mot, sl sft, sb blk, mot-wxy tex, tr sb vit lsfr, v calc; MRLST: gy-lt gy, brn, sft-frm, sb blk- sb ply, silty-mot tex, v calc, sl tr bent

CHK: ltgy, med-lt brn, mot, sl sft, sb blk, mot-wxy tex, tr sb vit lsfr, v calc; MRLST: gy-lt gy, brn, sft-frm, sb blk- sb ply, silty-mot tex, v calc, sl tr bent

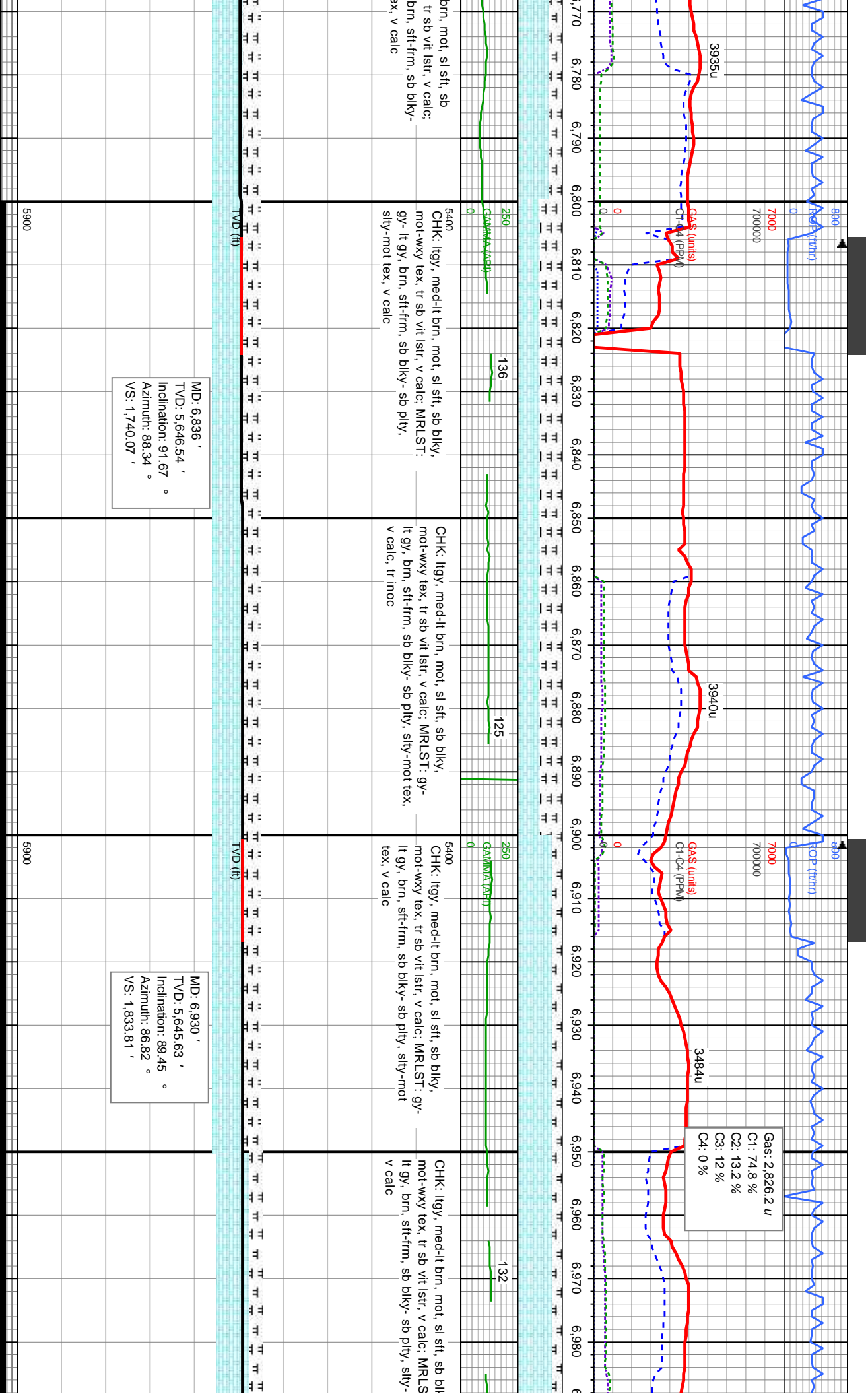
CHK: ltgy, med-lt blk, mot-wxy tex, MRLST: gy-lt gy, sb blk, silty-mot

5,551 '  
5,654.44 '  
ation: 90.59 °  
uth: 88.42 °  
456.36 '

MD: 6.646 '  
TVD: 5,652.95 '  
Inclination: 91.2 °  
Azimuth: 88.55 °  
VS: 1,550.98 '

MD: 6.741 '  
TVD: 5,649.94 '  
Inclination: 92.44 °  
Azimuth: 88.99 °  
VS: 1,645.53 '



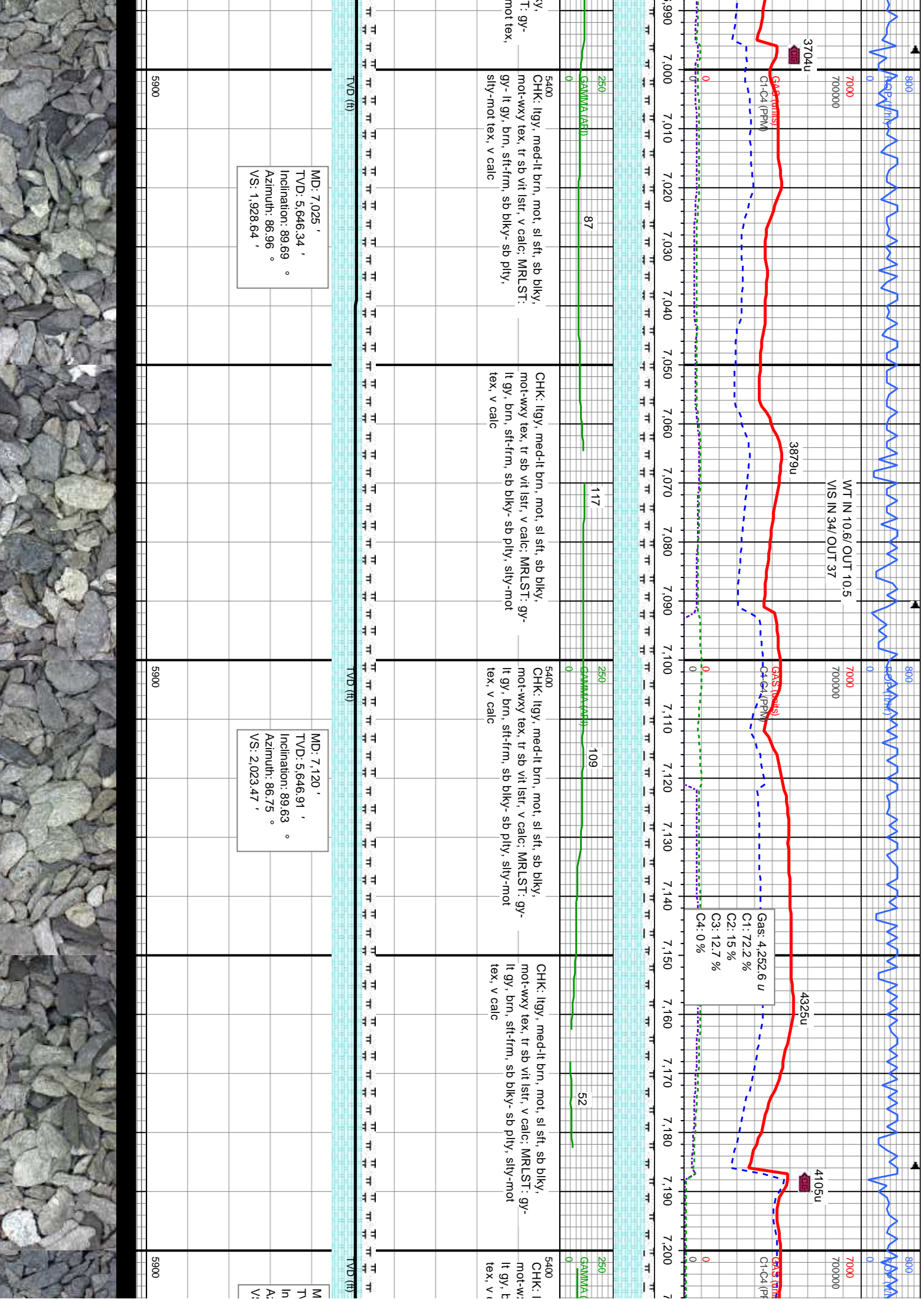


MD: 6.836 '  
TVD: 5,646.54 '  
Inclination: 91.67 °  
Azimuth: 88.34 °  
VS: 1,740.07 '

MD: 6.930 '  
TVD: 5,645.63 '  
Inclination: 89.45 °  
Azimuth: 86.82 °  
VS: 1,833.81 '

Gas: 2.826.2 u  
C1: 74.8 %  
C2: 13.2 %  
C3: 12 %  
C4: 0 %



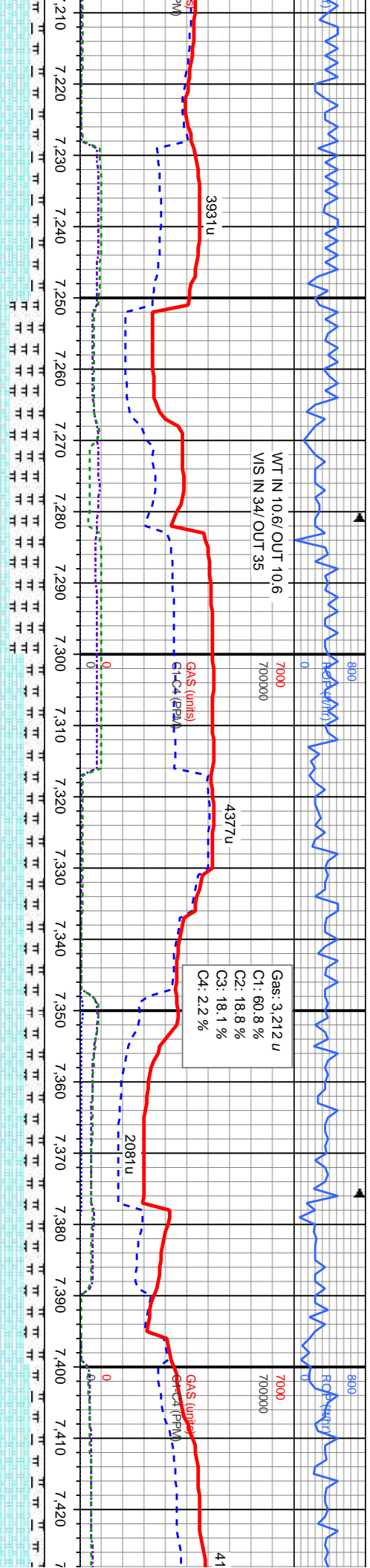


MD: 7.025 '  
TVD: 5,646.34 '  
Inclination: 89.69 °  
Azimuth: 86.96 °  
VS: 1,928.64 '

MD: 7.120 '  
TVD: 5,646.91 '  
Inclination: 89.63 °  
Azimuth: 86.75 °  
VS: 2,023.47 '

Gas: 4,252.6 u  
C1: 72.2 %  
C2: 15 %  
C3: 12.7 %  
C4: 0 %

MD: 7.120 '  
TVD: 5,646.91 '  
Inclination: 89.63 °  
Azimuth: 86.75 °  
VS: 2,023.47 '



gy, med-it brn, mot, sl sft, sb blk, sly-mot tex, tr sb vit lstr, v calc: MRLST: gy-frm, sft-frm, sb blk- sb ply, sily-mot calc

MRLST: gy- lt gy, brn, sft-frm, sb blk- sb ply, sily-mot tex, v calc, CHK: lly, med-it brn, mot, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, v calc

CHK: lly, med-it brn, mot, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, v calc: MRLST: gy- lt gy, brn, sft-frm, sb blk- sb ply, sily-mot tex, v calc

CHK: lly, med-it brn, mot, sl sft, sb blk, mot-wxy tex, tr sb vit lstr, v calc: MRLST: gy- lt gy, brn, sft-frm, sb blk- sb ply, sily-mot v calc

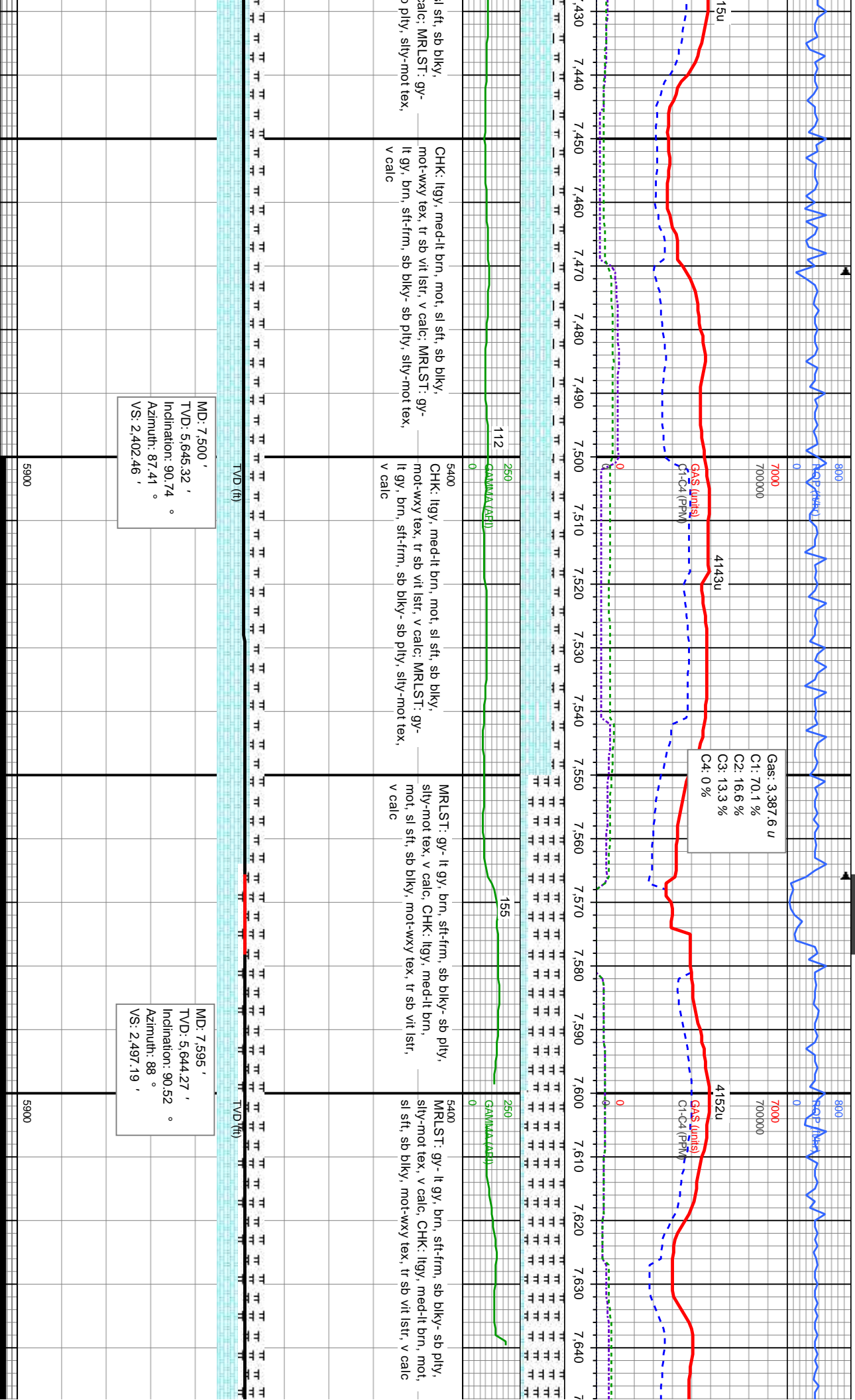
D: 7.215 '   
 TVD: 5.647.06 '   
 Inclination: 90.19 °   
 Azimuth: 87.39 °   
 VS: 2.118.28 '

MD: 7.310 '   
 TVD: 5.646.24 '   
 Inclination: 90.8 °   
 Azimuth: 88.17 °   
 VS: 2.213 '

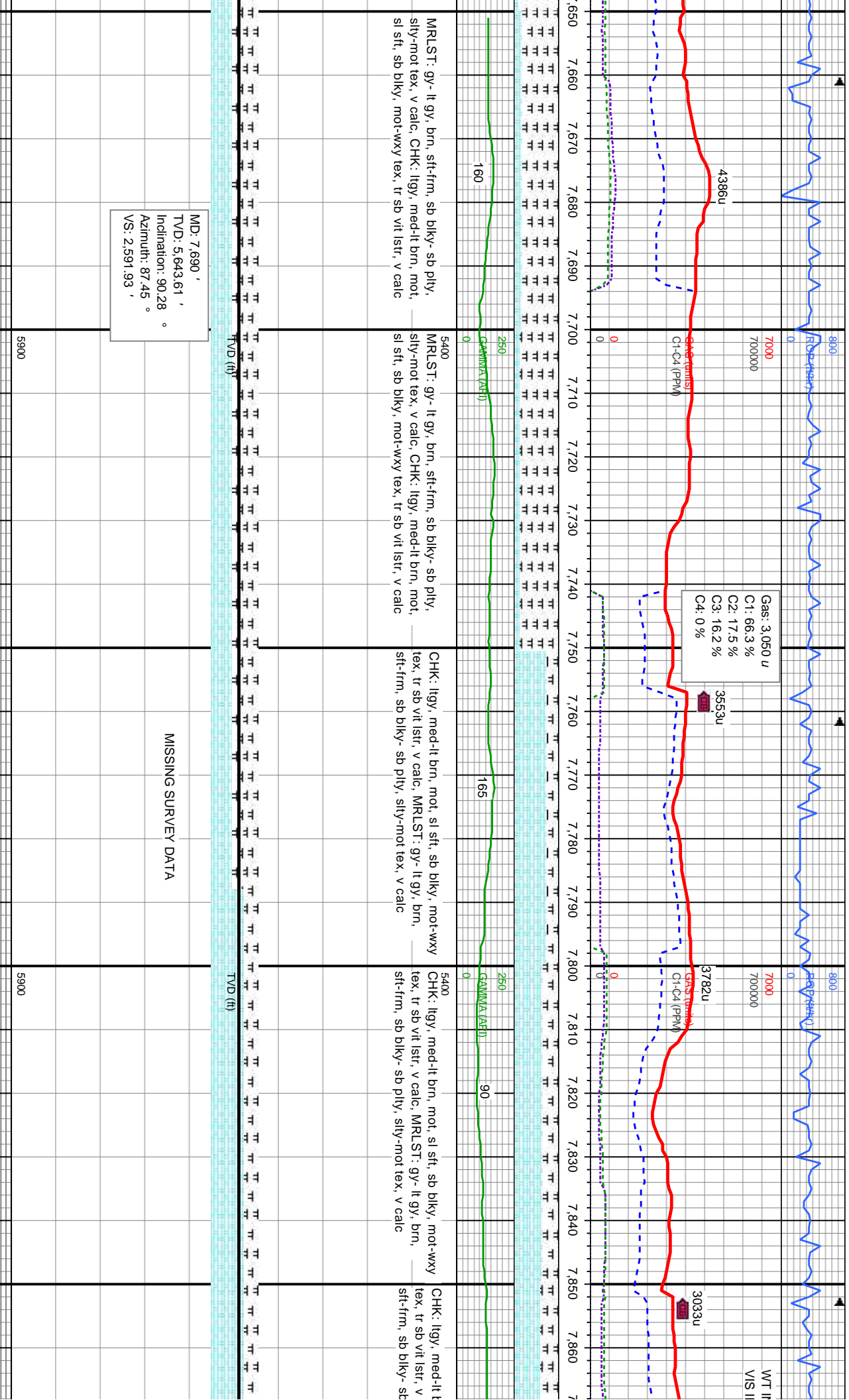
MD: 7.405 '   
 TVD: 5.645.75 '   
 Inclination: 89.78 °   
 Azimuth: 87.74 °   
 VS: 2.307.71 '

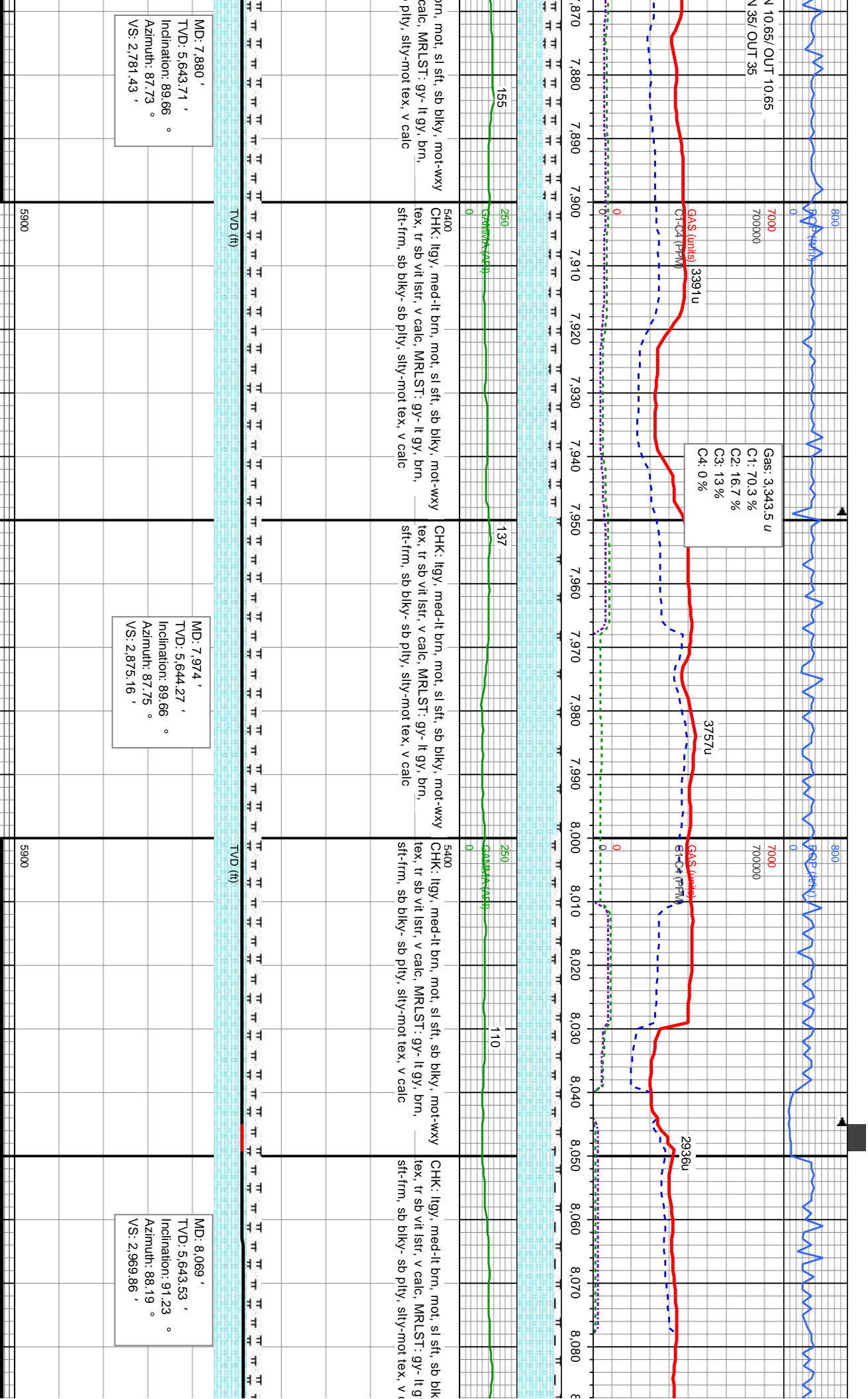




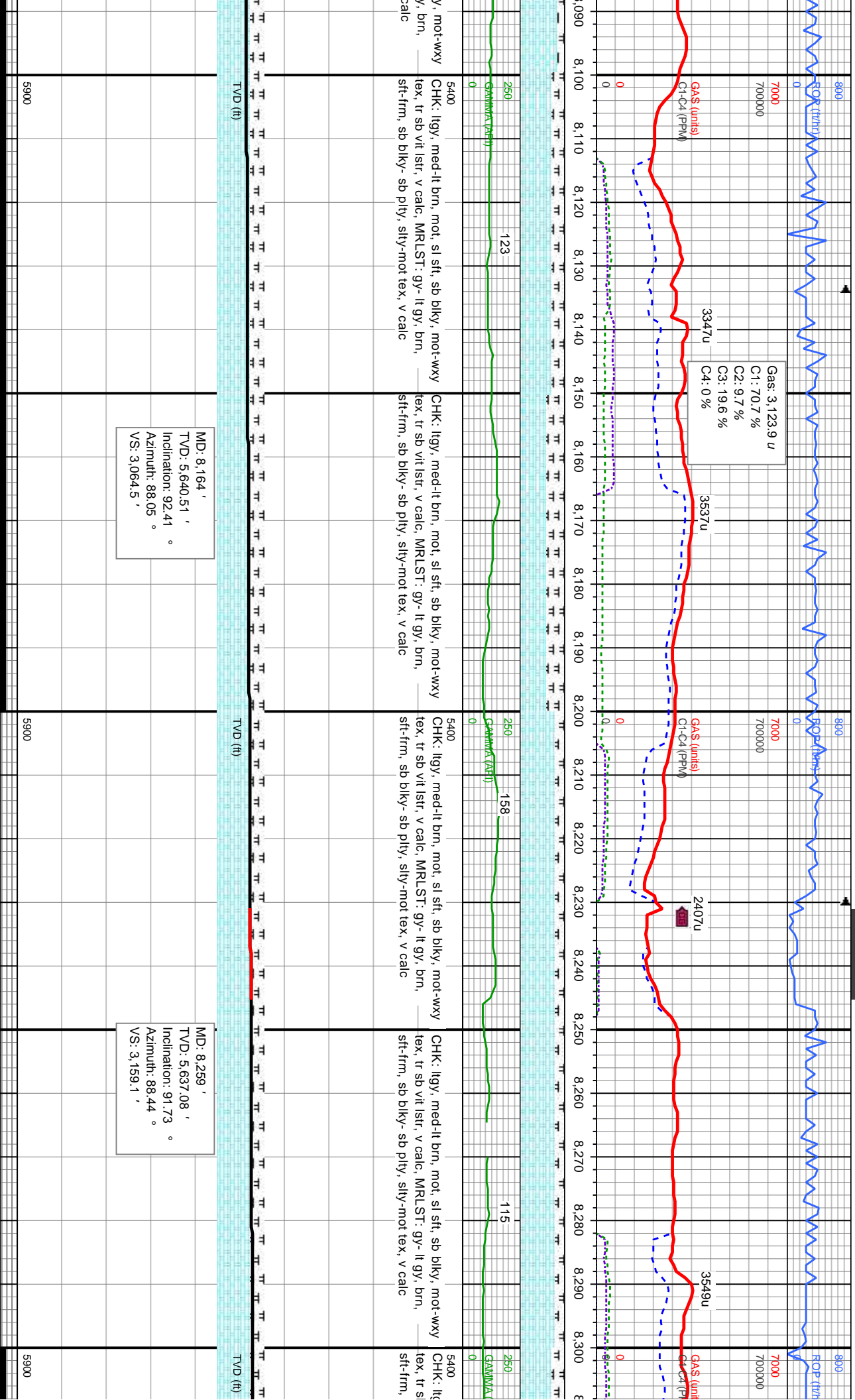




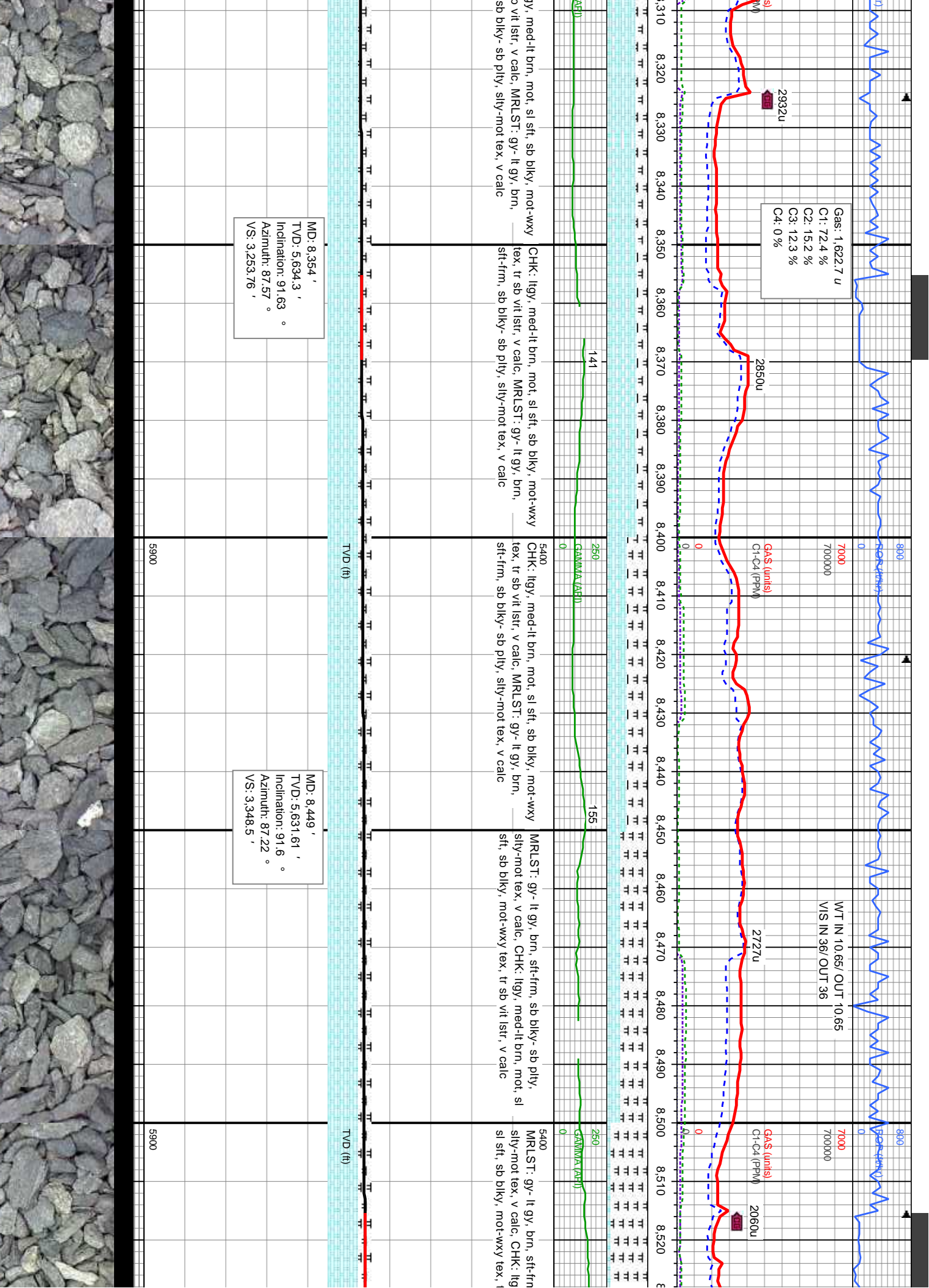






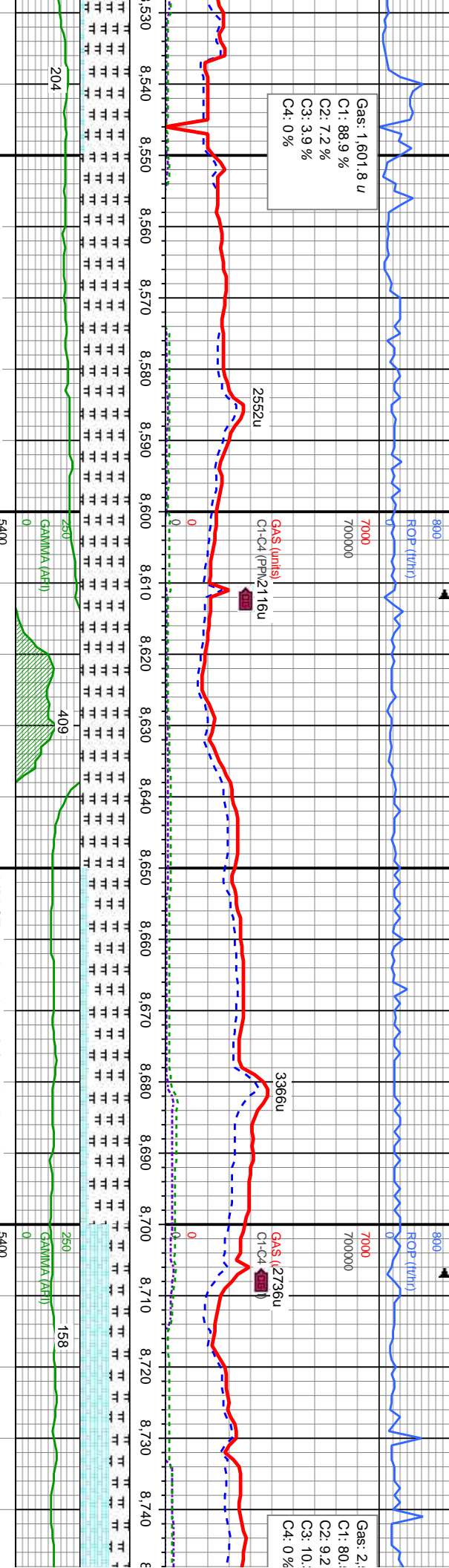






Gas: 1.6018 u  
C1: 88.9 %  
C2: 7.2 %  
C3: 3.9 %  
C4: 0 %

Gas: 2.1  
C1: 80.0  
C2: 9.2  
C3: 10.0  
C4: 0 %



h, sb blk-y- sb ply,  
y, med-lt brn, mot,  
r sb vit lstr, v calc

MRLST: gy- lt gy, brn, sft-frm, sb blk-y- sb ply,  
sily-mot tex, v calc

MRLST: gy- lt gy, brn, sft-frm, sb blk-y- sb  
ply, sily-mot tex, v calc

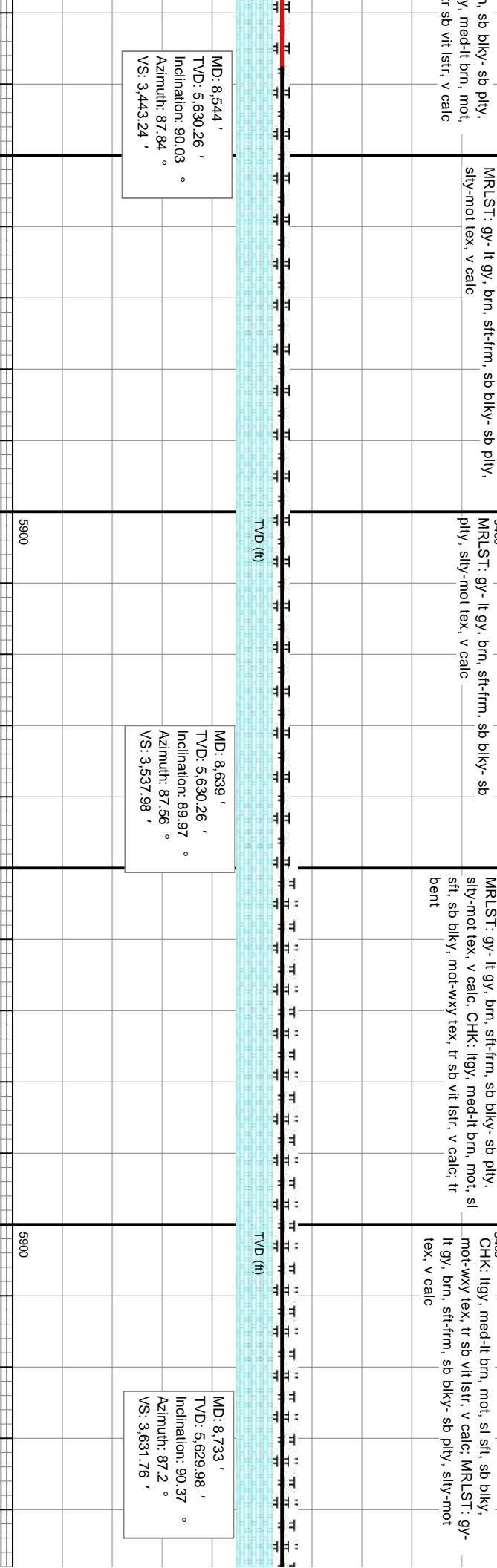
MRLST: gy- lt gy, brn, sft-frm, sb blk-y- sb  
sily-mot tex, v calc, CHK: ltgy, med-lt brn, mot, sl  
sft, sb blk-y, mot-wxy tex, tr sb vit lstr, v calc; tr  
bent

5400  
CHK: ltgy, med-lt brn, mot, sl sft, sb blk-y,  
mot-wxy tex, tr sb vit lstr, v calc; MRLST: gy-  
lt gy, brn, sft-frm, sb blk-y- sb ply, sily-mot  
tex, v calc

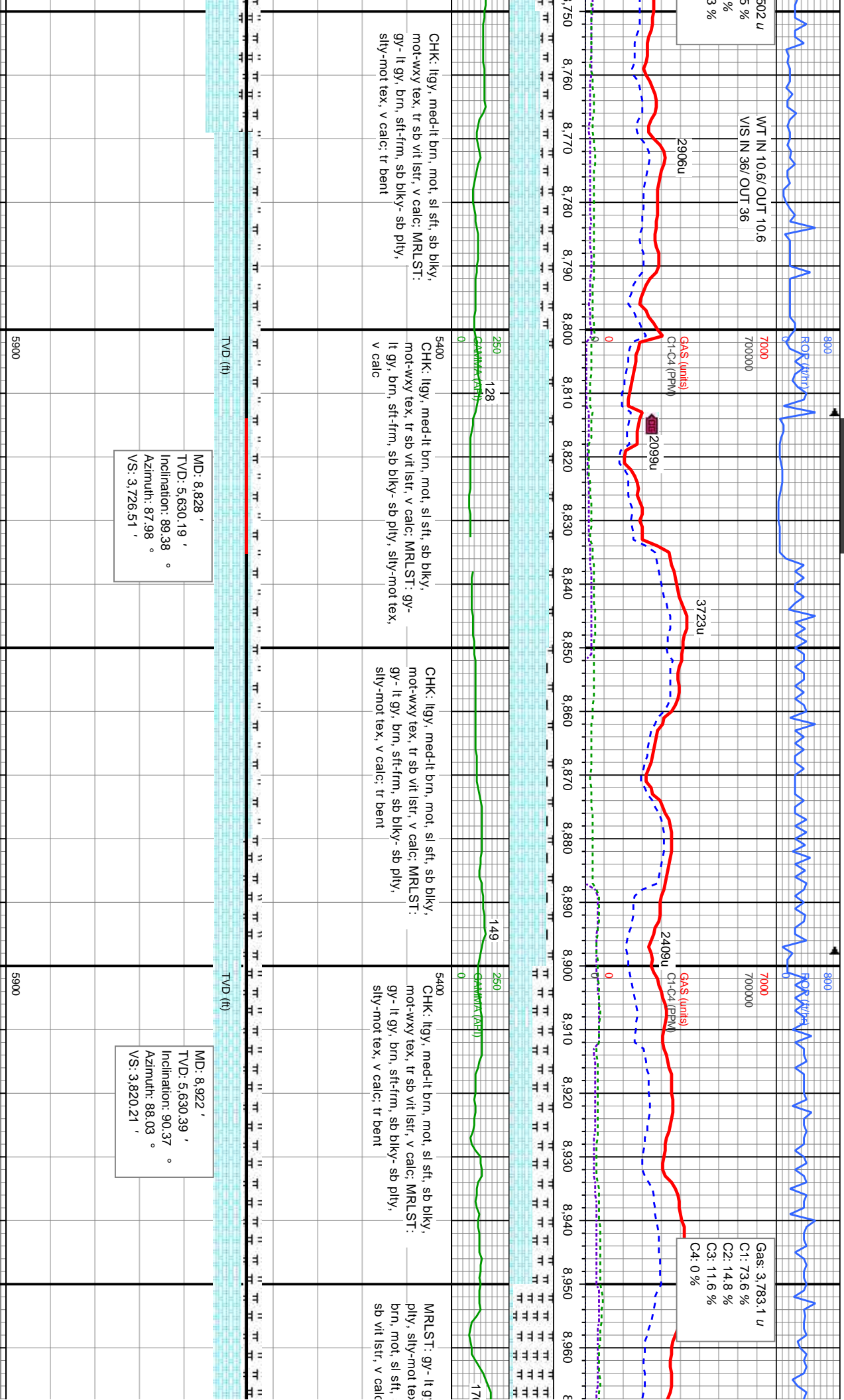
MD: 8,544 '  
TVD: 5,630.26 '  
Inclination: 90.03 °  
Azimuth: 87.84 °  
VS: 3,443.24 '

MD: 8,639 '  
TVD: 5,630.26 '  
Inclination: 89.97 °  
Azimuth: 87.56 °  
VS: 3,537.98 '

MD: 8,733 '  
TVD: 5,629.98 '  
Inclination: 90.37 °  
Azimuth: 87.2 °  
VS: 3,631.76 '

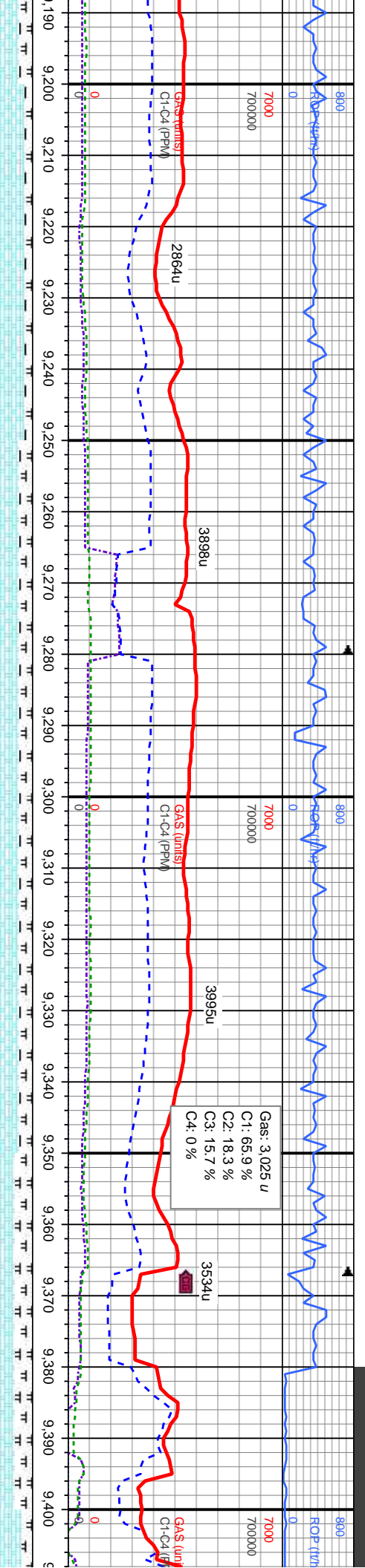












66	250	GAMMA (API)	66	250	GAMMA (API)	118	250	GAMMA (API)
5400	CHK: ltgy, med-lt brn, mot, sl sft, sb blkly, mot-wxy tex, tr sb vit lstr, v calc; MRLST: gy-lt gy, brn, sft-firm, sb blkly-sb plty, stly-mot tex, v calc; tr bent		5400	CHK: ltgy, med-lt brn, mot, sl sft, sb blkly, mot-wxy tex, tr sb vit lstr, v calc; MRLST: gy-lt gy, brn, sft-firm, sb blkly-sb plty, stly-mot tex, v calc		5400	CHK: ltgy, med-lt brn, mot, sl sft, sb blkly, mot-wxy tex, tr sb vit lstr, v calc; MRLST: gy-lt gy, brn, sft-firm, sb blkly-sb plty, stly-mot tex, v calc; tr bent	

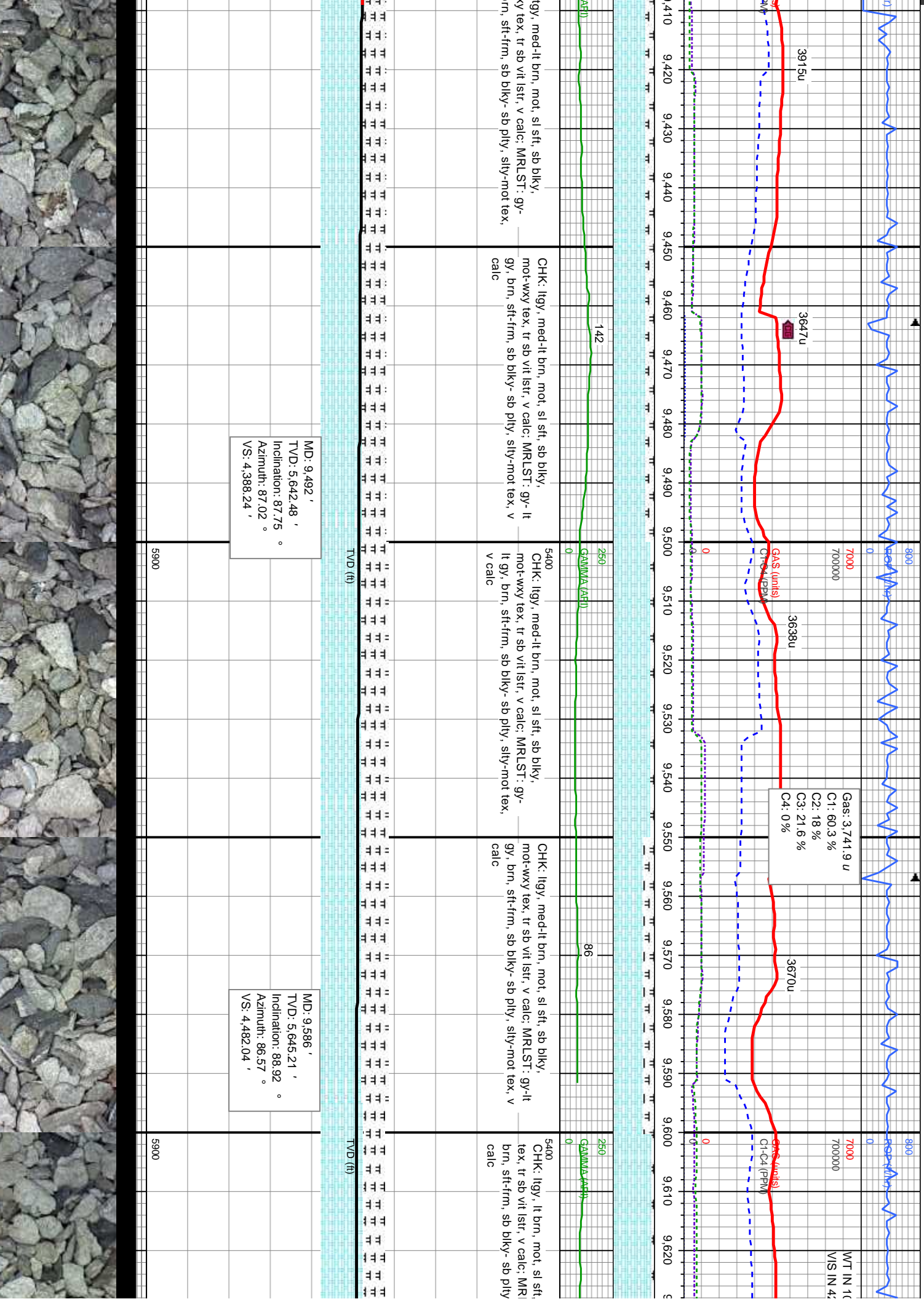
MD: 9,207 '  
TVD: 5,635.48 '  
Inclination: 88.67 °  
Azimuth: 87.87 °  
VS: 4,104.1 '

MD: 9,302 '  
TVD: 5,636.68 '  
Inclination: 89.88 °  
Azimuth: 87.95 °  
VS: 4,198.8 '

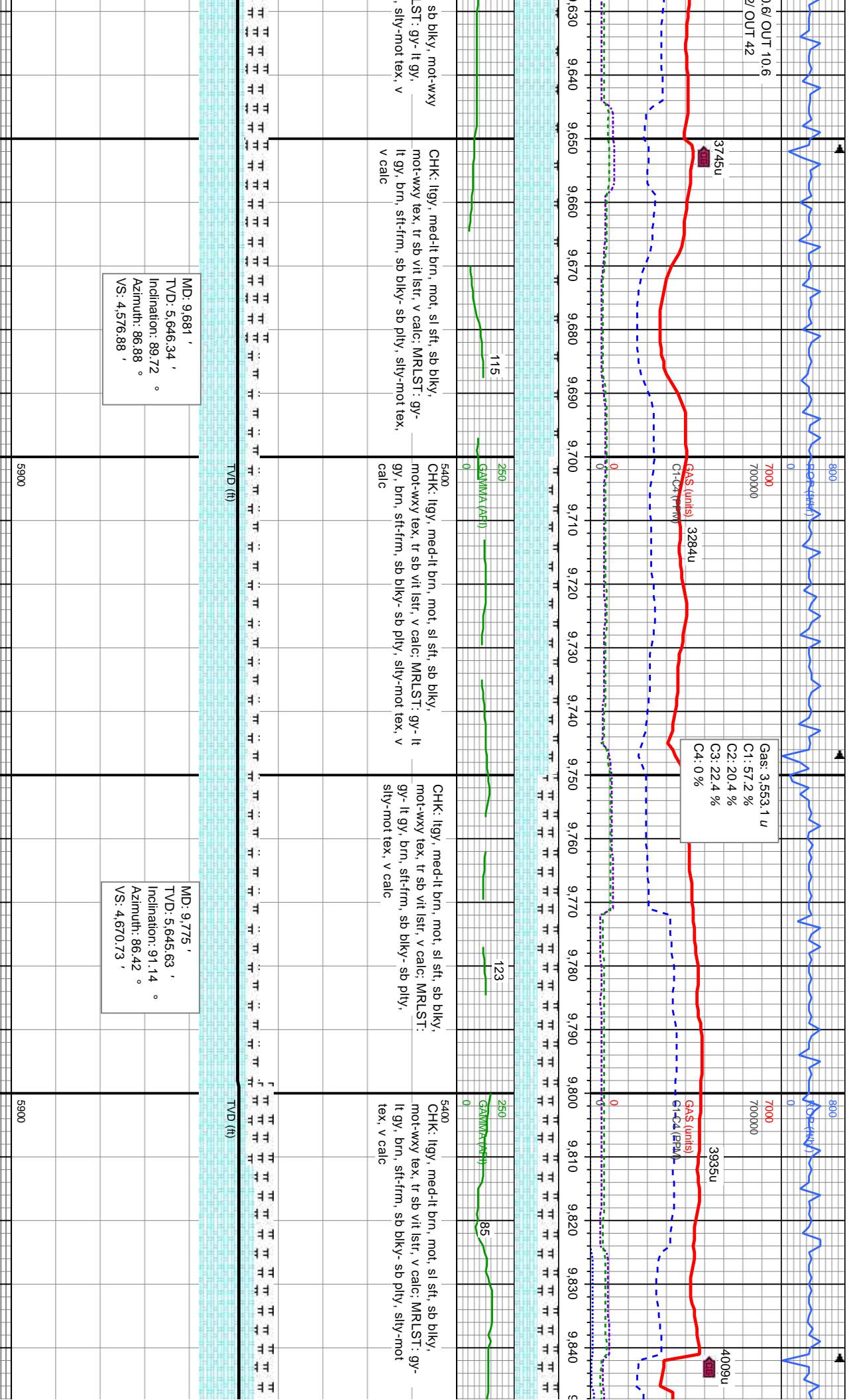
MD: 9,397 '  
TVD: 5,638.7 '  
Inclination: 87.69 °  
Azimuth: 87.35 °  
VS: 4,293.52 '

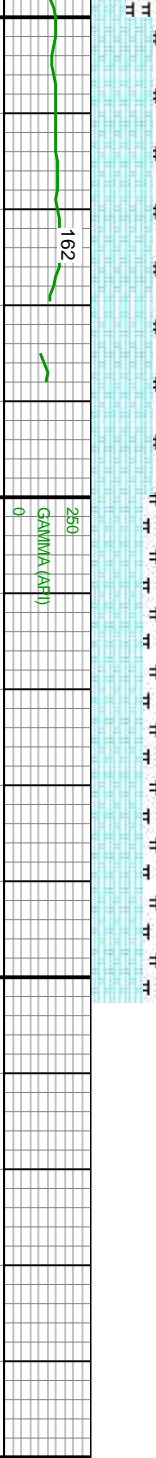
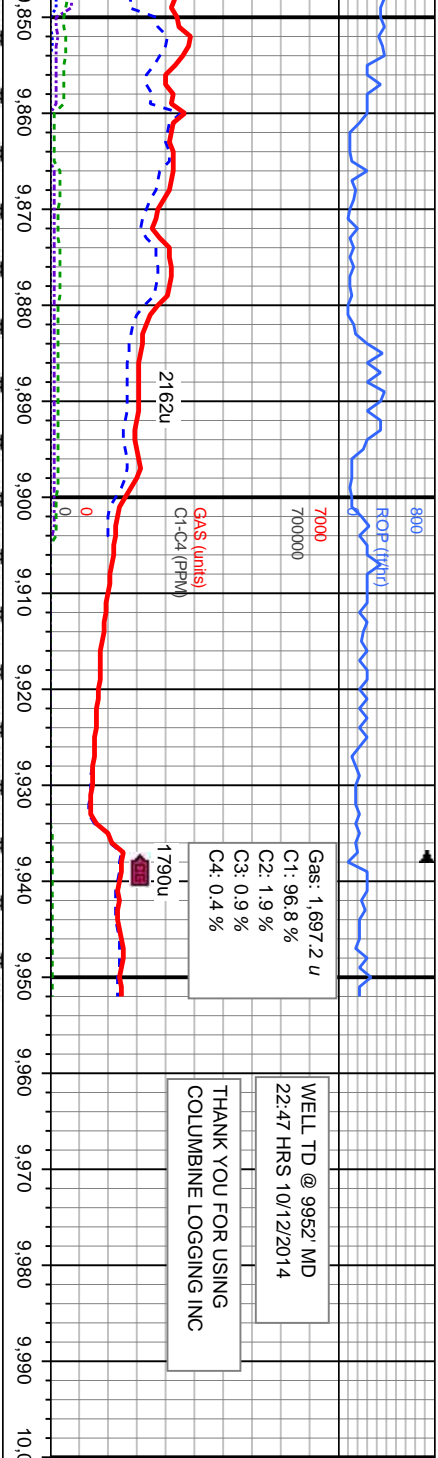












CHK: lty, med-lt brn, mot, sl sft, sb blk, mot-wxy  
tex, tr sb vit lstr, v calc: MRLST: gy-lt gy, brn,  
sft-firm, sb blk- sb ply, silty-mot tex, v calc

CHK: lty, med-lt brn, mot, sl sft, sb blk, mot-wxy  
tex, tr sb vit lstr, v calc: MRLST: gy-lt gy, brn,  
sft-firm, sb blk- sb ply, silty-mot tex, v calc

MD: 9,870 '  
TVD: 5,643.1 '  
Inclination: 91.91 °  
Azimuth: 86.52 °  
VS: 4,765.56 '

MD: 9,952 '  
TVD: 5,640.37 '  
Inclination: 91.91 °  
Azimuth: 86.52 °  
VS: 4,847.4 '

PROJECTION TO BIT

