



Scale: 5" / 100'
Measured Depth Log

Well Name ANTELOPE 11-14-15HNB

Location NWNE Sec. 15 T5N R62W

State Colorado

County Weld

Country United States

Rig Number Cade 22

API Number 05-123-39888-00

Field DJ Basin

Spud Date 8/1/2014

Drilling Completed 9/14/2014

Surface Coordinates 382 FNL X 1093 FWL

Ground Elevation 4698

K.B. Elevation 4715

Logged Interval 5900' To 10930'

Total Depth 10930'

Formation Niobrara "B" Chalk

Type of Drilling Fluid WBM

Geologist

Name Leo Carrasco/Chris Irwin

Company Decollement Consulting Inc.

Address 13300 Braun Road
Golden, Co 80401

Zone Color Coding

Oil
Note
Error

Condensate
Core
Water

Gas
Pressure
Seal

Rock Types

UNKNOWN

ANHYDRITE

GYPSUM

CHERT
COAL

MARLSTONE

SILTSTONE
SANDSTONE

SALT

SIDERITE or LIMONITE

LIMESTONE

DOLOMITE

MUDSTONE

SHALE

SHALE GRAY

SHALE COLORED

BRECCIA

TILL

BENTONITE

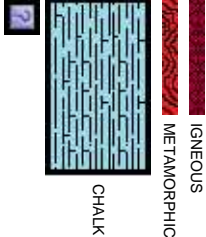
TUFF

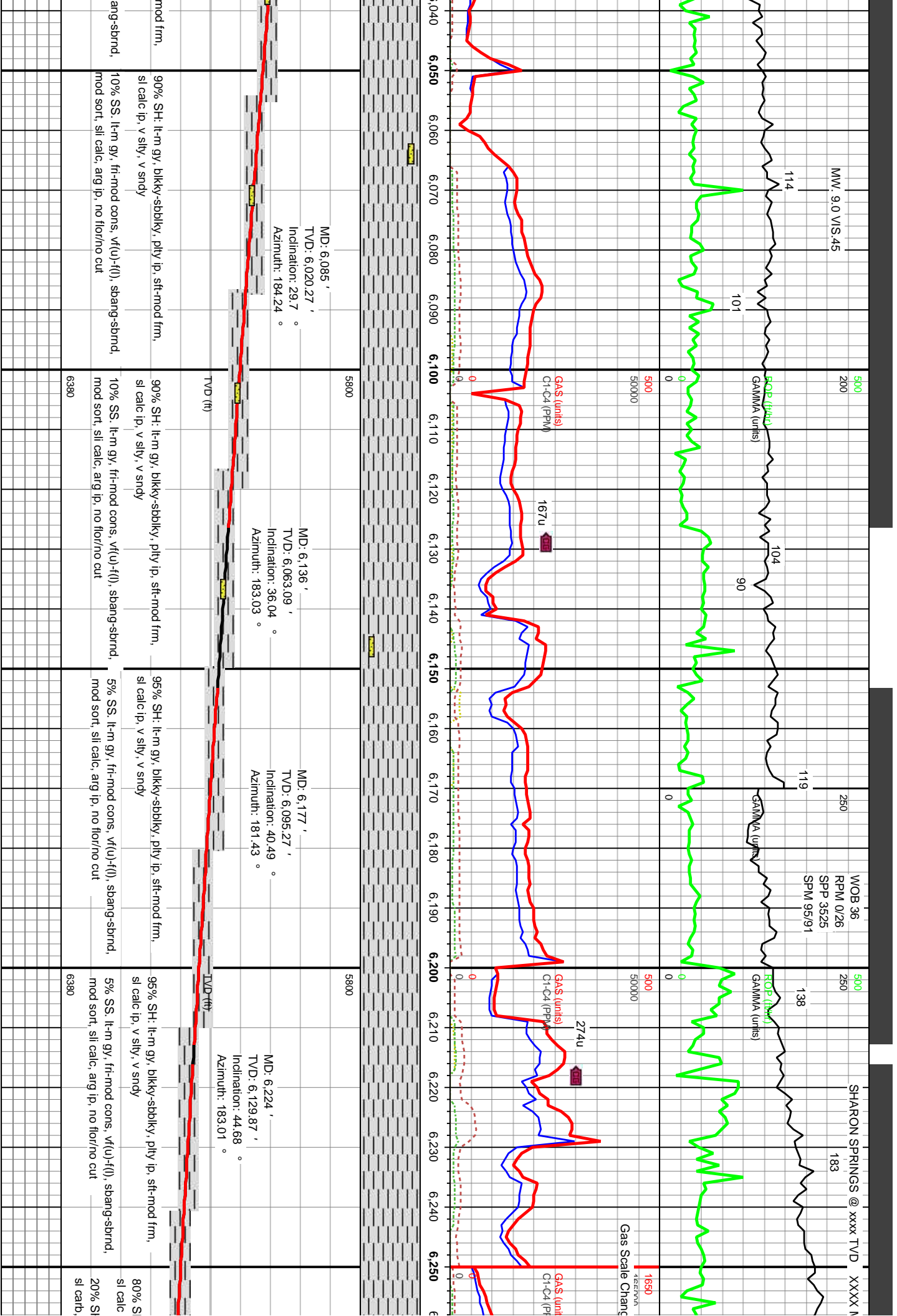
Accessories

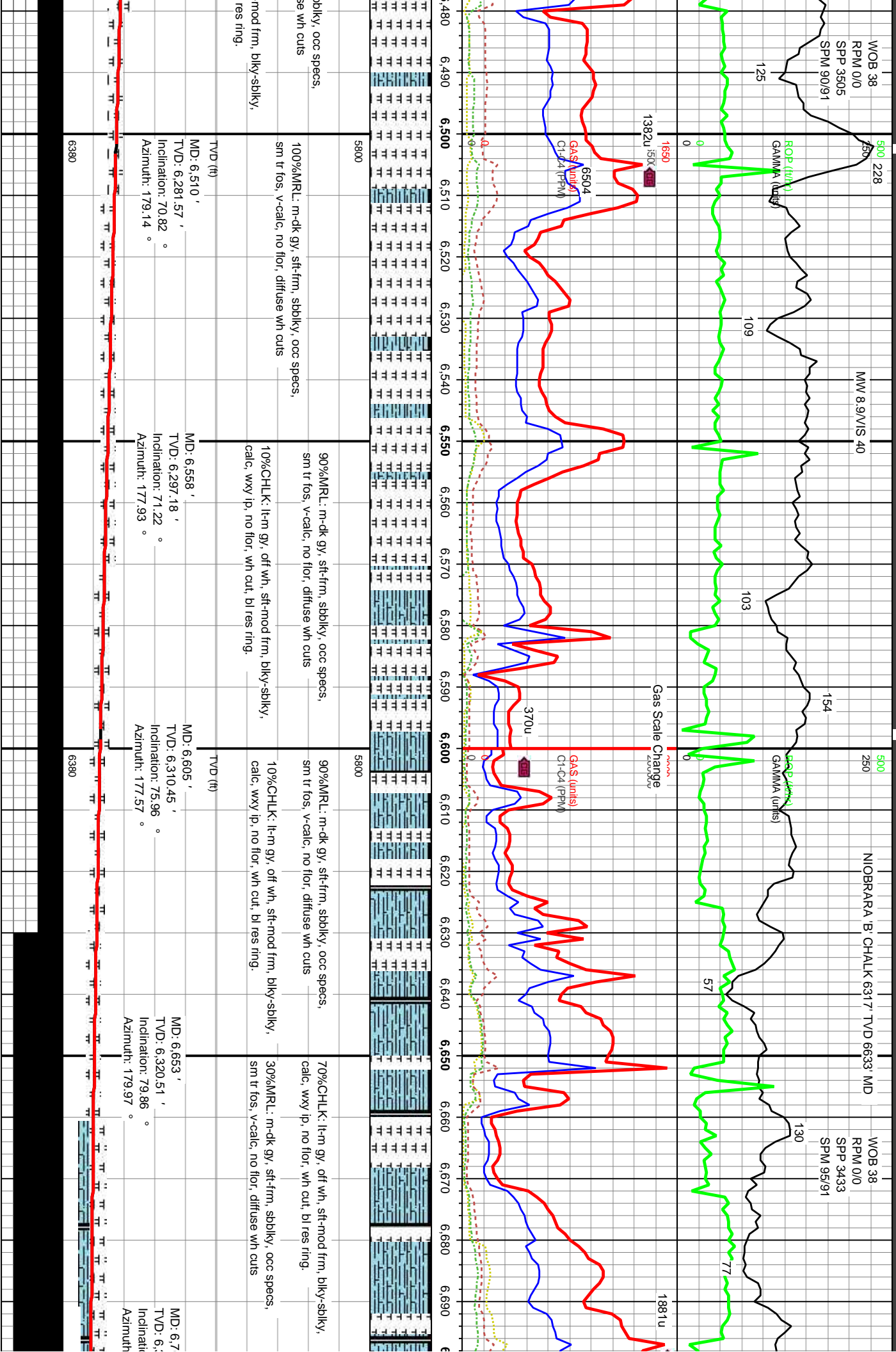
Fossils		Stringer	
F FOSSIL	— ARGILLACEOUS	↘ GLAUCONITE	
GASTROPOD	/ ARGILLITE GRAIN	≡ GYPSIFEROUS	
ALGAE	Ø OOLITE	⌒ HEAVY MINERAL	
AMPHIPORA	⊖ OSTRACOD	⌒ KAOLIN	— ANHYDRITE STRINGER
BELEMNITE	⊖ PELECYPOD	⊖ BRECCIA FRAGMENTS	— BENTONITE STRINGER
BIOCLASTIC	⌒ PELLET	⌒ CALCAREOUS	— COAL STRINGER
BRACHIOPOD	⊖ PISOLITE	■ CARBONACEOUS FLAKES	— DOLOMITE STRINGER
BRYOZOA	⌒ PLANT REMAINS	▲ CHITDK	— GYPSUM STRINGER
CEPHALOPOD	⌒ PLANT SPORES	▲ CHITL	— LIMESTONE STRINGER
CORAL	⊖ SCAPHOPOD	— COAL - THIN BEDS	⌒ PYRITE
CRINOID	⌒ STROMATOPOROID	⌒ DOLOMITIC	⌒ SALT CAST
ECHINOID	+	FELDSPAR	⌒ SANDY
FISH	● FERRUGINOUS PELLETT	↗ SILICEOUS	— SHALE STRINGER
FORAMINIFERA	≡ ANHYDRITIC	↘ FERRUGINOUS	— SILTSTONE STRINGER
		↘ TUFFACEOUS	
		↗ SILTY	

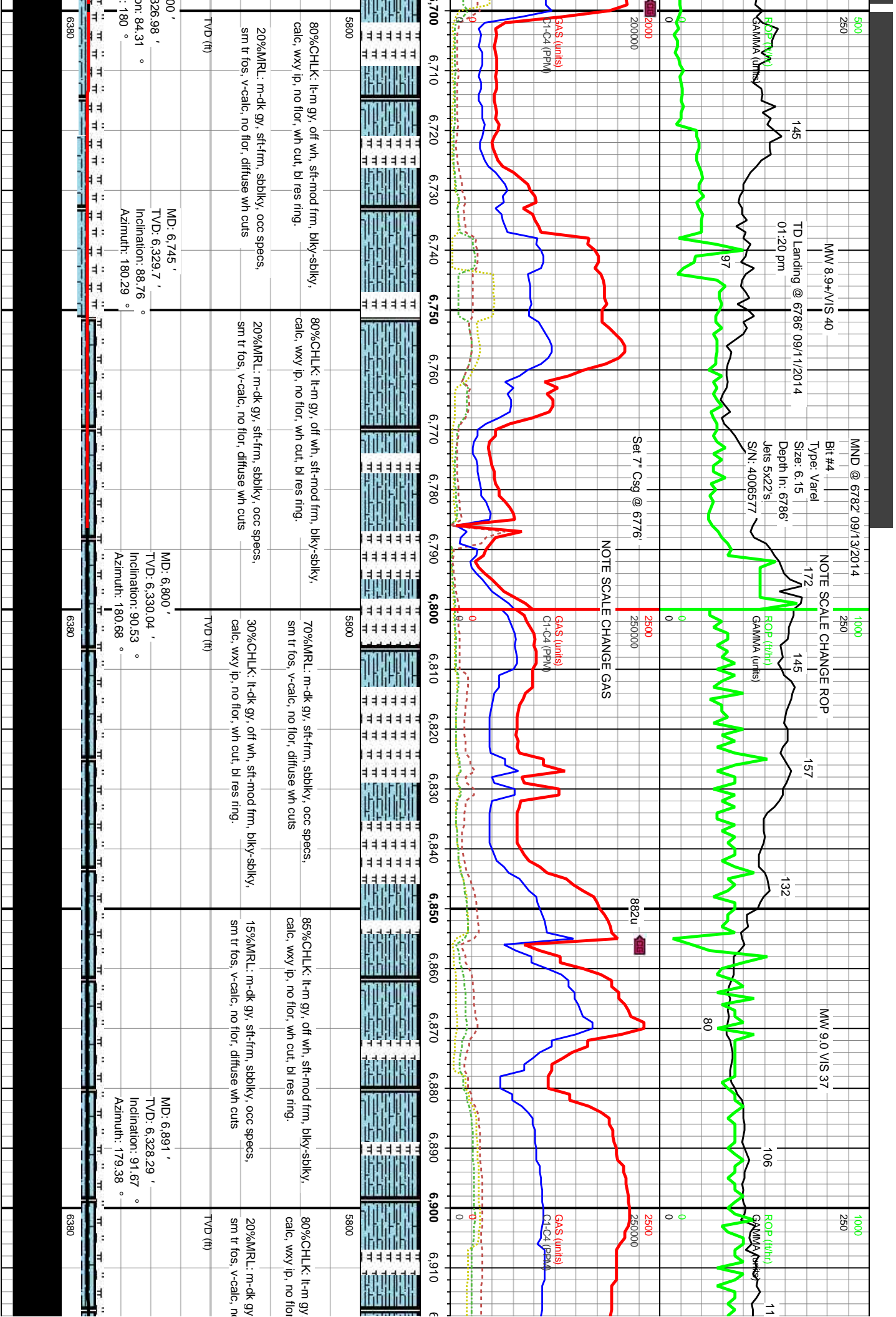
Other Symbols

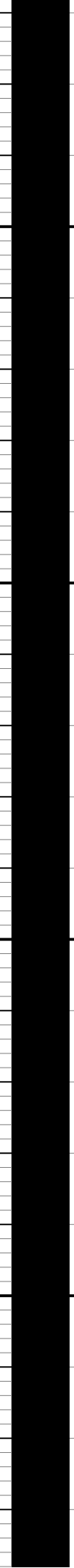
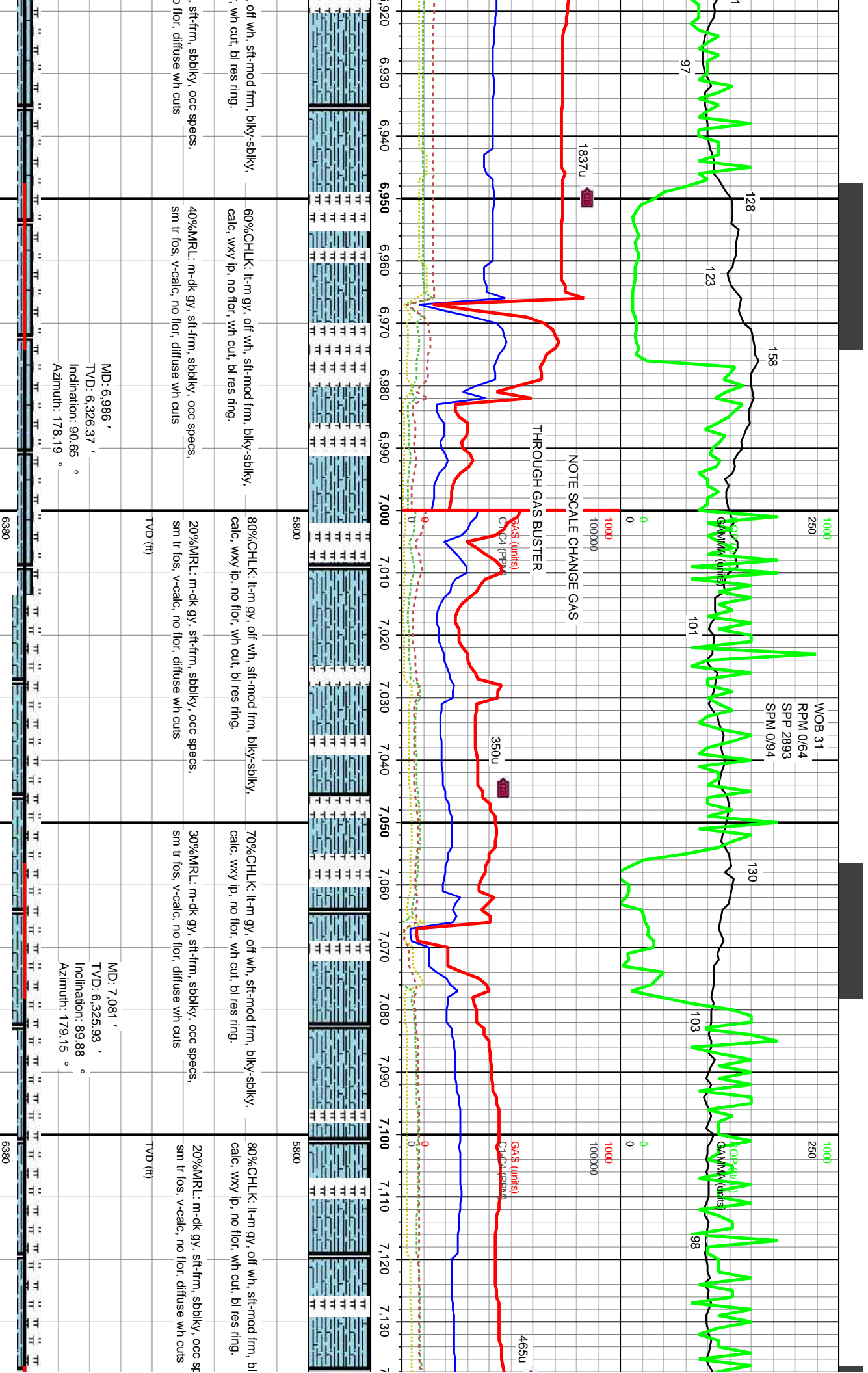
Oil Show		Rounding	
Ø ORGANIC	↔ FORMATION TOP	L LITHOGRAPHIC	
P PINPOINT	⚡ GAS SHOW	MX MICROXLN	
∇ VUGGY	⌒ MINDEPTH MN DEPTH	MMS MUDSTONE	
DEAD	⌒ NORMAL FAULT	R ROUNDED	PS PACKSTONE
EVEN	⌒ OIL SHOW	▢ SUBANG	WS WACKESTONE
QUESTIONABLE	⌒ OVERTURNED STRATA	P SUBRND	
SPOTTED STAINING	▲ BIT		
Engineering		Textures	
	■ CASING	↗ REVERSE FAULT	
	▲ CONNECTION (LEFT)	▲ SIDEWALL CORE (LEFT)	
	▲ CONNECTION (RIGHT)	▲ SIDEWALL CORE (RIGHT)	
	⬅ CONNECTION GAS	▨ SLIDE	
	⬇ CORE - LOST	05 SURVEY	
	■ CORE - RECOVERED	⬅ TRIP GAS	
	⌒ INTEROOULTIC	⬅ WIRELINE TESTED - LEFT	E EARTHY
	⌒ MOLDIC	⬅ WIRELINE TESTED - RT	FX FINELYXLN
			GS GRAINSTONE
Porosity		Sorting	
		M MODERATE	
		P POOR	
		W WELL	
Chalk			

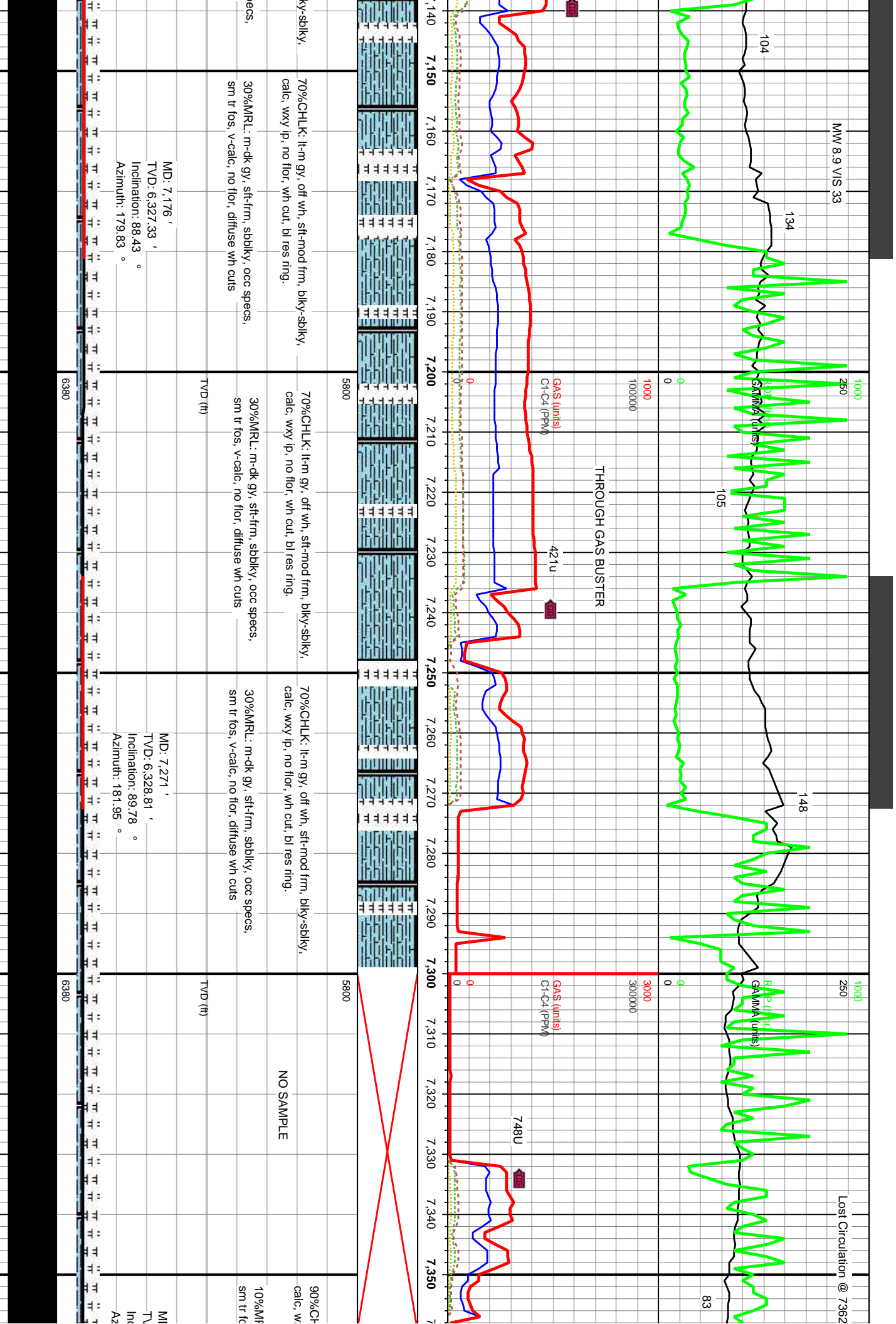


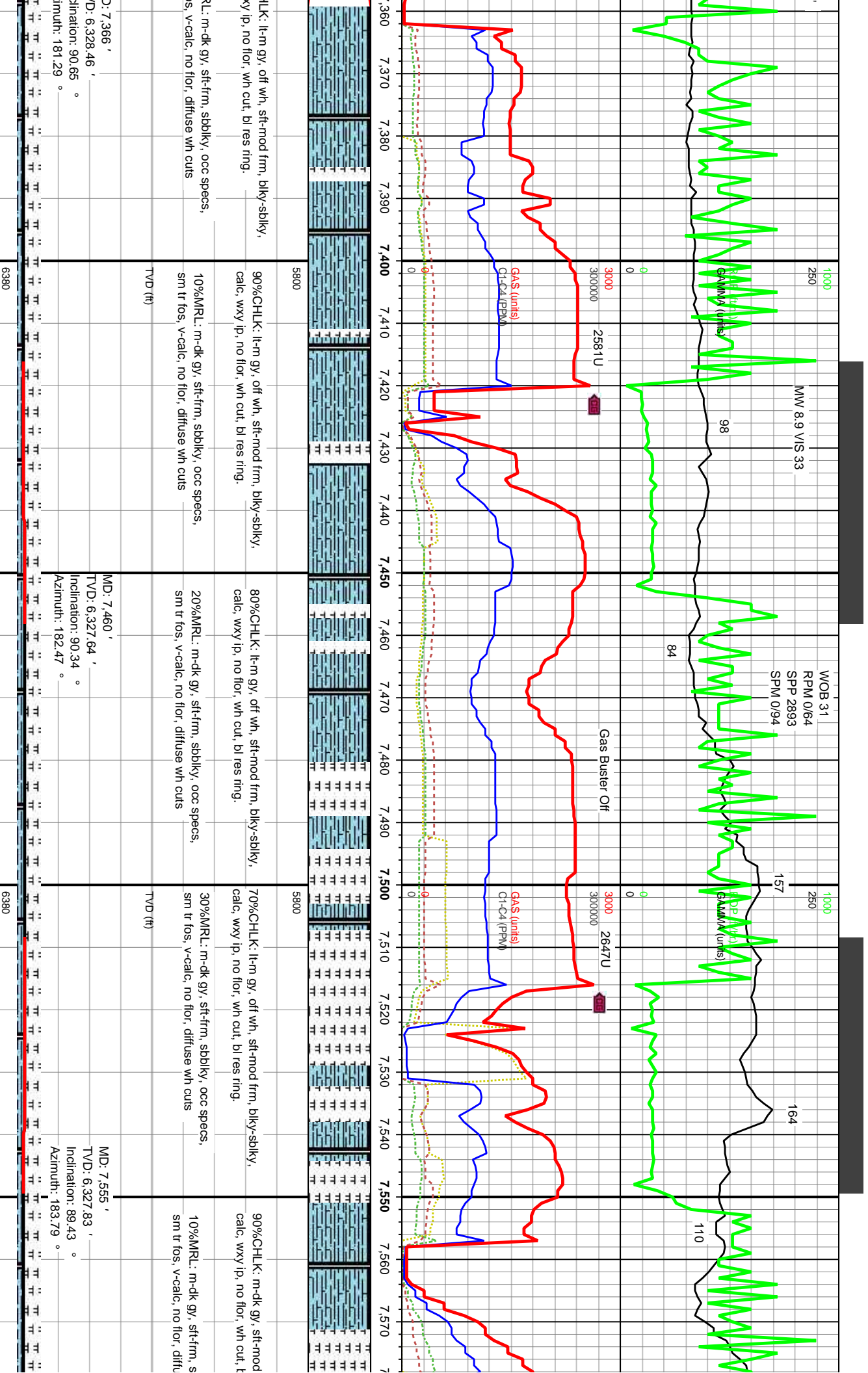












ALK: It-m gy, off wh, sft-mod frm, blk-y-sbly,
ky ip, no flor, wh cut, bl res ring.

RL: m-dk gy, sft-firm, sbblky, occ specs, s, v-calc, no flor, diffuse wh cuts

90%CHLk: It-n gy, off wh, stf-mod frm, blyk-sblyk, calc, wxy lp, no flor, wh cut, bl res ring.	
10%MRL: m-dk gy, stf-frm, sblyk, occ specs, sm tr fos, v-calc, no flor, diffuse wh cuts	
TVD (ft)	

80%CHLK: lt-m gy, off wh, stf-mod frm, bky-sbiky, calc, wxy ip, no flor, wh cut, bl res ring.

20%MRFL: m-dk gy, stf-frm, sbiky, occ specs, sm tr fos, v-calc, no flor, diffuse wh cuts

70%CHLCL: lt-m gy, off wh, stf-mod frm, blyk-sblyk, calc, wxy lp, no flor, wh cut, bl res ring.	
30%MRL: m-dk gy, stf-frm, sbply, occ specs, sm tr fos, v-calc, no flor, diffuse wh cuts	
TVD (ft)	

90%CHLK: m-dk gy, sft-mod
calc, wxy ip, no flor, wh cut, t

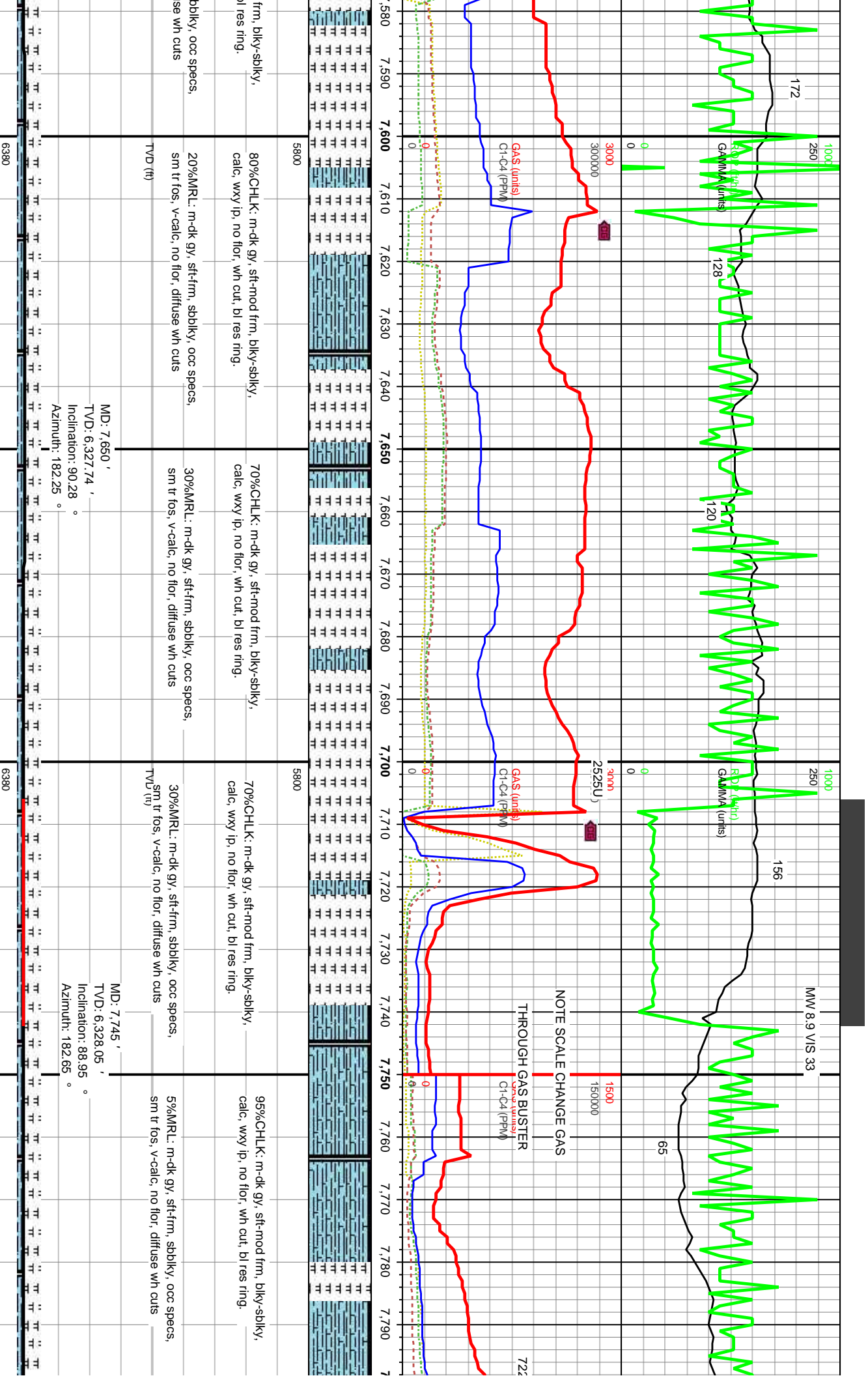
D: 7,366 ' —
 VD: 6,328.46 ' —
 inclination: 90.65 °
 azimuth: 181.29 ° —

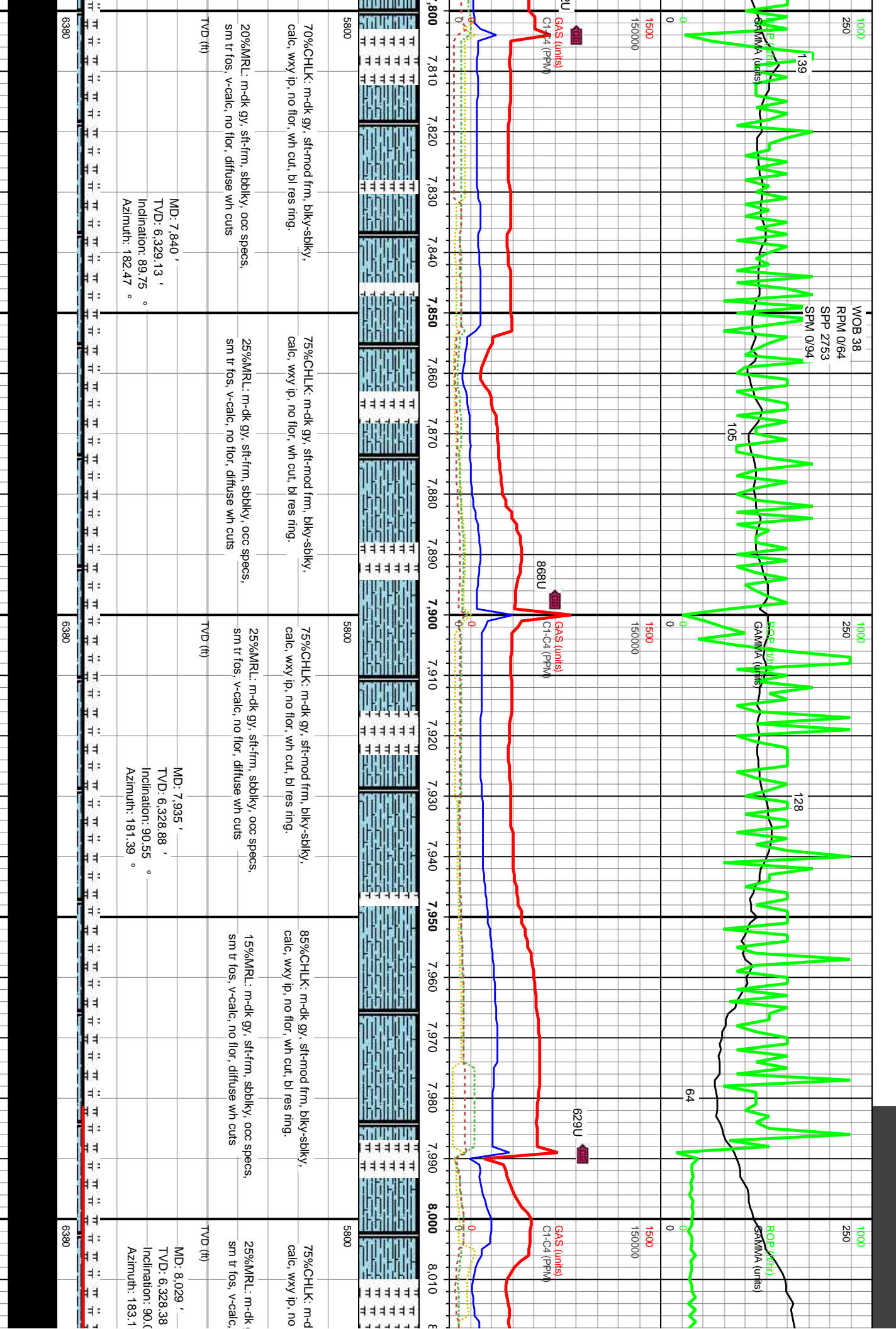
MD: 7,460 '
 TVD: 6,327.64 '
 Inclination: 90.34 °
 Azimuth: 182.47 °

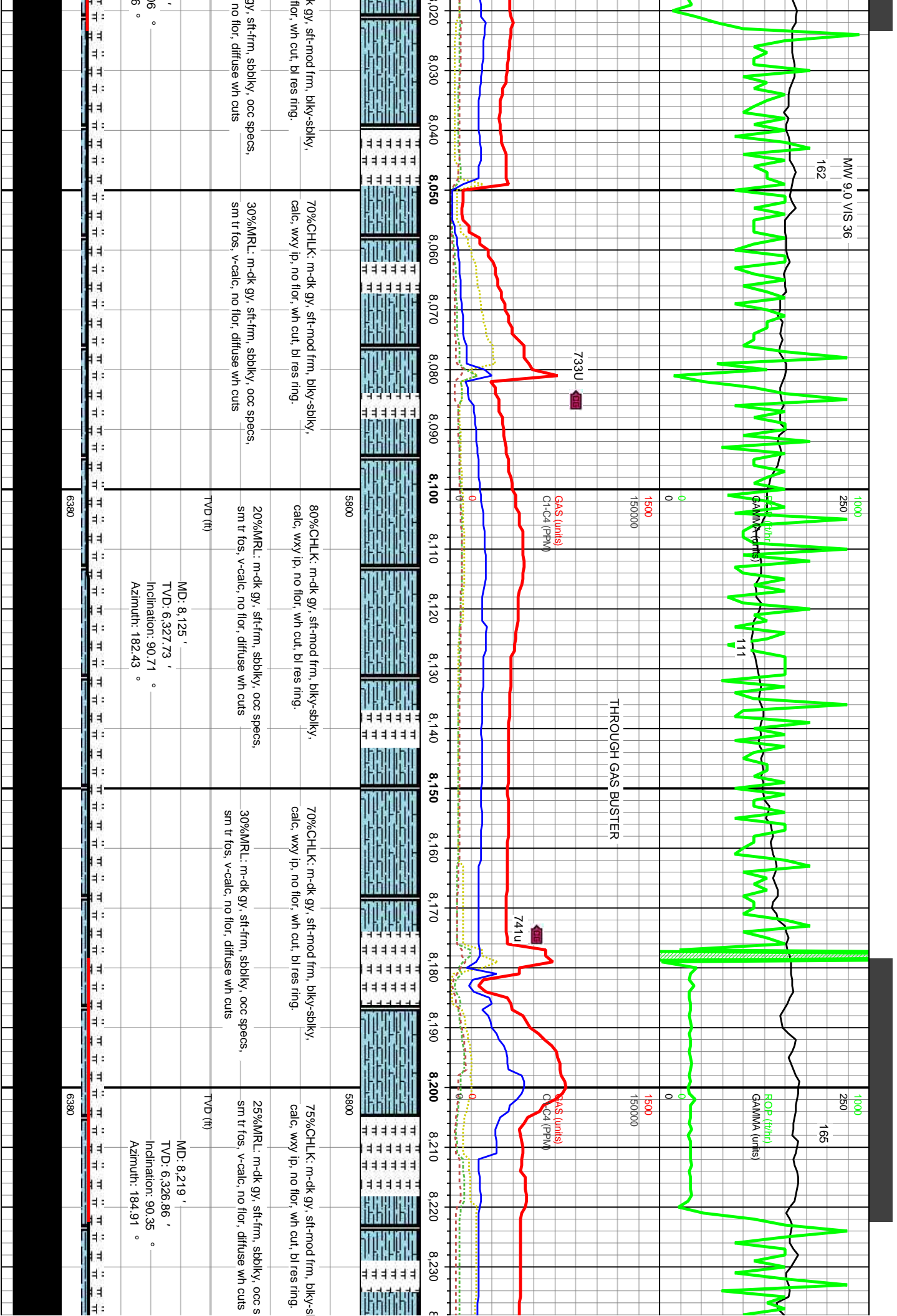
MD: 7.555 '
 TVD: 6,327.83 '
 Inclination: 89.43 °
 Azimuth: 183.79 °

6380

6380

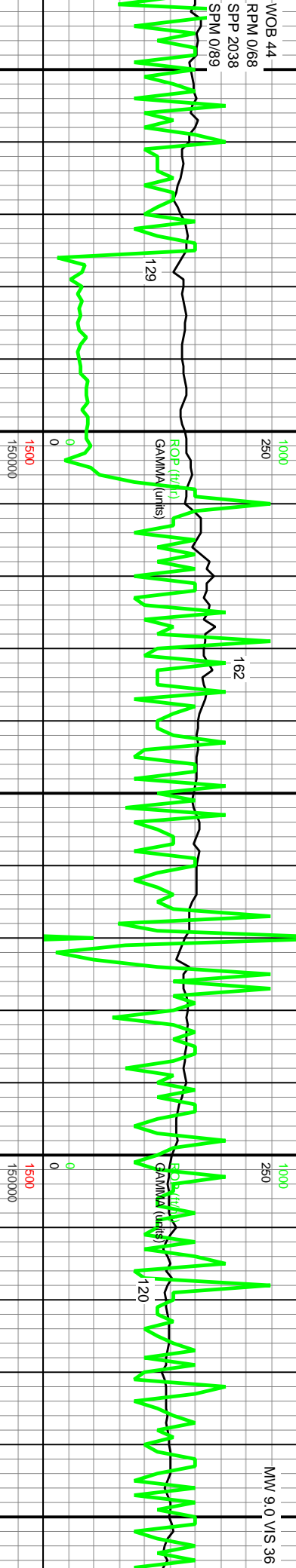






WOB 44
RPM 0/68
SPM 2038
SPM 0/89

MMW 9.0 VIS 36



653u

507u

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

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

8,240 8,250 8,260 8,270 8,280 8,290 8,300 8,310 8,320 8,330 8,340 8,350 8,360 8,370 8,380 8,390 8,400 8,410 8,420 8,430 8,440 8,450

Y, 70%CHLK: m-dk gy, sft-mod frm, blk-y-sbiky, calc, wxy ip, no flor, wh cut, bl res ring.	30%MR.L: m-dk gy, sft-frm, sbbiky, occ specs, sm tr fos, v-calc, no flor, diffuse wh cuts	5800	70%CHLK: m-dk gy, sft-mod frm, blk-y-sbiky, calc, wxy ip, no flor, wh cut, bl res ring.	30%MR.L: m-dk gy, sft-frm, sbbiky, occ specs, sm tr fos, v-calc, no flor, diffuse wh cuts	5800	80%CHLK: m-dk gy, sft-mod frm, blk-y-sbiky, calc, wxy ip, no flor, wh cut, bl res ring.	20%MR.L: m-dk gy, sft-frm, sbbiky, occ specs, sm tr fos, v-calc, no flor, diffuse wh cuts	5800	75%CHLK: m-dk gy, sft-mod frm, blk-y-sbiky, calc, wxy ip, no flor, wh cut, bl res ring.	25%MR.L: m-dk gy, sft-frm, sbbiky, occ specs, sm tr fos, v-calc, no flor, diffuse wh cuts	5800	75%CHLK: m-dk gy, sft-mod frm, blk-y-sbiky, calc, wxy ip, no flor, wh cut, bl res ring.	25%MR.L: m-dk gy, sft-frm, sbbiky, occ specs, sm tr
MD: 8,314 ' TVD: 6,328.21 ' Inclination: 88.03 ° Azimuth: 184.55 °													
MD: 8,409 ' TVD: 6,330.5 ' Inclination: 89.2 ° Azimuth: 184.4 °													

6390

6390

