



Scale: 5" / 100'  
Measured Depth Log

Well Name HUNT 8-60-17A-8-6

Location SWNW SEC: 17 TWP: 8N RANGE: 60W

State Colorado County Weld

Country United States Rig Number Patterson 346

API Number 05-123-4779C Field Wattenberg

Geographic Region DJ Basin

Spud Date 11/3/2018

Surface Coordinates SEC.17-T08N-R60W

Lat/Long: 40.663447,-104.122711

Bottom Hole Coordinates SEC: 8 TWP: 8N R60W

Ground Elevation 4944 K.B. Elevation 4969

Logged Interval 5910

Formation Niobrara C

Type of Drilling Fluid Oil Based Mud

Operator

Company Bison Oil and Gas

Address 518 17th Street  
Suite 1800  
Denver, CO 80202

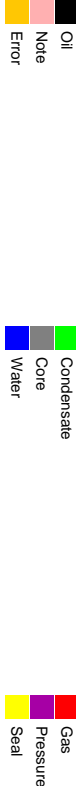
Geologist

Name Tracy Lawson, Josh Balmat

Company Terra Guidance

Address 67 West Floyd Avenue  
Englewood, CO 80110

Color Coding



Rock Types

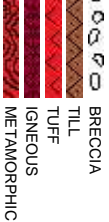


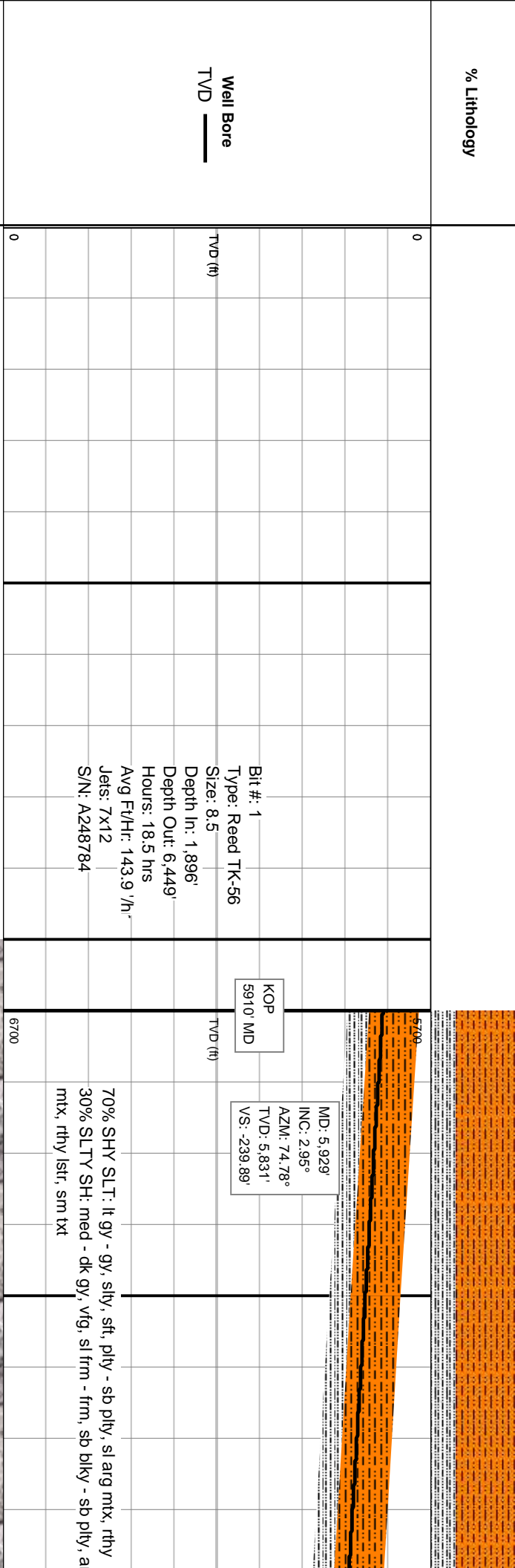
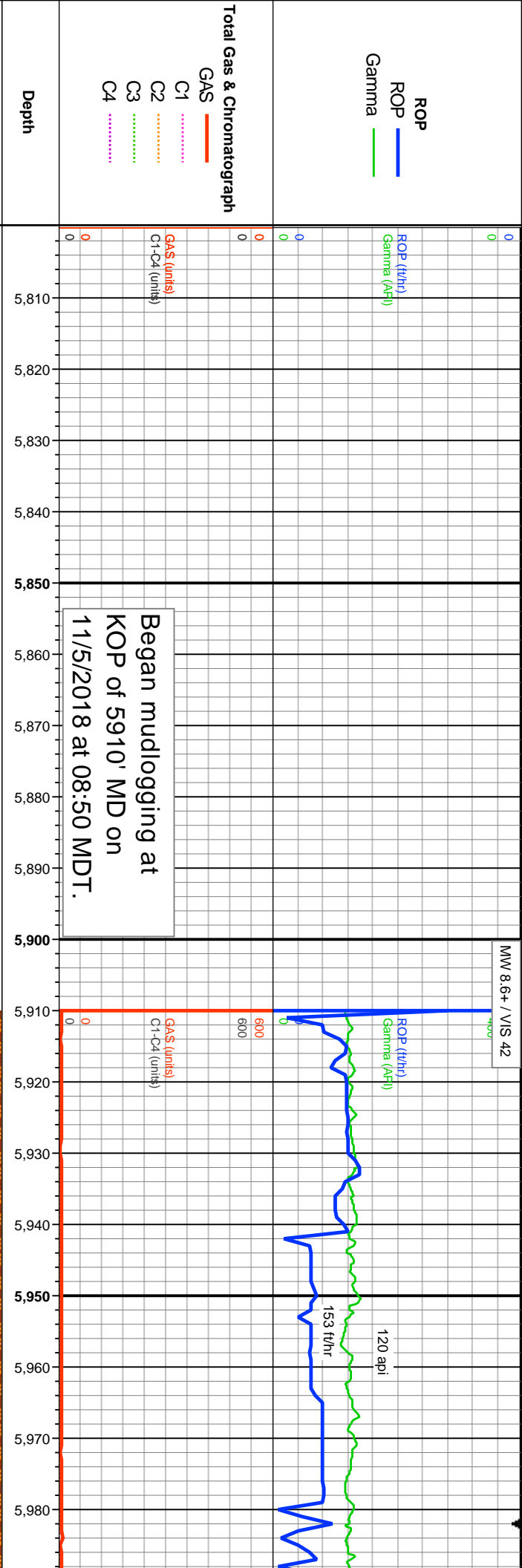
## Accessories

Fossils		Stringer	
F FOSSIL	- ARGILLACEOUS	GLAUCONITE	
GASTROPOD	/ ARGILLITE GRAIN	GYPSIFEROUS	
ALGAE	B BENTONITE	HEAVY MINERAL	ANHYDRITE STRINGER
AMPHIPORA	BITUMENOUS SUBSTANCE	K KAOLIN	BENTONITE STRINGER
BELEMNITE	BRECCIA FRAGMENTS	MARLSTONE	COAL STRINGER
BIOCLASTIC	↑ CALCAREOUS	MINERAL CRYSTALS	DOLOMITE STRINGER
BRACHIOPOD	■ CARBONACEOUS FLAKES	● NODULES	GYPSUM STRINGER
BRACHIOPOD	▲ CHITK	● PHOSPHATE PELLETS	LIMESTONE STRINGER
BRYOZOA	△ CHITL	P PYRITE	MARLSTONE (CALC) STRG
CEPHALOPOD	— COAL - THIN BEDS	■ SALT CAST	MARLSTONE (DOL) STRG
CORAL	⚡ SCAPHOPOD	· SANDY	SANDSTONE STRINGER
CRINOID	III STROMATOPOROID	▲ SILICEOUS	SHALE STRINGER
ECHINOID	+ FELDSPAR	● SILTY	SILTSTONE STRINGER
FISH	● FERRUGINOUS PELLETT	▼ TUFFACEOUS	
FORAMINIFERA	// ANHYDRITIC		

## Other Symbols

Oil Show		Engineering		Rounding	
ORGANIC	DST INTERVAL	MINDEPTH MN DEPTH	▲ ANGULAR	M MUDSTONE	
P PINPOINT	FAULT	NORMAL FAULT	R ROUNDED	P PACKSTONE	
DEAD	✓ VUGGY	↔ FORMATION TOP	● OIL SHOW	W SUBANG	W WACKESTONE
EVEN	✖ GAS SHOW				
QUESTIONABLE					
SPOTTED STAINING	▲ BIT				
	CASING				
Porosity		Textures		Sorting	
E EARTHY	▶ CONNECTION (RIGHT)	↕ REVERSE FAULT		M MODERATE	
FENESTRAL	▼ CONNECTION (DOWN)	▲ SIDEWALL CORE (LEFT)		P POOR	
F FRACTURE	▬ CONNECTION GAS	▲ SIDEWALL CORE (RIGHT)		W WELL	
INTERCRYSTALLINE	▬ CONNECTION GAS (DOWN)	▬ SLIDE			
INTEROOLITIC	↓ CORE - LOST	OS SURVEY			
MOLDIC	■ CORE - RECOVERED	TRIP GAS			

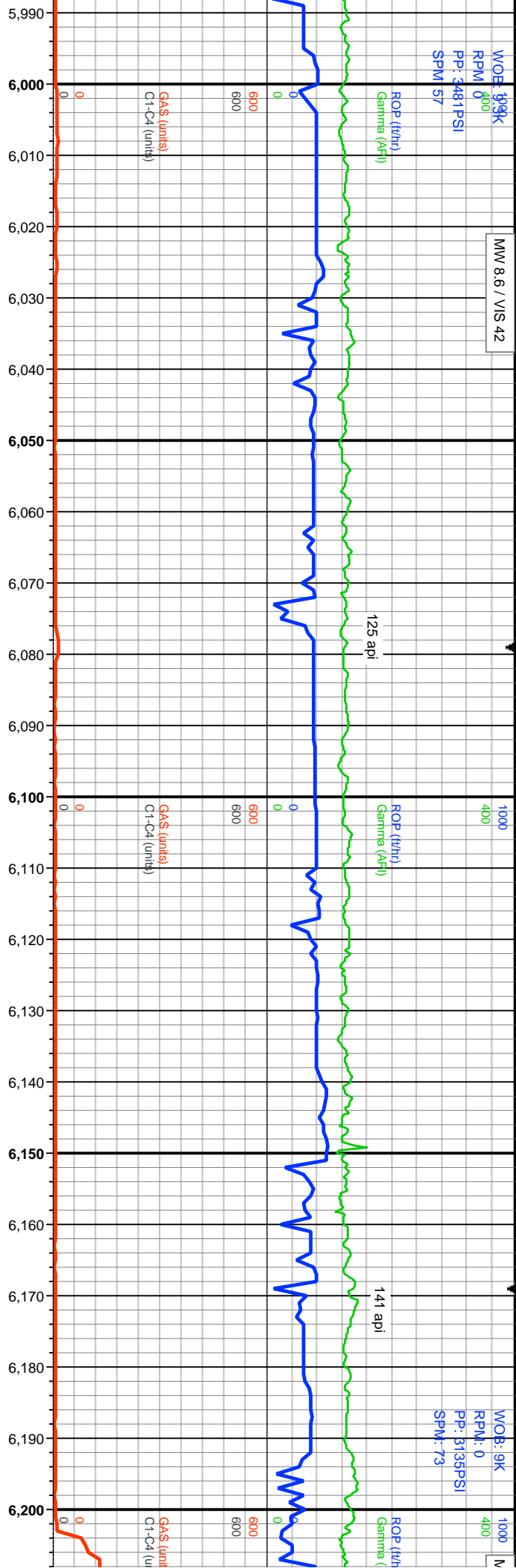




MW 8.6 / VIS 42

WOB: 393K  
RPM: 0  
PP: 3481PSI  
SPM: 57

WOB: 9K  
RPM: 0  
PP: 3135PSI  
SPM: 73

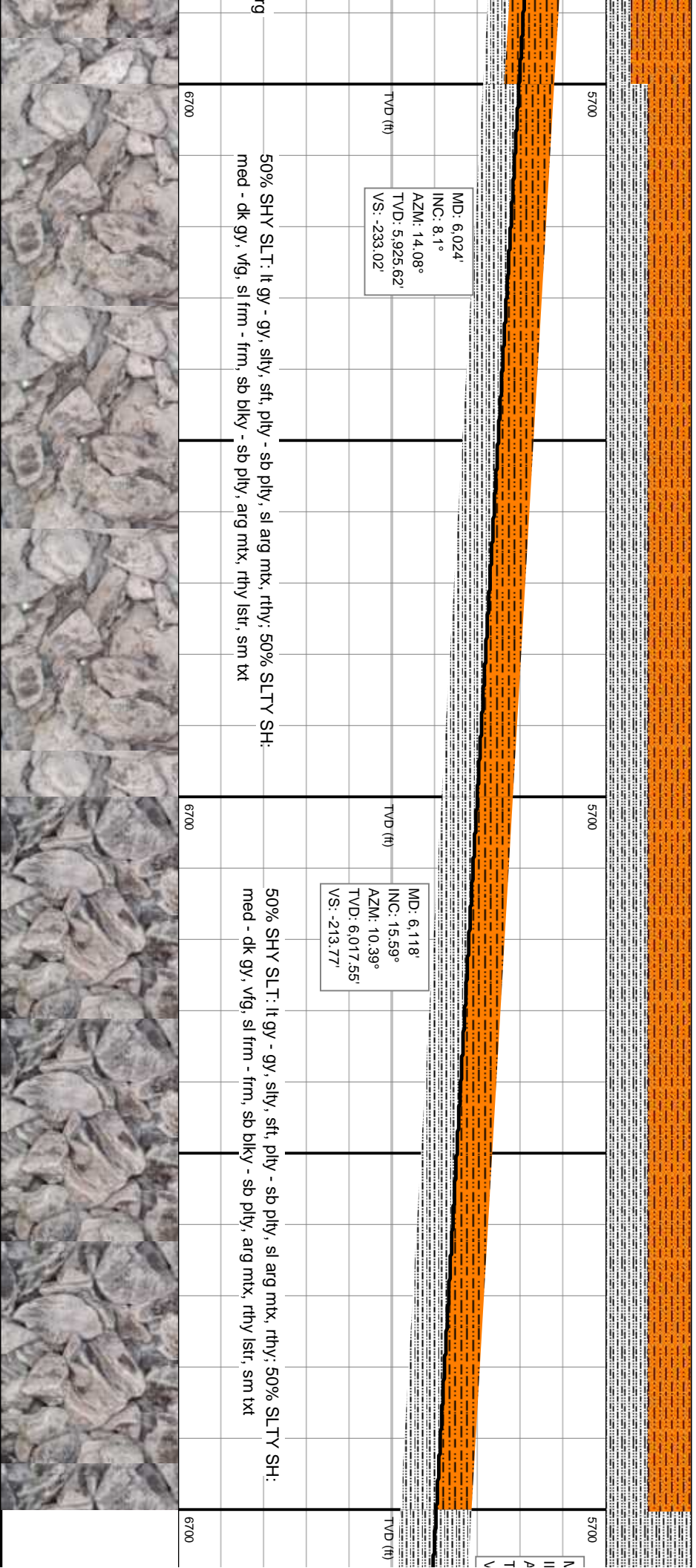


MD: 6.024'  
INC: 8.1°  
AZM: 14.08°  
TVD: 5.925.62'  
VS: -233.02'

MD: 6.118'  
INC: 15.59°  
AZM: 10.39°  
TVD: 6.017.55'  
VS: -213.77'

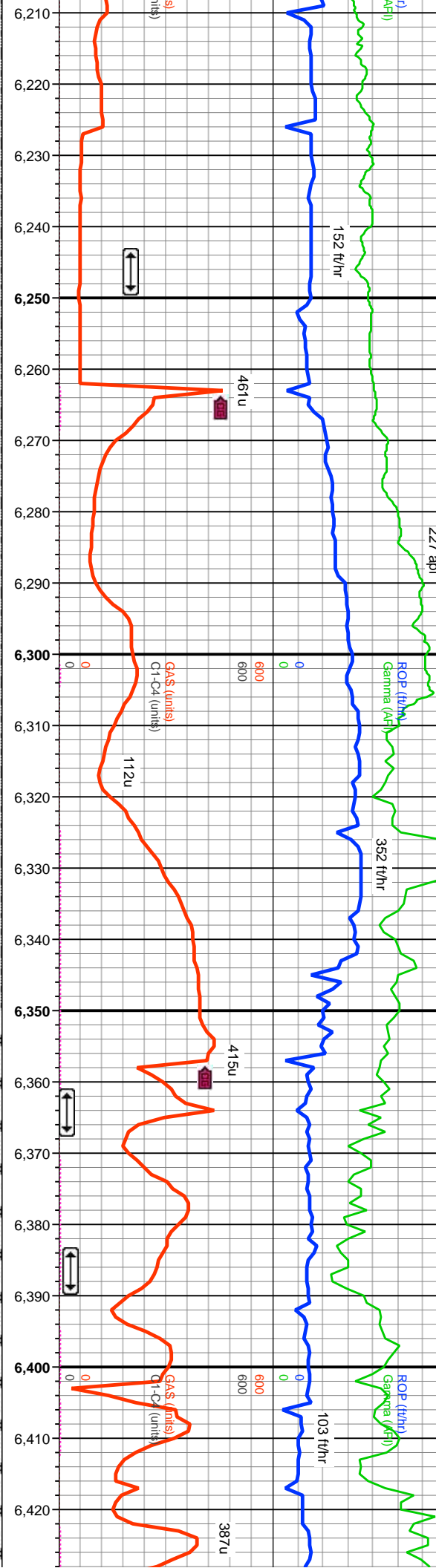
50% SHY SLT: lt gy - gy, silty, sft, pily - sb pily, sl arg mtx, rthy; 50% SLTY SH: med - dk gy, vfg, sl frm - frm, sb blkly - sb pily, arg mtx, rthy lstr, sm txt

50% SHY SLT: lt gy - gy, silty, sft, pily - sb pily, sl arg mtx, rthy; 50% SLTY SH: med - dk gy, vfg, sl frm - frm, sb blkly - sb pily, arg mtx, rthy lstr, sm txt





WOB: 112kP  
RPM: 0  
PP: 2427PSI  
SPM: 87



Sharon Springs Top:  
6248 MD / 6140 TVD

MD: 6,308'  
INC: 26.31°  
AZM: 359.92°  
TVD: 6,195.42'  
VS: -148.09°

A Chalk Top:  
6364' / 6244' TVD

A Marl Top:  
6386 MD / 6264 TVD

MD: 6,402'  
INC: 31.26°  
AZM: 355.47°  
TVD: 6,277.79'  
VS: -103.75°

100% SLTY SH: med - dk gy, vfg, sl frm - frm, sb blk - sb  
ply, arg mtx, rthy lstr, sm txt

100% SLTY SH: med - dk gy, vfg, sl  
frm - frm, sb blk - sb ply, arg mtx,  
rthy lstr, sm txt

50% CHK: lt- med gy- gybrn, sb blk - blk,  
sl sft, arg, rthy lstr, v calc; 50% MRLST: dk  
gy - gybrn, frm, sb blk, silty txt, rthy lstr, v arg,  
calc

90% MRLST: dk gy - gybr  
silty txt, rthy lstr, v arg, calc  
med gy- gybrn, sb blk - b  
rthy lstr, v calc

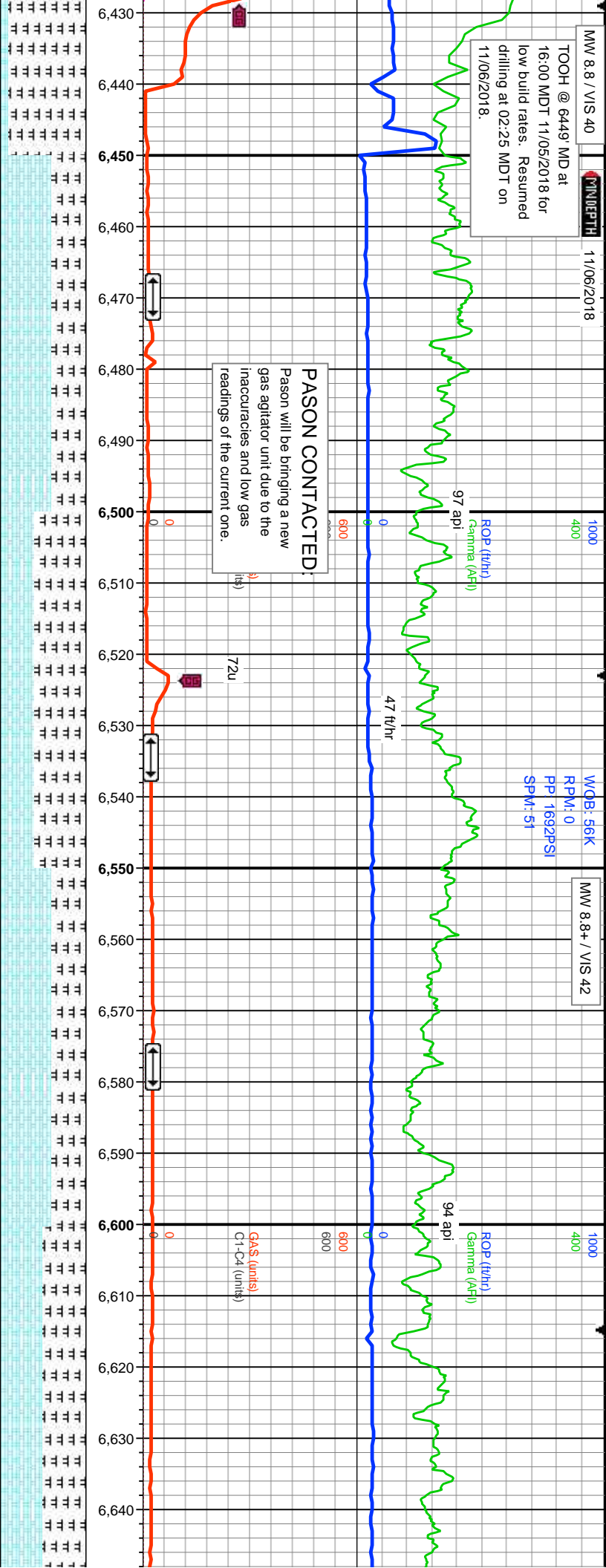


MW 8.8 / VIS 40  
TOOH @ 6449' MD at 16:00 MDT 11/05/2018 for low build rates. Resumed drilling at 02:25 MDT on 11/06/2018.

11/06/2018

WQB: 56K  
RPM: 0  
PP: 1692PSI  
SPM: 51

MW 8.8+ / VIS 42



Bit #: 2  
Type: BHGE  
Size: 8.5  
Depth In: 6,449'  
Jets: 3X20  
S/N: 5281900

60% CHK: lt- med gy- gybmn, sb blkly - blkly, sl sft, arg, rthy lstr, v calc; 40% MRLST: dk gy - gybmn, frm, sb blkly, slty txt, rthy lstr, v arg, calc; tr forams; mod dissn pyr

B Chalk Top:  
6469' MD / 6341' TVD

B Marl Top:  
6534' MD / 6383' TVD

C Chalk Top:  
6579' MD / 6411' TVD

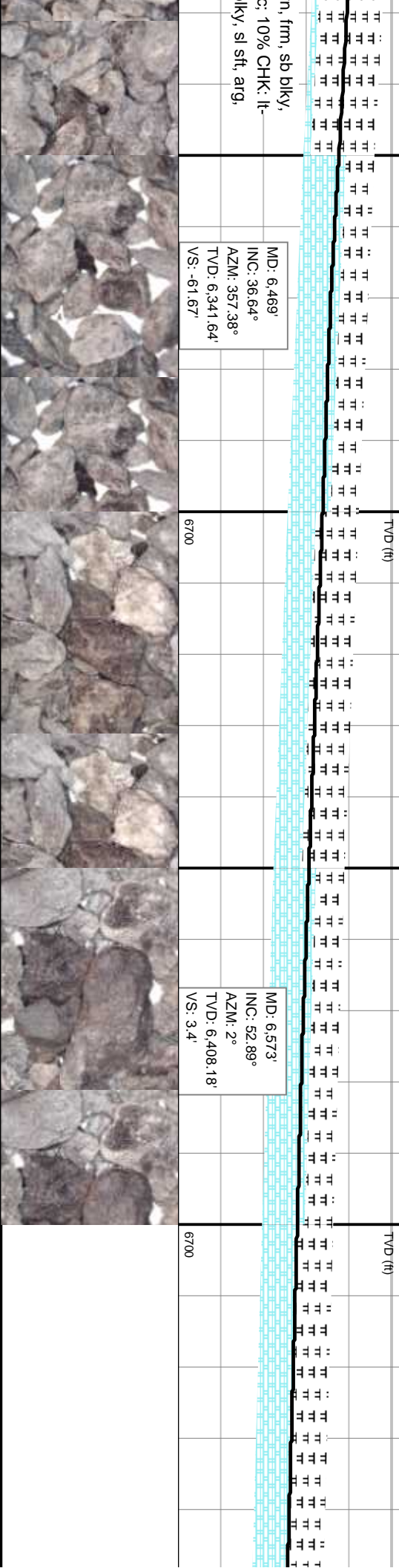
60% MRLST: dk gy - gybmn, frm, sb blkly, slty txt, rthy lstr, v arg, calc; 40% CHK: lt- med gy- gybmn, sb blkly - blkly, sl sft, arg, rthy lstr, v calc; tr forams; tr dissn pyr

60% CHK: lt- med gy- gybmn, sb blkly - blkly, sl sft, arg, rthy lstr, v calc; 40% MRLST: dk gy - gybmn, frm, sb blkly, slty txt, rthy lstr, v arg, calc; tr forams

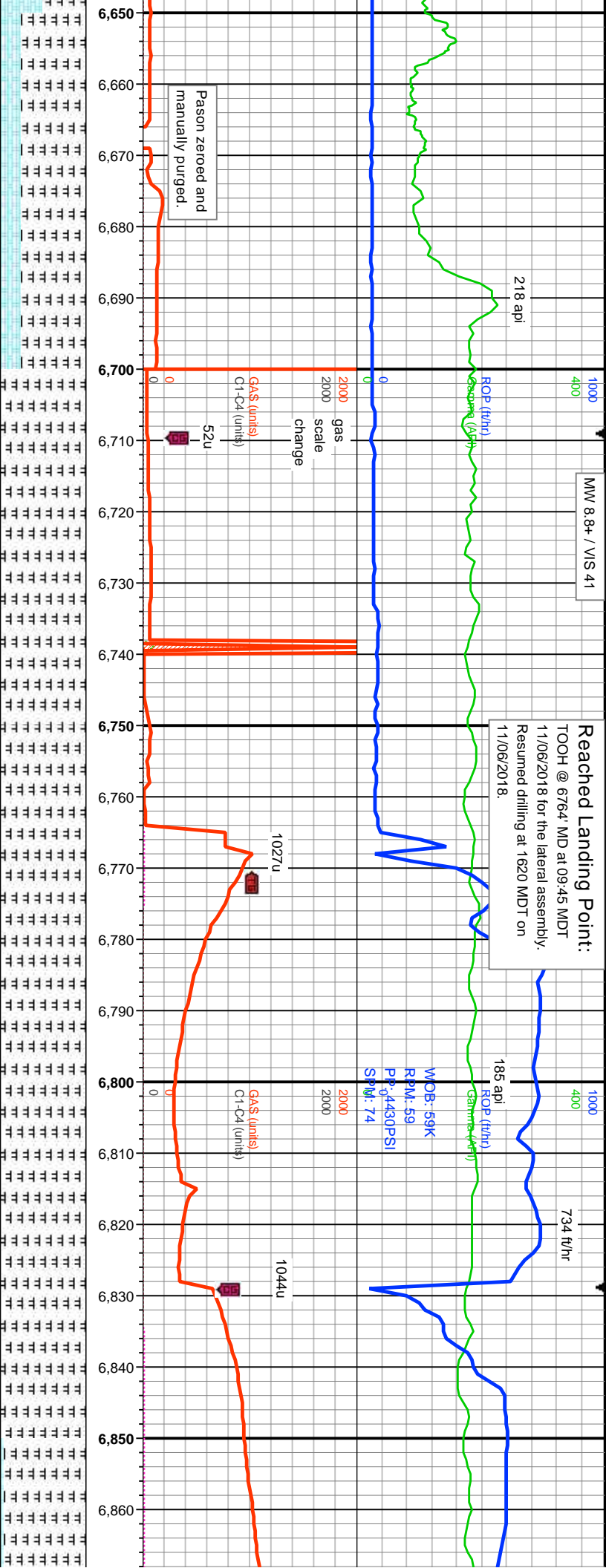
50% CHK: lt- med gy- gybmn, sb blkly - blkly, sl sft, arg, rthy lstr, v calc; 50% MRLST: dk gy - gybmn, frm, sb blkly, slty txt, rthy lstr, v arg, calc; tr forams

MD: 6,469'  
INC: 36.64°  
AZM: 357.38°  
TVD: 6,341.64'  
VS: -61.67'

MD: 6,573'  
INC: 52.89°  
AZM: 2°  
TVD: 6,408.18'  
VS: 3.4'







75% MRLST: dk gy - gybrn, frm, sb blkly,  
sily txt, rthy lstr, v arg, calc; 25% CHK: lt-  
med gy - gybrn, sb blkly - blkly, sl sft, arg,  
rthy lstr, v calc; tr forams

MD: 6,667'  
INC: 71.41°  
AZM: 4.48°  
TVD: 6,451.91'  
VS: 85.76'

100% MRLST: dk gy - gybrn, frm, sb  
blkly, sily txt, rthy lstr, v arg, calc; tr chk

100% MRLST: dk gy - gy brn, frm, sb blkly,  
v sily txt, rthy lstr, v arg, calc; tr chk

100% MRLST: dk gy - ltgy brn, frm, sb blkly,  
sily txt, rthy lstr, v arg, sl calc; tr chk

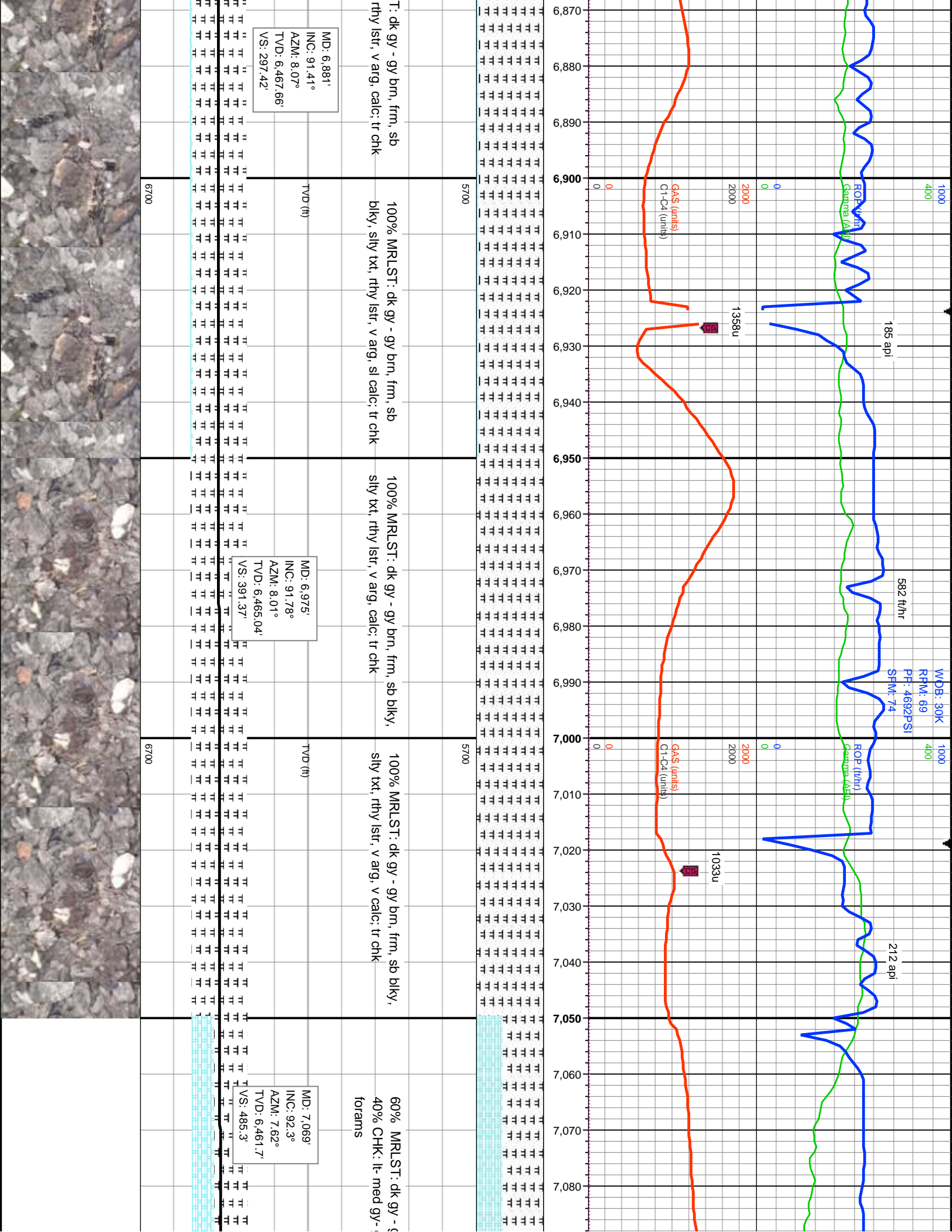
100% MRLS  
blkly, sily txt,

TVD (ft)

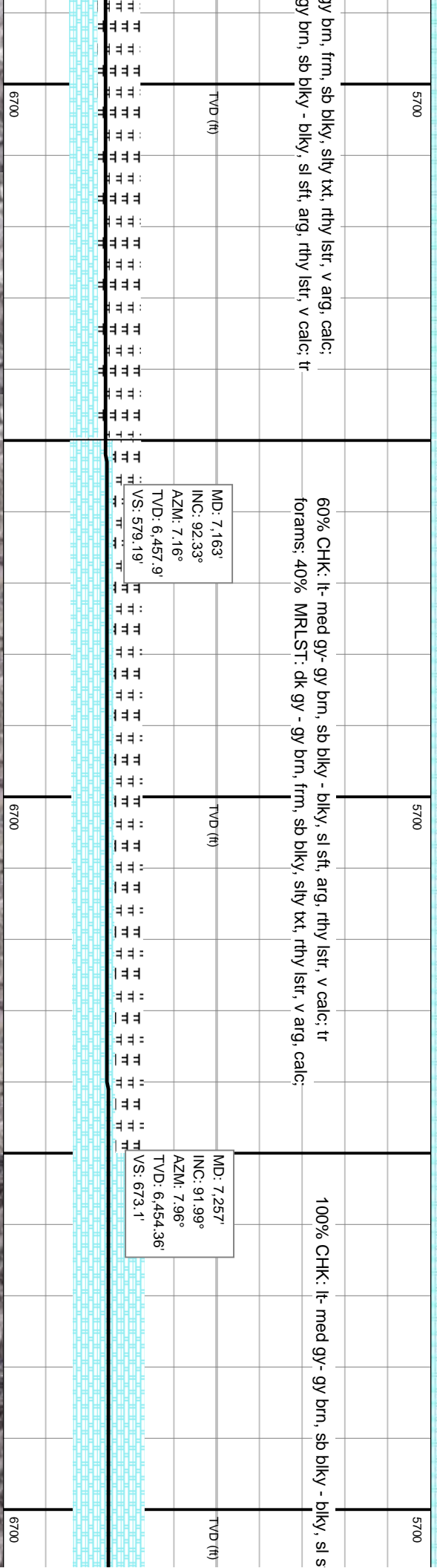
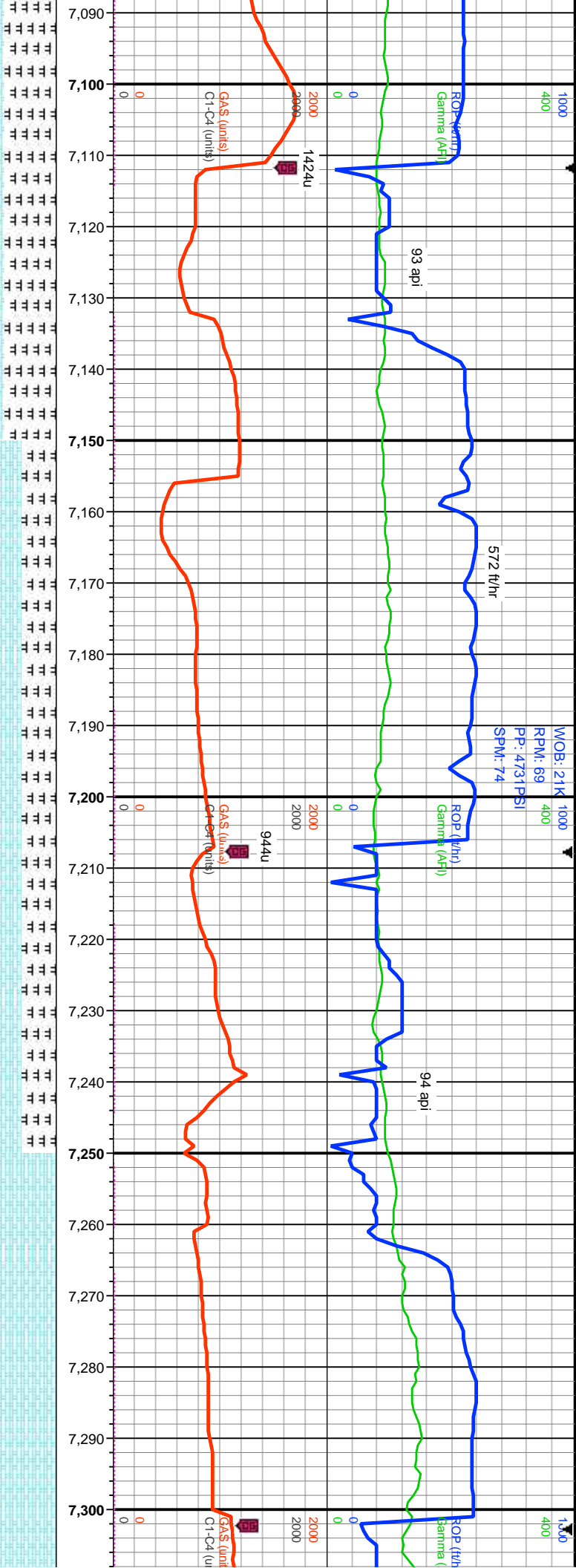
TVD (ft)

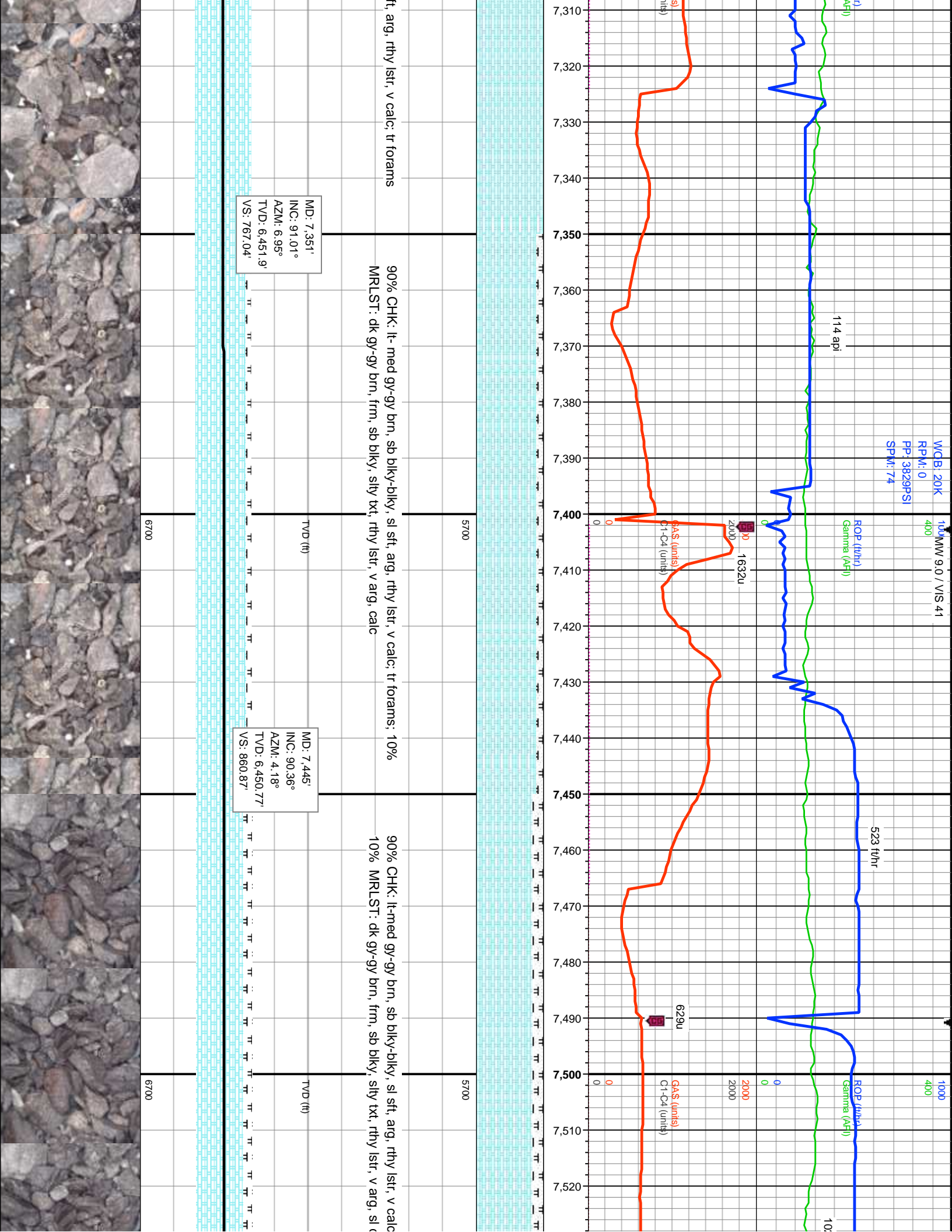
MD: 6,787'  
INC: 91.56°  
AZM: 8.69°  
TVD: 6,470.1'  
VS: 203.45'







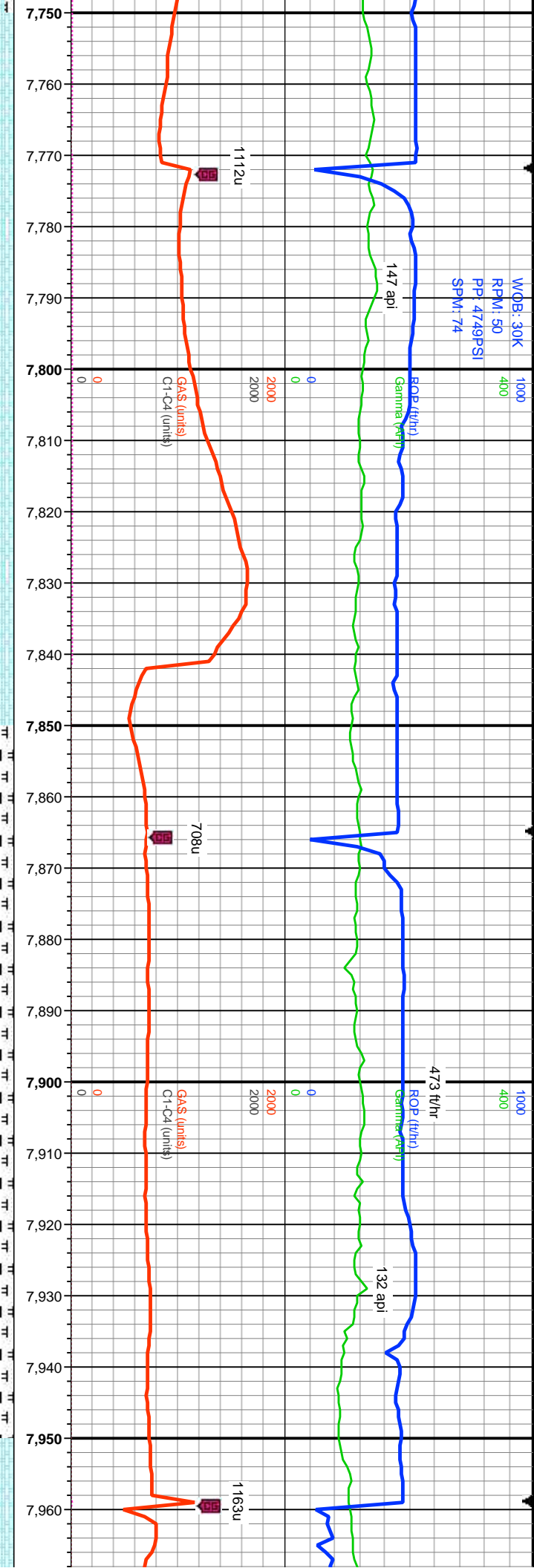












5700

100% CHK: lt- med gy-gy brn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; tr forams

MD: 7,821'  
INC: 90.33°  
AZM: 2.87°  
TVD: 6,448.59'  
VS: 1,235.13'

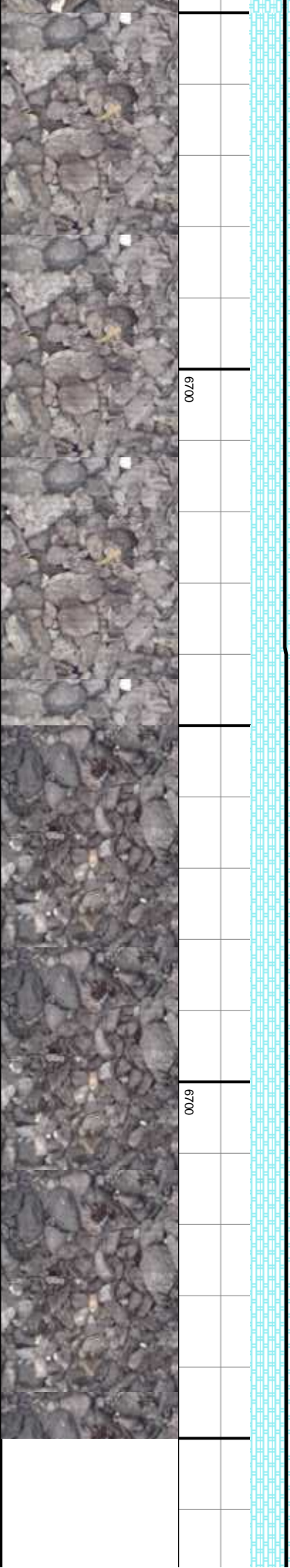
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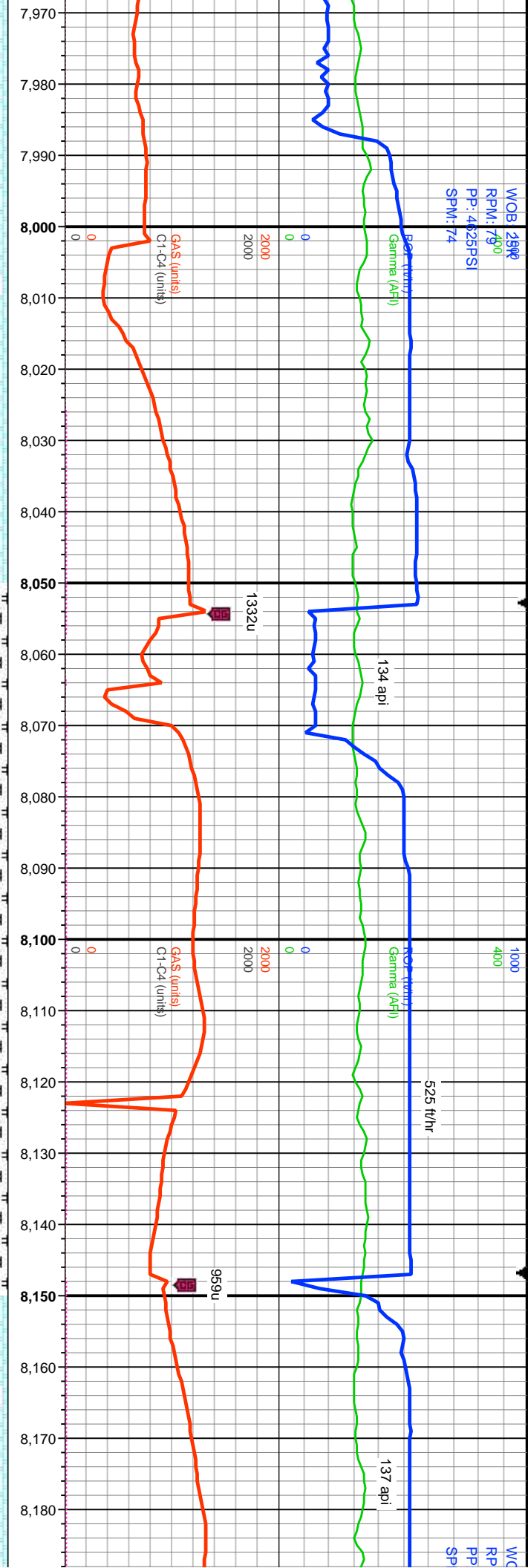
85% CHK: lt- med gy-gy brn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; tr forams;  
15% MRLST: dk gy-gy brn, frm, sb blk-y, stly txt, rthy lstr, v arg, calc

MD: 7,915'  
INC: 91.22°  
AZM: 2.67°  
TVD: 6,447.32'  
VS: 1,328.59'

6700

6700



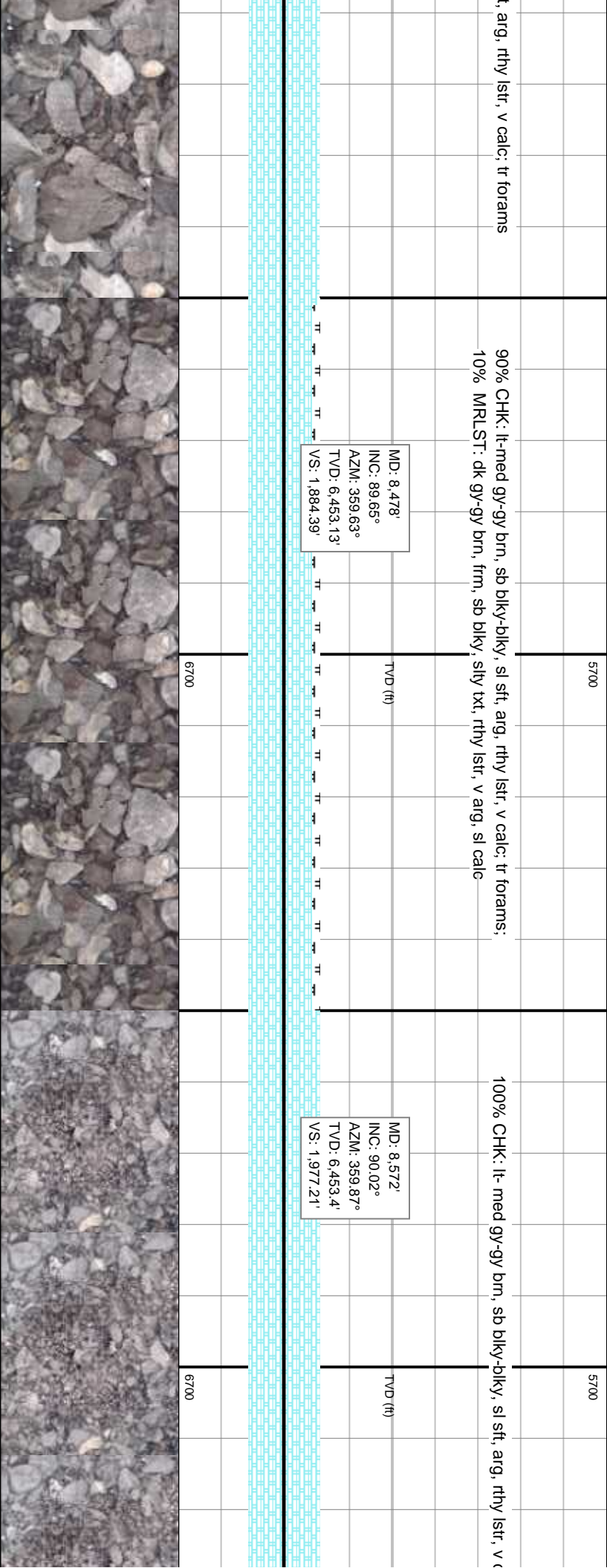
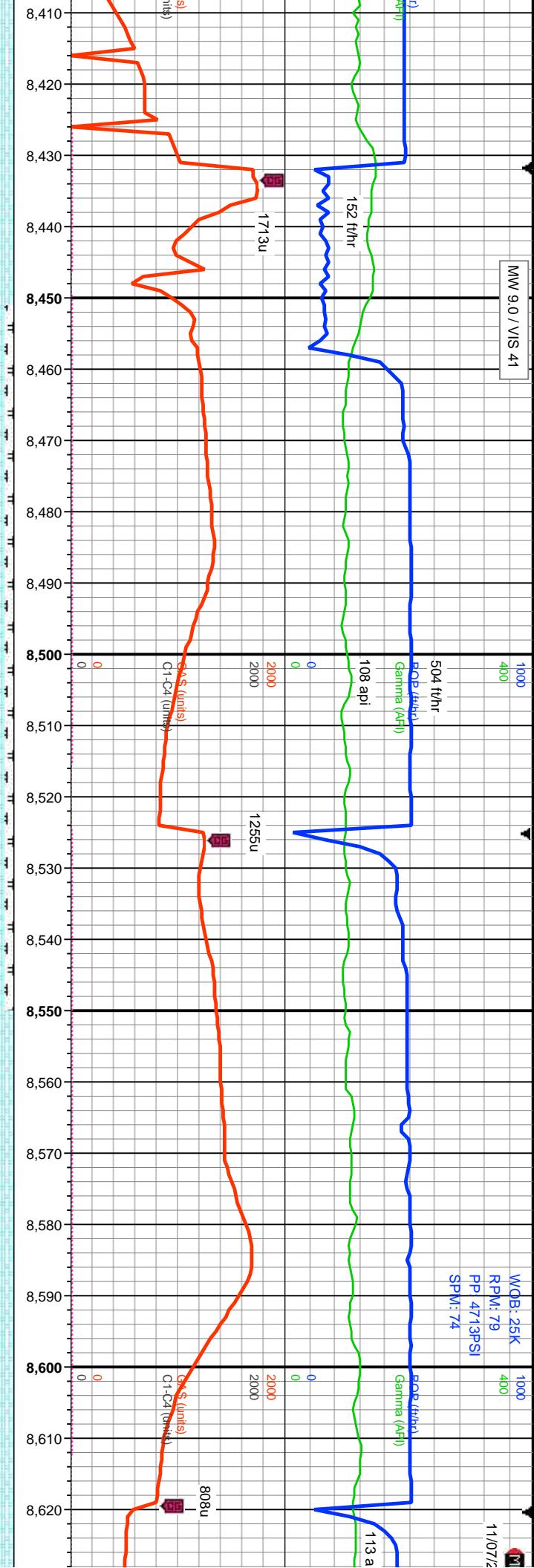


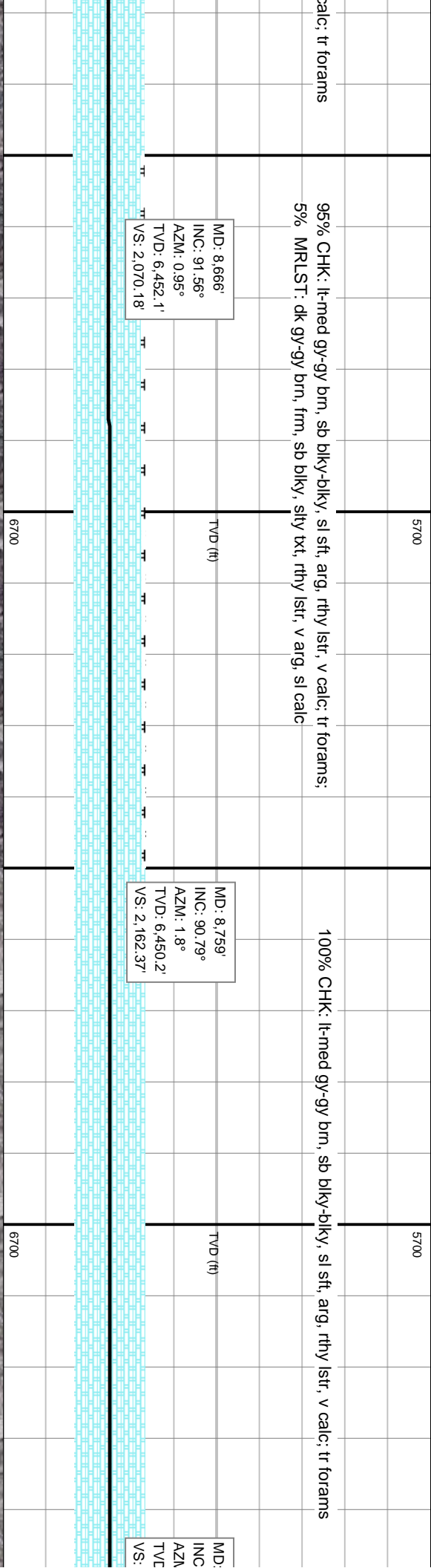
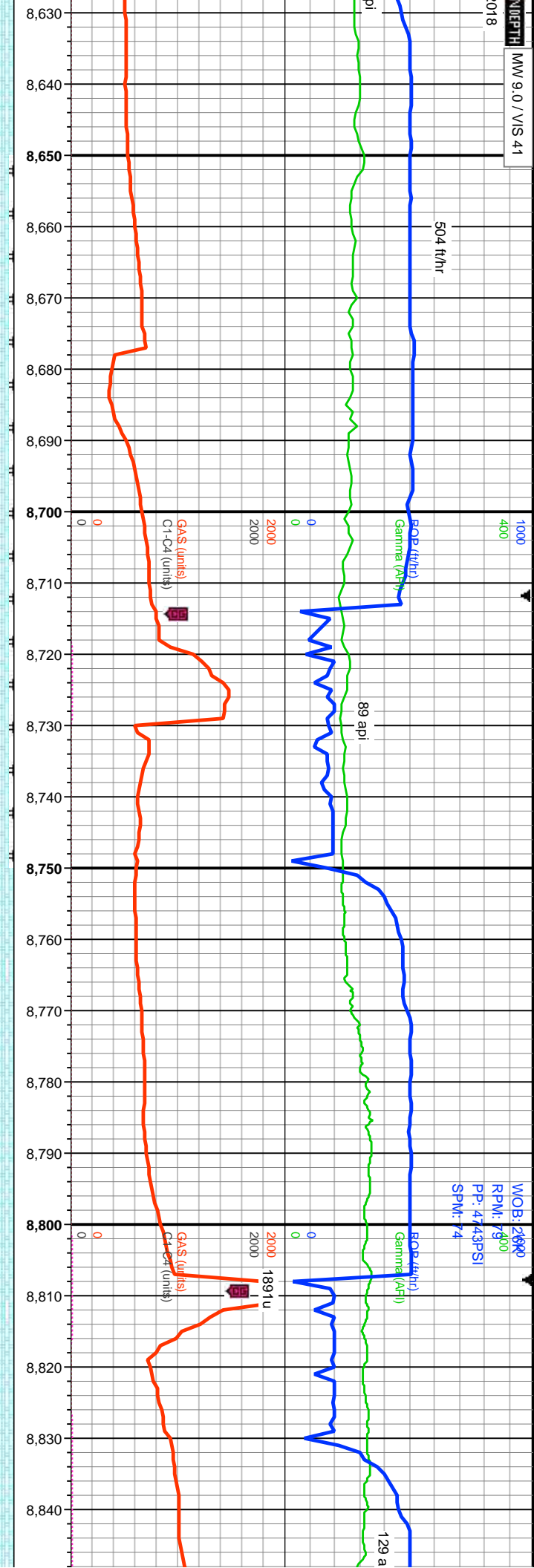
5700	MD: 8.009' INC: 90.24° AZM: 0.8° TVD: 6,446.13' VS: 1,421.86'	90% CHK: lt- med gy-gy brn, sb blk-y-bkly, sl sft, arg, rthy lstr, v calc forams; 10% MRLST: dk gy-gy brn, frm, sb blkly, silty txt, rthy lstr, v arg, calc	5700	MD: 8.103' INC: 88.89° AZM: 0.12° TVD: 6,446.84' VS: 1,514.85'	100% CHK: lt- med gy-gy
6700			6700		



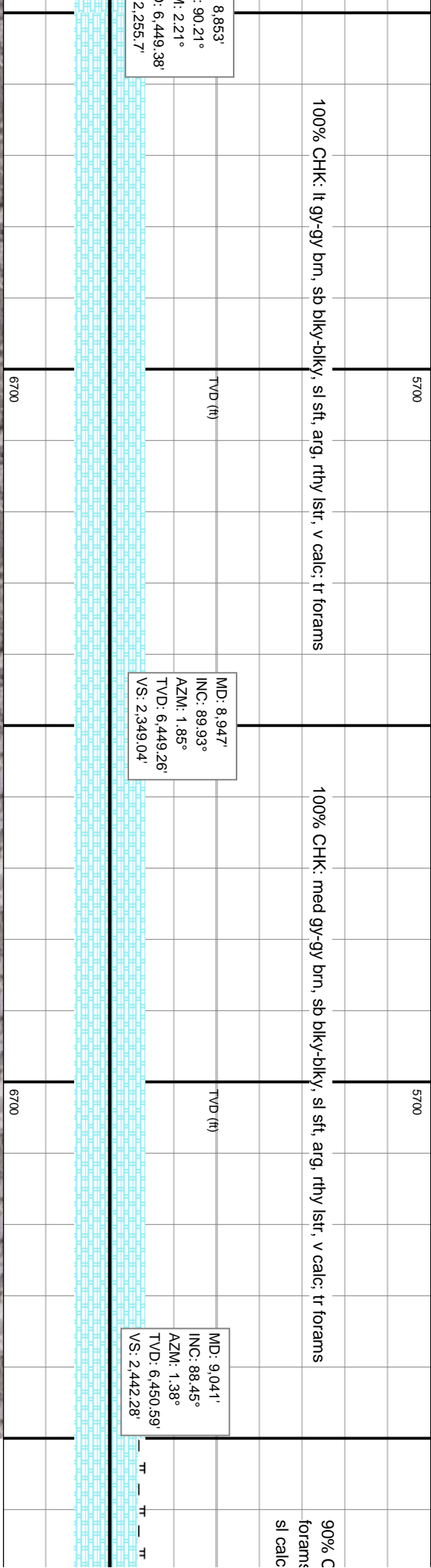
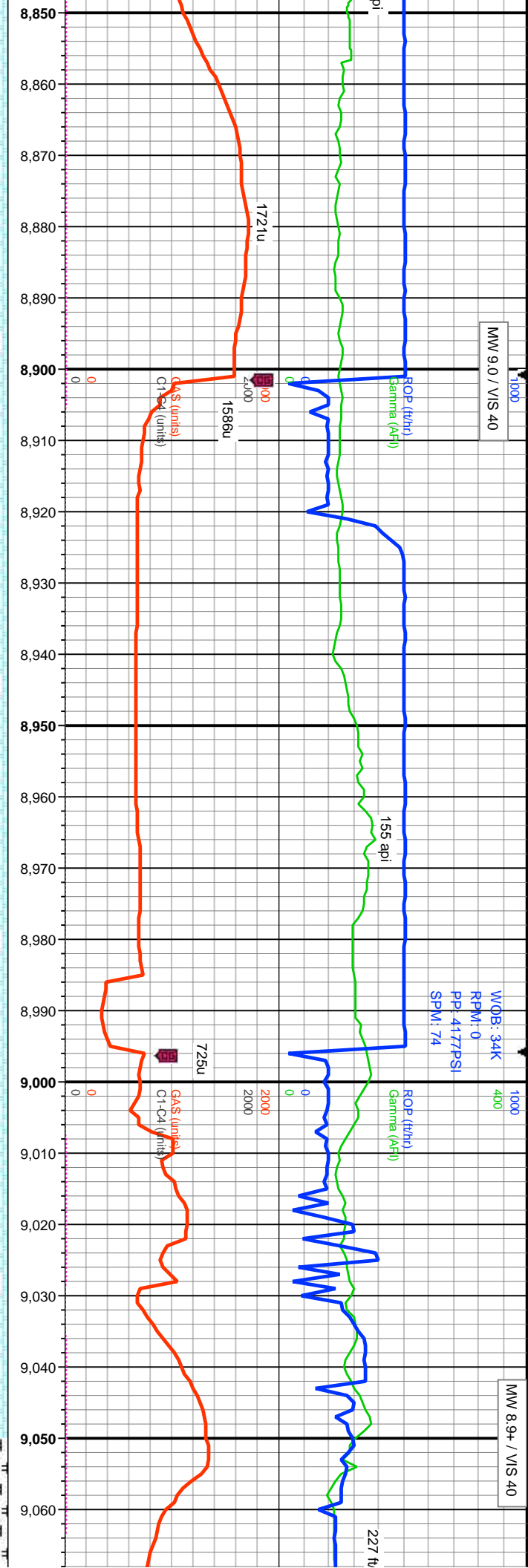




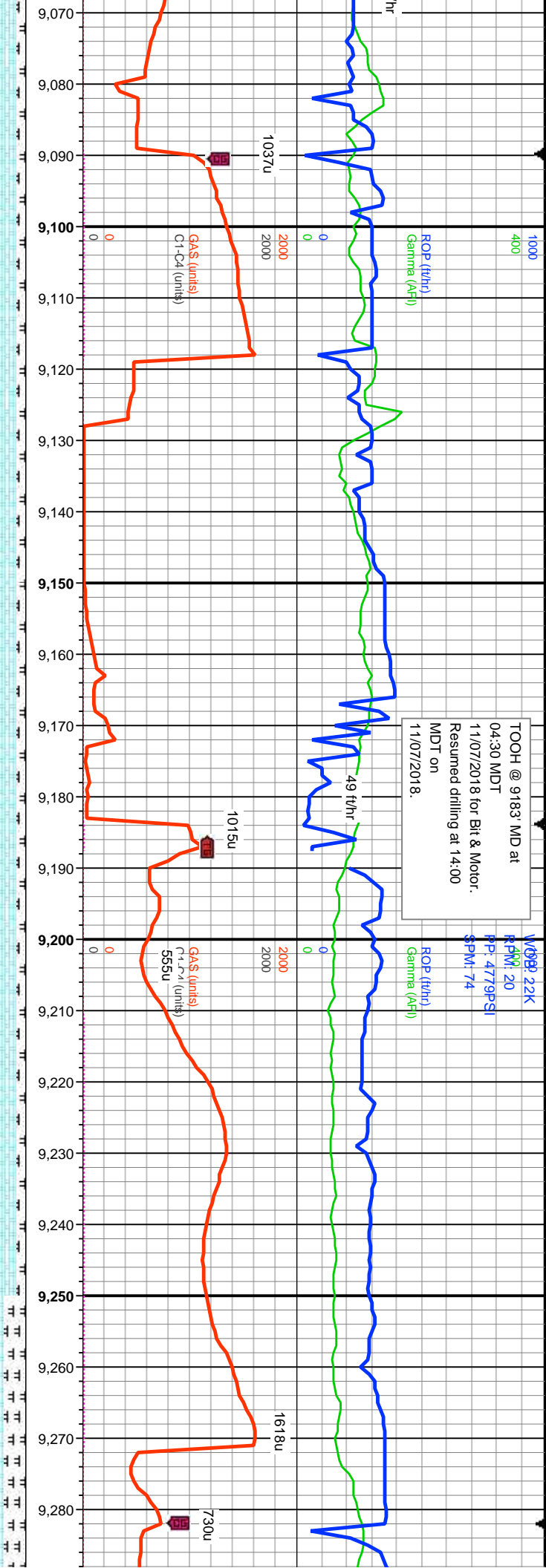












CHK: lt-med gy-gy brn, sb blk-y-bkly, sl sft, arg, rthy lstr, v calc; tr  
s; 10% MRLST: dk gy-gy brn, frm, sb blk-y, silty txt, rthy lstr, v arg,

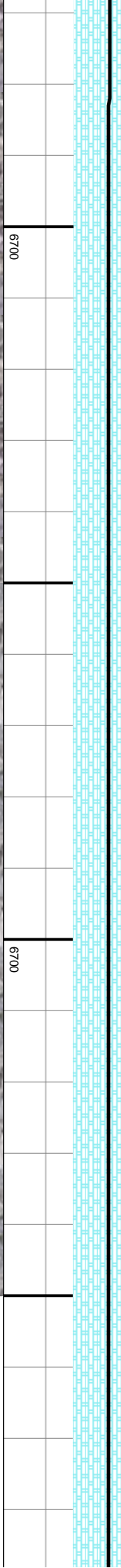
90% CHK: lt-med gy-gy brn, sb blk-y-bkly, sl sft, arg, rthy lstr, v calc; tr  
forams; 10% MRLST: dk gy-gy brn, frm, sb blk-y, silty txt, rthy lstr, v arg, calc

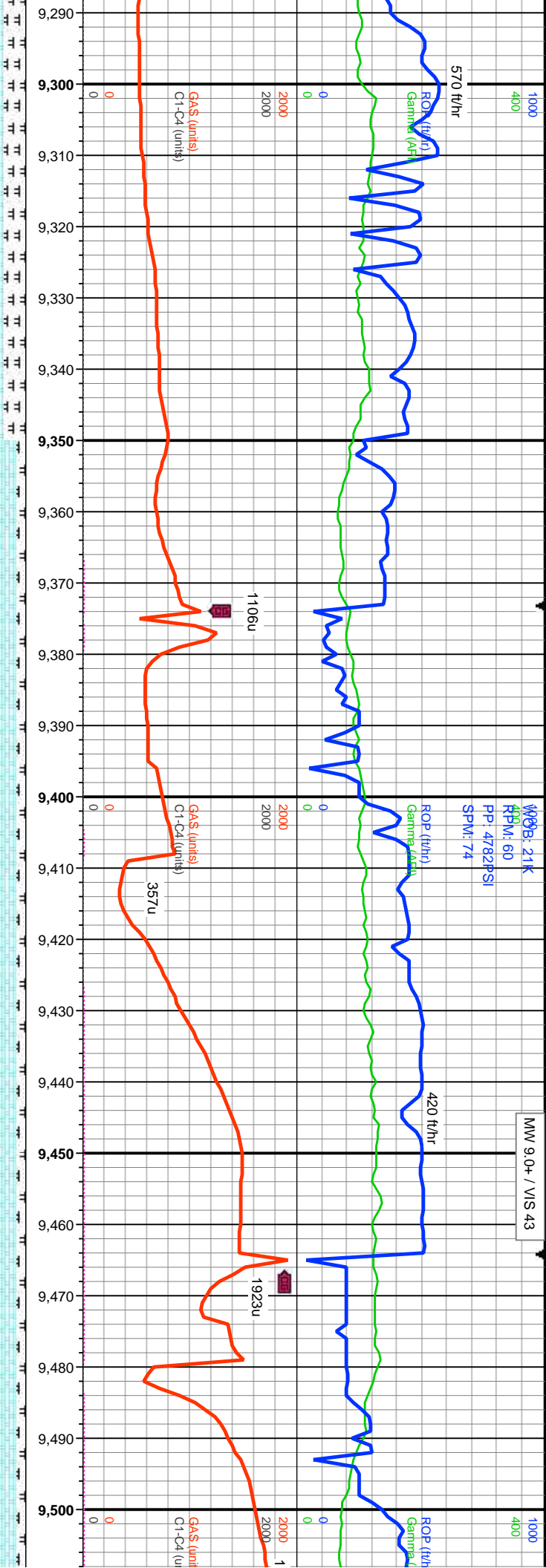
75% CHK: lt-med gy-gy brn, sb blk-y-bkly, sl sft, arg, rthy lstr, v calc; tr  
forams; 25% MRLST: dk gy-gy brn, frm, sb blk-y, silty txt, rthy lstr, v arg, calc

MD: 9,136'  
INC: 88.6°  
AZM: 1.31°  
TVD: 6,453.03'  
VS: 2,536.44'

Bit #: 3  
Type: Reed TK-56  
Size: 8.5  
Depth In: 6,764'  
Jets: 7x12  
S/N: A248784

MD: 9,229'  
INC: 90.03°  
AZM: 1.9°  
TVD: 6,454.15'  
VS: 2,628.69'





gy brn, sb blk-y-bkly, sl sft, arg, rthy lstr, v  
MRLST: dk gy-gy brn, frm, sb blk-y, silty txt,

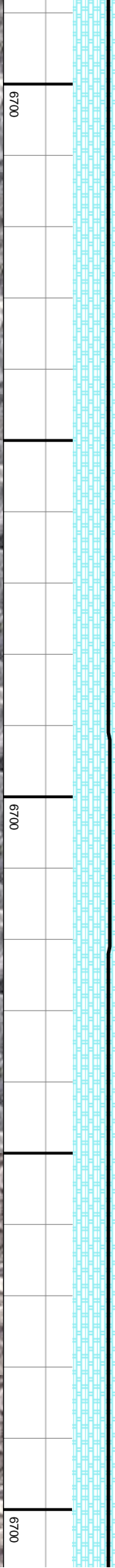
90% CHK: lt-med gy-gy brn, sb blk-y-bkly, sl sft, arg, rthy lstr, v calc; tr  
forams; 10% MRLST: dk gy-gy brn, frm, sb blk-y, silty txt, rthy lstr, v arg,  
calc

90% CHK: lt-med gy-gy brn, sb blk-y-bkly, ;  
10% MRLST: dk gy-gy brn, frm, sb blk-y, s

MD: 9.320'  
INC: 91.79°  
AZM: 2.2°  
TVD: 6.452.7'  
VS: 2.719.03'

MD: 9.411'  
INC: 89.88°  
AZM: 1.5°  
TVD: 6.451.38'  
VS: 2.809.34'

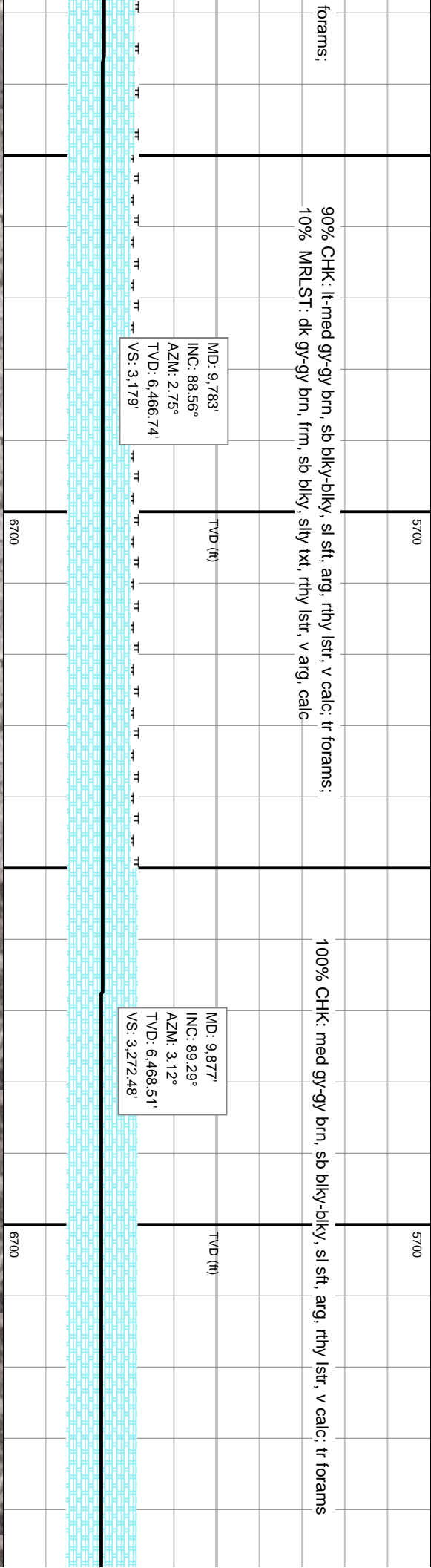
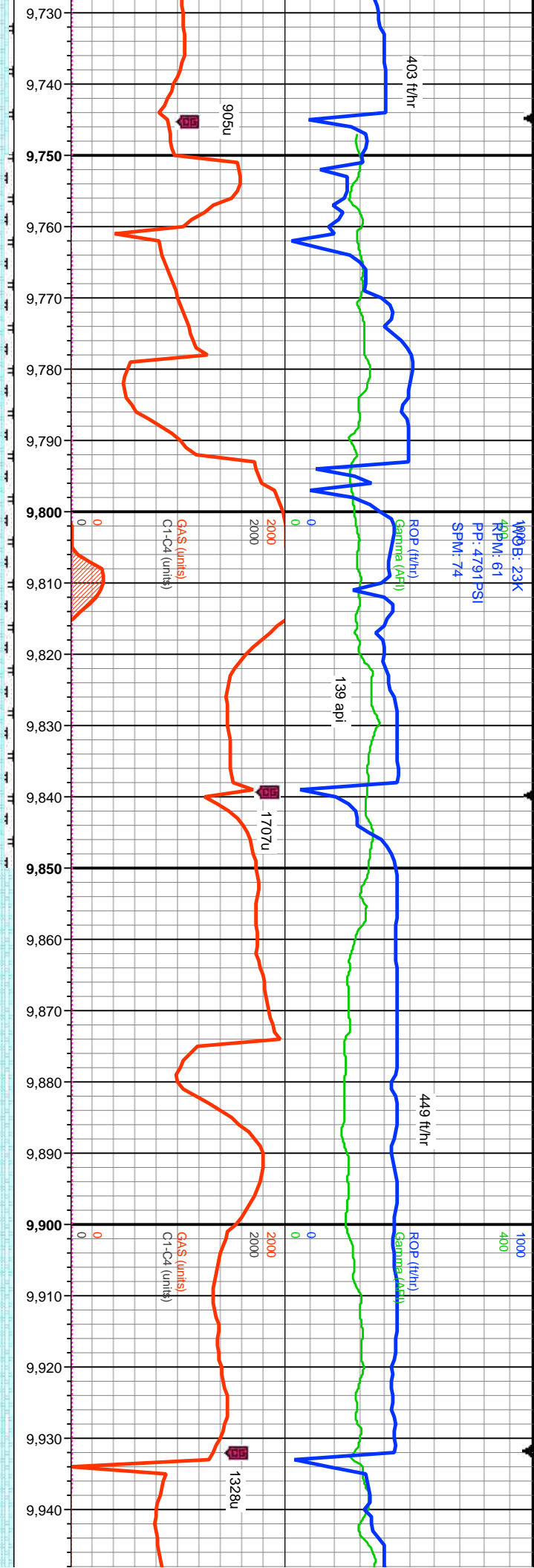
MD: 9.502'  
INC: 87.05°  
AZM: 3.51°  
TVD: 6.453.81'  
VS: 2.899.74'

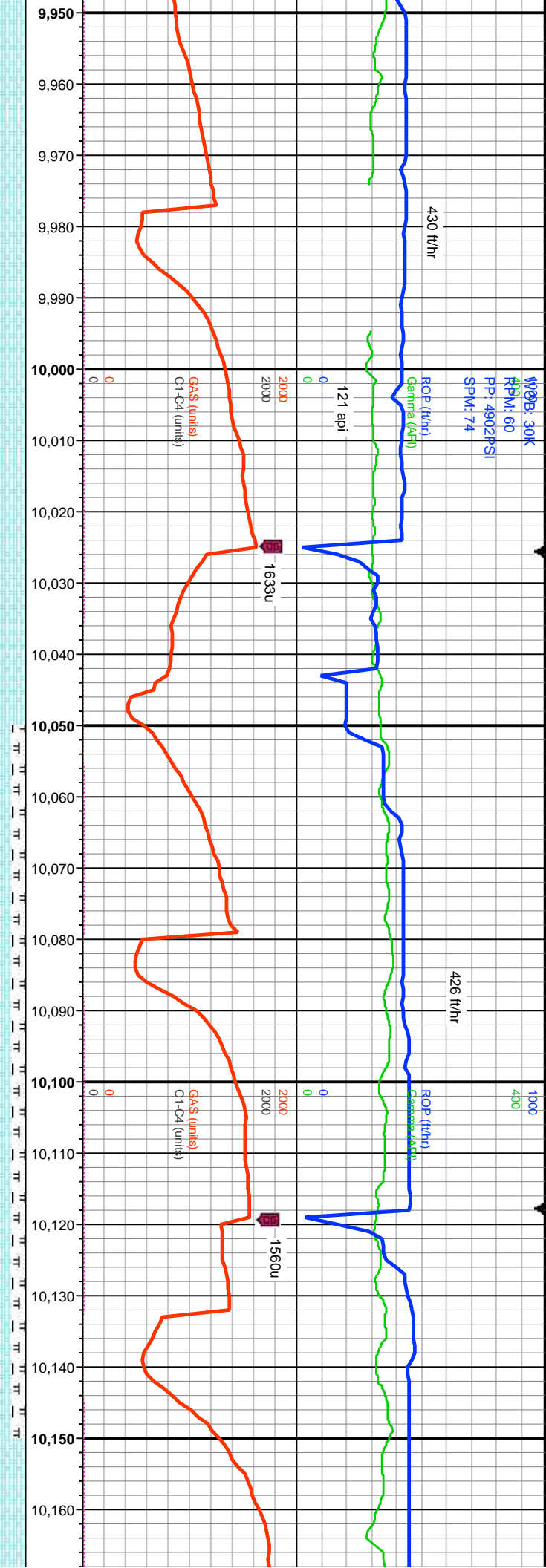








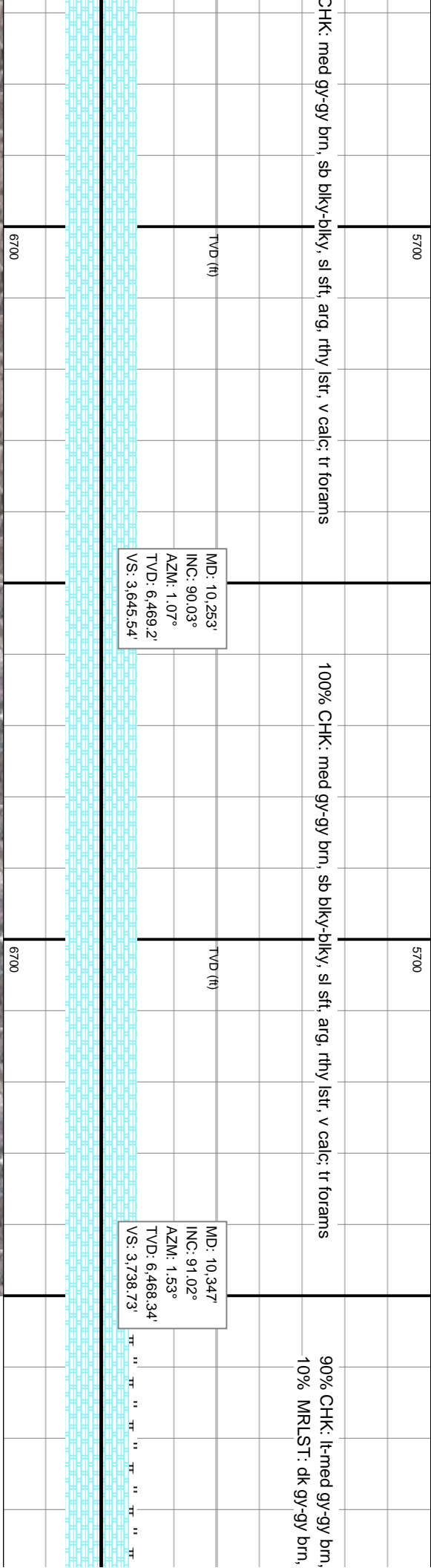
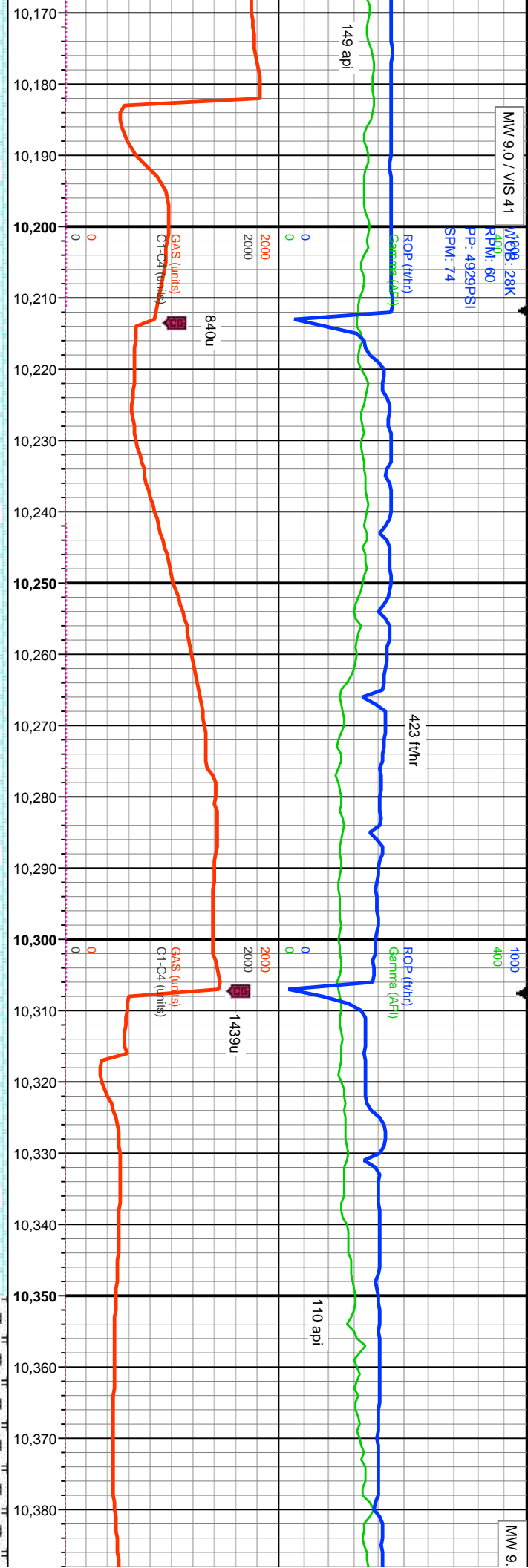




100% CHK: med gy-gy brn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; tr forams		5700	TVD (ft)	MD: 9.972' INC: 89.85° AZM: 3.27° TVD: 6.469.22' VS: 3.367.02'
85% CHK: lt-med gy-gy brn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; 15% MRLST: dk gy-gy brn, frm, sb blk-y, silty txt, rthy lstr, v arg, calc		5700	TVD (ft)	MD: 10.066' INC: 90.34° AZM: 1.02° TVD: 6.469.06' VS: 3.460.37'
100% (		6700	TVD (ft)	MD: 10.159' INC: 89.73° AZM: 0.62° TVD: 6.469.01' VS: 3.552.46'





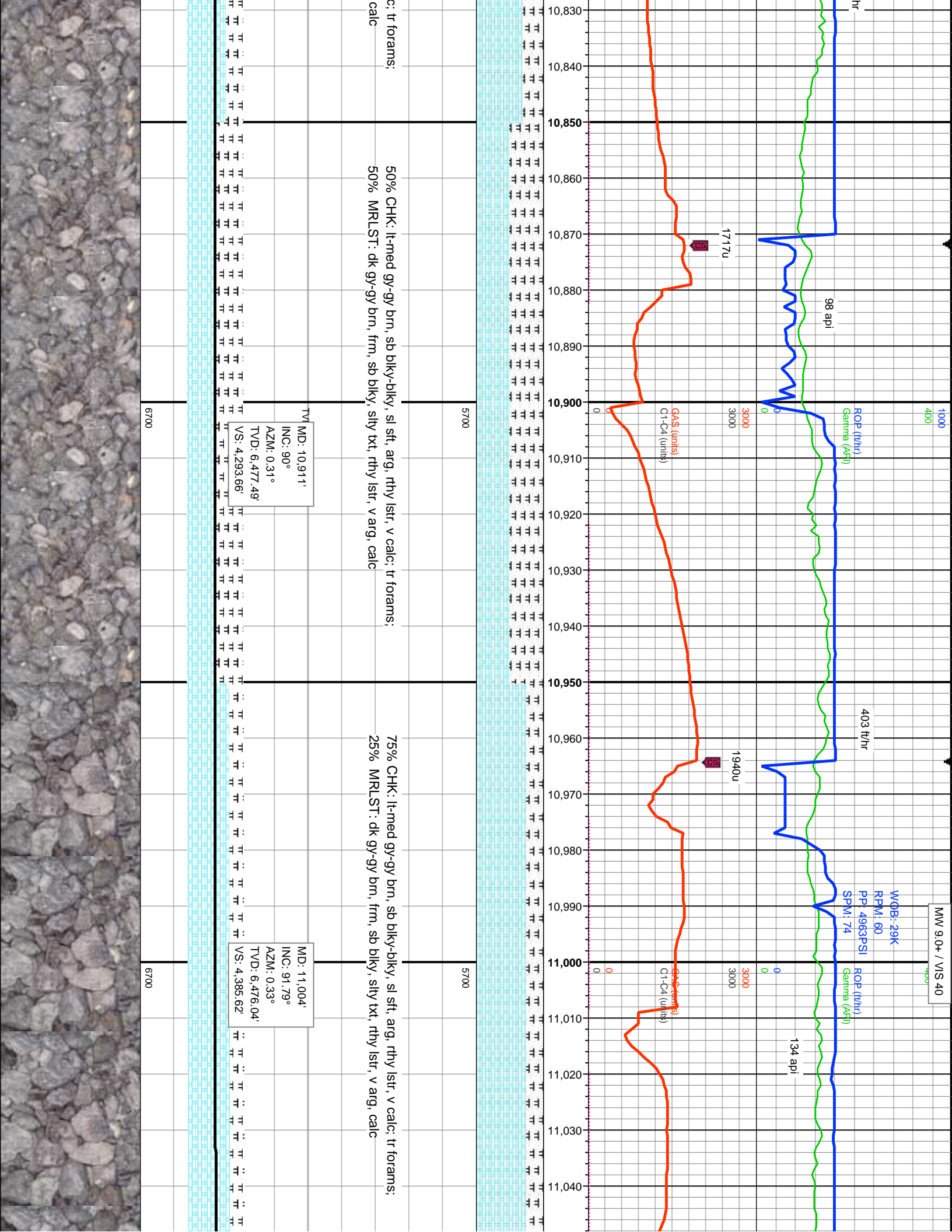




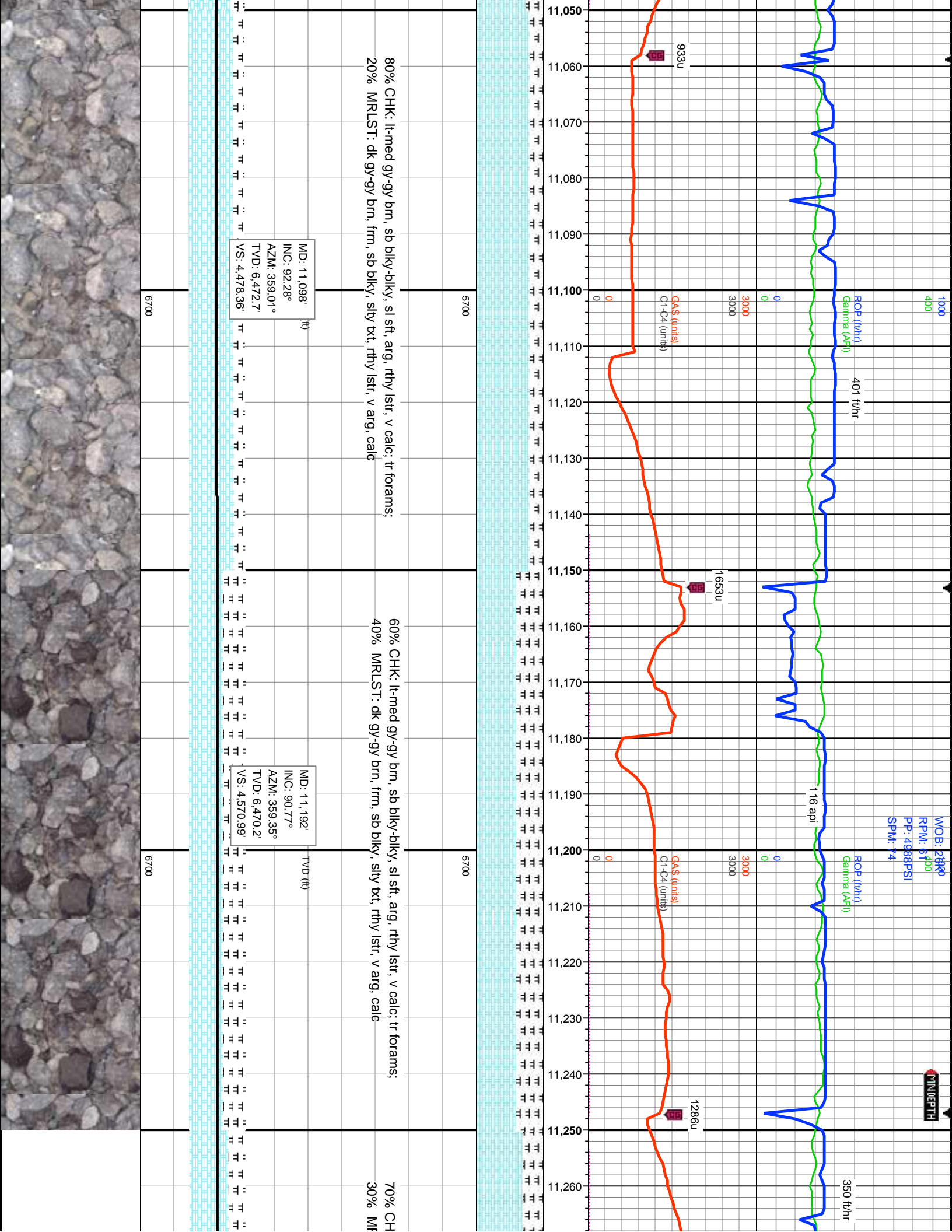




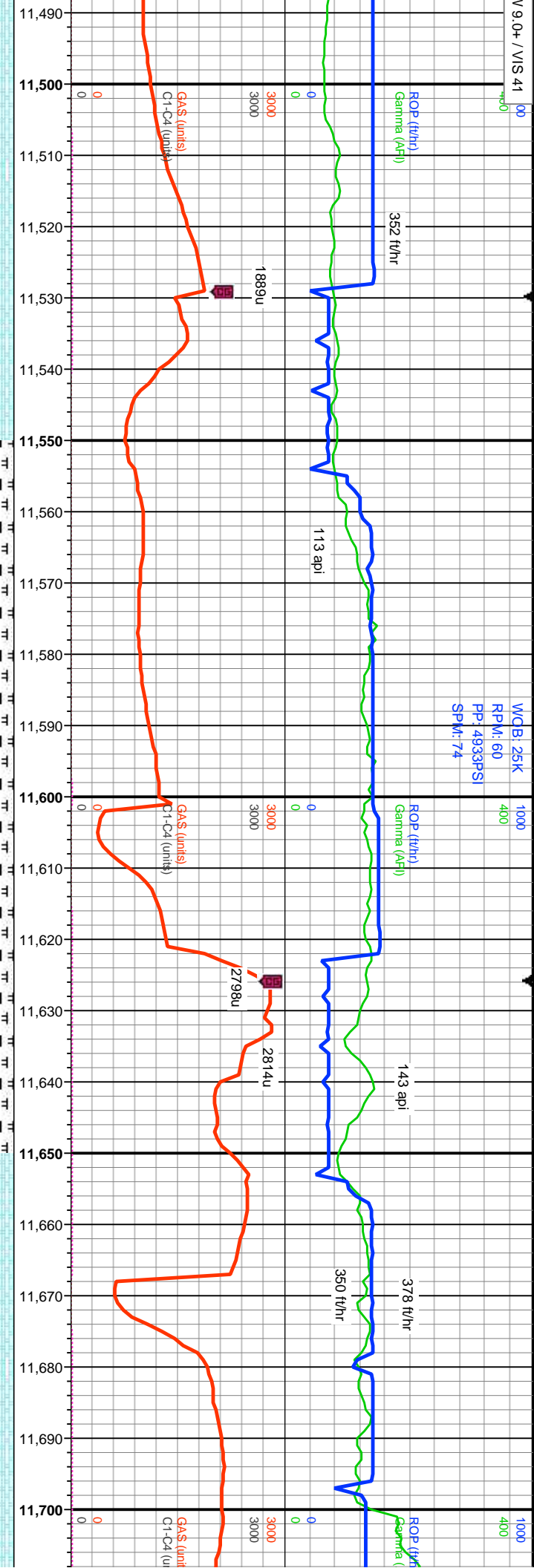












5700

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5700

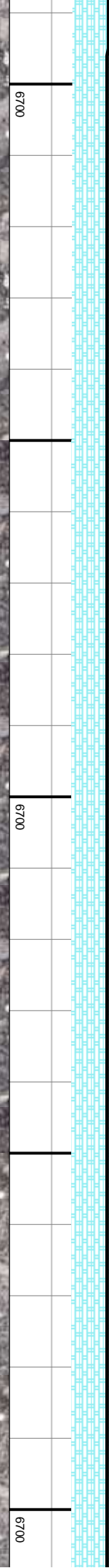
rn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; tr forams

85% CHK: lt- med gy-gy brn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; tr forams;  
15% MRLST: dk gy-gy brn, frm, sb blk-y, silty txt, rthy lstr, v arg, calc

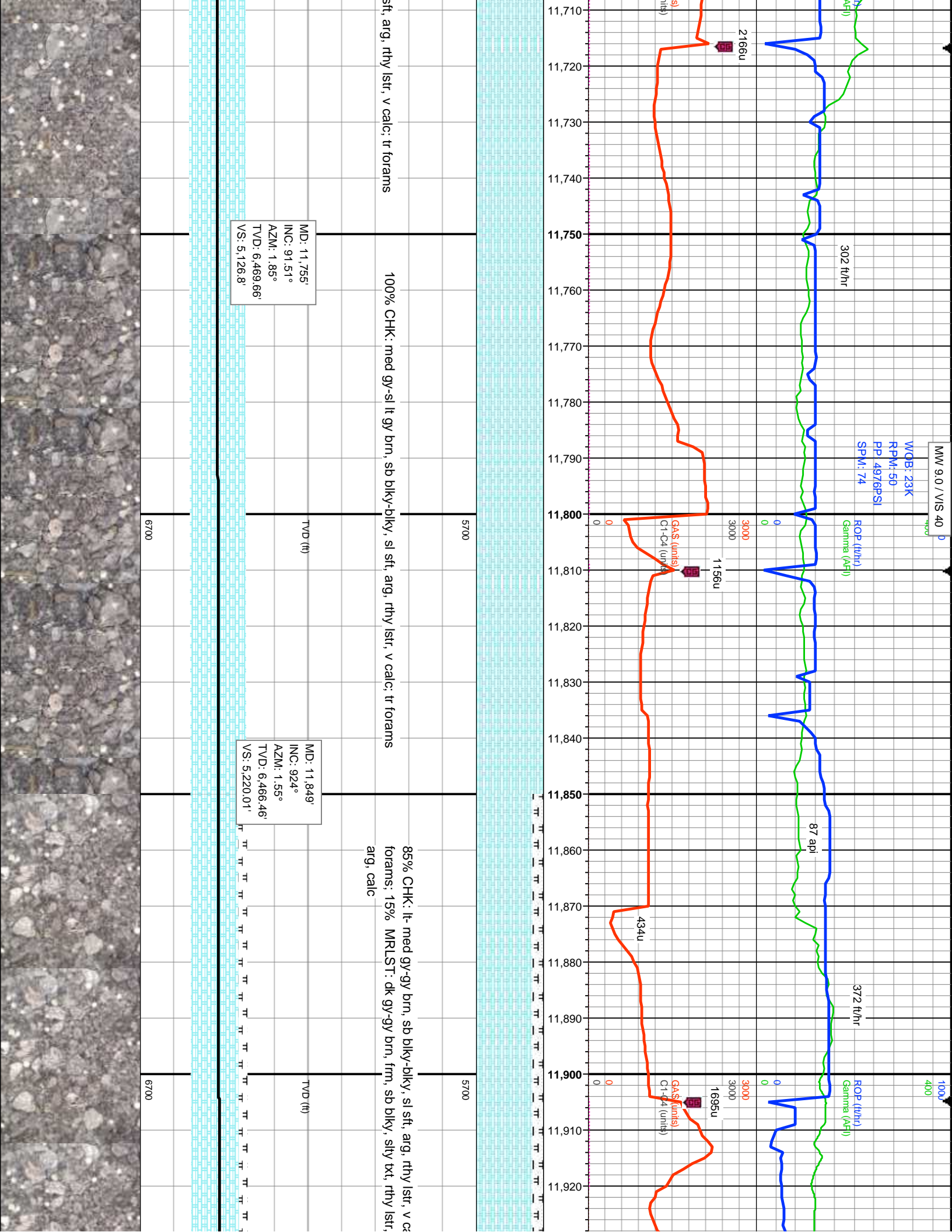
100% CHK: med gy-lt gy brn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; tr forams

MD: 11,568'  
INC: 88.19°  
AZM: 359.95°  
TVD: 6,470.64'  
VS: 4,941.31'

MD: 11,661'  
INC: 90.74°  
AZM: 2.4°  
TVD: 6,471.51'  
VS: 5,033.46'

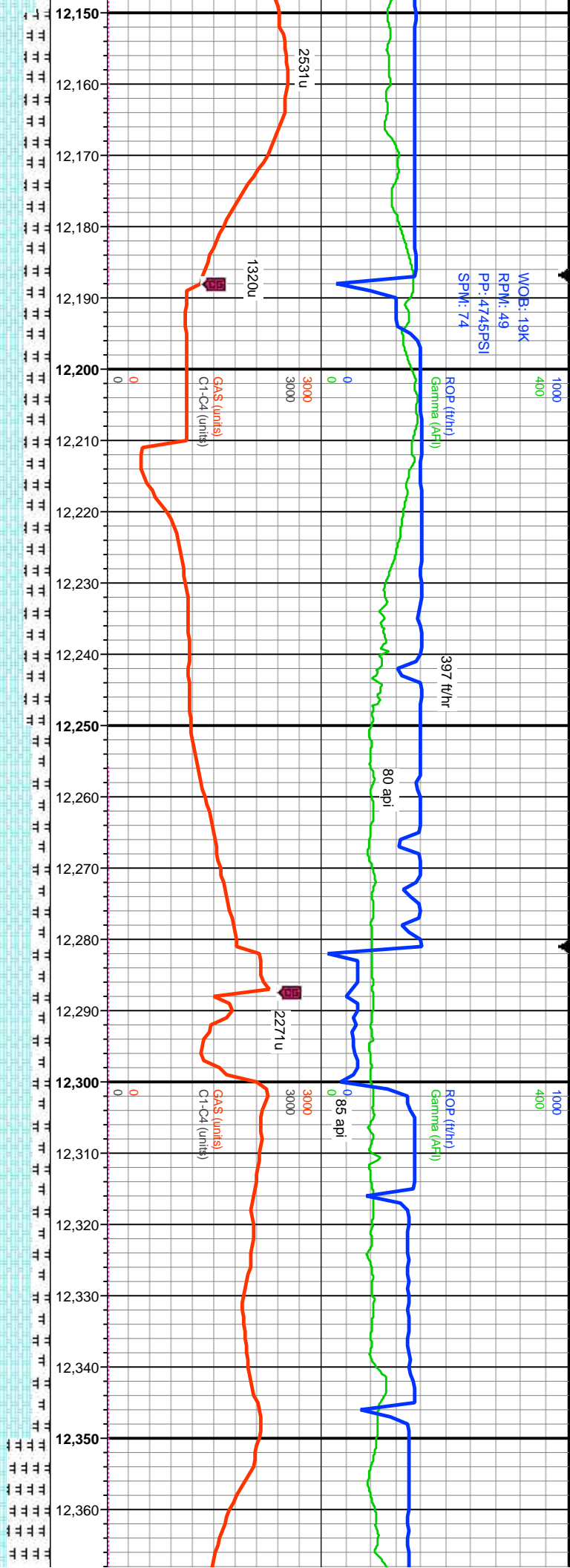












70% CHK: lt- med gy-gy brn, sb blk-y-blk-y, sl sft, arg, rthy lstr, v calc: tr forams;  
30% MRLST: dk gy-gy brn, frm, sb blk-y, silty txt, rthy lstr, v arg, calc

80% CHK: lt- med gy-gy brn, sb blk-y-blk-y, sl sft, arg, rthy lstr, v calc: tr  
forams; 20% MRLST: dk gy-gy brn, frm, sb blk-y, silty txt, rthy lstr, v arg, calc

50% CI

TVD (ft)	MD: 12,224'
	INC: 88.77°
TVD (ft)	MD: 12,318'
	INC: 90.4°

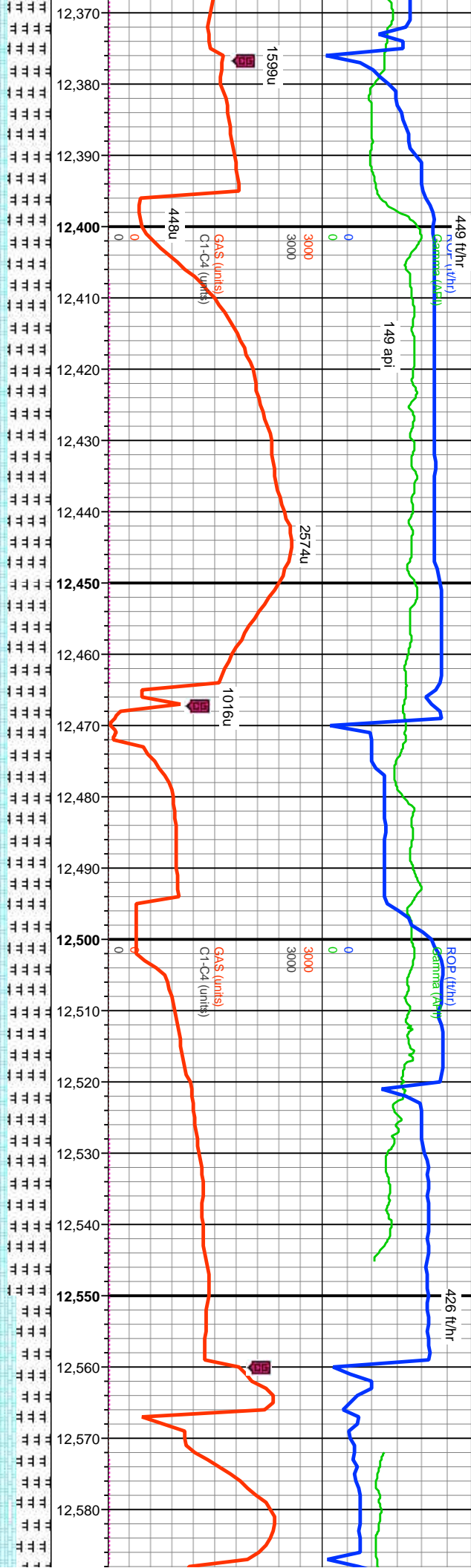
TVD (ft)	VS: 5,591.03'
	VS: 5,683.77'





WOB: 26K  
RPM: 59  
PP: 514PSI  
SPM: 74

MM 9.0+ / VIS 40



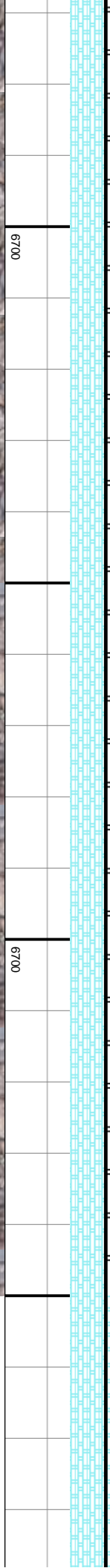
HK: lt- med gy-gy brn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; tr forams;  
RLST: dk gy-gy brn, frm, sb blk-y, slty txt, rthy lstr, v arg, calc

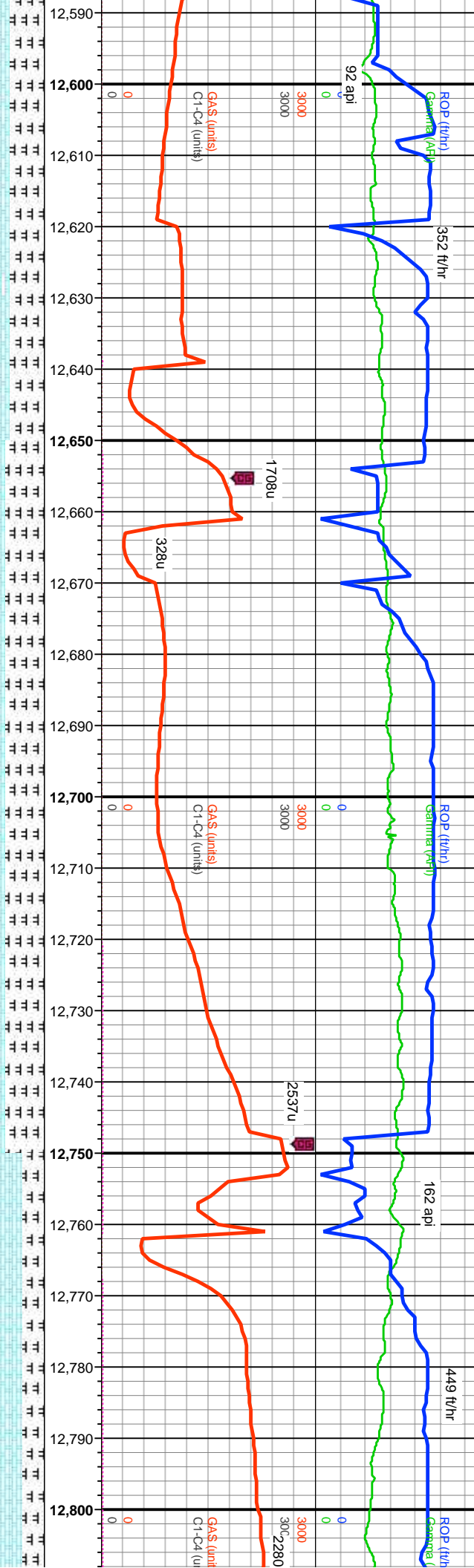
50% CHK: lt- med gy-gy brn, sb blk-y-blky, sl sft, arg, rthy lstr, v calc; tr  
forams; 50% MRLST: dk gy-gy brn, frm, sb blk-y, slty txt, rthy lstr, v arg, calc

60% CHK: lt- med gy  
calc; tr forams; 40%  
rthy lstr, v arg, calc

TVD MD: 12,412'  
INC: 90.56°  
AZM: 0.12°  
VS: 5,776.67'

MD: 12,505'  
INC: 90.83°  
AZM: 359.73°  
VS: 5,868.54'





gy brn, sb blkly-blkly, sl sft, arg, rthy lsfr, v  
MRLST: dk gy-gy brn, frm, sb blkly, silty txt,

55% CHK: lt- med gy-gy brn, sb blkly-blkly, sl sft, arg, rthy lsfr, v calc;  
tr forams; 45% MRLST: dk gy-gy brn, frm, sb blkly, silty txt, rthy lsfr, v  
arg, calc

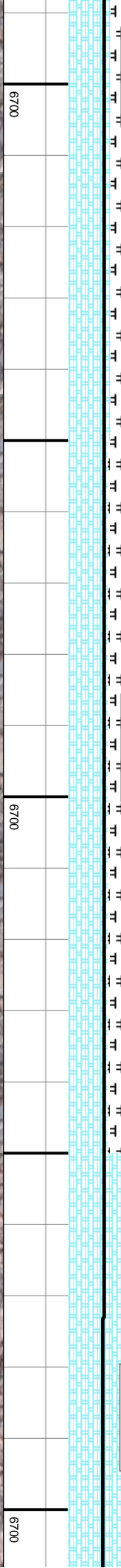
75% CHK: lt- med gy-gy brn, sb blkly-blkly,  
forams; 25% MRLST: dk gy-gy brn, frm, sil  
calc

MD: 12.599'  
INC: 89.35°  
AZM: 0.14°  
TVD: 6.462.8'  
VS: 5.961.41'

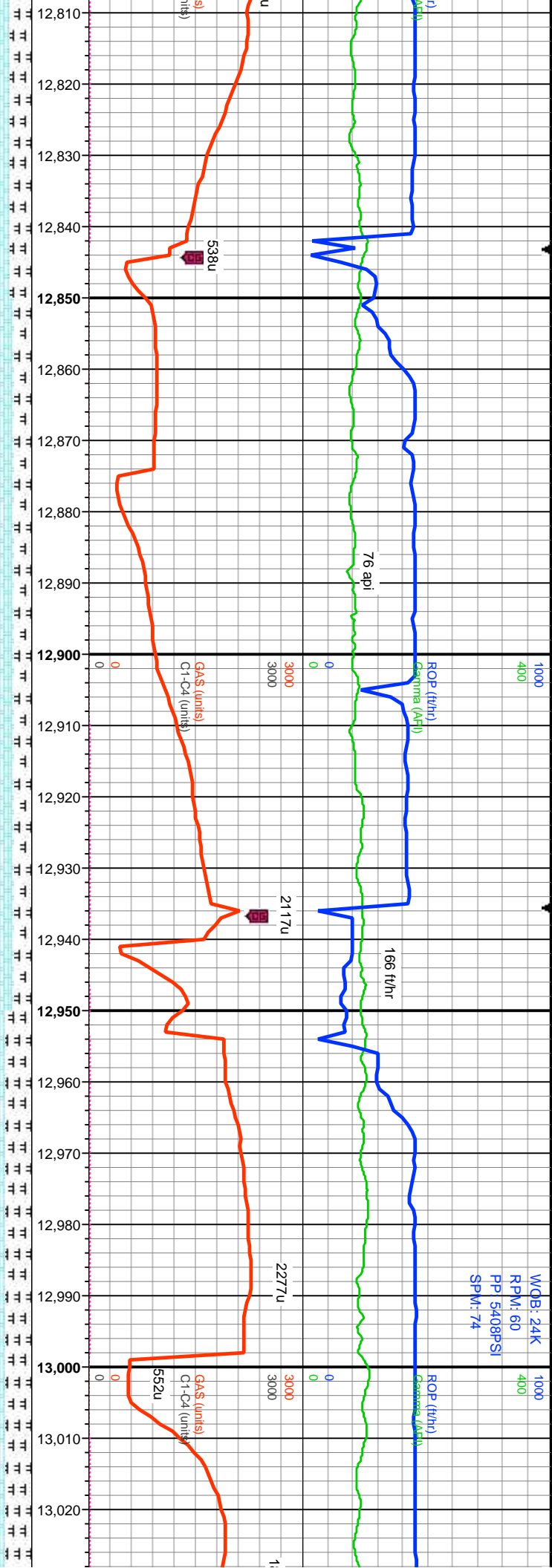
MD: 12.693'  
INC: 89.45°  
AZM: 2.08°  
TVD: 6.463.79'  
VS: 6.054.54'

MD: 12.787'  
INC: 88.81°  
AZM: 0.55°  
TVD: 6.465.21'  
VS: 6.147.72'

TVD (ft)







80% CHK: lt-med gy-gy brn, sb blkly-blkly, sl sft, arg, rthy lstr, v calc; tr  
forams; 20% MRLST: dk gy-gy brn, frm, sb blkly, slty txt, rthy lstr, v arg,  
calc

5700

5700

MD: 12,882'  
INC: 89.14°  
AZM: 2.14°  
TVD: 6,466.91'  
VS: 6,241.89'

TVD (ft)

70% CHK: lt-med gy-gy brn, sb blkly-blkly, sl sft, arg, rthy lstr  
calc; tr forams; 30% MRLST: dk gy-gy brn, frm, sb blkly, slty  
rthy lstr, v arg, calc

5700

5700

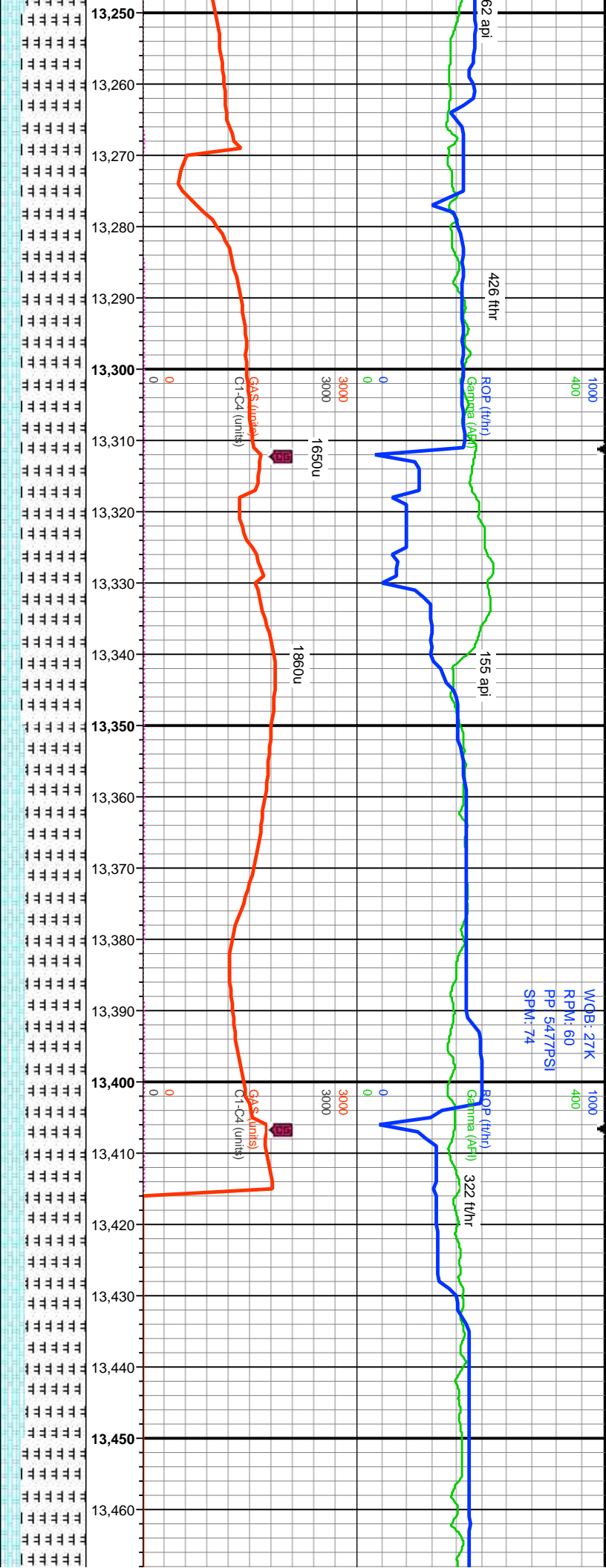
MD: 12,976'  
INC: 89.02°  
AZM: 3.51°  
TVD: 6,468.42'  
VS: 6,335.36'

TVD (ft)









75% MRLST: dk gy - gybrn, frm, sb blkly, slty txt, rthy lstr, v arg, calc;  
25% CHK: lt- med gy- gybrn, sb blkly - blkly, sl sft, arg, rthy lstr, v  
calc; tr forams

70% MRLST: dk gy - gybrn, frm, sb blkly, slty txt, rthy lstr, v arg, calc; 30%  
CHK: lt- med gy- gybrn, sb blkly - blkly, sl sft, arg, rthy lstr, v calc; tr forams

75%  
25%  
foran

MD: 13.256'  
INC: 89.36°  
AZM: 2.21°  
TVD: 6.471.92'  
VS: 6.615.86'

MD: 13.352'  
INC: 90.71°  
AZM: 2.93°  
TVD: 6.471.86'  
VS: 6.709.3'

MD: 13.446'  
INC: 90.77°  
AZM: 2.06°  
TVD: 6.470.64'  
VS: 6.802.72'

