



Scale: 5" / 100'  
Measured Depth Log

Well Name ROHN STATE LD10-69HN

Location SESE SEC 4 T9N R58W

State COLORADO County WELD

Country USA Rig Number H&P 273

API Number 05-123-37476 Field WILDCAT

Region DJ BASIN

Spud Date 9/28/2014

Surface Coordinates 661' FSL 330' FEL

Ground Elevation 4707' K.B. Elevation 4731'

Logged Interval 5050'

Formation NIOBRARA

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

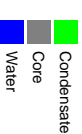
## Other

Wellsite Geologist #1 Laura Kellogg

















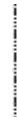




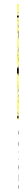











Wellsite Geologist #2 John Sabroske

Wellsite Geological Services Provided By Columbine Logging Inc.




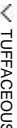





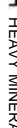


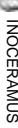




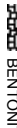

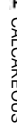



















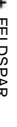














## Zone Color Coding



## Rock Types

	CHALK		CEMENT		IGNEOUS		SHALE GRAY
	MARLSTONE		CHERT		SIDERITE or LIMONITE		SHALY SILTSTONE
	SANDSTONE		CLAY CHOKE SAND		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		TUFACEOUS
	GASTROPOD		ARGILLITE GRAIN		GYPSIFEROUS		
	OOLITE		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		PLANT REMAINS		PHOSPHATE PELLETS		LIMESTONE STRINGER
	CORAL		COAL - THIN BEDS		PYRITE		MARLSTONE (CALC) STRG
	CRINOID		DOLOMITIC		SALT CAST		MARLSTONE (DOL) STRG
	ECHINOID		FELDSPAR		SANDY		SANDSTONE STRINGER
	FISH		FERRUGINOUS PELLET		SILICEOUS		SHALE STRINGER
	FORAMINIFERA		FERRUGINOUS		SILTY		SILTSTONE STRINGER

### Fossils

### Stringer

## Oil Show

	MOLDIC		FAULT
	ORGANIC		FORAM
	DEAD		PINPOINT
	EVEN		VUGGY
	QUESTIONABLE		NORMAL F
	SPOTTED STAINING		OIL SHOW

## Engineering

	BIT		OVERTURN
	CONNECTION (LEFT)		REVERSE
	E EARTHY		CONNECTION (RIGHT)
	FENESTRAL		CONNECTION GAS
	F FRACTURE		CORE - LOST
	INTERCRYSTALLINE		CORE - RECOVERED
	INTEROOLITIC		DST INTERVAL
			TRIP GAS

## Porosity

## Other S

# symbols

 WIRELINE TESTED - LEFT   **E** EARTHY

FORMATION TOP    WIRELINE TESTED - RT   **FX** FINELYXLN

**GS** GRAINSTONE

## Rounding

**L** LITHOGRAPHIC

**A** ANGULAR   **MX** MICROXLN

**R** ROUNDED   **MS** MUDSTONE

**S** SUBANG   **PS** PACKSTONE

**W** WACKSTONE

**MS** MUDSTONE

**PS** PACKSTONE

**MS** MUDSTONE

**W** WACKSTONE

**MS** MUDSTONE

## Textures

## Sorting

**B** BOUNDSTONE

**M** MODERATE

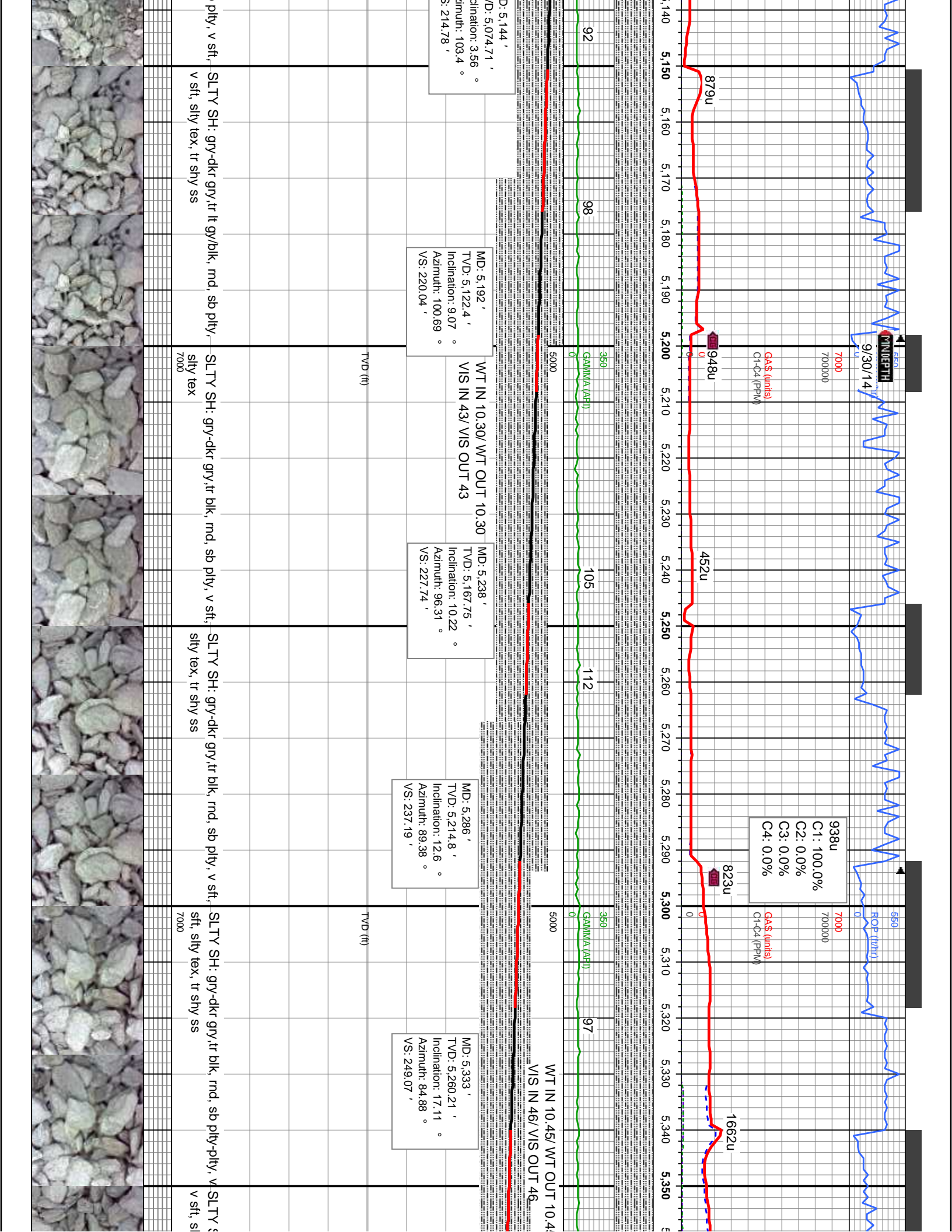
**C** CHALKY

**P** POOR

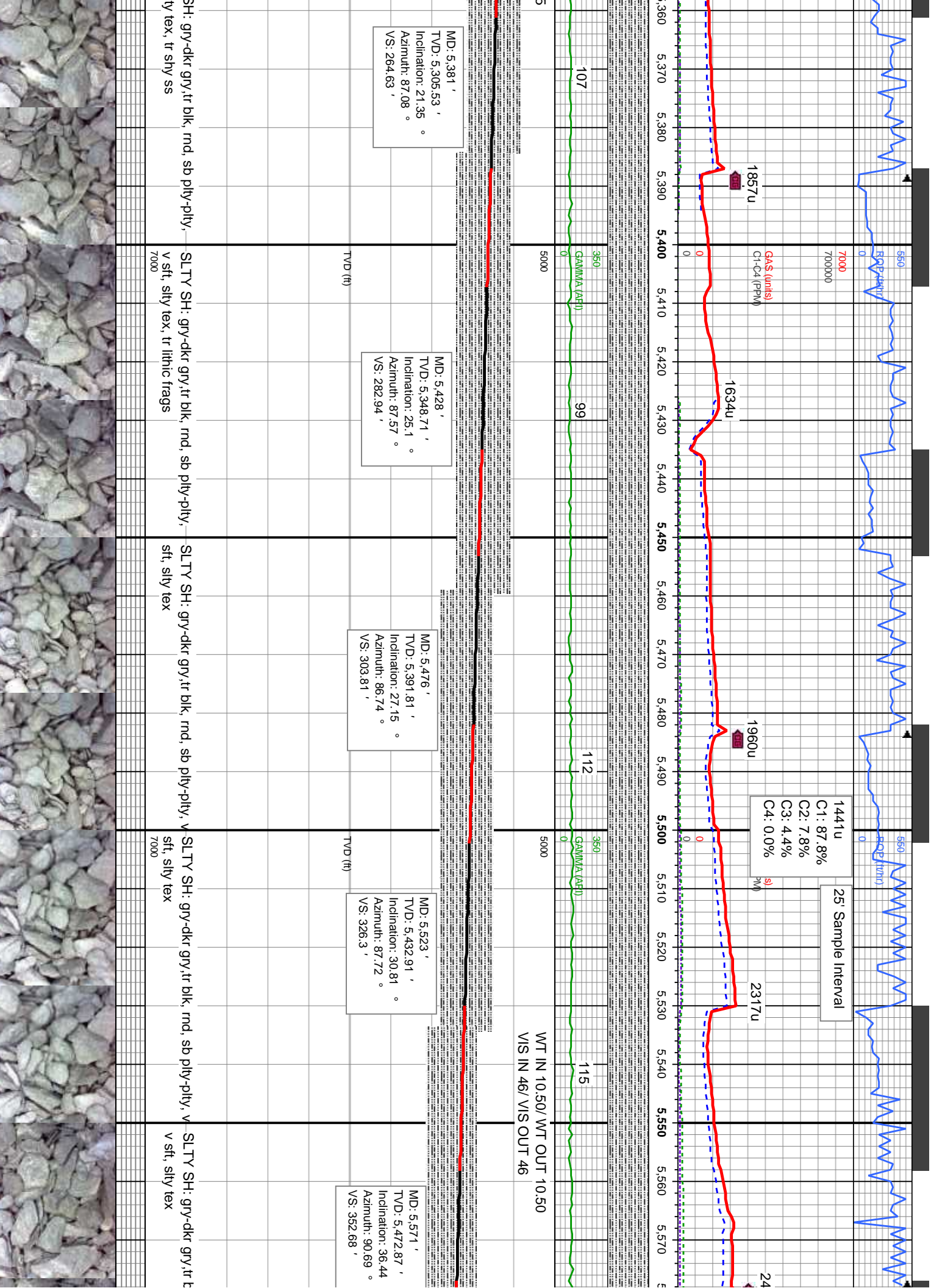
**W** WELL

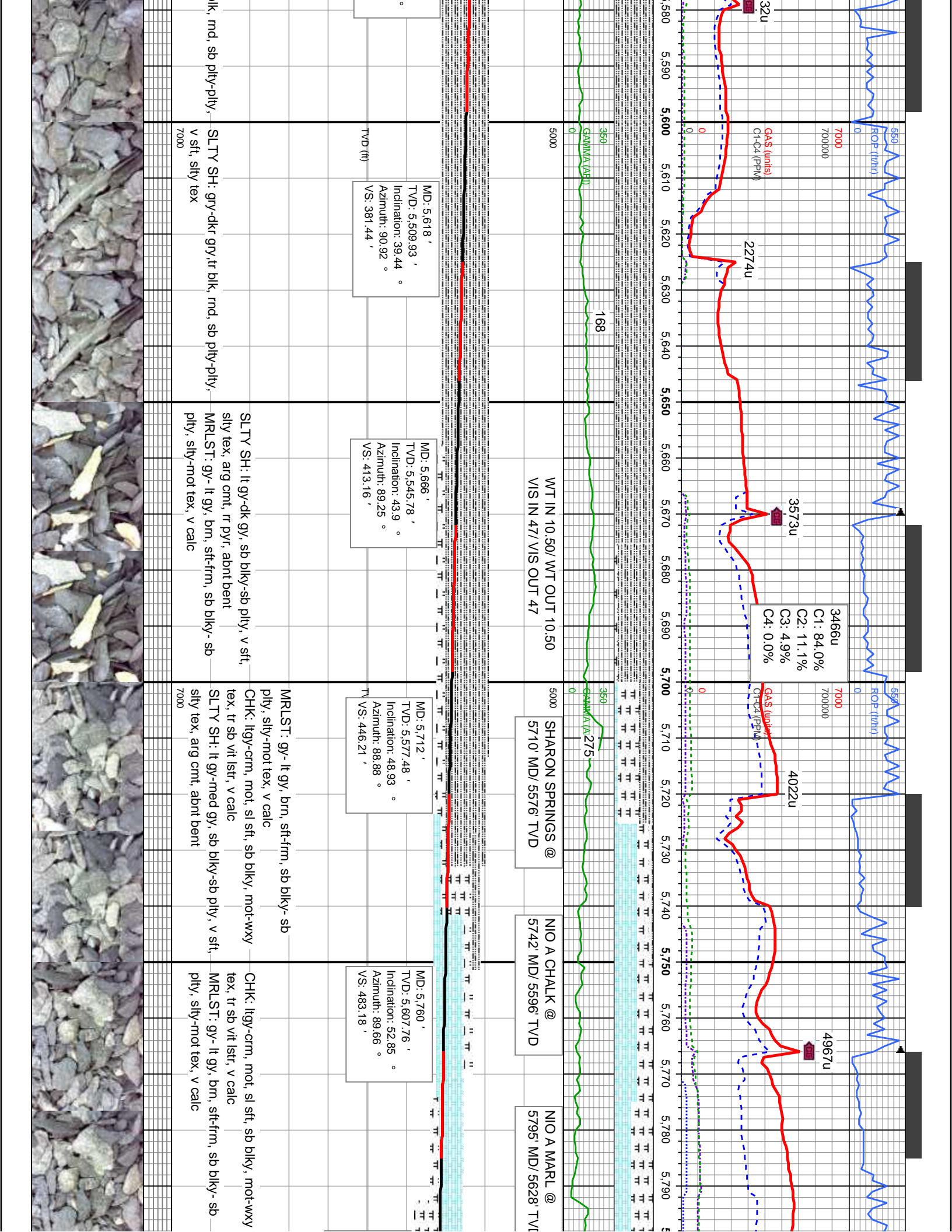
**W** WELL



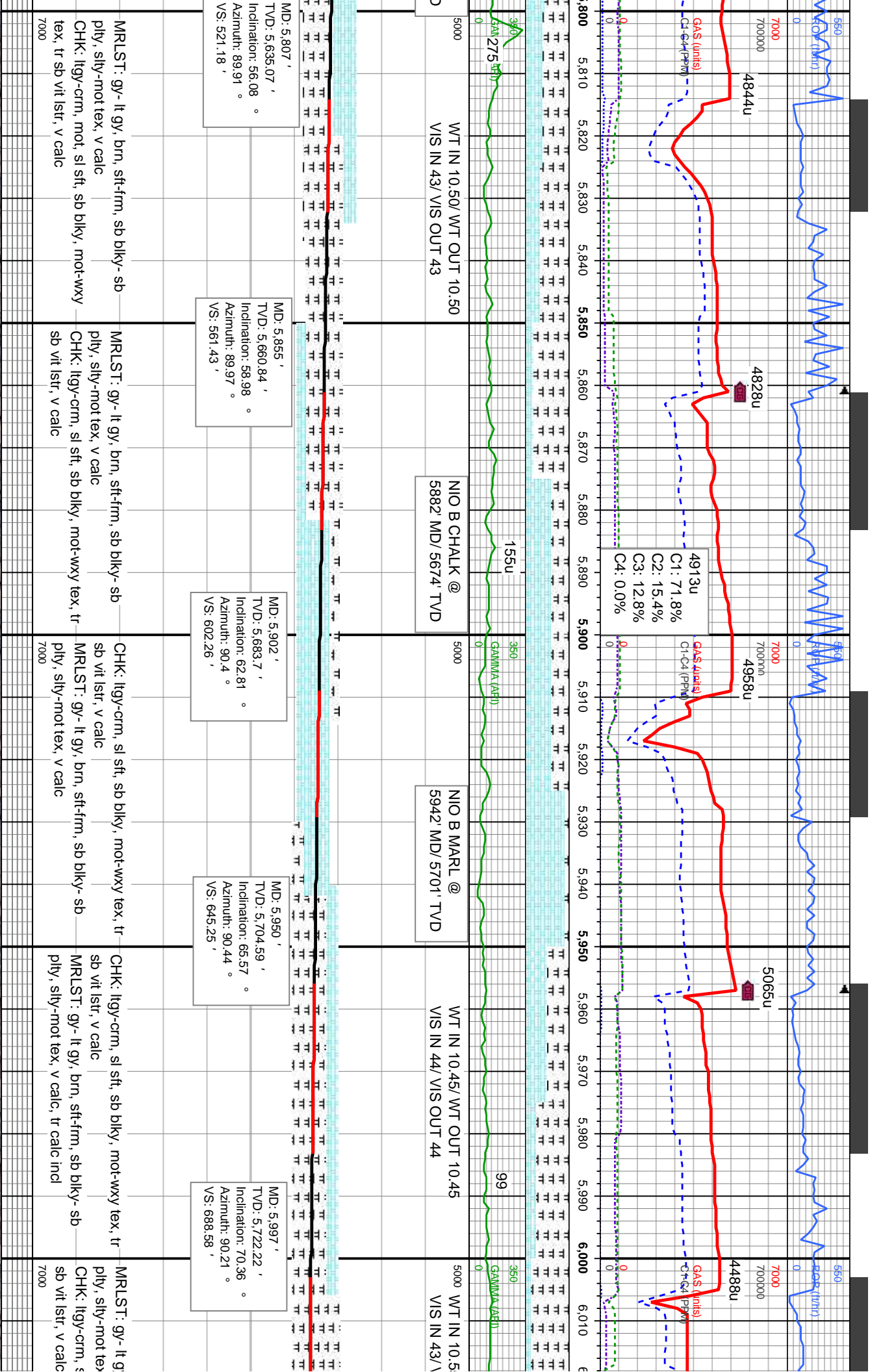












MD: 5,807' TVD: 5,635.07' Inclination: 56.08° Azimuth: 89.91° VS: 521.18'

MD: 5,855' TVD: 5,660.84' Inclination: 56.98° Azimuth: 89.97° VS: 561.43'

MD: 5,902' TVD: 5,683.7' Inclination: 62.81° Azimuth: 90.4° VS: 602.26'

MD: 5,950' TVD: 5,704.59' Inclination: 65.57° Azimuth: 90.44° VS: 645.25'

MD: 5,997' TVD: 5,722.22' Inclination: 70.36° Azimuth: 90.21° VS: 688.58'

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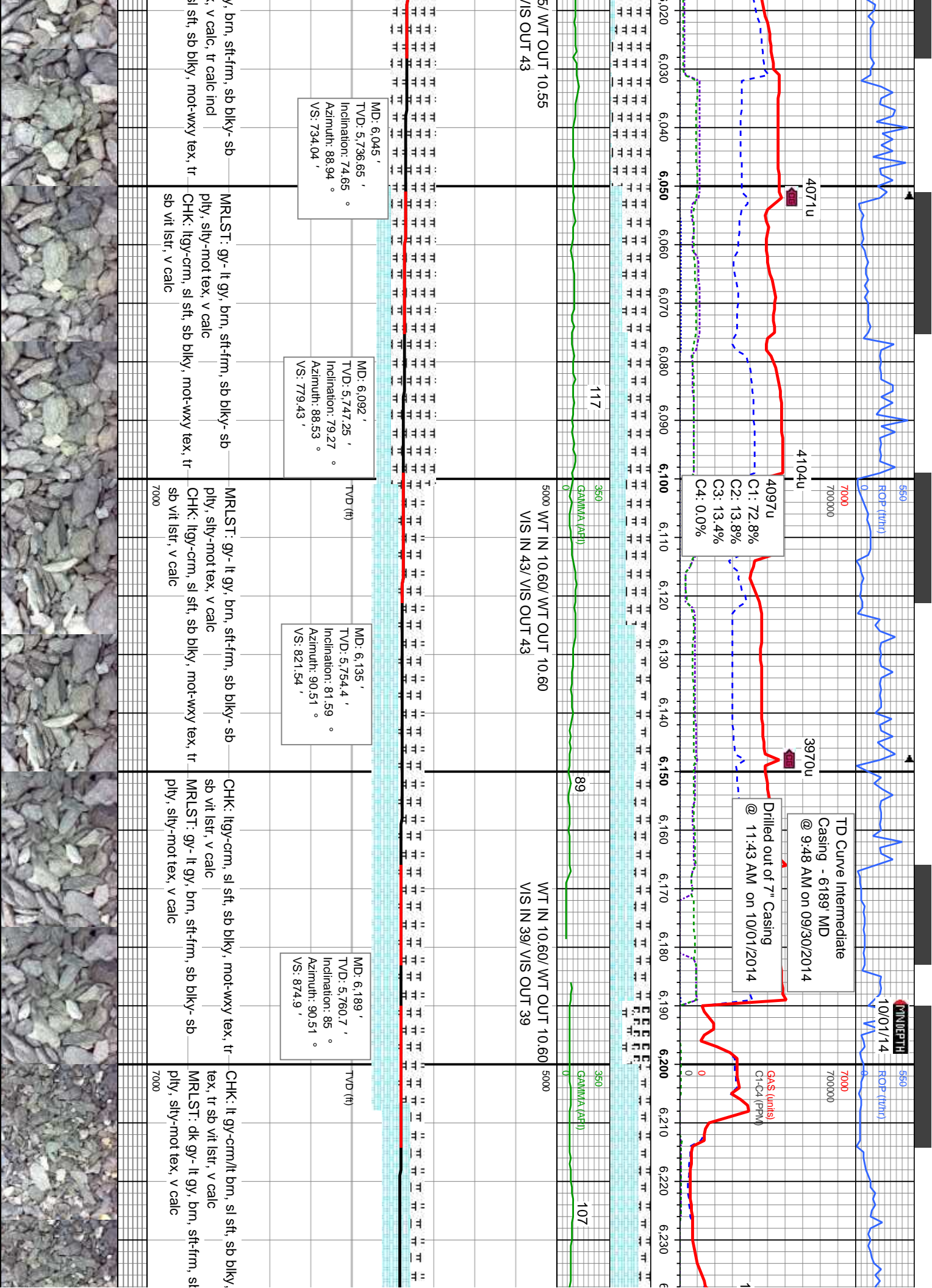
MD: 5,855' TVD: 5,660.84' Inclination: 56.98° Azimuth: 89.97° VS: 561.43'

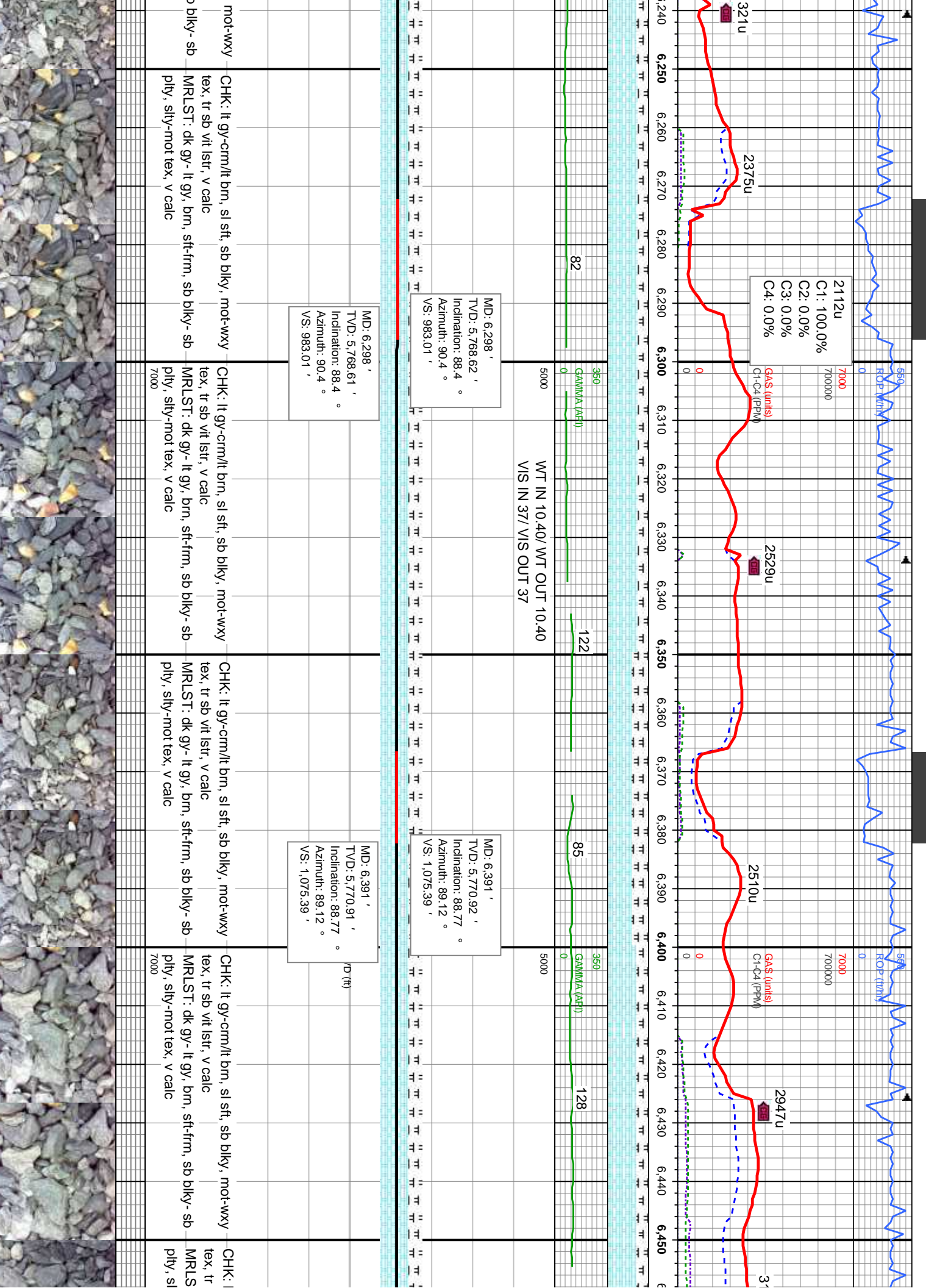
MD: 5,902' TVD: 5,683.7' Inclination: 62.81° Azimuth: 90.4° VS: 602.26'

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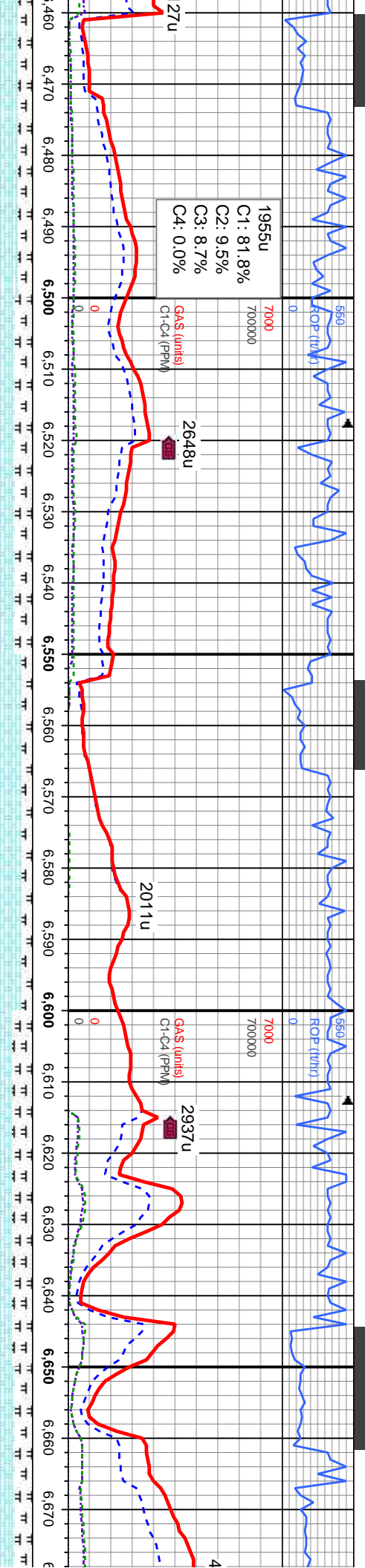
MD: 5,997' TVD: 5,722.22' Inclination: 70.36° Azimuth: 90.21° VS: 688.58'











1955u  
C1: 81.8%  
C2: 9.5%  
C3: 8.7%  
C4: 0.0%

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

2648u

2011u

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

2937u

WT IN 10.40/ WT OUT 10.40  
VIS IN 37/ VIS OUT 37

350  
GAMMA (AFI)

90

63

350  
GAMMA (AFI)

115

MD: 6.483 '  
TVD: 5.773.55 '  
Inclination: 87.96 °  
Azimuth: 87.45 °  
VS: 1.166.48 '

TVD (ft)

MD: 6.577 '  
TVD: 5.776.31 '  
Inclination: 88.67 °  
Azimuth: 86.99 °  
VS: 1.259.29 '

TVD (ft)

MD: 6.672 '  
TVD: 5.777.84 '  
Inclination: 89.48 °  
Azimuth: 86.48 °  
VS: 1.352.98 '

lt gy-crm/lt brn, sl sft, sb blk, mot-wxy  
sb vit lstr, v calc  
T: dk gy- lt gy, brn, sft-frm, sb blk- sb  
ply-mot tex, v calc

CHK: lt gy-crm/lt brn, sl sft, sb blk, mot-wxy  
tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, brn, sft-frm, sb blk- sb  
ply, slty-mot tex, v calc

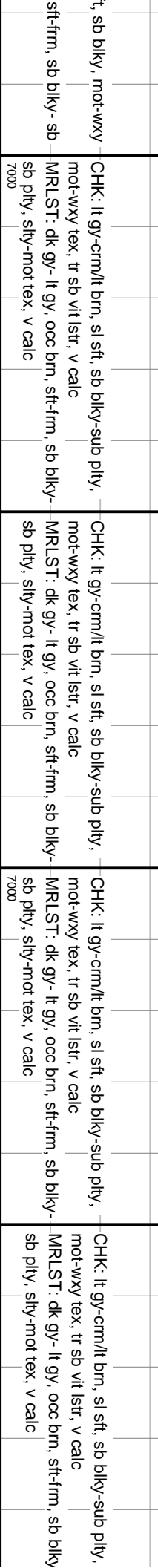
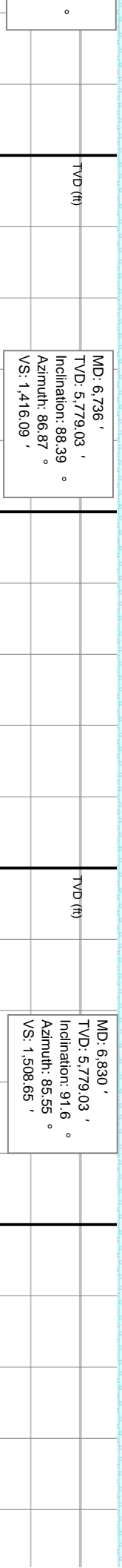
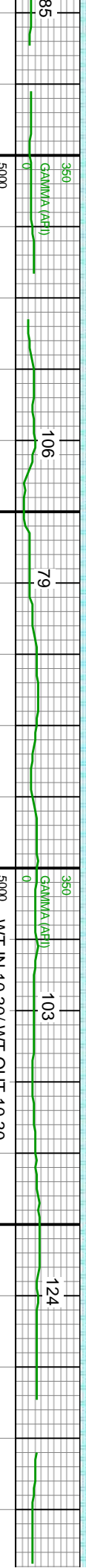
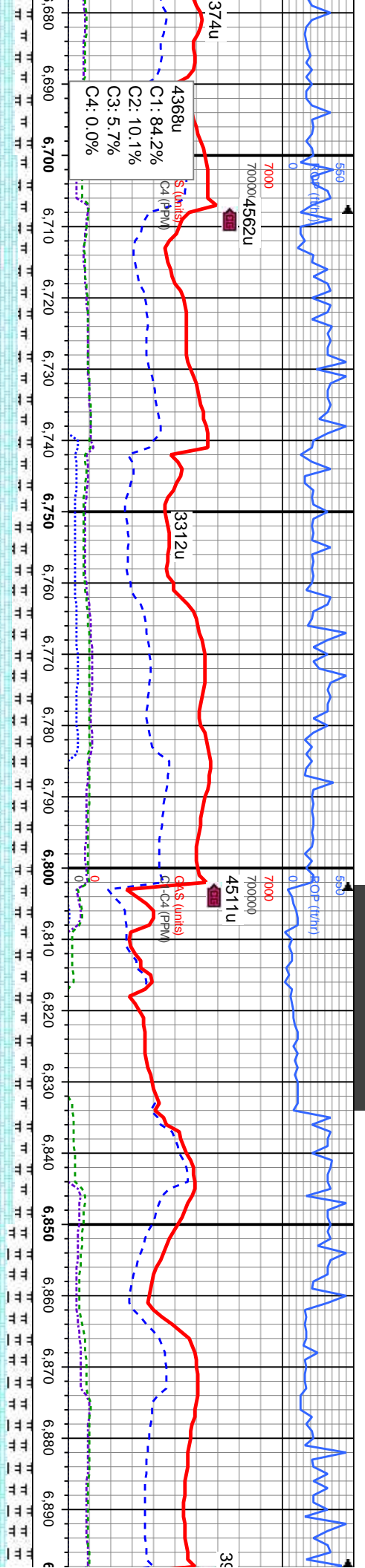
CHK: lt gy-crm/lt brn, sl sft, sb blk, mot-wxy  
tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, brn, sft-frm, sb blk- sb  
ply, slty-mot tex, v calc

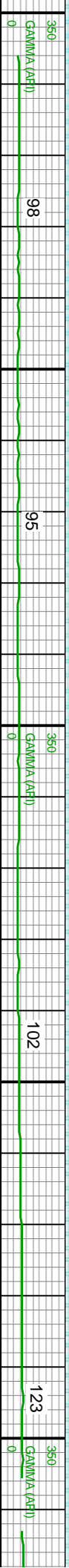
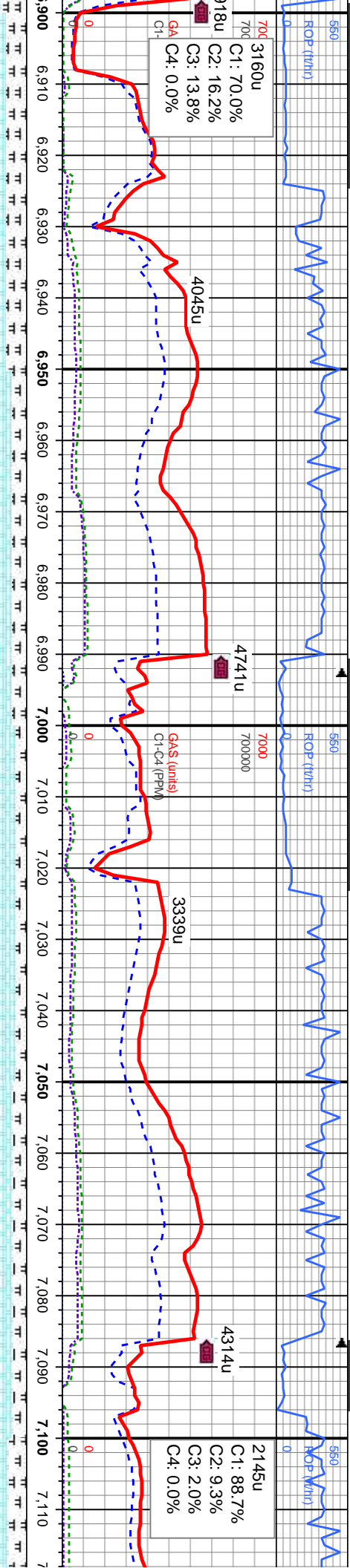
CHK: lt gy-crm/lt brn, sl sft, sb blk, mot-wxy  
tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, brn, sft-frm, sb blk- sb  
ply, slty-mot tex, v calc

CHK: lt gy-crm/lt brn, sl sft, sb blk, mot-wxy  
tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, brn, sft-frm, sb blk- sb  
ply, slty-mot tex, v calc





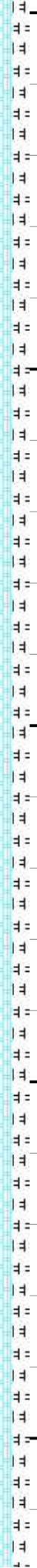




5000	WT IN 10.20/ WT OUT 10.20
	VIS IN 35/ VIS OUT 35

5000  
WT IN 10.30/ WT OUT 10.30  
VIS IN 37/ VIS OUT 37

5000



MD: 6,925 '   
 TVD: 5,776.15 '   
 Inclination: 91.88 °   
 Azimuth: 88.59 °   
 VS: 1,602.4 '

CHK: It gy-erm/lt brn, occ gy-dk gy, sl sft, sb  
biky-sub pily, mot-wxy tex, tr sb vi lstr, v calc  
-MRLST: dk gy-It gy, occ brn, sft-frm, sb biky-  
sb pily, slty-mot tex, v calc

CHK: lt gy-crm/lt brn, occ gy-dk gy, sl sft, sb  
biky-sub ply, mot-wxy tex, tr sb vit lst, v calc  
MRLEST: dk gy- lt gy, occ brn, sft-frm, sb biky  
sb ply, sily-mot tex, v calc

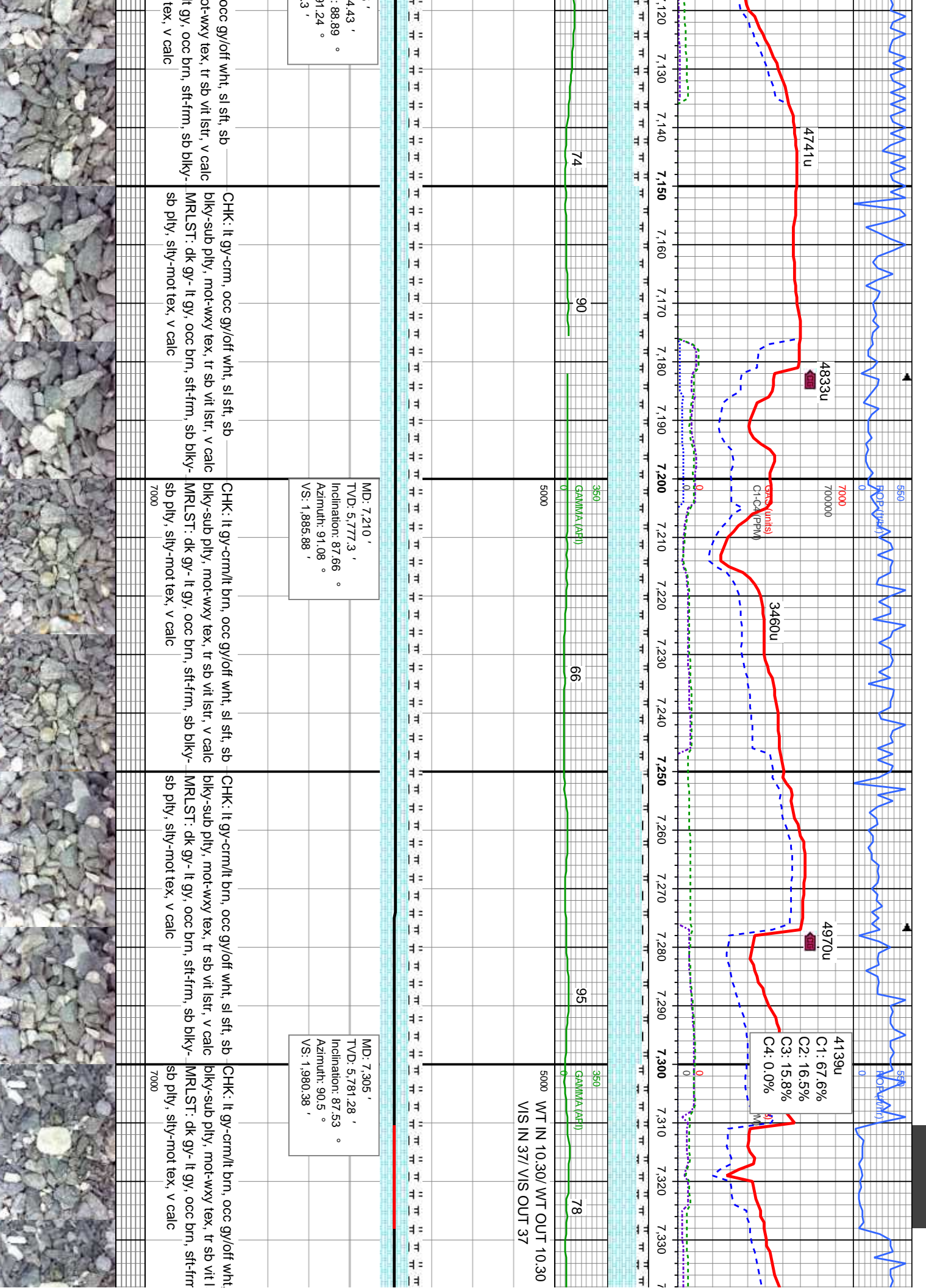
CHK: lt gy-crm/lt brn, occ gy-dk gy, sl sft, sb  
biky-sub pty, mot-wxy tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, occ brn, sft-firm, sb bikly  
sb pty, silty-mot tex, v calc

CHK: lt gy-erm/lt brn, occ gy/off wht, sl sft, sb blyk-sub ply, mot-wxy tex, tr sb vit lstr, v cal  
MRLST: dk gy- lt gy, occ brn, sft-frm, sb blyk  
sb ply, sly-mot tex, v calc

CHK: It gy-crm,  
biky-sub pty, m  
MRLST: dk gy-  
sb pty, silty-mot







4.43 ' °  
88.89 °  
1.24 °  
3 ' °

MD: 7,210 ' °  
TVD: 5,777.3 ' °  
Inclination: 87.66 °  
Azimuth: 91.08 °  
VS: 1,885.88 ' °

MD: 7,305 ' °  
TVD: 5,781.28 ' °  
Inclination: 87.53 °  
Azimuth: 90.5 °  
VS: 1,980.38 ' °

CHK: lt gy-crm, occ gy/off wht, sl sft, sb blkly-sub ply, mot-wxy tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, occ brn, sft-firm, sb blkly-sb ply, silty-mot tex, v calc

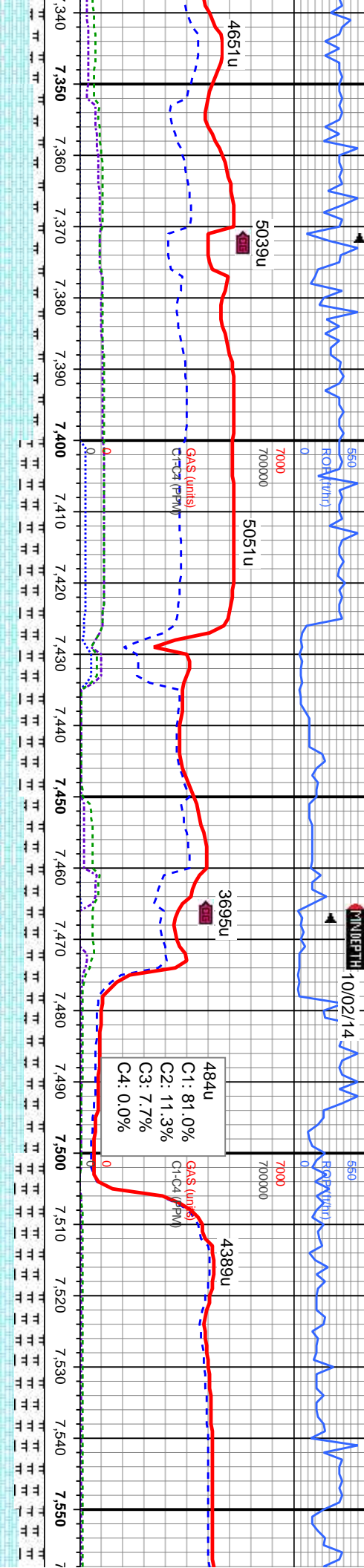
CHK: lt gy-crm/lt brn, occ gy/off wht, sl sft, sb blkly-sub ply, mot-wxy tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, occ brn, sft-firm, sb blkly-sb ply, silty-mot tex, v calc

CHK: lt gy-crm/lt brn, occ gy/off wht, sl sft, sb blkly-sub ply, mot-wxy tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, occ brn, sft-firm, sb blkly-sb ply, silty-mot tex, v calc

CHK: lt gy-crm/lt brn, occ gy/off wht, sl sft, sb blkly-sub ply, mot-wxy tex, tr sb vit lstr, v calc  
MRLST: dk gy- lt gy, occ brn, sft-firm, sb blkly-sb ply, silty-mot tex, v calc



DATE: 10/02/14

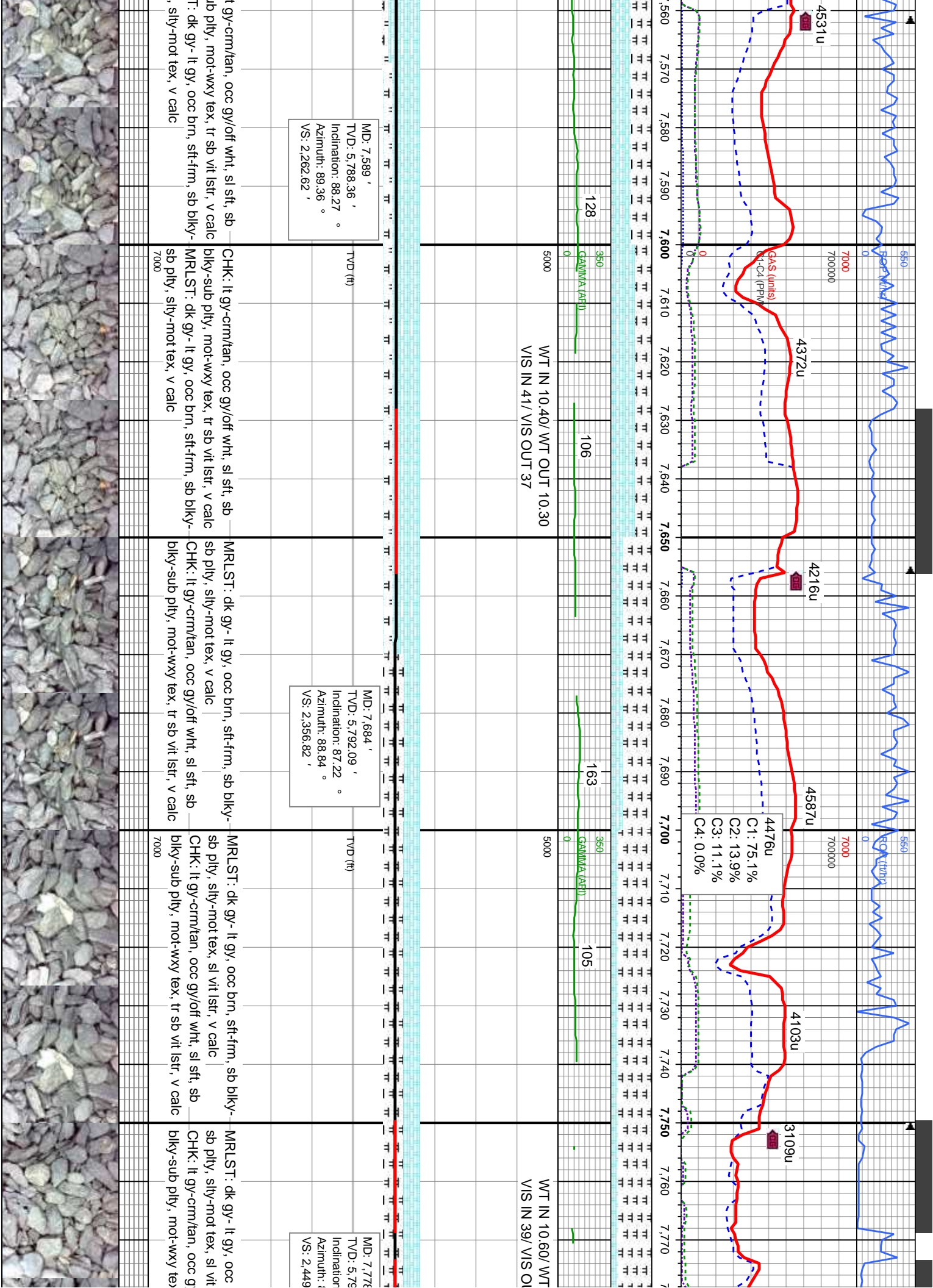


MD: 7,399 '  
TVD: 5,784.5 '  
Inclination: 88.55 °  
Azimuth: 90.4 °  
VS: 2,073.85 '

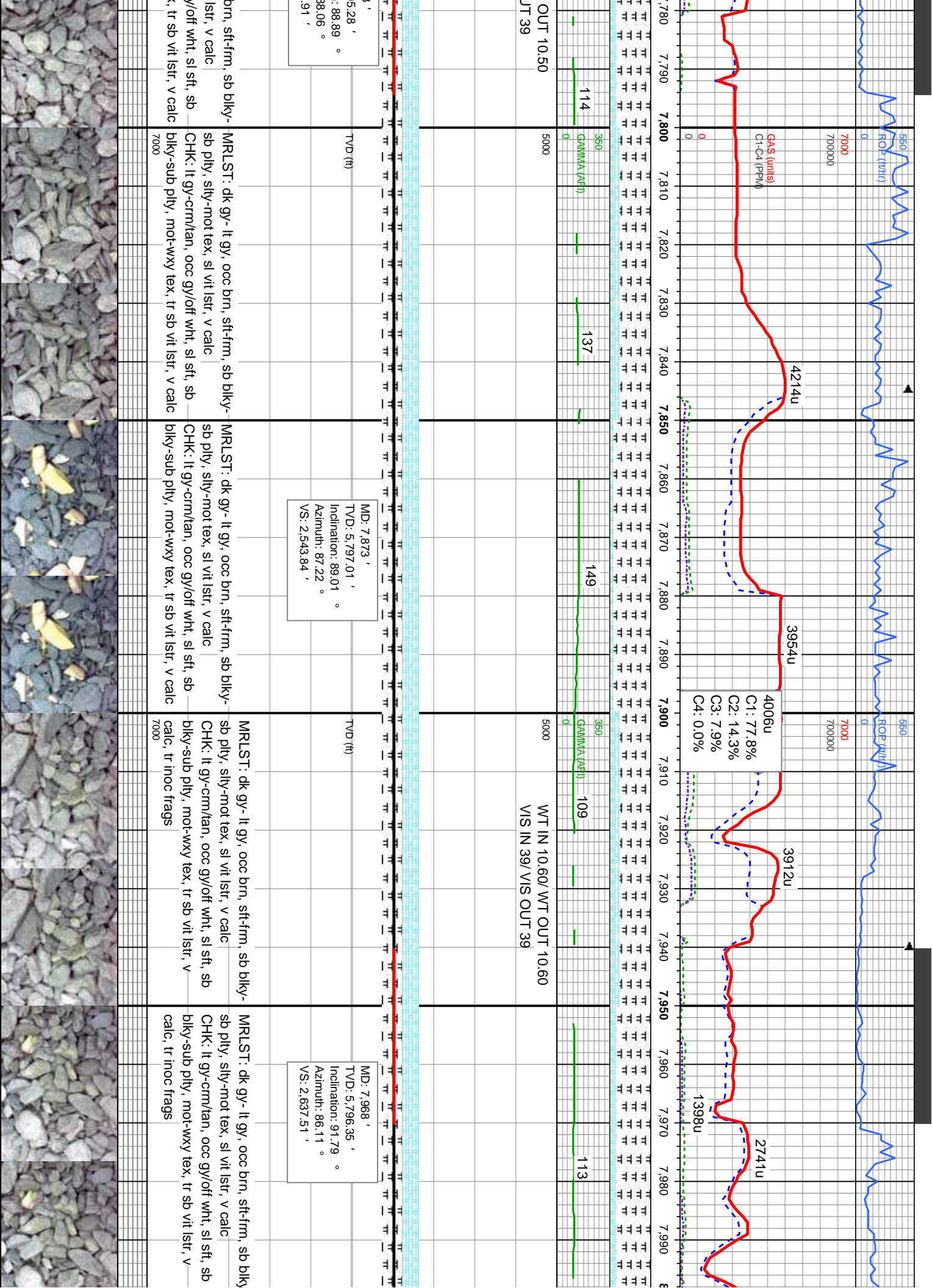
MD: 7,494 '  
TVD: 5,786.31 '  
Inclination: 89.26 °  
Azimuth: 89.69 °  
VS: 2,168.29 '

sl sft, sb	CHK: lt gy-crm/lt brn, occ gy/off wht, sl sft, sb	CHK: lt gy-crm/lt brn, occ gy/off wht, sl sft, sb	CHK: lt gy-crm/lt brn, occ gy/off wht, sl sft, sb	CHK: lt gy-crm/lt brn, occ gy/off wht, sl sft, sb
str, v calc	blky-sub pily, mot-wxy tex, tr sb vit lstr, v calc	blky-sub pily, mot-wxy tex, tr sb vit lstr, v calc	blky-sub pily, mot-wxy tex, tr sb vit lstr, v calc	blky-sub pily, mot-wxy tex, tr sb vit lstr, v calc
1, sb blky-	MRLST: dk gy- lt gy, occ brn, sft-fm, sb blky-	MRLST: dk gy- lt gy, occ brn, sft-fm, sb blky-	MRLST: dk gy- lt gy, occ brn, sft-fm, sb blky-	MRLST: dk gy- lt gy, occ brn, sft-fm, sb blky-
	sb pily, stly-mot tex, v calc, tr pyr	sb pily, stly-mot tex, v calc	sb pily, stly-mot tex, v calc	sb pily, stly-mot tex, v calc

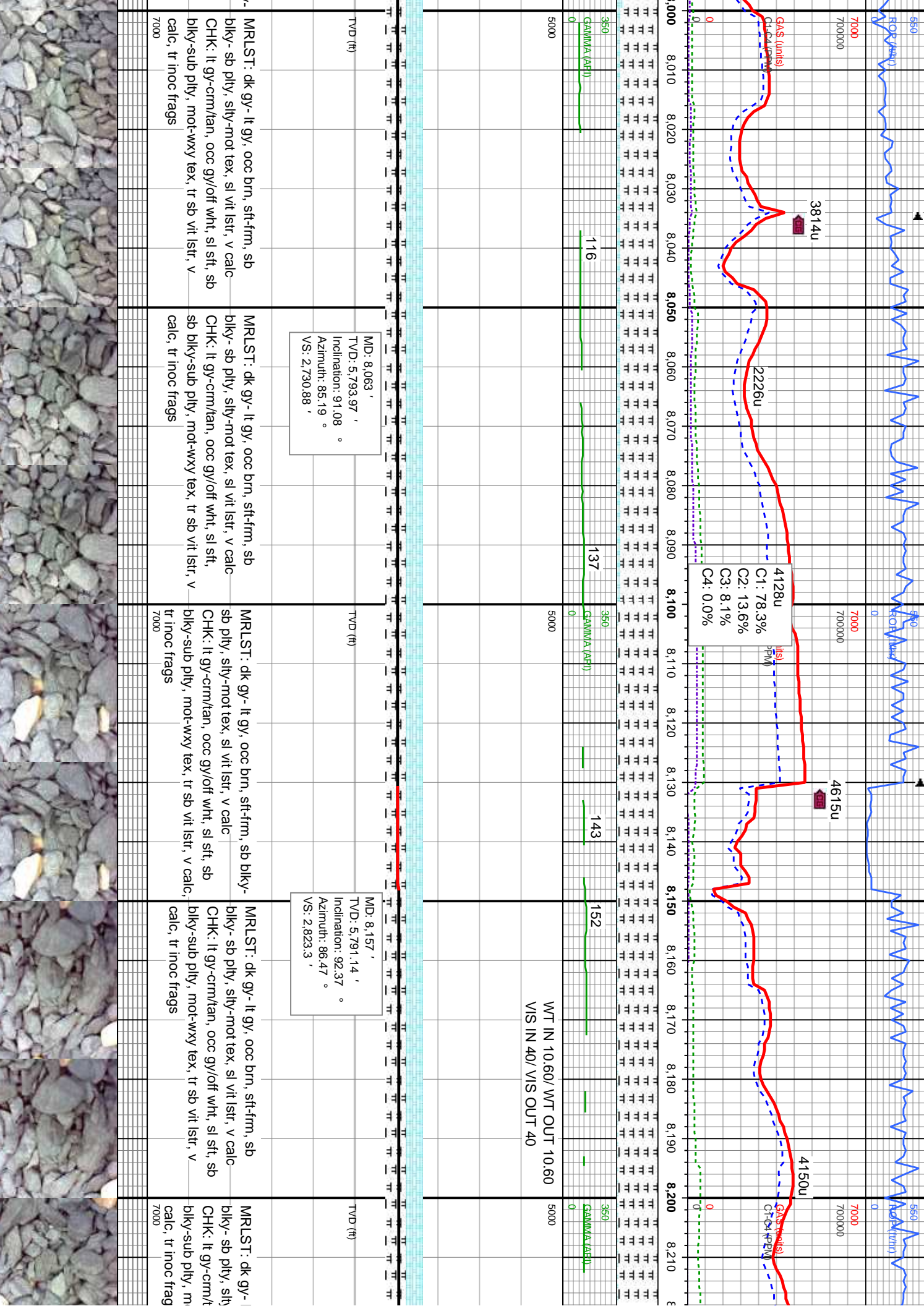










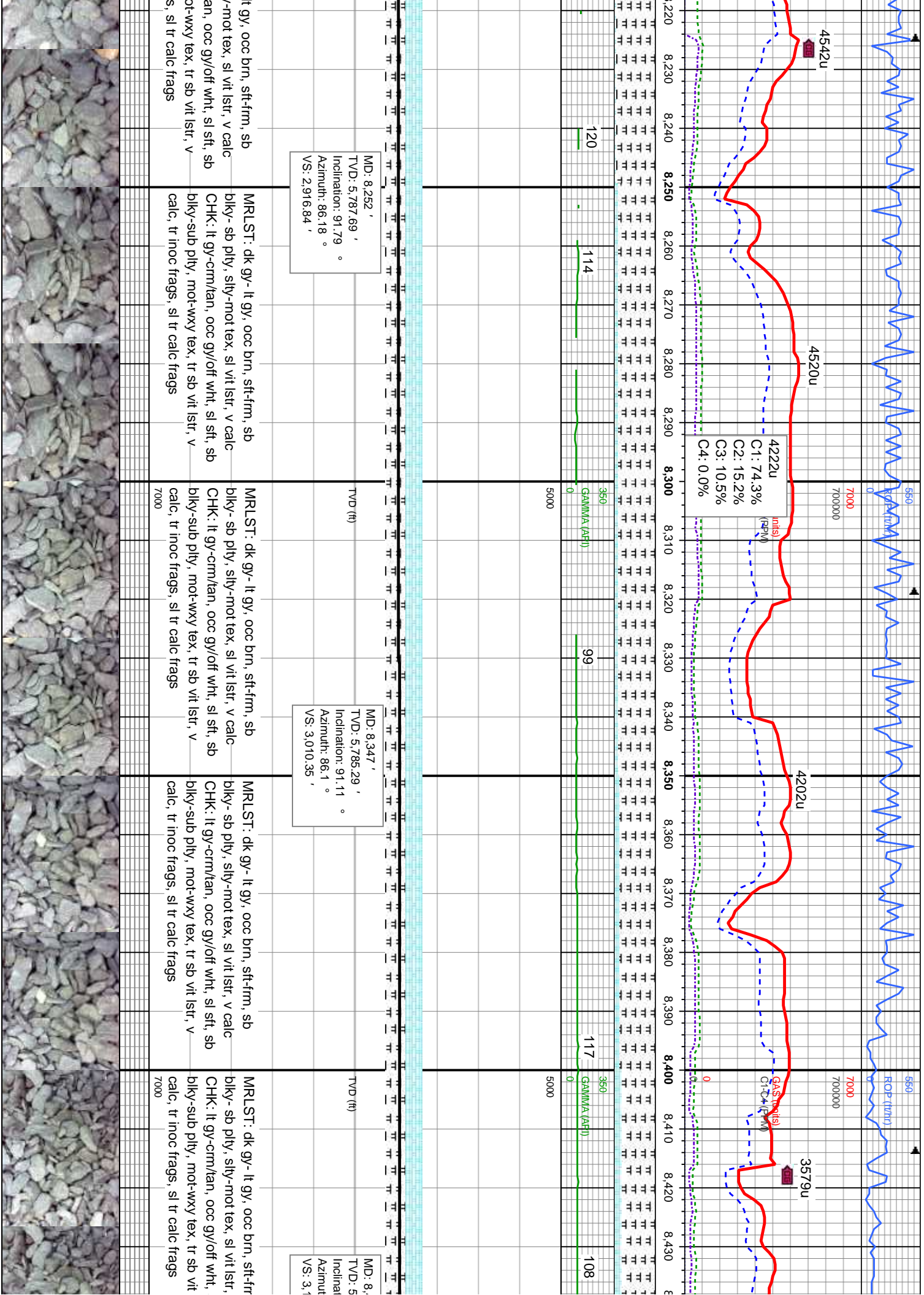


MD: 8,063 '  
TVD: 5,793.97 '  
Inclination: 91.08 °  
Azimuth: 85.19 °  
VS: 2,730.88 '

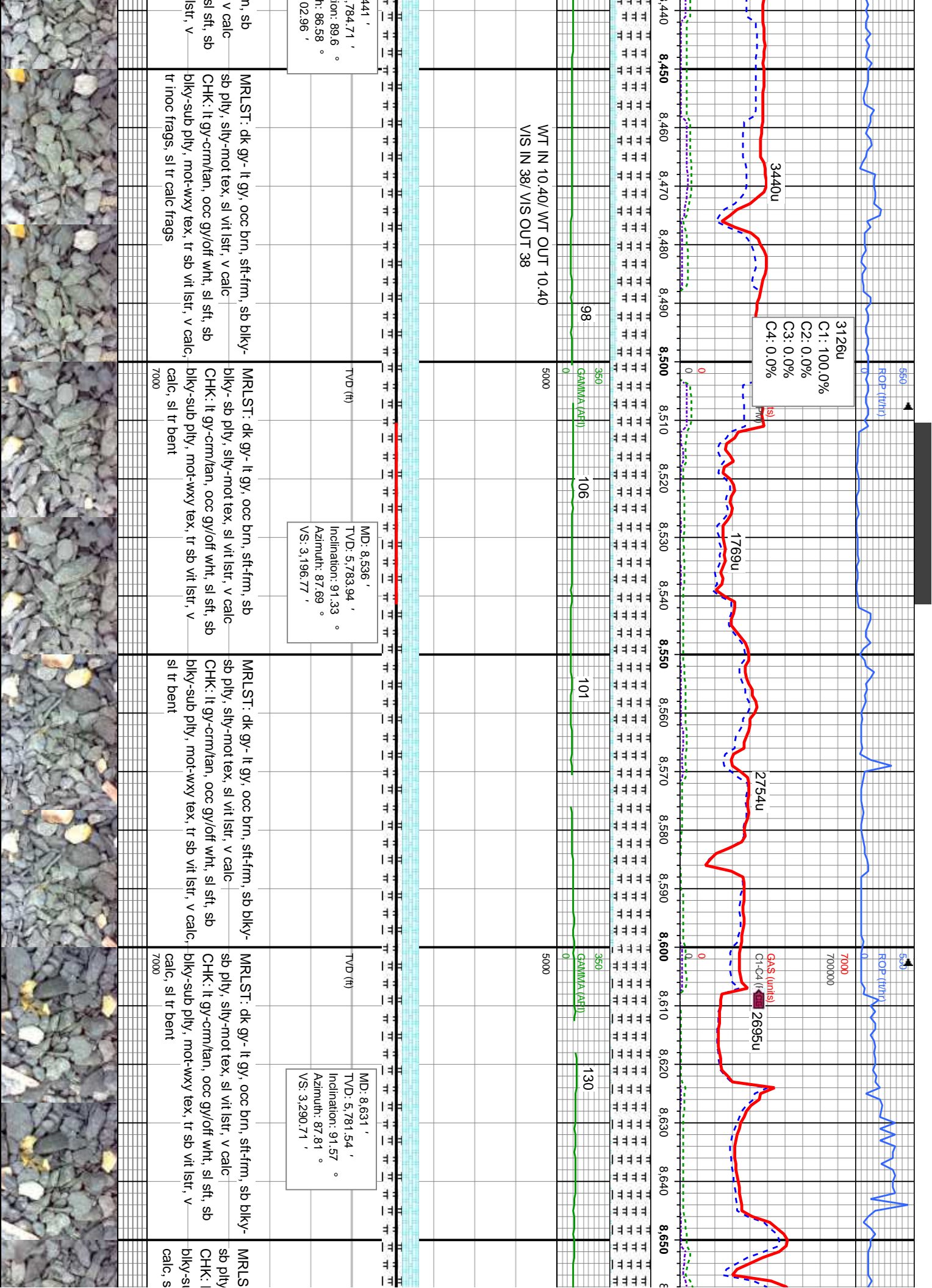
MD: 8,157 '  
TVD: 5,791.14 '  
Inclination: 92.37 °  
Azimuth: 86.47 °  
VS: 2,823.3 '

C1: 78.3%  
C2: 13.6%  
C3: 8.1%  
C4: 0.0%

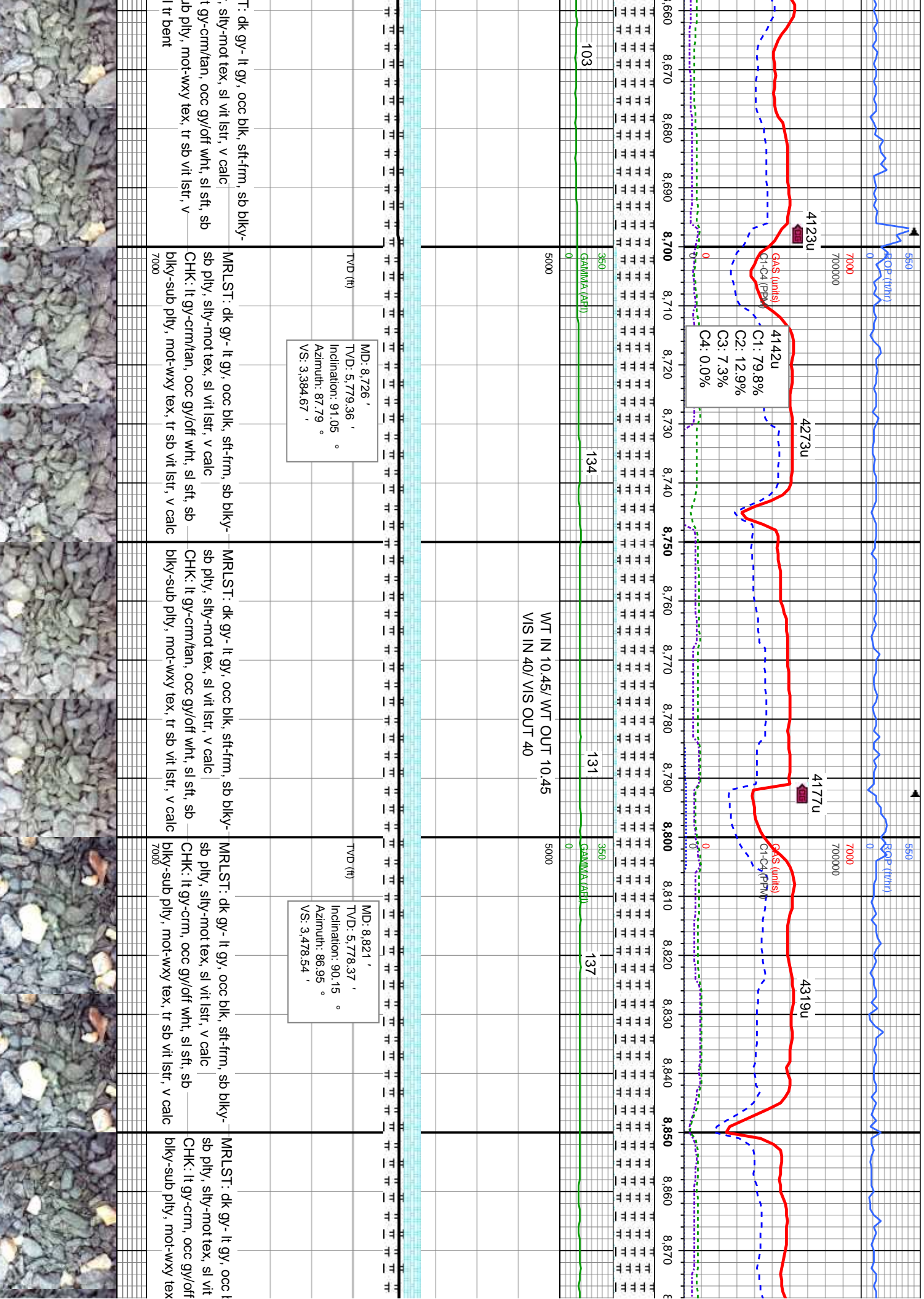
WT IN 10.60/ WT OUT 10.60  
VIS IN 40/ VIS OUT 40





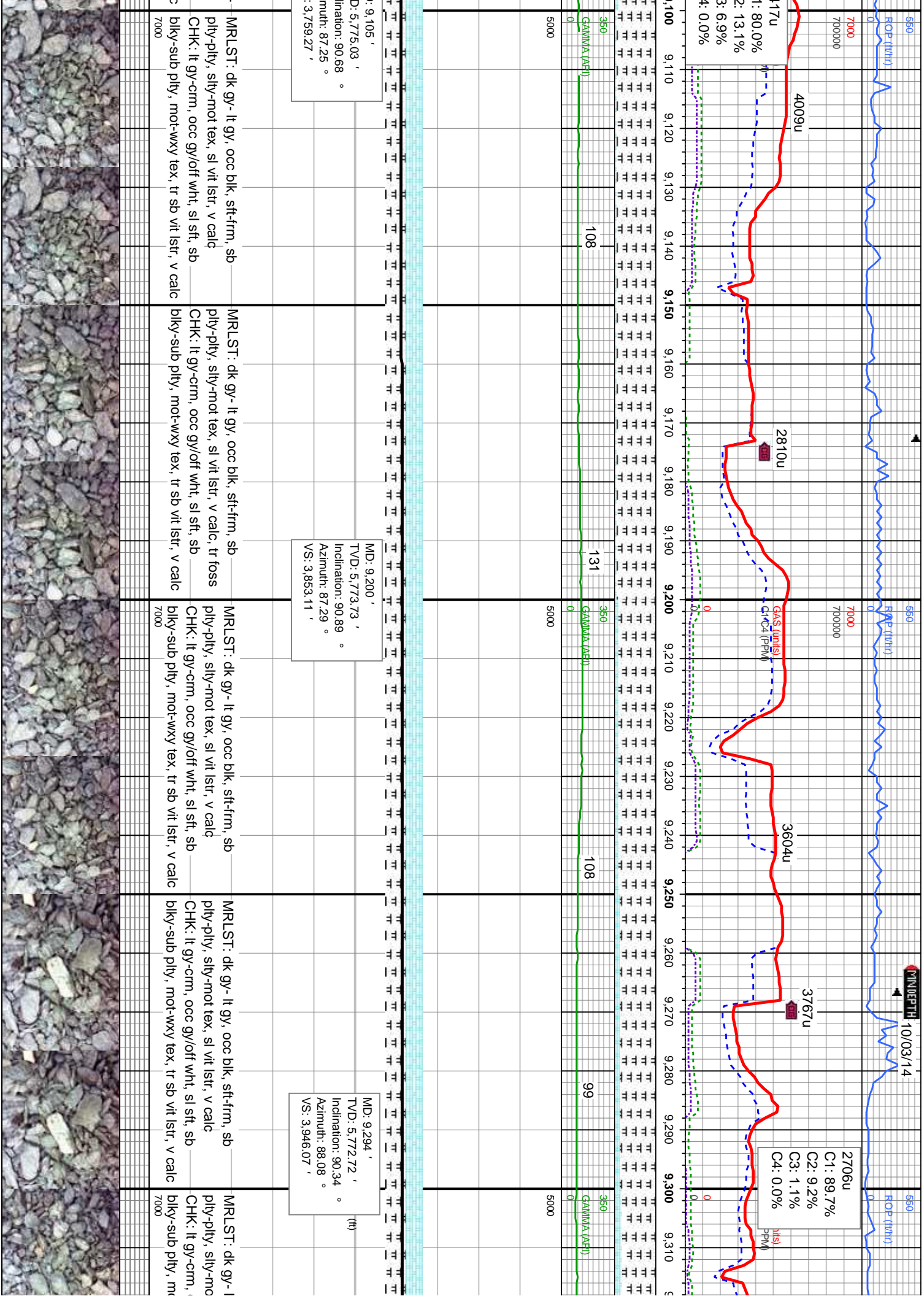






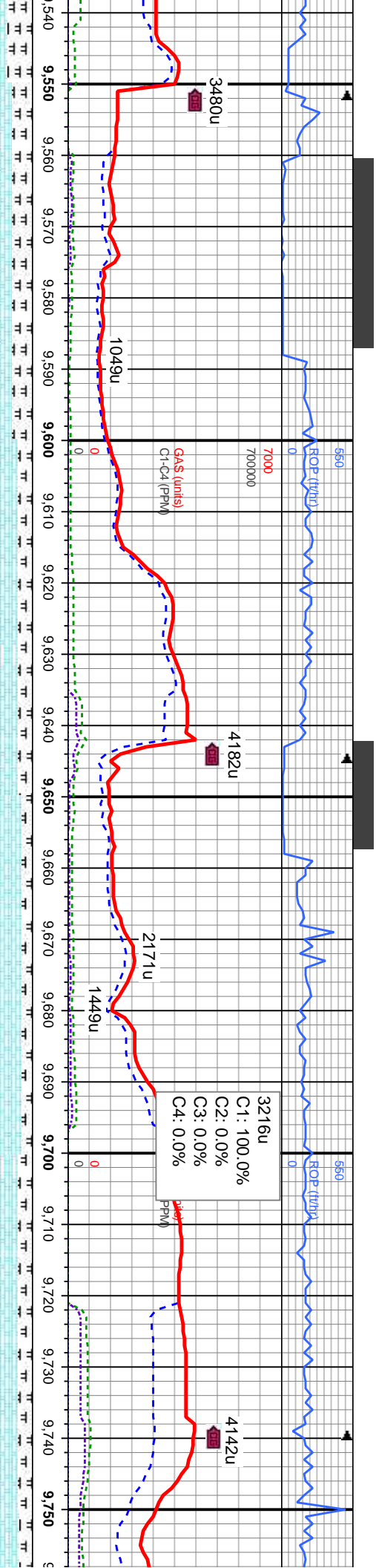












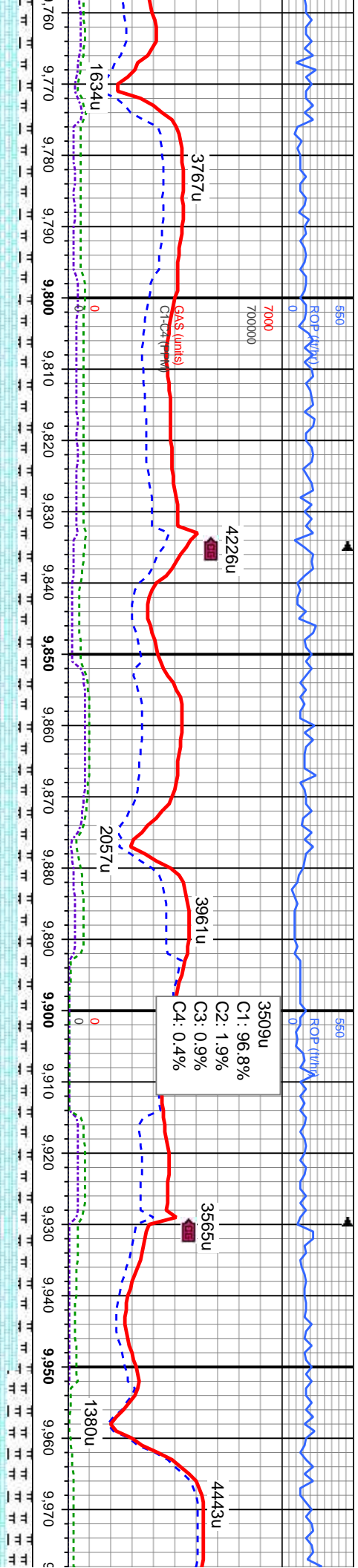
WT IN 10.30/ WT OUT 10.30  
VIS IN 57/ VIS OUT 57

MD: 9,578 '  
TVD: 5,770.04 '  
Inclination: 88.95 °  
Azimuth: 88.7 °  
VS: 4,227.68 '

MD: 9,673 '  
TVD: 5,773.57 '  
Inclination: 86.79 °  
Azimuth: 88.73 °  
VS: 4,321.8 '

sb	CHK: lt gy brn, occ gy/off wht, sl sft, sb	CHK: lt gy brn, occ gy/off wht, sl sft, sb	CHK: lt gy brn, occ gy/off wht, sl sft, sb
istr, v calc	bkly-sub pty, mot-wxy tex, tr sb vit istr, v calc	bkly-sub pty, mot-wxy tex, tr sb vit istr, v calc	bkly-sub pty, mot-wxy tex, tr sb vit istr, v calc
ply-ply,	MRLST: med gy- dk gy, sft-fm, sb ply-ply,	MRLST: med gy- dk gy, sft-fm, sb ply-ply,	MRLST: med gy- dk gy, sft-fm, sb ply-ply,
t	slty-mot tex, sl vit istr, v calc, tr bent	slty-mot tex, sl vit istr, v calc, tr bent	slty-mot tex, sl vit istr, v calc, tr bent





N 10.20 WT OUT 10.20  
N 41/ VIS OUT 41

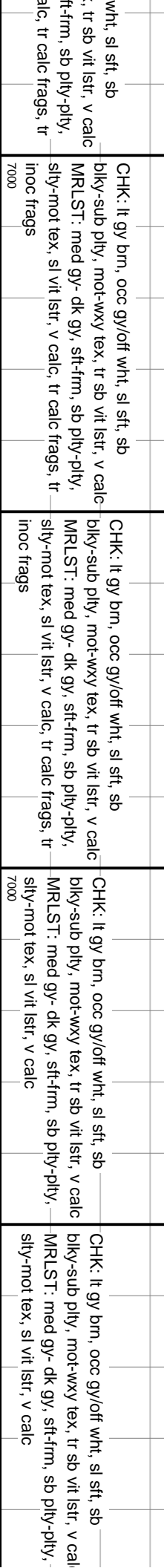
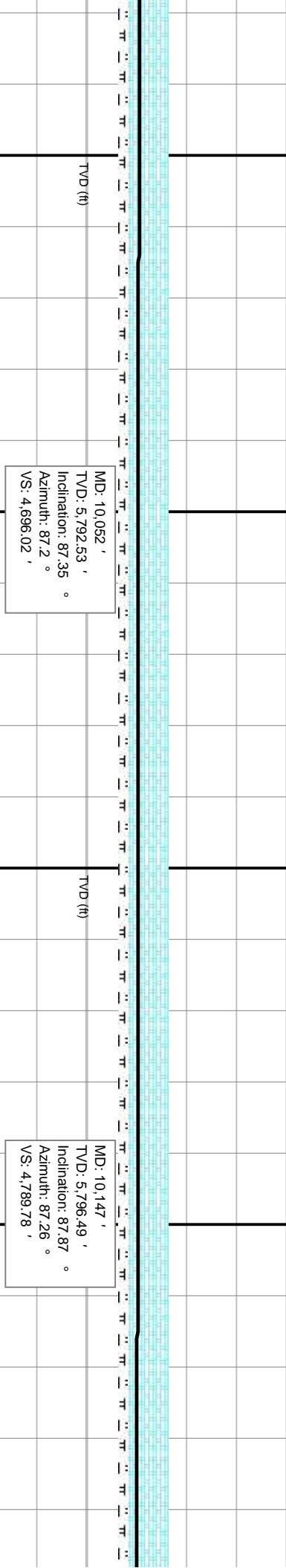
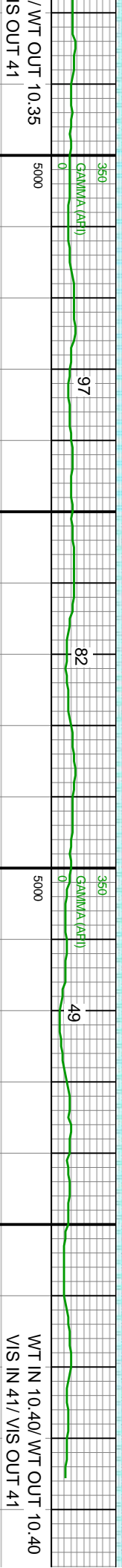
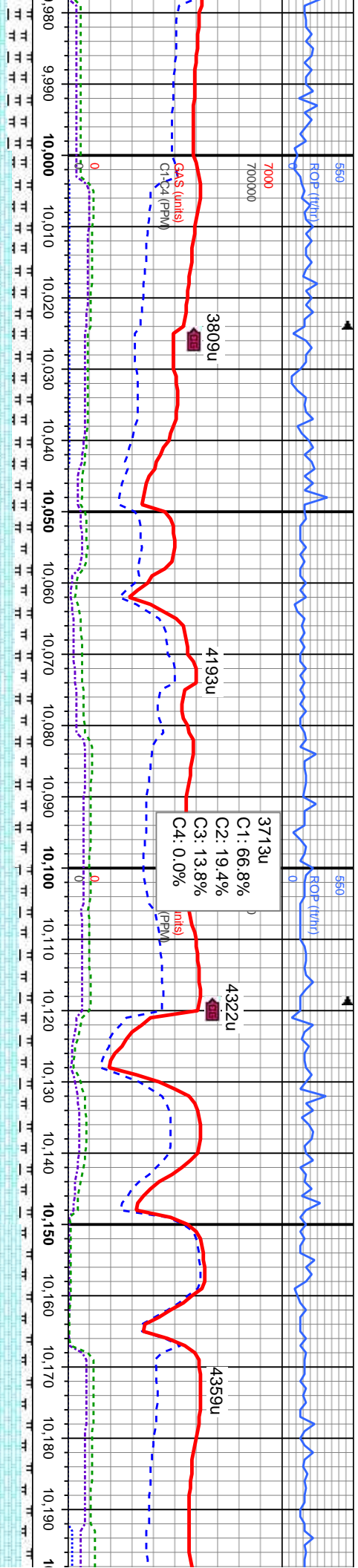
WT IN 10.35  
VIS IN 41/ V

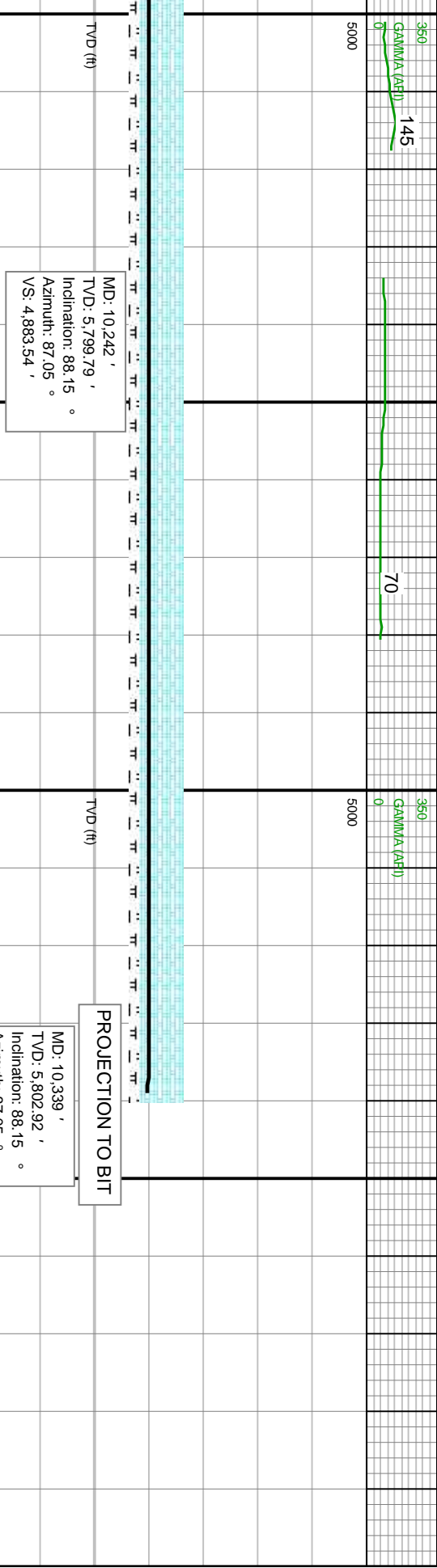
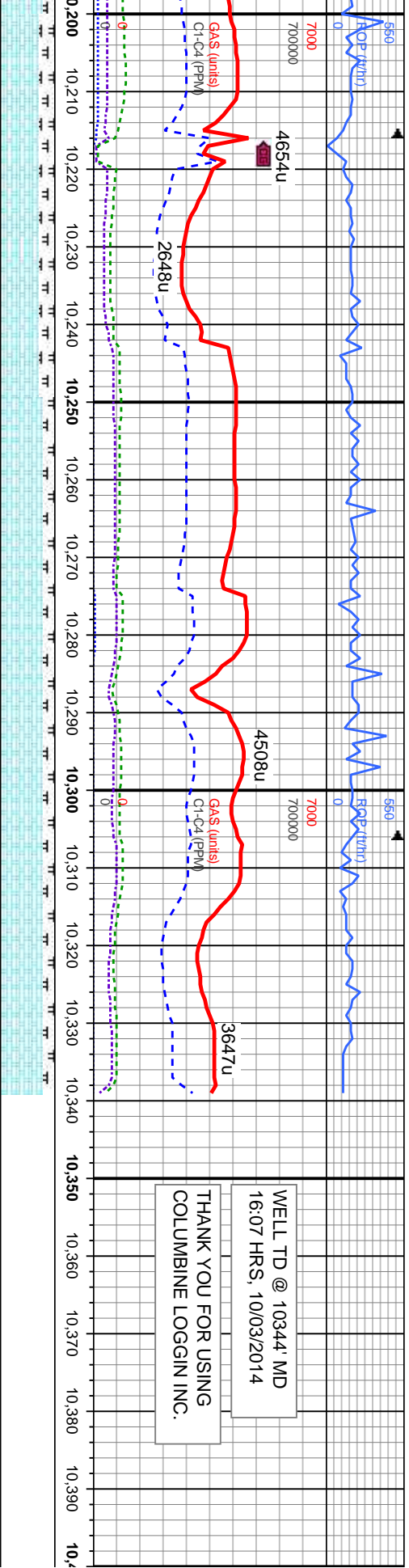
MD: 9.768 ' TVD: 5.778.99 ' Inclination: 86.67 ° Azimuth: 88.16 ° VS: 4.415.78 '	TVD (ft)	MD: 9.862 ' TVD: 5.784.4 ' Inclination: 86.73 ° Azimuth: 87.74 ° VS: 4.508.66 '	MD: 9.957 ' TVD: 5.789.71 ' Inclination: 86.85 ° Azimuth: 87.2 ° VS: 4.602.41 '
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gy brn, occ gy/off wht, sl sft, sb b pty, mot-wxy tex, tr sb vit lstr, v calc	CHK: lt gy brn, occ gy/off wht, sl sft, sb biky-sub pty, mot-wxy tex, tr sb vit lstr, v calc MRLST: med gy- dk gy, sft-fm, sb pty-ply, sily-mot tex, sl vit lstr, v calc	CHK: lt gy brn, occ gy/off wht, sl sft, sb biky-sub pty, mot-wxy tex, tr sb vit lstr, v calc MRLST: med gy- dk gy, sft-fm, sb pty-ply, sily-mot tex, sl vit lstr, v calc	CHK: lt gy brn, occ gy/off wht, sl sft, sb biky-sub pty, mot-wxy tex, tr sb vit lstr, v calc MRLST: med gy- dk gy, sft-fm, sb pty-ply, s sily-mot tex, sl vit lstr, v calc
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MD: 10,242 ' TVD: 5,799.79 ' Inclination: 88.15 ° Azimuth: 87.05 ° VS: 4,883.54 '	MD: 10,339 ' TVD: 5,802.92 ' Inclination: 88.15 ° Azimuth: 87.05 ° VS: 4,979.26 '
CHK: It gy brn, occ gy/off wht, sl sft, sb bly-sub ply, mot-wxy tex, tr sb vit lstr, v calc MRLST: med gy- dk gy, sft-fm, sb ply-pty, silty-mot tex, sl vit lstr, v calc	CHK: It gy brn, occ gy/off wht, sl sft, sb bly-sub ply, mot-wxy tex, tr sb vit lstr, v calc MRLST: med gy- dk gy, sft-fm, sb ply-pty, silty-mot tex, sl vit lstr, v calc, tr calc frags

