



Scale: 5" / 100'
Measured Depth Log

Well Name Wells Ranch AA26-63-1HN

Location SEC25 T6N R63W

State COLORADO

Country USA

API Number 05-123-37563

Region DJ BASIN

Spud Date 10/25/2013

Surface Coordinates 1674' FSL

153' FWL

LAT 40.45474°N

LONG 104.39410°W

Bottom Hole Coordinates 990' FSL

150' FWL

LAT 40.45296°N

LONG 104.41315°W

Ground Elevation 4792'

Logged Interval 6060' To 11661'

Formation NIOBRARA C CHALK

Type of Drilling Fluid FW LSND

K.B. Elevation 4816'

Total Depth 11661'

County WELD

Rig Number H&P 322

Field WATTENBERG

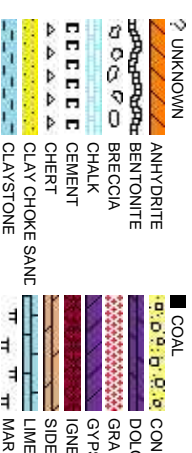
Drilling Completed 11/4/2013

Company Noble Energy Inc

Address 1625 BROADWAY
DENVER, CO 80202
(303) 228-4000

Name JOEY LUCE, ANDREA ZU

Company COLUMBINE LOGGING, II
Address 2385 S. LIPAN ST
DENVER, COLORADO 80
(303) 289-7764



Operator

Geologist




















































IDEMA, JOHN READY, MIKE GREENE
NC.

223

Rock Types

	METAMORPHIC		SHALY SILTSTONE
	NO SAMPLE		SILTY SHALE
	SALT		SILTSTONE
	SANDSTONE		TILL
	SALT-PEPPER SANDSTONE		WELDED TUFF
	SHALE		
	SHALE COLORED		
	SHALE GRAY		
	SHALY SANDSTONE		

Accessories

Fossils		F FOSSIL		ARGILLACEOUS		GLAUCONITE		TUFFACEOUS
		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		CHITK		NODULES		GYPSUM STRINGER
		CEPHALOPOD		COAL - THIN BEDS		PHOSPHATE PELLETS		LIMESTONE STRINGER
		CORAL		DOLOMITIC		PYRITE		MARLSTONE (CALC) STRG
		CRINOID		FELDSPAR		SALT CAST		MARLSTONE (DOL) STRG
		ECHINOID		FERRUGINOUS PELLET		SANDY		SANDSTONE STRINGER
		FISH				SILTY		
		FORAMINIFERA		ANHYDRITIC		SILTSTONE STRINGER		
						</		

Other Symbols

Oil Show		MOLDIC		FAULT		WIRELINE TESTED - LEFT		E EARTHY
	ORGANIC		FORMATION TOP		WIRELINE TESTED - RT		FX FINELYXLN	
	DEAD		GAS SHOW		GRAINSTONE		L LITHOGRAPHIC	
	EVEN		VUGGY		ROUNDING			
	QUESTIONABLE		NORMAL FAULT		ANGULAR		MX MICROXLN	
	SPOTTED STAINING		OIL SHOW		R ROUNDED		MS MUDSTONE	
Porosity			OVERTURNED STRATA		SUBANG		PS PACKSTONE	
	E EARTHY		REVERSE FAULT		SUBRND		WS WACKESTONE	
	FENESTRAL		SIDEWALL CORE (LEFT)					
	FRACTURE		SIDEWALL CORE (RIGHT)	Textures				
	INTERCRYSTALLINE		SLIDE		BOUNDSTONE		M MODERATE	
	INTERCRYSTALLINE		SURVEY		CHALKY		P POOR	
	INTERCRYSTALLINE		TRIP GAS		CRYPTOXLN		W WELL	
	INTERCRYSTALLINE							

Slide/Rotate

ROP
ROF
Gamma

Began Build @ 6060' MD
@ 21:02 hrs, 10/29/2013

Begin 50' Sample Intervals

Total Gas & Chromatograph

GAS
C1
C2
C3
C4

COLUMBINE LOGGING INC.
RIGGED UP ON 10/25/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0315

Depth Labels

% Lith

Well Bore
TVD

MUD WT 9.5 VIS 34

MUD WT 9.5 VIS 35

Gamma (KAP)

91

Began Build @ 6060' MD
@ 21:02 hrs, 10/29/2013

99

COLUMBINE LOGGING INC.
RIGGED UP ON 10/25/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0315

2689u

COLUMBINE LOGGING INC.
RIGGED UP ON 10/25/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0315

1246u

COLUMBINE LOGGING INC.
RIGGED UP ON 10/25/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0315

1612u



BHA # 2
Bit Size: 8.750
Drilling
Manufacturer: HDBS
Model: SD1611
675-0107
Serial Number: MMD55M
Nozzles: 5x16

Motor Number: 2
Manufacturer: Sperry
Model: Sperry Drill
Serial Number:

Bend: 2.0

MD: 6,118
TVD: 6,049.01
Inclination: 0.74 °
Azimuth: 146.33 °
VS: 191.97 '

MD: 6,165
TVD: 6,095.93
Inclination: 5.72 °
Azimuth: 239.79 °
VS: 194 '

95% SLTY SH: med gy - gy, occ dk gy, mod
sft - mod firm, sb ply - sb blkly, shy - silty tex,
non calc
5% SHY SS: wh - lt gy sme s&p, f gr, sb rd-
sb ang, fr srt, fri, mod por, arg cmt, occ biot

85% SLTY SH: med gy - gy, occ dk gy, mod
sft - mod firm, sb ply - sb blkly, shy - silty tex,
non calc
15% SHY SS: wh - lt gy sme s&p, f gr, sb
rd- sb ang, fr srt, fri, mod por, arg cmt, occ
biot

90% SLTY SH: med gy - gy, occ dk
sft - mod firm, sb ply - sb blkly, shy
non calc
10% SHY SS: wh - lt gy sme s&p, f
sb ang, fr srt, fri, mod por, arg cmt,

Oil Show

TR
FM
GE

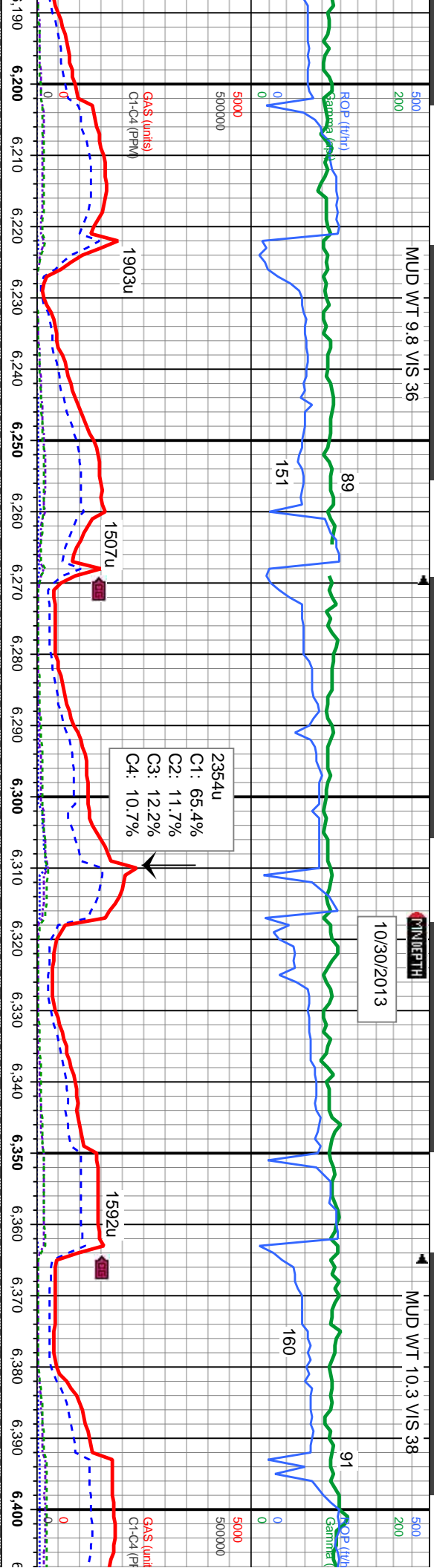
Images



MUD WT 9.8 VIS 36

MUD WT 10.3 VIS 38

10/30/2013



6000

MD: 6,213

TVD: 6,143.48

Inclination: 9.78 °

Azimuth: 242.26 °

VS: 200.04

TVD (ft)

MD: 6,260

TVD: 6,189.38

Inclination: 14.83 °

Azimuth: 244.34 °

VS: 209.52

MD: 6,308

TVD: 6,235.12

Inclination: 20.37 °

Azimuth: 245.64 °

VS: 223.29

MD: 6,355

TVD: 6,278.56

Inclination: 24.47 °

Azimuth: 245.61 °

VS: 240.37

MD: 6,403

TVD: 6,321

Inclination:

Azimuth: 25

VS: 260.55

TVD (ft)

gy, mod
- silty tex.
95% SLTY SH: med gy - gy, occ dk gy, mod
sft - mod firm, sb pily - sb blkly, shy - silty tex.
non calc
5% SHY SS: wh - lt gy sme s&p, f gr, sb rd-
sb ang, fr srt, fri, mod por, arg cnt, occ biot
6900

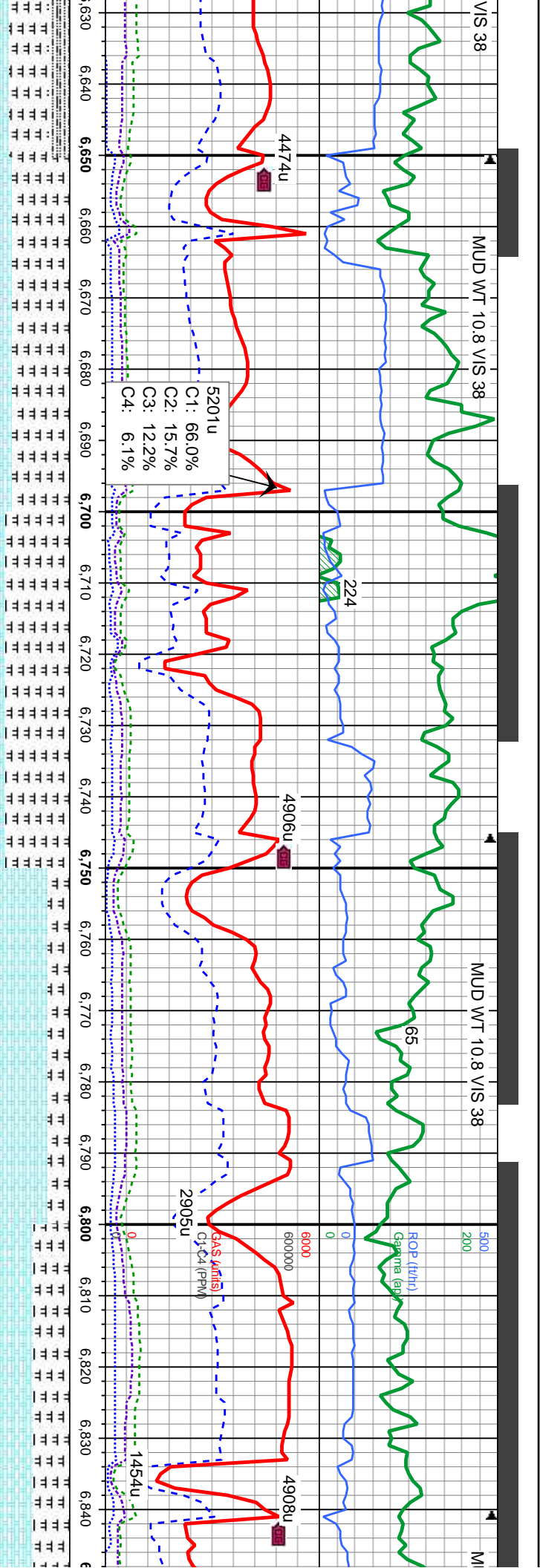
85% SLTY SH: med gy - gy, occ dk gy, mod
sft - mod firm, sb pily - sb blkly, shy - silty tex.
non calc
15% SHY SS: wh - lt gy sme s&p, f gr, sb rd-
sb ang, fr srt, fri, mod por, arg cnt, occ biot

90% SLTY SH: med gy - gy, occ dk gy, mod
sft - mod firm, sb pily - sb blkly, shy - silty tex.
non calc
10% SHY SS: wh - lt gy sme s&p, f gr, sb rd-
sb ang, fr srt, fri, mod por, arg cnt, occ biot

100% SLTY SH: med gy - gy, occ dk gy, mod
sft - mod firm, sb pily - sb blkly, shy - silty tex.
non calc
10% S
sb ang
6900

90% S
sft - m
non ca
10% S
sb ang
6900





dk gy-blk ip, mod sly-sly tex, mod tr	80% MRLST: med-dk gy, blk ip, mod sft-frm, sb blk-y-sb pty, rthy-gritty, mot, vit lstr ip, v calc, dissn pyr, mod bent 20% CHK: lt-med gy, gy brn, sft, occ mod frm, sb blk-y-sb pty, rthy-sb wxy, v calc	90% MRLST: med-dk gy, blk ip, mod sft-frm, sb blk-y-sb pty, rthy-gritty, mot, vit lstr ip, v calc, dissn pyr, mod bent 10% CHK: lt-med gy, gy brn, sft, occ mod frm, sb blk-y-sb pty, mot, rthy tex, v calc	70% CHK: wh-t gy, lt gy brn, sft, occ mod frm, sb blk-y-sb pty, mot, rthy-wxy, v calc 30% MRLST: med-dk gy, blk ip, mod sft-frm, sb blk-y-sb pty, rthy-gritty, mot, vit lstr ip, v calc, dissn pyr, sl tr bent	65% CHK: wh-t gy, lt gy brn, sft, occ mod frm, sb blk-y-sb pty, mot, rthy-wxy, v calc 50% MRLST: med-dk gy, blk ip, mod sft-frm, sb blk-y-sb pty, rthy-gritty, mot, vit lstr ip, v calc, dissn pyr
MD: 6,640 TVD: 6,507.27 Inclination: 48.42 ° Azimuth: 276.89 ° VS: 402.83 '	MD: 6,688 TVD: 6,538.83 Inclination: 49.35 ° Azimuth: 274.51 ° VS: 438.01 '	MD: 6,735 TVD: 6,568.27 Inclination: 53.07 ° Azimuth: 273.28 ° VS: 473.89 '	MD: 6,783 TVD: 6,595.68 Inclination: 57.29 ° Azimuth: 271.97 ° VS: 512.65 '	MD: 6,830 TVD: 6,619.4 Inclination: 62.05 ° Azimuth: 270.2 ° VS: 552.74 '



DATE/TIME
10/31/2013
11/02/2013

MUD WT 9.6+ VIS 36

132

277

75

4832u

4619u

4079u

4751u

124

132

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132

Motor Number: 3
Manufacturer: Sperry Drilling
Model: Sperry Drill
Serial Number: 475-342
Bend: 1.5

C1: 74.5%
C2: 13.1%
C3: 8.4%
C4: 3.9%

Back Washed Stand

75% CHK: med-lt gy-gy brn, occ crm, sft, occ mod frm, sb blk-y-sb pty, mot, rthy-wxy, v calc
25% MRLST: med-dk gy, blk, mod sft-frm, sb blk-y-sb pty, rthy-gritty, occ calc incl, mot, v calc, tr fos frags

65% CHK: med-lt gy-gy brn, occ crm, sft, occ mod frm, sb blk-y-sb pty, mot, rthy-wxy, v calc
35% MRLST: med-dk gy, blk, mod sft-frm, sb blk-y-sb pty, rthy-gritty, occ calc incl, mot, v calc, tr bent

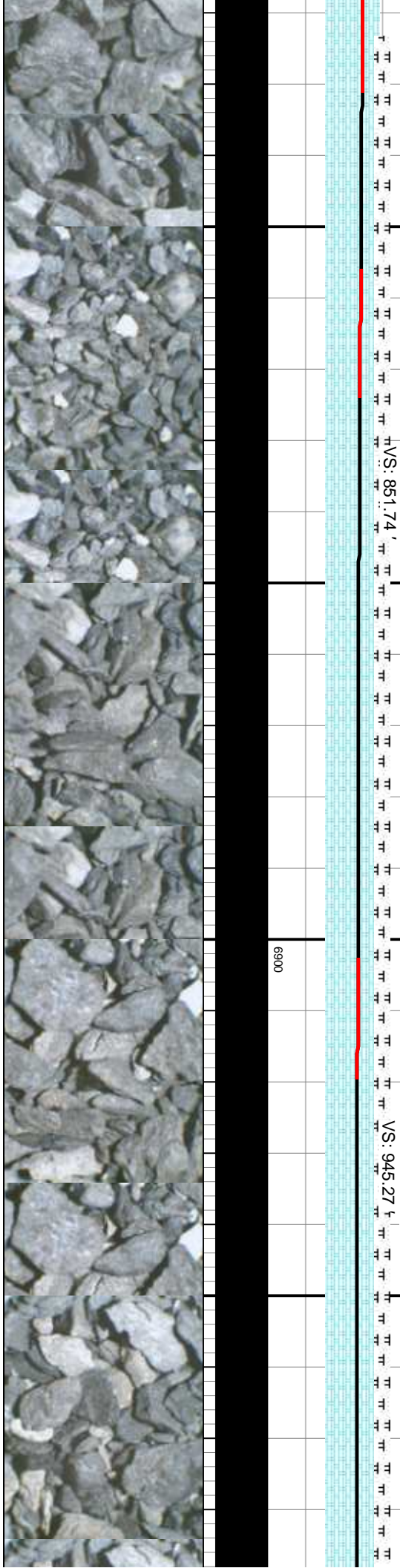
70% CHK: med-lt gy-gy brn, tr crm, sft, occ mod frm, sb blk-y-sb pty, sb mot, rthy-wxy, v calc
30% MRLST: med-dk gy, blk, mod sft-frm, sb blk-y-sb pty, rthy-sl gritty, occ calc incl, mot, v calc

60% CHK: med-lt gy-gy brn, tr crm, mod frm, sb blk-y-sb pty, sb mot, rthy-wxy, v calc
40% MRLST: med-dk gy, blk, mod sft-frm, sb blk-y-sb pty, rthy-sl gritty, occ calc incl, mot, v calc

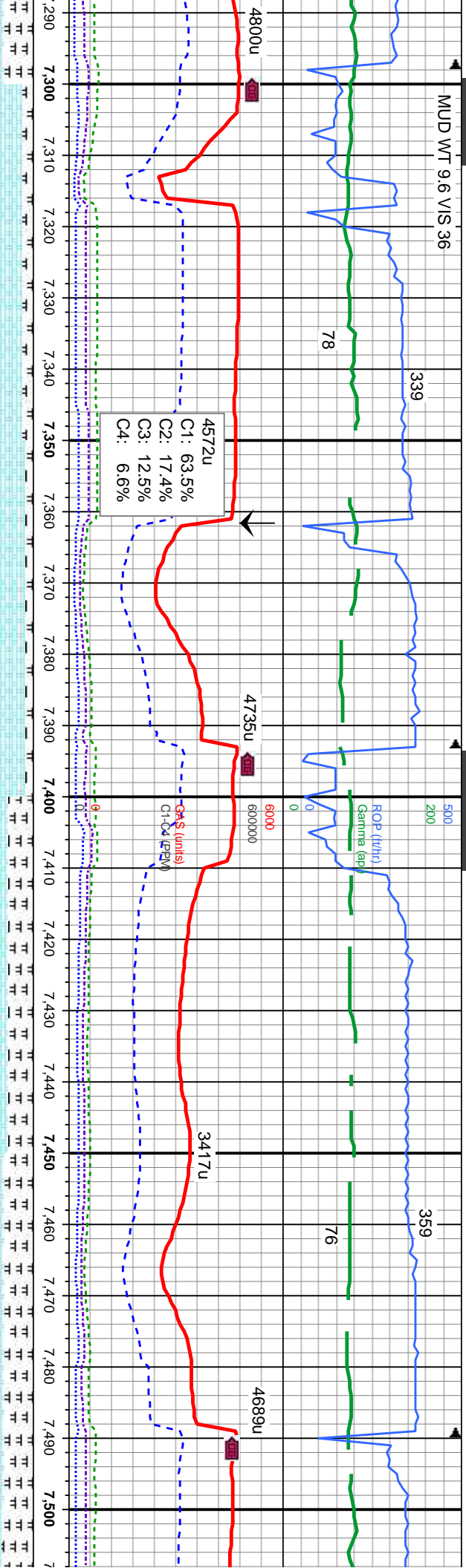
MD: 7,141'
TVD: 6,686.39'
Inclination: 85.31°
Azimuth: 271.17°
VS: 851.74'

MD: 7,236'
TVD: 6,691.01'
Inclination: 89.11°
Azimuth: 272.77°
VS: 945.27'

6900



MUD WT 9.6 VIS 36



85% CHK: med-lt gy-gy brn, tr crm, sft, occ
mod frm, sb blk-y-sb pfty, sb mot, rthy-wxy, v
calc
15% MRLST: med-dk gy, blk, mod sft-frm,
sb blk-y-sb pfty, rthy-sl gritty, tr calc incl, mot,
v calc

90% CHK: lt brn-tan, occ med gy, tr crm,
sft, occ mod frm, sb blk-y-sb pfty, sb mot,
rthy-wxy, v calc
10% MRLST: med-dk gy, blk, mod sft-frm,
sb blk-y-sb pfty, rthy-sl gritty, tr calc incl,
mot, v calc

65% CHK: med-lt gy-gy brn, tr crm, sft, occ
mod frm, sb blk-y-sb pfty, sb mot, rthy-wxy, v
calc
35% MRLST: med-dk gy, blk, mod sft-frm,
sb blk-y-sb pfty, rthy-sl gritty, tr calc incl, mot,
v calc

60% CHK: med-lt gy-gy brn, tr crm, sft,
occ mod frm, sb blk-y-sb pfty, sb mot,
rthy-sb wxy, v calc
40% MRLST: med-dk gy, blk, mod sft-frm,
sb blk-y-sb pfty, rthy-sl gritty, tr calc incl,
mot, v calc

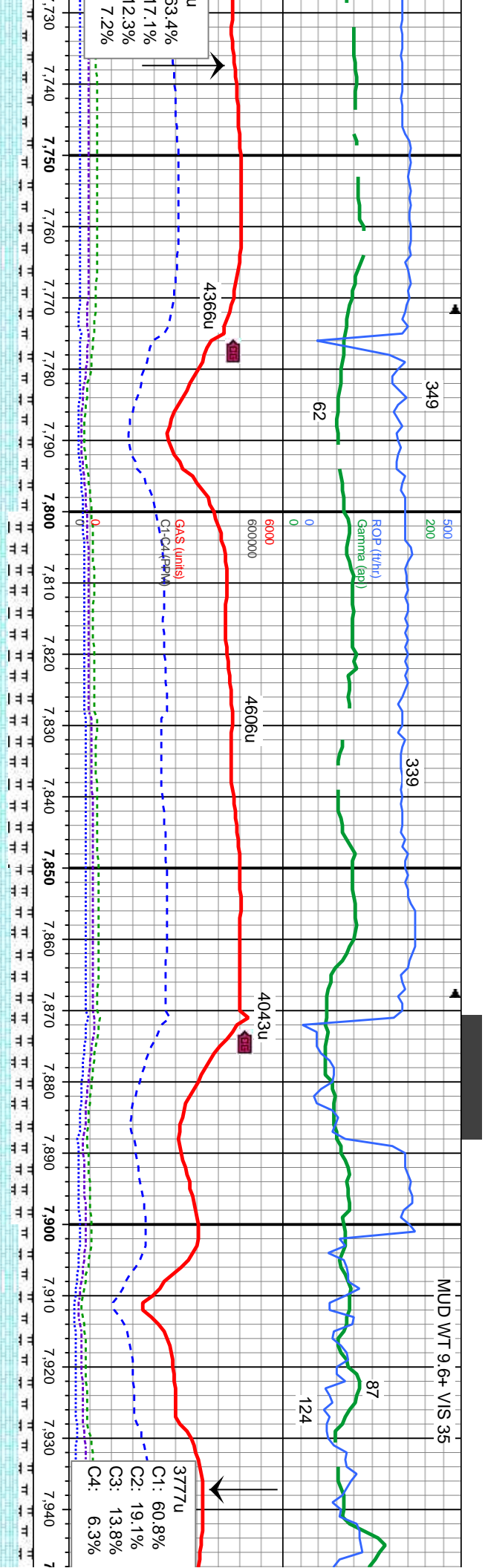
55% C
mod fr
wxy, v
sb blk
v calc

MD: 7,331
TVD: 6,692.54
Inclination: 89.04 °
Azimuth: 272.36 °
VS: 1,038.74'

MD: 7,426
TVD: 6,694.49
Inclination: 88.61 °
Azimuth: 271.84 °
VS: 1,132.34'

6900





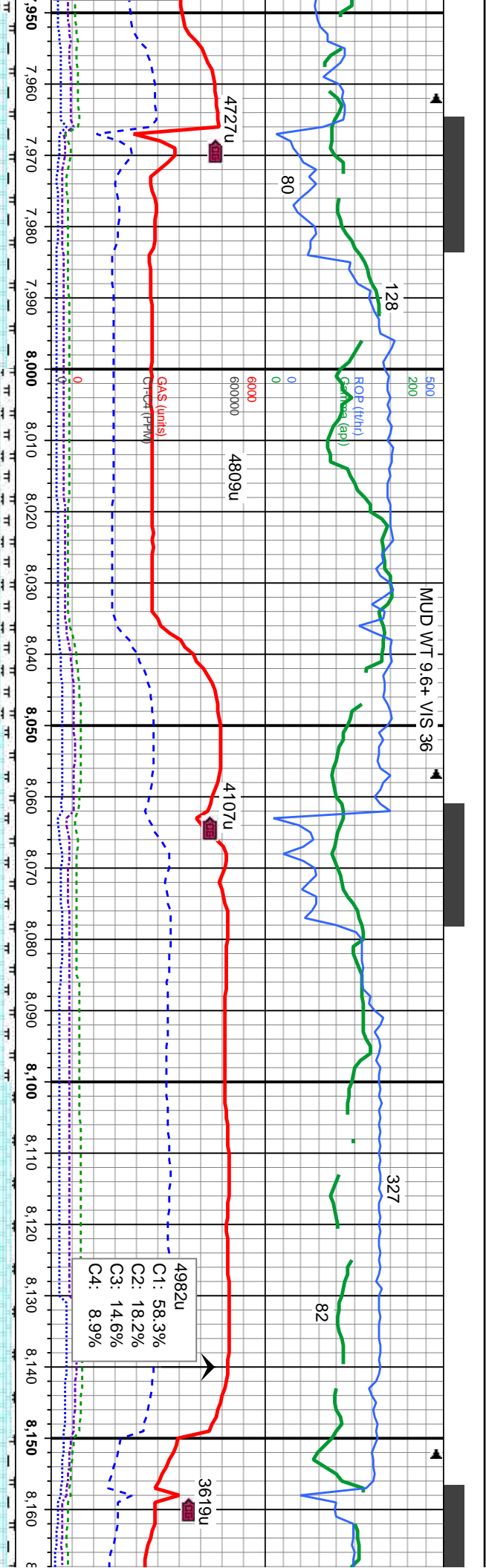
med gy, occ crm, blkly, tr sb ply, sb frags, v calc blk, mod sft-frm, ty, tr calc incl, mot	80% CHK: wh-lt gy, med gy-gy brn, sft, frm ip, sb blkly-sb ply, mot, rthy, v calc 20% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blkly-sb ply, mot, rthy lstr, stly tex, mot, occ sl vit lstr, v calc	65% CHK: wh-lt gy, med gy-gy brn, sft, frm ip, sb blkly-sb ply, mot, rthy, v calc 35% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blkly-sb ply, mot, rthy lstr, stly tex, mot, occ sl vit lstr, v calc	70% CHK: wh-lt gy, med gy-gy brn, sft, frm ip, sb blkly-sb ply, mot, rthy, v calc 30% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blkly-sb ply, mot, rthy lstr, stly tex, mot, occ sl vit lstr, v calc	80% CHK: wh-lt gy, med gy-gy brn, sft, sb blkly-sb ply, mot, rthy, v calc 20% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blkly-sb ply, mot, rthy lstr, stly tex, mot, occ sl vit lstr, v calc
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MD: 7,806'
TVD: 6,701.04'
Inclination: 90.49°
Azimuth: 268.88°
VS: 1,509.35'

MD: 7,900'
TVD: 6,700.4'
Inclination: 90.28°
Azimuth: 269.64°
VS: 1,602.65'

6900





90% CHK: wh-lt gy, med gy-gy brn, sft, sb
blky-sb pty, mot, rthy, v calc
10% MRLST: med-dk gy, blk ip, mod sft-sl
frm, sb blky-sb pty, mot, rthy lstr, silty tex,
mot, occ sl vit lstr, v calc

80% CHK: med gy-gy brn, sft, sb blky-sb
pty, mot, rthy, v calc
20% MRLST: med-dk gy, blk ip, mod sft-sl
frm, sb blky-sb pty, mot, rthy lstr, silty tex,
mot, occ sl vit lstr, v calc

85% CHK: wh-lt gy, med gy-gy brn, sft, sb
blky-sb pty, mot, rthy, v calc
15% MRLST: med-dk gy, blk ip, mod sft-sl
frm, sb blky-sb pty, mot, rthy lstr, silty tex,
mot, occ sl vit lstr, v calc

95% CHK: wh-lt gy, med gy-gy brn, sft, sb
blky-sb pty, mot, rthy, v calc
5% MRLST: med-dk gy, blk ip, mod sft-sl
frm, sb blky-sb pty, mot, rthy lstr, silty tex,
mot, occ sl vit lstr, v calc

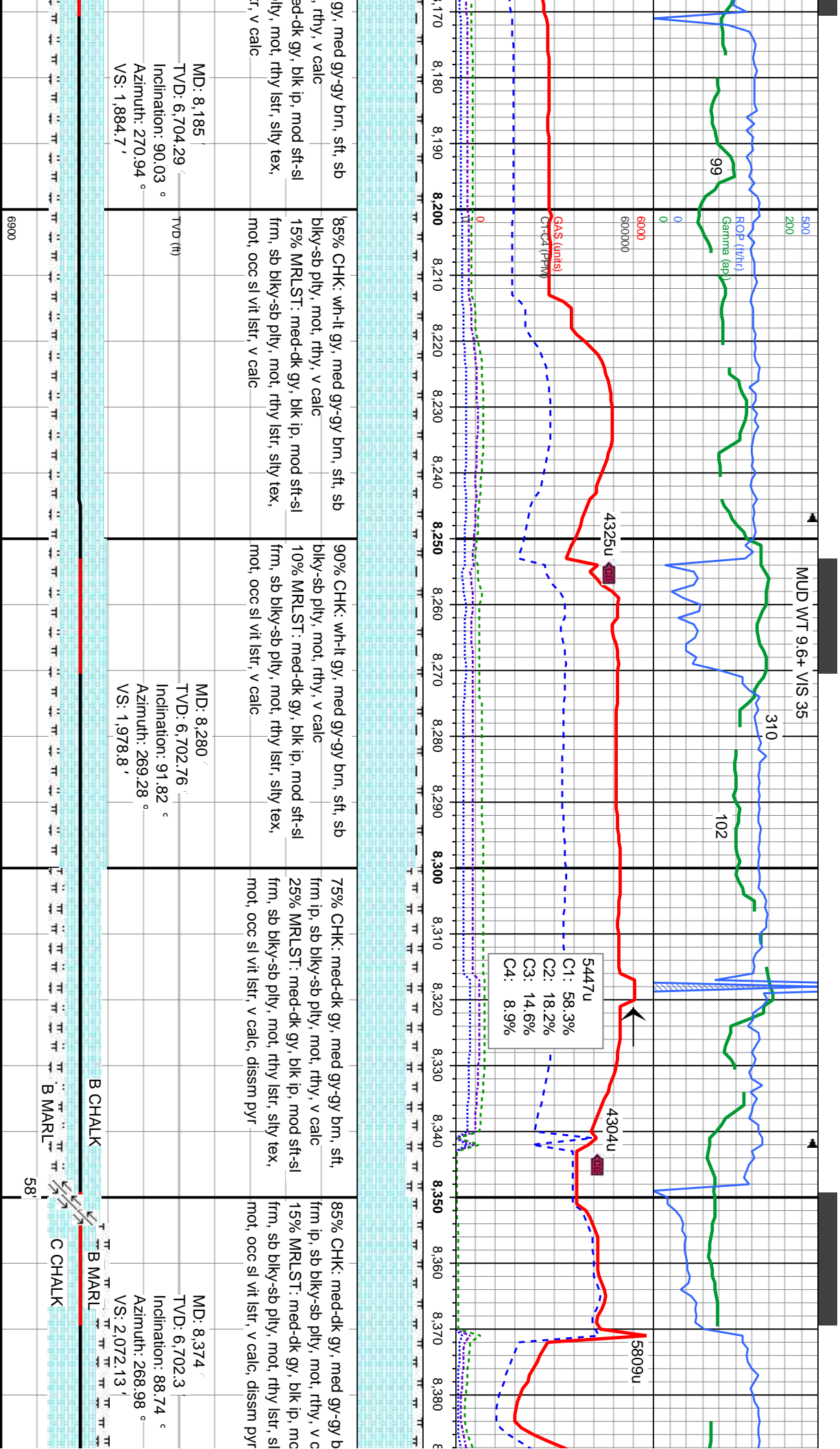
90% CHK: wh-lt
blky-sb pty, mot
10% MRLST: m
frm, sb blky-sb p
mot, occ sl vit lstr

MD: 7,995 '
TVD: 6,700.64 '(ft)
Inclination: 89.44 °
Azimuth: 270.42 °
VS: 1,696.79 '

MD: 8,090 '
TVD: 6,702.71 '(ft)
Inclination: 88.06 °
Azimuth: 270.81 °
VS: 1,790.77 '

6900

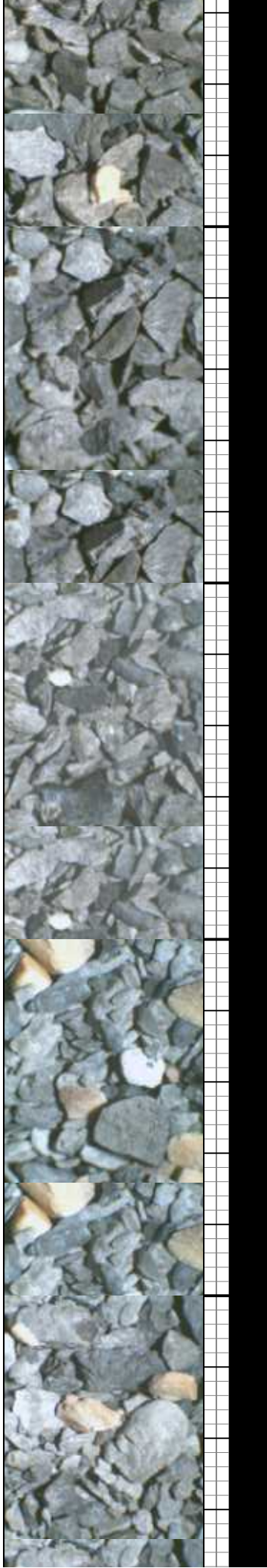


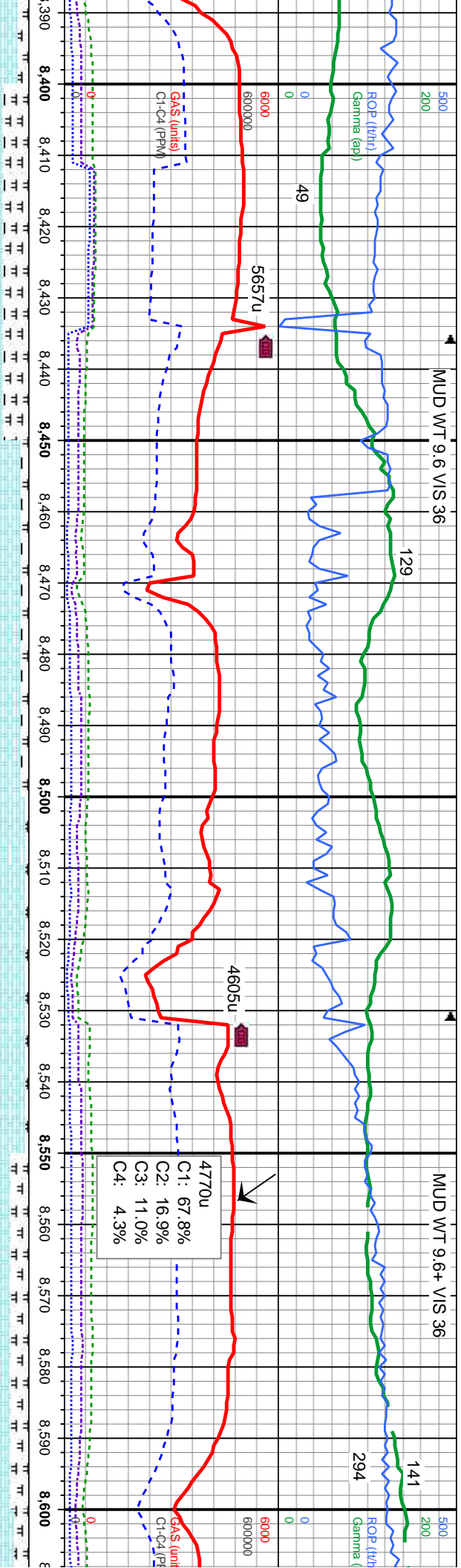


gy, med gy-gy brn, sft, sb rthy, v calc	85% CHK: wh-lt gy, med gy-gy brn, sft, sb blky-sb pty, mot, rthy, v calc	90% CHK: wh-lt gy, med gy-gy brn, sft, sb blky-sb pty, mot, rthy, v calc	75% CHK: med-dk gy, med gy-gy brn, sft, frm ip, sb blky-sb pty, mot, rthy, v calc	85% CHK: med-dk gy, med gy-gy b frm ip, sb blky-sb pty, mot, rthy, v c
med-dk gy, blk ip, mod sft-sl pty, mot, rthy lstr, silty tex, r, v calc	15% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blky-sb pty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc	10% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blky-sb pty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc	25% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blky-sb pty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc, dissim pyr	15% MRLST: med-dk gy, blk ip, mo frm, sb blky-sb pty, mot, rthy lstr, sl mot, occ sl vit lstr, v calc, dissim pyr

MD: 8,185' TVD: 6,704.29' Inclination: 90.03 ° Azimuth: 270.94 ° VS: 1,884.7'	MD: 8,280' TVD: 6,702.76' Inclination: 91.82 ° Azimuth: 269.28 ° VS: 1,978.8'	MD: 8,374' TVD: 6,702.3' Inclination: 88.74 ° Azimuth: 268.98 ° VS: 2,072.13'
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B CHALK
B MARL
C CHALK
58'



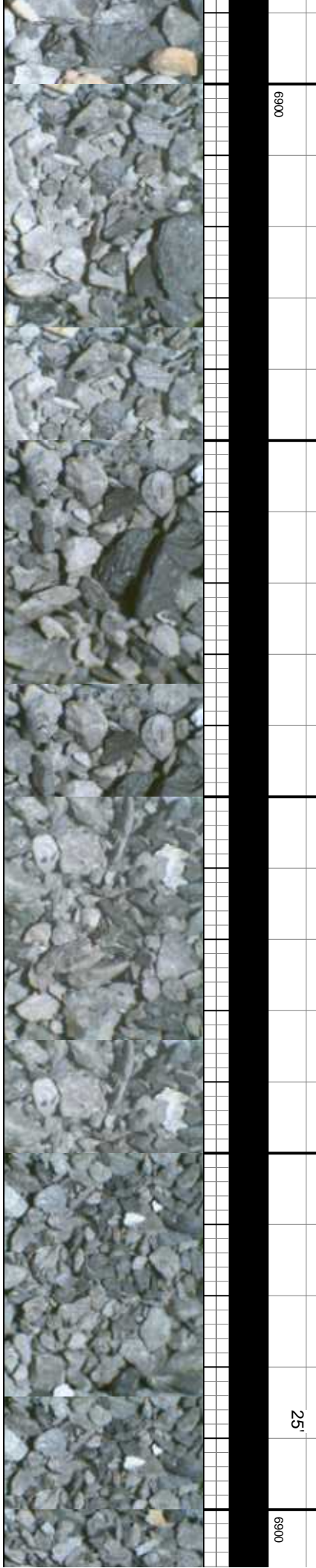


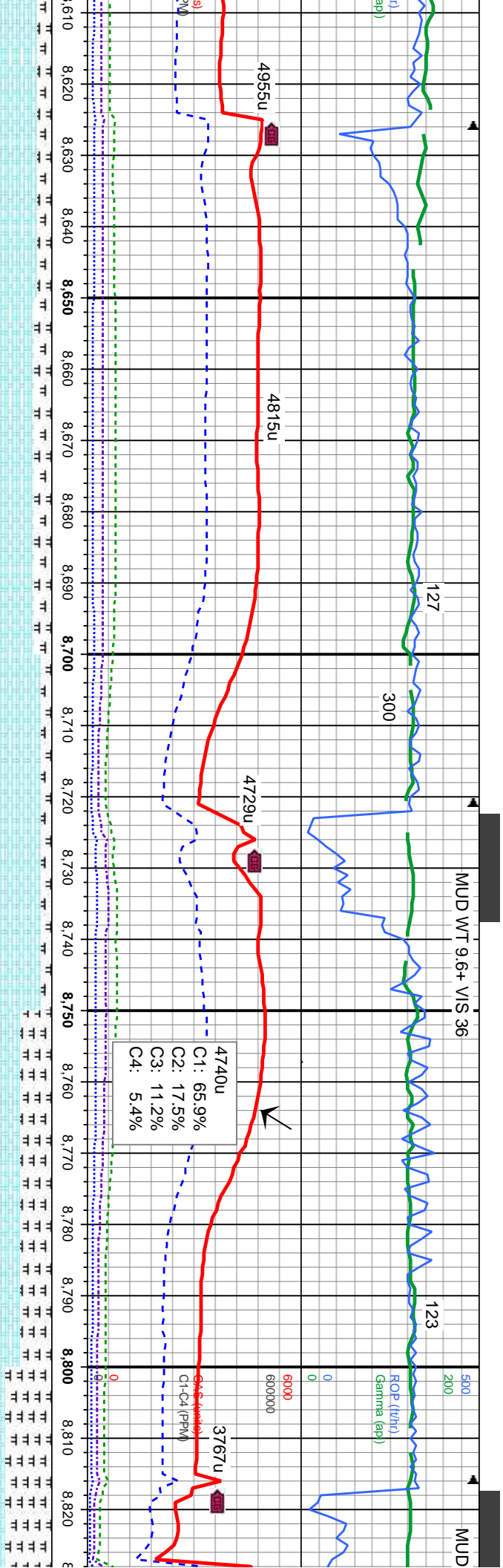
65% CHK: med-dk gy, med gy-gy brn, sft, frm ip, sb blk-y-sb pily, mot, rthy, v calc	90% CHK: med-dk gy, med gy-gy brn, sft, frm ip, sb blk-y-sb pily, mot, rthy, v calc	95% CHK: med-dk gy, med gy-gy brn, sft, sb blk-y-sb pily, mot, rthy, v calc	75% CHK: med-dk gy, med gy-gy brn, sft, sb blk-y-sb pily, mot, rthy, v calc	80% C: sb blk-y, 20% M: frm, sb mot, occ
35% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blk-y-sb pily, mot, rthy lstr, silty tex,	10% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blk-y-sb pily, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc, dissim pyr	5% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blk-y-sb pily, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc	25% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blk-y-sb pily, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc	
mot, occ sl vit lstr, v calc, dissim pyr				

TVD (ft)	MD: 8,469' TVD: 6,703.77' Inclination: 89.48 ° Azimuth: 268.78 ° VS: 2,166.49'	MD: 8,564' TVD: 6,704.51' Inclination: 89.63 ° Azimuth: 268.81 ° VS: 2,260.88'	TVD (ft)
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C CHALK

25'





HK: med-dk gy, med gy-gy brn, sft, -sb pty, mot, rthy, v calc	75% CHK: med-dk gy, med gy-gy brn, sft, frm ip, sb blk-y-sb pty, mot, rthy, v calc	85% CHK: wh-lt gy, lt gy brn, sft, frm ip, mot, rthy-sb wxy, sb blk-y-sb pty, v calc, tr bent	55% CHK: wh-lt gy, lt gy brn, sft, mot, rthy-sb wxy, sb blk-y-sb pty, v calc, tr bent	65% MRLST: med-dk gy frm, sb blk-y-sb pty, mot, occ sl vit lstr, v calc
MRLST: med-dk gy, blk ip, mod sft-sl blk-y-sb pty, mot, rthy lstr, silty tex, occ sl vit lstr, v calc	25% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blk-y-sb pty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc	15% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blk-y-sb pty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc, tr pyr, tr fos frags	45% MRLST: med-dk gy, blk ip, mod sft-sl frm, sb blk-y-sb pty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc, tr pyr	35% CHK: lt gy - gy, occ mot ip, rthy lstr, sb blk-y - bent

MD: 8,659'
TVD: 6,705'
Inclination: 89.78 °
Azimuth: 268.29 °
VS: 2,355.32'

MD: 8,754'
TVD: 6,705.39'
Inclination: 89.75 °
Azimuth: 268.74 °
VS: 2,449.77'

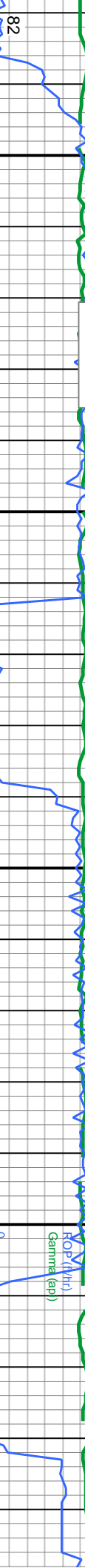
TVD (ft)

6900

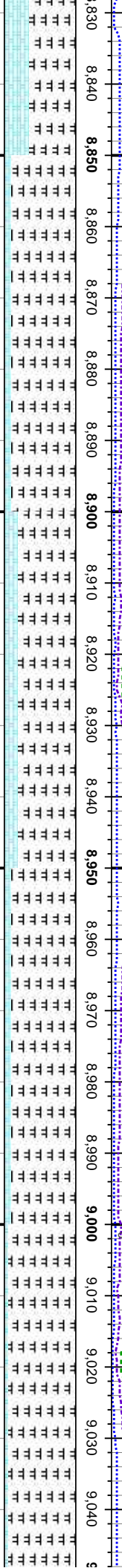


WT 9.6+ VIS 36 MUD WT 9.6+ VIS 36 MUD WT 9.6 VIS 36 MUD WT 9.6 VIS 36

11/03/2014



4377u
C1: 69.3%
C2: 16.8%
C3: 9.6%
C4: 4.3%

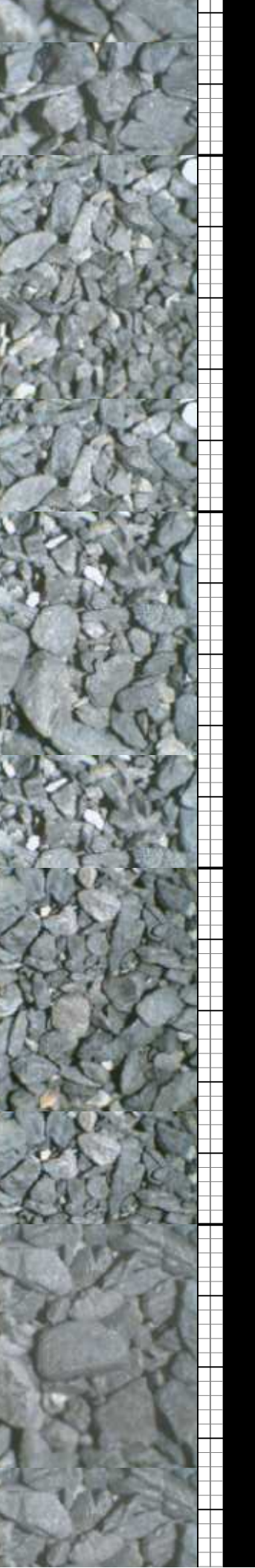
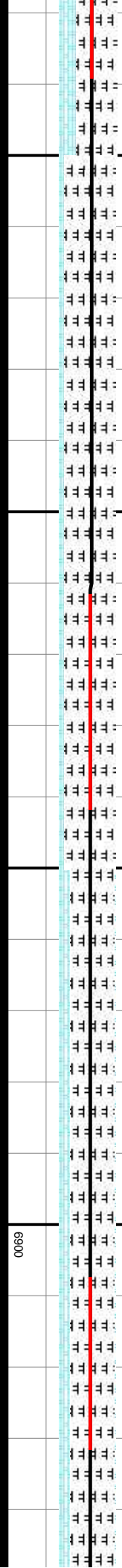


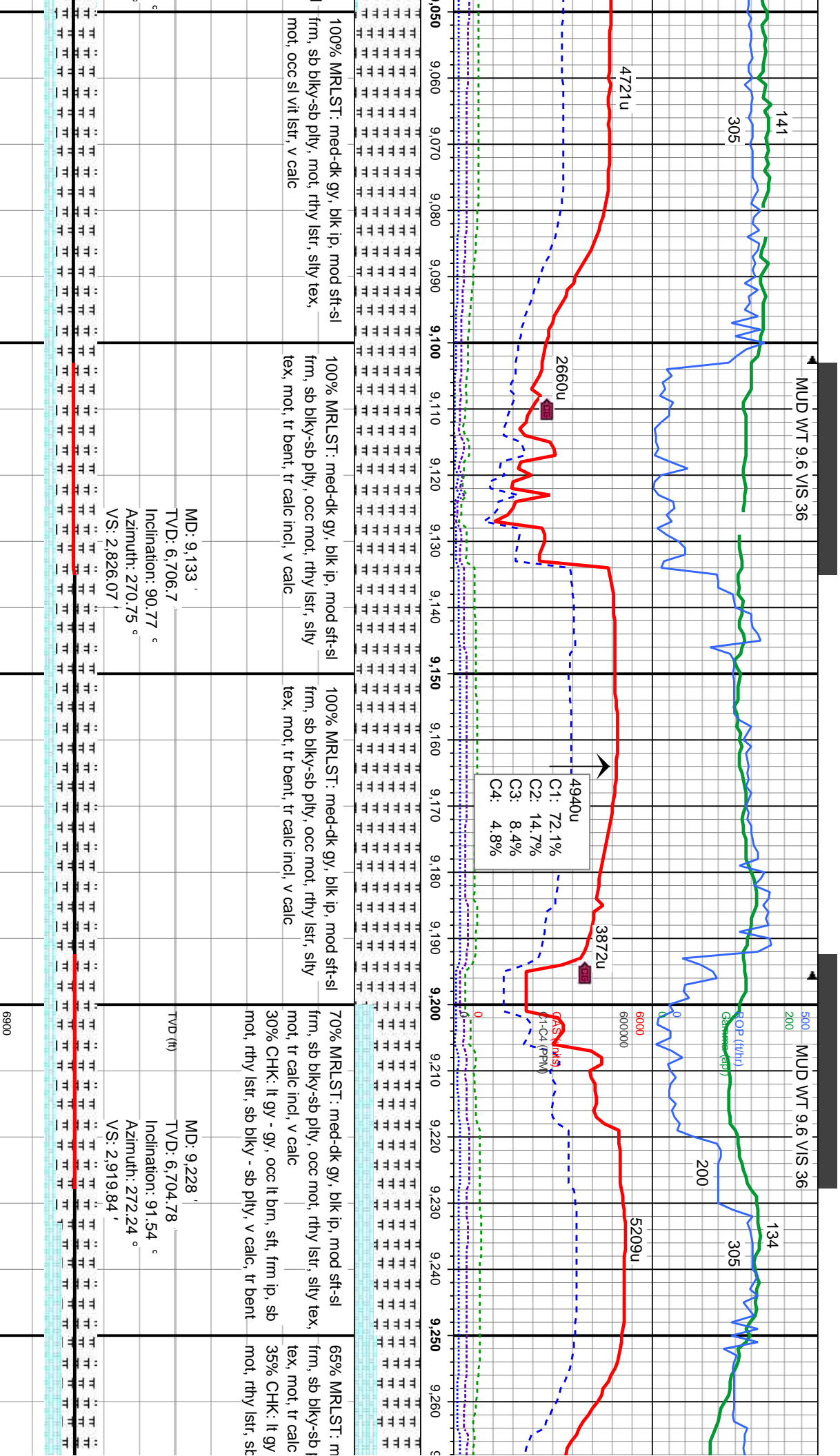
blk ip, mod sft-sl rthy lstr, silty tex, dissm pyr lt brn, sft, frm ip, sb pfty, v calc, tr bent	90% MRLST: med-dk gy, mod sft-sl frm, sb blk-y-sb pfty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc 10% CHK: lt gy - gy, occ lt brn, sft, frm ip, mot ip, rthy lstr, sb blk-y - sb pfty, v calc, tr bent	80% MRLST: med-dk gy, mod sft-sl frm, sb blk-y-sb pfty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc 20% CHK: lt gy - gy, occ lt brn, sft, frm ip, mot ip, rthy lstr, sb blk-y - sb pfty, v calc, tr bent	90% MRLST: med-dk gy, mod sft-sl frm, sb blk-y-sb pfty, mot, rthy lstr, silty tex, mot, occ sl vit lstr, v calc 10% CHK: lt gy - gy, occ lt brn, sft, frm ip, mot ip, rthy lstr, sb blk-y - sb pfty, v calc, tr bent	95% MRLST: med-dk gy, mod sft-sl frm, sb blk-y-sb pfty, mot, rthy lstr, silty tex, mot, occ s vit lstr, v calc 5% CHK: lt gy - gy, occ lt brn, sft, frm ip, mot ip, rthy lstr, sb blk-y - sb pfty, v calc, tr bent
---	---	---	---	--

MD: 8,849
TVD: 6,706.09
Inclination: 89.41 °
Azimuth: 268.63 °
VS: 2,544.18 '

MD: 8,944
TVD: 6,706.98
Inclination: 89.51 °
Azimuth: 268.97 °
VS: 2,638.57 '

MD: 9,038
TVD: 6,707.36
Inclination: 90.03
Azimuth: 269.13 °
VS: 2,731.92 '





MUD WT 9.6+ VIS 36

4978u
C1: 69.2%
C2: 16.7%
C3: 9.8%
C4: 4.3%

3690u

4756u

4872u

500
200
143
249
Gamma (cp)
GAS (units)
C1-C4 (PPM)

6900

75% MRLST: med gy, occ dk gy, tr blk, mod
sft-sl frm, sb blkly-sb pily, occ mot, rthy lstr,
sily tex, mot, tr calc incl, v calc
25% CHK: lt gy - gy, occ lt brn, sft, frm ip, sb
mot, rthy lstr, sb blkly - sb pily, v calc, tr bent

85% MRLST: med gy, occ dk gy, tr blk, mod
sft-sl frm, sb blkly-sb pily, occ mot, rthy lstr,
sily tex, mot, tr calc incl, v calc
15% CHK: lt gy - gy, occ lt brn, sft, frm ip, sb
mot, rthy lstr, sb blkly - sb pily, v calc, tr bent

95% MRLST: med gy, occ dk gy, tr blk, mod
sft-sl frm, sb blkly-sb pily, occ mot, rthy lstr, sily tex, mot, tr calc incl, v calc
5% CHK: lt gy - gy, occ lt brn, sft, frm ip, sb
mot, rthy lstr, sb blkly - sb pily, v calc

100% MRLST: med gy, occ dk gy, tr blk, mod
sft-sl frm, sb blkly-sb pily, occ mot, rthy lstr,
sily tex, mot, tr calc incl, v calc

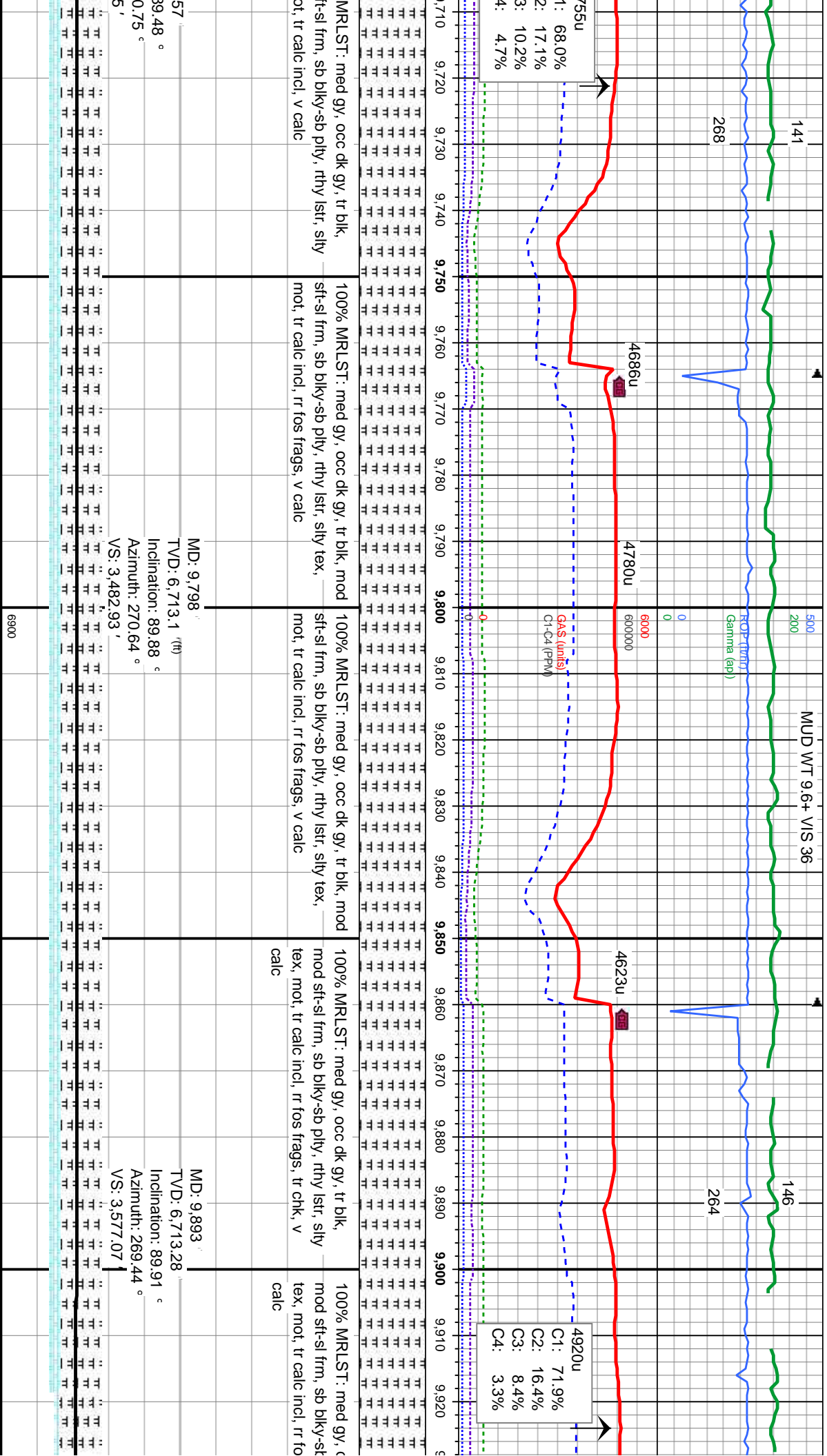
100%
mod s
tex, m

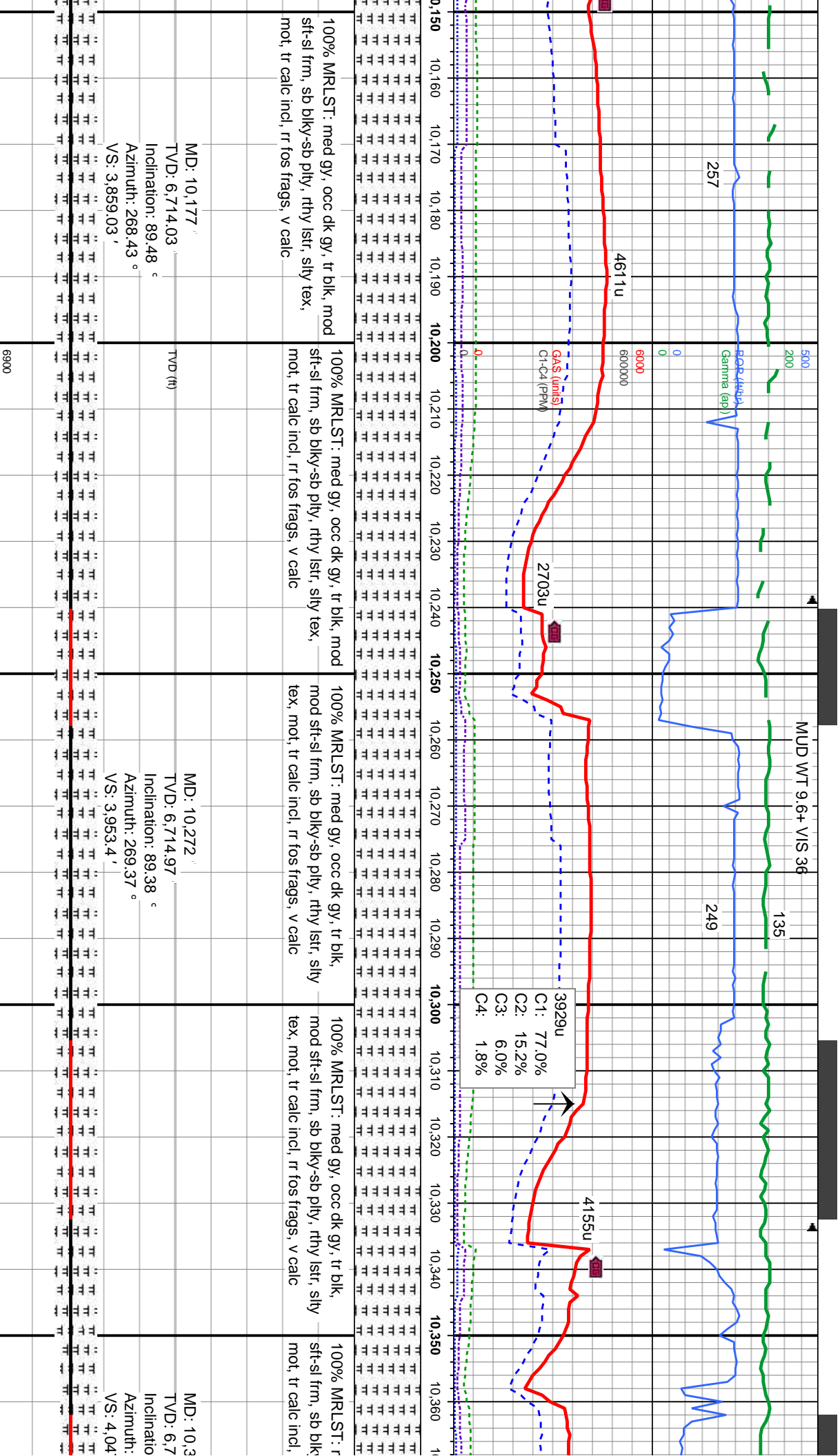
MD: 9.513
TVD: 6,708.64
Inclination: 87.44 °
Azimuth: 270.47 °
VS: 3,201.11'

MD: 9.608
TVD: 6,711.45
Inclination: 89.17 °
Azimuth: 271.12 °
VS: 3,295.02'

MD: 9.703
TVD: 6,712.
Inclination: 8
Azimuth: 27
VS: 3,388.9







100% MRLST: med gy, occ dk gy, tr blk, mod
sft-sl frm, sb blk-y-sb ply, rthy lstr, silty tex,
mot, tr calc incl, rr fos frags, v calc

100% MRLST: med gy, occ dk gy, tr blk, mod
sft-sl frm, sb blk-y-sb ply, rthy lstr, silty tex,
mot, tr calc incl, rr fos frags, v calc

100% MRLST: med gy, occ dk gy, tr blk,
mod sft-sl frm, sb blk-y-sb ply, rthy lstr, silty
tex, mot, tr calc incl, rr fos frags, v calc

100% MRLST: med gy, occ dk gy, tr blk,
mod sft-sl frm, sb blk-y-sb ply, rthy lstr, silty
tex, mot, tr calc incl, rr fos frags, v calc

100% MRLST: r
sft-sl frm, sb blk-y
mot, tr calc incl,

MD: 10,177'
TVD: 6,714.03'
Inclination: 89.48 °
Azimuth: 268.43 °
VS: 3,859.03'

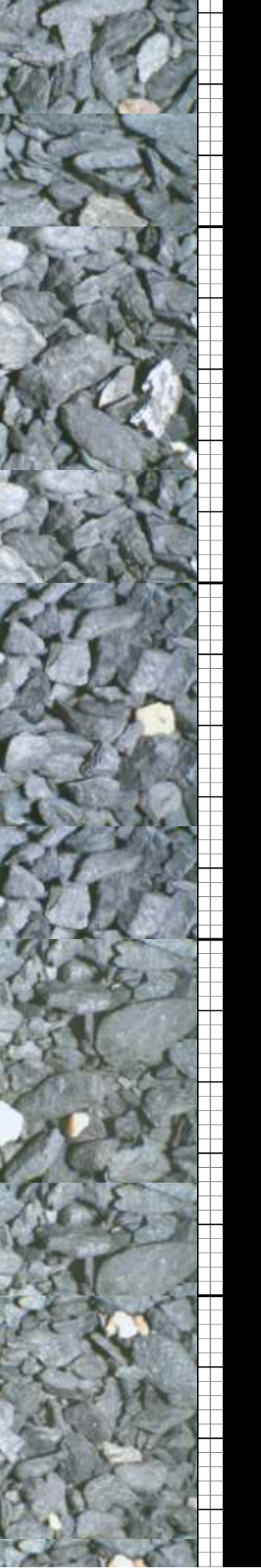
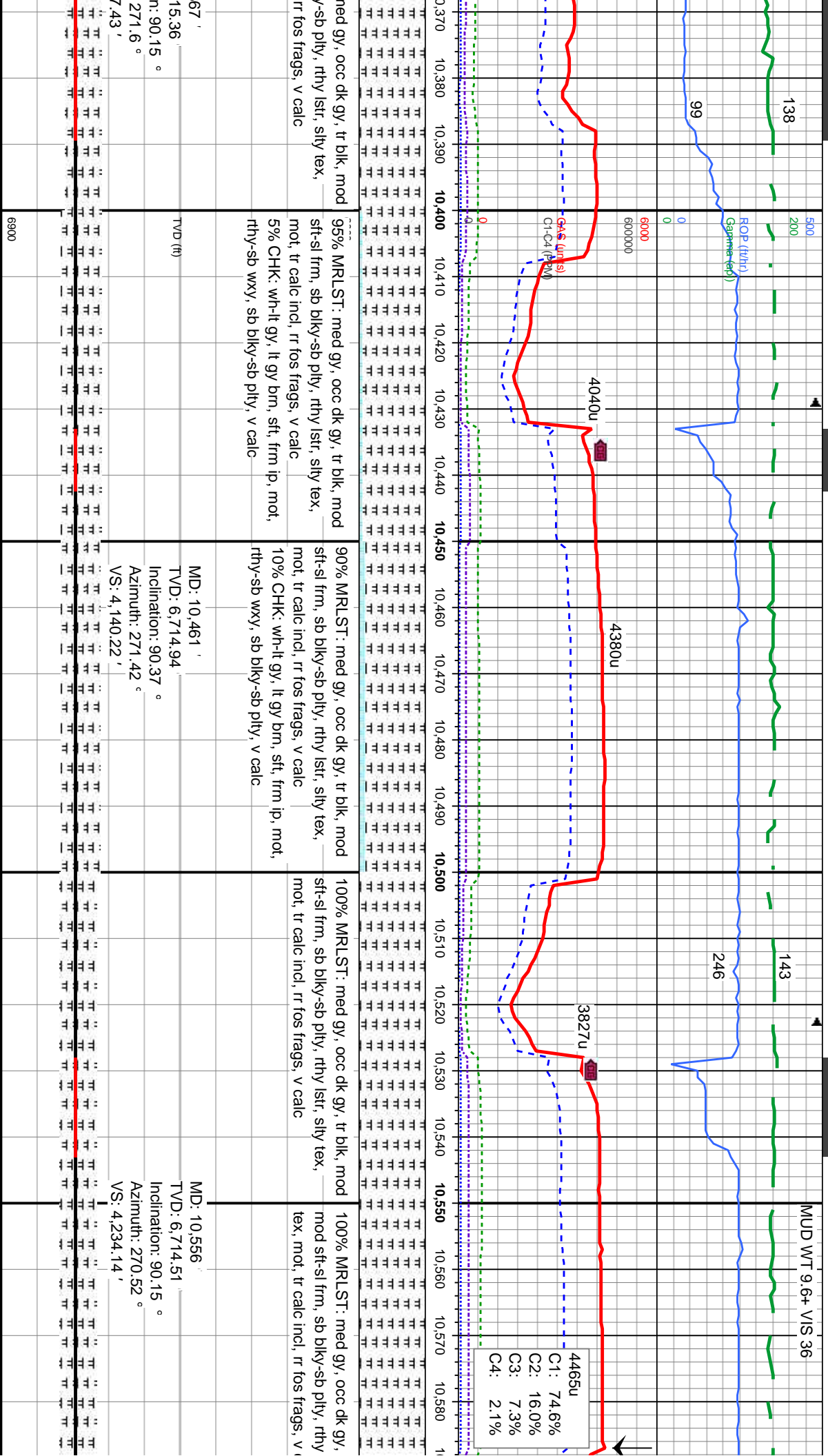
TVD (ft)

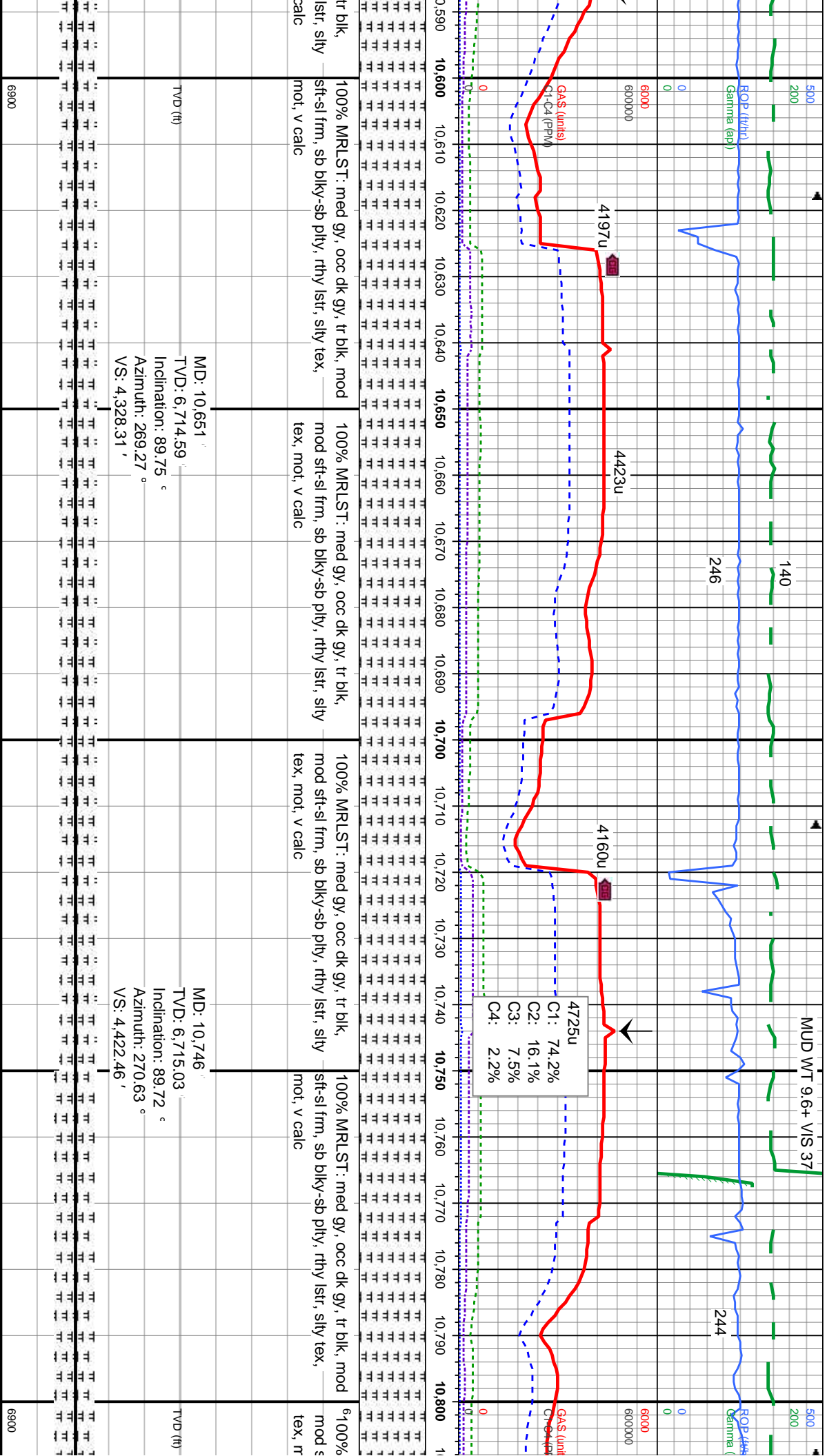
MD: 10,272'
TVD: 6,714.97'
Inclination: 89.38 °
Azimuth: 269.37 °
VS: 3,953.4'

MD: 10,3
TVD: 6,7
Inclination:
Azimuth:
VS: 4,04

6900

MUD WT 9.6+ V/S 36

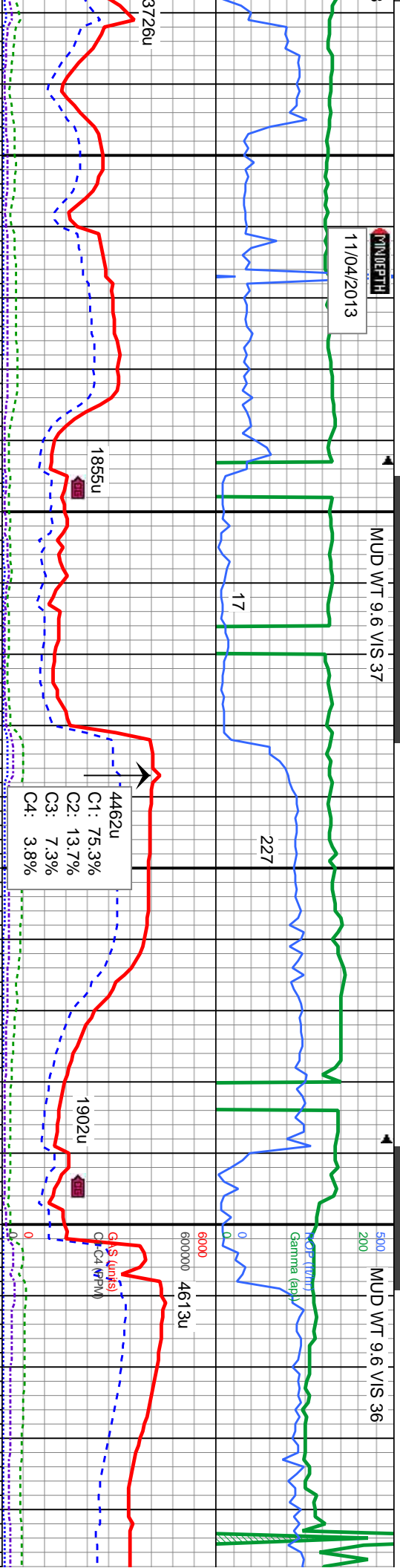




DATE: 11/04/2013

MUD WT 9.6 VIS 37

MUD WT 9.6 VIS 36

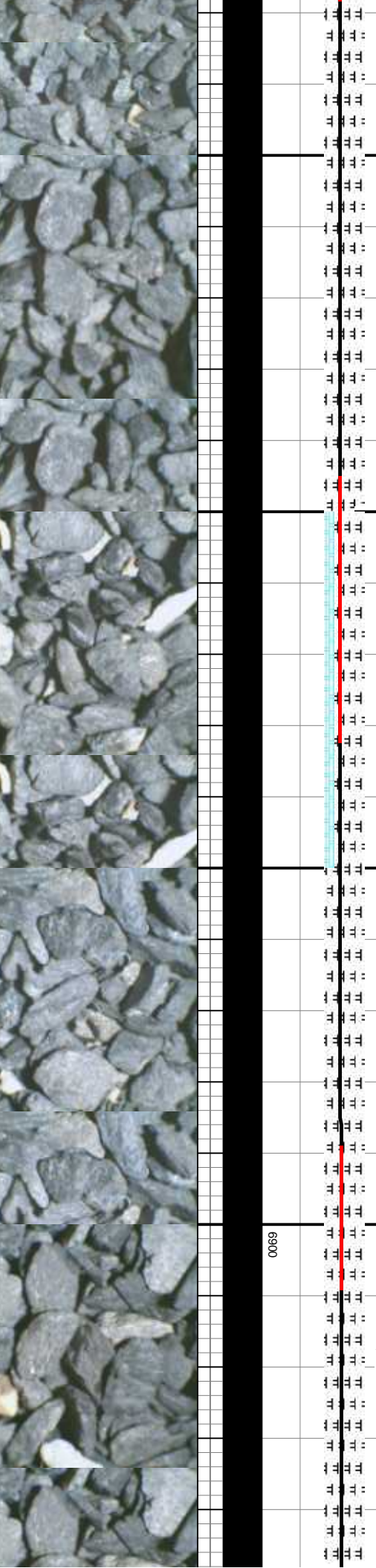


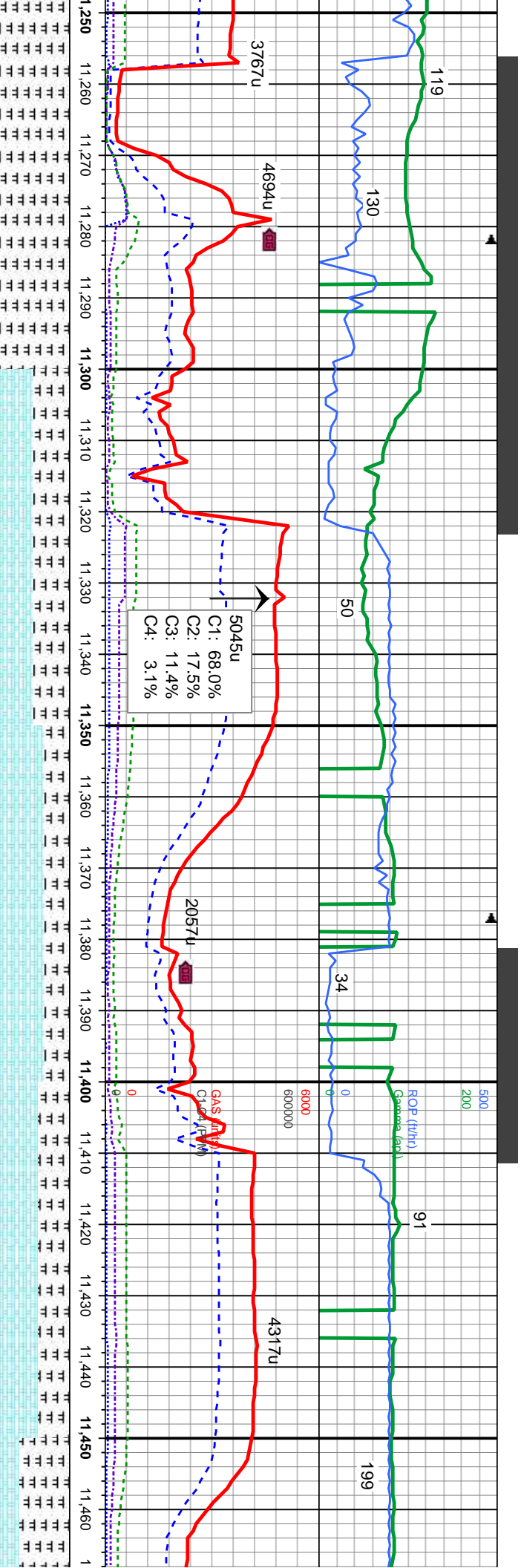
Depth (ft)	11,030	11,040	11,050	11,060	11,070	11,080	11,090	11,100	11,110	11,120	11,130	11,140	11,150	11,160	11,170	11,180	11,190	11,200	11,210	11,220	11,230	11,240
Occ dk gy, tr blk, pty, rthy lstr, silty																						
100% MRLST: med gy, occ dk gy, tr blk, mod sft-sil frm, sb blk-y-sb pty, rthy lstr, silty tex, mot, v calc																						
95% MRLST: med gy, occ dk gy, tr blk, mod sft-sil frm, sb blk-y-sb pty, rthy lstr, silty tex, mot, v calc																						
5% CHK: wh-lt gy, lt gy brn, sft, frm ip, mot, rthy-sb wxy, sb blk-y-sb pty, v calc																						
100% MRLST: med gy, occ dk gy, tr blk, mod sft-sil frm, sb blk-y-sb pty, rthy lstr, silty tex, mot, v calc																						
100% MRLST: med gy, occ dk gy, tr blk, mod sft-sil frm, sb blk-y-sb pty, rthy lstr, silty tex, mot, v calc																						

Property	Value
MD	11,031'
TVD	6,716.81'
Inclination	88.43°
Azimuth	273.21°
VS	702.8'

Property	Value
MD	11,126'
TVD	6,717.62'
Inclination	90.59°
Azimuth	270.3°
VS	4,796.49'

Property	Value
MD	11,220'
TVD	6,716.11'
Inclination	91.26°
Azimuth	268.75°
VS	4,889.74'





100% MRLST: med gy, occ dk gy, tr blk, mod sft-sl frm, sb blk-y-sb pty, rthy lstr, silty tex, mot, v calc

50% MRLST: med gy, occ dk gy, tr blk, mod sft-sl frm, sb blk-y-sb pty, rthy lstr, silty tex, mot, v calc
50% CHK: wh-lt gy, lt gy brn, sft, frm ip, mot, rthy-sb wxy, sb blk-y-sb pty, v calc

65% CHK: wh-lt gy, lt gy brn, sft, frm ip, mot, rthy-sb wxy, sb blk-y-sb pty, v calc
35% MRLST: med gy, occ dk gy, tr blk, mod sft-sl frm, sb blk-y-sb pty, rthy lstr, silty tex, mot, v calc

65% CHK: wh-lt gy, lt gy brn, sft, frm ip, mot, rthy-sb wxy, sb blk-y-sb pty, v calc
35% MRLST: med gy, occ dk gy, tr blk, mod sft-sl frm, sb blk-y-sb pty, rthy lstr, silty tex, mot, v calc

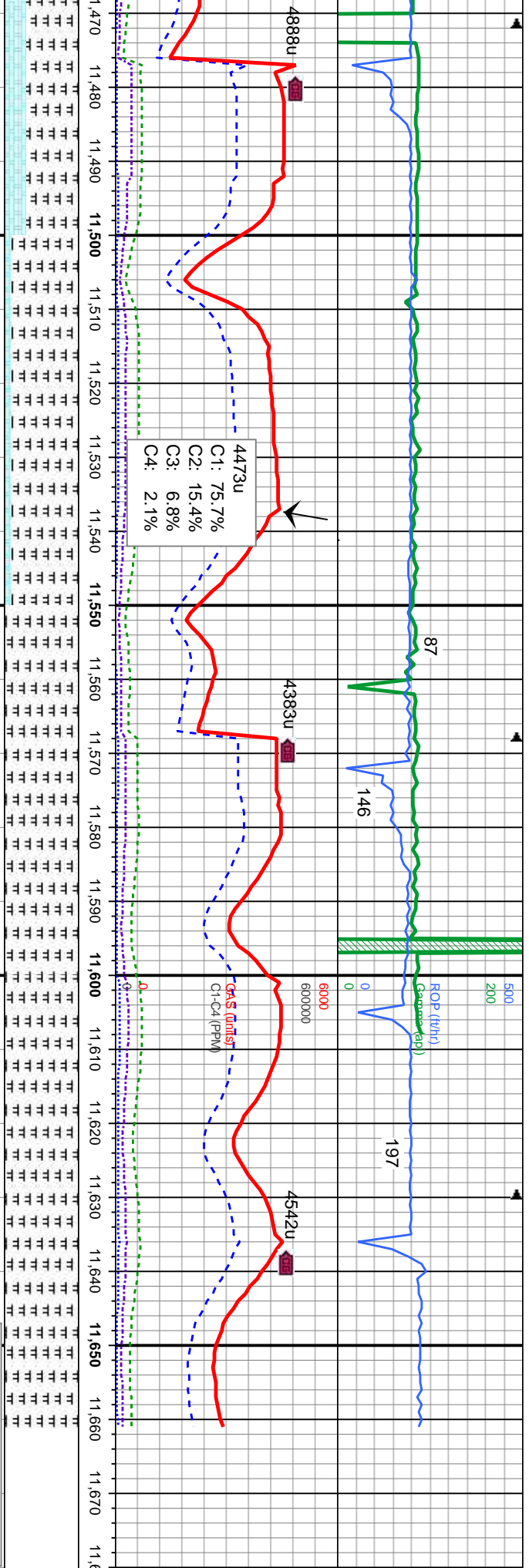
70% MRLST: m sft-sl frm, sb blk mot, v calc
30% CHK: wh-lt gy, rthy-sb wxy, sb

MD: 11,315
TVD: 6,714.12
Inclination: 91.14 °
Azimuth: 268.22 °
VS: 4,984.17'

MD: 11,410
TVD: 6,714.3
Inclination: 88.64 °
Azimuth: 268.29 °
VS: 5,078.65'

6900





ed gy, occ dk gy, tr blk, mod
y-sb pty, rthy lstr, silty tex,
gy, lt gy brn, sft, frm ip, mot,
blkly-sb pty, v calc

70% MRLST: med gy, occ dk gy, tr blk, mod
sft-sl frm, sb blkly-sb pty, rthy lstr, silty tex,
mot, v calc
30% CHK: wh-lt gy, lt gy brn, sft, frm ip, mot,
rthy-sb wxy, sb blkly-sb pty, v calc

100% MRLST: med gy, occ dk gy, tr blk,
mod sft-sl frm, sb blkly-sb pty, rthy lstr, silty
tex, mot, v calc

100% MRLST: med gy, occ dk gy, tr blk,
mod sft-sl frm, sb blkly-sb pty, rthy lstr,
silty tex, mot, v calc

MD: 11,506
TVD: 6,716.58
Inclination: 88.64 °
Azimuth: 268.57 °
VS: 5,174.08 '

MD: 11,600
TVD: 6,718.27
Inclination: 89.29 °
Azimuth: 269.27 °
VS: 5,267.44 '

PROJ TO BIT:
MD: 11,661
TVD: 6,719.03
Inclination: 89.29 °
Azimuth: 269.27 °
VS: 5,327.98 '

TD'd WELL @ 11661' MD
11:21 hrs 11/04/2013
Thank You For Choosing
Columbine Logging Inc.

