



Scale: 5" / 100'
Measured Depth Log

Well Name Arellano N-10-9HN

Location Sec 10 T5N R65W

State Colorado

County Weld

Country United States

Rig Number Frontier (Utah) 8

API Number 05-123-41112

AFE # 41112

Region DJ Basin

Field Wattenberg

Spud Date 3/31/2015

Drilling Completed 5/18/2015

Surface Coordinates N 40.410812 W 104.641171

Ground Elevation 4616'

K.B. Elevation 4640'

Logged Interval 6000' To 13944'

Total Depth 13944'

Formation Niobrara

Type of Drilling Fluid FWLSND

Operator

Company Bayswater Exploration & Production, LLC.

Address 730 17th St.
Denver, CO 80202

Geologist

Name Mark E. Brown

Company Bayswater Exploration & Production, LLC.

Address 730 17th St.
Denver, CO 80202

Other

Robert Davis Wellsite Geologist

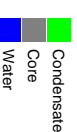
Shanna Gilbert Wellsite Geologist

Ben Katka Wellsite Geologist

Columbine Logging Computer 148

Bloodhound Unit 298

Zone Color Coding



Rock Types

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

Accessories

GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL	
INOCERAMUS	B BENTONITE	K KAOLIN	
ALGAE	BITUMENOUS SUBSTANCE	M MARCASITE	ANHYDRITE STRINGER
AMPHIPORA	BRECCIA FRAGMENTS	M MARLSTONE	BENTONITE STRINGER
BELEMNITE	C CALCAREOUS	M MICACEOUS	COAL STRINGER
BIOCLASTIC	P PELLET	CARBONACEOUS FLAKES	DOLOMITE STRINGER
BRACHIOPOD	P PISOLITE	MINERAL CRYSTALS	GYPSUM STRINGER
BRYOZOA	PLANT REMAINS	N NODULES	LIMESTONE STRINGER
CEPHALOPOD	PLANT SPORES	PHOSPHATE PELLETS	MARLSTONE (CALC) STRG
CORAL	SCAPHOPOD	COAL - THIN BEDS	MARLSTONE (DOL) STRG
CRINOID	STROMATOPOROID	D DOLOMITIC	SANDSTONE STRINGER
ECHINOID		F FELDSPAR	
		FERRUGINOUS PELLET	SHALE STRINGER
FISH		S SIDERITE	
FORAMINIFERA		F FERRUGINOUS	SILTSTONE STRINGER
F FOSSIL	ANHYDRITIC	G GLAUCONITE	
	ARGILLACEOUS	S SILTY	
		T TUFFACEOUS	

C

Oil Show

P PINPOINT
V VUGGY




































Engineering

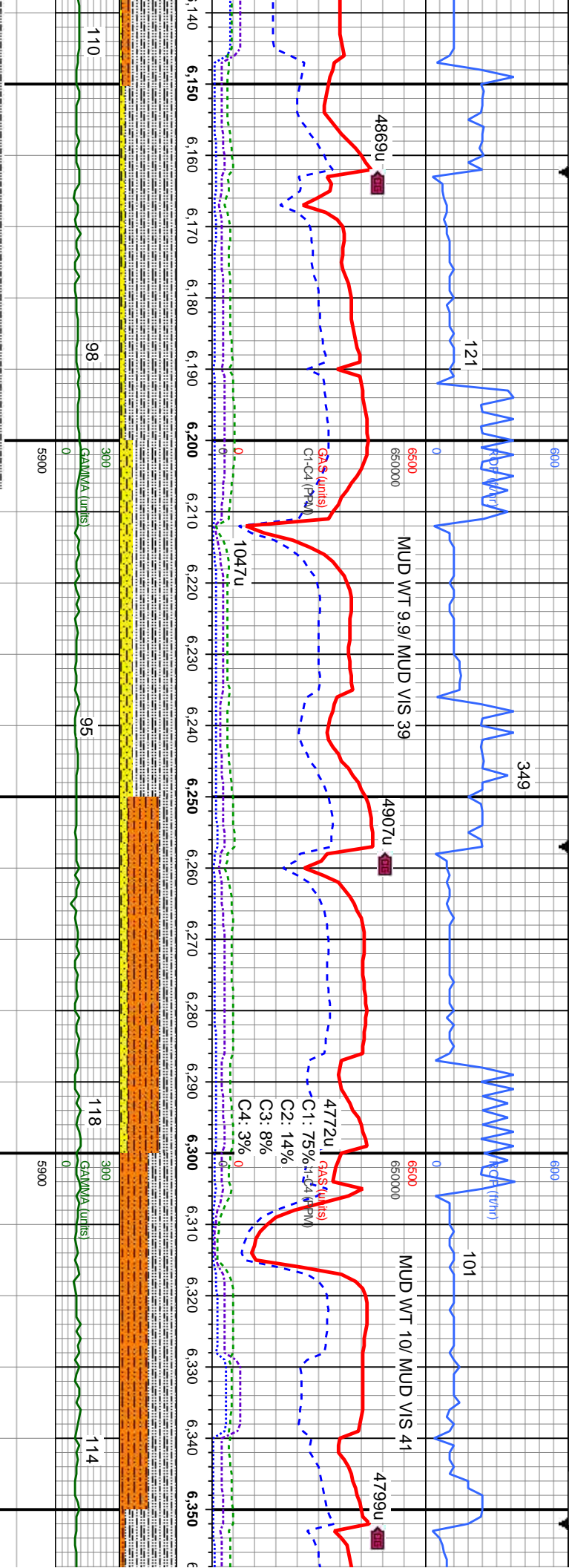
D DEAD	
E EVEN	
Q QUESTIONABLE	BIT
S SPOTTED STAINING	C CONNECTION (UP)

Porosity

C CONNECTION (DOWN)	C CONNECTION GAS
E EARTHY	C CONNECTION GAS (LEFT)
F FENESTRAL	T TRIP GAS
F FRACTURE	T TRIP GAS (LEFT)
I INTERCRYSTALLINE	D DOWN TIME GAS
I INTEROOLITIC	D DOWN TIME GAS (LEFT)
M MOLDIC	C CORE - LOST
O ORGANIC	C CORE - RECOVERED

Other Symbols

	DST INTERVAL		WIRELINE TESTED - LEFT		E EARTHY
	FAULT		WIRELINE TESTED - RT		FX FINELYXLN
	FORMATION TOP		DRILL STEM TEST		BS GRAINSTONE
	GAS SHOW		MINDEPTH MN DEPTH		L LITHOGRAPHIC
	OIL SHOW				MX MICROXLN
	MINDEPTH UP				MS MUDSTONE
Rounding					
	MINDEPTH (DOWN)		A ANGULAR		PS PACKSTONE
	NORMAL FAULT		R ROUNDED		WS WACKSTONE
	OVERTURNED STRATA		B SUBANG		
	REVERSE FAULT		N SUBRND		
Sorting					
	CASING				M MODERATE
Textures					
	SIDEWALL CORE (LEFT)				P POOR
	SIDEWALL CORE (RIGHT)		BS BOUNDSTONE		W WELL
	SLIDE		C CHALKY		
	SURVEY		CX CRYPTOXLN		



MD: 6,161'
TVD: 6,139.1'
Inclination: 4.5°
Azimuth: 270.4°
VS: -236.52'

MD: 6,208'
TVD: 6,185.85'
Inclination: 7.3°
Azimuth: 273.7°
VS: -231.69'

MD: 6,256'
TVD: 6,233.31'
Inclination: 9.8°
Azimuth: 275.1°
VS: -224.56'

MD: 6,303'
TVD: 6,279.46'
Inclination: 12°
Azimuth: 269.8°
VS: -215.69'

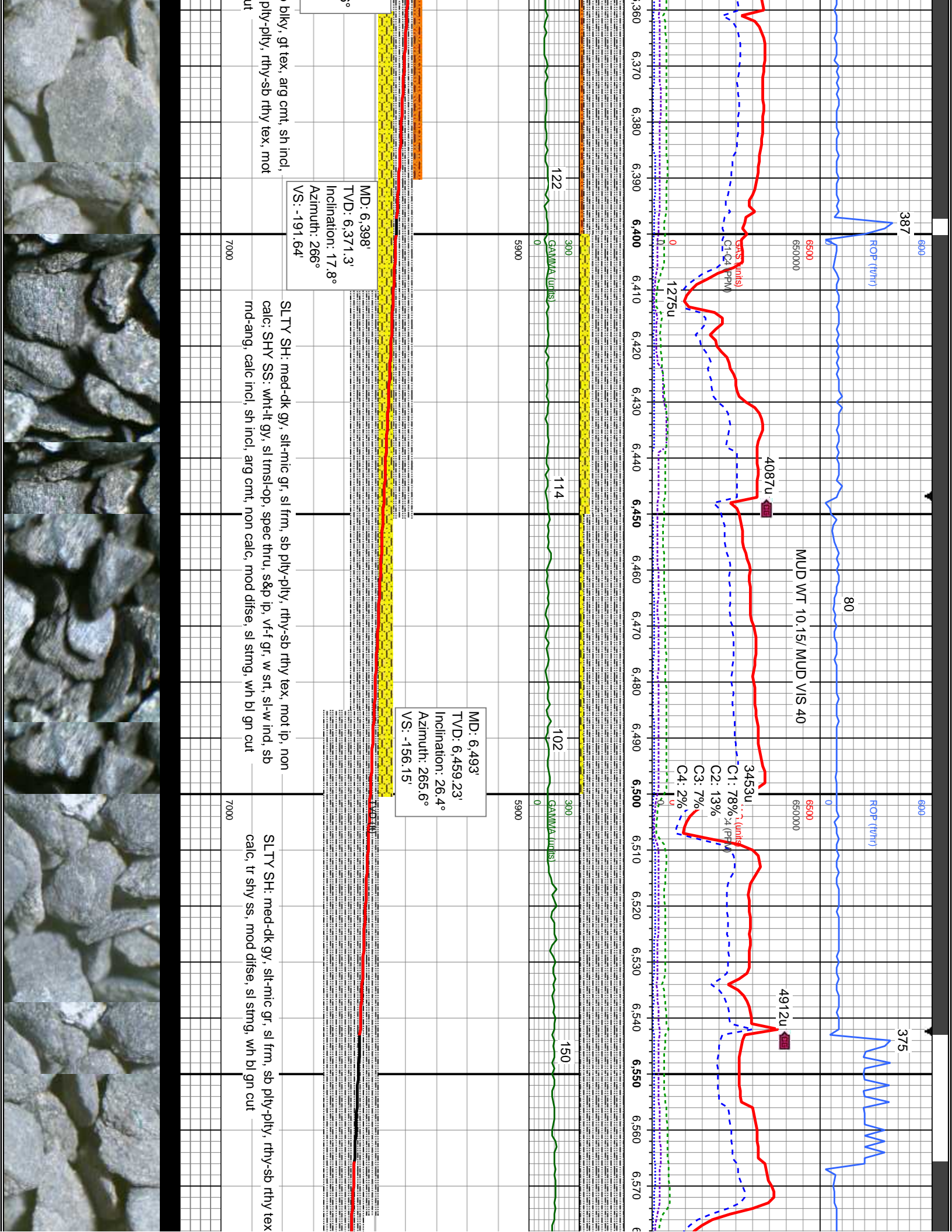
MD: 6,351'
TVD: 6,326.17'
Inclination: 14.6°
Azimuth: 266°
VS: -204.68'

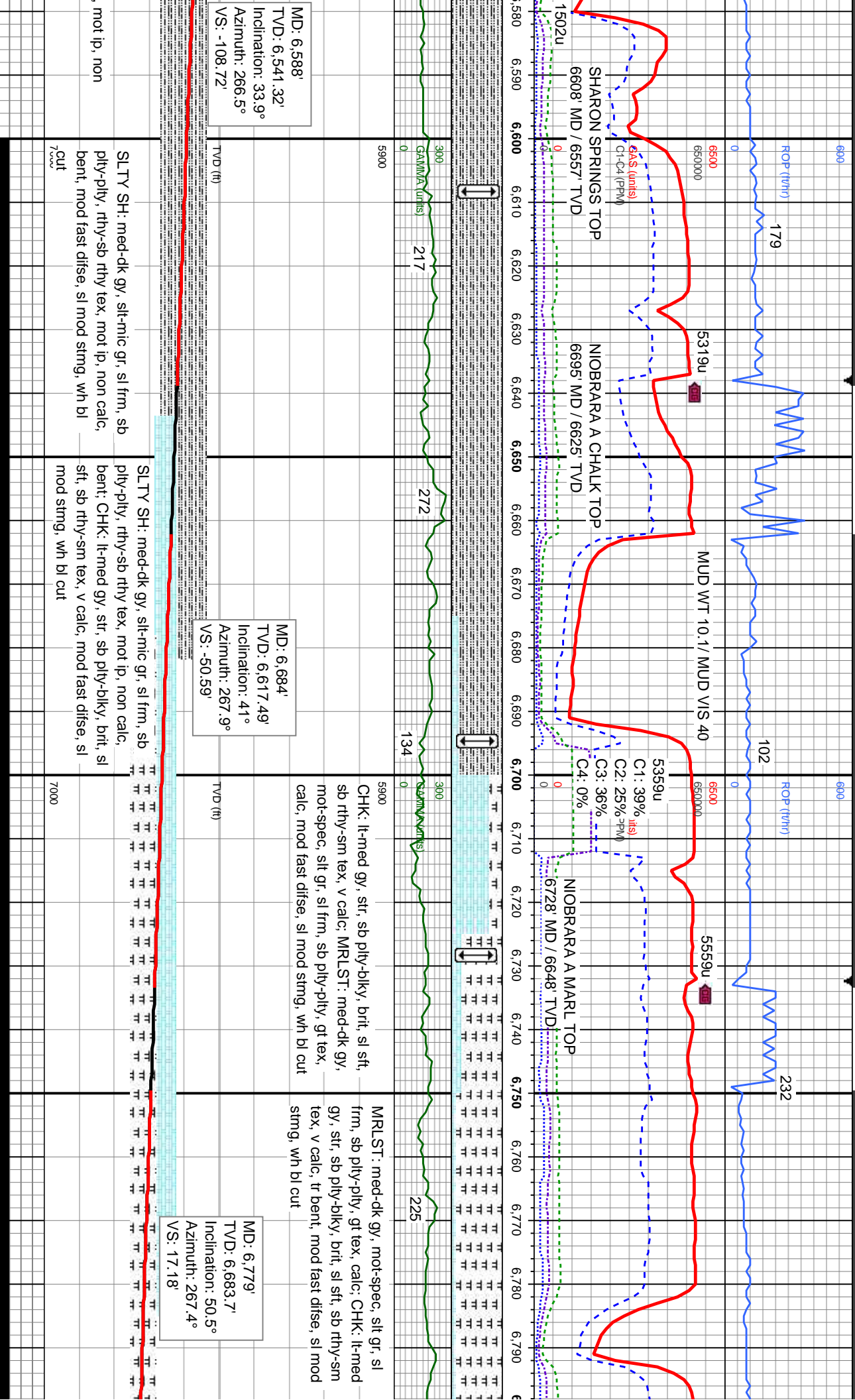
sl frm, sb ply-ply, rthy-sb rthy tex, mot ip, non calc;
sl frm-hd, sb ply-sb blkly, gt tex, arg cnt, sh incl, non
c, mod difse, sl stmg, wh bl gn cut

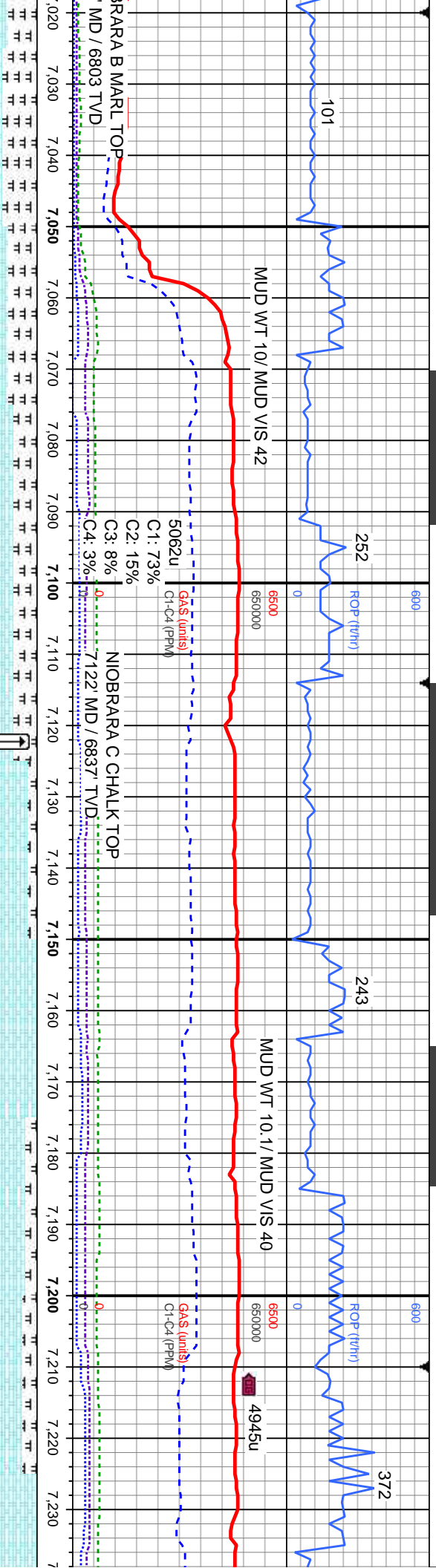
SLTY SH: med-dk gy, silt-mic gr, sl frm, sb ply-ply, rthy-sb rthy tex, mot ip, non calc;
SHY SS: wht-tt gy, sl trms-op, spec thru, s&p ip, vf-f gr, w srt, sl-w ind, sb md-ang,
calc incl, sh incl, arg cnt SHY SLTST: lt-med gy, silt-vf gr, sl frm-hd, sb ply-sb blkly,
gt tex, arg cnt, sh incl, non calc, mod difse, sl stmg, wh bl gn cut

SHY SLTST: lt-med gy, silt-vf gr, sl frm-hd, sb ply-sb
non calc; SLTY SH: med-dk gy, silt-mic gr, sl frm, sb
ip, non calc, tr shy ss, mod difse, sl stmg, wh bl gn c









RRARA B MARL TOP

MD / 6803 TVD

RRARA C CHALK TOP

MD / 6837 TVD

CHK: lt-med gy, str, sb pily-biky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pily-pily, gt tex, v calc, tr pyr, inoc, fast difse, mod fast stmg, wh bl cut

CHK: lt-med gy, str, sb pily-biky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pily-pily, gt tex, v calc, tr pyr, inoc, fast difse, mod fast stmg, wh bl cut

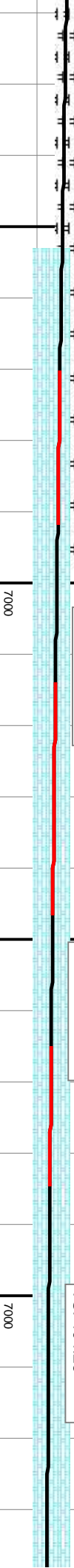
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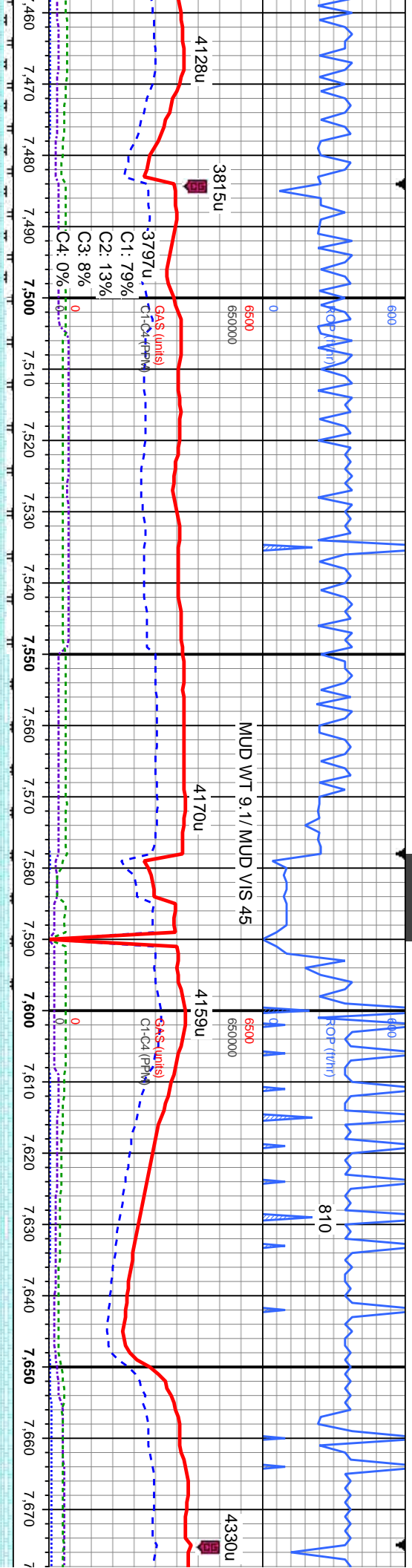
MD: 7,065'
TVD: 6,821.43'
Inclination: 71°
Azimuth: 270°
VS: 265.65'

MD: 7,113'
TVD: 6,835.74'
Inclination: 74.3°
Azimuth: 270.9°
VS: 311.44'

MD: 7,160'
TVD: 6,846.87'
Inclination: 78.3°
Azimuth: 272.7°
VS: 357.09'

MD: 7,208'
TVD: 6,855.74'
Inclination: 80.4°
Azimuth: 274.1°
VS: 404.25'



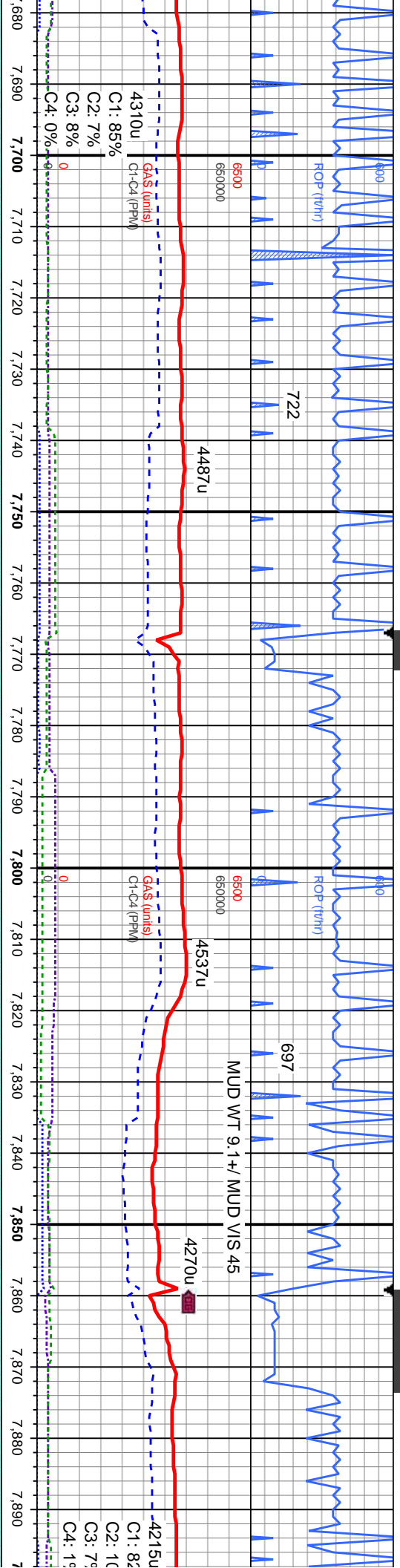


158	300	5900	CHK: lt-med gy, str, sb pily-blky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pily-pily, gt tex, v calc, tr pyr, fast difse, mod fast stimg, bri wh bl cut.
121	300	5900	CHK: lt-med gy, str, sb pily-blky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pily-pily, gt tex, v calc, tr pyr, fast difse, mod fast stimg, bri wh bl cut.
92	300	5900	CHK: lt-med gy, str, sb pily-blky, brit, sl sft, sb rthy-sm tex, v calc, fast difse, mod fast stimg, bri wh bl cut.
	300	5900	CHK: lt-med gy - lt-brn, sl sft, sb rthy-sm tex, v ca fast stimg, bri wh bl cut.

MD: 7,527'
TVD: 6,874.61'
Inclination: 88.2°
Azimuth: 271.1°
VS: 722.31'

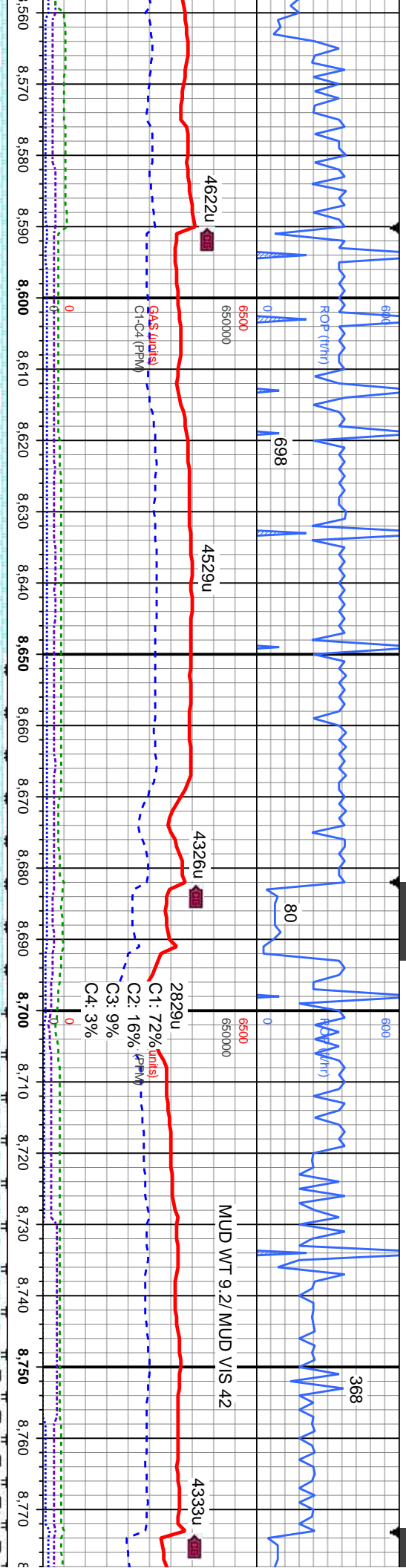
MD: 7,621'
TVD: 6,876'
Inclination: 90.1°
Azimuth: 269.3°
VS: 816.24'





77	300 GAMMA (units)	5900	90	300 GAMMA (units)	5900	75	300 GAMMA (units)	86	300 GAMMA (units)
TVD (ft)									
MD: 7,713' TVD: 6,875.84' Inclination: 90.1° Azimuth: 269° VS: 908.13'									
CHK: lt-med gy - lt-brn, str, sb pily-biky, brit, sl sft, sb rthy-sm tex, v calc, fast difse, mod fast stmg, bri wh bl cut.									
MD: 7,805' TVD: 6,875.44' Inclination: 90.4° Azimuth: 268.6° VS: 999.98'									
CHK: lt-med gy - lt-brn, str, sb pily-biky, brit, sl sft, sb rthy-sm tex, v calc, fast difse, mod fast stmg, bri wh bl cut.									
MD: 7,89 TVD: 6,8 Inclination: Azimuth: VS: 1.09									
CHK: lt-med gy - lt-brn, str, sb pily-biky, brit, sl sft, sb rthy-sm tex, v calc, fast difse, mod fast stmg, bri wh bl cut.									





lt-med gy - lt-brn, str, sb pty-blky, brit, sb rthy-sm tex, v calc, mod fast difse, ast stmg, bri wh bl cut.

CHK: lt-med gy - lt-brn, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, mod fast difse, mod fast stmg, bri wh bl cut.

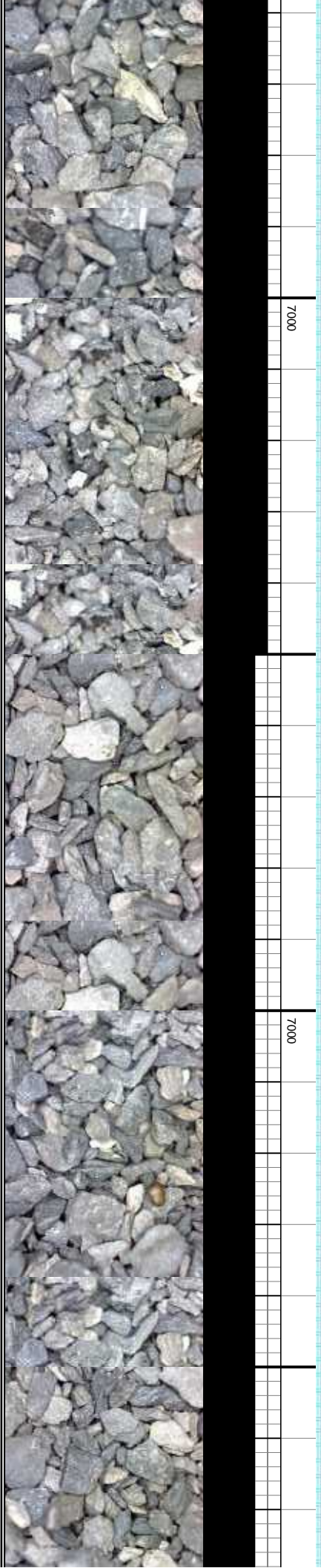
CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pty-pty, gt tex, v calc, mod fast difse, mod fast stmg, bri wh bl cut.

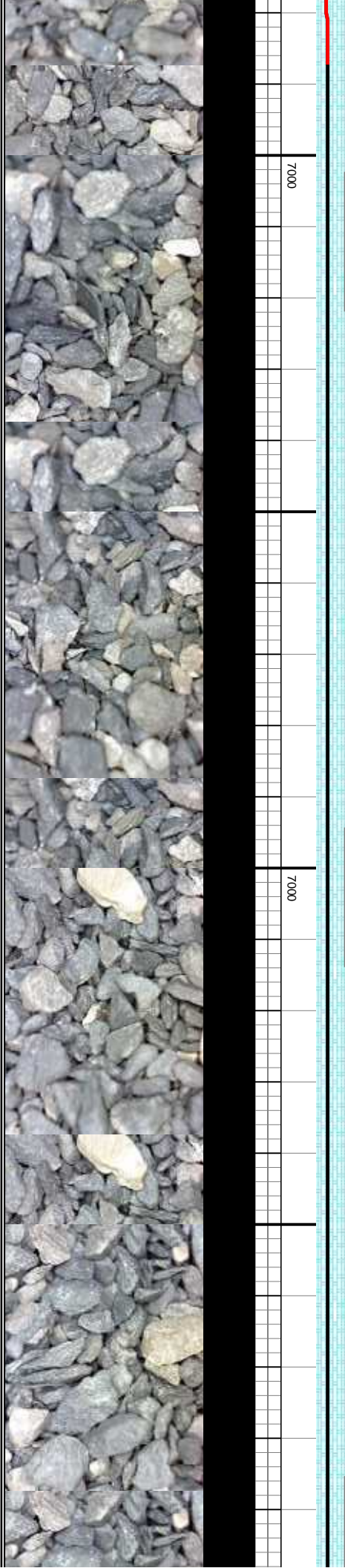
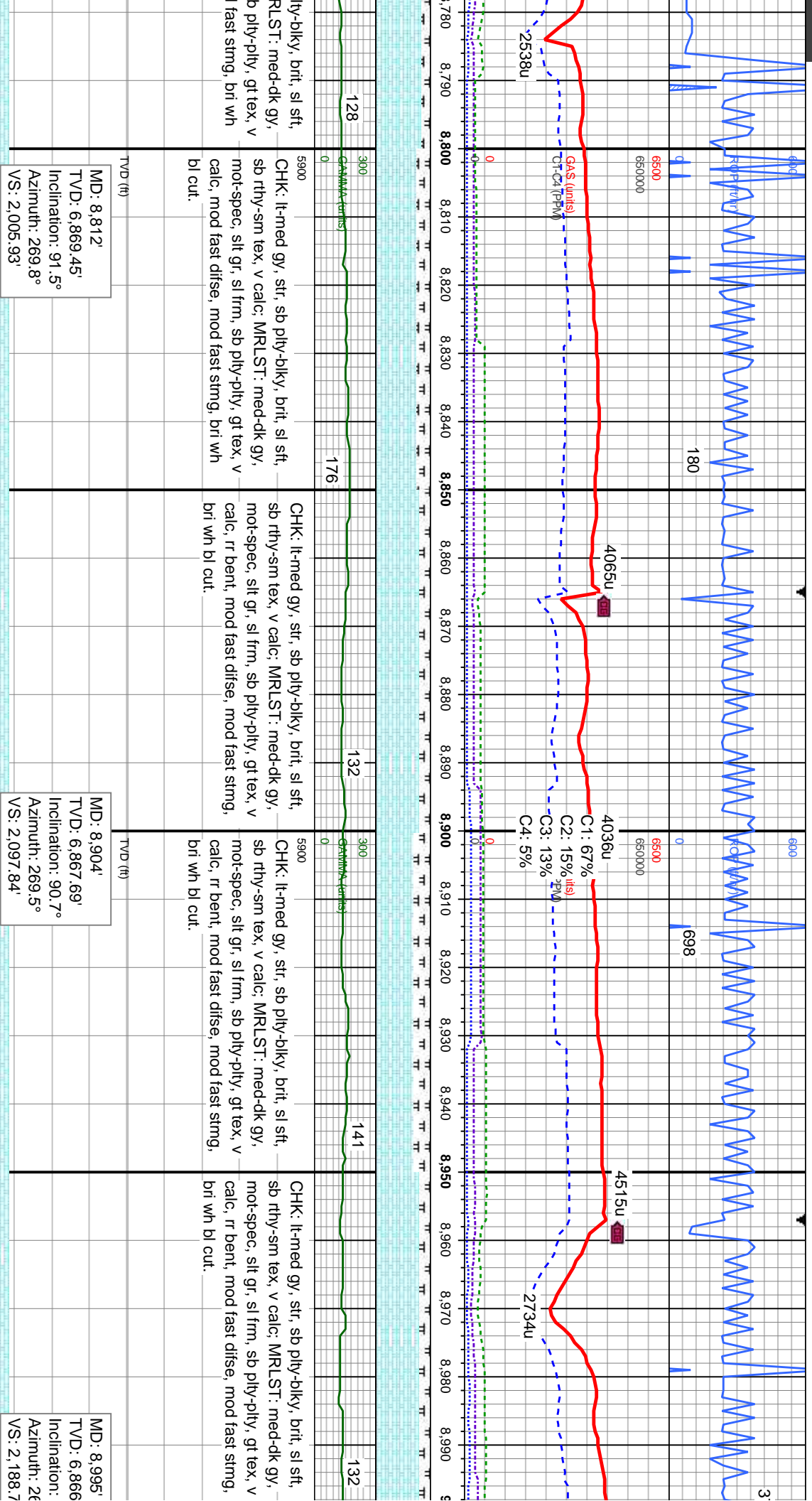
CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pty-pty, gt tex, v calc, mod fast difse, mod fast stmg, bri wh bl cut.

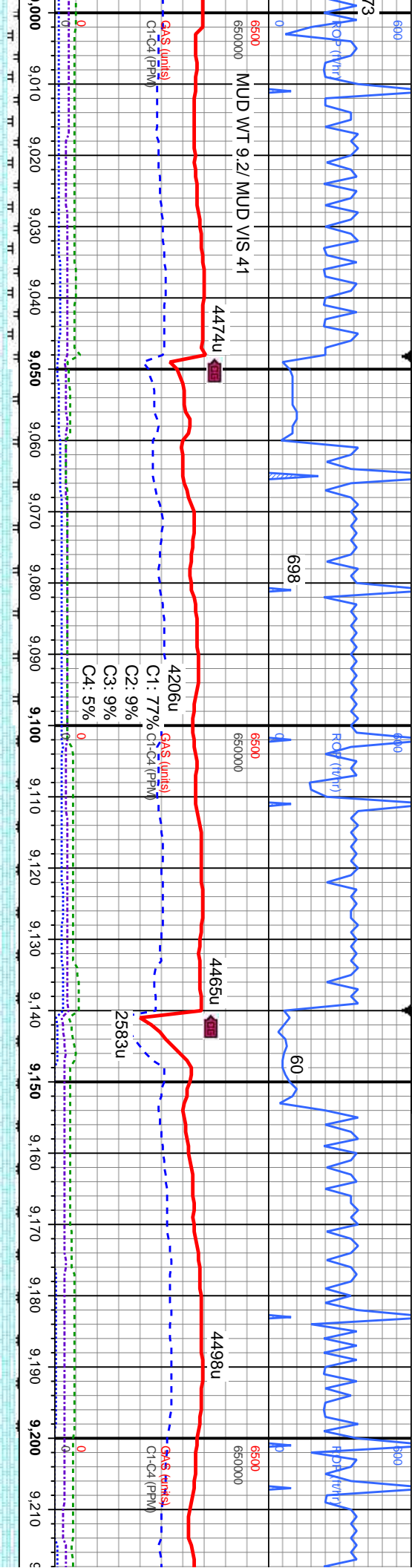
CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pty-pty, gt tex, v calc, mod fast difse, mod fast stmg, bri wh bl cut.

MD: 8,628'
TVD: 6,871.22'
Inclination: 89.7°
Azimuth: 269°
VS: 1,822.17'

MD: 8,720'
TVD: 6,871.06'
Inclination: 90.5°
Azimuth: 269.1°
VS: 1,914.04'







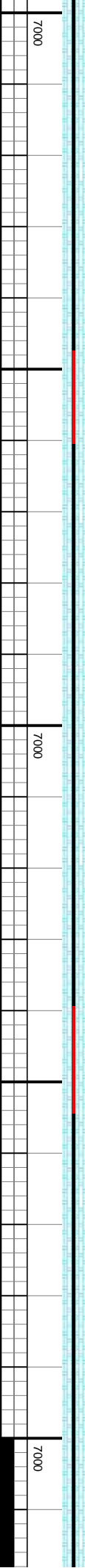
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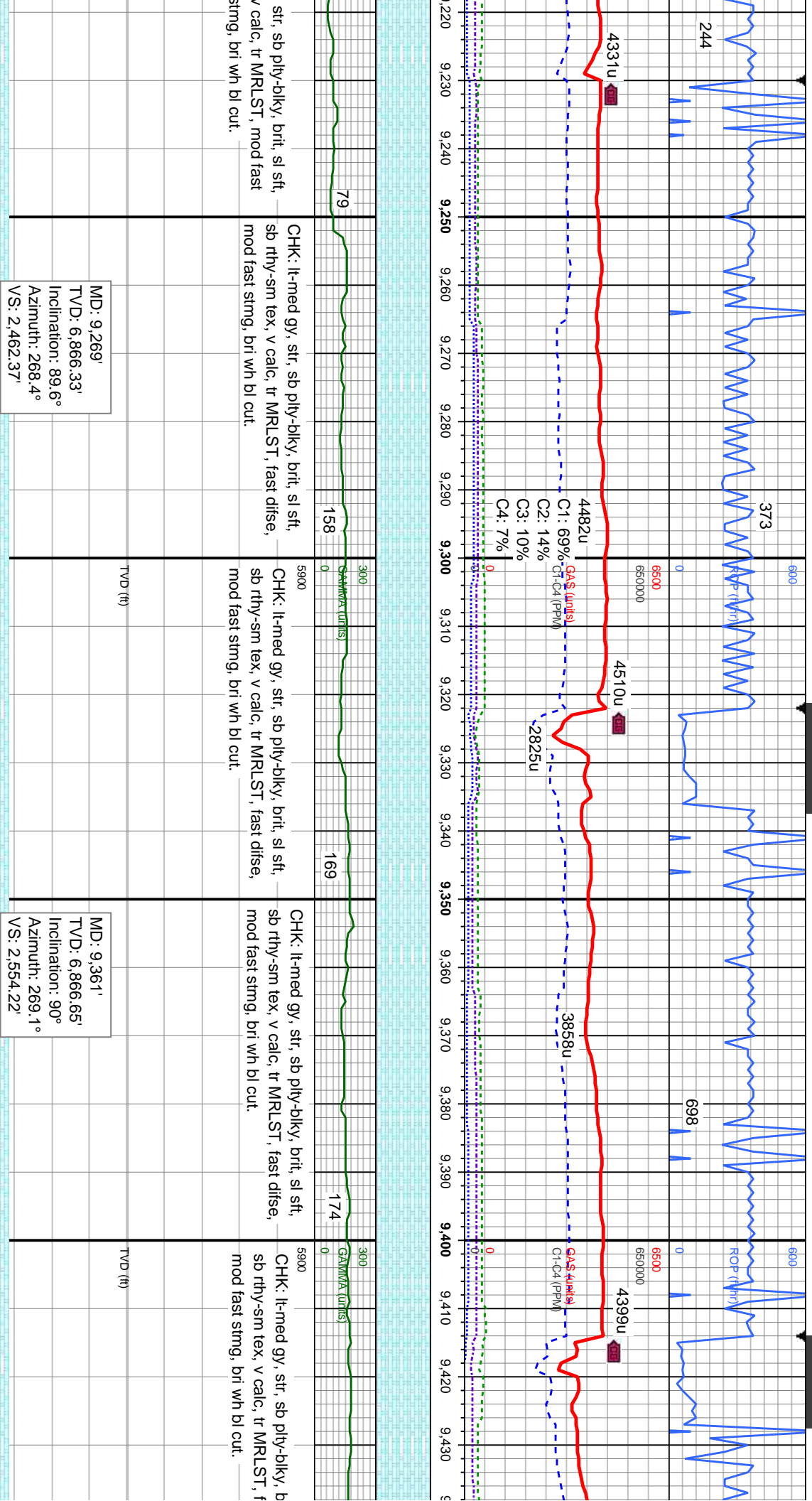
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CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pty-pty, gt tex, v calc, mod fast difse, mod fast stmg, bri wh bl cut.

MD: 9,086'
TVD: 6,866.81'
Inclination: 90°
Azimuth: 269.3°
VS: 2,279.58'

MD: 9,178'
TVD: 6,866.41'
Inclination: 90.5°
Azimuth: 269.8°
VS: 2,371.49'





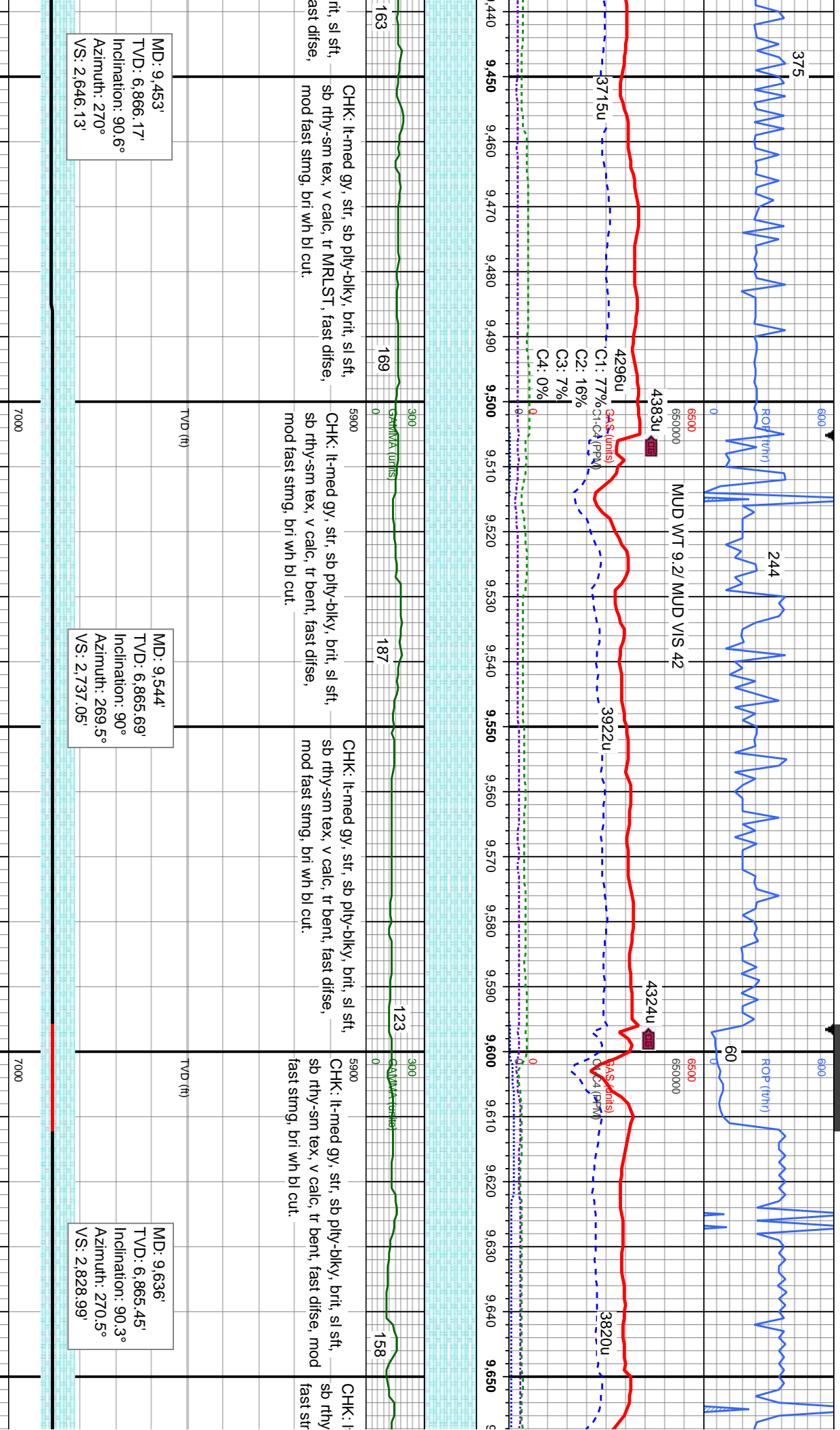
str, sb pily-biky, brit, sl sft, v calc, tr MRLST, mod fast stimg, bri wh bl cut.

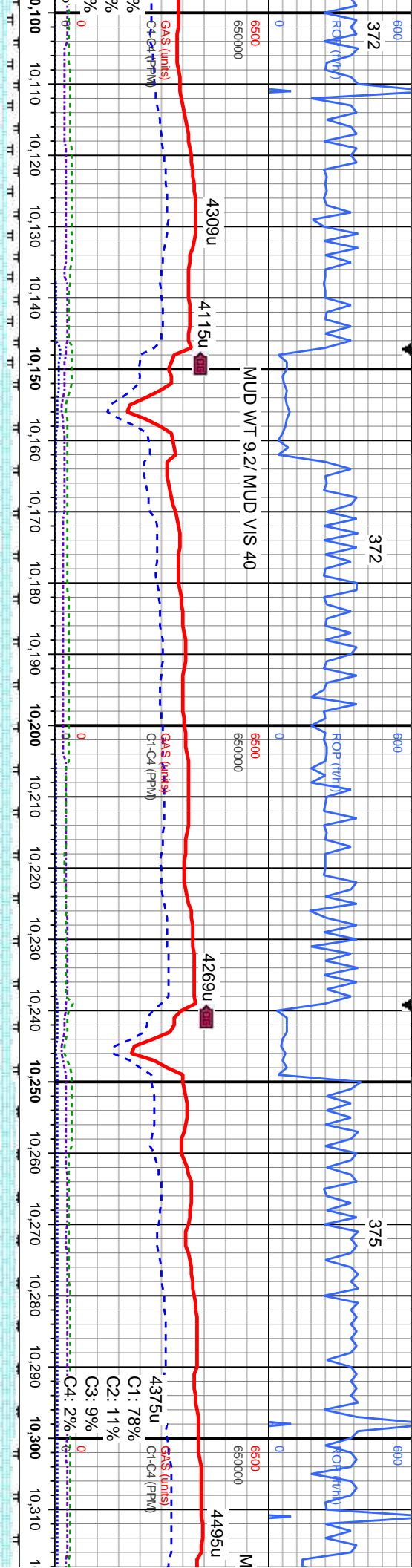
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CHK: lt-med gy, str, sb pily-biky, brit, sl sft, sb rthy-sm tex, v calc, tr MRLST, fast difse, mod fast stimg, bri wh bl cut.

CHK: lt-med gy, str, sb pily-biky, brit, sl sft, sb rthy-sm tex, v calc, tr MRLST, fast difse, mod fast stimg, bri wh bl cut.







CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pty-pty, gt tex, v calc, occ dissim pyr, fast difse, mod fast stmg, bri wh bl cut.

CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc; MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pty-pty, gt tex, v calc, occ dissim pyr, mod fast difse, mod fast stmg, bri wh bl cut.

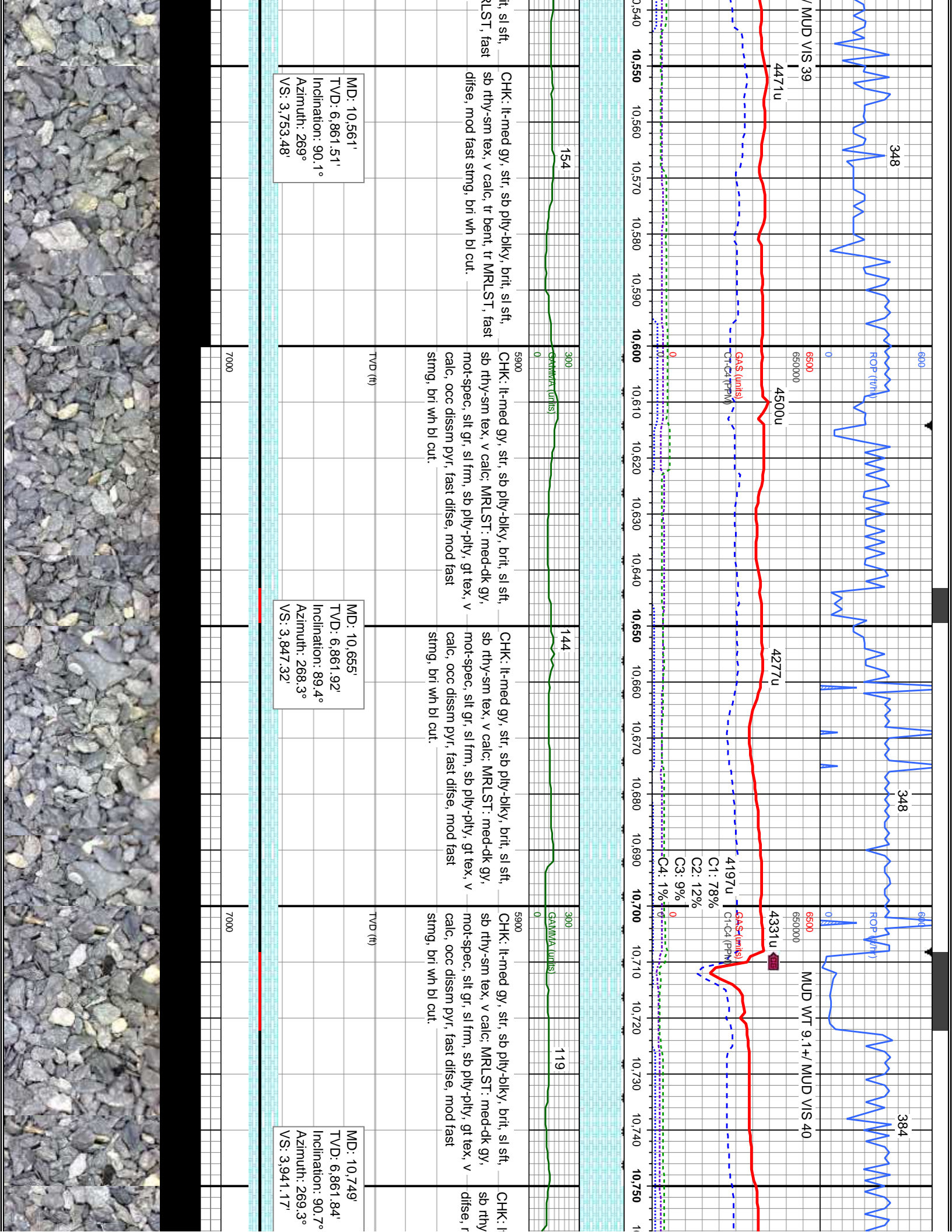
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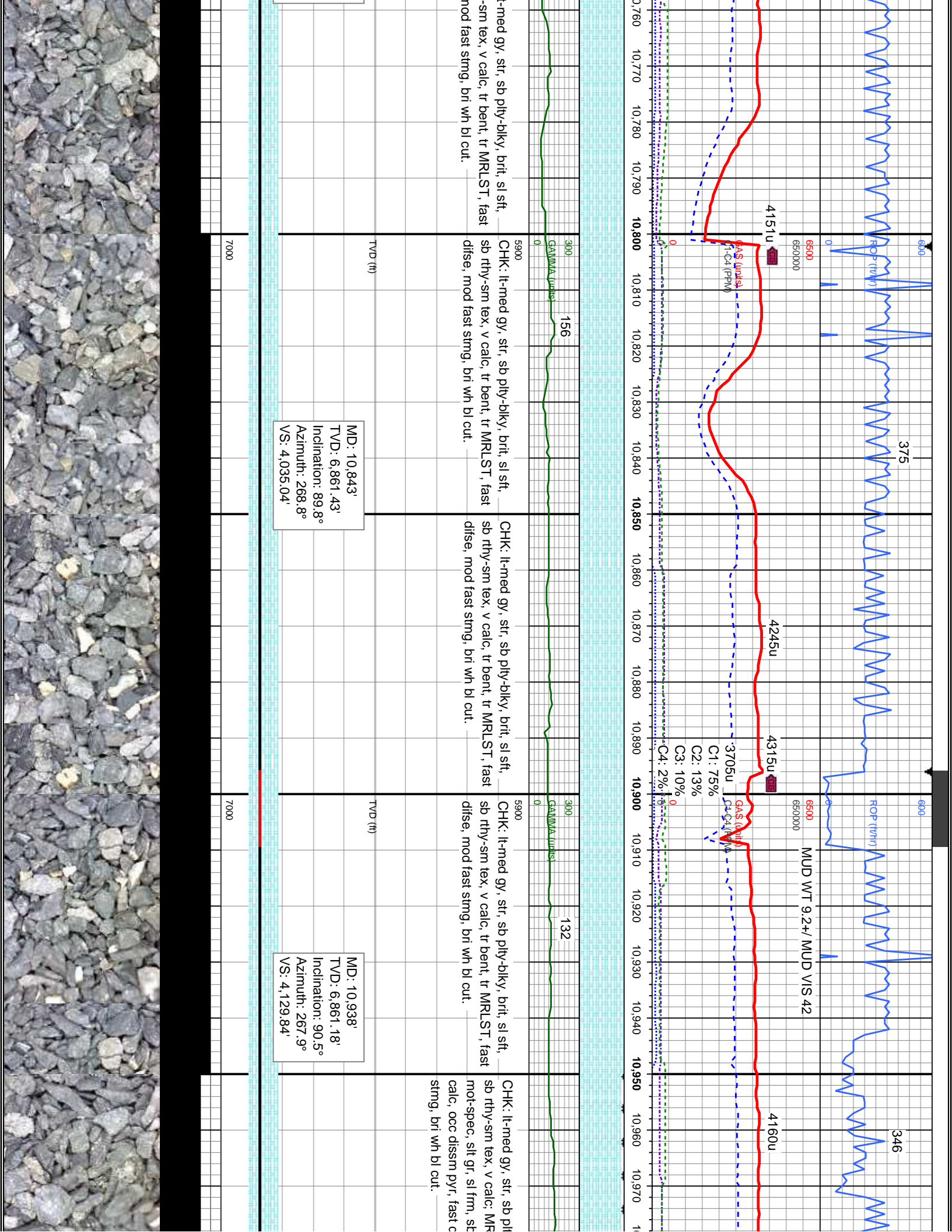
MD: 16'
TVD: 5,211'
Inclination: 89°
Azimuth: 272.6°
VS: .74'

MD: 10,188'
TVD: 6,866.1'
Inclination: 89.9°
Azimuth: 274.1°
VS: 3,380.71'

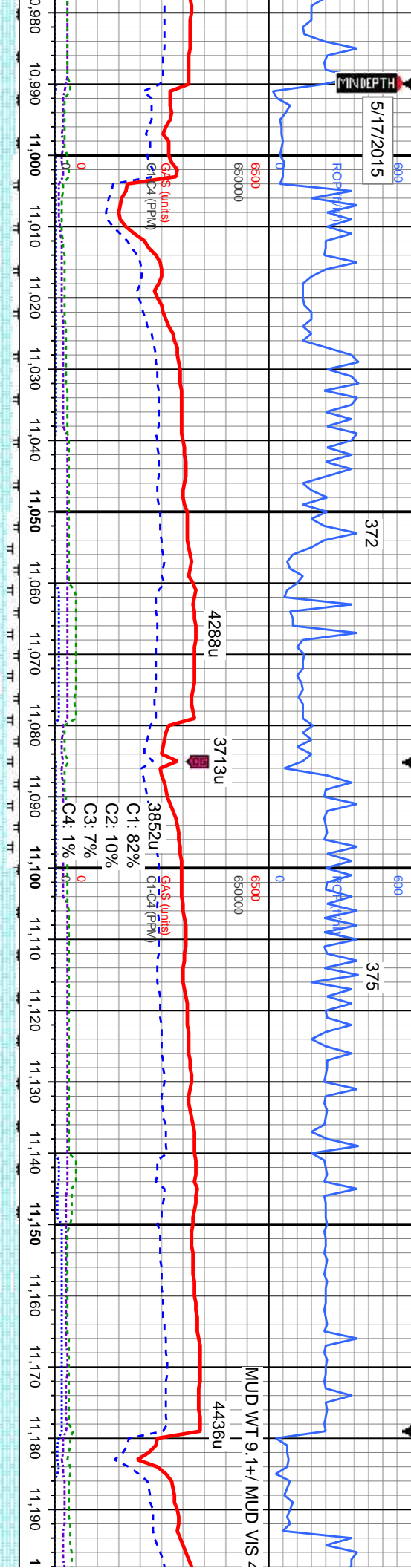
MD: 10,280'
TVD: 6,866.02'
Inclination: 90.2°
Azimuth: 273°
VS: 3,472.68'



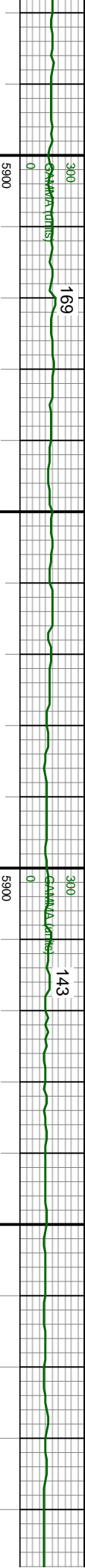




MINDDEPTH



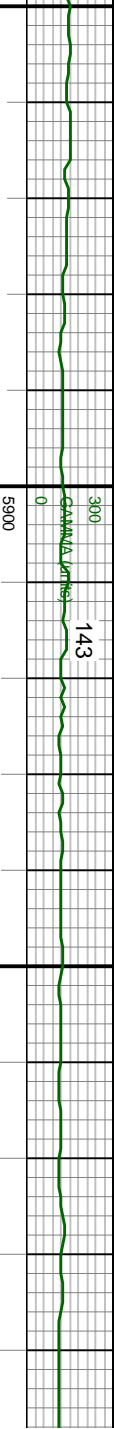
ply-bkly, brit, sl sft,
LLST: med-dk gy,
ply-pty, gt tex, \n
lilise, mod fast



CHK: rmed gy, str, sb ply-bkly, brit, sl sft,
sb rthy-sm tex, v calc; MRLST: med-dk gy,
rmt-spec, slt gr, sl frm, sb ply-ply, gt tex, \
calc, occ dissim pyr, fast disse, mod fast
stimg, bri wh bl cut.

TV_D (ft)

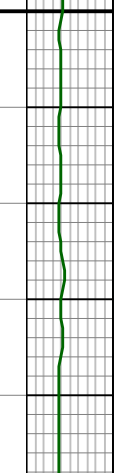
MD: 11,032'
TVD: 6,859.54'
Inclination: 91.5°
Azimuth: 269.1°
VS: 4,223.64'



CHK: It-med gy, str, sb pily-diky, brt, sl str,
sb rthy-sm tex, v calc, MRLST: med-dk gy,
mot-spec, slt gr, sl frm, sb pily-pily, gt tex,
calc, occ dissim pyr, fast difse, mod fast
stimg, bri wh bl cut.

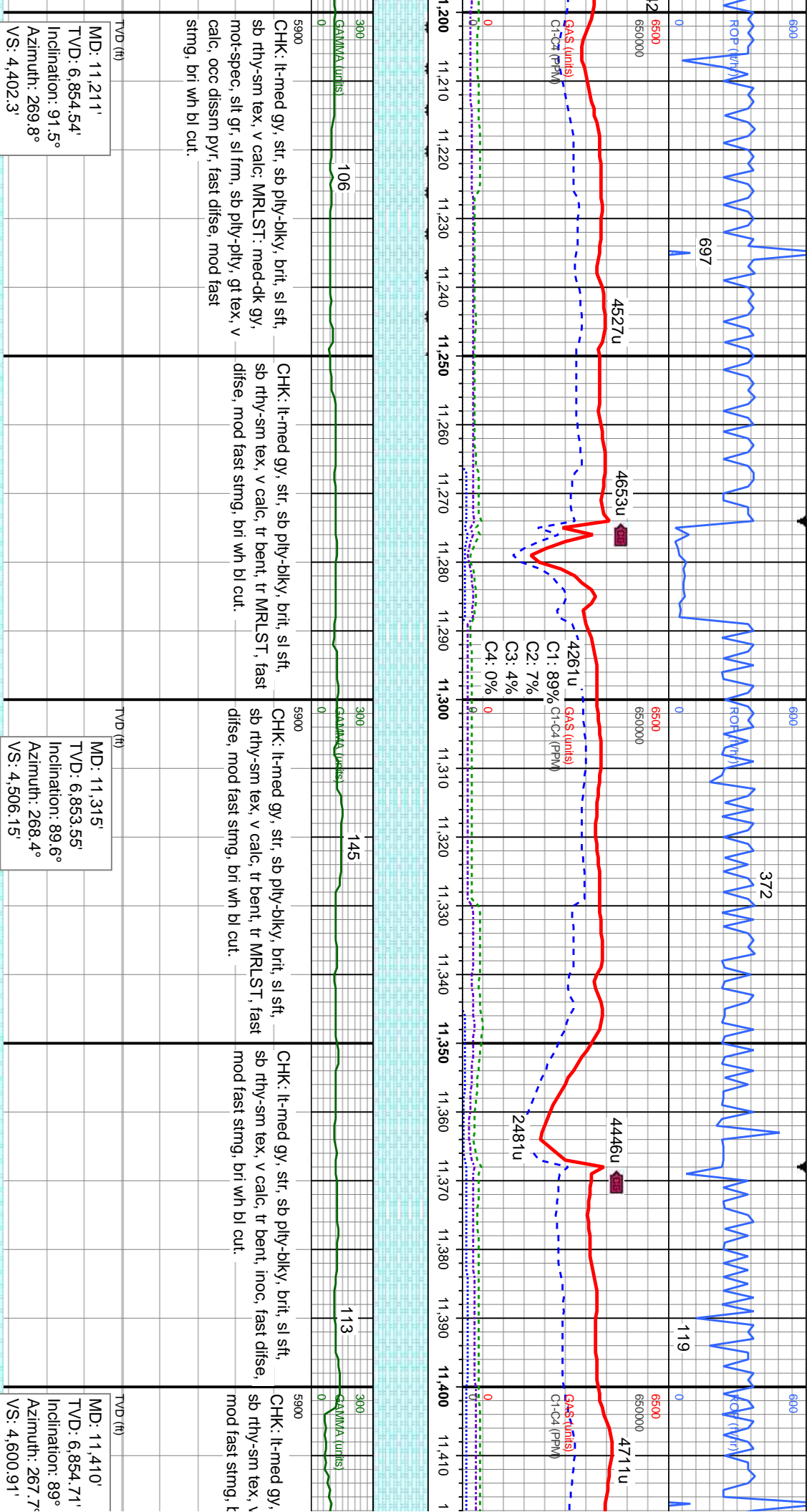
TV_D (ft)

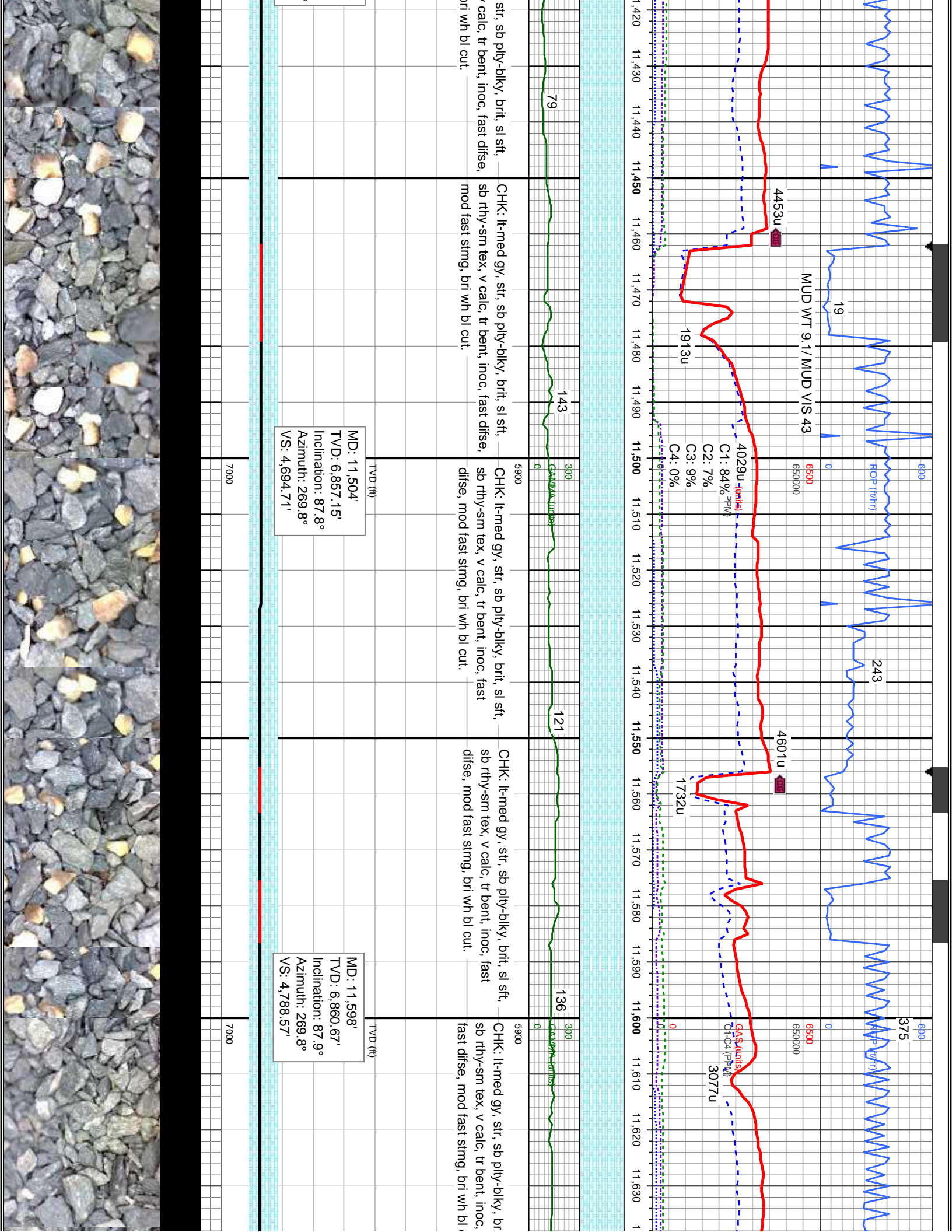
MD: 11,126'
TVD: 6,856.92'
Inclination: 91.7°
Azimuth: 268.3°
VS: 4,317.45'

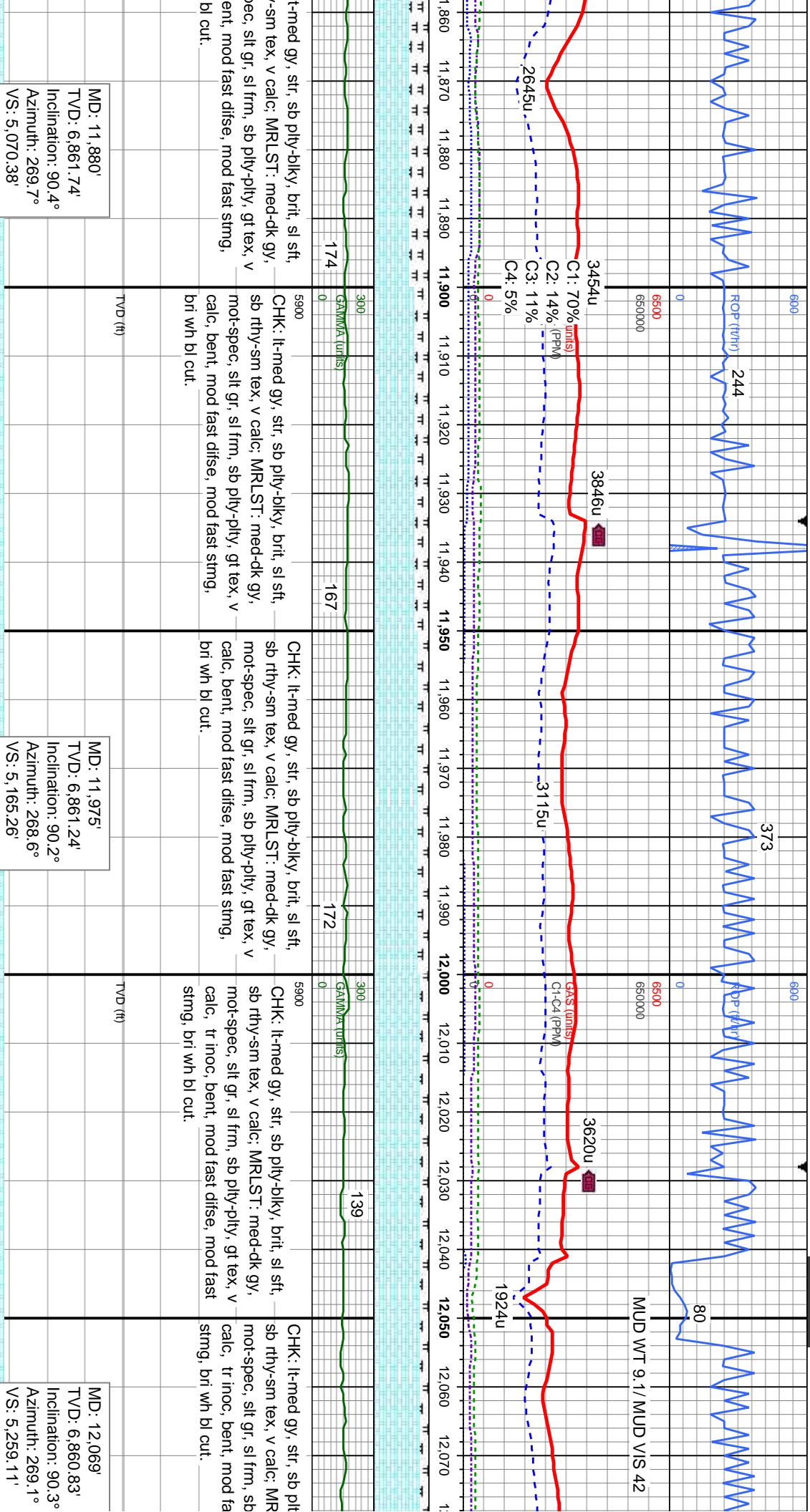


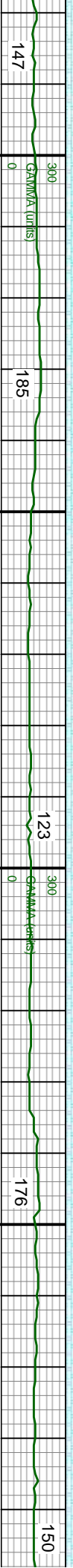
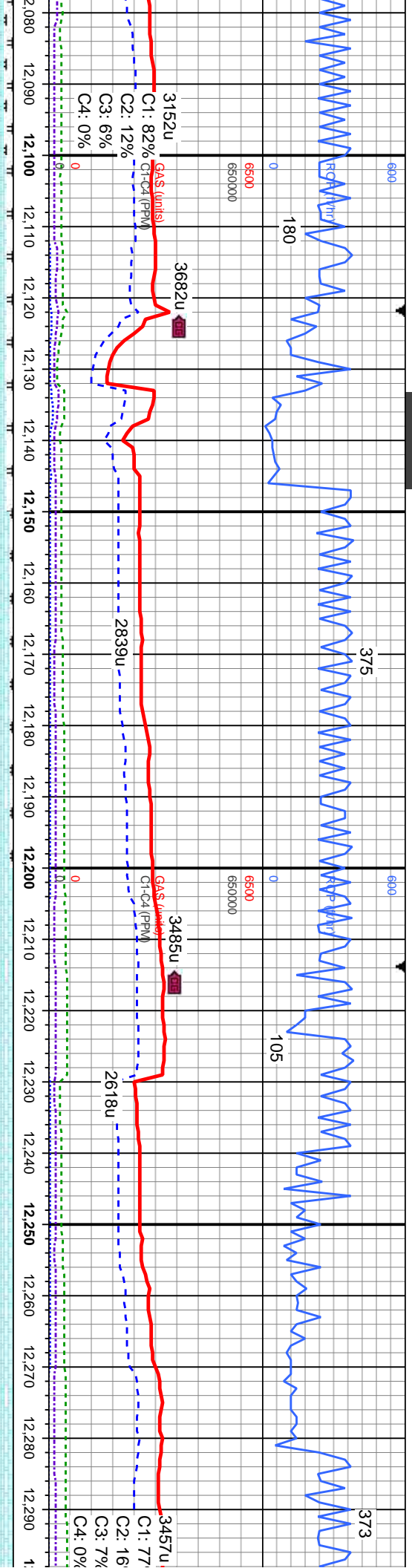
CHK: It-med gy, str, sb ply-blky, brit, sl sft, sb rhy-sm tex, v calc, tr bent, tr MRLST, fastdlse, mod fast strng, bri wh bl cut.

[illegible]









CHK: lt-med gy, str, sb pty-biky, brit, sl sft, sb rthy-sm tex, v calc, MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pty-pty, gt tex, v calc, rr inoc, bent, mod fast difse, mod fast stmg, bri wh bl cut.

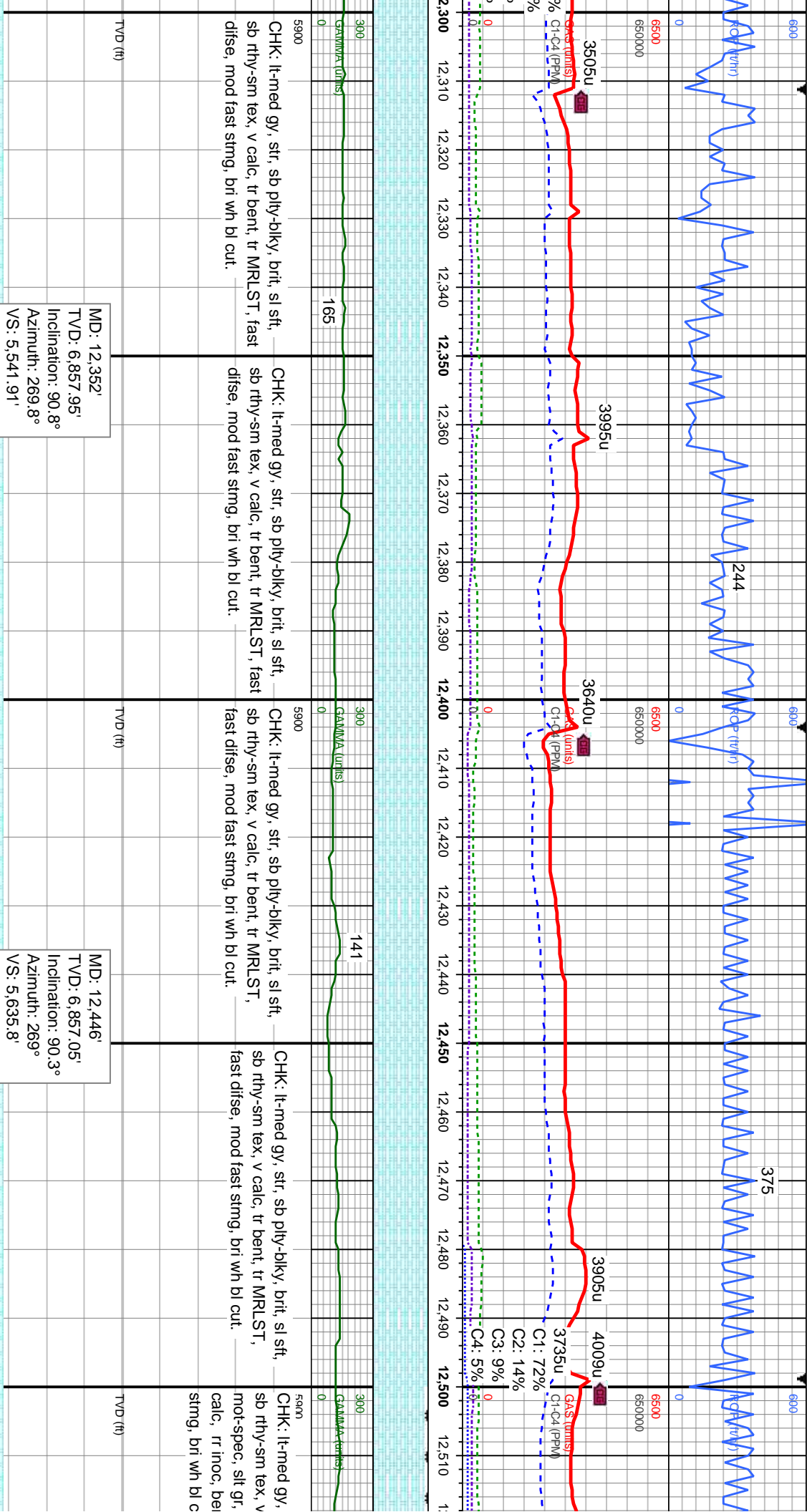
CHK: lt-med gy, str, sb pty-biky, brit, sl sft, sb rthy-sm tex, v calc, MRLST: med-dk gy, mot-spec, slt gr, sl frm, sb pty-pty, gt tex, v calc, rr inoc, bent, mod fast difse, mod fast stmg, bri wh bl cut.

CHK: lt-med gy, str, sb pty-biky, brit, sl sft, sb rthy-sm tex, v calc, tr bent, tr MRLST, fast difse, mod fast stmg, bri wh bl cut.

MD: 12,163'
TVD: 6,860.34'
Inclination: 90.3°
Azimuth: 270°
VS: 5,353.02'

MD: 12,258'
TVD: 6,859.35'
Inclination: 90.9°
Azimuth: 270.5°
VS: 5,447.97'





CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, tr bent, tr MRLST, fast difse, mod fast stmg, bri wh bl cut.

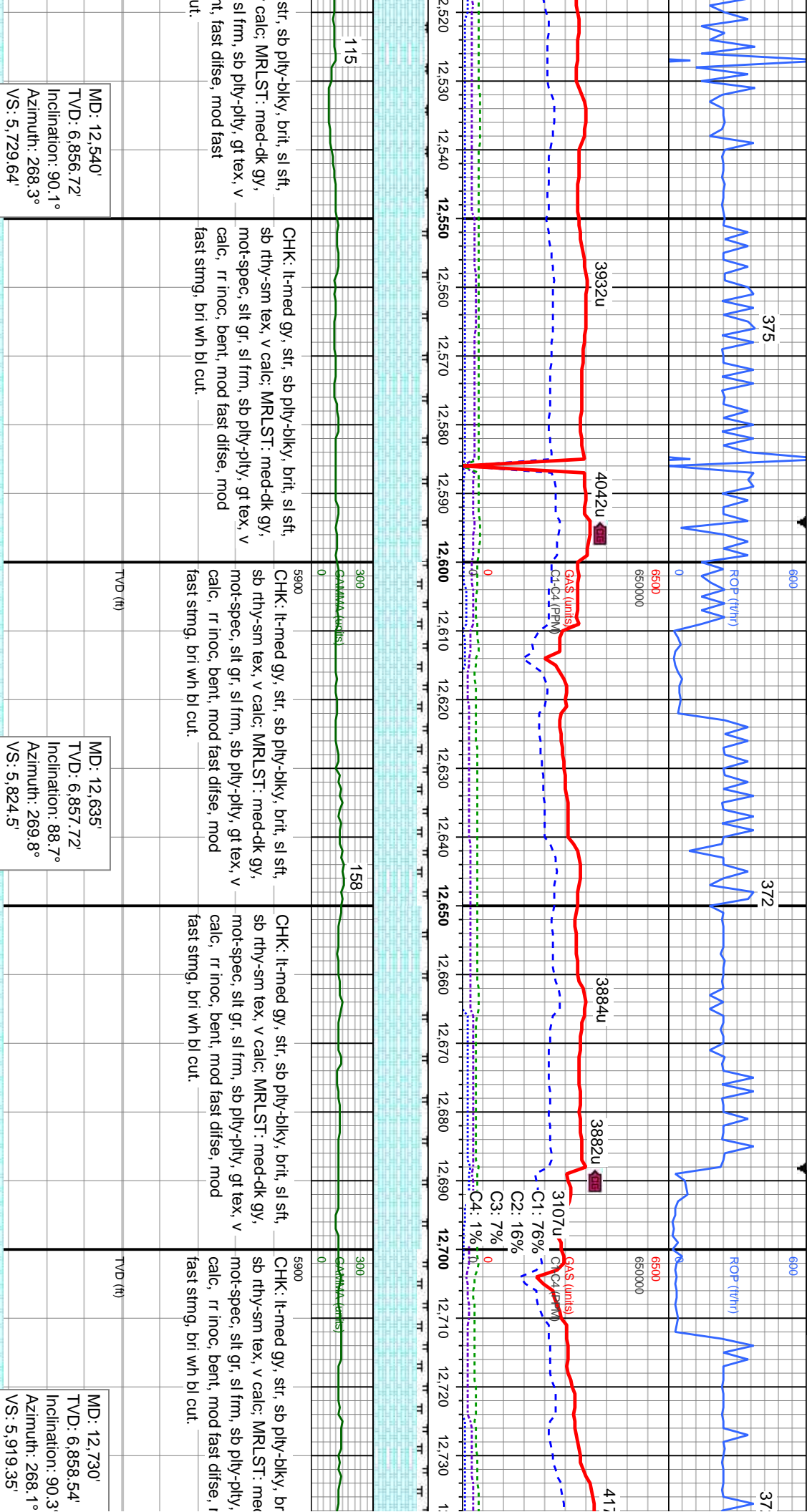
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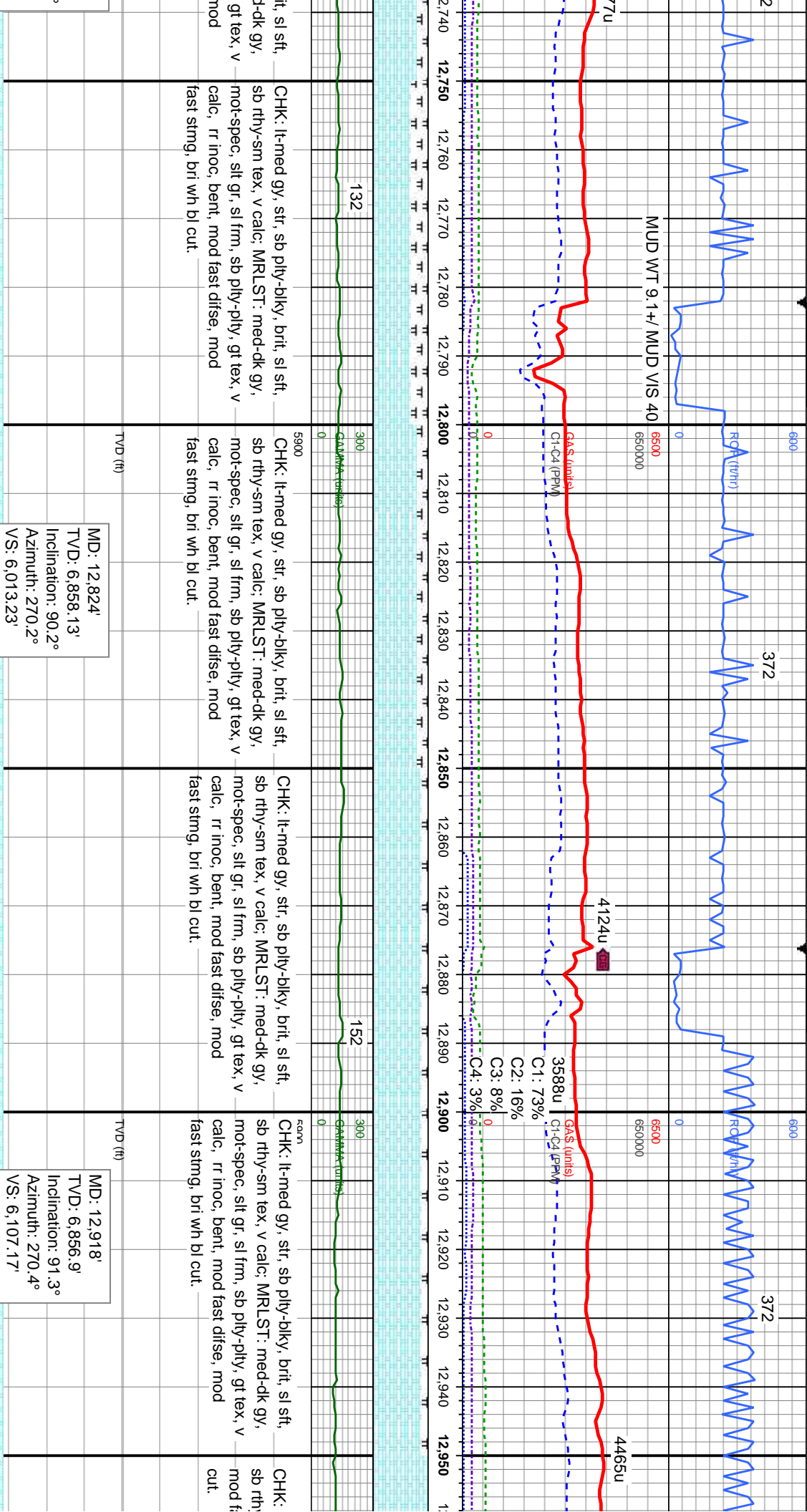
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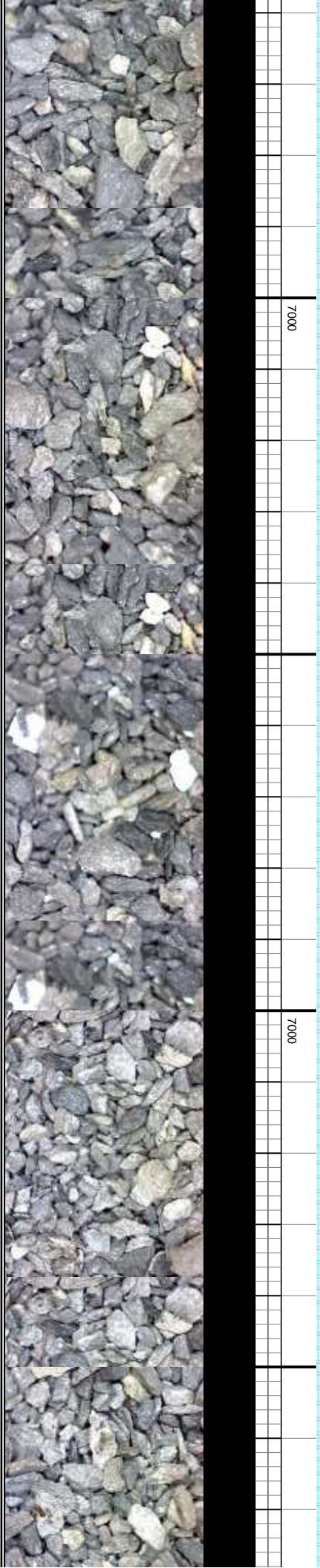
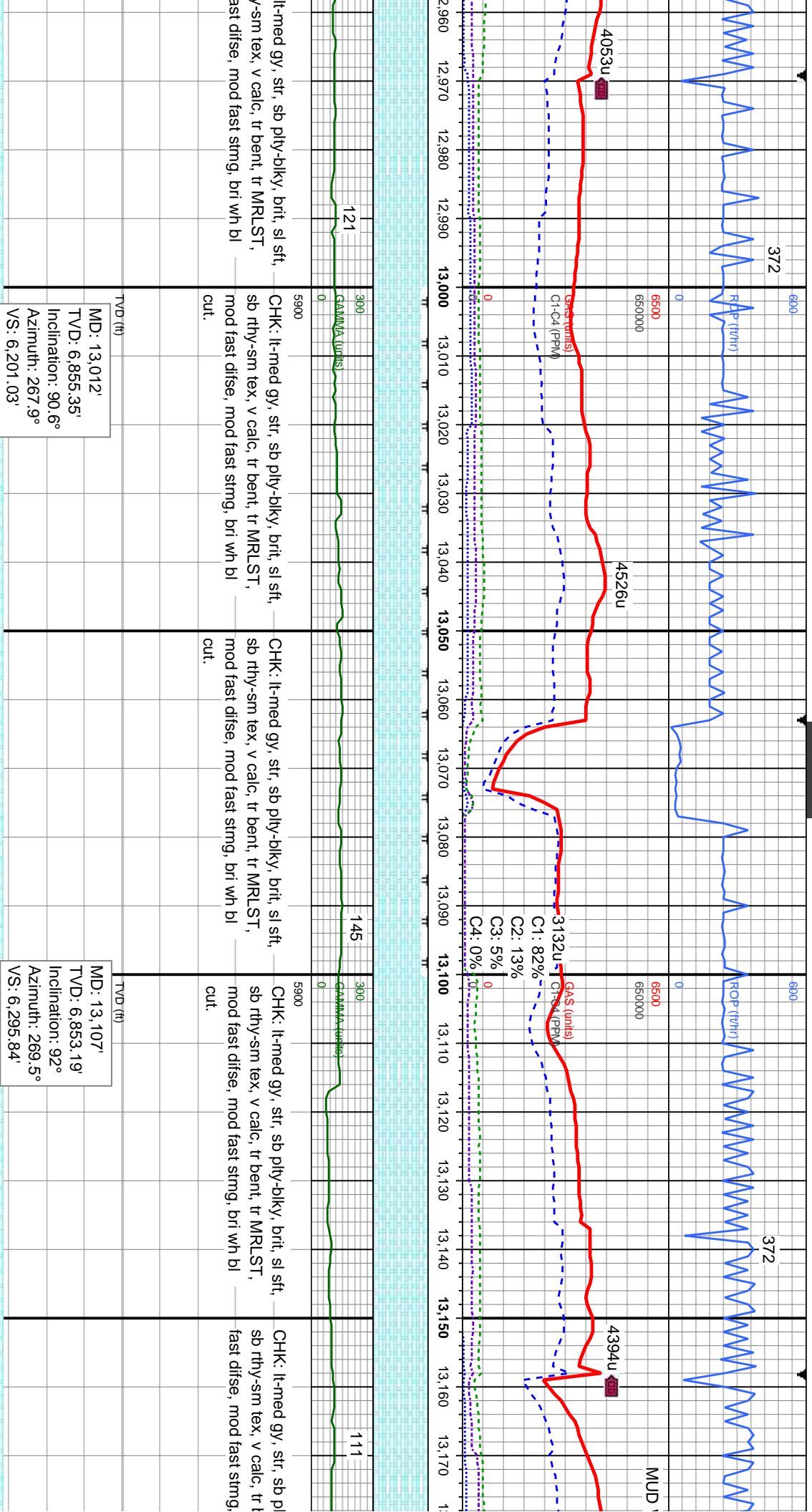
CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, tr bent, tr MRLST, fast difse, mod fast stmg, bri wh bl cut.

CHK: lt-med gy, sb rthy-sm tex, v mot-spec, slt gr, calc, tr inoc, bent stmg, bri wh bl c









5/18/2015

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MINDEPTH

WT 9.1/ MUD VIS 41

MUD WT 9.2/ MUD VIS 44

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3988u

3705u

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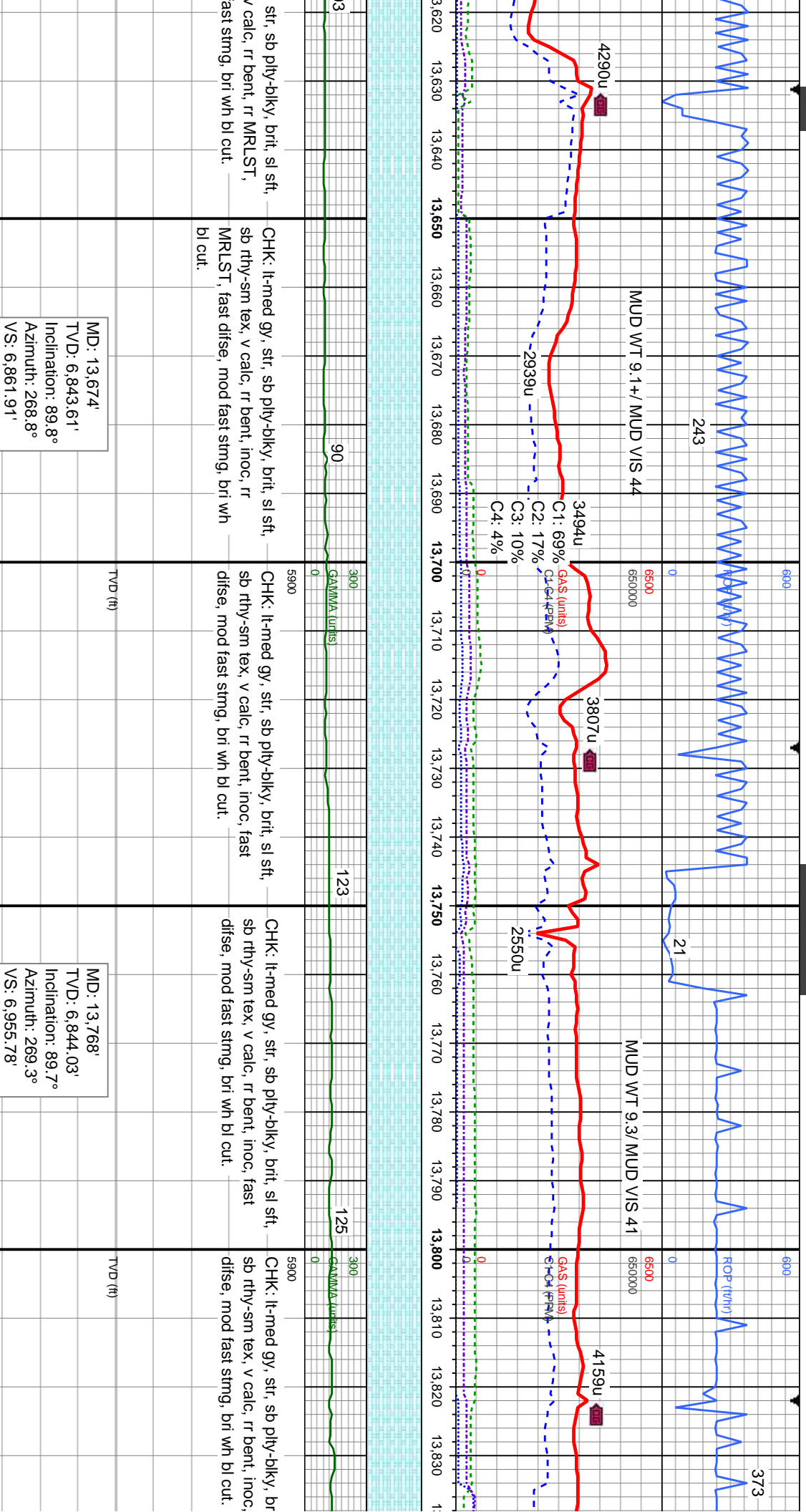
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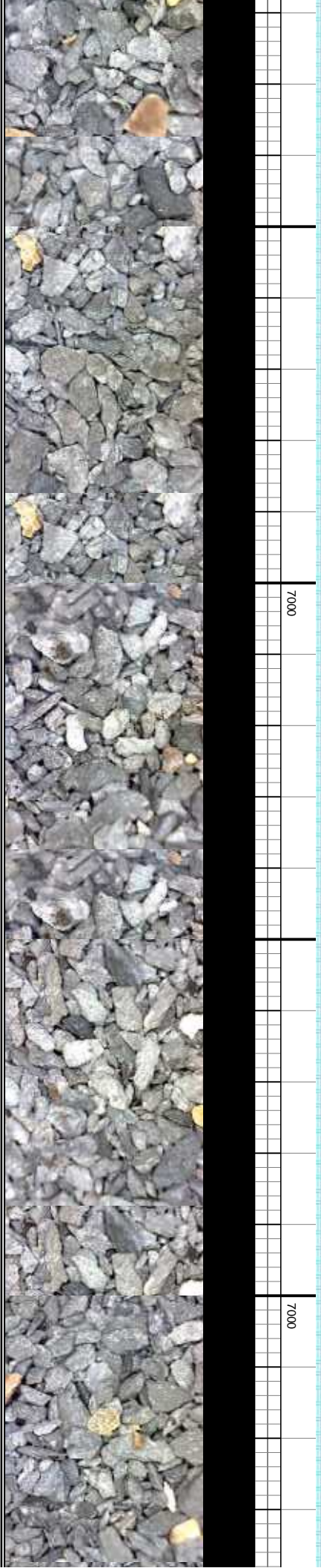
str, sb pty-blky, brit, sl sft, v calc, rr bent, rr MRLST, fast stmg, bri wh bl cut.

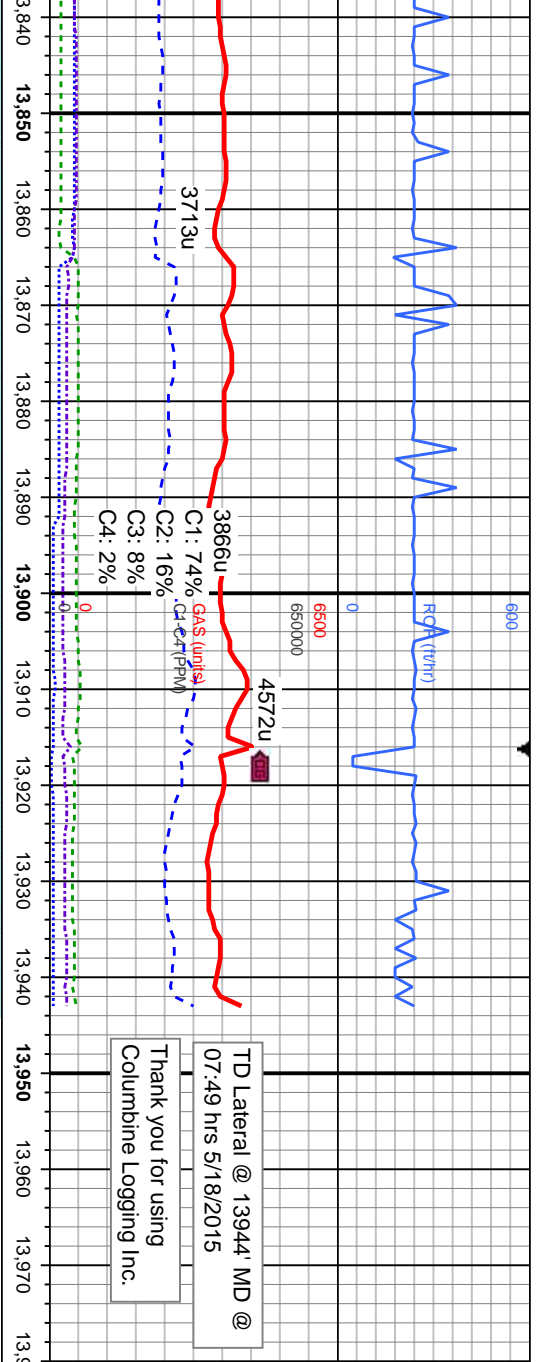
CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, rr bent, inoc, rr MRLST, fast difse, mod fast stmg, bri wh bl cut.

CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, rr bent, inoc, fast difse, mod fast stmg, bri wh bl cut.

CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, rr bent, inoc, fast difse, mod fast stmg, bri wh bl cut.

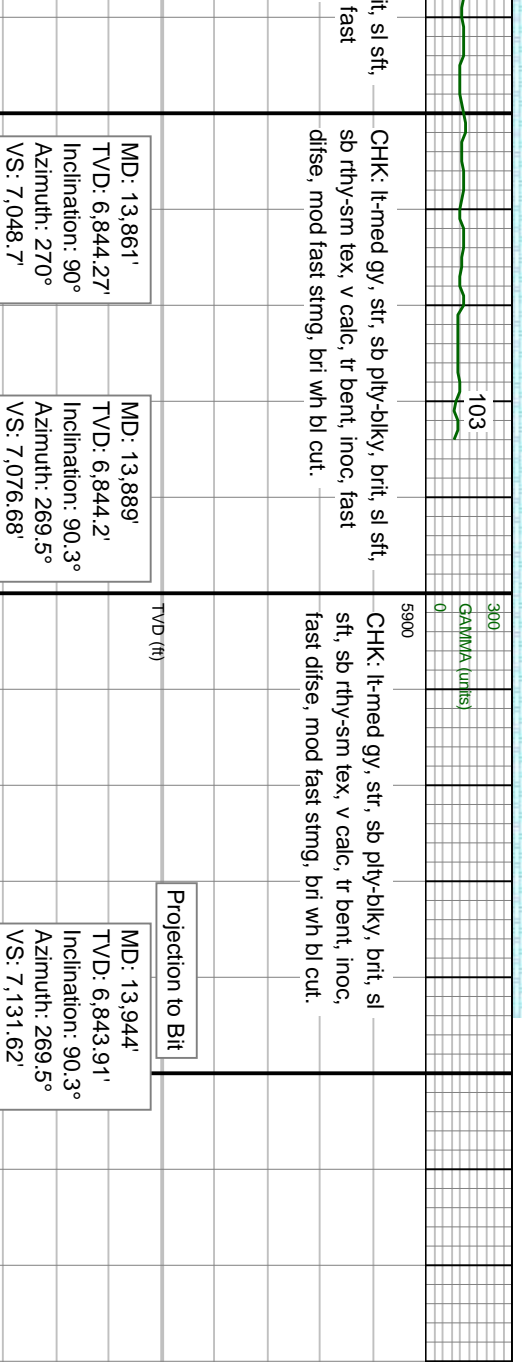
CHK: lt-med gy, str, sb pty-blky, br sb rthy-sm tex, v calc, rr bent, inoc, difse, mod fast stmg, bri wh bl cut.





TD Lateral @ 13944' MD @ 07:49 hrs 5/18/2015

Thank you for using Columbine Logging Inc.



MD: 13,861'
TVD: 6,844.27'
Inclination: 90°
Azimuth: 270°
VS: 7,048.7'

MD: 13,889'
TVD: 6,844.2'
Inclination: 90.3°
Azimuth: 269.5°
VS: 7,076.68'

Projection to Bit
MD: 13,944'
TVD: 6,843.91'
Inclination: 90.3°
Azimuth: 269.5°
VS: 7,131.62'

CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, tr bent, inoc, fast difse, mod fast stmg, bri wh bl cut.

CHK: lt-med gy, str, sb pty-blky, brit, sl sft, sb rthy-sm tex, v calc, tr bent, inoc, fast difse, mod fast stmg, bri wh bl cut.

