

Scale: 5" / 100'
Measured Depth Log

Location SESE SEC. 32 T5N R62W

County WELD

Rig Number XTREME 20

AFE # 15090

Field WATTENBERG

Drilling Completed 4/28/2015

Surface Coordinates 573' FSL x 1127' FEL (LAT: 40.35154, -104.22738)

Bottom Hole Coordinates 2310' FSL x 860' FEL (LAT: 40.35622, -104.24521) PROJECTED

K.B. Elevation 4548'

Total Depth 12350'

Formation NIOBRARA C-CHALK

Type of Drilling Fluid LSND, H2O

Company Bonanza Creek Energy Inc.

Geologist

Name Paul McKay

Company Bonanza Creek

Address 410 17TH STREET, SUITE 1500 DENVER, CO

Oil
Note
Error

Condensate

Core

Water

UNKNOWN

ANHYDRITE

GYPSUM

SALT

SIDERITE or LIMONITE

LIMESTONE

DOLOMITE

CHEER

■ COAL

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












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Accessories

Fossils

Fossils	F FOSSIL	- ARGILLACEOUS	GLAUCONITE
 GASTROPOD	 OOLITE	 ARGILLITE GRAIN	 GYPSIFEROUS
 ALGAE	 OSTRACOD	 B BENTONITE	 HEAVY MINERAL
 BELEMITE	 PELECYPOD	 BITUMENOUS SUBSTANCE	 KAOLIN
 BIOLACITE	 PELLET	 BRECCIA FRAGMENTS	 MARLSTONE
 BRACHIOPOD	 PISOLITE	 CALCAREOUS	 MINERAL CRYSTALS
 BRYOZOA	 PLANT REMAINS	 CARBONACEOUS FLAKES	 NODULES
 CEPHALOPOD	 PLANT SPORES	 CHITIN	 PHOSPHATE
 CORAL	 SCAPHOPOD	 COAL - THIN BEDS	 PYRITE
 CRINOID	 STROMATOPOROID	 DOLOMITIC	 SALT CAST
 ECHINOID	 FELDSPAR	 SANDY	 SILICEOUS
 FISH	 FERRUGINOUS PELLETT	 SILTY	 TUFFACEOUS
 FORAMINIFERA	 ANHYDRITIC	 FERRUGINOUS	 TUFFACEOUS

Stringer

ANHYDRITE STRINGER
BENTONITE STRINGER
COAL STRINGER
DOLOMITE STRINGER
GYPSUM STRINGER
LIMESTONE STRINGER
MARLSTONE (CALC) STRG
MARLSTONE (DOL) STRG
SANDSTONE STRINGER
SHALE STRINGER
SILTSTONE STRINGER

Other Symbols

Oil Show

O ORGANIC	FORMATION TOP	CONNECTION GAS	CRYPTOXLN
P PINPOINT	GAS SHOW	CONNECTION DOWN	E EARTHY
V VUGGY	MINDEPTH MN DEPTH	CASING	FX FINELYXLN

Engineering

EVEN	NORMAL FAULT	FORMATION TOP	GRAINSTONE
QUESTIONABLE	OIL SHOW	CONNECTION TOP	L LITHOGRAPHIC
SPOTTED STAINING	BIT	OVERTURNED STRATA	MX MICROXLN

Rounding

CASING	REVERSE FAULT	A ANGULAR	M3 MUDSTONE
CONNECTION (LEFT)	SIDEWALL CORE (LEFT)	R ROUNDED	P3 PACKSTONE
CONNECTION (RIGHT)	SIDEWALL CORE (RIGHT)	B SUBANG	W3 WACKSTONE
CONNECTION GAS	SLIDE	P SUBRND	

Textures

F FRACTURE	SURVEY		
INTERCRYSTALLINE	CORE - RECOVERED	WIRELINE TESTED - LEFT	B3 BOUNDSTONE
INTEROOLITIC	DST INTERVAL	WIRELINE TESTED - RT	C CHALKY
MOULDIC	FAULT		W WELL

Sorting

M MODERATE
P POOR
W WELL

Minerals

FERRUGINOUS PELLETT	FERRUGINOUS	TUFFACEOUS
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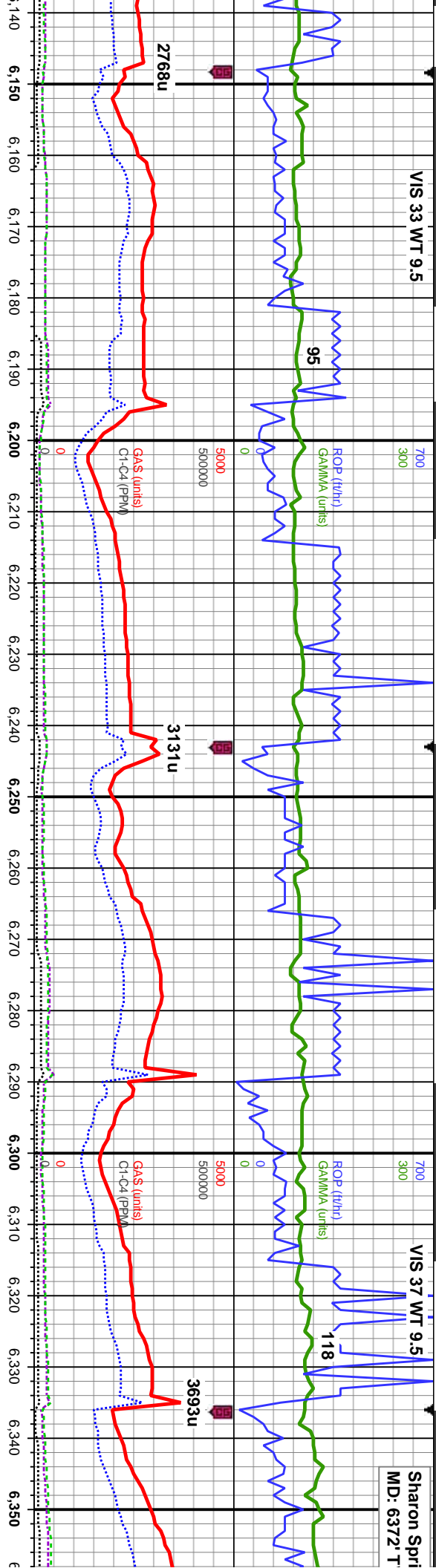
O 80202

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CONGLOMERATE	CHALK
BRECCIA	SILTY SHALE
TILL	NO SAMPLE
BENTONITE	SHALY SANDSTONE
TUFF	SHALY SILTSTONE
IGNEOUS	
METAMORPHIC	
CEMENT	

VIS 33 WT 9.5

Sharon Spri
MD: 6372' T



MD: 6,178'
Inclination: 18.6°
Azimuth: 259°
TVD: 5,630.89'
VS: -1,027.61'

MD: 6,225'
Inclination: 22.2°
Azimuth: 259.7°
TVD: 5,674.93'
VS: -1,011.49'

MD: 6,272'
Inclination: 23.4°
Azimuth: 259.4°
TVD: 5,718.26'
VS: -993.56'

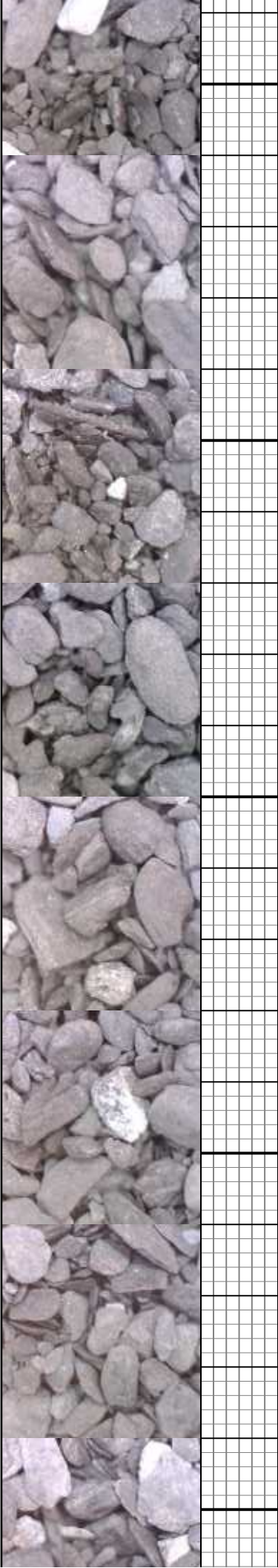
MD: 6,319'
Inclination: 27.3°
Azimuth: 257.4°
TVD: 5,760.72'
VS: -973.83'

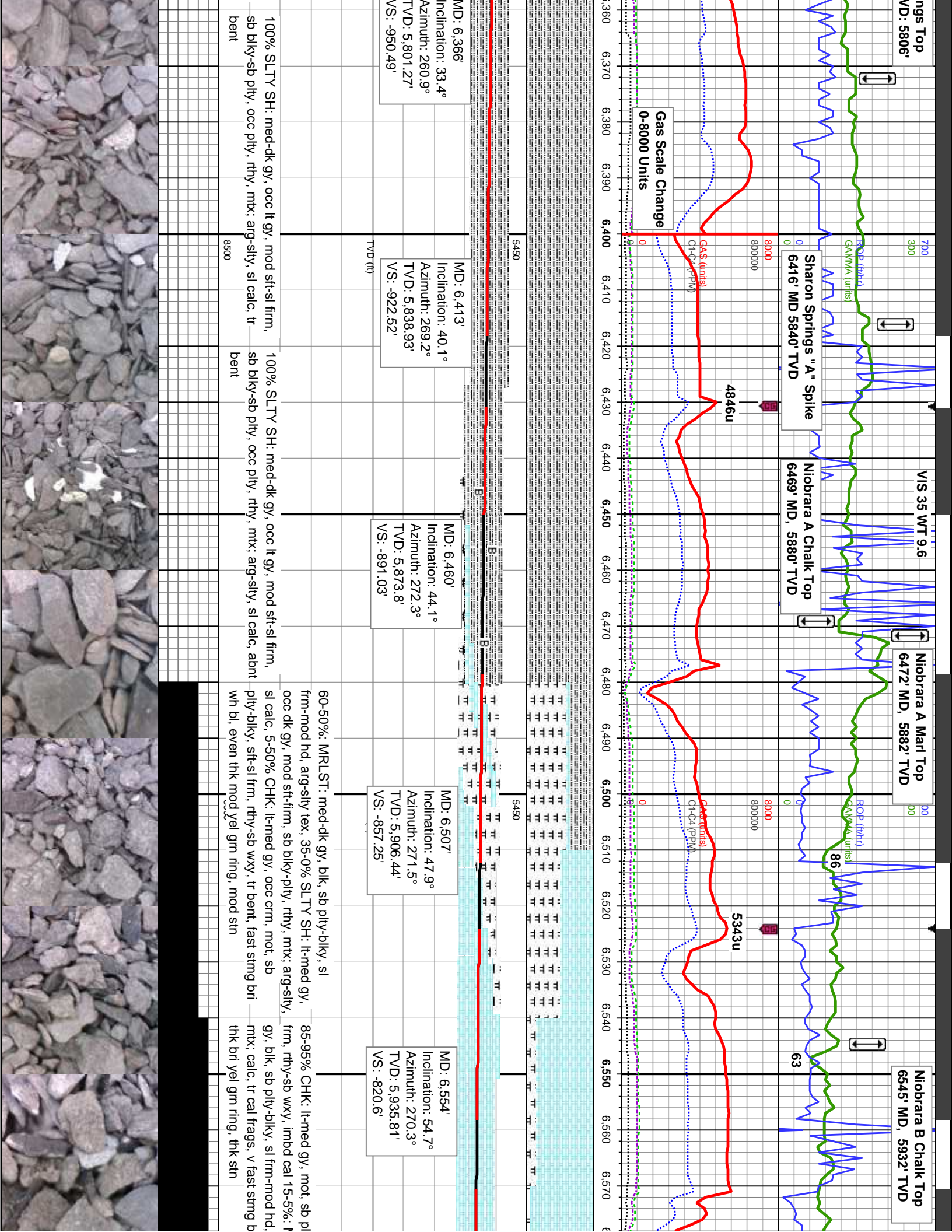
SH: lt-med gy, occ dk gy, mod sft-sl
ply, occ ply, rthy, mtx; arg-sily, sl
SS: off wh-lt gy, occ s&dp, vf-f gr-sb
st, mod hd-hd, sb blkly-blky, mics

100% SLTY SH: lt-med gy, some dk gy, mod sft-sl
firm, sb blkly-sb ply, occ ply, rthy, mtx; arg-sily, sl
calc, tr ss

100% SLTY SH: lt-med gy, some dk gy, mod sft-sl
firm, sb blkly-sb ply, occ ply, rthy, mtx; arg-sily, sl
calc, tr ss

100% SLTY SH: med-dk gy, occ lt gy, mod sft-sl firm,
sb blkly-sb ply, occ ply, rthy, mtx; arg-sily, sl calc

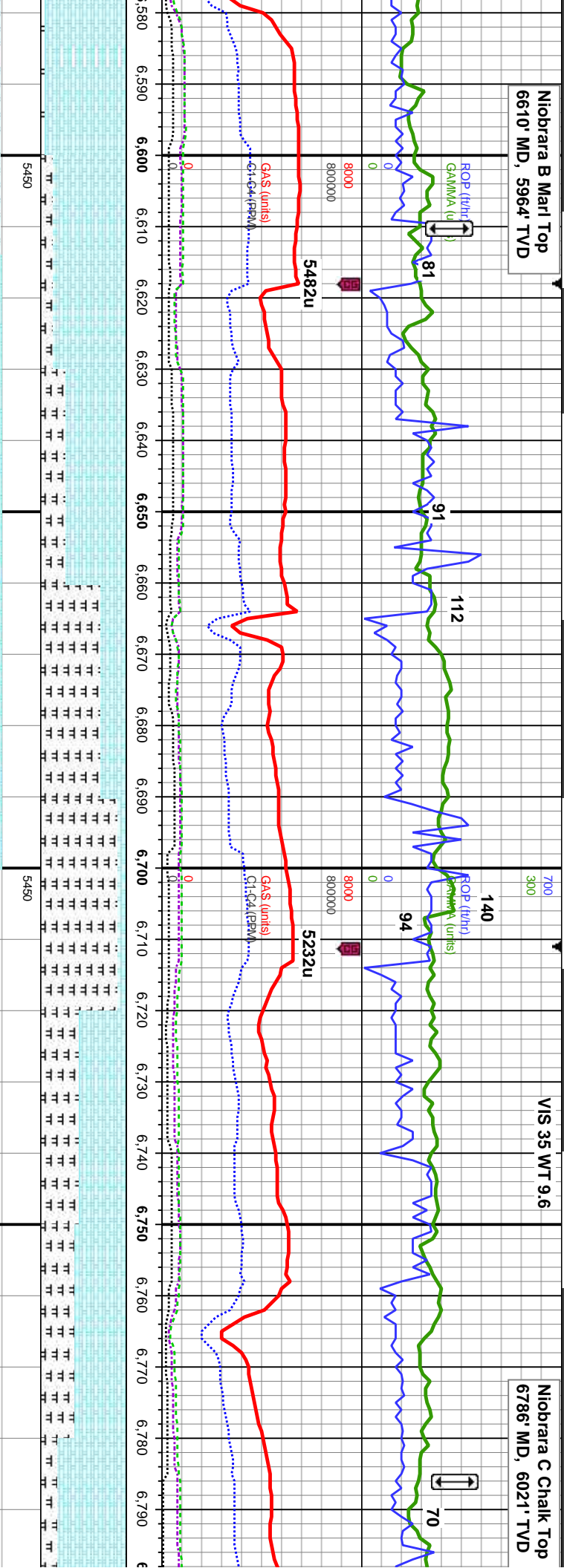




Niobrara B Marl Top
6610' MD, 5964' TVD

VIS 35 WT 9.6

Niobrara C Chalk Top
6786' MD, 6021' TVD



MD: 6,600'
Inclination: 61.6°
Azimuth: 268°
TVD: 5,960.07'
VS: -781.56'

MD: 6,647'
Inclination: 66.8°
Azimuth: 269.6°
TVD: 5,980.52'
VS: -739.27'

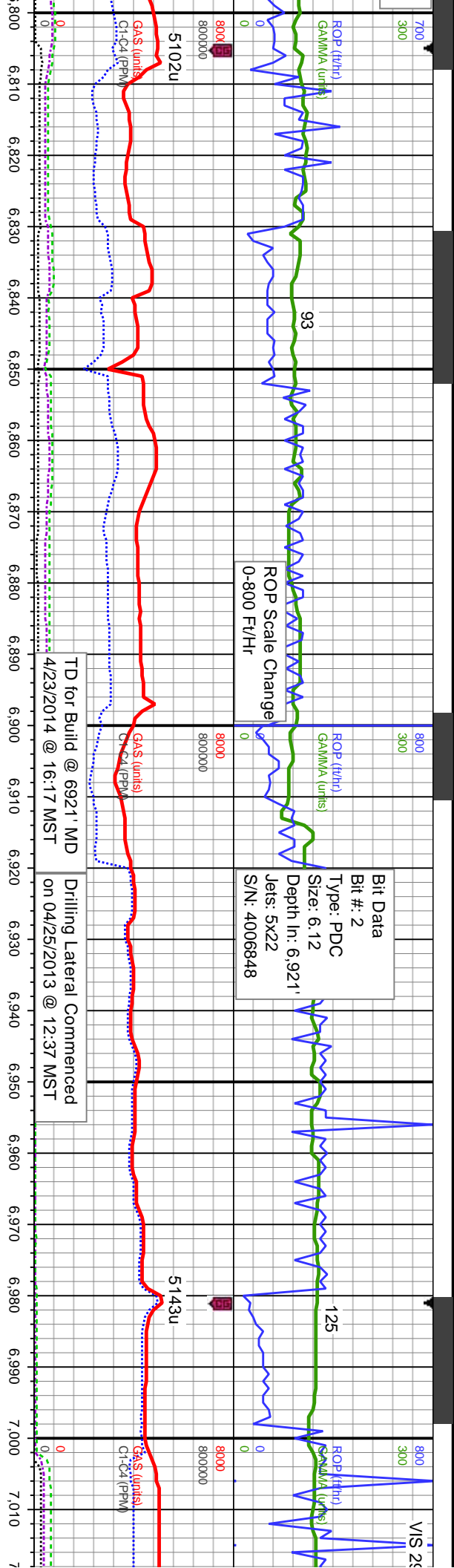
MD: 6,694'
Inclination: 71°
Azimuth: 271.2°
TVD: 5,997.44'
VS: -695.43' (ft)

MD: 6,741'
Inclination: 76.5°
Azimuth: 272.4°
TVD: 6,010.59'
VS: -650.36'

MD: 6,787'
Inclination: 83.9°
Azimuth: 273.3°
TVD: 6,018.41'
VS: -605.13'

ly-biky, sft-sl	85-70% CHK: lt-med gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, some imbd cal 15-30%; MRLST: med-dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sily tex, mtk: arg-sily tex, mod stmng bri wh bl, even thk mod yel gm ring, mod stn, v fast stmng bri wh bl, even v thk bri yel gm ring, thk sin	70-90%: MRLST: med-dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sily tex, 30-10% CHK: lt-med gy, occ wht-crm, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, tr bent, mod od, some uphole contaminants, mod stmng bri wh bl, even thk mod yel gm ring, mod sin	55-60% CHK: lt-med gy brn, occ wht-crm, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, tr cal inc, 45-40% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sily tex, tr cal frags, scat bent, mod stmng bri wh bl, med thk-mod yel-gn ring, thn stn	80-75% CHK: lt frm, rthy-sb wxy, sb ply-biky, sl frm v thk bri yel gm
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Bit Data
Bit #: 2
Type: PDC
Size: 6.12
Depth In: 6,921'
Jets: 5x22
S/N: 4006848

MD: 6,834'
Inclination: 88°
Azimuth: 273.4°
TVD: 6,021.73'
VS: -558.36'

Bit Projection
MD: 6921.00
INC: 89.00
AZI: 273.40
TVD: 6024.01
VS: -471.58
DLS: 1.15

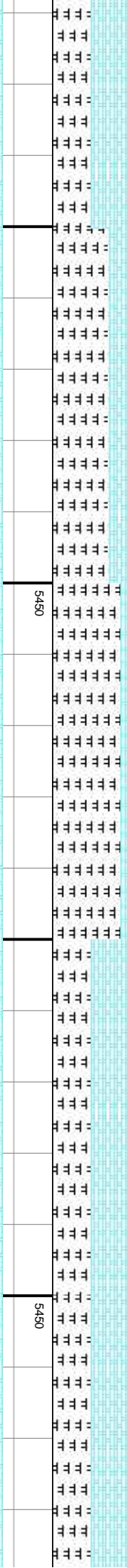
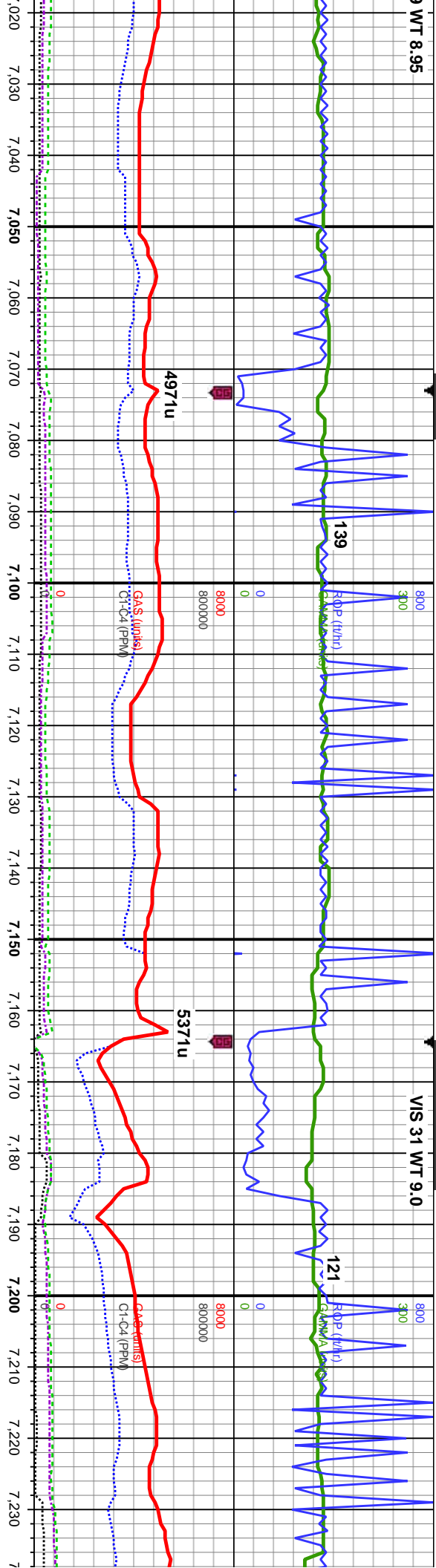
MD: 7,010'
Inclination: 89.2°
Azimuth: 271.3°
TVD: 6,026.03'
VS: -382.62'

med gy brn, mot, sb pily-blky, sft-sl	80-70% CHK: lt-med gy brn, mot, sb pily-blky, sft-sl frm, rthy-sb wxy, tr cal inc, 20-30% MRLST: dk gy, blk, sb pily-blky, sl frm-mod hd, arg-sily tex, tr bent, mod bri wh bl, even thk strn	55-60% CHK: med-dk gy, occ lt gy, mot, sb pily-blky, sft-sl frm, rthy-sb wxy, tr cal inc, 30% MRLST: dk gy, blk, sb pily-blky, sl frm-mod hd, arg-sily tex, 15-10% Cement, mod strng bri wh bl, med thk-mod yel-gn ring, thn strn	55% CHK: med: pily-blky, sft-sl fr 45% MRLST: dk frm-mod hd, arg bl, dull thn yel-g
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WT 8.95

VIS 31 WT 9.0

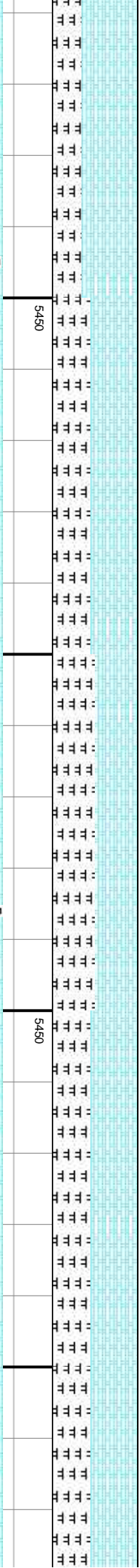
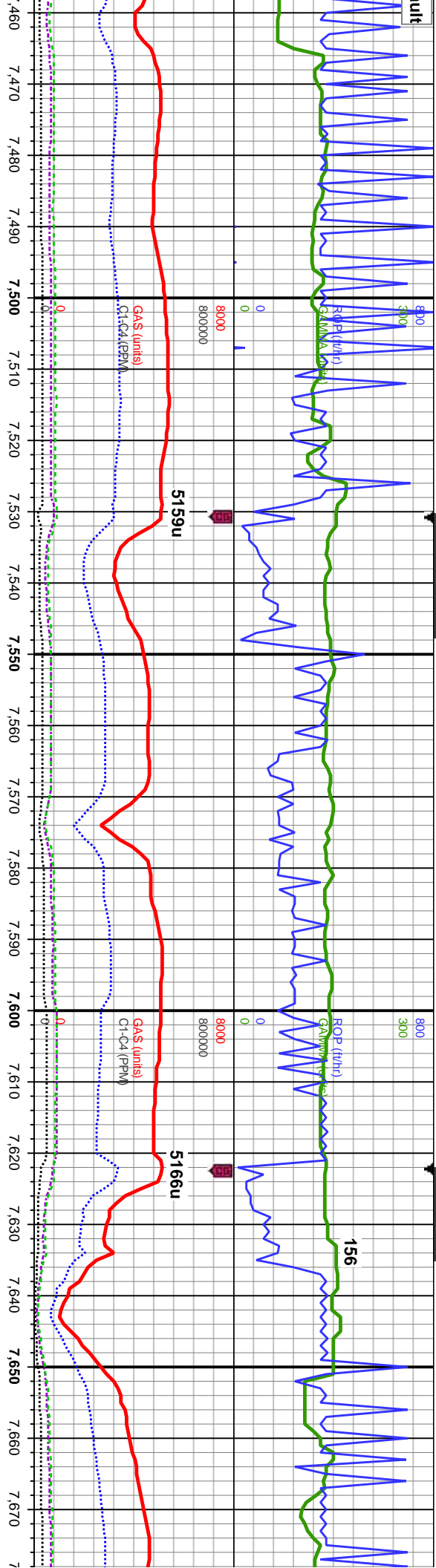


MD: 7,101'
Inclination: 90.6°
Azimuth: 272.6°
TVD: 6,026.19'
VS: -291.7'

MD: 7,192'
Inclination: 89.3°
Azimuth: 270.7°
TVD: 6,026.27'
VS: -200.76'

dk gy, occ lt gy, mot, sb rthy-sb wxy, tr cal inc, gy, blk, sb pty-blky, sl sily tex, slow milky dull wh n ring, tr stn	65% MRLST: dk gy, blk, sb pty-blky, sl frm-mod hd, arg tex,some sily, 35% CHK: med-dk gy, occ lt gy, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, occ cal frags, occ pyr, slow milky dull wh bl, dull thn yel-gn ring, tr stn	80% MRLST: dk gy, blk, sb pty-blky, sl frm-mod hd, arg tex,some sily, 20% CHK: med-dk gy, occ lt gy, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, occ cal frags, occ pyr, mod stimg bri wh bl, med thk-mod yel-gn ring, thn stin	55% CHK: med-lt gy bm, occ dk gy, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, tr cal inc, 45% MRLST: dk gy, blk, sb pty-blky, sl frm-mod hd, arg-sily tex, occ pyr, some cal and fos frags, mod stimg bri wh bl, med thk-mod yel-gn ring, thn stn	55% CHK: med-lt gy bm, occ dk gy pty-blky, sft-sl frm, rthy-sb wxy, tr c 45% MRLST: dk gy, blk, sb pty-blk frm-mod hd, arg-sily tex, occ pyr, s and fos frags, mod stimg bri wh bl, l thk-mod yel-gn ring, thn stn
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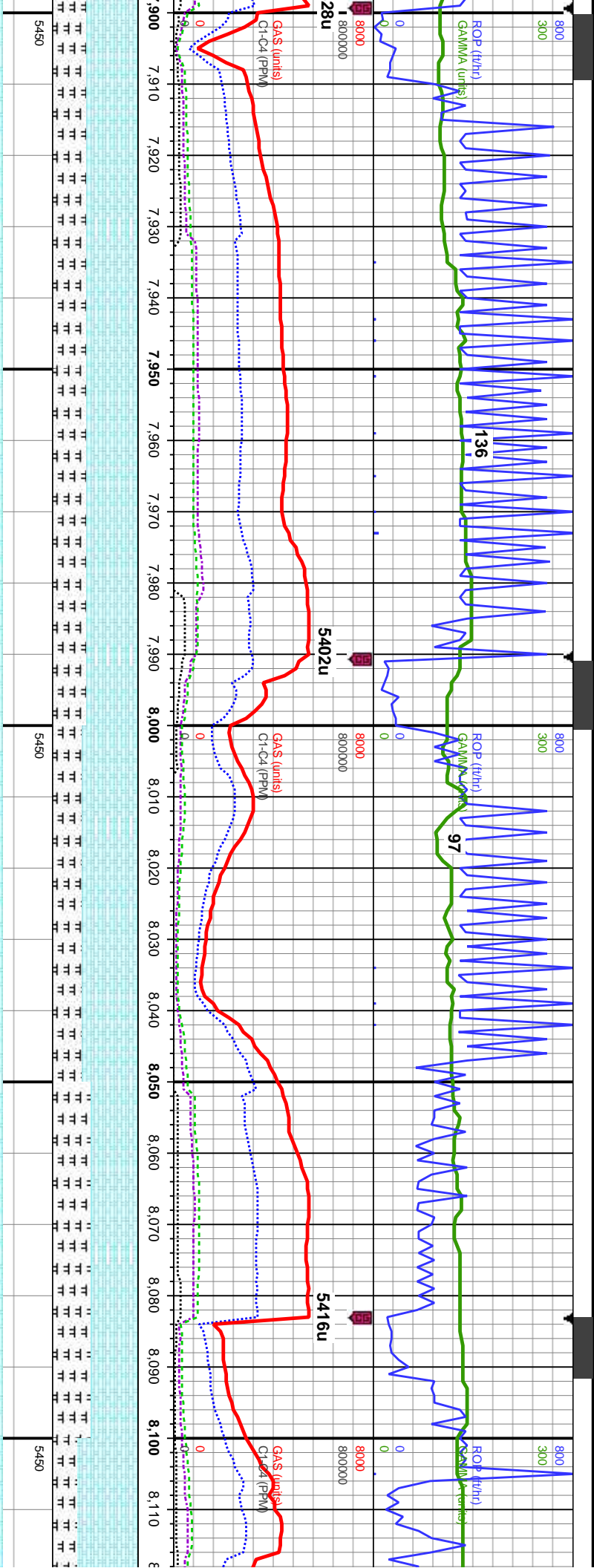
MD: 7,467' Inclination: 87.8° Azimuth: 269.1° TVD: 6,032.74' VS: 74.13'					
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CHK: med-lt gy brn, occ dk gy, mot, sb ply-sl frm, rthy-sb wxy, cal inc, 35% dk gy, blk, sb ply-blky, sl frm-mod -sly tex, occ pyr, cal and fos frags, ent, mod stmg bri wh bl, med d yel-gn ring, thn str	55% CHK: med-lt gy brn, occ dk gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, cal inc, 45% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sly tex, occ pyr, cal and fos frags, abt bent, mod stmg bri wh bl, med thk-mod yel-gn ring, thn str	50% CHK: med-lt gy brn, occ dk gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, cal inc, 50% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sly tex, occ pyr, cal and fos frags, abt bent, mod stmg bri wh bl, med thk-mod yel-gn ring, thn str	55% CHK: med-lt gy brn, occ dk gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, cal inc, 45% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sly tex, pyr, cal and fos frags, abnt bent, mod stmg bri wh bl, med thk-mod yel-gn ring, thn str	55% CHK: med-lt gy brn, occ dk gy, mot, sb ply-blky, sft-sl frm, rthy-sl MRLST: dk gy, blk, sb ply hd, arg-sly tex, pyr, cal a bent, mod stmg bri wh bl, yel-gn ring, thn str
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MD: 7,559' Inclination: 91° Azimuth: 269.9° TVD: 6,033.7' VS: 166.11'

MD: 7,651' Inclination: 90.2° Azimuth: 269.6° TVD: 6,032.74' VS: 258.11'
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MD: 7,927'
Inclination: 90.3°
Azimuth: 268.7°
TVD: 6,030.41'
VS: 534.07'

MD: 8,019'
Inclination: 89.5°
Azimuth: 268.1°
TVD: 6,030.57'
VS: 626.04'

MD: 8,111'
Inclination: 90°
Azimuth: 267.7°
TVD: 6,030.97'
VS: 718'

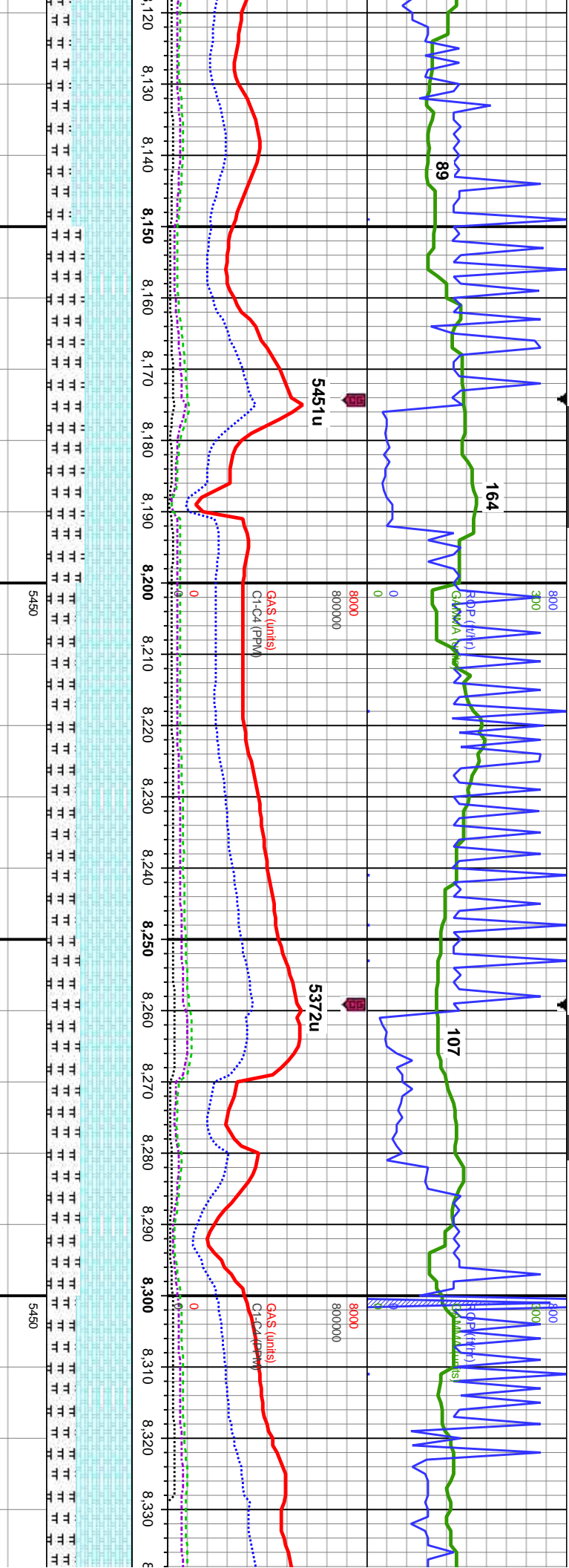
60% CHK: med-lt gy brn, occ dk gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, occ cal inc, 40% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sily tex, mod chk flor, mod sting bri wh bl, even mod thn frt yel-amb ring, thn str

60% CHK: med-lt gy brn, occ dk gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, cal inc, 40% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sily tex, mod chk flor, mod sting bri wh bl, even mod thn frt yel-amb ring, thn str

65% CHK: med-lt gy brn, occ dk gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, cal inc, 35% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sily tex, mod chk flor, mod sting bri wh bl, even mod thn frt yel-amb ring, thn str

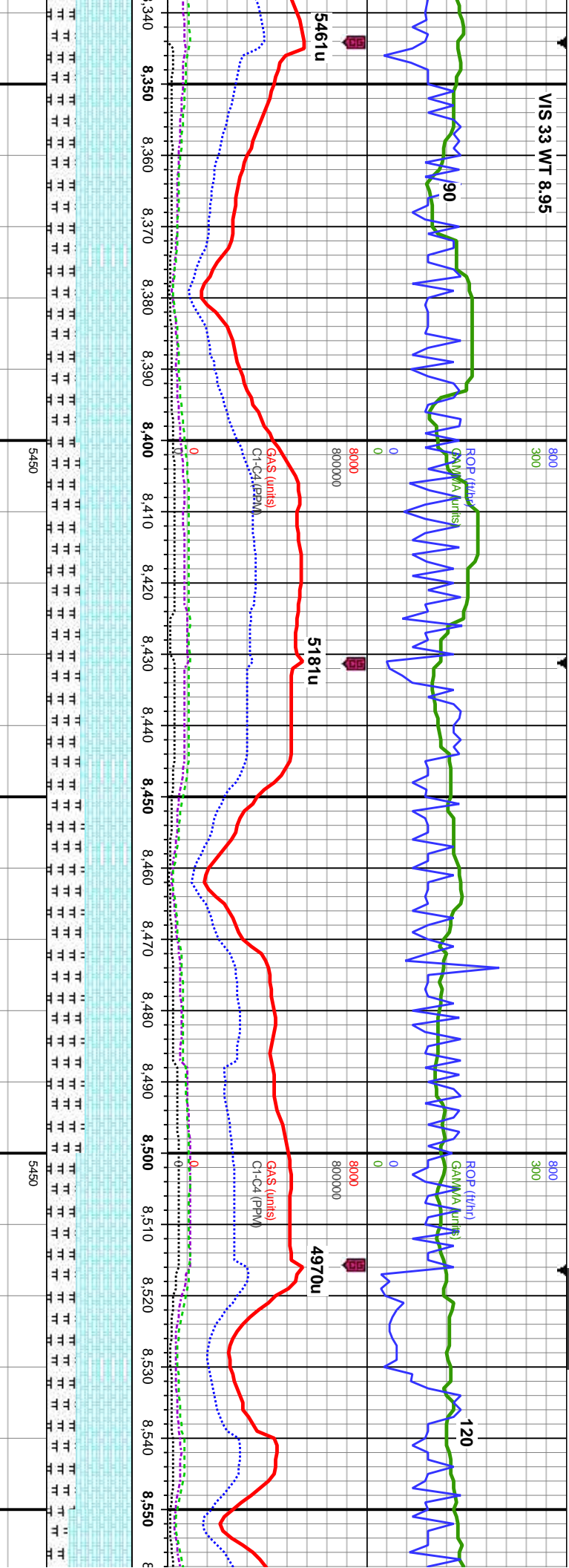
55% CHK: med-lt gy brn, dk gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, cal inc, 45% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sily tex, cal frags, pyr, mod sting bri wh bl, even mod thn frt yel-amb ring, thn str

70% CHK: med-lt gy brn, dk gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, cal inc, 45% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sily tex, cal frags, pyr, mod sting bri wh bl, even mod thn frt yel-amb ring, thn str



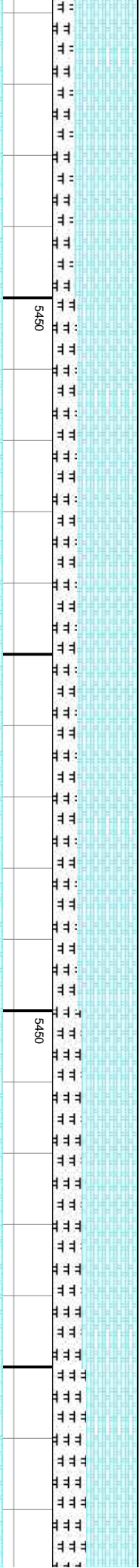
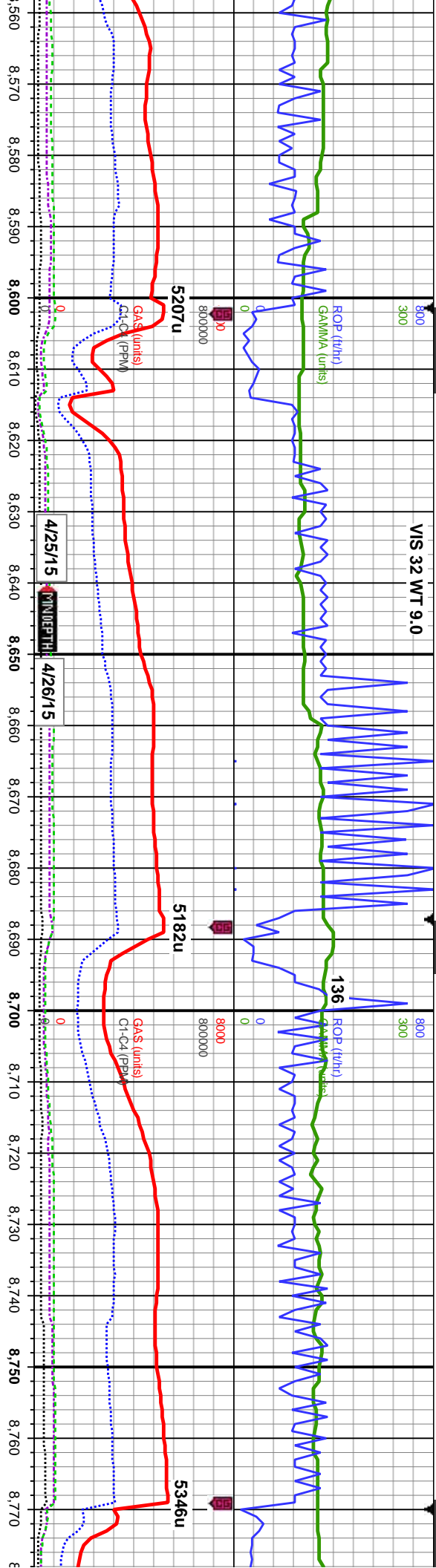
MD: 8,196' Inclination: 91.3° Azimuth: 270.6° TVD: 6,030.01' VS: 802.98'		MD: 8,280' Inclination: 89.8° Azimuth: 270.4° TVD: 6,029.2' VS: 886.97'	
55% CHK: med-lt gy brn, dk gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, cal inc, 45% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sly tex, cal frags, pyr, abnt bent, fast stmg bri wh bl, even mod thk mod yel-gn ring, mod stn	65% CHK: med-dk gy brn, occ lt gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, cal inc, 35% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sly tex, tr cal frags, scat bent, mod stmg bri wh bl, even mod thn fnt yel-amb ring, thn stn	60% CHK: med-dk gy brn, occ lt gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, cal inc, 40% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sly tex, tr cal frags, scat bent, mod stmg bri wh bl, even mod thn fnt yel-amb ring, thn stn	65% CHK: med-dk gy brn, occ lt gy, mot, sb ply-biky, sft-sl frm, rthy-sb wxy, cal inc, 40% MRLST: dk gy, blk, sb ply-biky, sl frm-mod hd, arg-sly tex, tr cal frags, scat bent, mod stmg bri wh bl, even mod thk mod yel-amb ring, mod stn





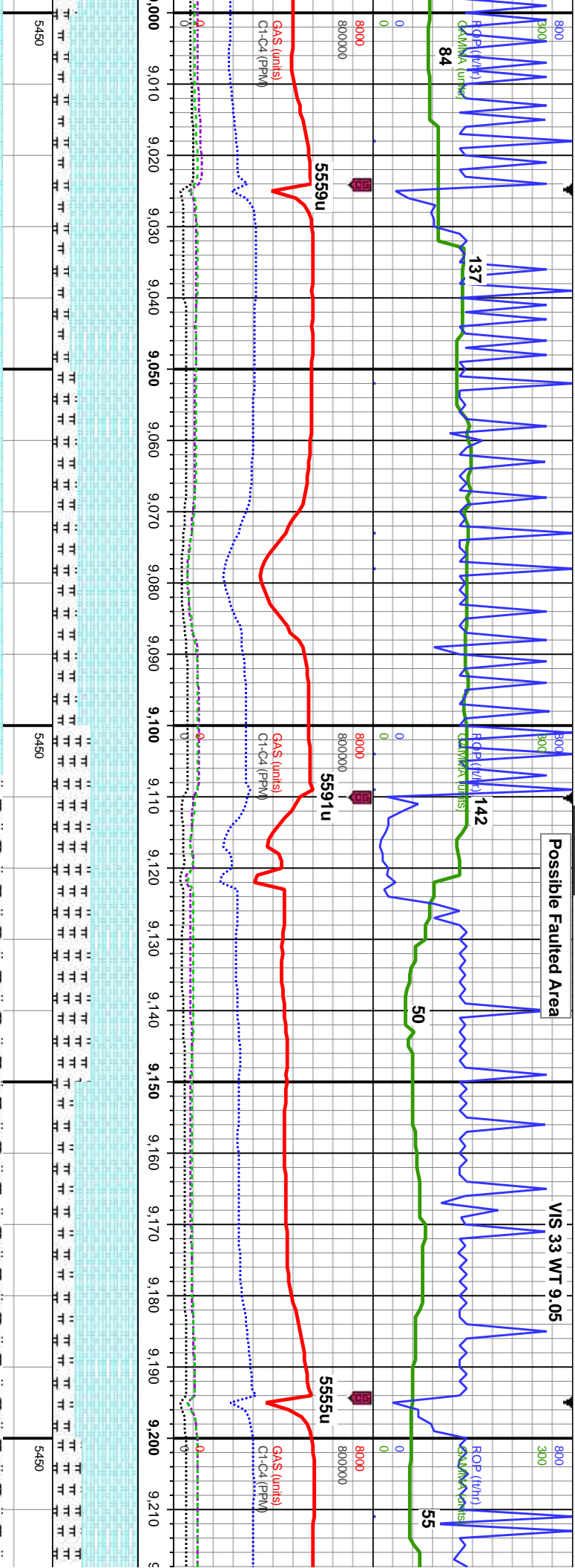
MD: 8,365' Inclination: 89.8° Azimuth: 270° TVD: 6,029.5' VS: 971.96'	65% CHK: med-dk gy brn, occ lt gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, cal inc, 35% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sily tex, tr cal frags, scat bent, fast stng bri wh bl, even mod thk mod yel-gn ring, mod sin	TVD (ft)	MD: 8,450' Inclination: 89.2° Azimuth: 269.9° TVD: 6,030.24' VS: 1,056.96'	65% CHK: med-dk gy brn, occ lt gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, cal inc, 40% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sily tex, tr cal frags, fast stng bri wh bl, even thk bri yel-gn ring, mod str	TVD (ft)	MD: 8,535' Inclination: 89.5° Azimuth: 270.1° TVD: 6,031.2' VS: 1,141.95'	75% C ply-blk 25% M frm-mc fast str yel-gn
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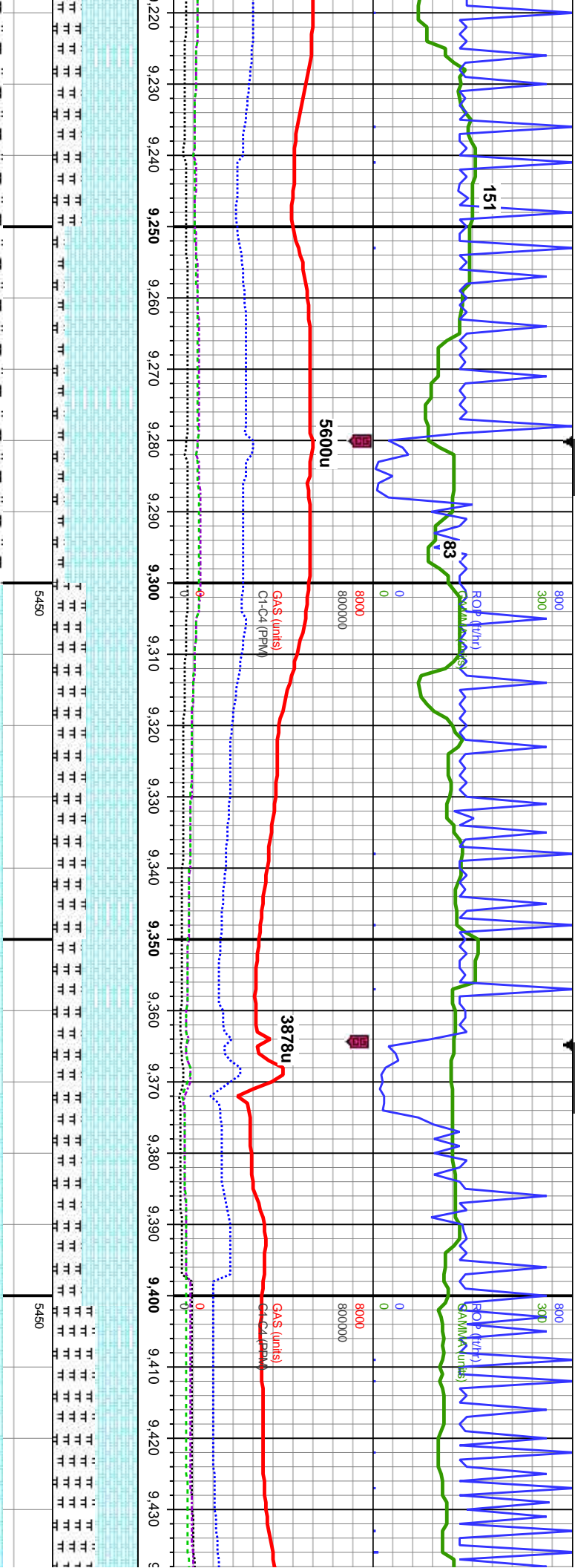
MD: 8,622' Inclination: 91° Azimuth: 270.8° TVD: 6,030.82' VS: 1,228.94'		70% CHK: med-dk gy brn, occ lt gy, mot, sb ply-dlky, sft-sl frm, rthy-sb wxy, tr cal inc, 30% MRLST: dk gy, blk, sb ply-dlky, sl frm-mod hd, arg-slty tex, mod stmg bri wh bl, even thk bri yel-gn ring, mod str	70% CHK: med-dk gy brn, occ lt gy, mot, sb ply-dlky, sft-sl frm, rthy-sb wxy, tr cal inc, 30% MRLST: dk gy, blk, sb ply-dlky, sl frm-mod hd, arg-slty tex, mod stmg bri wh bl, even thk bri yel-gn ring, mod str	65% CHK: med-dk gy brn, occ lt gy, mot, sb ply-dlky, sft-sl frm, rthy-sb wxy, 35% MRLST: dk gy, blk, sb ply-dlky, sl frm-mod hd, arg-slty tex, tr cal frags, mod stmg bri wh bl, even thn fnt amb ring, mod str	60% CHK: med-dk gy brn, ply-dlky, sft-sl frm, rthy-st dk gy, blk, sb ply-dlky, sl arg-slty tex, tr cal frags, m even thn fnt amb ring, mo
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MD: 9,046' Inclination: 90.5° Azimuth: 270.6° TVD: 6,029.7' VS: 1,652.84'		80% CHK: med gy brn, occ lt gy, mot, sb ply-dlky, sft-sl frm, rthy-sb wxy, 20% MRLST: dk gy, blk, sb ply-dlky, sl frm-mod hd, arg-sily tex, tr cal frags, fast sting bri wh bl, even mod tlk mod yel-gn ring, mod stn	70% CHK: med-dk gy brn, occ lt gy, mot, sb ply-dlky, sft-sl frm, rthy-sb wxy, 30% MRLST: dk gy, blk, sb ply-dlky, sl frm-mod hd, arg-sily tex, tr cal frags, fast sting bri wh bl, even mod tlk mod yel-gn ring, mod stn	65% CHK: med-dk gy brn, occ lt gy, mot, sb ply-dlky, sft-sl frm, rthy-sb wxy, 35% MRLST: dk gy, blk, sb ply-dlky, sl frm-mod hd, arg-sily tex, tr cal frags, mod sting bri wh bl, even mod thn fnt yel-lamb ring, thn sin	75% CHK: med gy brn, occ lt gy, mot, sb ply-dlky, sft-sl frm, rthy-sb wxy, 25% MRLST: dk gy, blk, sb ply-dlky, sl frm-mod hd, arg-sily tex, tr cal frags, mod sting bri wh bl, even mod thn fnt yel-lamb ring, thn sin	65% CHK: med- ply-dlky, sft-sl fr MRLST: dk gy, l hd, arg-sily tex, wh bl, even moc stin
TVD (ft)		TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)





MD: 9,301'
Inclination: 88.8°
Azimuth: 269.2°
TVD: 6,031.56'
VS: 1,907.82'

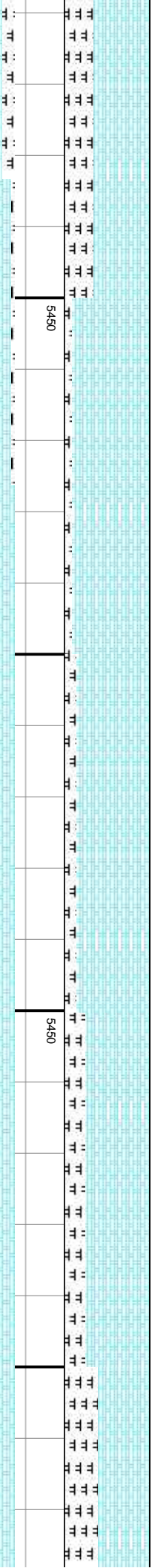
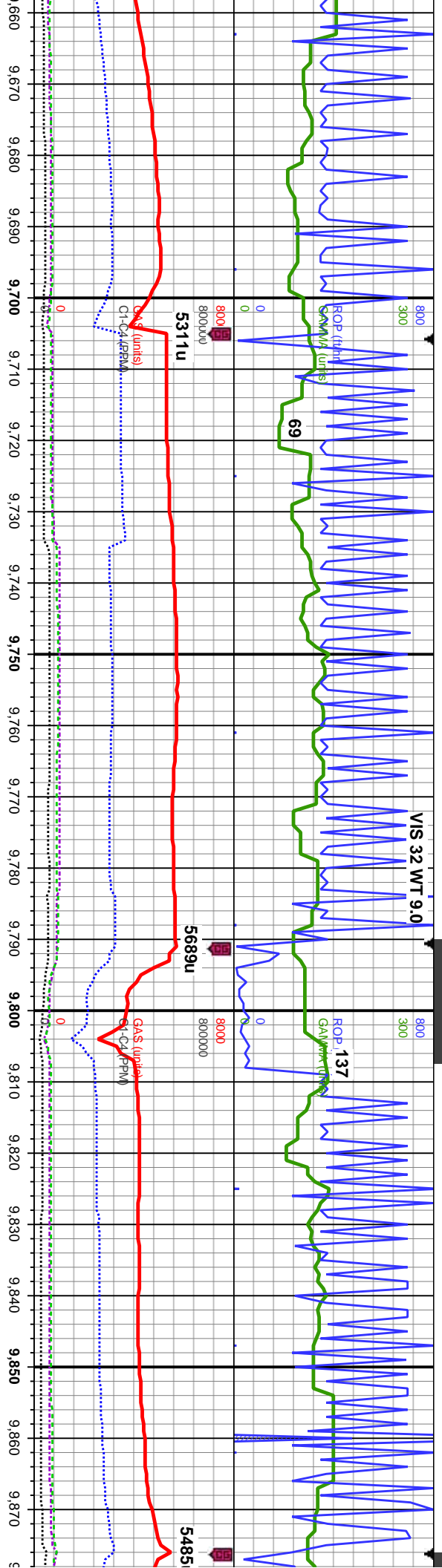
MD: 9,386'
Inclination: 88.9°
Azimuth: 269.8°
TVD: 6,033.26'
VS: 1,992.81'

MD: 9,386'
Inclination: 88.9°
Azimuth: 269.8°
TVD: 6,033.26'
VS: 1,992.81'

TVD (ft)

6' n: 90.2° 269.4° 330.82' 2.83'	85% CHK: lt-med gy brn, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, 15% MRLST: dk gy, blk, sb pty-blky, sl frm-mod hd, arg-sily tex, tr cal frags, mod stmg bri	65% CHK: med-dk gy brn, occ lt gy, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, tr cal incl 35% MRLST: dk gy, blk, sb pty-blky, sl frm-mod hd, arg-sily tex, tr cal frags, slow stmg bri wh bl, even mod thn fnt yel-amb ring, thn stn	65% CHK: med-dk gy brn, occ lt gy, mot, sb pty-blky, sft-sl frm, rthy-sb wxy, tr cal incl 35% MRLST: dk gy, blk, sb pty-blky, sl frm-mod hd, arg-sily tex, tr cal frags, slow stmg bri wh bl, even mod thn fnt yel-amb ring, thn stn	50% CHK: med-dk gy brn, occ lt gy pty-blky, sft-sl frm, rthy-sb wxy, tr c 50% MRLST: dk gy, blk, sb pty-blk frm-mod hd, arg-sily tex, tr cal frags mlky mod wh bl, even thn fnt yel-amb stn
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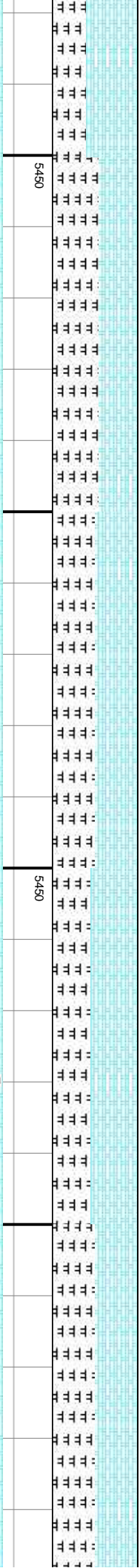
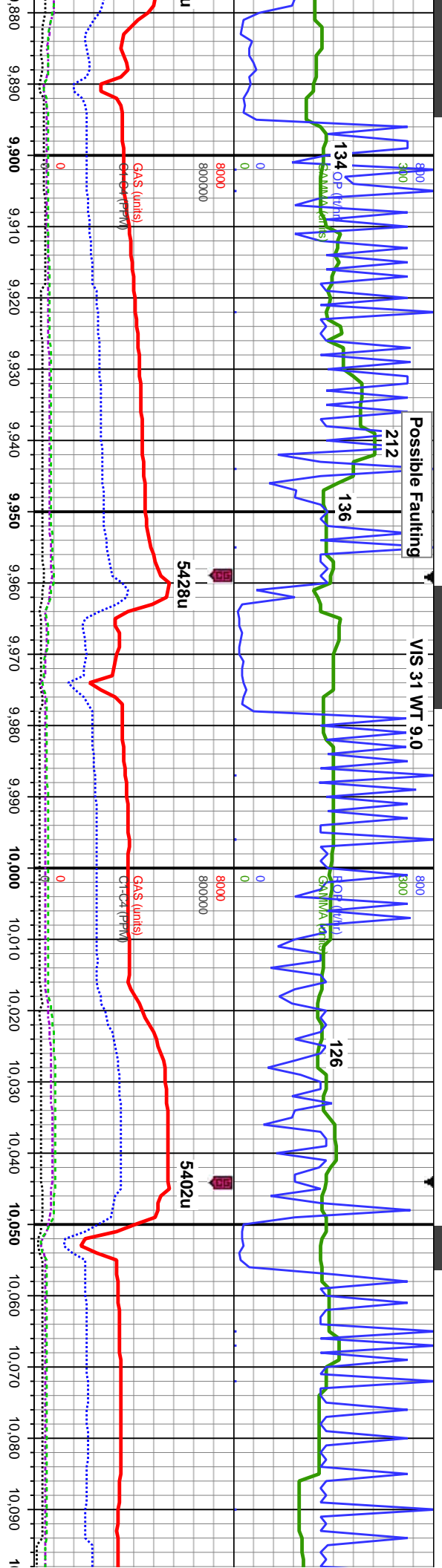


MD: 9,726'
Inclination: 88.9°
Azimuth: 269.9°
TVD: 6,031.48'
VS: 2,332.72'

MD: 9,811'
Inclination: 88.4°
Azimuth: 268.5°
TVD: 6,033.49'
VS: 2,417.69'

CHK: lt-med gy brn, mot, sb pily-blky, 90% CHK: lt-med gy brn, mot, sb pily-blky, 85% CHK: lt-med gy brn, mot, sb pily-blky, 75% CHK: lt-med gy brn, mot, sb pily-blky, 60% CHK: med-dk gy brn
rthy-sb wxy, 35% MRLST: dk gy, sft-sl frm, rthy-sb wxy, 10% MRLST: dk gy, sft-sl frm, rthy-sb wxy, 15% MRLST: dk gy, sft-sl frm, rthy-sb wxy, 25% MRLST: dk gy, pily-blky, sl frm-mod hd, arg-slty tex, blk, sb pily-blky, sl frm-mod hd, arg-slty tex, blk, sb pily-blky, sl frm-mod hd, arg-slty tex, g chk flor, fast stimg bri wh bl, even mod thk g chk flor, fast stimg bri wh bl, even mod thk g chk flor, fast stimg bri wh bl, even mod thk arg-slty tex, slow stimg bri thn frt yel-amb ring, thn s





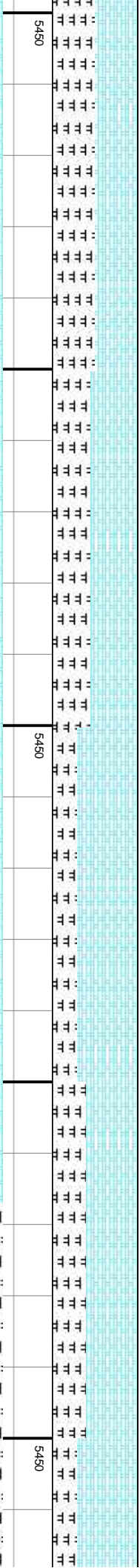
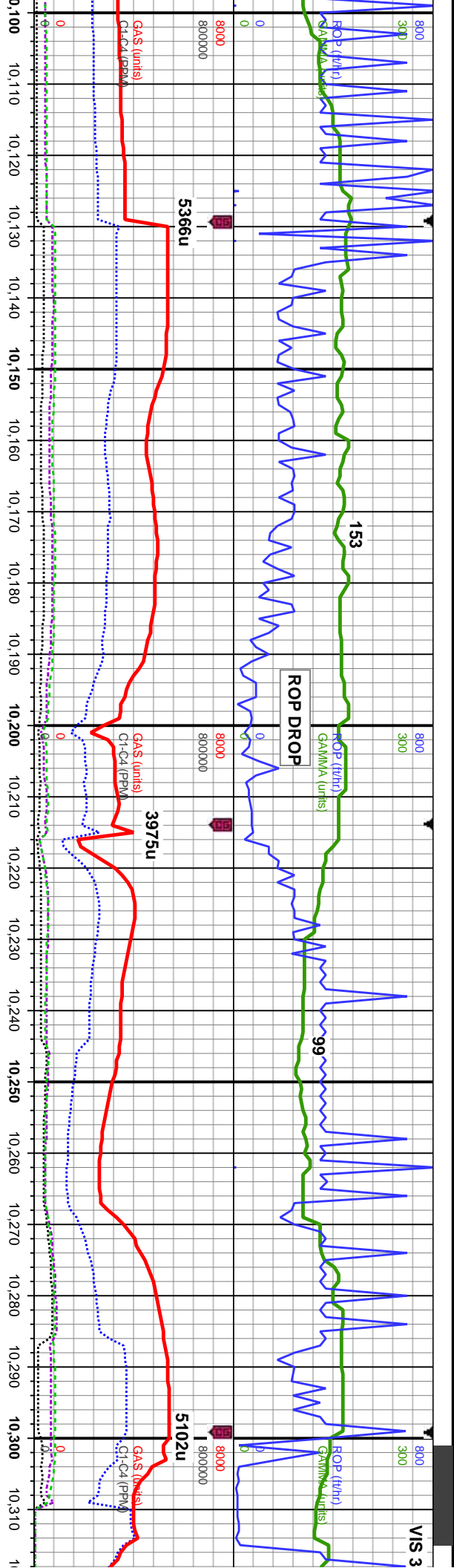
MD: 9,896'
Inclination: 88.6°
Azimuth: 268.9°
TVD: 6,035.71'
VS: 2,502.65'

MD: 9,981'
Inclination: 89.9°
Azimuth: 268.5°
TVD: 6,036.82'
VS: 2,587.63'

MD: 10,066'
Inclination: 90.5°
Azimuth: 269.9°
TVD: 6,036.53'
VS: 2,672.63'

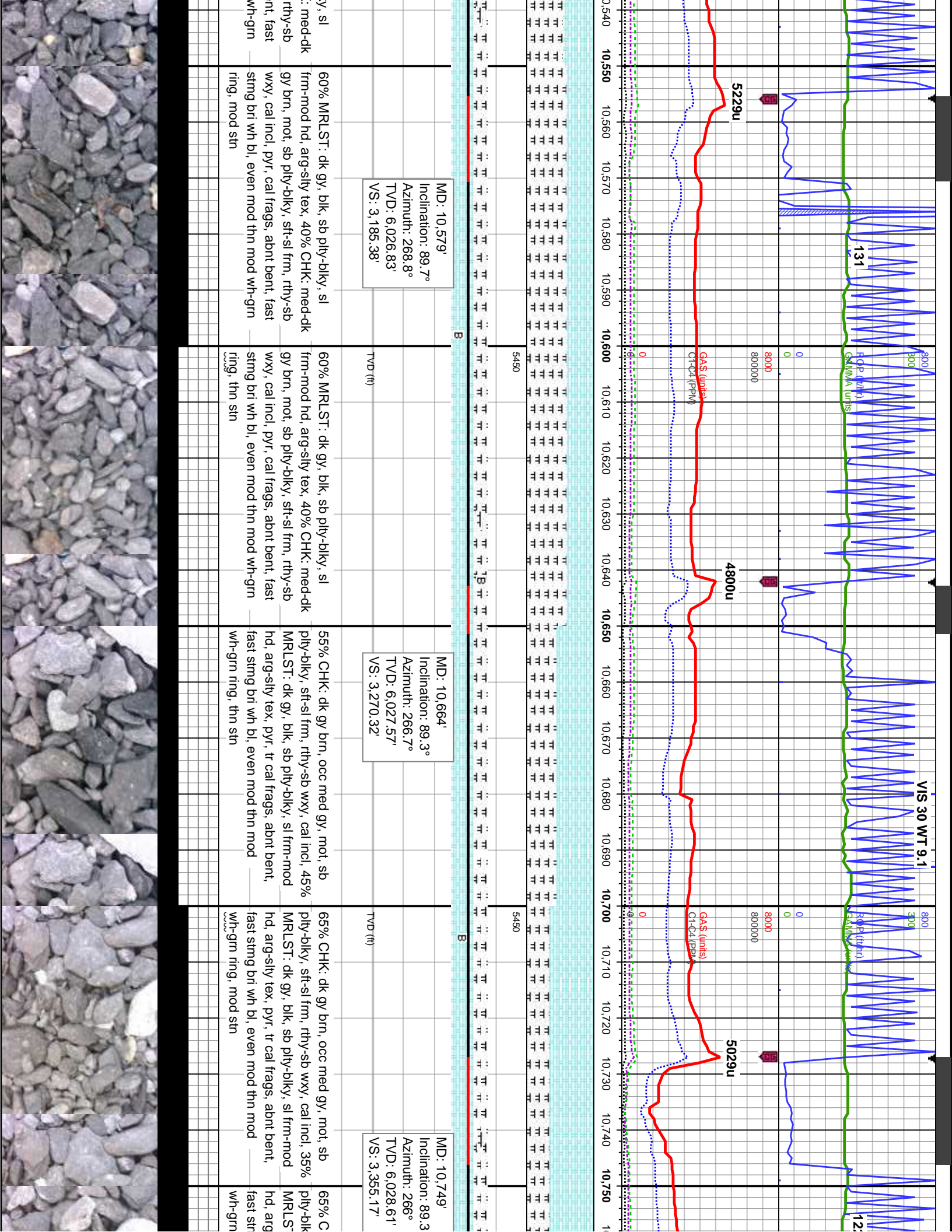
Depth (ft)	GR (units)	GAS (units)	VS (ft)
9,880	800	800,000	2,502.65
9,890	800	800,000	2,502.65
9,900	800	800,000	2,502.65
9,910	800	800,000	2,502.65
9,920	800	800,000	2,502.65
9,930	800	800,000	2,502.65
9,940	800	800,000	2,502.65
9,950	800	800,000	2,502.65
9,960	800	800,000	2,502.65
9,970	800	800,000	2,502.65
9,980	800	800,000	2,502.65
9,990	800	800,000	2,502.65
10,000	800	800,000	2,502.65
10,010	800	800,000	2,502.65
10,020	800	800,000	2,502.65
10,030	800	800,000	2,502.65
10,040	800	800,000	2,502.65
10,050	800	800,000	2,502.65
10,060	800	800,000	2,502.65
10,070	800	800,000	2,502.65
10,080	800	800,000	2,502.65
10,090	800	800,000	2,502.65

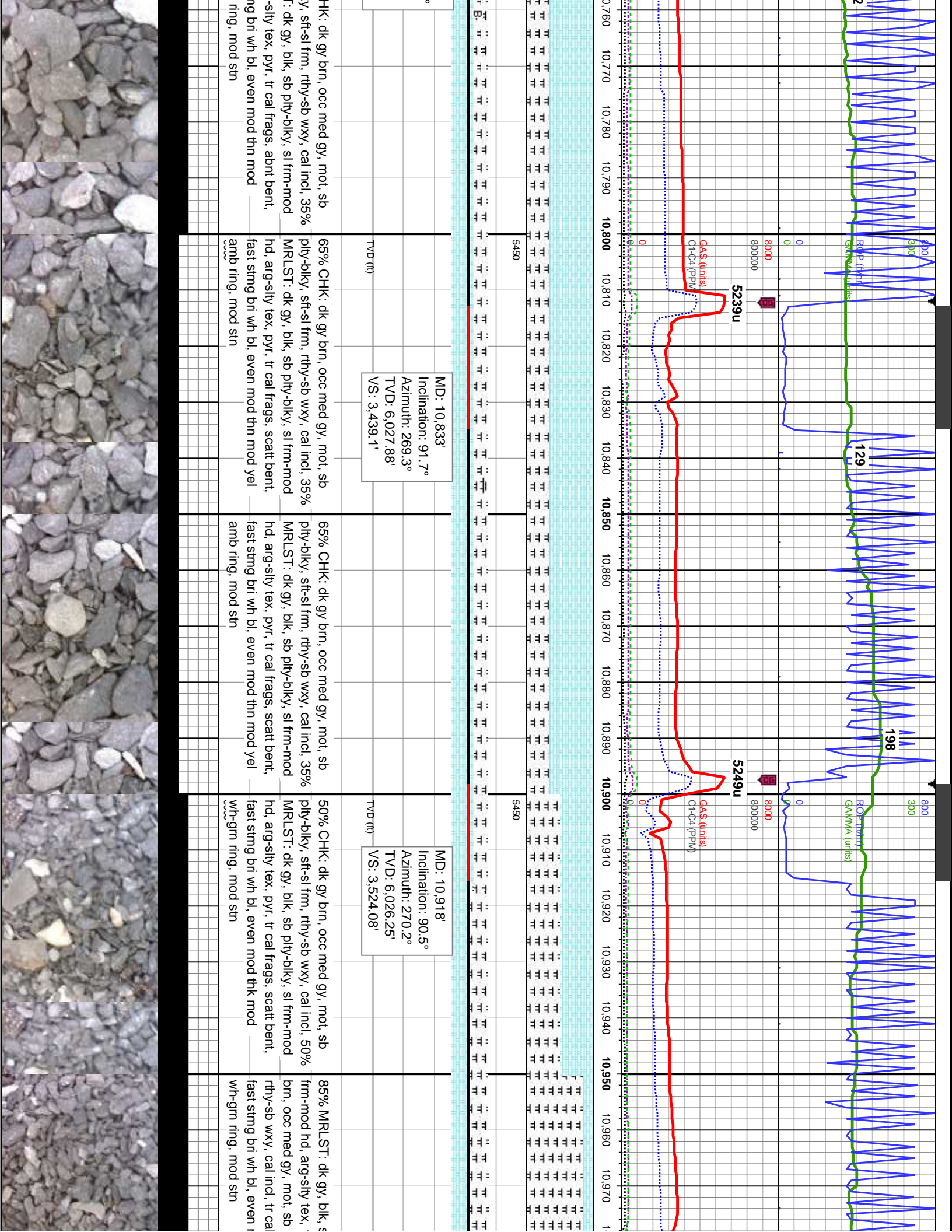




MD: 10,150' Inclination: 91° Azimuth: 270.6° TVD: 6,035.43' VS: 2,756.62'		MD: 10,235' Inclination: 91.8° Azimuth: 271.5° TVD: 6,033.35' VS: 2,841.56'		MD: Incl: Azir: TVE: VS:	
50% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sily tex, 50% CHK: med-dk gy brn, occ lt gy, mot, sb ply-blky, rthy-sb wxy, scat bent, slow stimg mod wh bl, even thn fnt yel-lamb ring, tr sin	55% CHK: med-dk gy brn, occ lt gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, 45% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sily tex, tr fos and cal frags, abnt bent, slow stimg mod wh bl, even thn fnt yel-lamb ring, tr sin	70% CHK: med-dk gy brn, occ lt gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, 30% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sily tex, tr fos and cal frags, abnt bent, fast stimg bri wh bl, even thk bri yel-gm ring, thn sin	60% CHK: med-dk gy brn, occ lt gy, mot, sb ply-blky, sft-sl frm, rthy-sb wxy, 40% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sily tex, tr fos and cal frags, scat bent, fast stimg bri wh bl, even thk bri yel-gm ring, thn sin	70% CHK: med-ply-blky, sft-sl frm, rthy-sb wxy, 10% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sily tex, tr fos and cal frags, scat bent, fast stimg bri wh bl, even thk bri yel-gm ring, thn sin	70% CHK: med-ply-blky, sft-sl frm, rthy-sb wxy, 10% MRLST: dk gy, blk, sb ply-blky, sl frm-mod hd, arg-sily tex, tr fos and cal frags, scat bent, fast stimg bri wh bl, even thk bri yel-gm ring, thn sin







CHK: dk gy brn, occ med gy, mot, sb
y, stf-sl frm, rthy-sb wxy, cal incl, 35%
F: dk gy, blk, sb pty-blky, sl frm-mod
sily tex, pyr, tr cal frags, abnt bent,
ing bri wh bl, even mod thn mod
ring, mod sin

65% CHK: dk gy brn, occ med gy, mot, sb
pty-blky, stf-sl frm, rthy-sb wxy, cal incl, 35%
MRLST: dk gy, blk, sb pty-blky, sl frm-mod
hd, arg-sily tex, pyr, tr cal frags, scatt bent,
fast stmg bri wh bl, even mod thn mod yel
amb ring, mod sin

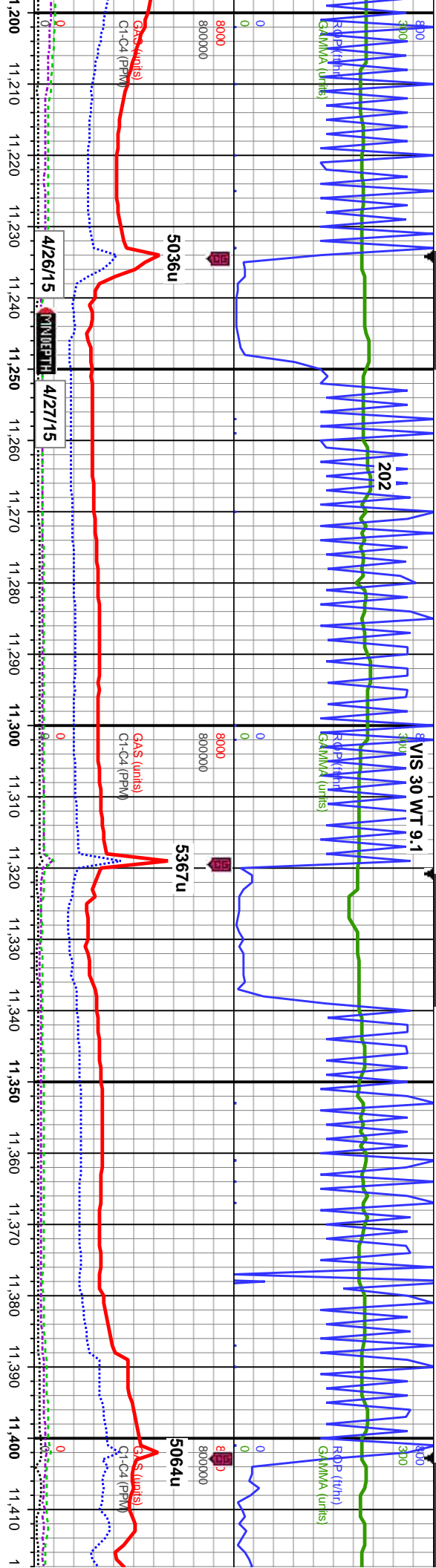
65% CHK: dk gy brn, occ med gy, mot, sb
pty-blky, stf-sl frm, rthy-sb wxy, cal incl, 35%
MRLST: dk gy, blk, sb pty-blky, sl frm-mod
hd, arg-sily tex, pyr, tr cal frags, scatt bent,
fast stmg bri wh bl, even mod thn mod yel
amb ring, mod sin

50% CHK: dk gy brn, occ med gy, mot, sb
pty-blky, stf-sl frm, rthy-sb wxy, cal incl, 50%
MRLST: dk gy, blk, sb pty-blky, sl frm-mod
hd, arg-sily tex, pyr, tr cal frags, scatt bent,
fast stmg bri wh bl, even mod thk mod
wh-gim ring, mod sin

85% MRLST: dk gy, blk, s
frm-mod hd, arg-sily tex,
brn, occ med gy, mot, sb
rthy-sb wxy, cal incl, tr cal
fast stmg bri wh bl, even r
wh-gim ring, mod sin

MD: 10,833'
Inclination: 91.7°
Azimuth: 269.3°
TVD: 6,027.88'
VS: 3,439.1'

MD: 10,918'
Inclination: 90.5°
Azimuth: 270.2°
TVD: 6,026.25'
VS: 3,524.08'



5450

5450

5450

MD: 11,257'
Inclination: 90.5°
Azimuth: 267.9°
TVD: 6,026.09'
VS: 3,862.92'

MD: 11,342'
Inclination: 89.5°
Azimuth: 267.6°
TVD: 6,026.09'
VS: 3,947.87'

85% MRLST: dk gy, blk, sb pty-blky, sl
frm-mod hd, arg-sily tex, 15% CHK: dk gy
brn, occ med gy, mot, sb pty-blky, sft-sl frm,
rthy-sb wxy, cal incl, tr bent, fast strng bri wh
bl, even mod thn mod wh-grn ring, mod stn

85% MRLST: dk gy, blk, sb pty-blky, sl
frm-mod hd, arg-sily tex, 15% CHK: dk gy
brn, occ med gy, mot, sb pty-blky, sft-sl frm,
rthy-sb wxy, cal incl, tr bent, fast strng bri wh
bl, even mod thn mod wh-grn ring, mod stn

90% MRLST: dk gy, blk, sb pty-blky, sl
frm-mod hd, arg-sily tex, 10% CHK: dk gy
brn, occ med gy, mot, sb pty-blky, sft-sl frm,
rthy-sb wxy, tr bent, slow strng-mky fnt wh bl,
even mod thk mod yel ring, tr stn

90% MRLST: dk gy, blk, sb pty-blky, sl
frm-mod hd, arg-sily tex, 10% CHK: dk gy
brn, occ med gy, mot, sb pty-blky, sft-sl frm,
rthy-sb wxy, tr bent, slow strng-mky fnt wh bl,
even mod thk mod yel ring, tr stn

85% MRLST: dk
frm-mod hd, arg
brn, occ med gy
rthy-sb wxy, tr p
mod wh bl, ever



