



Scale: 5" / 100'
Measured Depth Log

Well Name	TREBOR B11-68-1HN				
Location	SEC11 T5N R64W				
State	CO	County	WELD		
Country	USA		Rig Number	H&P 330	
API Number	05-123-37165		AFE #	139198	
Region	DENVER-JULESBURG BASIN		Field	WATTENBERG	
Spud Date	7/26/2013		Drilling Completed	8/2/2013	
Surface Coordinates	270' FNL, 673' FWL	Lat/Long:	40.42034/-104.52462		
Bottom Hole Coordinates	1120' FNL, 565' FEL	Lat/Long:	40.41807/-104.51013		
Ground Elevation	4606'	K.B. Elevation	4636'		
Logged Interval	5814'	To	10552'	Total Depth	10552'
Formation	TEEPEE BUTTES, SHARON SPRINGS, NIOBRARA				
Type of Drilling Fluid	LSND				

Company Noble Energy Inc

Name Teresa Malesar
Company Noble Energy Inc

WELL-SITE GEOLOGISTS

CHALK T T T

Operator

Geologist

Other

MARK WEIDERSPON
MICHAEL ROOKS
GARY MYERS





LOG CONTINUES FROM FILE:
TREBOR B11-68-1HN VERTICAL.mplot

Rock Types

MARLSTONE  SHALY SANDSTONE  SHALY SILTSTONE

Other Symbols

Engineering

 BIT
 CONNECTION (RIGHT)
 CONNECTION GAS
 MINDEPTH
 SLIDE

Slide/Rotate

ROP
ROF
GAMMA

COLUMBINE LOGGING INC
RIGGED UP ON 07/26/2013
MANNED 2-PERSON LOGGING
WITH BLOODHOUND GAS
CHROMATOGRAPH UNIT #0314
BEGAN ON 7/28/13

Total Gas & Chromatograph

GAS
C1
C2
C3
C4
CO2

LOG CONTINUES FROM FILE:
TREBOR B11-68-1HN VERTICAL.mplot

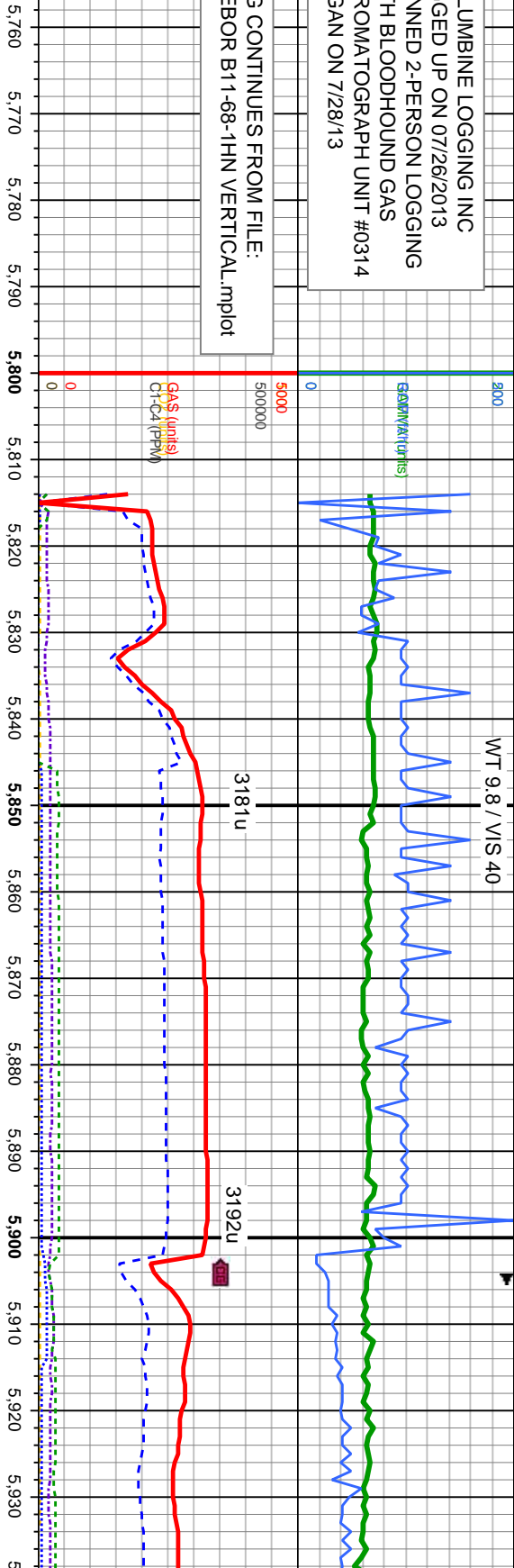
Depth Labels

% Lith

Well Bore
TVD

Oil Show

Images



Bit Data
Bit #: 2
Type: SECURITY/MMMD55M
Size: 8.75
Depth In: 674 '
Depth Out: 7,009 '
Jets: 5x15
S/N: 12186533

MD: 5,814'
TVD: 5,809.03
Inclination: 0.9 °
MW: 9.5
FV: 42
YP: 10
pH: 8.5
GELS: 4/18/24

MD: 5,843 '
TVD: 5,809.03
Inclination: 0.9 °
Azimuth: 250.6 °
VS: -85.53 '

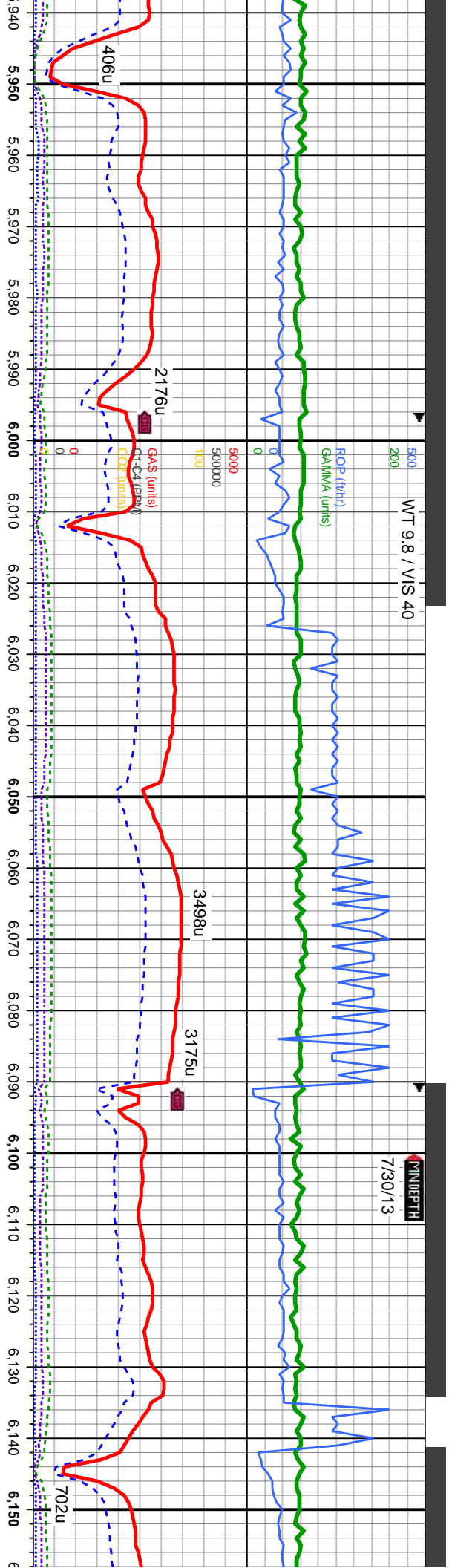
100% SHY SLTST: DK GY,
VF-V VFG, SB RD- SB ANG,
MOD SRT, ARG

100% SHY SLTST: DK GY,
VF-V VFG, SB RD- SB ANG,
MOD SRT, ARG

100% SHY SLTST: DK GY,
VF-V VFG, SB RD- SB AN
MOD SRT, ARG

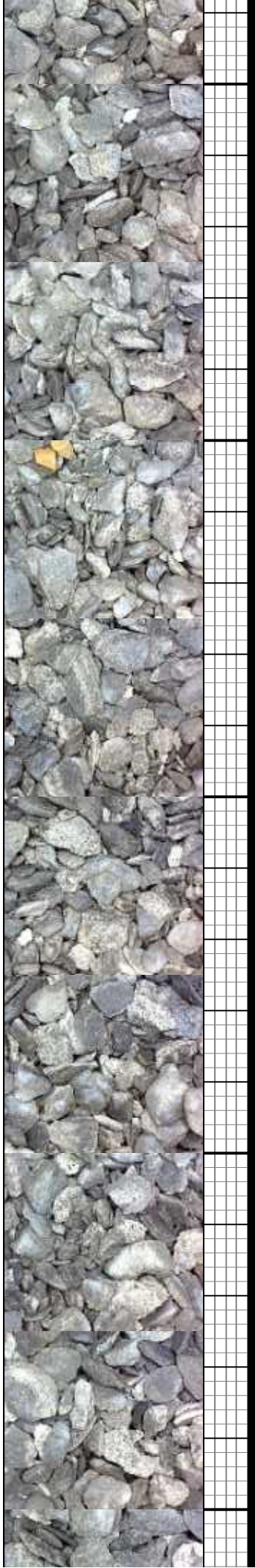
SLTR
F MOD
C
EX

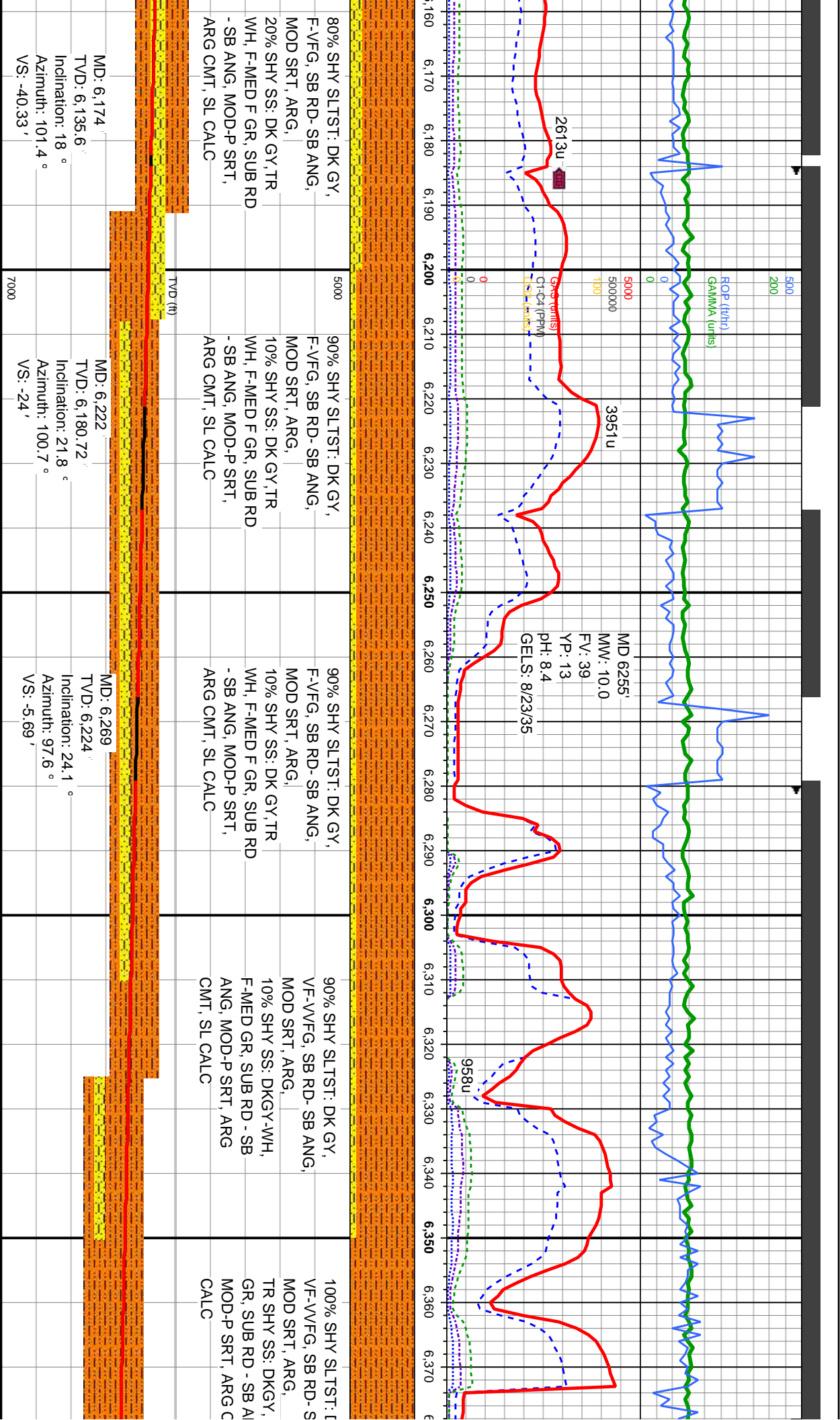




MD: 5.985 TVD: 5.950.69 Inclination: 8.4 ° Azimuth: 89.4 ° VS: -78.26'	MD: 6.032 TVD: 5.997.08 Inclination: 10.1 ° Azimuth: 93.4 ° VS: -70.81'	MD: 6.080 TVD: 6.044.33 Inclination: 10.1 ° Azimuth: 93 ° VS: -62.47'	75% SHY SLTST: DK GY, F-VFG, SB RD- SB ANG, MOD SRT, ARG, 25% SHY SS: DK GY,TR WH, F-MED F GR, SUB RD - SB ANG, MOD-P SRT, ARG CMT, SL CALC
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95% SHY SLTST: DK GY, F-VFG, SB RD- SB ANG, MOD SRT, ARG, 5% SHY SS: DK GY,TR WH, F-MED F GR, SUB RD - SB ANG, MOD-P SRT, ARG CMT, SL CALC	95% SHY SLTST: DK GY, F-VFG, SB RD- SB ANG, MOD SRT, ARG, 5% SHY SS: DK GY,TR WH, F-MED F GR, SUB RD - SB ANG, MOD-P SRT, ARG CMT, SL CALC	70% SHY SLTST: DK GY, F-VFG, SB RD- SB ANG, MOD SRT, ARG, 30% SHY SS: DK GY,TR WH, F-MED F GR, SB RD- SB ANG, MOD-P SRT, ARG CMT, SL CALC	MD: 6.127 TVD: 6.090.35 Inclination: 13.3 ° Azimuth: 96.9 ° VS: -52.99'
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80% SHY SLTST: DK GY,
F-VFG, SB RD- SB ANG,
MOD SRT, ARG,
20% SHY SS: DK GY, TR
WH, F-MED F GR, SUB RD
- SB ANG, MOD-P SRT,
ARG CMT, SL CALC

90% SHY SLTST: DK GY,
F-VFG, SB RD- SB ANG,
MOD SRT, ARG,
10% SHY SS: DK GY, TR
WH, F-MED F GR, SUB RD
- SB ANG, MOD-P SRT,
ARG CMT, SL CALC

90% SHY SLTST: DK GY,
F-VFG, SB RD- SB ANG,
MOD SRT, ARG,
10% SHY SS: DK GY, TR
WH, F-MED F GR, SUB RD
- SB ANG, MOD-P SRT,
ARG CMT, SL CALC

90% SHY SLTST: DK GY,
VF-VFG, SB RD- SB ANG,
MOD SRT, ARG,
10% SHY SS: DKGY-WH,
F-MED GR, SUB RD - SB
ANG, MOD-P SRT, ARG
CMT, SL CALC

100% SHY SLTST: F
VF-VFG, SB RD- S
MOD SRT, ARG,
TR SHY SS: DKGY,
GR, SUB RD - SB A
MOD-P SRT, ARG C
CALC

MD: 6,174
TVD: 6,135.6
Inclination: 18 °
Azimuth: 101.4 °
VS: -40.33 '

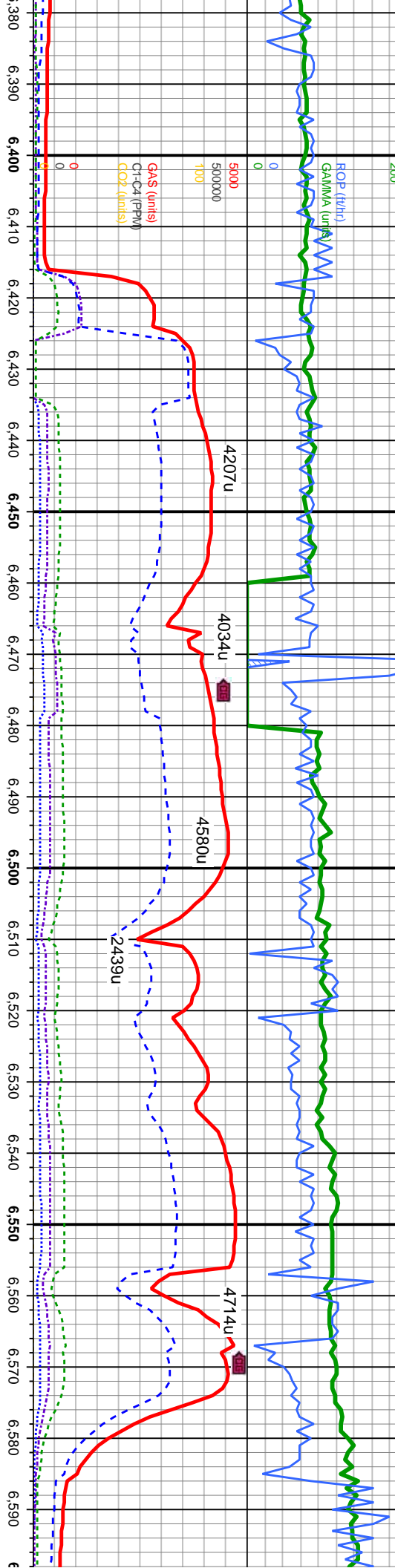
MD: 6,222
TVD: 6,180.72
Inclination: 21.8 °
Azimuth: 100.7 °
VS: -24 '

MD: 6,269
TVD: 6,224
Inclination: 24.1 °
Azimuth: 97.6 °
VS: -5.69 '

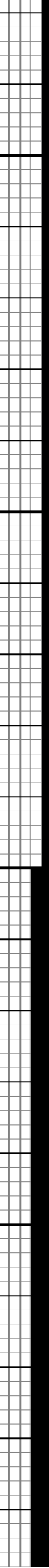
MD: 6,350
TVD: 6,310
Inclination: 24.1 °
Azimuth: 97.6 °
VS: -5.69 '



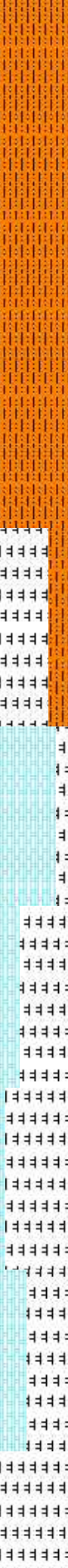
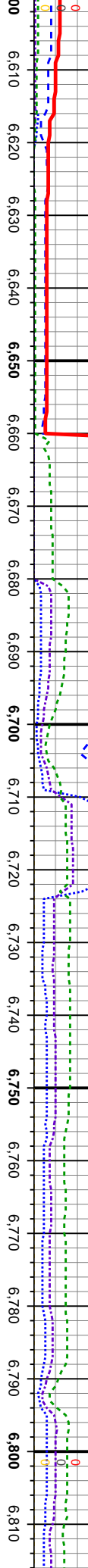
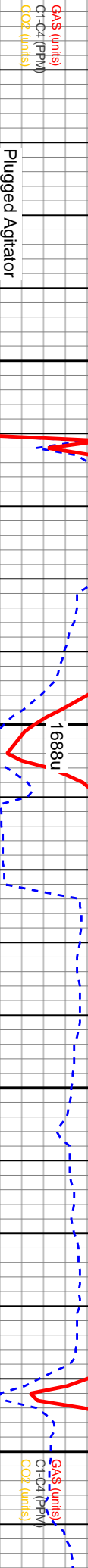
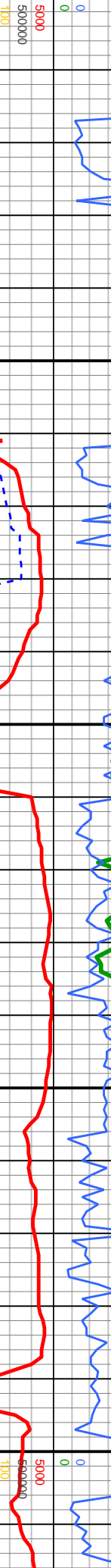
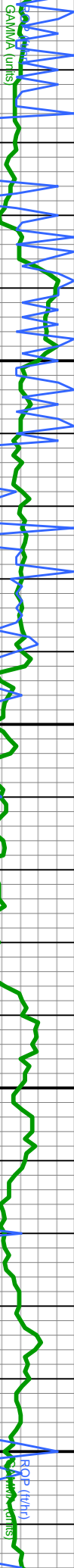
WT 10.4 / VIS 40



5000	100% SHY SLTST: DK GY, VF-VF/G, SB RD- SB ANG GR, MOD SRT, PLTY-SBBLKY ARG, COM BENT	MD: 6,411 TVD: 6,346.6 Inclination: 37.5 ° Azimuth: 91.3 ° VS: 64.85 '	100% SHY SLTST: DK GY, VF-VF/G, SB RD- SB ANG GR, MOD SRT, PLTY-SBBLKY ARG, COM BENT	MD: 6,459 TVD: 6,382.92 Inclination: 44.1 ° Azimuth: 92.9 ° VS: 95.83 '	100% SHY SLTST: DK GY, VF-VF/G, SB RD- SB ANG GR, MOD SRT, PLTY-SB PLTY ARG, COM BENT	MD: 6,506 TVD: 6,414.59 Inclination: 51.1 ° Azimuth: 94.8 ° VS: 130.25 '	100% SHY SLTST: DK GY, VF-VF/G, SB RD- SB ANG GR, MOD SRT, PLTY-SBBLKY ARG, TR BENT	MD: 6,554 TVD: 6,442.69 Inclination: 57.2 ° Azimuth: 95.9 ° VS: 168.95 '	MD: 6, TVD: 6, Inclina Azimut VS: 20
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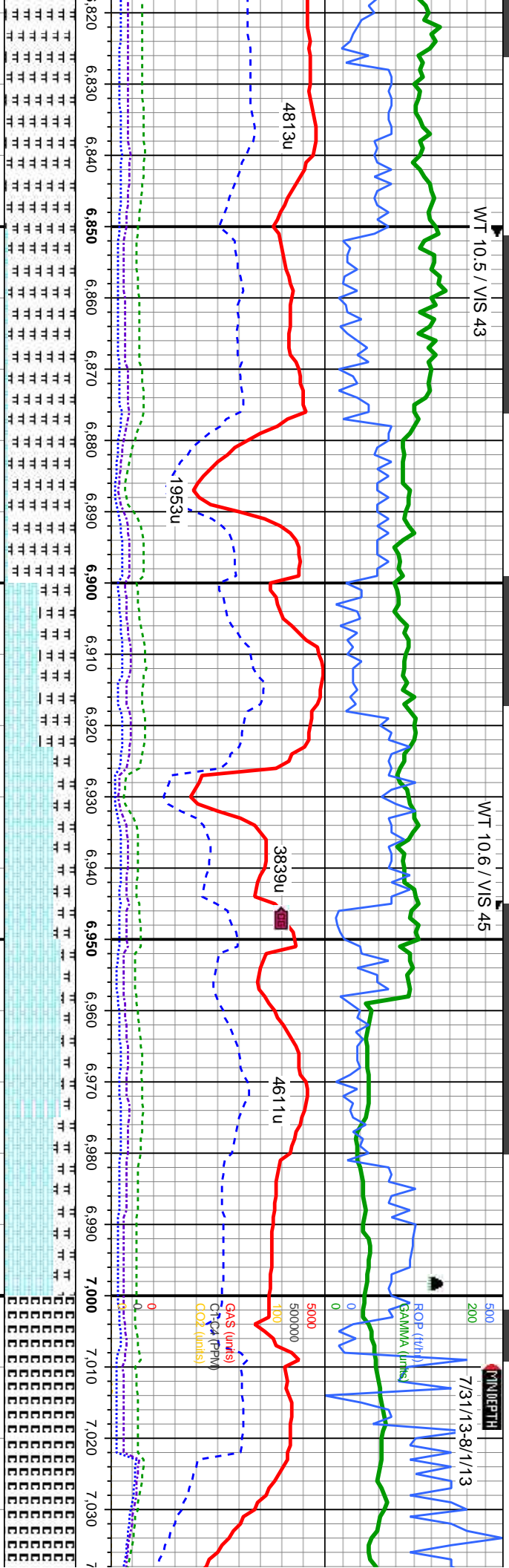
500 WT 10.5 / VIS 41 200 500 WT 10.5 / VIS 41 200 500



WT 10.5 / VIS 43

WT 10.6 / VIS 45

7/31/13-8/1/13



MD: 6,838	MD: 6,886	MD: 6,933	MD: 6,933
TVD: 6,570.56'	TVD: 6,585.07'	TVD: 6,597.28'	TVD: 6,597.28'
Inclination: 71.3°	Inclination: 73.5°	Inclination: 76.4°	Inclination: 76.4°
Azimuth: 99.8°	Azimuth: 101.9°	Azimuth: 101.5°	Azimuth: 101.5°
VS: 420.87'	VS: 466.62'	VS: 512'	VS: 512'

100% MRLST: DKGY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, TR CHK: DK GY, BLKY-SB BLKY, SFT, COM BENT

70% CHK: MED-DK GY, TR MOT, BLKY-SB BLKY, SFT, 30% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, TR BENT

70% CHK: LT-DK GY, SME MOT, BLKY-SB BLKY, SFT, 30% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, RR BENT

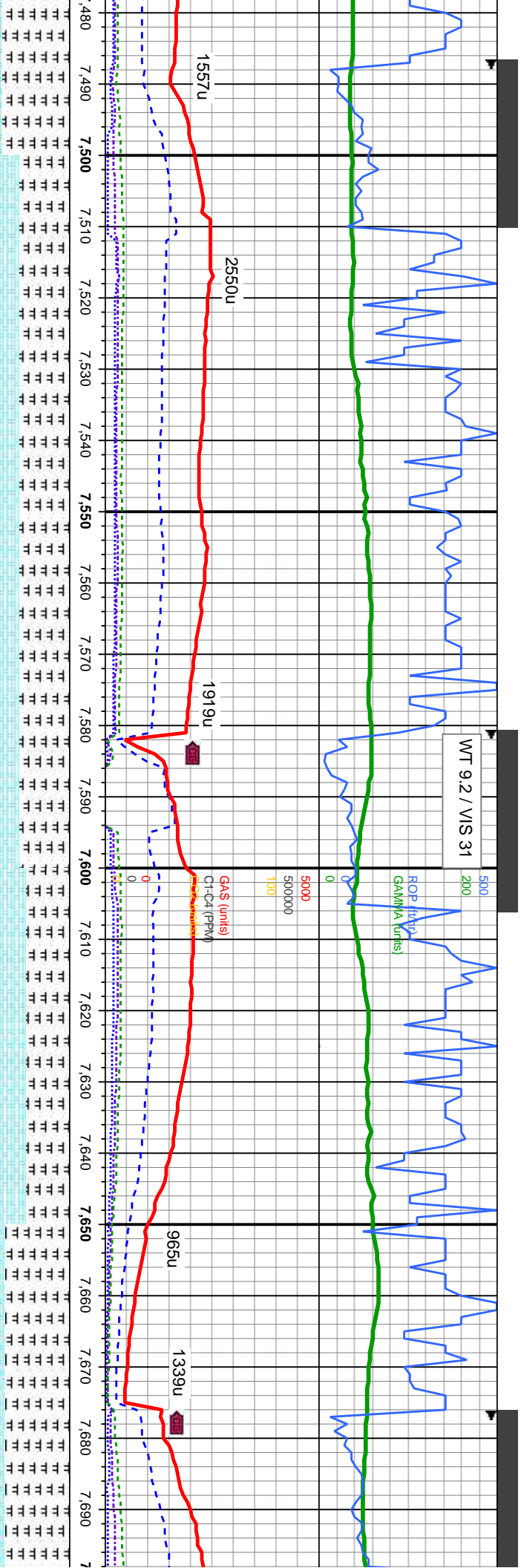
LOGGERS TOP: NIOBRARA B CHALK 6878' MD / 6583' TVD

100% Cement

TD CASING PT 7009' MD, 1202 HRS CASING SET @ 6998' MD DRILLED OUT 0103 HRS 8/1/30

MD: 7
TVD:
Inclination:
Azimuth:
VS: 6

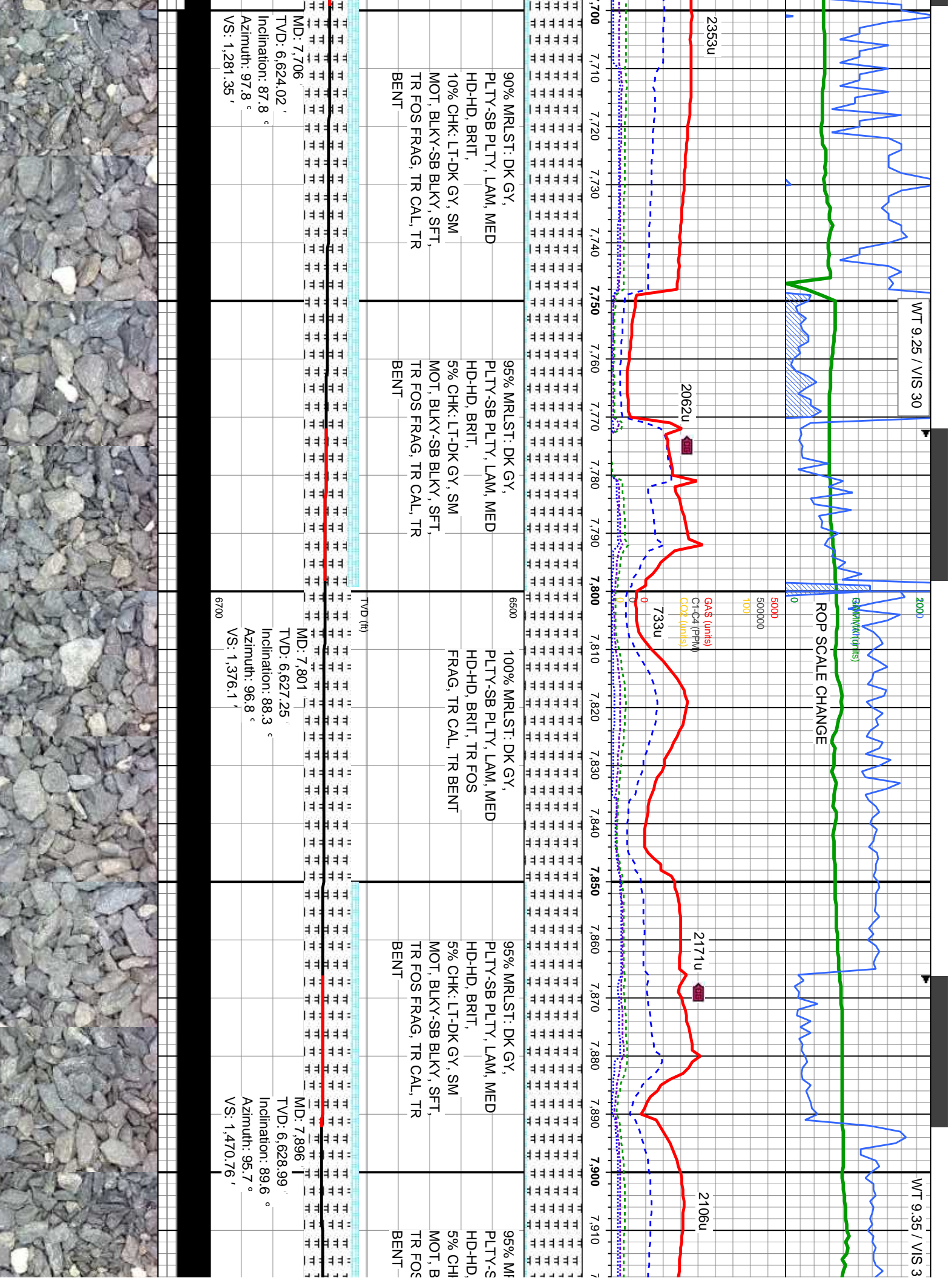


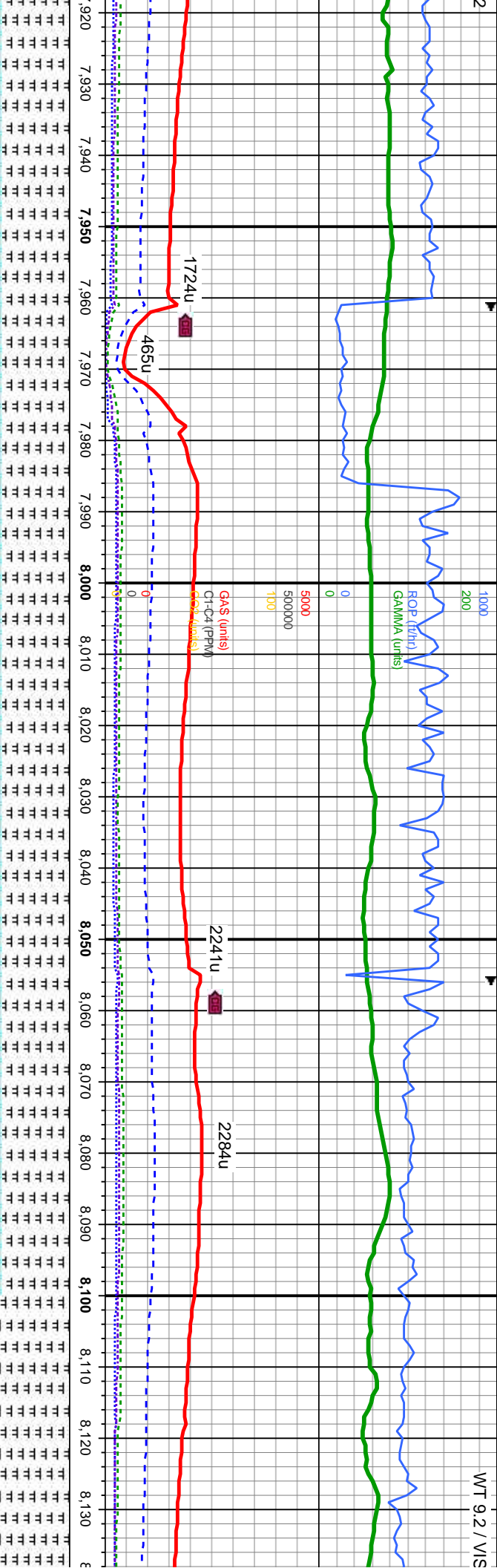


GY, LAM, MED	70% MRLST: DK GY, PLTY-SB PLTY, LAM, MED	70% MRLST: DK GY, PLTY-SB PLTY, LAM, MED	6500	60% MRLST: DK GY, PLTY-SB PLTY, LAM, MED	90% MRLST: DK GY, PLTY-SB PLTY, LAM, MED
GY, SM	HD-HD, BRIT,	HD-HD, BRIT,		HD-HD, BRIT,	HD-HD, BRIT,
BLKY, SFT,	30% CHK: LT-DK GY, SM	30% CHK: LT-DK GY, SM		40% CHK: LT-DK GY, SM	10% CHK: LT-DK GY, SM
TR CAL	MOT, BLKY-SB BLKY, SFT,	MOT, BLKY-SB BLKY, SFT,		TR FOS FRAG, TR CAL, TR	MOT, BLKY-SB BLKY, SFT,
	TR FOS FRAG, TR CAL	TR FOS FRAG, TR CAL		BENT	TR FOS FRAG, TR CAL, TR
					BENT

	MD: 7.517	MD: 7.612	
	TVD: 6.622.06 '	TVD: 6.621.4 '	
	Inclination: 91.8 °	Inclination: 89 °	
	Azimuth: 100.6 °	Azimuth: 99.6 °	
	VS: 1,092.49 '	VS: 1,187.47 '	
		6700	

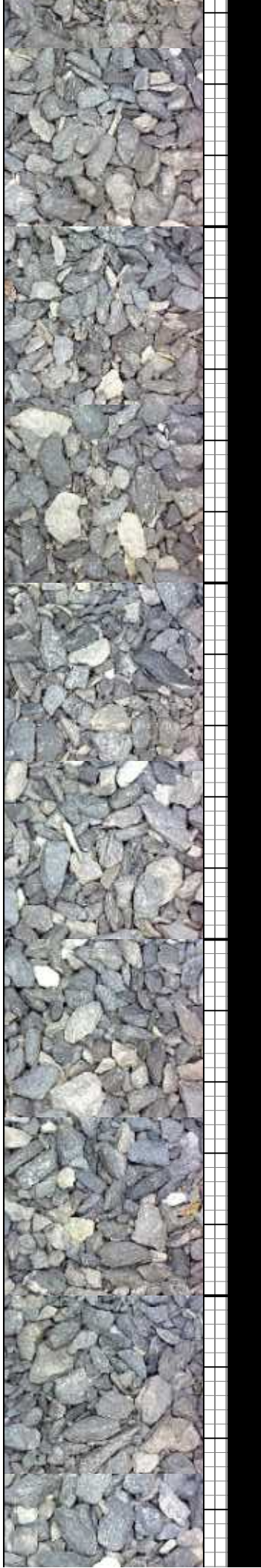


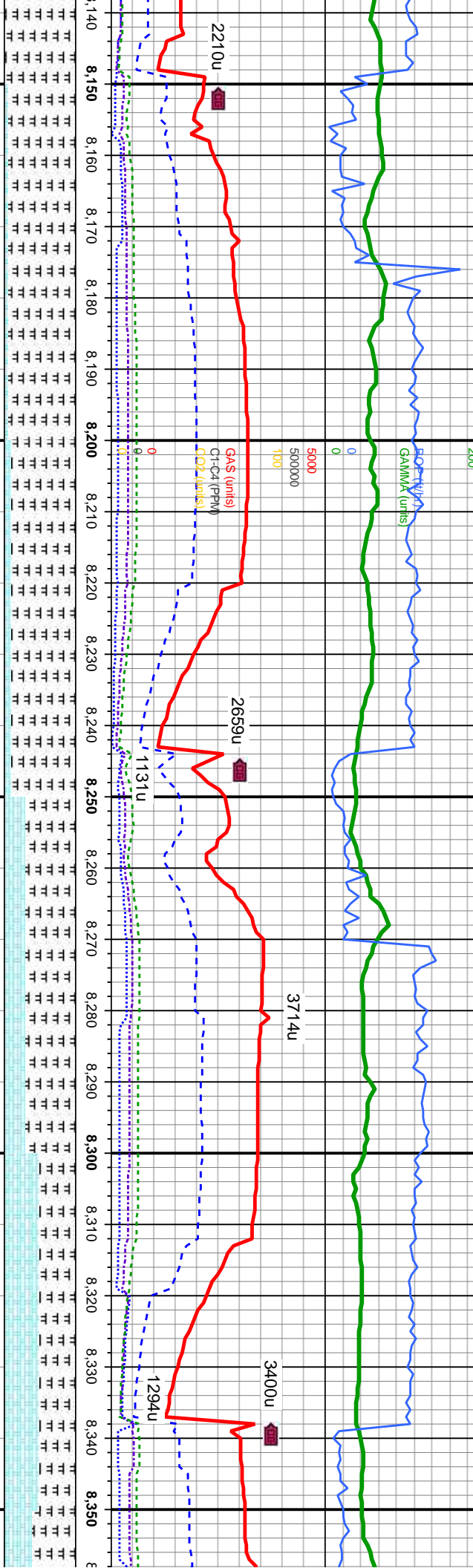




RLST: DK GY, B PLTY, LAM, MED BRIT, LT-DK GY, SM BLKY-SB BLKY, SFT, FOS FRAG, TR CAL, TR BENT	95% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 5% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR FOS FRAG, TR CAL, TR BENT	6500	95% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 5% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR FOS FRAG, TR CAL, TR BENT	95% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 5% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR FOS FRAG, TR CAL, TR BENT	100% MRLST: DK GY, PLTY-SB PLTY, LAM, ME HD-HD, BRIT, TR FOS FRAG, TR BENT
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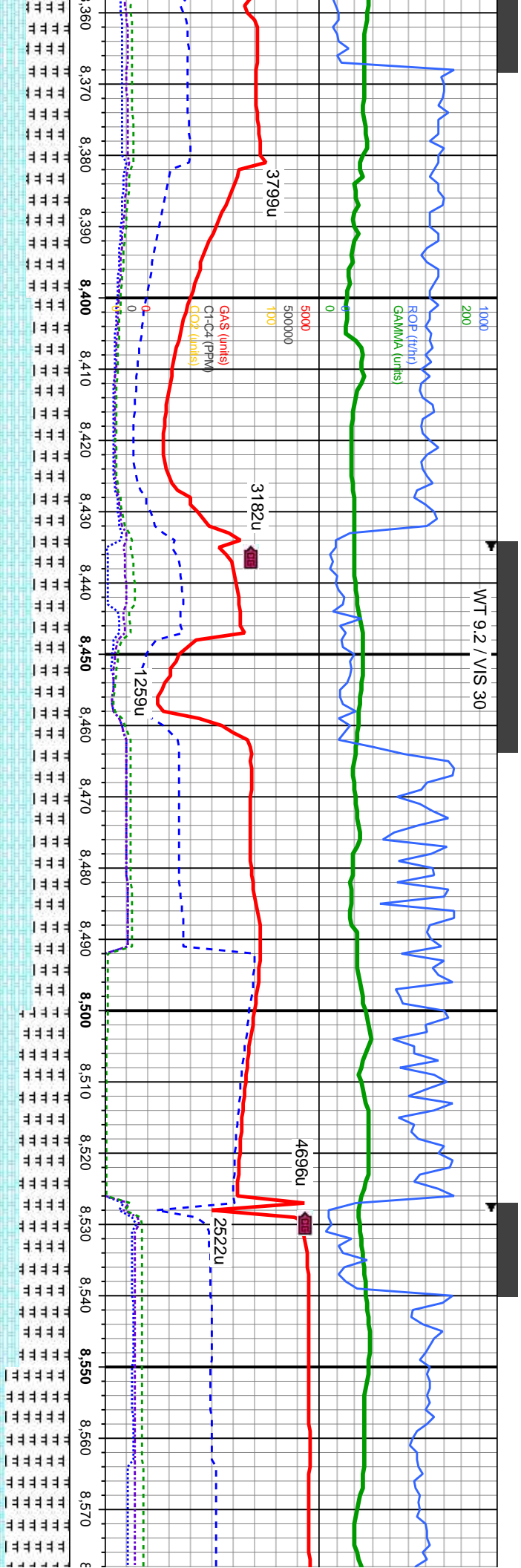
TVD: 6,628.25' Inclination: 91.3° Azimuth: 95.9° VS: 1,565.37'	MD: 7,991	TVD (ft)	MD: 8,086	TVD: 6,627.42' Inclination: 89.7° Azimuth: 95.9° VS: 1,660'
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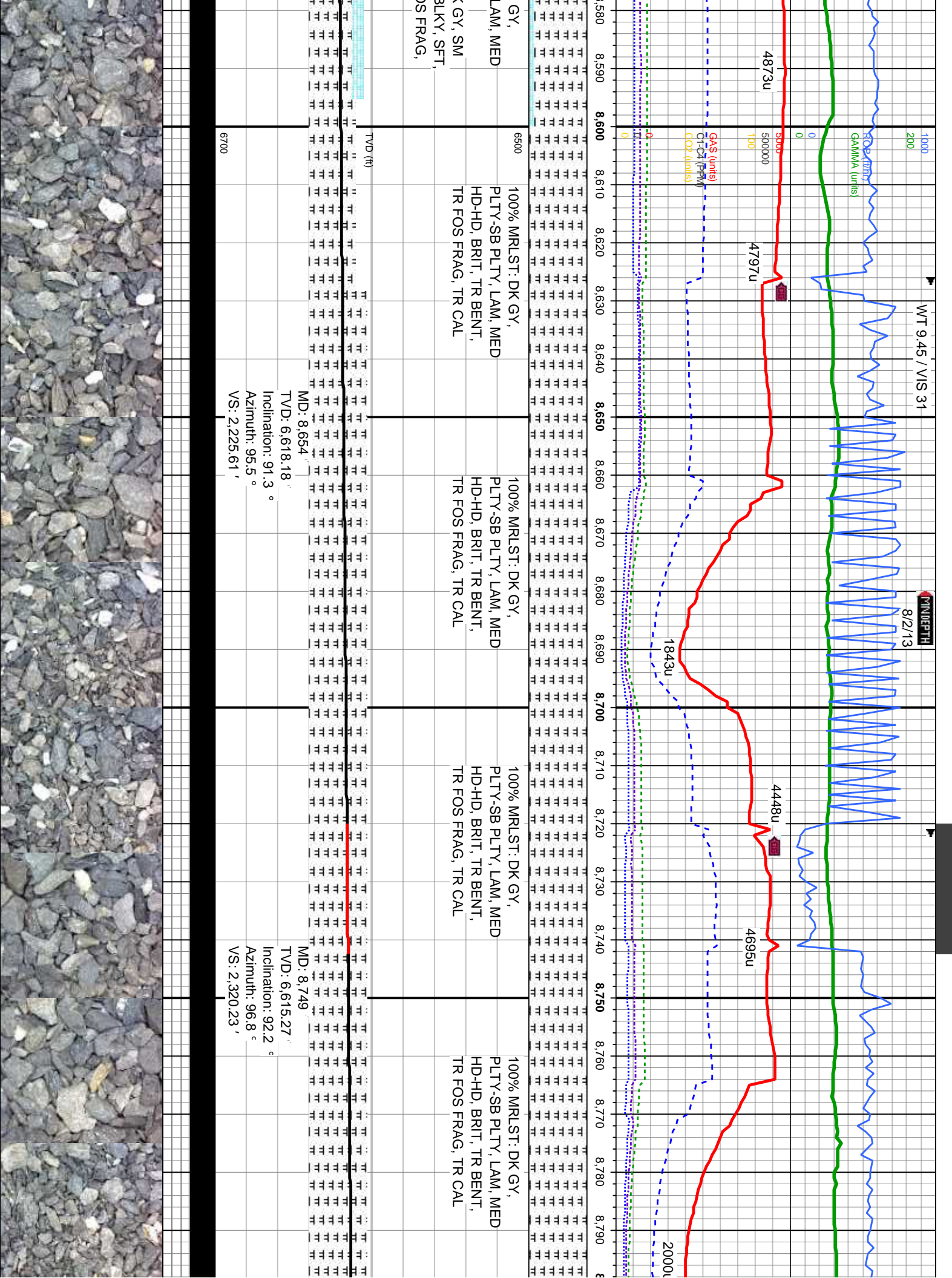
95% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 5% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR FOS FRAG, TR BENT	6500	90% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 10% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR FOS FRAG, TR BENT	70% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 30% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR BENT	50% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 50% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR BENT
MD: 8,181	TVD: 6,628.17'	MD: 8,276	TVD: 6,628.91'	
Inclination: 89.4 °		Inclination: 89.7 °		
Azimuth: 97 °		Azimuth: 96.2 °		
VS: 1,754.7'		VS: 1,849.42'		
	6700			

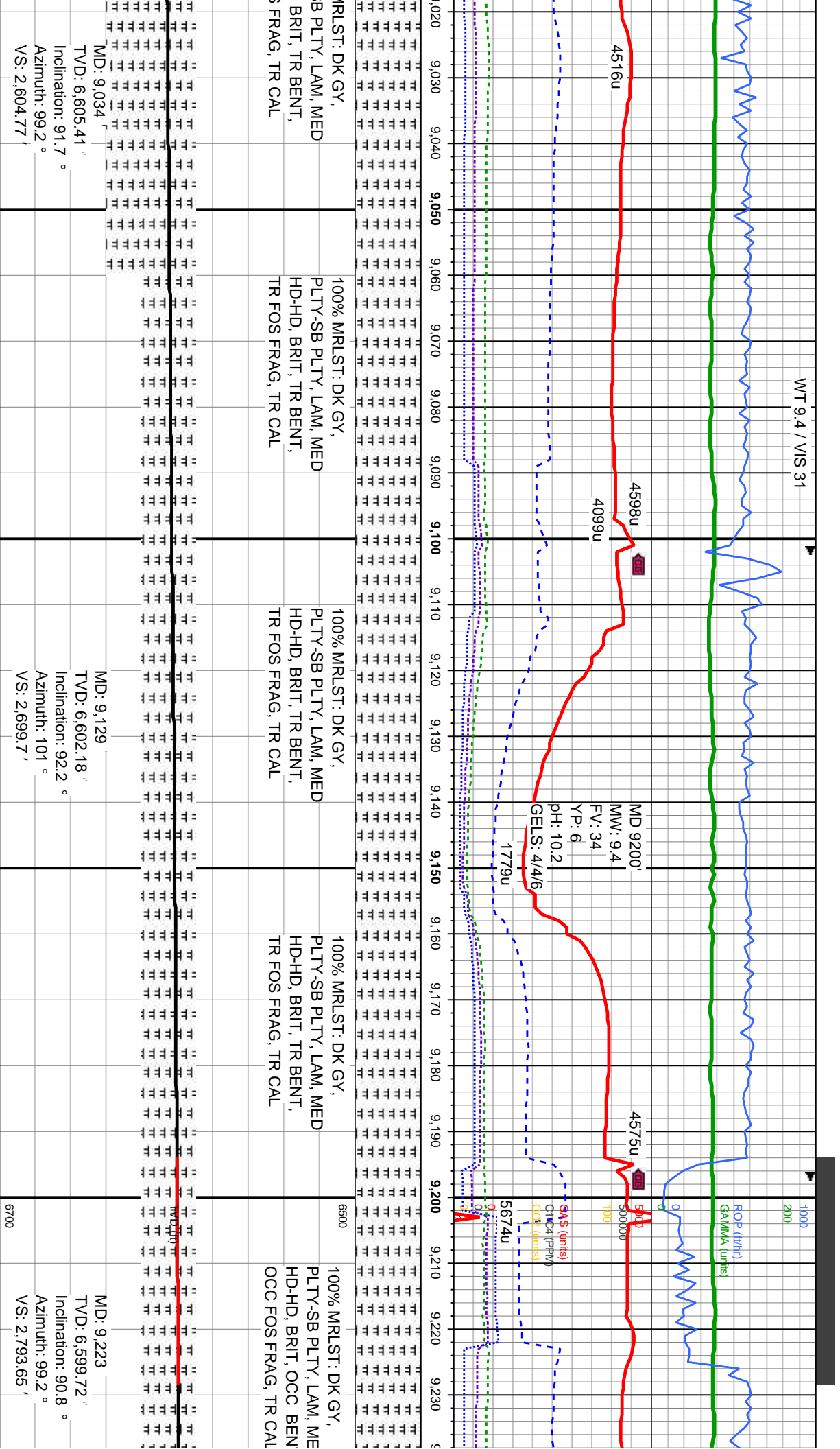




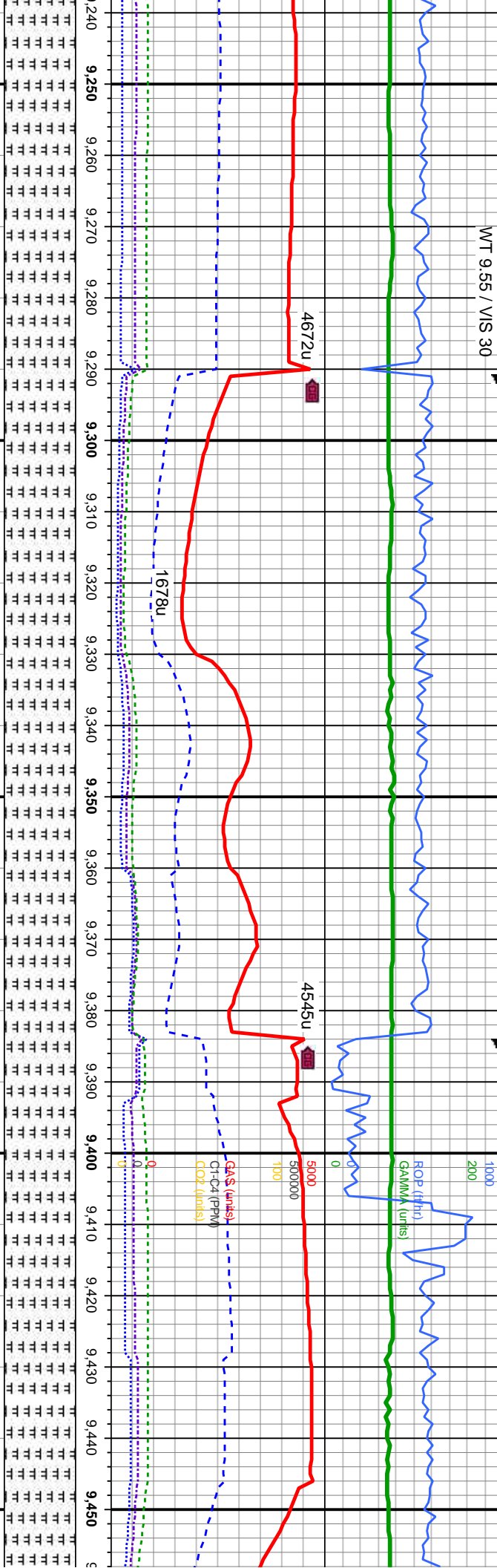
60% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 40% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR BENT	6500	50% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 50% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR BENT, TR FOS FRAG	50% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 50% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR BENT, TR FOS FRAG	70% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, 30% CHK: LT-DK GY, SM MOT, BLKY-SB BLKY, SFT, TR BENT, TR FOS FRAG, TR CAL	90% MRLST: DK PLTY-SB PLTY, HD-HD, BRIT, 10% CHK: LT-DK MOT, BLKY-SB TR BENT, TR FC TR CAL
TVD: 6,628.5' MD: 8,370'		TVD: 6,625.68' MD: 8,465'	TVD: 6,621.37' MD: 8,560'		
Inclination: 90.8 ° Azimuth: 95.9 ° VS: 1,943.08'		Inclination: 92.6 ° Azimuth: 95.4 ° VS: 2,037.63'	Inclination: 92.6 ° Azimuth: 95.5 ° VS: 2,132.09'		
6700					







WT 9.55 / VIS 30



100% MRLST: DK GY,
PLTY-SB PLTY, LAM, MED
HD-HD, BRIT, OCC BENT,
OCC FOS FRAG, TR CAL

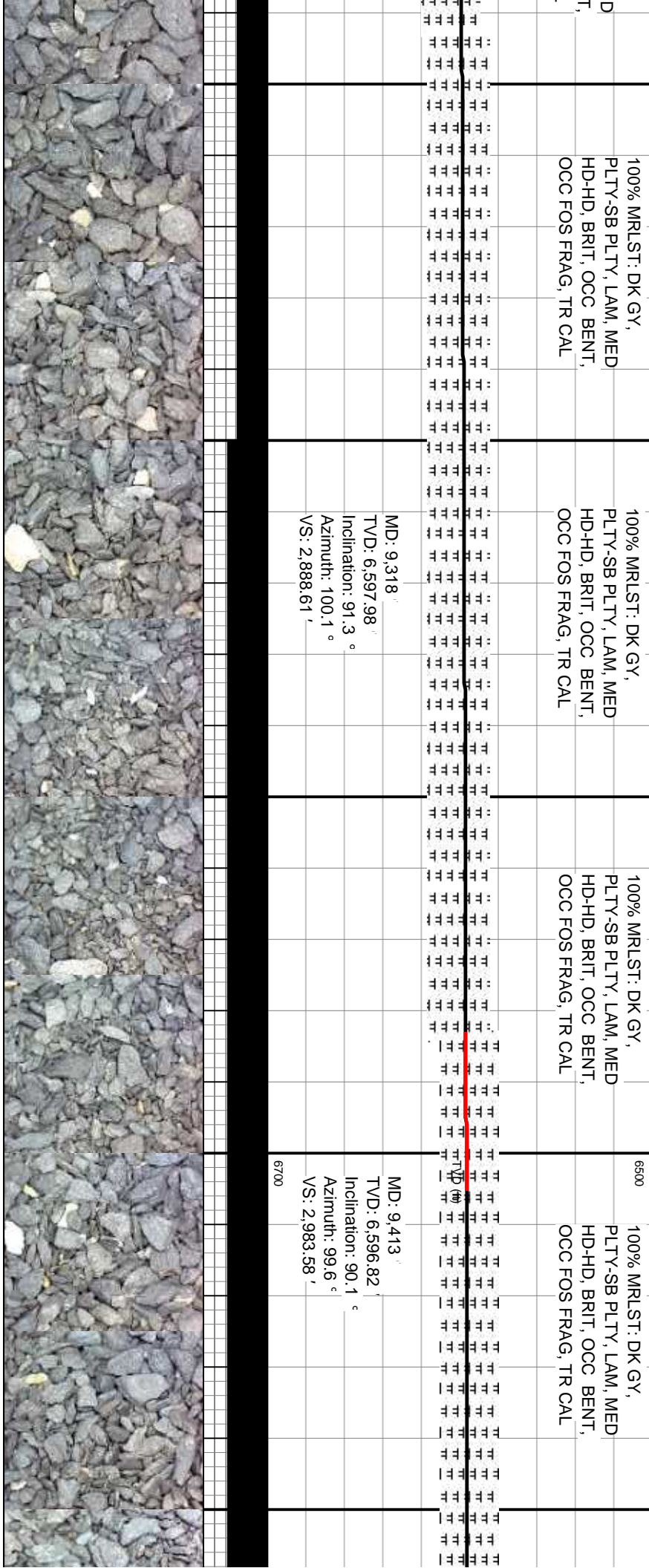
100% MRLST: DK GY,
PLTY-SB PLTY, LAM, MED
HD-HD, BRIT, OCC BENT,
OCC FOS FRAG, TR CAL

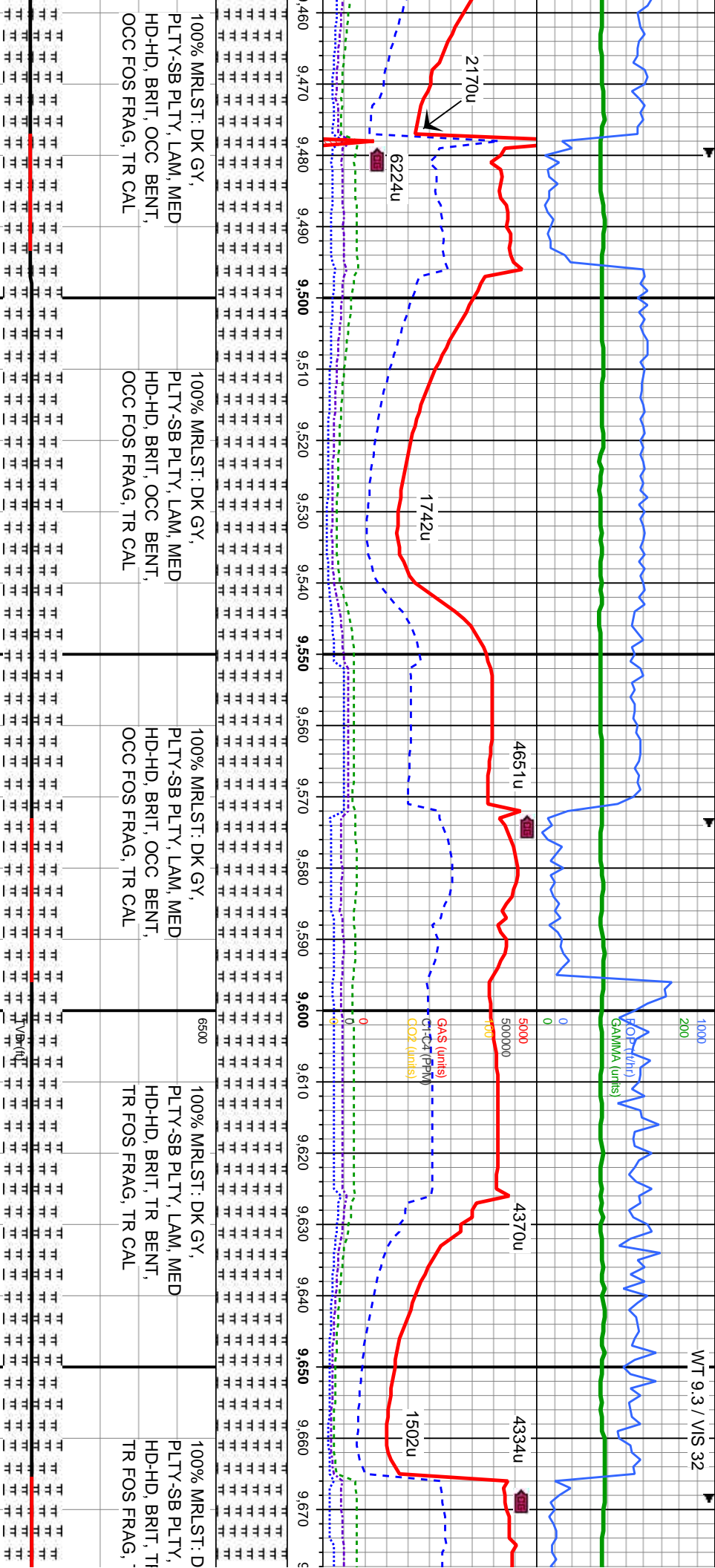
100% MRLST: DK GY,
PLTY-SB PLTY, LAM, MED
HD-HD, BRIT, OCC BENT,
OCC FOS FRAG, TR CAL

100% MRLST: DK GY,
PLTY-SB PLTY, LAM, MED
HD-HD, BRIT, OCC BENT,
OCC FOS FRAG, TR CAL

MD: 9,318 '
TVD: 6,597.98 '
Inclination: 91.3 °
Azimuth: 100.1 °
VS: 2,888.61 '

MD: 9,413 '
TVD: 6,596.82 '
Inclination: 90.1 °
Azimuth: 99.6 °
VS: 2,983.58 '

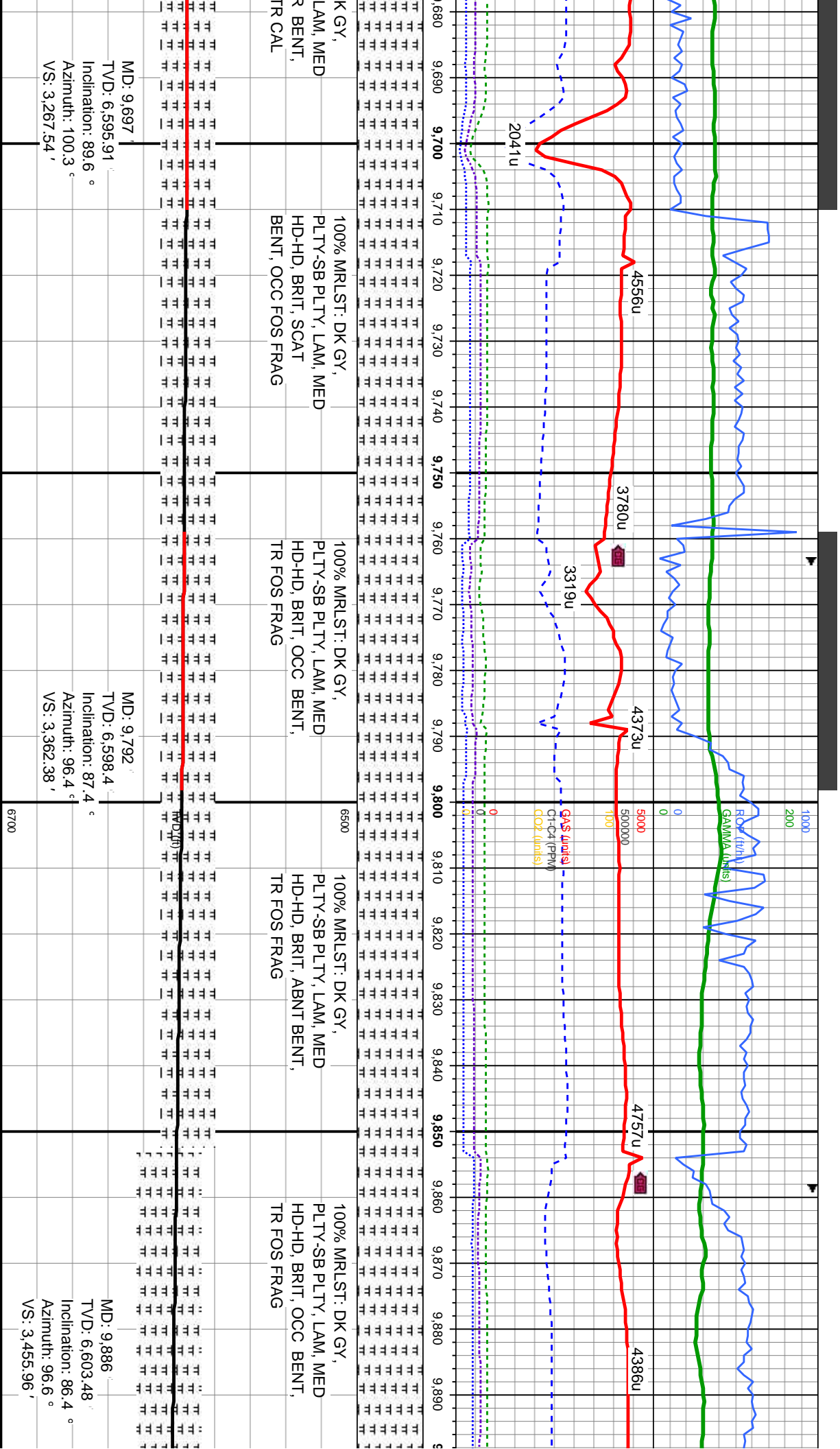


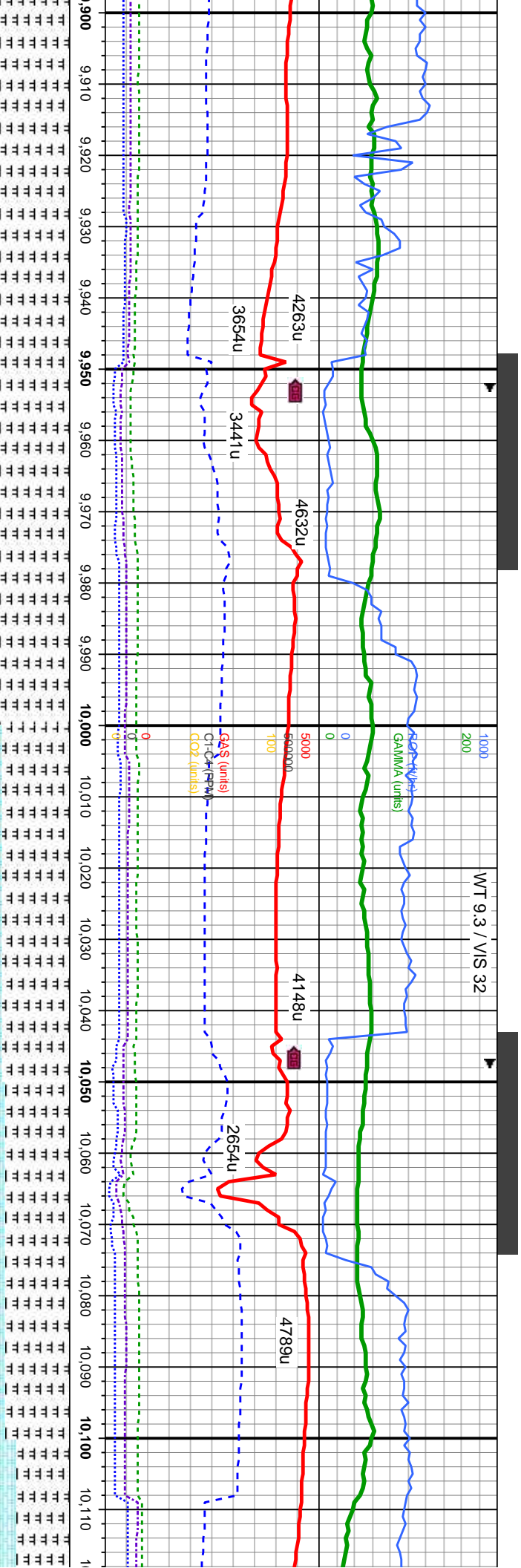


MD: 9,507'
TVD: 6,596.24'
Inclination: 90.6°
Azimuth: 102.9°
VS: 3,077.57'

6700

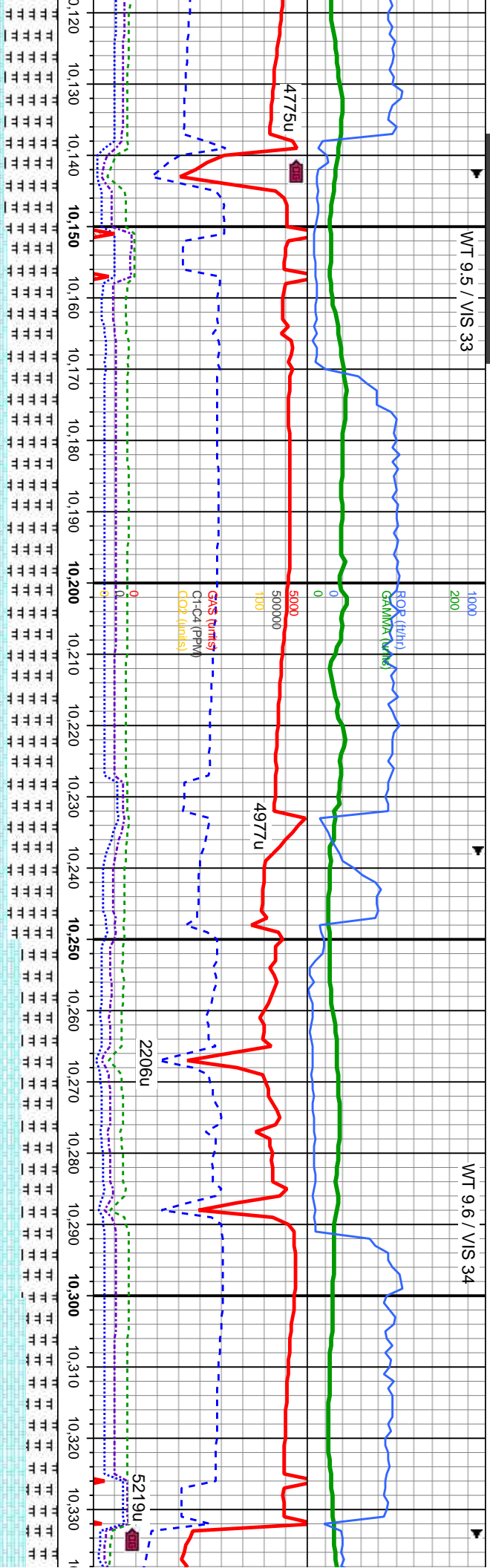






100% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, OCC BENT, TR FOS FRAG, TR PYR, TR CHK	100% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, OCC BENT, TR FOS FRAG, TR PYR, TR CHK	6500	95% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, SCAT BENT, TR FOS FRAG 5% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT	90% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, SCAT BENT, TR FOS FRAG 10% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT	75% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, SCAT BENT, TR FOS FRAG 25% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT
MD: 9,981'					
TVD: 6,607.29'					
Inclination: 87.6 °					
Azimuth: 95.7 °					
VS: 3,550.26'					
6700					

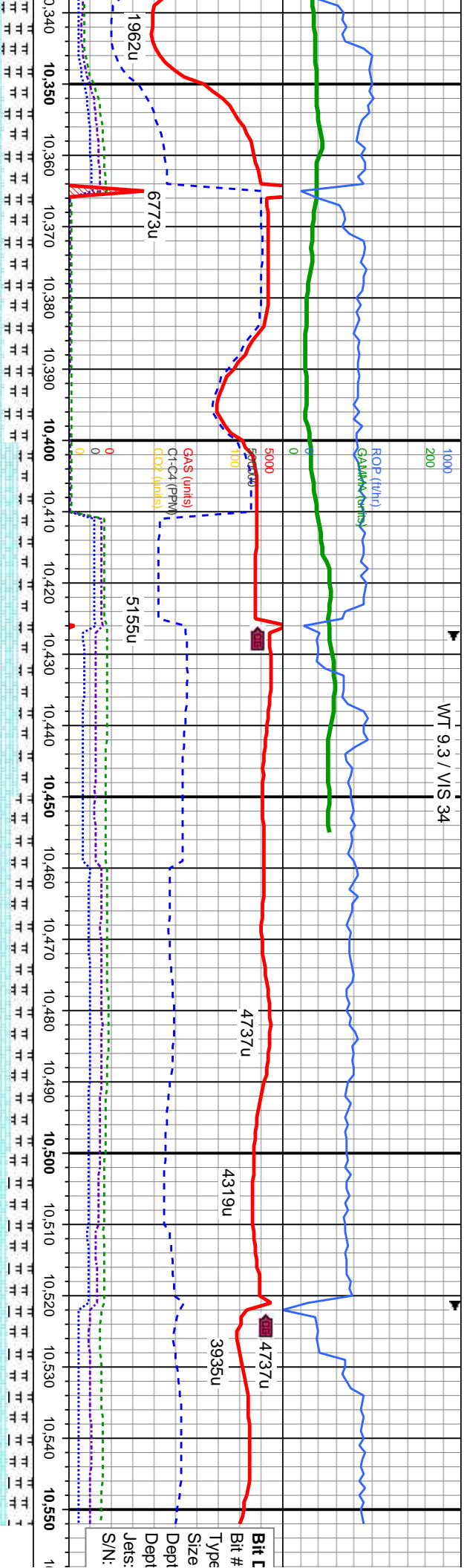




RLST: DK GY, SB PLTY, LAM, MED , BRIT, SCAT TR FOS FRAG HK: LT-SL DK GY, DT, BLKY-SB BLKY, SFT	70% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, SCAT BENT, TR FOS FRAG 30% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT	6500	70% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, SCAT BENT, TR FOS FRAG 30% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT	50% MRLST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, SCAT BENT, TR FOS FRAG 50% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT	56% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT 45% MRLST: DK GY, PLTY-SB PLTY, LAM, ME HD-HD, BRIT, SCAT BENT, TR FOS FRAG
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MD: 10,171 ' TVD: 6,611.77 ' Inclination: 89.2 ° Azimuth: 94.7 ° VS: 3,739.21 '	MD: 10,265 ' TVD: 6,612.34 ' Inclination: 90.1 ° Azimuth: 93.6 ° VS: 3,832.54 '
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D	60% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT 40% MR.LST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, OCC BENT, TR FOS FRAG	6500	80% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT 20% MR.LST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, OCC BENT, TR FOS FRAG	70% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT 30% MR.LST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, OCC BENT, TR FOS FRAG	65% CHK: LT-SL DK GY, SM MOT, BLKY-SB BLKY, SFT 35% MR.LST: DK GY, PLTY-SB PLTY, LAM, MED HD-HD, BRIT, OCC BENT, TR FOS FRAG	THANK COLU

TD: 10 @ 133					
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