



Scale: 5" / 100'  
Measured Depth Log

Well Name BUTTERBALL 30C-15HZ

Location SEC 10 T2N R67W

State CO

Country USA

API Number 051233787000

Region WATTENBERG

Spud Date 11/3/2013

Surface Coordinates FNL 50', FWL 310'

Bottom Hole Coordinates FSL 460', FWL 310'

County WELD

Rig Number XTREME 8

AFE # 2086573

Field WILDCAT

K.B. Elevation 5009'

Ground Elevation 4996'

Logged Interval 7020'

Formation CODELL

Type of Drilling Fluid FW LSND

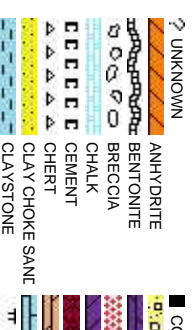
Company ANADARKO

Address 1099 18th, Suite

Name JOSH GARRET

Company ANADARKO

Address 1099 18th, Suite



Operator

1800 Denver, CO 80202

Geologist

1800 Denver, CO 80202

Rock Types

CONGLOMERATE	METAMORPHIC
DOLOMITE	NO SAMPLE
GRANITE	SALT
GYPSUM	SANDSTONE
IGNEOUS	SALT-PEPPER SAND
SIDERITE or LIMONITE	SHALE
LIMESTONE	SHALE COLORED
MARLSTONE	SHALE GRAY
	SHALY SANDSTONE
	SHALY SILTSTONE
	SILTY SHALE
	SILTSTONE
	TILL
	TUFF
	WELDED TUFF

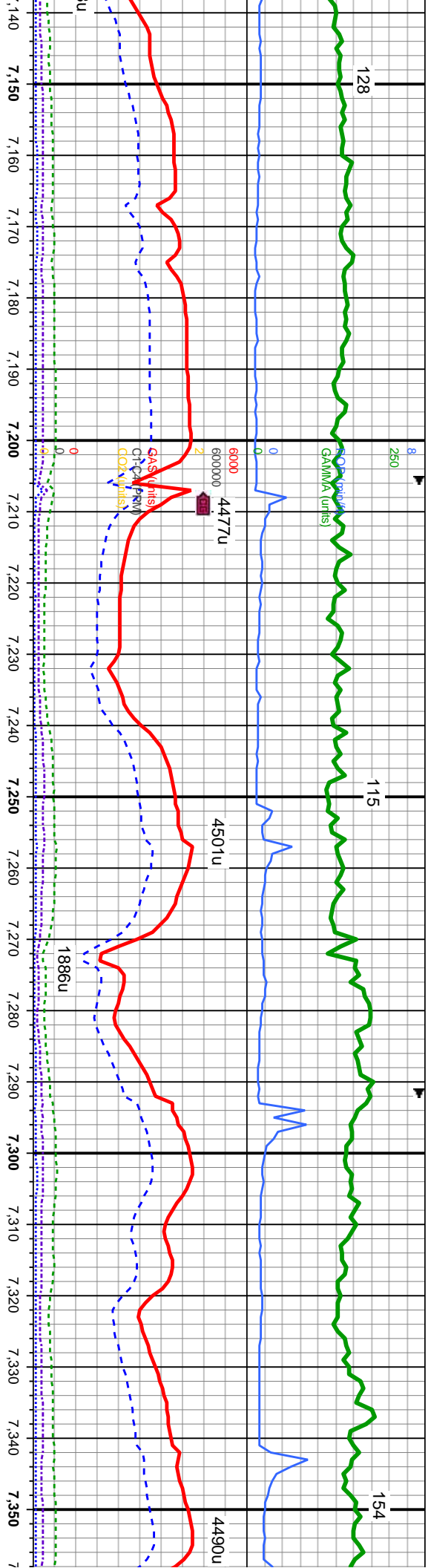
Accessories

<b>Fossils</b>	F FOSSIL	ARGILLACEOUS	GLAUCONITE	TUFFACEOUS
GASTROPOD	ARGILLITE GRAIN	GYPSIFEROUS		
ALGAE	OOLITE	B BENTONITE	HEAVY MINERAL	
AMPHIPORA	OSTRACOD	BITUMENOUS SUBSTANCE	INOCERAMUS	ANHYDRITE STRINGER
BELEMITE	PELECYPOD	BRECCIA FRAGMENTS	KAOLIN	BENTONITE STRINGER
BIOCLASTIC	PELLET	CALCAREOUS	MARLSTONE	COAL STRINGER
BRACHIOPOD	PISOLITE	CARBONACEOUS FLAKES	MINERAL CRYSTALS	DOLOMITE STRINGER
BRYOZOA	PLANT REMAINS	CHTDK	NODULES	GYPSUM STRINGER
CEPHALOPOD	PLANT SPORES	CHTLT	PHOSPHATE PELLET:	LIMESTONE STRINGER
CORAL	SCAPHOPOD	COAL - THIN BEDS	PYRITE	MARLSTONE (CALC) STRG
CRINOID	STROMATOPOROID	DOLOMITIC	SALT CAST	MARLSTONE (DOL) STRG
ECHINOID		FELDSPAR	SANDY	SANDSTONE STRINGER
FISH	<b>Minerals</b>	FERRUGINOUS PELLET	SILICEOUS	SHALE STRINGER
FORAMINIFERA	ANHYDRITIC	FERRUGINOUS	SILTY	SILTSTONE STRINGER

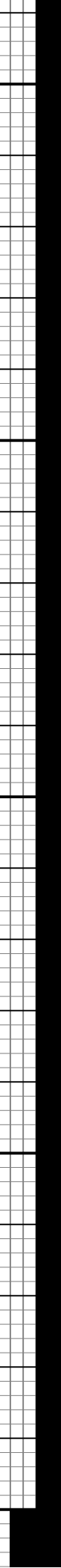
Other Symbols

<b>Oil Show</b>	MOLDIC	FAULT	WIRELINE TESTED - LEFT	E EARTHY
DEAD	ORGANIC	FORMATION TOP	WIRELINE TESTED - RT	FINELYXLN
EVEN	PINPOINT	GAS SHOW		GRAINSTONE
	VUGGY	MINDEPTH MN DEPTH		L LITHOGRAPHIC
QUESTIONABLE		NORMAL FAULT		MX MICROXLN
SPOTTED STAINING	Engineering	OIL SHOW		MS MUDSTONE
BIT	CONNECTION (LEFT)	OVERTURNED STRATA		PS PACKSTONE
E EARTHY	CONNECTION (RIGHT)	REVERSE FAULT		WS WACKSTONE
FENESTRAL	CONNECTION GAS	SIDEWALL CORE (LEFT)		
	CONNECTION GAS	SIDEWALL CORE (RIGHT)		
F FRACTURE	CORE - LOST	SLIDE		
X INTERCRYSTALLINE	CORE - RECOVERED	SURVEY		
INTEROOLITIC	DST INTERVAL	TRIP GAS		
			<b>Textures</b>	<b>Sorting</b>
			BOUNDSTONE	MODERATE
			CHALKY	POOR
			CRYPTOXLN	WELL



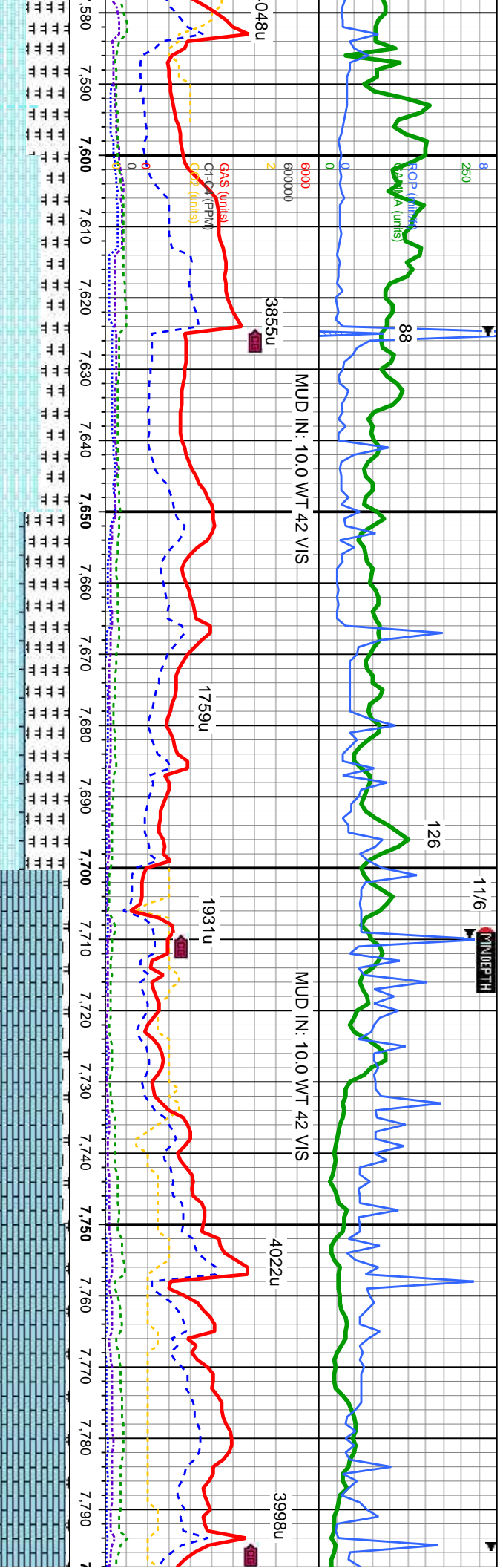


MD: 7,157'		MD: 7,200'		MD: 7,243'		MD: 7,285'		MD: 7,328'	
TVD: 7,107.96'		TVD: 7,149.58'		TVD: 7,190.56'		TVD: 7,229.86'		TVD: 7,269.17'	
Inclination: 12.99 °		Inclination: 16.05 °		Inclination: 19.16 °		Inclination: 22.15 °		Inclination: 25.64 °	
Azimuth: 170.98 °		Azimuth: 174.17 °		Azimuth: 174.27 °		Azimuth: 173.66 °		Azimuth: 173.71 °	
VS: 62.77'		VS: 73.45'		VS: 86.38'		VS: 101.1'		VS: 118.39'	
SLTY SH: dk-med gy-gy brn, sb ply-sb blk, med sft-frm, mod fri-sl brt, v sl calc, v slty; slow stmg milky bl cut, gn ring		SLTY SH: dk-med gy-gy brn, sb ply-sb blk, med sft-frm, mod fri-sl brt, v sl calc, v slty; slow stmg milky bl cut, gn ring		SLTY SH: dk-med gy-gy brn, sb ply-sb blk, med sft-frm, mod fri-sl brt, v sl calc, v slty; slow stmg milky bl cut, gn ring		SLTY SH: dk-med gy-gy brn, sb ply-sb blk, med sft-frm, mod fri-sl brt, v sl calc, v slty; slow stmg milky bl cut, gn ring		SLTY SH: dk-med gy-gy brn, sb ply-sb blk, med sft-frm, mod fri-sl brt, v sl calc, v slty; slow stmg milky bl cut, gn ring	









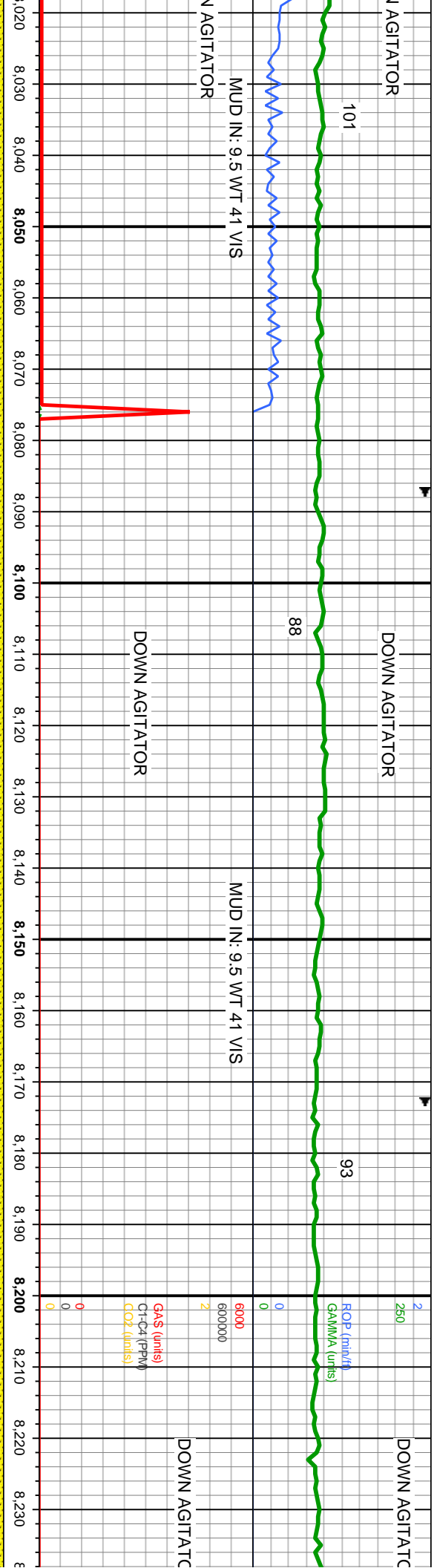
7,585'	MD: 7.585'	MD: 7.627'	MD: 7.711'	MD: 7.753'	MD: 7.79'
D: 7,476.66'	TVD: 7,502.15'	TVD: 7,524.08'	TVD: 7,542.08'	TVD: 7,555.79'	TVD: 7,568.79'
Inclination: 49.27°	Inclination: 55.44°	Inclination: 61.57°	Inclination: 67.67°	Inclination: 74.19°	Inclination: 74.19°
mut: 167.78°	Azimuth: 167.09°	Azimuth: 166.97°	Azimuth: 169.81°	Azimuth: 172.07°	Azimuth: 172.07°
265.35'	VS: 297.9'	VS: 332.37'	VS: 369.83'	VS: 408.97'	VS: 451.4'

ky, med sft-firm, gy, occ lt gy, sb med sft-firm, calc, sily tex; L.S: wh- lt tan, offwht-crm, v sft-sft, sb ply-sb blk, calc; tr pyr; med stmg bl cut, yel-brn ring	CHK:lt-med gy, occ dk gy, sb blk, sft, v calc, reth-wxy tex, MRLST: med-dk gy, sb blk, med sft-firm, calc, sily tex; scat pyr, scat bent; med stmg bl cut, yel-brn ring	CHK:lt-med gy, occ dk gy, sb blk, sft, v calc, reth-wxy tex, MRLST: med-dk gy, sb blk, med sft-firm, calc, sily tex; L.S: wh- lt tan, offwht-crm, v sft-sft, sb ply-sb blk, calc; scat pyr, scat bent; med stmg bl cut, yel-brn ring	MRLST: med-dk gy, sb blk, med sft-firm, calc, sily tex; L.S: wh- lt tan, offwht-crm, v sft-sft, sb ply-sb blk, calc; tr pyr; med stmg bl cut, yel-brn ring	MRLST: med-dk gy, sb blk, med sft-firm, calc, sily tex; L.S: wh- lt tan, offwht-crm, v sft-sft, sb ply-sb blk, calc; tr pyr; med stmg bl cut, yel-brn ring
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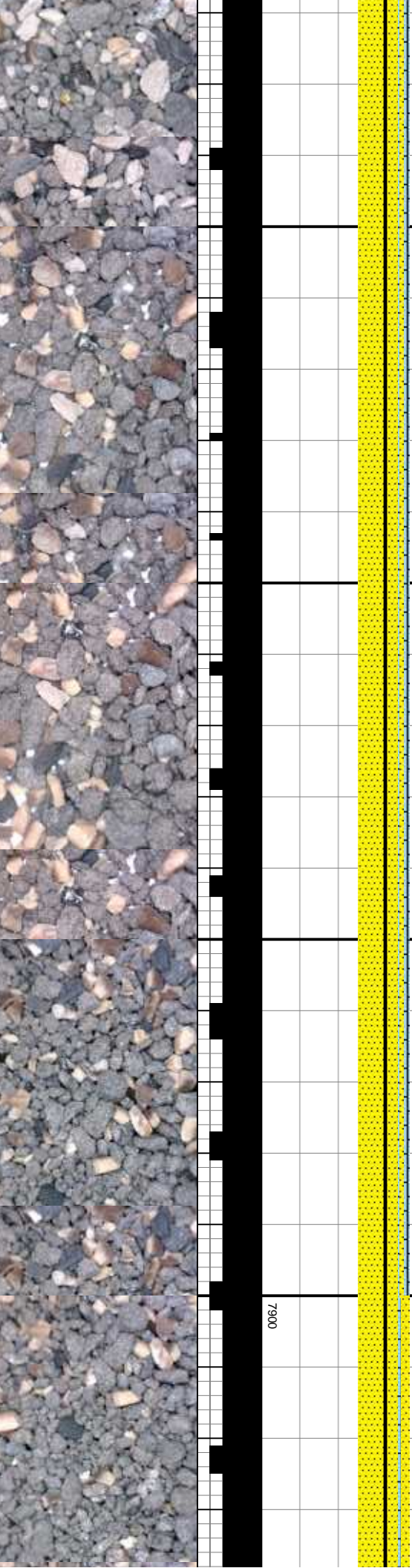




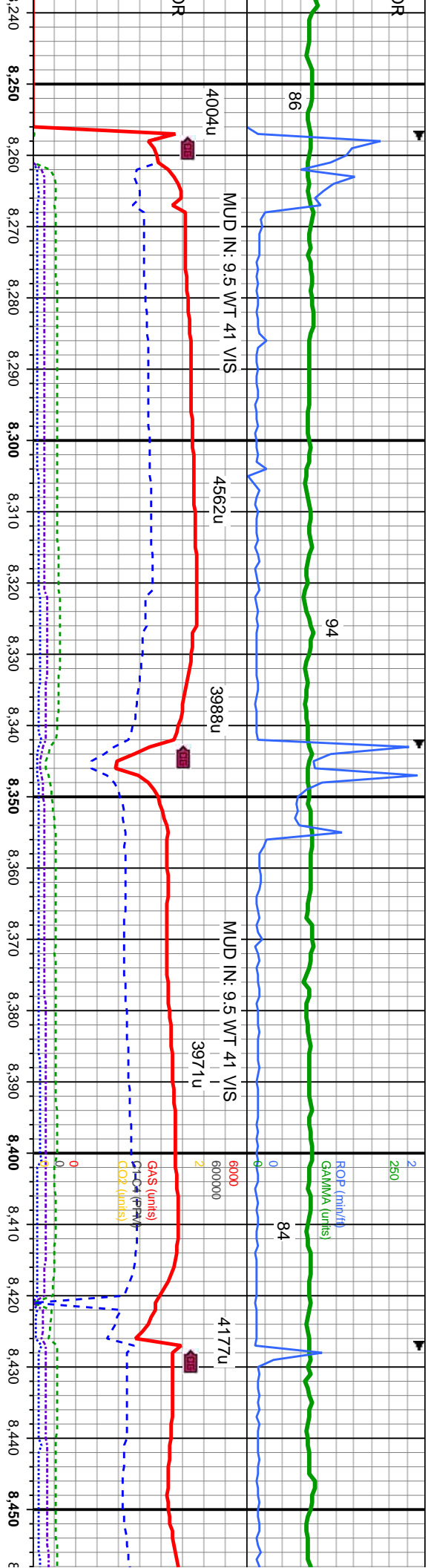




AGITATOR		DOWN AGITATOR		DOWN AGITATOR	
101		88		93	
MUD IN: 9.5 WT 41 VIS		MUD IN: 9.5 WT 41 VIS		MUD IN: 9.5 WT 41 VIS	
N AGITATOR		DOWN AGITATOR		DOWN AGITATOR	
MD: 8,033'		MD: 8,118'		MD: 8,118'	
TVD: 7,579.73'		TVD: 7,579.51'		TVD: 7,579.51'	
Inclination: 89.87 °		Inclination: 90.43 °		Inclination: 90.43 °	
Azimuth: 176.47 °		Azimuth: 177.84 °		Azimuth: 177.84 °	
VS: 686.11'		VS: 770.97'		VS: 770.97'	
SS: lt - med gy - blk, occ clr - tan, hd, wrd, med gr, non - sl calc; LS: wh-ltgy, offwht-crm, v sft-sft, sb pty-sb blk, calc; med stmg bl cut, yel-brn ring		SS: lt - med gy - blk, occ clr - tan, hd, wrd, med gr, non - sl calc; LS: wh-ltgy, offwht-crm, v sft-sft, sb pty-sb blk, calc; med stmg bl cut, yel-brn ring		SS: lt - med gy - blk, occ clr - tan, hd, wrd, med gr, non - sl calc; LS: wh-ltgy, offwht-crm, v sft-sft, sb pty-sb blk, calc; med stmg bl cut, yel-brn ring	
TVD (ft)		TVD (ft)		TVD (ft)	







l - tan, hd, wrd, med gr, non - sl calc; LS: wh-llgy, y; calc; med sting bl cut, yel-brn ring

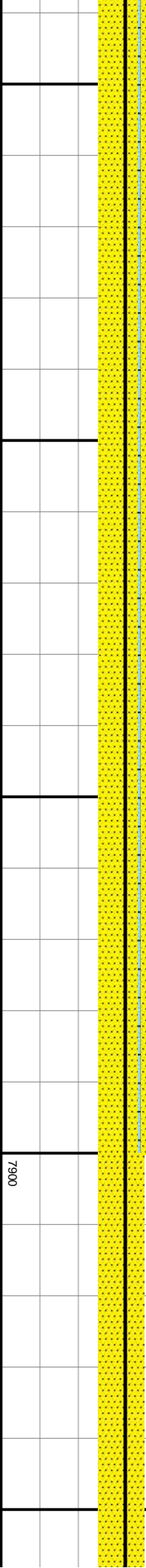
SS: lt - med gy, occ clr - tmsl - tan, hd, wrd, med gr, non - sl calc; LS: wh-llgy, offwht-crm, v sft-sft, sb pily-sb blk, calc; med sting bl cut, yel-brn ring

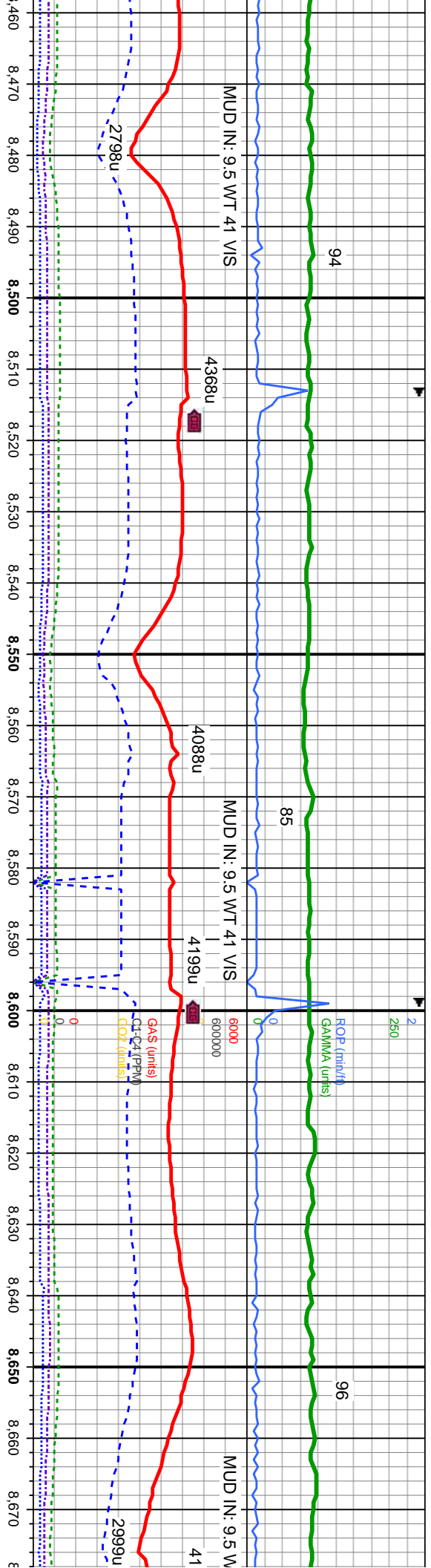
SS: lt - med gy - blk, occ clr - tmsl - tan, hd, wrd, med

MD: 8,288 '  
TVD: 7,577.88 '  
Inclination: 90.67 °  
Azimuth: 180.79 °  
VS: 940.91 '

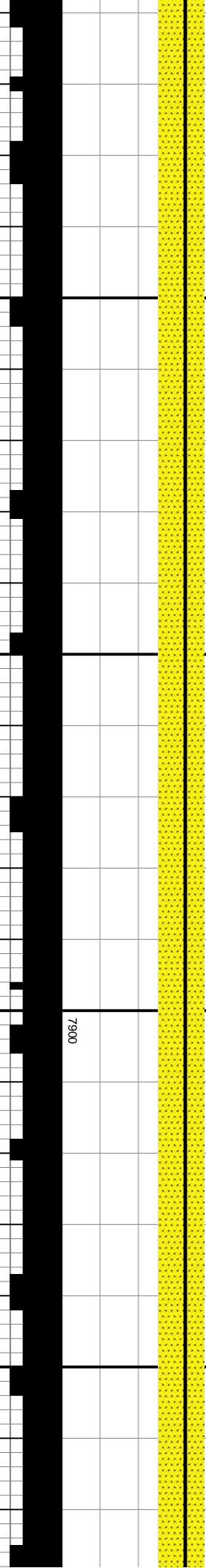
TVD (ft)

MD: 8,45  
TVD: 7,5  
Inclination:  
Azimuth:  
VS: 1,11'

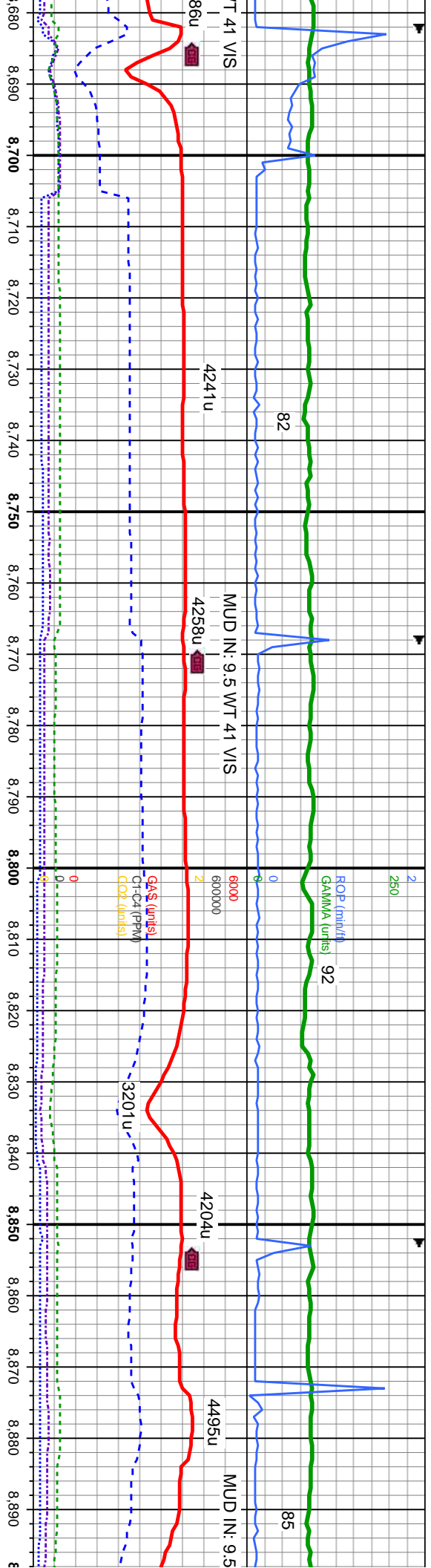




SS: lt - med gy - blk, occ clr - trnsl - tan, hd, wrd, med gr, non - sl calc; med sting bl cut, yel-brn ring	SS: lt - med gy - blk, occ clr - trnsl - tan, hd, wrd, med gr, non - sl calc; med sting bl cut, yel-brn ring	SS: lt - med gy - blk, occ clr - trnsl - tan, hd, wrd, med gr, non - sl calc; med sting bl cut, yel-brn ring
77.85'	77.85'	77.85'
89.35°	89.35°	89.35°
180.99°	180.99°	180.99°
1.9'	1.9'	1.9'
MD: 8,629'	MD: 8,629'	MD: 8,629'
TVD: 7,579.18'	TVD: 7,579.18'	TVD: 7,579.18'
Inclination: 89.75°	Inclination: 89.75°	Inclination: 89.75°
Azimuth: 180.76°	Azimuth: 180.76°	Azimuth: 180.76°
VS: 1,281.89'	VS: 1,281.89'	VS: 1,281.89'





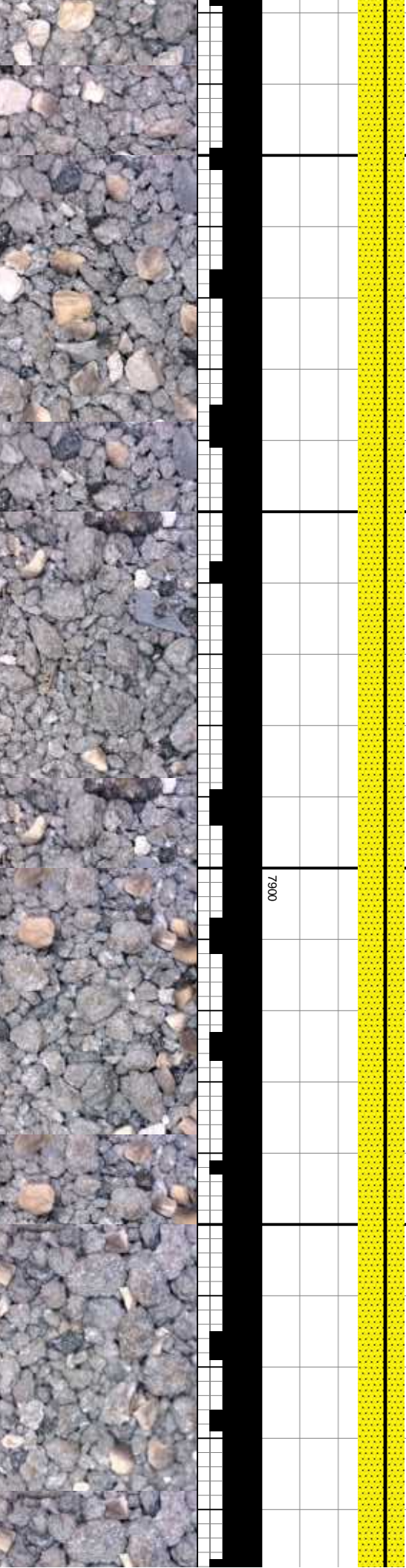


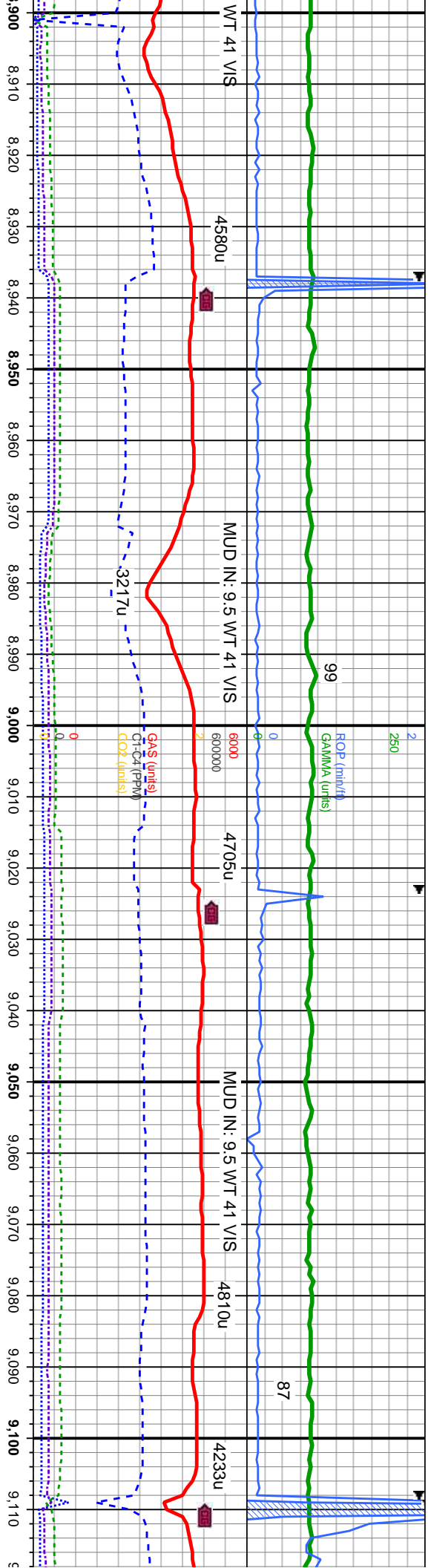
SS: lt - med gy - blk, occ clr - trnsI - tan, hd, wrd, med gr, non - sl calc; tr sh; med  
stmg bl cut, yel-brn ring

MD: 8,714 '  
TVD: 7,579.17 '  
Inclination: 90.27 °  
Azimuth: 182.21 °  
VS: 1,366.87 '

SS: lt - med gy - blk, occ clr - trnsI - tan, hd, wrd, med gr, non - sl calc; tr sh; med  
stmg bl cut, yel-brn ring

MD: 8,884 '  
TVD: 7,578.96 '  
Inclination: 89.87 °  
Azimuth: 180.54 °  
VS: 1,536.84 '





SS: lt - med gy - blk, occ cl- - trns- tan, hd, wrd, med gr, non - sl calc; tr sh; med sting bl cut, yel-bm ring

SS: lt - med gy - blk, occ cl- - trns- tan, hd, wrd, med gr, non - sl calc; tr sh; med sting bl cut, yel-bm ring

SS: lt - med gy - blk, occ cl- - trns- tan, hd, wrd, med gr, non - sl calc; tr sh; med sting bl cut, yel-bm ring

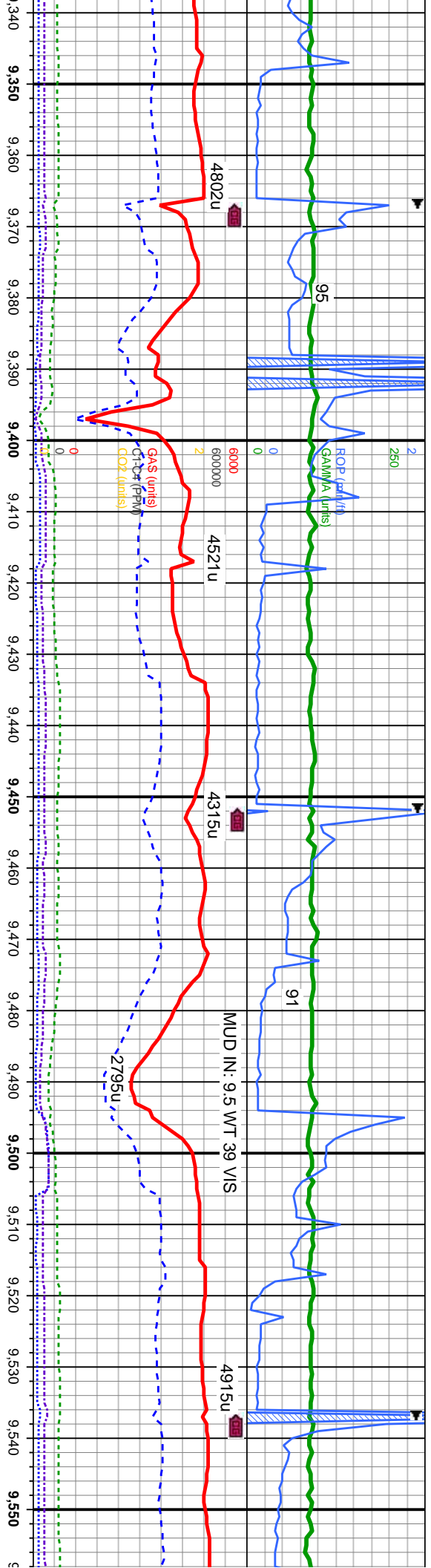
MD: 9,055 '  
TVD: 7,580.45 '  
Inclination: 89.13 °  
Azimuth: 178.82 °  
VS: 1,707.81 '

7900









nsi - tan, hd, wrd, med gr, non - sl calc, occ uncons  
bn ring

MD: 9,396'  
TVD: 7,585.82'  
Inclination: 91.26 °  
Azimuth: 179.39 ° (tt)  
VS: 2,048.64'

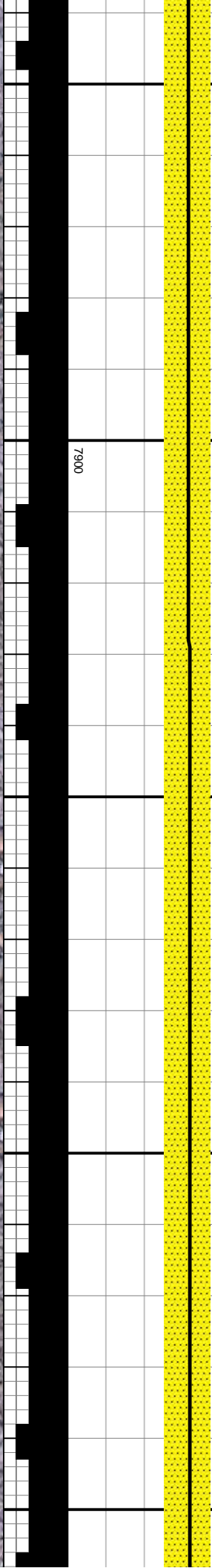
SS: lt - med gy - blk, occ clr - trnsi - tan, hd, wrd, med gr, non - sl calc, tr  
uncons qtz; tr sh; med sting bl cut, yel-brn ring

MD: 9,481'  
TVD: 7,584.16'  
Inclination: 90.98 °  
Azimuth: 180.2 °  
VS: 2,133.61'

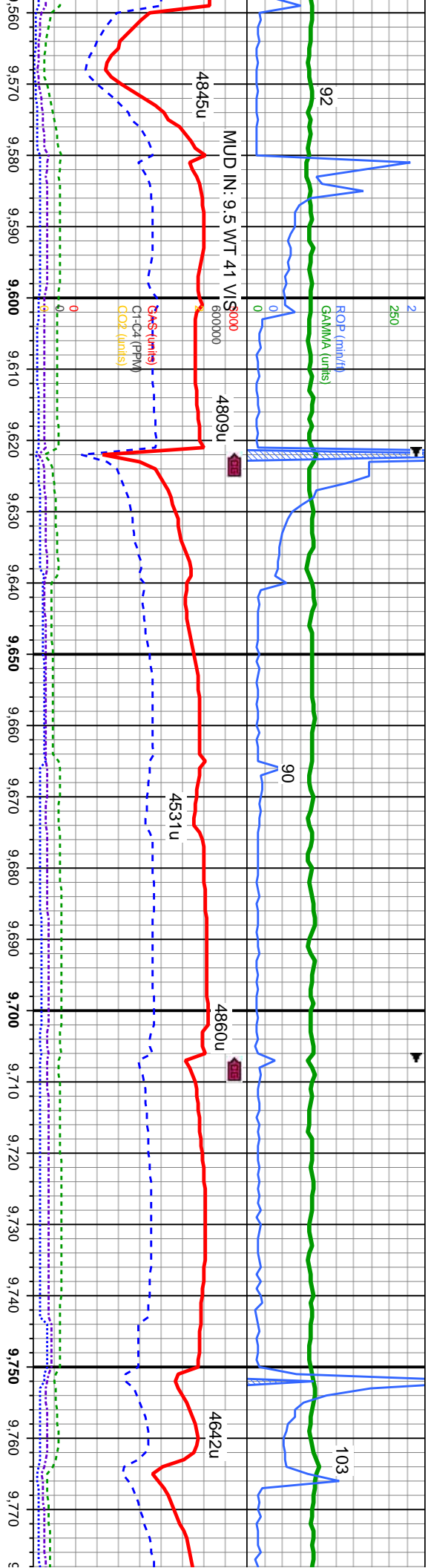
SS: lt - med gy - blk, occ clr - trnsi - tan, hd, wrd  
sting bl cut, yel-brn ring

ML  
TV  
Inc  
Az  
VS

7900







med gr, non - sl calc; tr sh; med

SS: lt - med gy - blk, occ clr - trnsl - tan, hd, wrd, med gr, non - sl calc; tr sh; med string bl cut, yel-brn ring

SS: lt - med gy - blk, occ clr - trnsl - tan, hd, wrd, med gr, non uncons qtz tr sh; med string bl cut, yel-brn ring

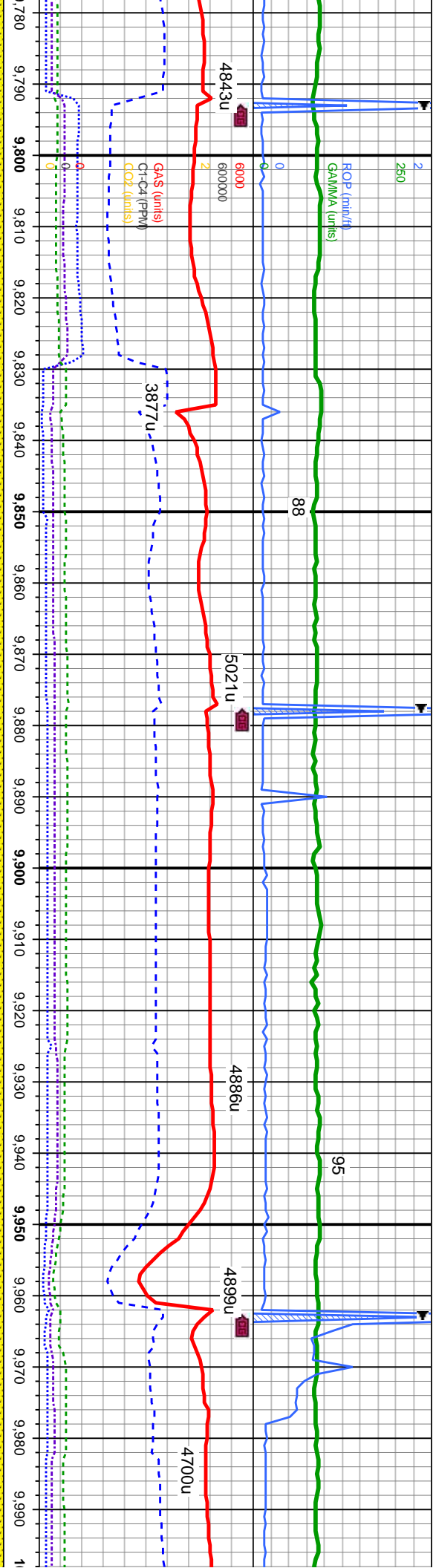
D: 9.566  
D: 7.582.9  
Inclination: 90.71 °  
Azimuth: 183.64 °

MD: 9.651  
TVD: 7.583.36  
Inclination: 88.67 °  
Azimuth: 185 °  
VS: 2.303.35'

MD: 9.77  
TVD: 7.5  
Inclination: 88.67 °  
Azimuth: 185 °  
VS: 2.436

7900





- sl calc; tr

6900 SS: lt - med gy - blk, occ clr - trnsl - tan, hd, wrd, med gr, non - sl calc; tr uncons  
qtz; tr sh; med string bl cut, yel-brn ring

SS: lt - med gy - blk, occ clr - trnsl - tan, hd, wrd, med gr, non - sl calc; tr uncons qtz; tr  
sh; med string bl cut, yel-brn ring

MD: 9.822  
TVD: 7,585.75  
Inclination: 89.72 °  
Azimuth: 184.72 °  
VS: 2,473.82'

TVD (ft)  
VS: 2,473.82'

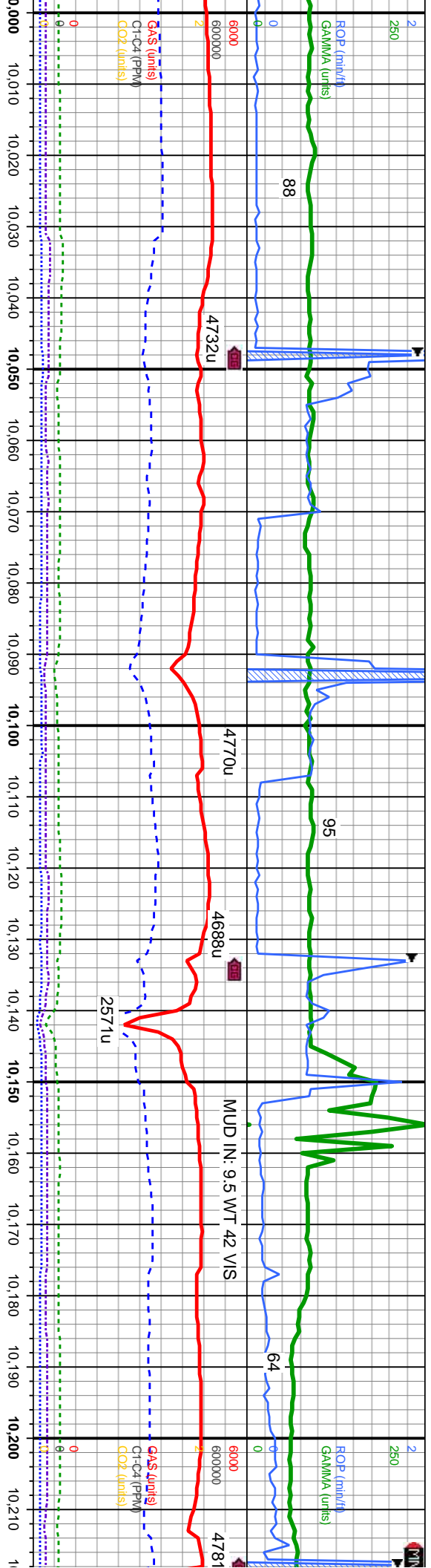
MD: 9.907  
TVD: 7,586.6  
Inclination: 89.13 °  
Azimuth: 184.12 °  
VS: 2,558.6'

MD: 9.992  
TVD: 7,588.53  
Inclination: 88.2 °  
Azimuth: 182.74 °  
VS: 2,643.46'

7900





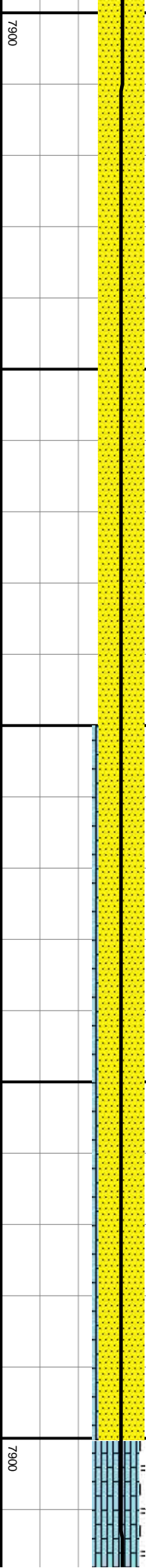


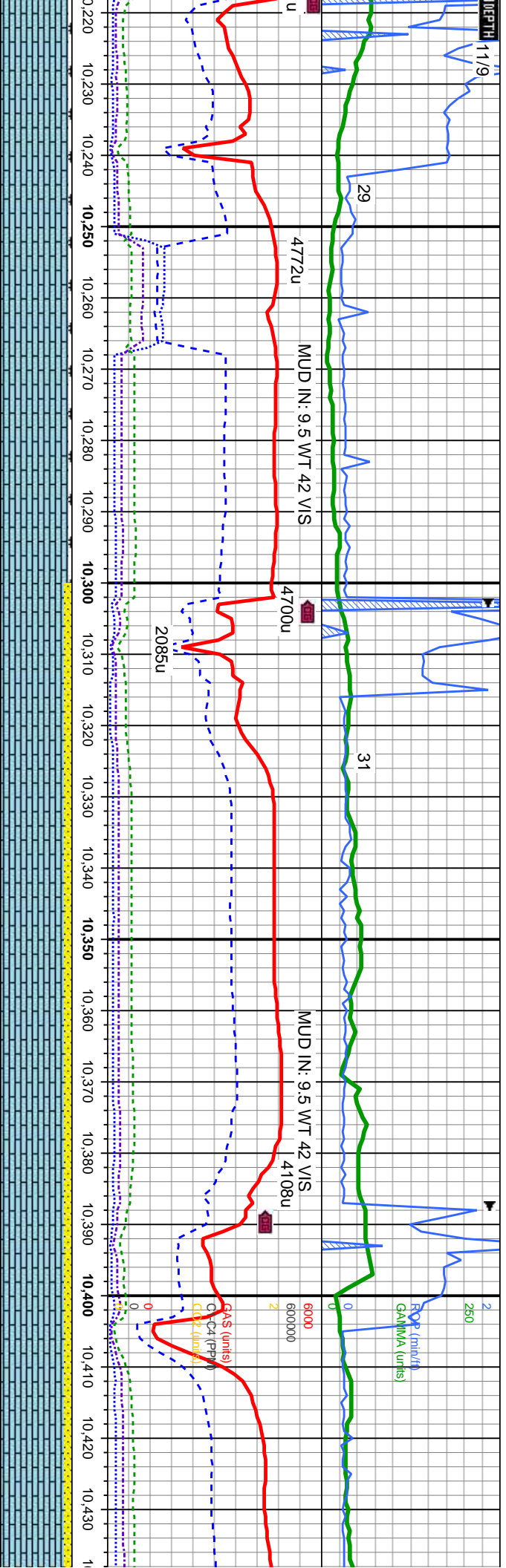
6900 SS: lt - med gy - blk, occ clr - trns l - tan, hd, wrd, med gr, non - sl calc; tr unconcs qtz, tr sh; med sting bl cut, yel-brn ring

6900 LS: wh- lt t med sft-fm

MD: 10,078' TVD: 7,590.2' Inclination: 89.5° Azimuth: 183.01° VS: 2,729.36'

MD: 10,163' TVD: 7,590.23' Inclination: 90.46° Azimuth: 182.9° VS: 2,814.27'





aan, offwht-crm, v sft-sft, sb ply-sb blk; MRLST: med-dk gy, sb blk, n, calc, sily tex; v calc, tr SS; slow-med strng cut, brn-yl ring

LS: wh-lyg, ofwht-crm, v sft-sft, sb ply-sb blyk, calc; SS: lt - med gy - blk, occ clr - trnsf - tan, hd, wrd, med gr, non - sl calc; some mrlst; slow-med strng cut, brn-yel ring

LS: wh-Itgy, ofwht-crm, v sft-sft, -tan, hd, wrd, med gr, non - sl cā

MD: 10,248  
TVD: 7,587.95  
Inclination: 92.61 °  
Azimuth: 183.29 °  
VS: 2,899.14 '

TV D: 7,587.95

Inclination: 92.61 °

Azimuth: 183.29 °

VS: 2,899.14 '

MD: 10,333  
TVD: 7,584.61  
Inclination: 91.9 °  
Azimuth: 183.12 °  
VS: 2,983.97'

TV D: 7,584.61

Inclination: 91.9 °

Azimuth: 183.12 °

VS: 2,983.97'

MD: 10,418  
TVD: 7,582.22  
Inclination: 91.32 °  
TVD (ft)/Azimuth: 183.73 °  
VS: 3,068.81 '

TVD: 7,582.22

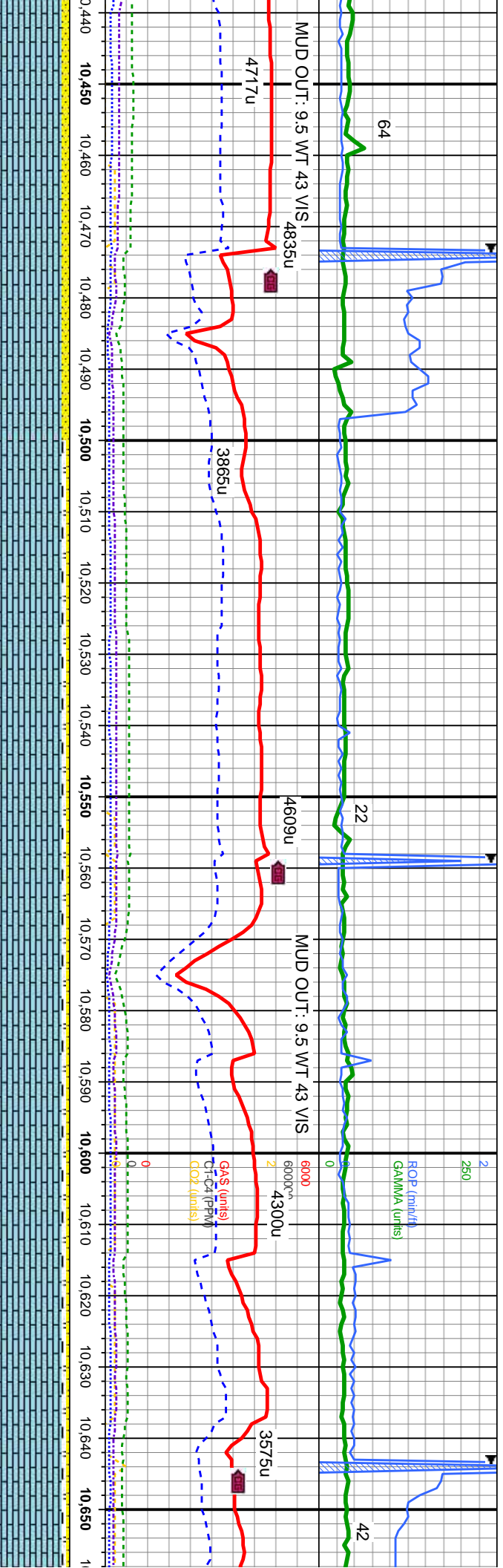
Inclination: 91.32 °

TVD (ft) Azimuth: 183.73 °

VS: 3,068.81 '

7900





sb pily-sb blk, calc; SS: lt - med gy - blk, occ clr - trmsl  
alc; some mlst; slow-med string cut, brn-yel ring

LS: wh-ltgy, offwht-crm, v sft-sft, sb pily-sb blk, calc; SS: lt - med gy - blk, occ clr -  
trmsl - tan, hd, wrd, med gr, non - sl calc; MRLST: med-dk gy, sb blk, med  
sft-frm, calc, silty tex; slow-med string cut, brn-yel ring

LS: wh-ltgy, offwht-crm, v sft-sft, sb pily-sb blk,  
clr - trmsl - tan, hd, wrd, med gr, non - sl calc; MRLST: med sft-frm, calc, silty tex; slow-med string cut, t

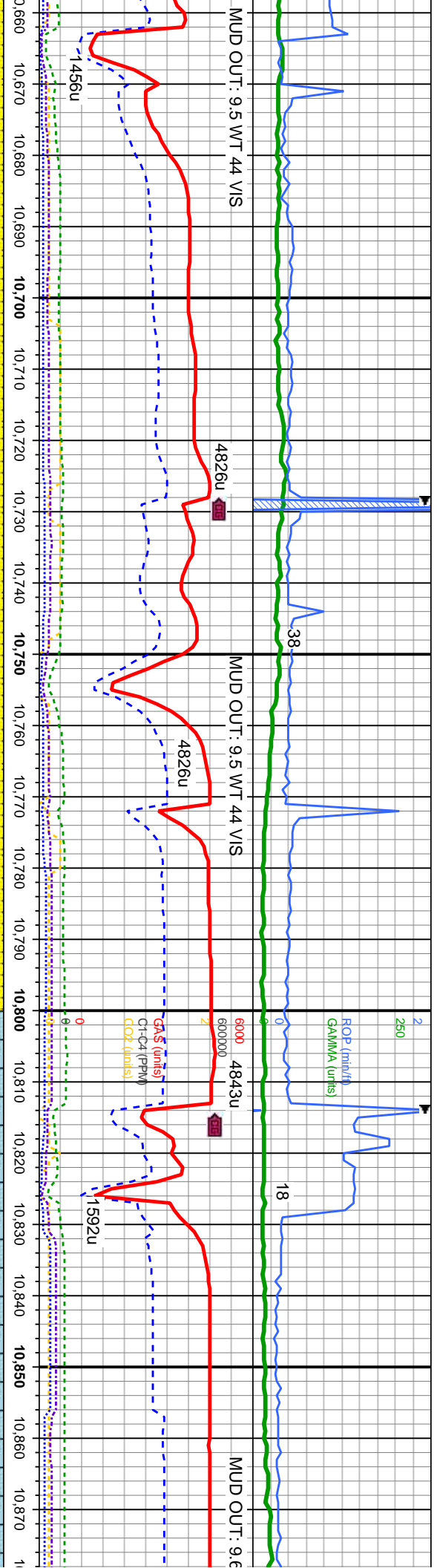
MD: 10,504'  
TVD: 7,581.58'  
Inclination: 89.53°  
Azimuth: 183.24°  
VS: 3,154.68'

MD: 10,589'  
TVD: 7,582.35'  
Inclination: 89.44°  
Azimuth: 181.69°  
VS: 3,239.62'

TVD (ft)

7900





calc; SS: lt - med gy - blk, occ  
RST: med-dk gy, sb blk, yel ring

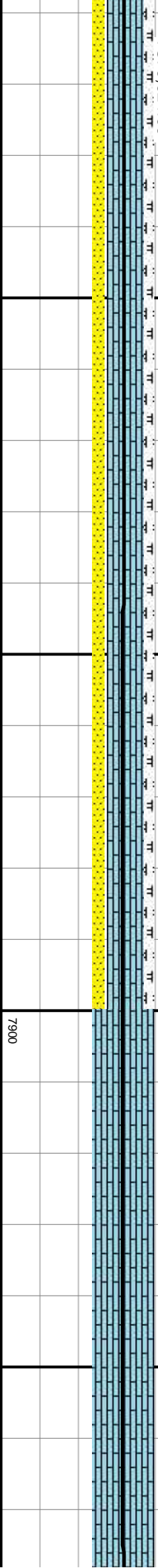
LS: wh-ltgy, offwh-crm, v sft-sft, sb pty-sb blk, calc; SS: lt - med gy - blk, occ cl  
- trns - tan, hd, wrd, med gr, non - sl calc; MRLST: med-dk gy, sb blk, yel ring

LS: wh-ltgy, offwh-crm, v sft-sft, sb pty-sb blk, calc; tr mrlst, tr ss; slow-l  
brn-yel ring

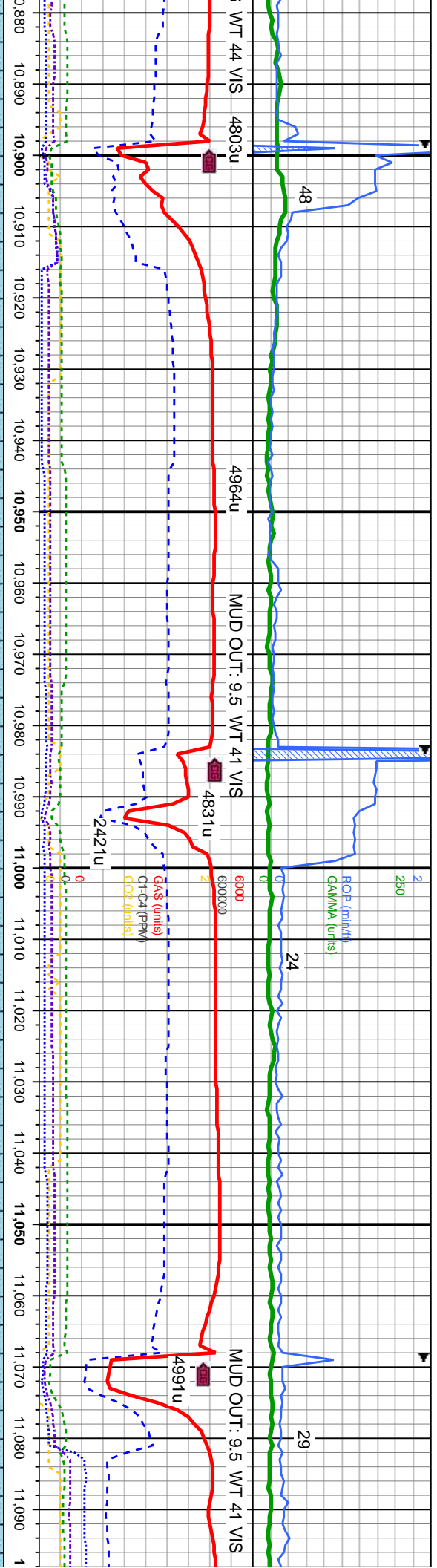
MD: 10,674  
TVD: 7,583.7  
Inclination: 88.74 °  
Azimuth: 182.12 °  
VS: 3,324.58'

MD: 10,759  
TVD: 7,585.51  
Inclination: 88.82 °  
Azimuth: 180.42 °  
VS: 3,409.55'

MD: 10,844  
TVD: 7,585.68  
Inclination: 90.95 °  
Azimuth: 180.47 °  
VS: 3,494.54'







med string cut, cut, brn-yel ring

LS: wh-ltgy, ofwht-crm, v sft-sft, sb ply-sb blkly, calc; tr mrlst, tr ss; slow-med strmg

MD: 10,930'  
TVD: 7,584.33'  
Inclination: 90.85°  
Azimuth: 180.97°  
VS: 3,580.53'

6900

LS: wh-ltgy, ofwht-crm, v sft-sft, sb ply-sb blkly, calc; tr mrlst, tr ss, tr sec cal, tr fos;

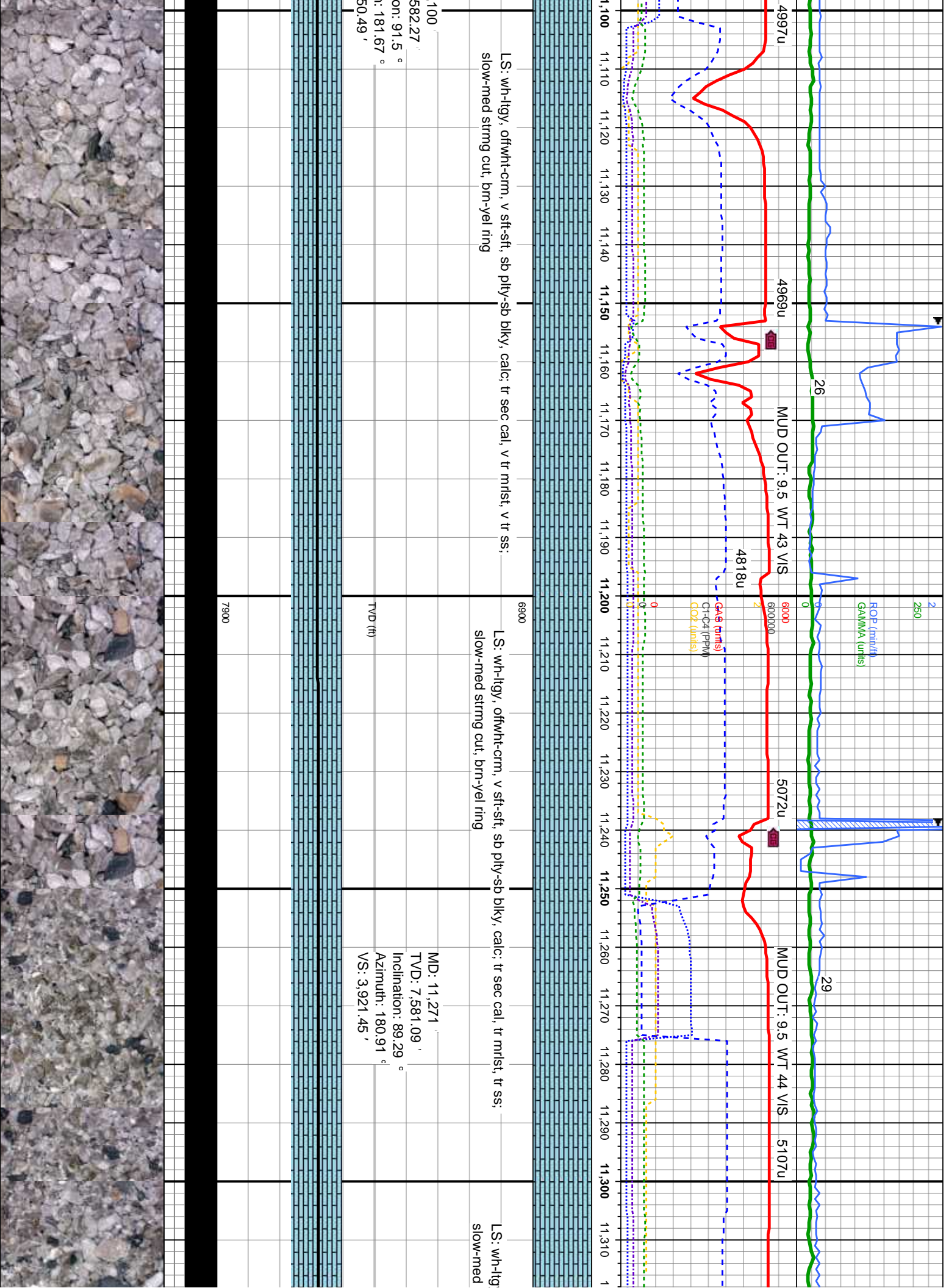
slow-med strmg cut, brn-yel ring

MD: 11,015'  
TVD: 7,583.54'  
Inclination: 90.21°  
Azimuth: 181.18°  
VS: 3,665.52'

MD: 11,015'  
TVD: 7,583.54'  
Inclination: 90.21°  
Azimuth: 181.18°  
VS: 3,665.52'

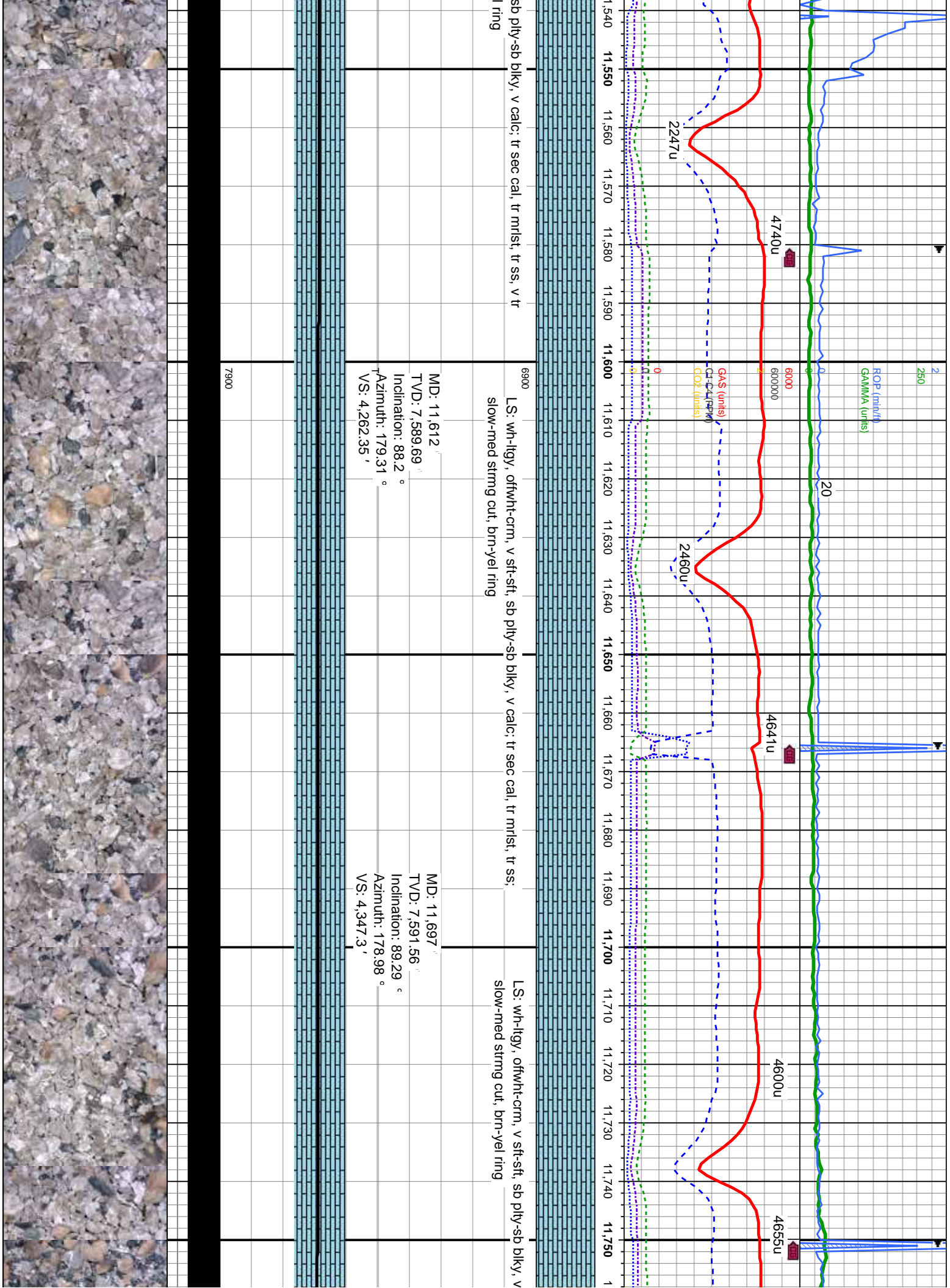
7900



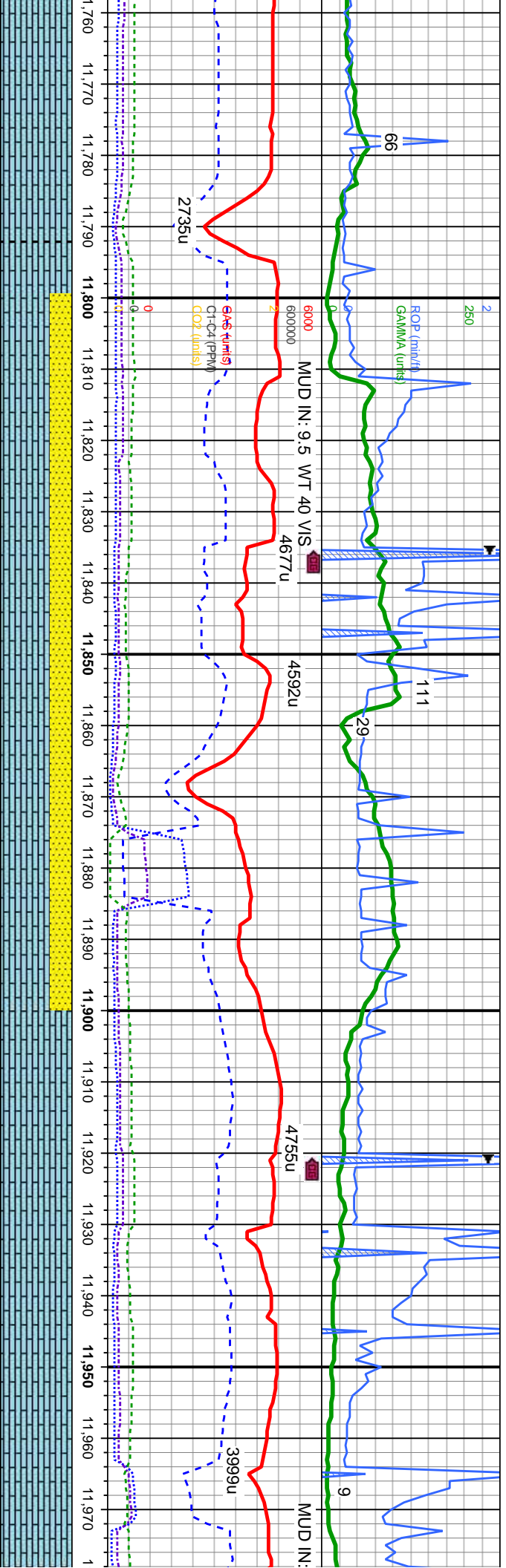












calc; tr sec cal, tr mlst, tr ss;

MD: 11,782'  
TVD: 7,593.14'  
Inclination: 88.58°  
Azimuth: 178.81°  
VS: 4,432.24'

TVD (ft)

6900 L.S: wh-llgy, offwht-orm, v sft-sft, sb pily-sb blk, calc; SS: lt - med gy - blk, occ clr - trsl - tan, hd, wrd, med gr, non - sl calc; some mlst; slow-med strng cut, brn-yel ring

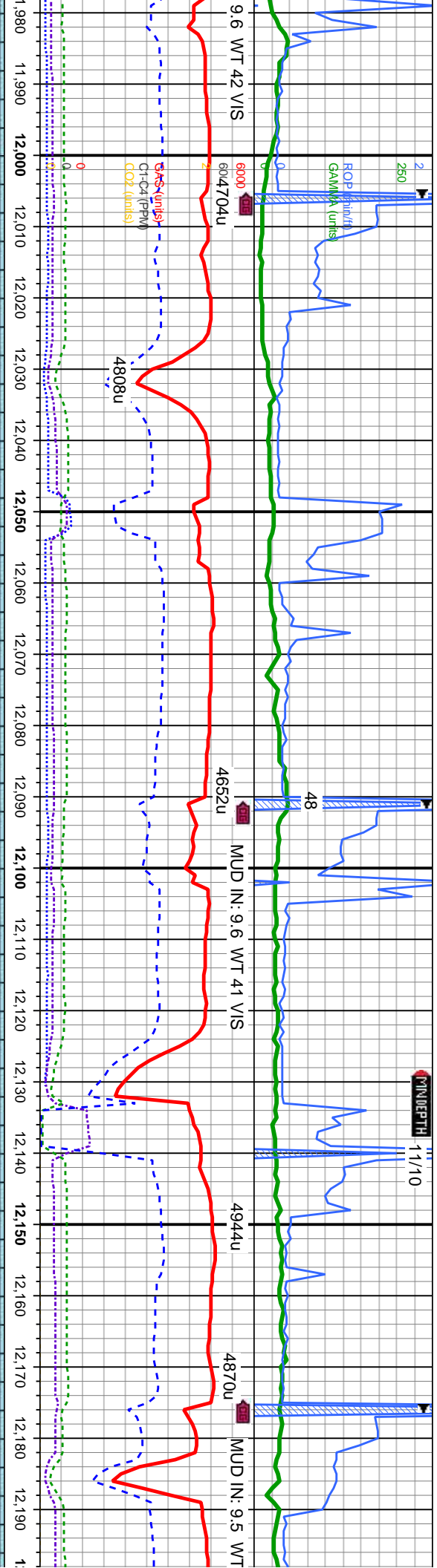
MD: 11,867'  
TVD: 7,595.3'  
Inclination: 88.5°  
Azimuth: 179.05°  
VS: 4,517.18'

L.S: wh-llgy, offwht-orm, v sft-sft, sb pily-sb blk, v calc; tr sec cal, tr mlst

MD: 11,952'  
TVD: 7,596.9'  
Inclination: 89.35°  
Azimuth: 179.24°  
VS: 4,602.15'

7900





t, tr ss;

6900 LS: wh-lgy, ofwht-frm, v sft-sft, sb pily-sb blkly, v calc; tr sec cal, tr mlst, tr ss;  
slow-med string cut, brn-yl ring

LS: wh-lgy, ofwht-frm, v sft-sft, sb pily-sb blkly, v calc; tr sec cal, tr mlst, tr ss;  
slow-med string cut, brn-yl ring

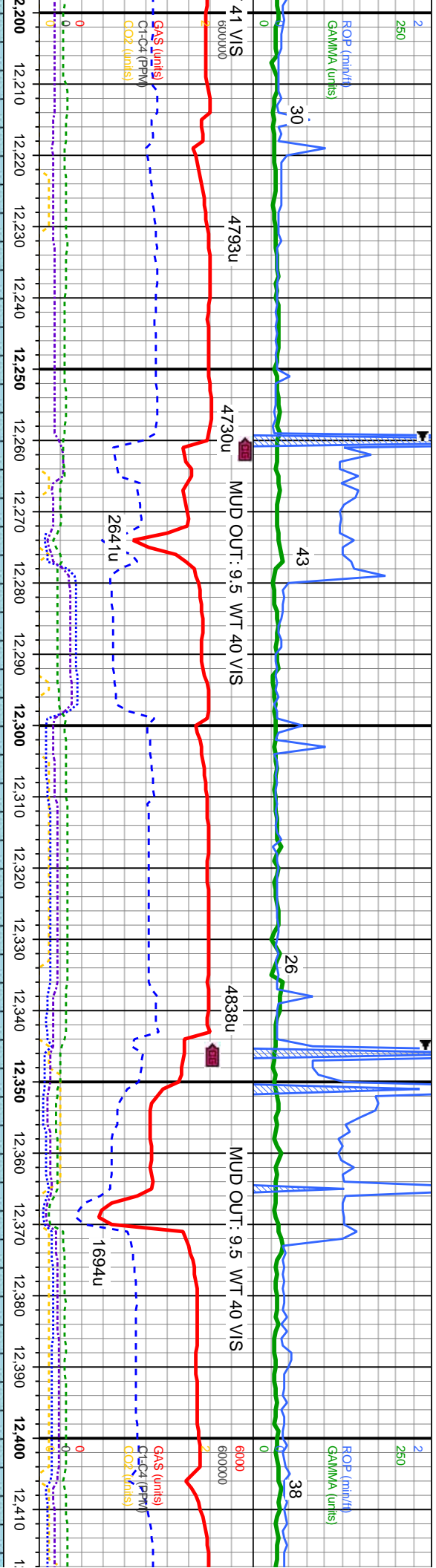
MD: 12,038  
TVD: 7,597.5  
Inclination: 89.84  
Azimuth: 180.95  
VS: 4,688.14

MD: 12,123  
TVD: 7,595.98  
Inclination: 92.21  
Azimuth: 181.53  
VS: 4,773.11

7900







LS: wh-lgy, offwht-crm, v sft-sft, sb ply-sb blk, v calc; some mlst, tr sec cal, tr ss;  
slow-med strmg cut, brn-yl ring

MD: 12,208  
VD: 7,593.34  
Inclination: 91.36 °  
Azimuth: 182.75 °  
S: 4,858.03'

LS: wh-lgy, offwht-crm, v sft-sft, sb ply-sb blk, v calc; some mlst, some ss;  
slow-med strmg cut, brn-yl ring

MD: 12,293  
TVD: 7,591.33  
Inclination: 91.35 °  
Azimuth: 182.99 °  
VS: 4,942.95'

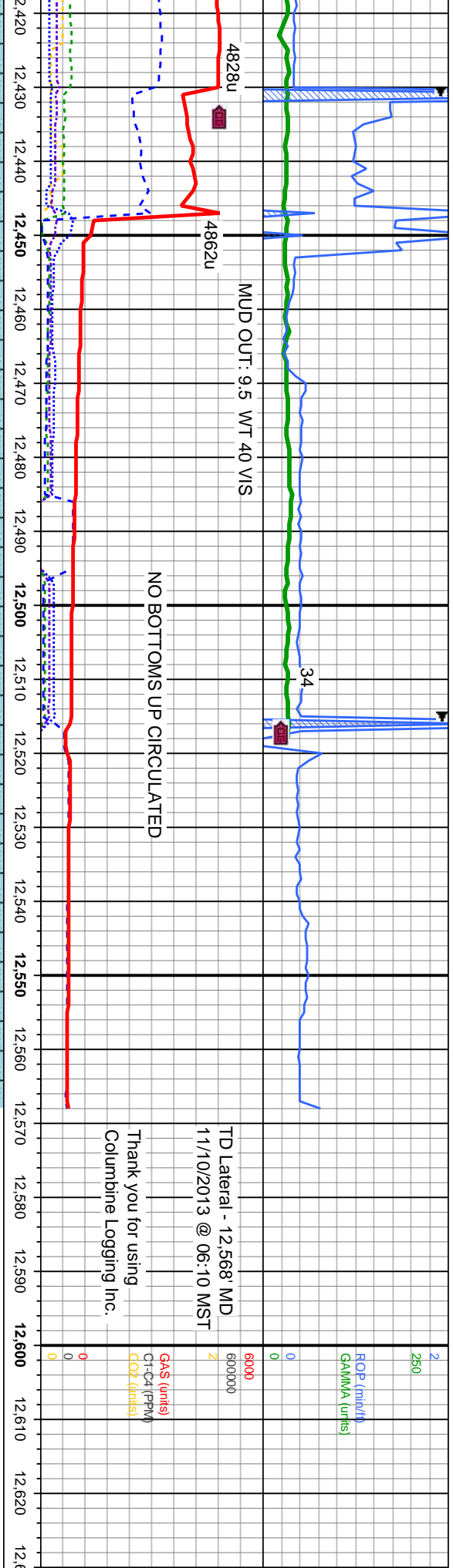
LS: wh-lgy  
slow-med

MD: 12,378  
TVD: 7,590.17  
Inclination: 90.21 °  
Azimuth: 182.09 °  
VS: 5,027.88'

7900

7900





Y, offwht-crm, v sft-sft, sb pty-sb blk, v calc; some mlst, some ss;  
strng cut, brn-yel ring

LS: wh-lgy, offwht-crm, v sft-sft, sb pty-sb blk, v calc;  
some mlst, some ss; slow-med strng cut, brn-yel ring

MD: 12,511 '  
TVD: 7,589.85 '  
Inclination: 90.06 °  
Azimuth: 181.19 °  
VS: 5,160.84 '

MD: 12,568 '  
TVD: 7,589.8 '  
Inclination: 90.06 °  
Azimuth: 181.19 °  
VS: 5,217.84 '

TVD (ft)

6900

7900

