



Scale: 5" / 100'
Measured Depth Log

Well Name	State Antelope O-K-24HNB		
Location	SWSE Section 24, T5N, R62W		
State	Colorado	County	Weld
Country	USA	Rig Number	Cade 22
API Number	05-123-36467		
Region	DJ Basin	Field	Wattenberg
Spud Date	2/11/2013		
Surface Coordinates	165' FSL x 1,524 FEL		
Ground Elevation	4,517	K.B. Elevation	4,533
Logged Interval	5,586		
Formation	Niobrara B Chalk		
Type of Drilling Fluid	FW LSND		

Company Bonanza Creek
Address 410 17th Street, Suite 100
Denver, CO 80202

Name Paul McKay
Company Bonanza Creek Energy
410 17th Street #1500
Denver, CO 80202

Well-site Company

Well-site Geologist

Operator

te 1500

Geologist

ergy, Inc.

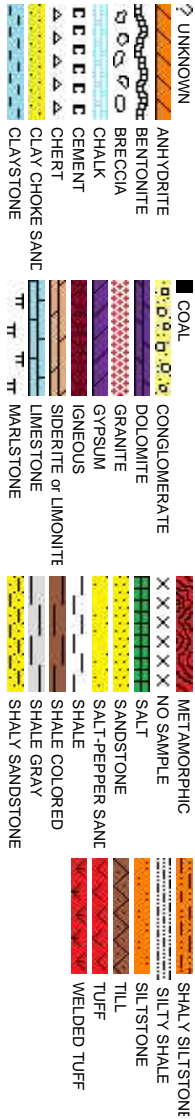
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Other

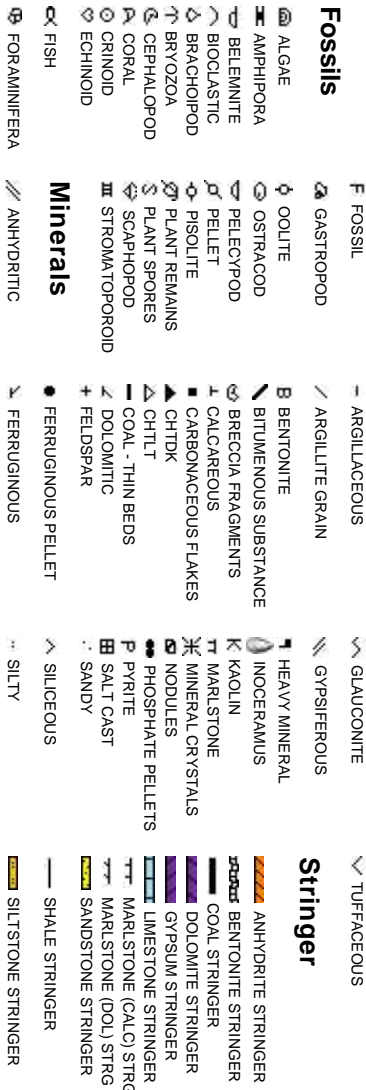
Columbine Logging
2385 S. Lipan St.
Denver, CO 80223

Joey Luce
Eli Smith

Rock Types



Accessories



Other Symbols

Oil Show

- MOLDIC
- ORGANIC
- PINPOINT
- VUGGY
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Engineering

- FAULT
- FORMATION TOP
- GAS SHOW
- MINDEPTH MN DEPTH
- NORMAL FAULT
- OIL SHOW
- OVERTURNED STRATA
- REVERSE FAULT
- SIDEWALL CORE (LEFT)
- SIDEWALL CORE (RIGHT)
- CONNECTION (LEFT)
- CONNECTION (RIGHT)
- CONNECTION GAS
- BIT
- CORE - LOST
- CORE - RECOVERED
- DST INTERVAL
- FRACTURE
- INTERCRYSTALLINE
- INTEROOLITIC

Porosity

- EARTHY

- FENESTRAL

- CONNECTION GAS

- SIDEWALL CORE (RIGHT)

Textures

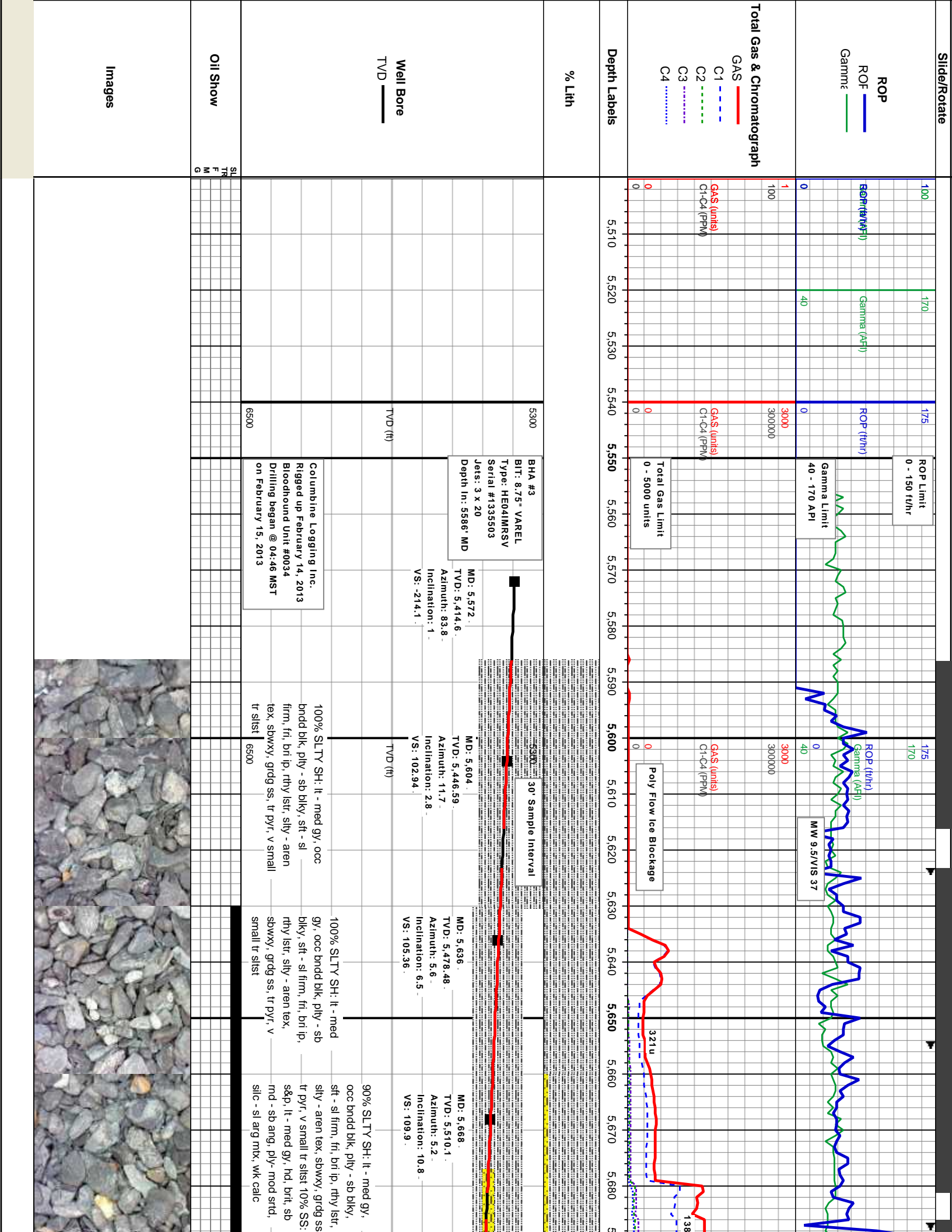
- BOUNDSTONE
- CHALKY
- CRYPTOXLN

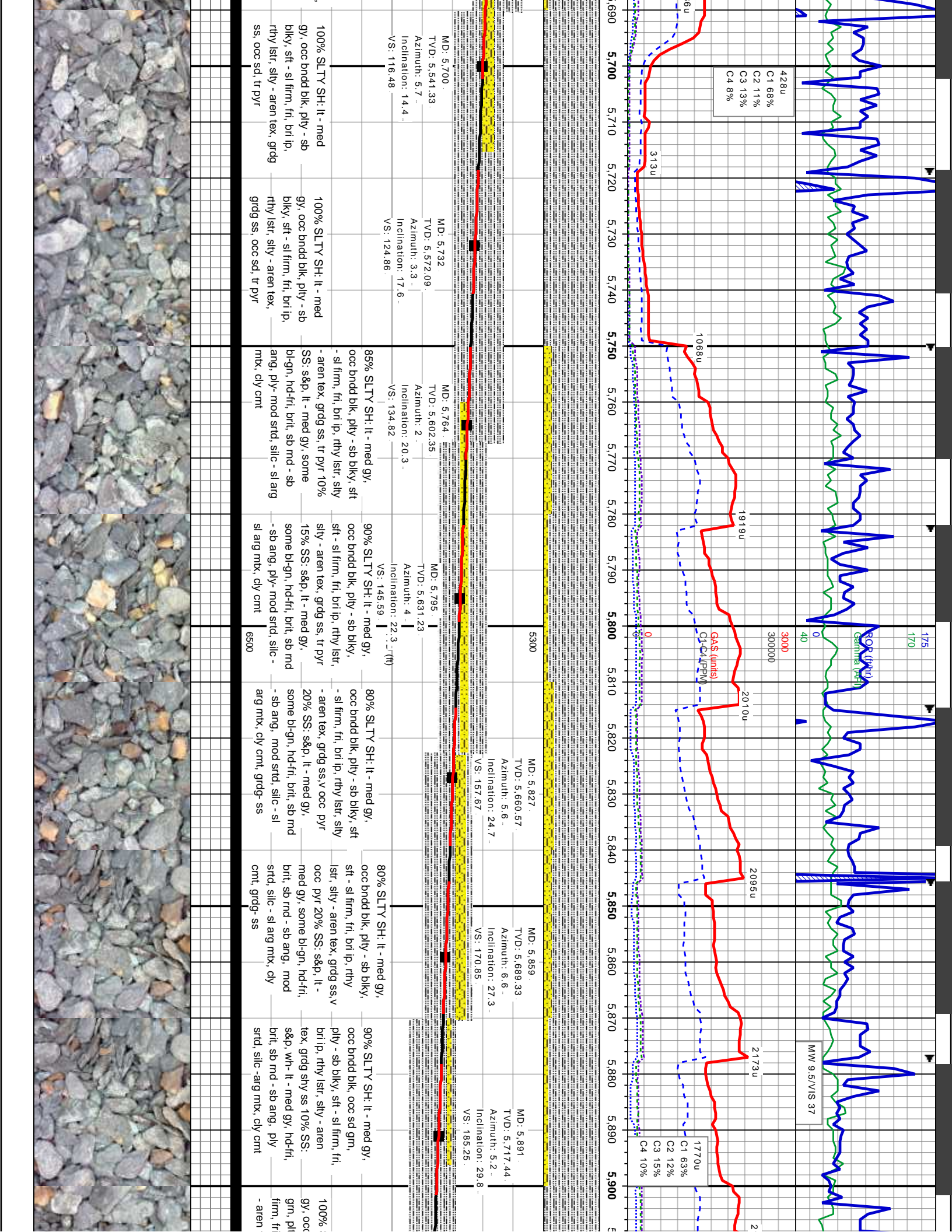
Sorting

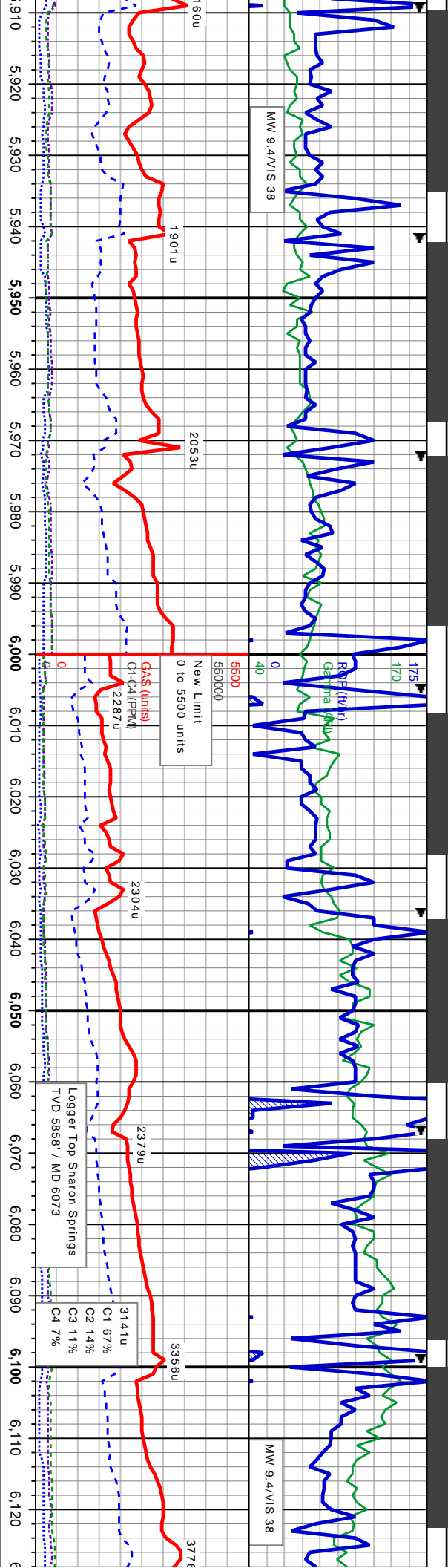
- MODERATE
- POOR
- WELL

Rounding

- WIRELINE TESTED - LEFT
- WIRELINE TESTED - RT
- FINELYXLN
- GRAINSTONE
- LITHOGRAPHIC
- ANGULAR
- ROUNDED
- SUBANG
- SUBRND
- MICROXLN
- MUDSTONE
- PACKSTONE
- WACKESTONE



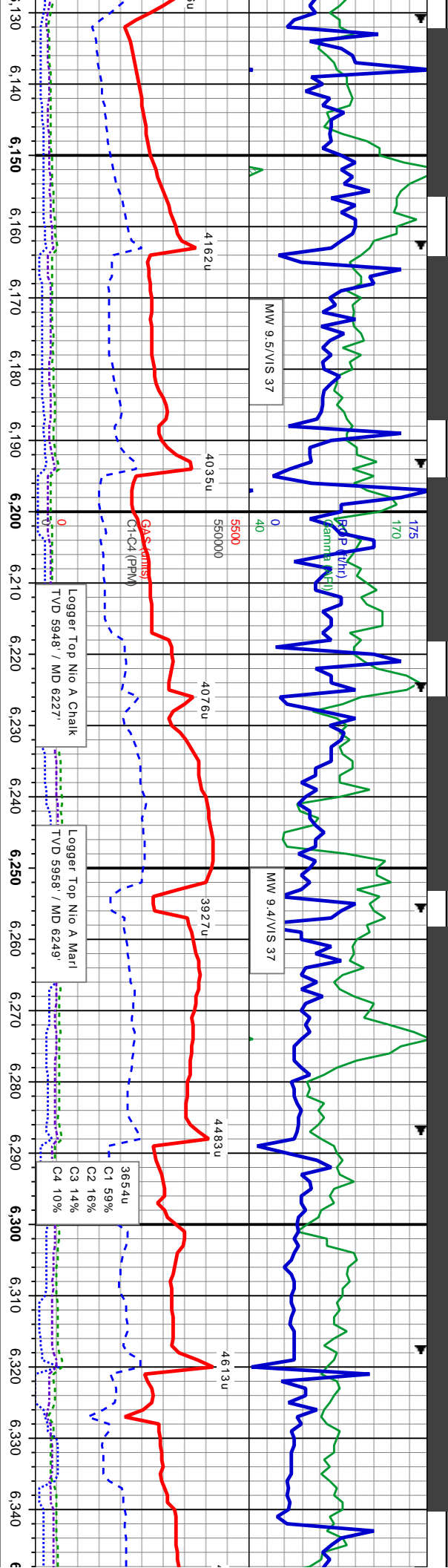




MD: 5.921 TVD: 5,743.06 Azimuth: 3.3 Inclination: 32.9 VS: 200.08	MD: 5.953 TVD: 5,769.46 Azimuth: 1.5 Inclination: 35.9 VS: 217.43	MD: 5.985 TVD: 5,794.81 Azimuth: 4.2 Inclination: 39.3 VS: 236.12	MD: 6.017 TVD: 5,819 Azimuth: 5.6 Inclination: 42.5 VS: 255.95	MD: 6.049 TVD: 5,841.93 Azimuth: 5.2 Inclination: 45.9 VS: 277	MD: 6.081 TVD: 5,863.82 Azimuth: 5.4 Inclination: 47.8 VS: 299.05	MD: 6.113 TVD: 5,884.72 Azimuth: 5.2 Inclination: 50.6 VS: 321.93
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SLTY SH: lt - med brndd blk, occ sd y - sb blk, sft - sl bri ip, rthy lstr, sily ex, grdg shly ss	100% SLTY SH: lt - med gy, occ brndd blk, occ sd gm, ply - sb blk, sft - sl firm, fri, bri ip, rthy lstr, tr sb fis, sily - aren tex, grdg shly ss	100% SLTY SH: lt - med gy, some dk gy, ply - sb blk, mod sft - sl firm, fri, bri ip, rthy lstr, tr sb fis, sily - aren tex, occ sd	100% SLTY SH: lt - med gy, some dk gy, occ brndd blk, ply - sb blk, mod sft - sl firm, fri, bri ip, rthy lstr, tr sb fis, sily - aren tex, occ sd, occ tr slist	100% SLTY SH: lt - med gy, some dk gy, some lt gygn, ply - sb blk, mod sft - sl firm, fri, bri ip, rthy lstr, sily - aren tex, occ sd, occ tr slist	100% SLTY SH: lt - med gy, some dk gy, ply - sb blk, mod sft - sl firm, fri, bri ip, rthy lstr, sily - aren tex, occ tr slist	100% SLTY SH: lt - med gy, some dk gy, brndd blk, ply - sb blk, mod sft - sl firm, fri, bri ip, rthy lstr, sily - aren tex, occ tr slist, tr dissn pyr	100% SLTY SH: lt - med gy, some dk gy, brndd blk, ply - sb blk, mod sft - sl firm, fri, bri ip, rthy lstr, sily - aren tex, occ tr slist, tr dissn pyr
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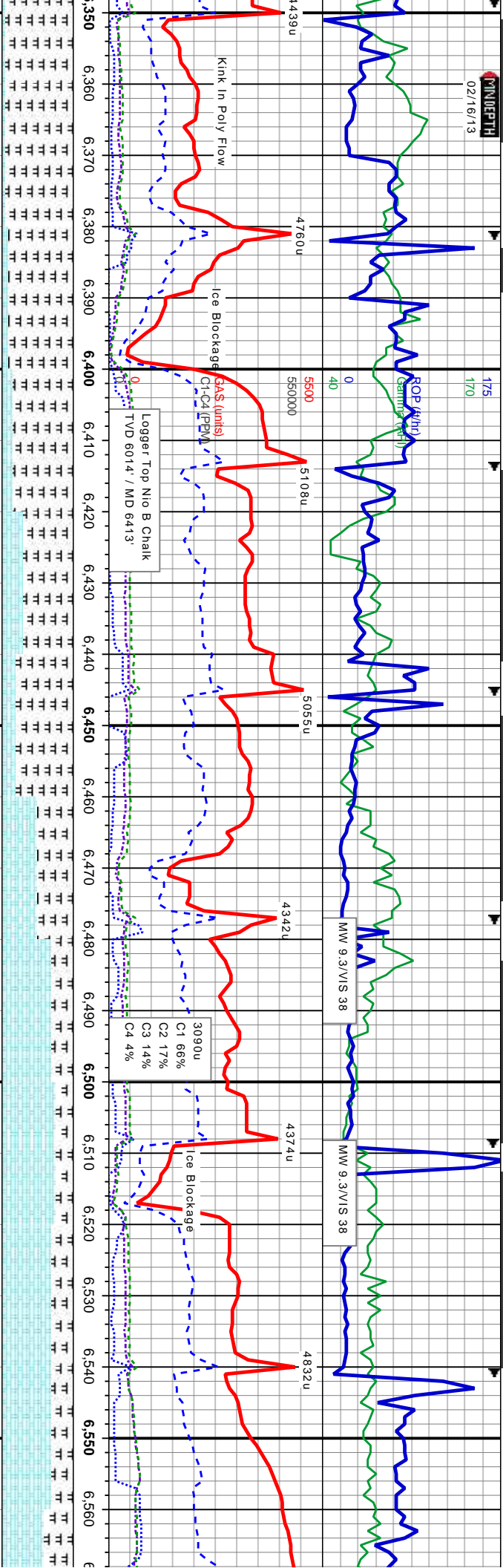




MD: 6.144. TVD: 5.903.74 Azimuth: 4.3 Inclination: 53.7 VS: 345.12	MD: 6.175 TVD: 5.921.39 Azimuth: 4 Inclination: 56.9 VS: 369.36	5300 95%SLTY SH: lt - dk gy, blk y brn, ply - blk y, sft - sl frm, fri - brit, tr sb flss, rthy lstr, silty - aren tex, r lt gy - bent, tr pyr 5-15% CHK: lt - med gy brn, mot, blk y, sft - sl frm, fri, brit ip, rthy lstr, sbwxy, calc	40-90% MRLST: med - dk gy brn, sb ply - blk y, sl frm - mod hard, bri, fri ip, rthy lstr, silty - arg tex, calc mix 40-10% CHK: lt - med gy brn, some off wh, mot, blk y, sft - sl frm, fri-brit, rthy lstr, sbwxy, calc 20-0% SLTY SH: lt - dk gy, lt gy brn, ply - blk y, sft - sl frm, fri - brit, tr sb flss, rthy lstr, silty - aren tex, r lt gy - wh silst, tr bent, tr pyr	95%MRLST: med - dk gy brn, blk ip, sb ply - blk y, sl frm - mod hard, bri, fri ip, sl lmpy ip, rthy lstr, silty - arg tex, calc mix, tr silty sh 5% CHK: lt gy brn, crm ip, mot, blk y, sft - sl frm, fri, brit ip, rthy lstr, wxy ip, calc	95%MRLST: med - dk gy blk, sb ply - blk y, sl frm - hard, bri, fri ip, sl lmpy ip, lstr, silty - arg tex, calc mb silty sh 5% CHK: lt gy brn, ip, mot, blk y, sft - sl frm, fri, rthy lstr, wxy ip, calc
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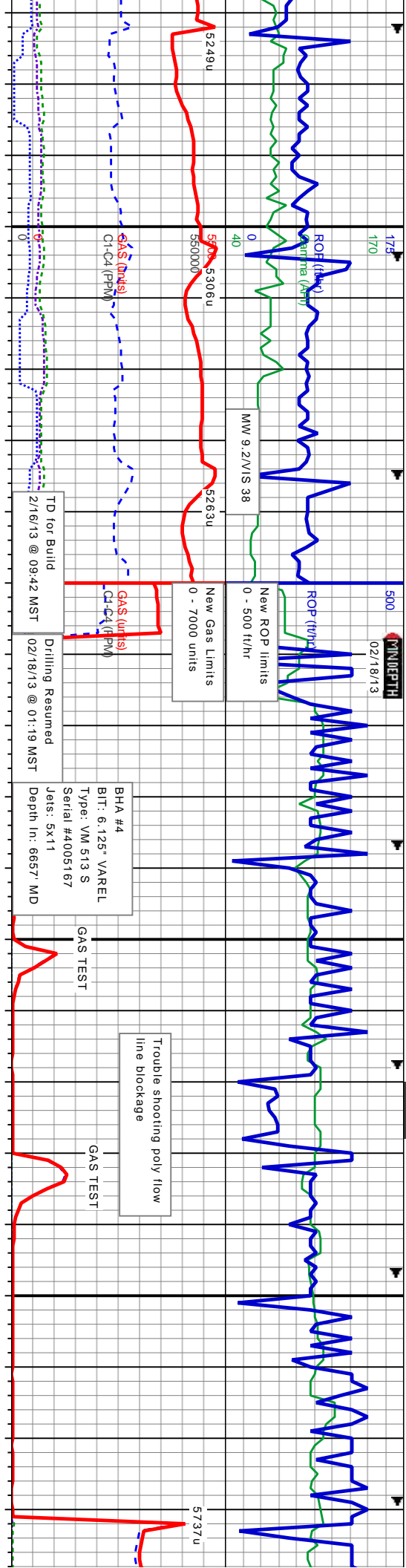
SH: lt - dk gy, mod sft - sl tr sb flss, rthy lstr, r silst, tr wh silst, tr bent, tr pyr	100%SLTY SH: lt - dk gy, lt gy brn, ply - blk y, sft - sl frm, fri - brit, tr sb flss, rthy lstr, silty - aren tex, r lt gy - wh silst, tr bent, tr pyr	MD: 6.206 TVD: 5.937.75 Azimuth: 2.9 Inclination: 59.4 VS: 394.49	MD: 6.237 TVD: 5.953.01 Azimuth: 2.4 Inclination: 61.6 VS: 420.36	MD: 6.268 TVD: 5.967.01 Azimuth: 0.6 Inclination: 64.7 VS: 447.02	MD: 6.299 TVD: 5.979.37 Azimuth: 359.1 Inclination: 68.3 VS: 474.63	MD: 6.332 TVD: 5.990.28 Azimuth: 359.1 Inclination: 73.1 VS: 504.97
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95-90%MRSLT: med - dk gy brn, blk, sb pily - blkly, sl firm - mod hard, bri, fri ip, sl lmpy ip, rthy lstr, silty - arg tex, calc mtx, tr silty sh 5-10% CHK: lt gy brn, crm ip, mot, blkly, sft - sl firm, fri, brit ip, rthy lstr, wxy ip, rr pvl, calc	5300 85-70%MRSLT: med - dk gy brn, blk, sb pily - blkly, sl firm - mod hard, bri, fri ip, sl lmpy ip, rthy lstr, silty - arg tex, calc mtx, tr silty sh 15-30% CHK: lt gy brn, crm ip, mot, blkly, sft, fri, rthy lstr, wxy, calc	80-50%MRSLT: med - dk gy brn, blk, sb pily - blkly, sl firm - mod hard, bri-fri, sb fss ip, sl lmpy ip, rthy lstr, silty - arg tex, calc mtx, tr bent 20-50% CHK: lt-med gy brn, wh-lt-gy-crm, mot, sb pily- sb blkly, sft-sl firm, fri-brit, rthy lstr, wxy ip, calc	70-75%CHK: lt-med gy brn, wh-lt gy-crm, mot- stir ip, sb pily- sb blkly, sft-sl hd, fri-brit, rthy lstr, wxy ip, calc 30-25%MRSLT: med - dk gy brn, blk, sb pily - blkly, sl - mod hard, bri-fri, sb fss ip, rthy lstr, silty - arg tex, calc mtx	70-70%CHK: lt-med gy brn, wh-lt gy-crm, mot- stir ip, sb pily- sb blkly, sft-sl hd, fri-brit, rthy lstr, wxy ip, calc 30-30%MRSLT: med - dk gy brn, sb pily - blkly, sl - mod hard, bri-fri, sb fss ip, rthy lstr, silty - arg tex, calc mtx, tr silty sh	60-6 gy-c hd, f 40-3 occ hard tex,
MD: 6.363. TVD: 5,999.11 Azimuth: 358.4 Inclination: 73.8 VS: 533.97	MD: 6.396. TVD: 6,008.23 Azimuth: 359.6 Inclination: 74.1 VS: 564.88	MD: 6.427. TVD: 6,016.04 Azimuth: 359.2 Inclination: 76.7 VS: 594.08	MD: 6.458. TVD: 6,022.16 Azimuth: 358.7 Inclination: 80.2 VS: 623.79	MD: 6.490. TVD: 6,026.47 Azimuth: 358.4 Inclination: 84.3 VS: 654.68	MD: 6.522. TVD: 6,028.45 Azimuth: 358.5 Inclination: 88.6 VS: 685.88
					MD: 6.553. TVD: 6,028.83 Azimuth: 357.1 Inclination: 90 VS: 716.23





55%CHK: lt-med gy brn, wh-lt
m, mot, sb ply-sb blk, sft-sl
fri-bri, rthy lstr, wxy ip, calc
55%MRSLT: med-dk gy brn,
blk, sb ply-blky, sl-mod
bri-fri, sb flss ip, rthy lstr, silty
calc mtx, tr silty sh

5300 50-55-45%CHK: lt-med gy brn, lt gy-crm, mot,
sb ply-sb blk, sft-sl hd, fri-bri, rthy lstr, wxy
ip, calc 50-45-55%MRSLT: med-dk gy brn,
occ blk, sb ply-blky, sl-mod hard, bri-fri, sb
flss ip, rthy lstr, silty tex, calc mtx, tr silty sh, tr
Inoc, tr pyr

50' Sample Interval

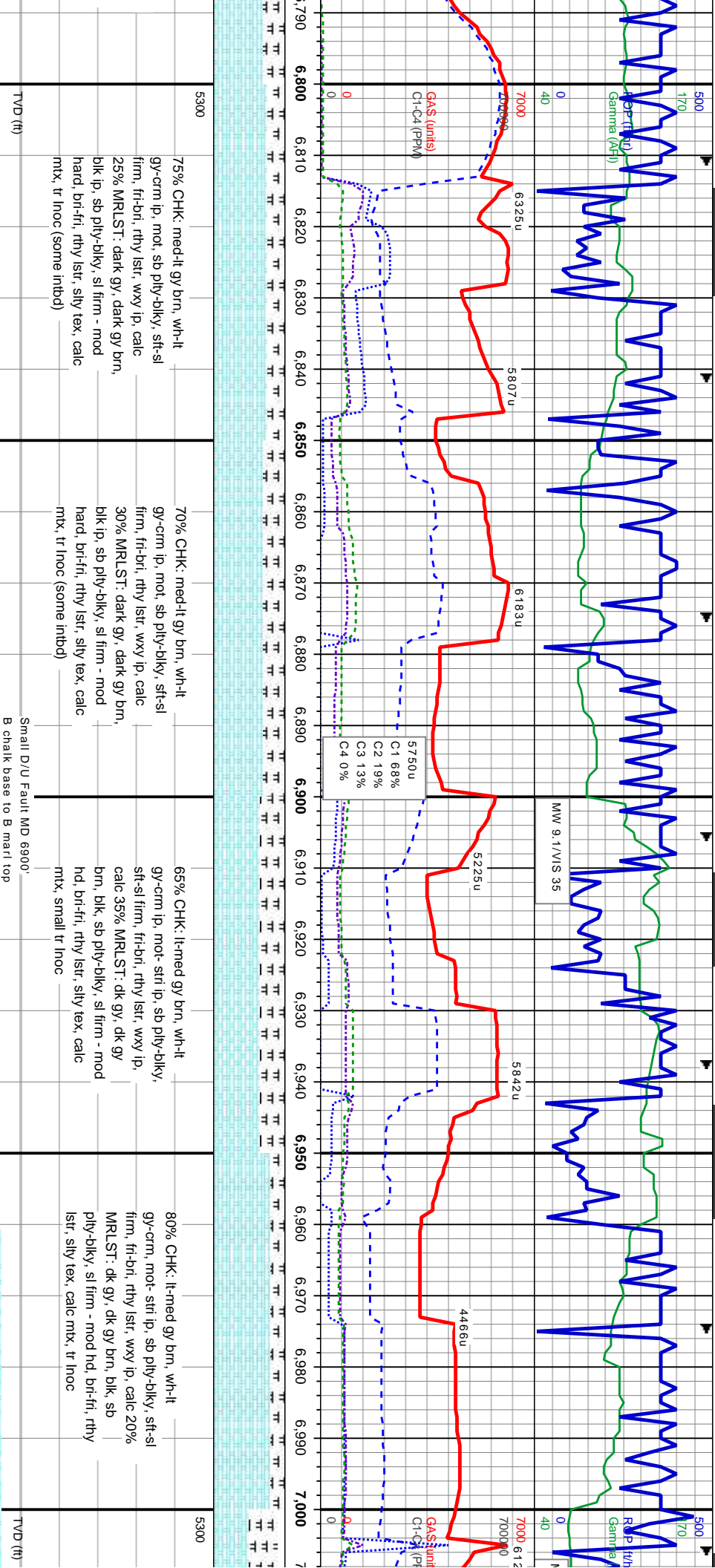
95% MRLST: dark gy, dark gy
brn, blk, sb ply-blky, sl firm -
mod hard, bri, fri ip, rthy lstr, silty
tex, calc mtx 5% CHK: med-lt
gy brn, mot, sb ply-blky, sft-sl
firm, fri-bri, rthy lstr, calc, tr inoc

95% MRLST: dark gy, dark gy
brn, blk, sb ply-blky, sl firm -
mod hard, bri, fri ip, rthy lstr, silty
tex, calc mtx 5% CHK: med-lt
gy brn, mot, sb ply-blky, sft-sl
firm, fri-bri, rthy lstr, calc, tr inoc

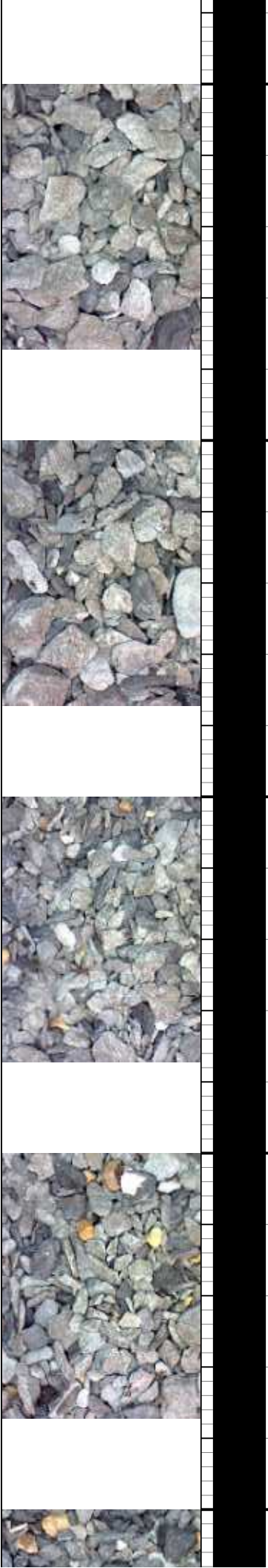
70% CHK: med-lt gy brn, crm
ip, mot, sb ply-blky, sft-sl firm,
fri-bri, rthy lstr, calc, tr inoc 30%
MRLST: dark gy, dark gy brn,
blk ip, sb ply-blky, sl firm - mod
hard, bri-fri, rthy lstr, silty tex,
calc mtx

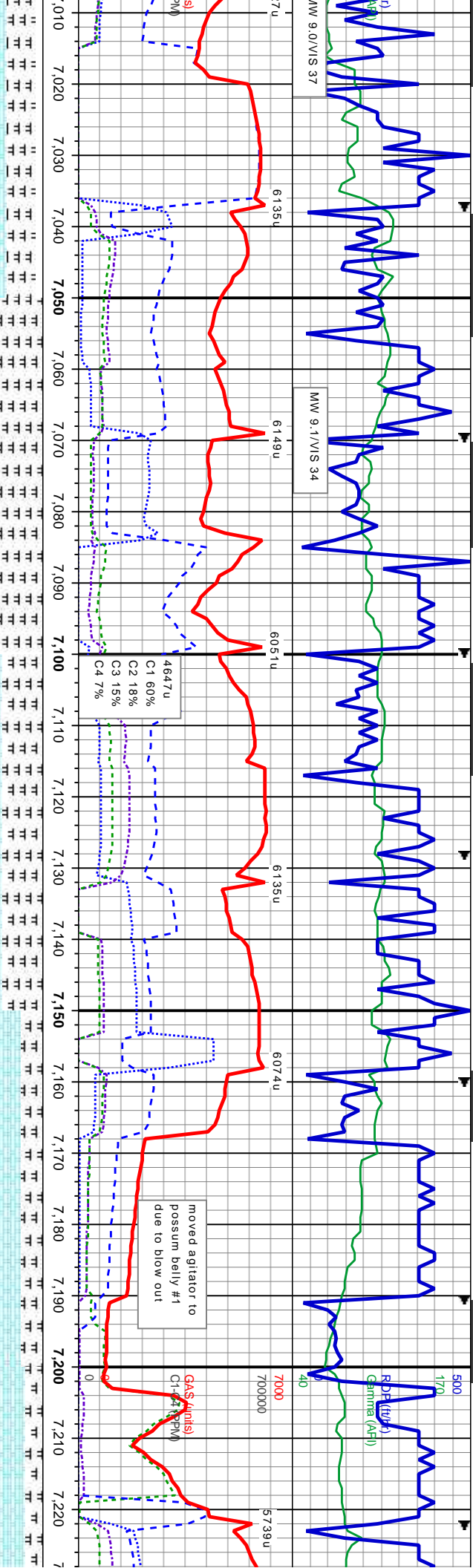
TVD (ft)	
MD: 6.584	MD: 6.607
TVD: 6.028.75	TVD: 6.028.61
Azimuth: 358.9	Azimuth: 358.9
Inclination: 90.3	Inclination: 90.4
VS: 746.57	VS: 769.08
6500	
TVD (ft)	
MD: 6.695	MD: 6.727
TVD: 6.028.16	TVD: 6.028.11
Azimuth: 356.8	Azimuth: 356.2
Inclination: 90.3	Inclination: 89.9
VS: 855.2	VS: 886.68
TVD (ft)	
MD: 6.759	MD: 6.759
TVD: 6.028.19	TVD: 6.028.19
Azimuth: 356.2	Azimuth: 356.2
Inclination: 89.8	Inclination: 89.8
VS: 918.19	VS: 918.19





5300	75% CHK: med-lt gy brn, wh-lt gy-crm ip, mot, sb ply-blky, sft-sl firm, fri-br, rthy lstr, wxy ip, calc 25% MRLST: dark gy, dark gy brn, blk ip, sb ply-blky, sl firm - mod hard, bri-fri, rthy lstr, silty tex, calc mtx, tr inoc (some intbd)	70% CHK: med-lt gy brn, wh-lt gy-crm ip, mot, sb ply-blky, sft-sl firm, fri-br, rthy lstr, wxy ip, calc 30% MRLST: dark gy, dark gy brn, blk ip, sb ply-blky, sl firm - mod hard, bri-fri, rthy lstr, silty tex, calc mtx, tr inoc (some intbd)	65% CHK: lt-med gy brn, wh-lt gy-crm ip, mot- stri ip, sb ply-blky, sft-sl firm, fri-br, rthy lstr, wxy ip, calc 35% MRLST: dk gy, dk gy brn, blk, sb ply-blky, sl firm - mod hd, bri-fri, rthy lstr, silty tex, calc mtx, small tr inoc	80% CHK: lt-med gy brn, wh-lt gy-crm, mot- stri ip, sb ply-blky, sft-sl firm, fri-br, rthy lstr, wxy ip, calc 20% MRLST: dk gy, dk gy brn, blk, sb ply-blky, sl firm - mod hd, bri-fri, rthy lstr, silty tex, calc mtx, tr inoc	5300
TVD (ft)					
Small D/U Fault MD 6900'					
B chalk base to B marl top					
6790	MD: 6,823 TVD: 6,028.27 Azimuth: 356.2 Inclination: 89.9 VS: 981.25	MD: 6,854 TVD: 6,028.33 Azimuth: 356.1 Inclination: 89.9 VS: 1,011.77	MD: 6,917 TVD: 6,028.25 Azimuth: 355.9 Inclination: 90.2 VS: 1,074.01	MD: 6,949 TVD: 6,028.25 Azimuth: 357.5 Inclination: 89.8 VS: 1,105.47	MD: 6,980 TVD: 6,028.34 Azimuth: 356.9 Inclination: 89.5 VS: 1,135.93
6500	6500	6500	6500	6500	6500





60% CHK: lt-med gy brn, wh-
gy-crm lp, mot-sfri lp, sb ply-biky,
sft-si firm, fri-bri, rthy lstr, calc 40%
MRLST: dk gy, dk gy brn, blk, sb
ply-biky, si firm - mod hd, bri-fri,
rthy lstr, silty tex, calc mtx, tr inoc

60% MRLST: dk gy, dk gy brn, blk,
sb ply-biky, mod hd, bri-fri, rthy lstr,
silty tex, calc mtx, tr inoc 40%
CHK: lt-med gy brn, occ wh-
gy-crm, mot, sb ply-biky, sft-si firm,
fri-bri, rthy lstr, calc

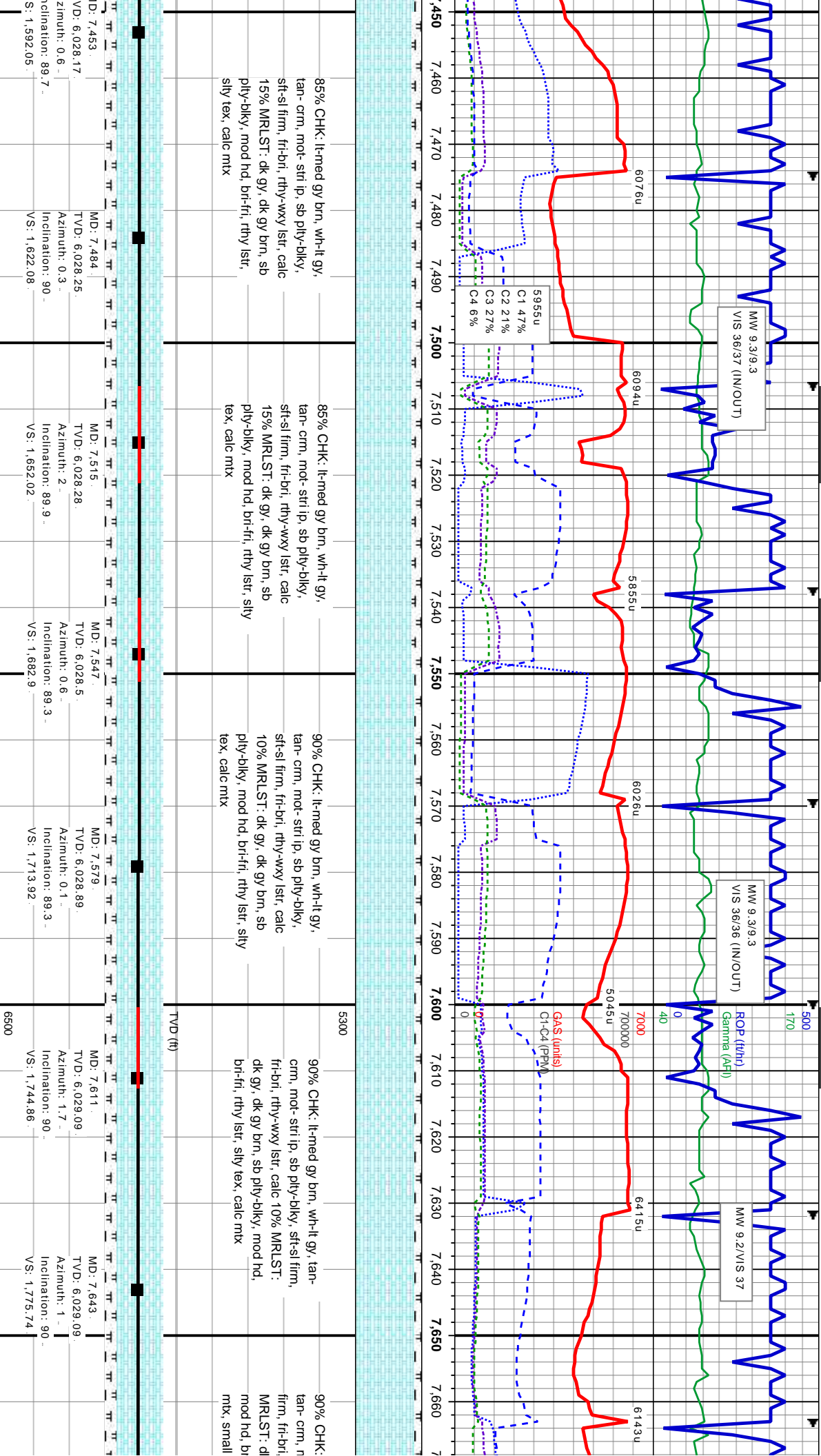
55% MRLST: dk gy, dk gy brn, blk,
sb ply-biky, mod hd, bri-fri, rthy
lstr, silty tex, calc mtx, tr inoc 45%
CHK: lt-med gy brn, occ wh-
gy-crm, mot, sb ply-biky, sft-si
firm, fri-bri, rthy lstr, calc

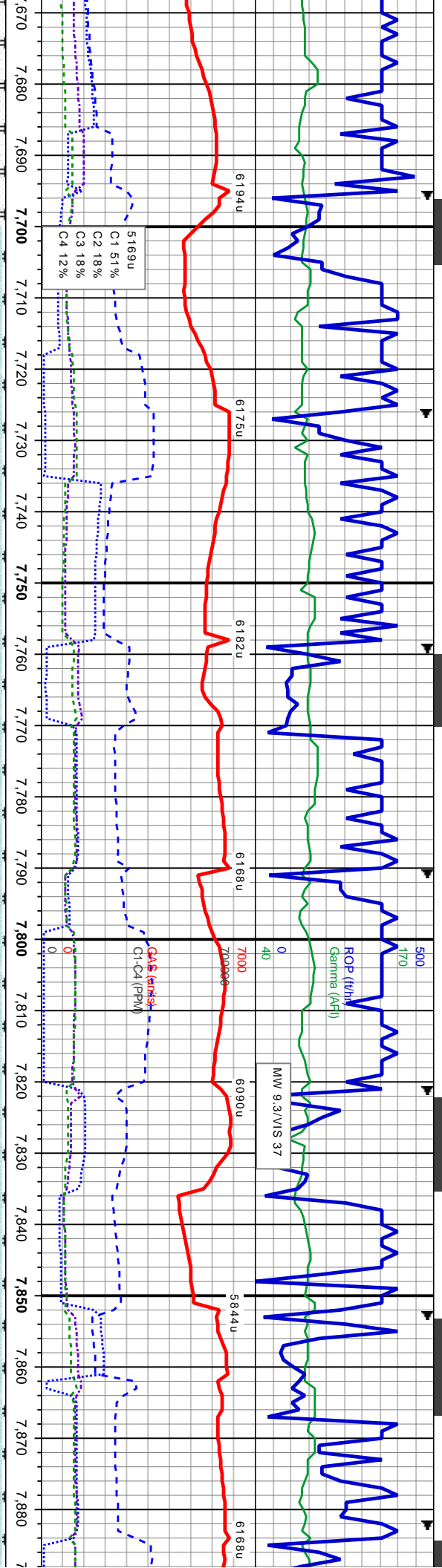
70% CHK: lt-med gy brn, wh-
gy-crm, mot, sb ply-biky, sft-si firm,
fri-bri, rthy lstr, calc 30% MRLST:
dk gy, dk gy brn, blk, sb ply-biky,
mod hd, bri-fri, rthy lstr, silty tex,
calc mtx, small tr inoc

75% CHK: lt-med g
gy-crm, mot, sb ply
firm, fri-bri, rthy lstr,
MRLST: dk gy, dk g
ply-biky, mod hd, b
silty tex, calc mtx, sr

MD: 7.012 TVD: 6,028.67 Azimuth: 356.8 Inclination: 89.7 VS: 1,167.37	MD: 7.043 TVD: 6,028.67 Azimuth: 358 Inclination: 89.9 VS: 1,197.77	MD: 7.075 TVD: 6,028.79 Azimuth: 359.9 Inclination: 89.7 VS: 1,228.97	MD: 7.106 TVD: 6,028.87 Azimuth: 2.6 Inclination: 90 VS: 1,258.89	MD: 7.138 TVD: 6,028.59 Azimuth: 2 Inclination: 91 VS: 1,289.62	MD: 7.170 TVD: 6,027.89 Azimuth: 3.1 Inclination: 91.5 VS: 1,320.3	MD: 7.201 TVD: 6,027.29 Azimuth: 2.7 Inclination: 90.7 VS: 1,349.98
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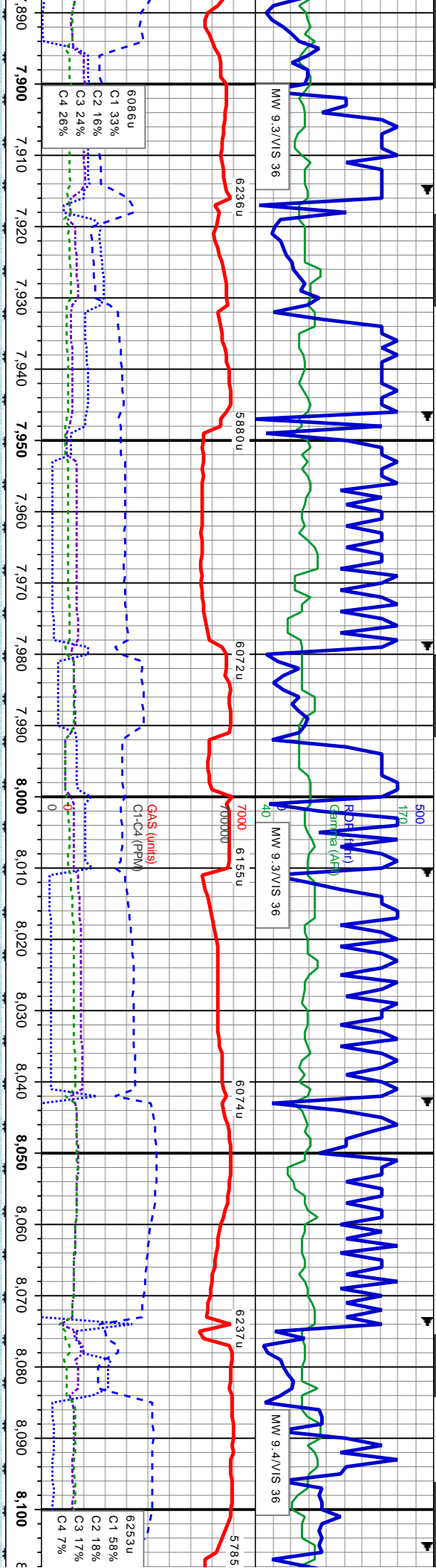




lt-med gy brn, wh-it gy, not stri ip, sb ply-blky, sft-sl rthy-wxy lst, calc 10% gy, dk gy brn, sb ply-blky, br-frt, rthy lst, silty tex, calc tr fos frag	95% CHK: lt-med gy brn, wh-it gy, tan-crm, mot-stri ip, sb ply-blky, sft-sl firm, fr-bri, rthy-wxy lst, calc 5% MRLST: dk gy, dk gy brn, sb ply-blky, mod hd, br-frt, rthy lst, silty tex, calc mix	95% CHK: lt-med gy brn, lt gy, tan-crm, mot-stri ip, sb ply-blky, sft-sl firm, fr-bri, rthy-wxy lst, calc 5% MRLST: dk gy, dk gy brn, sb ply-blky, mod hd, br-frt, rthy lst, silty tex, calc mix	95% CHK: lt-med gy brn, lt gy, tan-crm, tr wh, mot-stri ip, ply-sb ply, sft-sl firm, fr-bri, rthy-wxy lst, calc 5% MRLST: dk gy, dk gy brn, sb ply-blky, mod hd, br-frt, rthy lst, silty tex, calc mix	95% CHK: lt-med gy brn, lt gy, whi, t-crm, mot-stri ip, sb ply-blky, sft-sl fr-bri, rthy-wxy lst, calc 5% MRLST gy, dk gy brn, blk, sb ply-blky, mod br-frt, rthy lst, silty tex, calc mix
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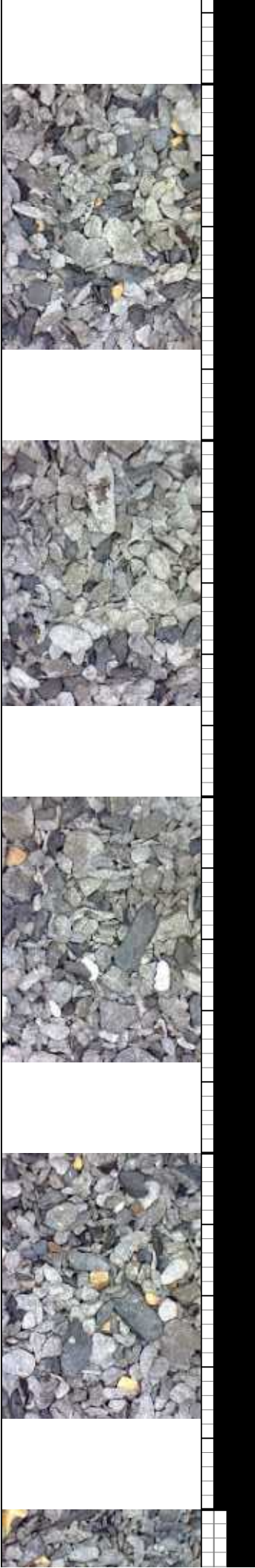
MD: 7.675 TVD: 6.029.2 Azimuth: 358.9 Inclination: 89.6 VS: 1.806.81	MD: 7.707 TVD: 6.029.31 Azimuth: 359.6 Inclination: 90 VS: 1.837.97	MD: 7.738 TVD: 6.029.34 Azimuth: 359.4 Inclination: 89.9 VS: 1.868.13	MD: 7.770 TVD: 6.029.45 Azimuth: 358.4 Inclination: 89.7 VS: 1.899.33	MD: 7.800 TVD: 6.029.69 Azimuth: 358.2 Inclination: 89.4 VS: 1.928.66	MD: 7.831 TVD: 6.029.85 Azimuth: 357.1 Inclination: 90 VS: 1.959.03	MD: 7.863 TVD: 6.029.99 Azimuth: 358.7 Inclination: 89.5 VS: 1.990.36
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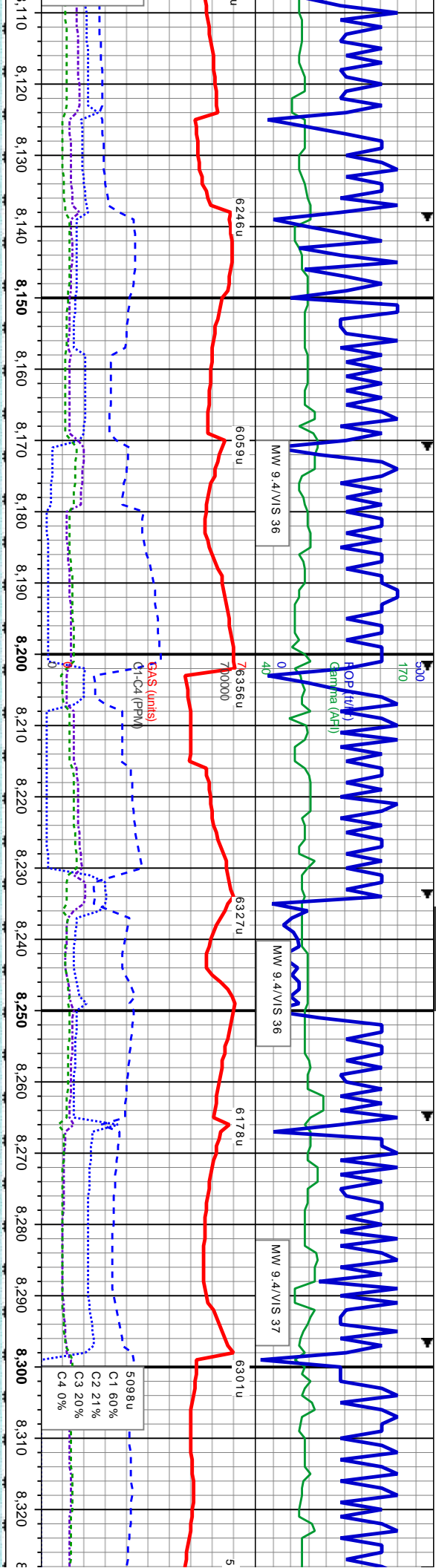




95% CHK: lt-med gy brn,lt gy, whi, tan, crm, mot-stri ip, sb ply-bkly, sft-sl firm, frt-bri, rthy-wxy lstr, calc 5% MRLST: dk gy, dk gy brn, blk, sb ply-bkly,sl firm-mod hd, brt-frt, rthy lstr, silty tex, calc mtx	95% CHK: lt-med gy brn,lt gy, whi, crm, mot-stri ip, sb ply-bkly, sft-sl firm, frt-bri, rthy-wxy lstr, calc 5% MRLST: dk gy, dk gy brn, blk, sb ply-bkly,sl firm-mod hd, brt-frt, rthy lstr, silty tex, calc mtx	95% CHK: lt-med gy brn,lt gy, whi, crm, mot-stri ip, sb ply-bkly, sft-sl firm, frt-bri, rthy-wxy lstr, calc 5% MRLST: dk gy, dk gy brn, blk, sb ply-bkly,sl firm-mod hd, brt-frt, rthy lstr, silty tex, calc mtx, tr inoc, rr bent	95% CHK: lt gy brn,lt gy, whi, crm, mot-stri ip, sb ply-bkly, sft-sl firm, frt-bri, rthy-wxy lstr, calc 5% MRLST: dk gy, dk gy brn, blk, sb ply-bkly,sl firm-mod hd, brt-frt, rthy lstr, silty tex, calc mtx
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MD: 7.895 TVD: 6,030.24 Azimuth: 358.5 Inclination: 89.6 VS: 2,021.6	MD: 7.927 TVD: 6,030.52 Azimuth: 0.3 Inclination: 89.4 VS: 2,052.74	MD: 7.959 TVD: 6,030.8 Azimuth: 0.6 Inclination: 89.6 VS: 2,083.74	MD: 7.991 TVD: 6,030.8 Azimuth: 1.2 Inclination: 90.4 VS: 2,114.68	MD: 8.022 TVD: 6,030.72 Azimuth: 359.9 Inclination: 89.9 VS: 2,144.71	MD: 8.054 TVD: 6,030.77 Azimuth: 359.6 Inclination: 89.9 VS: 2,175.8	MD: 8.086 TVD: 6,030.69 Azimuth: 0.3 Inclination: 90.4 VS: 2,206.88
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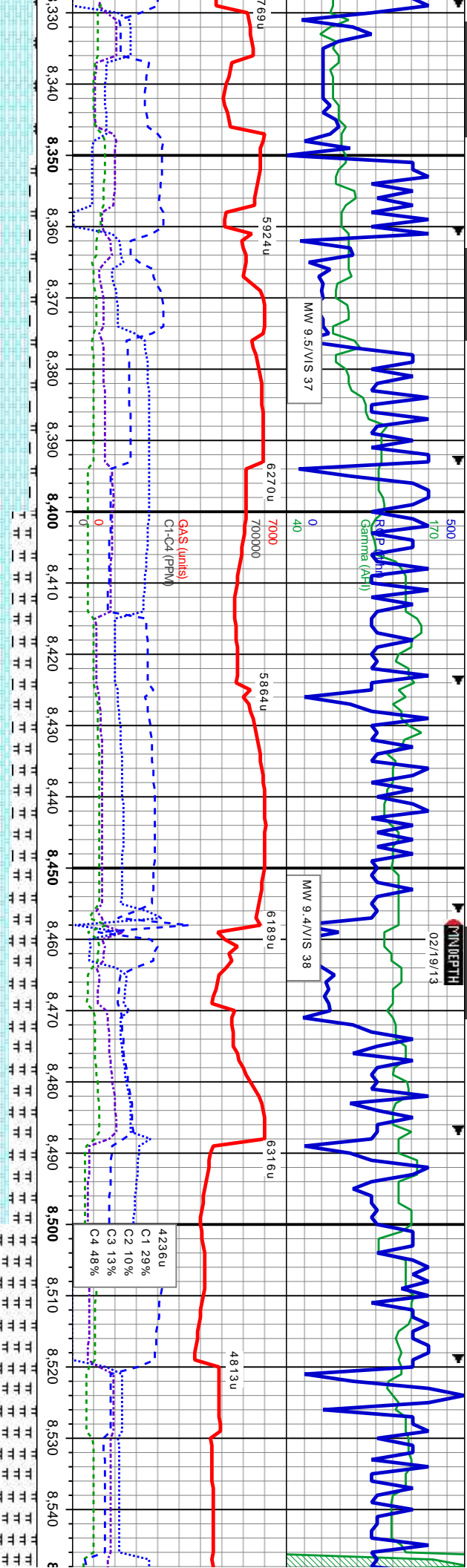




% CHK: lt gy brn, lt gy, whi, crm, mot- stri ip, ply-biky, sft-sl firm, fri-br, rthy-wxy lst, calc 5% MRLST: dk gy, dk brn, blk, sb ply-biky, sl firm-mod hd, br-fi, rthy lst, silty tex, calc mtx		95% CHK: lt-med gy brn, lt gy, whi & crm ip, mot- stri ip, sb ply-biky, sft-sl firm, fri-br, rthy-wxy lst, calc 5% MRLST: dk gy, dk gy brn, blk, sb ply-biky, sl firm-mod hd, br-fi, rthy lst, silty tex, calc mtx		95% CHK: lt-med gy brn, lt gy, whi, crm, mot- stri ip, sb ply-biky, sft-sl firm, fri-br, rthy-wxy lst, calc 5% MRLST: dk gy, dk gy brn, blk, sb ply-biky, sl firm, br-fi, rthy lst, silty tex, calc mtx, tr inoc, tr bent		95% CHK: lt-med gy brn, lt gy, whi, crm, mot- stri ip, sb ply-biky, sft-sl firm, fri-br, rthy-wxy lst, calc 5% MRLST: dk gy, dk gy brn, blk, sb ply-biky, sl firm, br-fi, rthy lst, silty tex, calc mtx, tr inoc, tr bent		95% CHK: lt-med gy brn, tan-crm, mot- stri ip, ply-biky, fri-br, rthy-wxy lst, calc 5% MRLST: dk gy, dk gy brn, blk, sb ply firm-mod hd, br-fi, rthy lst, calc mtx	
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MD: 8,118 TVD: 6,030.38 Azimuth: 1.5 Inclination: 90.7 VS: 2,237.82		MD: 8,150 TVD: 6,030.1 Azimuth: 0.3 Inclination: 90.3 VS: 2,268.76		MD: 8,182 TVD: 6,030.05 Azimuth: 358.2 Inclination: 89.9 VS: 2,299.92		MD: 8,213 TVD: 6,030.02 Azimuth: 358.4 Inclination: 90.2 VS: 2,302.22		MD: 8,245 TVD: 6,029.74 Azimuth: 359.6 Inclination: 90.8 VS: 2,361.41		MD: 8,277 TVD: 6,029.52 Azimuth: 358 Inclination: 90 VS: 2,392.63		MD: 8,309 TVD: 6,029.52 Azimuth: 357.6 Inclination: 90 VS: 2,423.97	
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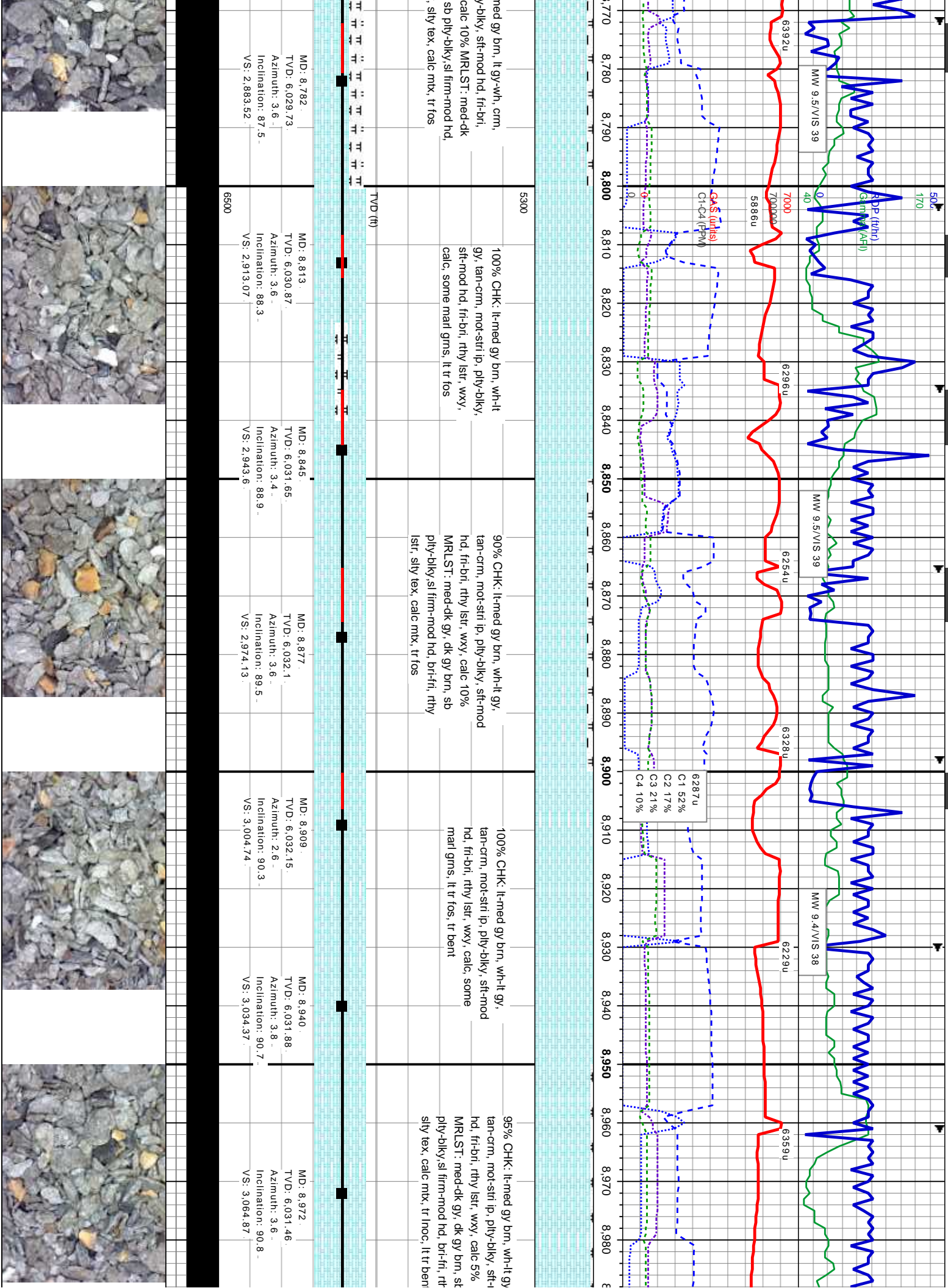


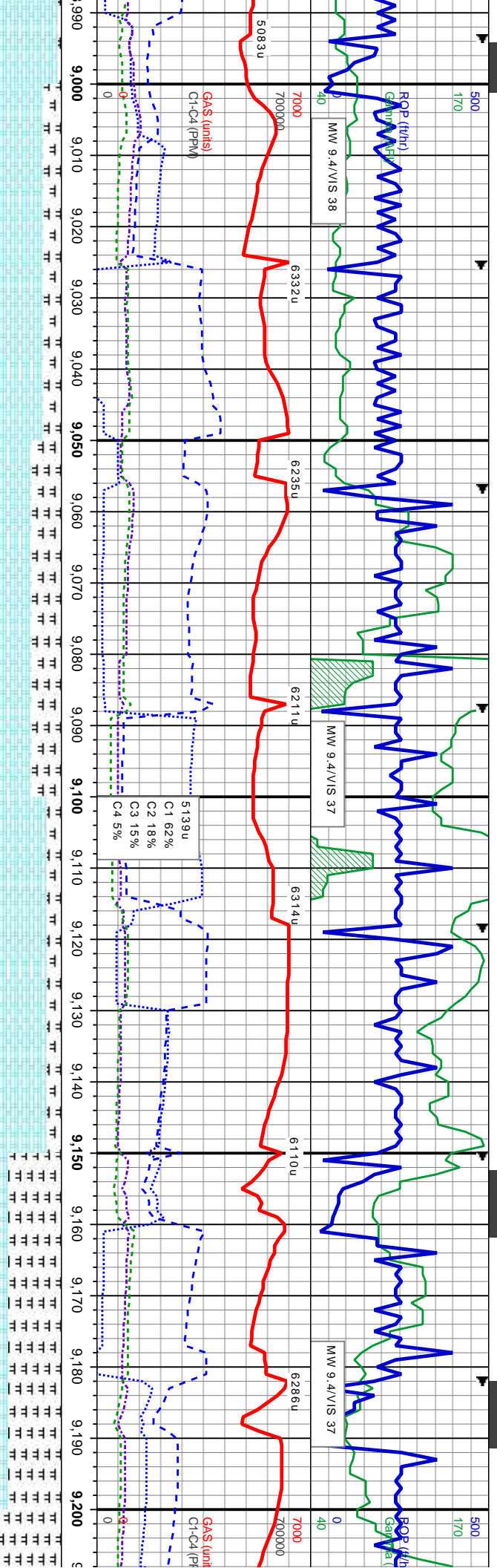


lt gy, whi, biky, sft-sl firm, % MRLST: dk biky, sl str, silty tex,	90% CHK: lt-med gy brn, lt gy, tan-crm, mot- stri ip, ply-biky, sft-sl firm, fri-brl, rthy-wxy istr, calc 10% MRLST: dk gy, dk gy brn, blk, sb ply-biky, sl firm-mod hd, brl-fri, rthy istr, silty tex, calc mix, rr bent, rr pyr	5300	65% CHK: lt-med gy brn, lt gy, whi & crm ip, mot- stri ip, ply-biky, sft-sl firm, fri-brl, rthy-wxy istr, calc 45% MRLST: dk gy, dk gy brn, blk, sb ply-biky, sl firm-mod hd, brl-fri, rthy istr, silty tex, calc mix, rr bent	60% CHK: lt-med gy brn, lt gy, crm ip, mot, ply-biky, sft-sl firm, fri-brl, rthy istr, wxy ip, calc, com intbod wi mntst 40% MRLST: med-dk gy, dk gy brn, blk ip, sb ply-biky, sl firm-mod hd, brl-fri, rthy istr, silty tex, calc mix	50% CHK: lt-med gy brn, lt gy, mot, ply-biky, sft-sl firm, fri-brl, rthy istr, calc, com intbod wi mntst 50% MRLST: med-dk gy, dk gy brn, blk ip, sb ply-biky, sl firm-mod hd, brl-fri, rthy istr, silty tex, calc mix
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MD: 8,341 TVD: 6,029.15 Azimuth: 357.5 Inclination: 91.3 VS: 2,455.33	MD: 8,372 TVD: 6,028.4 Azimuth: 0.3 Inclination: 91.5 VS: 2,485.55	MD: 8,404 TVD: 6,027.53 Azimuth: 358.2 Inclination: 91.6 VS: 2,516.7 6500	MD: 8,435 TVD: 6,026.56 Azimuth: 359.2 Inclination: 92 VS: 2,546.94	MD: 8,466 TVD: 6,025.74 Azimuth: 359.6 Inclination: 91 VS: 2,577.1	MD: 8,498 TVD: 6,025.1 Azimuth: 0.3 Inclination: 91.3 VS: 2,608.17	MD: 8,530 TVD: 6,024.4 Azimuth: 359.6 Inclination: 91.2 VS: 2,639.23
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75% CHK: lt-med gy brn, wh-lt gy, mot, pty-bkly, sft-mod hd, fri-bri, rthy lstr, calc 25% MRLST: med-dk gy, dk gy brn, sb pty-bkly, sl firm-mod hd, bri-fri, rthy lstr, silty tex, calc mntx, tr bent, tr pyr

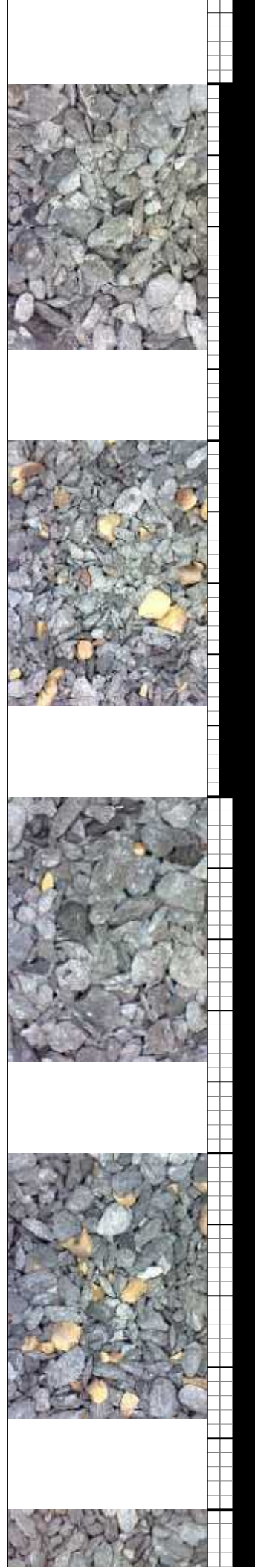
60% CHK: lt-med gy brn, wh-lt gy, crm ip, mot, pty-bkly, sft-mod hd, fri-bri, rthy lstr, calc 40% MRLST: med-dk gy, dk gy brn, sb pty-bkly, sl firm-mod hd, bri-fri, rthy lstr, silty tex, calc mntx, tr dissm pyr

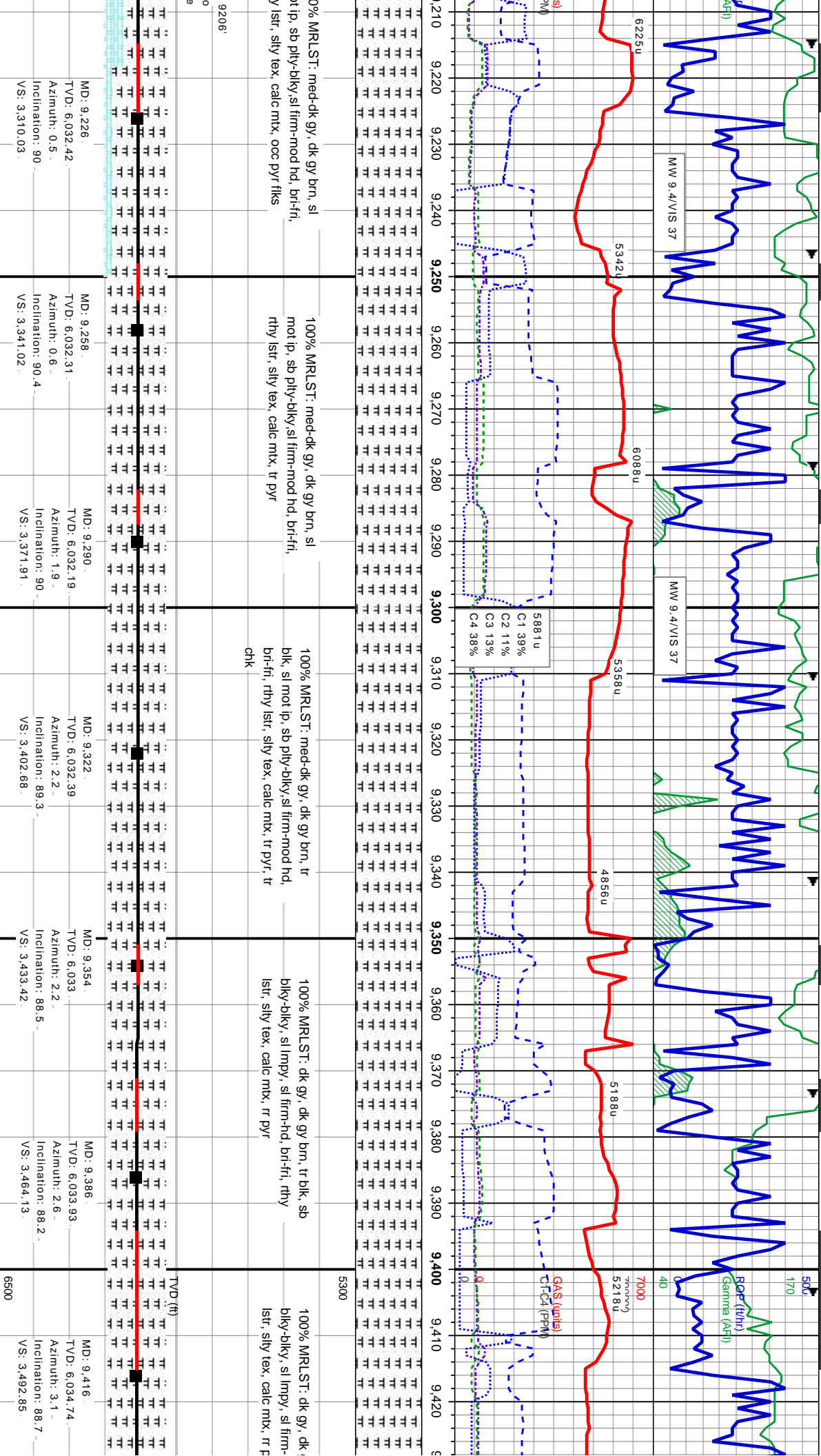
80% CHK: lt-med gy brn, wh-lt gy, crm ip, mot, pty-bkly, sft-mod hd, fri-bri, rthy lstr, calc 20% MRLST: med-dk gy, dk gy brn, sb pty-bkly, sl firm-mod hd, bri-fri, rthy lstr, silty tex, calc mntx

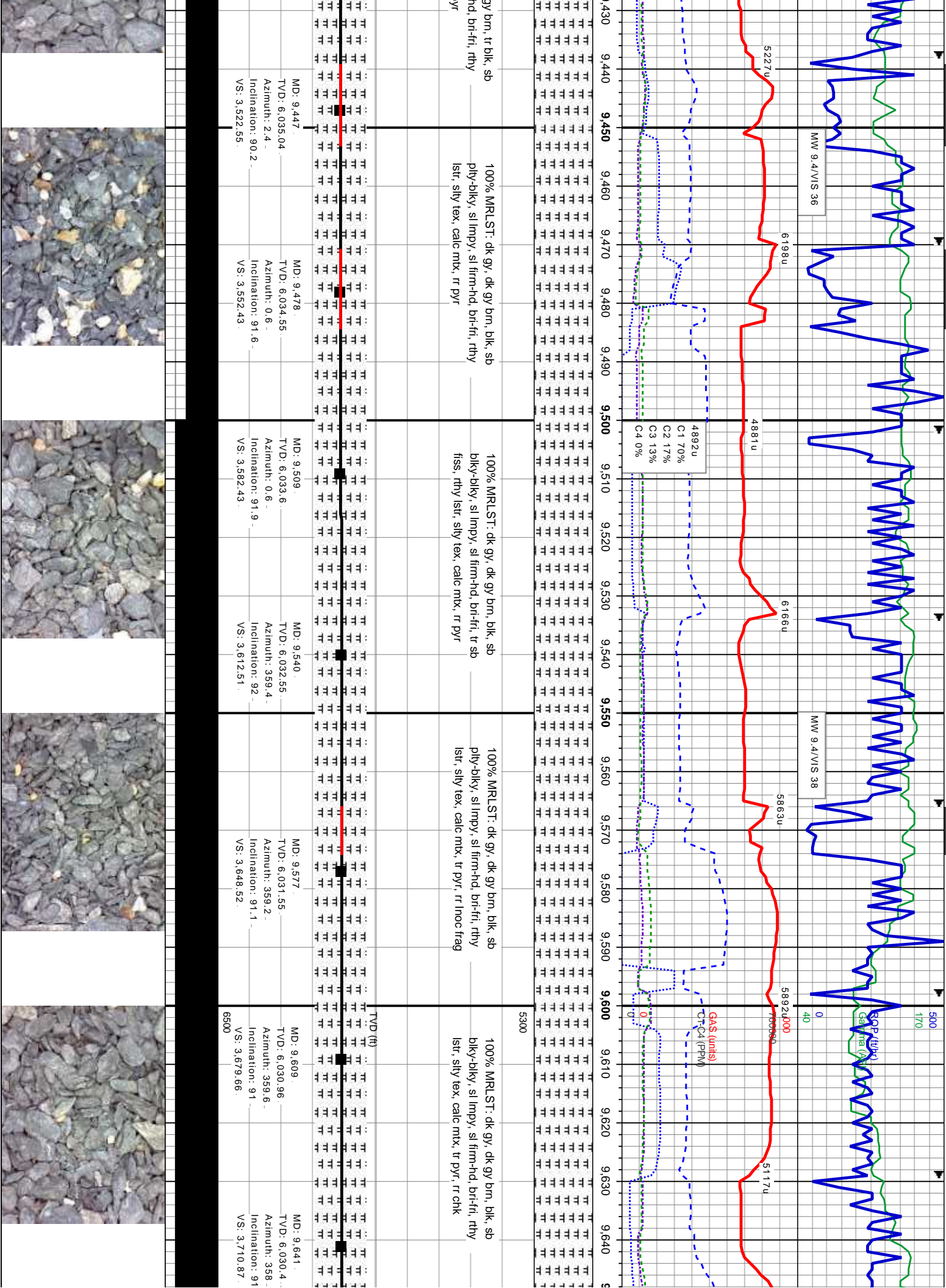
75% MRLST: med-dk gy, dk gy brn, sb pty-bkly, sl firm-mod hd, bri-fri, rthy lstr, silty tex, calc mntx, occ pyr flks

25% CHK: lt-med gy brn, wh-lt gy, mot, pty-bkly, sft-mod hd, fri-bri, rthy lstr, calc

TVD (ft)			
MD: 9.003	MD: 9.034	MD: 9.066	MD: 9.098
TVD: 6.031.25	TVD: 6.031.27	TVD: 6.031.33	TVD: 6.031.47
Azimuth: 3.3	Azimuth: 2	Azimuth: 1.7	Azimuth: 0.5
Inclination: 90	Inclination: 89.9	Inclination: 89.9	Inclination: 89.6
VS: 3.094.46	VS: 3.124.18	VS: 3.154.98	VS: 3.185.89
6500			







MD: 9.447
TVD: 6.035.04
Azimuth: 2.4
Inclination: 90.2
VS: 3.522.55

MD: 9.478
TVD: 6.034.55
Azimuth: 0.6
Inclination: 91.6
VS: 3.552.43

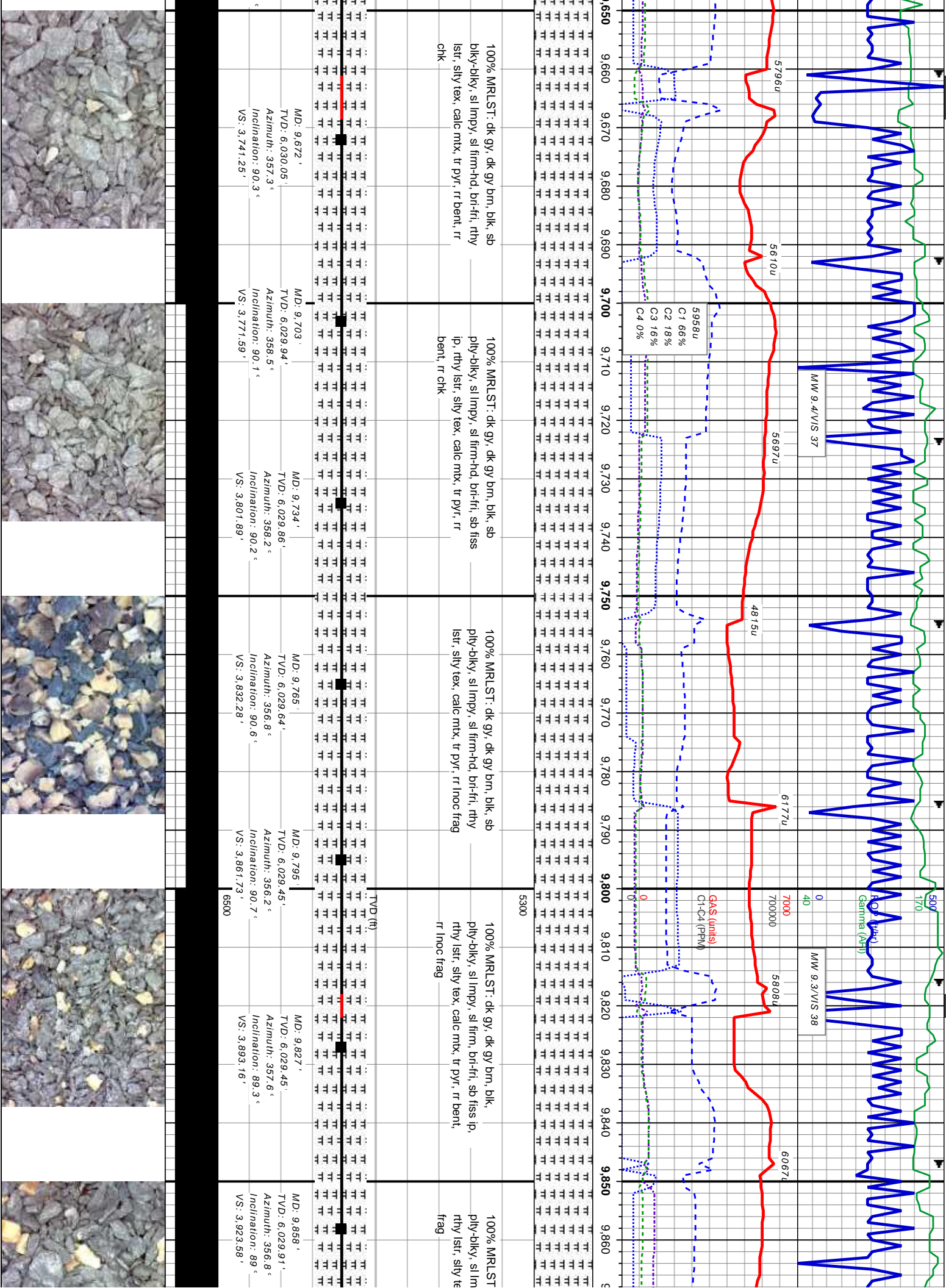
MD: 9.509
TVD: 6.033.6
Azimuth: 0.6
Inclination: 91.9
VS: 3.582.43

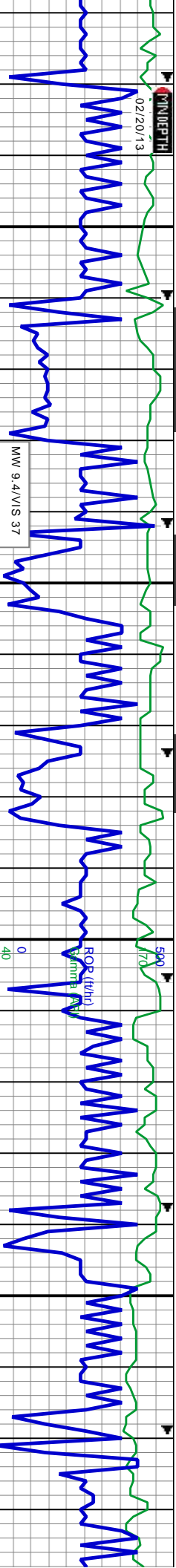
MD: 9.540
TVD: 6.032.55
Azimuth: 359.4
Inclination: 92
VS: 3.612.51

MD: 9.577
TVD: 6.031.55
Azimuth: 359.2
Inclination: 91.1
VS: 3.648.52

MD: 9.609
TVD: 6.030.96
Azimuth: 359.6
Inclination: 91
VS: 3.679.66

MD: 9.641
TVD: 6.030.4
Azimuth: 358
Inclination: 91
VS: 3.710.87





MW 9.4/VIS 37

5166u

C1 57%

C2 17%

C3 15%

C4 11%

ROP (ft/hr)

Gamma Ray

40

7000

7000

4989u

6002u

5676u

GA\$ (units)

C1-C4 (PPM)

0

0

0

0

0

0

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5300

100% MRLST: dk gy, dk gy brn, blk, pty-biky, sl impy, sl firm-mod hd, brt-frt, rthy lstr, silty tex, calc mtx, rr pyr, rr inoc frag

100% MRLST: dk gy, dk gy brn, blk-bik ip, pty-biky, sl impy, sl-mo hd, brt-frt, rthy lstr, silty tex, calc n rr inoc frag

100% MRLST: dk gy, dk gy brn, blk, pty-biky, sl impy, sl firm, brt-frt, rthy lstr, silty tex, calc mtx, tr pyr, tr inoc frag

100% MRLST: dk gy, dk gy brn, blk, pty-biky, sl impy, sl firm-mod hd, brt-frt, rthy lstr, silty tex, calc mtx, rr pyr, rr inoc frag

100% MRLST: dk gy, dk gy brn, blk, pty-biky, sl impy, sl firm-mod hd, brt-frt, rthy lstr, silty tex, calc mtx, rr pyr, rr inoc frag

100% MRLST: dk gy, dk gy brn, blk-bik ip, pty-biky, sl impy, sl-mo hd, brt-frt, rthy lstr, silty tex, calc n rr inoc frag

TVD (ft)

MD: 9.890

TVD: 6.030.58

Azimuth: 355.9

Inclination: 88.6

VS: 3.955.06

MD: 9.922

TVD: 6.031.53

Azimuth: 355.2

Inclination: 88

VS: 3.986.62

MD: 9.954

TVD: 6.032.51

Azimuth: 356.9

Inclination: 88.5

VS: 4.018.12

MD: 9.984

TVD: 6.033.24

Azimuth: 357.1

Inclination: 88.7

VS: 4.047.57

MD: 10.016

TVD: 6.034.02

Azimuth: 356.2

Inclination: 88.5

VS: 4.079.02

MD: 10.047

TVD: 6.035.05

Azimuth: 355.5

Inclination: 87.7

VS: 4.109.56

MD: 10.078

TVD: 6.036.16

Azimuth: 354.7

Inclination: 88.2

VS: 4.140.16



