



Scale: 5" / 100'  
Measured Depth Log

Well Name    Antelope K31-O34-15HNB

Location    NWNE SECTION 15, T5N, R62W

State    COLORADO

County    WELD

Country    USA

Rig Number    CADE 25

API Number    05-123-38736

Region    DJ BASIN

Field    WATTENBERG

Spud Date    2/27/2014

Drilling Completed    3/6/2014

Surface Coordinates    352' FNL x 2544' FEL

Bottom Hole Coordinates    395' FSL x 2207' FEL

Ground Elevation    4680'

K.B. Elevation    4697'

Logged Interval    5800'    To    10994'

Total Depth    10994'

Formation    NIOBRARA B CHALK

Type of Drilling Fluid    FW LSND

Company    Bonanza Creek  
Address    410 17th STRE  
DENVER, CO 8

Name    BRANT LOGAN  
Company    BONANZA CRE  
Address    410 17th STRE  
DENVER, CO 8

COLUMBINE LOGGING, INC  
WELL-SITE GEOLOGISTS

Operator

Energy Inc.

ET, SUITE 1500  
0202

Geologist

EEK ENERGY INC.

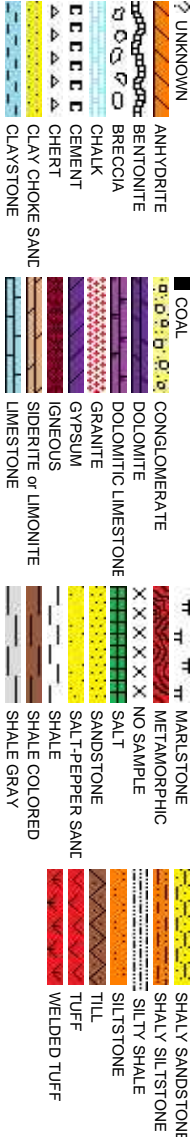
ET, SUITE 1500  
0202

Other

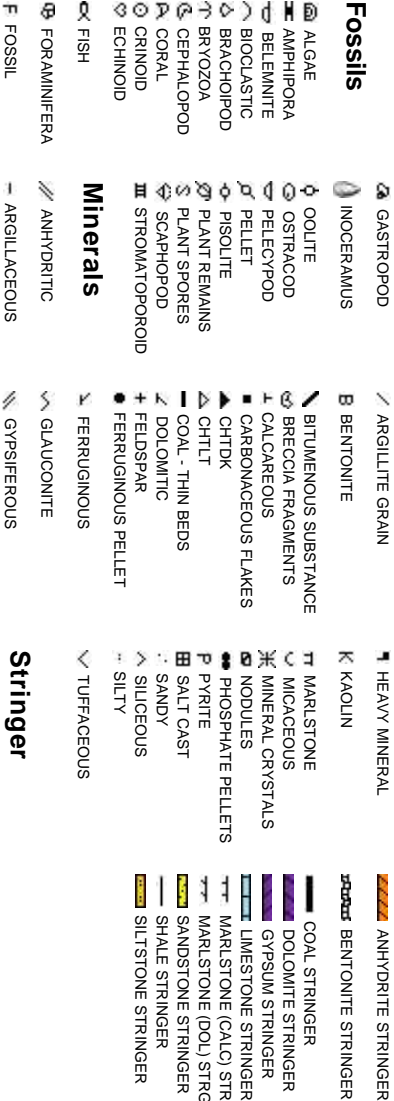
2385 S. LIPAN ST.  
DENVER, CO 80223

JOEY LUCE  
JEFF LACY

Rock Types



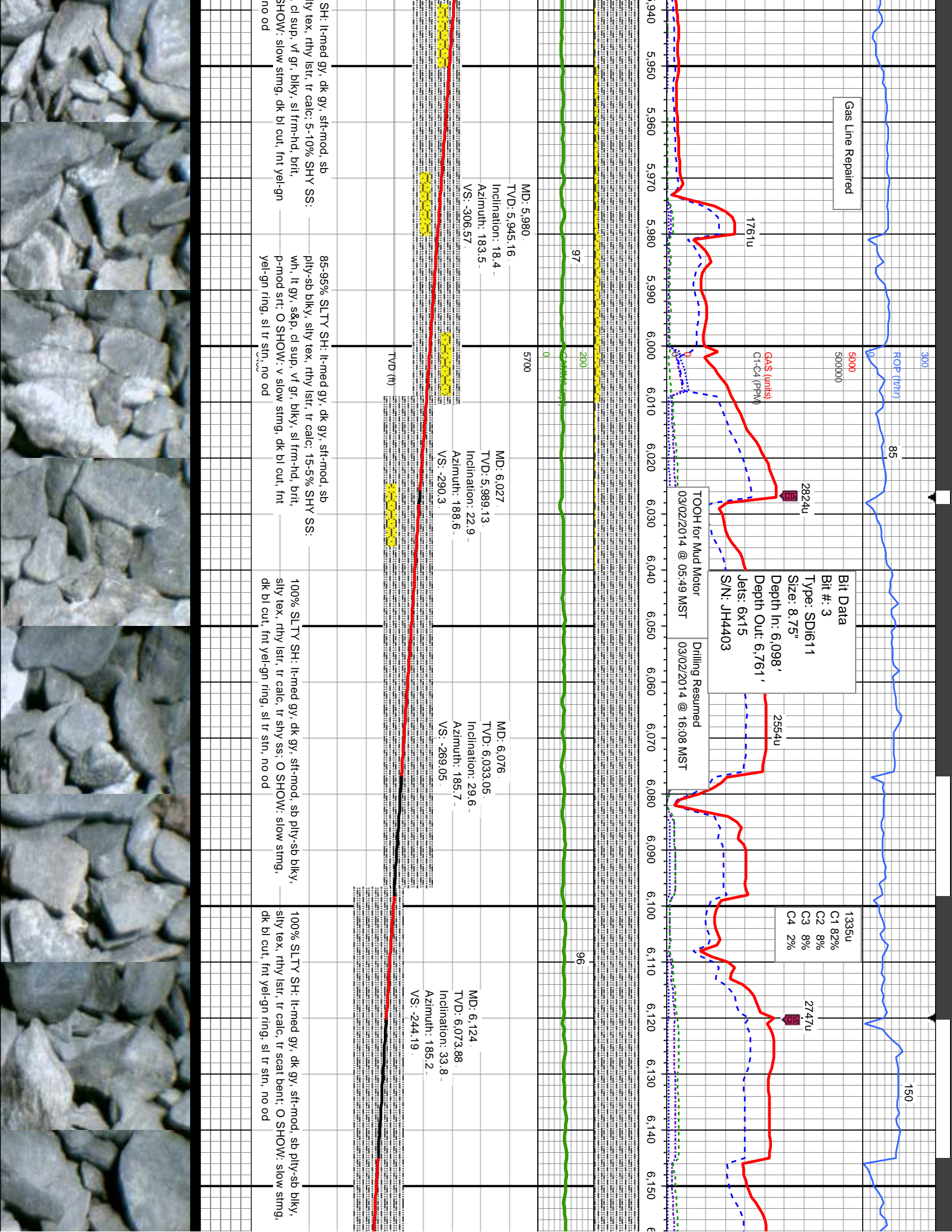
Accessories



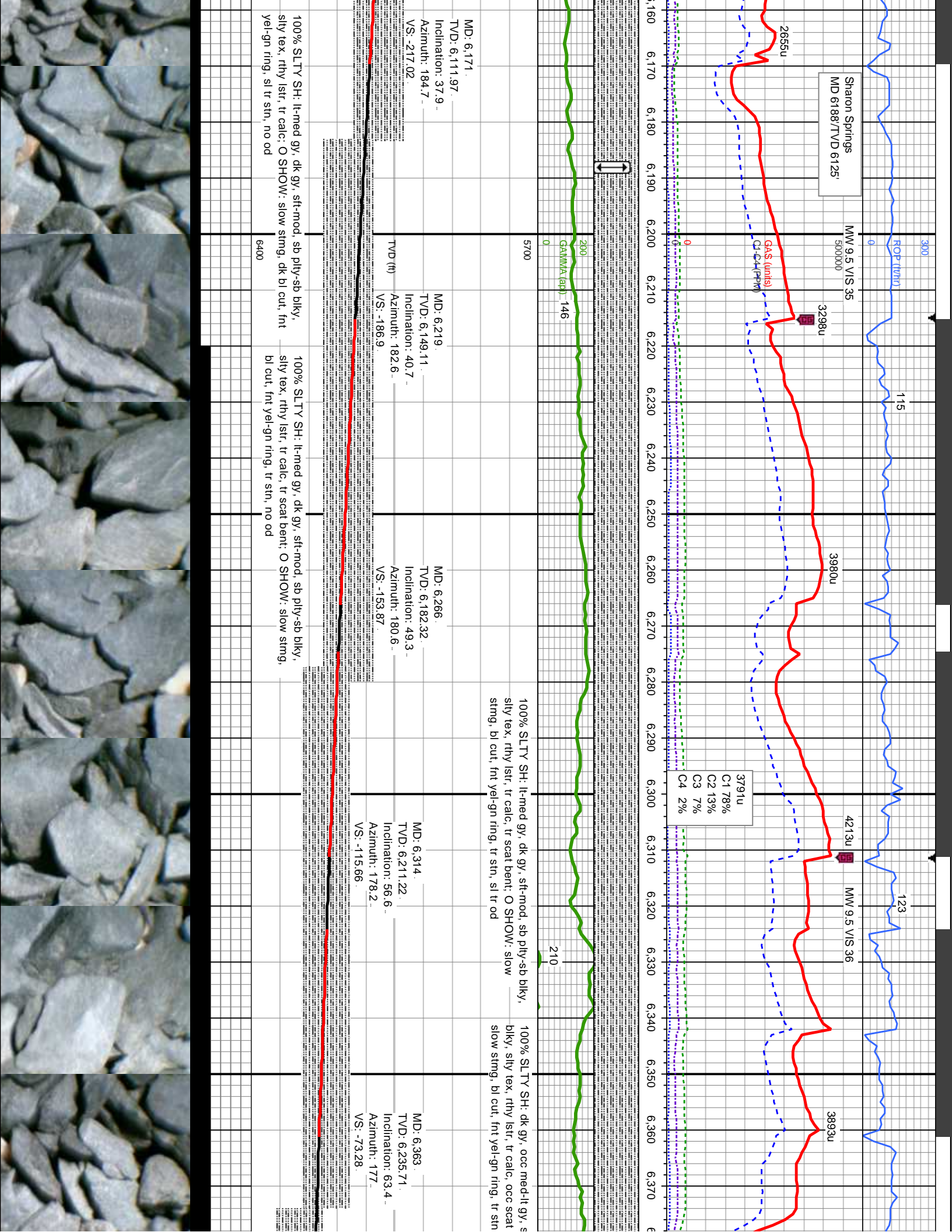


Slide/Rotate			
ROP	ROP Limit 0 to 300 ft/hr	ROP (ft/hr) 58	
ROF	Gas Limit 0 to 5000 units	MW 9.3 VIS 35	
Total Gas & Chromatograph		GAS (units) C1 - - - - - C2 - - - - - C3 - - - - - C4 - - - - -	
Depth Labels		5,760 5,770 5,780 5,790 5,800 5,810 5,820 5,830 5,840 5,850 5,860 5,870 5,880 5,890 5,900 5,910 5,920 5,930	
% Lith		Equipment Repair: icy Conditions	
Curves		TRAP TEST GOOD MW 9.2 VIS 36 C1 97% C2 2% C3 1% C4 0%	
GAMMA		267u 299u 323u	
Well Bore		Bit Data Bit #: 2 Type: JH9853 Size: 8.75" Depth In: 430' Depth Out: 6,098' Jets: 8x14 S/N: SD1513	
Oil Show		COLUMBINE LOGGING 03/01/2014 MANNED 2-PERSON LOGGING WITH BLOODHOUND GAS CHROMATOGRAPH UNIT #0550 BUILD KICKED OFF @ 00:58MST ON 03/02/2014	
Images		80-85% SLTY SH: lt-med gy, dk gy, sft-med, sb ply-sb blkly, silty tex, rthy lstr, tr calc: 20-15% SHY SS: wh, lt gy, s&p, cl sup, vf gr, blkly, sl frm-hd, brit, mod-g strg; O SHOW: slow stmg, dk bl cut, fnt yel-gn ring, no sin, no od	
		85% SLTY SH: lt-med gy, dk gy, sft-med, sb ply-sb blkly, silty tex, rthy lstr, tr calc: 15% SHY SS: wh, lt gy, s&p, cl sup, vf gr, blkly, sl frm-hd, brit, mod-g strg; O SHOW: slow stmg, dk bl cut, fnt yel-gn ring, no sin, no od	
		95-90% SLTY SH: lt-med gy, dk gy, sft-med, sb ply-sb blkly, silty tex, rthy lstr, tr calc: 10-15% SHY SS: wh, lt gy, s&p, cl sup, vf gr, blkly, sl frm-hd, brit, mod-g strg; O SHOW: slow stmg, dk bl cut, fnt yel-gn ring, no sin, no od	











ROP (ft/hr)

MINDEPTH

95

New Gas Limit  
0 to 7000 units

7000

7000000

3648u

Gas (u/psi)

C1-C4 (ppm)

Niobrara B Chalk  
MD 6407 /TVD 6254

5303u

5133u

MM 9.5 VIS 39

5048u

4870u

C1 75%

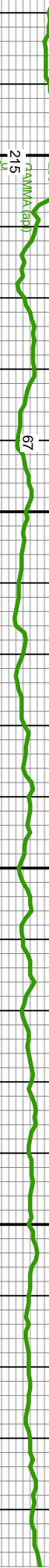
C2 14%

C3 8%

C4 3%

Niobrara B Marl  
MD 6526 /TVD 6287

380 6.390 6.400 6.410 6.420 6.430 6.440 6.450 6.460 6.470 6.480 6.490 6.500 6.510 6.520 6.530 6.540 6.550 6.560 6.570 6.580 6.590



ft-mod, sb ply-sb bent; O SHOW: s1 tr od

560% CHK: lt gy, occ wh-crm, mot, ply-biky, sft-frm, fri-brlt, wxy ip, sily ip, rthy lstr; 25-0% SLTY SH: dk gy, occ med-it gy, sft-mod, sb ply-sb biky, sily tex, rthy lstr, tr calc; 15-40% MRLST: dk gy, blk, sb ply-biky, frm-mod hd, sily-arg tex, rthy lstr, calc mtx, rr scat bent; O SHOW: mod fast stimg, slow stimg, bl cut, frt yel-gn ring, tr stn, sl tr od

70-40% CHK: lt gy, occ wh-crm, mot, ply-biky, sft-frm, fri-brlt, wxy ip, sily ip, rthy lstr; 30-60% MRLST: dk gy, blk, sb ply-biky, frm-mod hd, sily-arg tex, rthy lstr, calc mtx, rr scat bent; tr sily sh; O SHOW: mod fast stimg, bishwh cut, yel-wh ring, fr stn, tr od

65-70% MRLST: dk gy, blk, spd wh ip, sb ply-biky, frm-mod hd, sily-arg tex, rthy lstr, calc mtx, scat bent, tr foss; 35-30% CHK: lt-med gy, wh-crm, mot, ply-biky, sft-frm, fri-brlt, wxy ip, sily ip, rthy lstr; O SHOW: mod slow stimg, bishwh cut, yel-wh ring, tr stn, tr od

85-90% MRLST: frm-mod hd, sily foss; 15-10% CHK: ply-biky, sft-frm SHOW: mod stimg

TVMD: 6.411  
TVD: 6.255.45  
Inclination: 68-  
Azimuth: 177.4-  
VS: -29.55

MD: 6.458  
TVD: 6.270.63  
Inclination: 74.3-  
Azimuth: 177.6-  
VS: 14.88

MD: 6.506  
TVD: 6.282.81  
Inclination: 76.3  
Azimuth: 177.1-  
VS: 61.29

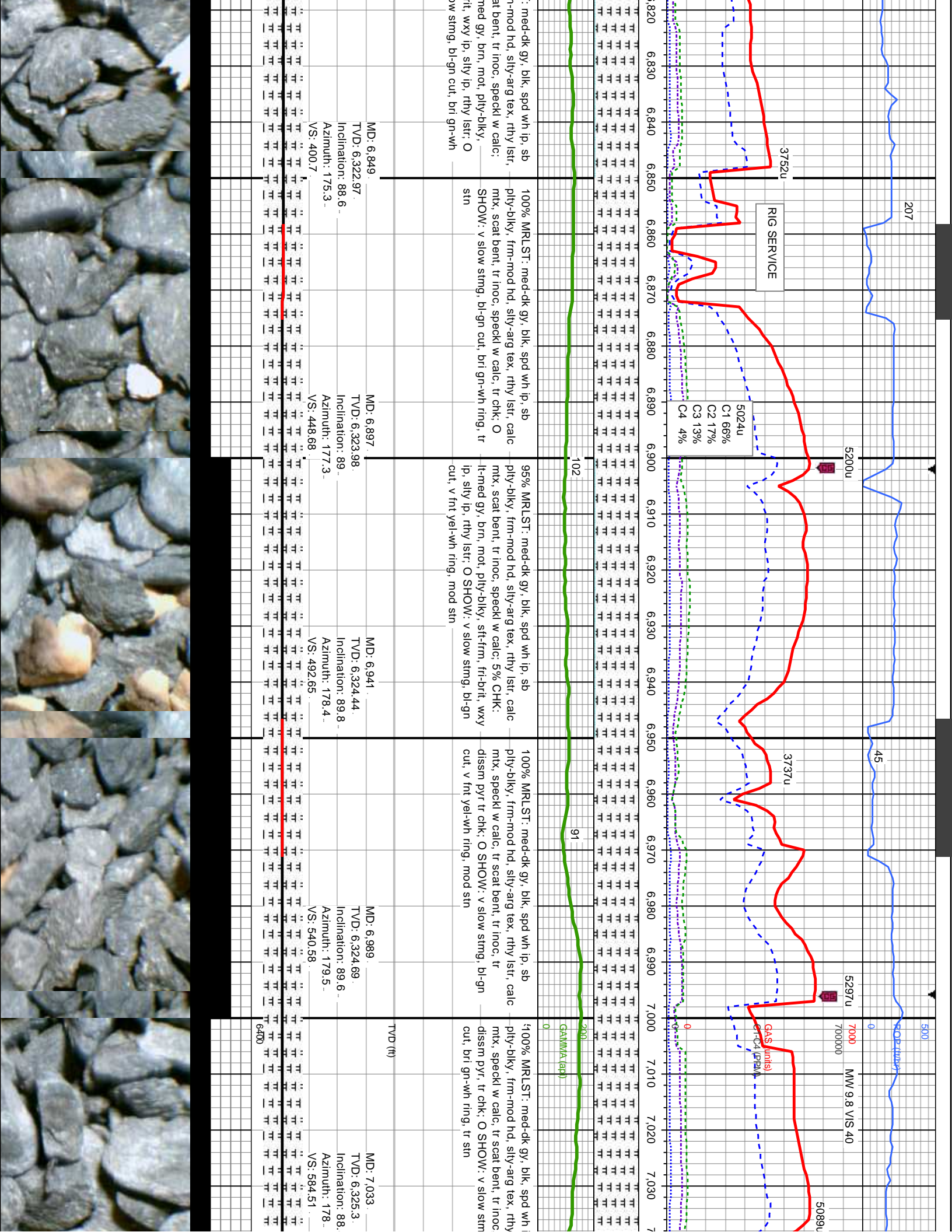
MD: 6.554  
TVD: 6.293.73  
Inclination: 77.4-  
Azimuth: 177.2-  
VS: 108.02

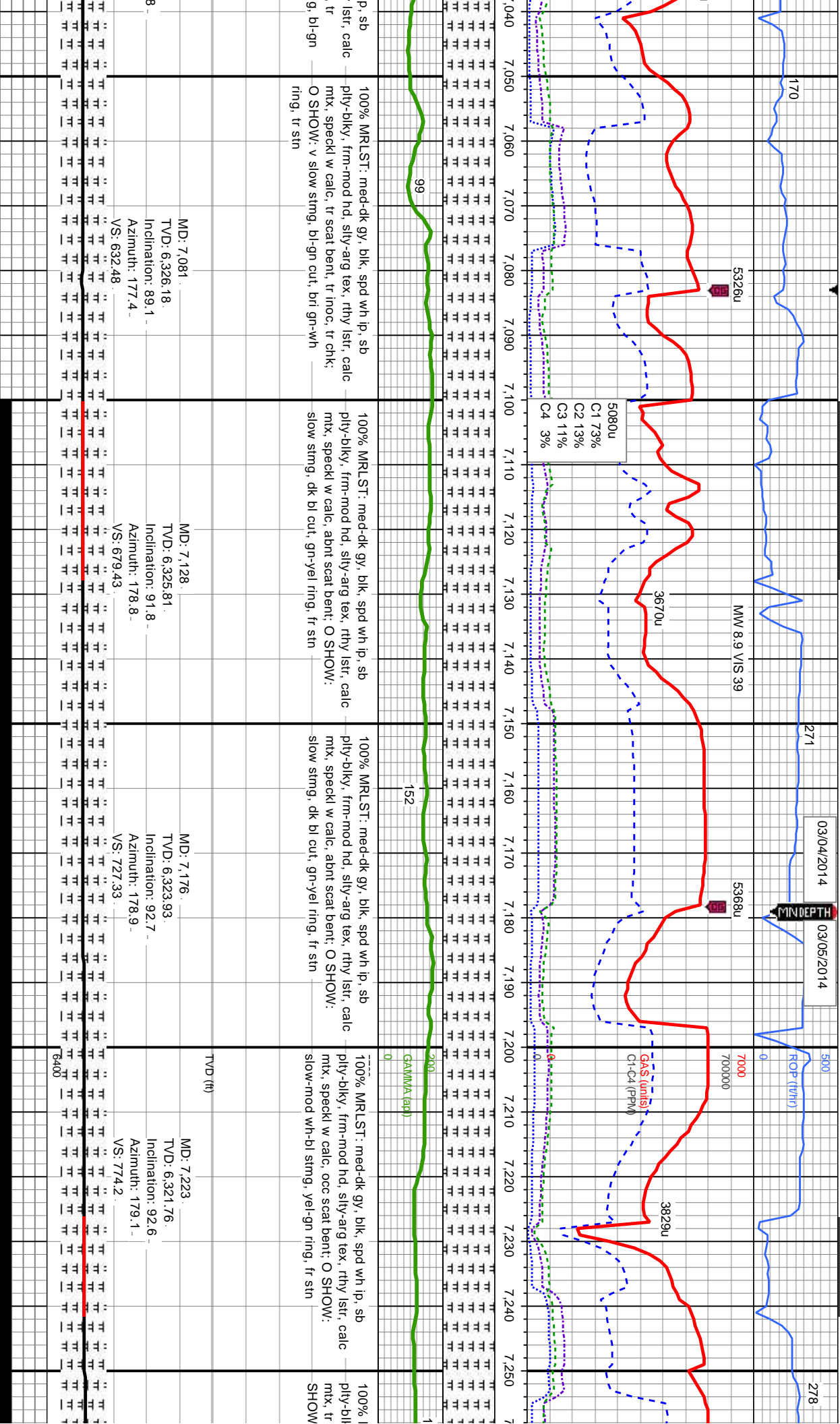
D/U Fault Sharon Springs to B Chalk



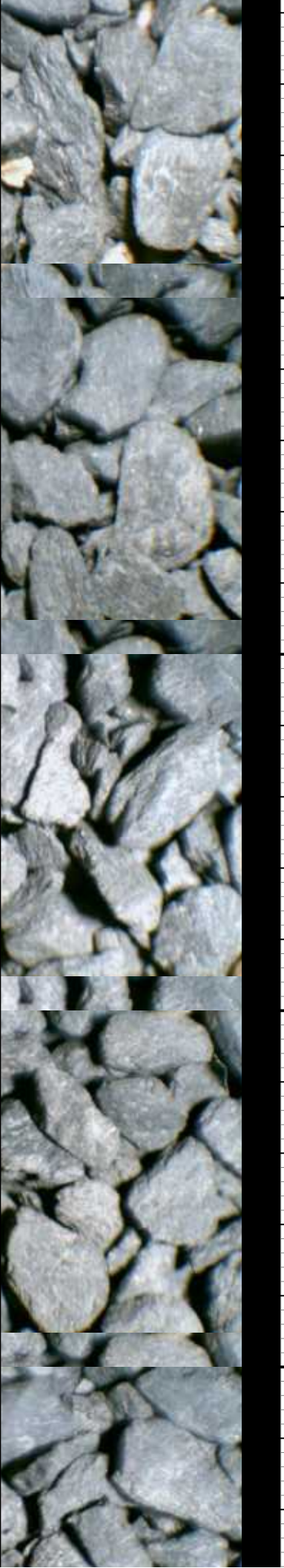
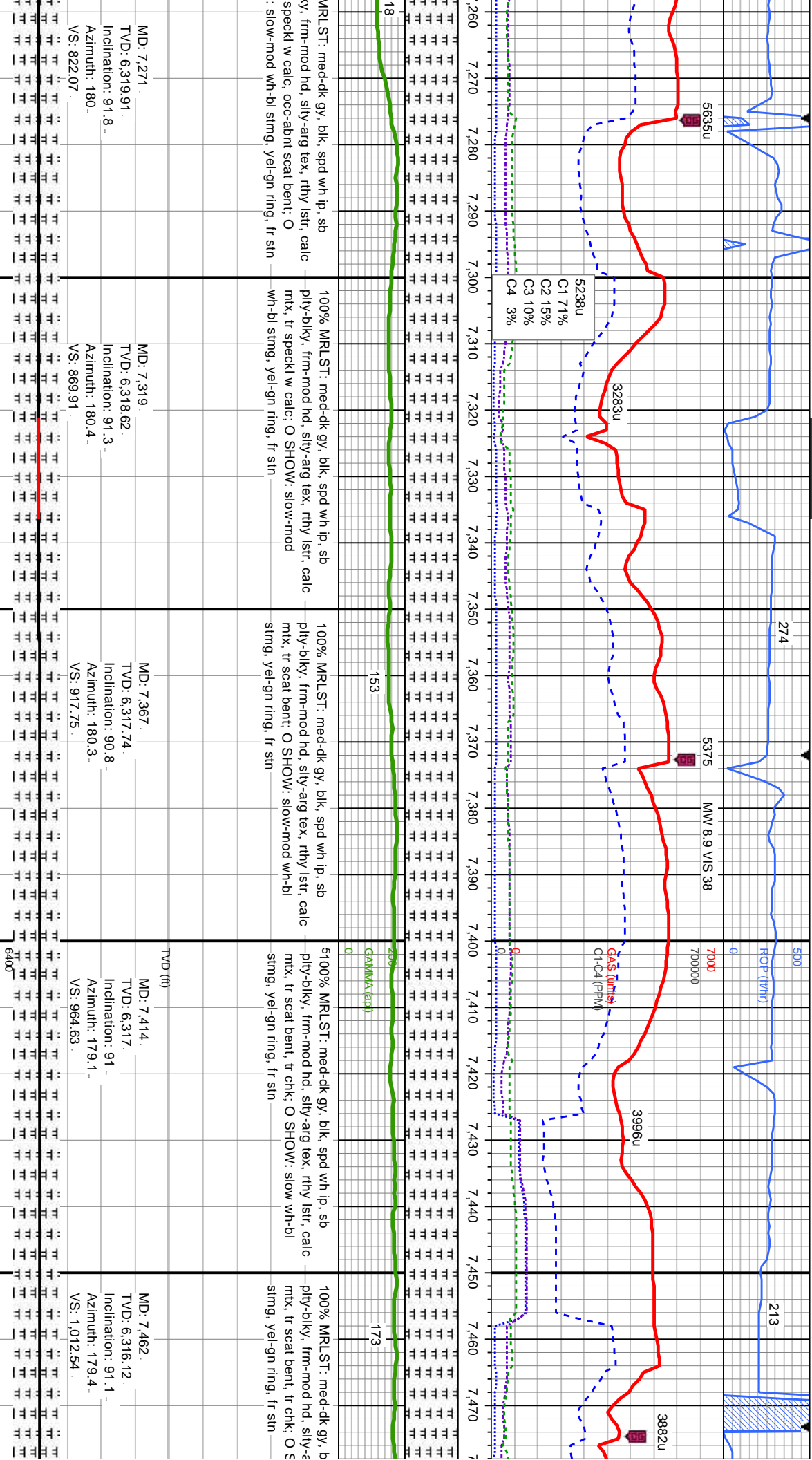




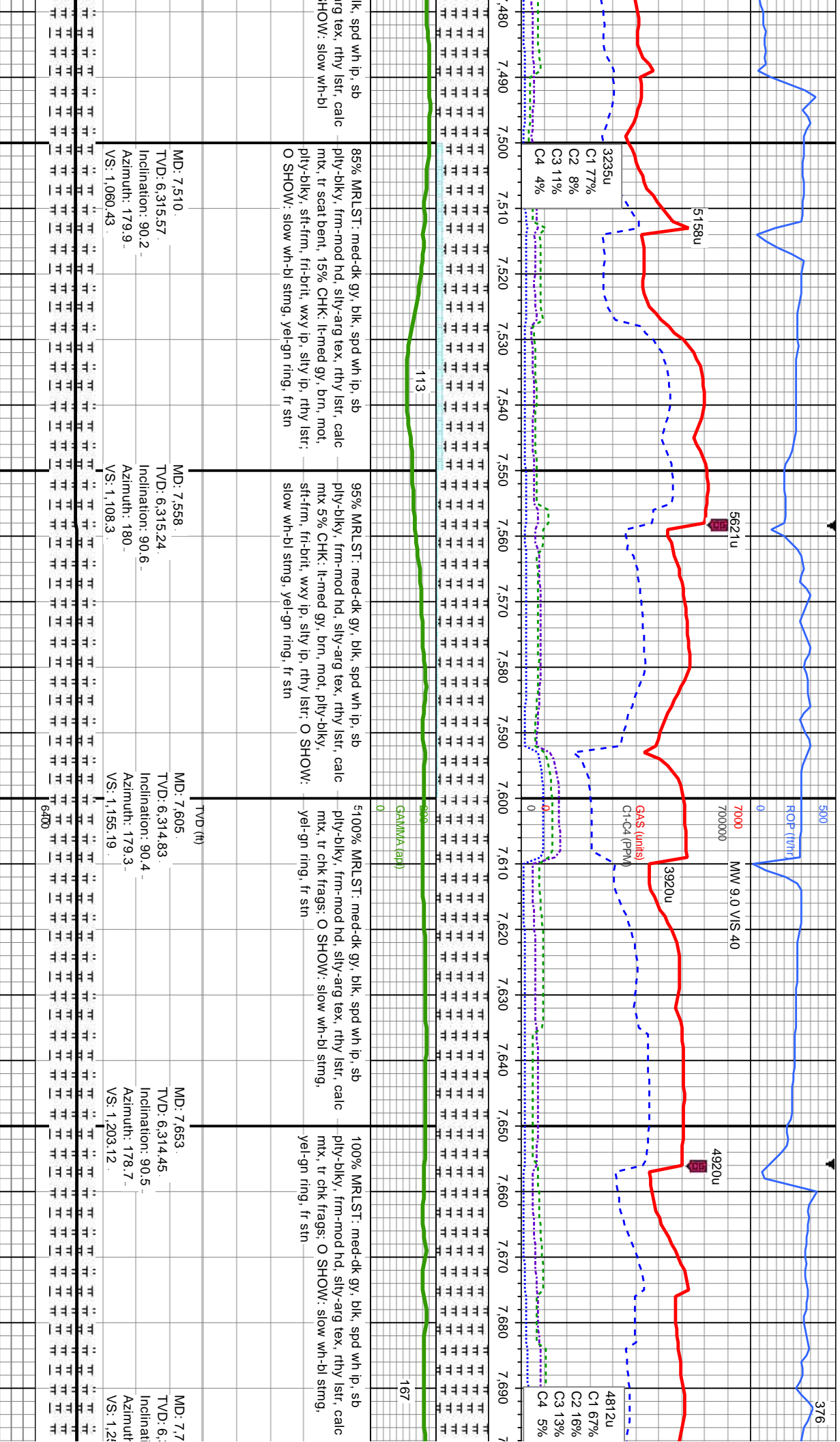






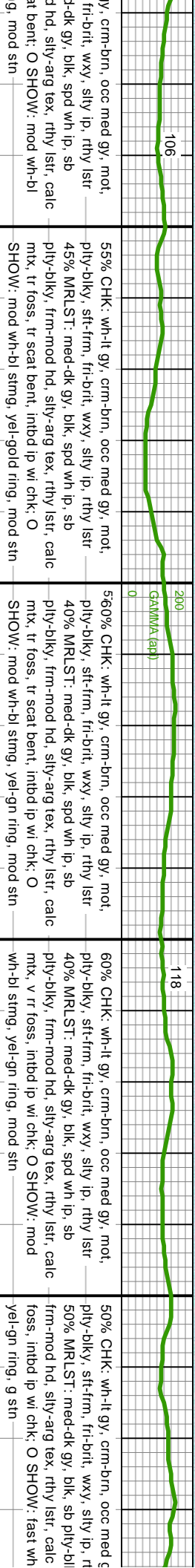
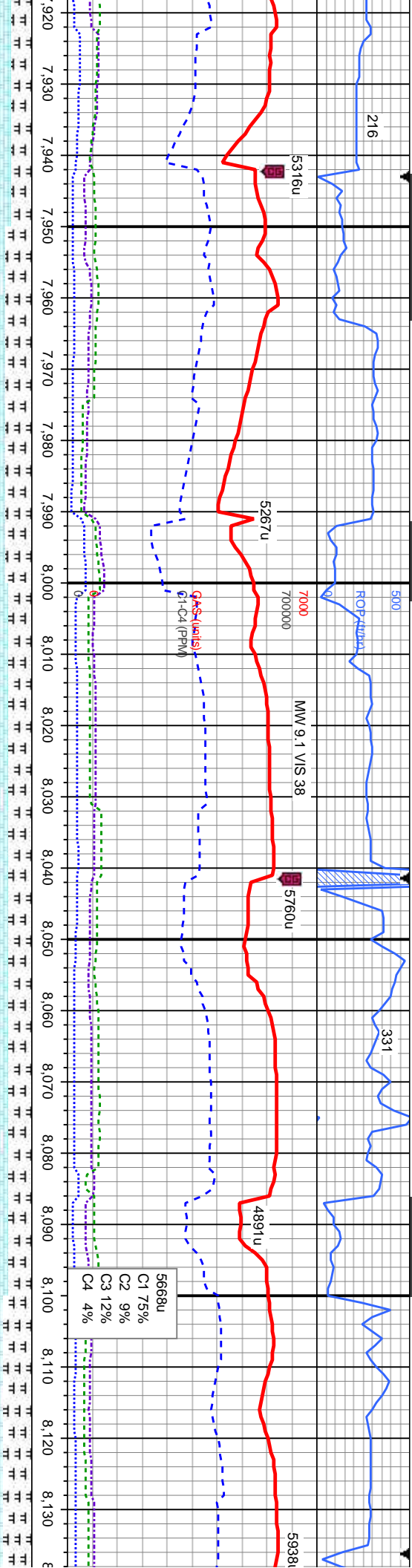








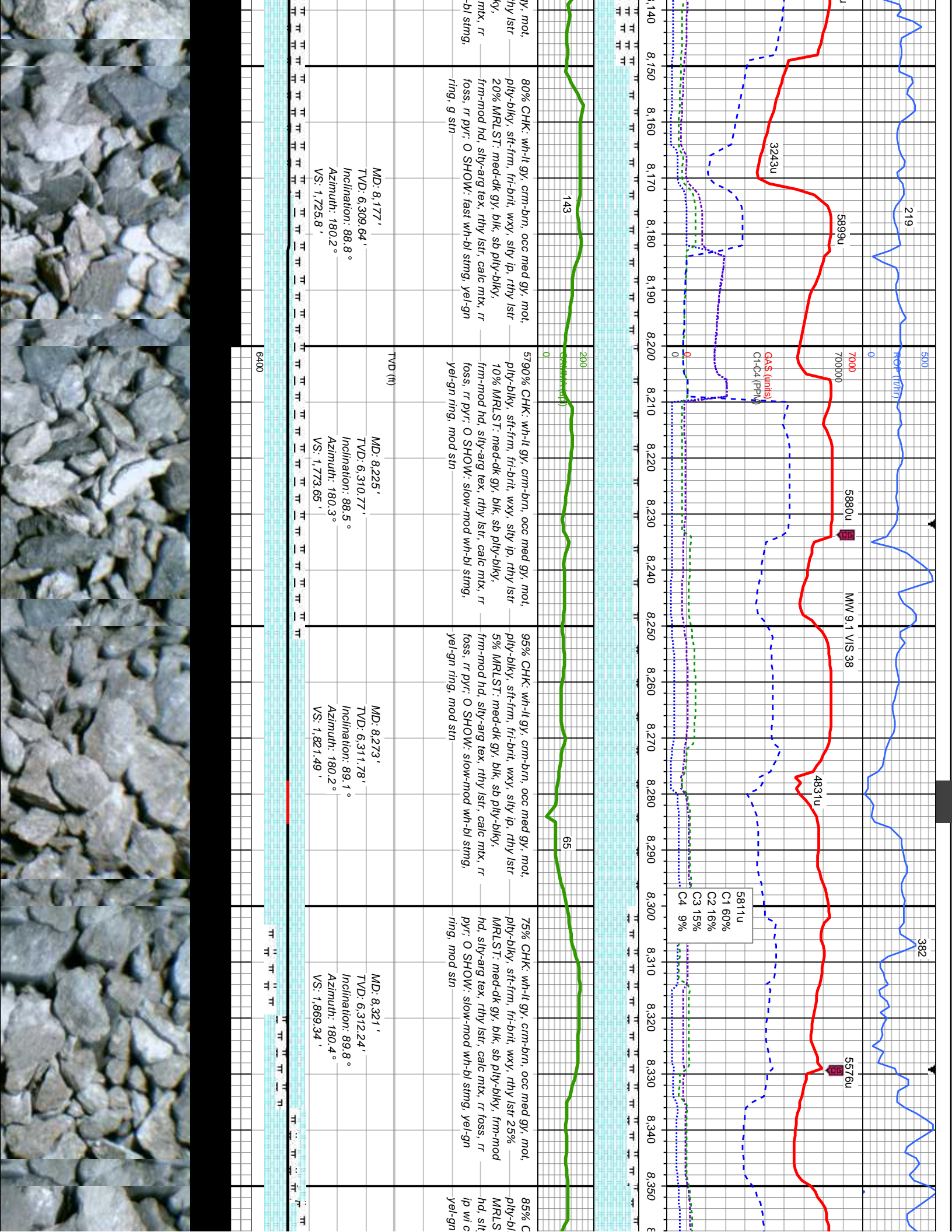




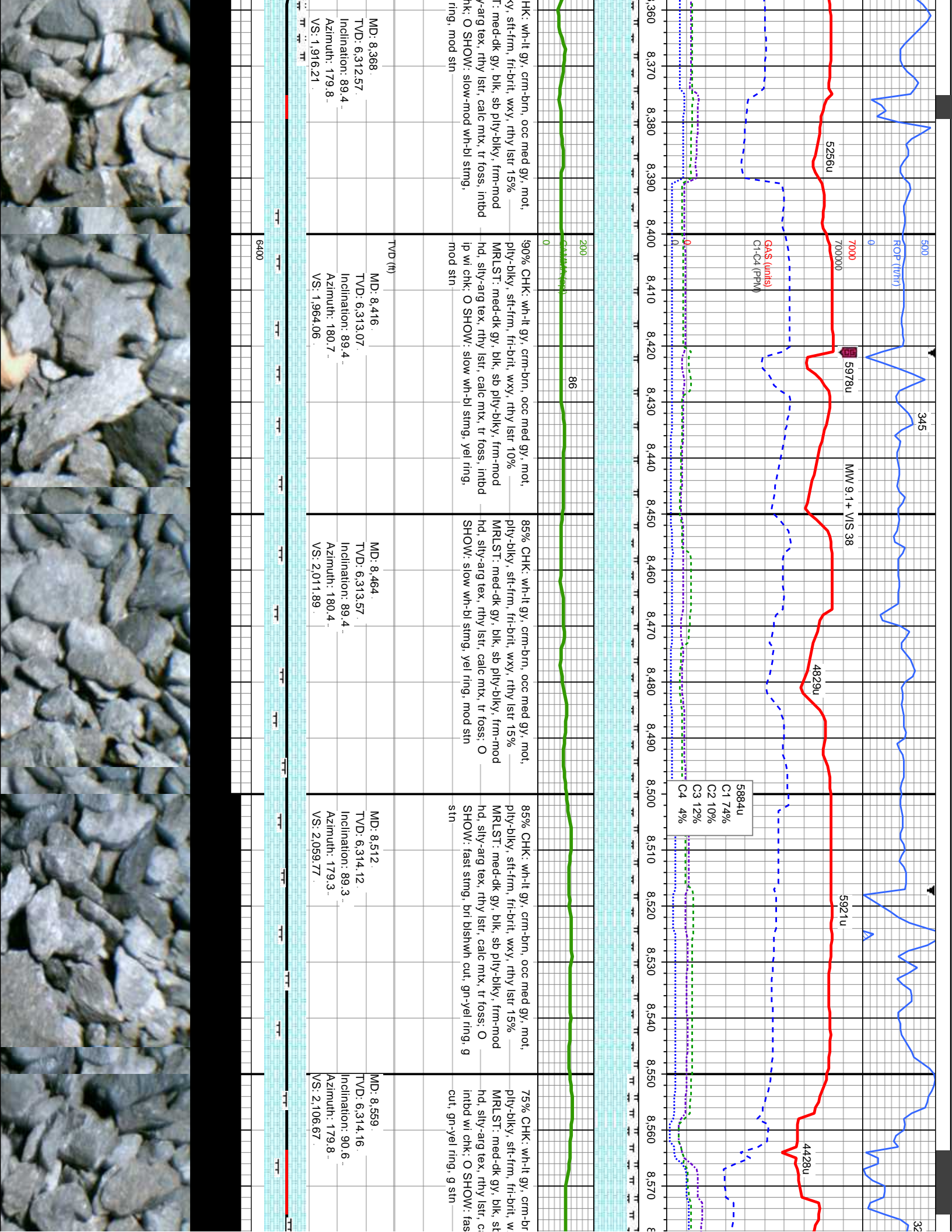
55% CHK: wh-ll gy, crm-brn, occ med gy, mot, pily-blky, sft-frm, fri-brlt, wxy, silty ip, rthy lstr 45% MRLST: med-dk gy, blk, spd wh ip, sb pily-blky, frm-mod hd, silty-arg tex, rthy lstr, calc mtz, tr foss, tr scat bent, intbd ip wi chk, O SHOW: mod wh-bl sting, yel-gold ring, mod stn	560% CHK: wh-ll gy, crm-brn, occ med gy, mot, pily-blky, sft-frm, fri-brlt, wxy, silty ip, rthy lstr 40% MRLST: med-dk gy, blk, spd wh ip, sb pily-blky, frm-mod hd, silty-arg tex, rthy lstr, calc mtz, tr foss, tr scat bent, intbd ip wi chk, O SHOW: mod wh-bl sting, yel-gn ring, mod stn	60% CHK: wh-ll gy, crm-brn, occ med gy, mot, pily-blky, sft-frm, fri-brlt, wxy, silty ip, rthy lstr 40% MRLST: med-dk gy, blk, spd wh ip, sb pily-blky, frm-mod hd, silty-arg tex, rthy lstr, calc mtz, v rr foss, intbd ip wi chk, O SHOW: mod wh-bl sting, yel-gn ring, mod stn	50% CHK: wh-ll gy, crm-brn, occ med gy, mot, pily-blky, sft-frm, fri-brlt, wxy, silty ip, rthy lstr 50% MRLST: med-dk gy, blk, sb pily-blky, frm-mod hd, silty-arg tex, rthy lstr, calc foss, intbd ip wi chk, O SHOW: fast wh yel-gn ring, g stn
MD: 7.940. TVD: 6,310.77. Inclination: 92.3. Azimuth: 180.4. VS: 1,489.64.	MD: 7.987. TVD: 6,309.3. Inclination: 91.3. Azimuth: 180.7. VS: 1,536.45.	MD: 8.035. TVD: 6,308.5. Inclination: 90.6. Azimuth: 180.3. VS: 1,584.28.	MD: 8.083. TVD: 6,308.25. Inclination: 90. Azimuth: 181. VS: 1,632.11.
MD: 7.940. TVD: 6,310.77. Inclination: 92.3. Azimuth: 180.4. VS: 1,489.64.	MD: 7.987. TVD: 6,309.3. Inclination: 91.3. Azimuth: 180.7. VS: 1,536.45.	MD: 8.035. TVD: 6,308.5. Inclination: 90.6. Azimuth: 180.3. VS: 1,584.28.	MD: 8.083. TVD: 6,308.25. Inclination: 90. Azimuth: 181. VS: 1,632.11.
MD: 8.130. TVD: 6,308.7. Inclination: 88.9. Azimuth: 180.1. VS: 1,678.95.	MD: 8.130. TVD: 6,308.7. Inclination: 88.9. Azimuth: 180.1. VS: 1,678.95.	MD: 8.130. TVD: 6,308.7. Inclination: 88.9. Azimuth: 180.1. VS: 1,678.95.	MD: 8.130. TVD: 6,308.7. Inclination: 88.9. Azimuth: 180.1. VS: 1,678.95.





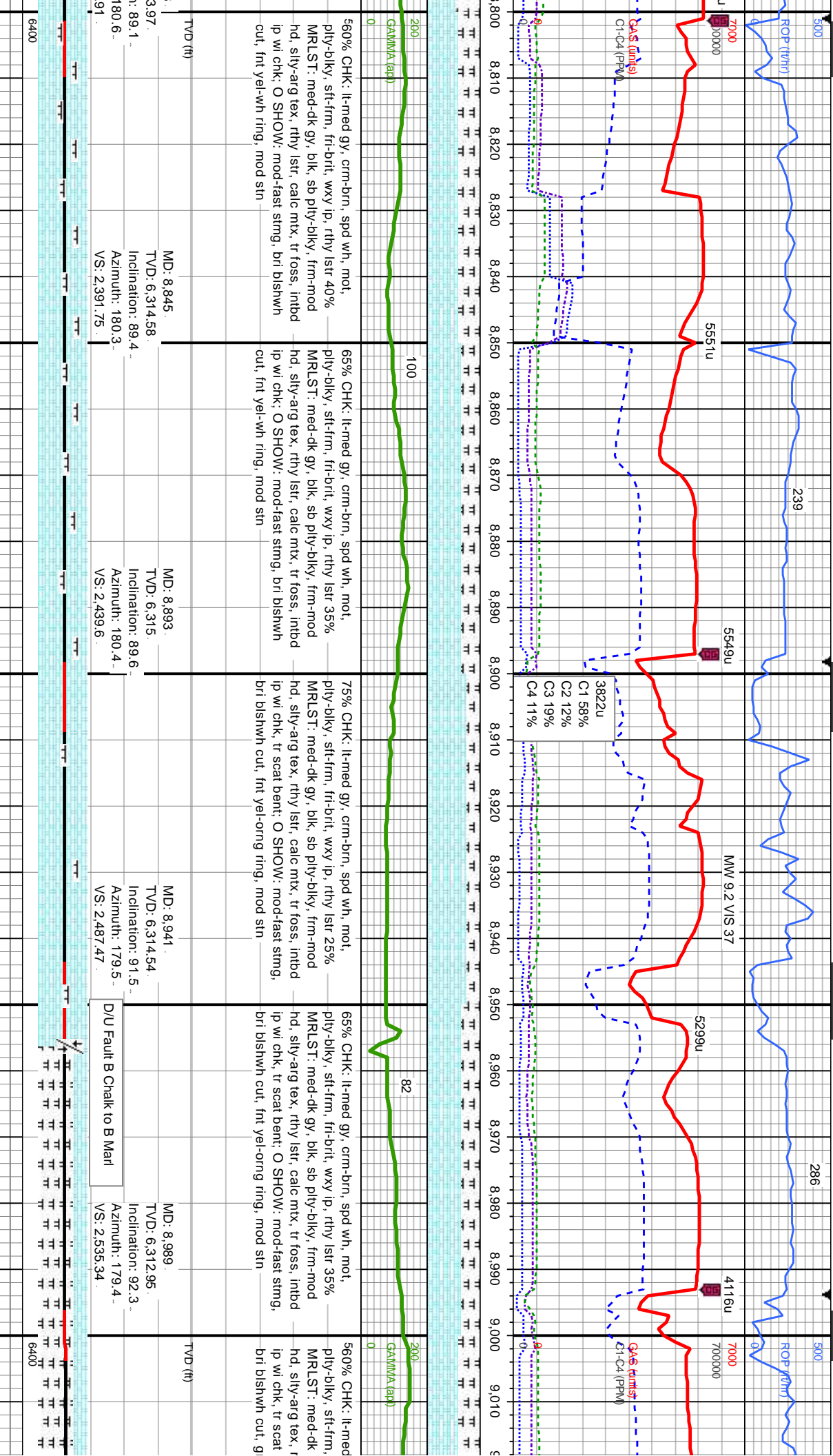








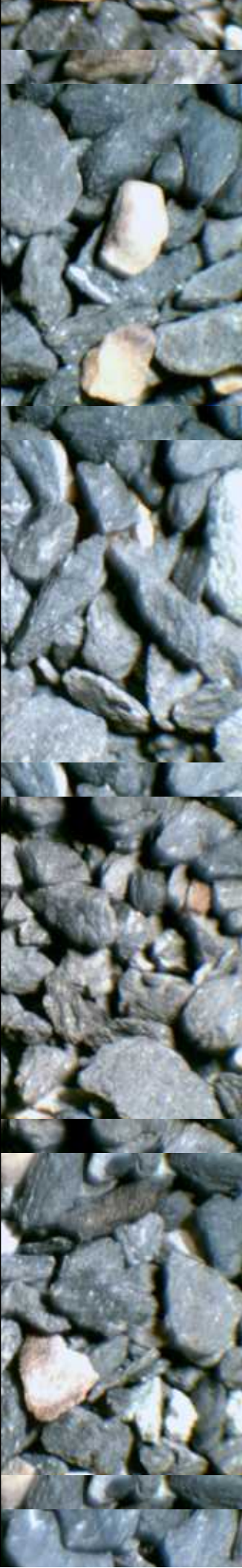
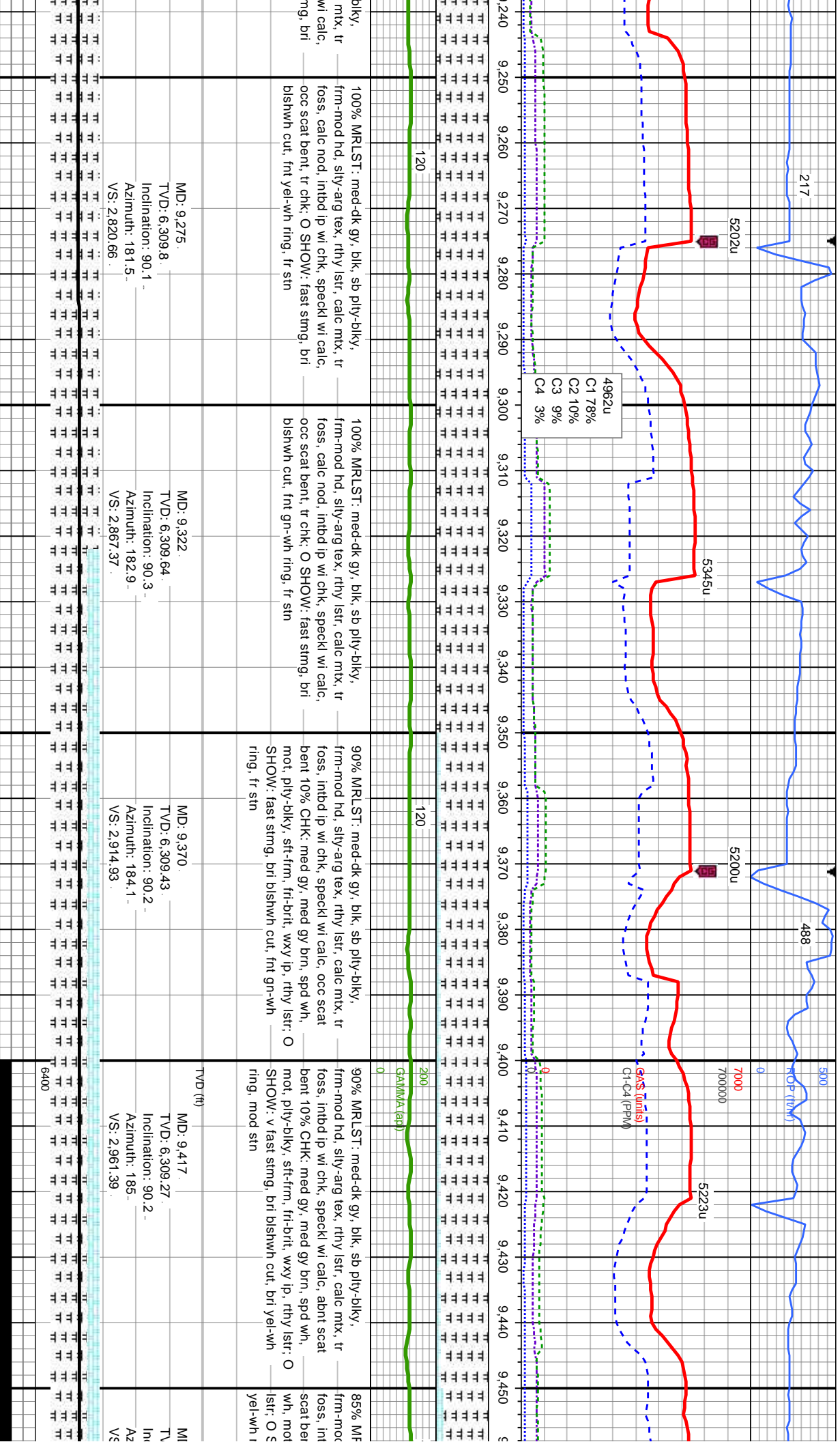


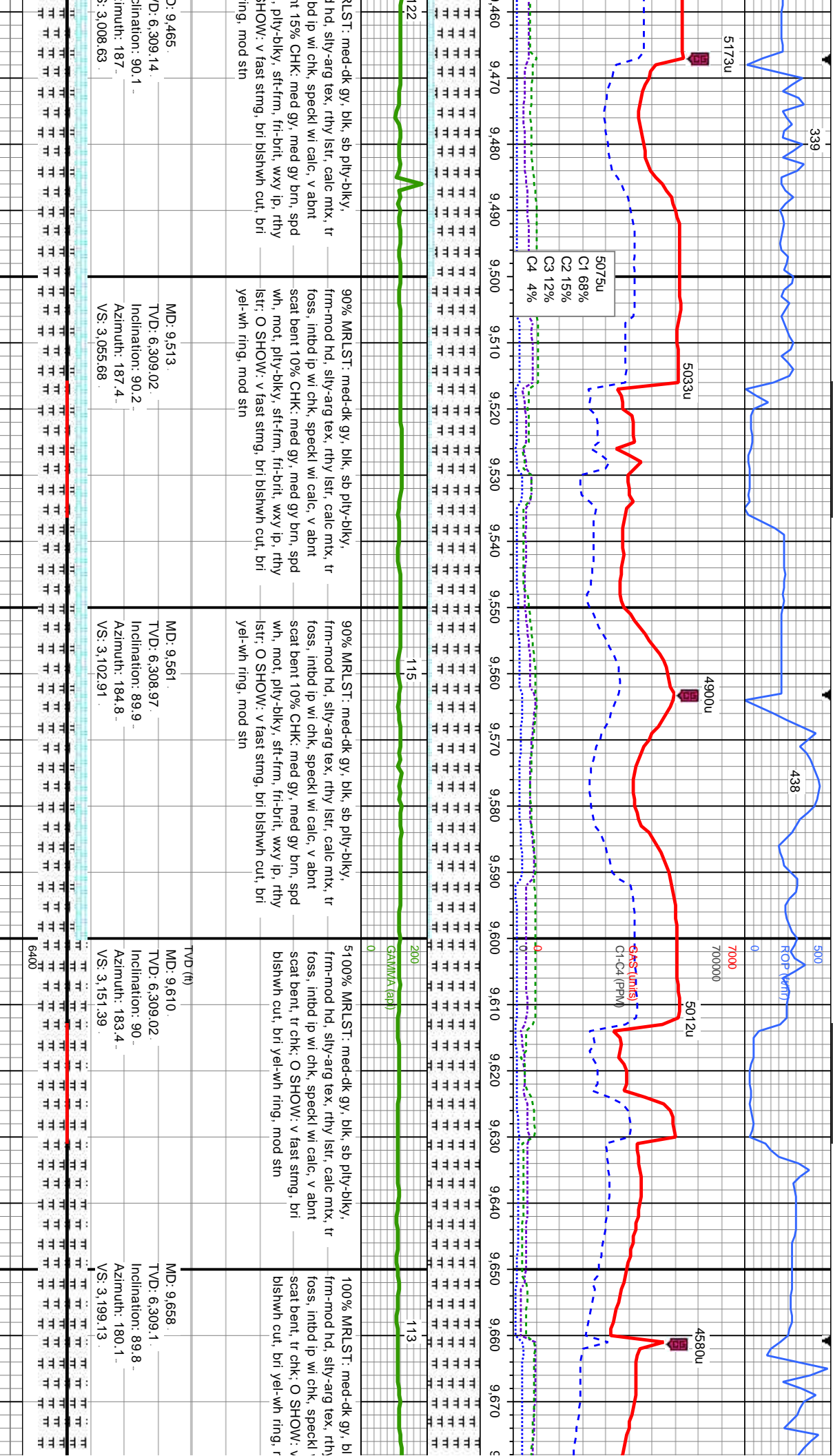










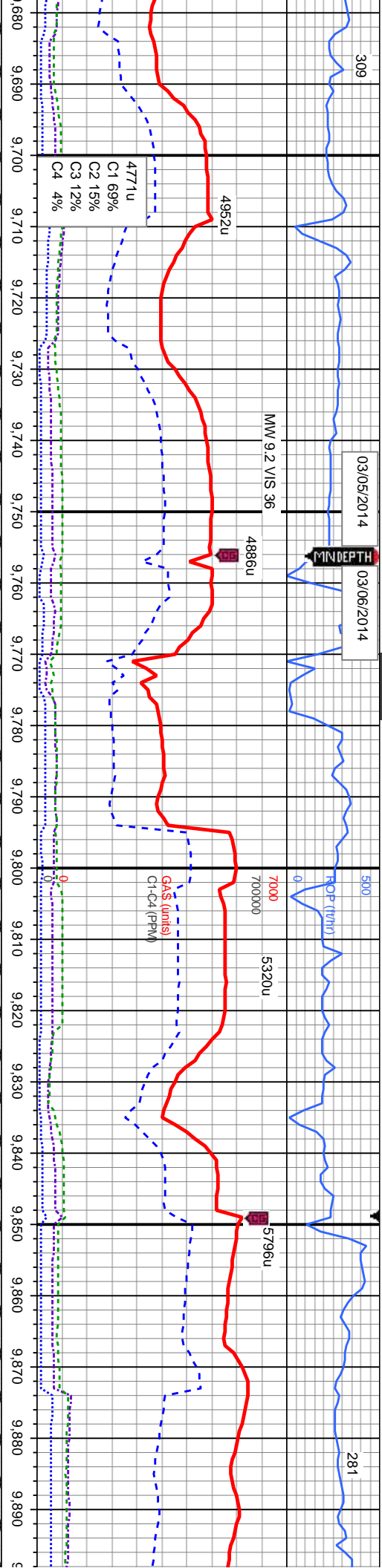




03/05/2014 03/06/2014

MINDEPTH

281

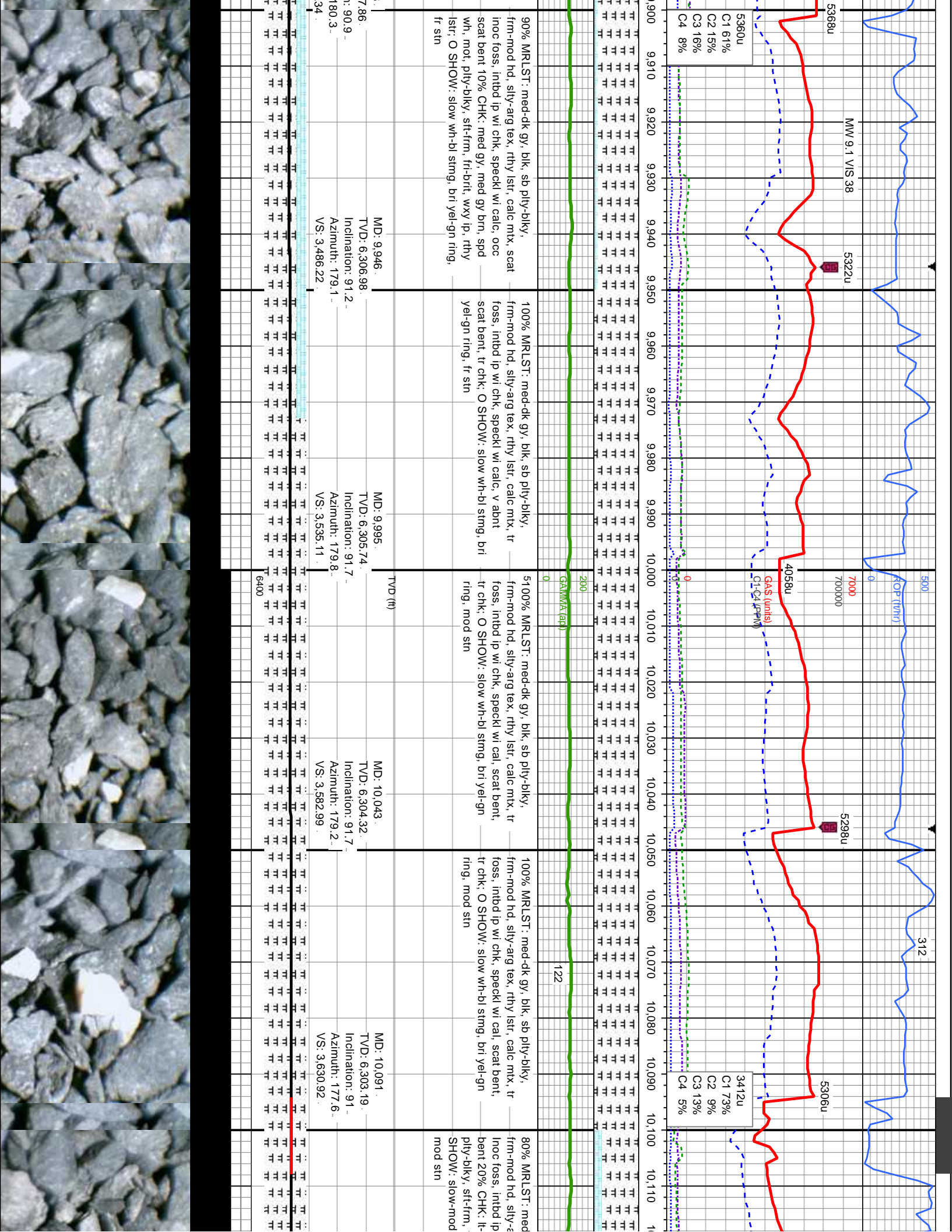


85% MRLST: med-dk gy, blk, sb pty-biky, frm-mod hd, silty-arg tex, rthy lstr, calc mtx, scat inoc foss, intbd ip wi chk, speckl wi calc, v abnt scat bent 15% CHK: med gy, med gy brn, spd wh, mot, pty-biky, sft-frm, fri-brit, wxy ip, lstr: O SHOW: slow wh-bl stimg, bri yel-gn ring, fr stn	80% MRLST: med-dk gy, blk, sb pty-biky, frm-mod hd, silty-arg tex, rthy lstr, calc mtx, scat inoc foss, intbd ip wi chk, speckl wi calc, abnt scat bent 20% CHK: med gy, med gy brn, spd wh, mot, pty-biky, sft-frm, fri-brit, wxy ip, lstr: O SHOW: slow wh-bl stimg, bri yel-gn ring, fr stn	90% MRLST: med-dk gy, blk, sb pty-biky, frm-mod hd, silty-arg tex, rthy lstr, calc mtx, scat inoc foss, intbd ip wi chk, speckl wi calc, v abnt scat bent 10% CHK: med gy, med gy brn, spd wh, mot, pty-biky, sft-frm, fri-brit, wxy ip, lstr: O SHOW: slow wh-bl stimg, bri yel-gn ring, fr stn	90% MRLST: med-dk gy, blk, sb pty-biky, frm-mod hd, silty-arg tex, rthy lstr, calc mtx, scat inoc foss, intbd ip wi chk, speckl wi calc, occ scat bent 10% CHK: med gy, med gy brn, spd wh, mot, pty-biky, sft-frm, fri-brit, wxy ip, lstr: O SHOW: slow wh-bl stimg, bri yel-gn ring, fr stn
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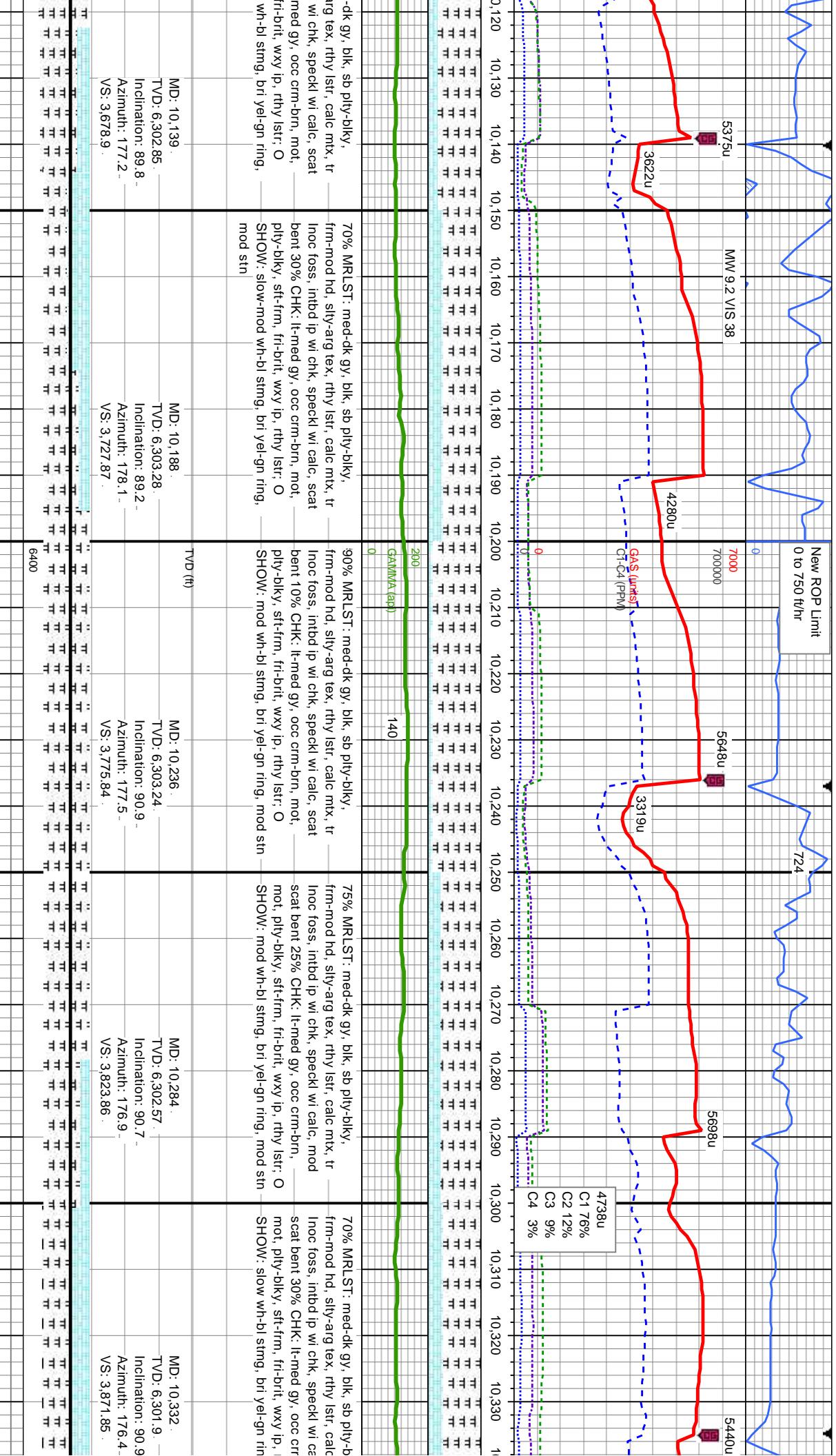
MD: 9.704 TVD: 6.309.22 Inclination: 89.9 Azimuth: 180.8 VS: 3.244.98	MD: 9.752 TVD: 6.309.3 Inclination: 89.9 Azimuth: 181.1 VS: 3.292.78	MD: 9.801 TVD: 6.309.18 Inclination: 90.4 Azimuth: 180.1 VS: 3.341.61	MD: 9.849 TVD: 6.308.63 Inclination: 90.9 Azimuth: 179.8 VS: 3.389.48	MD: 9.898 TVD: 6.30 Inclination: Azimuth: VS: 3.438
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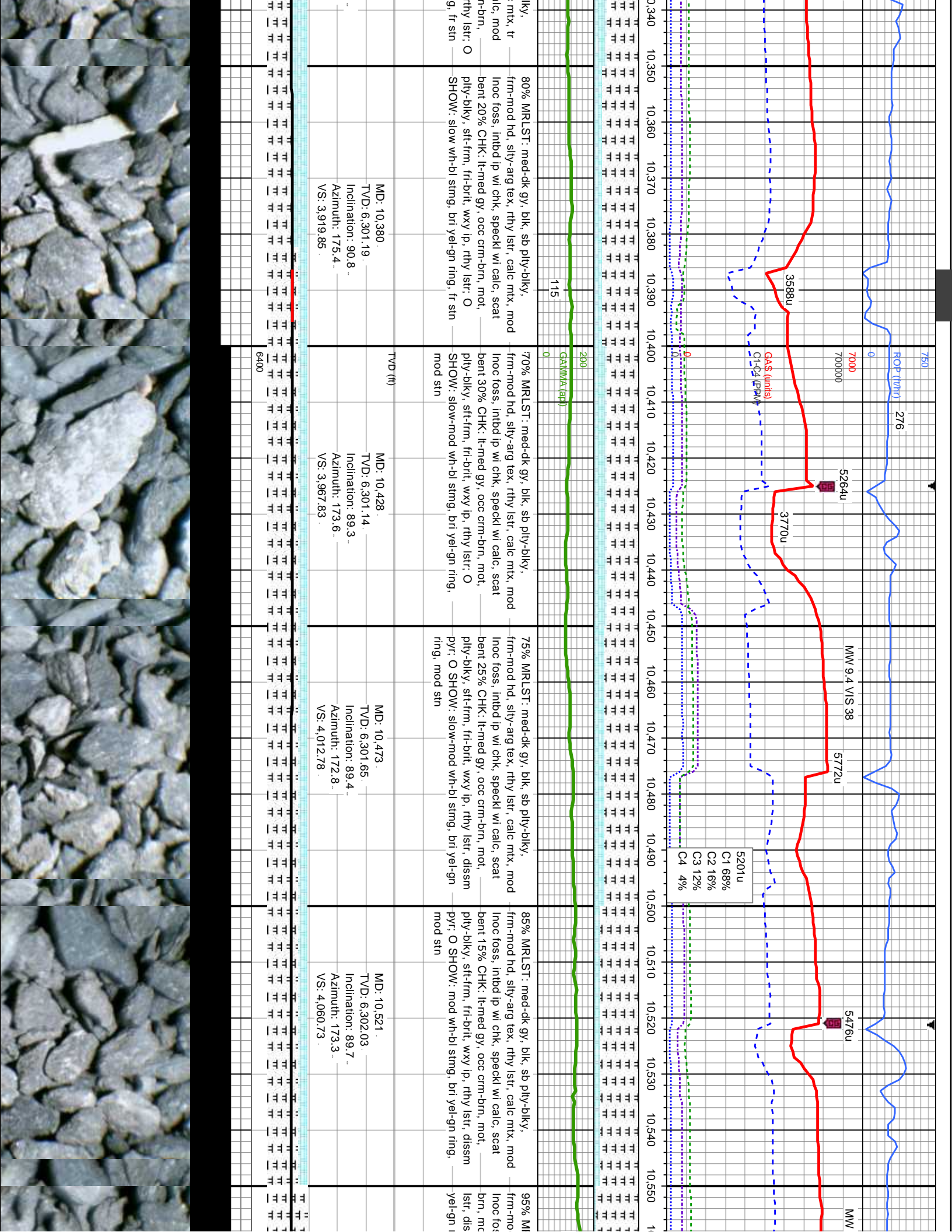




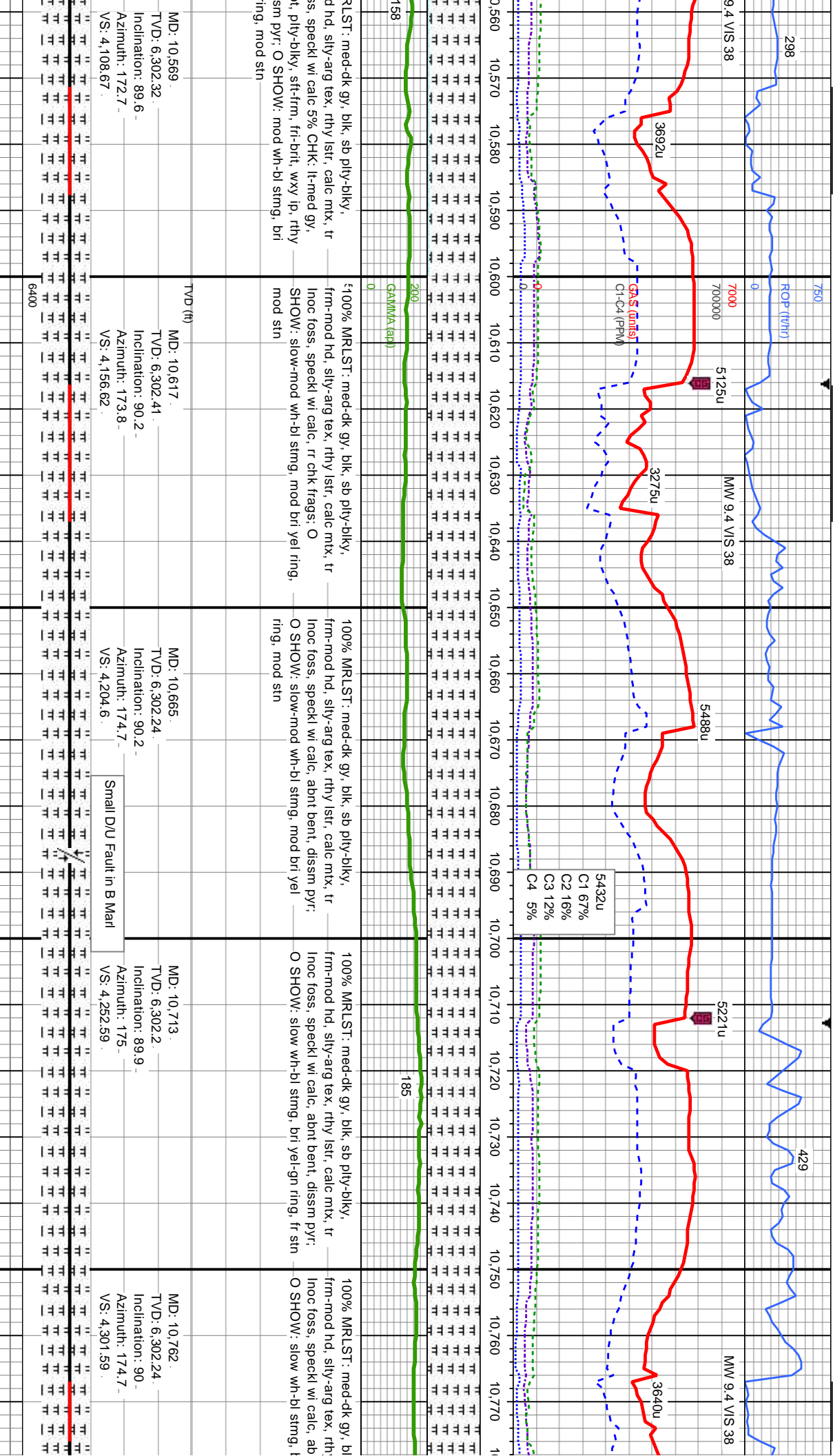


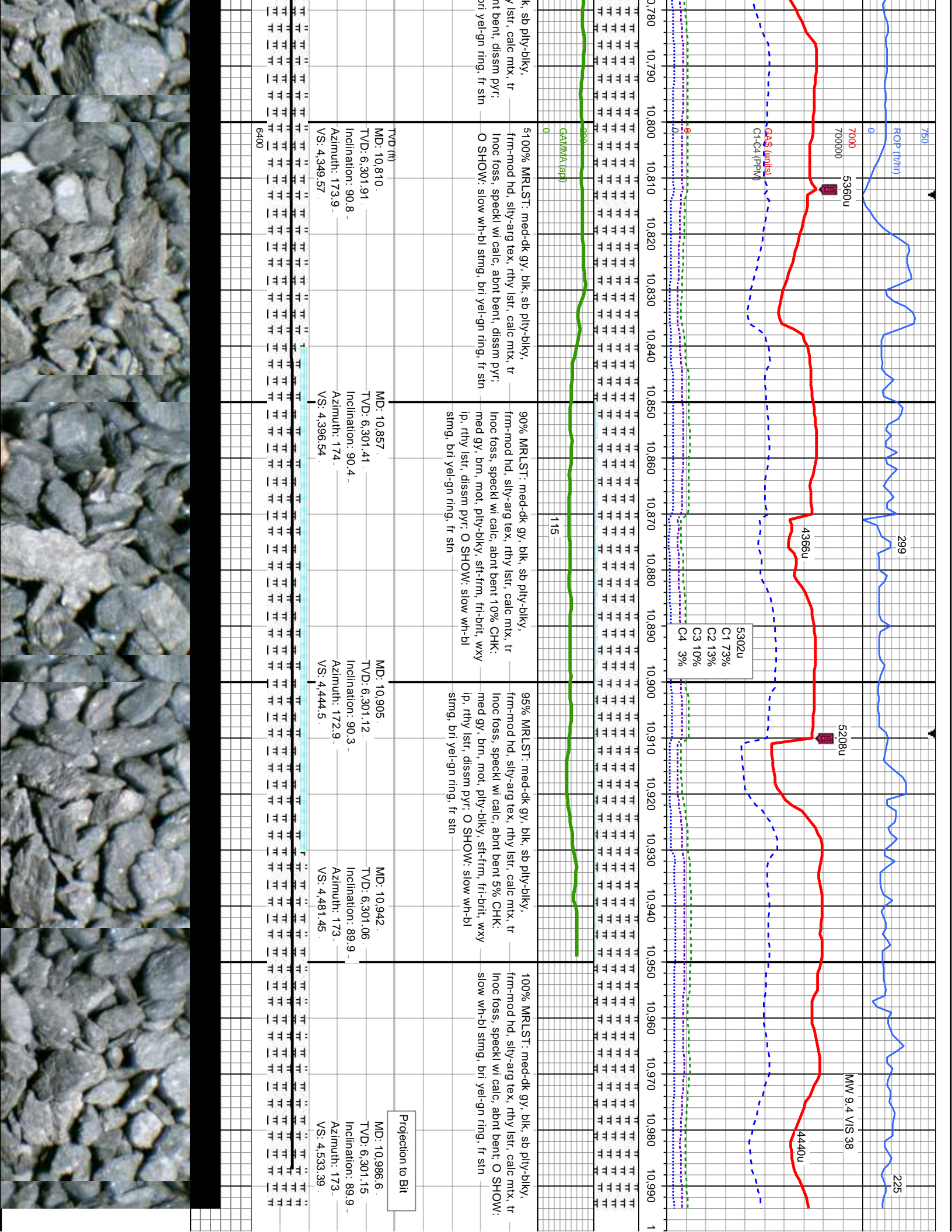




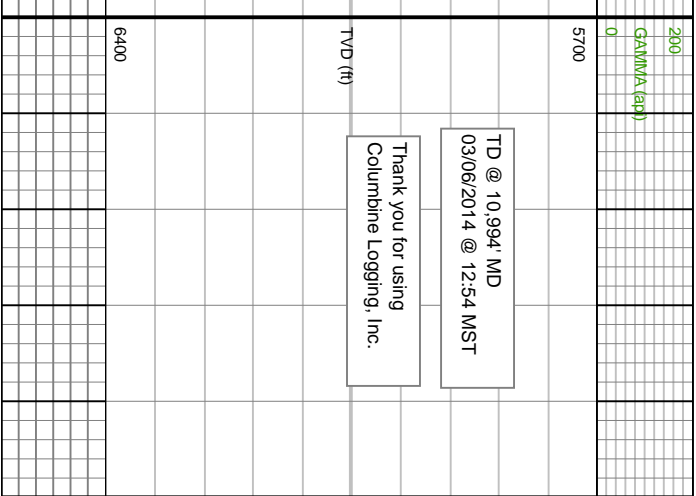
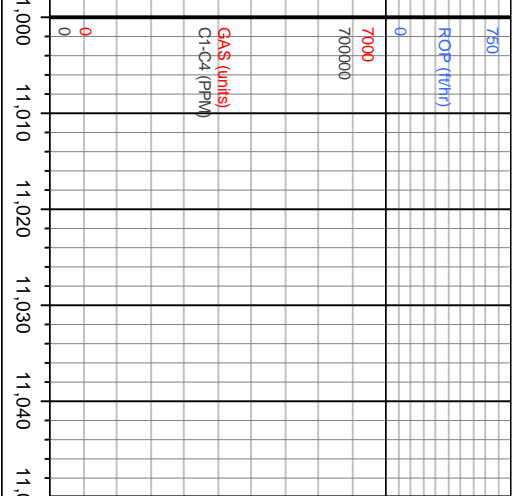












TD @ 10,994' MD  
03/06/2014 @ 12:54 MST

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Columbine Logging, Inc.