



Scale: 5" / 100'  
Measured Depth Log

Well Name Pronghorn-O24-15-10XRLLNB

Location SESW SECTION 15, T5N, R61W

State COLORADO

County WELD

Country USA

Rig Number CADE 25

API Number 05-123-41162

AFE # 15109

Region DJ BASIN

Field WATTENBERG

Spud Date 3/1/2015

Drilling Completed 3/21/2015

Surface Coordinates 270' FSL x 1417' FWL

Bottom Hole Coordinates 327' FNL x 2187' FWL

Ground Elevation 4669'

K.B. Elevation 4686'

Logged Interval 5650' To 16131'

Total Depth 16131'

Formation NIOBRARA B CHALK

Type of Drilling Fluid FW LSND

## Operator

Company Bonanza Creek Energy Inc.

Address 410 17th STREET, SUITE 1500  
DENVER, CO 80202

## Geologist

Name BRANT LOGAN

Company BONANZA CREEK ENERGY INC.

Address 410 17th STREET, SUITE 1500  
DENVER, CO 80202

## Other

COLUMBINE LOGGING, INC. 602 S. LIPAN STREET  
DENVER, COLORADO 80202  
WELL SITE GEOLOGISTS JOEY LUCE  
JEFF LACY

## Zone Color Coding

Oil  
Note  
Error

Condensate  
Core  
Water

Gas  
Pres  
Sea

Rock Types

UNKNOWN	COAL	MARLSTONE	SHALY SANDSTONE
ANHYDRITE	CONGLOMERATE	METAMORPHIC	SHALY SILTSTONE
BENTONITE	DOLOMITE	NO SAMPLE	SILTY SHALE
BRECCIA	DOLOMITIC LIMESTONE	SALT	SILTSTONE
CHALK	GRANITE	SANDSTONE	TILL
CEMENT	GYPSSUM	SALT-PEPPER SANC	TUFF
CHERT	IGNEOUS	SHALE	WELDED TUFF
CLAY CHOKE SANC	SIDERITE or LIMONITE	SHALE COLORED	
CLAYSTONE	LIMESTONE	SHALE GRAY	

Accessories

GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL	ANHYDRITE STRINGER
INOCERAMUS	B BENTONITE	K KAOLIN	BENTONITE STRINGER
ALGAE	BITUMENOUS SUBSTANCE	MARLSTONE	COAL STRINGER
AMPHIPORA	BRECCIA FRAGMENTS	MICACEOUS	DOLOMITE STRINGER
BELLENITE	PELECYPOD	↑ CALCAREOUS	GYPSSUM STRINGER
BIOCLASTIC	PELLET	CARBONACEOUS FLAKES	LIMESTONE STRINGER
BRACHIOPOD	PISOLITE	CHTDK	MARLSTONE (CALC) STRG
BRYOZOA	PLANT REMAINS	CHTLT	MARLSTONE (DOL) STRG
CEPHALOPOD	PLANT SPORES	COAL - THIN BEDS	SANDSTONE STRINGER
CORAL	SCAPHOPOD	DOLOMITIC	SANDY
CRINOID	STROMATOPOROID	+ FELDSPAR	SILICEOUS
ECHINOID		FERRUGINOUS PELLET	SILTY
FISH	Minerals	FERRUGINOUS	TUFFACEOUS
FORAMINIFERA	ANHYDRITIC	GLAUCONITE	
F FOSSIL	ARGILLACEOUS	GYPSEFEROUS	Stringer

Oil Show

- P PINPOINT
- VUGGY






































Engineering

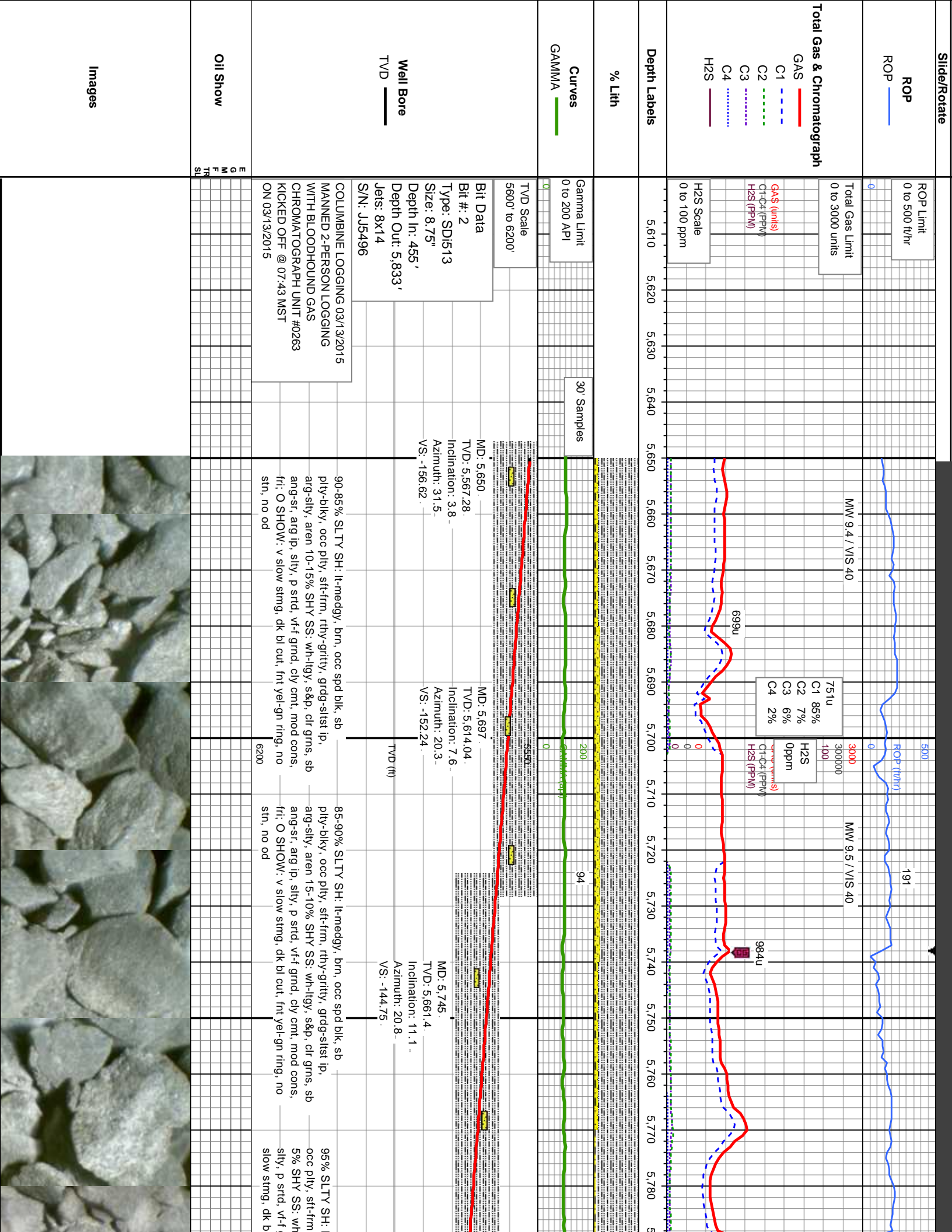
- DEAD
- EVEN
- QUESTIONABLE
- BIT
- SPOTTED STAINING
- CONNECTION (UP)

Porosity

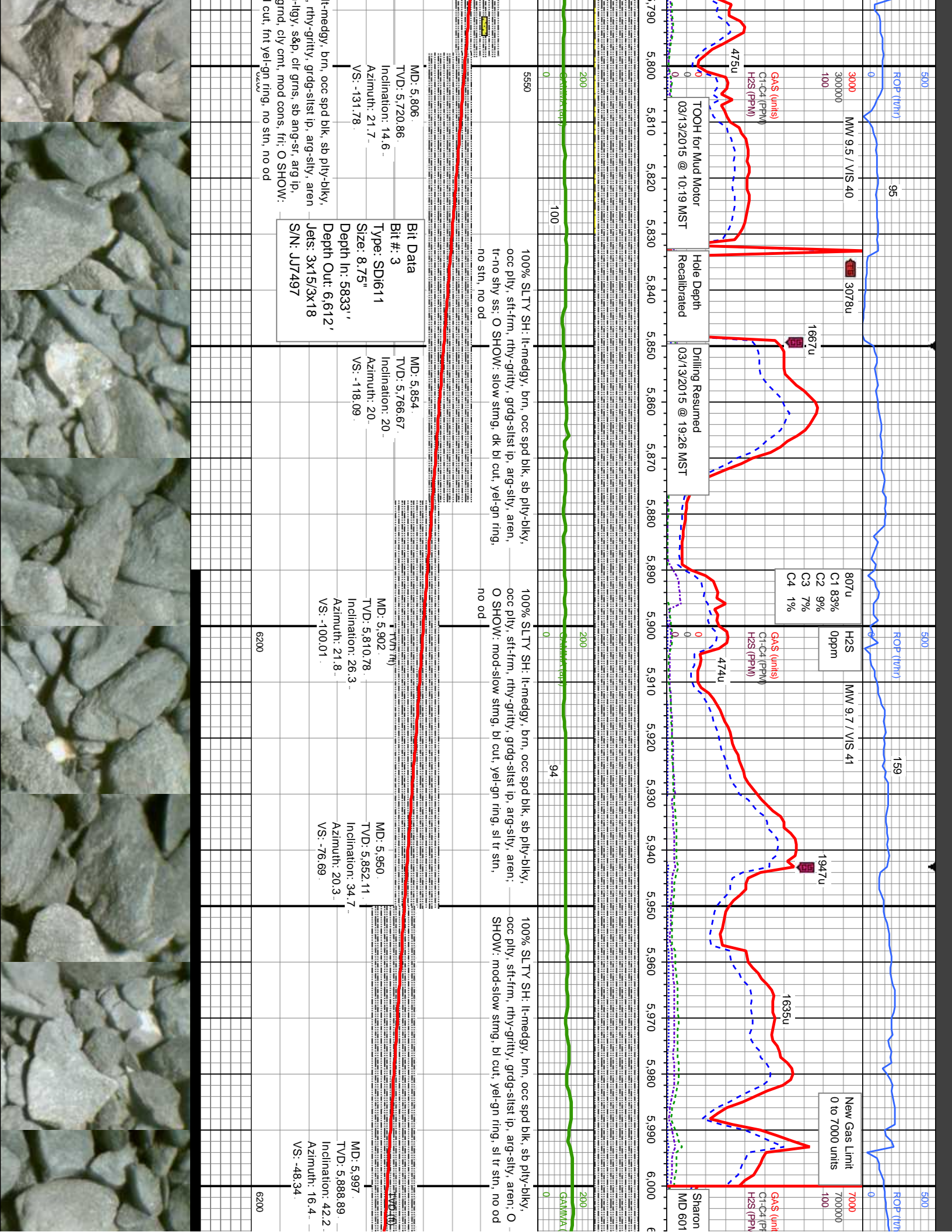
- CONNECTION GAS
- CONNECTION GAS
- TRIP GAS
- TRIP GAS (LEFT)
- FRACTURE
- INTERCRYSTALLINE
- DOWN TIME GAS
- INTEROOLITIC
- DOWN TIME GAS
- MOLDIC
- CORE - LOST
- ORGANIC
- CORE - RECOVERED

Other Symbols

	DST INTERVAL		WIRELINE TESTED - LEFT		E EARTHY
	FAULT		WIRELINE TESTED - RT		FX FINELYXLN
	FORMATION TOP		DRILL STEM TEST		BS GRAINSTONE
	GAS SHOW		MIN DEPTH		L LITHOGRAPHIC
	OIL SHOW				MX MICROXLN
	MIN DEPTH UP	<b>Rounding</b>			
					MX MUDSTONE
	MIN DEPTH (DOWN)		ANGULAR		PS PACKSTONE
	NORMAL FAULT		ROUNDED		WX WACKSTONE
	OVERTURNED STRATA		SUBANG		
	REVERSE FAULT		SUBRND	<b>Sorting</b>	
	CASING				M MODERATE
<b>Textures</b>					
	SIDEWALL CORE (LEFT)				P POOR
	SIDEWALL CORE (RIGHT)		BS BOUNDSTONE		W WELL
	SLIDE		CHALKY		
	SURVEY		CX CRYPTOXLN		

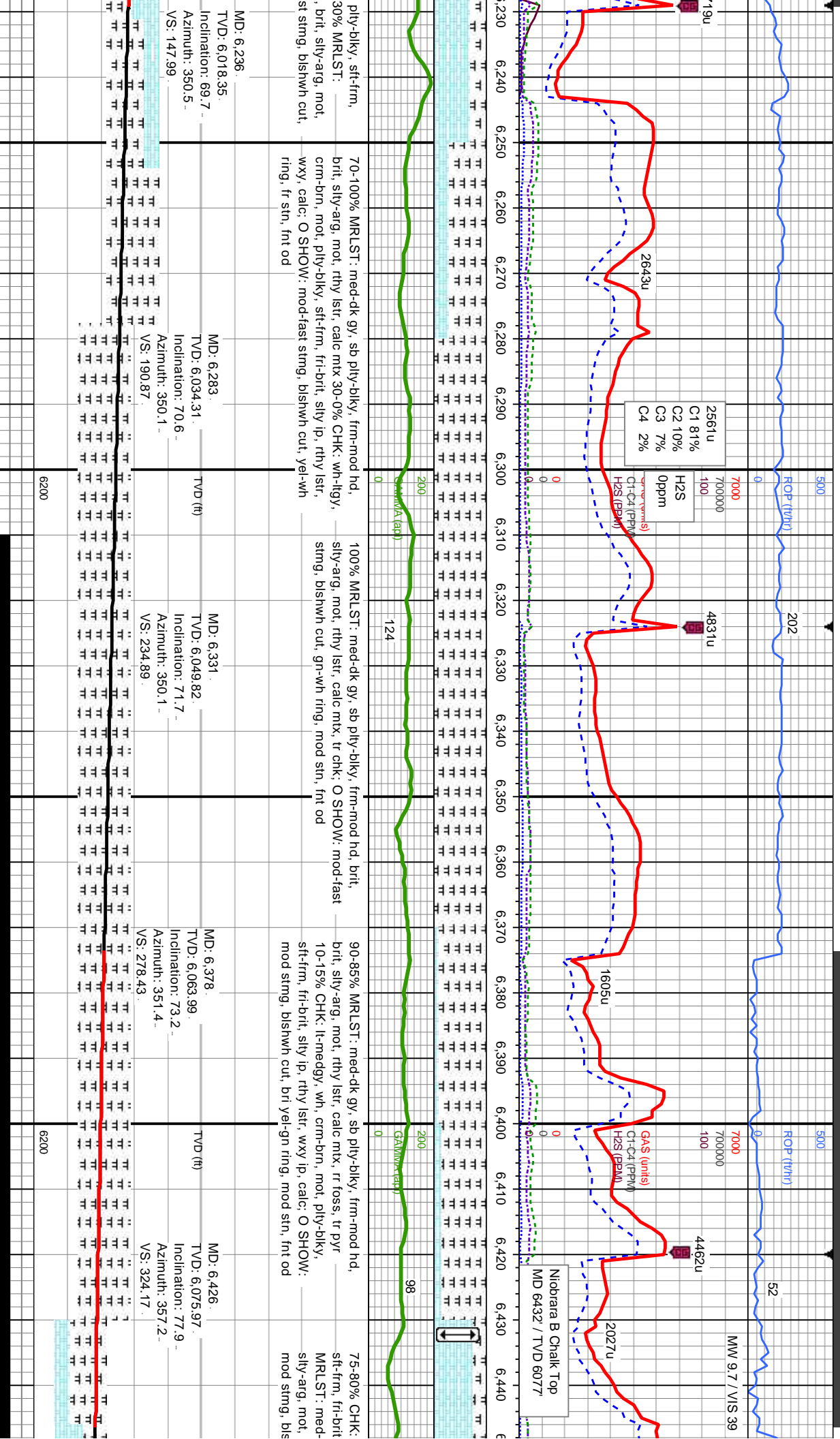




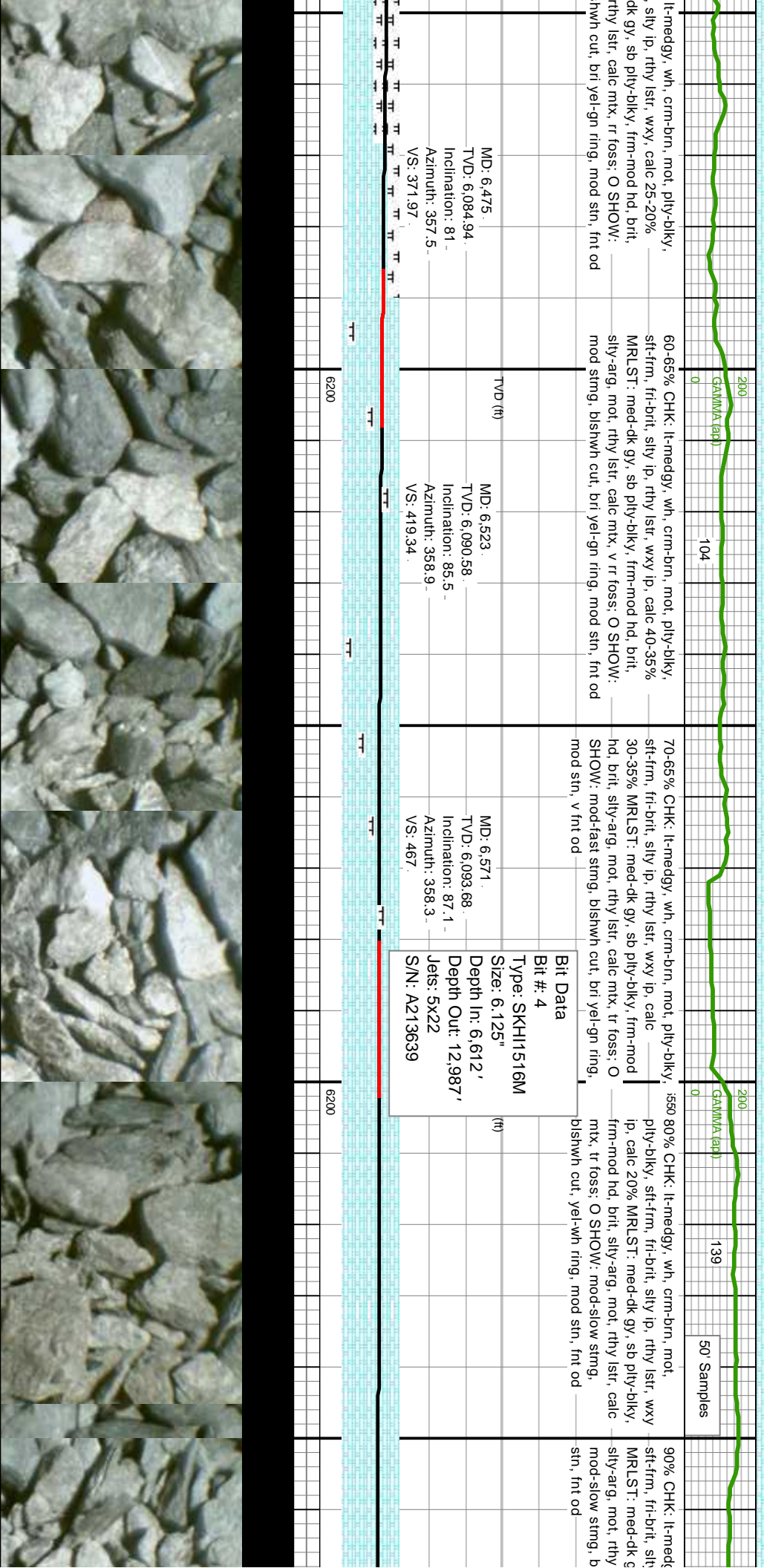




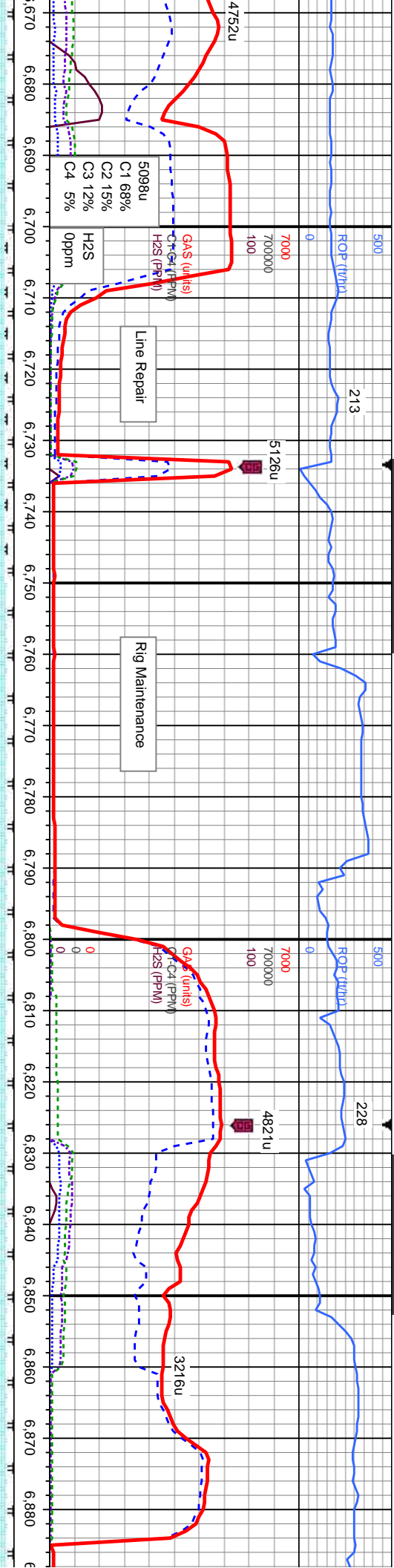




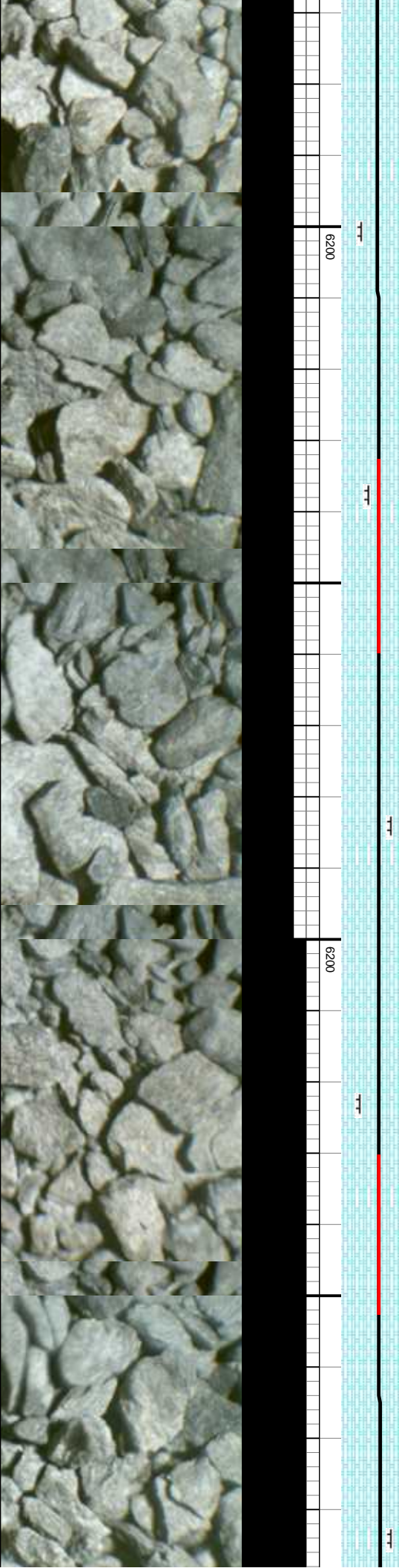


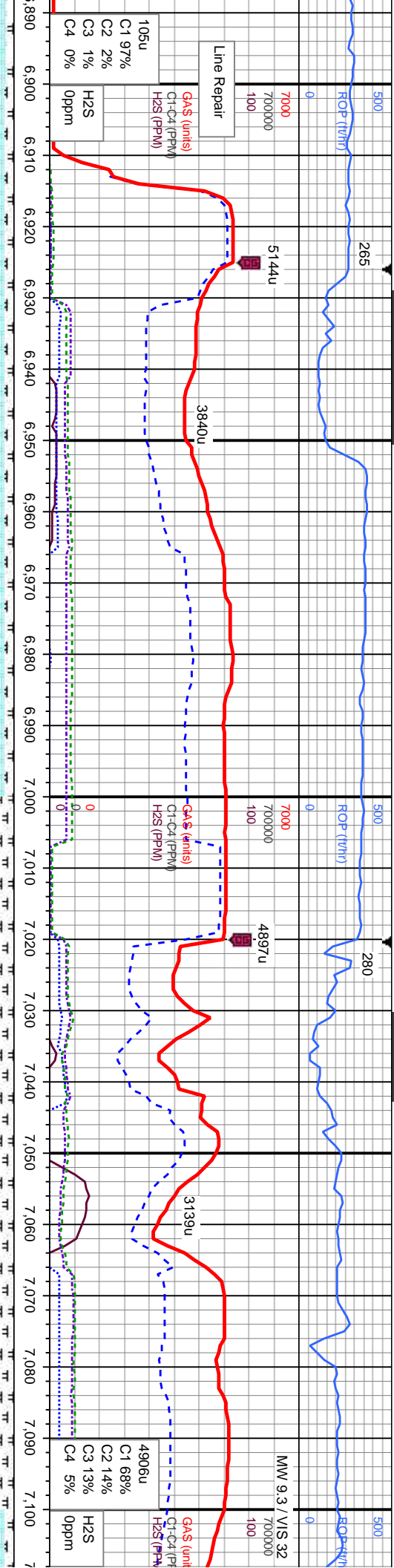




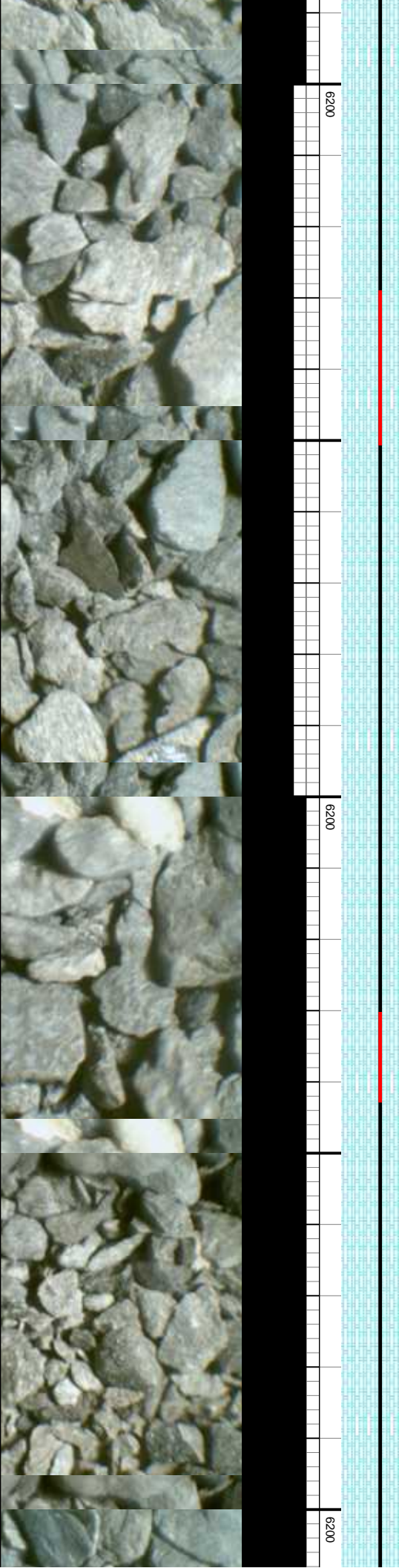


yy, wh, crm-brn, mot, ply-blky, /ip, rthy lstr, wxy ip, calc 10% y, sb ply-blky, frm-mod hd, brit, lstr, calc mix, tr foss; O SHOW: bishwh cut, yel-wh ring, mod	85% CHK: lt-medgy, wh, crm-brn, mot, ply-blky, sft-frm, fri-brit, sily ip, rthy lstr, wxy ip, calc 15% MRSLT: med-dk gy, sb ply-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mix, tr foss; O SHOW: mod-slow string, bishwh cut, gn-yel ring, mod str, fnt od	90% CHK: lt-medgy, wh, crm-brn, mot, ply-blky, sft-frm, fri-brit, sily ip, rthy lstr, wxy ip, calc 10% MRSLT: med-dk gy, sb ply-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mix, tr foss; O SHOW: mod-slow string, bishwh cut, gn-yel ring, mod str, fnt od	90% CHK: lt-medgy, wh, crm-brn, mot, ply-blky, sft-frm, fri-brit, sily ip, rthy lstr, wxy ip, calc 10% MRSLT: med-dk gy, sb ply-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mix, tr foss; O SHOW: mod-slow string, bishwh cut, fnt gn-yel ring, g str, fnt od
MD: 6.686 TVD: 6.095.19 Inclination: 91.4 Azimuth: 356.1 VS: 581.05	MD: 6.780 TVD: 6.092.97 Inclination: 91.3 Azimuth: 358.2 VS: 674.27	MD: 6.876 TVD: 6.091.97 Inclination: 89.9 Azimuth: 358.4 VS: 769.72	





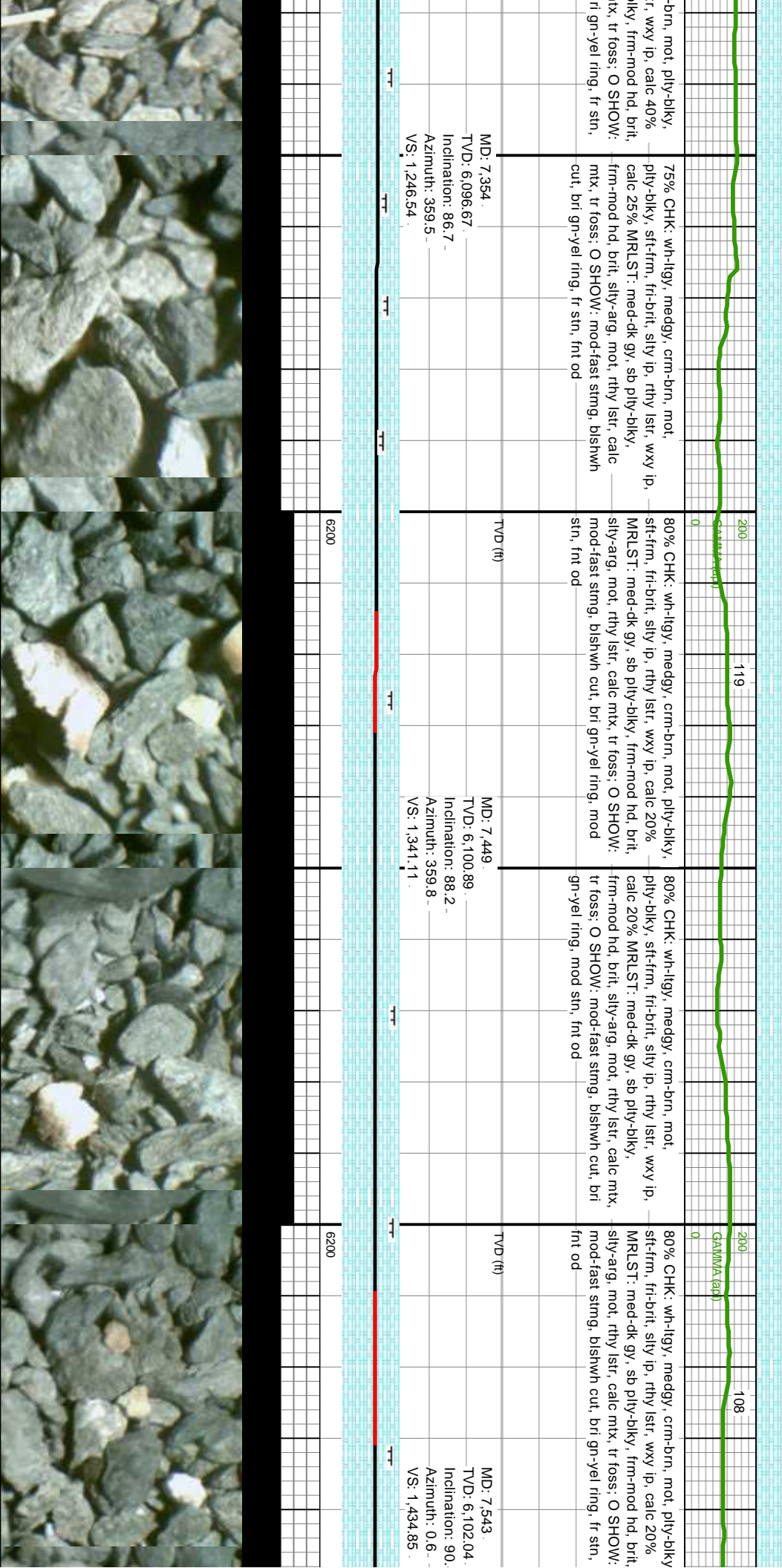
85% CHK: lt-medgy, wh, crm-brn, mot, pily-blky, sft-frm, fri-brit, silv ip, rthy lstr, wxy ip, calc 15% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brit, silv-arg, mot, rthy lstr, calc mtx, tr foss; O SHOW: mod-slow string, blshwh cut, fnt gn-wh ring, mod stn, fnt od	85% CHK: lt-medgy, wh, crm-brn, mot, pily-blky, sft-frm, fri-brit, silv ip, rthy lstr, wxy ip, calc 15% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brit, silv-arg, mot, rthy lstr, calc mtx, tr foss; O SHOW: mod-slow string, blshwh cut, fnt gn-wh ring, mod stn, fnt od	75% CHK: lt-medgy, wh, crm-brn, mot, pily-blky, sft-frm, fri-brit, silv ip, rthy lstr, wxy ip, calc 25% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brit, silv-arg, mot, rthy lstr, calc mtx, tr foss; O SHOW: mod-slow string, blshwh cut, fnt gn-wh ring, g stn, fnt od	75% CHK: lt-medgy, wh, crm-brn, mot, pily-blky, sft-frm, fri-brit, silv ip, rthy lstr, wxy ip, calc 25% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brit, silv-arg, mot, rthy lstr, calc mtx, tr foss; O SHOW: mod-slow string, blshwh cut, fnt gn-wh ring, g stn, fnt od	85% Ch sft-frm, MRLST: mod-slc
TVD (ft)	MD: 6.970. TVD: 6.091.56 Inclination: 90.6- Azimuth: 0.5- VS: 863.36	TVD (ft)	MD: 7.066. TVD: 6.091.47 Inclination: 89.5- Azimuth: 1.2- VS: 959.18	TVD (ft)



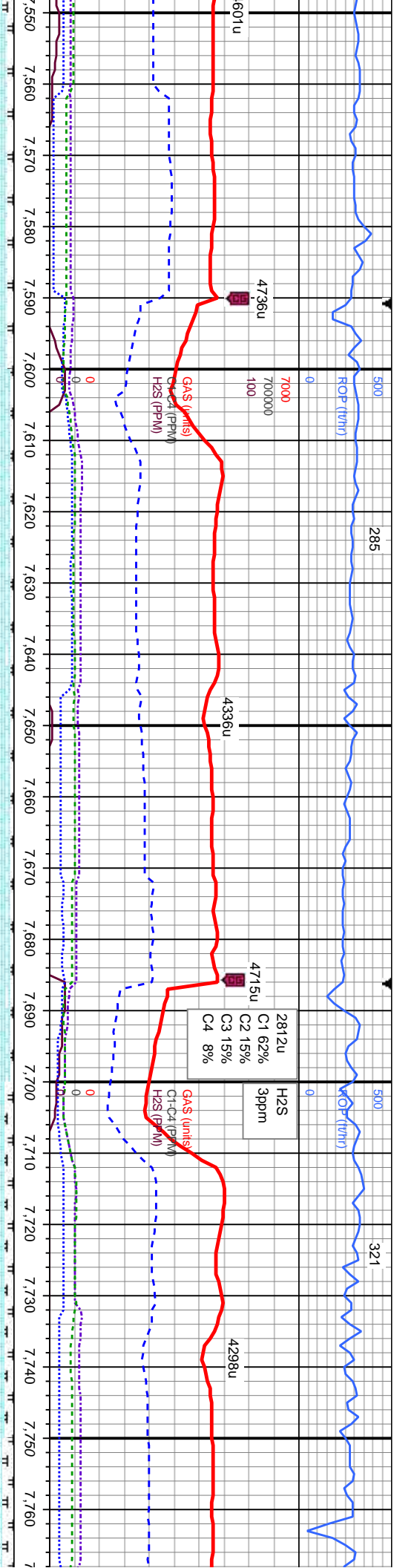






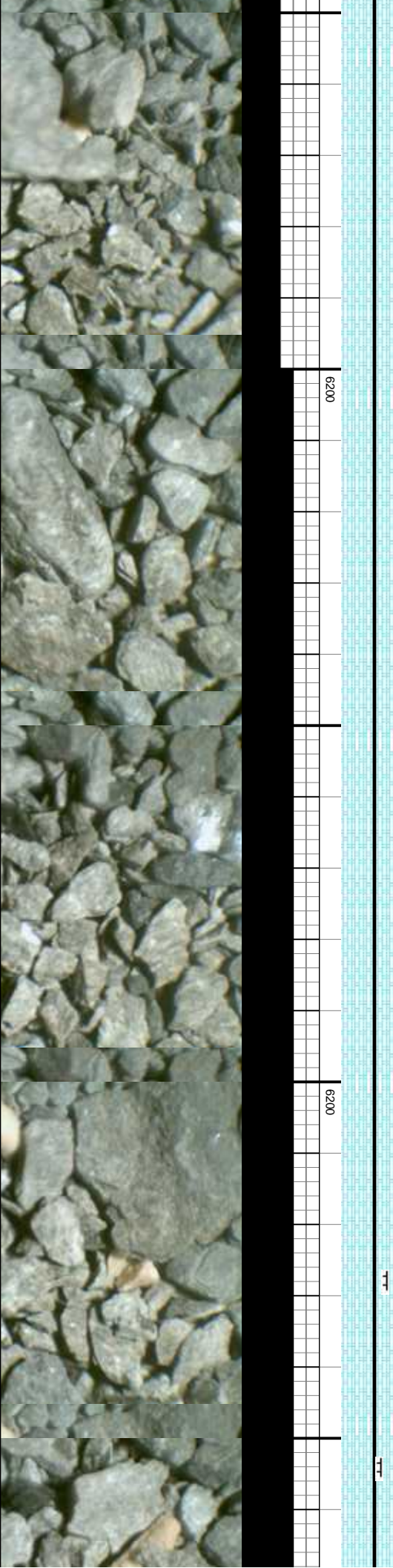


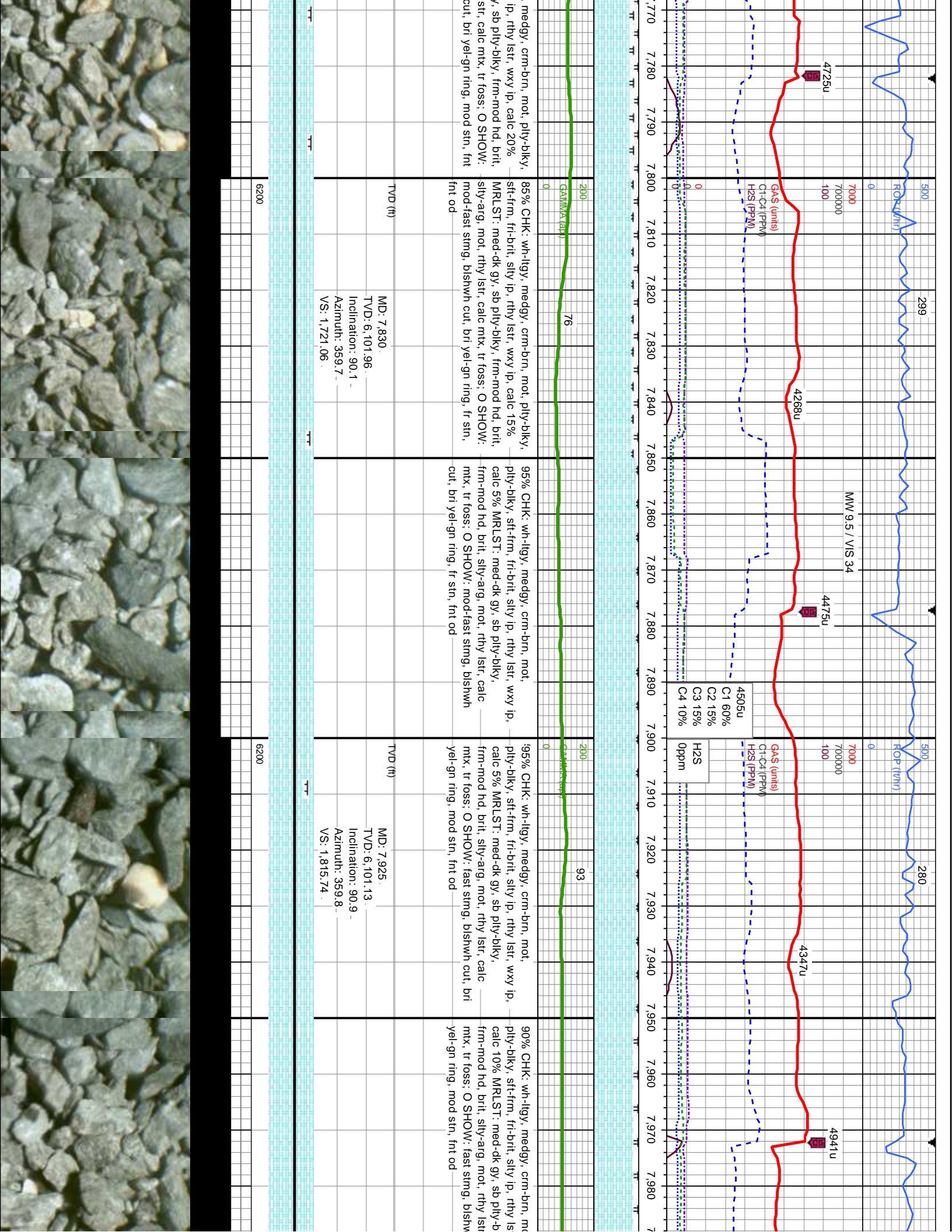




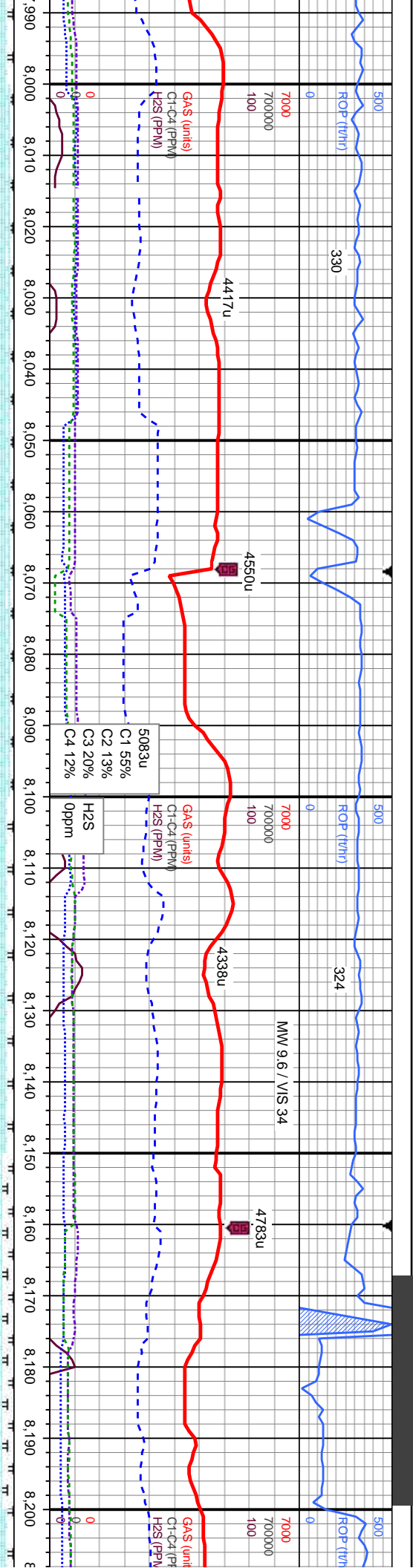
90% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, fit-brit, sily ip, rthy lstr, wxy ip, calc 10% MRLST: med-dk gy, sb ply-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, tr foss: O SHOW: mod-fast stmg, blshwh cut, bri gn-yel ring, fr stn, fnt od	95% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, fit-brit, sily ip, rthy lstr, wxy ip, calc 5% MRLST: med-dk gy, sb ply-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, tr foss: O SHOW: mod-fast stmg, blshwh cut, bri gn-yel ring, mod stn, fnt od	95% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, fit-brit, sily ip, rthy lstr, wxy ip, calc 5% MRLST: med-dk gy, sb ply-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, tr foss: O SHOW: mod-fast stmg, blshwh cut, bri gn-yel ring, mod stn, fnt od	85% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, fit-brit, sily ip, rthy lstr, wxy ip, calc 15% MRLST: med-dk gy, sb ply-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, tr foss: O SHOW: fast stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od	80% CHK: wh-llgy, sft-frm, fit-brit, sily MRLST: med-dk g sily-arg, mot, rthy fast stmg, blshwh od
---	---	---	--	--

TVD (ft)	MD: 7.639' TVD: 6.101.87' Inclination: 89.8° Azimuth: 0.3° VS: 1.530.62'	TVD (ft)	MD: 7.735' TVD: 6.102.04' Inclination: 90° Azimuth: 0° VS: 1.626.36'
----------	--	----------	--

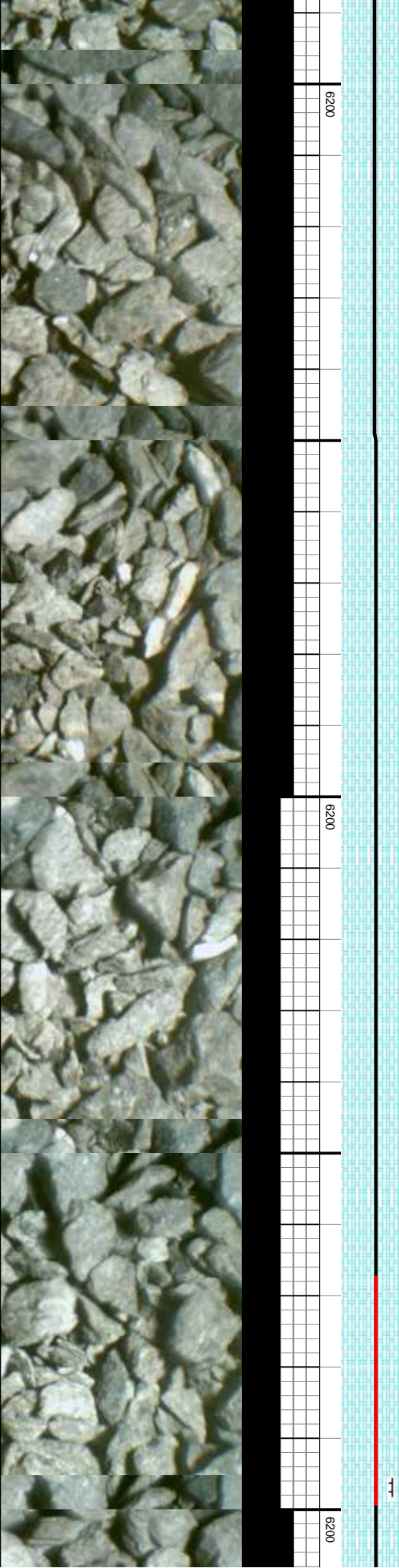








595% CHK: wh-llgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc 5% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, tr Inoc: O SHOW: fast stmg, blshwh cut, bri mod stn, fnt od	95% CHK: wh-llgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc 5% MRLST: med-dk gy, blk, sb pily-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, tr Inoc: O SHOW: fast stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od	590% CHK: wh-llgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc 10% MRLST: med-dk gy, blk, sb pily-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, tr Inoc: O SHOW: mod-fast stmg, blshwh cut, bri yel-gn ring, fr stn, fnt od	80% CHK: wh-llgy, crm-brn, mot, pily-blky, sft-frm, fri-brt, sily ip, rthy lstr, wxy, calc 20% MRLST: med-dk gy, blk, sb pily-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, tr Inoc: O SHOW: mod-fast stmg, blshwh cut, bri yel-gn ring, fr stn, fnt od	590% C
MD: 8.021 TVD: 6.099.96 Inclination: 90.5 Azimuth: 358.5 VS: 1.911.33	MD: 8.116 TVD: 6.099.13 Inclination: 90.5 Azimuth: 357.5 VS: 2.005.74	MD: 8.116 TVD: 6.099.13 Inclination: 90.5 Azimuth: 357.5 VS: 2.005.74	MD: 8.116 TVD: 6.099.13 Inclination: 90.5 Azimuth: 357.5 VS: 2.005.74	MD: 8.116 TVD: 6.099.13 Inclination: 90.5 Azimuth: 357.5 VS: 2.005.74

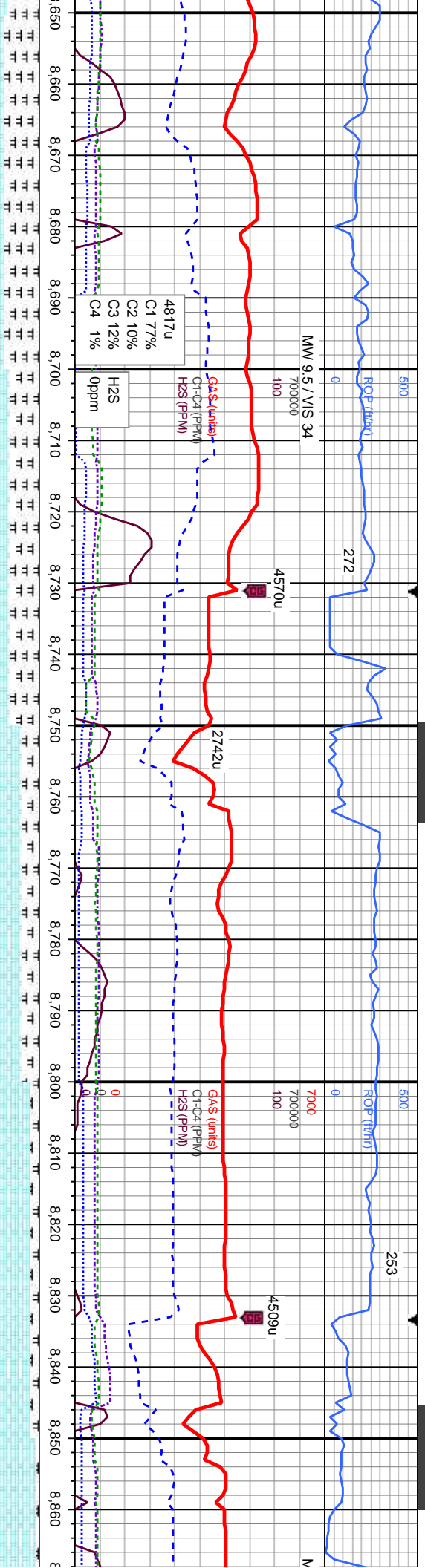












60% MRLST: med-dk gy, sb pty-bkly, frm-mod  
hd, brit, silty-arg, mot, rthy lstf, calc mix, r  
Inoc 40% CHK: lt-medgy, brn, occ crm, mot,  
pty-bkly, sft-frm, fri-brit, silty ip, rthy lstf, wxy  
ip, calc; O SHOW: mod stmg, blshwh cut, bri  
yel-gn ring, fr stn, fnt od

550% MRLST: med-dk gy, sb pty-bkly, frm-mod  
hd, brit, silty-arg, mot, rthy lstf, calc mix, r  
Inoc 50% CHK: lt-medgy, brn, occ crm, mot,  
pty-bkly, sft-frm, fri-brit, silty ip, rthy lstf, wxy  
ip, calc; O SHOW: mod stmg, blshwh cut, bri  
yel-gn ring, fr stn, fnt od

70% CHK: lt-medgy, brn, crm-wh, mot,  
pty-bkly, sft-frm, fri-brit, silty ip, rthy lstf, wxy,  
calc 30% MRLST: med-dk gy, sb pty-bkly,  
frm-mod hd, brit, silty-arg, mot, rthy lstf, calc  
mix, r bent; O SHOW: mod stmg, blshwh cut,  
bri yel-gn ring, fr stn, fnt od

585% CHK: lt-medgy, brn, crm-wh, mot,  
pty-bkly, sft-frm, fri-brit, silty ip, rthy lstf, wxy,  
calc 15% MRLST: med-dk gy, sb pty-bkly,  
frm-mod hd, brit, silty-arg, mot, rthy lstf, calc  
mix, r bent; O SHOW: mod-fast stmg, blshwh  
cut, bri yel-gn ring, mod stn, fnt od

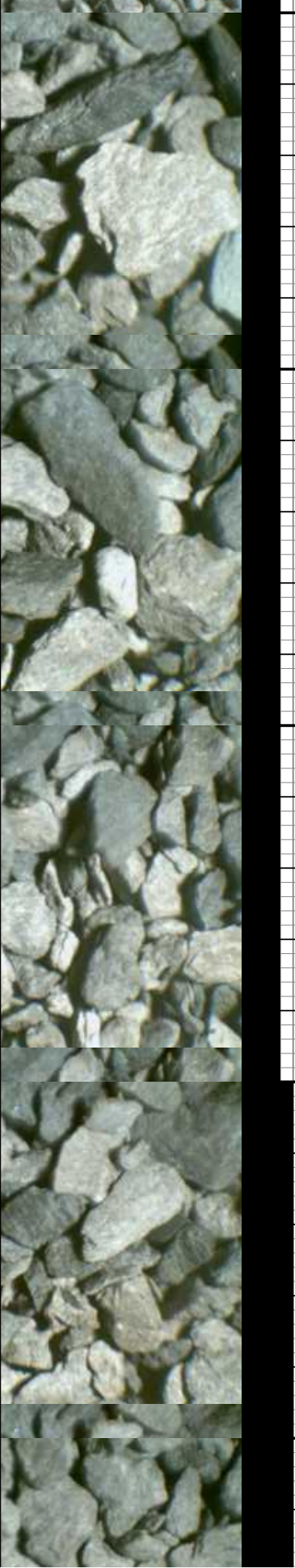
95% CHK: wh-l  
sft-frm, fri-brit,  
MRLST: med-d  
brit, silty-arg, m  
mod-fast stmg,  
mod stn, fnt od

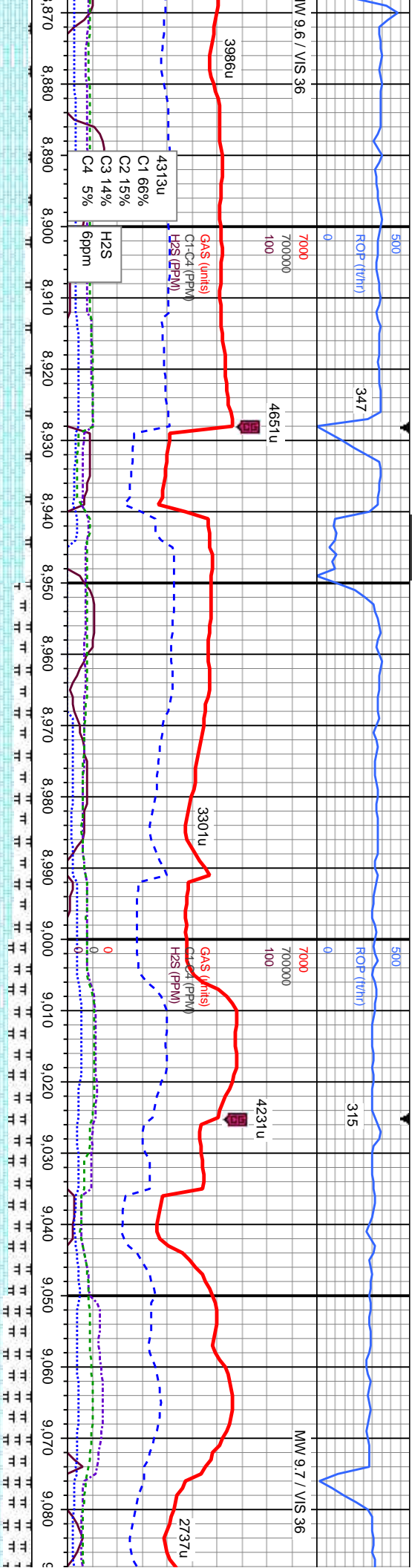
MD: 8,689.  
TVD: 6,095.22.  
Inclination: 91.8 -  
Azimuth: 1 -  
VS: 2,577.13.

MD: 8,785.  
TVD: 6,092.54.  
Inclination: 91.4 -  
Azimuth: 359.7 -  
VS: 2,672.85.

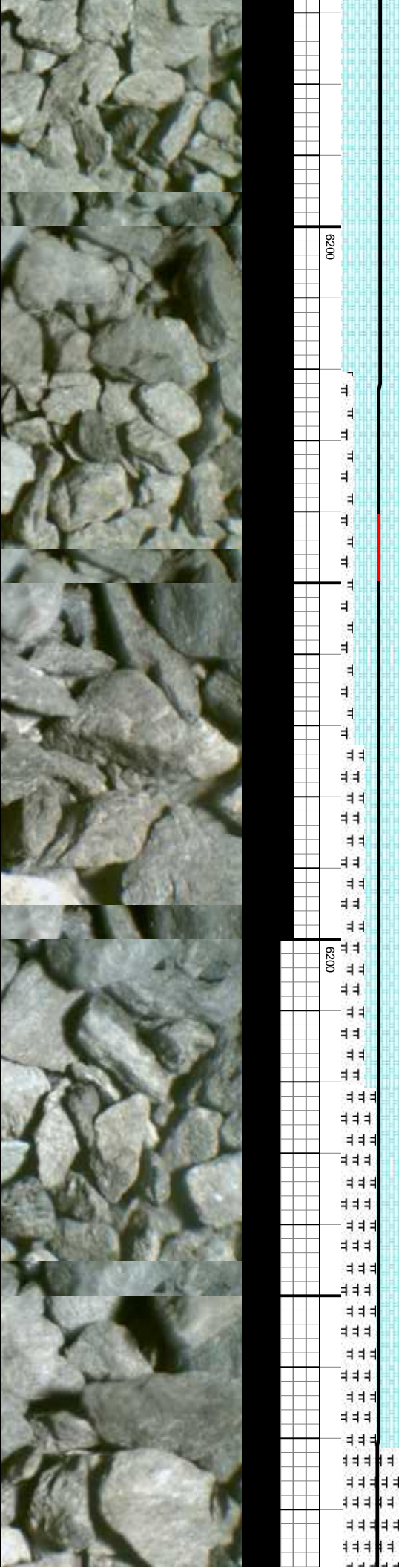
TVD (ft)

TVD (ft)

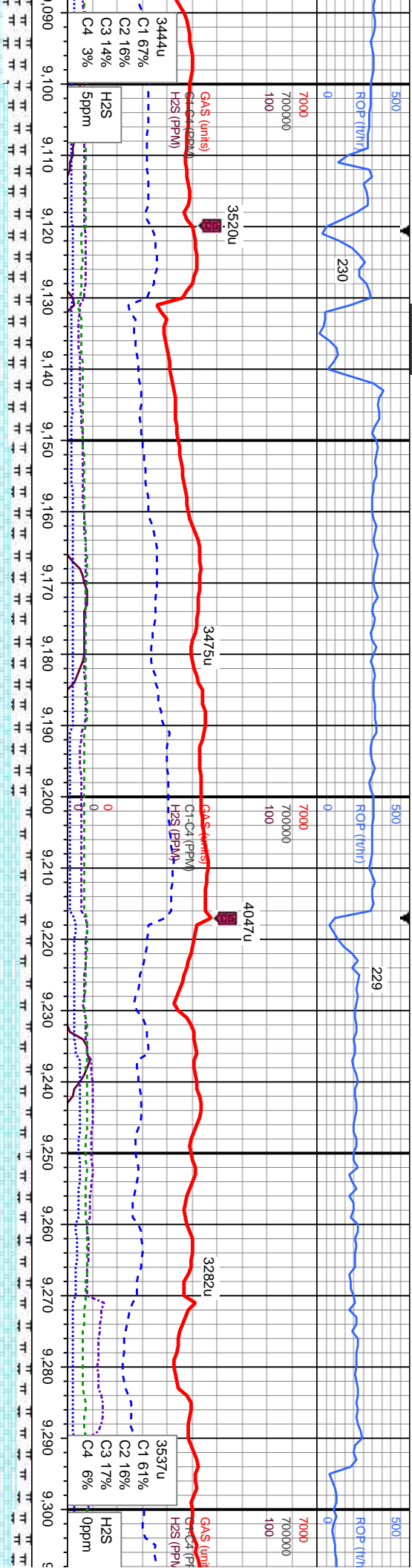




gy, crm-brn, mot, pily-blky, sily ip, rthy lstr, wxy, calc 5% k gy, sb pily-blky, frm-mod hd, rty lstr, calc mix: O SHOW: bishwh cut, bri yel-gn ring,	200 GAMMA GAPI	103	5590% CHK: wh-lgy, crm-brn, mot, pily-blky, sft-frm, frt-brit, sily ip, rthy lstr, wxy, calc 10% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mix: O SHOW: mod-fast stmg, bishwh cut, bri yel-gn ring, mod stn, frt od	200 GAMMA GAPI	134	5560% CHK: lt-medgy, crm-brn, mot, pily-blky, sft-frm, frt-brit, sily ip, rthy lstr, wxy ip, calc, occ intbd wi marl 40% MRLST: med-dk gy, sb pily-blky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mix, rr foss: O SHOW: mod stmg, bishwh cut, bri yel-gn ring, fr stn, frt od	50% CHK: lt-medgy, crm-brn, mot, pily-blky, sft-frm, frt-brit, sily ip, rthy lstr, wxy ip, calc, occ intbd wi marl 50% MRLST: med-c pily-blky, frm-mod hd, brit, sily-arg, n lstr, calc mix, rr foss: O SHOW: mod bishwh cut, bri yel-gn ring, fr stn, frt
MD: 8.880 TVD: 6,091.46 Inclination: 89.9 Azimuth: 359.1 VS: 2.767.48	TVD (ft)		MD: 8.976 TVD: 6,092.88 Inclination: 88.4 Azimuth: 359 VS: 2.863.05	TVD (ft)		MD: 9.070 TVD: 6,094.61 Inclination: 89.5 Azimuth: 359.1 VS: 2.956.62	







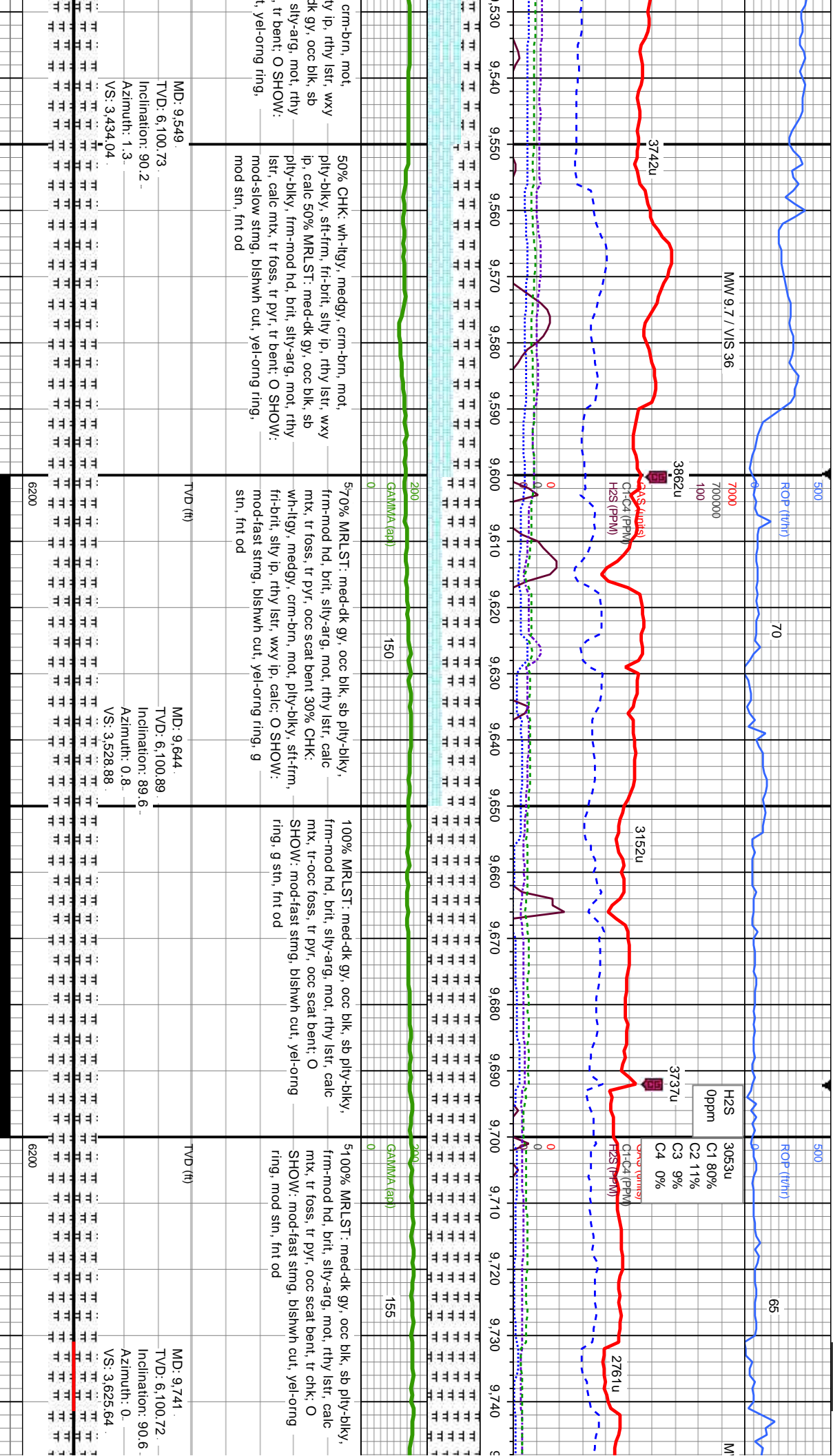
560% CHK: lt-medgy, crm-brn, mot, pily-biky, sft-frn, fri-brlt, sily ip, rthy lstr, wxy ip, calc, occ intbd wi marl 40% MRLST: med-dk gy, sb pily-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtx, rr foss, dissim pyr; O SHOW: mod stmg, blshwh cut, bri yel-gn ring, fr sin, fnt od	565% CHK: lt-medgy, some wh, crm-brn, mot, pily-biky, sft-frn, fri-brlt, sily ip, rthy lstr, wxy ip, calc, occ intbd wi marl 35% MRLST: med-dk gy, sb pily-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtx, rr foss, pyr; O SHOW: mod stmg, blshwh cut, bri yel-gn ring, fr sin, fnt od	5580% CHK: wh-ltgy, medgy ip, crm-brn, mot, pily-biky, sft-frn, fri-brlt, sily ip, rthy lstr, wxy, calc 20% MRLST: med-dk gy, sb pily-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtx, tr foss; O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod sin, fnt od	75% CHK: wh-ltgy, medgy ip, crm-brn, mot, pily-biky, sft-frn, fri-brlt, sily ip, rthy lstr, wxy, calc 25% MRLST: med-dk gy, sb pily-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtx, tr foss; O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod sin, fnt od	5655% C pily-b ip, cal pily-b lstr, cr mod-s g sin,
--	--	---	---	---

TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)
MD: 9.167 TVD: 6,096.47 Inclination: 88.3 Azimuth: 359.1 VS: 3.053.19	MD: 9.262 TVD: 6,099.37 Inclination: 88.2 Azimuth: 358.9 VS: 3.147.73		

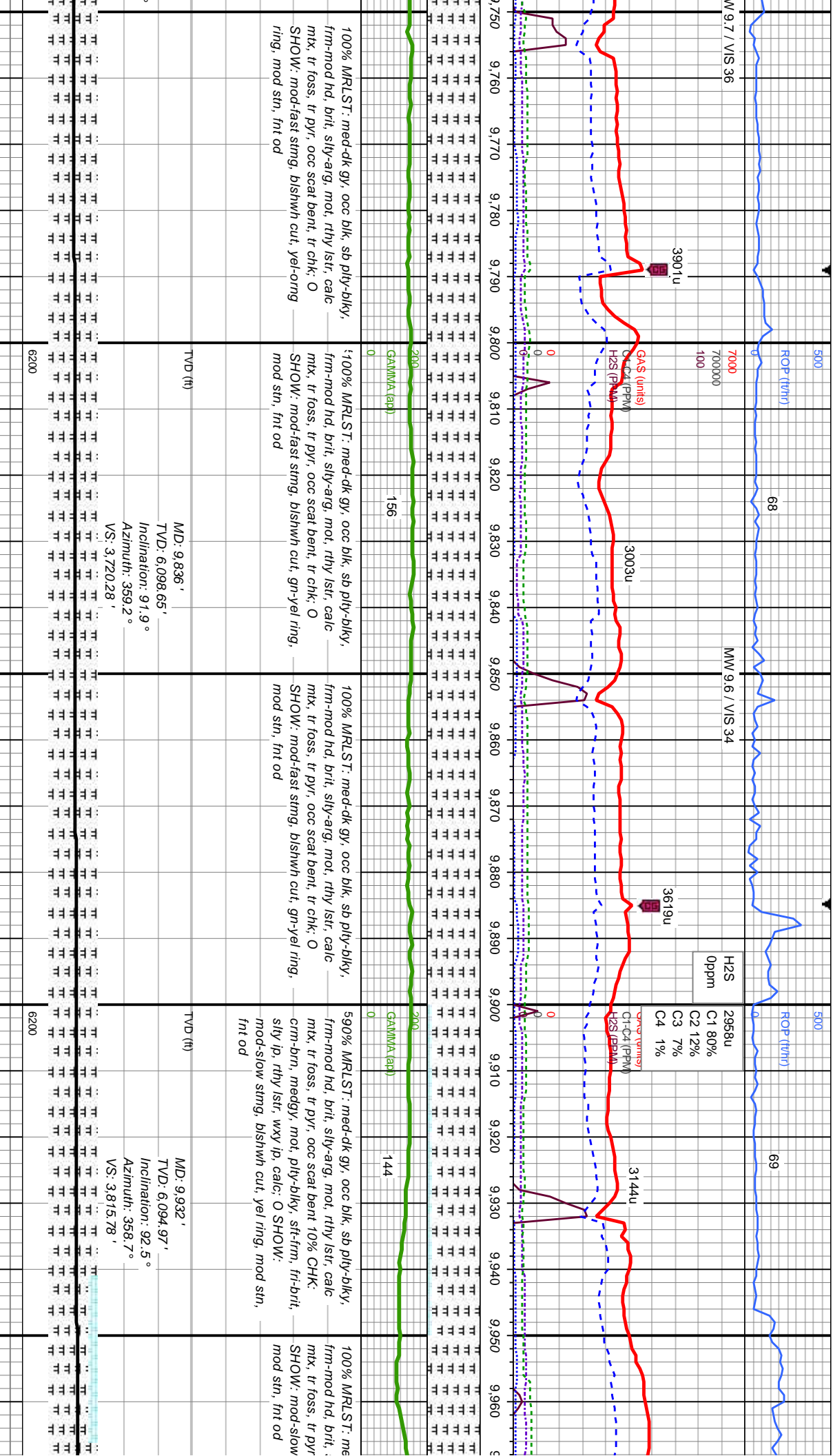








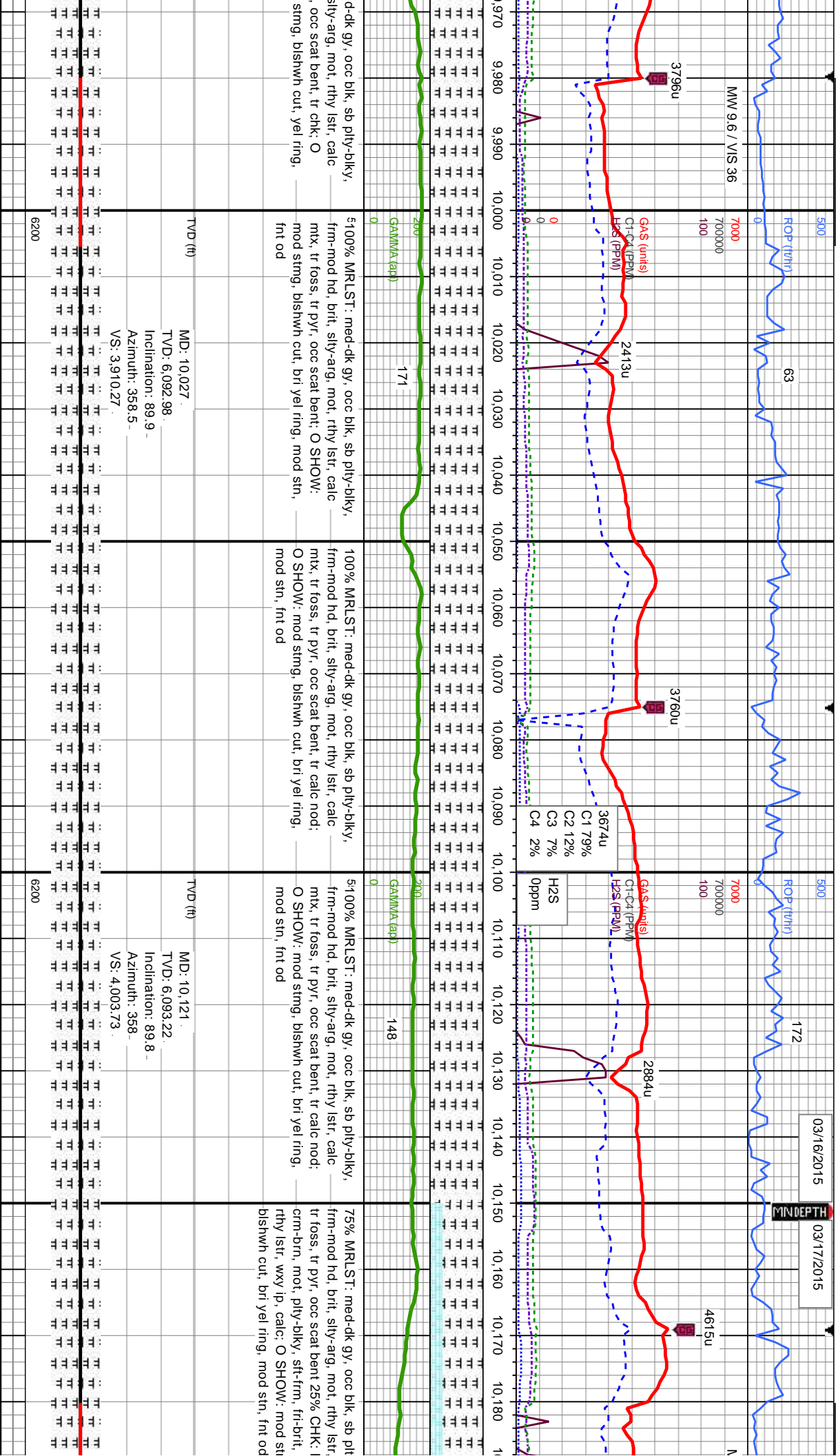




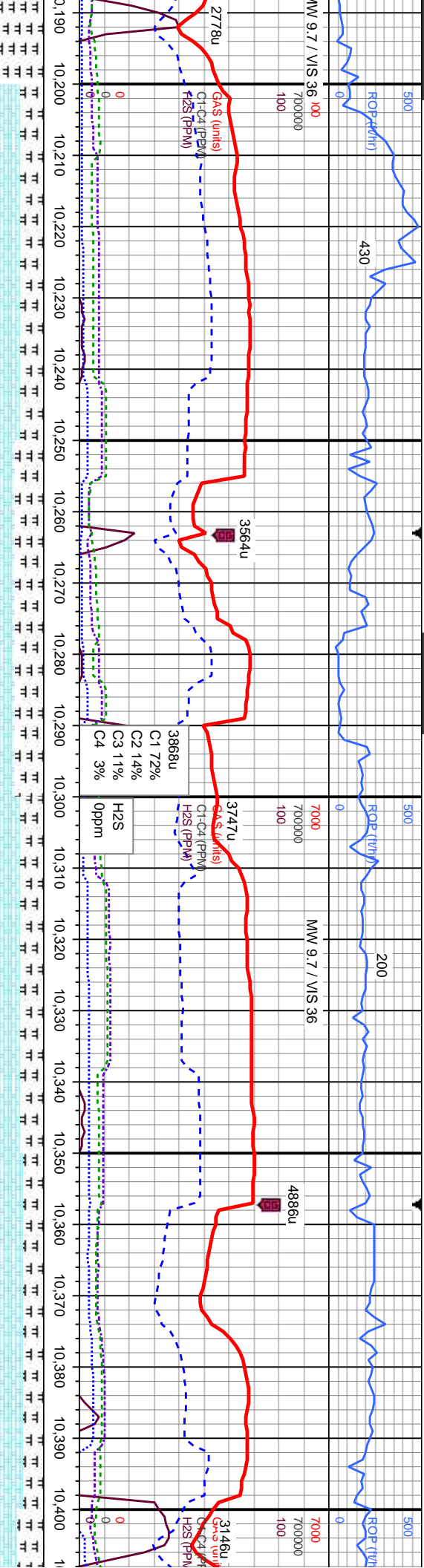
03/16/2015

03/17/2015

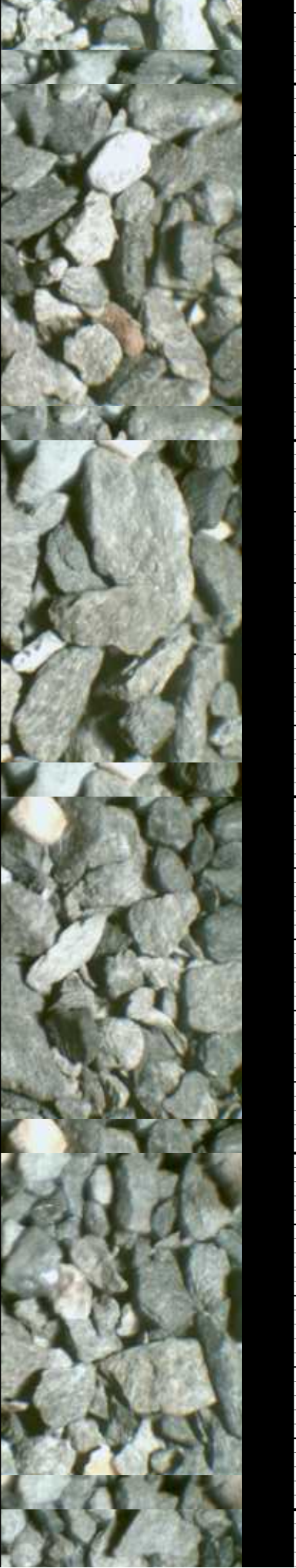
MINDEPTH

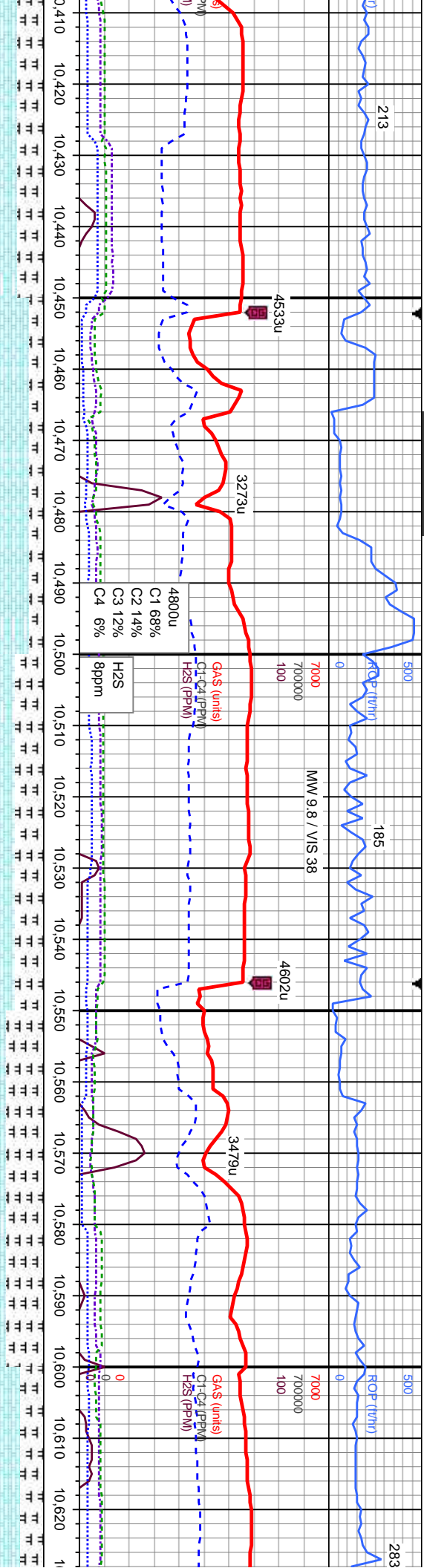






560% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, fri-brt, silty ip, rthy lstr, wxy ip, calc 40% MRLST: med-dk gy, ooc blk, sb ply-blky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtx, tr foss, tr pyr, ooc scat bent; O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod sin, fnt od	50% MRLST: med-dk gy, ooc blk, sb ply-blky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtx, tr foss, tr pyr, ooc scat bent 50% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, fri-brt, silty ip, rthy lstr, wxy ip, calc; O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod sin, fnt od	560% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, fri-brt, silty ip, rthy lstr, wxy ip, calc 40% MRLST: med-dk gy, ooc blk, sb ply-blky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtx, tr foss, tr pyr, ooc scat bent; O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod sin, fnt od	65% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, fri-brt, silty ip, rthy lstr, wxy, calc 35% MRLST: med-dk gy, ooc blk, sb ply-blky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtx, tr foss, tr bent; O SHOW: mod-slow stmg, blshwh cut, bri yel-gn ring, mod sin, fnt od	555% (
MD: 10.216. TVD: 6,094.63 Inclination: 88.5 Azimuth: 0 VS: 4,098.29	MD: 10.310. TVD: 6,096.44 Inclination: 89.3 Azimuth: 359.7 VS: 4,191.98	MD: 10.405. TVD: 6,097.9 Inclination: 8 Azimuth: 356 VS: 4,286.64		
Potential U/D Fault				





CHK: wh-llgy, medgy, crm-brn, mot, pty-biky, sft-frm, frt-brit, silty ip, rthy lstr, wxy, 5% MRLST: med-dk gy, occ blk, sb pty-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtz, tr foss, O SHOW: mod bishwh cut, bri yel-gn ring, mod stn, fnt od

75% CHK: wh-llgy, medgy, crm-brn, mot, pty-biky, sft-frm, frt-brit, silty ip, rthy lstr, wxy, calc 25% MRLST: med-dk gy, occ blk, sb pty-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtz, v r r foss, O SHOW: mod string, bishwh cut, bri yel-gn ring, mod stn, fnt od

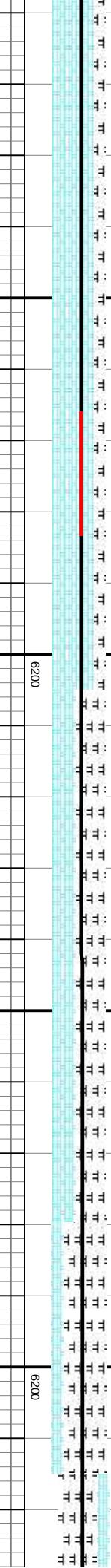
50% CHK: wh-llgy, medgy, crm-brn, mot, pty-biky, sft-frm, frt-brit, silty ip, rthy lstr, wxy ip, calc 50% MRLST: med-dk gy, occ blk, sb pty-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtz, tr foss, O SHOW: mod-slow string, bishwh cut, bri yel ring, mod stn, fnt od

65% MRLST: med-dk gy, occ blk, sb pty-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtz, tr foss, r pyr 35% CHK: lt-medgy, brn, some crm, mot, pty-biky, sft-frm, frt-brit, silty ip, rthy lstr, wxy ip, calc, O SHOW: mod-slow string, bishwh cut, bri yel ring, mod stn, fnt od

50% CHK: wh-llgy, medgy, crm-brn, mot, pty-biky, sft-frm, frt-brit, silty ip, calc 40% MRLST: med-dk gy, occ blk, sb pty-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtz, tr foss, O SHOW: mod-slow string, bishwh cut, bri yel ring, mod stn, fnt od

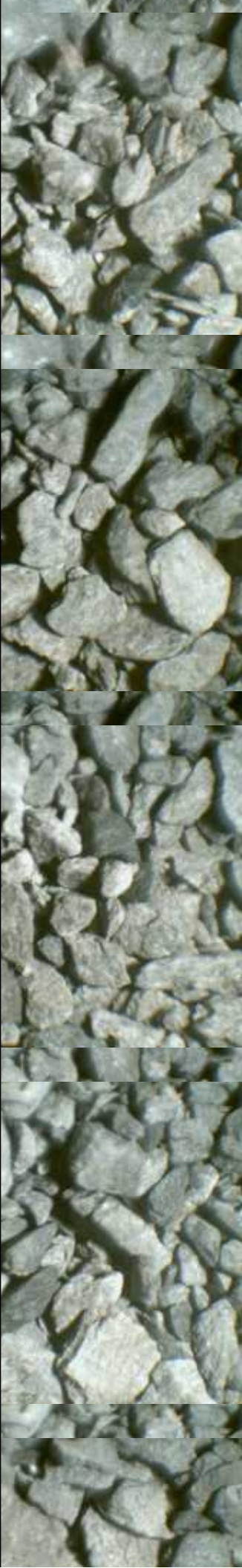
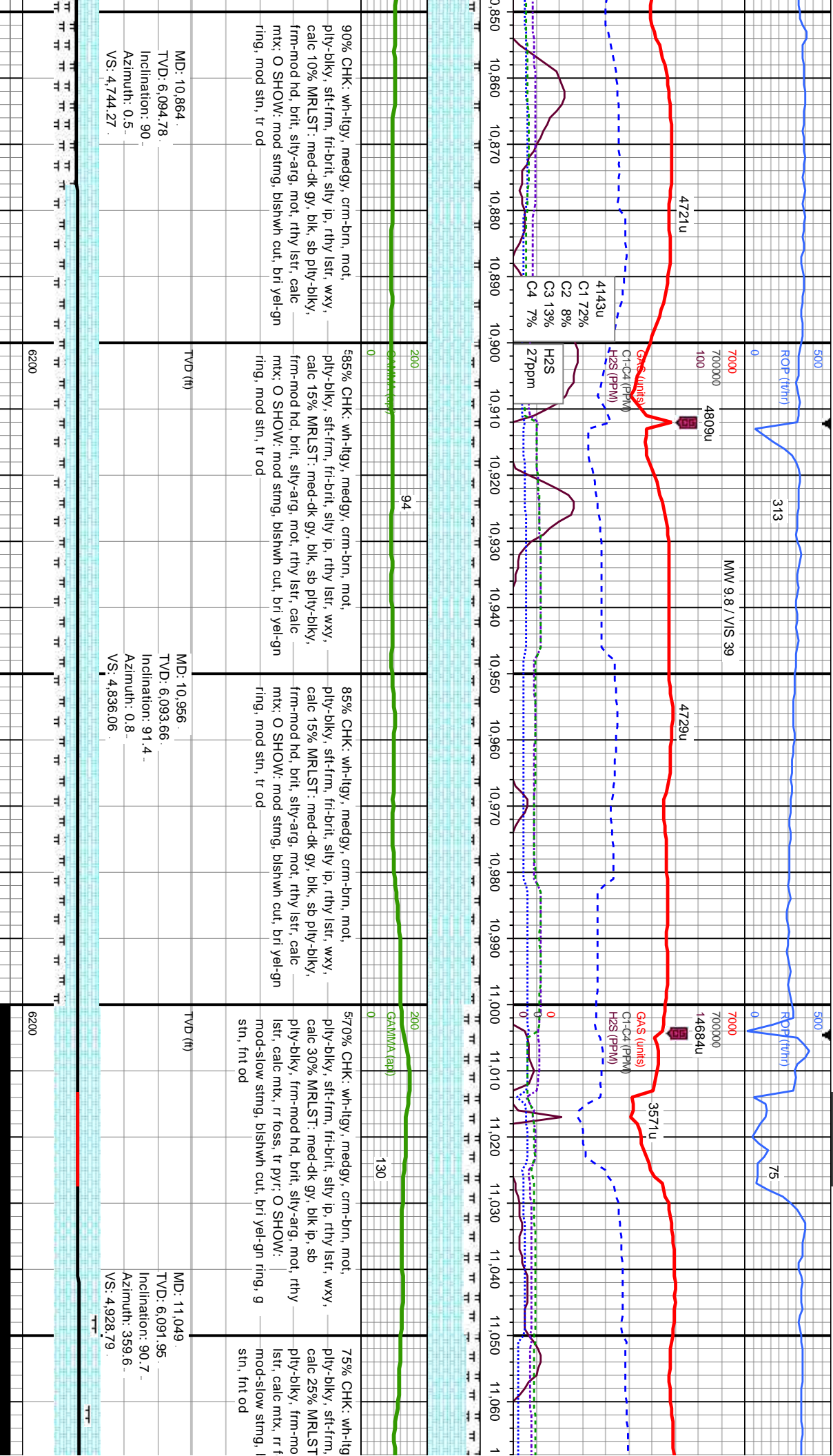
MD: 10.499 (ft)  
TVD: 6,098.09  
Inclination: 90.9  
Azimuth: 0.6  
VS: 4,380.37

MD: 10.589  
TVD: 6,096.16  
Inclination: 91.5  
Azimuth: 0.1  
VS: 4,470.13

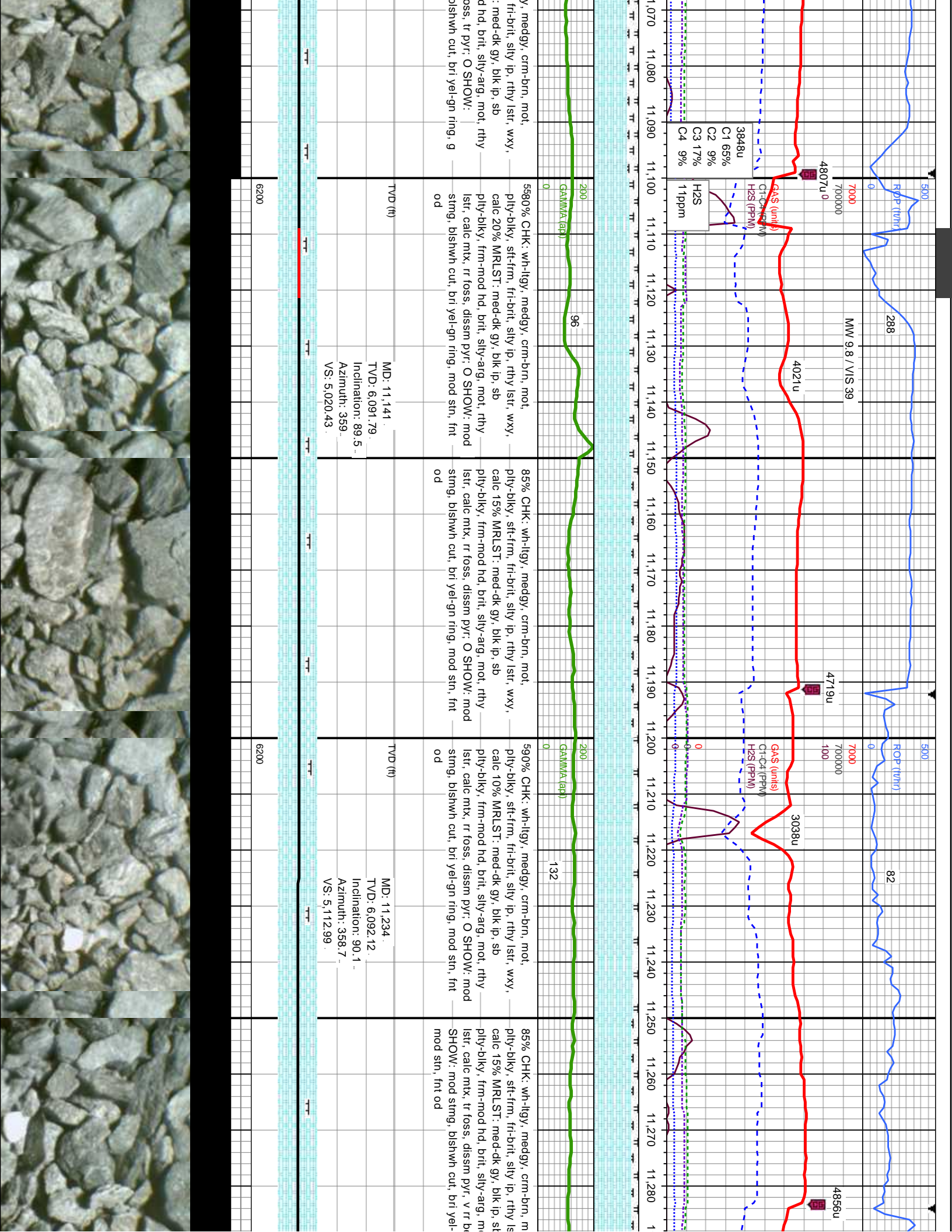


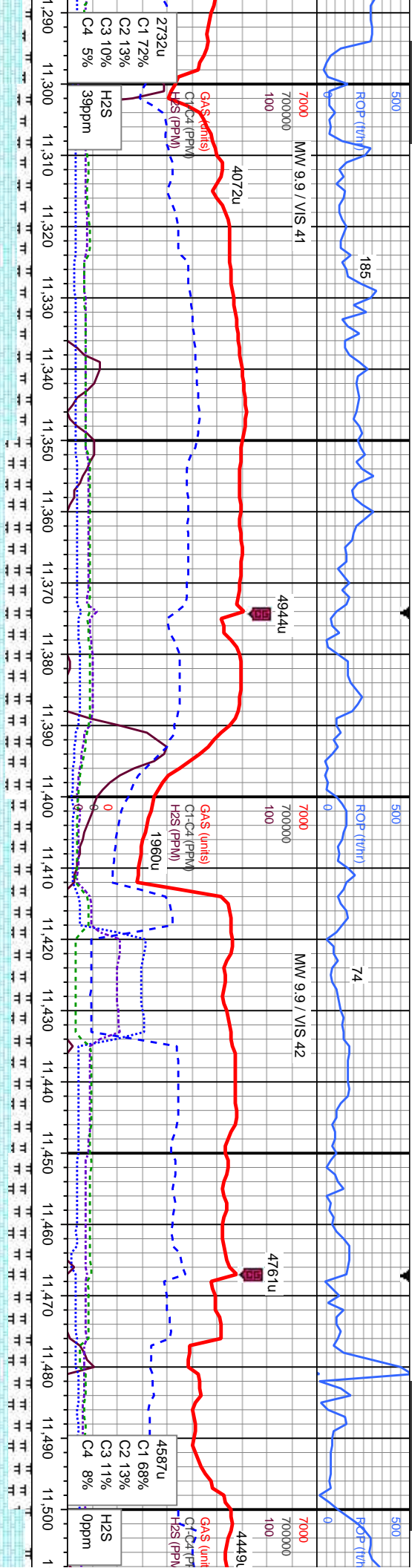












75% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, stly ip, rthy lstr, wxy, calc 25% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, stly-arg, mot, rthy lstr, calc mnx, rr foss, rr pyr, v rr bent; O SHOW: mod sting, bishwh cut, bri yel-gn ring, mod stn, fnt od

55% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, stly ip, rthy lstr, wxy ip, calc 45% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, stly-arg, mot, rthy lstr, calc mnx, rr foss; O SHOW: mod sting, bishwh cut, bri yel-gn ring, mod stn, fnt od

565% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, stly ip, rthy lstr, wxy, calc 35% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, stly-arg, mot, rthy lstr, calc mnx, rr foss; O SHOW: mod-slow sting, bl cut, yel-orn ring, mod stn, fnt od

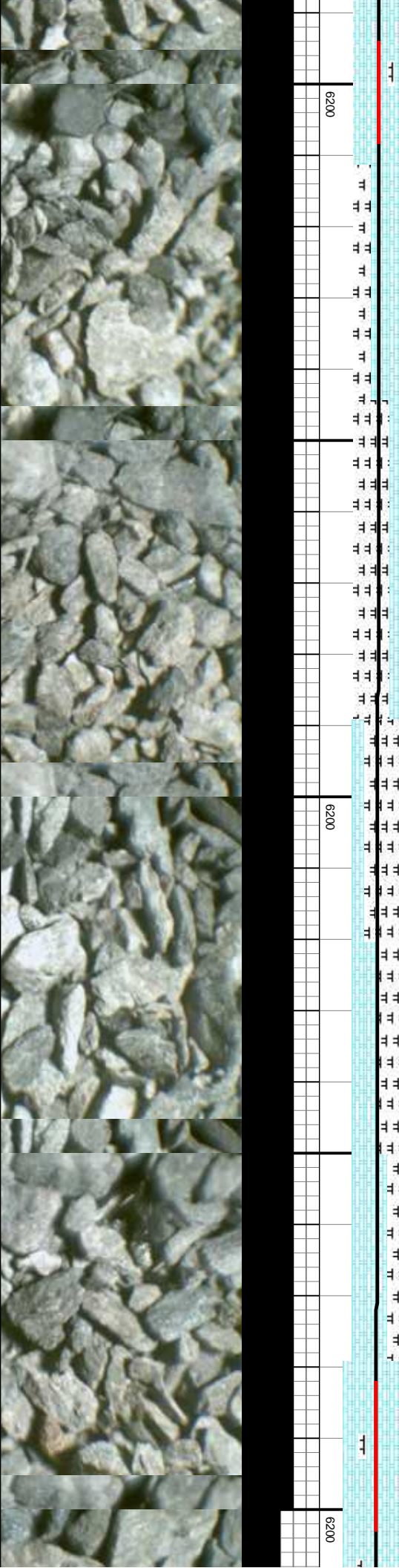
60% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, stly ip, rthy lstr, wxy, calc 40% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, stly-arg, mot, rthy lstr, calc mnx, rr foss, tr bent; O SHOW: mod-slow sting, bl cut, yel-orn ring, mod stn, fnt od

90% C: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, stly ip, rthy lstr, wxy, calc 10% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, stly-arg, mot, rthy lstr, calc mnx, rr foss, tr bent; O SHOW: mod-slow sting, bl cut, yel-orn ring, mod stn, fnt od

TVD (ft) MD: 11,326  
TVD: 6,092.92  
Inclination: 88.9  
Azimuth: 359.4  
VS: 5,204.59

TVD (ft) MD: 11,418  
TVD: 6,095.57  
Inclination: 87.8  
Azimuth: 358.5  
VS: 5,296.13

TVD (ft) MD: 11  
TVD: 6  
Inclination  
Azimuth  
VS: 5.3







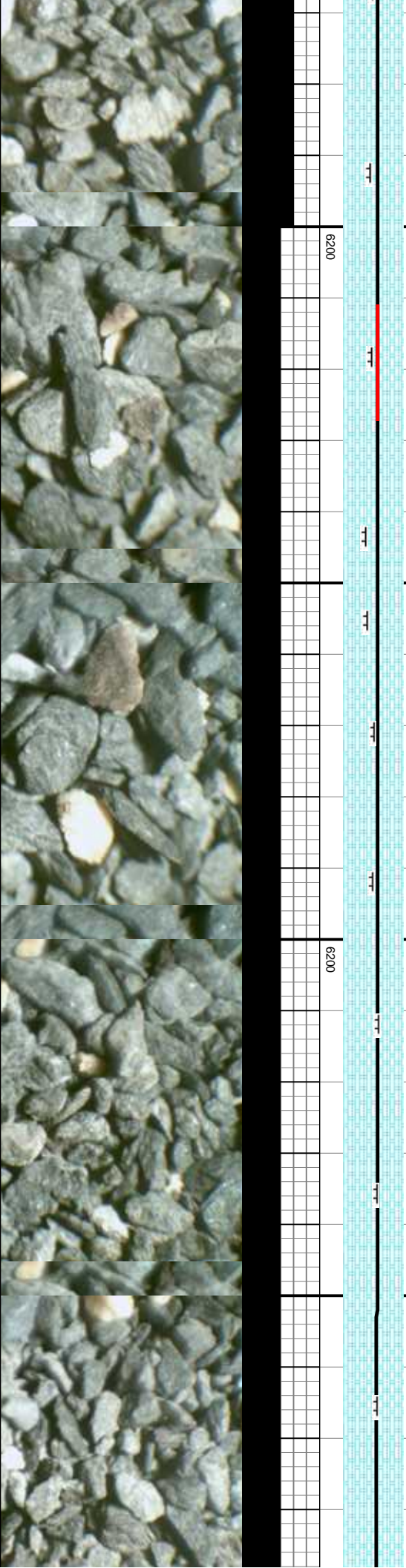
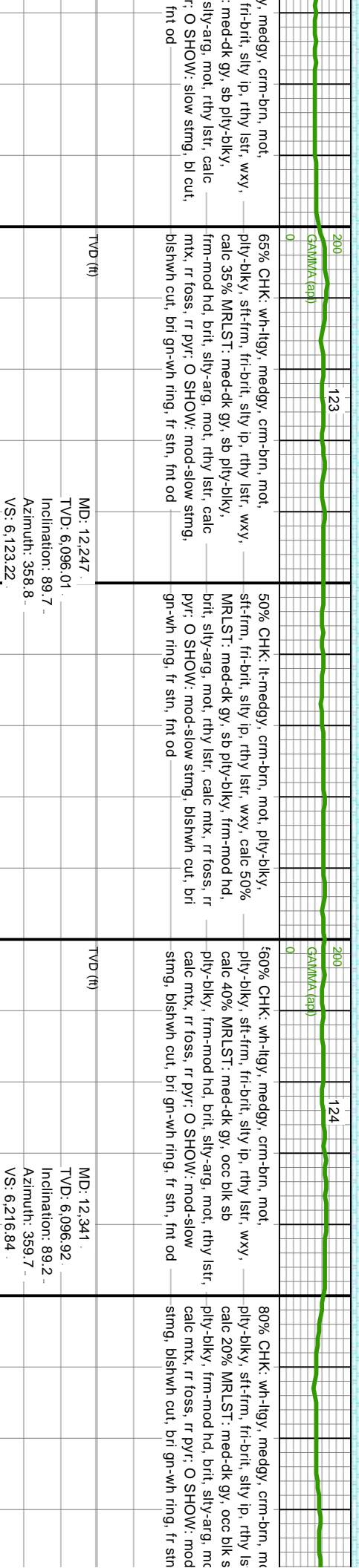
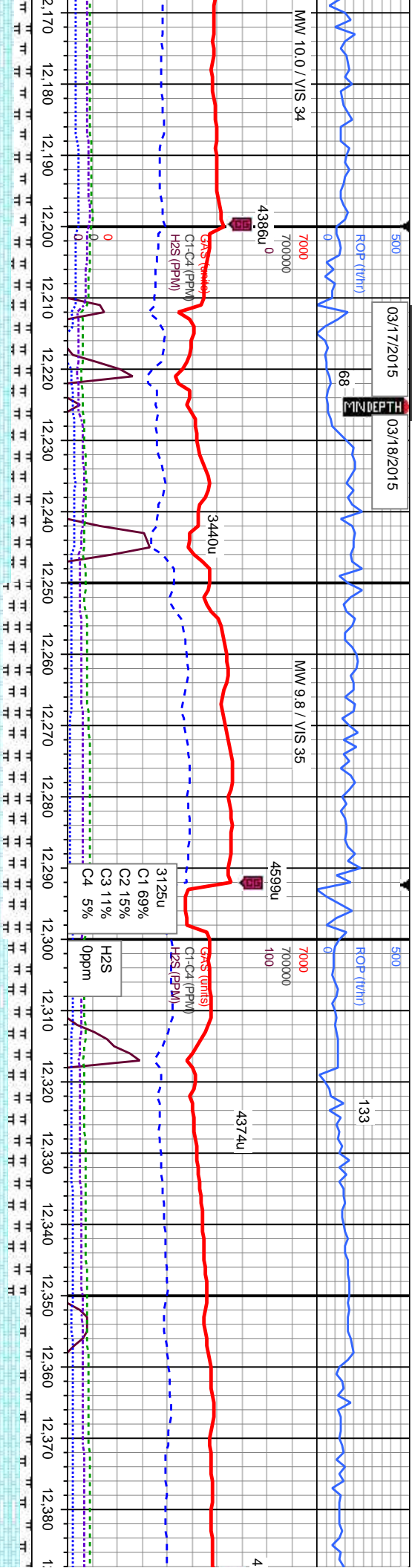




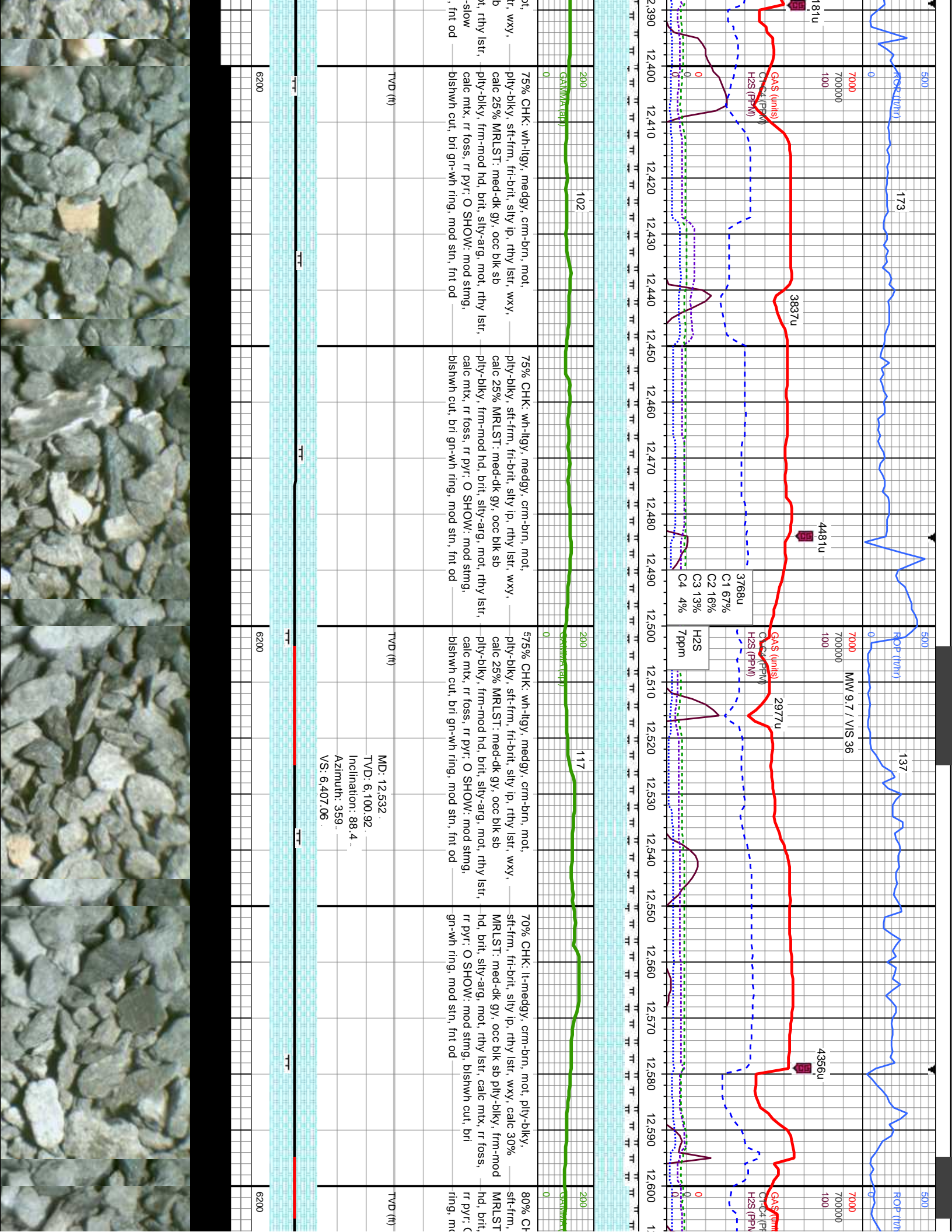








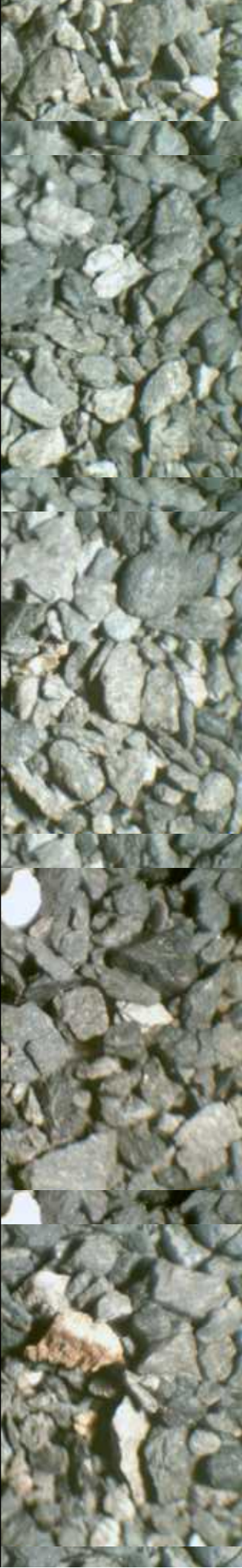
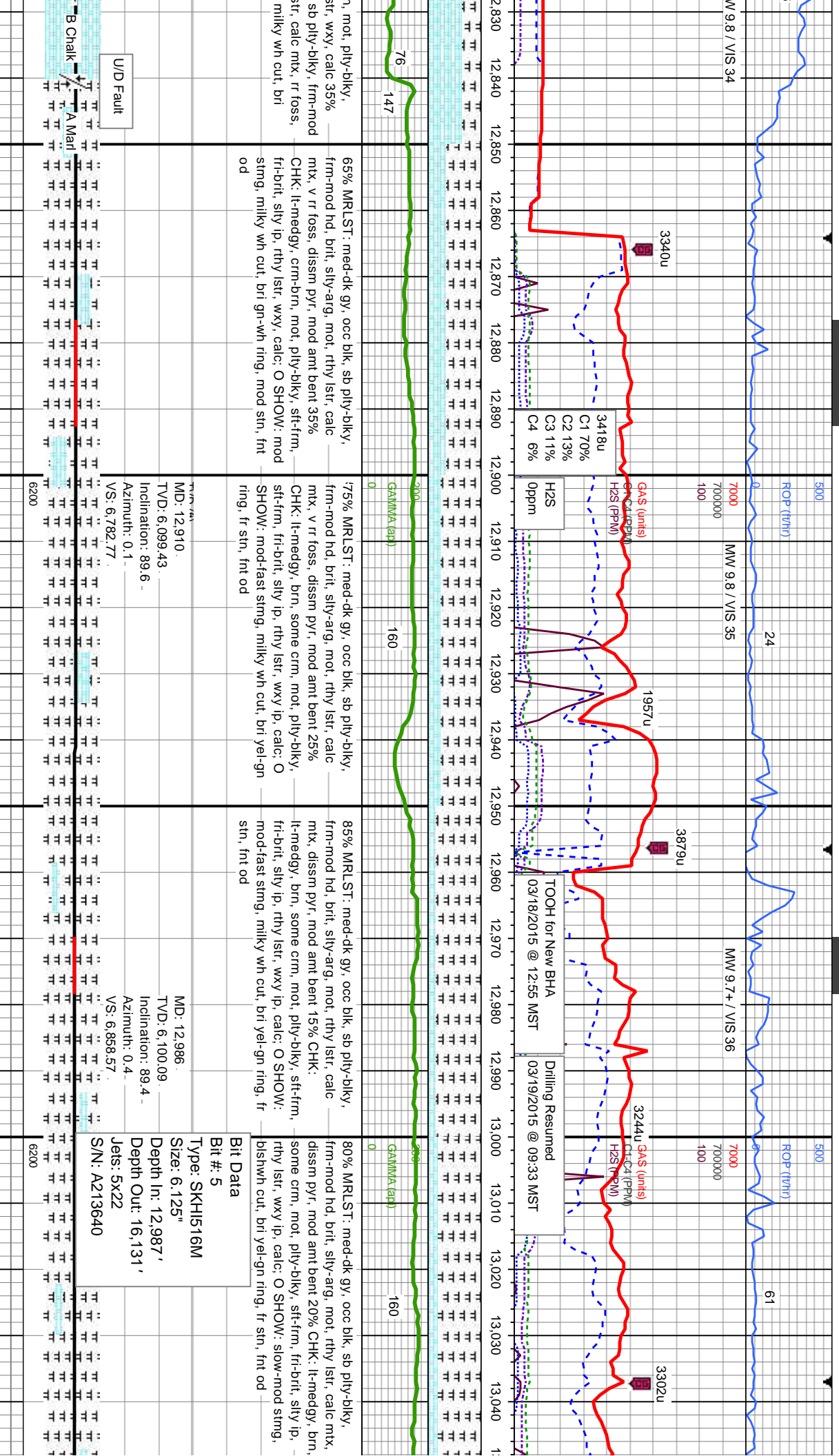








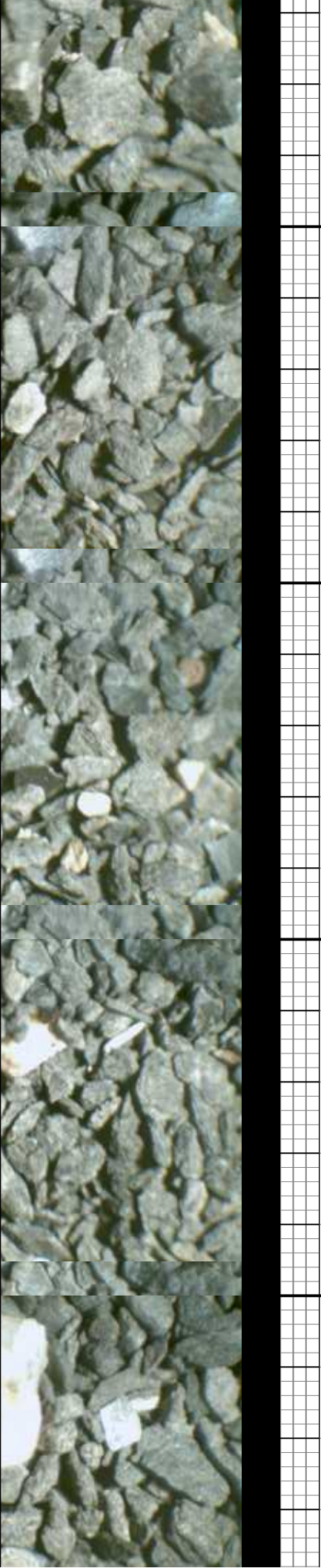
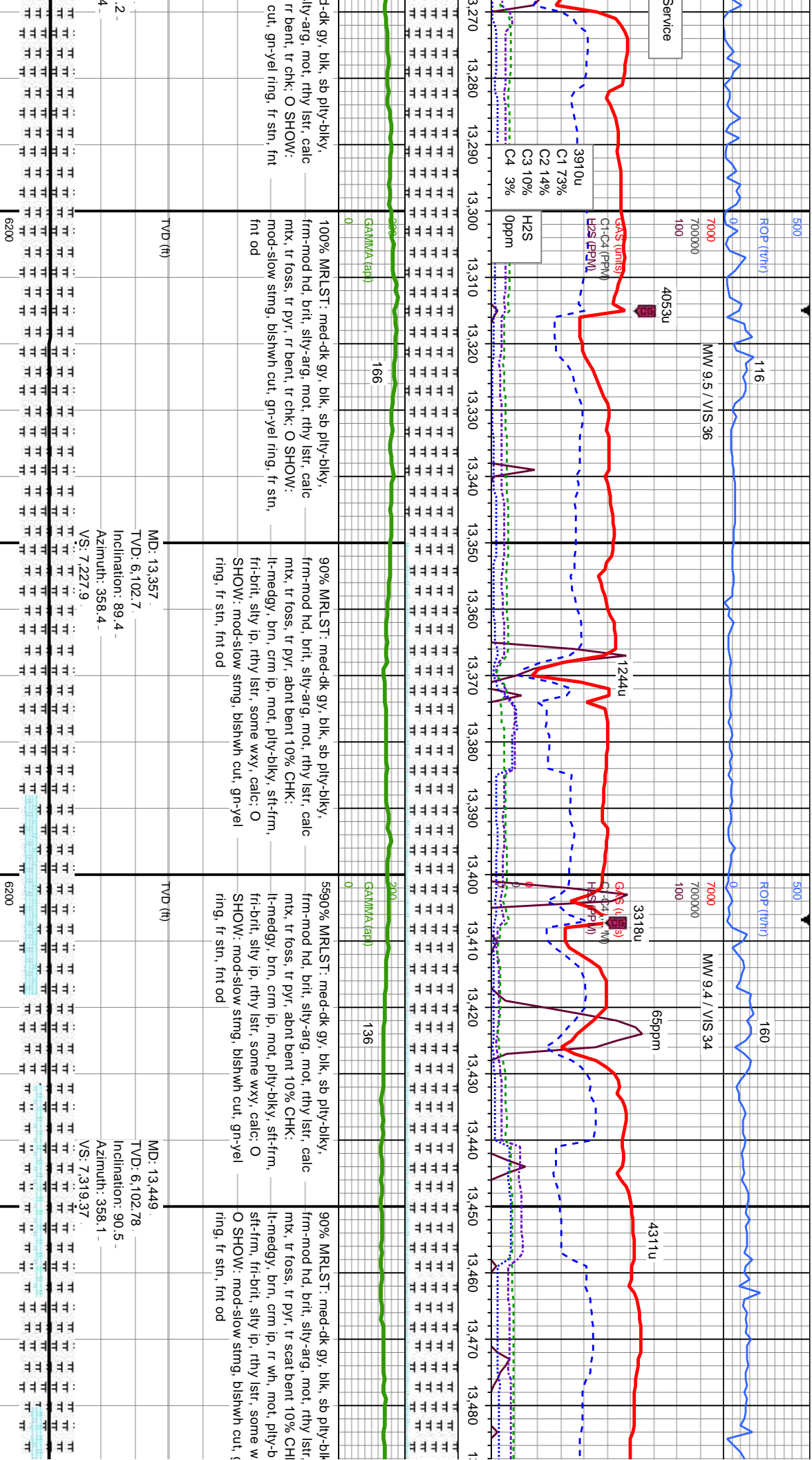


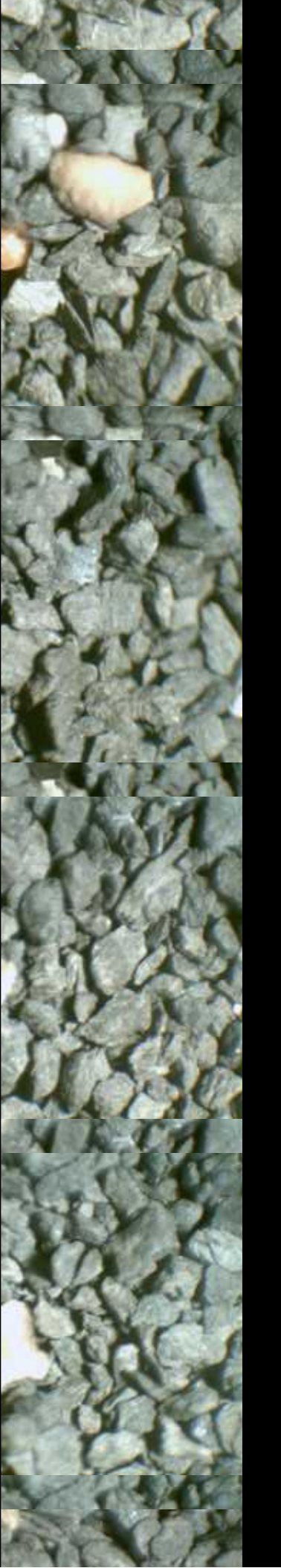








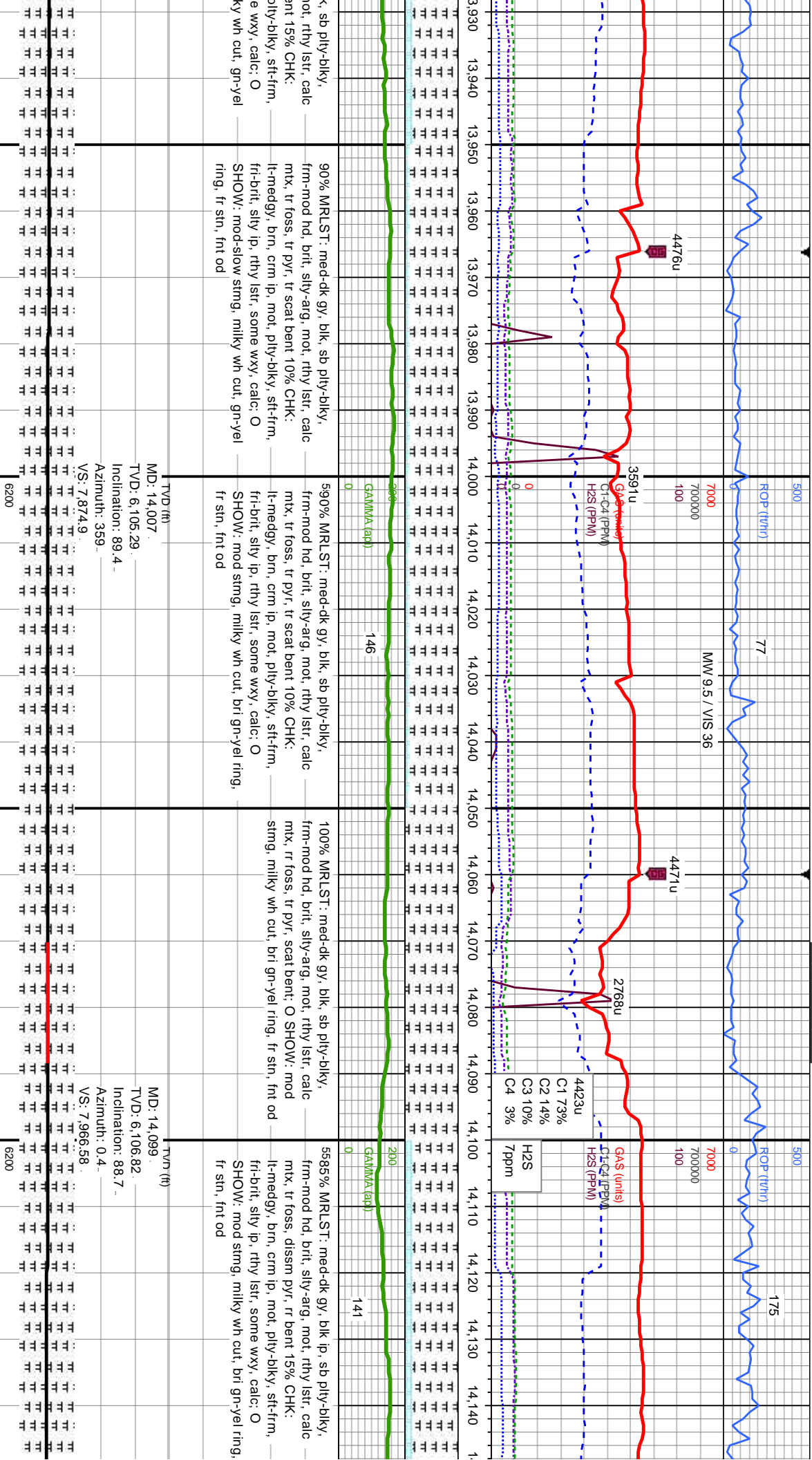




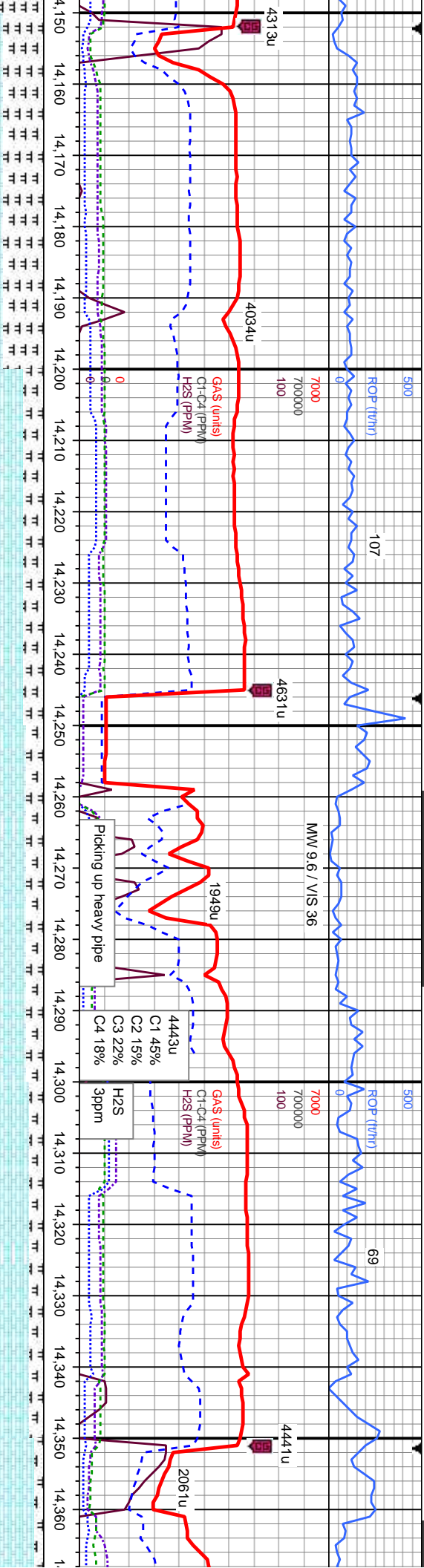












70% MRLST: med-dk gy, blk ip, sb pty-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtz, tr foss, dissn pyr, rr bent 30% CHK: lt-medgy, brn, crm ip, mot, pty-biky, st-frm, fri-brlt, sily ip, rthy lstr, some wxy, calc, O SHOW: mod stmg, milky wh cut, bri gn-yei ring, fr stn, fnt od

565% CHK: lt-medgy, crm-brn, wh ip, mot, pty-biky, st-frm, fri-brlt, sily ip, rthy lstr, wxy, calc 35% MRLST: med-dk gy, blk ip, sb pty-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtz, tr foss, dissn pyr, O SHOW: mod stmg, milky wh cut, bri gn-yei ring, mod stn, fnt od

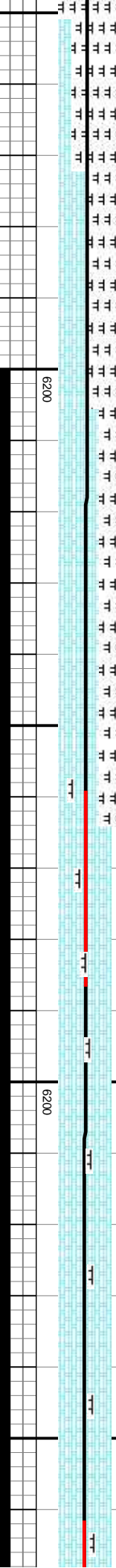
70% CHK: lt-medgy, crm-brn, wh ip, mot, pty-biky, st-frm, fri-brlt, sily ip, rthy lstr, wxy, calc 30% MRLST: med-dk gy, blk ip, sb pty-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtz, tr foss, dissn pyr, rr bent, O SHOW: mod stmg, milky wh cut, bri gn-yei ring, mod stn, fnt od

575% CHK: wh-llgy-medgy, crm-brn, mot, pty-biky, st-frm, fri-brlt, sily ip, rthy lstr, wxy, calc 25% MRLST: med-dk gy, blk ip, sb pty-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtz, tr foss, dissn pyr, scat bent, O SHOW: mod stmg, milky wh cut, bri gn-yei ring, mod stn, fnt od

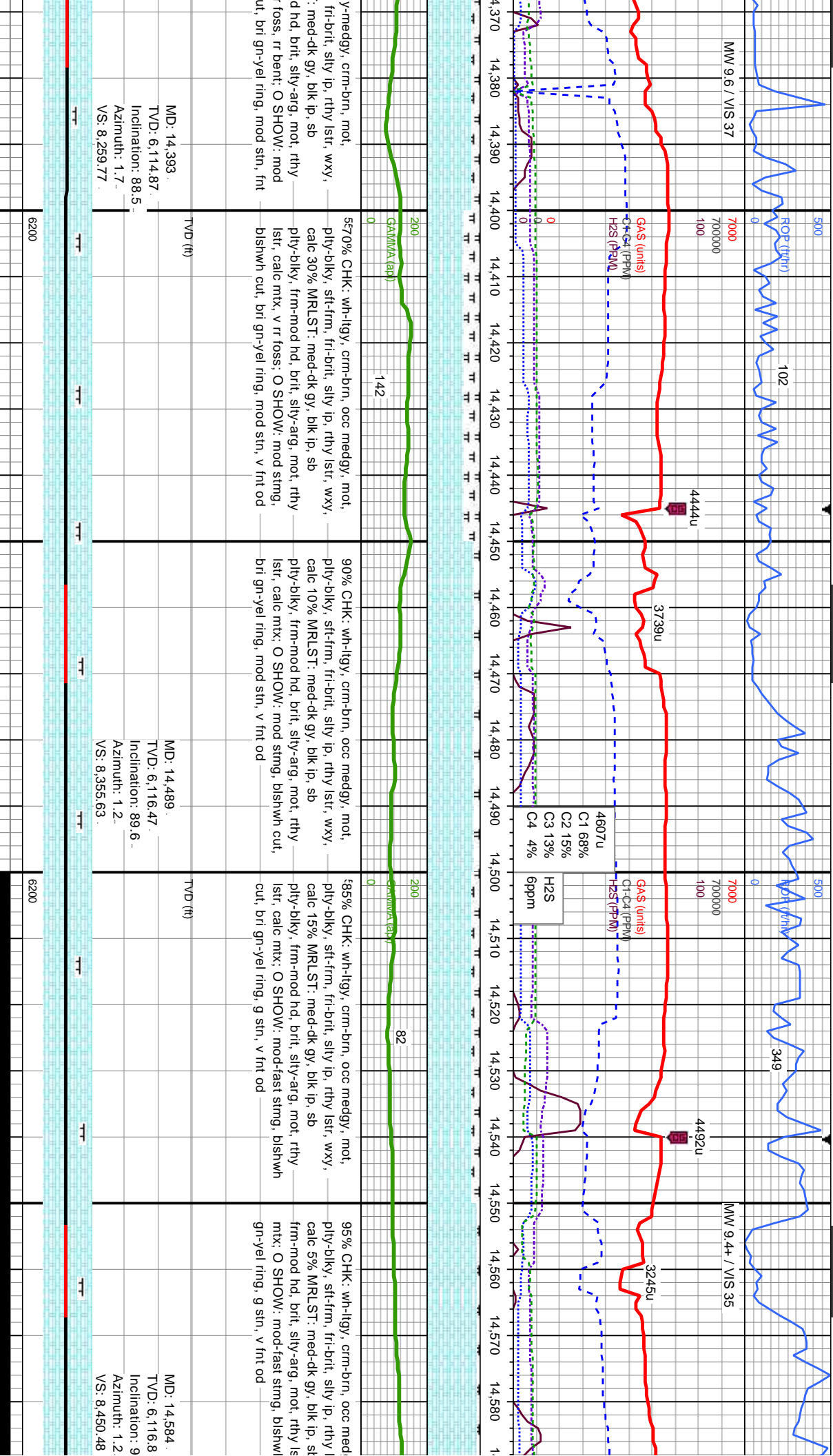
85% CHK: wh-llgy-medgy, crm-brn, mot, pty-biky, st-frm, fri-brlt, sily ip, rthy lstr, wxy, calc 15% MRLST: med-dk gy, blk ip, sb pty-biky, frm-mod hd, brlt, sily-arg, mot, rthy lstr, calc mtz, tr foss, dissn pyr, scat bent, O SHOW: mod stmg, milky wh cut, bri gn-yei ring, mod stn, fnt od

MD: 14,193.  
TVD: 6,109.12.  
Inclination: 88.5.  
Azimuth: 359.8.  
VS: 8,060.29.

MD: 14,298.  
TVD: 6,112.14.  
Inclination: 88.2.  
Azimuth: 0.6.  
VS: 8,164.96.







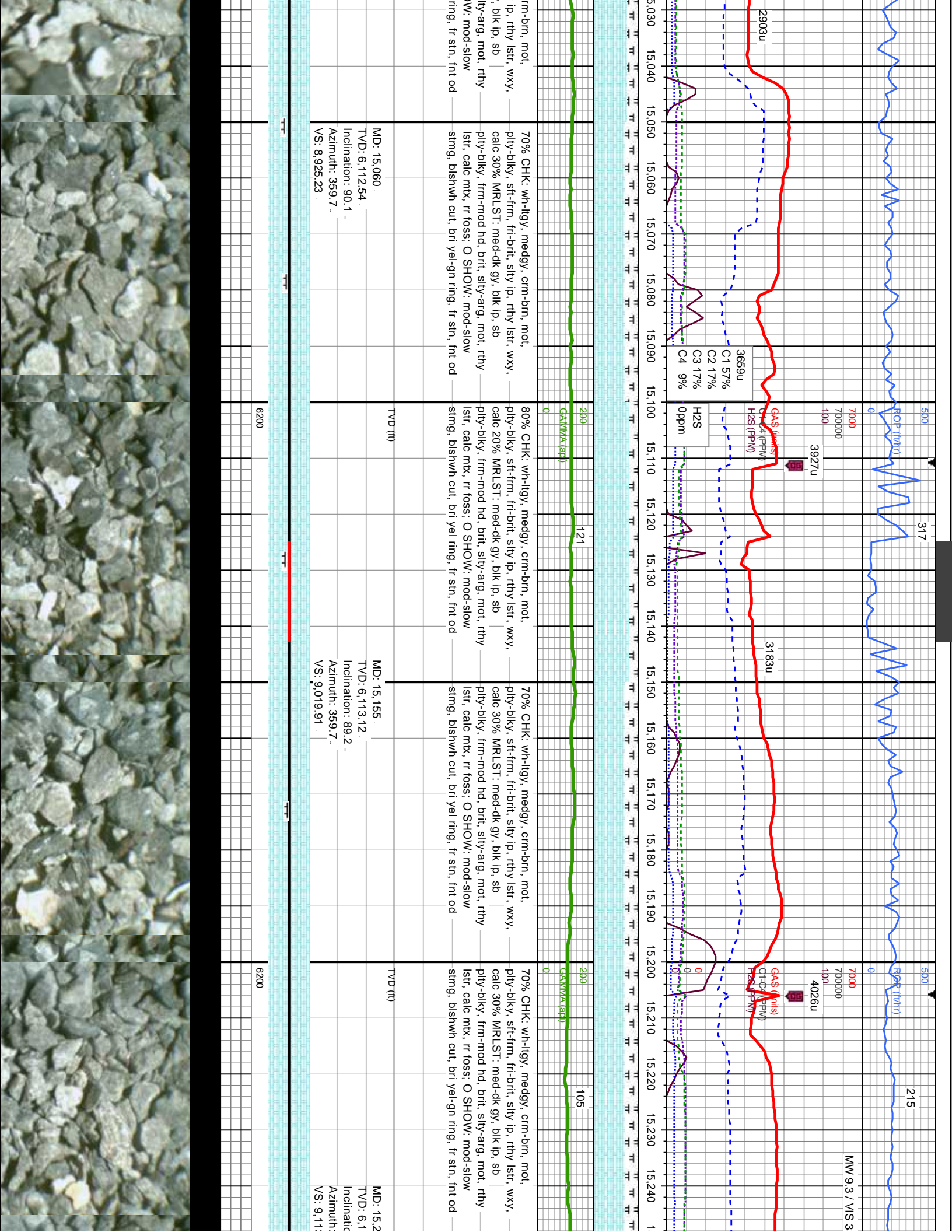


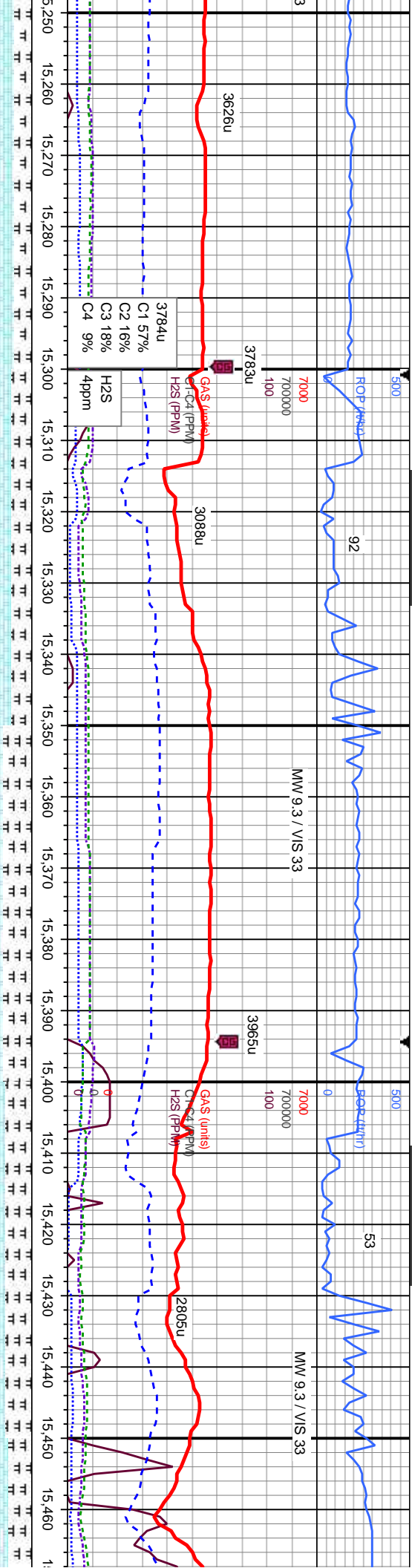




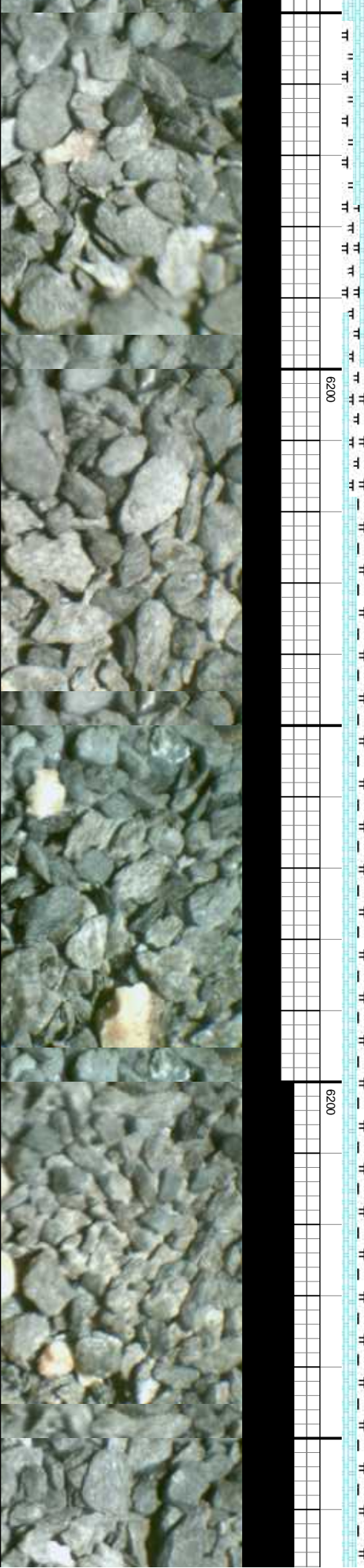




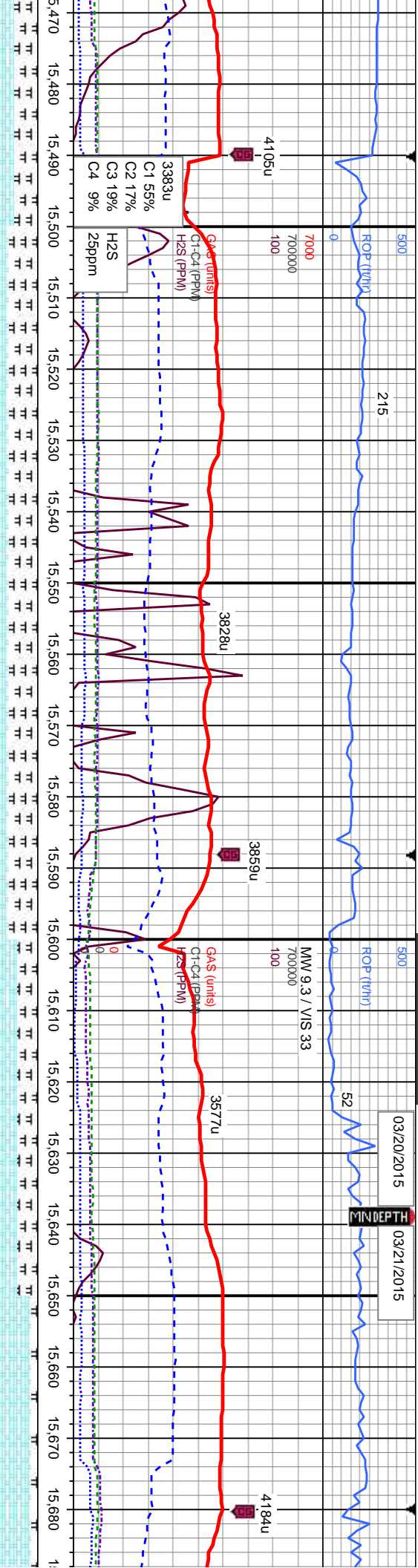




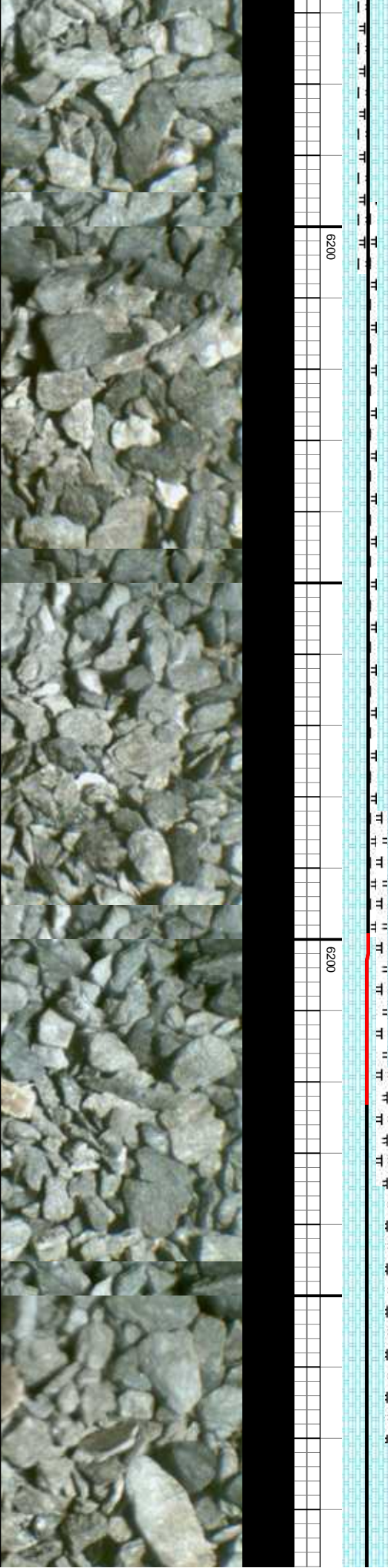
70% CHK: wh-llgy, medgy, crm-brn, mot, ply-blky, sft-frm, frt-brlt, slty ip, rthy lstr, wxy, calc 30% MRLST: med-dk gy, blk ip, sb ply-blky, frm-mod hd, brlt, slty-arg, mot, rthy lstr, calc mxx, rr foss: O SHOW: mod-slow stimg, blshwh cut, bri yel-gn ring, fr stn, fnt od	65% CHK: medgy, crm-brn, mot, ply-blky, sft-frm, frt-brlt, slty ip, rthy lstr, wxy, calc 35% MRLST: med-dk gy, blk ip, sb ply-blky, frm-mod hd, brlt, slty-arg, mot, rthy lstr, calc mxx, rr foss: O SHOW: mod-slow stimg, blshwh cut, yel-wh ring, fr stn, fnt od	50% CHK: medgy, crm-brn, mot, ply-blky, sft-frm, frt-brlt, slty ip, rthy lstr, wxy, calc 50% MRLST: med-dk gy, blk ip, sb ply-blky, frm-mod hd, brlt, slty-arg, mot, rthy lstr, calc mxx, rr foss: O SHOW: mod-slow stimg, blshwh cut, yel-wh ring, fr stn, fnt od	55% CHK: medgy, crm-brn, mot, ply-blky, sft-frm, frt-brlt, slty ip, rthy lstr, wxy, calc 45% MRLST: med-dk gy, blk ip, sb ply-blky, frm-mod hd, brlt, slty-arg, mot, rthy lstr, calc mxx, rr foss: O SHOW: mod-slow stimg, blshwh cut, bri yel-gn ring, mod stn, fnt od	60% CHK: medgy, crm-brn, mot, ply-blky, sft-frm, frt-brlt, slty ip, rthy lstr, wxy, calc 30% MRLST: med-dk gy, blk ip, sb ply-blky, frm-mod hd, brlt, slty-arg, mot, rthy lstr, calc mxx, rr foss: O SHOW: mod-slow stimg, blshwh cut, bri yel-gn ring, mod stn, fnt od
49	49	49	49	49
33.29	33.29	33.29	33.29	33.29
in: 90.6	in: 90.6	in: 90.6	in: 90.6	in: 90.6
359.8	359.8	359.8	359.8	359.8
3.6	3.6	3.6	3.6	3.6
TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)
MD: 15.344	MD: 15.344	MD: 15.344	MD: 15.344	MD: 15.344
TVD: 6.112.79	TVD: 6.112.79	TVD: 6.112.79	TVD: 6.112.79	TVD: 6.112.79
Inclination: 90	Inclination: 90	Inclination: 90	Inclination: 90	Inclination: 90
Azimuth: 0.3	Azimuth: 0.3	Azimuth: 0.3	Azimuth: 0.3	Azimuth: 0.3
VS: 9.208.32	VS: 9.208.32	VS: 9.208.32	VS: 9.208.32	VS: 9.208.32



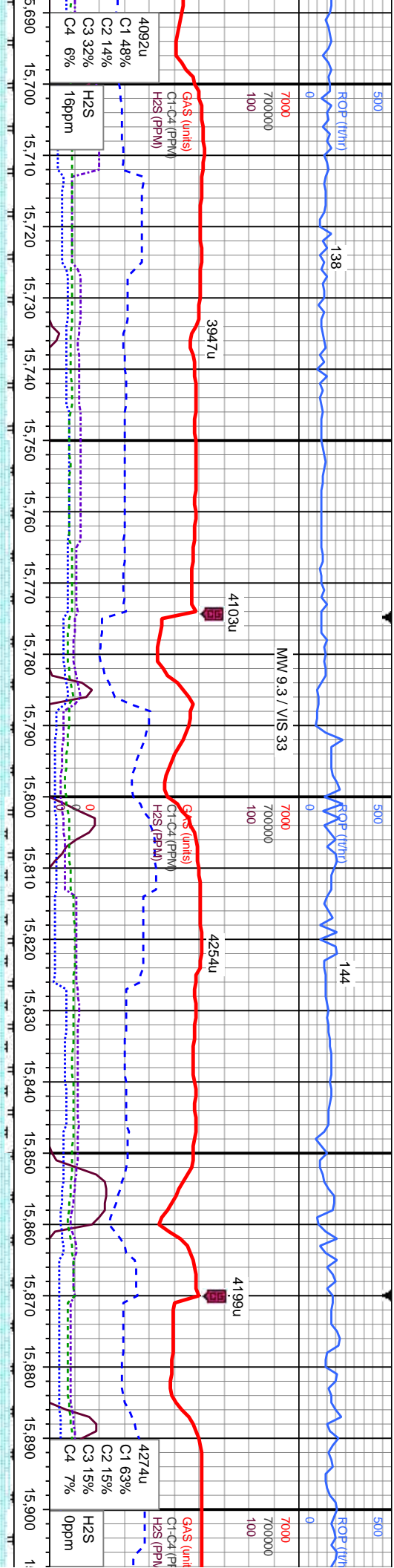




crn-brn, mot, pily-biky, /p, rthy lstr, wxy, calc 40% y, blk ip, sb pily-biky, frm-mod mot, rthy lstr, calc mtx, r mod-slow stimg, blshwh cut, bri th, frt od	50% CHK: medgy, crn-brn, mot, pily-biky, sft-frm, fri-brit, sily ip, rthy lstr, wxy, calc 50% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, r foss: O SHOW: mod-slow stimg, blshwh cut, bri yel-gn ring, mod stn, frt od	50% CHK: medgy, crn-brn, mot, pily-biky, sft-frm, fri-brit, sily ip, rthy lstr, wxy, calc 50% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, r foss: O SHOW: mod-slow stimg, blshwh cut, bri yel-gn ring, mod stn, frt od	65% CHK: medgy, crn-brn, mot, pily-biky, sft-frm, fri-brit, sily ip, rthy lstr, wxy, calc 35% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, sily-arg, mot, rthy lstr, calc mtx, r foss: O SHOW: mod-slow stimg, blshwh cut, bri yel-gn ring, mod stn, frt od	90% CHK: wh-ilty, medgy, crn-brn, mnc pily-biky, sft-frm, fri-brit, sily ip, rthy lstr, calc 10% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, sily-arg, mnc lstr, calc mtx, r foss: O SHOW: mod-si stimg, blshwh cut, bri yel-gn ring, mod od
TVD (ft)	TVD (ft)	TVD (ft)	TVD (ft)	
MD: 15,534. TVD: 6,114.28. Inclination: 90.6. Azimuth: 0.5. VS: 9,397.84.	MD: 15,629. TVD: 6,115.2. Inclination: 88.3. Azimuth: 0.4. VS: 9,492.6.			





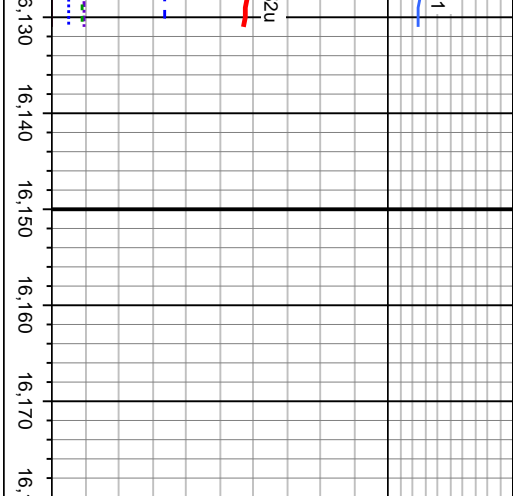


90% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, silty ip, rthy lstr, wxy, calc 10% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtx, rr foss: O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od	95% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, silty ip, rthy lstr, wxy, calc 5% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtx, rr foss: O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od	585% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, silty ip, rthy lstr, wxy, calc 15% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtx, rr foss: O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od	95% CHK: wh-llgy, medgy, crm-brn, mot, pily-biky, stf-frn, frt-brit, silty ip, rthy lstr, wxy, calc 5% MRLST: med-dk gy, blk ip, sb pily-biky, frm-mod hd, brit, silty-arg, mot, rthy lstr, calc mtx, rr foss: O SHOW: mod stmg, blshwh cut, bri yel-gn ring, mod stn, fnt od	590% C
MD: 15.723. TVD: 6,117.82. Inclination: 88.5. Azimuth: 359.7. VS: 9,586.3.	MD: 15.819. TVD: 6,119.58. Inclination: 89.4. Azimuth: 359.3. VS: 9,681.93.			
TVD (ft)	TVD (ft)			TVD (ft)









mot, pty-bky,  
str, wxy, calc 5%  
sb pty-bky, frm-mod  
str, calc mtx, tr

TD Reached MD 16131'  
03/21/2015 @ 04:44 MST

Thank you for using  
Columbine Logging, Inc.

on to Bit

, 131  
, 113.63  
tion: 91.2  
h: 357.9  
92.31