



Scale: 5" / 100'
Measured Depth Log

Well Name Shuffy State Y34-714

Location NWSE SECTION 10 T2N R64W

State COLORADO

County WELD

Country USA

Rig Number H&P 517

API Number 05-123-45621

AFE # 205063

Geographic Region DJ BASIN

Field WATTENBERG

Spud Date 1/7/2018

Drilling Completed 1/12/2018

Surface Coordinates NWSE SECTION 10, T2N, R64W

300' FSL x 750' FEL

Bottom Hole Coordinates NWSE SECTION 10, T2N, R64W

2500' FSL x 260' FEL

Ground Elevation 5039'

K.B. Elevation 5069'

Logged Interval 6350' To 19794'

Total Depth 19794"

Formation NIOBRABA B MARL

Type of Drilling Fluid OIL BASED MUD

Operator

Company Noble Energy, Inc.

Address 1625 Broadway, Suite 2200
Denver, CO 80202



Geologist

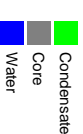
Name TIM BRIGHT, WEDGE HOWLAND

Company Terra Guidance


























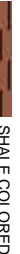



Address 1298 O Road
Loma CO 81524
(970) 260-5408



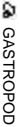

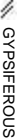





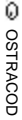


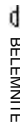

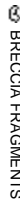
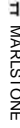
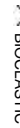

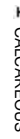
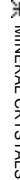
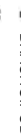





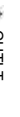

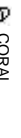
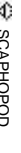
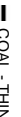







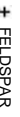











Color Coding





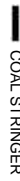
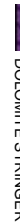
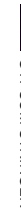
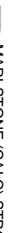


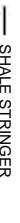


Rock Types

 LIMESTONE	 SANDSTONE	 DOLOMITE	 BRECCIA
 Chalk	 BENTONITE	 CHERT	 TILL
 Marl	 CEMENT	 COAL	 TUFF
 SHALE	 UNKNOWN	 MARLSTONE	 IGNEOUS
 Silty Shale	 ANHYDRITE	 CLAYSTONE	 METAMORPHIC
 Shaly Siltstone	 GYPSUM	 SHALE GRAY	
 SILTSTONE	 SALT	 SHALE COLORED	
 Shaly Sandston	 SIDERITE or LIMONITE	 CONGLOMERATE	









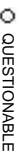

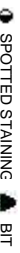






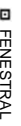
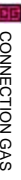

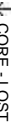

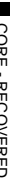
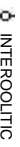
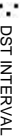



Accessories

Fossils	F FOSSIL	ARGILLACEOUS	GLAUCONITE
 GASTROPOD	 ARGILLITE GRAIN	 GYPSIFEROUS	
 ALGAE	 OOLITE	 BENTONITE	 HEAVY MINERAL
 AMPHIPORA	 OSTRACOD	 BITUMENOUS SUBSTANCE	 KAOLIN
 BELEMNITE	 PELECYPOD	 BRECCIA FRAGMENTS	 MARLSTONE
 BIOCLASTIC	 PELLET	 CALCAREOUS	 MINERAL CRYSTALS
 BRACHIOPOD	 PISOLITE	 CARBONACEOUS FLAKES	 NODULES
 BRYOZOA	 PLANT REMAINS	 CHITDK	 PHOSPHATE PELLETS
 CEPHALOPOD	 PLANT SPORES	 CHITLT	 PYRITE
 CORAL	 SCAPHOPOD	 COAL - THIN BEDS	 SALT CAST
 CRINOID	 STROMATOPOROID	 DOLOMITIC	 SANDY
 ECHINOID		 FELDSPAR	 SILICEOUS
 FISH	Minerals	 FERRUGINOUS PELLET	 SILTY
 FORAMINIFERA	 ANHYDRITIC	 FERRUGINOUS	 TUFFACEOUS

Stringer

 ANHYDRITE STRINGER	 BENTONITE STRINGER	 COAL STRINGER	 DOLOMITE STRINGER
 GYPSUM STRINGER	 LIMESTONE STRINGER	 MARLSTONE (CALO) STRG	 MARLSTONE (DOL) STRG
 SANDSTONE STRINGER	 SHALE STRINGER	 SILTSTONE STRINGER	

Other

 ORGANIC	 FAULT
 PINPOINT	 GAS
 DEAD	 VUGGY
 EVEN	 NORMAL
 QUESTIONABLE	 OIL
 SPOTTED STAINING	 BIT
 CASING	 REVERSAL
Porosity	 CONNECTION (LEFT)
 EARTHY	 CONNECTION (DOWN)
 FENESTRAL	 CONNECTION GAS
 FRACTURE	 CORE - LOST
 INTERCRYSTALLINE	 CORE - RECOVERED
 INTEROOLITIC	 DST INTERVAL
 MOLDIC	 FAULT
	 WIRELINE

er Symbols

ORMATION TOP L LITHOGRAPHIC

Rounding

HOW MX MICROXLN

PTH A ANGULAR MS MUDSTONE

L FAULT R ROUNDED PS PACKSTONE

OW B SUBANG WS WACKESTONE

JRNED STRATA T SUBRND

Sorting

SE FAULT

Textures

ALL CORE (LEFT) M MODERATE

ALL CORE (RIGHT) BS BOUNDSTONE P POOR

C CHALKY W WELL

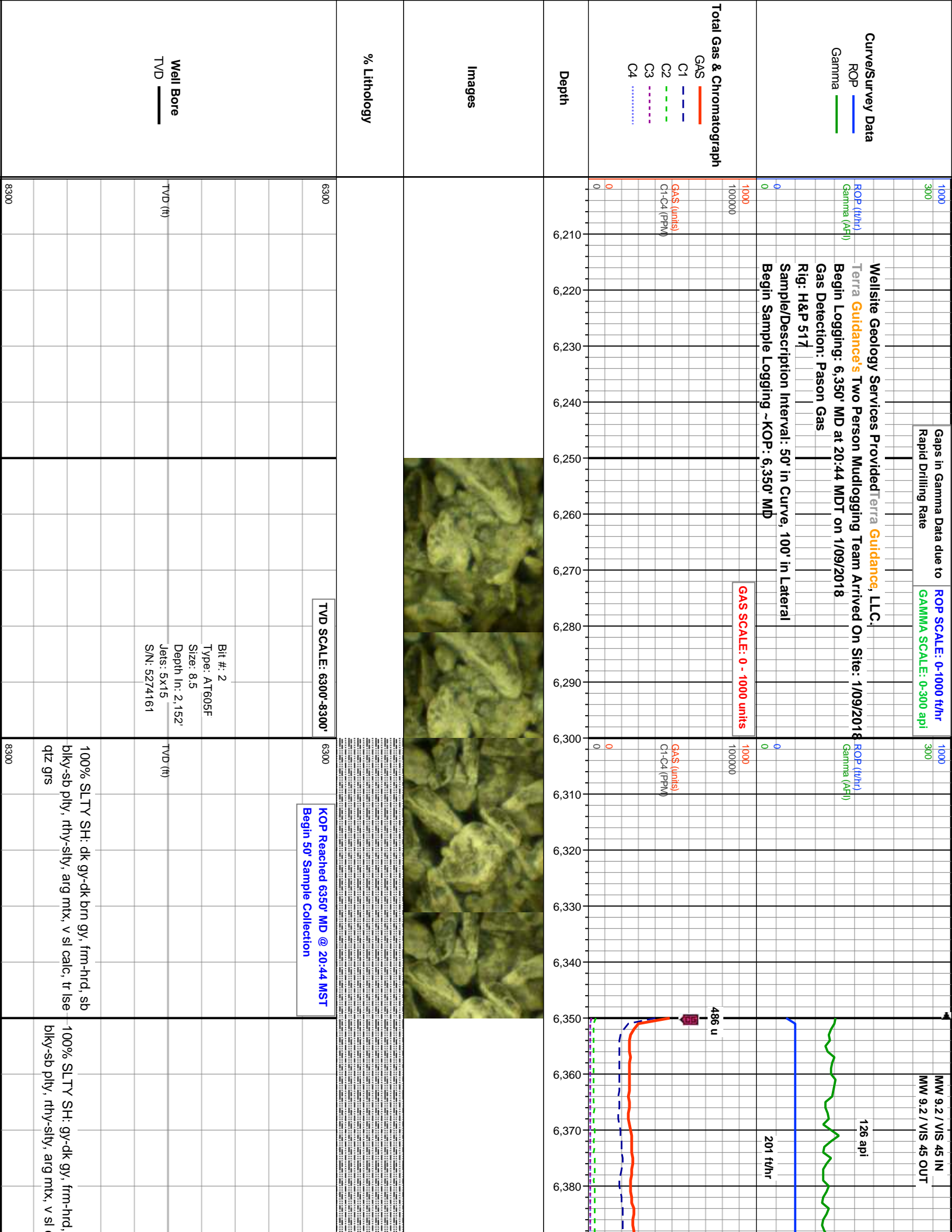
EY CX CRYPTOXLN

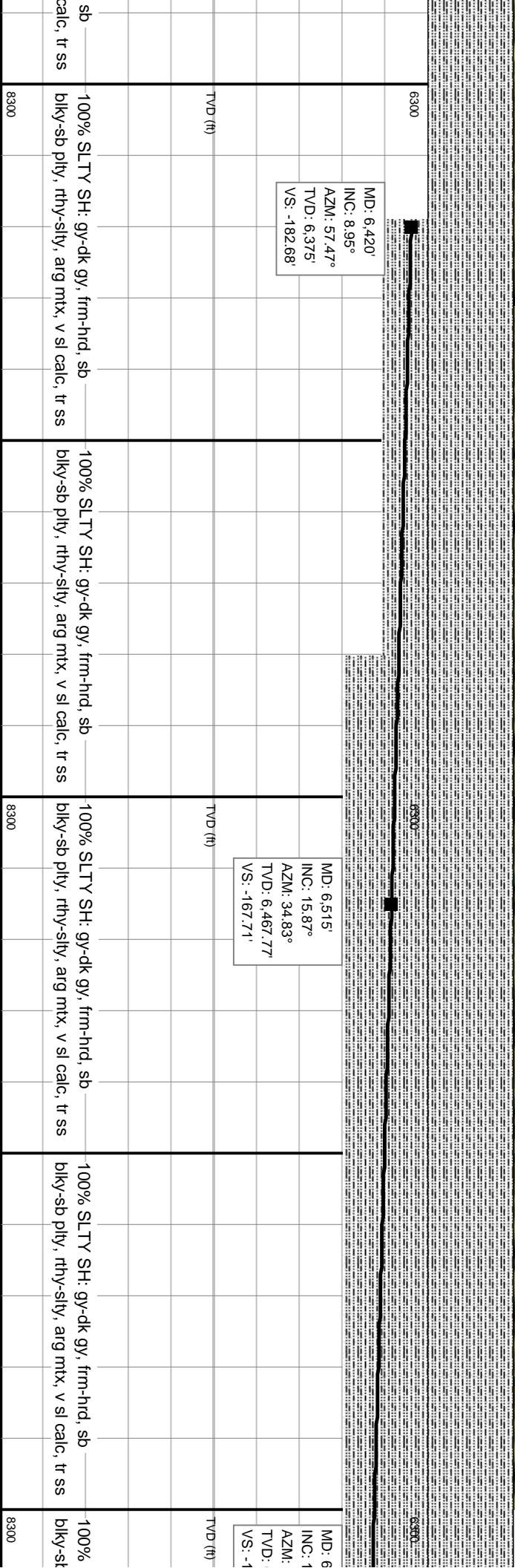
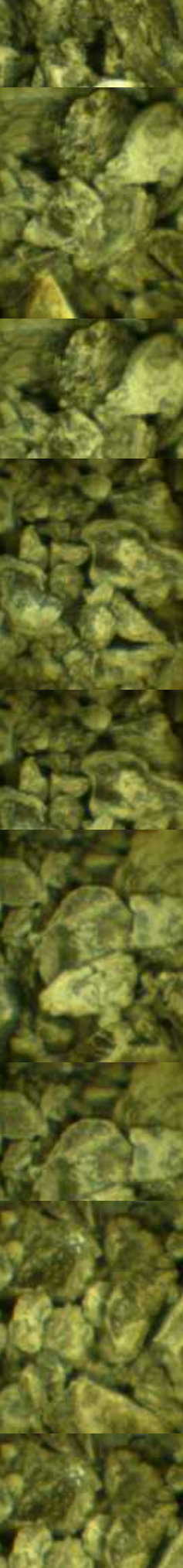
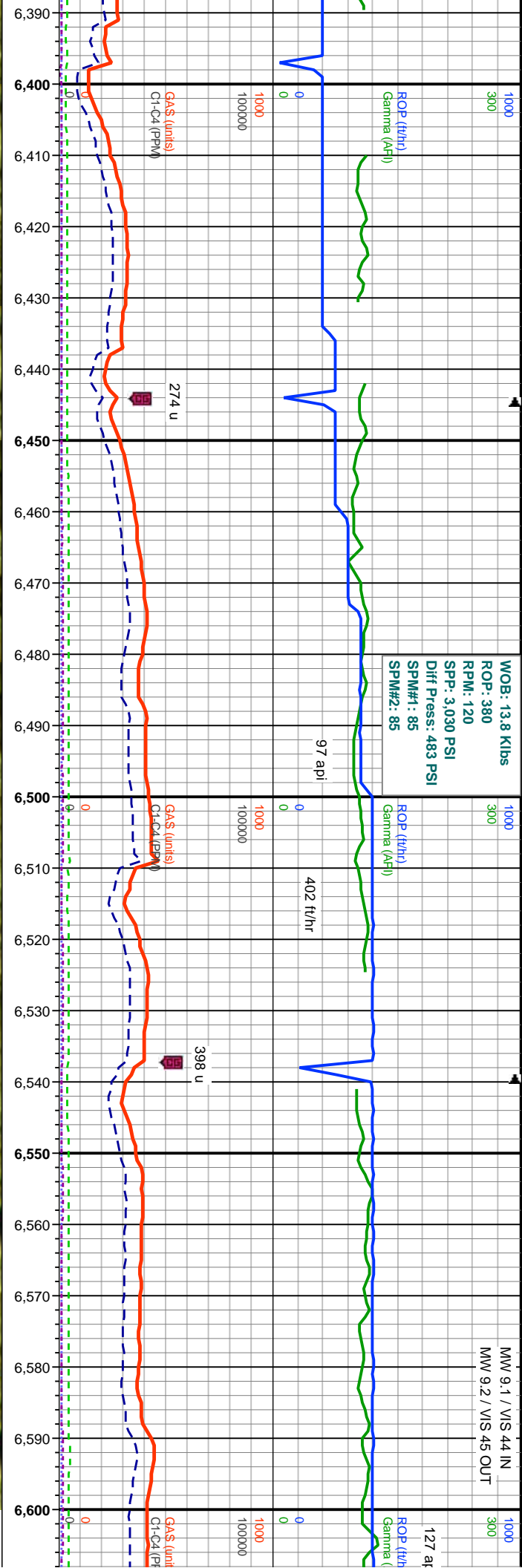
EGAS E EARTHY

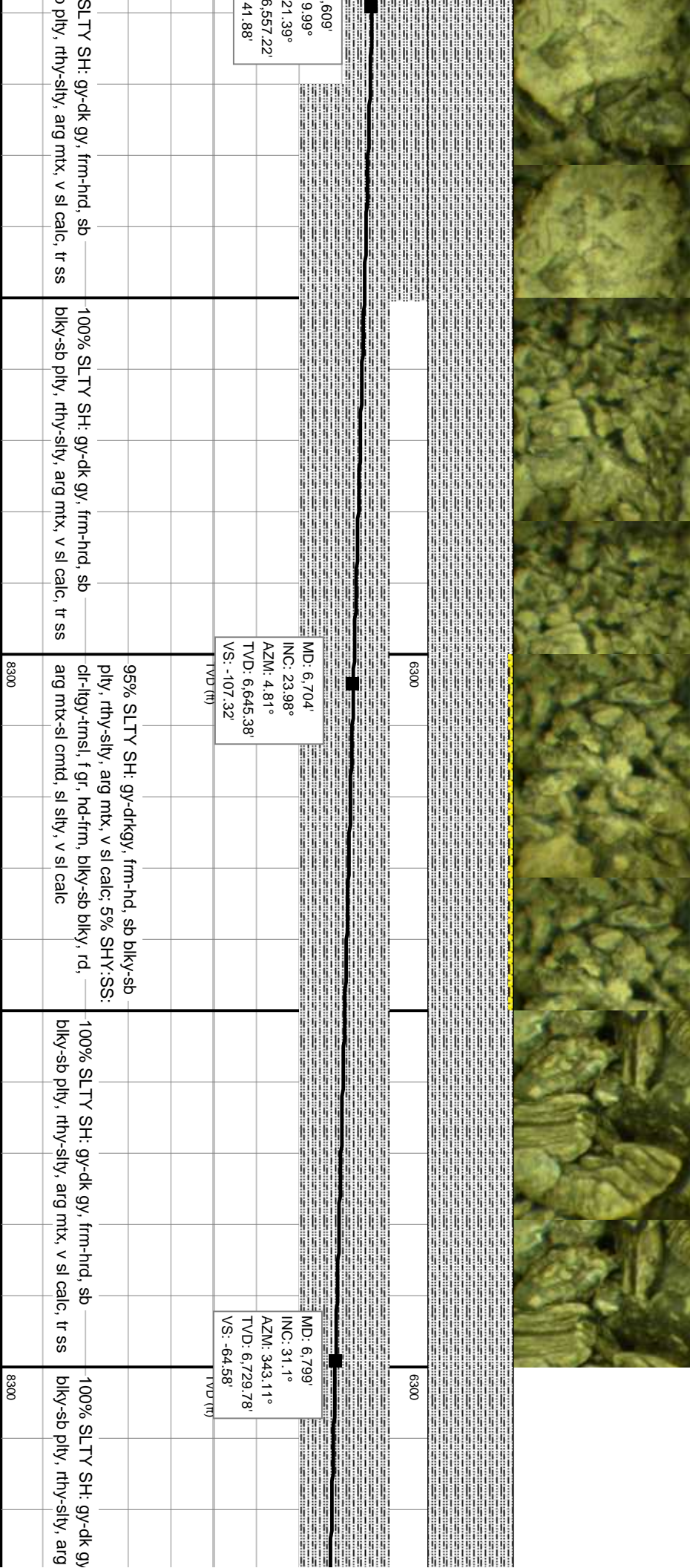
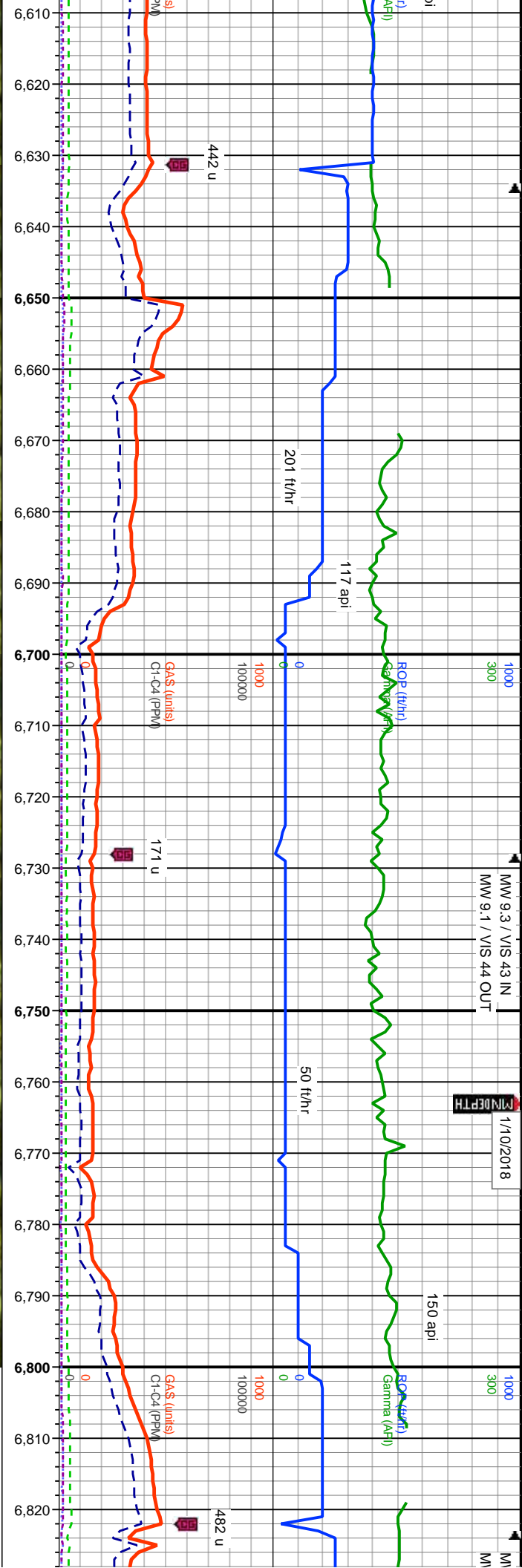
NE TESTED - LEFT FX FINELYXLN

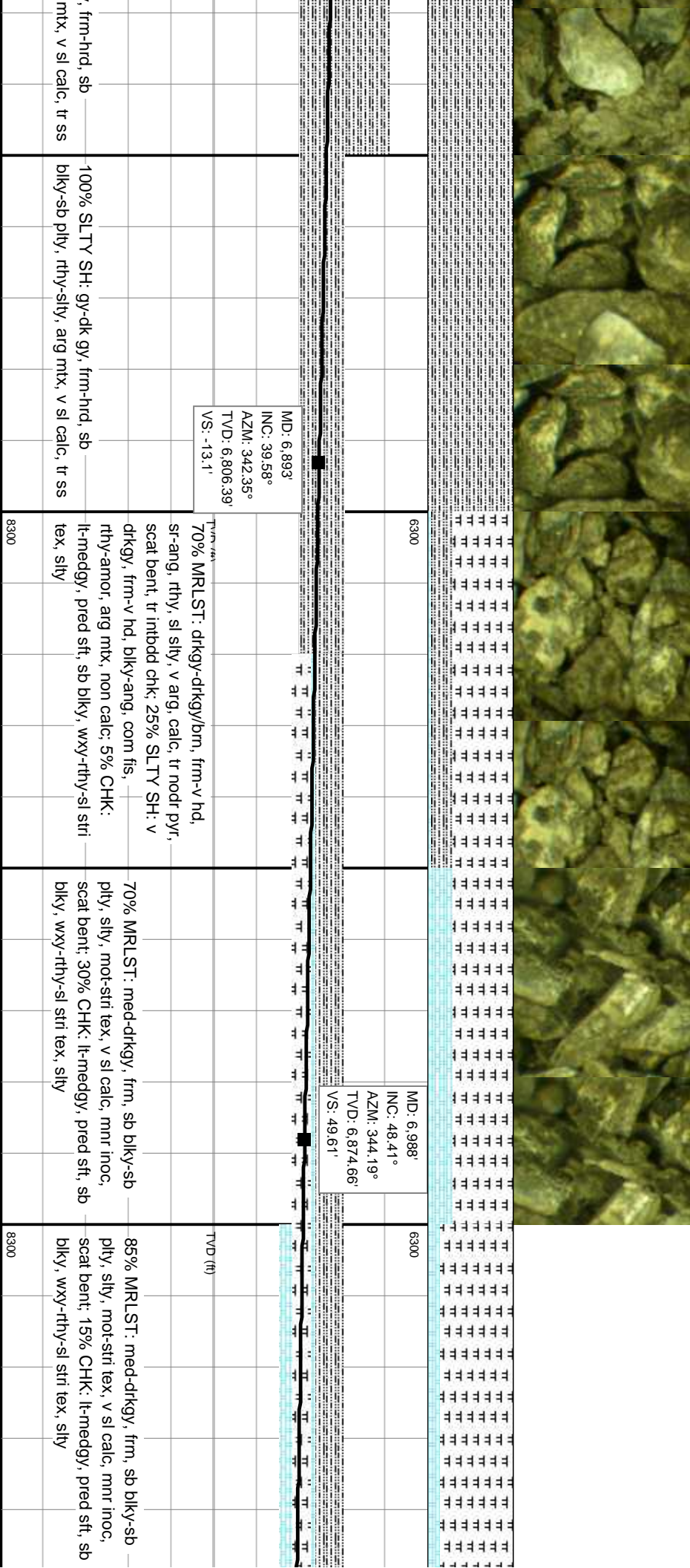
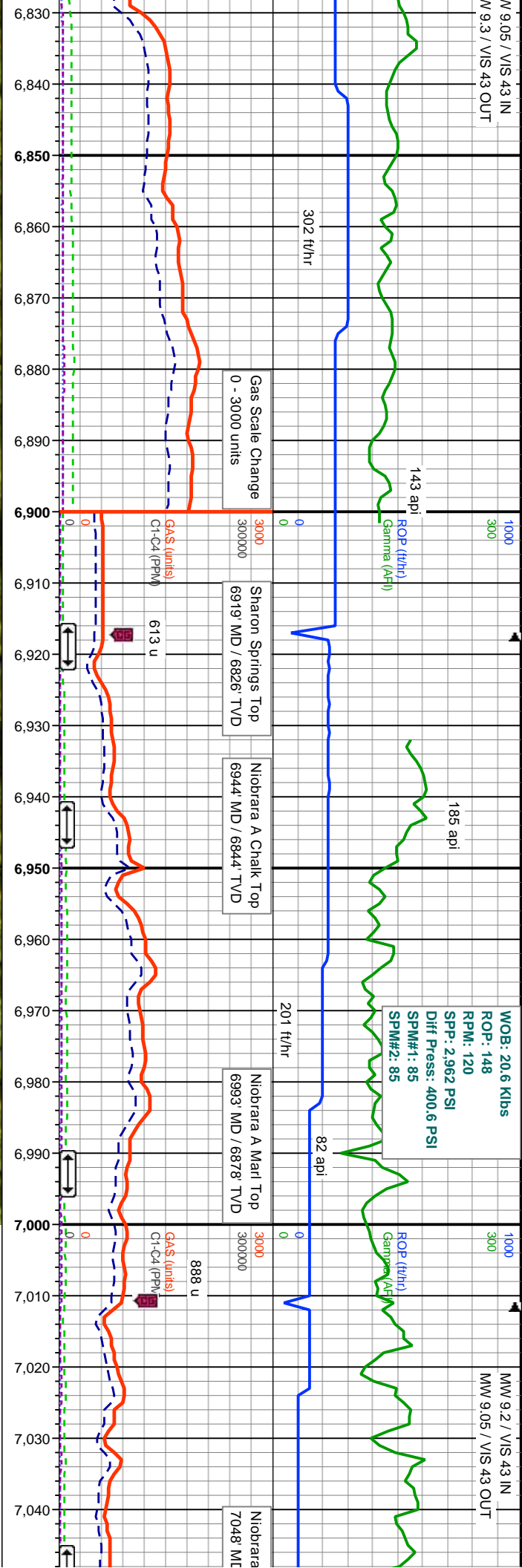
NE TESTED - RT ES GRANSTONE

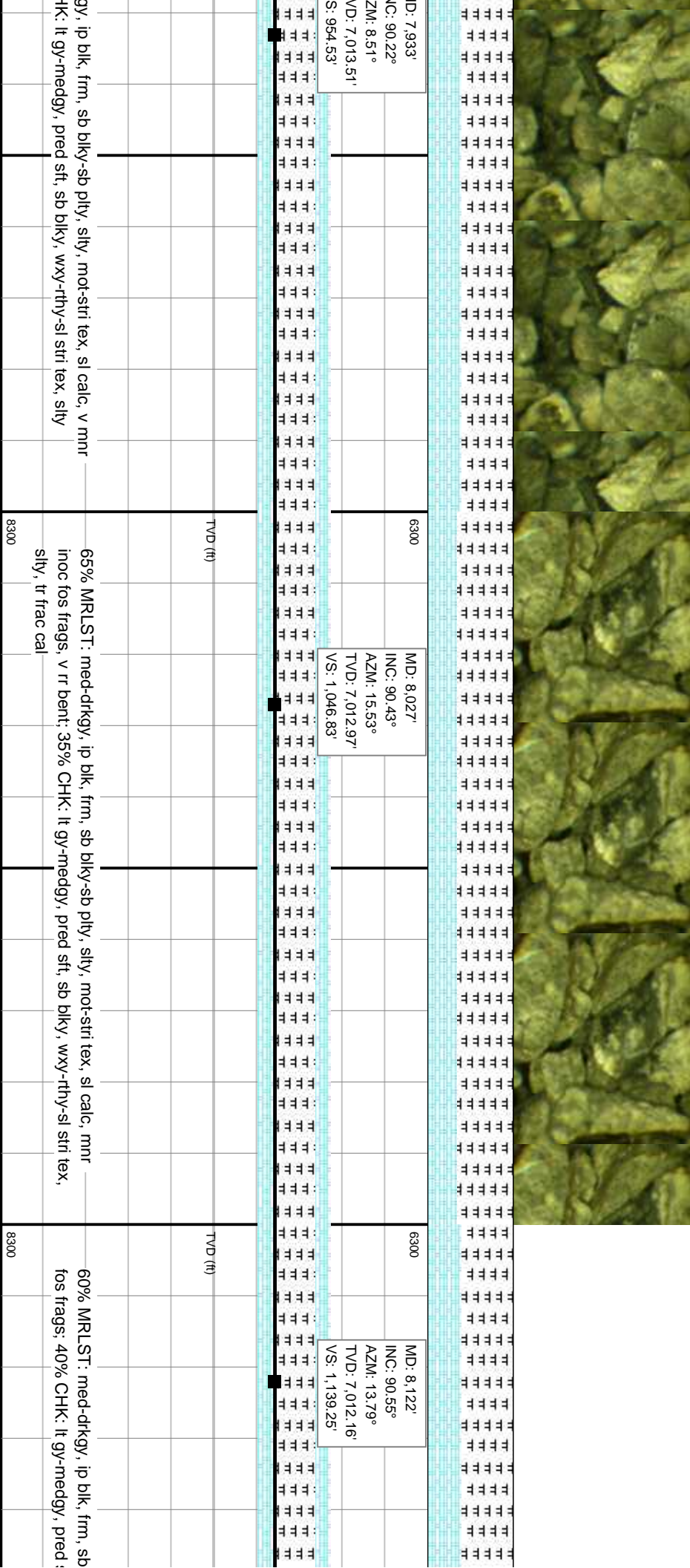
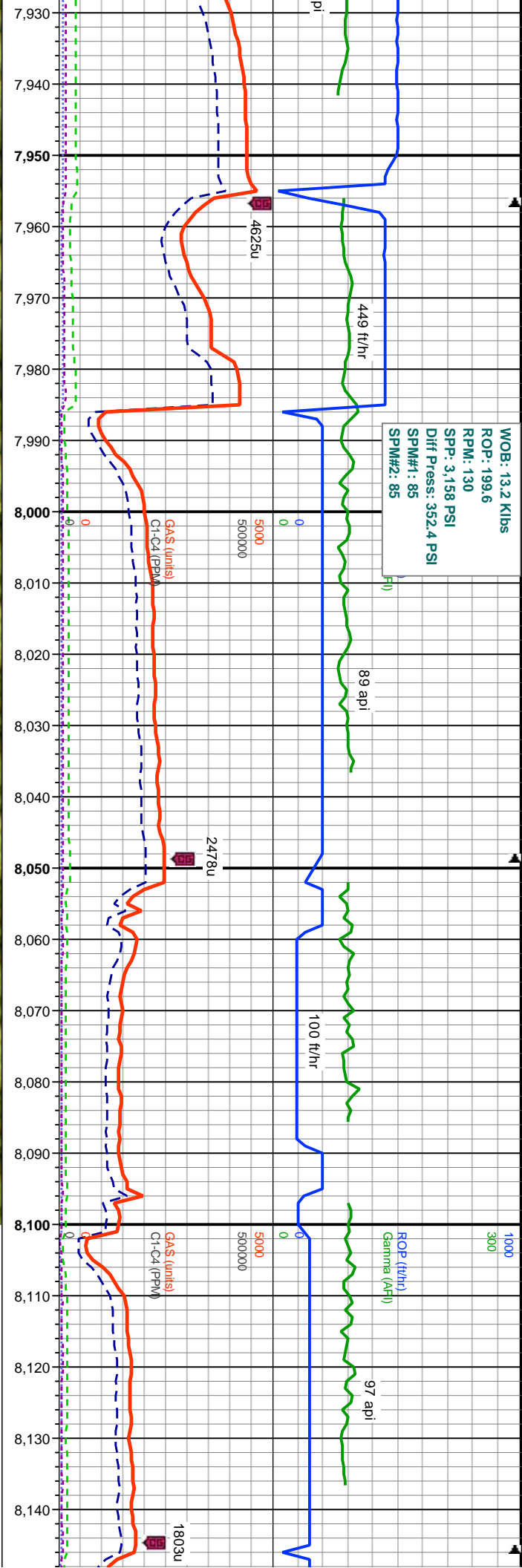
ConnectionGas(Vert)

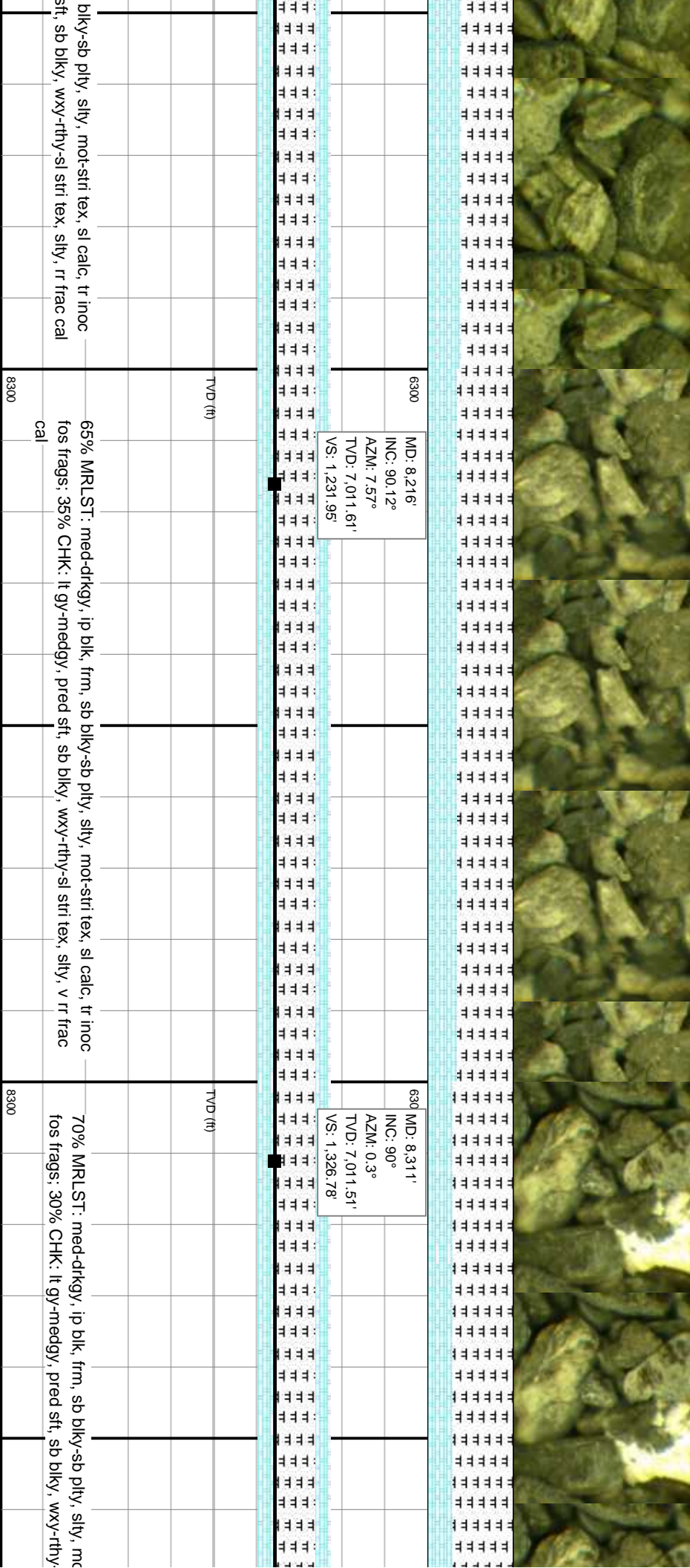
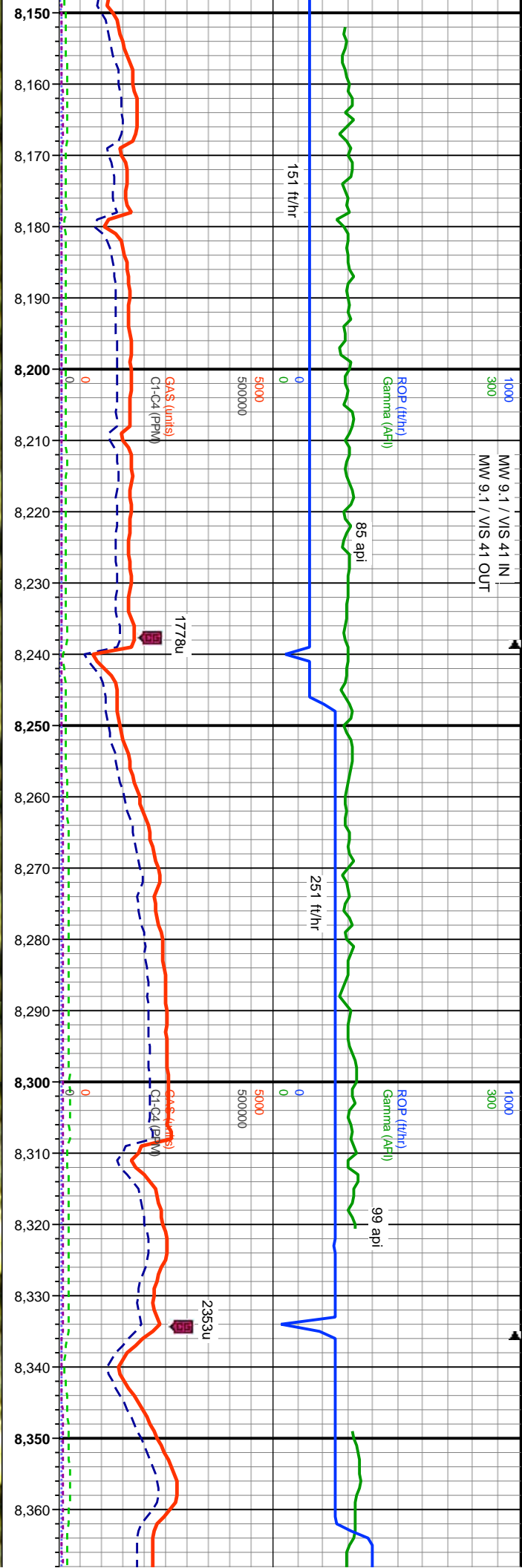


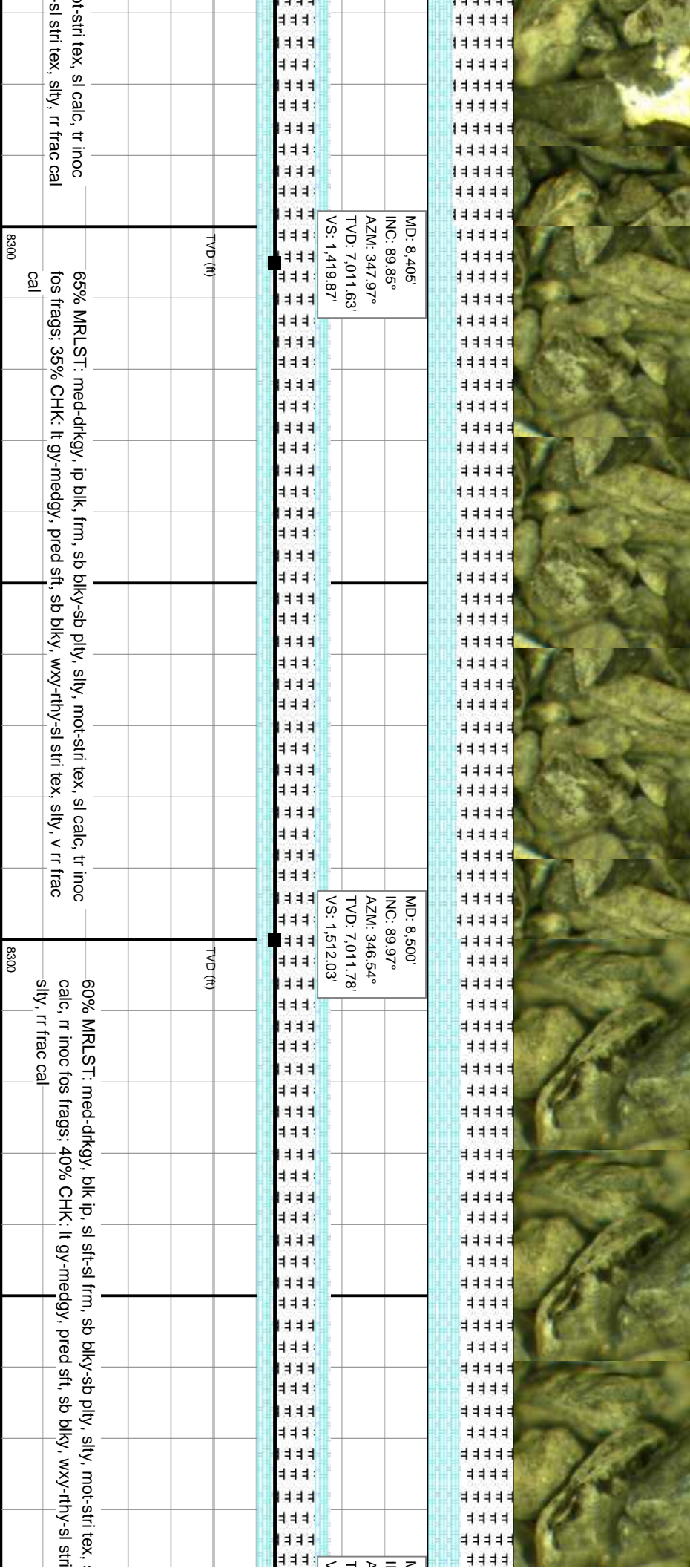
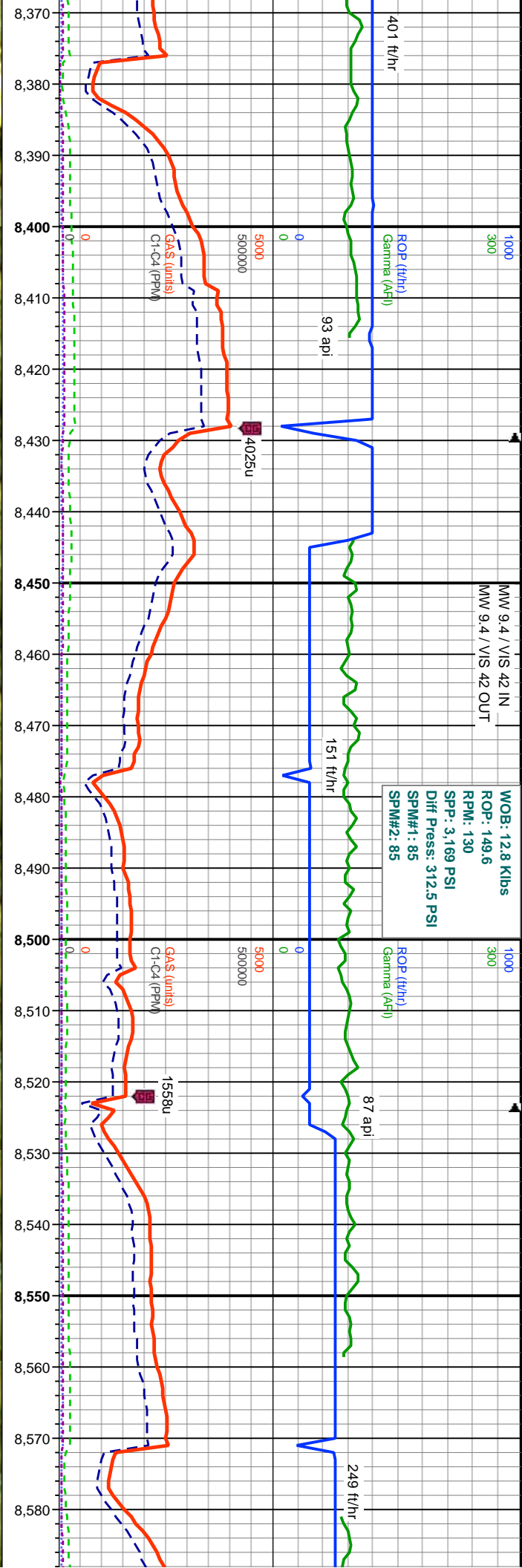


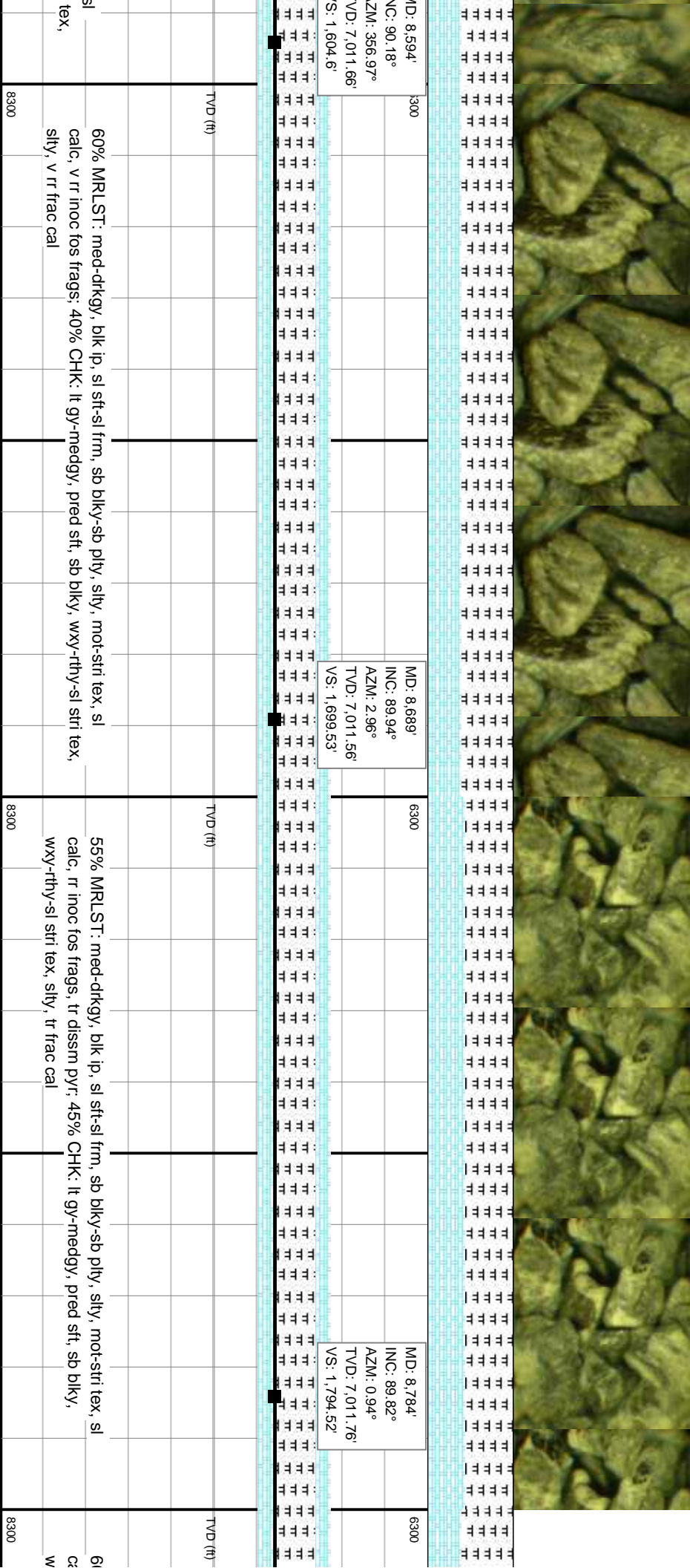
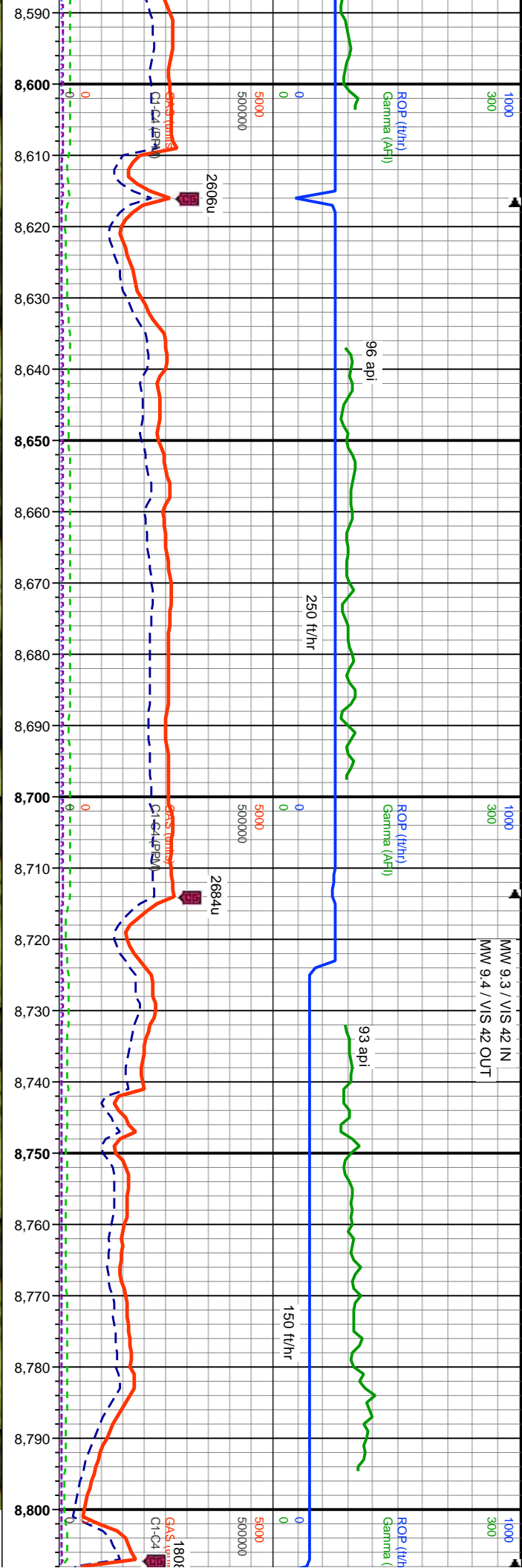


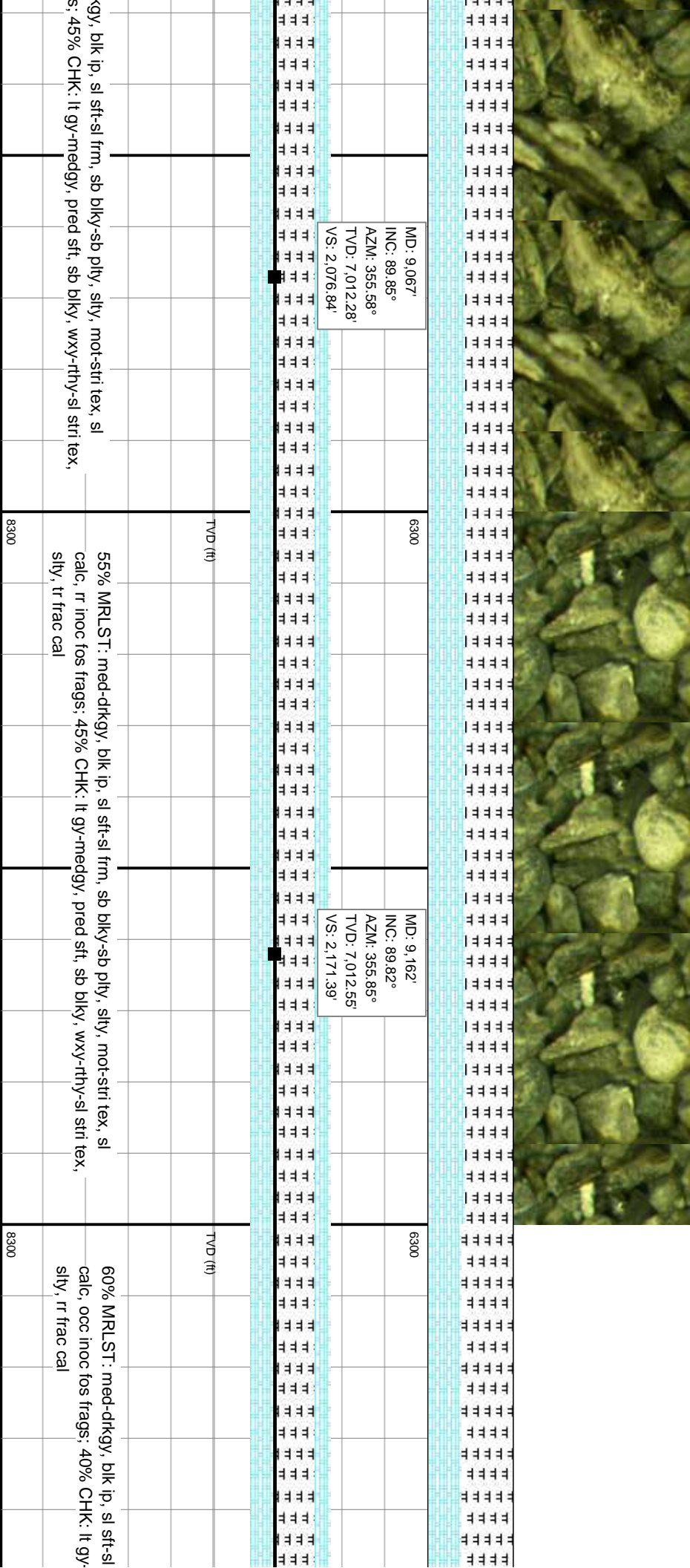
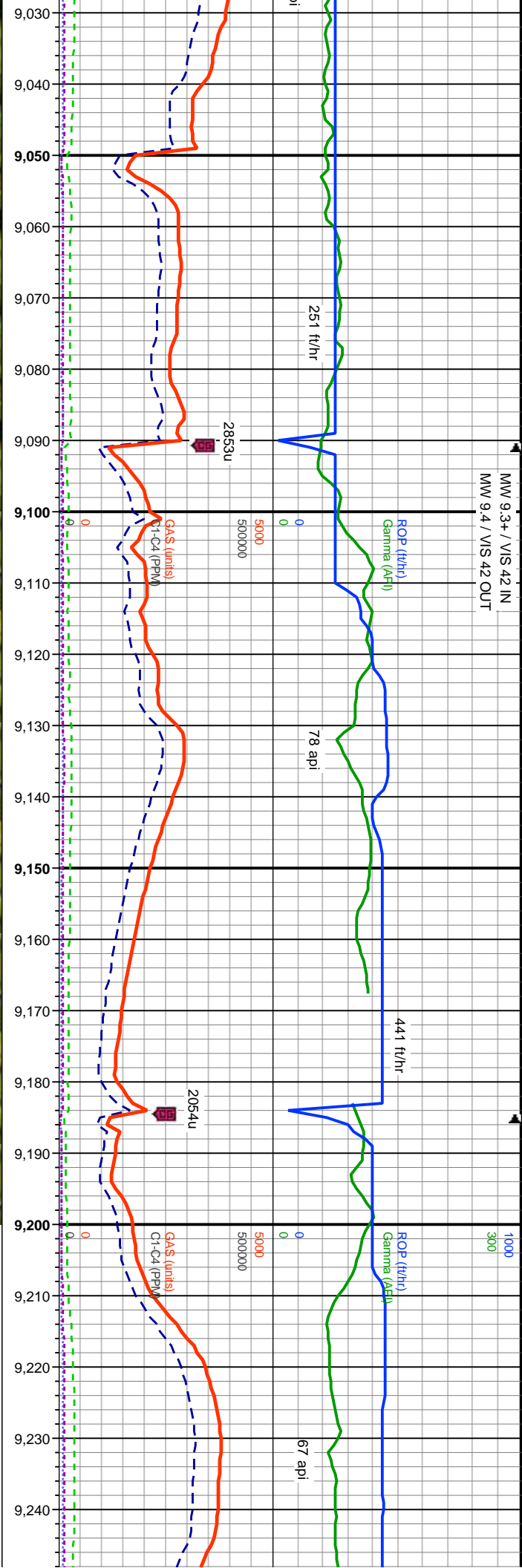


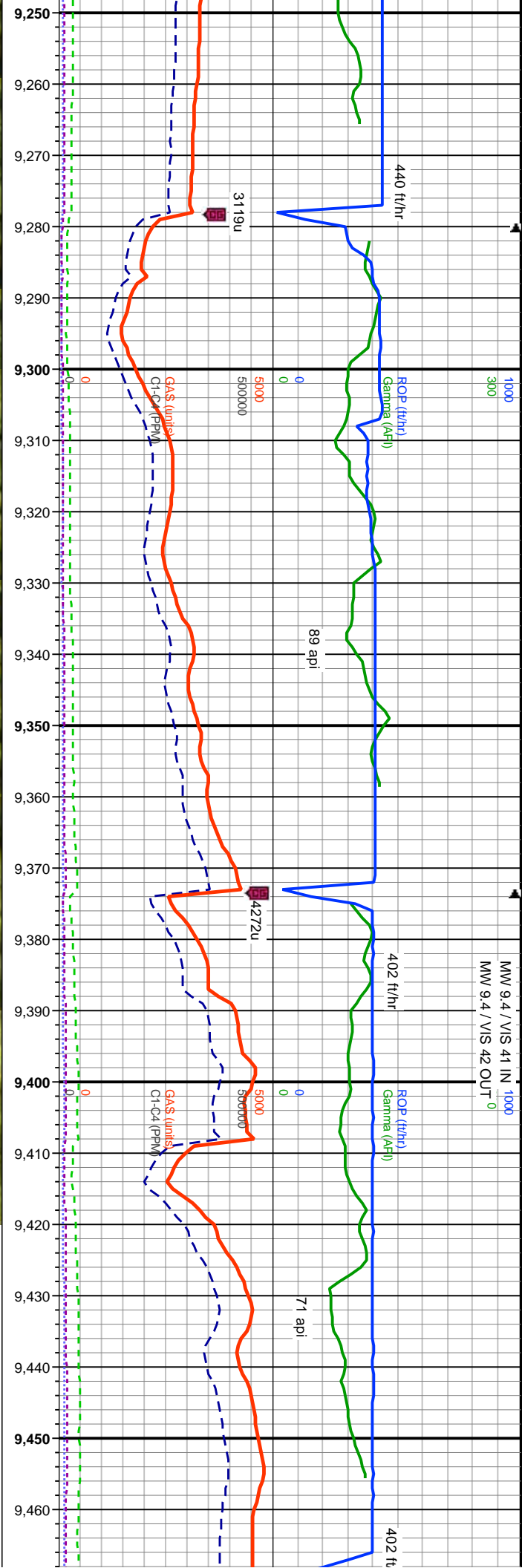




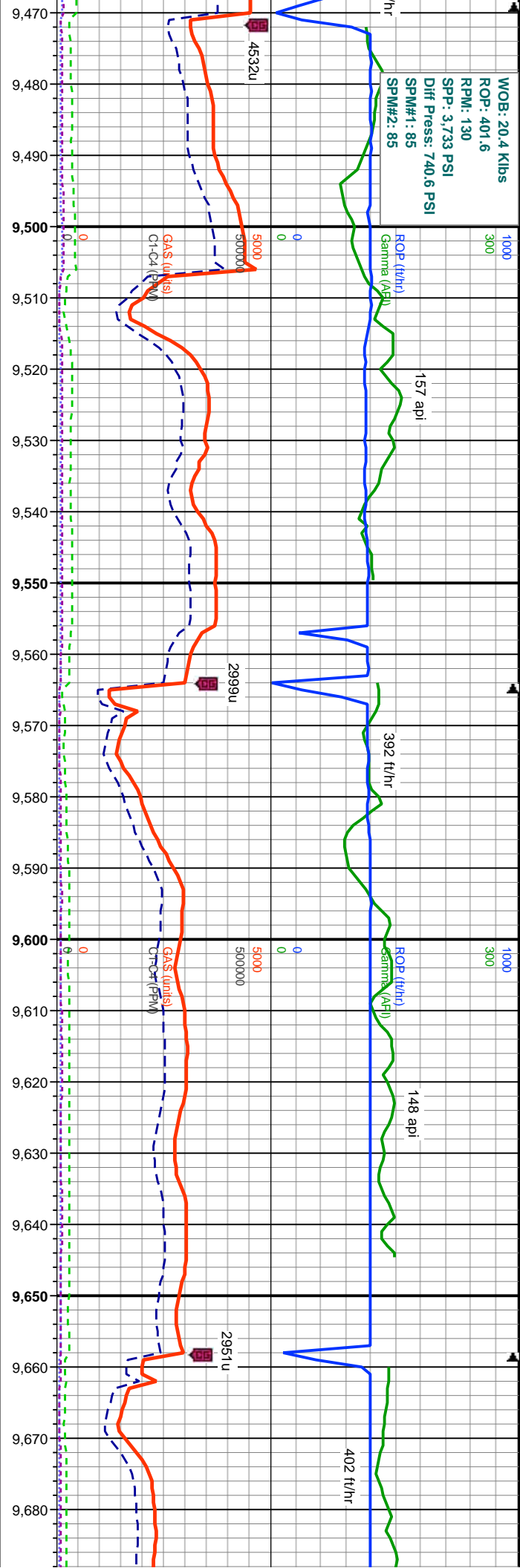




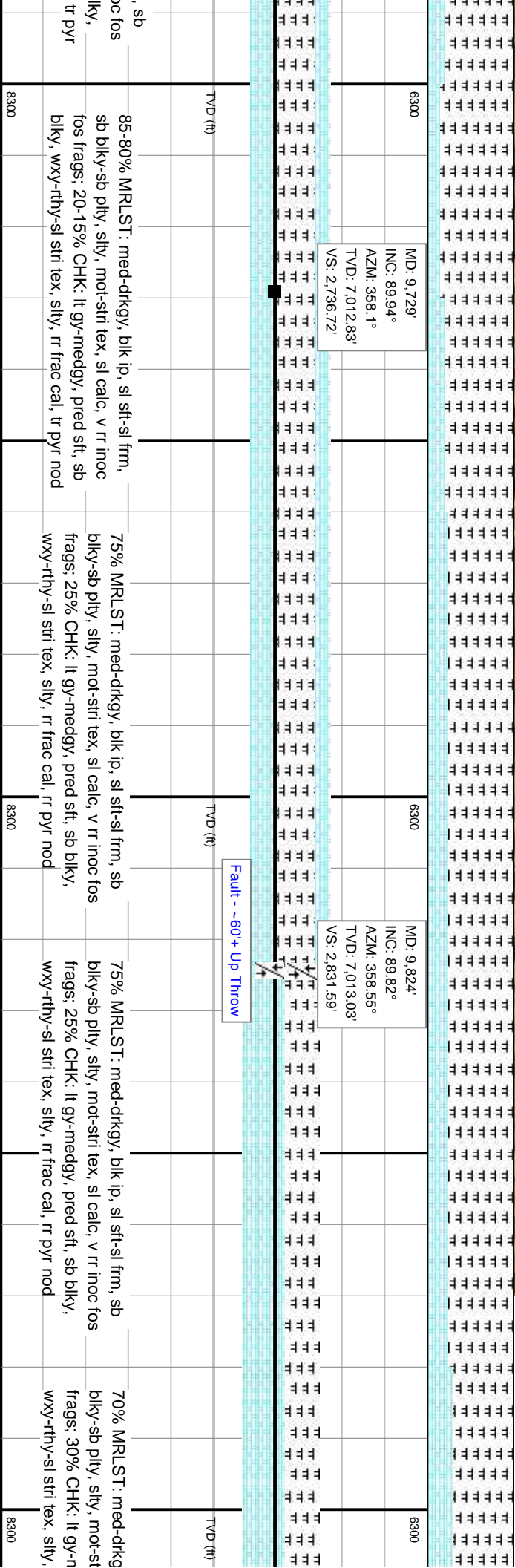
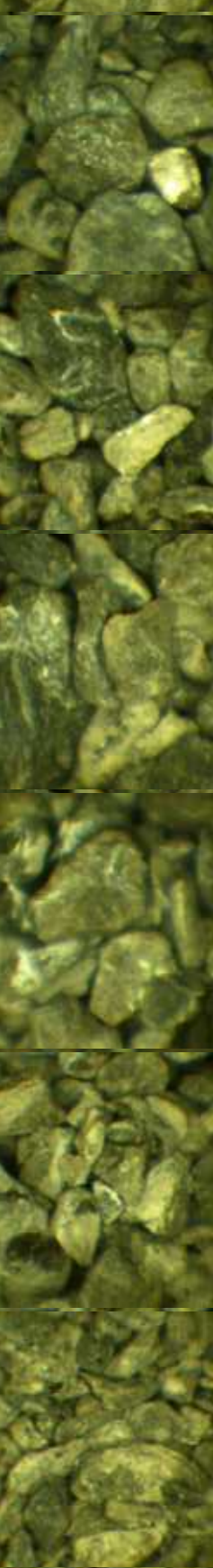
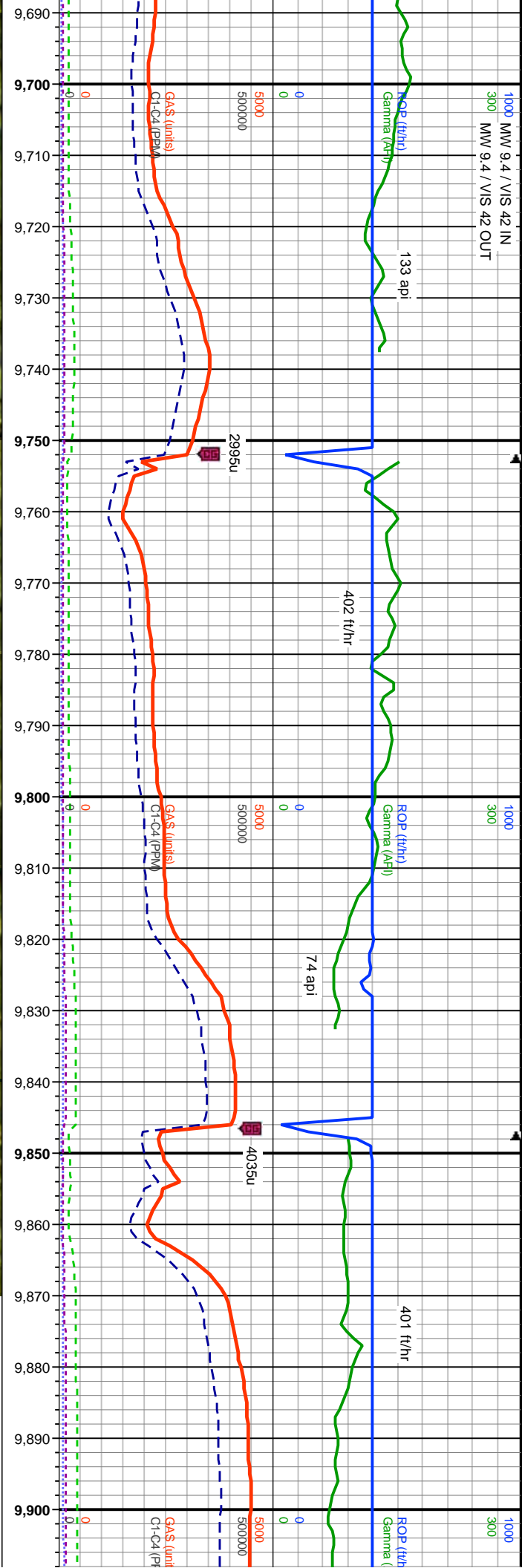


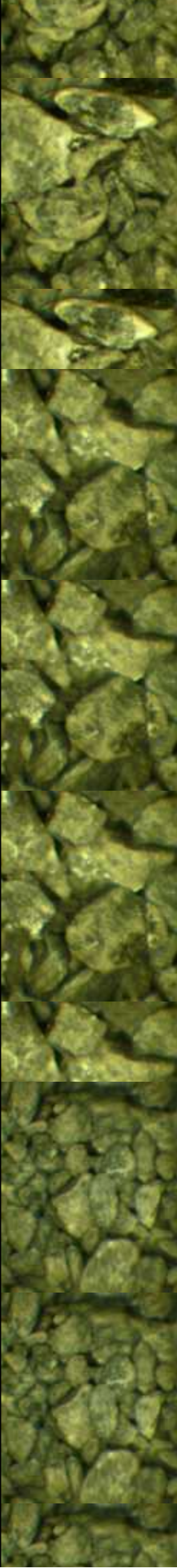
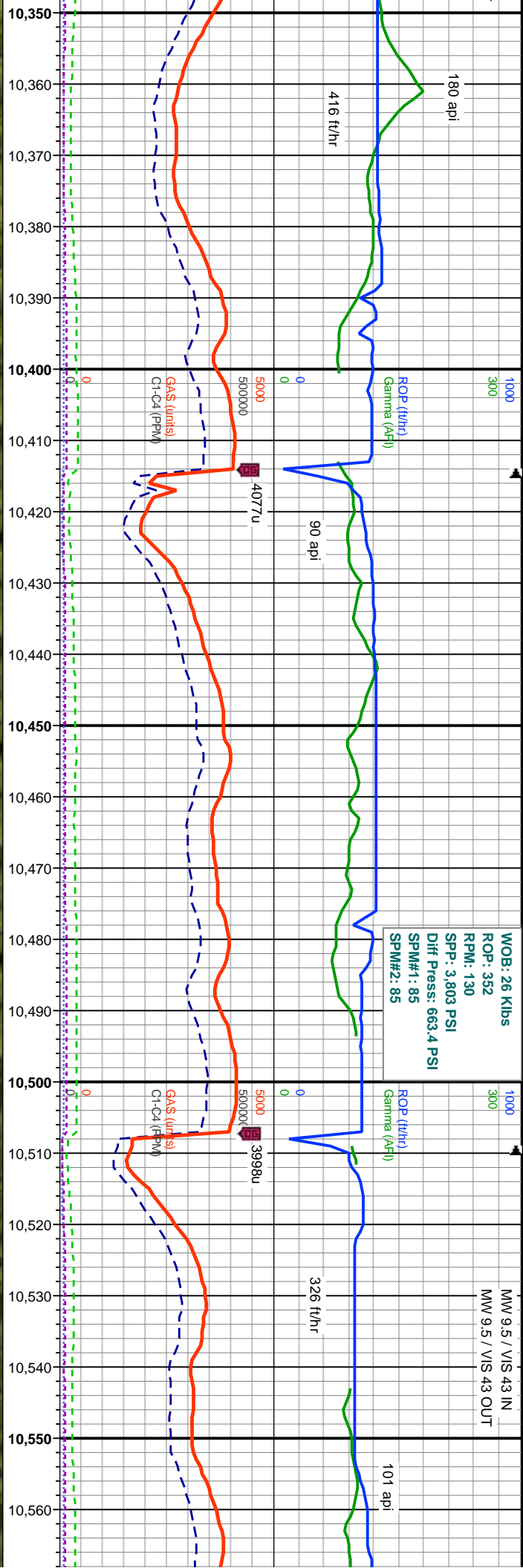


MD: 9.257' INC: 90.31° AZM: 356.83° TVD: 7.012.44' VS: 2.266.03'		MD: 9.351' INC: 89.91° AZM: 356.57° TVD: 7.012.26' VS: 2.359.73'		MD: 9.446' INC: 89.94° AZM: 356.62° TVD: 7.012.39' VS: 2.454.41'	
6300		6300		6300	
Begin 30' Sample Collection 14:23 MST on 1/10/2018					
fm, sb blk-y-sb pty, silty, mot-stri tex, sl medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, tr frac cal		70-65% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb pty, silty, mot-stri tex, sl blk-y-sb pty, silty, mot-stri tex, sl calc, tr inoc fos frags; 5% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, tr frac cal		75-70% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb pty, silty, mot-stri tex, sl calc, tr inoc fos frags; 30-35% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, tr frac cal	
8300		8300		8300	



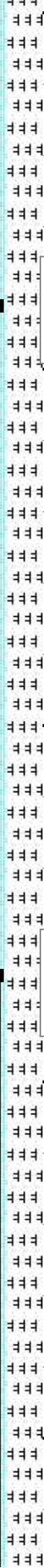
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MD: 10.391'
INC: 90.86°
AZM: 358.37°
TVD: 7.011.63'
VS: 3.397.88'

MD: 10.485'
INC: 91.11°
AZM: 357.21°
TVD: 7.010.01'
VS: 3.491.7'



TVD (ft)

TVD (ft)

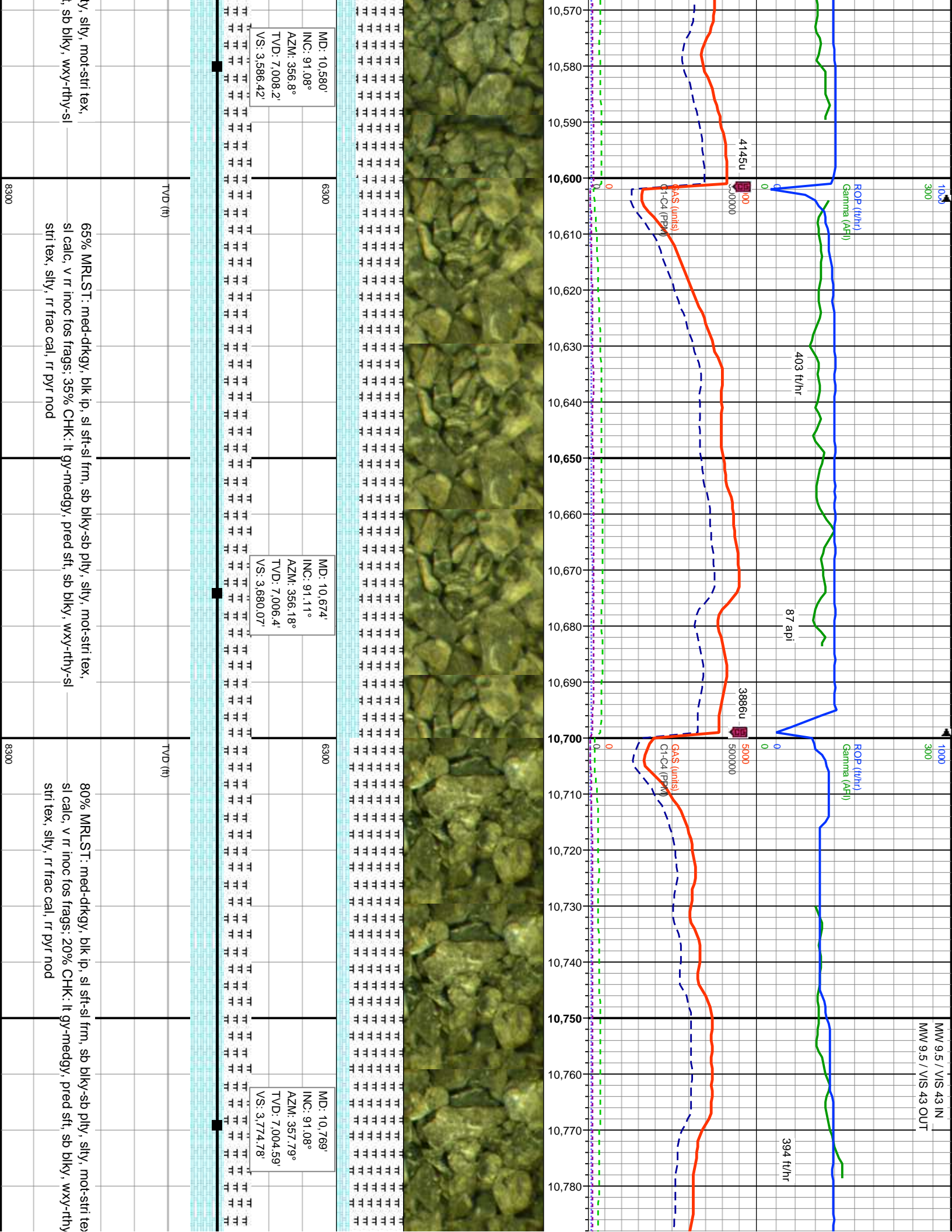
sl frm, sb blk-y-sb plty, silty, mot-str tex,
lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl

65% MRLST: med-drkgy, blk ip, sl sft-sl frm, sb blk-y-sb plty, silty, mot-stri tex,
sl calc, v rr inoc fos frags: 35% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl
stri tex, silty, rr frac cal, rr pyr nod

70% MRLST: med-drkgy, blk ip, sl sft-sl frm, sb blk-y-sb pl
sl calc, v rr inoc fos frags: 30% CHK: lt gy-medgy, pred sft
stri tex, silty, rr frac cal, rr pyr nod

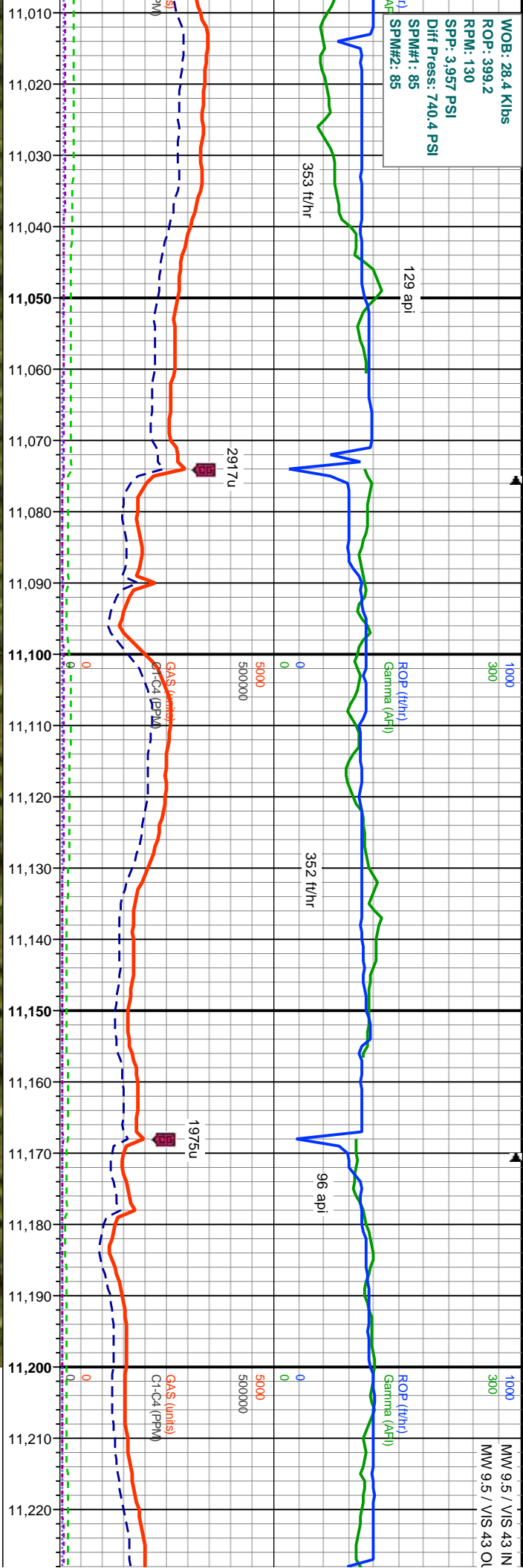
8300

8300



WOB: 28.4 Klbs
ROP: 399.2

MMW 9.5 / VIS 43 IN
MMW 9.5 / VIS 43 OR



MD: 11.052'
INC: 91.02°
AZM: 359.91°
TVD: 6,999.3'
VS: 4,057.52'

MD: 11,146'
INC: 90.95°
AZM: 359.8°
TVD: 6,997.69'
VS: 4,151.48'

6300

5300

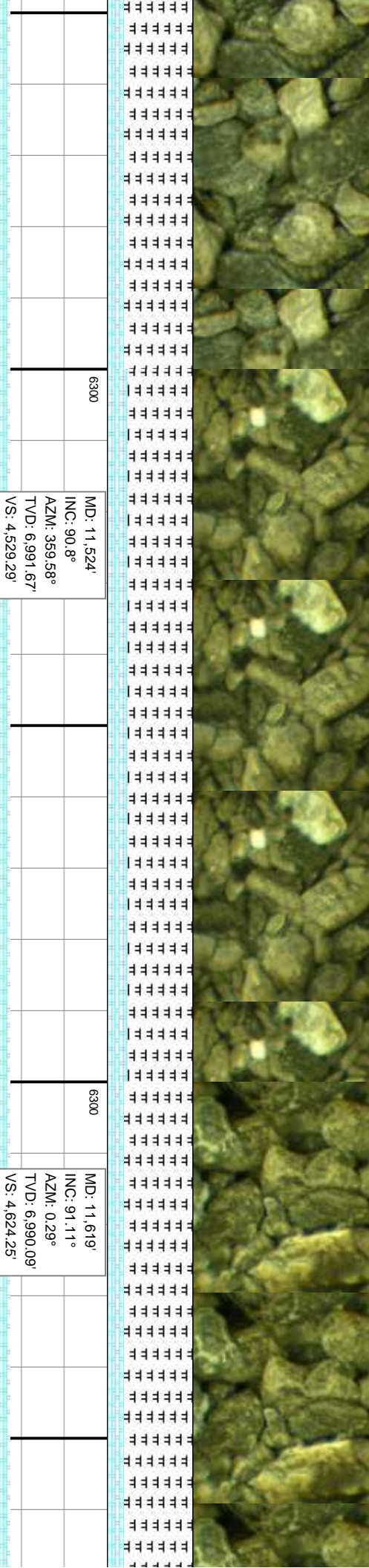
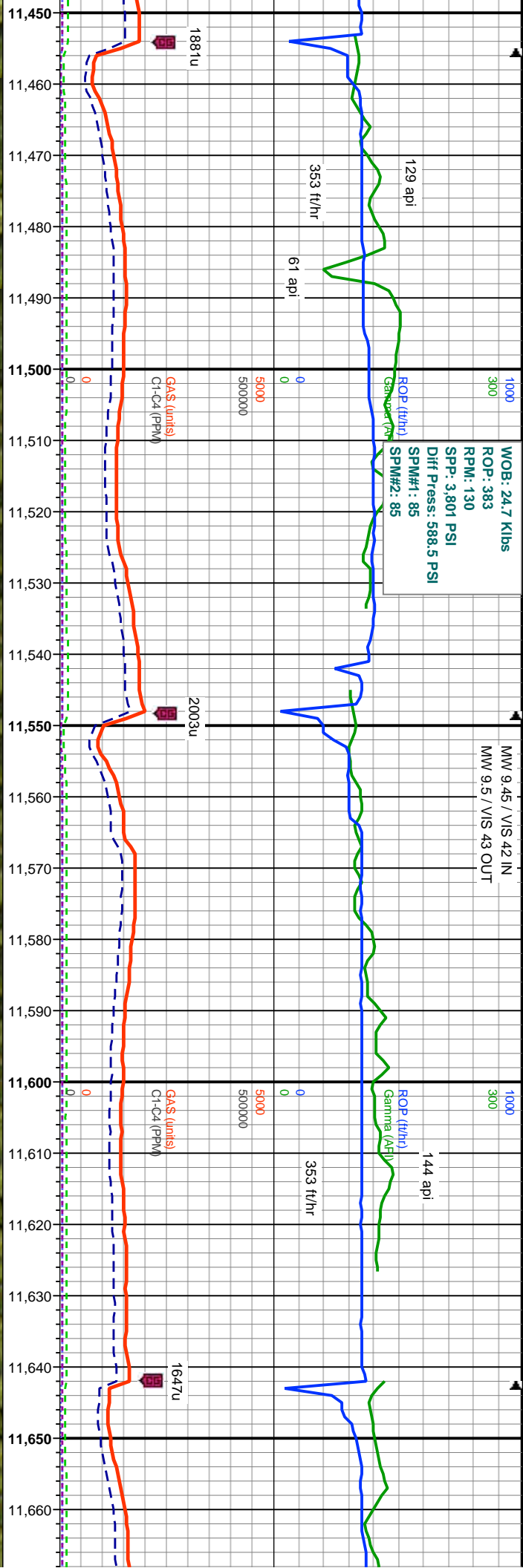
TVDD (ft)

TVDD (ft)

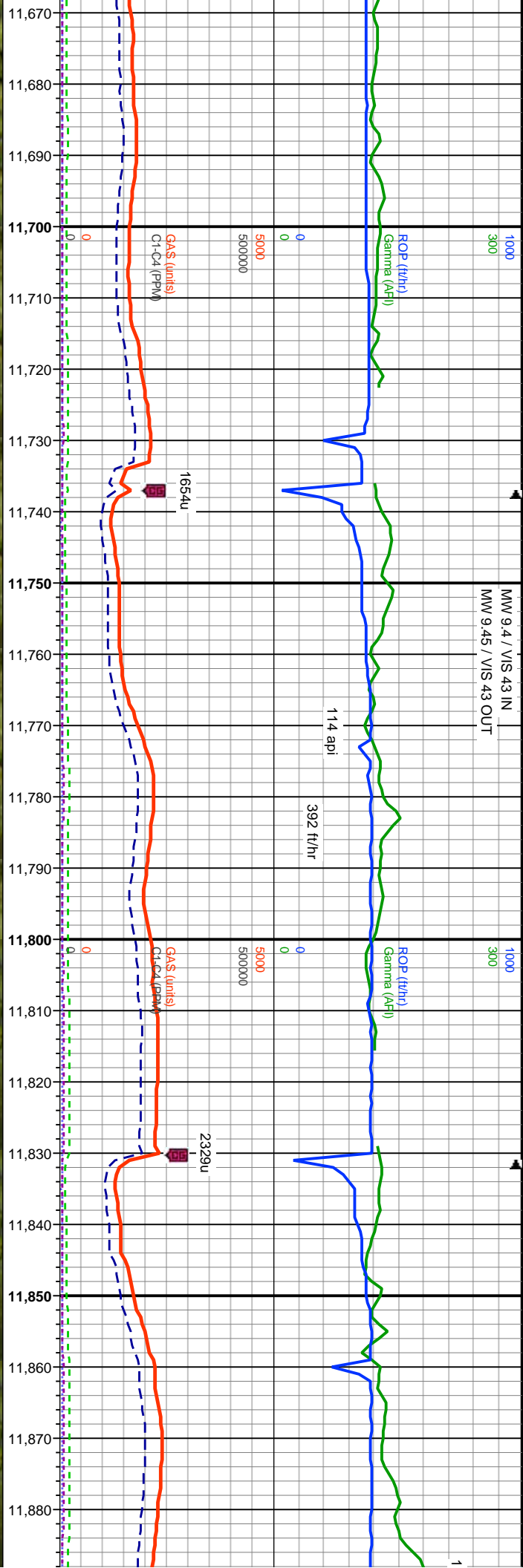
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sl calc: 35% CHK: lt gy-medgy, tr wh, pred sft, sb blkgy, wxy-rthy-sl stri lex, slty,
rr tr frac cal, rr tr bent

70% MRLST : med-drtgy, blk ip, sl sft-sl frm, sb blk-sb pily, slty, mot-stri tex,
sl calc: 30% CHK: lt gy-medgy, tr wh, pred sft, sb blk, wxy-rthy-sl stri tex, slty, v
rr tr frac cal, rr tr bent

75% MRLST: med-
sl calc; 25% CHK:
fr bent



sl frm, sb blk-y-sb plty, slty, mot-str tex, pred sft, sb blk-y, wxy-rthy-sl str tex, slty,	75% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb plty, slty, mot-str tex, sl calc, 25% CHK: lt gy-medgy, tr wh, pred sft, sb blk-y, wxy-rthy-sl str tex, slty, fr bent wi yel flr, non pyrc	8300
sl frm, sb blk-y-sb plty, slty, mot-str tex, pred sft, sb blk-y, wxy-rthy-sl str tex, slty,	80% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb sl calc, 20% CHK: lt gy-medgy, tr wh, pred sft, sb blk-y, v fr bent wi yel flr, non pyrc	8300



6300

MD: 11,713'
INC: 90.86°
AZM: 359.67°
TVD: 6,988.47'
VS: 4,718.21'

6300

MD: 11,808'
INC: 90.98°
AZM: 359.98°
TVD: 6,986.95'
VS: 4,813.16'

TVD (ft)

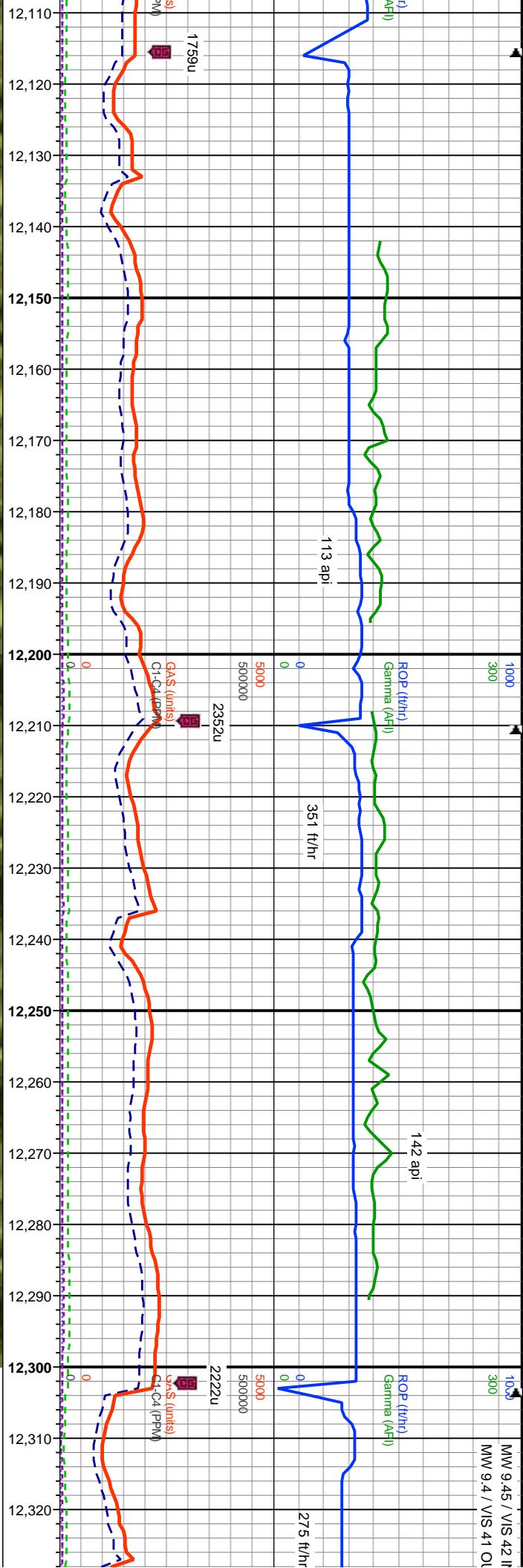
TVD (ft)

80% MRLST: med-drkgy, blk ip, sl sft-sl frm, sb blk-ss ply, silty, mot-stri tex, sl calc; 20% CHK: lt gy-medgy, tr wh, pred sft, sb blk, wxy-rthy-sl stri tex, silty, fr bent w/ yel flr, non pyrc

80% MRLST: med-drkgy, blk ip, sl sft-sl frm, sb blk-ss ply, silty, mot-stri tex, sl calc; 20% CHK: lt gy-medgy, tr wh, pred sft, sb blk, wxy-rthy-sl stri tex, silty, fr bent w/ yel & org flr, sl pyrc

8300

8300



MD: 12,186'
INC: 90.49°
AZM: 2.13°
TVD: 6,980.87'
VS: 5,191.07'

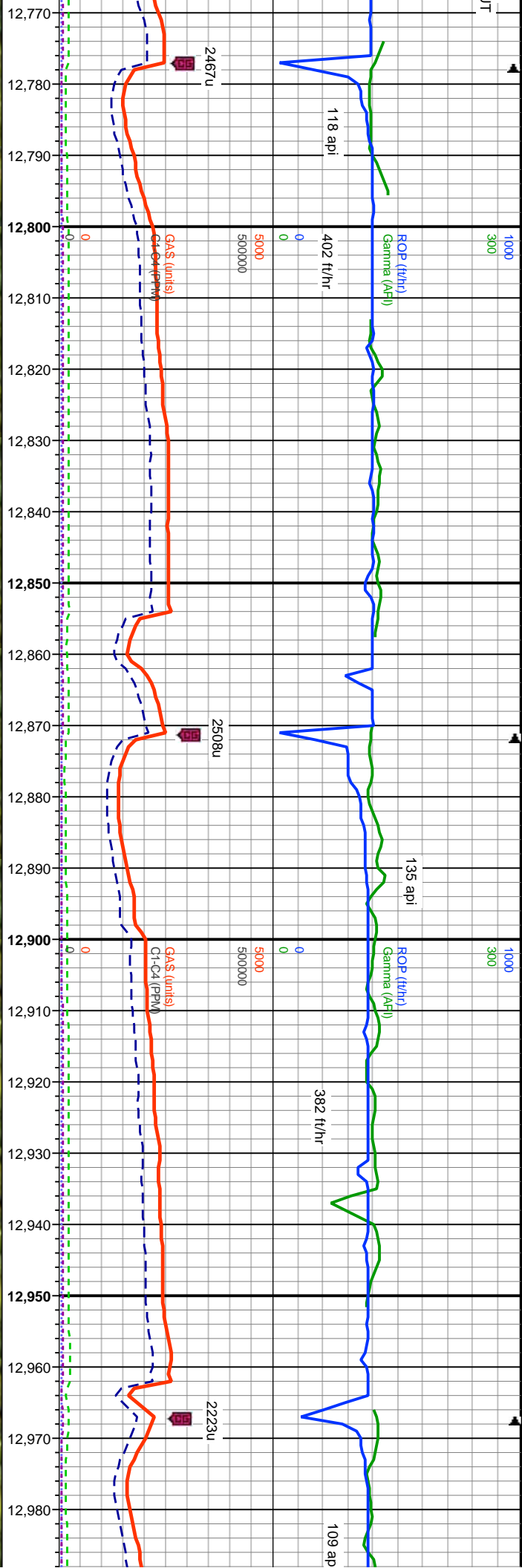
MD: 12,281'
INC: 90.15°
AZM: 5.46°
TVD: 6,980.34'
VS: 5,285.96'

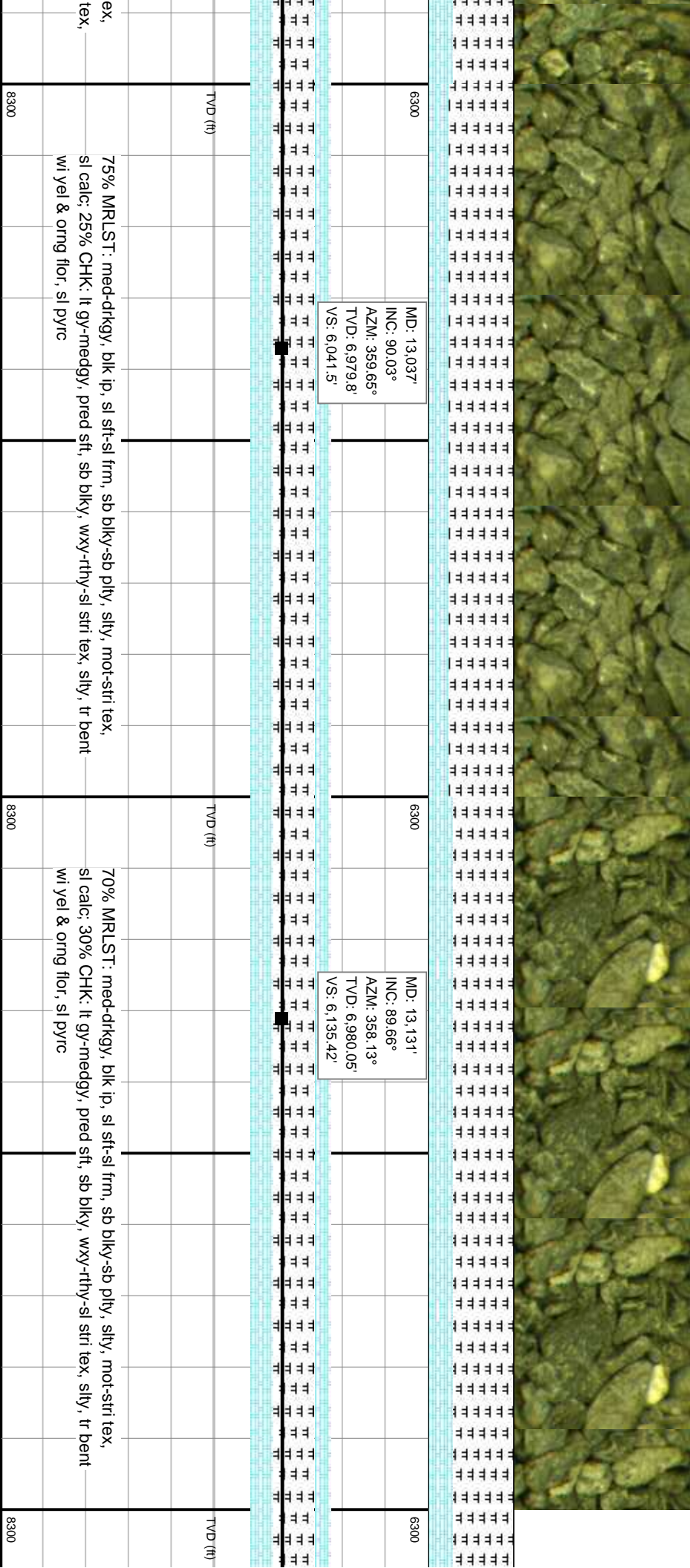
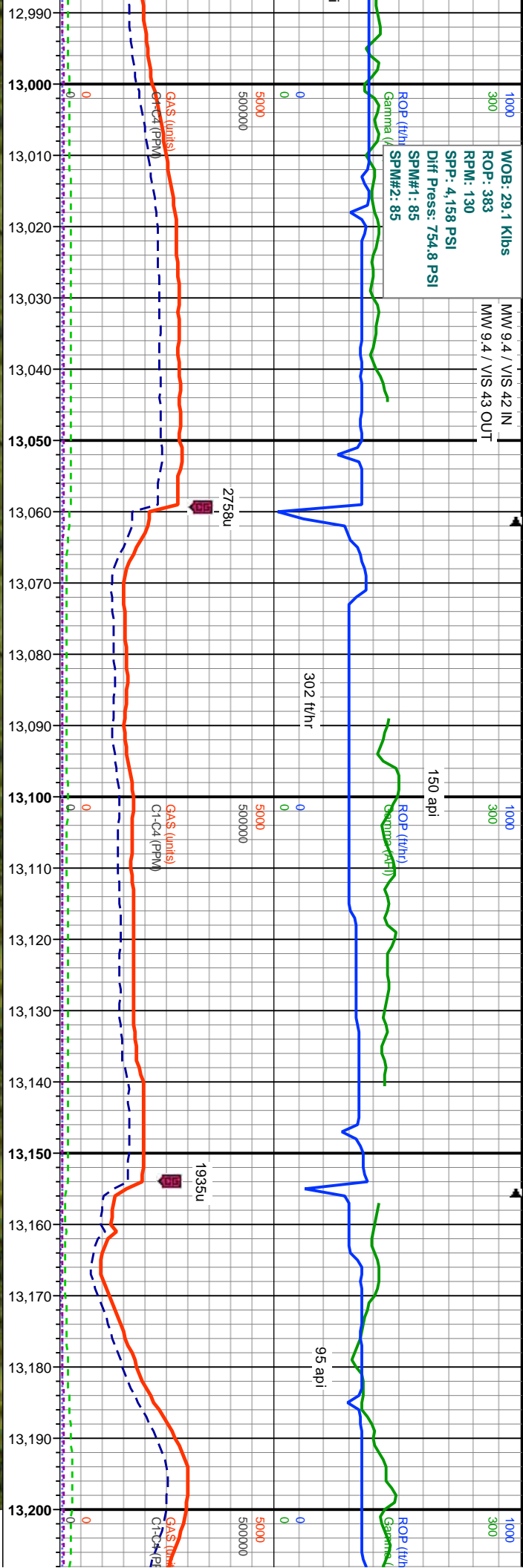
75% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-ly-sb pty, silty, mot-str tex, sl calc; 25% CHK: lt gy-medgy, tr wh, pred sft, sb blk-ly, wxy-rthy-sl stri tex, silty, tr bent w/ yel & org flor, sl pyrc

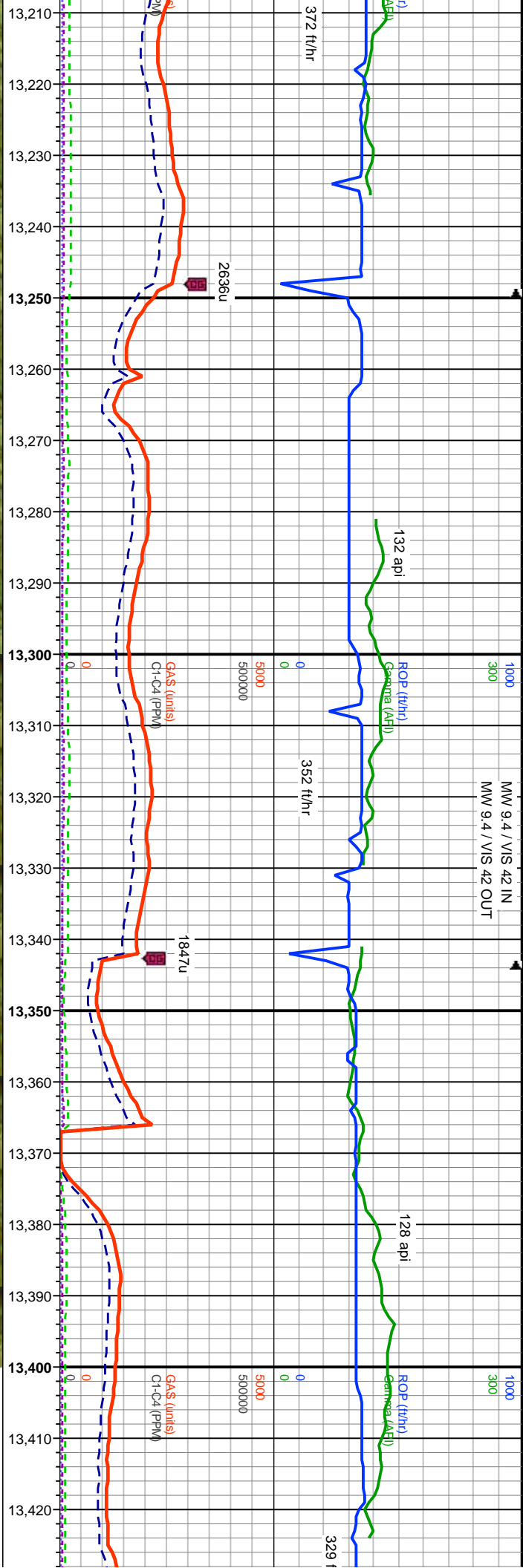
75% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-ly-sb pty, silty, mot-str tex, sl calc; 25% CHK: lt gy-medgy, tr wh, pred sft, sb blk-ly, wxy-rthy-sl stri tex, silty, tr bent w/ yel & org flor, sl pyrc

70% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-ly-sb pty, silty, mot-str tex, sl calc; 30% CHK: lt gy-medgy, tr wh, pred sft, sb blk-ly, wxy-rthy-sl stri tex, silty, tr bent w/ yel & org flor, sl pyrc

TVD (ft)		TVD (ft)	
8300		8300	







MD: 13,225'
INC: 89.69°
AZM: 357.15°
TVD: 6,980.58'
VS: 6,229.22'

MD: 13,320'
INC: 89.94°
AZM: 356.94°
TVD: 6,980.89'
VS: 6,323.96'

MD: 13,414'
INC: 90°
AZM: 358.57°
TVD: 6,980.94'
VS: 6,417.78'

Fault - ~10' Down Throw

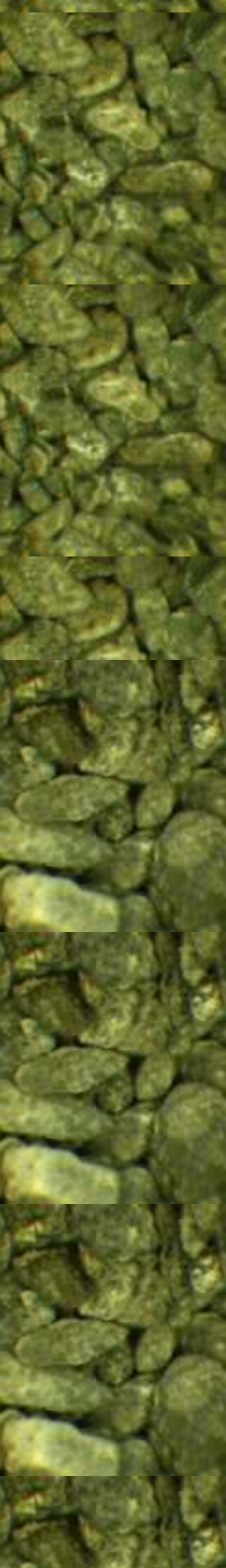
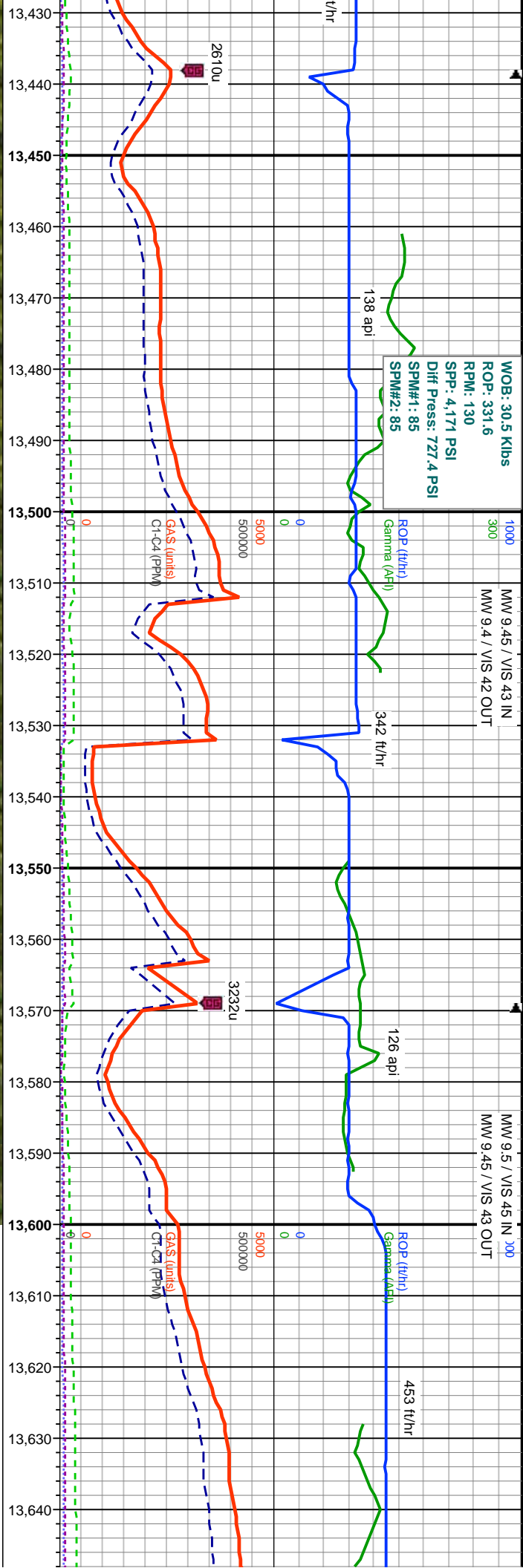
TVD (ft)

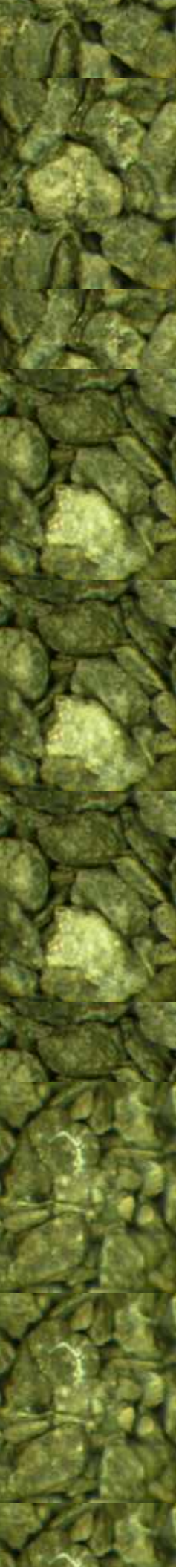
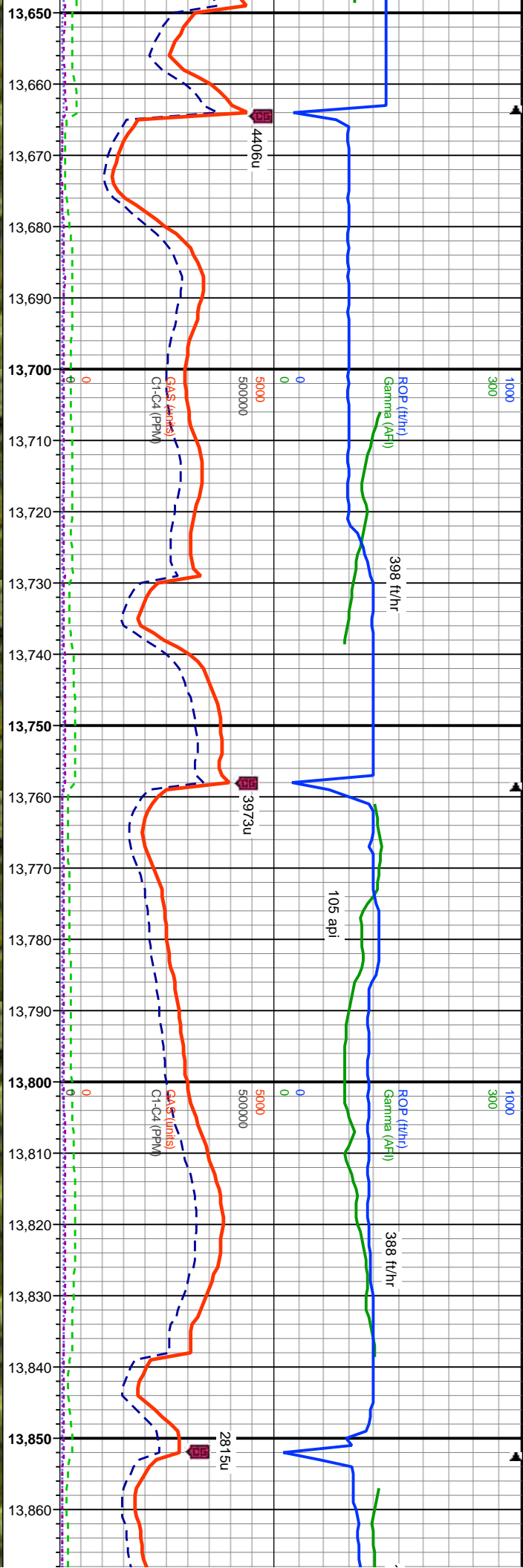
TVD (ft)

70% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb ply, silty, mot-stri tex,
sl calc; 30% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, tr bent
wi yel & org flor, sl pyrc

75% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb ply, silty, mot-stri tex,
sl calc; 25% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, occ
bent wi yel & org flor, sl pyrc, tr pyr nod

80% MRLST: med
sl calc; 20% CHK:
bent wi yel & org

[illegible]



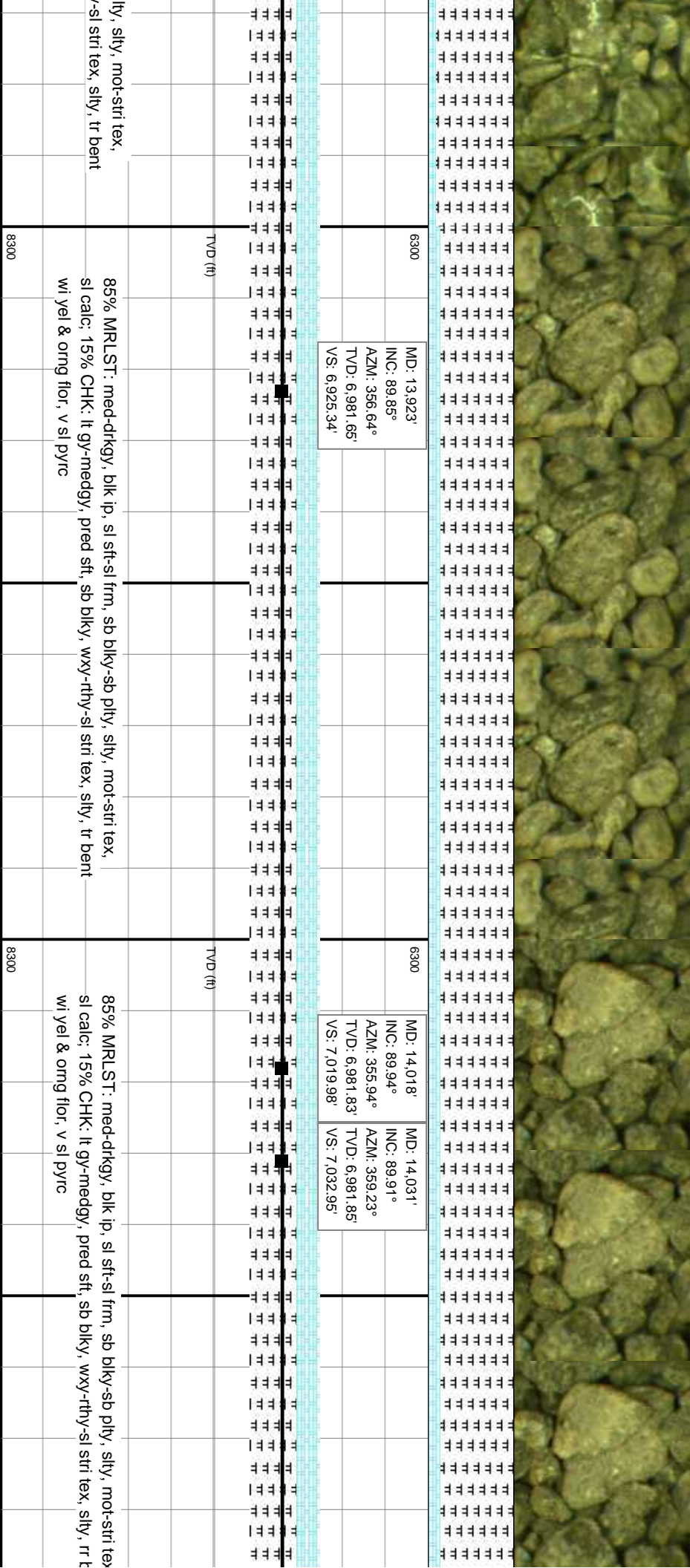
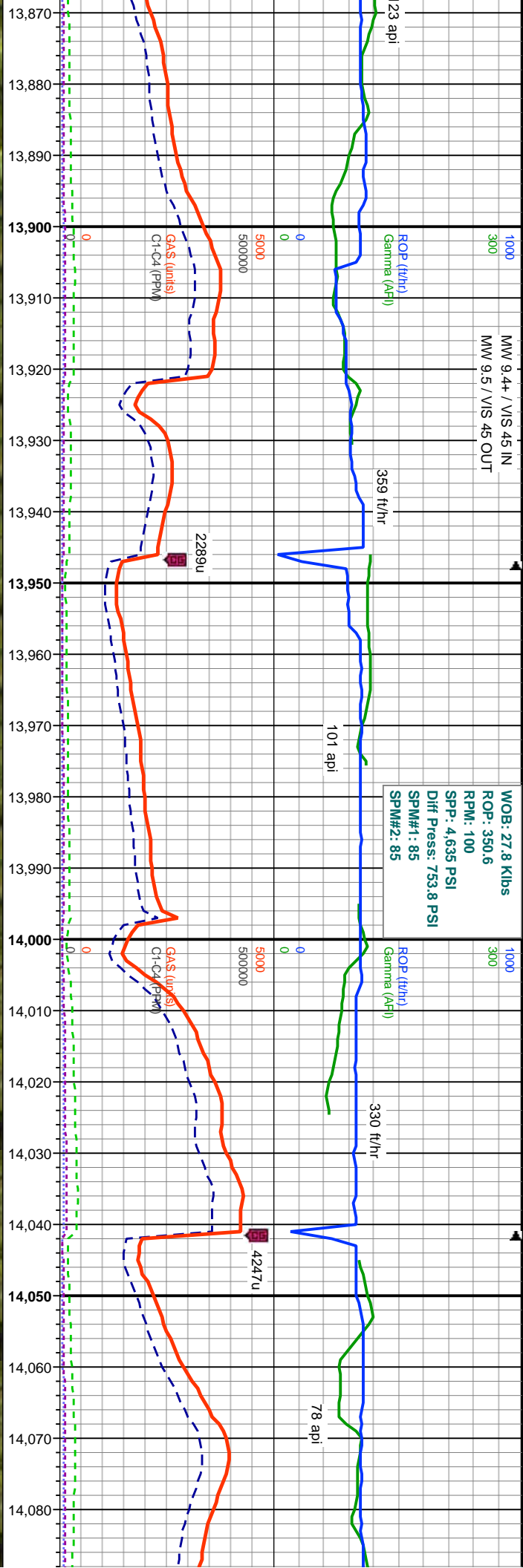
6300		MD: 13,734' INC: 89.94° AZM: 356.16° TVD: 6,981.28' VS: 6.737.02'
6300		MD: 13,829' INC: 89.88° AZM: 356.49° TVD: 6,981.43' VS: 6.831.66'

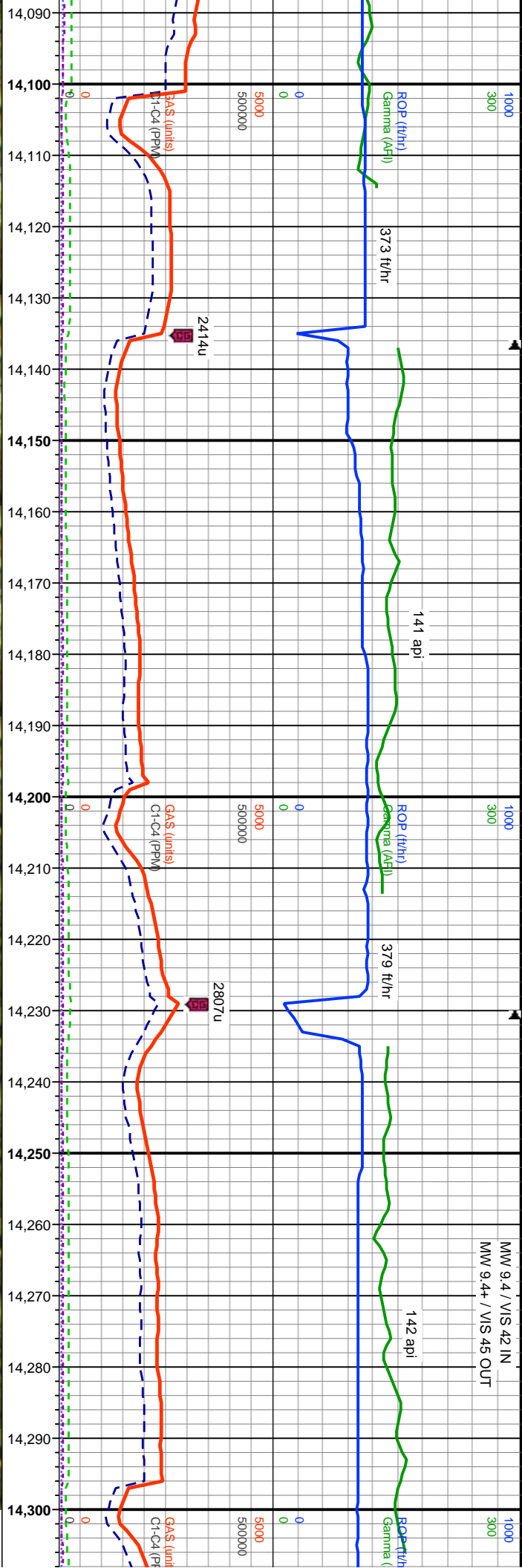
6300		MD: 13,734' INC: 89.94° AZM: 356.16° TVD: 6,981.28' VS: 6.737.02'
6300		MD: 13,829' INC: 89.88° AZM: 356.49° TVD: 6,981.43' VS: 6.831.66'

6300		MD: 13,734' INC: 89.94° AZM: 356.16° TVD: 6,981.28' VS: 6.737.02'
6300		MD: 13,829' INC: 89.88° AZM: 356.49° TVD: 6,981.43' VS: 6.831.66'

90% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-ly-sb pty, silty, mot-stri tex, sl calc, 10% CHK: lt gy-medgy, pred sft, sb blk-ly, wxy-rthy-sl stri tex, silty, rr bent w/ yel & omg flor, sl pyrc

90% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-ly-sb pty, silty, mot-stri tex, sl calc, 10% CHK: lt gy-medgy, pred sft, sb blk-ly, wxy-rthy-sl stri tex, silty, rr bent w/ yel & omg flor, sl pyrc





630d MD: 14,112'
INC: 90.06°
AZM: 357.8°
TVD: 6,981.87'
VS: 7,113.85'

MD: 14,207'
INC: 90.06°
AZM: 358.83°
TVD: 6,981.77'
VS: 7,208.72'

MD: 14,301'
INC: 89.91°
AZM: 359.23°
TVD: 6,981.79'
VS: 7,302.65'

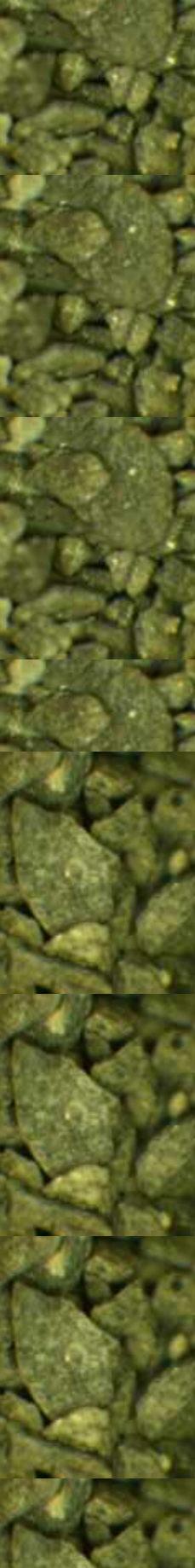
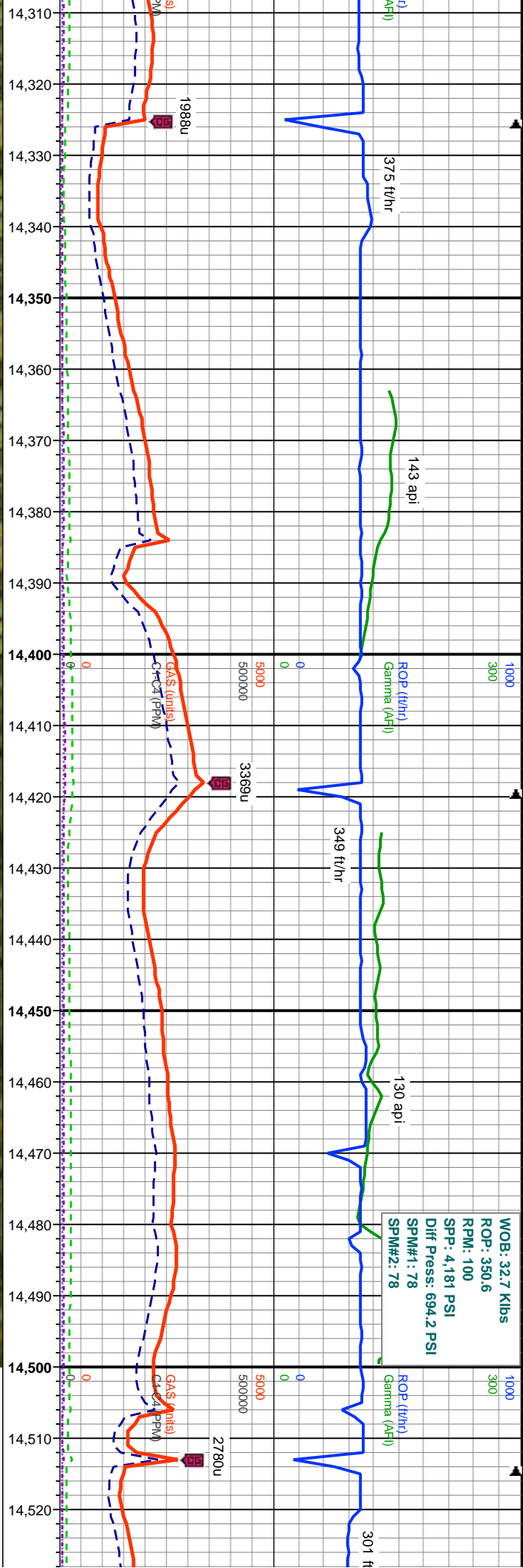
TVD (ft)

TVD (ft)

TVD (ft)

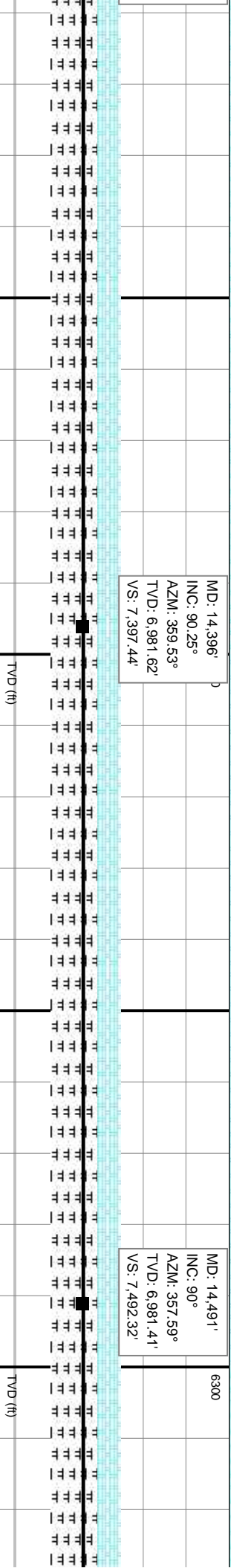
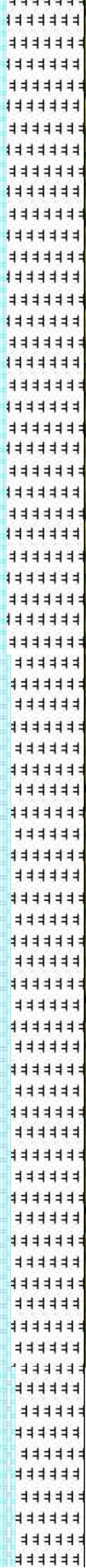
90% MRLST: med-drkgy, blk ip, sl sft-sl frm, sb blk-ly-sb pthy, silty, mot-stri tex, sl calc; 10% CHK: lt gy-medgy, pred sft, sb blk-ly, wxy-rthy-sl stri tex, silty, rr bent wi yel & ong flor, v sl pyrc

90% MRLST: med-drkgy, blk ip, sl sft-sl frm, sb blk-ly-sb pthy, silty, mot-stri tex, sl calc; 10% CHK: lt gy-medgy, pred sft, sb blk-ly, wxy-rthy-sl stri tex, silty, tr bent wi yel & ong flor, v sl pyrc



MD: 14,396'
INC: 90.25°
AZM: 359.53°
TV/D: 6,981.62'
VS: 7,397.44'

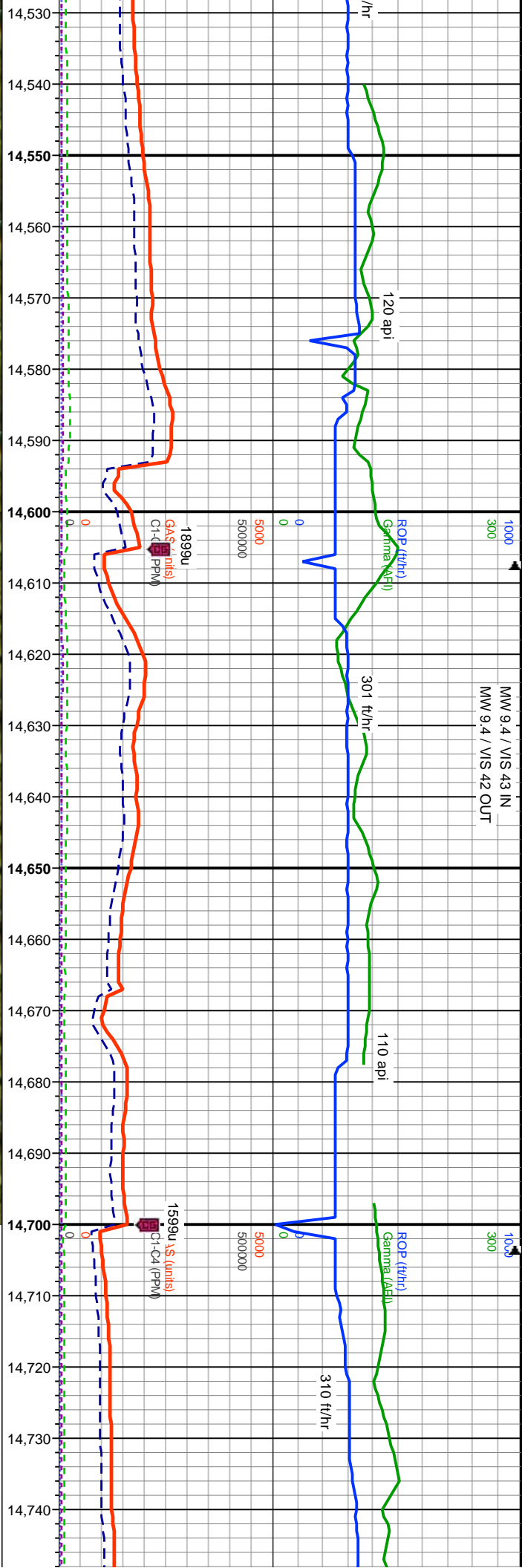
MD: 14,491'
INC: 90°
AZM: 357.59°
TV/D: 6,981.41'
VS: 7,492.32'



90% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blkyl-sb plty, silty, mot-str tex,
sl calc; 10% CHK: lt gy-medgy, pred sft, sb blkyl, wxy-rthy-sl str tex, silty, tr bent
wi yel & omg flor, v sl pyrc

85% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blkyl-sb plty, silty, mot-str tex,
sl calc; 15% CHK: lt gy-medgy, pred sft, sb blkyl, wxy-rthy-sl str tex, silty, tr bent
wi yel & omg flor, v sl pyrc, tr inoc fos frags

80% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blkyl-sb plty, silty, mot-str tex,
sl calc; 20% CHK: lt gy-medgy, pred sft, sb blkyl, wxy-rthy-sl str tex, silty, tr bent
wi yel & omg flor, v sl pyrc



MD: 14.585'
INC: 89.88°
AZM: 357.43°
TVD: 6.981.51'
VS: 7.586.12'

MD: 14.679'
INC: 90.09°
AZM: 358.32°
TVD: 6.981.54'
VS: 7.679.95'

TVD (ft)

TVD (ft)

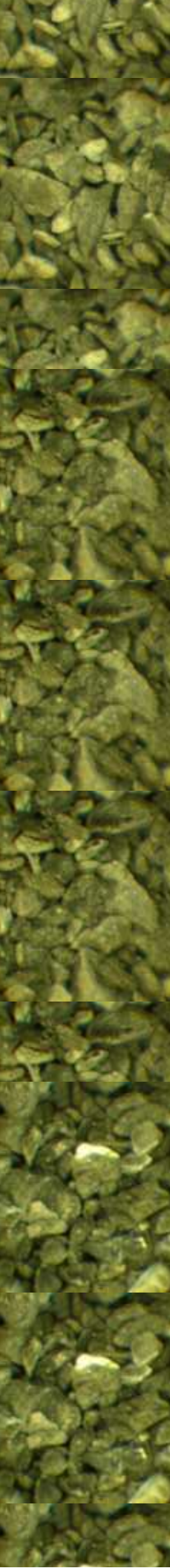
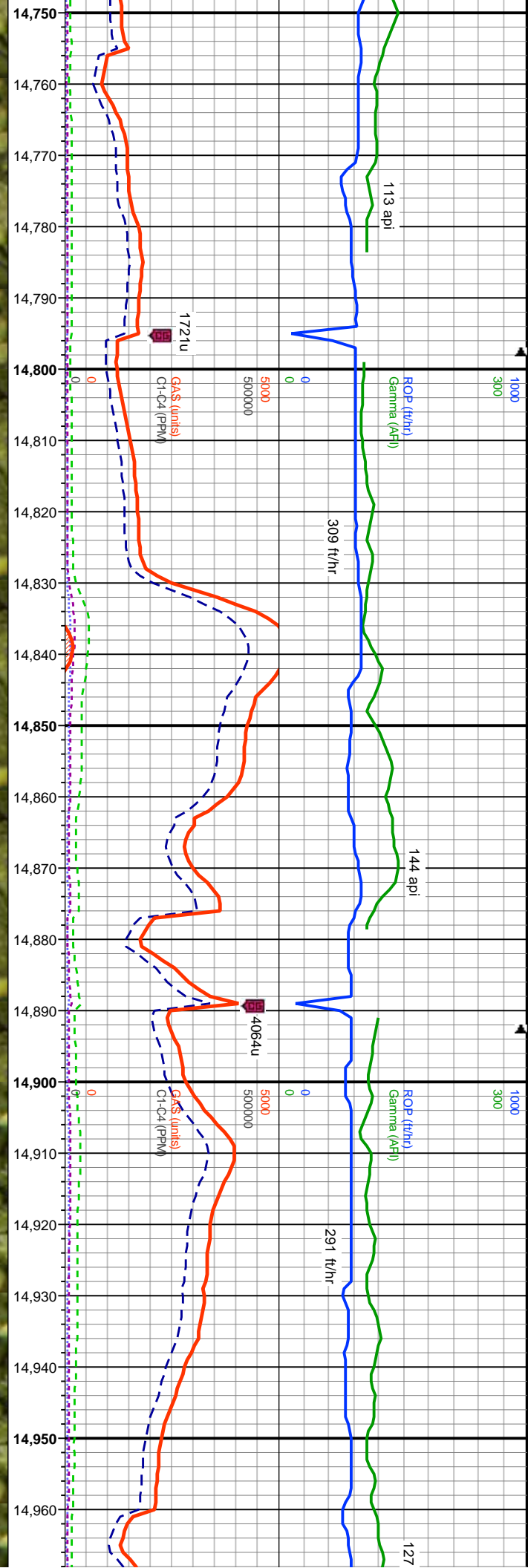
dkkgy, blk ip, sl sft-sl frm, sb blk-y-sb plty, silty, mot-stri tex,
t gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, tr bent
sl pyrc, v rr inoc fos frags

80% MRLST: med-dkkgy, blk ip, sl sft-sl frm, sb blk-y-sb plty, silty, mot-stri tex,
sl calc: 20% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, rr bent
wi yel & omg flor, v sl pyrc, rr inoc fos frags

85% MRLST: med-dkkgy, blk ip, sl sft-sl frm, sb blk-y-sb plty, silty, mot-stri tex,
sl calc: 15% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, rr bent
wi yel & omg flor, v sl pyrc, rr inoc fos frags

8300

8300



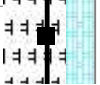
MD: 14,774'		INC: 89.88°		AZM: 358.02°		TVD: 6,981.56'		VS: 7,774.81'	
6300									



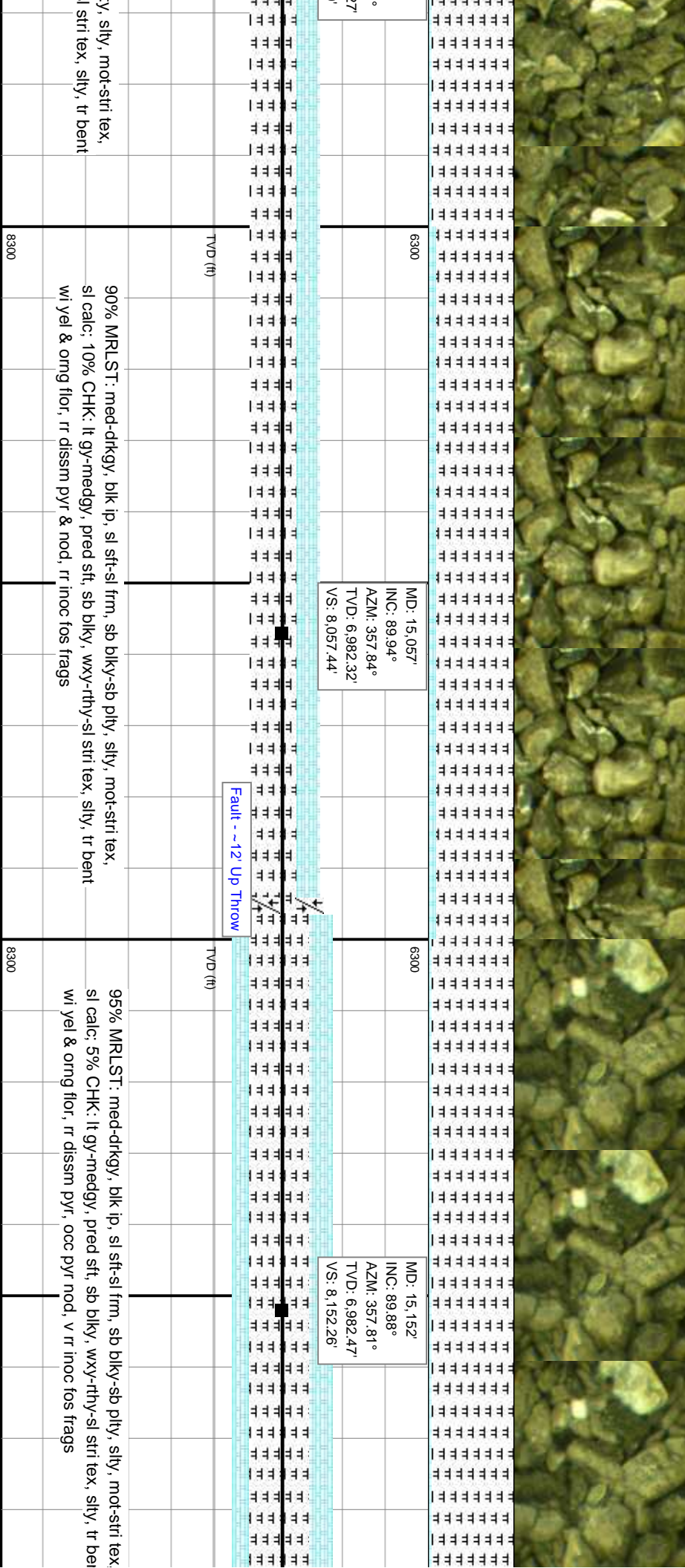
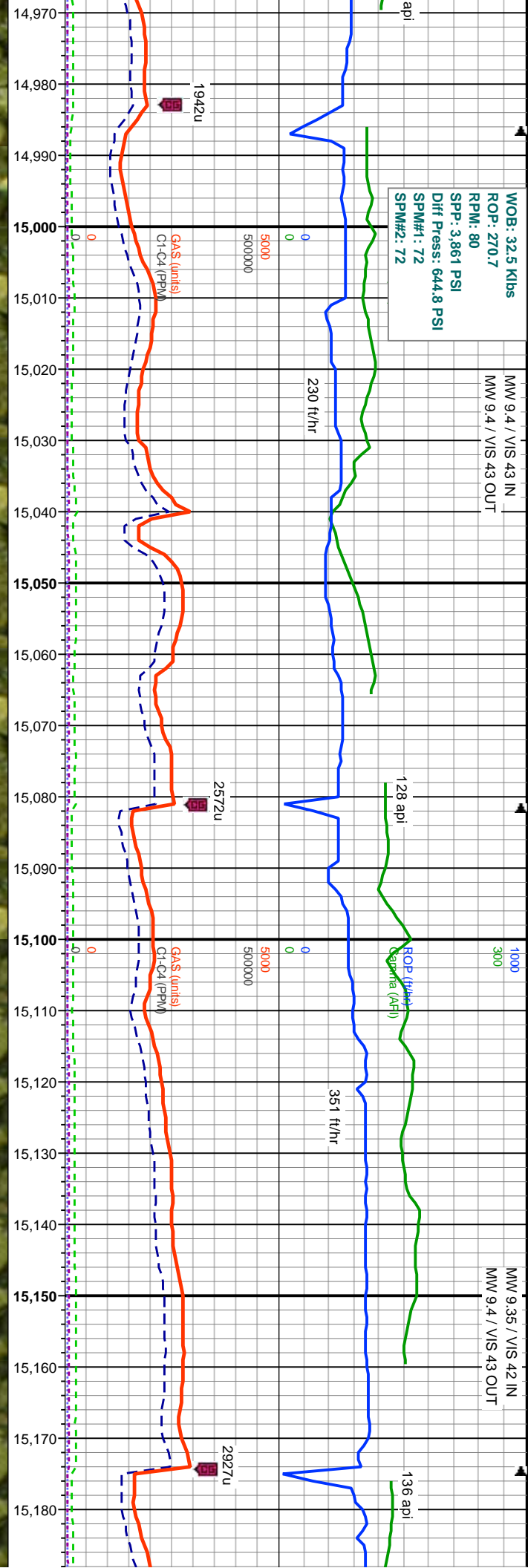
MD: 14,868'		INC: 89.63°		AZM: 358.97°		TVD: 6,981.96'		VS: 7,868.69'	
6300									

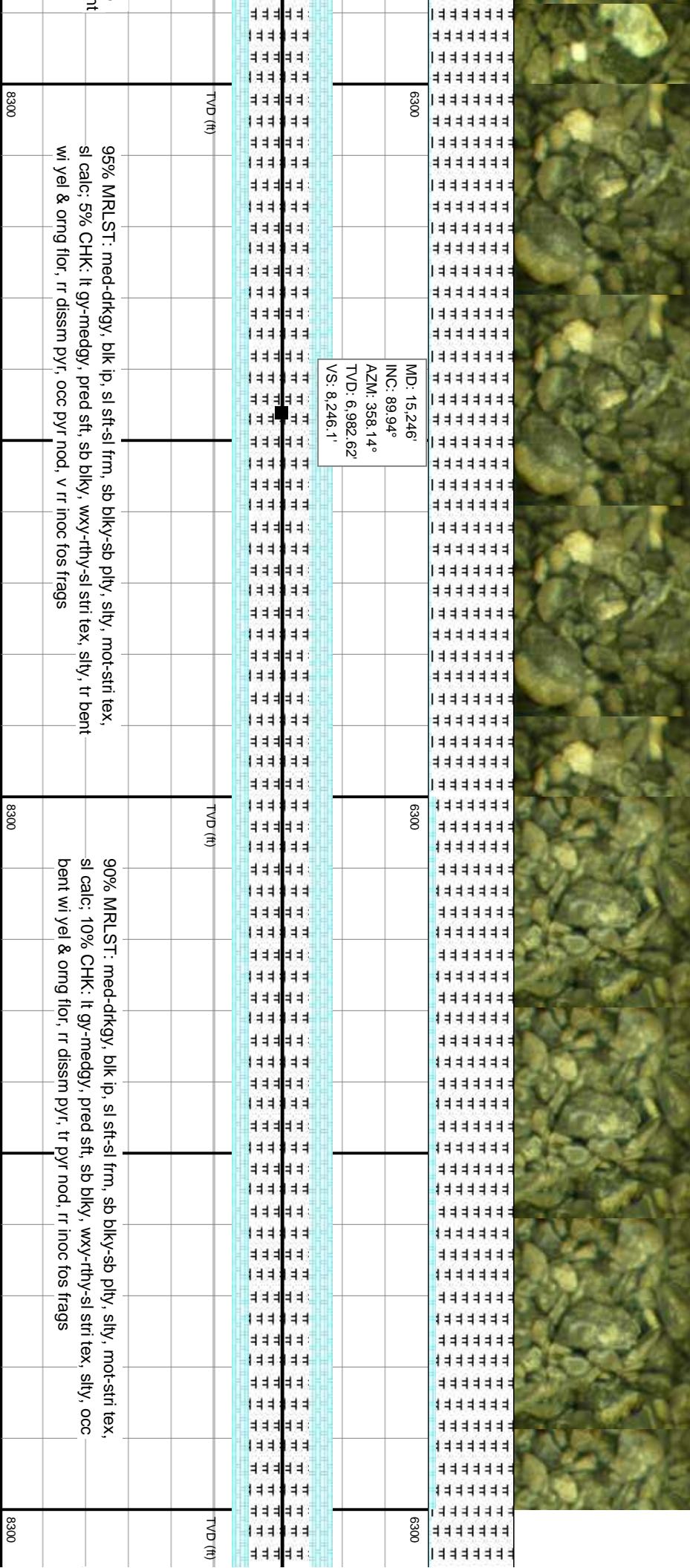
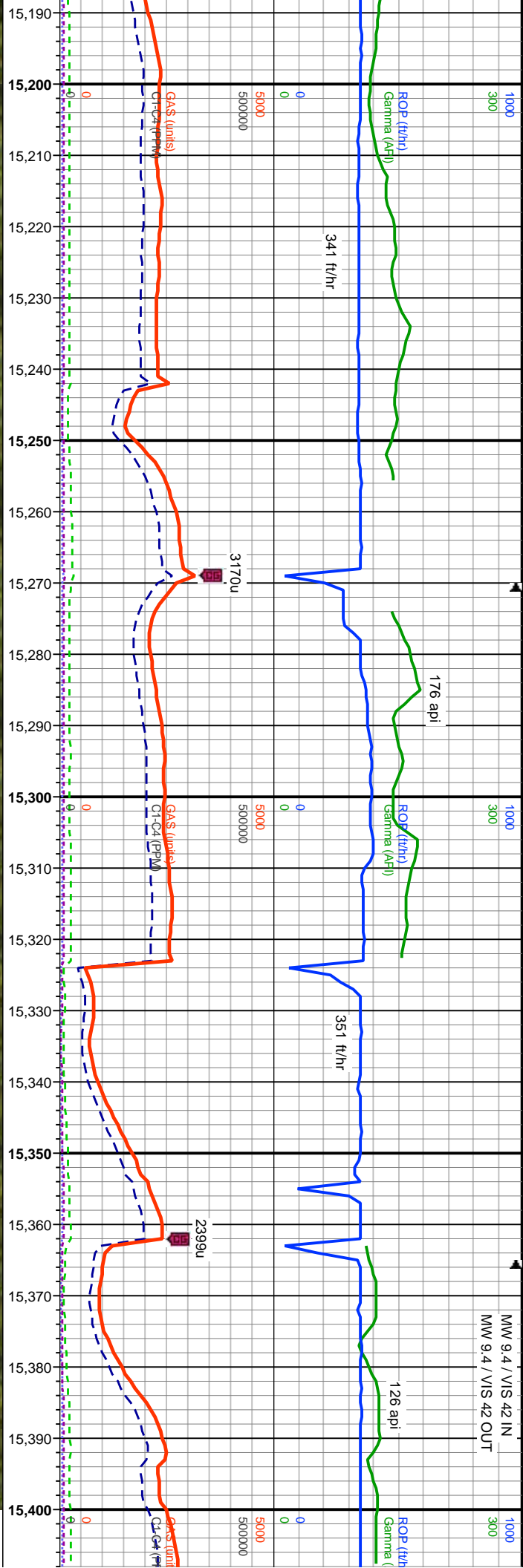


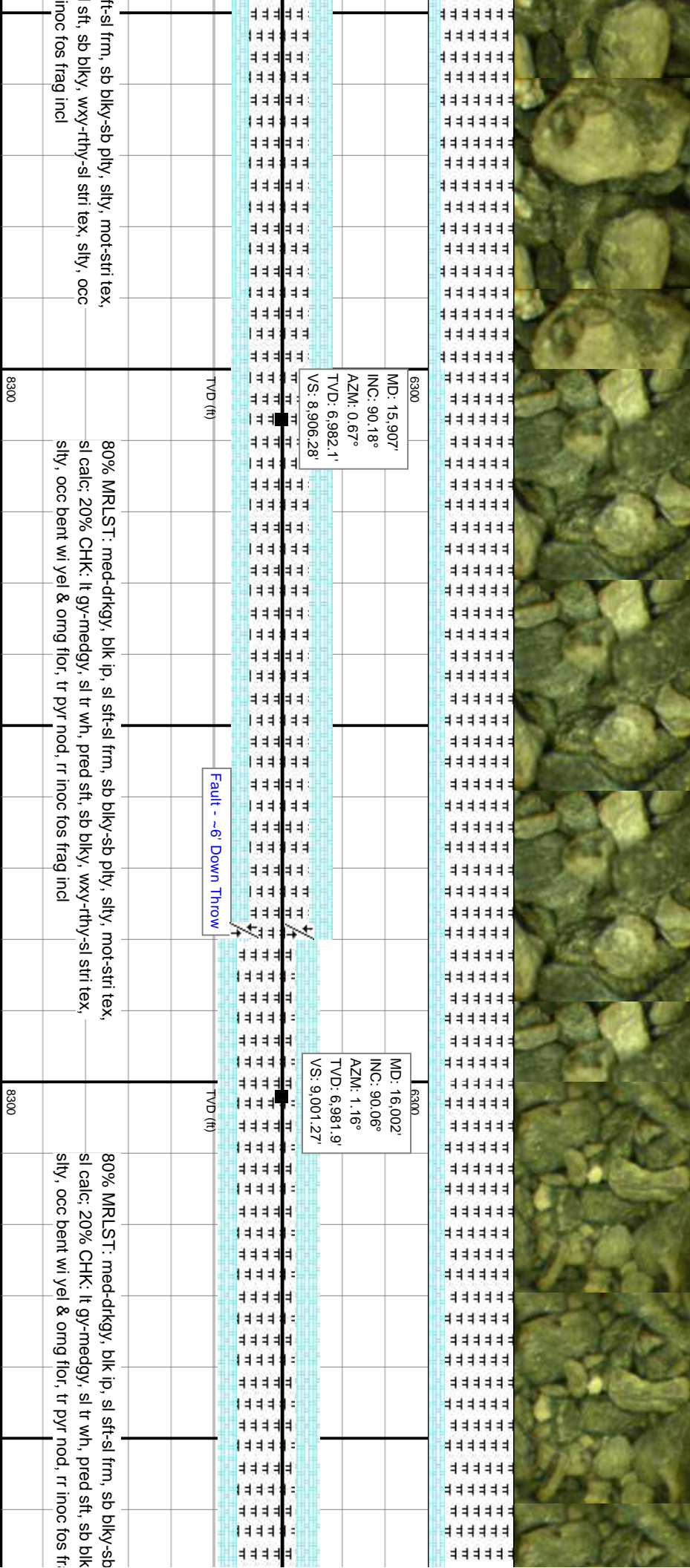
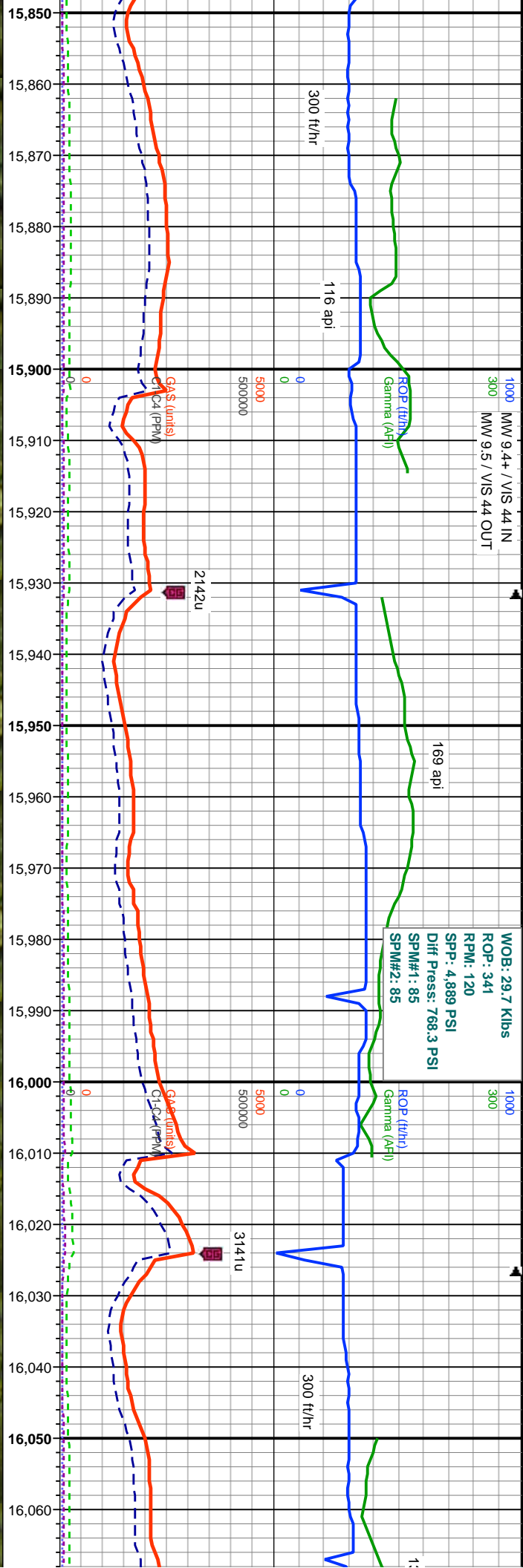
MD: 14,963'		INC: 90°		AZM: 358.28		TVD: 6,982.2		VS: 7,963.55'	
6300									



si frm, sb blkly-sb plty, silty, mot-stri tex, t, sb blkly, wxy-rthy-sl stri tex, silty, tr bent frags		90% MRLST: med-drtkgy, blk ip, sl sft-sl frm, sb blkly-sb plty, silty, mot-stri tex, sl calc; 10% CHK: lt gy-medgy, pred sft, sb blkly, wxy-rthy-sl stri tex, silty, tr bent wi yel & org flor, v sl pyrc, tr inoc fos frags		95% MRLST: med-drtkgy, blk ip, sl sft-sl frm, sb blkly-sb plty, silty, mot-stri tex, sl calc; 5% CHK: lt gy-medgy, pred sft, sb blkly, wxy-rthy-sl stri tex, silty, tr bent wi yel & org flor, rr diss pyr & nod, rr inoc fos frags	
8300		8300		8300	





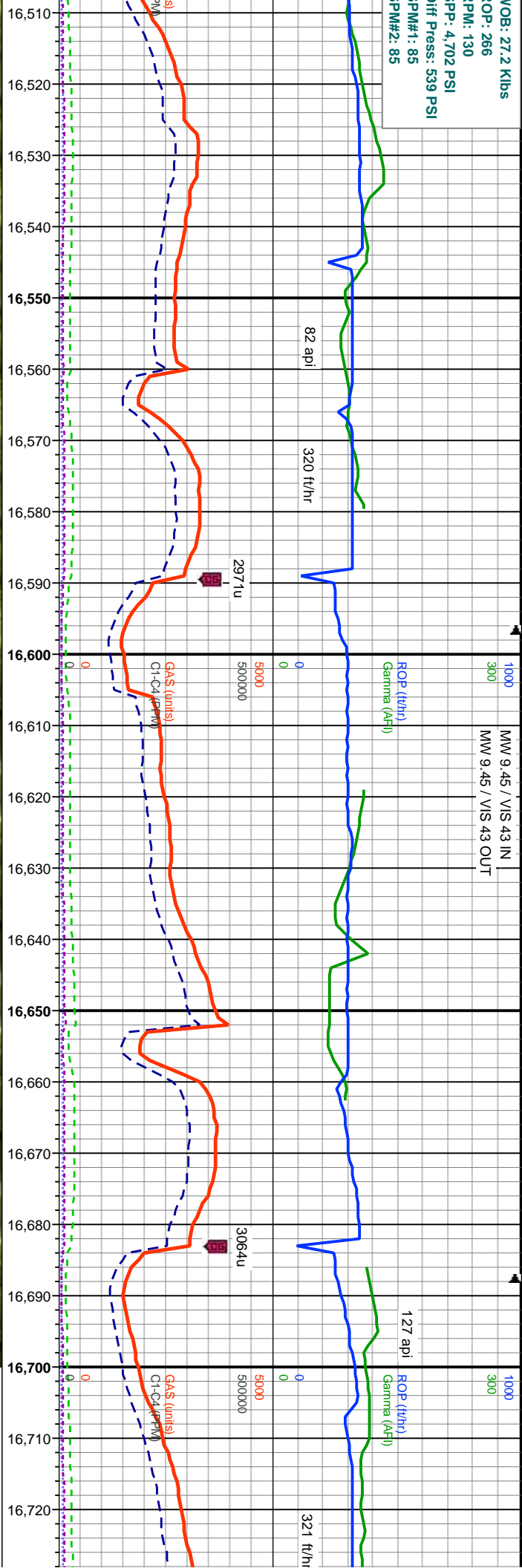


AOB: 27.2 Klbs
 OP: 266
 PM: 130
 PP: 4,702 PSI
 Diff Press: 539 PSI
 PM#1: 85
 PM#2: 85

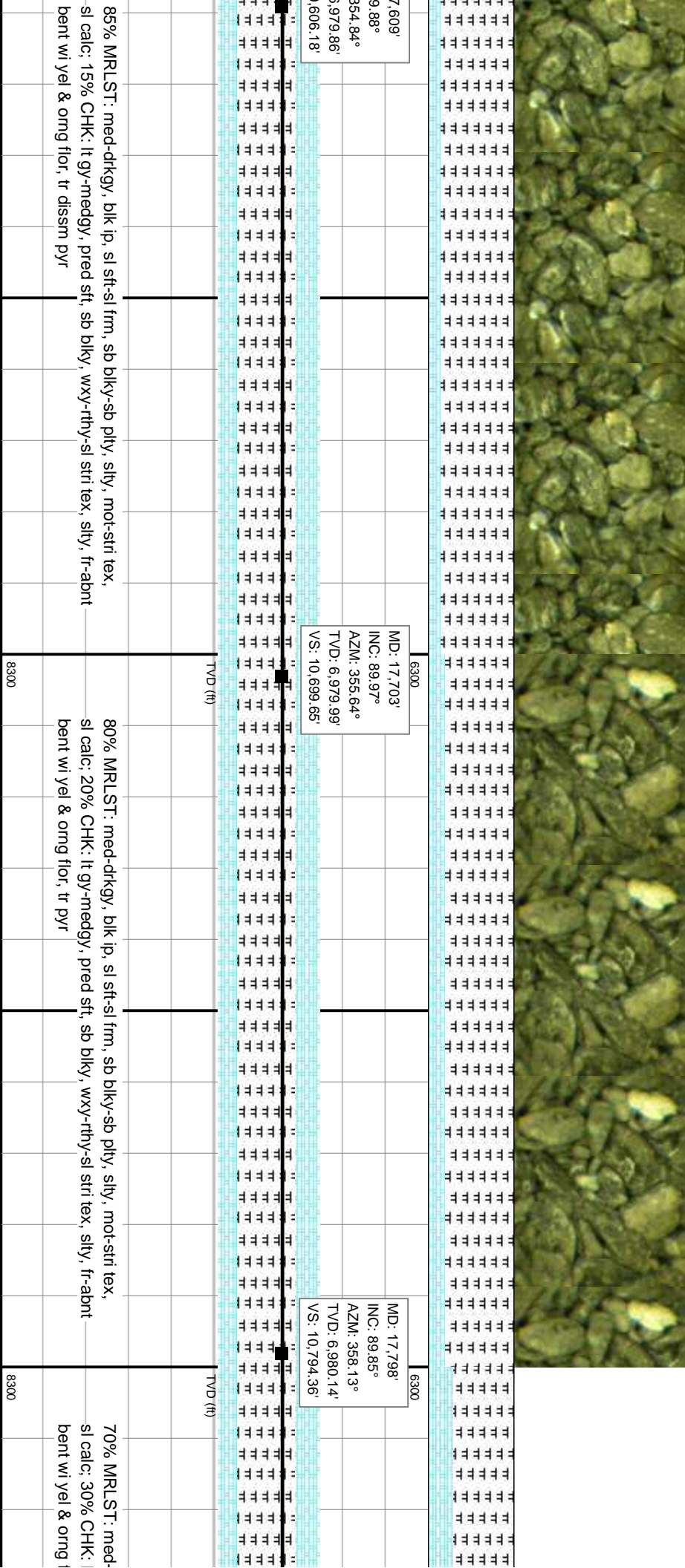
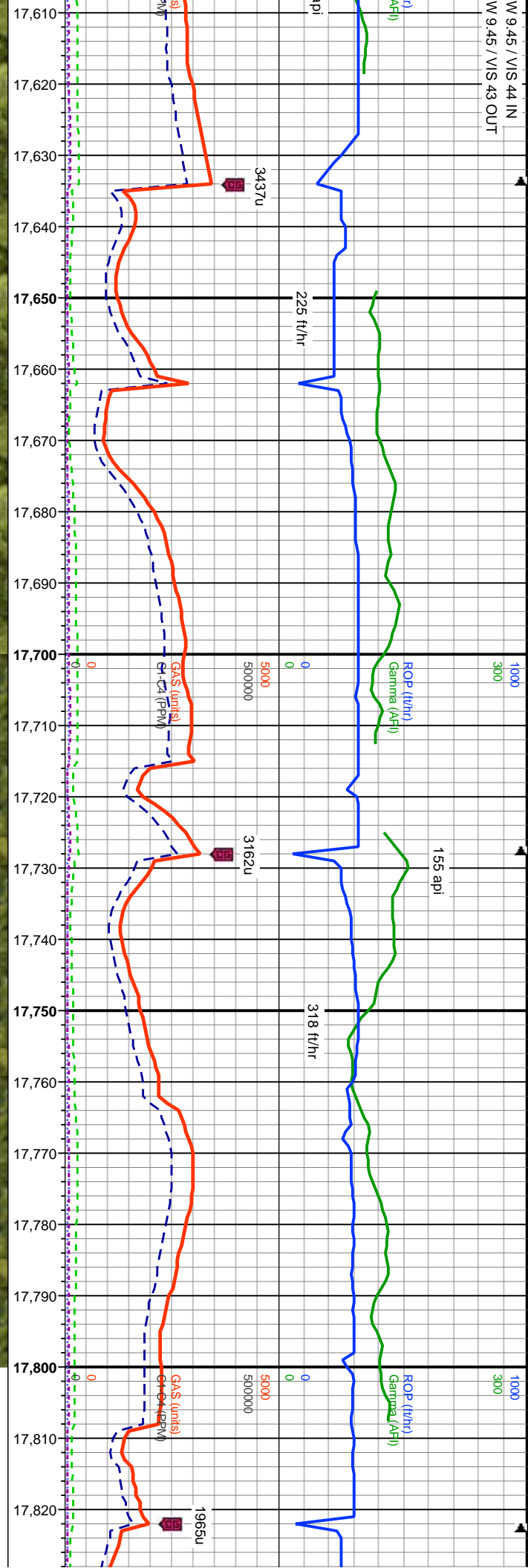
1000
 300
 MW 9.45 / VIS 43 IN
 MW 9.45 / VIS 43 OUT

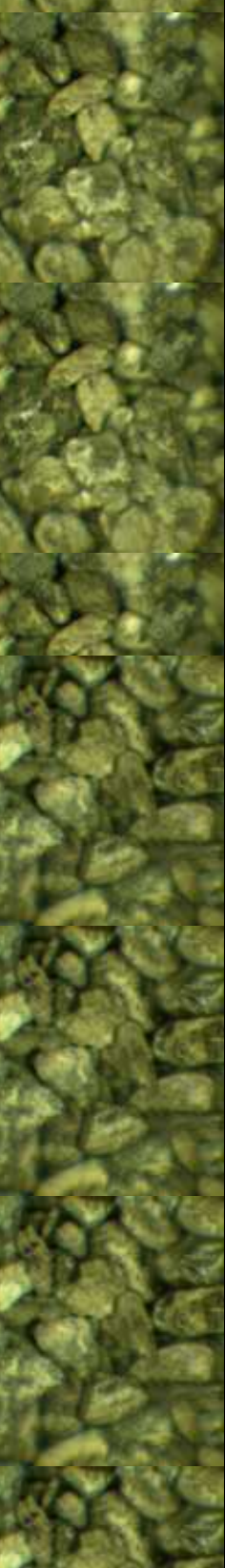
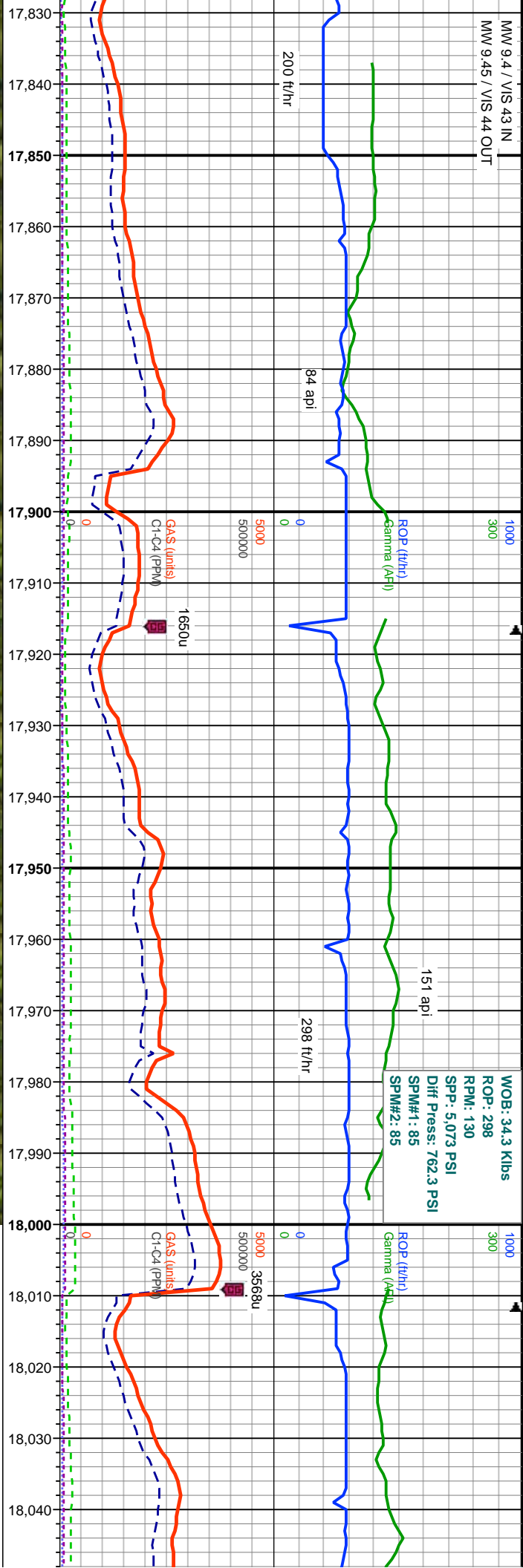
82 api
 320 ft/hr
 2971u
 3064u
 127 api
 321 ft/hr

ROP (ft/hr)
 Gamma (API)
 Gas (units)
 C1-C4 (ppm)

[illegible]

B Marl Fossil Bed		TVD (ft)	TVD (ft)
70% MR.LST: med-drkgy, blk ip, sl sft-sl frm, sb blkly-sb ply, slty, mot-stri tex, sl calc; 30% CHK: lt gy-medgy, sl tr wh, pred sft, sb blkly, wxy-rthy-sl stri tex, slty, occ bent wi yel & omg flor, tr pyr nod, fr inoc fos frag incl, tr frac cal	70% MR.LST: med-drkgy, blk ip, sl sft-sl frm, sb blkly-sb ply, slty, mot-stri tex, sl calc; 30% CHK: lt gy-medgy, sl tr wh, pred sft, sb blkly, wxy-rthy-sl stri tex, slty, occ bent wi yel & omg flor, tr pyr nod, fr inoc fos frag incl, tr frac cal	8300	8300



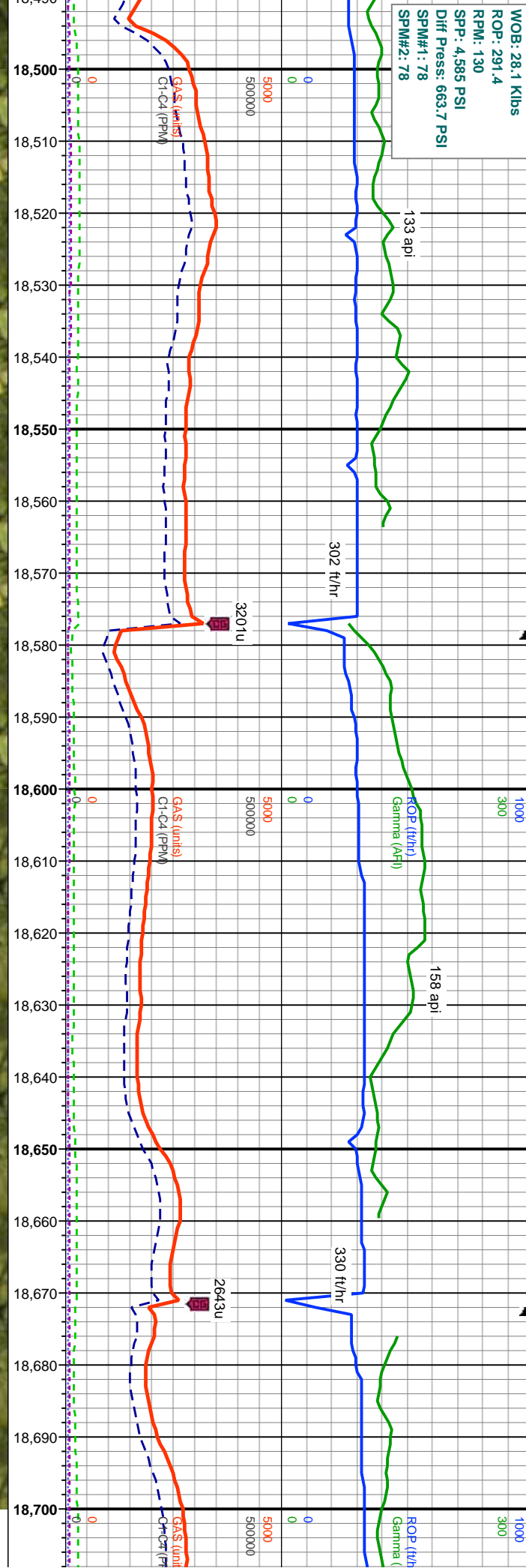


MD: 17.892 INC: 90.15° AZM: 359.27° TVD: 6.980.14' VS: 10.888.27'		6300	MD: 17.987 INC: 89.91° AZM: 0.23° TVD: 6.980.09' VS: 10.983.23'		6300
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TVD (ft)		TVD (ft)	
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8300		8300	
80% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb pthy, silty, mot-str tex, sl calc, 20% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl str tex, silty, fr-abnt bent w/ yel & org flor, tr pyr		75% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb pthy, silty, mot-str tex, sl calc, 25% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl str tex, silty, fr-abnt bent w/ yel flor	

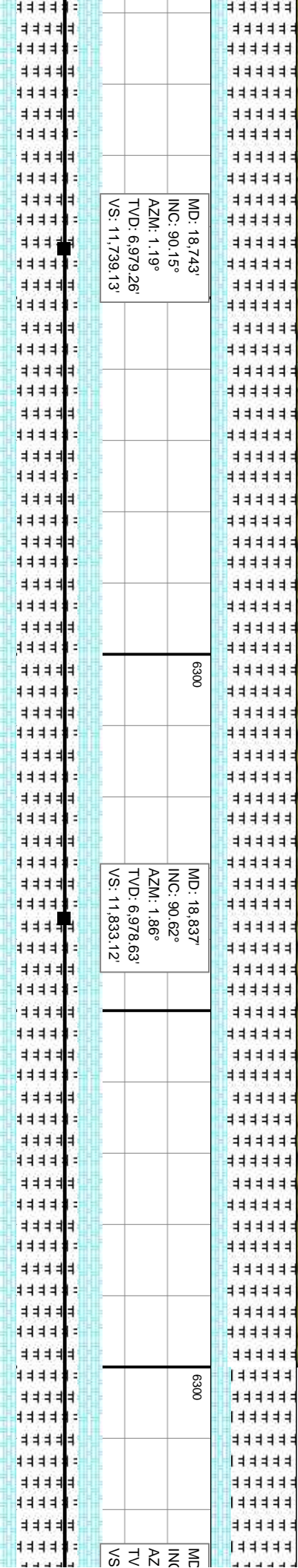
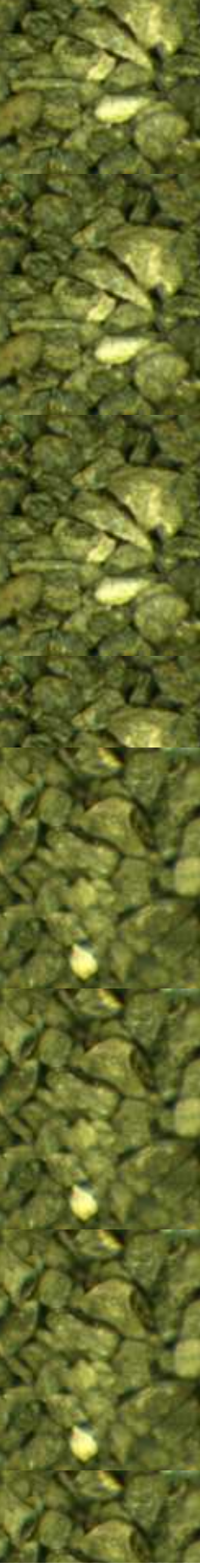
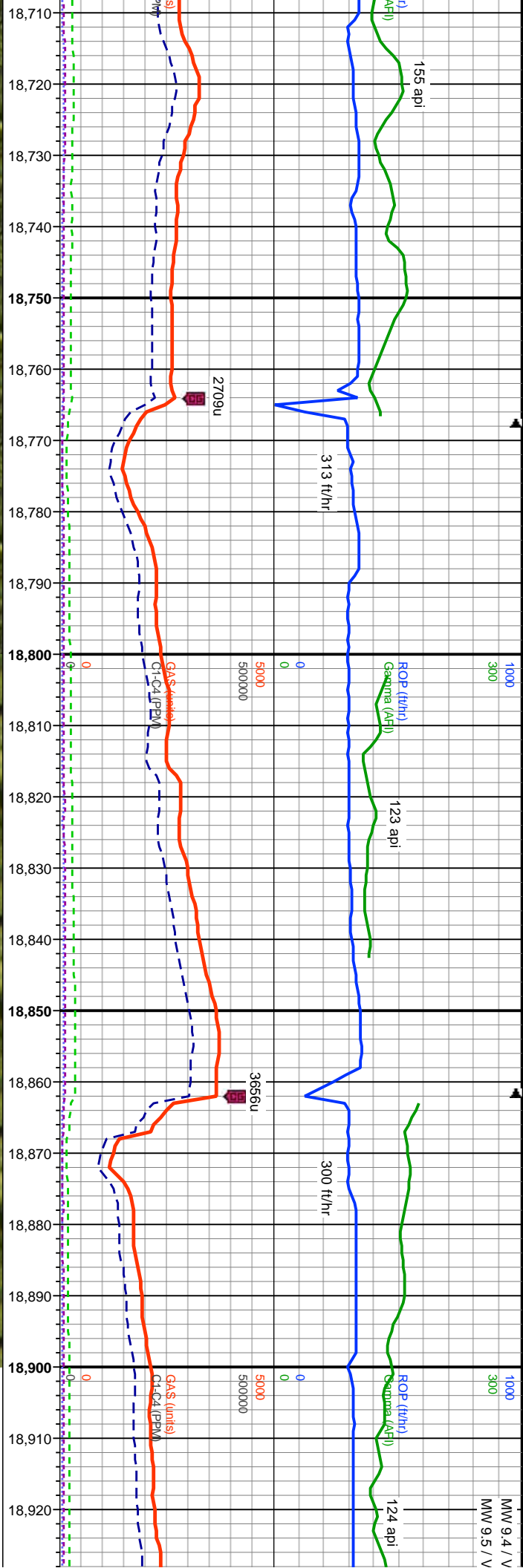
WOB: 28.1 Klbs
ROP: 291.4
RPM: 130
SPP: 4,565 PSI
Diff Press: 663.7 PSI
SPM#1: 78
SPM#2: 78



6300		MD: 18,554' INC: 90.25° AZM: 0.47° TVD: 6,979.44' VS: 11,550.14'		6300		MD: 18,649' INC: 89.91° AZM: 0.68° TVD: 6,979.31' VS: 11,645.13'		6300	
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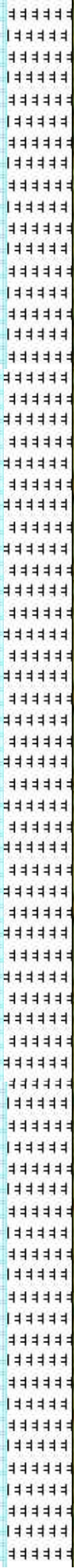
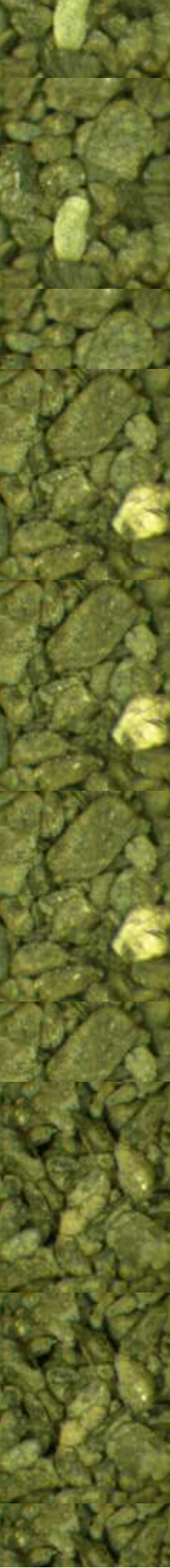
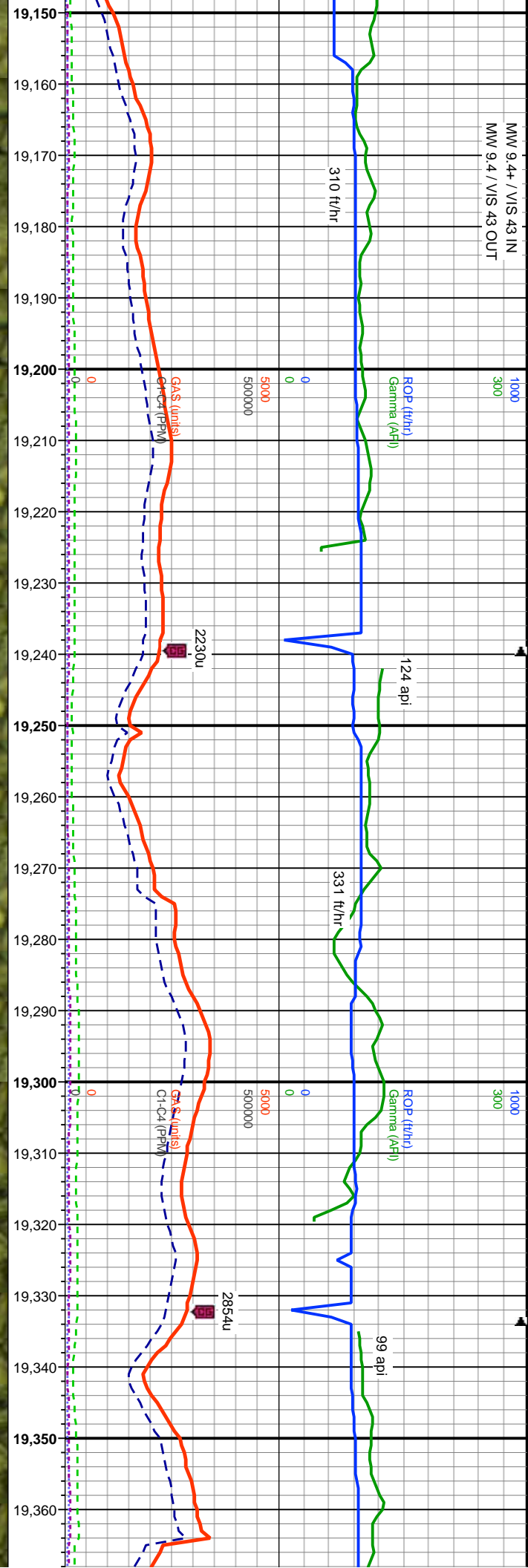
6300		90% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb pily, silty, mot-stri tex, sl calic: 10% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, r bent w/ yel flor, tr frac cal, r inoc fos frags		6300		85% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb pily, silty, mot-stri tex, sl calic: 15% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, r bent w/ yel flor, tr frac cal, v r inoc fos frags		6300	
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300% MRLST: med-dikgy, blk ip, si sft-si frm, sb bkly-sb ply, sily, mor-stri tex, si calc; 20% CHK: lt gy-medgy, pred sft, sb bkly, wxy-rthy-si stri tex, sily, tr bent yel flor, tr frac cal, v tr inoc fos frags

80% MRLST: med-drkyg, blk ip, sl sft-sl frm, sb blyk-sb ply, sfty, mot-str tex, sl calc; 20% CHK: lt gy-medgy, pried sft, sb blyk, wxy-rthy-sl stri tex, sfty, tr bent wi yel flor, tr frac cal, v tr inoc fos frags

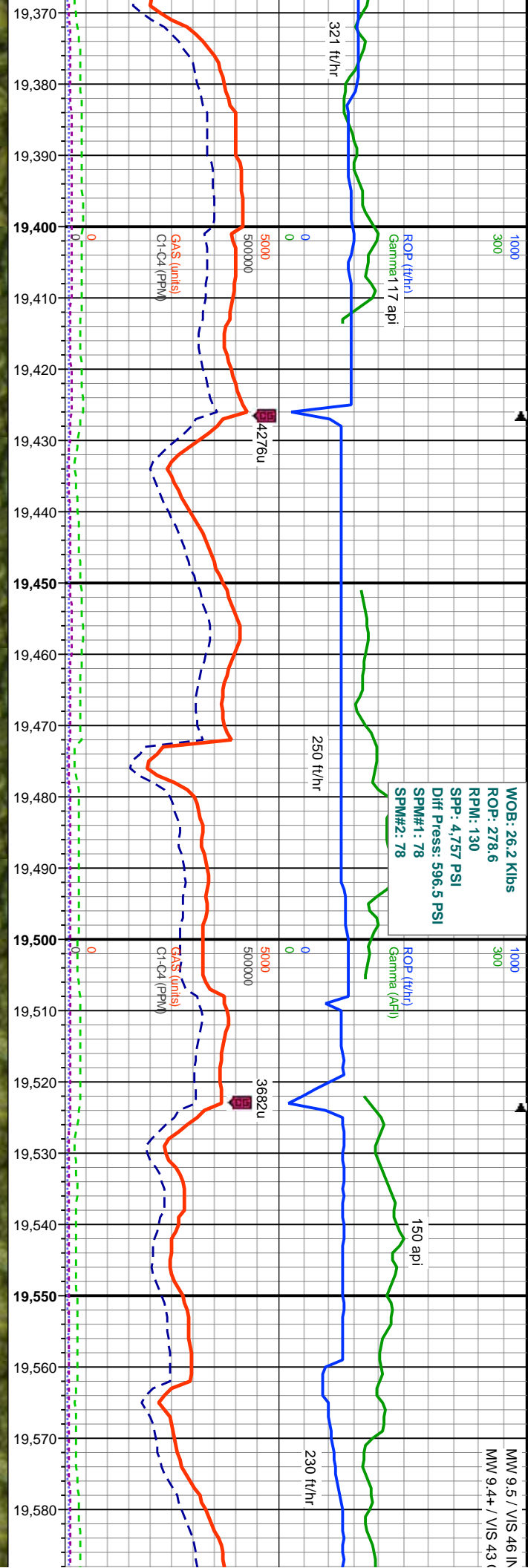
75% MRLST: medic
si calc; 25% CHK: It
wi yel flor, tr frac cal



6300	MD: 19,215' INC: 90.18° AZM: 0.01° TVD: 6,977.82' VS: 12,211.1'
6300	MD: 19,310' INC: 90.25° AZM: 359.04° TVD: 6,977.46' VS: 12,306.05'



firm, sb blkly-sb pily, silty, mot-str tex, sb blkly, wxy-rthy-si str tex, silty, tr bent v rr dissn pyr & nod	80% MRLST: med-drkgy, blk ip, sl sft-si frm, sb blkly-sb pily, silty, mot-str tex, sl calc, 20% CHK: lt gy-medgy, pred sft, sb blkly, wxy-rthy-si str tex, silty, tr bent wi yel flor, tr frac cal, v rr inoc fos frags, v rr dissn pyr & nod	75% MRLST: med-drkgy, blk ip, sl sft-si frm, sb blkly-sb pily, sl calc, 25% CHK: lt gy-medgy, pred sft, sb blkly, wxy-rthy- bent wi yel flor, rr frac cal, rr inoc fos frags, v rr dissn pyr
8300	8300	8300



MD: 19,404'
INC: 90.22°
AZM: 358.11°
TVD: 6,977.08'
VS: 12,399.94'

MD: 19,499'
INC: 89.85°
AZM: 358.27°
TVD: 6,977.02'
VS: 12,494.8'

TVD (ft)

TVD (ft)

8300

8300

80% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb plty, silty, mot-stri tex, sl calc, 20% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, tr bent wi yel flor, v rr frac cal, rr inoc fos frags, v rr dissim pyr & nod

75% MRLST: med-dkgy, blk ip, sl sft-sl frm, sb blk-y-sb plty, silty, mot-stri tex, sl calc, 25% CHK: lt gy-medgy, pred sft, sb blk-y, wxy-rthy-sl stri tex, silty, tr bent wi yel flor, v rr frac cal, rr inoc fos frags, v rr dissim pyr & nod

M
IN
A
T
V

11
AF11

at 1109 on 1/12/2018 @ 19794' MD

Thank you for using Terra Guidance
ological Services

19,810
19,820
19,830
19,840
19,850
