

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Walton H-25HC

Location LAT. 40.550186, LONG. -104.832879

State Colorado

County Weld

Country USA

Rig Number Frontier 10

API Number 05-123-41415

AFE # 2014WeldH-25HC

Geographic Region DJ Basin

Field Wattenberg

Spud Date 7/15/2015

Drilling Completed 8/27/2015

Surface Coordinates Sec.25-T7N-R67W
842'FNL, 252'FEL

Bottom Hole Coordinates Projected:
Sec.25-T7N-R67W
1745'FNL, 470'FWL

Ground Elevation 4979'
Logged Interval 6000' **To** 12350'

K.B. Elevation 5001.5'
Total Depth 12350'

Formation Codell

Type of Drilling Fluid MMH

Operator

Company Bayswater Exploration and Production LLC.

Address 730 17th Street, Suite 610
Denver, CO 80202

Geologist

Name Charles Trodick, Tracy Lawson

Company COLUMBINE LOGGING, INC.

Address 602 S. LIPAN ST.
DENVER, CO 80223

Zone Color Coding

Oil
Note
Error

Condensate
Core
Water

Rock Types

UNKNOWN
ANHYDRITE
BENTONITE
BRECCIA
CHALK
CEMENT
CHERT
CLAY CHOKE SAND
CLAYSTONE

COAL
CONGLOMERATE
DOLOMITE
DOLOMITIC LIMESTONE
GRANITE
GYPSUM
IGNEOUS
SIDERITE or LIMONITE
LIMESTONE

MARLS
METAM
NO SAND
SALT
SANDS
SALT-P
SHALE
SHALE

Accessories

GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL
INOCERAMUS	B BENTONITE	K KAOLIN
OOLITE	BITUMINOUS SUBSTANCE	M MARCASITE
OSTRACOD	BRECCIA FRAGMENTS	T MARLSTONE
BELEMNITE	D DOLOMITIC	M MICACEOUS
BIOCLASTIC	CARBONACEOUS FLAKES	M MINERAL CRYSTALS
BRACHIOPOD	C CHTL	N NODULES
BRYOZOA	COAL - THIN BEDS	P PHOSPHATE PELLETS
CEPHALOPOD	D DOLOMITIC	P PYRITE
CORAL	F FELDSPAR	S SALT CAST
CRINOID	F FERRUGINOUS PELLET	S SANDY
ECHINOID	F FERRUGINOUS	S SIDERITE
FISH	G GLAUCONITIC	S SILICEOUS
FORAMINIFERA	G GYPSIFEROUS	S SILTY
F FOSSIL		T TUFFACEOUS

Stringer

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

Other Symbols

P PINPOINT	DST INTERVAL	WIRELINE TESTED - LEFT	E EARTHY
V VUGGY	FAULT	WIRELINE TESTED - RT	FX FINELYXLN
D DEAD	FORMATION TOP	DRILL STEM TEST	GS GRAINSTONE
E EVEN	GAS SHOW	MN DEPTH	L LITHOGRAPHIC
Q QUESTIONABLE	OIL SHOW	MN DEPTH UP	MX MICROXLN
S SPOTTED STAINING	CONNECTION (UP)	R ROUNDING	MS MUDSTONE

Porosity

CONNECTION (DOWN)	A ANGULAR	PS PACKSTONE
CONNECTION GAS	NORMAL FAULT	WS WACKESTONE
CONNECTION GAS (LEFT)	OVERTURNED STRATA	
TRIPART GAS	REVERSE FAULT	S SUBANG
TRIPART GAS (LEFT)	CASING	S SUBSAND

Textures

INTERCRYSTALLINE	SIDEWALL CORE (LEFT)	M MODERATE
INTERCOLITIC	SIDEWALL CORE (RIGHT)	P POOR
MOLDIC	SLIDE	W WELL
ORGANIC	SURVEY	CX CRYPTOXLN

Sorting

M MODERATE

P POOR

W WELL

Oil Show

P PINPOINT
V VUGGY

Engineering

D DEAD
E EVEN
Q QUESTIONABLE
S SPOTTED STAINING
A CONNECTION (UP)

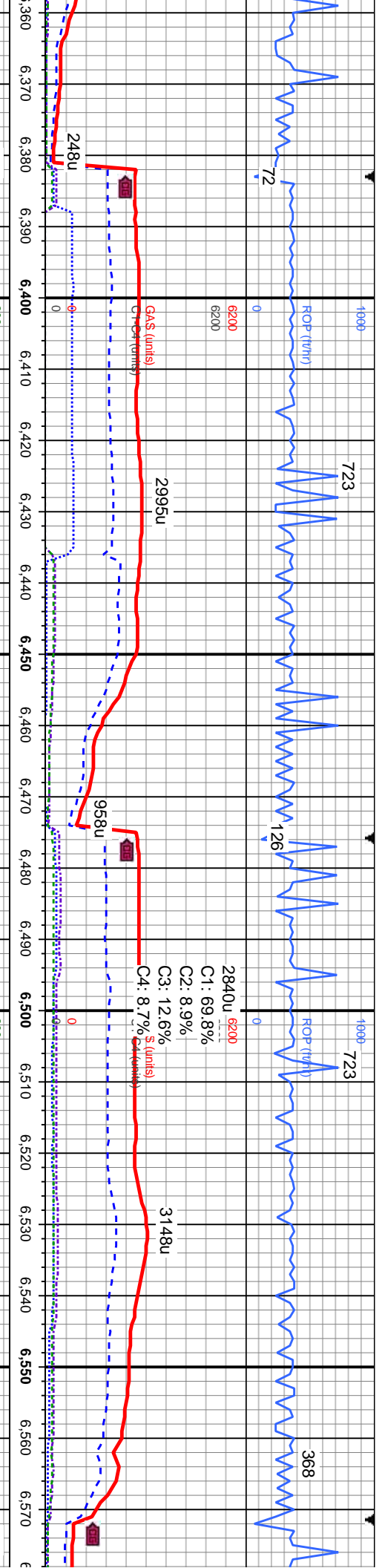
Porosity

CONNECTION (DOWN)
CONNECTION GAS
CONNECTION GAS (LEFT)
TRIPART GAS
TRIPART GAS (LEFT)

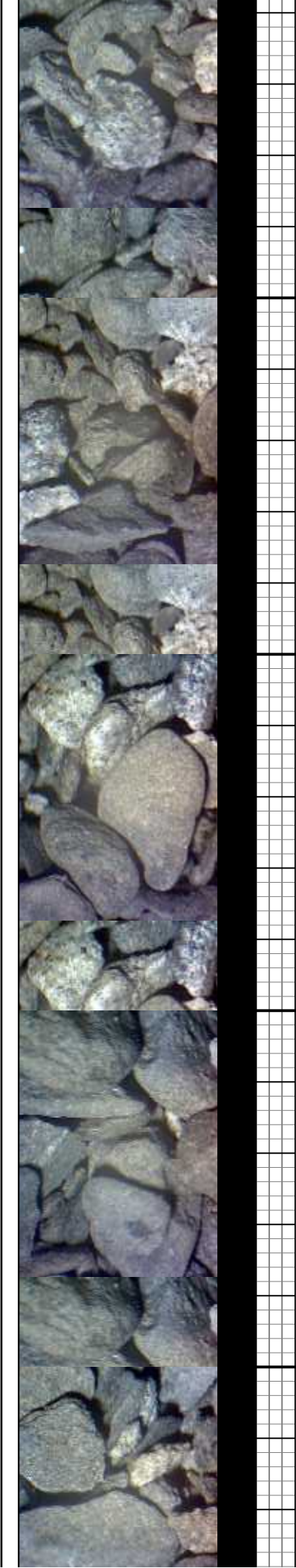
INTERCRYSTALLINE
INTERCOLITIC
MOLDIC
ORGANIC
DOWN TIME GAS
DOWN TIME GAS (LEFT)
CORE - LOST
CORE - RECOVERED

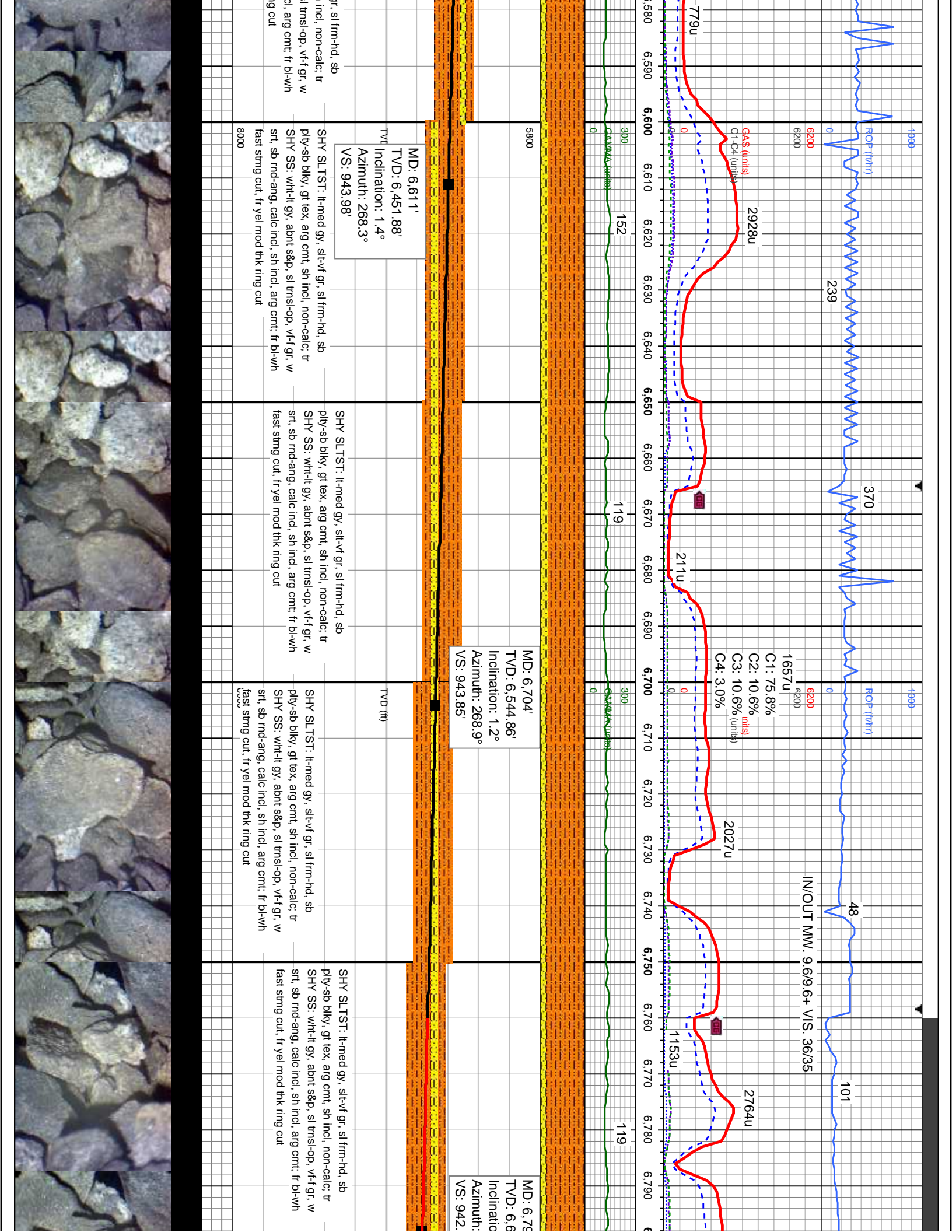
Gas
Pressure
Seal

SHALY SANDSTONE
SHALY SILTSTONE
SILTY SHALE
SILTSTONE
TILL
TUFF
WELDED TUFF
GRAY



<p>ST: It-med gy, sil-vf gr, sl frm-hd, sb ply-sb blk/y, gt tex, arg cmt, sh incl, non-calc; tr SHY SS: wht-lt gy, abnt s&p, sl trmsl-op, vf-f gr, w srt, sb rnd-ang, calc incl, sh incl, arg cmt; fr bl-wh fast smg cut; fr yel mod thk ring cut</p>	<p>SHY SLTST: It-med gy, sil-vf gr, sl frm-hd, sb ply-sb blk/y, gt tex, arg cmt, sh incl, non-calc; tr SHY SS: wht-lt gy, abnt s&p, sl trmsl-op, vf-f gr, w srt, sb rnd-ang, calc incl, sh incl, arg cmt; fr bl-wh fast smg cut; fr yel mod thk ring cut</p>	<p>SHY SLTST: It-med gy, sil-vf gr, sl frm-hd, sb ply-sb blk/y, gt tex, arg cmt, sh incl, non-calc; tr SHY SS: wht-lt gy, abnt s&p, sl trmsl-op, vf-f gr, w srt, sb rnd-ang, calc incl, sh incl, arg cmt; fr bl-wh fast smg cut; fr yel mod thk ring cut</p>	<p>SHY SLTST: It-med gy, sil-vf gr, sl frm-hd, sb ply-sb blk/y, gt tex, arg cmt, sh incl, non-calc; tr SHY SS: wht-lt gy, abnt s&p, sl trmsl-op, vf-f gr, w srt, sb rnd-ang, calc incl, sh incl, arg cmt; fr bl-wh fast smg cut; fr yel mod thk ring cut</p>
<p>MD: 6.421' TVD: 6,261.93' Inclination: 1.4° Azimuth: 266.4° VS: 944.44'</p>	<p>MD: 6.517' TVD: 6,357.9' Inclination: 1.2° Azimuth: 275.7° VS: 944.23'</p>	<p>MD: 6.517' TVD: 6,357.9' Inclination: 1.2° Azimuth: 275.7° VS: 944.23'</p>	<p>MD: 6.517' TVD: 6,357.9' Inclination: 1.2° Azimuth: 275.7° VS: 944.23'</p>





1900
ROP (ft/hr)
6200
6200
239
370
1900
ROP (ft/hr)
6200
6200
1657u
C1: 75.8%
C2: 10.6%
C3: 10.6% (units)
C4: 3.0%
2027u
48
IN/OUT MW: 9.6/9.6+ VS: 36/35
101

779u
2928u

211u
2764u

MD: 6.611'
TVD: 6.451.88'
Inclination: 1.4°
Azimuth: 268.3°
VS: 943.98'

MD: 6.704'
TVD: 6.544.86'
Inclination: 1.2°
Azimuth: 268.9°
VS: 943.85'

MD: 6.79'
TVD: 6.6
Inclination:
Azimuth:
VS: 942

fr s/frm-hd, sb
incl, non-calc: tr
lt trnsi-op, vf-f gr, w
d, arg cmt: fr bl-wh
ring cut

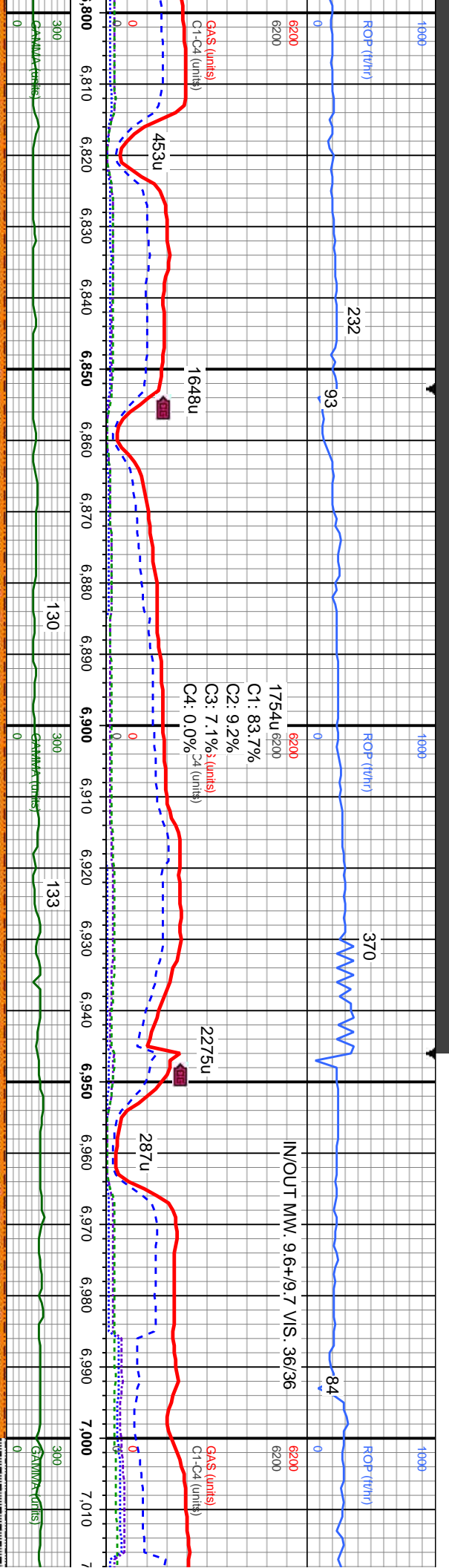
SHY SLTST: lt-med gy, silt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex, arg cmt, sh incl, non-calc: tr
SHY SS: wht-lt gy, abnt s&p, sl trnsi-op, vf-f gr, w
srt, sb rnd-ang, calc incl, sh incl, arg cmt: fr bl-wh
fast stmg cut, fr yel mod thk ring cut

8000

SHY SLTST: lt-med gy, silt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex, arg cmt, sh incl, non-calc: tr
SHY SS: wht-lt gy, abnt s&p, sl trnsi-op, vf-f gr, w
srt, sb rnd-ang, calc incl, sh incl, arg cmt: fr bl-wh
fast stmg cut, fr yel mod thk ring cut

SHY SLTST: lt-med gy, silt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex, arg cmt, sh incl, non-calc: tr
SHY SS: wht-lt gy, abnt s&p, sl trnsi-op, vf-f gr, w
srt, sb rnd-ang, calc incl, sh incl, arg cmt: fr bl-wh
fast stmg cut, fr yel mod thk ring cut

SHY SLTST: lt-med gy, silt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex, arg cmt, sh incl, non-calc: tr
SHY SS: wht-lt gy, abnt s&p, sl trnsi-op, vf-f gr, w
srt, sb rnd-ang, calc incl, sh incl, arg cmt: fr bl-wh
fast stmg cut, fr yel mod thk ring cut



8' 38.6'
n: 7.3°
276.6°
558'

MD: 6,891'
TVD: 6,728.59'
Inclination: 21.9°
Azimuth: 275.5°
VS: 938.21'

MD: 6,986'
TVD: 6,814.02'
Inclination: 30°
Azimuth: 274.3°
VS: 931.13'

5SHY SLTST: lk-med gy, slt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex
SLTY SH: med-dk
ply-ply, rthy-sb rth
SS: wht-lt gy, abnt
rnd-ang, calc incl,
stng cut, fr yel mo

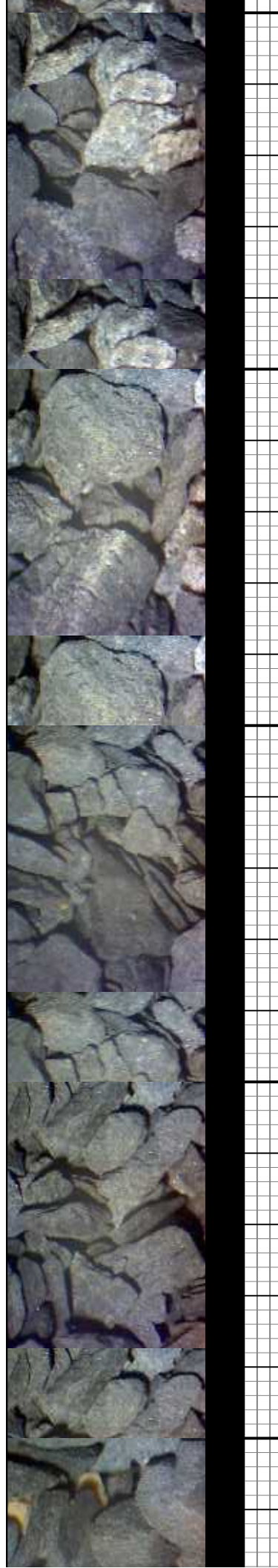
SHY SLTST: lk-med gy, slt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex, arg cmt, sh incl, non-calc; tr
SHY SS: wht-lt gy, abnt s&p, sl trnsl-op, vf-f gr, w
srt, sb rnd-ang, calc incl, sh incl, arg cmt; fr bl-wh
fast stng cut, fr yel mod thk ring cut

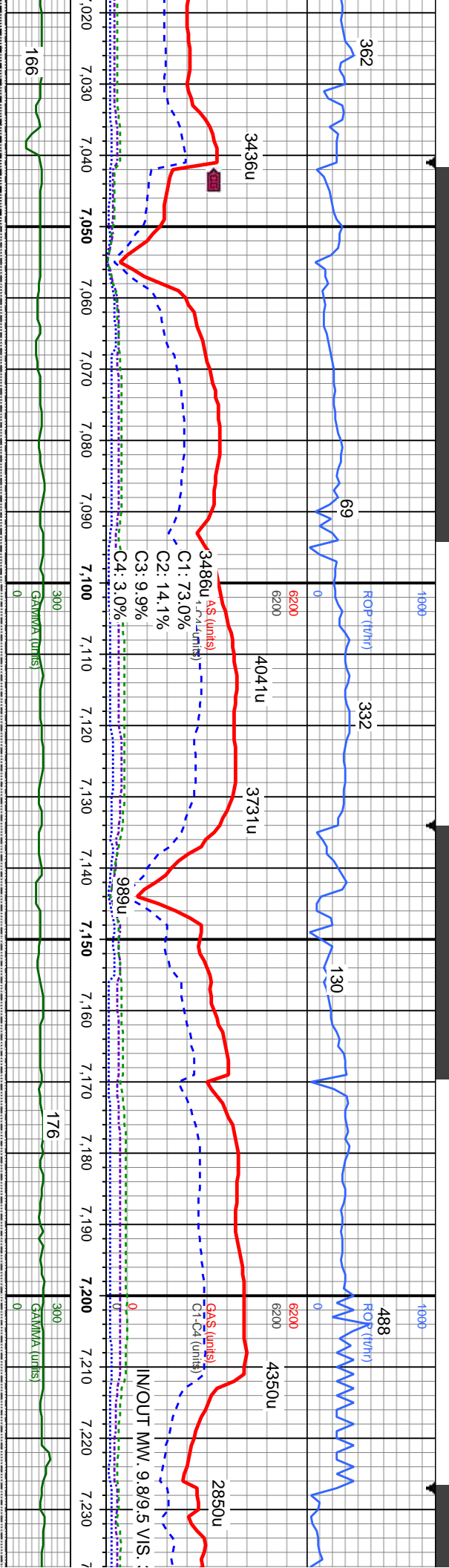
SHY SLTST: lk-med gy, slt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex, arg cmt, sh incl, non-calc; tr
SHY SS: wht-lt gy, abnt s&p, sl trnsl-op, vf-f gr, w
srt, sb rnd-ang, calc incl, sh incl, arg cmt; fr bl-wh
fast stng cut, fr yel mod thk ring cut

SHY SLTST: lk-med gy, slt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex, arg cmt, sh incl, non-calc; tr
SHY SS: wht-lt gy, abnt s&p, sl trnsl-op, vf-f gr, w
srt, sb rnd-ang, calc incl, sh incl, arg cmt; fr bl-wh
fast stng cut, fr yel mod thk ring cut

SHY SLTST: lk-med gy, slt-vf gr, sl frm-hd, sb
ply-sb blkly, gt tex, arg cmt, sh incl, non-calc; tr
SHY SS: wht-lt gy, abnt s&p, sl trnsl-op, vf-f gr, w
srt, sb rnd-ang, calc incl, sh incl, arg cmt; fr bl-wh
fast stng cut, fr yel mod thk ring cut

TVD (ft) 8000





d gy, sil-vf gr, sl frm-hd, sb
 arg cmt, sh incl, non-calc; r
 gy, sil-mic gr, sl frm, sb
 vly tex, mot lp, non-calc; tr SHY
 s&p, sl trnsi-op, vf-f gr, w srt, sb
 sh incl, arg cmt, fr bl-wh fast
 d thk ring cut

SHY SLTST: lk-med gy, sil-vf gr, sl frm-hd, sb
 ply-sb blkly, gt tex, arg cmt, sh incl, non-calc; r
 SLTY SH: med-dk gy, sil-mic gr, sl frm, sb
 ply-ply, rthy-sb rthy tex, mot lp, non-calc; tr SHY
 SS: wht-lt gy, abnt s&p, sl trnsi-op, vf-f gr, w srt, sb
 rnd-ang, calc incl, sh incl, arg cmt, fr bl-wh fast
 sting cut, fr yell mod thk ring cut

5SHY SLTST: lk-med gy, sil-vf gr, sl frm-hd, sb
 ply-sb blkly, gt tex, arg cmt, sh incl, non-calc;
 occ SLTY SH: med-dk gy, sil-mic gr, sl frm, sb
 ply-ply, rthy-sb rthy tex, mot lp, non-calc; tr SHY
 SS: wht-lt gy, abnt s&p, sl trnsi-op, vf-f gr, w srt, sb
 rnd-ang, calc incl, sh incl, arg cmt, fr bl-wh fast
 sting cut, fr yell mod thk ring cut

SHY SLTST: lk-med gy, sil-vf gr, sl frm-hd, sb
 ply-sb blkly, gt tex, arg cmt, sh incl, non-calc;
 abnt SLTY SH: med-dk gy, sil-mic gr, sl frm, sb
 ply-ply, rthy-sb rthy tex, mot lp, non-calc; fr
 bl-wh fast sting cut, fr yell mod thk ring cut

58SLTY SH: med-dk gy, sil-mic gr, sl frm, sb
 ply-ply, rthy-sb rthy tex, mot lp, non-calc;
 occ SHY SLTST: lk-med gy, sil-vf gr, sl f
 sb ply-sb blkly, gt tex, arg cmt, sh incl,
 non-calc; mod bl-wh fast sting cut, mod
 mod thk ring cut

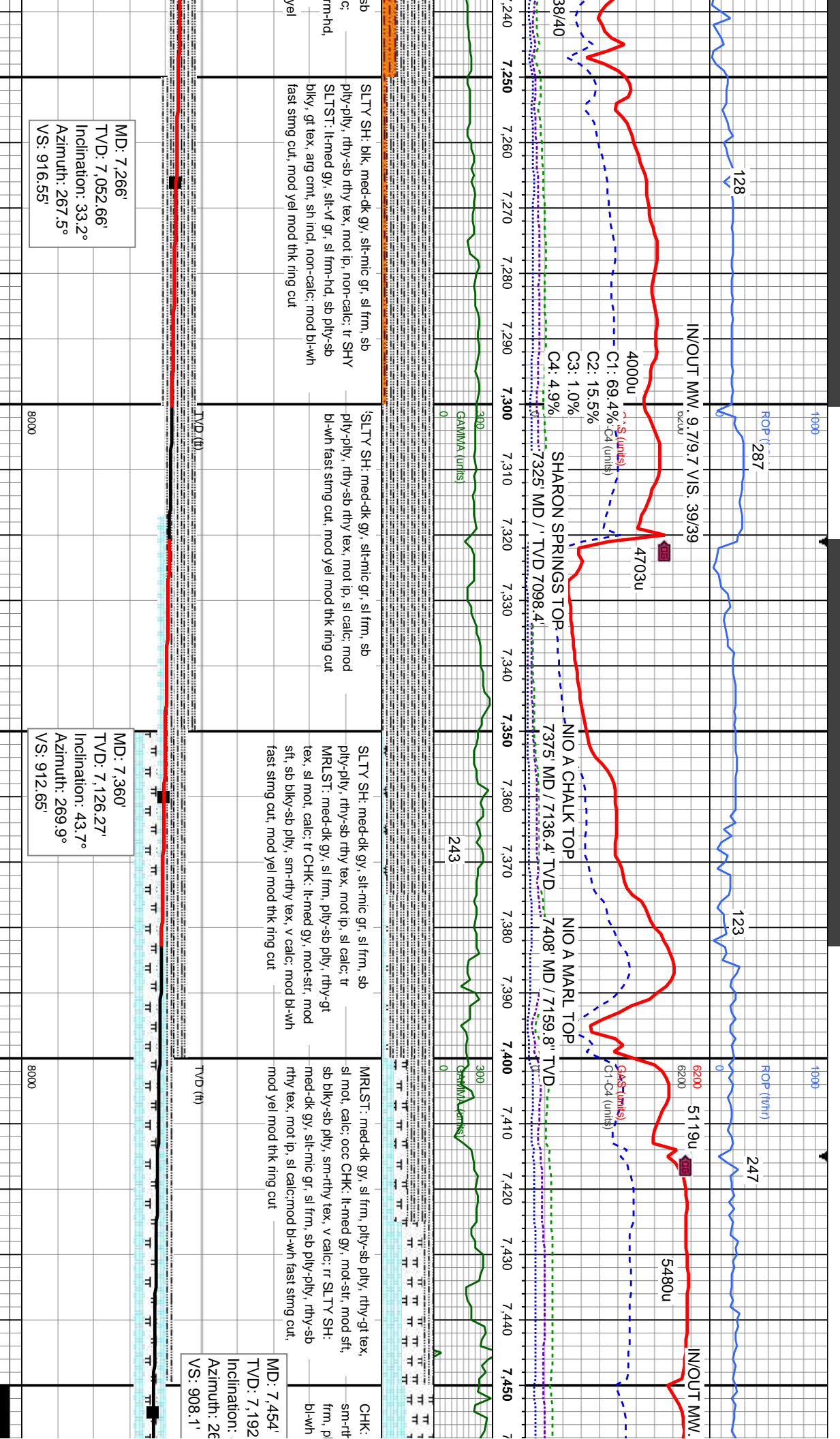
MD: 7,080'
 TVD: 6,894.88'
 Inclination: 31.3°
 Azimuth: 272.4°
 VS: 924.19'

MD: 7,173'
 TVD: 6,974.18'
 Inclination: 31.7°
 Azimuth: 269°
 VS: 919.37'

8000

8000





SLTY SH: blk, med-dk gy, silt-mic gr, sl frm, sb
 pily-pily, rthy-sb rthy tex, mot ip, non-calc; tr SHY
 SLTST: lt-med gy, silt-vf gr, sl frm-hd, sb pily-sb
 blk, gt tex, arg cmt, sh incl, non-calc; mod bl-wh
 fast string cut, mod yel mod thk ring cut

SLTY SH: med-dk gy, silt-mic gr, sl frm, sb
 pily-pily, rthy-sb rthy tex, mot ip, sl calc; mod
 bl-wh fast string cut, mod yel mod thk ring cut

SLTY SH: med-dk gy, silt-mic gr, sl frm, sb
 pily-pily, rthy-sb rthy tex, mot ip, sl calc; tr
 MRLST: med-dk gy, sl frm, pily-sb pily, rthy-gt
 tex, sl mot, calc; tr CHK: lt-med gy, mot-str, mod
 sft, sb blk, sb pily, sm-rthy tex, v calc; mod bl-wh
 fast string cut, mod yel mod thk ring cut

MRLST: med-dk gy, sl frm, pily-sb pily, rthy-gt tex,
 sl mot, calc; occ CHK: lt-med gy, mot-str, mod sft,
 sb blk, sb pily, sm-rthy tex, v calc; tr SLTY SH:
 med-dk gy, silt-mic gr, sl frm, sb pily-pily, rthy-sb
 rthy tex, mot ip, sl calc; mod bl-wh fast string cut,
 mod yel mod thk ring cut

CHK:
 sm-rtf
 frm, pily
 bl-wh

MD: 7,454'
 TVD: 7,192'
 Inclination:
 Azimuth: 267.5°
 VS: 908.1'

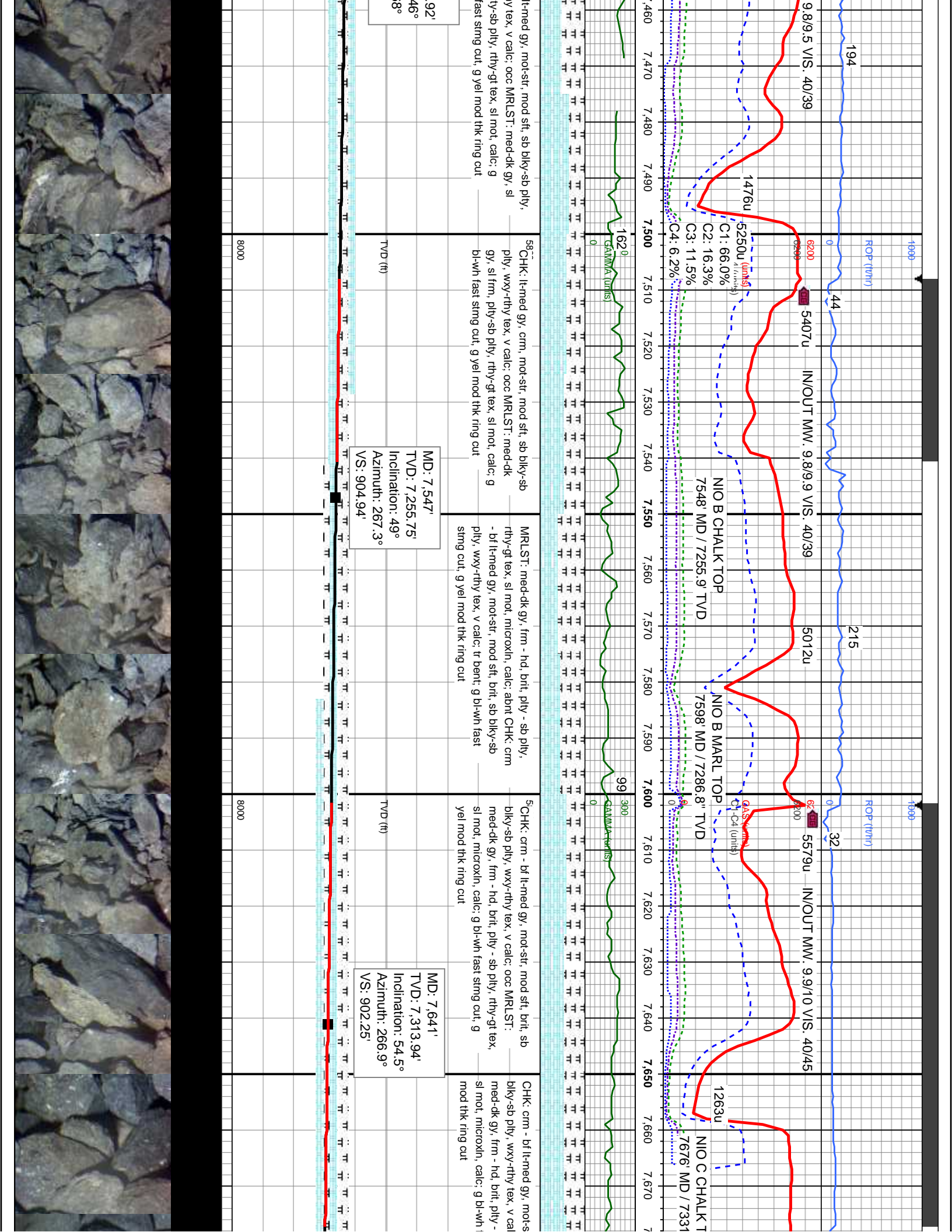
MD: 7,266'
 TVD: 7,052.66'
 Inclination: 33.2°
 Azimuth: 267.5°
 VS: 916.55'

MD: 7,360'
 TVD: 7,126.27'
 Inclination: 43.7°
 Azimuth: 269.9°
 VS: 912.65'

8000

8000





1900

1900

FOP (ft/m)

FOP (ft/m)

194

215

1263u

9.8/9.5 VIS. 40/39

IN/OUT MW. 9.8/9.9 VIS. 40/39

IN/OUT MW. 9.9/10 VIS. 40/45

NIO C CHALK T

6200

6200

1263u

5407u

5012u

5579u

NIO B CHALK TOP
7548' MD / 7255.9' TVD

NIO B MARL TOP
7598' MD / 7286.8" TVD

NIO C CHALK T
7676' MD / 7331

5250u

5250u

1476u

1476u

1620

1620

99

99

C1: 66.0%

C2: 16.3%

C3: 11.5%

C4: 6.2%

C4: 6.2%

C4: 6.2%

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

92'
46°
8°

58' CHK: lt-med gy, mod-str, mod sft, sb blk-y-sb ply, wxy-rthy tex, v calc; occ MRLST: med-dk gy, sl frm, ply-sb ply, rthy-gt tex, sl mot, calc; g bl-wh fast string cut, g yel mod thk ring cut

MRLST: med-dk gy, frm - hd, brit, ply - sb ply, rthy-gt tex, sl mot, microxin, calc; abnt CHK: crm - bf lt-med gy, mod-str, mod sft, brit, sb blk-y-sb ply, wxy-rthy tex, v calc; tr bent; g bl-wh fast string cut; g yel mod thk ring cut

5' CHK: crm - bf lt-med gy, mod-str, mod sft, brit, sb blk-y-sb ply, wxy-rthy tex, v calc; occ MRLST: med-dk gy, frm - hd, brit, ply - sb ply, rthy-gt tex, sl mot, microxin, calc; g bl-wh fast string cut, g yel mod thk ring cut

CHK: crm - bf lt-med gy, mod-str, mod sft, brit, sb blk-y-sb ply, wxy-rthy tex, v calc; occ MRLST: med-dk gy, frm - hd, brit, ply - sb ply, rthy-gt tex, sl mot, microxin, calc; g bl-wh fast string cut, g yel mod thk ring cut

TVD (ft)

TVD (ft)

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

8000

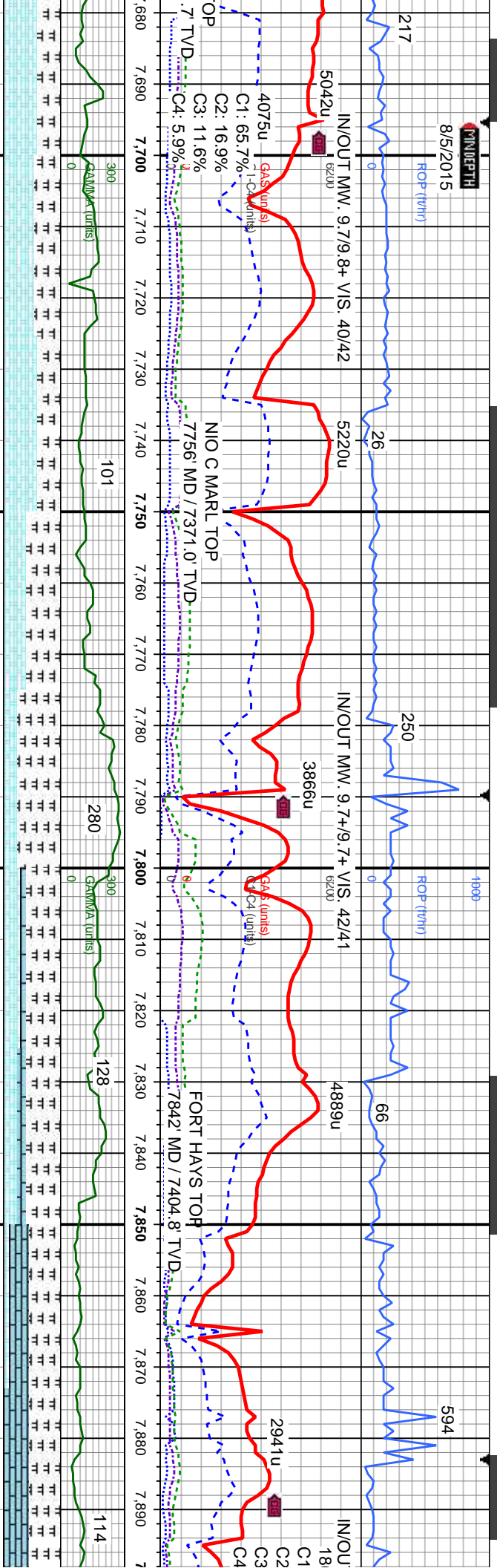
8000

MD: 7.547'
TVD: 7.255.75'
Inclination: 49°
Azimuth: 267.3°
VS: 904.94'

MD: 7.641'
TVD: 7.313.94'
Inclination: 54.5°
Azimuth: 266.9°
VS: 902.25'



MINIDEPTH
8/5/2015



58CHK: crm - bf lt-med gy, mot-str, mod sft, brit, sb blkly-sb pily, wxy-rthy tex, v calc; occ MRLST: med-dk gy, frm - hd, brit, pily - sb pily, rthy-gt tex, sl mot, microxin, calc; g bl-wh fast string cut, g yel mod thk ring cut

MD: 7.735'
TVD: 7.363.06'
Inclination: 62.5°
Azimuth: 266.9°
VS: 899.59'

58CHK: crm - bf lt-med gy, mot-str, mod sft, brit, sb blkly-sb pily, wxy-rthy tex, v calc; occ MRLST: med-dk gy, frm - hd, brit, pily - sb pily, rthy-gt tex, sl mot, microxin, calc; g bl-wh fast string cut, g yel mod thk ring cut

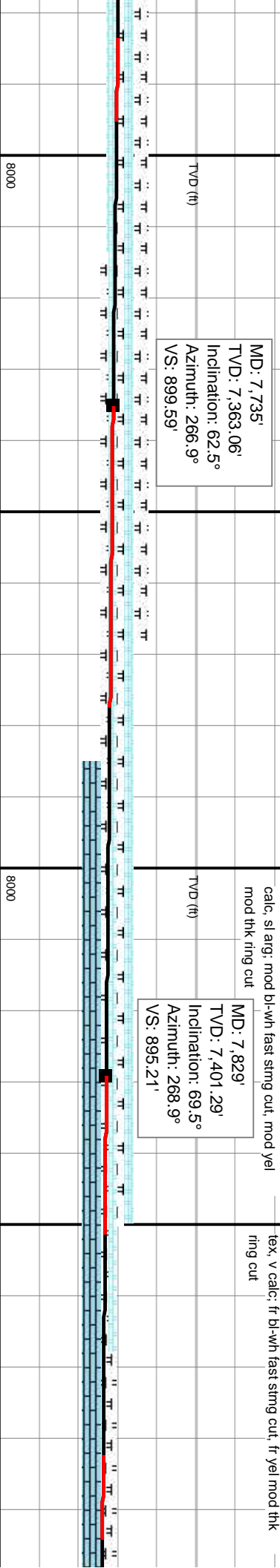
MD: 7.735'
TVD: 7.363.06'
Inclination: 62.5°
Azimuth: 266.9°
VS: 899.59'

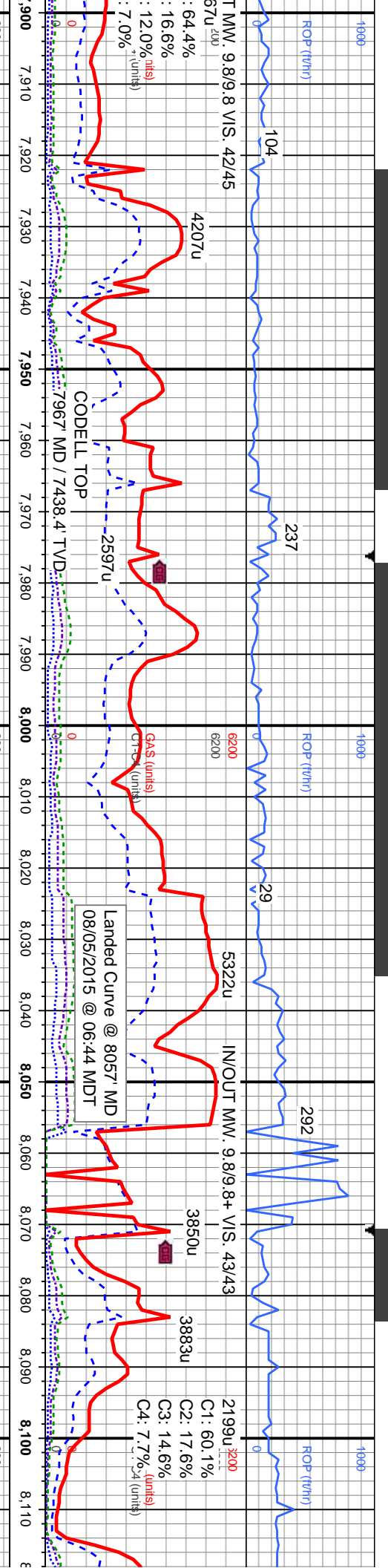
MRLST: med-dk gy, frm - hd, brit, pily - sb pily, rthy-gt tex, sl mot, microxin, calc; occ CHK: crm - bf lt-med gy, mot-str, mod sft, brit, sb blkly-sb pily, wxy-rthy tex, v calc; g bl-wh fast string cut, g yel mod thk ring cut

58CHK: crm - bf lt-med gy, mot-str, mod sft, brit, sb blkly-sb pily, wxy-rthy tex, v calc; tr LMST: oflwh - crm, bf, lt gy ip, blkly-sb blkly, wxy tex, mic xin, frm-hd, v calc, sl arg; mod bl-wh fast string cut, mod yel mod thk ring cut

MD: 7.829'
TVD: 7.401.29'
Inclination: 69.5°
Azimuth: 268.9°
VS: 895.21'

MRLST: med-dk gy, frm - hd, brit, pily - sb pily, rthy-gt tex, sl mot, microxin, calc; occ LMST: oflwh - crm, bf, lt gy ip, blkly-sb blkly, wxy tex, mic xin, frm-hd, v calc, sl arg; tr CHK: crm - bf lt-med gy, mot-str, mod sft, brit, sb blkly-sb pily, wxy-rthy tex, v calc; fr bl-wh fast string cut, fr yel mod thk ring cut





5L MST: offwhit - crm, bf, lt gy ip, blk-y-sb blk-y, wxy tex, mic xln, frm-hd, v calc, sl arg; tr MRLST: med - dk gy, frm - hd, brt, sb ply - sb blk-y, rthy-gr tex, sl silty mtx, v calc, tr pyr; tr bl-wh fast sting cut, tr yel thk ring cut

LMST: wh-ll gy-crm, gy ip, blk-y-sb blk-y, rthy-sm tex, mic xln, frm-hd, v calc, sl arg; SHY SS: lt gy-med gy, occ s&p/wh/clr, f-med gr, occ f-gr, sl mot ip, mod frm, mod strd, sl calc mtx, tr SLTY SH: lt-med gy, sil-mic gr, sft, sb ply-ply, rthy-sb rthy tex, mot ip, sl-calc; LMST: wh-ll gy-crm, gy ip, blk-y-sb blk-y, rthy-sm tex, mic xln, frm-hd, v calc, sl arg; mod bl-wh fast sting cut, fr yel thk ring cut

SHY SS: lt gy-med gy, occ s&p/wh/clr, f-med gr, occ f-gr, sl mot ip, mod frm, mod strd, sl calc mtx; SLTY SH: lt-med gy, sil-mic gr, sft, sb ply-ply, rthy-sb rthy tex, mot ip, sl-calc; LMST: wh-ll gy-crm, gy ip, blk-y-sb blk-y, rthy-sm tex, mic xln, frm-hd, v calc, sl arg; mod bl-wh fast sting cut, mod yel thk ring cut

SHY SS: lt gy-med gy, occ s&p/wh/clr, f-med gr, occ f-gr, sl mot ip, mod frm, mod strd, sl calc mtx; SLTY SH: lt-med gy, sil-mic gr, sft, sb ply-ply, rthy-sb rthy tex, mot ip, sl-calc; tr LMST: g bl-wh fast sting cut, g yel thk ring cut

SHY SS: lt gy-med occ f-gr, sl mot ip, r rthy-sb rthy tex, mo fast sting cut, g yel

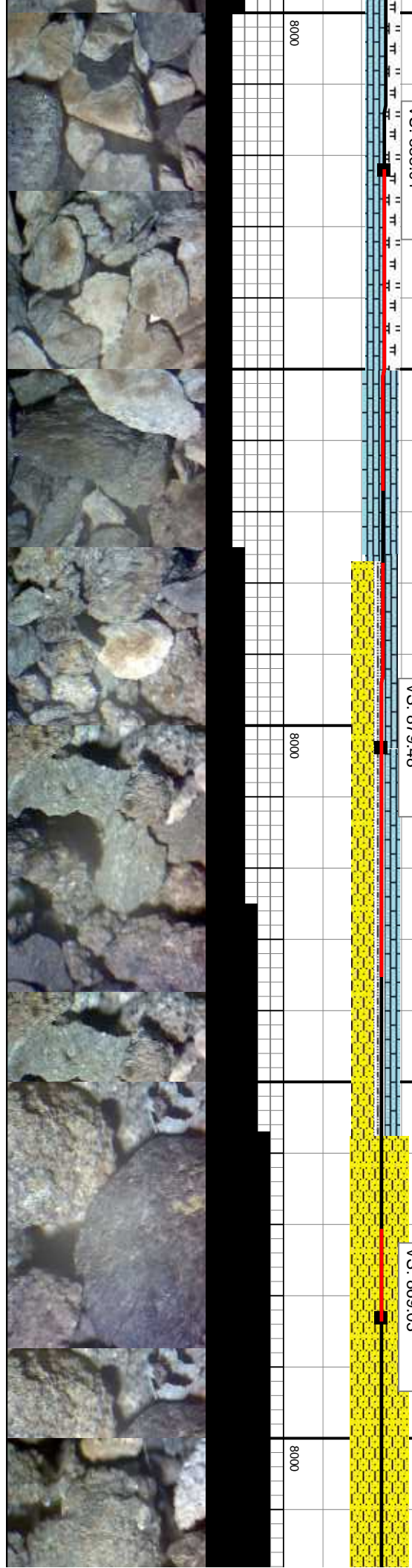
MD: 7,922'
TVD: 7,430.65'
Inclination: 73.7°
Azimuth: 270.4°
VS: 888.01'

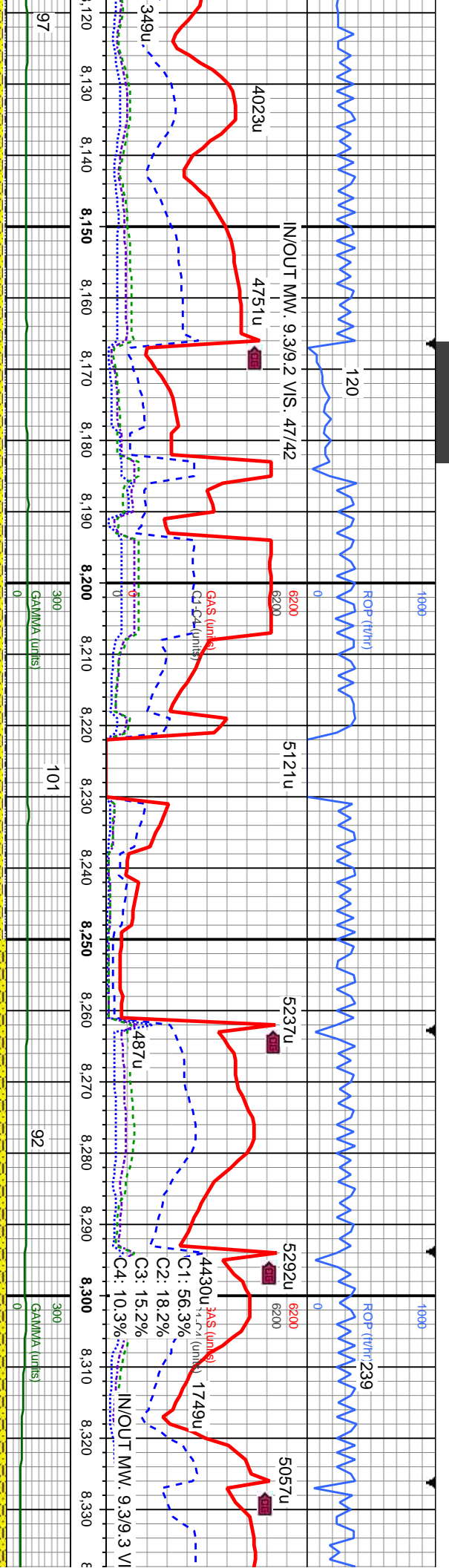
MD: 8,003'
TVD: 7,445.68'
Inclination: 84.9°
Azimuth: 271.9°
VS: 879.48'

MD: 8,083'
TVD: 7,448.66'
Inclination: 90.84°
Azimuth: 273.13°
VS: 869.03'

TVD (ft)

TVD (ft)





occ s&p/vh/cr, f med gr,
mod-fm, mod strd, sl calc mx;
/y, silt-mic gr, sft, sb pily-pily,
t ip, sl-calc; tr LMST; g bl-wh
thk ring cut

SHY SS: lt gy-med gy, occ s&p, vf-f gr, occ f-gr, sl
mot ip, mod-fm, mod strd, sl calc mx; tr SLTY SH:
lt-med gy, silt-mic gr, sft, sb pily-pily, rthy-sb rthy tex,
mot ip, sl-calc; g bl-wh fast string cut, g yel thk ring
cut

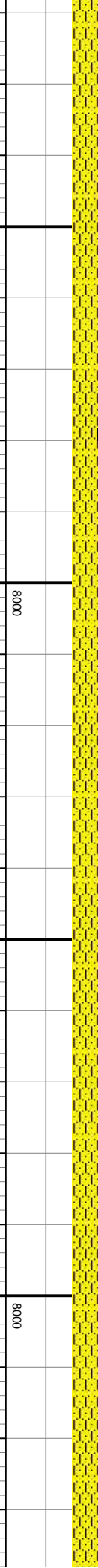
SHY SS: lt gy-med gy, occ s&p, vf-f gr, occ f-gr, sl
mot ip, mod-fm, mod strd, sl calc mx; tr SLTY
SH: lt-med gy, silt-mic gr, sft, sb pily-pily, rthy-sb
rthy tex, mot ip, sl-calc; g bl-wh fast string cut, g
yel thk ring cut

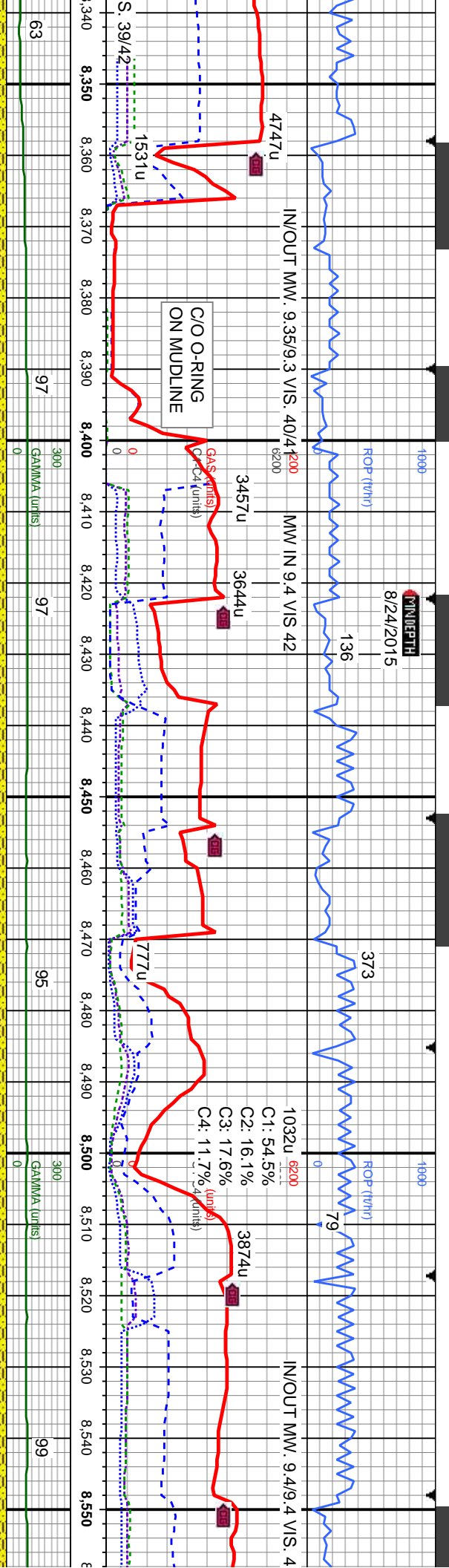
SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl
mot ip, mod-fm, mod strd, sl calc mx; g bl-wh
fast string cut, g yel thk ring cut

SHY SS: lt gy-med gy, occ s&p, vf gr, c
sl mot ip, mod-fm, mod strd, sl calc mx
bl-wh fast string cut, g yel thk ring cut

MD: 8,179'
TVD: 7,445.34'
Inclination: 93.12°
Azimuth: 273.25°
VS: 855.36'

MD: 8,274'
TVD: 7,439.95'
Inclination: 93.39°
Azimuth: 271.9°
VS: 842.86'





occ f-gr, SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl mot ip, mod-firm, mod strd, sl calc mix; g bl-wh fast string cut; g yel thk ring cut

MD: 8,370'
 TVD: 7,437.95'
 Inclination: 88.99°
 Azimuth: 269.38°
 VS: 833.43'

SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl mot ip, mod-firm, mod strd, sl calc mix; g bl-wh fast string cut; g yel thk ring cut

TVD (ft)

SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl mot ip, mod-firm, mod strd, sl calc mix; g bl-wh fast string cut; g yel thk ring cut

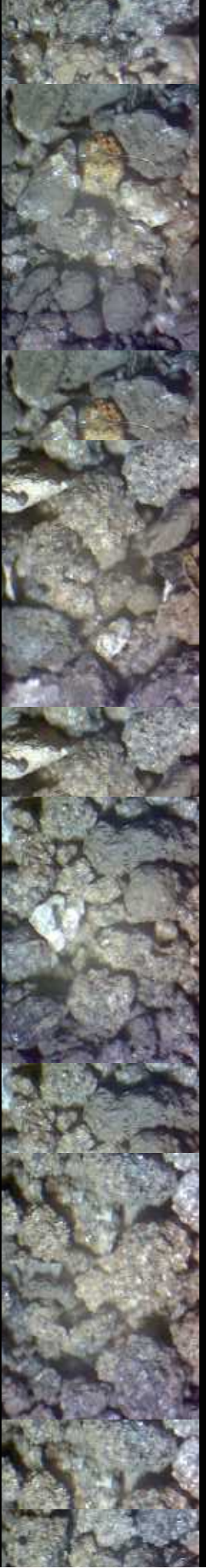
MD: 8,465'
 TVD: 7,436.33'
 Inclination: 92.24°
 Azimuth: 7,436.33°
 VS: 829.96'

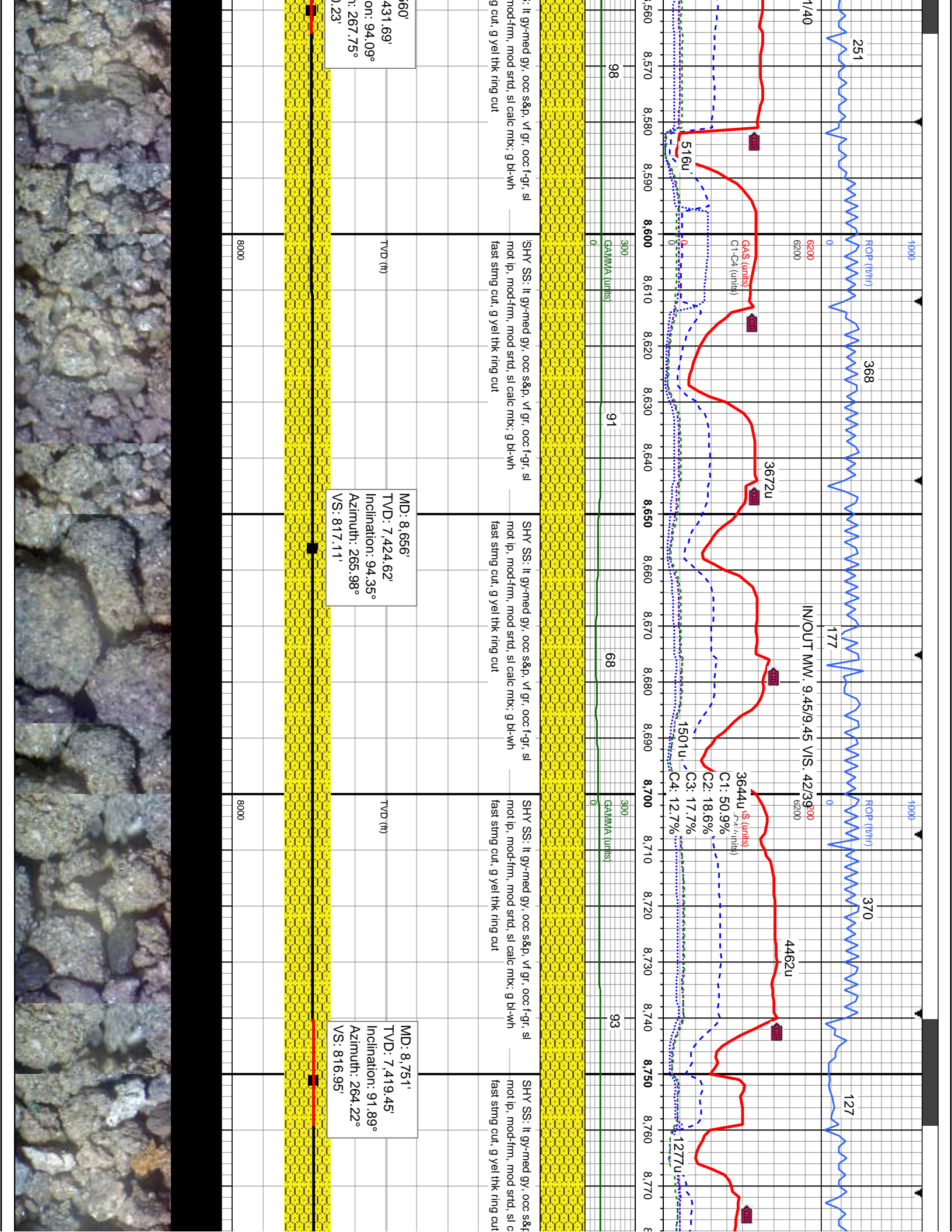
SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl mot ip, mod-firm, mod strd, sl calc mix; g bl-wh fast string cut; g yel thk ring cut

TVD (ft)

SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl mot ip, mod-firm, mod strd, sl calc mix; g bl-wh fast string cut; g yel thk ring cut

MD: 8,550'
 TVD: 7,436.33'
 Inclination: 92.24°
 Azimuth: 7,436.33°
 VS: 829.96'





ROP (ft/hr) 1900 1700 1500 1300 1100 900 700 500 300 100 0

251 368 370 127

IN/OUT MW: 9.45/9.45 VIS: 4.23/3.00

6200 6200 6200

8560 8570 8580 8590 8600 8610 8620 8630 8640 8650 8660 8670 8680 8690 8700 8710 8720 8730 8740 8750 8760 8770

98 91 68 93

300 300 300 300

GAMMA (units)

SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl
 -mot lp, mod-firm, mod strd, sl calc mtx: g bl-wh
 fast sting cut, g yel thk ring cut

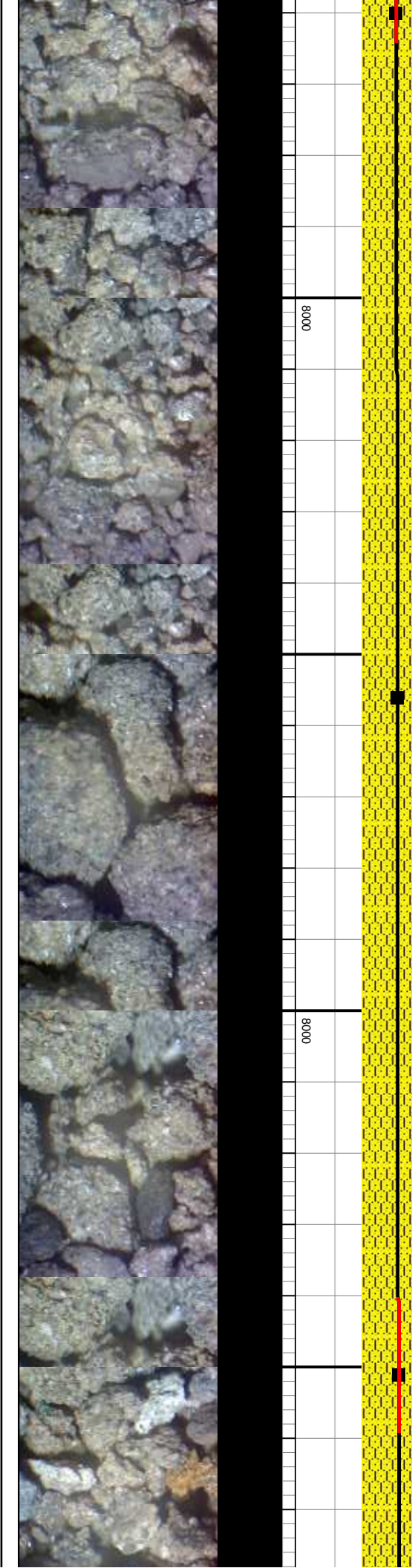
SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl
 -mot lp, mod-firm, mod strd, sl calc mtx: g bl-wh
 fast sting cut, g yel thk ring cut

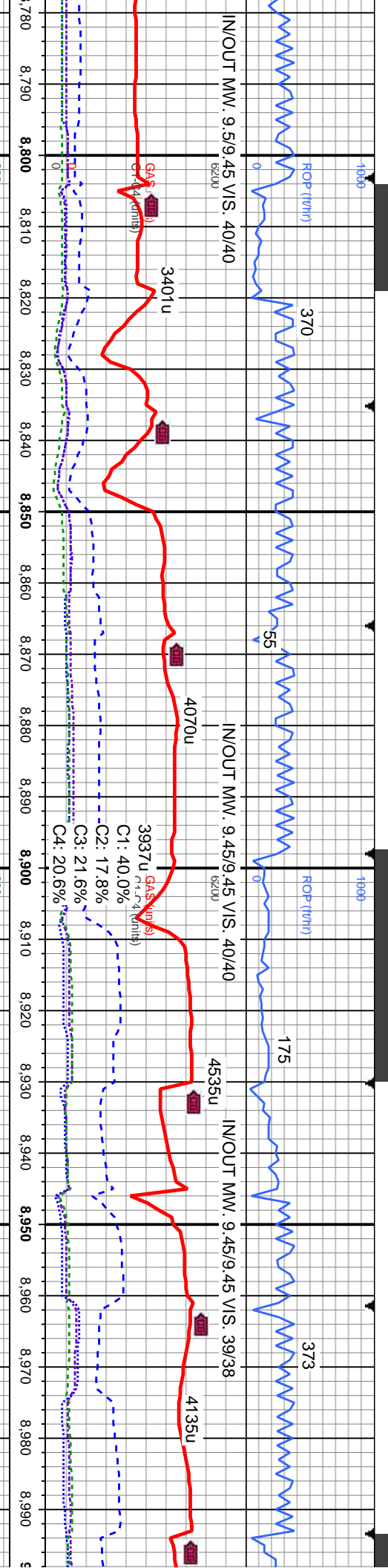
SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl
 -mot lp, mod-firm, mod strd, sl calc mtx: g bl-wh
 fast sting cut, g yel thk ring cut

MD: 8.60'
 TVD: 7.431.69'
 Inclination: 94.09°
 Azimuth: 267.75°
 VS: 817.23'

MD: 8.656'
 TVD: 7.424.62'
 Inclination: 94.35°
 Azimuth: 265.98°
 VS: 817.11'

MD: 8.751'
 TVD: 7.419.45'
 Inclination: 91.89°
 Azimuth: 264.22°
 VS: 816.95'





SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl
 mot ip, mod-fm, mod strd, sl calc mx; g bl-wh
 fast string cut, g yel thk ring cut

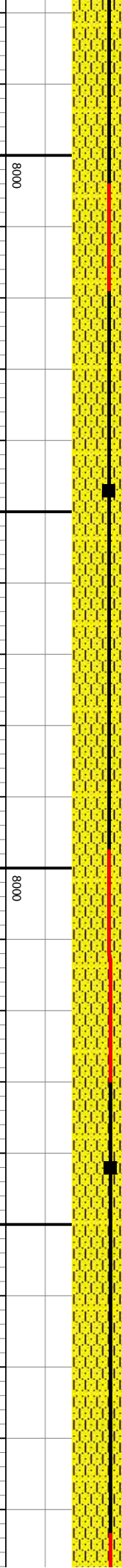
SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl
 mot ip, mod-fm, mod strd, sl calc mx; g bl-wh
 fast string cut, g yel thk ring cut

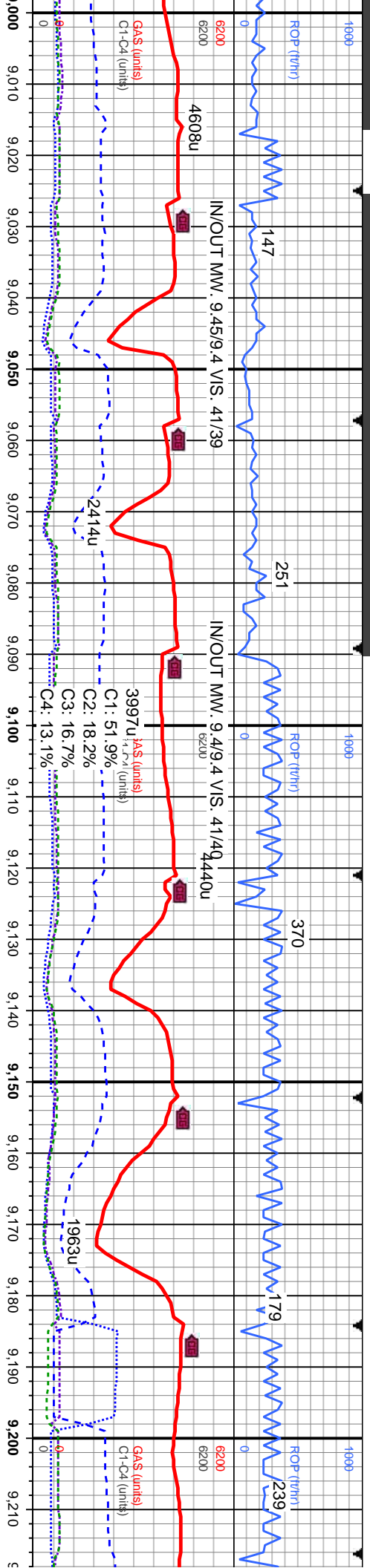
SHY SS: lt gy-med gy, occ s&p, vf gr, occ f-gr, sl
 mot ip, mod-fm, mod strd, sl calc mx; g bl-wh
 fast string cut, g yel thk ring cut

SHY SS: wh-med gy, occ s&p, occ cl, vf gr, occ
 f-gr, sl mot ip, mod-fm, mod strd, sl calc mx; g
 bl-wh fast string cut, g yel thk ring cut

MD: 8,847'
 TVD: 7,415.4'
 Inclination: 92.95°
 Azimuth: 264.15°
 VS: 818.31'

MD: 8,942'
 TVD: 7,410.44'
 Inclination: 93.03°
 Azimuth: 265.47°
 VS: 818.63'





SHY SS: wh-med gy, occ s&p, occ clr, vf gr, occ
f-gr, sl mot ip, mod-fm, mod strd, sl calc mix; g
bl-wh fast stmg cut, g yel thk ring cut

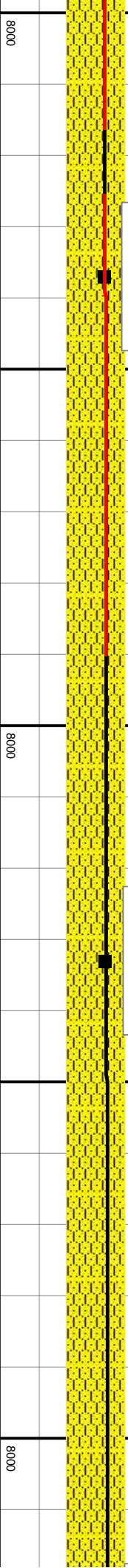
SHY SS: wh-med gy, occ s&p, occ clr, vf gr, occ
f-gr, sl mot ip, mod-fm, mod strd, sl calc mix; g
bl-wh fast stmg cut, g yel thk ring cut

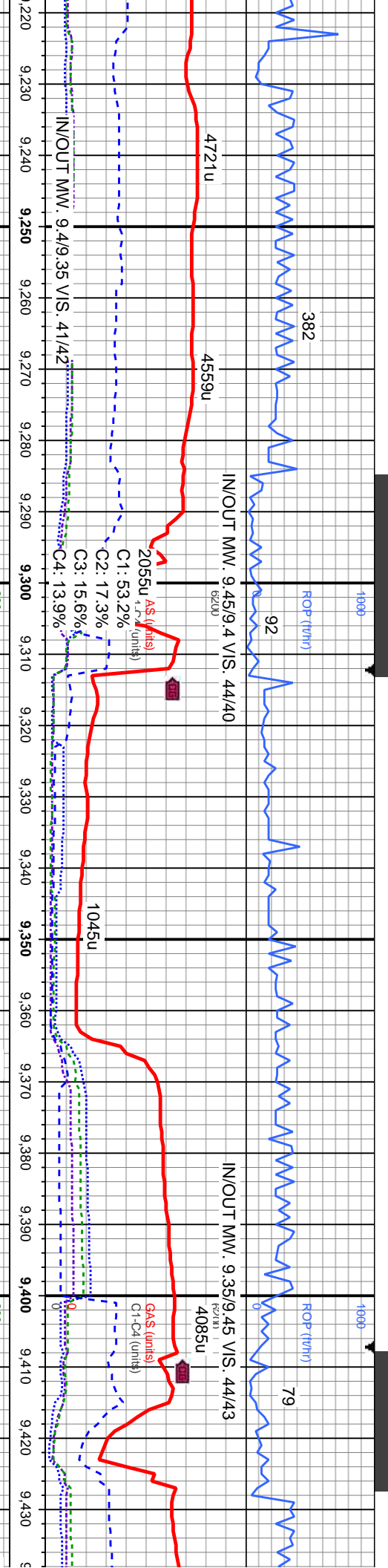
SHY SS: wh-med gy, occ s&p, occ clr, vf gr, occ
f-gr, sl mot ip, mod-fm, mod strd, sl calc mix; g
bl-wh fast stmg cut, g yel thk ring cut

SHY SS: wh-med gy, occ s&p, occ clr, vf gr, occ
f-gr, sl mot ip, mod-fm, mod strd, sl calc mix; g
bl-wh fast stmg cut, g yel thk ring cut

MD: 9,037'
TVD: 7,404.18'
Inclination: 94.53°
Azimuth: 267.96°
VS: 815.79'

MD: 9,133'
TVD: 7,397.12'
Inclination: 93.91°
Azimuth: 271.67°
VS: 807.76'





y, occ s&p, occ clr, vf gr, occ
 mod strd, sl calc mtx: g
 g yel thk ring cut

SHY SS: wh-med gy, occ s&p, occ clr, vf gr, occ
 f-gr, sl mot ip, mod frm, mod strd, sl calc mtx: g
 bl-wh fast string cut, g yel thk ring cut

LMST: ll gy-crm, occ wh, sb pily-sb blk, wxy tex,
 mic xln, frm-hrd, v calc tr sh; SHY SS: wh-med gy,
 occ s&p, occ clr, vf gr, mod frm, w strd, sl calc
 mtx: g bl-wh fast string cut, g yel thk ring cut

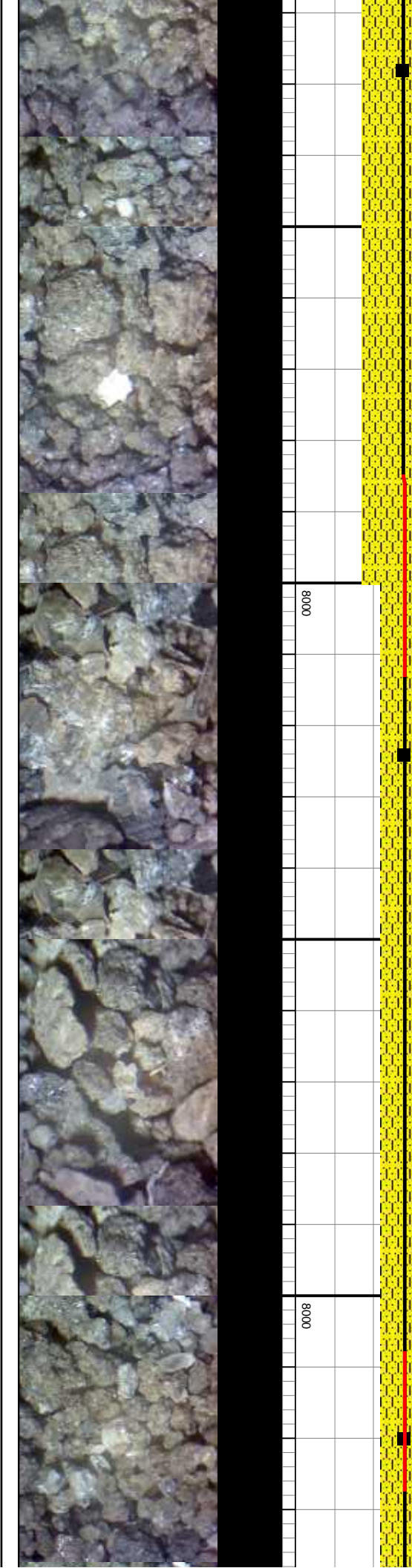
LMST: ll gy-crm, occ wh, sb pily-sb blk, wxy tex,
 mic xln, frm-hrd, v calc tr sh; SHY SS: wh-med gy,
 occ s&p, occ clr, vf gr, mod frm, w strd, sl calc
 mtx: g bl-wh fast string cut, g yel thk ring cut

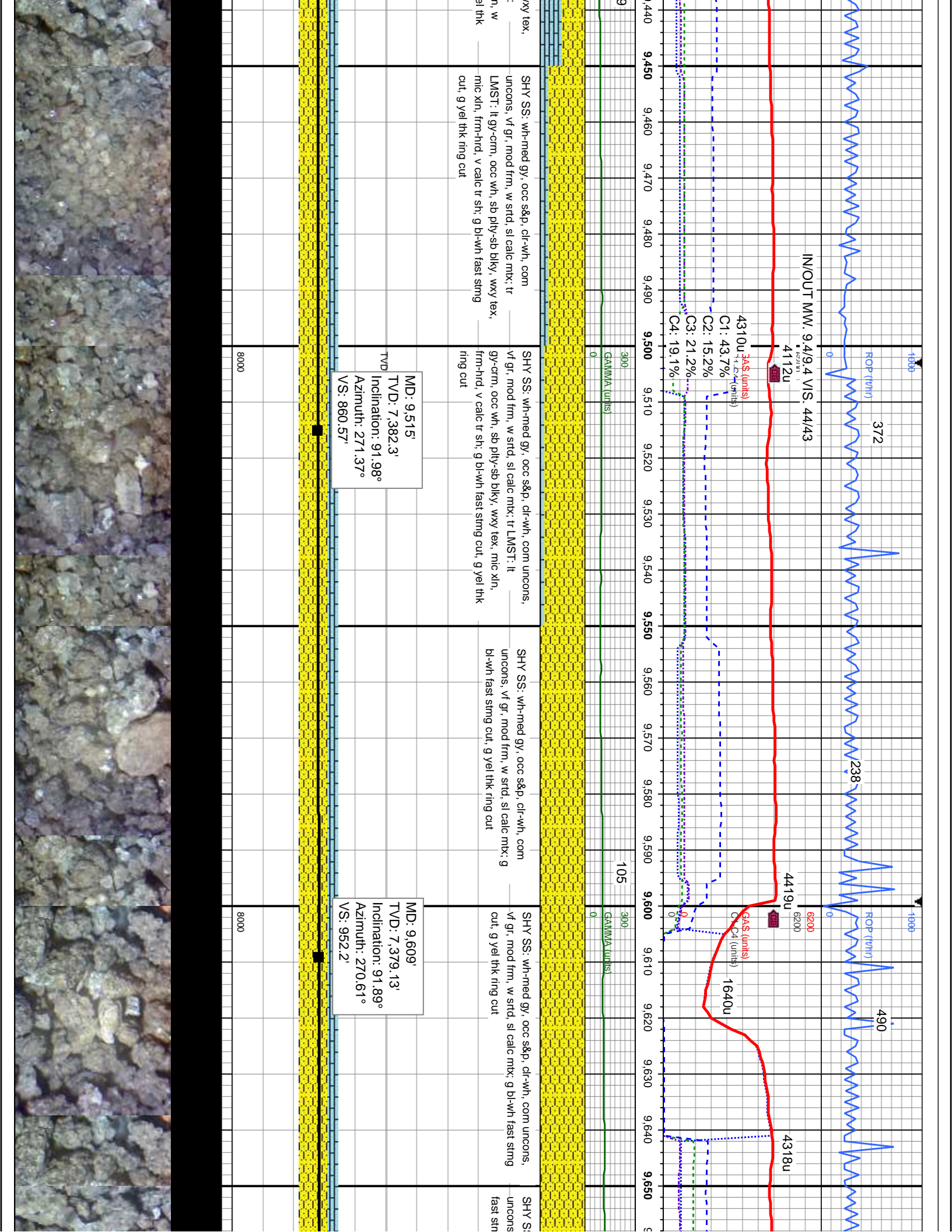
LMST: ll gy-crm, occ wh, sb pily-sb blk, w
 mic xln, frm-hrd, v calc tr sh; about SHY SS
 wh-med gy, occ s&p, occ clr, vf gr, mod frm
 strd, sl calc mtx: g bl-wh fast string cut, g yel
 ring cut

MD: 9,228'
 TVD: 7,390.49'
 Inclination: 94.09°
 Azimuth: 270.6°
 VS: 797.63'

MD: 9,324'
 TVD: 7,386.36'
 Inclination: 90.84°
 Azimuth: 273°
 VS: 786.27'

MD: 9,420'
 TVD: 7,384.49'
 Inclination: 90.66°
 Azimuth: 271.1°
 VS: 768.04'





IN/OUT MW 9,4/9,4 VIS 44/43

4310u
372
C1: 43.7%
C2: 15.2%
C3: 21.2%
C4: 19.1%

MD: 9,515'
TVD: 7,382.3'
Inclination: 91.98°
Azimuth: 271.37°
VS: 860.57'

MD: 9,609'
TVD: 7,379.13'
Inclination: 91.89°
Azimuth: 270.61°
VS: 952.2'

SHY SS: wh-med gy, occ s&p, cl-wh, com uncons, v' gr, mod frm, w strd, sl calc mtx; tr LMST: lt uncons, v' gr, mod frm, w strd, sl calc mtx; tr mic xln, frm-hrd, v calc tr sh; g bl-wh fast stmg cut; g yel thk ring cut

SHY SS: wh-med gy, occ s&p, cl-wh, com uncons, v' gr, mod frm, w strd, sl calc mtx; tr LMST: lt gy-crm, occ wh, sb ply-sb blkly, wxy tex, mic xln, frm-hrd, v calc tr sh; g bl-wh fast stmg cut; g yel thk ring cut

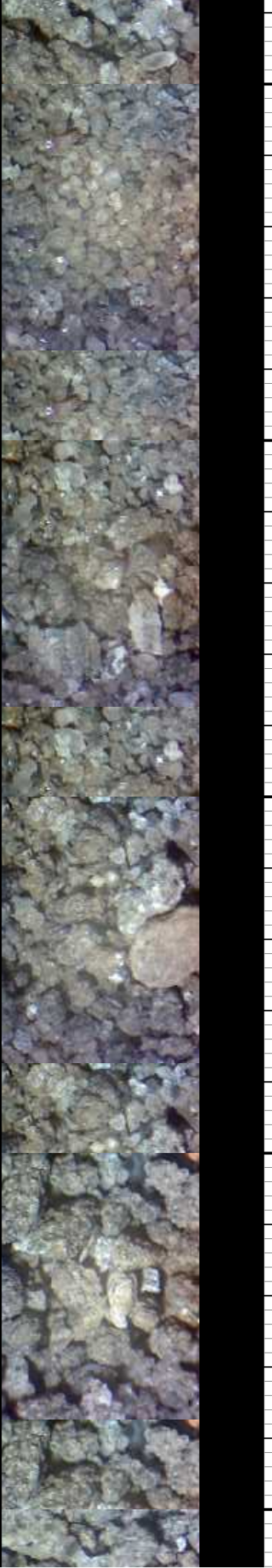
SHY SS: wh-med gy, occ s&p, cl-wh, com uncons, v' gr, mod frm, w strd, sl calc mtx; g bl-wh fast stmg cut; g yel thk ring cut

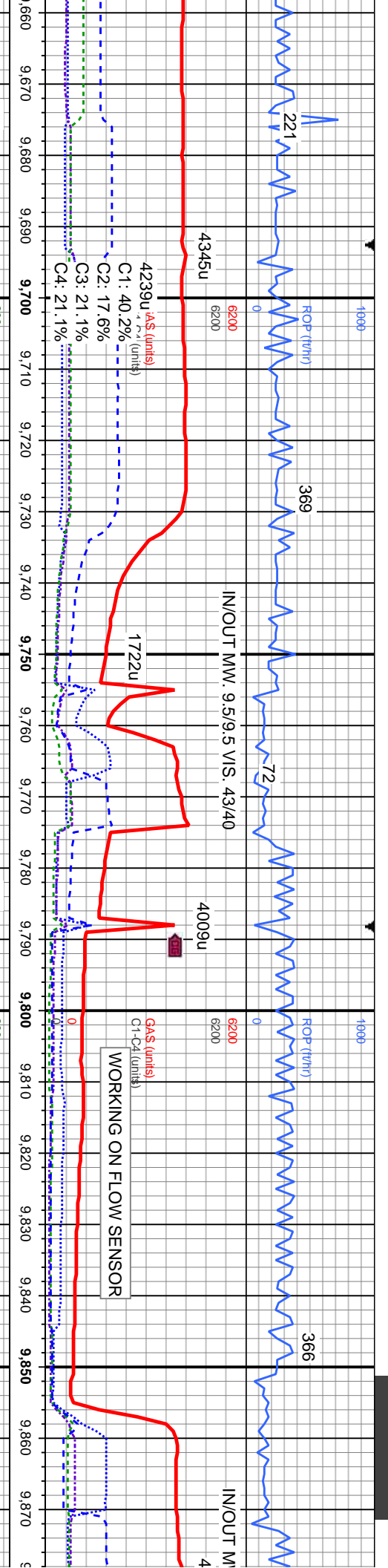
SHY SS: wh-med gy, occ s&p, cl-wh, com uncons, v' gr, mod frm, w strd, sl calc mtx; g bl-wh fast stmg cut; g yel thk ring cut

SHY SS: wh-med gy, occ s&p, cl-wh, com uncons, v' gr, mod frm, w strd, sl calc mtx; g bl-wh fast stmg cut; g yel thk ring cut

8000

8000





3: wh-med gy, occ s&p, cl-wh, com
 v' gr, mod frm, w strd, sl calc mx; g bl-wh
 g cut, g yel thk ring cut

58^{SHY} SS: wh-med gy, occ s&p, cl-wh, com
 uncons, v' gr, mod frm, w strd, sl calc mx; g
 bl-wh fast string cut, g yel thk ring cut

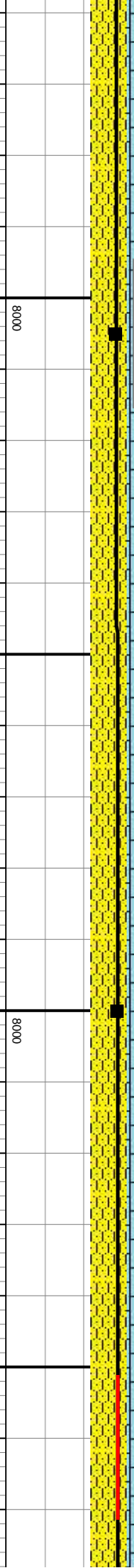
58^{SHY} SS: wh-med gy, occ s&p, cl-wh, com uncons,
 v' gr, mod frm, w strd, sl calc mx; g bl-wh fast string
 cut, g yel thk ring cut

58^{SHY} SS: wh-med gy, occ s&p, cl-wh, v' gr, mod
 frm, w strd, sl calc mx; g bl-wh fast string cut, g
 yel thk ring cut

SHY SS: wh-med gy, occ s&p
 frm, w strd, sl calc mx; g bl-wh
 thk ring cut

MD: 9,705'
 TVD: 7,374.57'
 Inclination: 93.56°
 Azimuth: 271.33°
 VS: 2,045.73'

MD: 9,800'
 TVD: 7,368.67'
 Inclination: 93.56°
 Azimuth: 272.71°
 VS: 2,137.81'



MINDEPTH 8/25/2015

1900 ROP (ft/hr) 455

1294u

C1: 6.7%
C2: 0.9%
C3: 0%
C4: 92.4%

10,100 10,110 10,120 10,130 10,140 10,150 10,160 10,170 10,180 10,190 10,200 10,210 10,220 10,230 10,240 10,250 10,260 10,270 10,280 10,290 10,300 10,310

1900 ROP (ft/hr) 330

6200 6200

330

INOUT MW, 9.4/9.4 VS, 43/4

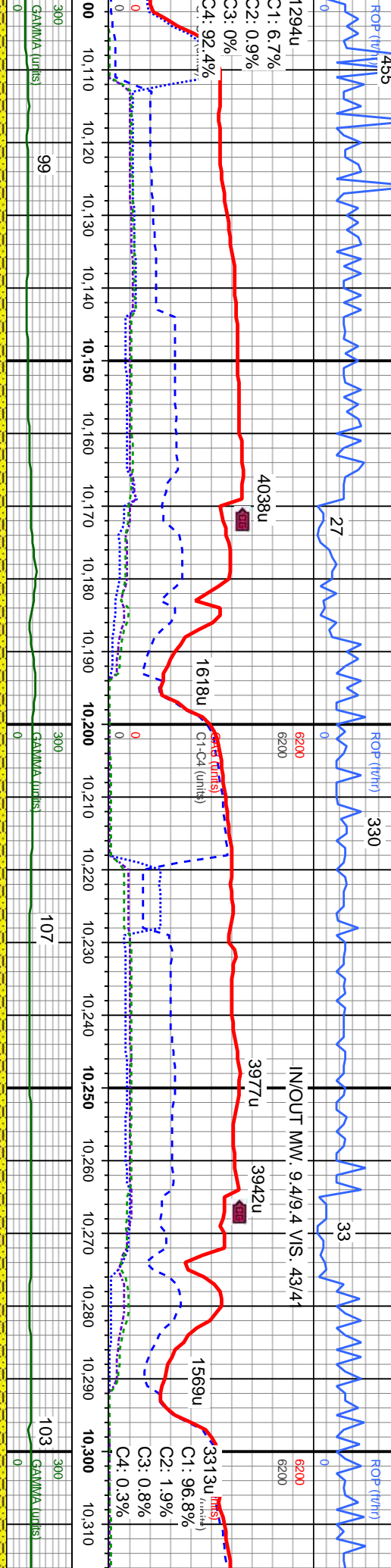
3977u 3942u

33

1569u 3313u

C1: 96.8%
C2: 1.9%
C3: 0.8%
C4: 0.3%

10,300 10,310



SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; g bl-wh fast string cut, g yel thk ring cut

SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; g bl-wh fast string cut, g yel thk ring cut

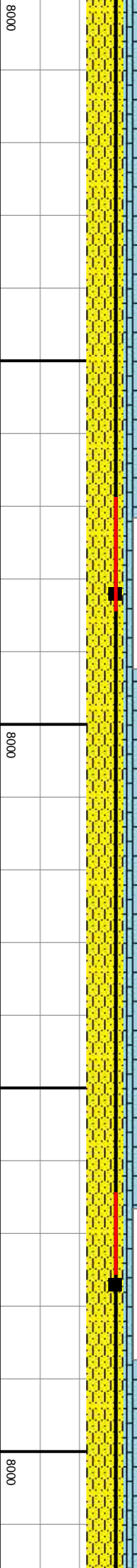
58SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; tr LMST; g bl-wh fast string cut; g yel thk ring cut

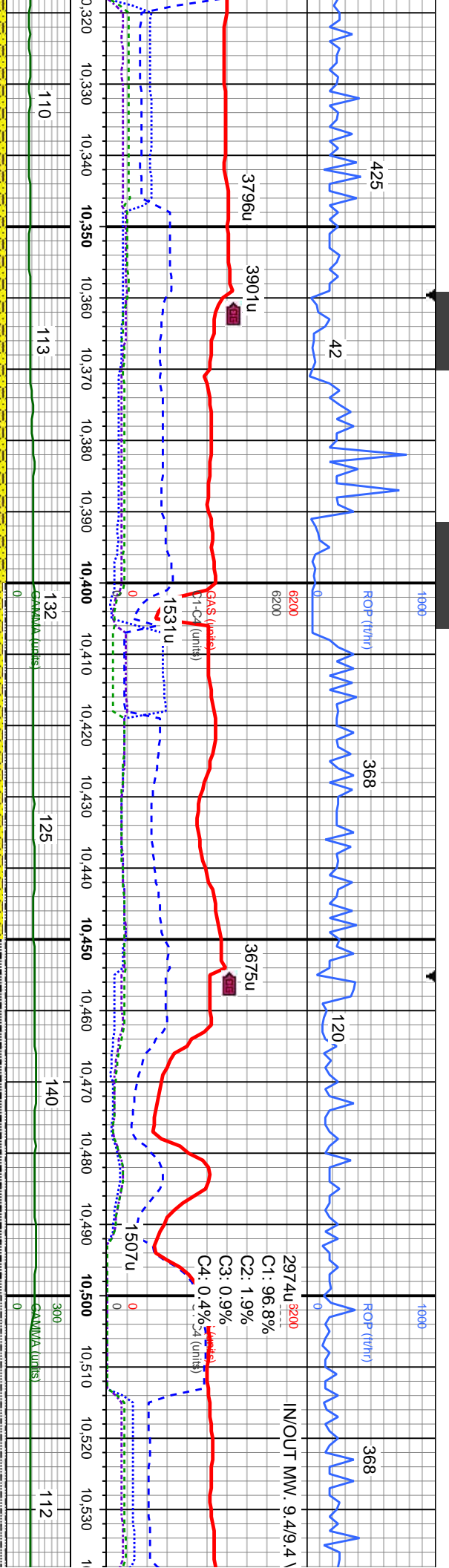
SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; g bl-wh fast string cut; g yel thk ring cut

58SHY SS: wh-me mod frm, w strd, bl-wh fast string cut

MD: 10,182'
TVD: 7,360'
Inclination: 88.55°
Azimuth: 270.12°
VS: 681.67'

MD: 10,277'
TVD: 7,361.09'
Inclination: 90.13°
Azimuth: 269.32°
VS: 673.85'





d gy, occ s&p, cl-w/wh, v/ gr, sl calc mix; tr SLTY SH; g cut, g yel thk ring cut

SHY SS, wh-med gy, occ s&p, cl-w/wh, v/ gr, mod frm, w srtd, sl calc mix; tr LMST; tr SLTY SH; g bl-wh fast string cut, g yel thk ring cut

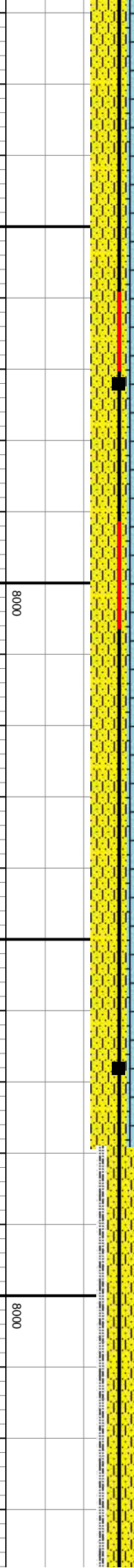
SHY SS, cl-med gy, occ s&p/w/wh, f-v/ gr, abnt uncons, sl mot ip, mod frm-brlt, mod srtd, calc mix, predy dtz, occ lrg dtz grs; tr SLTY SH; lt gy-blk, sft, sb pily-pily, rthy-sb rthy tex, sl calc; g bl-wh mod slow string cut, g mod thk yel ring cut

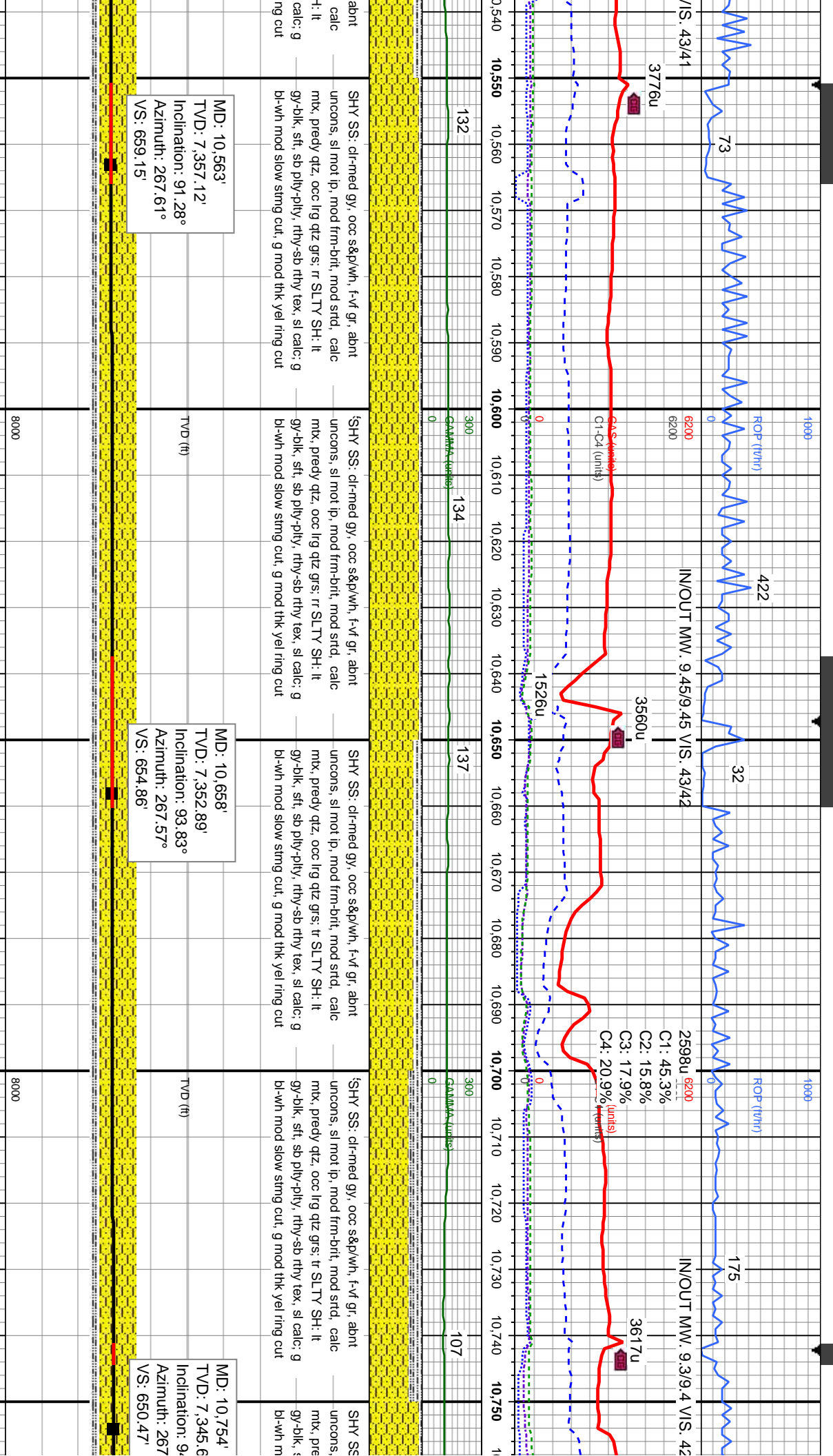
SHY SS, cl-med gy, occ s&p/w/wh, f-v/ gr, abnt uncons, sl mot ip, mod frm-brlt, mod srtd, calc mix, predy dtz, occ lrg dtz grs; tr SLTY SH; lt gy-blk, sft, sb pily-pily, rthy-sb rthy tex, sl calc; g bl-wh mod slow string cut, g mod thk yel ring cut

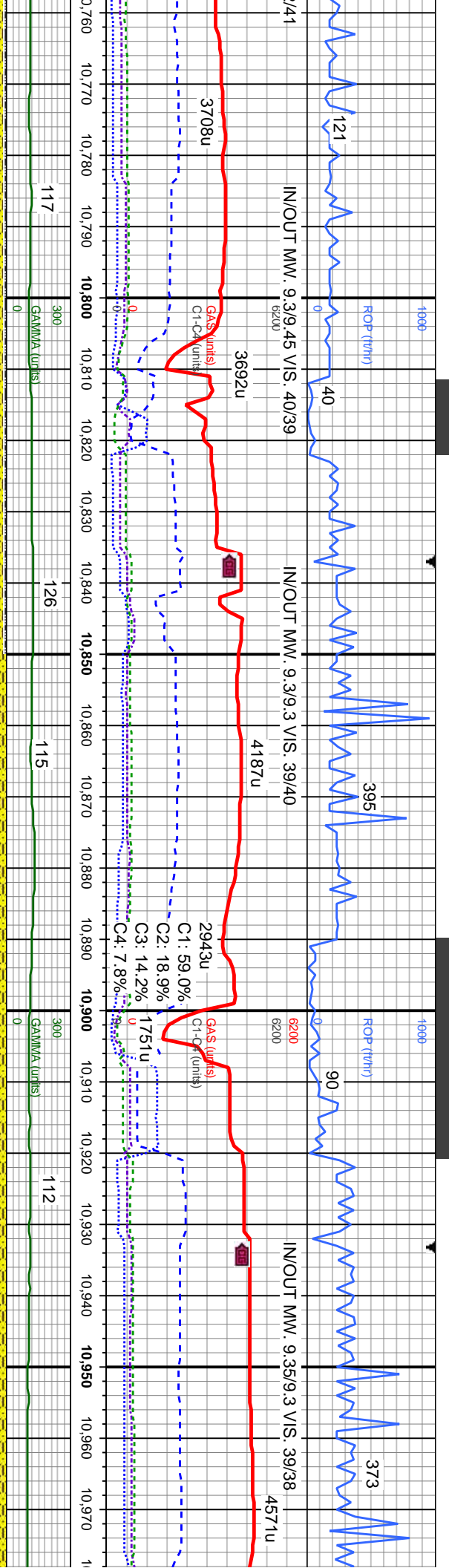
SHY SS, cl-med gy, occ s&p/w/wh, f-v/ gr, abnt uncons, sl mot ip, mod frm-brlt, mod srtd, calc mix, predy dtz, occ lrg dtz grs; tr SLTY SH; lt gy-blk, sft, sb pily-pily, rthy-sb rthy tex, sl calc; g bl-wh mod slow string cut, g mod thk yel ring cut

MD: 10,372'
 TVD: 7,360.29'
 Inclination: 90.84°
 Azimuth: 268.56°
 VS: 667.32'

MD: 10,468'
 TVD: 7,358.88'
 Inclination: 90.84°
 Azimuth: 266.82°
 VS: 662.82'







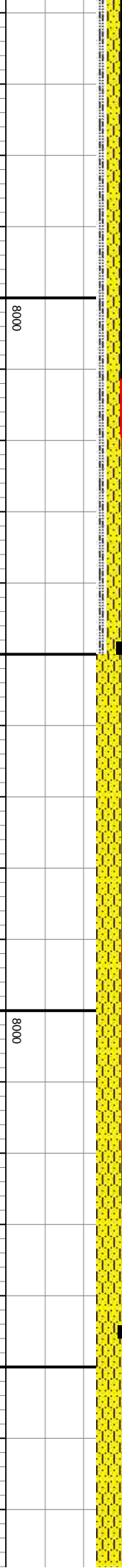
SHY SS: cl-r-med gy, occ s&p/wh, f-vf gr, abnt
 frm, w strd, sl calc mx; tr LMST; tr SLTY SH; g
 bl-wh fast string cut, g yel thk ring cut

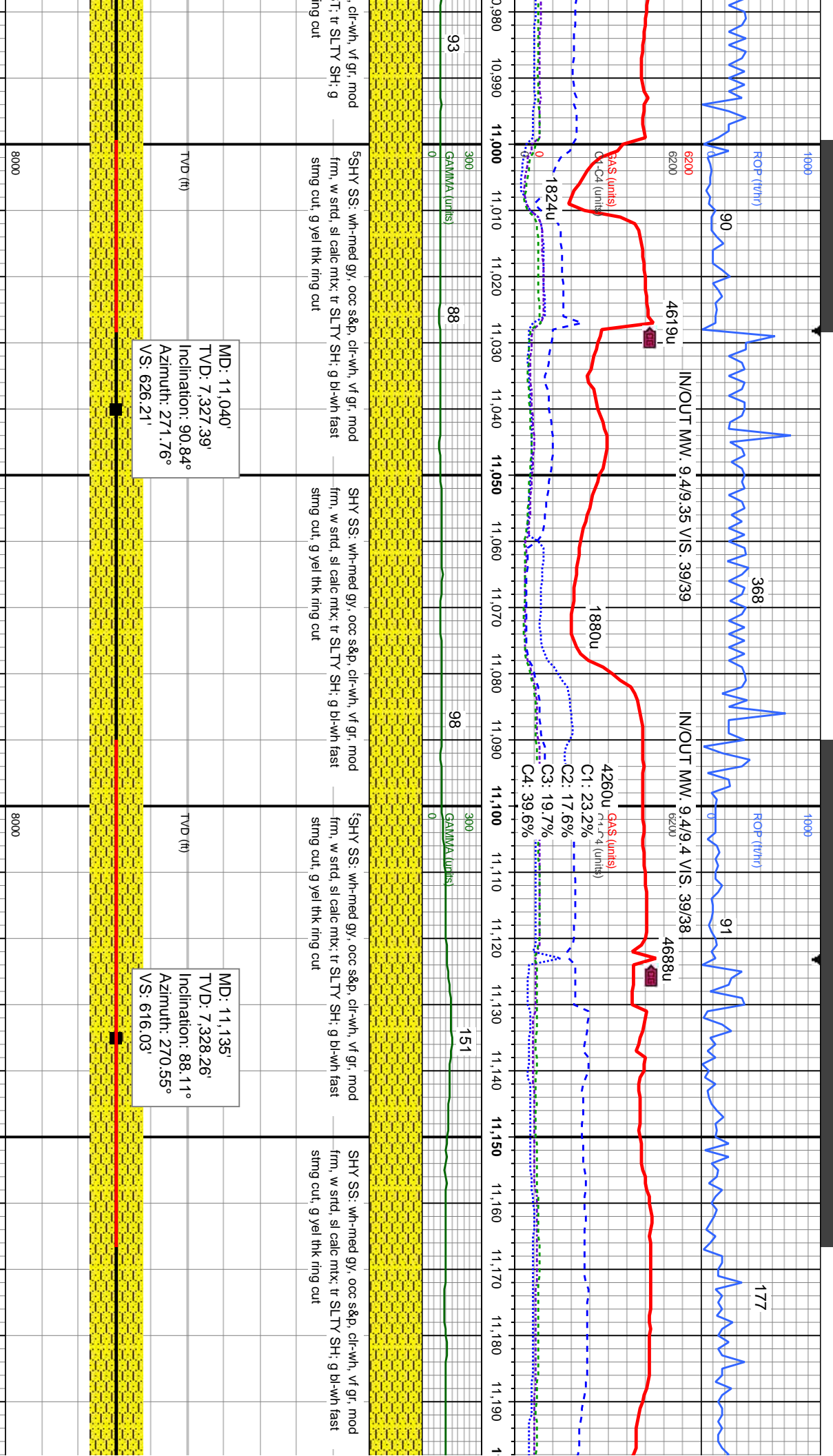
SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod
 frm, w strd, sl calc mx; tr LMST; tr SLTY SH; g
 bl-wh fast string cut, g yel thk ring cut

SHY SS: cl-r-med gy, occ s&p/wh, f-vf gr, abnt
 uncons, sl mot ip, mod frm-brtl, mod strd, calc
 mx; priedy dtz, occ lng dtz grs; rr SLTY SH; lt
 gy-blk, sft, sb plly-plly, rthy-sb rthy tex, sl calc; g
 bl-wh mod slow string cut, g mod thk yel ring cut

MD: 10,849'
 TVD: 7,337.51'
 Inclination: 94.88°
 Azimuth: 268.95°
 VS: 644.99'

MD: 10,945'
 TVD: 7,330.74'
 Inclination: 93.21°
 Azimuth: 270.95°
 VS: 636.72'





MD: 11,040'
 TVD: 7,327.39'
 Inclination: 90.84°
 Azimuth: 271.76°
 VS: 626.21'

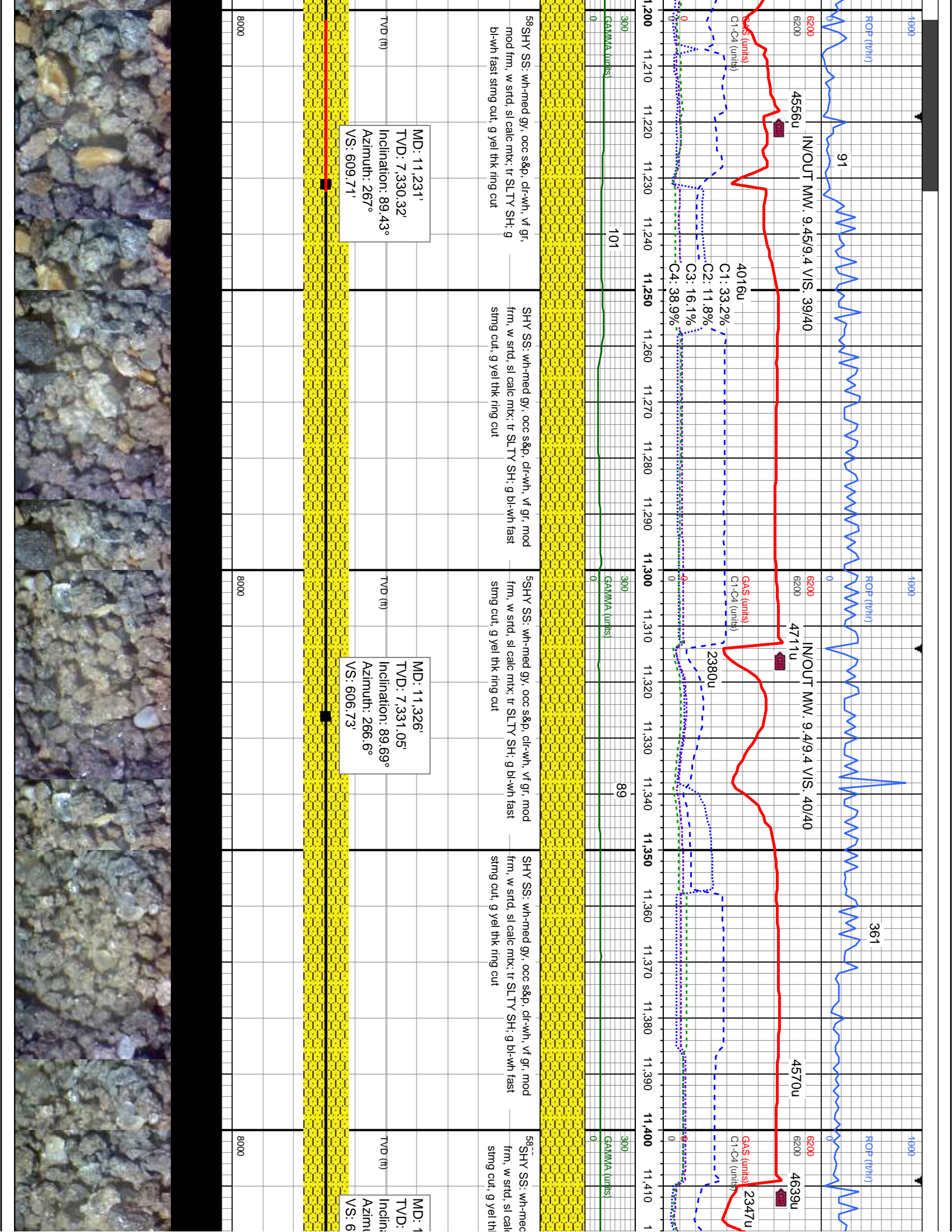
MD: 11,135'
 TVD: 7,328.26'
 Inclination: 88.11°
 Azimuth: 270.55°
 VS: 616.03'

5SHY SS: wh-med gy, occ s&p, cl-w, vf gr, mod
 frm, w strd, sl calc mix; r SLTY SH; g bl-wh fast
 stmg cut; g yel thk ring cut

SHY SS: wh-med gy, occ s&p, cl-w, vf gr, mod
 frm, w strd, sl calc mix; r SLTY SH; g bl-wh fast
 stmg cut; g yel thk ring cut

SHY SS: wh-med gy, occ s&p, cl-w, vf gr, mod
 frm, w strd, sl calc mix; r SLTY SH; g bl-wh fast
 stmg cut; g yel thk ring cut





58 SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; g bl-wh fast string cut; g yel thk ring cut

MD: 11,231'
 TVD: 7,330.32'
 Inclination: 89.43°
 Azimuth: 267°
 VS: 609.71'

SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; g bl-wh fast string cut; g yel thk ring cut

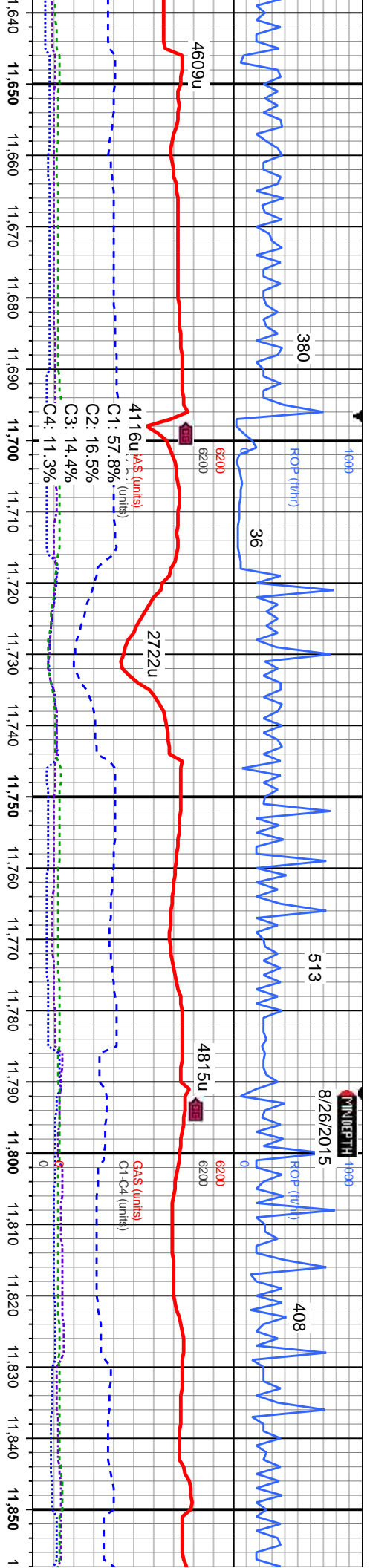
MD: 11,326'
 TVD: 7,331.05'
 Inclination: 89.69°
 Azimuth: 266.6°
 VS: 606.73'

5 SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; g bl-wh fast string cut; g yel thk ring cut

SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; g bl-wh fast string cut; g yel thk ring cut

58 SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; tr SLTY SH; g bl-wh fast string cut; g yel thk ring cut

MD: 11,326'
 TVD: 7,331.05'
 Inclination: 89.69°
 Azimuth: 266.6°
 VS: 606.73'



4116u GRS (units)
C1: 57.8% (units)
C2: 16.5%
C3: 14.4%
C4: 11.3%

4815u GRS (units)
C1-C4 (units)

SHY SS, wh-med gy, occ s&p, cl-wh, vf gr, mod firm, w strd, sl calc mtx; tr SLTY SH; g bl-wh fast stmg cut, g yel thk ring cut

580° SHY SS, wh-med gy, occ s&p, cl-wh, vf gr, mod firm, w strd, sl calc mtx; tr SLTY SH; g bl-wh fast stmg cut, g yel thk ring cut

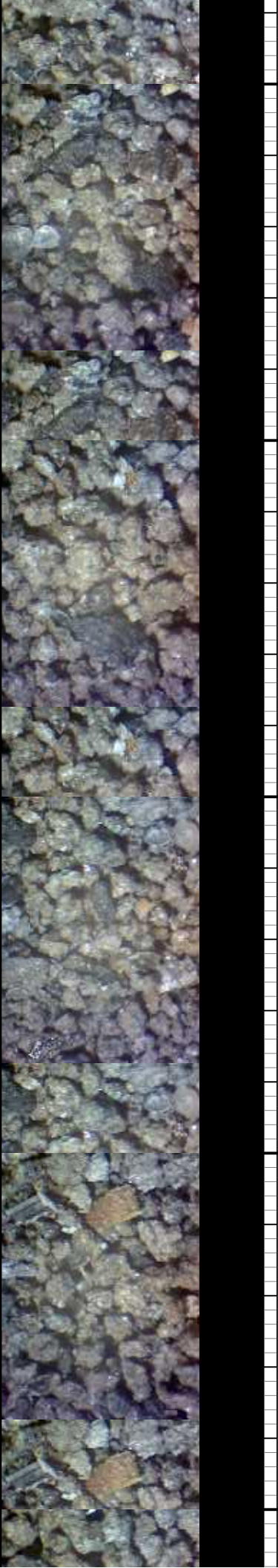
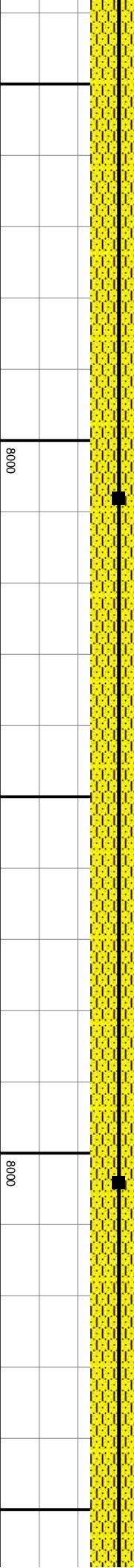
SHY SS, wh-med gy, occ s&p, cl-wh, vf gr, mod firm, w strd, sl calc mtx; g bl-wh fast stmg cut, g yel thk ring cut

5 SHY SS, wh-med gy, occ s&p, cl-wh, vf gr, mod firm, w strd, sl calc mtx; g bl-wh fast stmg cut, g yel thk ring cut

SHY mod cut

MD: 11,708'
TVD: 7,328.32'
Inclination: 89.78°
Azimuth: 269.61°
VS: 592.44'

MD: 11,804'
TVD: 7,328.17'
Inclination: 90.4°
Azimuth: 269.3°
VS: 584.98'



1900

8/27/2015

1900

1900

ROP (10/1)

ROP (10/1)

ROP (10/1)

39

368

177

395

250

5083u

MW: 9.3 VIS: 42

5270u

IN/OUT MW: 9.3/9.3 VIS: 42/41

5496u

IN/OUT MW: 9.4/9.5 VIS: 44/41

475

4635u

3347u

111

100

124

C1: 57.0%

C2: 16.0%

C3: 14.8%

C4: 12.2%

102

300

300

300

100

124

124

SS: wh-med gy, occ s&p, cl-wh, vf gr, frm, w strd, sl calc mix; g bl-wh fast string yel thk ring cut

580 SHY SS: wh-med gy, occ s&p, cl-wh, vf gr, mod frm, w strd, sl calc mix; g bl-wh fast string cut, g yel thk ring cut

SHY SS: cm - med gy, occ s&p, vf gr, mod frm-hd, glsy, gt, w strd, sl calc mix; tr SLTY SH: g bl-wh fast string cut, g yel thk ring cut

SHY SS: cm - med gy, occ s&p, vf gr, mod frm-hd, glsy, gt, w strd, sl calc mix; tr SLTY SH: g bl-wh fast string cut, g yel thk ring cut

SHY SS: cm - med gy, occ s&p, frm-hd, glsy, gt, w strd, sl calc g bl-wh fast string cut, g yel thk

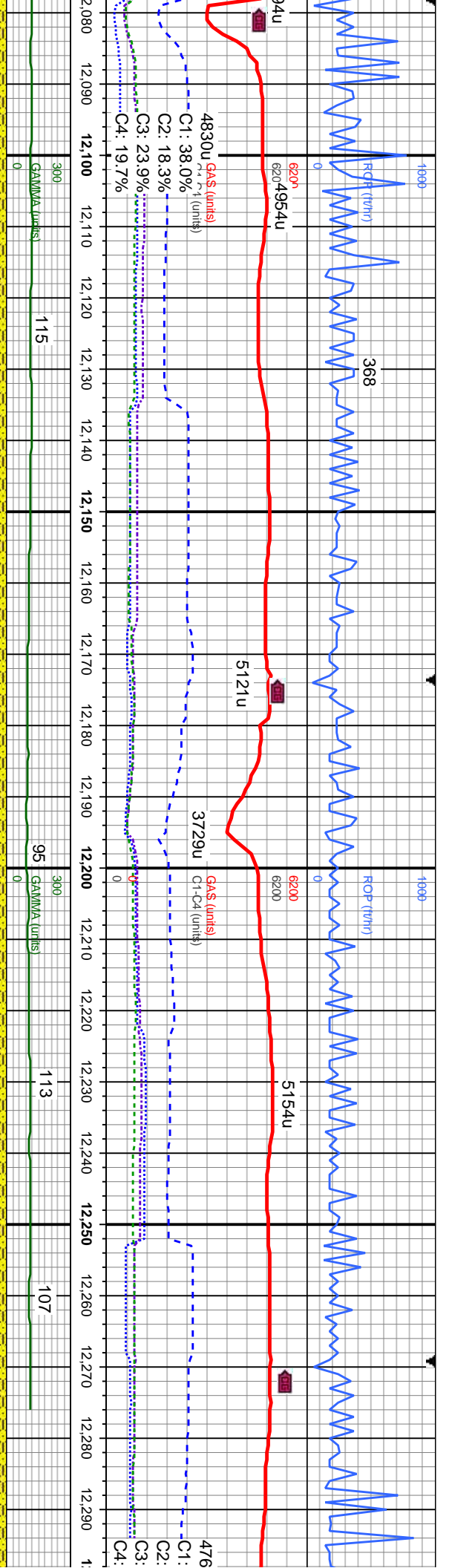
MD: 11,899'
TVD: 7,327.87'
Inclination: 89.96°
Azimuth: 269.9°
VS: 577.36'

MD: 11,995'
TVD: 7,328.75'
Inclination: 88.99°
Azimuth: 270.46°
VS: 568.7'

8000

8000





p. v: gr. mod
m: mx; tr: SLTY SH;
ring cut

5800 SHY SS: crn - med gy, occ s&p, vf gr, mod
frm-hd, glsy, gt, w srd, sl calc mx; tr SLTY SH;
g bl-wh fast strng cut, g yel thk ring cut

SHY SS: crn - med gy, occ s&p, occ clr, vf gr,
mod frm-hd, glsy, gt, w srd, sl calc mx; g bl-wh
fast strng cut, g yel thk ring cut

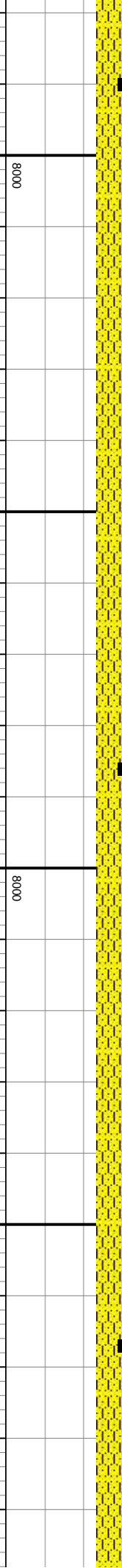
58 SHY SS: wh - med gy, occ s&p, vf gr, mod
frm-hd, glsy, gt, w srd, sl calc mx; tr SLTY SH;
g bl-wh fast strng cut, g yel thk ring cut

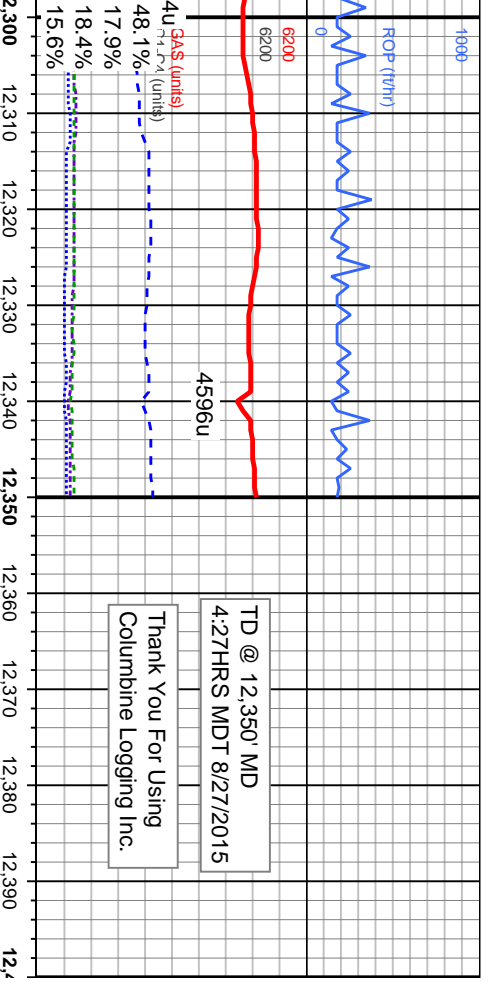
SHY SS: wh - med gy, occ s&p, vf gr, mod
frm-hd, glsy, gt, w srd, sl calc mx; tr SLTY SH;
g bl-wh fast strng cut, g yel thk ring cut

MD: 12,090'
TVD: 7,329.77'
Inclination: 89.78°
Azimuth: 270.61°
VS: 559.53'

MD: 12,186'
TVD: 7,330.29'
Inclination: 89.6°
Azimuth: 269.65°
VS: 550.95'

MD: 12,267'
TVD: 7,330.55'
Inclination: 90.04°
Azimuth: 269.08°
VS: 544.78'





TD @ 12,350' MD
4:27HRS MDT 8/27/2015
Thank You For Using
Columbine Logging Inc.

5SHY SS: wh - med gy, occ s&p; vf gr, mod
frm-hd, glsy, gt, w strd, sl calc mtk; tr SLTY SH;
g bl-wh fast string cut, g yel thk ring cut

Proj. to Bit

MD: 12,350'
TVD: 7,330.49'
Inclination: 90.04°
Azimuth: 269.08°
VS: 538.88'

TVD (ft)

8000

