

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Black Tiger 15C-27HZ

Location SEC.22-T2N-R67W

State COLORADO

Country USA

API Number 05123394010000

County WELD

Rig Number H&P 307

AFE # 2088707

Region DJ BASIN

Field WATTENBERG

Spud Date 8/10/2014

Drilling Completed 8/17/2014

Surface Coordinates 300' FSL & 1472' FEL

Bottom Hole Coordinates RELATIVE TO WELLHEAD:
5443.84' S & 696.61' W

Ground Elevation 4880'

K.B. Elevation 5005'

Logged Interval 7095' MD To 13575' MD

Total Depth 13575' MD

Formation CODELL

Type of Drilling Fluid FRESH WATER

Operator

Company ANADARKO PETROLEUM INC

Address 1099 18th St, Suite 1800
Denver , CO 80202

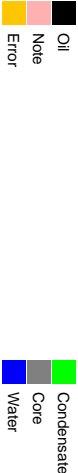
Geologist

Name Jim Frank, John Sabroske

Company COLUMBINE LOGGING INC.

Address 2385 S. Lipan St.
Denver, CO 80223

Zone Color Code



Rock Types



Accessories

Fossils	GASTROPOD	ARGILLITE GRAIN	HEAVY MINERAL	Stringer
INOCERAMUS	B BENTONITE	K KAOLIN	ANHYDRITE STRINGER	BENTONITE STRINGER
ALGAE	O OOLITE	M MARCASTITE	GYPSUM STRINGER	DOLOMITE STRINGER
AMPHIPORA	O OSTRACOD	M MARLSTONE	LIMESTONE STRINGER	MARLSTONE (CALC) STRG
BELEMNITE	P PELLET	M MICACEOUS	P PYRITE	MARLSTONE (DOL) STRG
BIOCLASTIC	P PELLET	C CARBONACEOUS FLAKES	S SALT CAST	SANDSTONE STRINGER
BRACHIOPOD	I ISOLITE	C CHTDK	S SIDERITE	SHALE STRINGER
BRYOZOA	P PLANT REMAINS	C COAL - THIN BEDS	S SILICEOUS	SILTSTONE STRINGER
CEPHALOPOD	S PLANT SPORES	D DOLOMITIC	S SILTY	
CORAL	S SCAPHOPOD	F FELDSPAR	T TUFFACEOUS	
CRINOID	S STROMATOPOROID	F FERRUGINOUS PELLET		
E ECHINOID		F FERRUGINOUS		
F FISH	Minerals	G GLAUCONITE		
F FORAMINIFERA	A ANHYDRITIC	G GYPSIFEROUS		
F FOSSIL	A ARGILLACEOUS			

Other Symbols

Oil Show	P PINPOINT	DST INTERVAL	WIRELINE TESTED - LEFT	E EARTHY
V VUGGY	FAULT	WIRELINE TESTED - RT	F FINELYXLN	
Engineering	D DEAD	FORMATION TOP	DRILL STEM TEST	ES GRAINSTONE
E EVEN	GAS SHOW	OIL SHOW	MN DEPTH	L LITHOGRAPHIC
Q QUESTIONABLE	BIT			MX MICROXLN
S SPOTTED STAINING	C CONNECTION (UP)	MN DEPTH UP		MS MUDSTONE
Porosity	C CONNECTION (DOWN)	MN DEPTH (DOWN)	A ANGULAR	PS PACKSTONE
E EARTHY	C CONNECTION GAS	N NORMAL FAULT	R ROUNDED	WS WACKESTONE
F FENESTRAL	C CONNECTION GAS (LEFT)	O OVERTURNED STRATA	S SUBANG	
F FRACTURE	T TRIP GAS	R REVERSE FAULT	S SUBRND	Sorting
X INTERCRYSTALLINE	T TRIP GAS (LEFT)	C CASING		M MODERATE
I INTEROOLITIC	D DOWN TIME GAS	S SIDEWALL CORE (LEFT)		P POOR
M MOLDIC	D DOWN TIME GAS (LEFT)	S SIDEWALL CORE (RIGHT)		W WELL
O ORGANIC	C CORE - LOST	S SLIDE		
	C CORE - RECOVERED	S SURVEY		
		C CRYPTOXLN		

ling



MARLSTONE	SHALY SANDSTONE
METAMORPHIC	SHALY SILTSTONE
NO SAMPLE	SILTY SHALE
SALT	SILTSTONE
SANDSTONE	TILL
SALT-PEPPER SANIC	TUFF
SHALE	WELDED TUFF
SHALE COLORED	
SHALE GRAY	

Slide/Rotate

ROP
ROF
GAMMA

ROP (min/hr)
GAMMA (api)

COLUMBINE LOGGING 2 MAN
RIGGED UP @ 13:30 HRS 8/11/2014
BEGIN LOGGING @ 04:16 8/12/2014

DRLG 8.75" HOLE W/ BIT #3
SMITH SD/611MPX
IN @ 6970 MD

ROP (min/hr)
GAMMA (api)

100

Total Gas & Chromatograph

GAS
C1
C3

GAS (units)
C1-C3 (PPM)

ROP & GAS DATA PROVIDED BY TOTCO
- GAMMA & SURVEY DATA PROVIDED BY BAKER HUGHES

GAS (units)
C1-C3 (PPM)

TOTCO GAS DETECTION OFFLINE

Depth Labels

7,010 7,020 7,030 7,040 7,050 7,060 7,070 7,080 7,090 7,100 7,110 7,120 7,130 7,140 7,150 7,160 7,170 7,180

% Lith



7000

WT IN: 10.2 OUT: 10.1
VIS IN: 47 OUT: 48

Well Bore
TVD

TVD (ft)

DRILLING IN
SUSSEX FORM.

MD: 7,093.
TVD: 6,992.71
Inclination: 0.87
Azimuth: 177.9
VS: -623.19

KOP = 7095' MD

TVD (ft)

MD: 7,140.
TVD: 7,039.69
Inclination: 2.4
Azimuth: 181.15
VS: -621.85

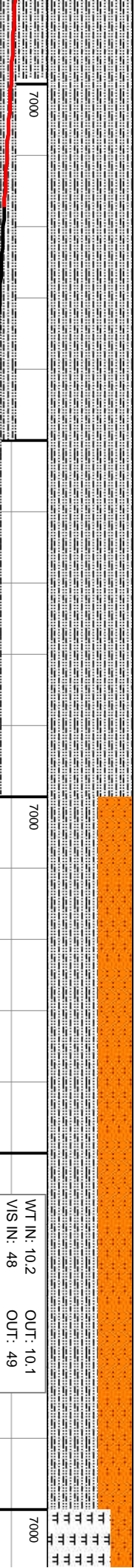
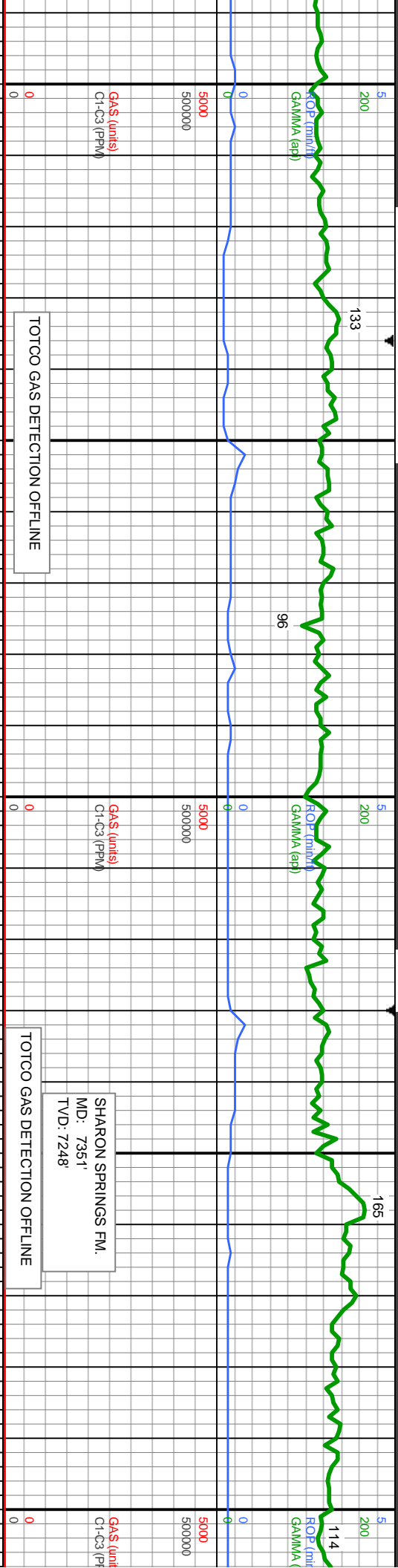
7095'-7200' MD SLTY SH: lt - m gy-tr dk gy,
sft - frm, sbblky - sbply, m-v slty, v sl calc

Oil Show

E
G
M
F
T
SH

Images





TOTCO GAS DETECTION OFFLINE

TOTCO GAS DETECTION OFFLINE

SHARON SPRINGS FM.
MD: 7351'
TVD: 7248'

TV/D (ft)

MD: 7,234.
TVD: 7,133.28.
Inclination: 7.52.
Azimuth: 178.76.
VS: -613.36.

MD: 7,281 .
TVD: 7,179.65 .
Inclination: 11.19
Azimuth: 177.65 -
VS: -605.73 .

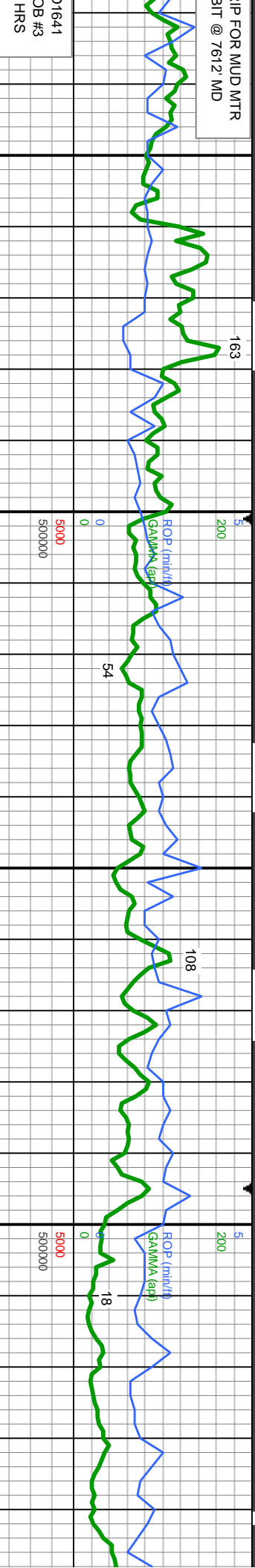
MD: 7,329.
TVD: 7,226.43.
Inclination: 14.61
Azimuth: 179.46
VS: -595.03.

MD: 7,376.
TVD: 7,271.49.
Inclination: 18.37
Azimuth: 182.74
VS: -581.69.

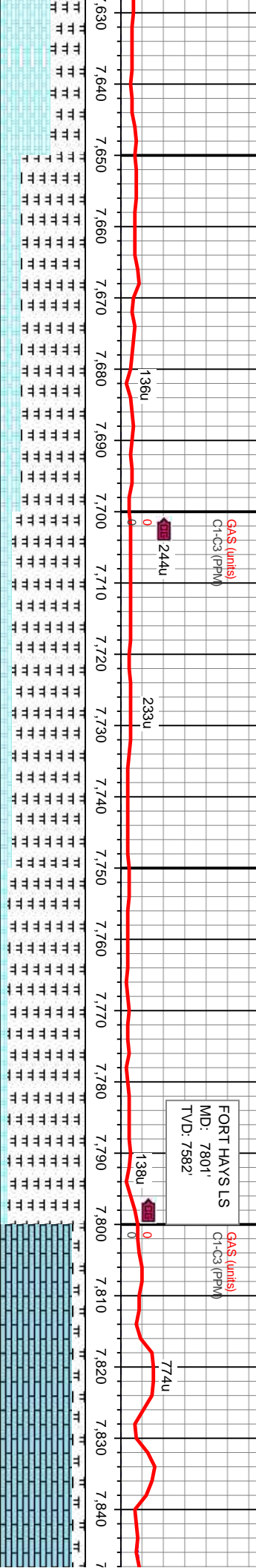
-7200'-7300' MD SLTY SH: lt - m gy-tr dk gy, sft - frm, sbblky - sbply, m-v silty, v sl calc

7300'-7400' MD SLTY SH: lt - m gy-m gybrn, sft - frm, sbblky - sbply, m-v slty, v sl calc, SLTST: lt gy-lt gy brn, sb-blky-sb-pity, med-v frm, v sl calc, occ bent

7400'-74
ply-sb b
SLTST:
sl calc, c
uuu



1641
DB #3
HRS



WT IN: 10.2 OUT: 10.2
VIS IN: 42 OUT: 43

MD: 7.659
TVD: 7.508.62
Inclination: 48.55
Azimuth: 181.69
VS: -433.23

MD: 7.690
TVD: 7.528.25
Inclination: 52.86
Azimuth: 182.02
VS: -409.25

MD: 7.722
TVD: 7.546.49
Inclination: 57.6
Azimuth: 182.76
VS: -382.98

MD: 7.753
TVD: 7.562.27
Inclination: 61.23
Azimuth: 182.68
VS: -356.3

MD: 7.785
TVD: 7.576.37
Inclination: 66.43
Azimuth: 182.96
VS: -327.61

MD: 7.816
TVD: 7.587.37
Inclination: 72
Azimuth: 182.82
VS: -298.65

MD: 7.846
TVD: 7.595
Inclination: 75
Azimuth: 182.82
VS: -267

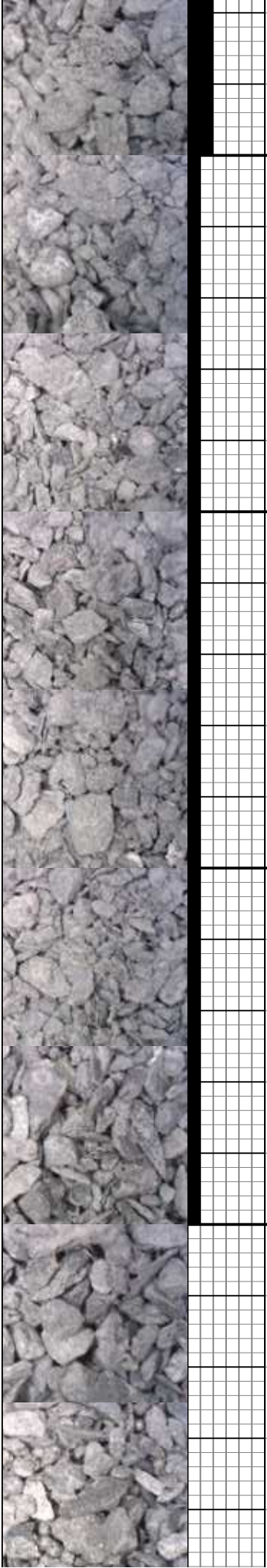
lt-med gy, mot, sb
sb ply-sb blk, mod sft-fm, fri, chky-sb wxy, v
gy-gy brn, sb
m, sb arg-sily, calc,
w/ slw halo cut

7650-7700' MD: MRLST: med-dk gy-gy brn,
sb ply-sb blk, mod sft-fm, sb arg-sily,
calc, abnt bent, CHK: lt-med gy, mot, sb
blk-sb ply, sft-si frm, fri, chky-sb wxy, v
calc, sl tr lt blu/yel flr w/ slw halo cut

7700-7750' MD: MRLST: med-dk gy-gy brn,
sb ply-sb blk, mod sft-fm, sb arg-sily,
calc, abnt bent, CHK: lt-med gy, mot, sb
blk-sb ply, sft-si frm, fri, chky-sb wxy, v
calc, sl tr lt blu/yel flr w/ slw halo cut

7750-7800' MD: MRLST: med-dk gy-gy brn,
sb ply-sb blk, mod sft-fm, m-v arg, sl sily
ip, calc, tr bent, CHK: lt-med gy, mot, sb
blk-sb ply, sft-si frm, fri, chky-sb wxy, v
calc, sl tr lt blu/yel flr w/ slw halo cut

7800-7850' MD: LS: crm-offwh/ lt brn, sub
ply-pty, tr blk, frm-brt, v calc, suc tex, tr mot
tex: MRLST: med-dk gy-gy brn, sb ply-sb blk,
mod sft-fm, m-v arg, sl sily ip, calc



7" CASING SET
@ 7945' MD

8/14+15/14
7945' MD

DRLG 6.125" HOLE W/ NB #5
ULTERRA U613S IN @ 7945' MD,
OB # 4 DRLD 333 IN 17.5 HRS

3

200

ROP (minu/f)

GAMMA (API)

77

GA\$ (units)

C1-C3 (PPM)

16

5

200

ROP (minu/f)

GAMMA (API)

54

ROP (minu/f)

GAMMA (API)

98

ROP (minu/f)

GAMMA (API)

98

ROP (minu/f)

GAMMA (API)

77

ROP (minu/f)

GAMMA (API)

77

CODELL SS
MD: 7878'
TVD: 7603'

812u

0

0

0

0

0

0

0

0

0

0

0

0

0

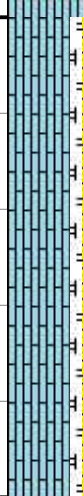
0

0

0

0

7,850 7,860 7,870 7,880 7,890 7,900 7,910 7,920 7,930 7,940 7,950 7,960 7,970 7,980 7,990 8,000 8,010 8,020 8,030 8,040 8,050 8,060



7000

WT IN: 10.2

OUT: 10.1

VIS IN: 51

OUT: 44

7100

7100

7100

7100

7100

7100

7100

7100

7100

7100

7100

7100

MD: 7,879.
TVD: 7,602.77.
Inclination: 79.76 -
Azimuth: 182.2.
VS: -237.63.

MD: 7,903.
TVD: 7,606.48.
Inclination: 82.44 -
Azimuth: 181.41 -
VS: -213.92.

TVD SCALE CHANGE

MD: 7,970.
TVD: 7,612.37.
Inclination: 87.47 -
Azimuth: 180.69 -
VS: -147.2.

MD: 8,064.
TVD: 7,615.84
Inclination: 88
Azimuth: 181.
VS: -53.27.

3.
622.
n: 75.87 -
182.3.

MD: 7,879.
TVD: 7,602.77.
Inclination: 79.76 -
Azimuth: 182.2.
VS: -237.63.

MD: 7,903.
TVD: 7,606.48.
Inclination: 82.44 -
Azimuth: 181.41 -
VS: -213.92.

MD: 7,970.
TVD: 7,612.37.
Inclination: 87.47 -
Azimuth: 180.69 -
VS: -147.2.

MD: 8,064.
TVD: 7,615.84
Inclination: 88
Azimuth: 181.
VS: -53.27.

7850'-7900' MD: LS: crm-offwht lt brn, pily-flky
ip, frm-brt, crpxln-micxln, suc tx, v calc; SS: lt
brn-dk brn-mot, f-med gr, mod-v frm, sbmrd-rnd,
mod-w strd, p-mod cons w/ v sl calc cnt, tr
glau; MRLST: med-dk gy-gy brn, sb pily-sb blkly,
mod sft-frm, m-v arg, sl silty ip, calc

7900'-7945' MD: SS: lt brn-dk brn/occ gy-mot,
f-med gr, mod-v frm, sr-rd, mod-w strd, p-mod
cons, v sl calc cnt, tr glau; LS: offwht- lt brn,
sub pily-plty, frm-brt, crpxln-micxln, suc tex, v
calc

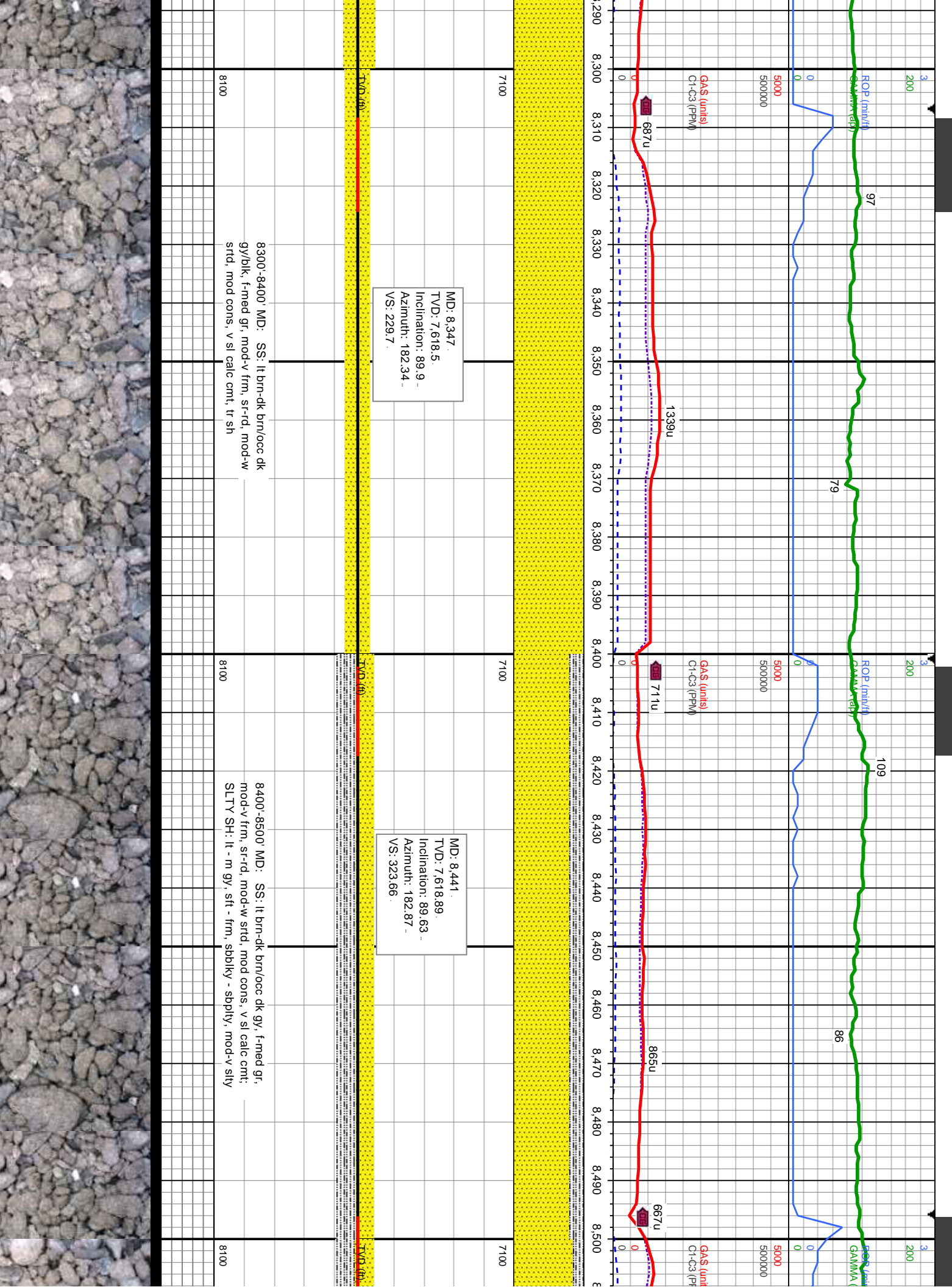
7945'-8000' MD: SS: lt brn-dk brn/occ gy-mot,
f-med gr, mod-v frm, sr-rd, mod-w strd, mod
cons, v sl calc cnt, tr sh

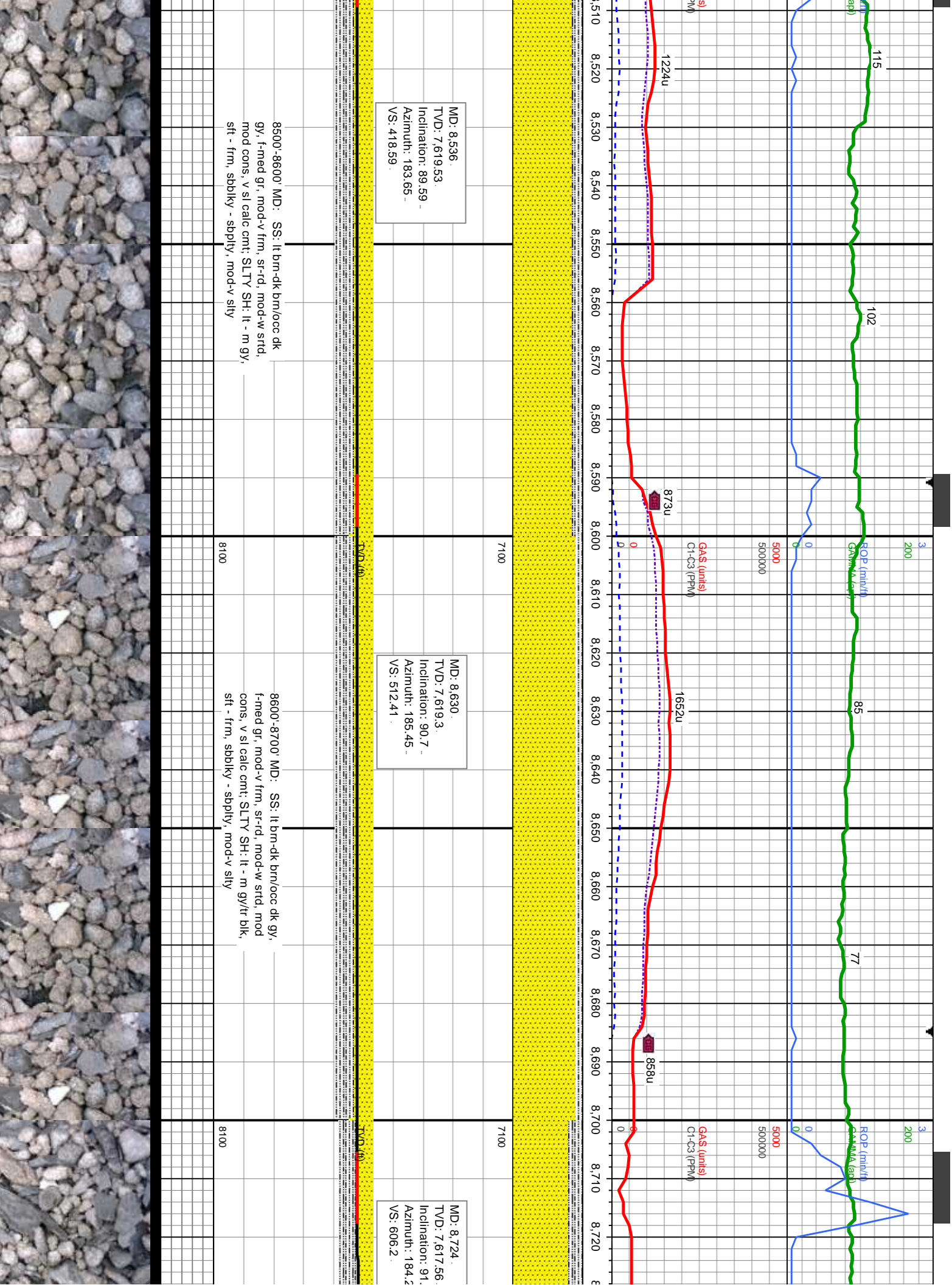
8000'-8100' MD: SS: lt brn-dk brn/occ gy-mo
f-med gr, mod-v frm, sr-rd, mod-w strd, mod
cons, v sl calc cnt

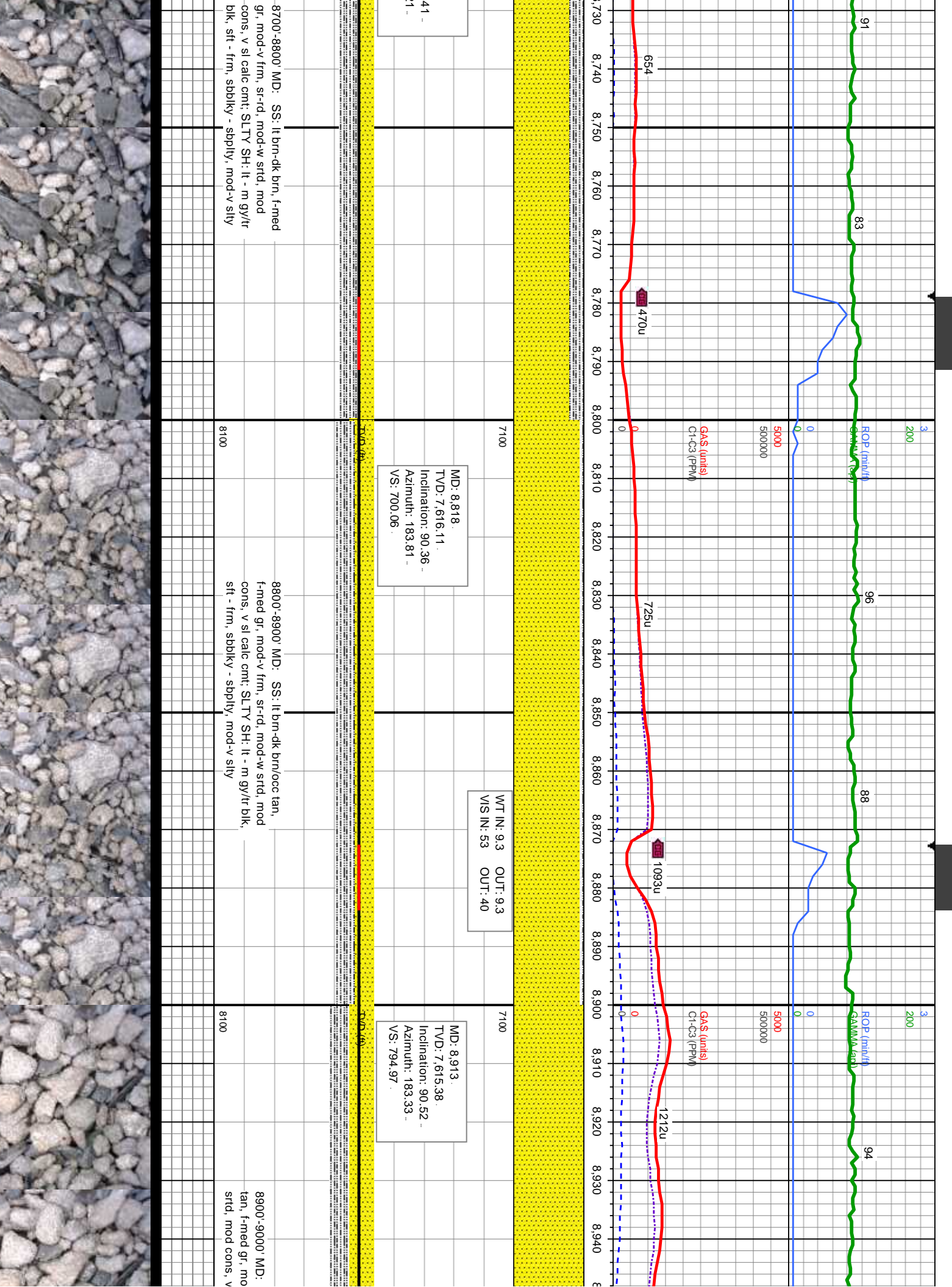
8100'









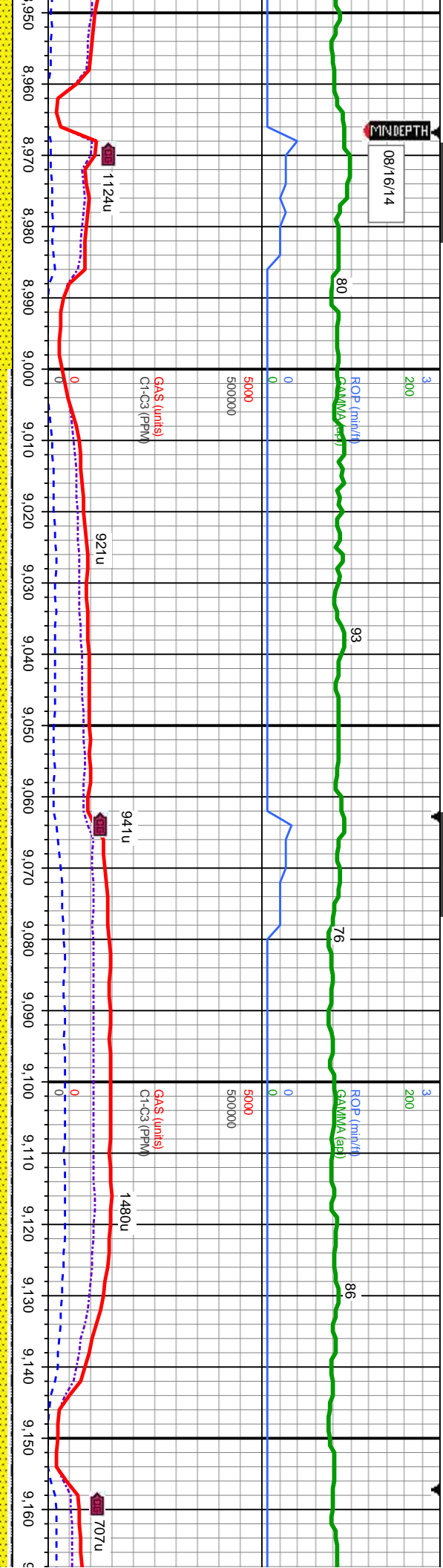


8700'-8800' MD: SS: lt brn-dk brn, f-med
gr, mod-v frm, sr-rd, mod-w strd, mod
cons, v sl calc cnt; SLTY SH: lt - m gy/tr
blk, sft - frm, sbblky - sbply, mod-v slty

8800'-8900' MD: SS: lt brn-dk brn/occ tan,
f-med gr, mod-v frm, sr-rd, mod-w strd, mod
cons, v sl calc cnt; SLTY SH: lt - m gy/tr blk,
sft - frm, sbblky - sbply, mod-v slty

8900'-9000' MD:
tan, f-med gr, mo
strd, mod cons, v

08/16/14
MINDEPTH



MD: 9,007.
TVD: 7,614.23
Inclination: 90.89
Azimuth: 181.71
VS: 888.93.

MD: 9,102.
TVD: 7,613.6
Inclination: 89.87
Azimuth: 180.96
VS: 983.92.

WT IN: 9.2 OUT: 9.2
VIS IN: 48 OUT: 40

SS: lt brn-dk brn/occ
d-v frm, sr-rd, mod-w
sl calc cnt, tr sh

9000'-9100' MD: SS: lt brn-dk brn/occ tan,
f-med gr, mod-v frm, sr-rd, mod-w strd, mod
cons, v sl calc cnt; SLTY SH: lt - m gy/tr blk,
sft - frm, sbblky - sbply, mod-v slty, tr foss

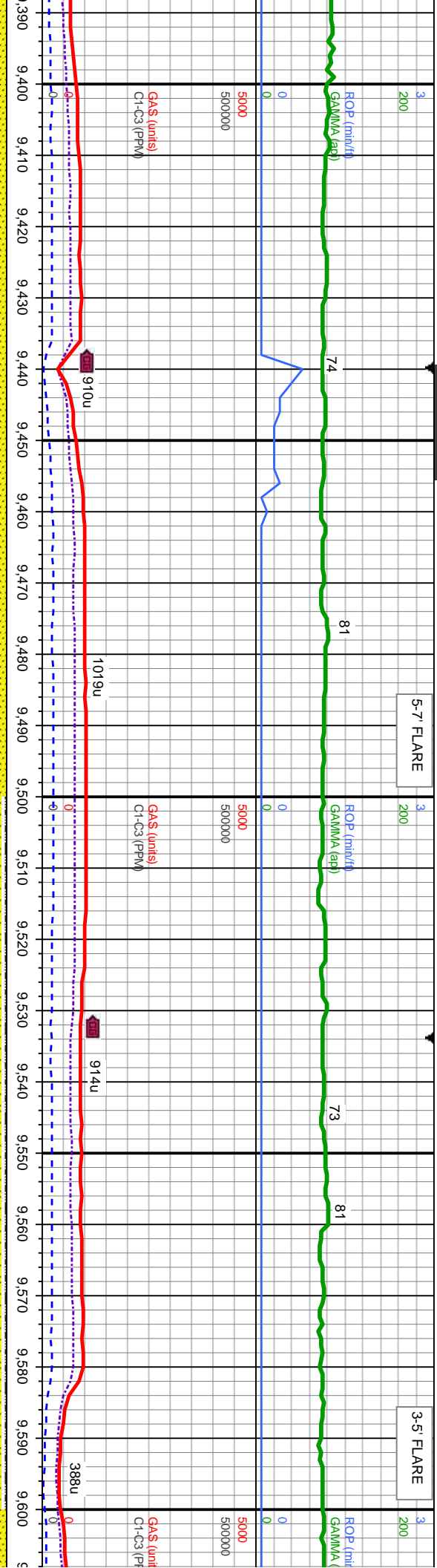
8100

9100'-9200' MD: SS: lt brn-dk brn/occ gy,
f-med gr, mod-v frm, sr-rd, mod-w strd, mc
cons, v sl calc cnt, tr glau; SLTY SH: lt - m
gy/tr blk, sft - frm, sbblky - sbply, mod-v s

8100



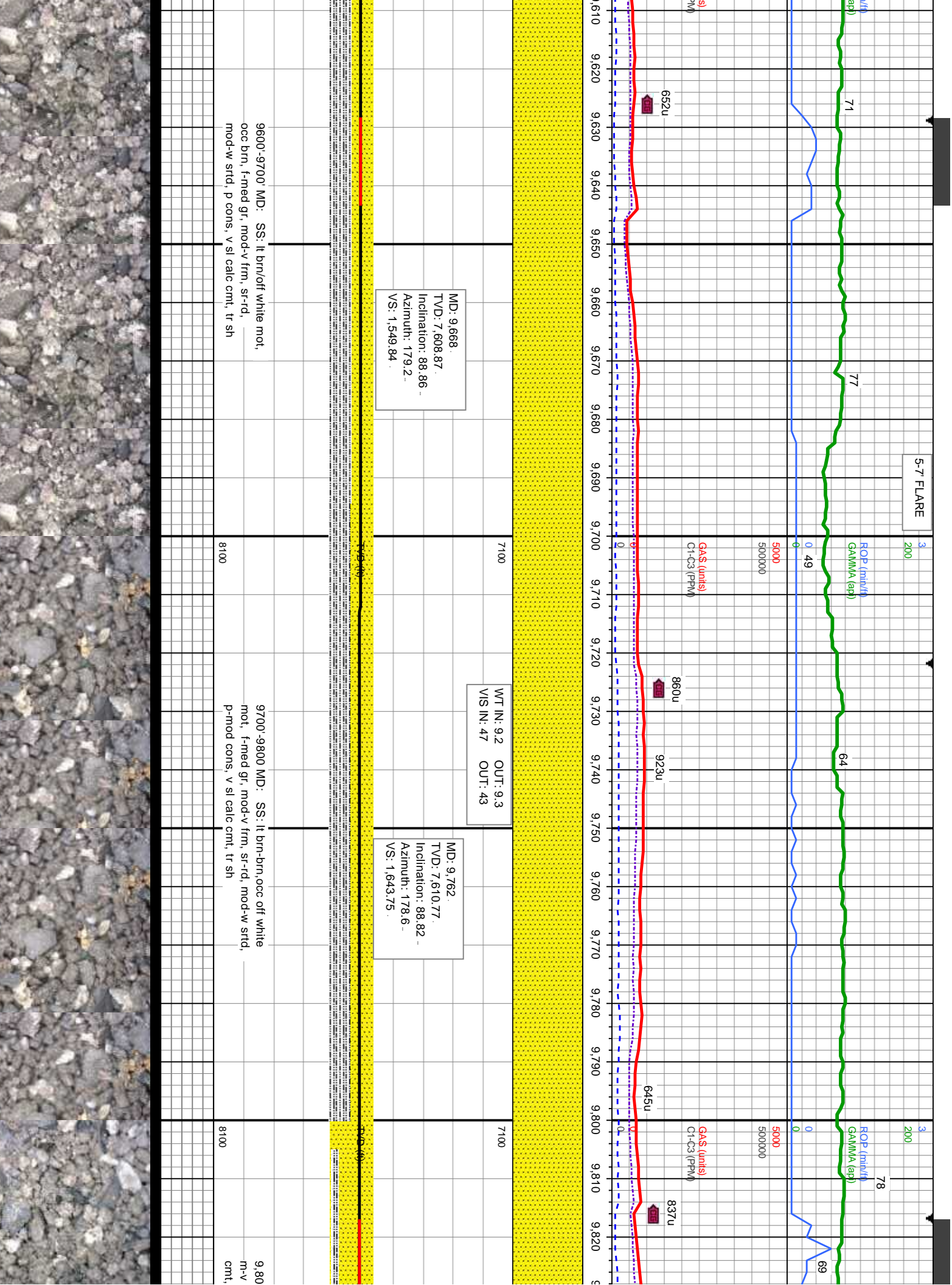




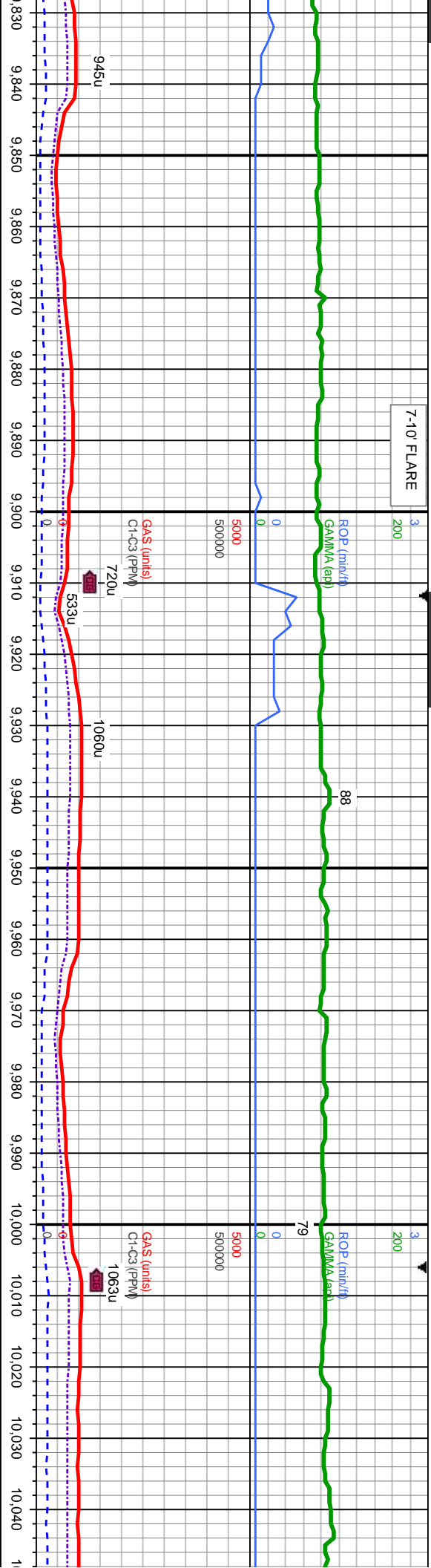
7100	WT IN: 9.2 VIS IN: 49 OUT: 9.3 OUT: 42	MD: 9.479 TVD: 7,610.14 Inclination: 90.61 Azimuth: 181.43 VS: 1,360.87	7100
7100	WT IN: 9.2 VIS IN: 49 OUT: 9.3 OUT: 43	MD: 9.573 TVD: 7,608.79 Inclination: 91.04 Azimuth: 181.08 VS: 1,454.86	7100

8100	9400'-9500' MD: SS: lt brn-dk brn/occ tan, f-med gr/occ c, mod-v frm, sr-rd, mod-w strd, mod cons, v sl calc cnt, tr sh	8100
8100	9500'-9600' MD: SS: lt brn-dk brn, f-med gr, mod-v frm, sr-rd, mod-w strd, mod cons, v sl calc cnt, SLTY SH: lt - m gy, sft - frm, sbblky - sbply, mod-v sily	8100





7-10' FLARE



MD: 9.856
TVD: 7,612.53
Inclination: 89.04
Azimuth: 179.8
VS: 1,737.68

MD: 9.951
TVD: 7,614.35
Inclination: 88.76
Azimuth: 181.34
VS: 1,832.65

MD: 10.045
TVD: 7,616.08
Inclination: 88
Azimuth: 181
VS: 1,926.64

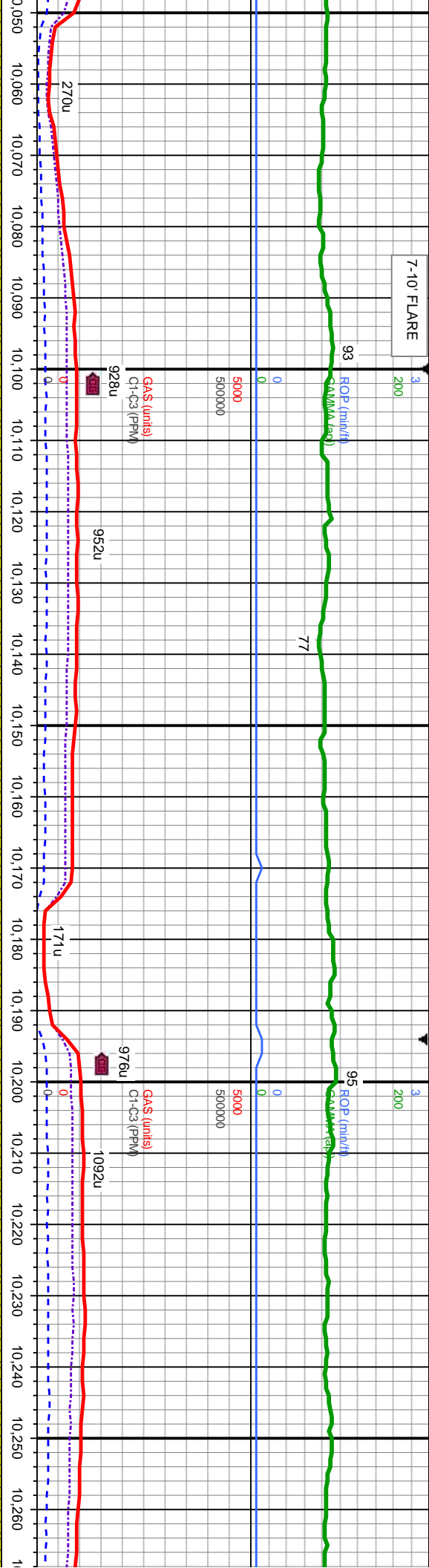
0'-9,900' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbnd-rnd, m-w srd, p-m cons w/ v sl calc p vis intgrn por, sl tr lt bl flwr w/ slw halo cut

9,900'-10,000' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbnd-rnd, m-w srd, p-m cons w/ v sl calc cnt, p vis intgrn por, sl tr lt bl flwr w/ slw halo cut

10,000'-10,100' MD: SS: lt m-v frm, sbnd-rnd, m-w srd, p vis intgrn por, sl tr



7-10' FLARE



N: 9.3
OUT: 9.3
N: 49
OUT: 41

MD: 10.139
TVD: 7,617.13
Inclination: 89.59
Azimuth: 180.55
VS: 2,020.63

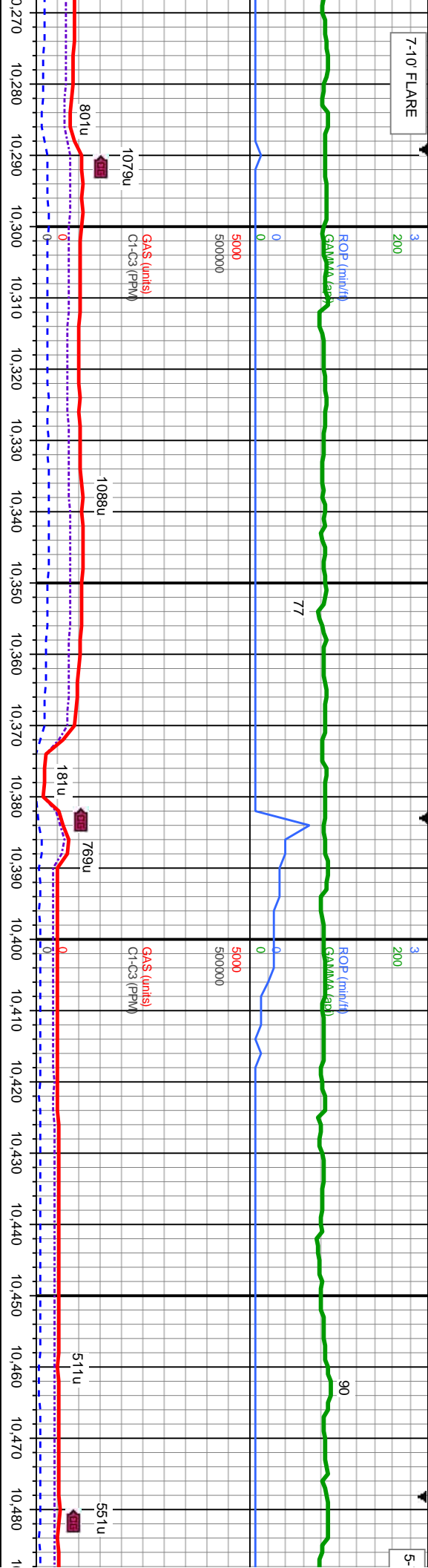
MD: 10.234
TVD: 7,617.53
Inclination: 89.93
Azimuth: 180.54
VS: 2,115.63

dk brn-dk gybrn-mot, f-m gr,
td, p-m cons w/ v sl calc
lt bl flr w/ slw halo cut

10,100'-10,200' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr,
m-v frm, sbnd-rnd, m-w strd, p-m cons w/ v sl calc
cmt, p vis intrgrn por, sl tr lt bl flr w/ slw halo cut

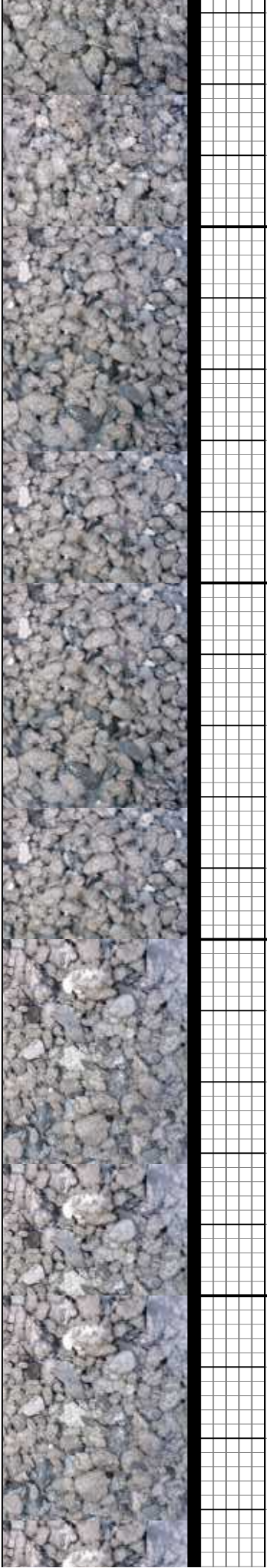
10,200'-10,300' MD: SS: lt-dk brn-dk gybrn-mot
m-v frm, sbnd-rnd, m-w strd, p-m cons w/ v sl
cmt, p vis intrgrn por, sl tr lt bl flr w/ slw halo





7100	WT IN: 9.2+ OUT: 9.4 VIS IN: 45 OUT: 44	7100
MD: 10.328 TVD: 7,617.26 Inclination: 90.4 Azimuth: 180.4 VS: 2,209.62		
7100	MD: 10.422 TVD: 7,617.69 Inclination: 89.07 Azimuth: 180.77 VS: 2,303.61	7100

10,300'-10,400' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbnd-rnd, m-w srtf, p-m cons w/ v sl calc cmf, p vis intrgrn por, sl tr lt bl flr w/ slw halo cut	8100
10,400'-10,500' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbnd-rnd, m-w srtf, p-m cons w/ v sl calc cmf, p vis intrgrn por, sl tr lt bl flr w/ slw halo cut	8100

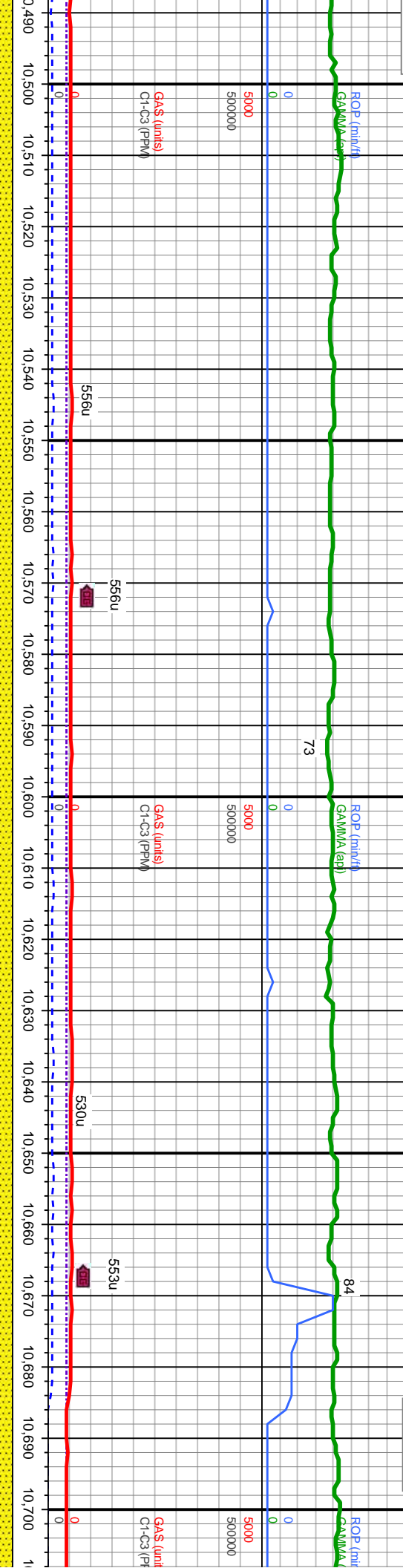


7' FLARE

3' FLARE

5-7' FLARE

3' FLARE



MD: 10,517.
TVD: 7,618.88.
Inclination: 89.5
Azimuth: 180.66
VS: 2,398.6

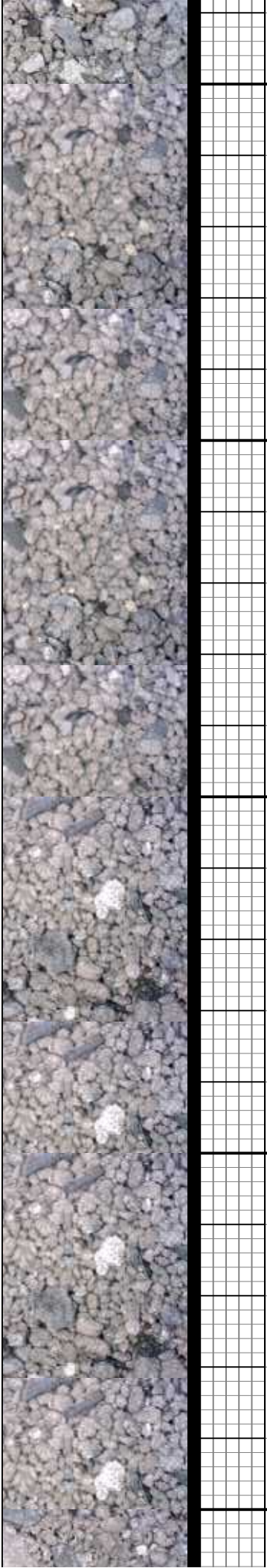
MD: 10,611.
TVD: 7,619.54.
Inclination: 89.69
Azimuth: 180.09
VS: 2,492.59

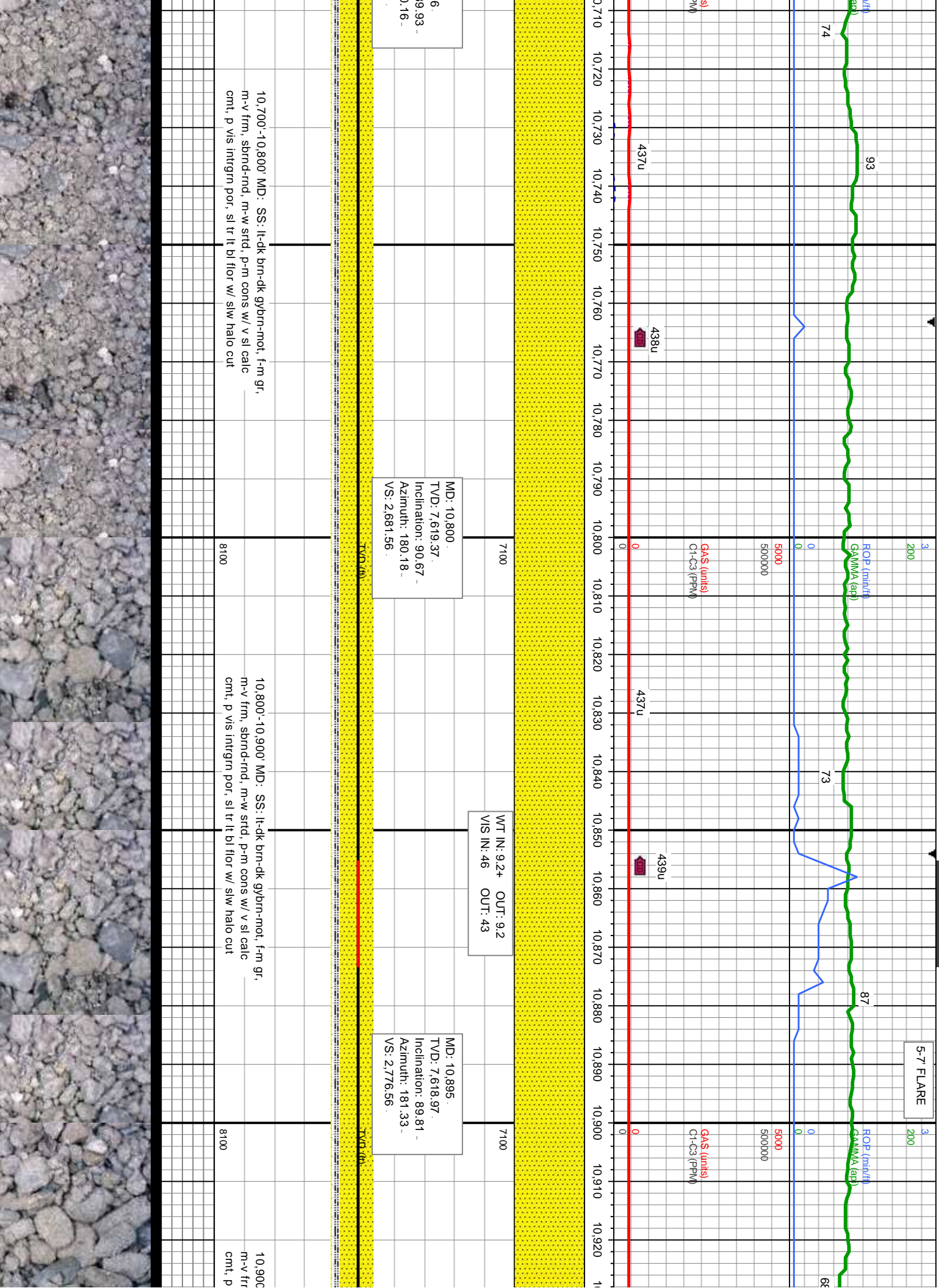
MD: 10,706.
TVD: 7,619.8
Inclination: 89.69
Azimuth: 180.09
VS: 2,587.58

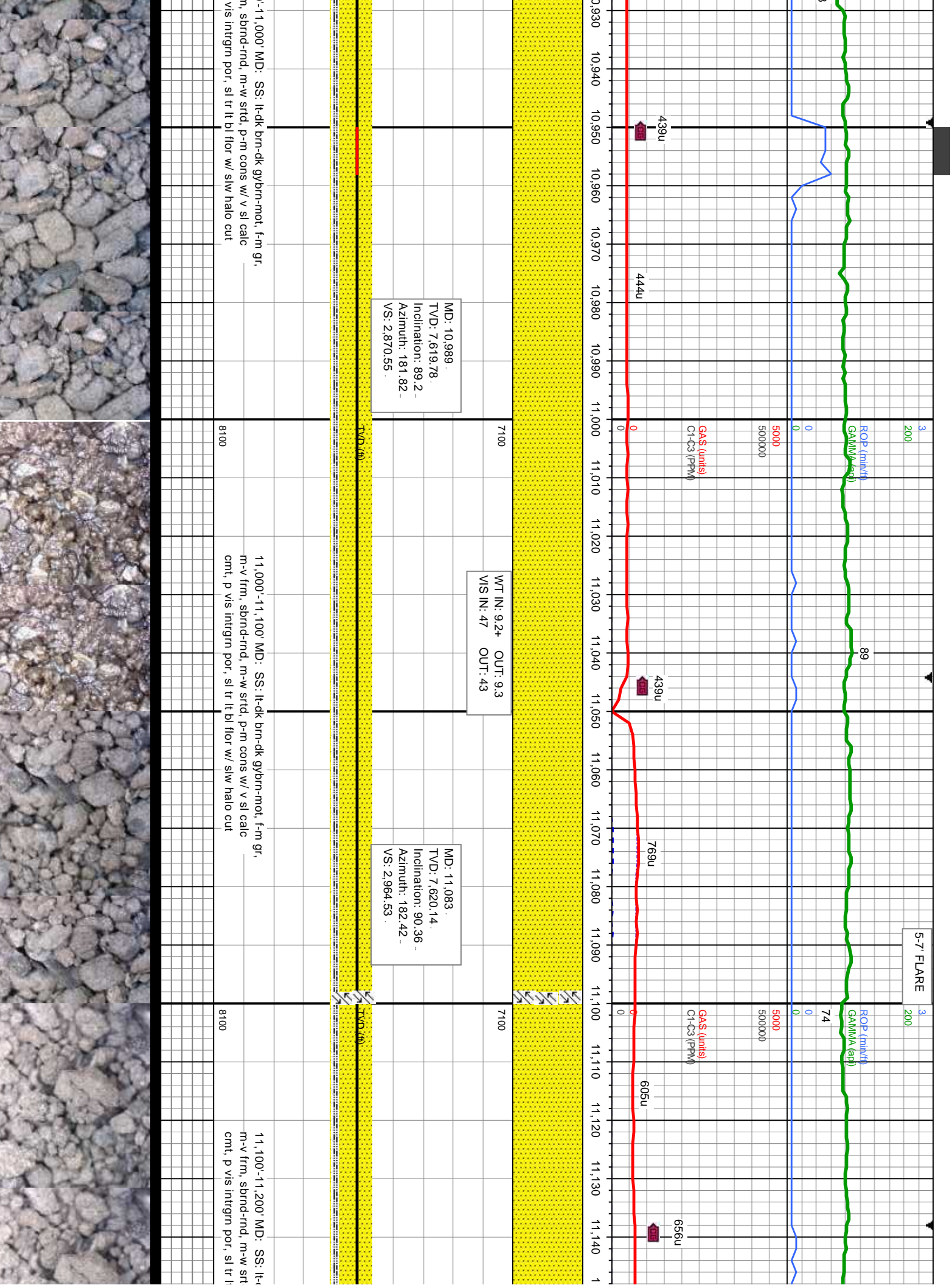
WT IN: 9.2+ OUT: 9.2+
VIS IN: 46 OUT: 43

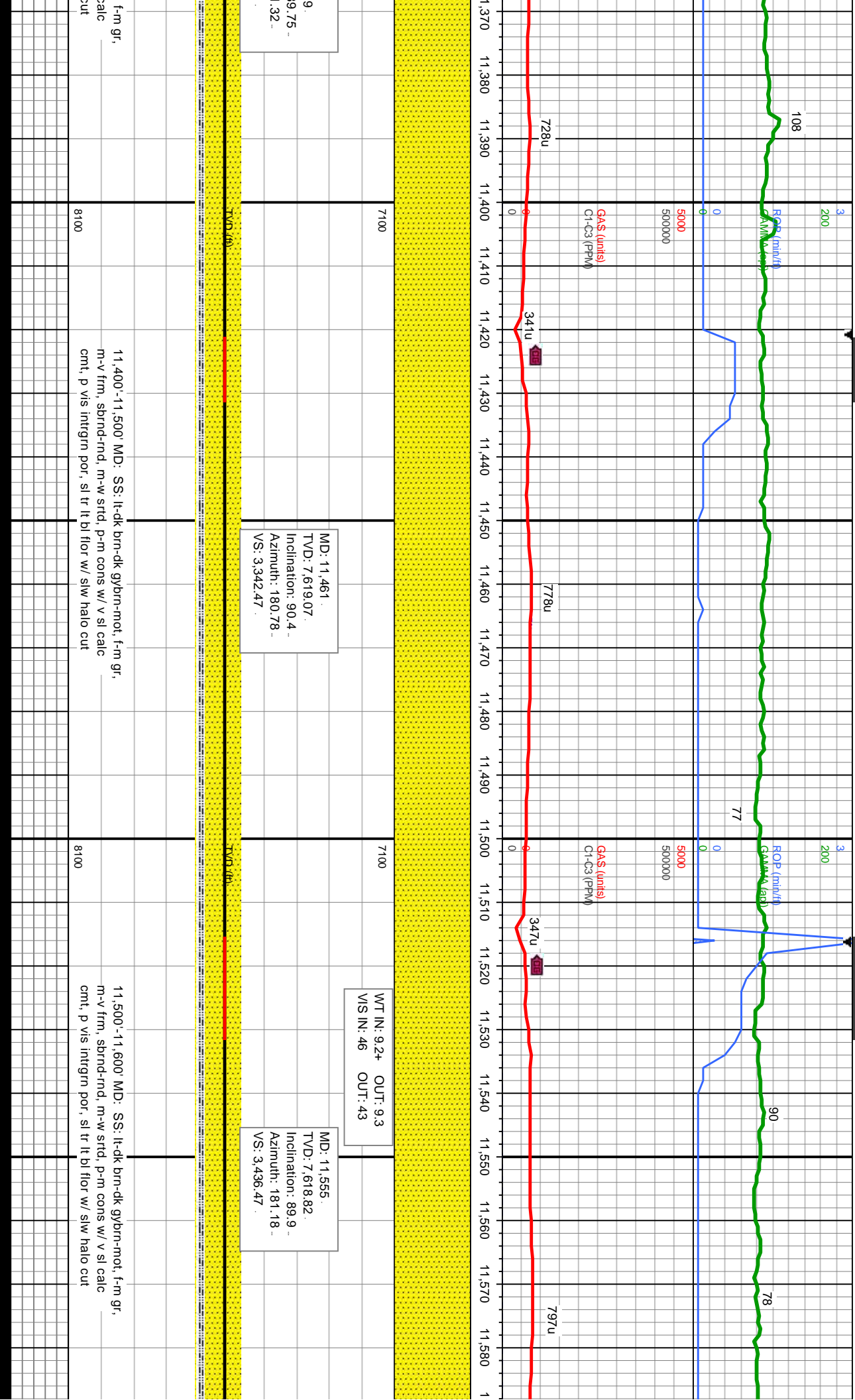
10,500'-10,600' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbnd-rnd, m-w srd, p-m cons w/ v sl calc cnt, p vis intgrn por, sl tr lt bl flr w/ slw halo cut

10,600'-10,700' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbnd-rnd, m-w srd, p-m cons w/ v sl calc cnt, p vis intgrn por, sl tr lt bl flr w/ slw halo cut









9. 9.75 - .32

MD: 11,461
TVD: 7,619.07
Inclination: 90.4
Azimuth: 180.78
VS: 3,342.47

MD: 11,555
TVD: 7,618.82
Inclination: 89.9
Azimuth: 181.18
VS: 3,436.47

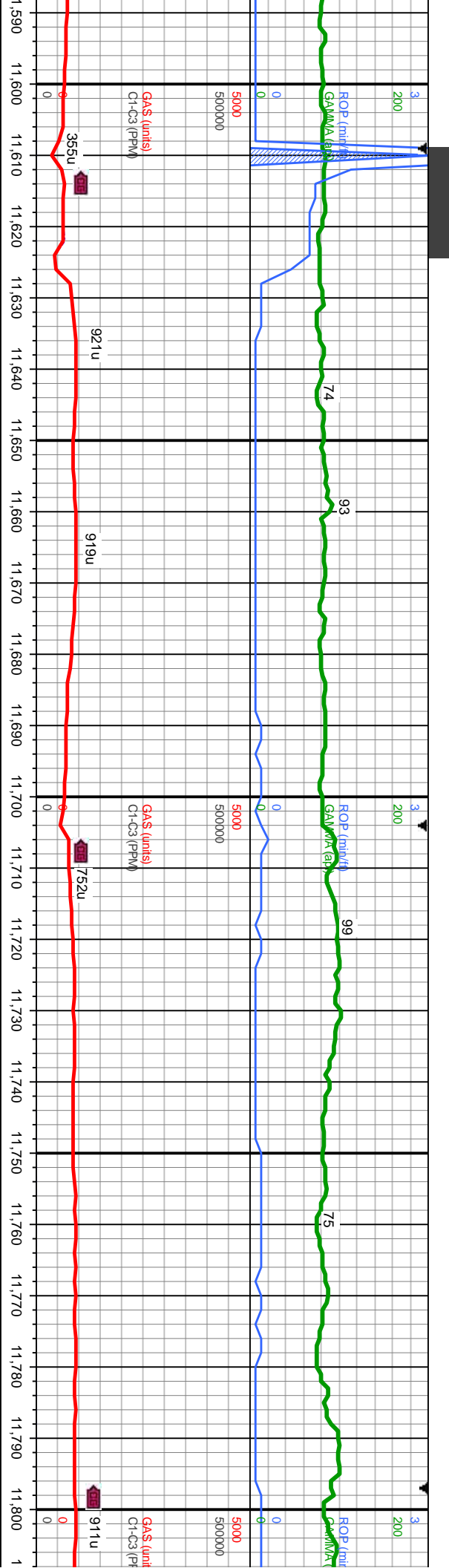
WT IN: 9.2+ OUT: 9.3
VIS IN: 46 OUT: 43

f-m gr, m-v frm, sbrrd-rnd, m-w srt, p-m cons w/ v sl calc cut

11,400'-11,500' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbrrd-rnd, m-w srt, p-m cons w/ v sl calc cut, p vis intrgrn por, sl tr lt bl flr w/ slw halo cut

11,500'-11,600' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbrrd-rnd, m-w srt, p-m cons w/ v sl calc cut, p vis intrgrn por, sl tr lt bl flr w/ slw halo cut





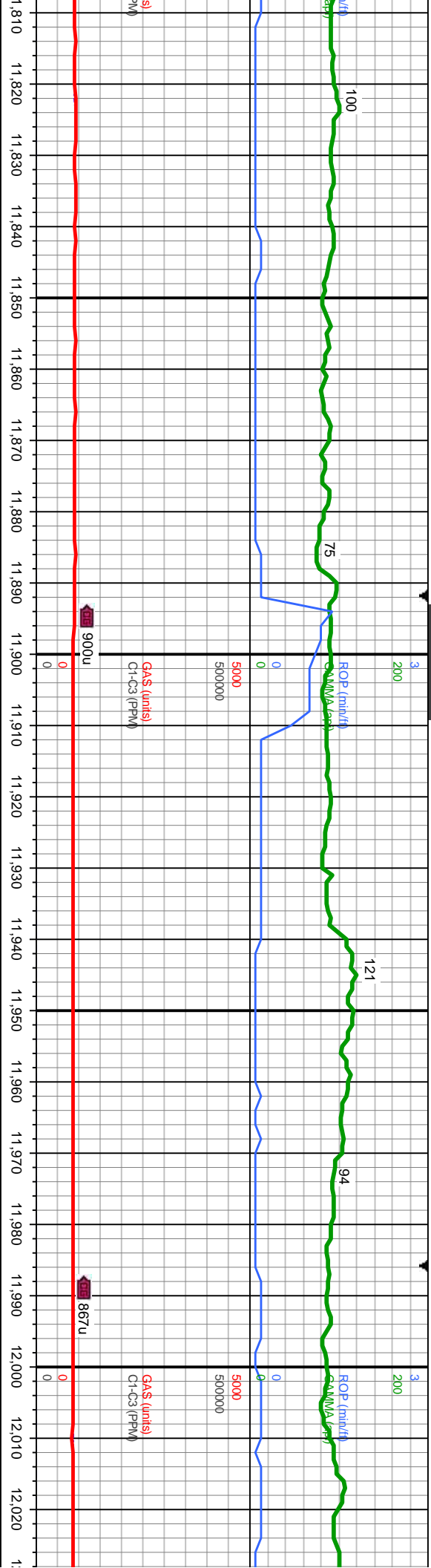
WT IN: 9.2+ OUT: 9.3
VIS IN: 46 OUT: 45

MD: 11,649
TVD: 7,619.84
Inclination: 88.86
Azimuth: 181.09
VS: 3,530.46

MD: 11,744
TVD: 7,621.58
Inclination: 89.04
Azimuth: 181
VS: 3,625.44

11,600'-11,700' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbnd-mnd, m-w strd, p-m cons w/ v sl calc cnt, p vis intrgrn por, sl tr lt bl flr w/ slw halo cut

11,700'-11,800' MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbnd-mnd, m-w strd, p-m cons w/ v sl calc cnt, tr sh



WT IN: 9.2+ OUT: 9.4
VIS IN: 47 OUT: 45

MD: 11,838.
TVD: 7,622.27.
Inclination: 90.12 -
Azimuth: 181.68 -
VS: 3,719.44 .

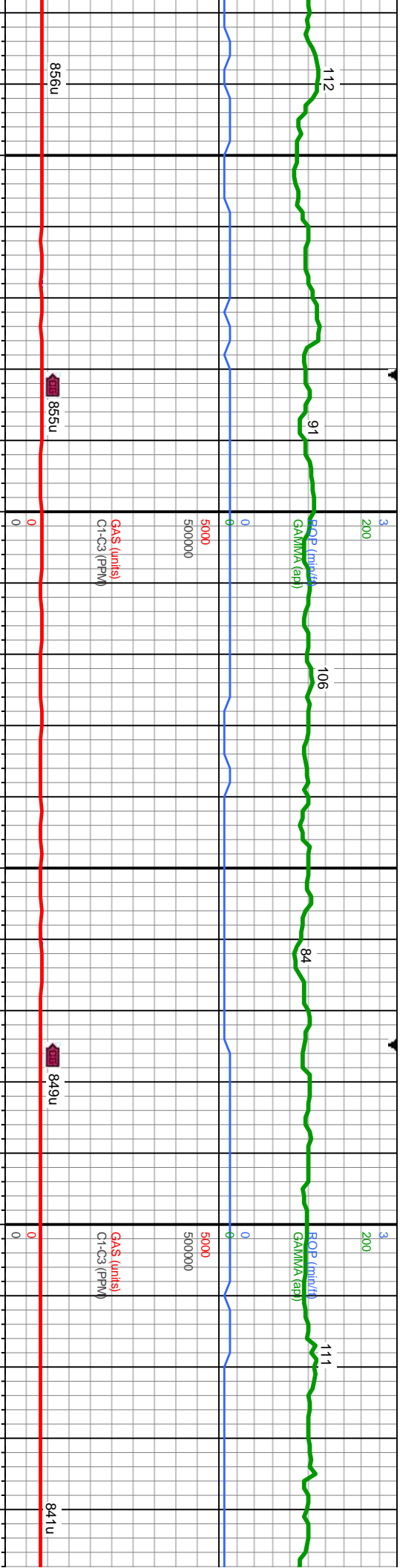
MD: 11,932.
TVD: 7,623.42.
Inclination: 88.48 -
Azimuth: 181.19 -
VS: 3,813.43 .

MD: 12,026.
TVD: 7,625.3
Inclination: 8
Azimuth: 18
VS: 3,907.4 .

11,800'-11,900' MD: SS: lt-dk bm, occ
mot, f-m gr, m-v frm, sbird-rnd, m-w strd,
p-m cons w/ v sl calc cnt, tr sh

11,900'-12,000' MD: SS: lt-dk bm, occ
mot, f-m gr, m-v frm, sbird-rnd, m-w
strd, p-m cons w/ v sl calc cnt, tr sh



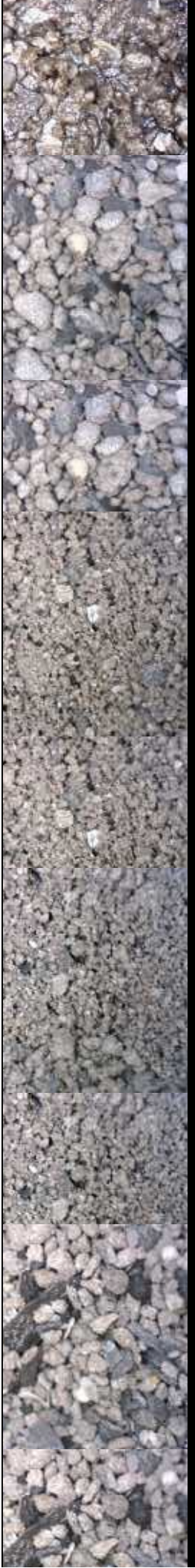


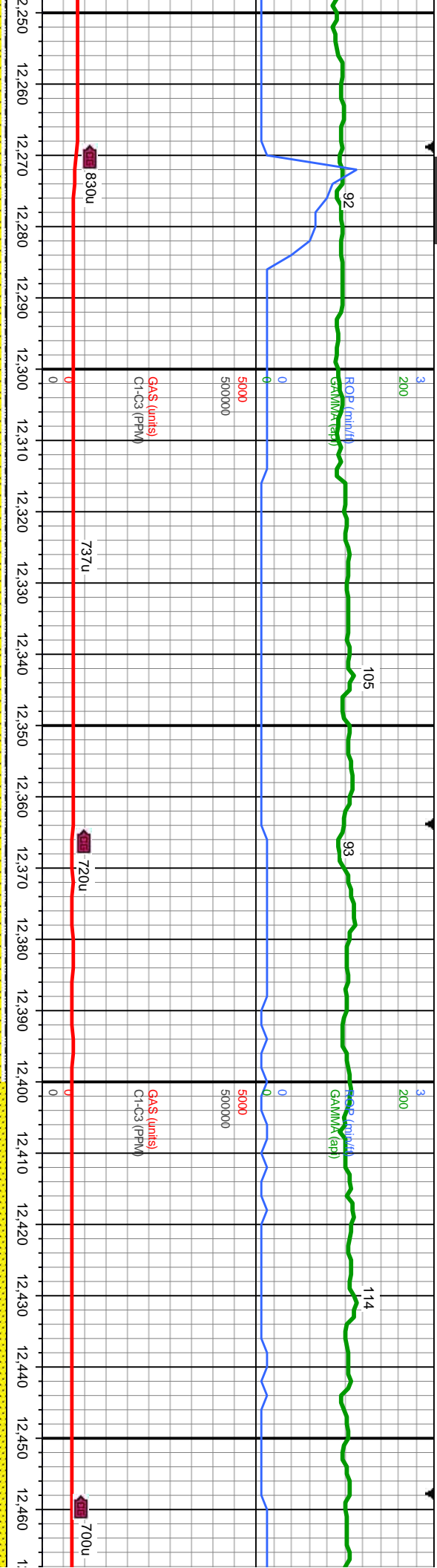
5.
9.16 -
.46 -

MD: 12,121.
TVD: 7,626.26.
Inclination: 89.75 -
Azimuth: 181.06 -
VS: 4,002.4.

MD: 12,215.
TVD: 7,626.52.
Inclination: 89.93 -
Azimuth: 180.5 -
VS: 4,096.4.

MD	SS	It-dk brn, occ	mot, f-m gr, m-v frm, sbnd-rnd, m-w srt'd, p-m cons w/ v sl calc cnt, tr sh
12,000'-12,100'	MD: 12,121.	SS: It-dk brn, occ	mot, f-m gr, m-v frm, sbnd-rnd, m-w srt'd, p-m cons w/ v sl calc cnt, tr sh
12,100'-12,200'	MD: 12,200.	SS: It-dk brn, occ	mot, f-m gr, m-v frm, sbnd-rnd, m-w srt'd, p-m cons w/ v sl calc cnt, tr sh
12,200'-12,300'	MD: 12,215.	SS: It-dk brn, occ	mot, f-m gr, m-v frm, sbnd-rnd, m-w srt'd, p-m cons w/ v sl calc cnt, tr sh





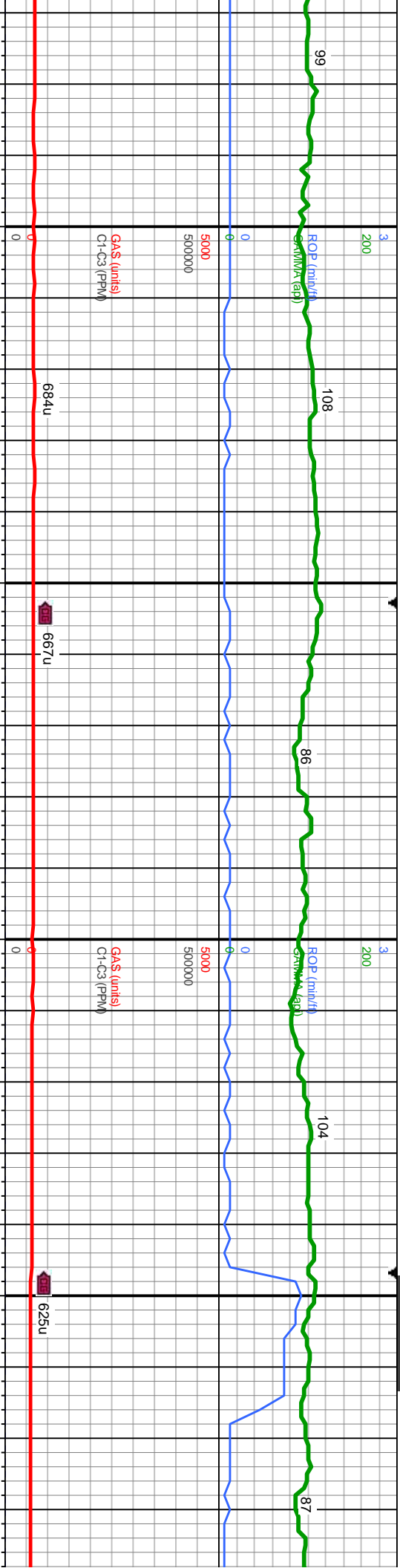
WT IN: 9.3 OUT: 9.4
VIS IN: 46 OUT: 45

MD: 12,309
TVD: 7,627.34
Inclination: 89.07
Azimuth: 180.6
VS: 4,190.39

MD: 12,404
TVD: 7,628.75
Inclination: 89.23
Azimuth: 180.91
VS: 4,285.38

Depth (ft)	Description
12,300-12,400	MD: SS: lt brn-dk brn, occ gy mot, f-med gr, mod-v frm, sr-rd, mod-w strd, mod cons, v sl calc cnt; SLTY SH: lt - m gy, tr blk, sft - frm, sbblky - sbply, mod-v sily
8100	
12,400-12,500	MD: SS: lt-dk brn-dk gybrn-mot, f-m gr, m-v frm, sbrrd-rnd, m-w strd, p-m cons w/ v sl calc cnt
8100	





MD: 12,498
TVD: 7,629.41
Inclination: 89.96
Azimuth: 181.02
VS: 4,379.37

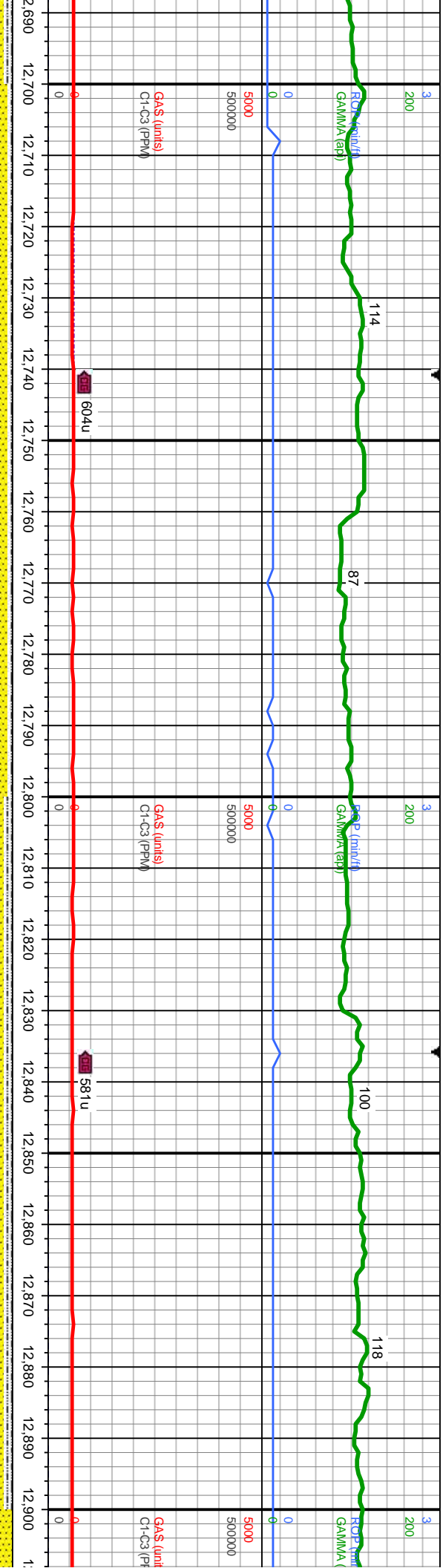
WT IN: 9.3 OUT: 9.4
VIS IN: 46 OUT: 45

MD: 12,592
TVD: 7,628.92
Inclination: 90.64
Azimuth: 181.02
VS: 4,473.37

MD: 12,687
TVD: 7,629
Inclination:
Azimuth: 18
VS: 4,568.3

TVD (ft)	
7100	
12,500'-12,600' MD: SS: lt-dk brn-dk gy/brn-mot, f-m gr, m-v frm, sbnd-rnd, m-w strd, p-m cons w/ v sl calc cmf, tr sh, tr pyr	
8100	
TVD (ft)	
7100	
12,600'-12,700' MD: SS: lt brn-dk brn, f-med gr, mod-v frm, sr-rd, mod-w strd, mod cons, v sl calc cmf; SLTY SH: lt - m gy, sft - frm, sbblky - sbply, mod-v slty	
8100	





MD: 12,781
TVD: 7,630.02
Inclination: 89.56
Azimuth: 180.58
VS: 4,662.36

MD: 12,876
TVD: 7,630.85
Inclination: 89.44
Azimuth: 179.73
VS: 4,757.34

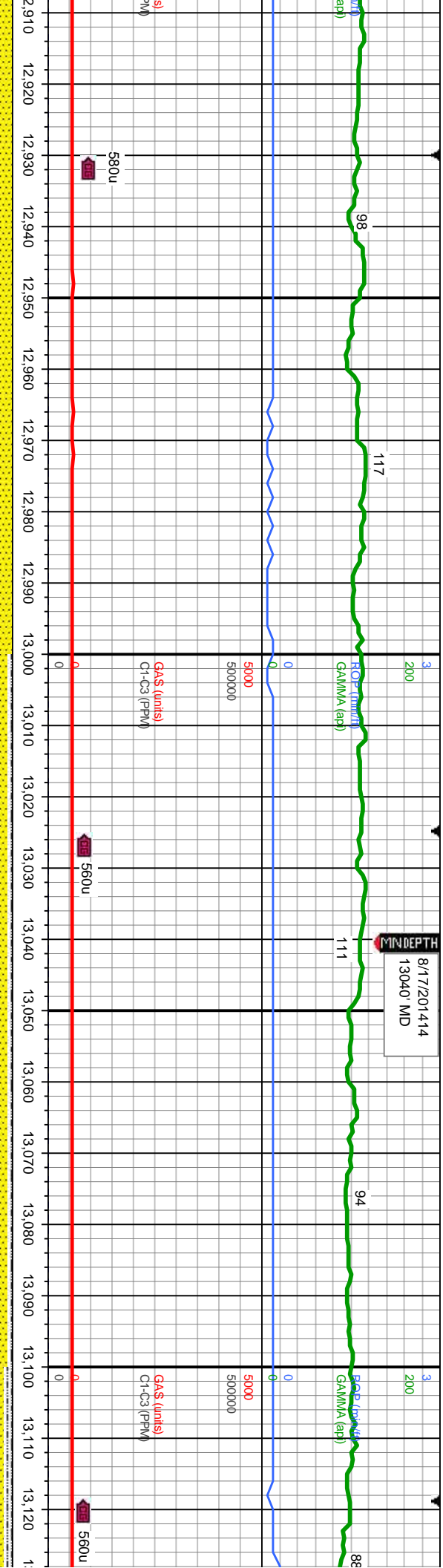
12,700'-12,800' MD: SS: lt brn-dk brn, f-med gr, mod-v frm, sr-rd, mod-w strd, mod cons, v sl calc cnt; SLTY SH: lt - m gy, sft - frm, sbblky - sbply, mod-v silty

8100

12,800'-12,900' MD: SS: lt brn-dk brn, f-med gr, mod-v frm, sr-rd, mod-w strd, p-mod cons, v sl calc cnt; SLTY SH: lt - m gy/tr blk, sft - frm, sbblky - sbply, mod-v silty

8100





WT IN: 9.3 OUT: 9.4
VIS IN: 44 OUT: 44

MD: 12,970.
TVD: 7,631.54.
Inclination: 89.72 -
Azimuth: 180.07 -
VS: 4,851.32

WT IN: 9.4 OUT: 9.5
VIS IN: 44 OUT: 44

MD: 13,065.
TVD: 7,631.44.
Inclination: 90.4 -
Azimuth: 179.99 -
VS: 4,946.3.

TVD (ft)

TVD (ft)

12,900'-13,000' MD: SS: lt-dk brn-dk
gy brn-mot, f-m gr, m-v frm, sbnd-rnd, m-w
strd, p-m cons w/ v sl calc cnt, tr sh

8100

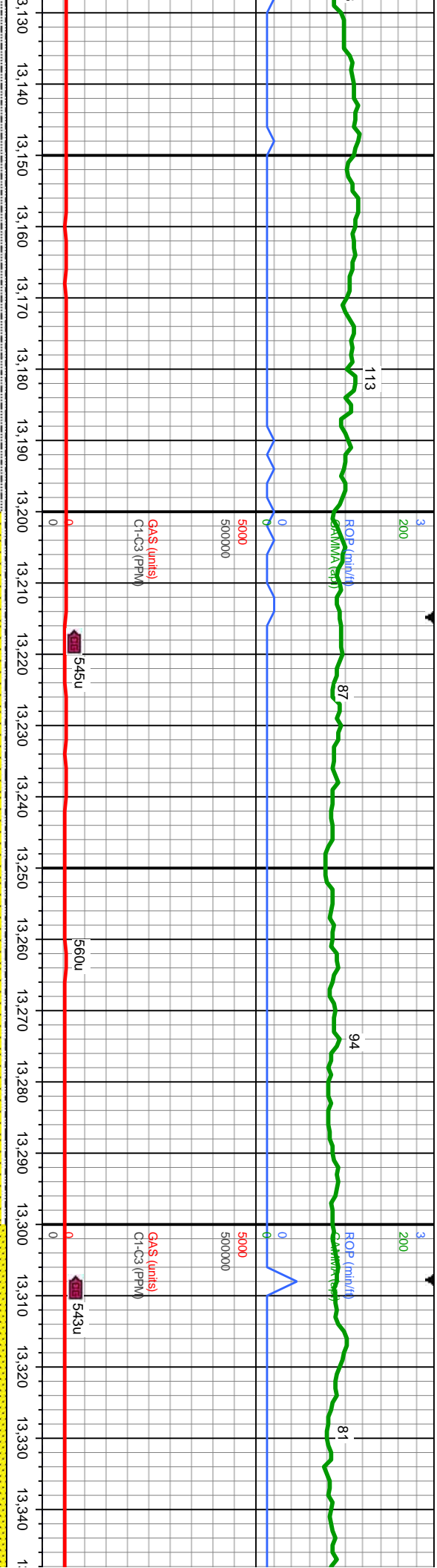
13,000'-13,100' MD: SS: lt brn-dk brn/oc dk gy, f-med gr,
mod-v frm, sr-rd, mod-w strd, mod cons, v sl calc cnt;
SLTY SH: lt - m gy/tr blk, sft - frm, sbblky - sbply, mod-v silty

8100

13,100'-13,200' MD: SS: lt brn-dk brn/oc dk gy, f-med gr,
mod-v frm, sr-rd, mod-w strd, mod cons, v sl calc cnt;
SLTY SH: lt - m gy/tr blk, sft - frm, sbblky - sbply, mod-v silty

8100





MD: 13,159.
TVD: 7,630.76
Inclination: 90.43
Azimuth: 179.87
VS: 5,040.28

MD: 13,254.
TVD: 7,629.75
Inclination: 90.79
Azimuth: 180.29
VS: 5,135.26

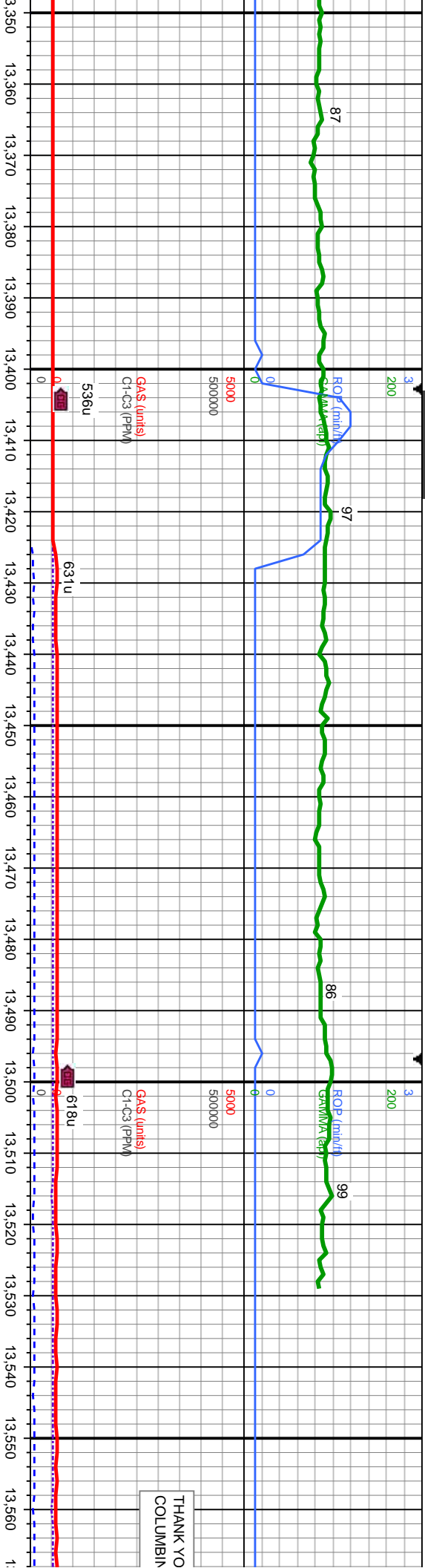
MD: 13,341.
TVD: 7,628
Inclination
Azimuth: 1
VS: 5,229.

13,200' MD: SS: lt brn-dk brn/occ dk gy, f-med gr, n, sr-rd, mod-w strd, mod cons, v sl calc cm; SLTY gy/tr blk, sft - frm, sbblky - sbply, mod-v silty

13,200'-13,300' MD: SS: lt brn-dk brn/occ dk gy, f-med gr, mod-v frm, sr-rd, mod-w strd, mod cons, v sl calc cm; SLTY Sh: lt - m gy/tr blk, sft - frm, sbblky - sbply, mod-v silty

13,300'-13,400' MD: : gy/brn-mot, f-m gr, m strd, p-mod cons, v s





3.07 91.26 79.48 22.		MD: 13.443 TVD: 7.627.18 Inclination: 89.81 Azimuth: 179.13 VS: 5.324.17	
TVD (ft)		TVD (ft)	
7100	WT IN: 9.5 VIS IN: 44	OUT: 9.5 OUT: 43	7100
MD: 13.520 TVD: 7.627.15 Inclination: 90.24 Azimuth: 179.48 VS: 5.401.13		PROU TO BIT	

SS: lt-dk brn-dk v firm, sbnd-rnd, med-w calc cnt, tr sh	8100	13.400'-13.500' MD: SS: lt-dk brn-dk gy/brn-mot, f-m gr, m-v frm, sbnd-rnd, med-w strd, p-mod cons, v sl calc cnt, tr sh	8100	13.500'-13.575' MD: SS: lt-dk brn-dk gy/brn-mot, f-m gr, m-v frm, sbnd-rnd, med-w strd, p-mod cons, v sl calc cnt, tr sh
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U FOR USING
IE LOGGING INC.

13,570 13,580 13,590 13,600

WELL TDD @ 13,575'
@ 03:40 HRS ON 08/17/14

MD: 13,575'
TVD: 7,626.92'
Inclination: 90.24°
Azimuth: 179.48°
VS: 5,456.1'

