



RESERVOIR GROUP

Scale: 5" / 100'
Measured Depth Log

Well Name Herbers 1A-20H-B167

Location SESW 20 1N 67W

State Colorado

County Weld

Country U.S.A.

Rig Number Ensign 142

API Number 05-123-49794

AFE # 16192306.1

Geographic Region Rockies

Field Wattenberg

Spud Date 10/13/2019

Drilling Completed 3/2/2020

Surface Coordinates NWNE Sec: 20 Twp: 1N 67W
Lat/Long: 40.041524/-104.913547

Planned Location 829' FNL 2,382' FEL

Bottom Hole Coordinates Sec: 29 Twp: 1N 67W

Planned Location 2,172' FNL 2,470' FEL

Ground Elevation 5,107

K.B. Elevation 5,130

Logged Interval 2,571' **To** 15,000'

Total Depth 15,000'

Formation Niobrara B Chalk

Type of Drilling Fluid Oil Based Mud

Operator

Company Creststone Peak Resources

Address 1801 California Street
Denver, CO 80202



CRESTONE PEAK RESOURCES

Geologist

Name John T. Ready

Company Crestone Peak Resources

Address 1801 California Street
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Color Coding



Oil



Condensate



Gas



Note



Core



Pressure



Error



Water



Seal

Other

Services Provided 2-Man Logging, Gas Chromatography

Loggers: Micah Morgan / Greg Diefenbach

Equipment: ML-608

Address Reservoir Group
14103 Interdrive West
Houston, Texas 77032

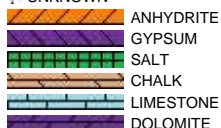
Service Start Date: 02/27/2020

Service End Date: 03/02/2020

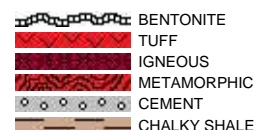
JOB # 0135

Rock Types

? UNKNOWN



▲ ▲ ▲ ▲ ▲ CHERT



Accessories

Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC
- BRACHIOPOD
- BRYOZOA
- CEPHALOPOD
- CORAL
- CRINOID
- ECHINOID
- FISH
- FORAMINIFERA

F FOSSIL

- GASTROPOD
- OOLITE
- OSTRACOD
- PELECYPOD
- PELLET
- PISOLITE
- PLANT REMAINS
- PLANT SPORES
- SCAPHOPOD
- STROMATOPOROID

Minerals

- ANHYDRITIC

ARGILLACEOUS

- ARGILLITE GRAIN
- BENTONITE
- BITUMENOUS SUBSTANCE
- BRECCIA FRAGMENTS
- CALCAREOUS
- CARBONACEOUS FLAKES
- CHTDK
- CHTLT
- COAL - THIN BEDS
- DOLOMITIC
- FELDSPAR
- FERRUGINOUS PELLET
- FERRUGINOUS

GLAUCONITE

- GYPSIFEROUS
- HEAVY MINERAL
- KAOLIN
- MARLSTONE
- MINERAL CRYSTALS
- NODULES
- PHOSPHATE PELLETS
- PYRITE
- SALT CAST
- SANDY
- SILICEOUS
- SILTY
- 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

Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

- EARTHY
- FENESTRAL
- FRACTURE
- INTERCRYSTALLINE
- INTEROOLITIC
- MOLDIC

ORGANIC

- PINPOINT
- VUGGY

Engineering

- BIT
- CASING
- CONNECTION (LEFT)
- CONNECTION (RIGHT)
- CONNECTION GAS
- CORE - LOST
- CORE - RECOVERED
- DST INTERVAL
- FAULT

FORMATION TOP

- GAS SHOW
- MN DEPTH
- NORMAL FAULT
- OIL SHOW
- OVERTURNED STRATA
- REVERSE FAULT
- SIDEWALL CORE (LEFT)
- SIDEWALL CORE (RIGHT)
- SLIDE
- SURVEY
- TRIP GAS
- WIRELINE TESTED - LEFT
- WIRELINE TESTED - RT

Rounding

- ANGULAR
- ROUNDED
- SUBANG
- SUBRND

Textures

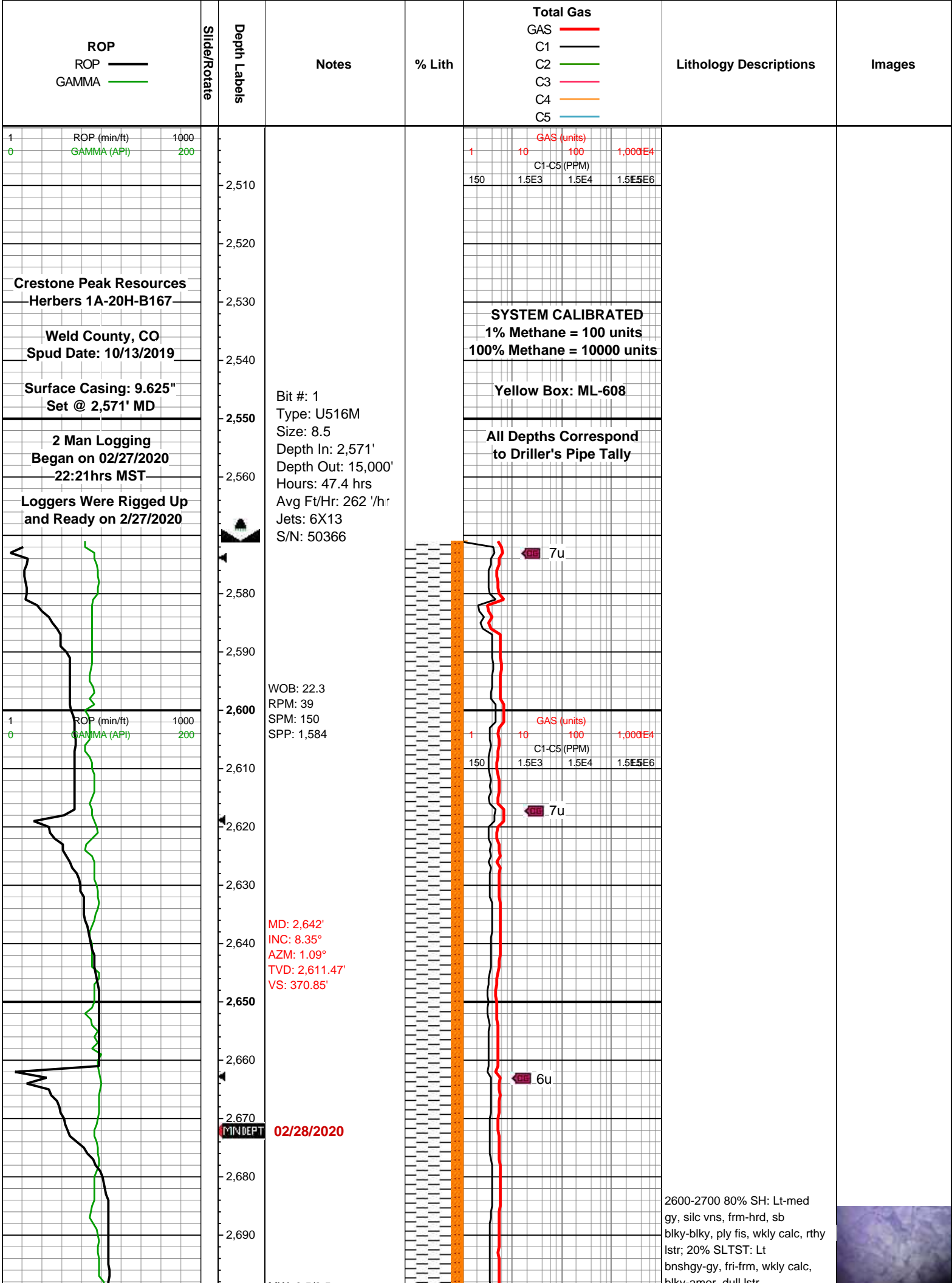
- BOUNDSTONE
- CHALKY
- CRYPTOXLN
- EARTHY
- FINELYXLN
- GRAINSTONE

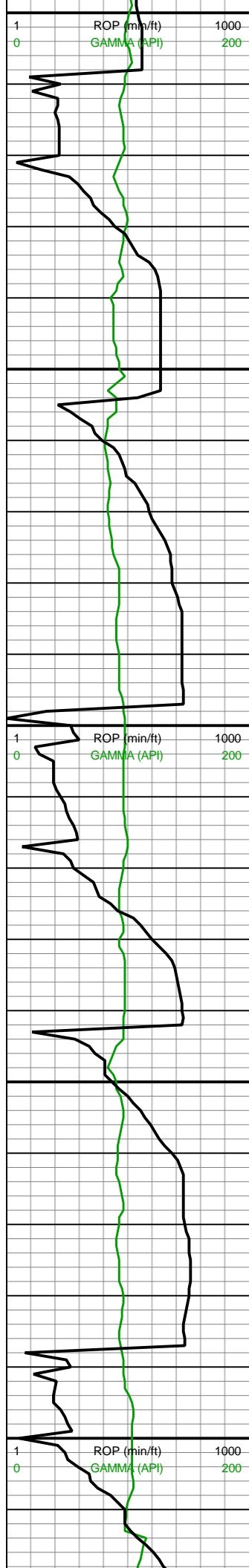
L LITHOGRAPHIC

- MICROXLN
- MUDSTONE
- PACKSTONE
- WACKESTONE

Sorting

- MODERATE
- POOR
- WELL





2,700
2,710
2,720
2,730
2,740
2,750
2,760
2,770
2,780
2,790
2,800
2,810
2,820
2,830
2,840
2,850
2,860
2,870
2,880
2,890
2,900
2,910

MW: 9.5/9.5
VIS: 47/46

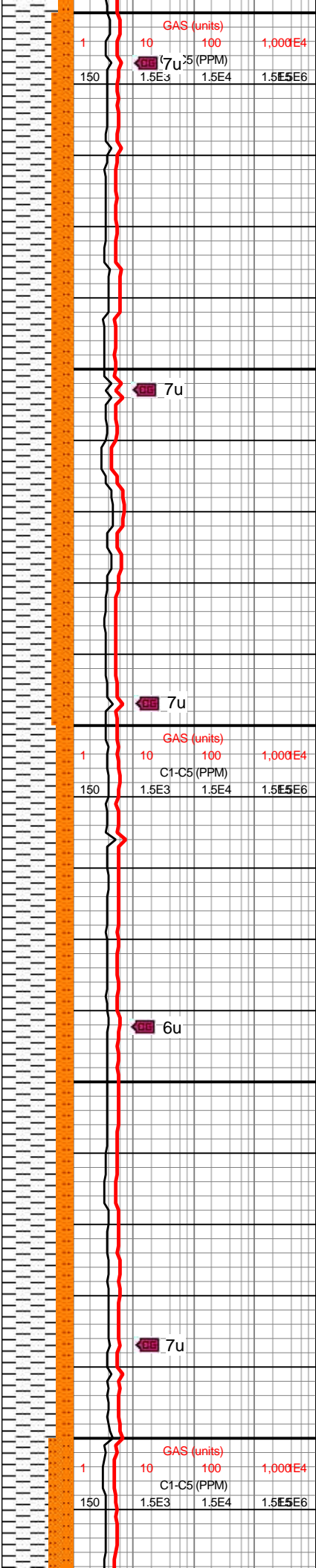
MD: 2,732'
INC: 8.88°
AZM: 351.77°
TVD: 2,700.46'
VS: 384.26'

WOB: 12.5
RPM: 50
SPM: 198
SPP: 2,199

MD: 2,821'
INC: 9.76°
AZM: 352.48°
TVD: 2,788.28'
VS: 398.53'

MW: 9.5/9.5
VIS: 46/45

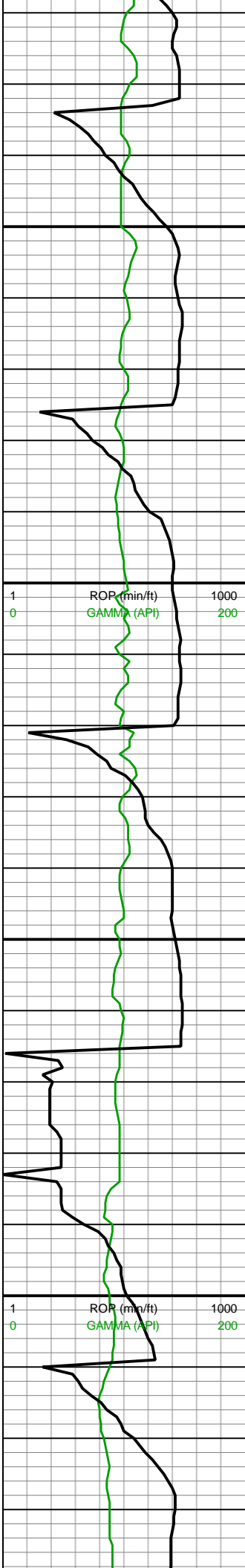
MD: 2,910'
INC: 9.85°
AZM: 354.76°
TVD: 2,875.98'
VS: 413.59'



2700-2800 70% SH: Lt-med
gy, silc vns, frm-hrd, sb
blky-blky, ply fis, wkly calc, rthy
lstr; 30% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
blky-amor, dull lstr

2800-2900 75% SH: Lt-med
gy, silc vns, frm-hrd, sb
blky-blky, ply fis, wkly calc, rthy
lstr; 25% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
blky-amor, dull lstr





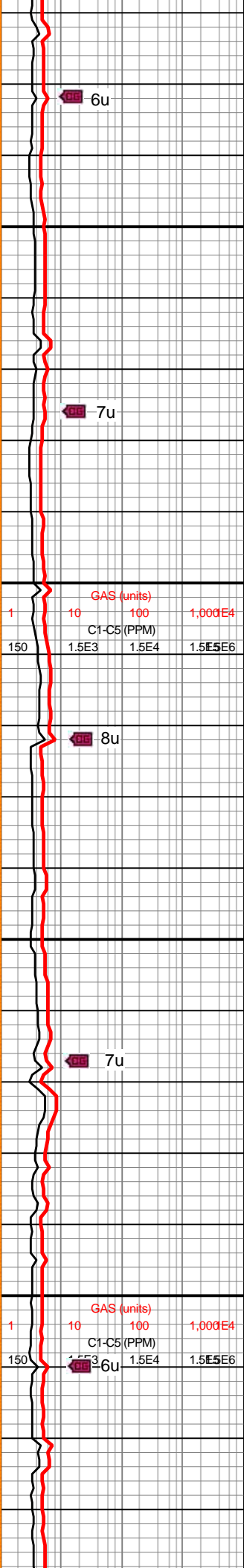
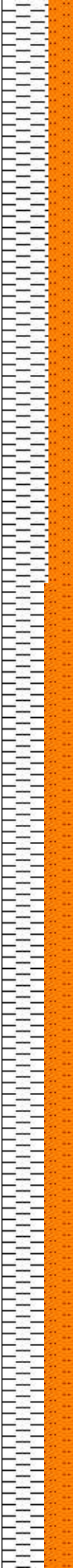
2,920
2,930
2,940
2,950
2,960
2,970
2,980
2,990
3,000
3,010
3,020
3,030
3,040
3,050
3,060
3,070
3,080
3,090
3,100
3,110
3,120
3,130

MD: 2,999'
INC: 9.06°
AZM: 351.95°
TVD: 2,963.77'
VS: 428.11'

WOB: 23.5
RPM: 51
SPM: 196
SPP: 2,581

MW: 9.5/9.5
VIS: 46/45

MD: 3,088'
INC: 9.85°
AZM: 356.34°
TVD: 3,051.57'
VS: 442.65'



6u

7u

8u

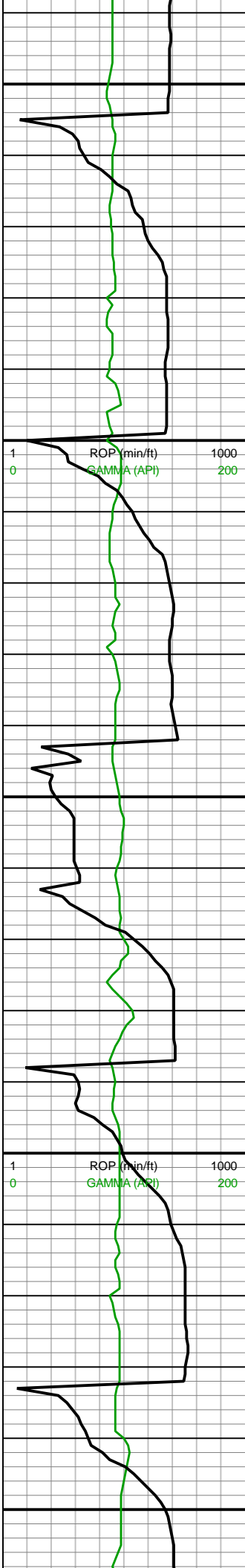
7u

6u

2900-3000 65% SH: Lt-med
gy, silc vns, frm-hrd, sb
blky-blky, ply fis, wkly calc, rthy
lstr; 35% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
blky-amor, dull lstr

3000-3100 60% SH: Lt-med
gy, silc vns, frm-hrd, sb
blky-blky, ply fis, wkly calc, rthy
lstr; 40% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
blky-amor, dull lstr





3,140
3,150
3,160
3,170
3,180
3,190
3,200
3,210
3,220
3,230
3,240
3,250
3,260
3,270
3,280
3,290
3,300
3,310
3,320
3,330
3,340
3,350

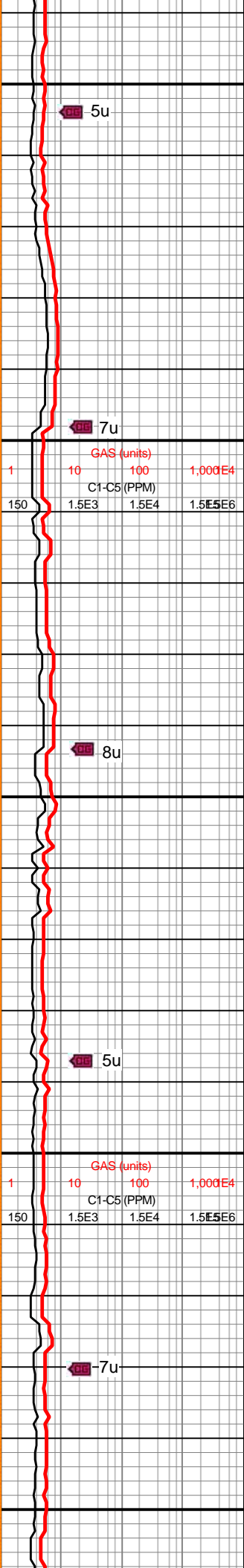
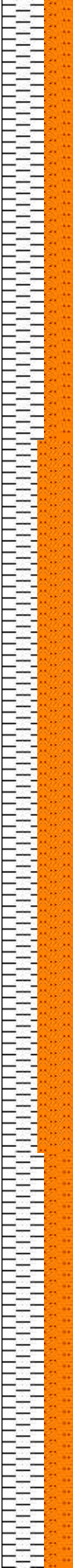
MD: 3,177'
INC: 8.97°
AZM: 353°
TVD: 3,139.37'
VS: 457.13'

WOB: 28.2
RPM: 51
SPM: 196
SPP: 2,634

MW: 9.5/9.5
VIS: 47/46

MD: 3,267'
INC: 10.38°
AZM: 356.52°
TVD: 3,228.09'
VS: 472.19'

MD: 3,356'
INC: 9.58°
AZM: 355.11°



5u

7u

8u

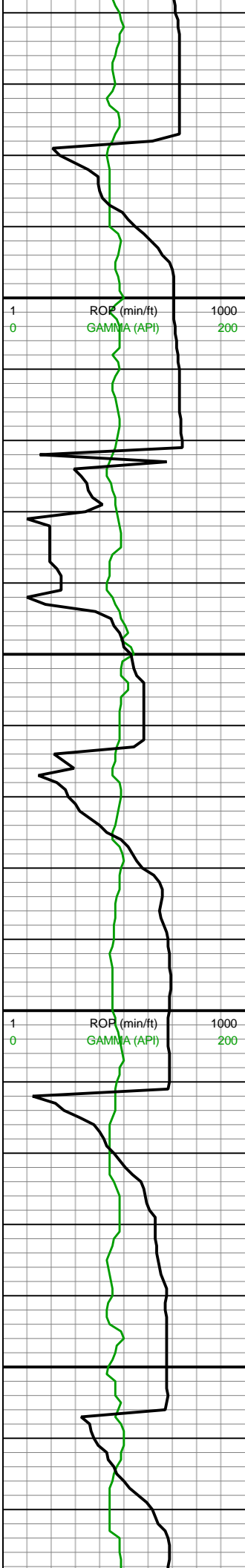
5u

7u

3100-3200 60% SH: Lt-med
gy, silc vns, frm-hrd, sb
blky-blky, ply fis, wkly calc, rthy
lstr; 40% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
blky-amor, dull lstr

3200-3300 50% SH: Lt-med
gy, silc vns, frm-hrd, sb
blky-blky, ply fis, wkly calc, rthy
lstr; 50% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
blky-amor, dull lstr





3,360
3,370
3,380
3,390
3,400
3,410
3,420
3,430
3,440
3,450
3,460
3,470
3,480
3,490
3,500
3,510
3,520
3,530
3,540
3,550
3,560
3,570

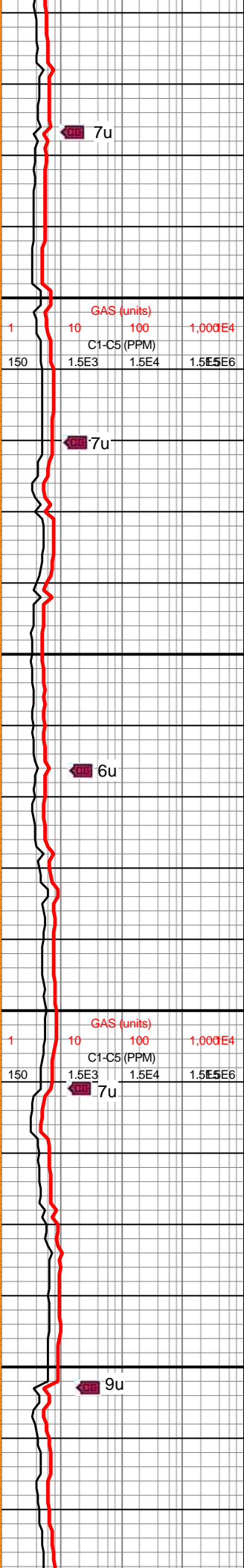
TVD: 3,315.74'
VS: 487.57'

WOB: 25.9
RPM: 25
SPM: 198
SPP: 2,603

MD: 3,445'
INC: 9.85°
AZM: 356.34°
TVD: 3,403.46'
VS: 502.55'

MW: 9.5/9.5
VIS: 47/46

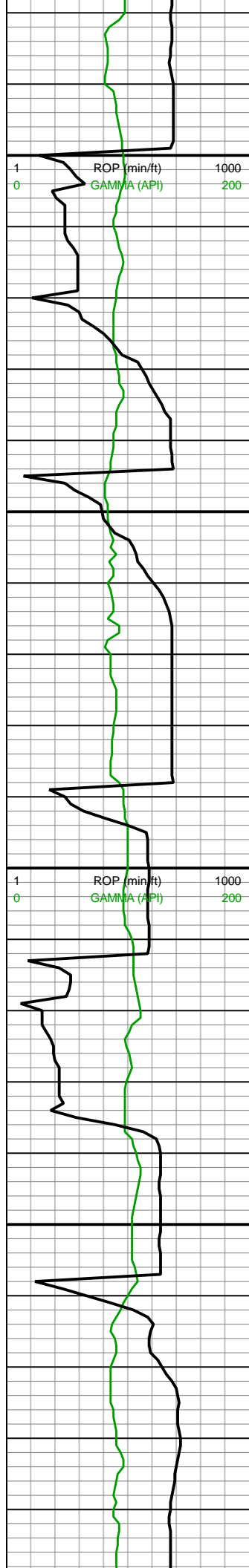
MD: 3,534'
INC: 9.15°
AZM: 354.94°
TVD: 3,491.24'
VS: 517.2'



3300-3400 60% SH: Lt-med gy, silc vns, frm-hrd, sb blkly-blky, ply fis, wkly calc, rthy lstr; 40% SLTST: Lt bnshgy-gy, fri-frm, wkly calc, blkly-amor, dull lstr

3400-3500 60% SLTST: Lt bnshgy-gy, fri-frm, wkly calc, blkly-amor, dull lstr; 40%SH: Lt-med gy, silc vns, frm-hrd, sb blkly-blky, ply fis, wkly calc, rthy lstr





3,580
3,590
3,600
3,610
3,620
3,630
3,640
3,650
3,660
3,670
3,680
3,690
3,700
3,710
3,720
3,730
3,740
3,750
3,760
3,770
3,780
3,790

WOB: 32.7
RPM: 50
SPM: 196
SPP: 2,727

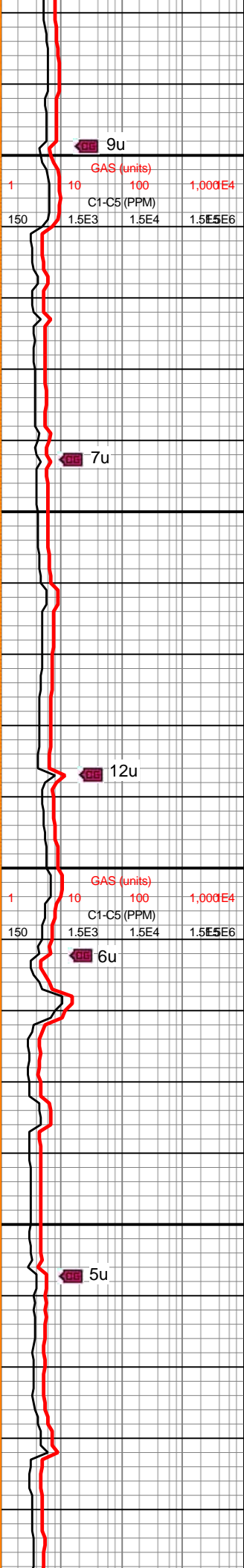
MD: 3,648'
INC: 9.41°
AZM: 0.91°
TVD: 3,603.75'
VS: 535.54'

**Trip for Agitator
@ 3,688' MD
05:17hrs**

MM

MD: 3,737'
INC: 10.55°
AZM: 358.28°
TVD: 3,691.4'
VS: 550.96'

WOB: 39

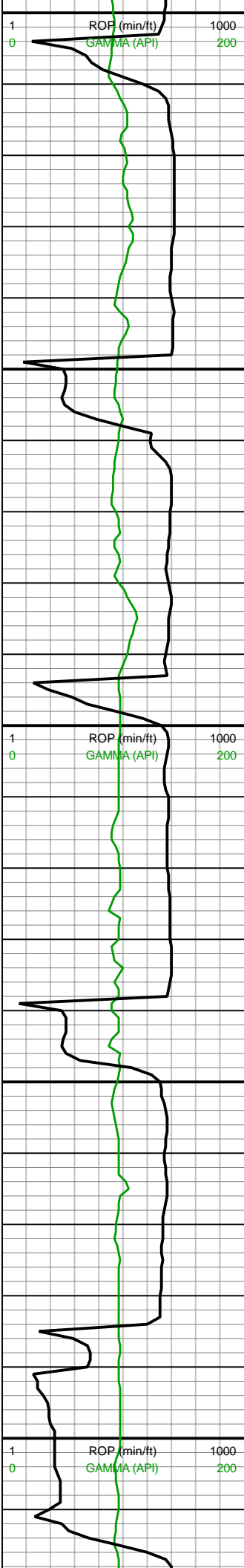


3500-3600 60% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
blky-amor, dull lstr; 40%SH:
Lt-med gy, silc vns, frm-hrd, sb
blky-blky, ply fis, wkly calc, rthy
lstr

3600-3700 65% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
blky-amor, dull lstr; 35%SH:
Lt-med gy, silc vns, frm-hrd, sb
blky-blky, ply fis, wkly calc, rthy
lstr

3700-3800 70% SLTST: Lt
bnshgy-gy, fri-frm, sl hd ip,
wkly calc, blky-amor, dull lstr;
30%SH: Lt-med gy, frm-sl hrd,
sb blky-blky,amor, ply fis, wkly





RPM: 51
SPM: 198
SPP: 3,162

MW: 9.5/9.5
VIS: 46/45

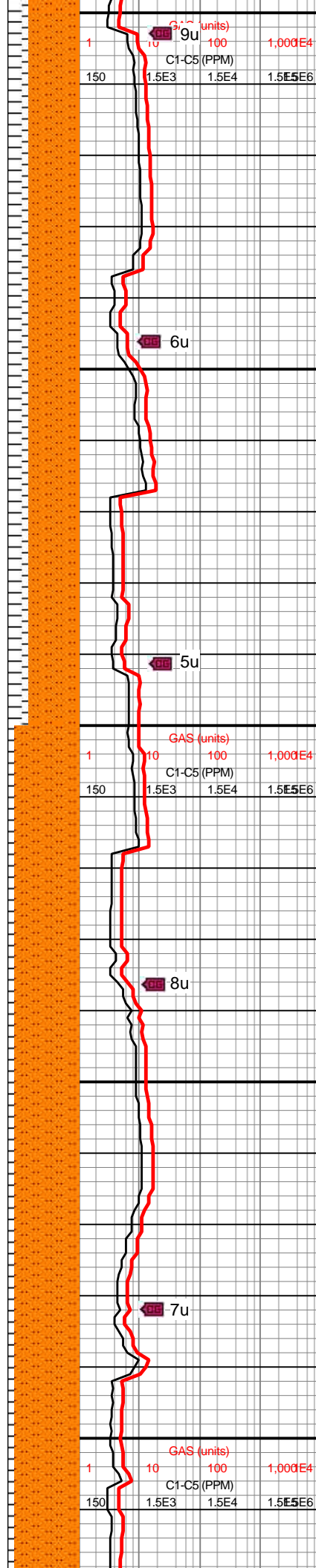
MD: 3,827'
INC: 9.67°
AZM: 353°
TVD: 3,780.01'
VS: 566.7'

MD: 3,916'
INC: 8.88°
AZM: 348.43°
TVD: 3,867.85'
VS: 580.85'

WOB: 11
RPM: 0
SPM: 197
SPP: 2,675

MD: 4,005'
INC: 10.02°
AZM: 351.07°
TVD: 3,955.64'
VS: 595.23'

MW: 9.5/9.5
VIS: 46/45



GAS (units)
C1-C5 (PPM)
9u
100
1.000E4
1.5E3
1.5E4
1.5E6

6u

5u

8u

7u

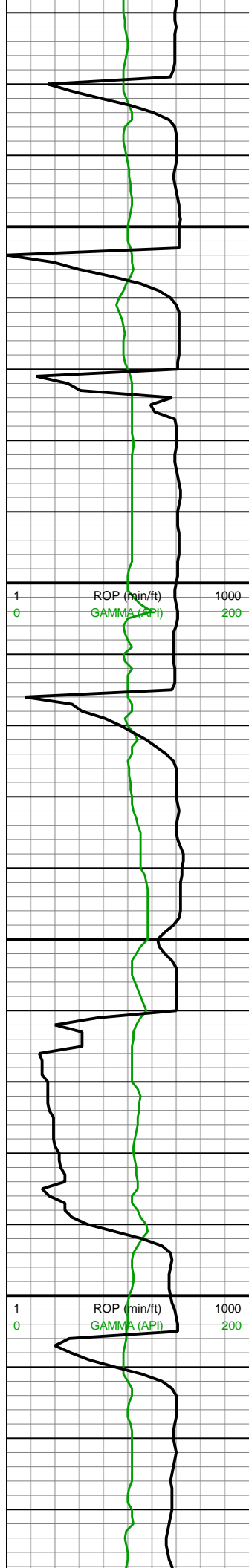
GAS (units)
C1-C5 (PPM)
10
100
1.000E4
1.5E3
1.5E4
1.5E6

calc, rthy lstr

3800-3900 70% SLTST: Lt
bnshgy-gy, fri-frm, wkly calc,
sb blkyl-blky-amor, dull-rthy lstr;
30%SH: Lt-med gy, frm-sl hrd,
sb blkyl-blky,amor, ply fis, wkly
calc, rthy lstr

3900-4000 90% SLTST:
lt-med gy, sl fri-frm, wkly calc,
blkyl-amor, dull lstr; 10%SH:
Lt-med gy, frm-hrd, sb
blkyl-blky, amor, ply fis, wkly
calc, dull-rthy lstr





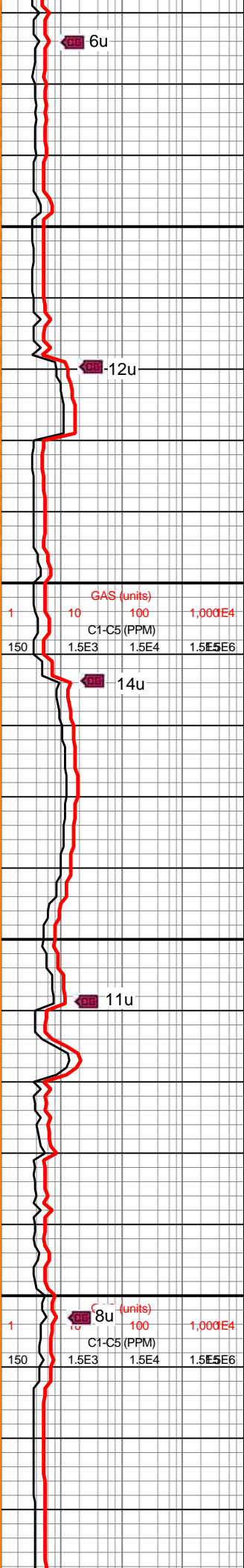
4,020
4,030
4,040
4,050
4,060
4,070
4,080
4,090
4,100
4,110
4,120
4,130
4,140
4,150
4,160
4,170
4,180
4,190
4,200
4,210
4,220
4,230

MD: 4,094'
INC: 9.15°
AZM: 348.43°
TVD: 4,043.39'
VS: 609.81'

MD: 4,183'
INC: 9.85°
AZM: 358.8°
TVD: 4,131.18'
VS: 624.36'

WOB: 34
RPM: 51
SPM: 197
SPP: 3,174

MW: 9.5/9.5
VIS: 46/45



6u

12u

14u

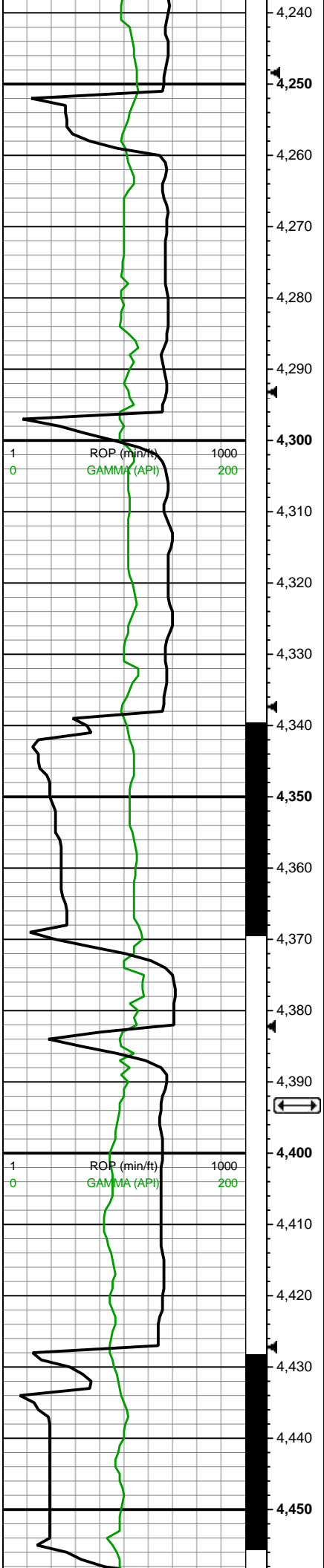
11u

8u

4000-4100 90% SLTST: lt gy,
frm, wkly calc, blk-ymor, rthy
lstr; 10%SH: Lt-med gy, frm-sl
hrd, sb blk-ymor, amor, ply fis,
wkly calc, dull-rthy lstr

4100-4200 100% SLTST:
lt-med gy, sl fri-frm, wkly calc,
sb blk-ymor, amor, dull-rthy lstr;
tr SH





MD: 4,272'
INC: 8.62°
AZM: 357.75°
TVD: 4,219.02'
VS: 638.63'

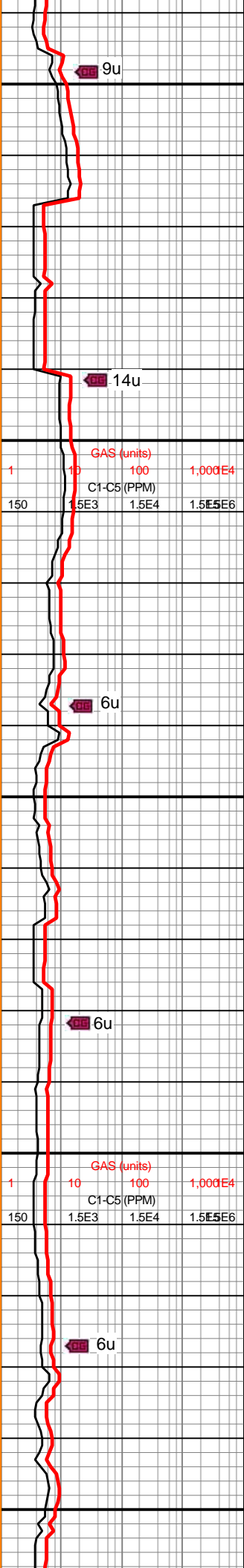
MD: 4,362'
INC: 9.94°
AZM: 8.65°
TVD: 4,307.85'
VS: 653.05'

MW: 9.4/9.4
VIS: 47/465

↔
Larimer
4,338' TVD
4,393' MD

WOB: 35
RPM: 51
SPM: 196
SPP: 3,183

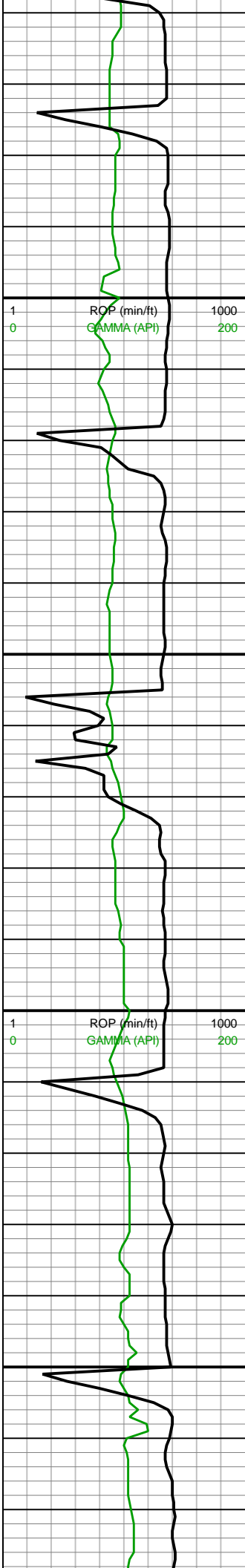
MD: 4,451'
INC: 11.52°
AZM: 4.25°
TVD: 4,395.29'
VS: 669.51'



4200-4300 100% SLTST:
lt-med gy, sl fri-frm, sl hd ip,
wkly calc, sb blkly-blky-amor,
dull-rthy lstr; tr SH

4300-4400 100% SLTST:
lt-med gy, sme dk gy ip,
frm-hd, wkly calc, sb
blkly-blky-amor, dull-rthy lstr





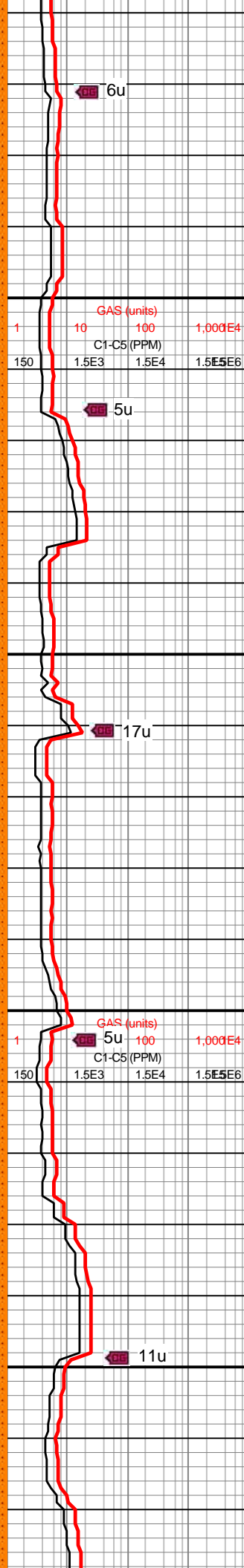
4,460
4,470
4,480
4,490
4,500
4,510
4,520
4,530
4,540
4,550
4,560
4,570
4,580
4,590
4,600
4,610
4,620
4,630
4,640
4,650
4,660
4,670

MD: 4,540'
INC: 10.73°
AZM: 1.44°
TVD: 4,482.62'
VS: 686.66'

WOB: 36
RPM: 51
SPM: 197
SPP: 3,303

MW: 9.4/9.4
VIS: 47/45

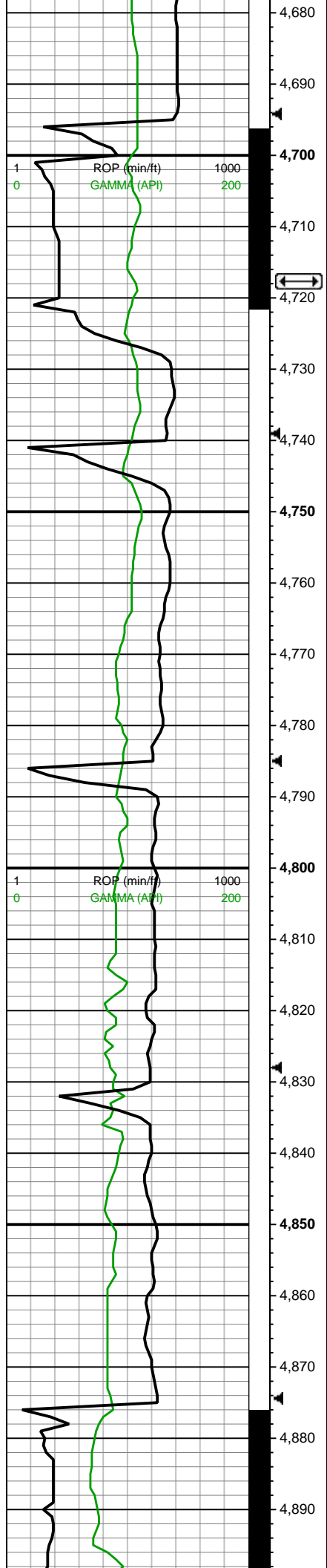
MD: 4,629'
INC: 9.23°
AZM: 358.28°
TVD: 4,570.27'
VS: 702.07'



4400-4500 100% SLTST:
lt-med gy, frm-sl hd-hd, wkly
calc, sb blkly-blky, amor ip, rthy
lstr

4500-4600 100% SLTST:
lt-med gy, frm-hd, wkly calc,
sb blkly-blky, amor ip, dull-rthy
lstr; tr SS





Sussex
4,657' TVD
4,718' MD

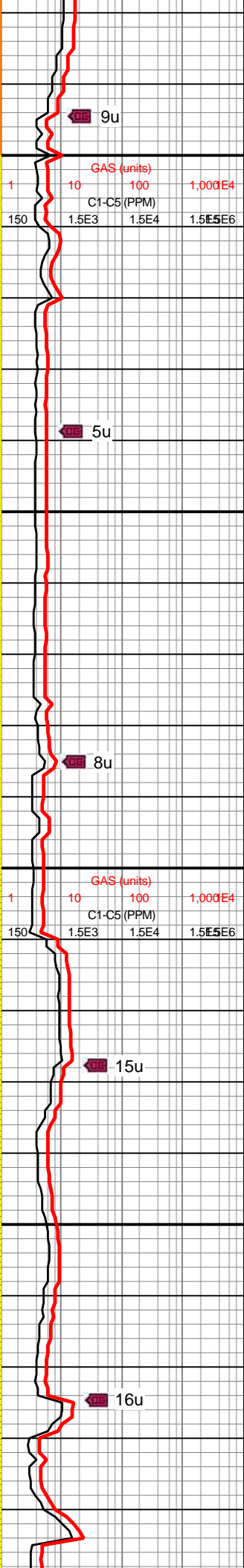
MD: 4,718'
INC: 10.73°
AZM: 0.56°
TVD: 4,657.92'
VS: 717.49'

WOB: 35
RPM: 51
SPM: 197
SPP: 3,299

MD: 4,807'
INC: 9.58°
AZM: 3.73°
TVD: 4,745.53'
VS: 733.17'

MW: 9.4/9.4
VIS: 47/45

MD: 4,896'
INC: 10.2°
AZM: 353.53°

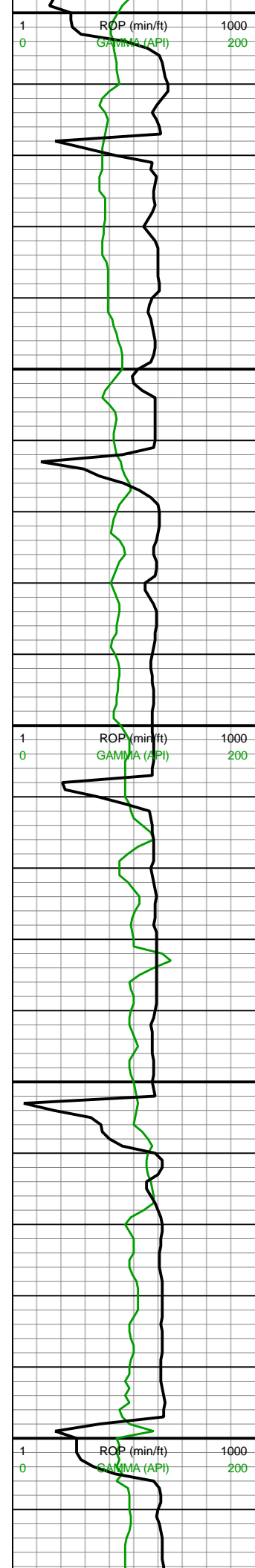


4600-4700 100% SLTST:
lt-med gy, frm-hd, wkly calc,
sb blkly-blky, amor ip, dull-rthy
lstr; tr SS

4700-4800 75% Sltly SS:
med-dk gy, vf gr, sb rnd-sb
ang, dull-sdy tex, sft-frm, w srt,
mod cons, v slty; 25% SLTST:
lt gy, frm-hd, wkly calc, sb
blkly-blky, dull-rthy lstr

4800-4900 85% Sltly SS:
med-dk gy, vf gr, tr f grs, sb
rnd-sb ang, dull-sdy tex,
sft-frm, w srt, mod cons, v slty;
15% SLTST: lt gy, frm-hd,





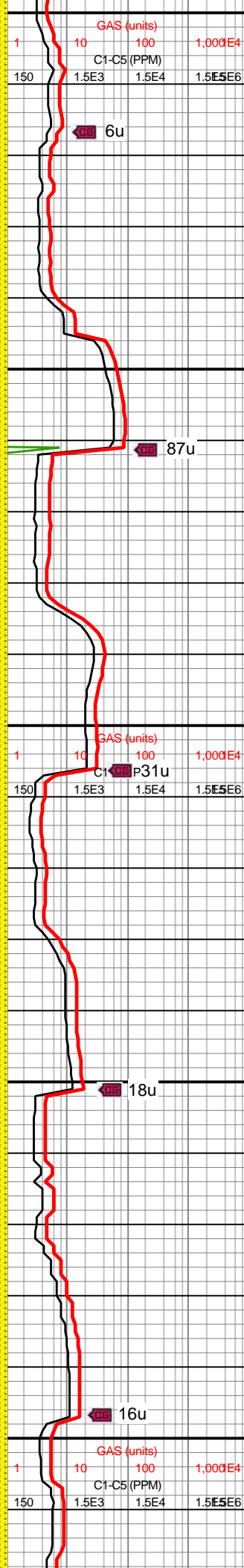
TVD: 4,833.21'
VS: 748.39'

MD: 4,985'
INC: 9.85°
AZM: 351.42°
TVD: 4,920.85'
VS: 763.75'

WOB: 34
RPM: 51
SPM: 197
SPP: 3,338

MW: 9.4/9.4
VIS: 47/45

MD: 5,075'
INC: 8.79°
AZM: 352.65°
TVD: 5,009.66'
VS: 778.18'

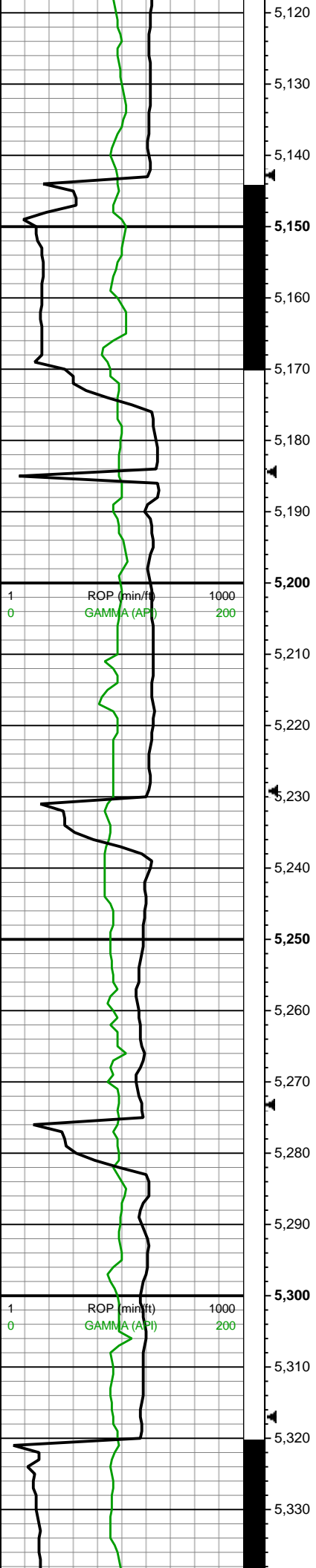


wkly calc, sb blkly-blky, rthy lstr

4900-5000 100% Sily SS:
med-dk gy, vf-f gr, sb rnd-sb
ang, dull-sdy tex, sft-frm-hd,
mod-w srt, sl calc cmt, mod
cons, v slty

5000-5100 100% Sily SS:
med-dk gy, sm lt gy ip, vf-f gr,
sb rnd-sb ang, dull-sdy tex,
frm-hd, mod-w srt, sl calc cmt,
mod cons, v slty





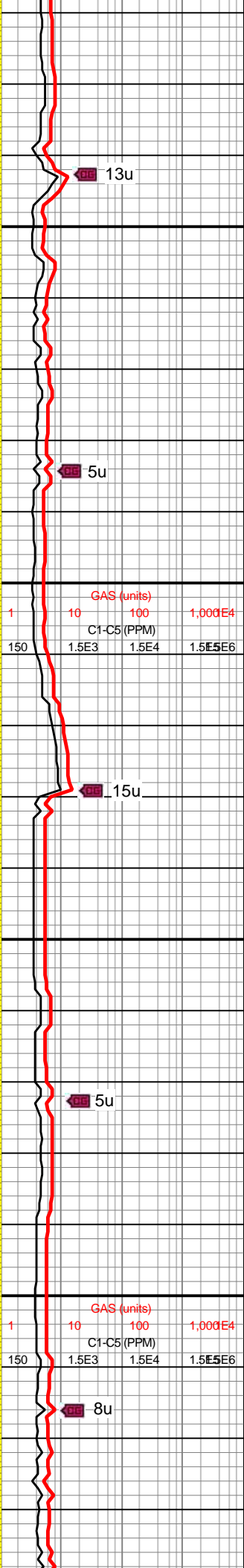
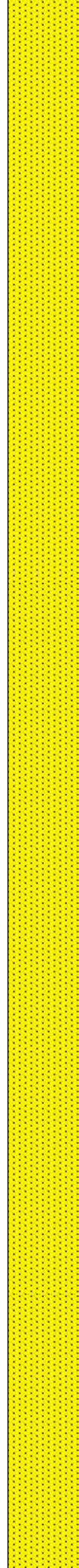
MD: 5,164'
INC: 9.94°
AZM: 350.19°
TVD: 5,097.48'
VS: 792.49'

WOB: 35
RPM: 51
SPM: 198
SPP: 3,325

MD: 5,253'
INC: 8.53°
AZM: 350.37°
TVD: 5,185.32'
VS: 806.57'

MW: 9.4/9.4
VIS: 47/45

MD: 5,348'



13u

5u

15u

5u

8u

5100-5200 100% Sltly SS:
med-dk gy, vf-f gr, sb rnd-sb
ang, dull-sdy tex, frm-hd,
mod-w srt, sl calc cmt, mod
cons, v slty

5200-5300 100% Sltly SS:
lt-med-dk gy, vf-f gr, sb rnd-sb
ang, ang ip, dull-sdy tex,
frm-hd, w srt, sl calc cmt, mod
cons, v slty



MD: 5,342'
INC: 10.38°
AZM: 352.3°
TVD: 5,273.11'
VS: 821.03'

Shannon
5,288' TVD
5,358' MD

WOB: 32
RPM: 51
SPM: 196
SPP: 3,306

MD: 5,431'
INC: 10.2°
AZM: 351.42°
TVD: 5,360.68'
VS: 836.76'

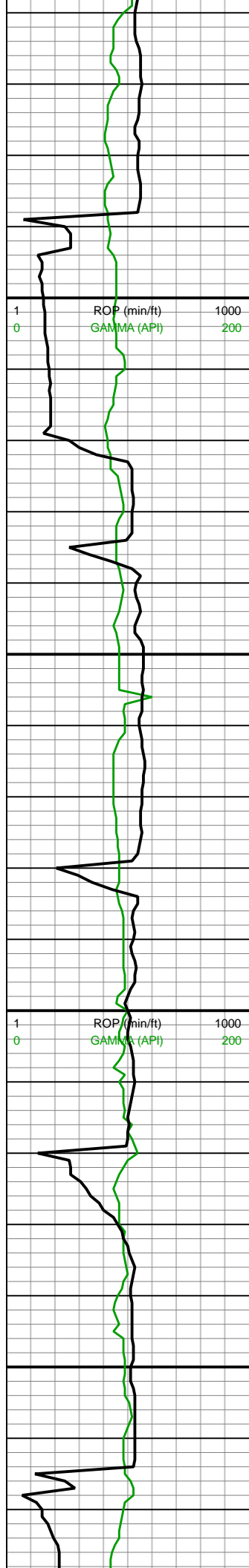
GD

MD: 5,521'
INC: 8.35°
AZM: 351.77°
TVD: 5,449.5'
VS: 851.11'

MW: 9.4/9.4
VIS: 47/45

5300-5400 100% Sity SS:
med-dk gy, vf gr, sb rnd-sb
ang, dull-sdy tex, frm-hd, sl fri
ip, w srt, sl calc cmt, mod
cons, v slty

5400-5500 100% Sity SS:
lt-med-dk gy, vf gr, sb rnd-sb
ang, dull-sdy tex, frm-hd, v hd
ip, w srt, sl calc cmt, mod
cons, v slty



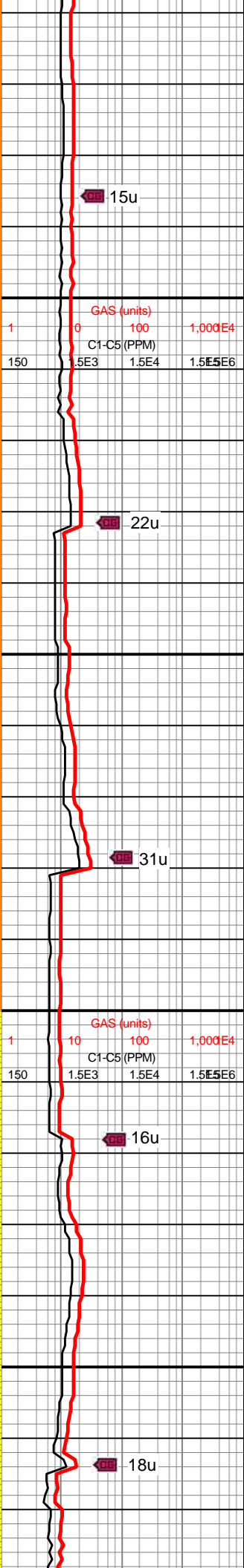
5,560
5,570
5,580
5,590
5,600
5,610
5,620
5,630
5,640
5,650
5,660
5,670
5,680
5,690
5,700
5,710
5,720
5,730
5,740
5,750
5,760
5,770

WOB: 25.4
RPM: 51
SPM: 197
SPP: 2,999

MD: 5,610'
INC: 9.76°
AZM: 351.25°
TVD: 5,537.38'
VS: 864.96'

MD: 5,699'
INC: 8.27°
AZM: 350.01°
TVD: 5,625.28'
VS: 878.73'

MW: 9.4/9.4
VIS: 45/44



15u

22u

31u

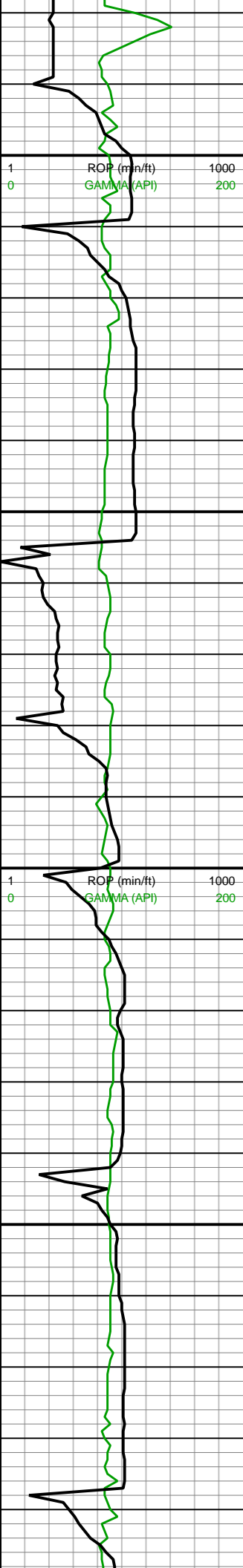
16u

18u

5500-5600 100% SDY
SLTST: Lt gy, dk gy ip, vf
gr-silty tex, suc ip, sb rnd-sub
ang, frm-hd, brit ip, dull-wxy
lstr, ply fiss, wkly-mod calc,
silc cmt

5600-5700 100% SDY
SLTST: Lt gy, dk gy ip, vf
gr-silty tex, suc ip, sb rnd-sub
ang, frm-hd, brit ip, dull-wxy
lstr, ply fiss, wkly-mod calc,
silc cmt





5,780
5,790
5,800
5,810
5,820
5,830
5,840
5,850
5,860
5,870
5,880
5,890
5,900
5,910
5,920
5,930
5,940
5,950
5,960
5,970
5,980
5,990

MD: 5,788'
INC: 9.67°
AZM: 355.46°
TVD: 5,713.19'
VS: 892.48'

WOB: 32.5
RPM: 51
SPM: 198
SPP: 3,269

MD: 5,877'
INC: 11.52°
AZM: 358.45°
TVD: 5,800.67'
VS: 908.82'

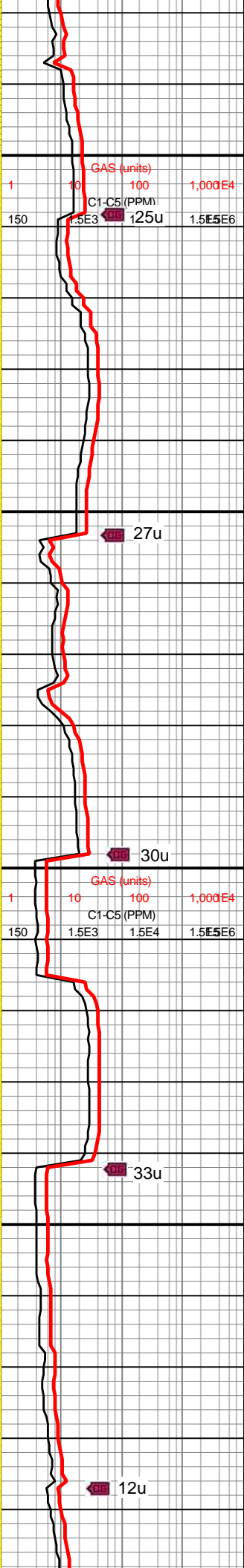
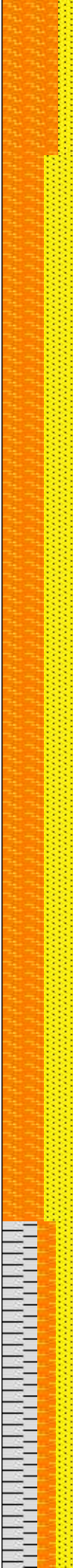
MW: 9.4/9.4
VIS: 45/44

MD: 5,966'
INC: 9.58°
AZM: 357.05°
TVD: 5,888.17'
VS: 925.1'



Mitten Top
5,900' TVD
5,978' MD

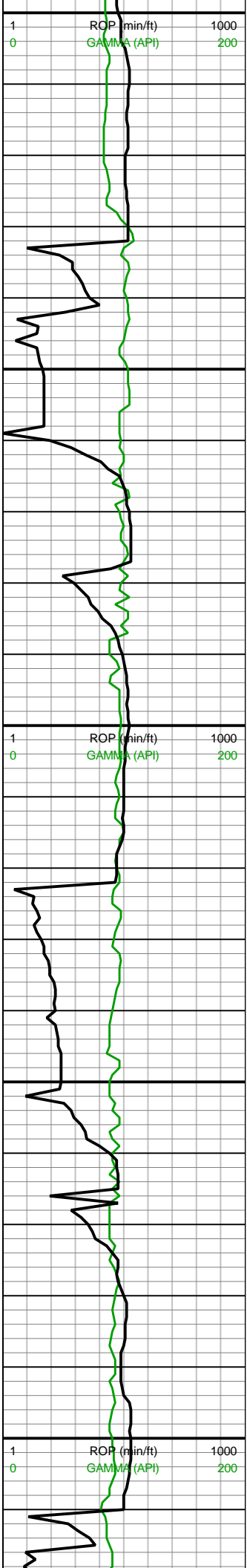
WOB: 34.2



5700-5800 80% SDY SLTST:
Lt-med gy, bnshgy ip, vf gr-sltly
tex, suc ip, sb rnd-sub ang,
frm-hd, brit ip, dull-wxy lstr, ply
fiss, wkly-mod calc; 20% SS:
med-dk gy, f-vf gr, s&p ip, sme
free qtz, mod srt, silc cmt

5800-5900 60% SDY SLTST:
Lt-med gy, bnshgy ip, vf gr-sltly
tex, suc ip, sb rnd-sub ang,
frm-hd, brit ip, dull-wxy lstr, ply
fiss, wkly-mod calc; 40% SS:
med-dk gy, f-vf gr, s&p ip, sme
free qtz, mod srt, silc cmt

5900-6000 50% SH: dk gy-blk,
suc, silc, hrd-v hrd, blkly-sub
blkly, wxy lstr, mod fiss; 25%
SDY SLTST: Lt-med gy,
bnshgy ip, vf gr-sltly tex, suc ip,
sb rnd-sub ang, frm-hd, brit ip,
dull-wxy lstr, ply fiss, wkly-mod
calc; 25% SS: med-dk gy, f-vf
gr, s&p ip, sme free qtz, mod
srt, silc cmt



6,000
6,010
6,020
6,030
6,040
6,050
6,060
6,070
6,080
6,090
6,100
6,110
6,120
6,130
6,140
6,150
6,160
6,170
6,180
6,190
6,200
6,210

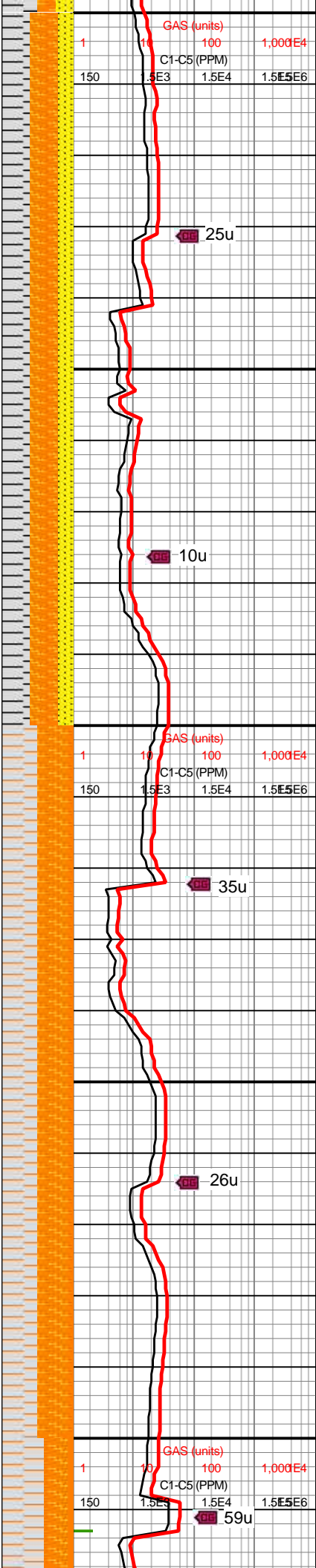
RPM: 51
SPM: 198
SPP: 3,329

MW: 9.4/9.4
VIS: 45/43

MD: 6,056'
INC: 8.71°
AZM: 358.98°
TVD: 5,977.02'
VS: 939.39'

MD: 6,145'
INC: 10.38°
AZM: 357.22°
TVD: 6,064.79'
VS: 954.14'

WOB: 34.8
RPM: 51
SPM: 198
SPP: 3,368



1 1 1
150 1.5E3 1.5E4 1.5E5E6

1 1 1
150 1.5E3 1.5E4 1.5E5E6

1 1 1
150 1.5E3 1.5E4 1.5E5E6

25u

10u

35u

26u

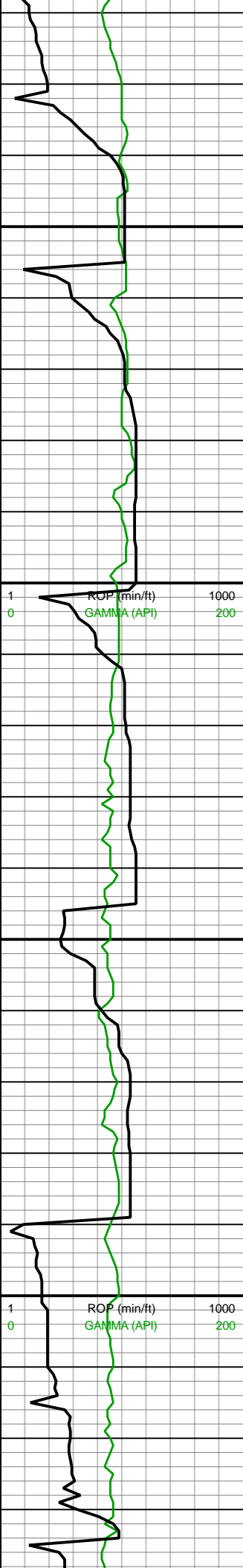
59u

srt, silc cmt

6000-6100 40% SH: dk gy-blk, suc, silc, hrd-v hrd, blk-sub blk, wxy lstr, mod fiss; 40% SDY SLTST: Lt-med gy, bnshgy ip, vf gr-slty tex, suc ip, sb rnd-sub ang, frm-hd, brit ip, dull-wxy lstr, ply fiss, wkly-mod calc; 20% SS: med-dk gy, f-vf gr, s&p ip, sme free qtz, mod srt, silc cmt

6100-6200 50% SLTY SH: Med-dk gy, suc, silc, hrd-v hrd, brit ip, blk-sub blk, dull-rthy lstr, ply fiss, non calc; 50% SDY SLTST: Lt-med gy, bnshgy ip, vf gr-slty tex, sb rnd-sub ang, brit-hd, wkly calc, silc cmt





6,220
6,230
6,240
6,250
6,260
6,270
6,280
6,290
6,300
6,310
6,320
6,330
6,340
6,350
6,360
6,370
6,380
6,390
6,400
6,410
6,420
6,430

MD: 6,234'
INC: 10.64°
AZM: 350.89°
TVD: 6,152.3'
VS: 970.26'

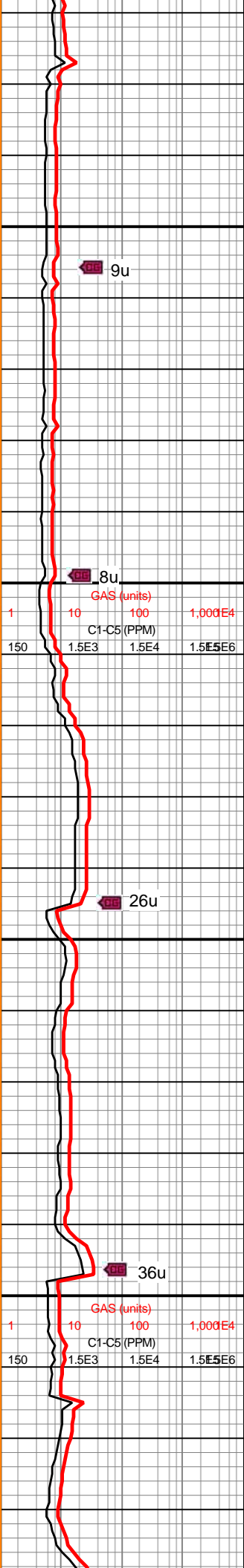
MW: 9.6/9.5
VIS: 44/43

MD: 6,323'
INC: 8.97°
AZM: 350.19°
TVD: 6,239.99'
VS: 985.21'

WOB: 21.5
RPM: 51
SPM: 198
SPP: 2,941

MD: 6,412'
INC: 9.85°
AZM: 347.73°
TVD: 6,327.79'
VS: 999.49'

MW: 9.7/9.6
VIS: 44/42



9u

8u

26u

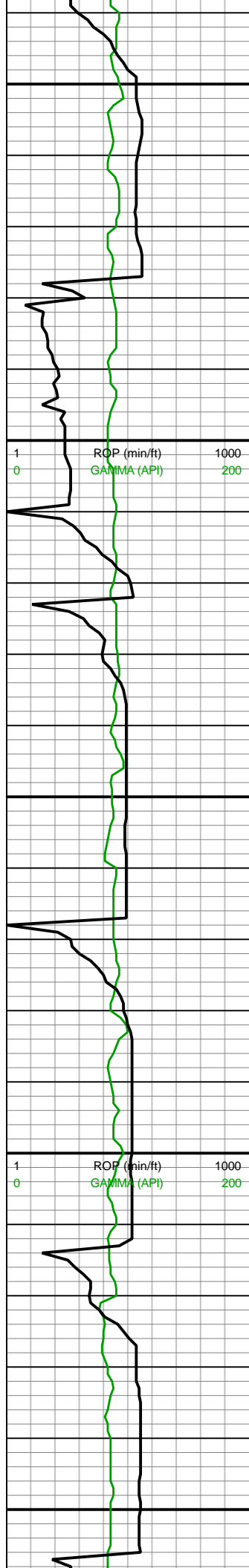
36u

GAS (units)			
1	10	100	1,000E4
C1-C5 (PPM)			
150	1.5E3	1.5E4	1.5E5E6

6200-6300 60% SLTY SH:
Med-dk gy, suc, silc, hrd-v hrd,
brit ip, blk-sub blk, dull-rthy
lstr, ply fiss, non calc; 40%
SDY SLTST: Lt-med gy,
bnshgy ip, vf gr-silty tex, sb
rnd-sub ang, brit-hd, wkly calc,
silc cmt

6300-6400 70% SLTY SH:
Med-dk gy, suc, silc, hrd-v hrd,
brit ip, blk-sub blk, dull-rthy
lstr, ply fiss, non calc; 30%
SDY SLTST: Lt-med gy,
bnshgy ip, vf gr-silty tex, sb
rnd-sub ang, brit-hd, wkly calc,
silc cmt





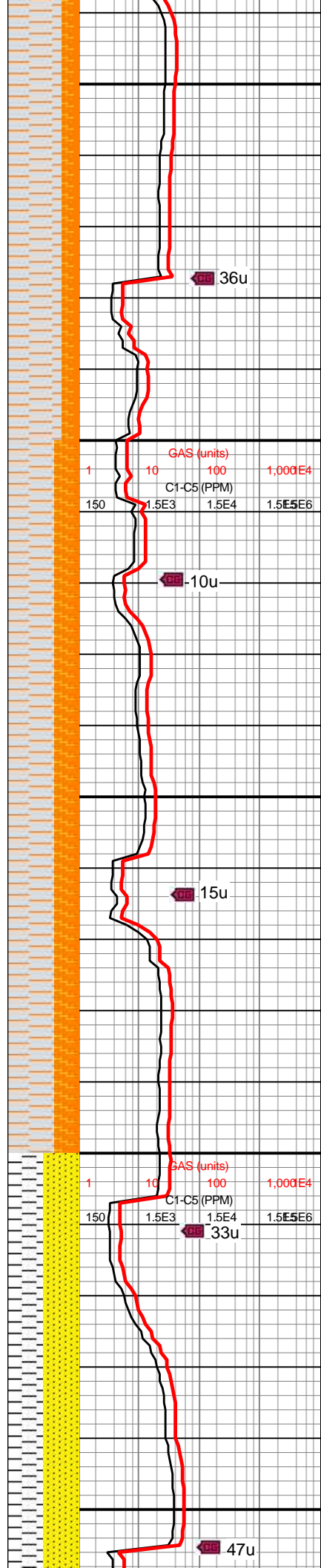
6,440
6,450
6,460
6,470
6,480
6,490
6,500
6,510
6,520
6,530
6,540
6,550
6,560
6,570
6,580
6,590
6,600
6,610
6,620
6,630
6,640
6,650

MD: 6,501'
INC: 11.43°
AZM: 353.53°
TVD: 6,415.26'
VS: 1,015.69'

MW: 9.8/9.8
VIS: 44/42

MD: 6,591'
INC: 9.94°
AZM: 354.06°
TVD: 6,503.7'
VS: 1,032.28'

WOB: 31.6
RPM: 51
SPM: 198
SPP: 3,403



36u

-10u

15u

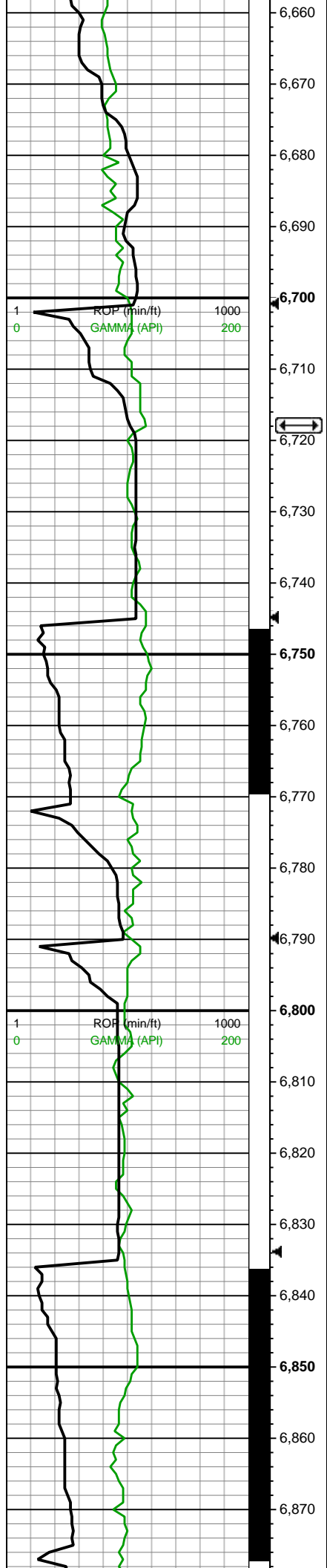
33u

47u

6400-6500 75% SLTY SH:
Med-dk gy, suc, silc, hrd-v hrd,
brit ip, blk-sub blk, dull-rthy
lstr, ply fiss, non calc; 25%
SDY SLTST: Lt-med gy,
bnshgy ip, vf gr-sltly tex, sb
rnd-sub ang, brit-hd, non calc,
silc cmt

6500-6600 65% SLTY SH:
Med-dk gy, suc, silc, hrd-v hrd,
brit ip, blk-sub blk, dull-rthy
lstr, ply fiss, non calc; 35%
SDY SLTST: Lt-med gy,
bnshgy ip, vf gr-sltly tex, sb
rnd-sub ang, brit-hd, non calc,
silc cmt





MD: 6,680'
INC: 7.56°
AZM: 352.83°
TVD: 6,591.66'
VS: 1,045.73'

MW: 9.8/9.8
VIS: 44/42

Tepee Buttes
6,629' TVD
6,718' MD

MINDEPTH 02/29/2020

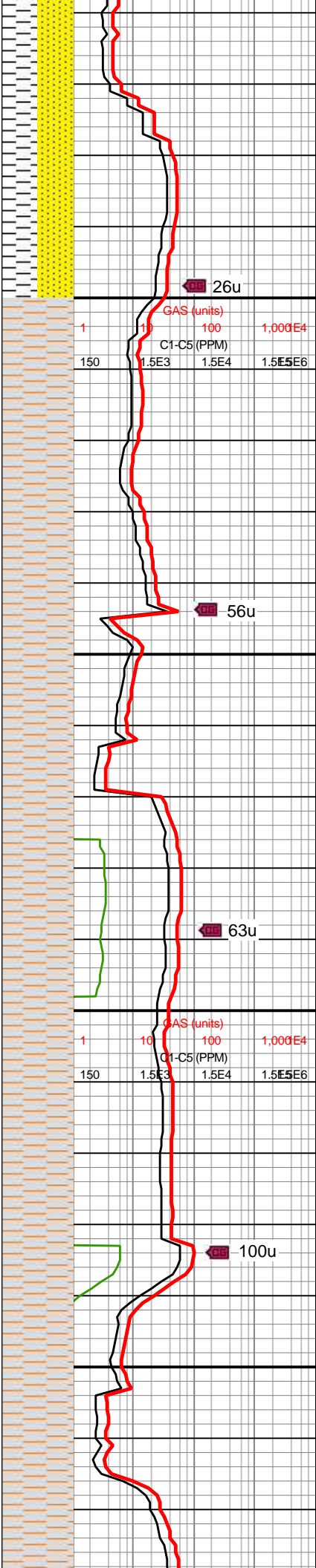
KOP
6,656' TVD
6,745' MD

MD: 6,769'
INC: 3.08°
AZM: 357.57°
TVD: 6,680.25'
VS: 1,053.93'

WOB: 32.6
RPM: 30
SPM: 196
SPP: 3,451

MW: 9.8/9.8
VIS: 44/42

MD: 6,858'
INC: 1.85°
AZM: 172.3°
TVD: 6,769.22'
VS: 1,054.9'



26u

56u

63u

100u

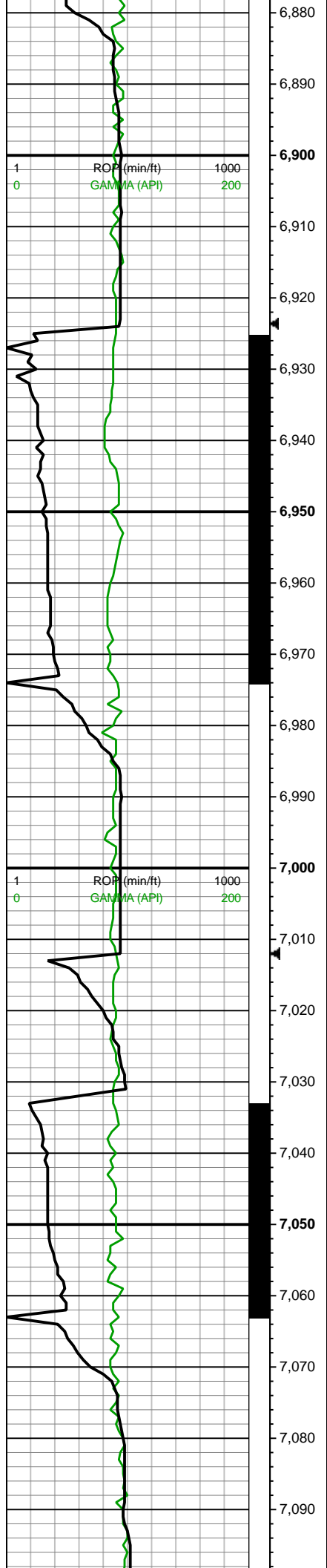
6600-6700 50% SH: Med-dk gy, sm, mod fiss, brit, wxy lstr, sub plty-plty, conch ip, non-calc; 50% SS: Lt-med gy, dk gy ip, f-vf gr, sub ang-ang, w srt, silc cmt

6700-6750 100% SLTY SH: Med-dk gy, suc, sm-slt, silc, hrd-v hrd, brit ip, blk-sub blk, plty ip, amor ip, dull-rthy lstr, ply fiss, non calc

6750-6800 100% SLTY SH: Med-dk gy, suc, sm-slt, silc, hrd-v hrd, brit ip, blk-sub blk, plty ip, amor ip, dull-rthy lstr, ply fiss, non calc

6800-6850 100% SLTY SH: Med-dk gy, suc, sm-slt, silc, hrd-v hrd, brit ip, blk-sub blk, plty ip, amor ip, dull-rthy lstr, ply fiss, non calc



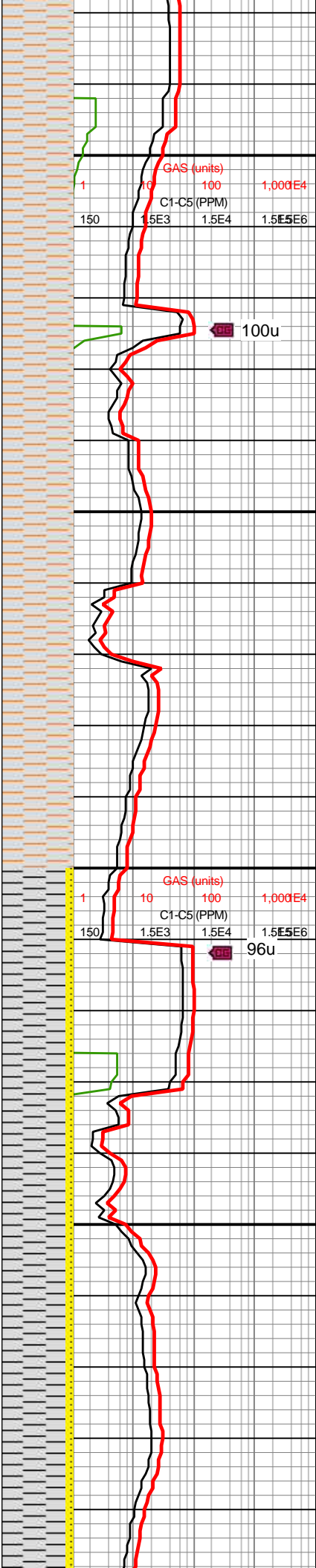


MD: 6,947'
INC: 6.42°
AZM: 177.4°
TVD: 6,857.97'
VS: 1,048.5'

WOB: 32.6
RPM: 30
SPM: 197
SPP: 3,577

MD: 7,036'
INC: 9.58°
AZM: 174.58°
TVD: 6,946.09'
VS: 1,036.15'

MW: 9.8/9.8
VIS: 44/42



6850-6900 100% SLTY SH:
Med-dk gy, suc, sm-sltly, silc,
hrd-v hrd, brit ip, blkly-sub blkly,
ply ip, amor ip, dull-rthy lstr,
ply fiss, non calc

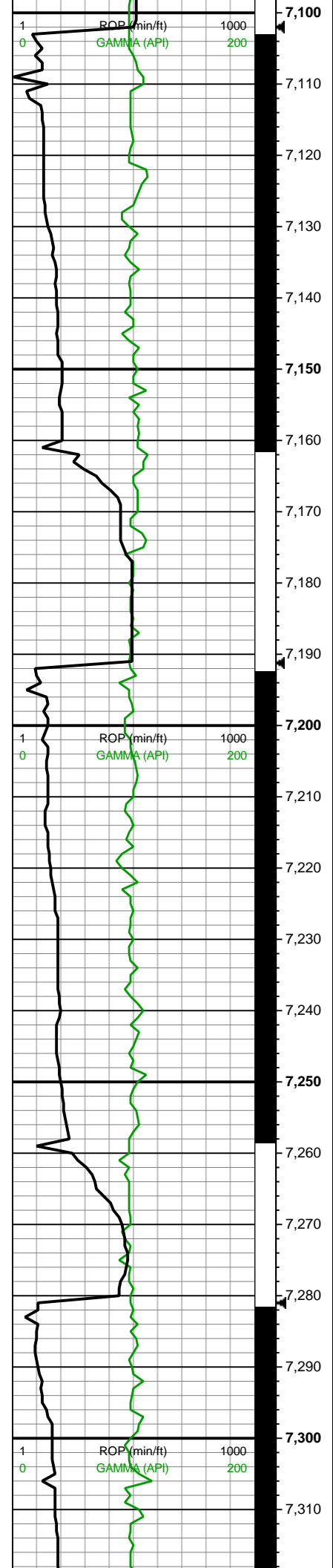
6900-6950 100% SLTY SH:
Med-dk gy, suc, sm-sltly, silc,
hrd-v hrd, brit ip, blkly-sub blkly,
ply ip, amor ip, dull-rthy lstr,
ply fiss, non calc, LCM

6950-7000 100% SLTY SH:
Med-dk gy, suc, sm-sltly, silc,
hrd-v hrd, brit ip, blkly-sub blkly,
ply ip, amor ip, dull-rthy lstr,
ply fiss, non calc, LCM

7000-7050 90% SH: dk
gy-bnshgy, blkshrd ip, sm, sl
sltly ip, silc, sft, brit ip, fri, sub
ply-sub ang, mod fiss, wxy lstr;
10% SS: Off wht-lt gy, vf gr,
rd-sub rd, med hd, mod srt, fri,
silc cmt, non-calc

7050-7100 90% SH: dk
gy-bnshgy, blkshrd ip, sm, sl
sltly ip, silc, sft, brit ip, fri, sub
ply-sub ang, mod fiss, wxy lstr;
10% SS: Off wht-lt gy, vf gr,
rd-sub rd, med hd, mod srt, fri,
silc cmt, non-calc





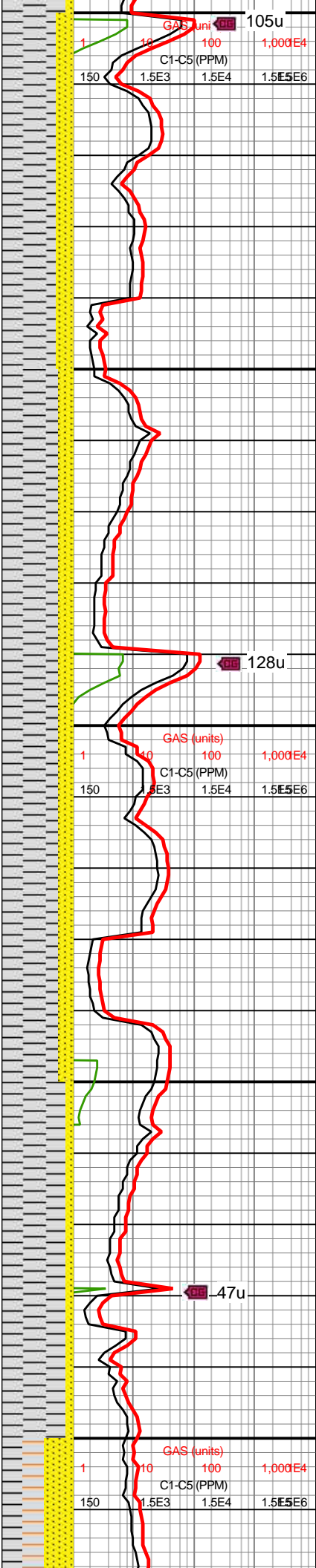
MD: 7,126'
INC: 13.98°
AZM: 180.21°
TVD: 7,034.17'
VS: 1,017.82'

WOB: 17.1
RPM: 1
SPM: 183
SPP: 2,641

MD: 7,215'
INC: 19.26°
AZM: 179.51°
TVD: 7,119.43'
VS: 992.37'

MW: 9.8/9.8
VIS: 44/42

MD: 7,304'
INC: 25.76°
AZM: 180.03°
TVD: 7,201.6'
VS: 958.32'



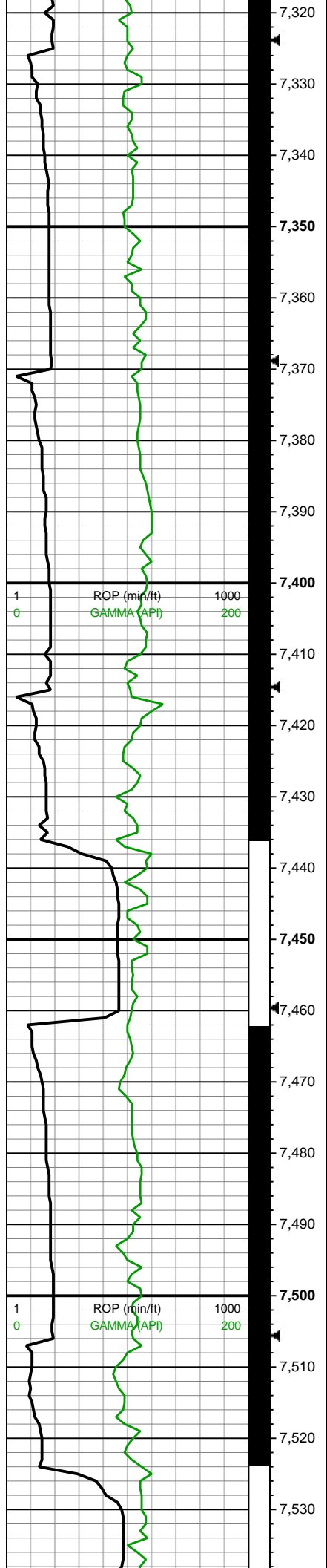
silc cmt, non-calc

7100-7150 75% SH: dk gy-bnshgy, blkshrd ip, sm, sl slty ip, silc, sft, brit ip, fri, sub plty-sub ang, mod fiss, wxy lstr; 25% SS: Off wht-lt gy, vf gr, rd-sub rd, med hd, mod srt, fri, silc cmt, non-calc

7150-7200 80% SH: dk gy-bnshgy, blkshrd ip, sm, sl slty ip, silc, sft, brit ip, fri, sub plty-sub ang, mod fiss, wxy lstr; 20% SS: Off wht-lt gy, vf gr, rd-sub rd, med hd, mod srt, fri, silc cmt, non-calc

7200-7250 80% SH: dk gy-bnshgy, blkshrd ip, sm, sl slty ip, silc, sft, brit ip, fri, sub plty-sub ang, mod fiss, wxy lstr; 20% SS: Off wht-lt gy, vf gr, rd-sub rd, med hd, mod srt, fri, silc cmt, non-calc

7250-7300 90% SH: dk gy-bnshgy, blkshrd ip, sm, sl slty ip, silc, sft, brit ip, fri, sub plty-sub ang, mod fiss, wxy lstr; 10% SS: Off wht-lt gy, vf gr, rd-sub rd, med hd, mod srt, fri, silc cmt, non-calc



MW: 9.8/9.8
VIS: 44/42

MM

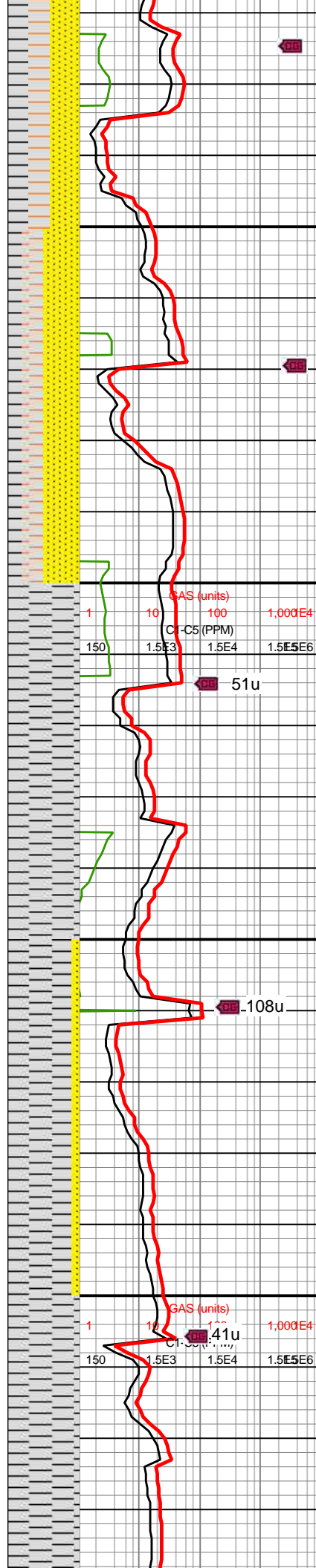
MD: 7,393'
INC: 37.2°
AZM: 180.91°
TVD: 7,277.38'
VS: 911.92'

WOB: 20.1
RPM: 3
SPM: 182
SPP: 2,645

MW: 9.7+/9.7
VIS: 44/42

MD: 7,482'
INC: 43.7°
AZM: 184.08°
TVD: 7,345.07'
VS: 854.28'

Sharon Springs
7,374' TVD
7,525' MD



7300-7350 40% SS: Off wht-lt gy, dk gy ip, vf gr, rd-sub rd, med hd, mod srt, fri, silc cmt, non-calc; 30% SH: dk gy-dk bnshgy, sm-suc, sl slty ip, silc, sft-frm, brit ip, plty-sub ang, mod fiss, rthy lstr; 30% SLTST: Med-dk gy, silc, hrd-v hrd, fri ip, blk-sub blk

7350-7400 50% SS: Off wht-lt-med gy, vf gr, rd-sub rd, med hd, mod srt, fri, silc cmt, non-calc; 30% SLTST: Med-dk gy, silc, hrd-v hrd, blk-sub blk; 20% SH: dk gy-dk bnshgy, sm-suc, sl slty ip, silc, sft-frm, plty-sub ang, mod fiss, rthy lstr

7400-7450 100% SH: dk gy-dk bnshgy, sm-suc, sl slty, silc, sft-frm, sb plty-sb blk, mod fiss, wxy-rthy lstr; tr SS

7450-7500 100% SH: dk gy, sm-suc, sl slty, silc, sft-frm, sb plty-sb blk, mod fiss, wxy-rthy lstr; 10% SS: lt-med gy, vf gr, rd-sub rd, med hd, mod srt, fri, silc cmt, non-calc

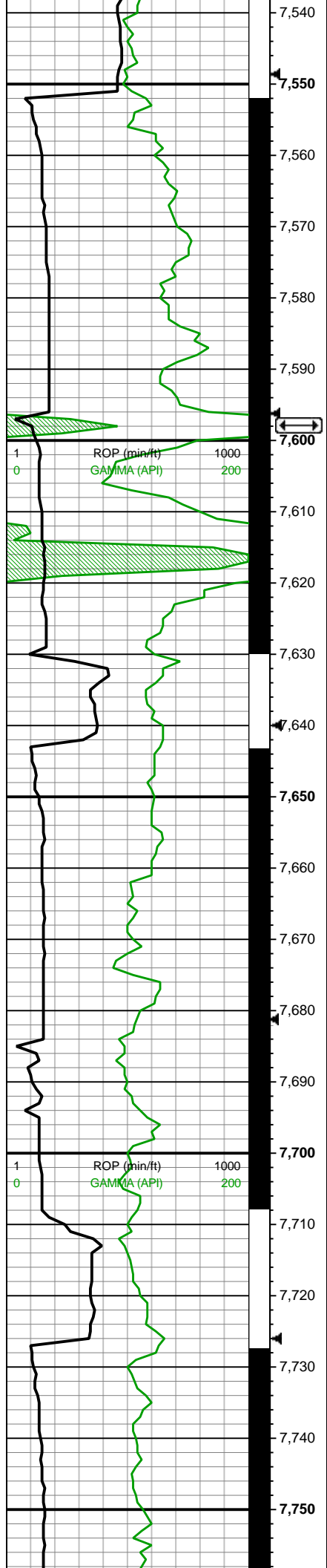
GAS (units)
C-C5 (PPM)
1.5E3 1.5E4 1.5E5 1.5E6

51u

108u

GAS (units)
C-C5 (PPM)
1.5E3 1.5E4 1.5E5 1.5E6

41u



MD: 7,571'
INC: 50.83°
AZM: 183.2°
TVD: 7,405.43'
VS: 789.09'

WOB: 25
RPM: 0
SPM: 182
SPP: 2,650

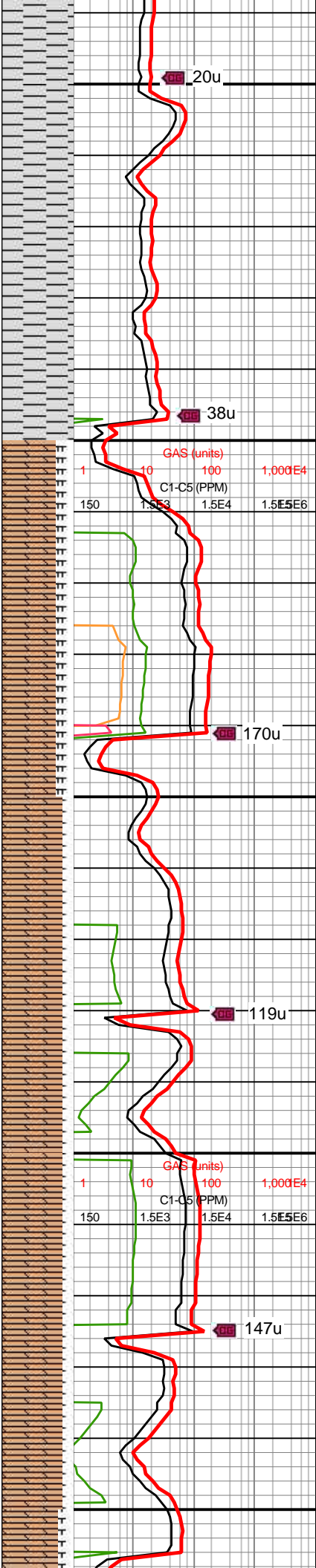
Nio A Chalk
7,419' TVD
7,596' MD

MW: 9.8/9.8
VIS: 43/42

MD: 7,660'
INC: 60.94°
AZM: 180.39°
TVD: 7,455.29'
VS: 715.54'

MW: 9.8/9.8
VIS: 44/43

MD: 7,750'
INC: 71.05°
AZM: 180.56°
TVD: 7,491.86'
VS: 633.44'



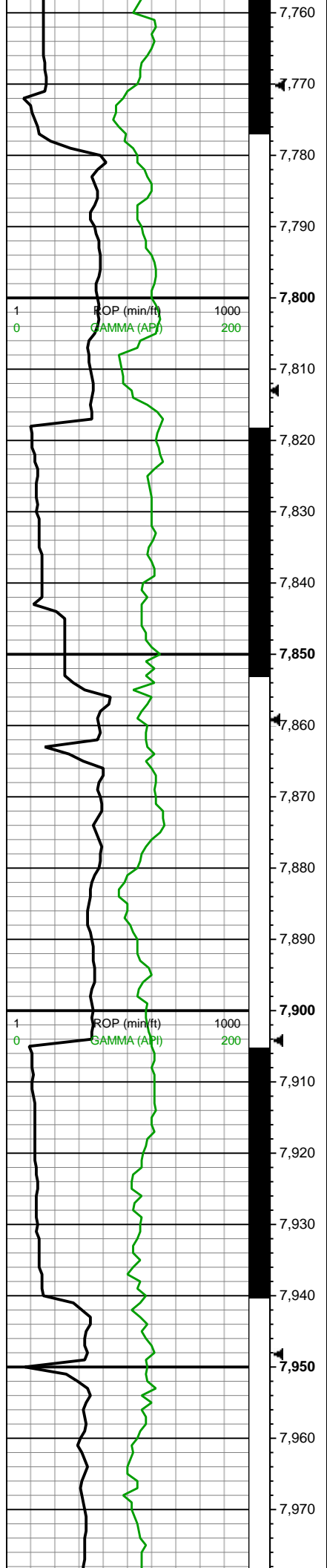
7500-7550 100% SH: dk
gy-blk, sm, sl slty, silc, frm-hd,
sb plty, mod fiss, wxy-rthy lstr

7550-7600 100% SH: dk
gy-blk, sm-sl suc, sl slty, silc, sl
calc ip, frm-sl hd, sb plty, mod
fiss, wxy-rthy lstr

7600-7650 75% CHK, med-dk
gy, blk-y-sb blk-y, sft-frm, rthy
tex, tr mrlst incl; 25% MRLST,
dk gy-blk, sft-frm dull-rthy tex,
sb blk-y

7650-7700 85% CHK, med-dk
gy, blk-y-sb blk-y, frm-mod hd,
rthy-chky tex, tr mrlst incl; 15%
MRLST, dk gy-blk, sl hd-hd,
dull-rthy tex, sb blk-y-sb plty

7700-7750 85% CHK, med-dk
gy, blk-y-sb blk-y, sl hd-mod hd,
rthy-chky tex, tr intbdd mrlst ip;
15% MRLST, dk gy-blk, sl
hd-hd, rthy tex, sb blk-y-sb plty,
calc



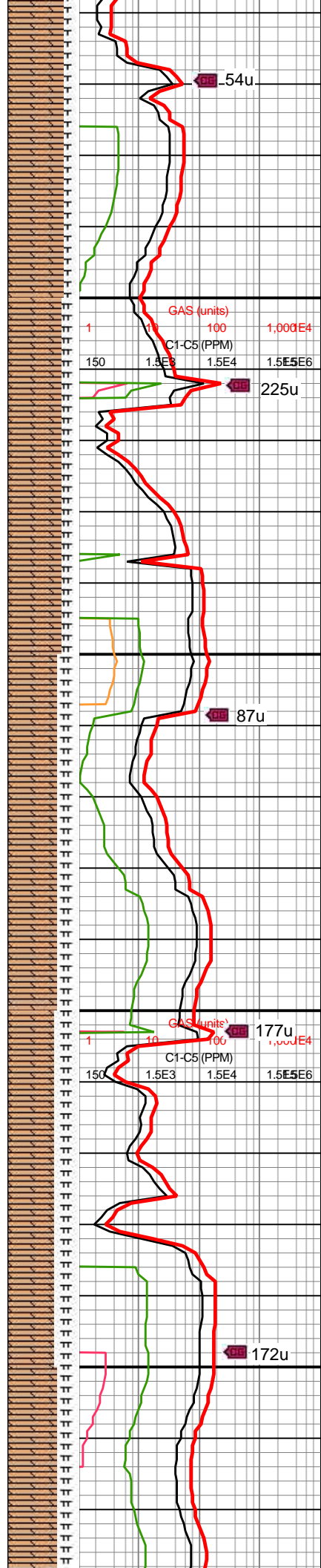
WOB: 34
RPM: 30
SPM: 184
SPP: 3,262

MW: 9.8/9.7+
VIS: 44/42

MD: 7,839'
INC: 77.38°
AZM: 181.44°
TVD: 7,516.05'
VS: 547.85'

MW: 9.8/9.8
VIS: 44/42

MD: 7,928'
INC: 80.99°
AZM: 181.62°
TVD: 7,532.75'
VS: 460.48'



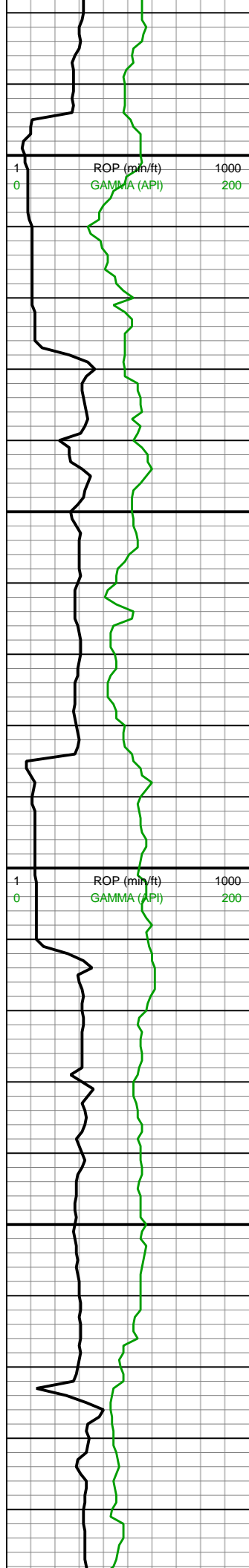
7750-7800 80% CHK, med-dk gy, sme blk ip, blk-y-sb blk-y, frm-sl hd, rthy-chky tex, tr intbdd mlrst ip; 20% MRLST, dk gy-blk, sl hd-hd, rthy tex, sb blk-y-sb plty, calc, tr pp pyr

7800-7850 75% CHK, med-dk gy-blk, blk-y-sb blk-y, frm-sl hd, rthy-chky tex, tr mlrst incl; 25% MRLST, dk gy-blk, sl hd, rthy tex, sb blk-y-sb plty, calc

7850-7900 70% CHK, med-dk gy, blk-y-sb blk-y, frm-sl hd, rthy-chky tex, tr mlrst incl; 30% MRLST, dk gy-blk, sl hd-mod hd, rthy tex, sb blk-y-sb plty, calc, tr cal frac fl ip, tr pyr nod ip

7900-7950 65% CHK, med-dk gy, sb blk-y-blk-y, frm-sl hd, rthy-chky tex, amor ip, sl slty ip 35% MRLST, dk gy-blk, sl hd-hd, rthy tex, sb blk-y-sb plty, calc





WOB: 27
RPM: 0
SPM: 184
SPP: 2,646

MD: 8,017'
INC: 84.5°
AZM: 180.21°
TVD: 7,543.99'
VS: 372.22'

MW: 9.8/9.8
VIS: 44/43

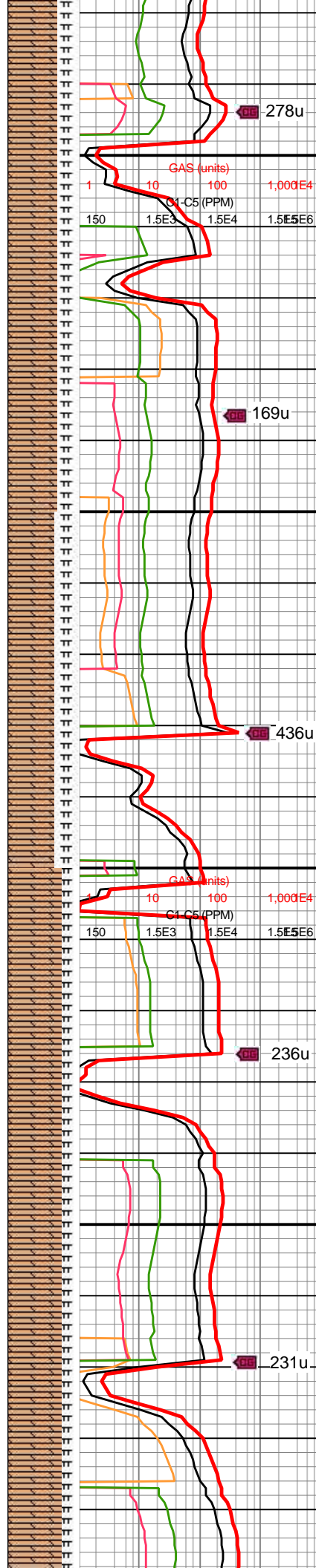
Nio B Chalk
7,546' TVD
8,055' MD

MD: 8,106'
INC: 88.46°
AZM: 180.39°
TVD: 7,549.45'
VS: 283.4'

Land Curve @
8,110' MD
7,549' TVD

MW: 9.8/9.8
VIS: 44/42

MD: 8,195'
INC: 88.55°
AZM: 179.51°
TVD: 7,551.78'

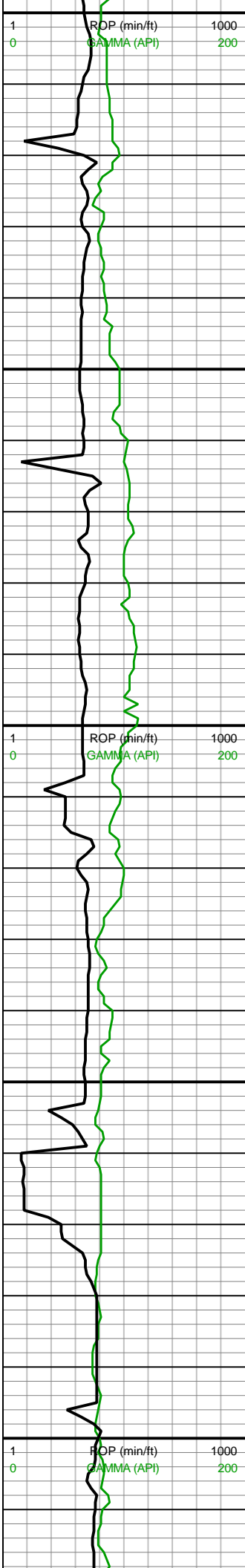


7950-8000 70% CHK, med-dk gy, sb blk-ylk, frm-sl hd, rthy-chky tex, amor, sl slty ip 30% MRLST, dk gy, sl hd, rthy tex, sb blk-sb plty, calc

7950-8000 70% CHK, med-dk gy, sb blk-ylk, frm, rthy-chky tex, amor, 30% MRLST, dk gy-blk, sl hd, rthy tex, sb blk-sb plty, calc, tr f dissim pyr ip

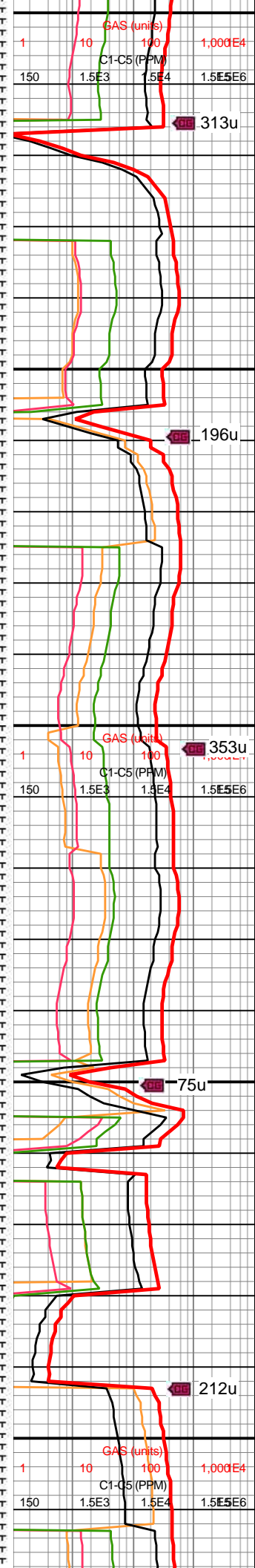
8050-8100 65% CHK, med-dk gy, sb blk-ylk, sft-frm, rthy tex, amor, 35% MRLST, dk gy-blk, sl hd-hd, dull-rthy tex, sb blk-sb plty, calc, tr pyr nod ip

8100-8200 75% CHK, med-dk gy, sb blk-ylk, sft-frm, dull-chky tex, amor ip, 25% MRLST, dk gy-blk, sl hd-hd, rthy tex, sb blk-sb plty, calc, tr



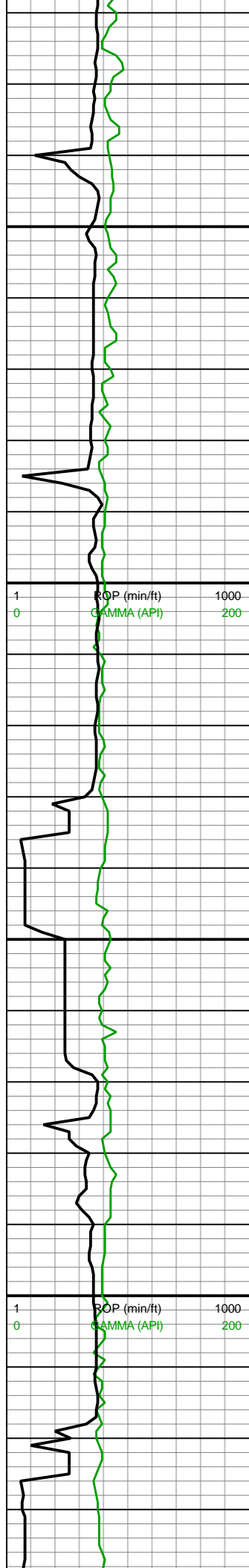
8,200
8,210
8,220
8,230
8,240
8,250
8,260
8,270
8,280
8,290
8,300
8,310
8,320
8,330
8,340
8,350
8,360
8,370
8,380
8,390
8,400
8,410

VS: 194.44'
WOB: 34
RPM: 60
SPM: 188
SPP: 3,244
MD: 8,284'
INC: 88.55°
AZM: 179.33°
TVD: 7,554.03'
VS: 105.47'
MW: 9.8/9.8
VIS: 43/41
MD: 8,373'
INC: 89.96°
AZM: 178.63°
TVD: 7,555.18'
VS: 16.49'
WOB: 34
RPM: 60
SPM: 194
SPP: 3,347



f pyr ip
8200-8300 60% CHK, med-dk gy, sb blk-y-blky, sft frm, rthy-chky tex, amor ip, 40% MRLST, dk gy-blk, sl hd-hd, sl fri ip, rthy tex, sb blk-y-sb plty, calc, tr pyr nod
313u
196u
353u
75u
212u
8300-8400 65% CHK, med-dk gy, sb blk-y-blky, sft frm, rthy-chky tex, amor, 35% MRLST, dk gy-blk, sl hd-hd, sl fri, dull-rthy tex, sb blk-y, calc, tr f pyr





8,420
8,430
8,440
8,450
8,460
8,470
8,480
8,490
8,500
8,510
8,520
8,530
8,540
8,550
8,560
8,570
8,580
8,590
8,600
8,610
8,620
8,630

MD: 8,462'
INC: 90.04°
AZM: 176.69°
TVD: 7,555.18'
VS: -72.43'

MW: 9.8/9.8
VIS: 43/42

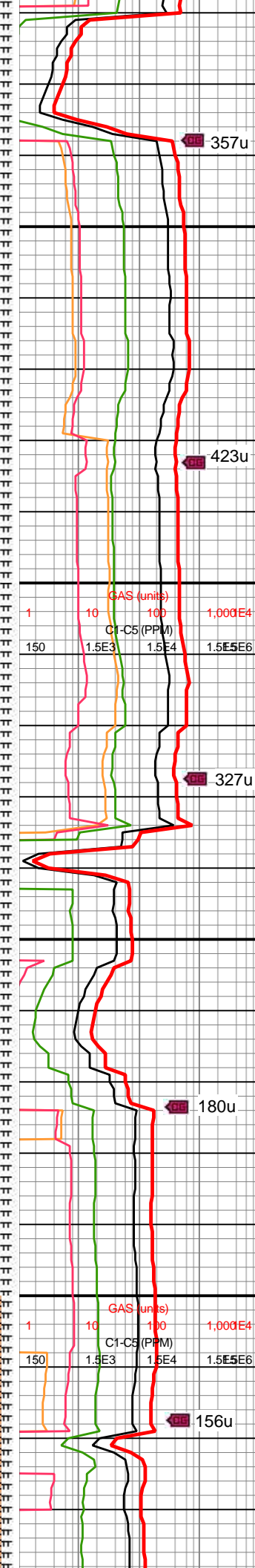
MD: 8,551'
INC: 90.75°
AZM: 176.34°
TVD: 7,554.57'
VS: -161.26'

MW: 9.8/9.8
VIS: 43/41

WOB: 34
RPM: 60
SPM: 196
SPP: 3,475

MD: 8,641'

On Gas Buster



357u

423u

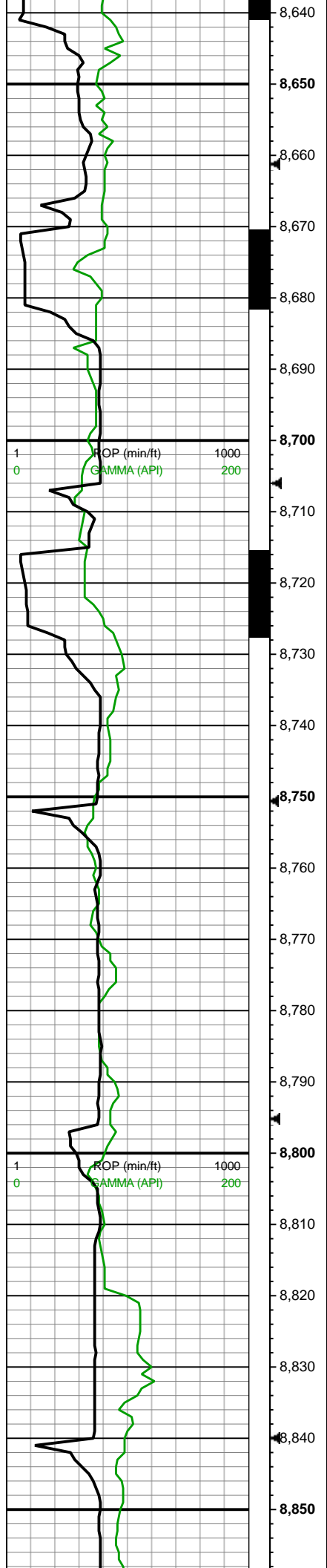
327u

180u

156u

8400-8500 60% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, 40% MRLST, dk gy-blk, hd-v hd, sl fri, rthy tex, sb blk-y-sb plty, calc

8500-8600 70% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl 30% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-y-sb plty, calc



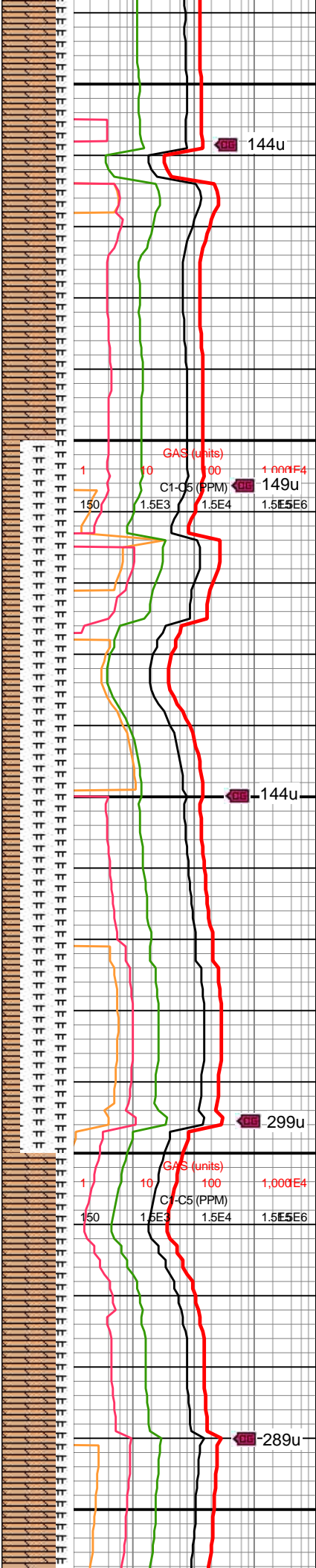
INC: 90.66°
AZM: 176.87°
TVD: 7,553.46'
VS: -251.1'

MW: 9.8/9.8
VIS: 43/41

MD: 8,730'
INC: 90.22°
AZM: 180.21°
TVD: 7,552.78'
VS: -340.05'

WOB: 33.2
RPM: 60
SPM: 197
SPP: 3,435

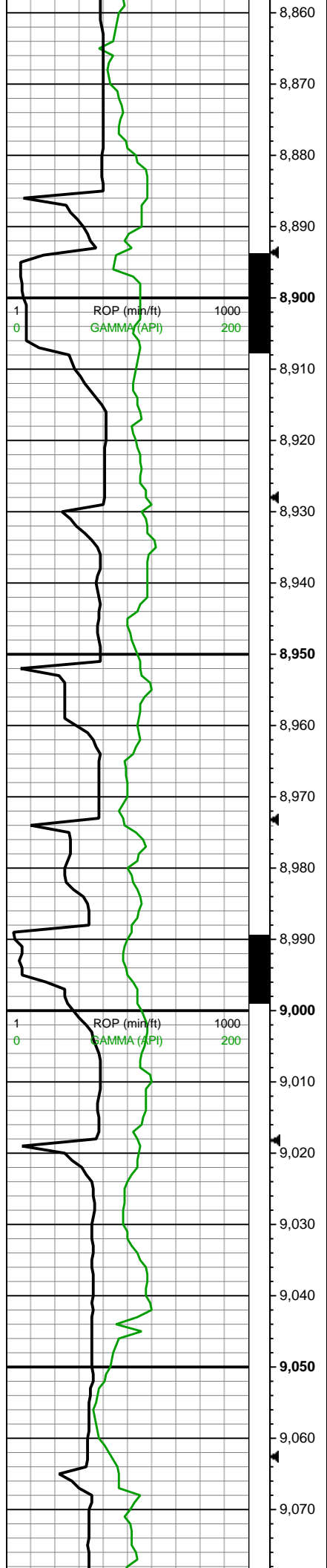
MD: 8,819'
INC: 90.66°
AZM: 180.03°
TVD: 7,552.1'
VS: -429.05'



8600-8700 75% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl 25% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-y-sb plty, calc

8700-8800 75% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-y-blky, tr pyr nod, calc; 25% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl





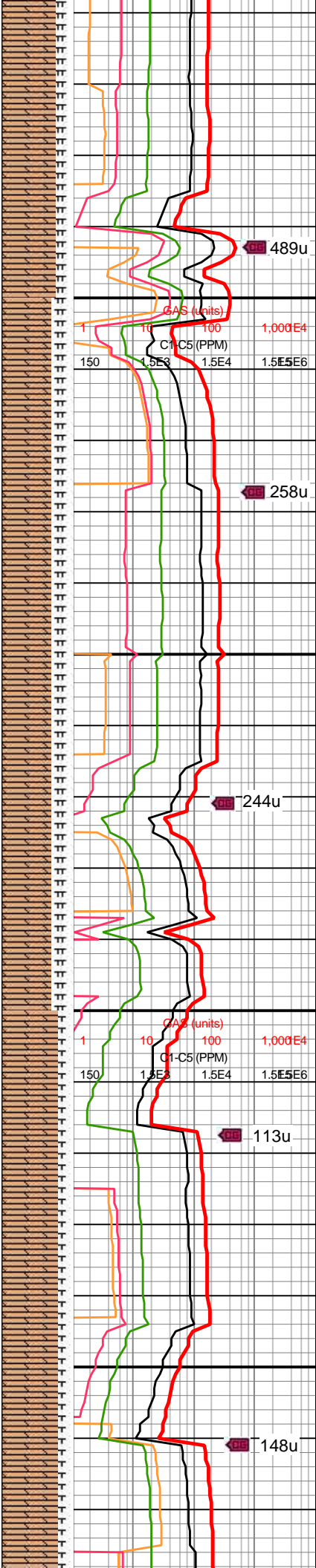
MW: 9.8/9.8
VIS: 43/41

MD: 8,908'
INC: 88.2°
AZM: 180.21°
TVD: 7,552.98'
VS: -518.04'

MW: 9.9+/9.8+
VIS: 43/41

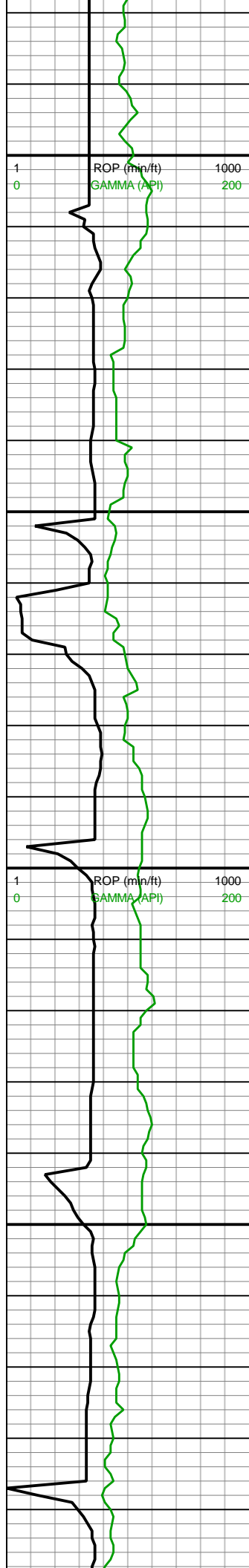
MD: 8,997'
INC: 89.08°
AZM: 180.21°
TVD: 7,555.09'
VS: -607.01'

WOB: 24.6
RPM: 60
SPM: 196
SPP: 3,384



8800-8900 75% CHK, med-dk
gy, sb blk-y-blky, frm-sl hd,
rthy-chky tex, amor, tr mrlst
incl, sme free chk; 75%
MRLST, dk gy-blk, hd-v hd, sl
fri, dull-rthy tex, sb blk-y-blky,
calc, tr pp pyr

8900-9000 70% CHK, med-dk
gy, sb blk-y-blky, frm-sl hd,
rthy-chky tex, amor, tr mrlst
incl, sme free chk; 30%
MRLST, dk gy-blk, hd-v hd, sl
fri, dull-rthy tex, sb blk-y-blky,
calc



9,080
9,090
9,100
9,110
9,120
9,130
9,140
9,150
9,160
9,170
9,180
9,190
9,200
9,210
9,220
9,230
9,240
9,250
9,260
9,270
9,280
9,290

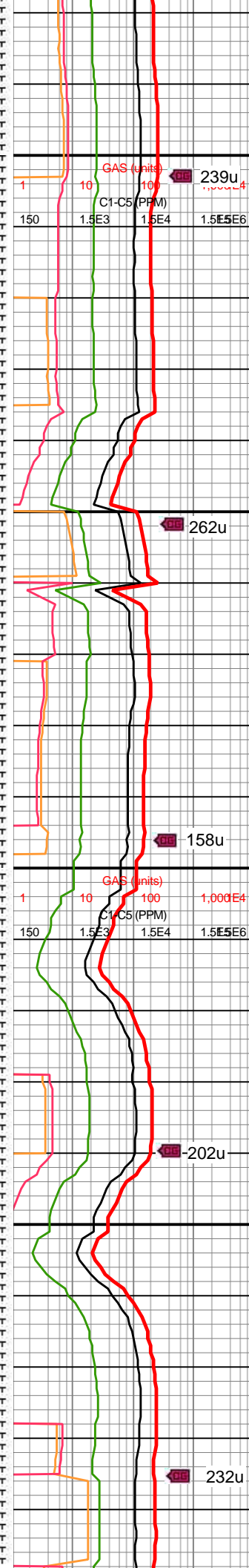
MD: 9,086'
INC: 89.25°
AZM: 179.86°
TVD: 7,556.39'
VS: -696'

MW: 10/9.9+
VIS: 43/41

MD: 9,175'
INC: 89.87°
AZM: 180.56°
TVD: 7,557.07'
VS: -785'

WOB: 33.8
RPM: 60
SPM: 196
SPP: 3,618

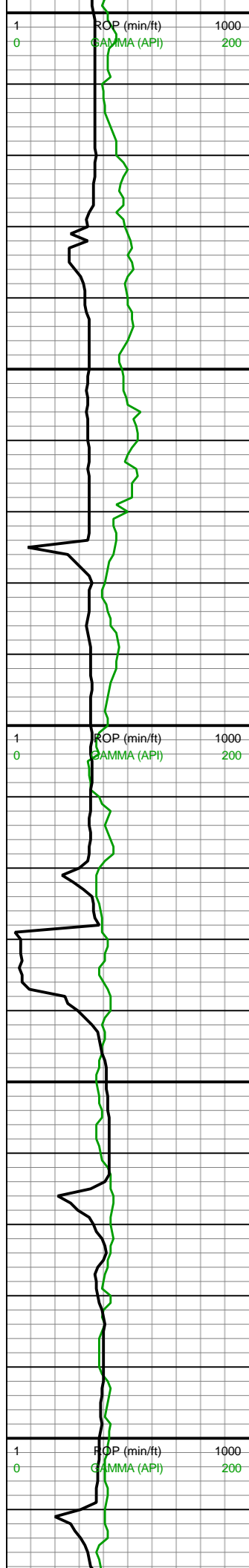
MD: 9,264'
INC: 89.6°
AZM: 180.03°
TVD: 7,557.49'
VS: -873.99'



9000-9100 80% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, sme free chk; 20% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-y-blky, calc

9100-9200 60% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, sme free chk; 40% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-y-blky, calc, tr pyr

9200-9300 65% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, sme free chk; 35% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-y-blky, calc, tr pyr



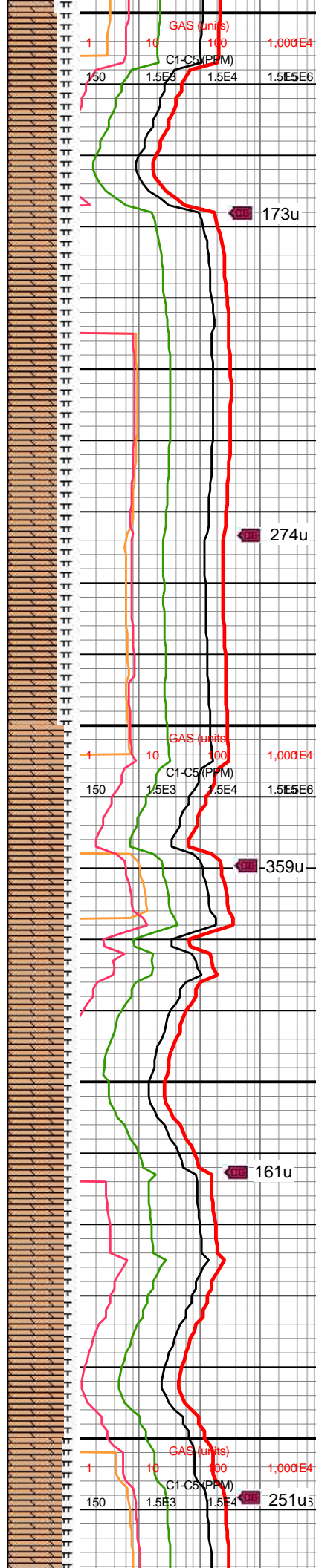
9,300
9,310
9,320
9,330
9,340
9,350
9,360
9,370
9,380
9,390
9,400
9,410
9,420
9,430
9,440
9,450
9,460
9,470
9,480
9,490
9,500
9,510

MD: 9,353'
INC: 89.87°
AZM: 179.68°
TVD: 7,557.9'
VS: -962.99'

WOB: 33.7
RPM: 60
SPM: 196
SPP: 3,548

MD: 9,442'
INC: 89.69°
AZM: 180.21°
TVD: 7,558.24'
VS: -1,051.99'

MW: 10/10
VIS: 43/41



173u

274u

359u

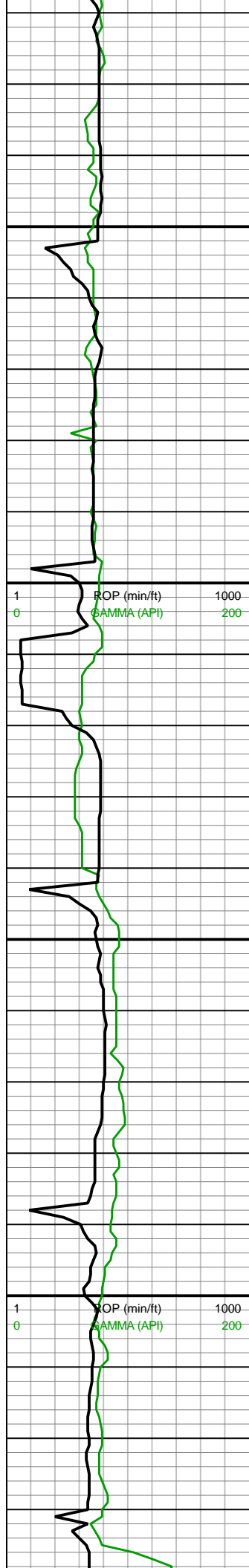
161u

251u

9300-9400 70% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, sme free chk; 30% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-y-blky, calc, tr pyr

9400-9500 80% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, sme free chk; 20% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-y-blky, calc





MD: 9,532'
INC: 90.22°
AZM: 180.03°
TVD: 7,558.31'
VS: -1,141.99'

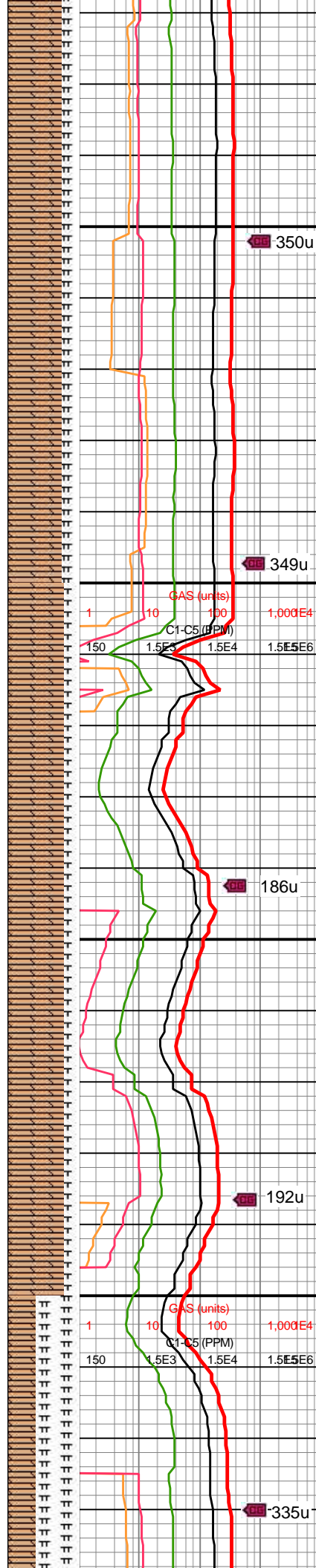
WOB: 26.7
RPM: 60
SPM: 196
SPP: 3,581

MINDEPTH 03/01/2020

MD: 9,621'
INC: 89.43°
AZM: 180.21°
TVD: 7,558.58'
VS: -1,230.99'

MW: 10/10
VIS: 43/41

MD: 9,710'
INC: 89.69°
AZM: 179.86°
TVD: 7,559.27'
VS: -1,319.99'



350u

349u

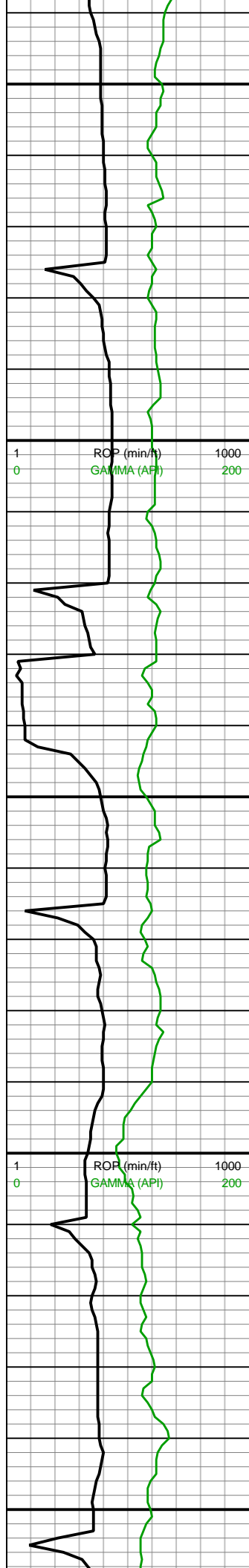
186u

192u

335u

9500-9600 75% CHK, med-dk gy, sb blkly-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, sme free chk; 25% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blkly-blky, calc

9600-9700 80% CHK, med-dk gy, sb blkly-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, sme free chk; 20% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blkly-blky



9,740
9,750
9,760
9,770
9,780
9,790
9,800
9,810
9,820
9,830
9,840
9,850
9,860
9,870
9,880
9,890
9,900
9,910
9,920
9,930
9,940
9,950

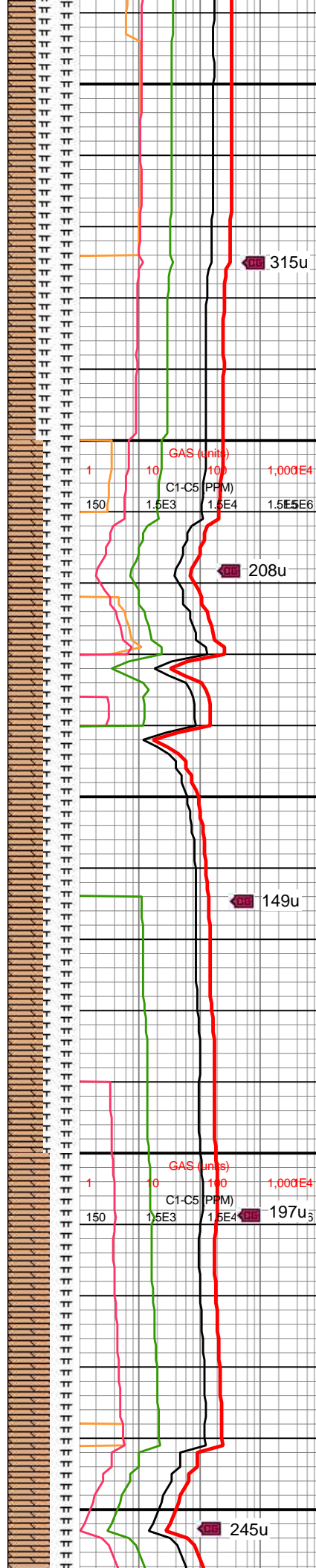
MD: 9,799'
INC: 90.04°
AZM: 178.63°
TVD: 7,559.48'
VS: -1,408.98'

WOB: 33.2
RPM: 60
SPM: 197
SPP: 3,739

MW: 10/10
VIS: 43/41

MD: 9,888'
INC: 88.64°
AZM: 180.03°
TVD: 7,560.5'
VS: -1,497.96'

MW: 10/10
VIS: 43/41



315u

9700-9800 60% MRLST, dk
gy-blk, hd-v hd, sl fri, dull-rthy
tex, sb blk-y-blky; 40% CHK,
med-dk gy, sb blk-y-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl, sme free chk

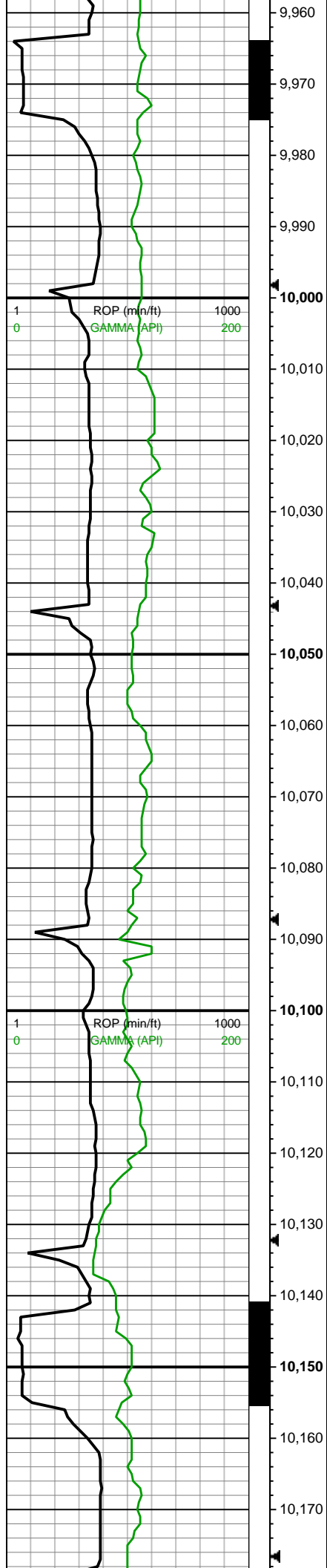
208u

149u

9800-9900 50% MRLST, dk
gy-blk, hd-v hd, sl fri, dull-rthy
tex, sb blk-y-blky; 50% CHK,
med-dk gy, sb blk-y-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl, sme free chk

197u₃

245u



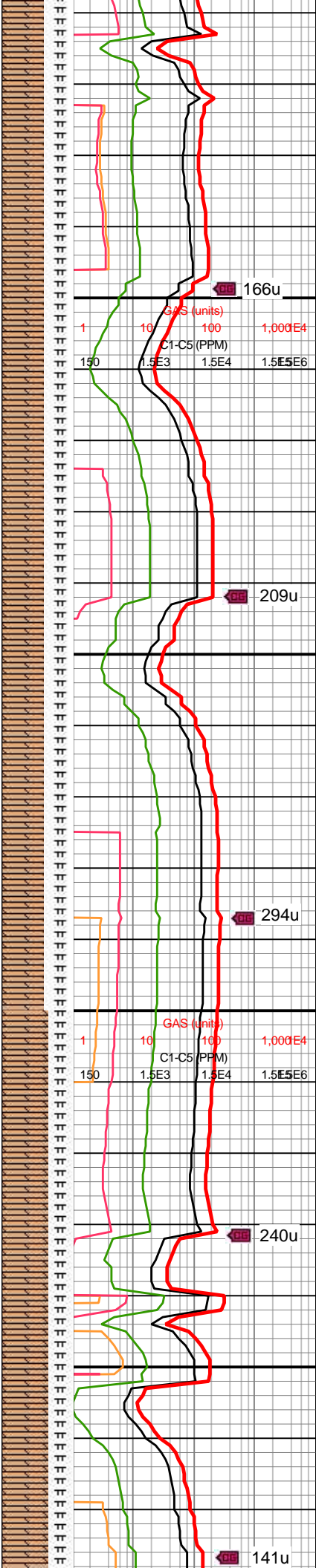
MD: 9,977'
INC: 90.57°
AZM: 180.39°
TVD: 7,561.11'
VS: -1,586.95'

WOB: 34.3
RPM: 60
SPM: 196
SPP: 3,636

MD: 10,067'
INC: 90.66°
AZM: 179.68°
TVD: 7,560.15'
VS: -1,676.95'

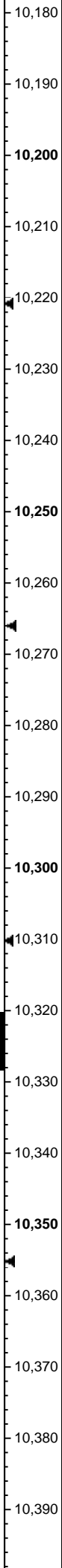
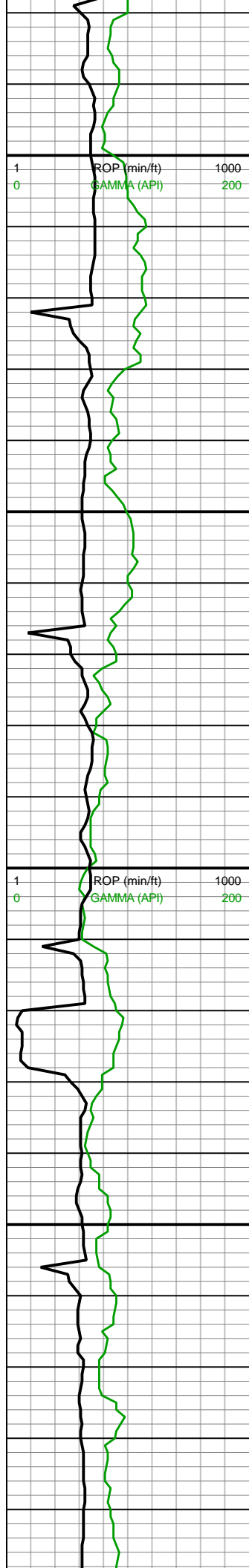
MW: 10/10
VIS: 43/41

MD: 10,156'
INC: 88.72°
AZM: 180.56°
TVD: 7,560.63'
VS: -1,765.94'



9900-10000 60% CHK,
med-dk gy, sb blkly-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl, sme free chky; 40%
MRLST, dk gy-blk, hd-v hd, sl
fri, dull-rthy tex, sb blkly-blk

10000-10100 60% CHK,
med-dk gy, sb blkly-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl, sme free chky; 40%
MRLST, dk gy-blk, hd-v hd, sl
fri, dull-rthy tex, sb blkly-blk,
mnr pyr



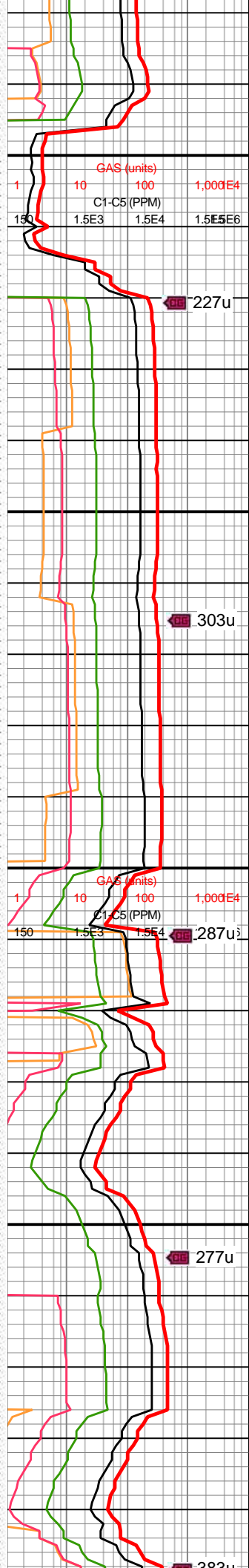
WOB: 36.1
RPM: 60
SPM: 197
SPP: 3,691

MD: 10,245'
INC: 88.2°
AZM: 180.03°
TVD: 7,563.02'
VS: -1,854.91'

MM

MD: 10,334'
INC: 89.34°
AZM: 179.51°
TVD: 7,564.93'
VS: -1,943.88'

WOB: 35

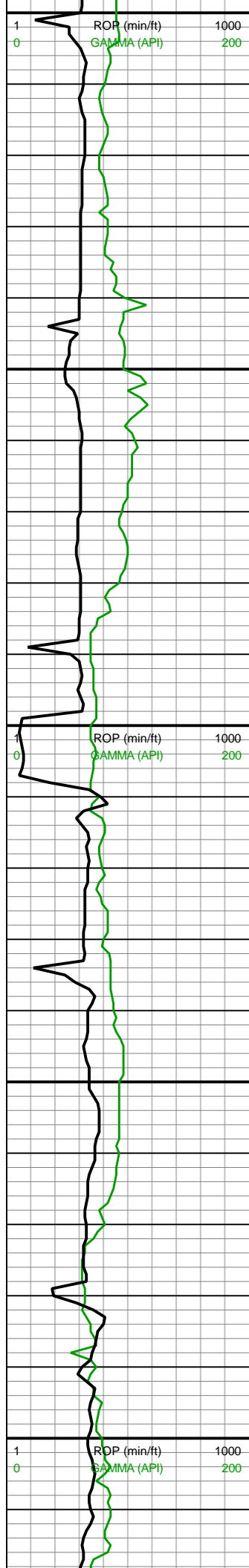


10100-10200 65% CHK,
med-dk gy, sb blkyl-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl, sme free chky; 35%
MRLST, dk gy-blk, hd-v hd, sl
fri, dull-rthy tex, sb blkyl-blk,
mnr pyr

10200-10300 55% CHK,
med-dk gy, sb blkyl-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl, sme free chky; 45%
MRLST, dk gy-blk, hd-v hd, sl
fri, dull-rthy tex, sb blkyl-blk,
mnr pyr

10300-10400 65% CHK,
med-dk gy, sb blkyl-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl, sme free chky; 35%
MRLST, dk gy-blk, hd-v hd, sl
fri, rthy tex, sb blkyl-blk, tr f po





10,400
10,410
10,420
10,430
10,440
10,450
10,460
10,470
10,480
10,490
10,500
10,510
10,520
10,530
10,540
10,550
10,560
10,570
10,580
10,590
10,600
10,610

RPM: 60
SPM: 196
SPP: 3,683

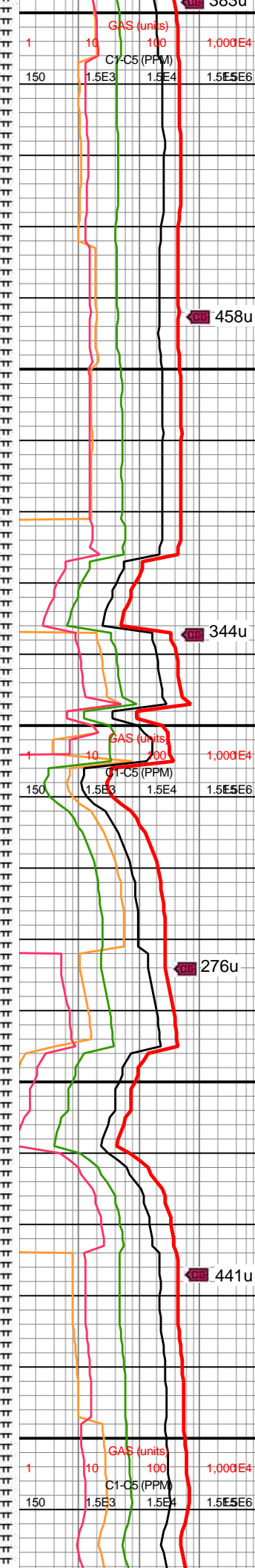
MD: 10,423'
INC: 90.04°
AZM: 179.33°
TVD: 7,565.41'
VS: -2,032.88'

MW: 10.0/10.0
VIS: 42/41

MD: 10,512'
INC: 90.13°
AZM: 179.51°
TVD: 7,565.28'
VS: -2,121.87'

WOB: 35
RPM: 60
SPM: 196
SPP: 3,716

MD: 10,601'
INC: 91.36°
AZM: 178.8°
TVD: 7,564.12'
VS: -2,210.85'



10,400
10,410
10,420
10,430
10,440
10,450
10,460
10,470
10,480
10,490
10,500
10,510
10,520
10,530
10,540
10,550
10,560
10,570
10,580
10,590
10,600
10,610

MD: 10,423'
INC: 90.04°
AZM: 179.33°
TVD: 7,565.41'
VS: -2,032.88'

MW: 10.0/10.0
VIS: 42/41

MD: 10,512'
INC: 90.13°
AZM: 179.51°
TVD: 7,565.28'
VS: -2,121.87'

WOB: 35
RPM: 60
SPM: 196
SPP: 3,716

MD: 10,601'
INC: 91.36°
AZM: 178.8°
TVD: 7,564.12'
VS: -2,210.85'

pyr

458u

344u

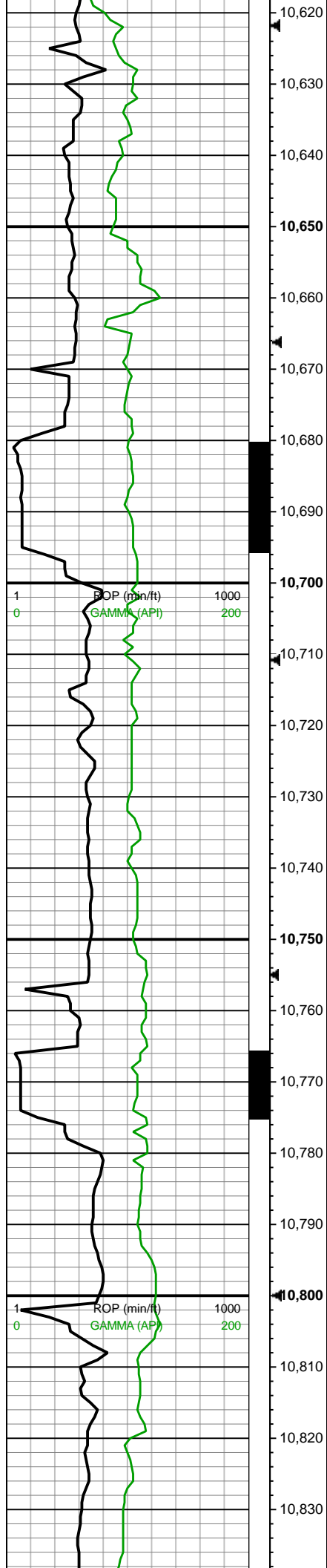
276u

441u

10400-10500 60% CHK,
med-dk gy, sb blkly-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl; 40% MRLST, dk gy-blk,
hd-v hd, sl fri, dull-rthy tex, sb
blkly-blk

10500-10600 60% CHK,
med-dk gy, sb blkly-blky, frm-sl
hd, rthy-chky tex, amor, tr mrlst
incl, tr free chk ip; 40%
MRLST, dk gy-blk, hd-v hd, sl
fri-fri ip, dull tex, sb blkly-blk





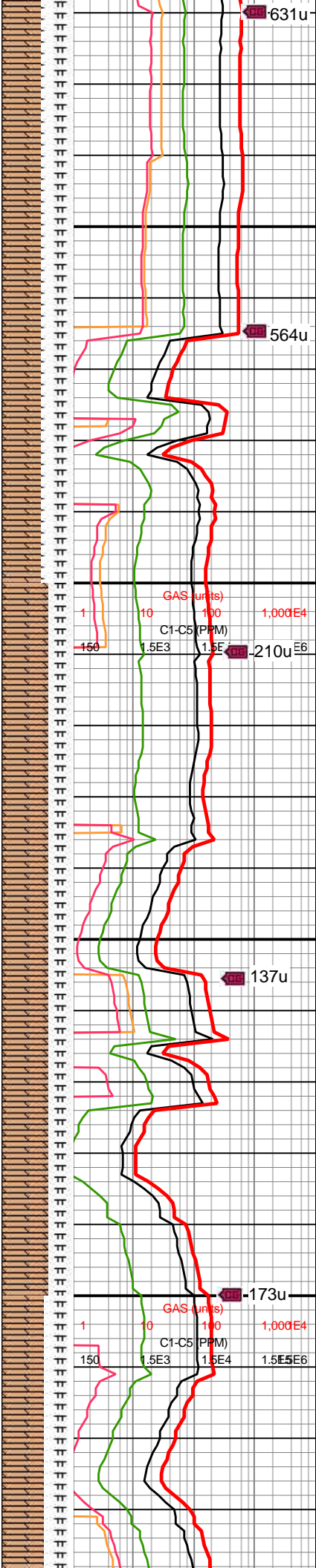
MW: 10.0/10.0
VIS: 42/41

MD: 10,690'
INC: 91.01°
AZM: 180.21°
TVD: 7,562.28'
VS: -2,299.83'

MW: 10.0/10.0
VIS: 42/41

MD: 10,780'
INC: 89.78°
AZM: 180.91°
TVD: 7,561.66'
VS: -2,389.82'

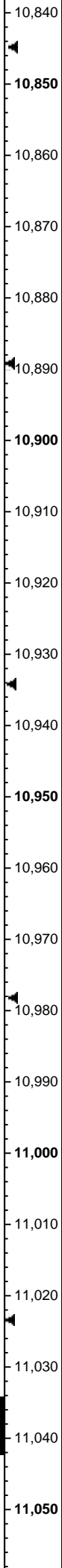
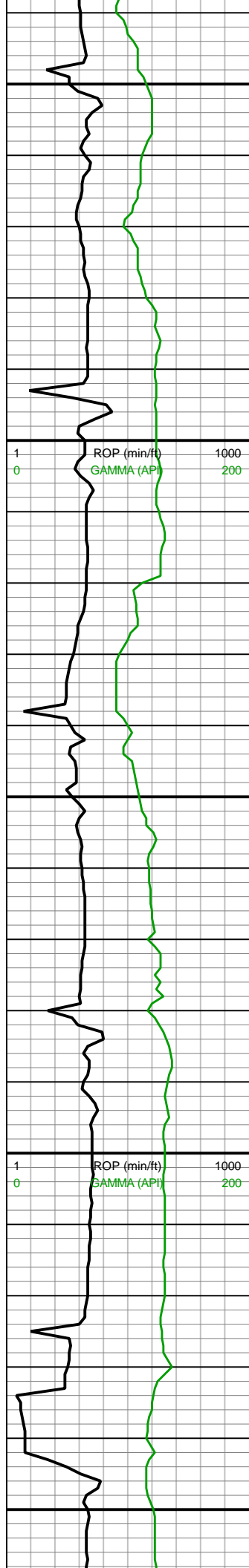
WOB: 35
RPM: 60
SPM: 196
SPP: 3,827



10600-10700 55% CHK,
med-dk gy, sb blkyl-blky, frm-sl
hd, sft ip, rthy-chky tex, sl
amor, tr free chk ip; 45%
MRLST, dk gy-blk, hd-v hd, sl
fri, dull-rthy tex, sb blkyl-blk

10700-10800 65% CHK,
med-dk gy, sb blkyl-blky, frm-sl
hd, sft ip, rthy-chky tex, sl
amor, tr free chk ip; 35%
MRLST, dk gy-blk, hd-v hd, sl
fri, dull-rthy tex, sb blkyl-blk





MD: 10,869'
INC: 90.04°
AZM: 180.39°
TVD: 7,561.8'
VS: -2,478.81'

MW: 10.0/10.0
VIS: 42/41

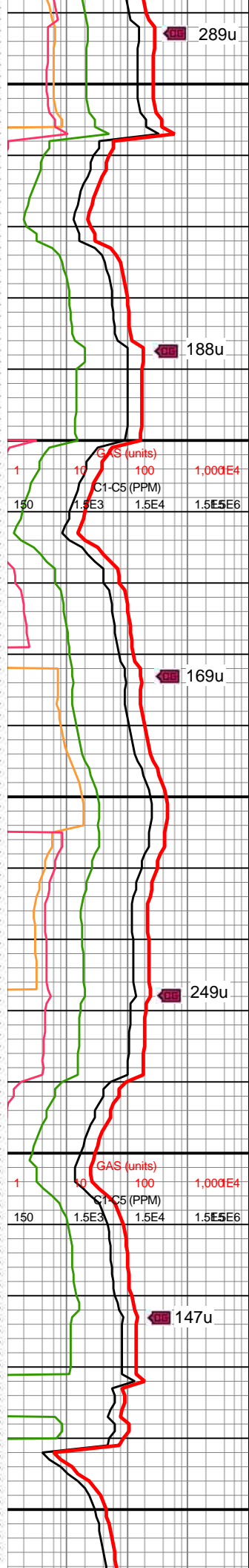
Off Gas Buster

MD: 10,958'
INC: 90.4°
AZM: 180.21°
TVD: 7,561.46'
VS: -2,567.81'

WOB: 35
RPM: 60
SPM: 199
SPP: 3,877

MD: 11,047'
INC: 89.25°
AZM: 180.56°
TVD: 7,561.73'
VS: -2,656.81'

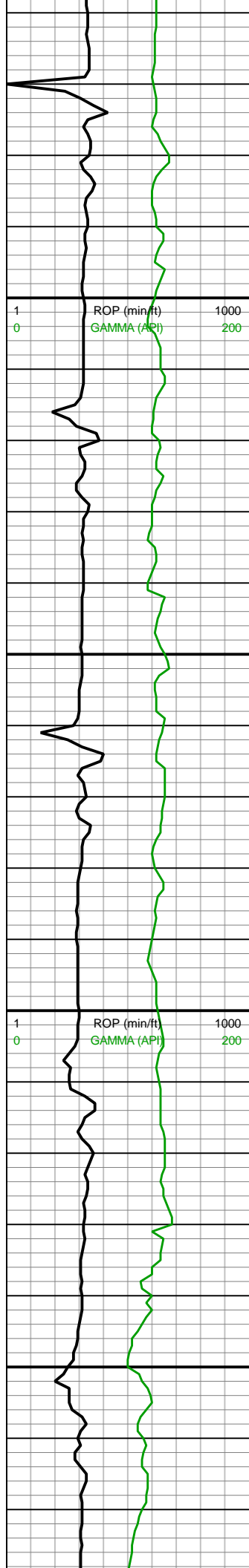
MW: 10.0/10.0
VIS: 42/41



10800-10900 60% CHK,
med-dk gy, sb blkyl-blky, frm-sl
hd, rthy-chky tex, sl amor, tr
mrlst incl; 40% MRLST, dk
gy-blk, hd-v hd, sl fri, rthy tex,
sb blkyl-blk

10900-11000 60% MRLST, dk
gy-blk, hd-v hd, sl fri, dull-rthy
tex, sb blkyl-blk, tr f pyr; 40%
CHK, med-dk gy, sb blkyl-blky,
frm-sl hd, rthy-chky tex, sl
amor, tr mrlst incl, tr free chk
ip





11,060
11,070
11,080
11,090
11,100
11,110
11,120
11,130
11,140
11,150
11,160
11,170
11,180
11,190
11,200
11,210
11,220
11,230
11,240
11,250
11,260
11,270

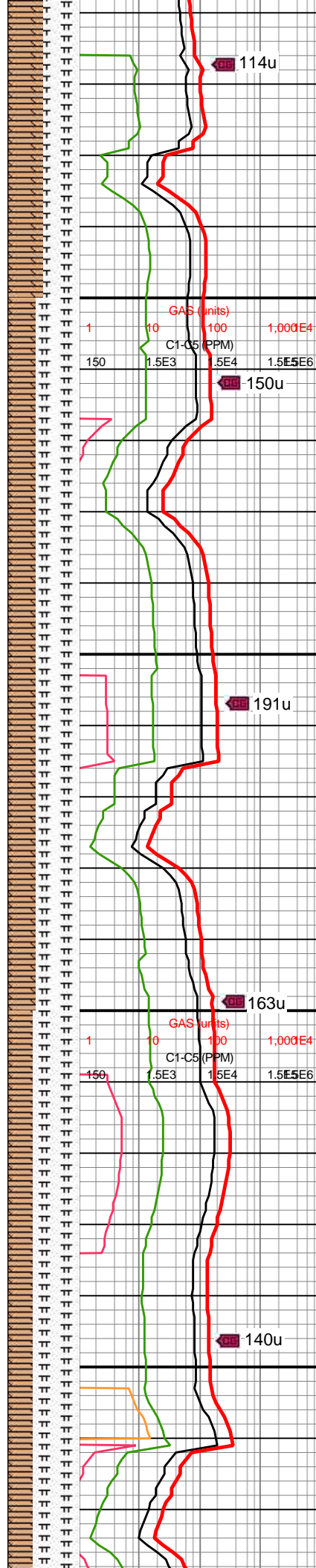
VIS: 43/41

MD: 11,136'
INC: 89.78°
AZM: 179.86°
TVD: 7,562.49'
VS: -2,745.8'

WOB: 34
RPM: 60
SPM: 197
SPP: 3,773

MD: 11,225'
INC: 90.31°
AZM: 179.33°
TVD: 7,562.42'
VS: -2,834.8'

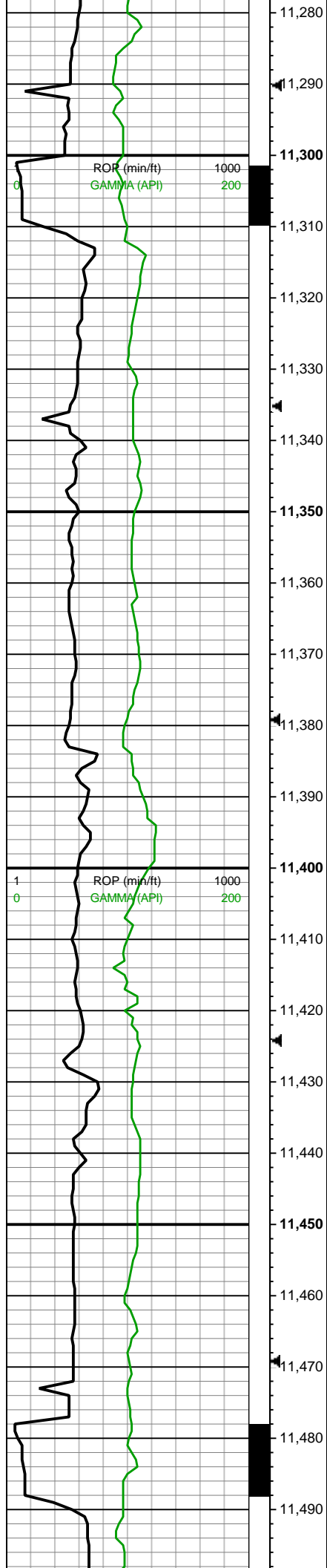
MW: 10.0/10.0
VIS: 43/41



11000-11100 50% MRLST, dk gy-blk, hd-v hd, sl fri-fri ip dull-rthy tex, sb blk-y-blk, tr f pp pyr; 50% CHK, med-dk gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, sl amor, tr free chk ip

11100-11200 60% MRLST, dk gy-blk, hd-v hd, sl fri, rthy tex, sb blk-y-blk, tr f pp pyr; 40% CHK, med-dk gy, sme lt gy ip, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr free chk ip





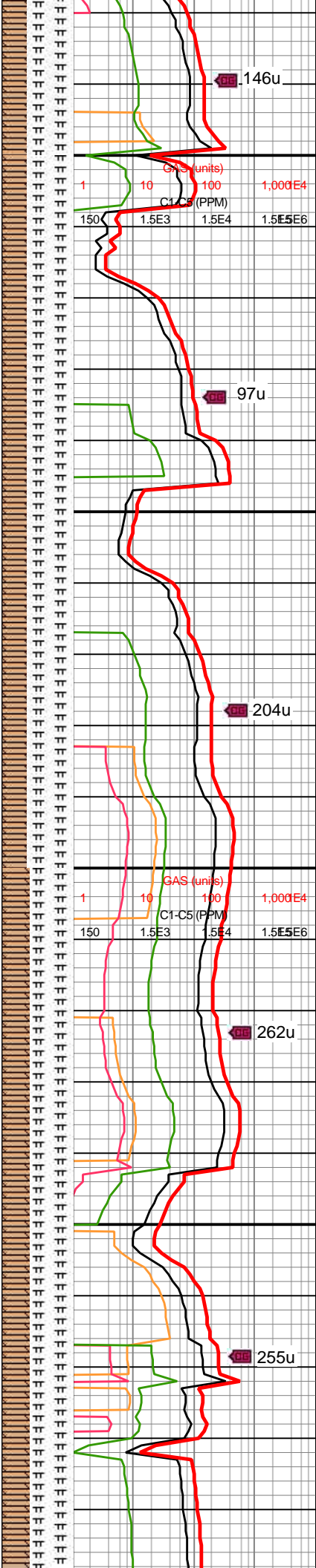
MD: 11,314'
INC: 89.34°
AZM: 179.68°
TVD: 7,562.69'
VS: -2,923.8'

MW: 10.0/10.0
VIS: 43/41

WOB: 34
RPM: 60
SPM: 198
SPP: 3,789

MD: 11,403'
INC: 90.22°
AZM: 179.16°
TVD: 7,563.03'
VS: -3,012.79'

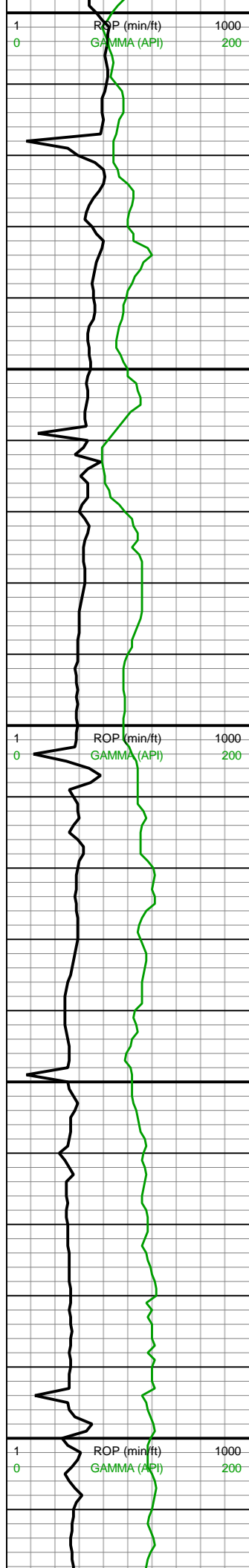
MD: 11,493'
INC: 89.25°
AZM: 180.03°
TVD: 7,563.45'



11200-11300 65% MRLST, dk gy-blk, hd-v hd, sl fri-fri, dull-rthy tex, sb blk-ylk, tr f pyr; 35% CHK, med-dk gy, sb blk-ylk, frm-sl hd, rthy tex, amor

11300-11400 65% MRLST, dk gy-blk, hd-v hd, sl fri-fri, dull-rthy tex, sb blk-sb plty, tr f pyr; 35% CHK, med-dk gy, sb blk-ylk, frm-sl hd, rthy-chky tex, amor, tr mrlst incl ip

11400-11500 60% MRLST, dk gy-blk, hd-v hd, sl fri, dull-rthy tex, sb blk-sb plty, plty ip, tr f pyr nod; 40% CHK, med-dk gy, sb blk-ylk, frm-sl hd, rthy-chky tex, amor, tr mrlst



VS: -3,102.78'

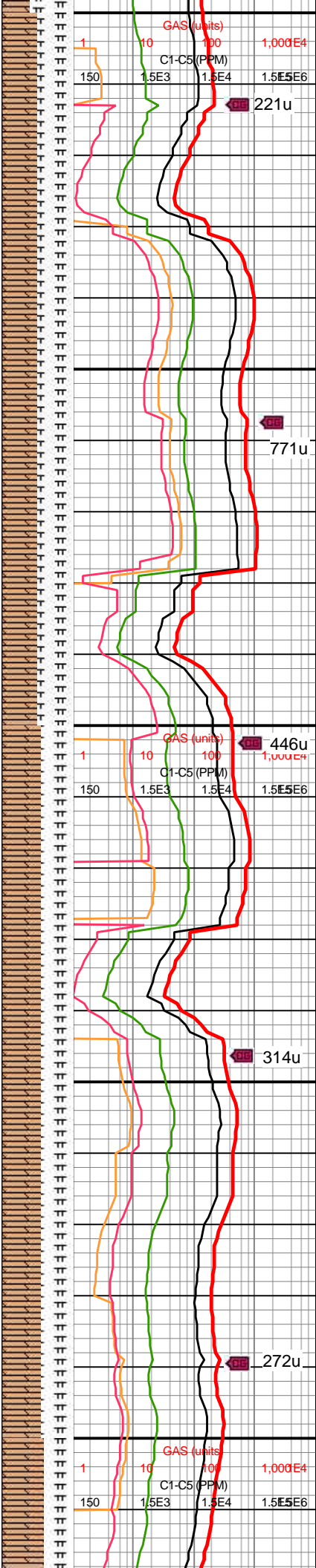
MW: 10.0/10.0
VIS: 43/41

MD: 11,582'
INC: 89.69°
AZM: 179.51°
TVD: 7,564.27'
VS: -3,191.78'

WOB: 35
RPM: 60
SPM: 197
SPP: 3,767

MD: 11,671'
INC: 90.48°
AZM: 179.16°
TVD: 7,564.14'
VS: -3,280.77'

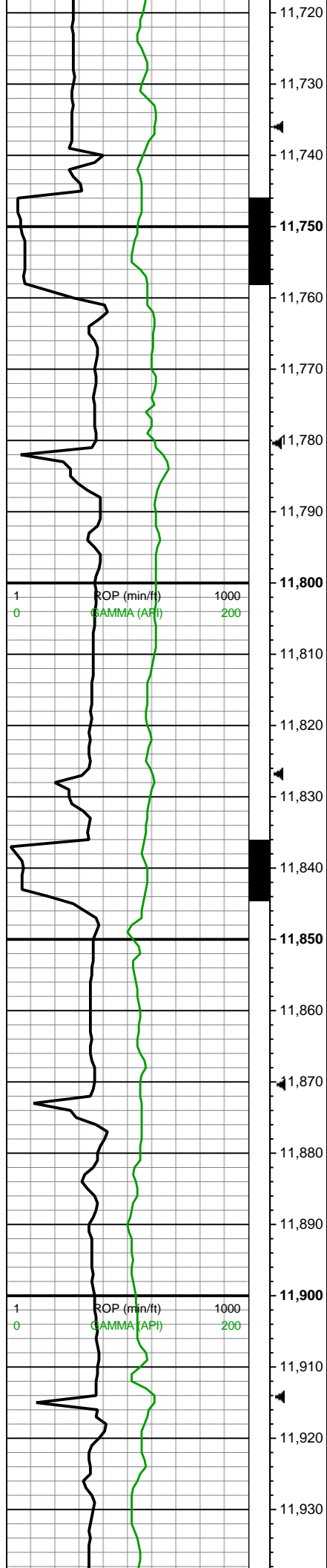
MW: 10.0/10.0
VIS: 43/41



incl ip

11500-11600 50% MRLST, dk gy-blk, hd-v hd, sl fri, rthy tex, sb blk-y-sb plty; 40% CHK, med-dk gy, sme lt gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl

11600-11700 55% CHK, med gy, sme lt gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl; 45% MRLST, dk gy-blk, sl hd-hd, sl fri-fri ip, dull-rthy tex, sb blk-y-sb plty



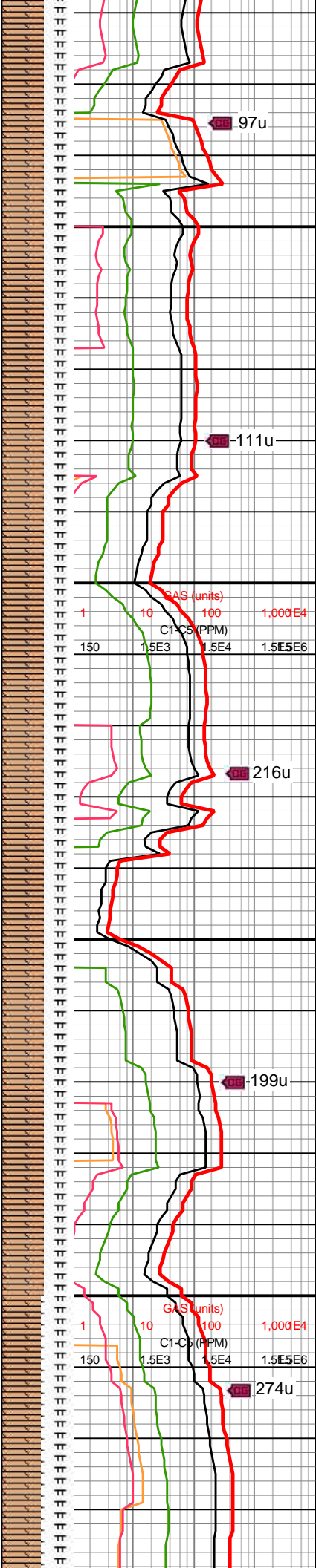
MD: 11,760'
INC: 89.52°
AZM: 180.56°
TVD: 7,564.14'
VS: -3,369.77'

MW: 10.0/10.0
VIS: 43/41

WOB: 35
RPM: 60
SPM: 197
SPP: 3,931

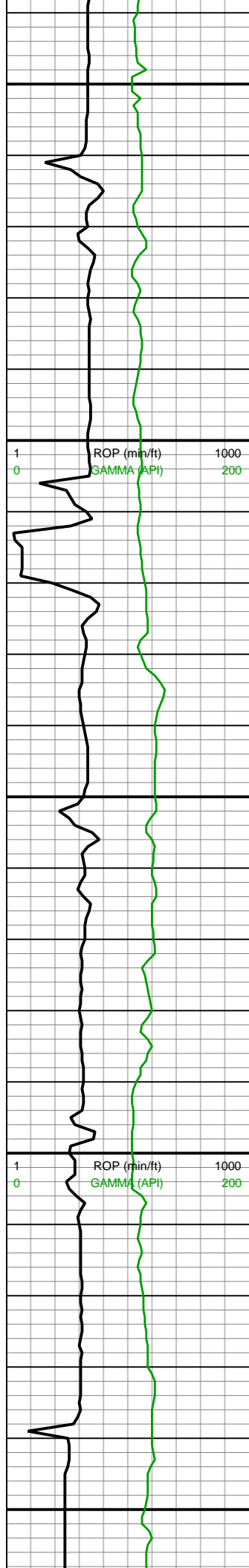
MD: 11,849'
INC: 88.81°
AZM: 181.62°
TVD: 7,565.43'
VS: -3,458.74'

MD: 11,938'
INC: 89.08°
AZM: 181.44°
TVD: 7,566.14'
VS: -3,469.88'

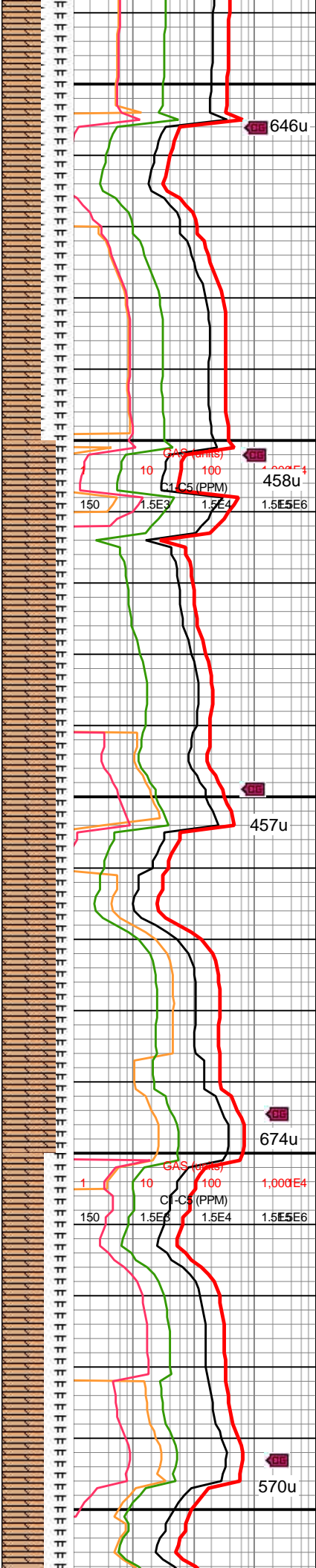


11700-11800 60% CHK, med gy, sb blkly-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, tr f pp pyr ip; 40% MRLST, dk gy-blk, sl hd-hd, sl fri, dull-rthy tex, sb blkly-sb plty

11800-11900 60% CHK, med gy, sb blkly-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, tr free chk; 40% MRLST, dk gy-blk, sl hd-hd, sl fri-fri ip, dull-rthy tex, sb blkly-sb plty, tr f pp pyr



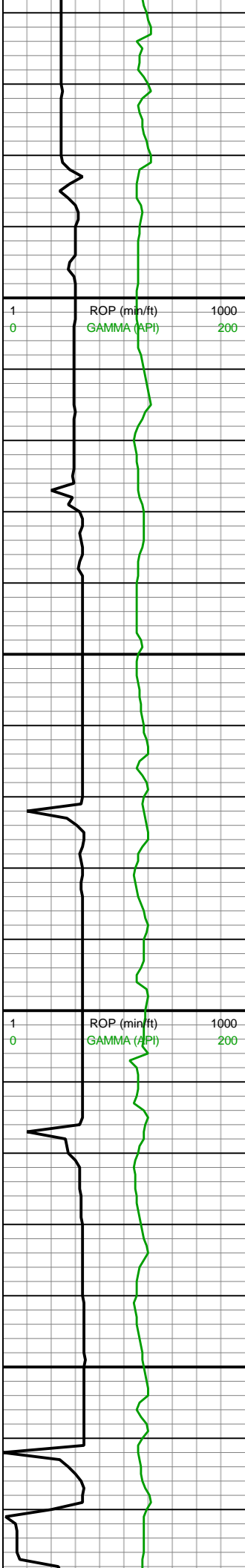
11,940
11,950 MW: 10.0/10.0
VIS: 43/41
11,960
11,970
11,980
11,990
12,000 WOB: 33
RPM: 60
SPM: 198
SPP: 3,997
12,010
12,020 MD: 12,027'
INC: 87.93°
AZM: 181.09°
TVD: 7,569.4'
VS: -3,636.64'
12,030
12,040
12,050 MW: 10.0/10.0
VIS: 44/42
GD
12,060
12,070
12,080
12,090
12,100
12,110 MD: 12,117'
INC: 88.2°
AZM: 180.39°
TVD: 7,572.43'
VS: -3,726.58'
12,120
12,130
12,140
12,150 MW: 9.9/9.9
VIS: 43/41



11900-12000 55% CHK, med
gy, sb blk-y-blky, frm-sl hd,
rthy-chky tex, amor, tr mrlst
incl; 45% MRLST, dk gy-blk,
hd-v hd, sl fri, rthy tex, sb
blk-y-sb plty, tr f pp pyr

12000-12100 75% CHK: med
gy, sb blk-y-blky, frm-sl hd,
rthy-chky tex, amor, tr mrlst
incl; 25% MRLST: dk gy-blk,
hd-v hd, sl fri, rthy tex, sb
blk-y-sb plty, tr pp pyr





12,160
12,170
12,180
12,190
12,200
12,210
12,220
12,230
12,240
12,250
12,260
12,270
12,280
12,290
12,300
12,310
12,320
12,330
12,340
12,350
12,360
12,370

WOB: 29.7
RPM: 60
SPM: 196
SPP: 3,762

MD: 12,206'
INC: 88.29°
AZM: 180.03°
TVD: 7,575.16'
VS: -3,815.54'

MW: 9.9+/9.9
VIS: 43/41

MD: 12,295'
INC: 88.64°
AZM: 180.21°
TVD: 7,577.54'
VS: -3,904.51'

MW: 10/9.9+
VIS: 43/41



12100-12200 60% CHK: med gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl; 40% MRLST: dk gy-blk, hd-v hd, sl fri, rthy tex, sb blk-y-sb plty, tr pyr

12200-12300 50% CHK: med gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, mnr free chk; 50% MRLST: dk gy-blk, hd-v hd, sl fri, rthy tex, sb blk-y-sb plty



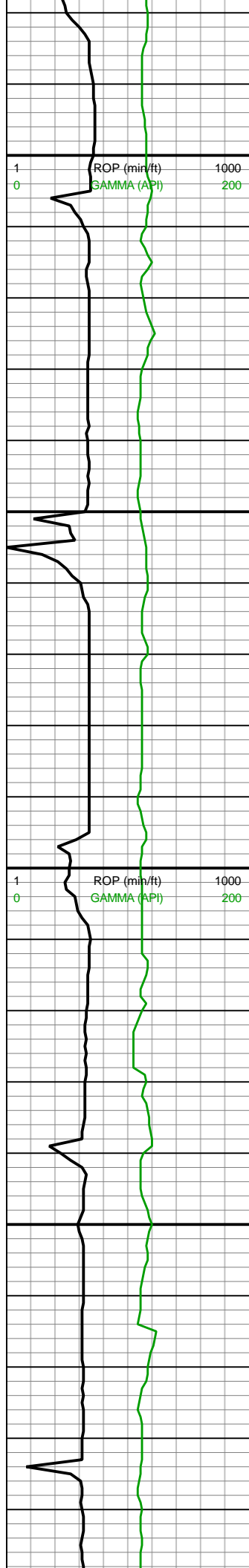
351u

326u

589u

719u

477u



MD: 12,384'
INC: 87.58°
AZM: 180.03°
TVD: 7,580.48'
VS: -3,993.46'

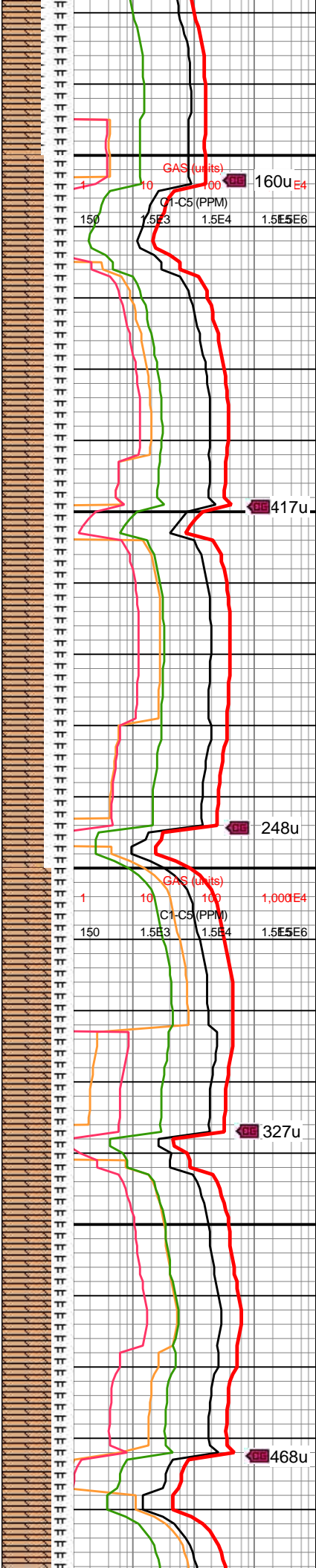
WOB: 34.9
RPM: 60
SPM: 196
SPP: 4,037

MD: 12,473'
INC: 88.02°
AZM: 179.51°
TVD: 7,583.9'
VS: -4,082.39'

MW: 10/10
VIS: 43/41

MD: 12,562'
INC: 88.37°
AZM: 179.33°
TVD: 7,586.7'
VS: -4,171.34'

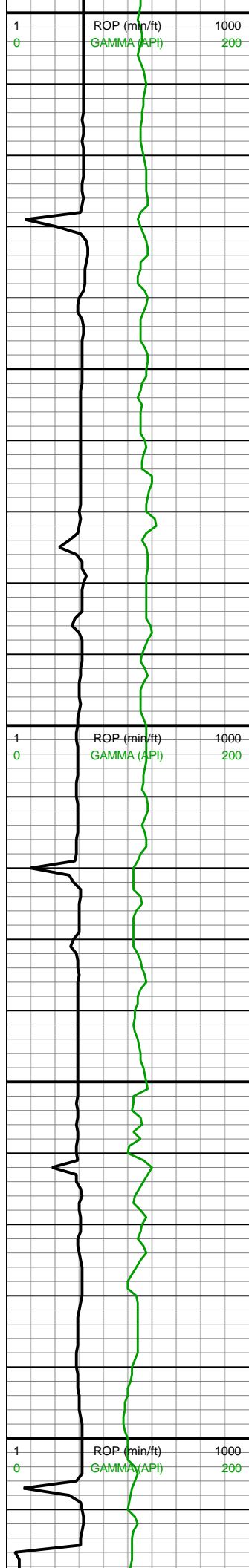
WOB: 34.4



12300-12400 55% CHK: med gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, mnr free chk, tr mrlst incl; 45% MRLST: dk gy-blk, hd-v hd, sl fri, rthy tex, sb blk-y-sb plty, tr pp pyr

12400-12500 60% CHK: med gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, mnr free chk, tr mrlst incl; 40% MRLST: dk gy-blk, hd-v hd, sl fri, rthy tex, sb blk-y-sb plty, tr pp pyr

12500-12600 70% CHK: med gy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, mnr free chk, tr mrlst incl; 30% MRLST: dk gy-blk, hd-v hd, sl fri, rthy tex, sb blk-y-sb plty, tr pp pyr



12,600
12,610
12,620
12,630
12,640
12,650
12,660
12,670
12,680
12,690
12,700
12,710
12,720
12,730
12,740
12,750
12,760
12,770
12,780
12,790
12,800
12,810

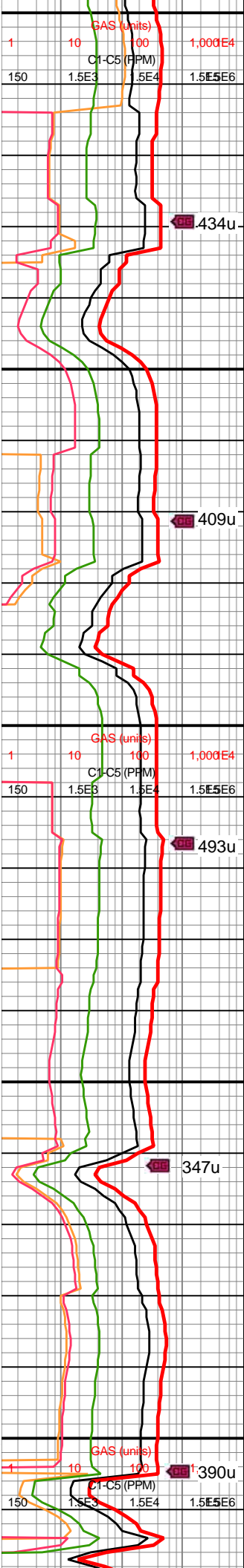
RPM: 60
SPM: 197
SPP: 3,979

MD: 12,651'
INC: 88.64°
AZM: 179.33°
TVD: 7,589.02'
VS: -4,260.3'

MW: 10/10
VIS: 43/41

MD: 12,740'
INC: 89.16°
AZM: 179.16°
TVD: 7,590.73'
VS: -4,349.28'

WOB: 35.7
RPM: 60
SPM: 196
SPP: 3,955



434u

409u

493u

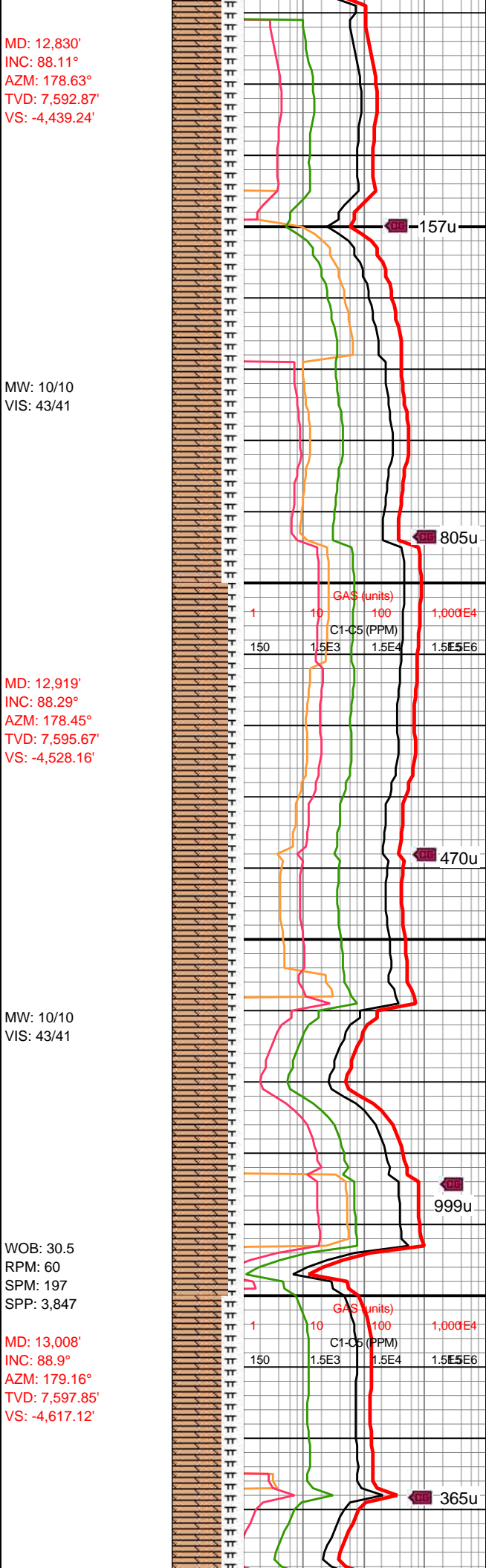
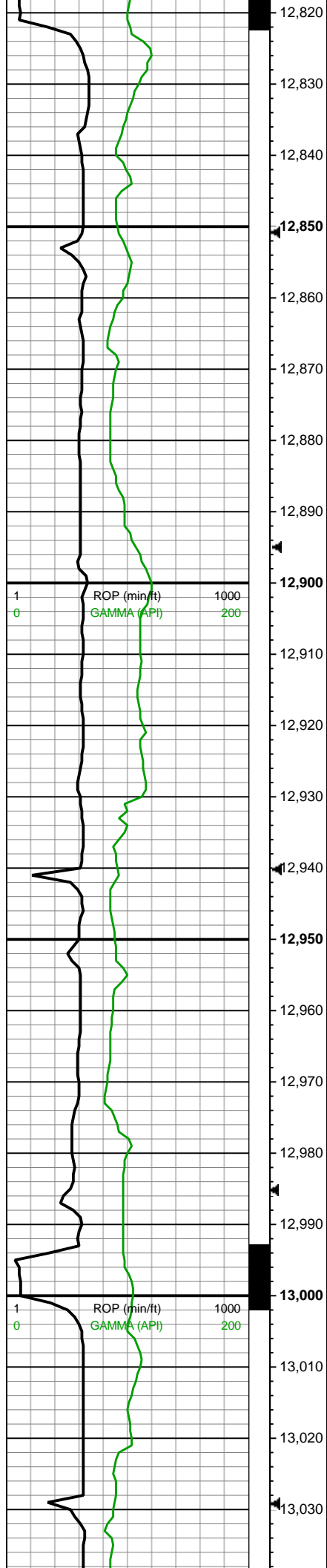
347u

390u

12600-12700 65% CHK: med
gy, sb blkly-blky, frm-sl hd,
rthy-chky tex, amor, mnr free
chk, tr mrlst incl; 55% MRLST:
dk gy-blk, hd-v hd, sl fri, rthy
tex, sb blkly-sb plty

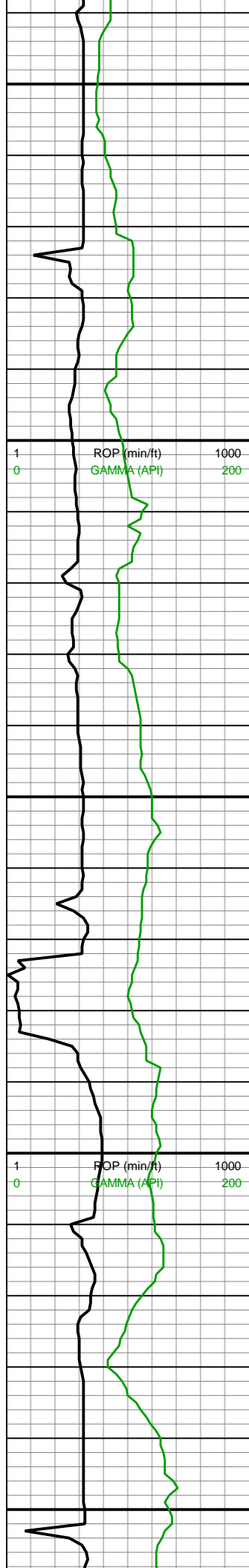
12700-12800 75% CHK: med
gy-lt bnshgy, sb blkly-blky,
frm-sl hd, rthy-chky tex, amor,
mnr free chk, tr mrlst incl; 25%
MRLST: dk gy-blk, hd-v hd, sl
fri, rthy tex, sb blkly-sb plty





12800-12900 70% CHK: med
gy-lt bnshgy, sb blkyl-blky,
frm-sl hd, rthy-chky tex, amor,
mnr free chk, tr mrlst incl; 30%
MRLST: dk gy-blk, hd-v hd, sl
fri, sb blkyl-sb plty, rthy tex

12900-13000 80% CHK: med
gy-lt bnshgy, sb blkyl-blky,
frm-sl hd, rthy-chky tex, amor,
mnr free chk, tr mrlst incl; 20%
MRLST: dk gy-blk, hd-v hd, sb
blkyl-sb plty, rthy tex, sl fri



13,040
13,050
13,060
13,070
13,080
13,090
13,100
13,110
13,120
13,130
13,140
13,150
13,160
13,170
13,180
13,190
13,200
13,210
13,220
13,230
13,240
13,250

MINDEPTH 03/02/2020

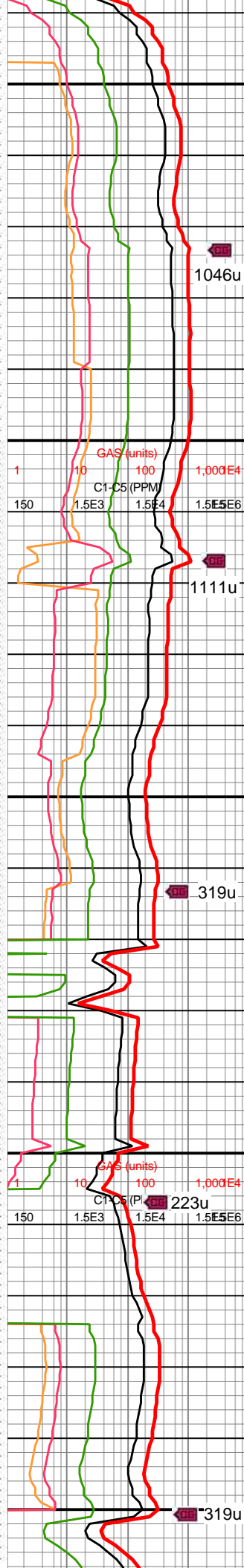
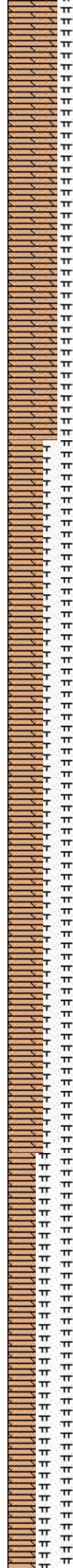
MD: 13,097'
INC: 89.34°
AZM: 178.45°
TVD: 7,599.22'
VS: -4,706.09'

MW: 10/10
VIS: 43/41

MD: 13,186'
INC: 89.16°
AZM: 179.51°
TVD: 7,600.38'
VS: -4,795.06'

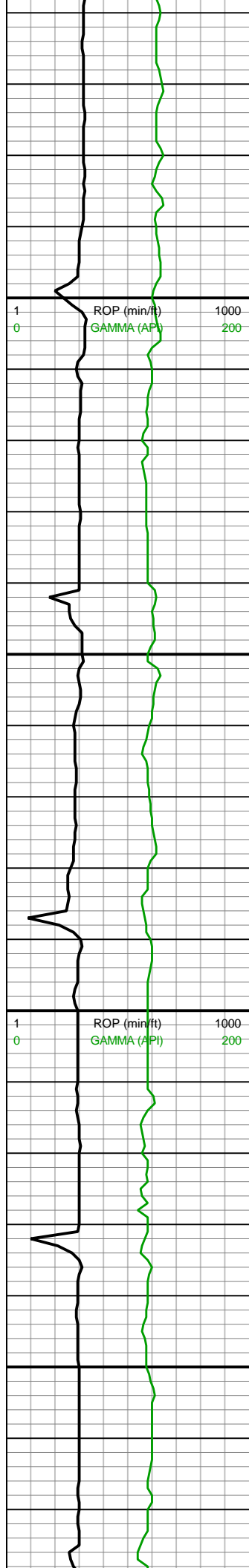
WOB: 35.1
RPM: 60
SPM: 197
SPP: 3,962

MW: 10/10
VIS: 43/41



13000-13100 70% CHK: med
gy-lt bnshgy, sb blkyl-bkly,
frm-sl hd, rthy-chky tex, amor,
mnr free chk, tr mrlst incl; 30%
MRLST: dk gy-blk, hd-v hd, sb
blkyl-sb plty, rthy tex, sl fri

13100-13200 50% MRLST: dk
gy-blk, hd-v hd, sb blkyl-sb plty,
rthy tex, sl fri; 50% CHK: med
gy-lt bnshgy, sb blkyl-bkly,
frm-sl hd, rthy-chky tex, amor,
tr mrlst incl, mnr free chk



13,260
13,270
13,280
13,290
13,300
13,310
13,320
13,330
13,340
13,350
13,360
13,370
13,380
13,390
13,400
13,410
13,420
13,430
13,440
13,450
13,460
13,470

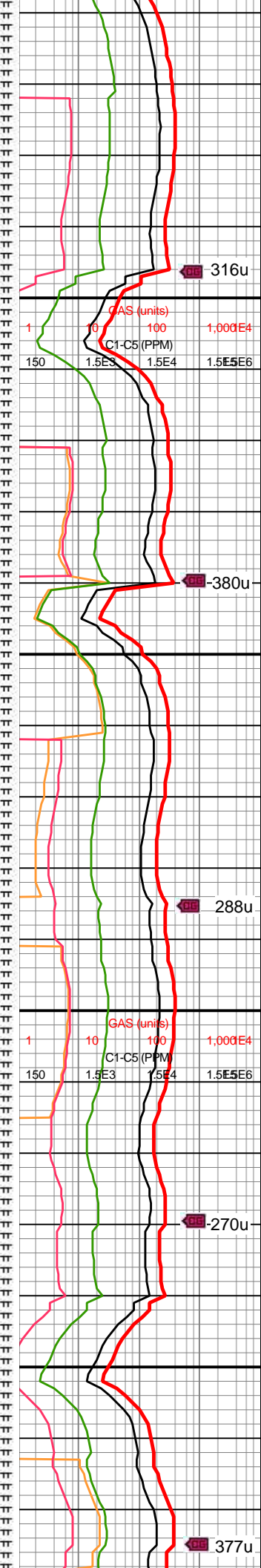
MD: 13,276'
INC: 88.9°
AZM: 179.33°
TVD: 7,601.91'
VS: -4,885.04'

MW: 10/10
VIS: 43/41

MD: 13,365'
INC: 89.16°
AZM: 179.33°
TVD: 7,603.41'
VS: -4,974.03'

WOB: 34.8
RPM: 60
SPM: 196
SPP: 3,952

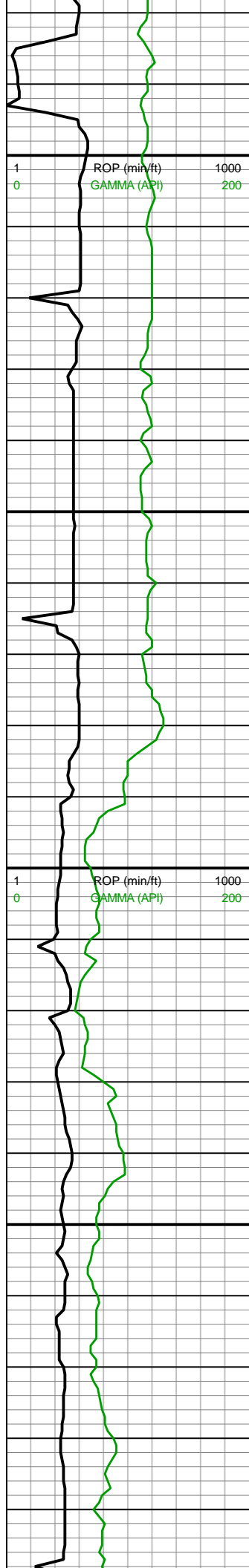
MD: 13,454'
INC: 89.25°
AZM: 178.8°
TVD: 7,604.65'
VS: -5,063.01'



13200-13300 40% MRLST: dk gy-blk, hd-v hd, sb blk-y-sb plty, rthy tex, sl fri; 60% CHK: med gy-lt bnshgy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, mnfr free chk

13300-13400 50% CHK: med gy-lt bnshgy, sb blk-y-blky, frm-sl hd, rthy-chky tex, amor, tr mrlst incl, mnfr free chk; 50% MRLST: dk gy-blk, hd-v hd, sb blk-y-sb plty, rthy tex, sl fri





13,480
13,490
13,500
13,510
13,520
13,530
13,540
13,550
13,560
13,570
13,580
13,590
13,600
13,610
13,620
13,630
13,640
13,650
13,660
13,670
13,680
13,690

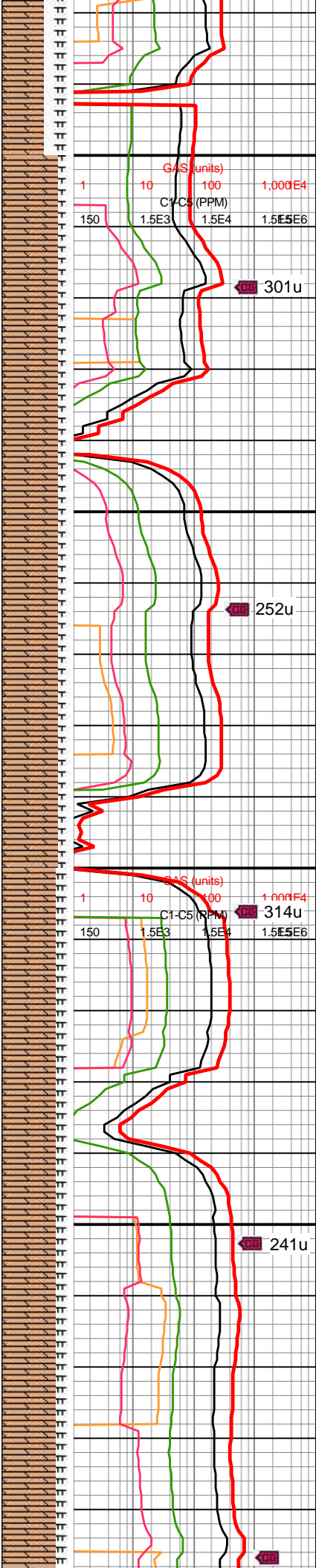
MW: 10/10
VIS: 43/41

MD: 13,543'
INC: 88.37°
AZM: 179.86°
TVD: 7,606.5'
VS: -5,151.98'

WOB: 34.9
RPM: 60
SPM: 197
SPP: 3,855

MD: 13,632'
INC: 88.11°
AZM: 179.51°
TVD: 7,609.23'
VS: -5,240.93'

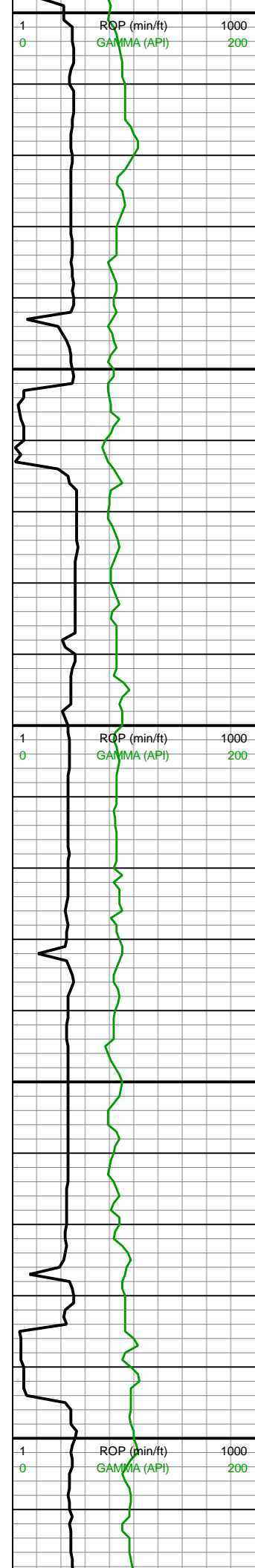
MW: 10/10
VIS: 43/41



13400-13500 60% CHK: med
gy-lt bnshgy, sb blkly-blky,
frm-sl hd, rthy-chky tex, amor,
tr mrlst incl, mnr free chk; 40%
MRLST: dk gy-blk, hd-v hd,
rthy tex, sl fri, sb blkly-sb plty, tr
pp pyr

13500-13600 80% CHK: med
gy-lt bnshgy, sb blkly-blky,
frm-sl hd, rthy-chky tex, amor,
tr mrlst incl, mnr free chk; 20%
MRLST: dk gy-blk, hd-v hd,
rthy tex, sl fri, sb blkly-sb plty, tr
pp pyr

13600-13700 75% CHK: med
gy-lt bnshgy, sb blkly-blky,
frm-sl hd, rthy-chky tex, amor,
tr mrlst incl, mnr free chk; 25%
MRLST: dk gy-blk, hd-v hd,
rthy tex, sl fri, sb blkly-sb plty, tr
pp pyr



13,700
13,710
13,720
13,730
13,740
13,750
13,760
13,770
13,780
13,790
13,800
13,810
13,820
13,830
13,840
13,850
13,860
13,870
13,880
13,890
13,900
13,910

MD: 13,721'
INC: 87.58°
AZM: 178.98°
TVD: 7,612.58'
VS: -5,329.86'

MM

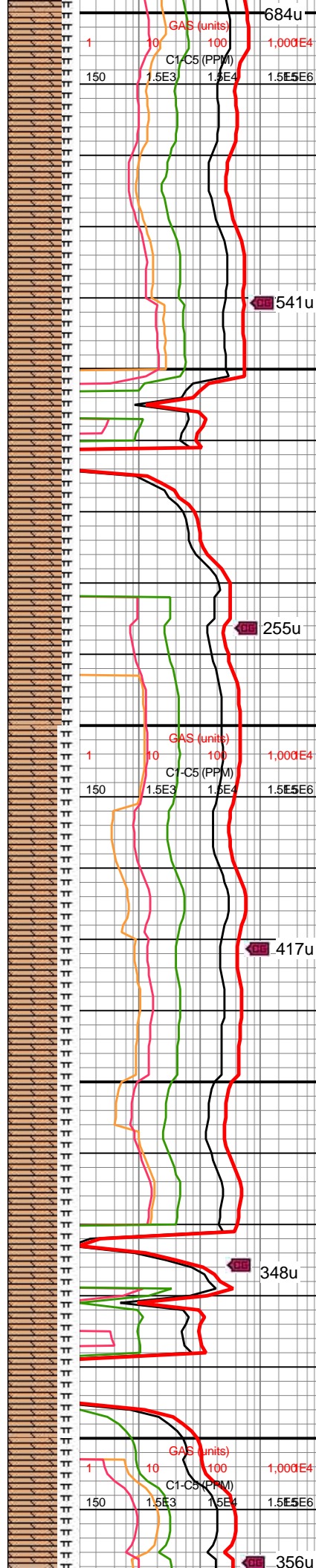
MW: 10/10
VIS: 42/41

WOB: 34.8
RPM: 60
SPM: 198
SPP: 3,787

MD: 13,810'
INC: 88.55°
AZM: 179.68°
TVD: 7,615.58'
VS: -5,418.8'

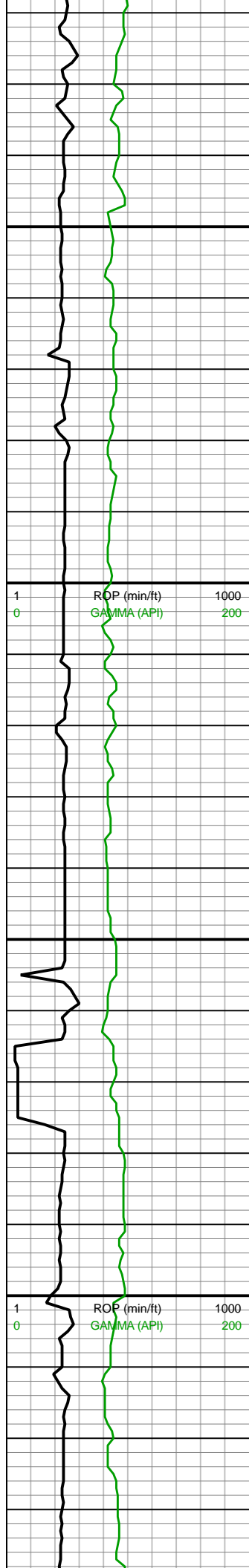
MW: 10.0/10.0
VIS: 42/40

MD: 13,899'
INC: 89.52°
AZM: 179.86°
TVD: 7,617.08'
VS: -5,507.79'



13700-13800 75% CHK: med
gy, sb blk-y-blky, frm-sl hd,
rthy-chky tex, amor, tr mrlst
incl, tr free chk; 25% MRLST:
dk gy-blk, hd-v hd, dull-rthy
tex, sl fri, sb blk-y-sb plty, tr pp
pyr

13800-13900 70% CHK: med
gy, sb blk-y-blky, frm-sl hd, sft
ip, rthy-chky tex, amor, tr mrlst
incl, tr free chk; 30% MRLST:
dk gy-blk, hd-v hd, dull-rthy
tex, sl fri, sb blk-y-sb plty, tr f
pp pyr



13,920
13,930
13,940
13,950
13,960
13,970
13,980
13,990
14,000
14,010
14,020
14,030
14,040
14,050
14,060
14,070
14,080
14,090
14,100
14,110
14,120
14,130

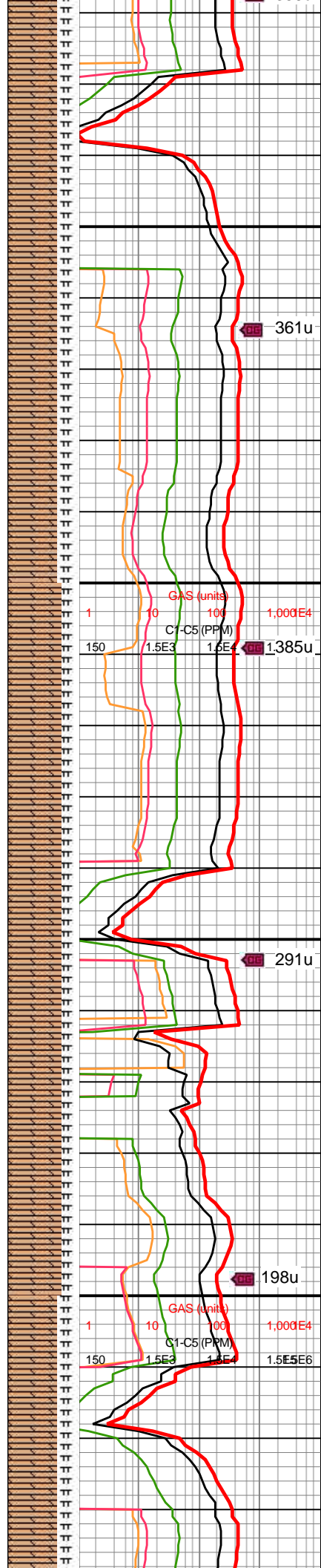
MW: 10.0/10.0
VIS: 42/40

MD: 13,988'
INC: 89.34°
AZM: 178.98°
TVD: 7,617.97'
VS: -5,596.78'

WOB: 36
RPM: 60
SPM: 197
SPP: 3,790

MW: 10.0/10.0
VIS: 42/40

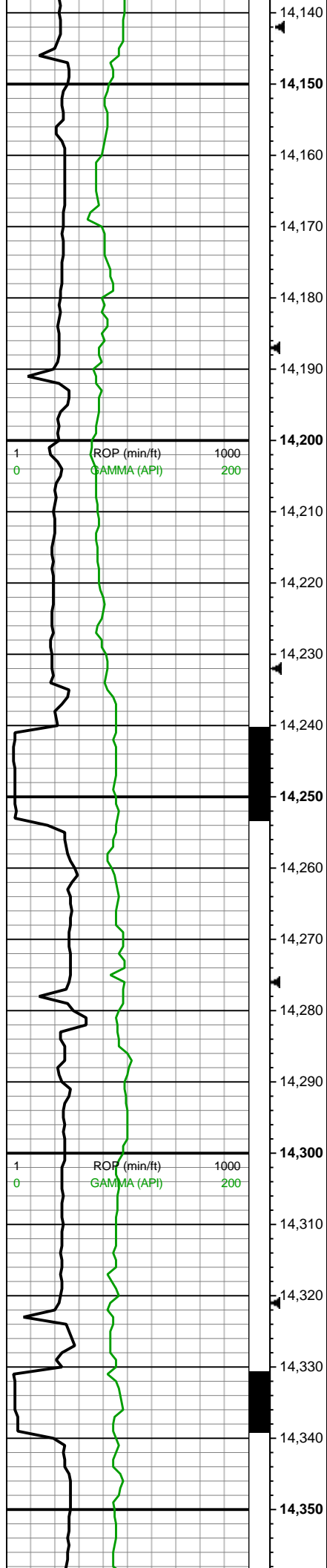
MD: 14,077'
INC: 90.4°
AZM: 180.56°
TVD: 7,618.17'
VS: -5,685.77'



13900-14000 70% CHK: med
gy, sb blk-y-blky, frm-sl hd, sft
ip, rthy-chky tex, amor, tr mrlst
incl, tr free chk; 30% MRLST:
dk gy-blk, hd-v hd, rthy tex, sl
fri, sb blk-y-sb plty, tr f pp pyr

14000-14100 75% CHK: med
gy-lt bnshgy, sb blk-y-blky,
frm-sl hd, rthy-chky tex, amor,
tr mrlst incl, tr free chk; 25%
MRLST: dk gy-blk, hd-v hd,
rthy tex, sl fri, sb blk-y-sb plty





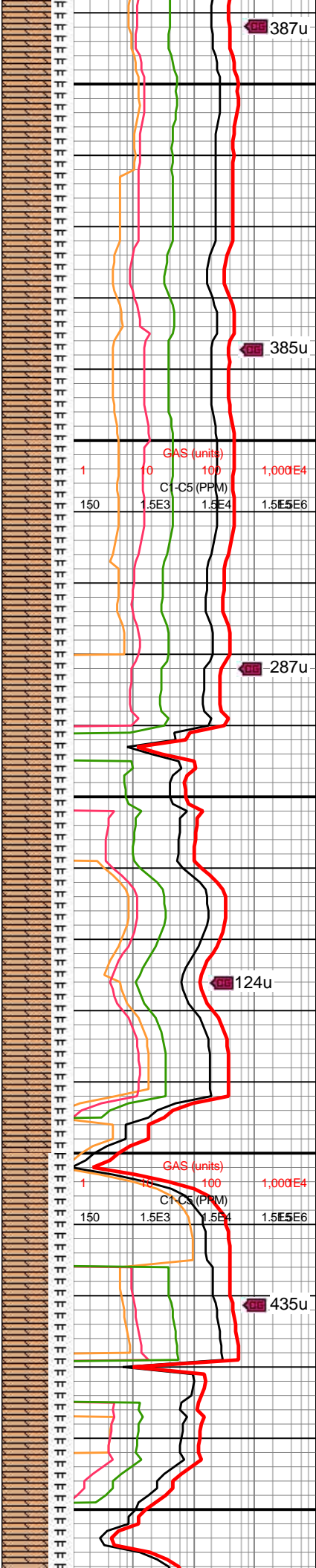
MD: 14,166'
INC: 90.84°
AZM: 180.56°
TVD: 7,617.21'
VS: -5,774.77'

WOB: 35
RPM: 60
SPM: 196
SPP: 3,810

MW: 10.0/10.0
VIS: 42/40

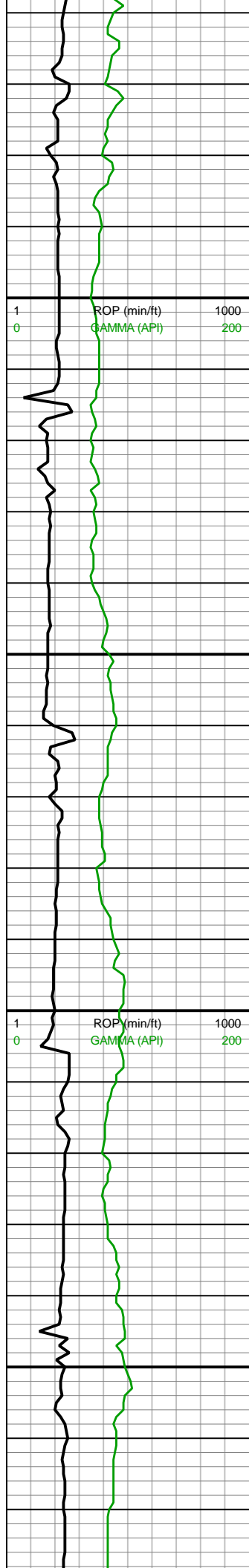
MD: 14,256'
INC: 90.13°
AZM: 181.62°
TVD: 7,616.44'
VS: -5,864.74'

MD: 14,345'
INC: 88.02°
AZM: 180.56°
TVD: 7,617.88'
VS: -5,953.71'



14100-14200 70% CHK: med
gy-lt bnshgy, sb blkly-blky,
frm-sl hd, sft ip, rthy-chky tex,
amor, tr mrlst incl, tr free chk;
30% MRLST: dk gy-blk, hd-v
hd, dull-rthy tex, sl fri, sb
blkly-sb plty

14200-14300 70% CHK: med
gy-lt bnshgy, sb blkly-blky,
frm-sl hd, sft ip, rthy-chky tex,
amor, tr mrlst incl, tr free chk;
30% MRLST: dk gy-blk, hd-v
hd, dull-rthy tex, sl fri, sb
blkly-sb plty



14,360
14,370
14,380
14,390
14,400
14,410
14,420
14,430
14,440
14,450
14,460
14,470
14,480
14,490
14,500
14,510
14,520
14,530
14,540
14,550
14,560
14,570

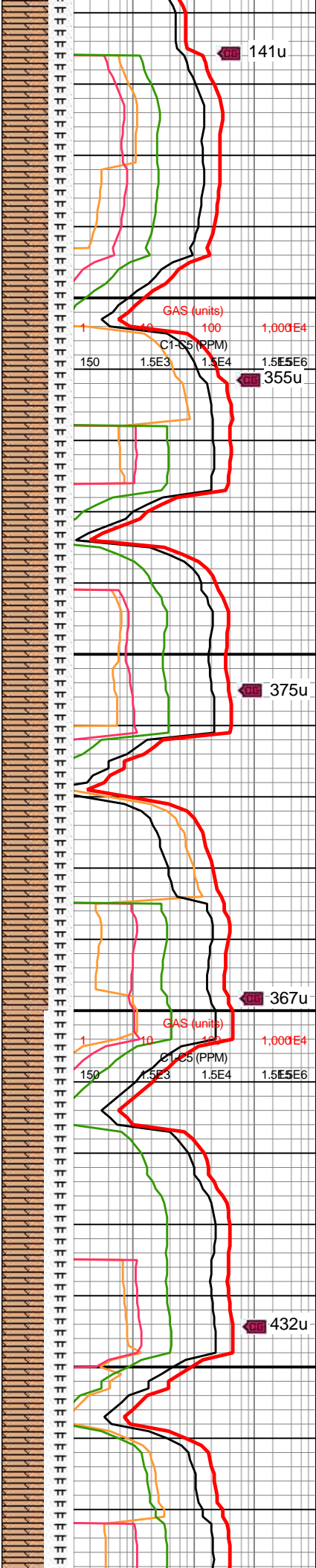
MW: 10.0/10.0
VIS: 42/40

WOB: 36
RPM: 60
SPM: 198
SPP: 3,821

MD: 14,434'
INC: 88.55°
AZM: 180.74°
TVD: 7,620.54'
VS: -6,042.66'

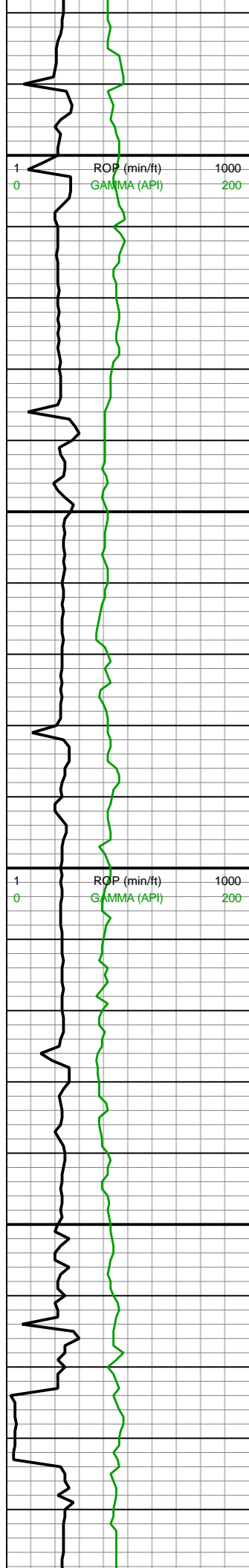
MD: 14,523'
INC: 88.55°
AZM: 180.56°
TVD: 7,622.8'
VS: -6,131.63'

MW: 10.0/10.0
VIS: 42/41



14300-14400 65% CHK: med
gy-lt bnshgy, sb blkly-blky,
frm-sl hd, sft ip, rthy-chky tex,
amor, tr free chk; 35%
MRLST: dk gy-blk, hd-v hd,
dull-rthy tex, sl fri, sb blkly-sb
plty, tr f pp pyr ip

14400-14500 65% CHK: med
gy, sme dk gy, sb blkly-blky,
frm-sl hd, sft ip, rthy-chky tex,
amor, tr free chk; 35%
MRLST: dk gy-blk, hd-v hd,
rthy tex, sl fri, sb blkly-sb plty, tr
intbdd chk



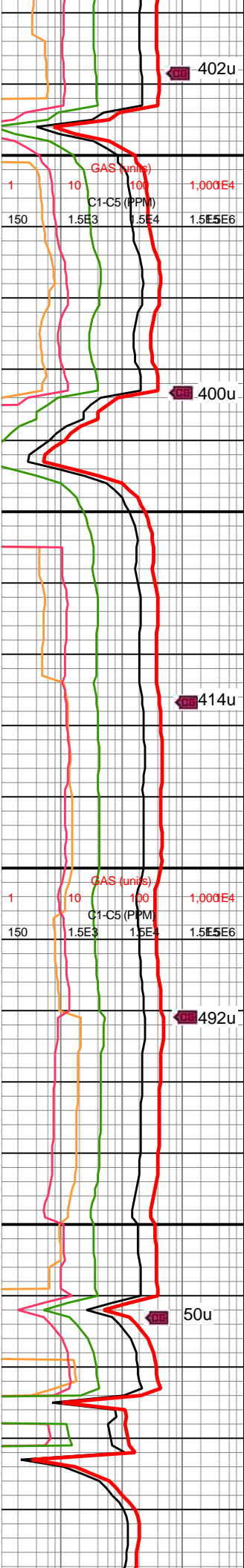
14,580
14,590
14,600
14,610
14,620
14,630
14,640
14,650
14,660
14,670
14,680
14,690
14,700
14,710
14,720
14,730
14,740
14,750
14,760
14,770
14,780
14,790

WOB: 36
RPM: 60
SPM: 196
SPP: 3,868

MD: 14,613'
INC: 88.81°
AZM: 180.21°
TVD: 7,624.87'
VS: -6,221.6'

MD: 14,702'
INC: 89.96°
AZM: 179.86°
TVD: 7,625.82'
VS: -6,310.6'

MD: 14,791'
INC: 88.55°
AZM: 179.68°
TVD: 7,626.98'
VS: -6,399.59'

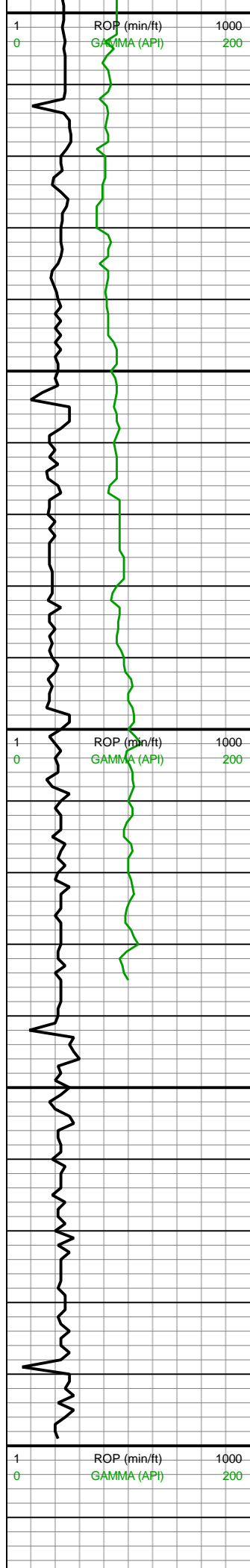


14500-14600 60% CHK: med
gy, sme dk gy, sb blkyl-blky,
frm-sl hd, rthy-chky tex, amor,
tr free chk; 40% MRLST: dk
gy-blk, hd-v hd, dull-rthy tex, sl
fri, sb blkyl-sb plty, tr f pp pyr

14600-14700 60% CHK: med
gy, sb blkyl-blky, frm-sl hd,
rthy-chky tex, amor, tr free chk;
40% MRLST: dk gy-blk, hd-v
hd, dull-rthy tex, sl fri, sb
blkyl-sb plty, tr f pp pyr

14700-14800 70% CHK: med
gy, sb blkyl-blky, frm-sl hd,
rthy-chky tex, amor, occ free
chk; 30% MRLST: dk gy-blk,
hd-v hd, rthy tex, sl fri, sb





14,800
14,810
14,820
14,830
14,840
14,850
14,860
14,870
14,880
14,890
14,900
14,910
14,920
14,930
14,940
14,950
14,960
14,970
14,980
14,990
15,000
15,010

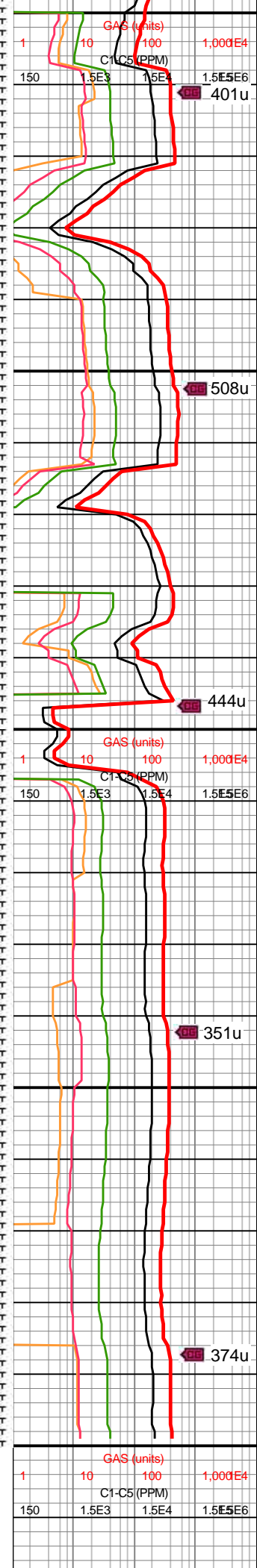
WOB: 36
RPM: 60
SPM: 197
SPP: 3,970

MD: 14,880'
INC: 88.99°
AZM: 179.68°
TVD: 7,628.89'
VS: -6,488.56'

MW: 10.0/10.0
VIS: 41/39

MD: 14,935'
INC: 88.81°
AZM: 179.33°
TVD: 7,629.95'
VS: -6,543.55'

**Reached TD @
15,000' MD, on
03/02/2020 @
15:37 MST**



GAS (units)
C1-C5 (PPM)

14800-14900 75% CHK: med
gy, sb blkly-blky, frm-sl hd,
rthy-chky tex, amor, tr mrlst
incl ip, occ free chk; 25%
MRLST: dk gy-blk, hd-v hd,
dull-rthy tex, sl fri, sb blkly-sb
ppty, tr intbdd chk ip

14900-15000 70% CHK: med
gy, sb blkly-blky, frm-sl hd,
rthy-chky tex, amor, tr mrlst
incl, occ free chk; 30%
MRLST: dk gy-blk, hd-v hd,
dull-rthy tex, sl fri, sb blkly-sb
ppty, tr chk incl ip

blkly-sb ppty

