

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Piceance Federal 28-20E

Location NE SW SEC 28 T9S R93W 2001 FSL 2489 FWL

State Colorado

County Mesa

Country United States

Rig Number Patterson 306

API Number 05-077-10256

Field Vega

Region Piceance Basin

Drilling Completed 10/19/2015

Spud Date 10/14/2015

Surface Coordinates N 39.246389 W 107.774975

Bottom Hole Coordinates N 39.241867 W 107.768211

Ground Elevation 7685'

K.B. Elevation 7701'

Logged Interval 1656' **To** 8540'

Total Depth 8540'

Formation Rollins

Type of Drilling Fluid Water Based

Operator

Company Piceance Energy, LLC.

Address 1512 Larimer Street, Suite 1000
Denver, CO 80202


Geologist

Name Andy McCarthy

Company Laramie Energy II, LLC.

Address 1512 Larimer Street, Suite 1000
Denver, CO 80202

Zone Color Coding

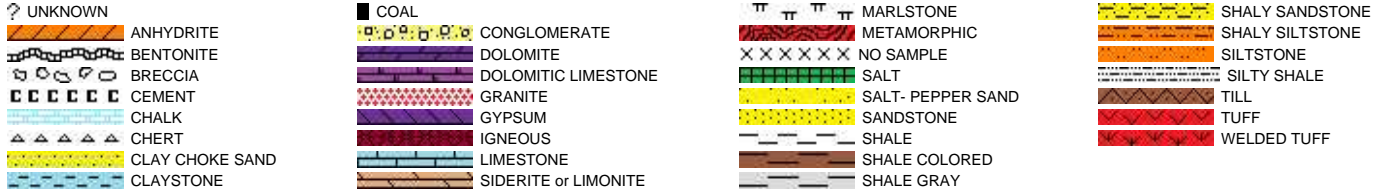
| | | |
|---|--|--|
|  Oil |  Condensate |  Gas |
|  Note |  Core |  Pressure |
|  Error |  Water |  Seal |

Other

Jordan Mccullugh Well Site Geologist

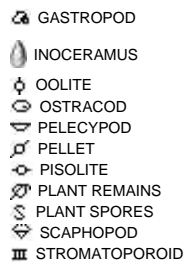
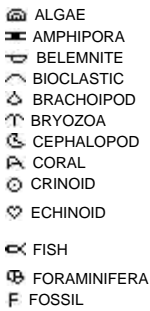
Columbine Logging Computer 14A

Rock Types

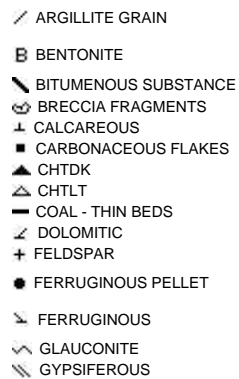
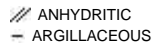


Accessories

Fossils



Minerals

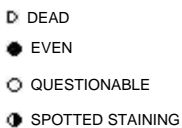


Stringer

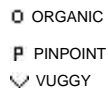


Other Symbols

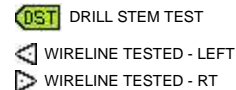
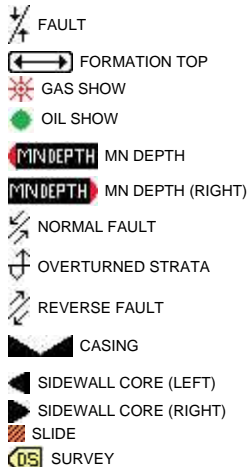
Oil Show



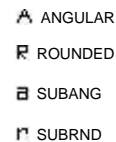
Porosity



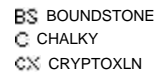
Engineering



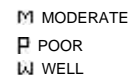
Rounding



Textures



Sorting



ROP
ROP

One-Man Strip Logging
Rigged Up 10/16/2015
Began Logging @ 1656' @
13:26 hrs MST on 10/16/15

0.34 min/ft

0.17 min/ft

WOB: 16.2 klbs
ROP: 288 ft/hr
SPP: 1254 psi
RPM: 31
Strokes: 49 spm

Slide/Rotate

Depth Labels

Total Gas & Chromatograph

GAS
C1
C2
C3
C4
C5

Bit #: 2
Type: MM55
Size: 7.875"
Depth In: 1656'
Depth Out: 8540'
Hours: 61
Avg Ft/Hr: 113
Jets: 5x12
S/N: 12733248

MUD WT 8.6 VIS 27

53u

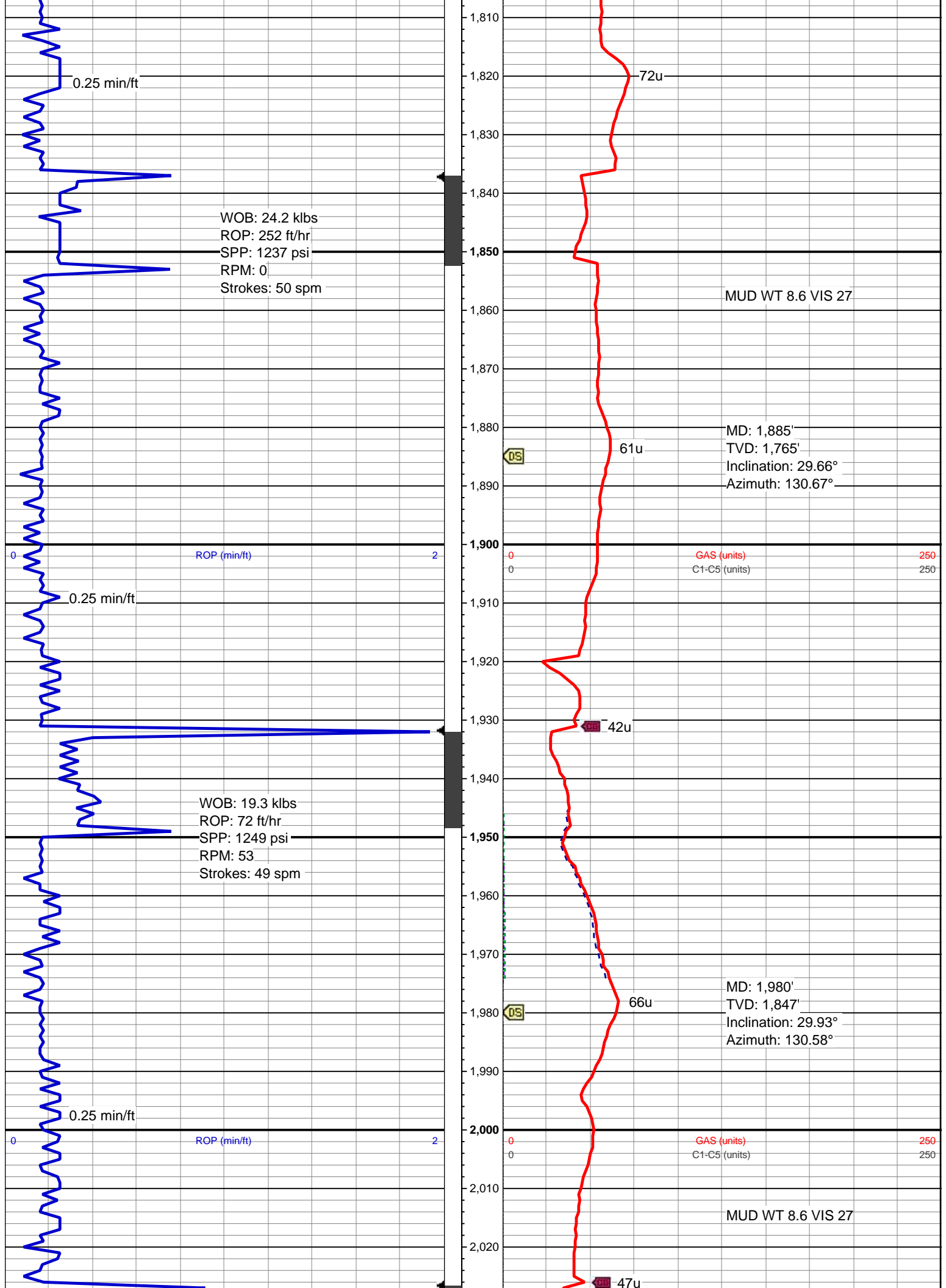
MD: 1,695'
TVD: 1,600'
Inclination: 30.06°
Azimuth: 131.63°

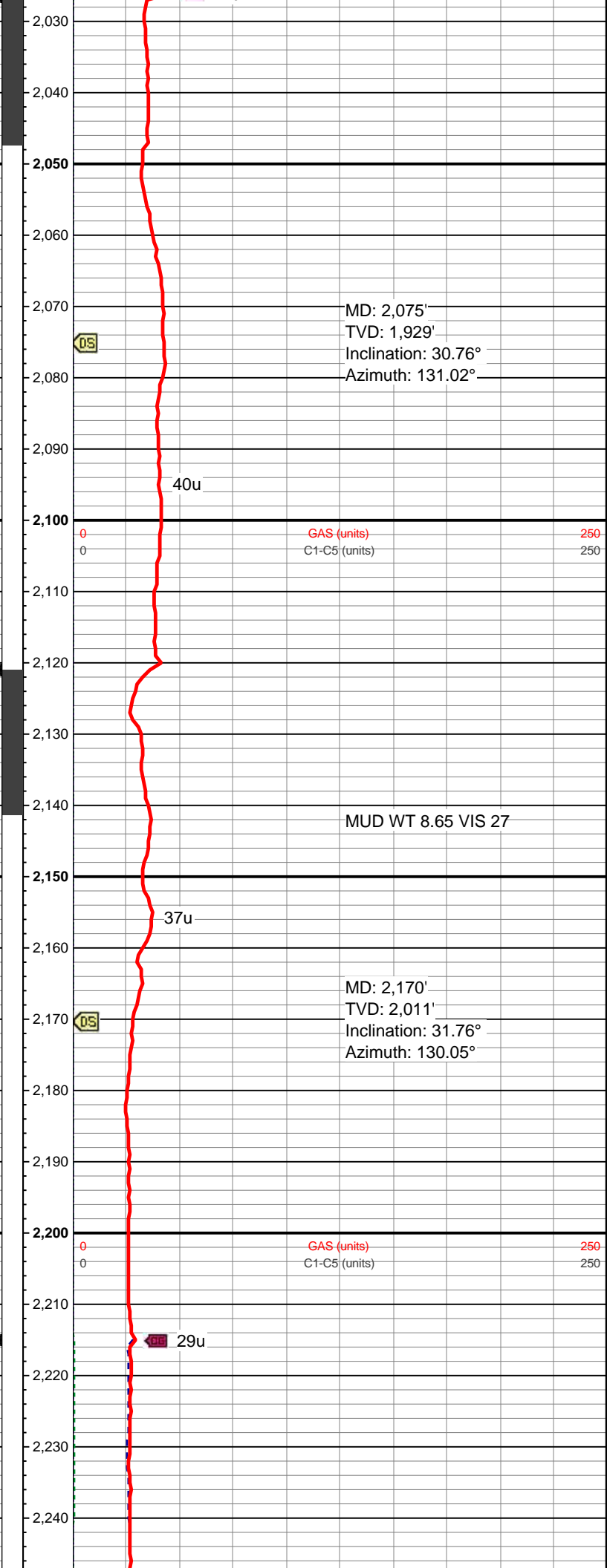
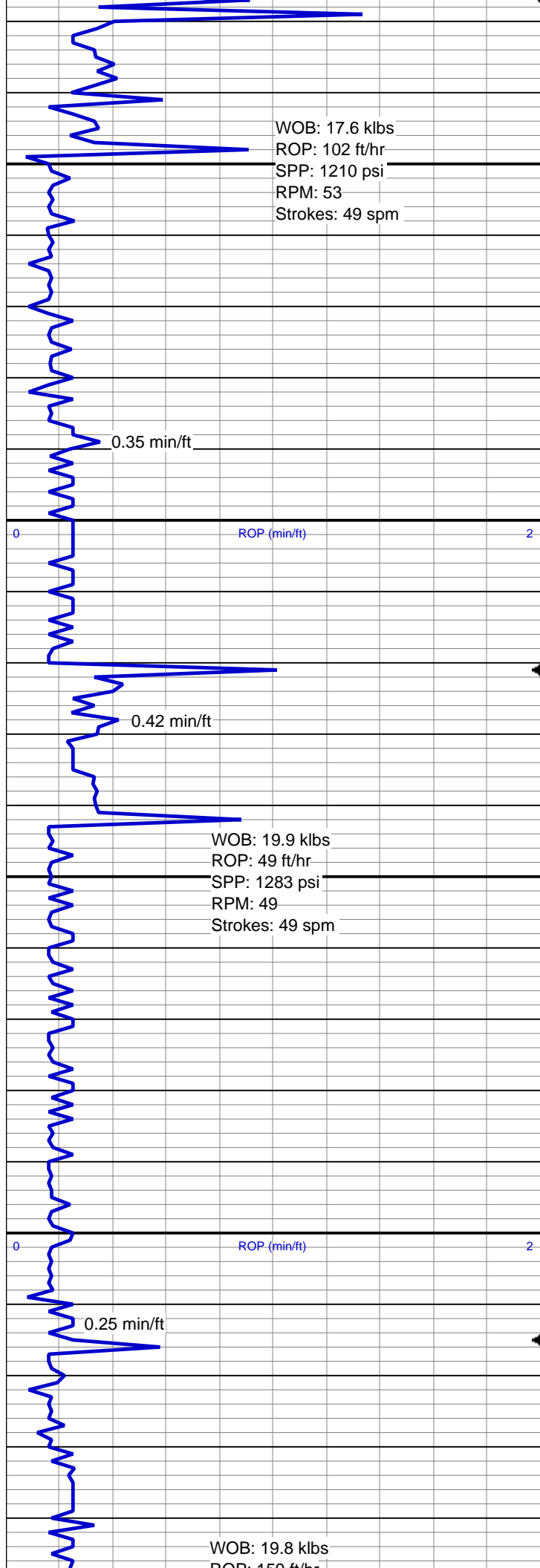
GAS (units) 250
C1-C5 (units) 250

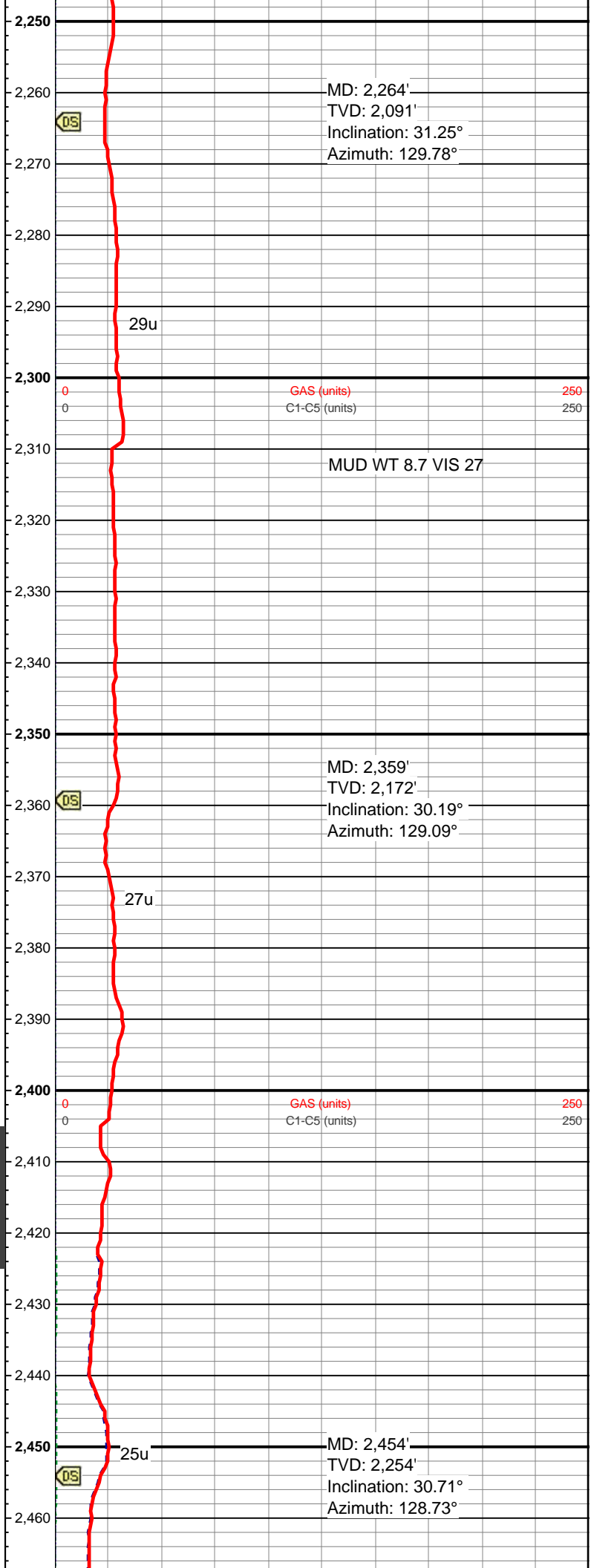
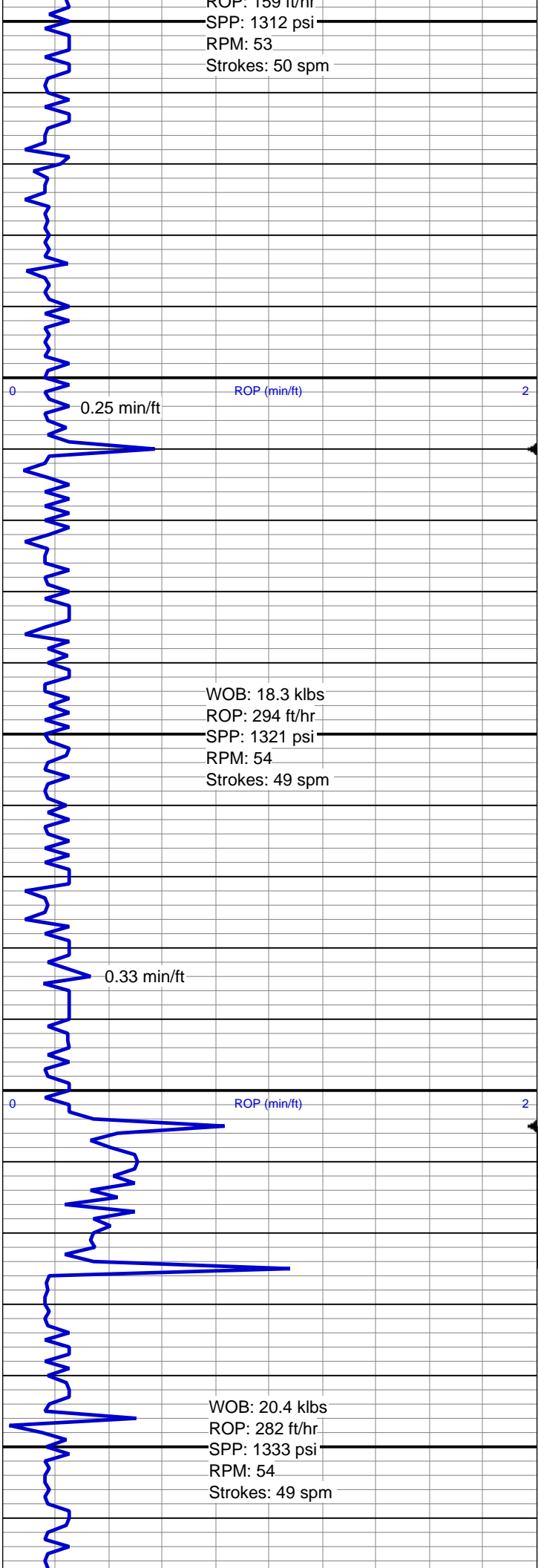
60u

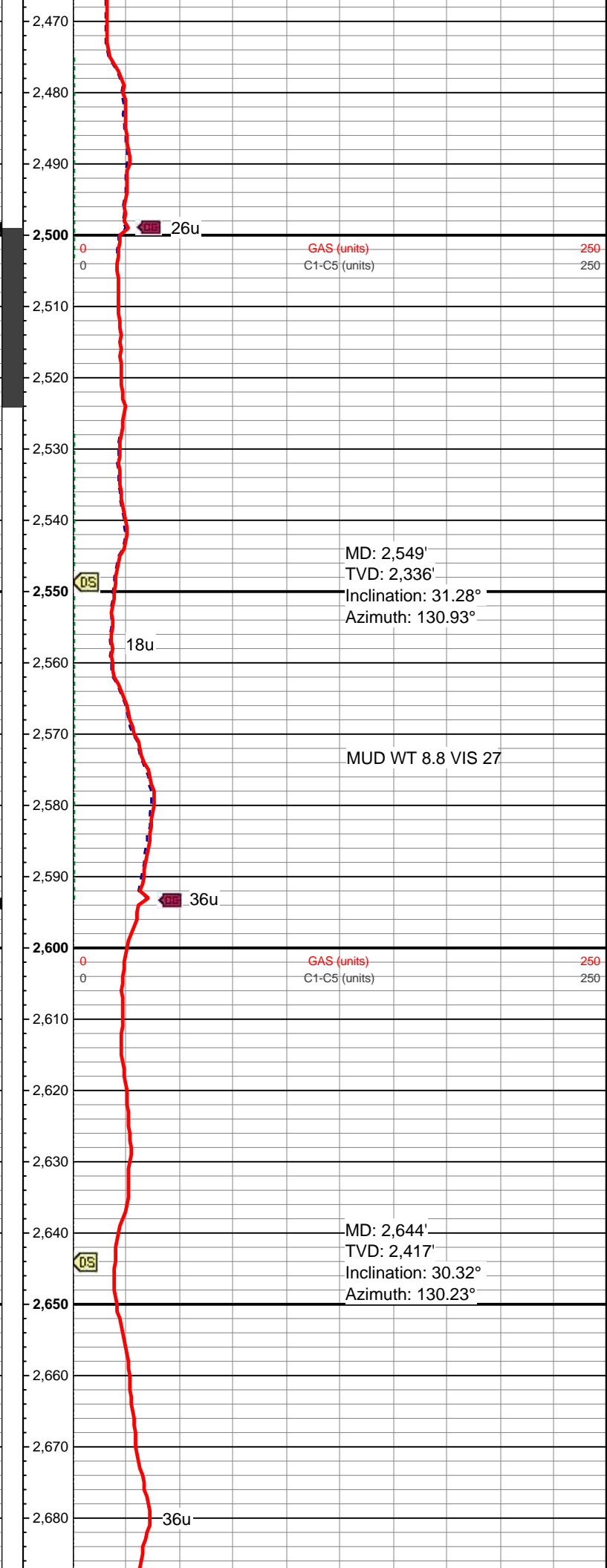
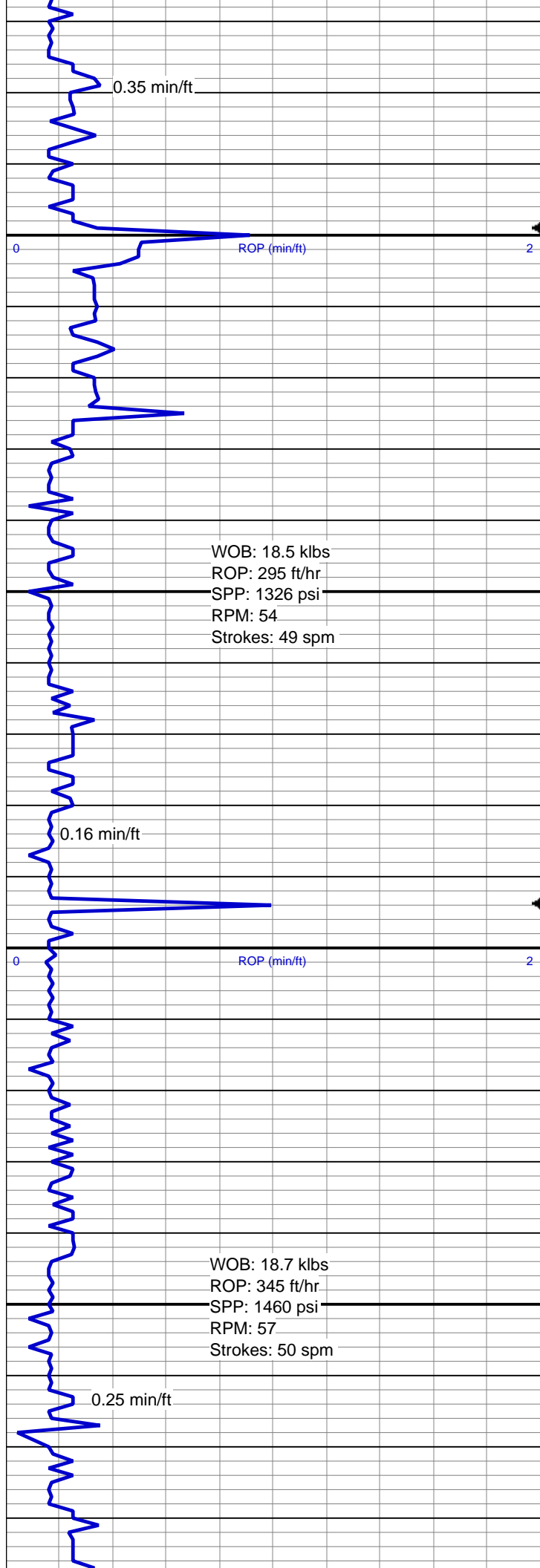
MD: 1,790'
TVD: 1,682'
Inclination: 29.14°
Azimuth: 131.55°

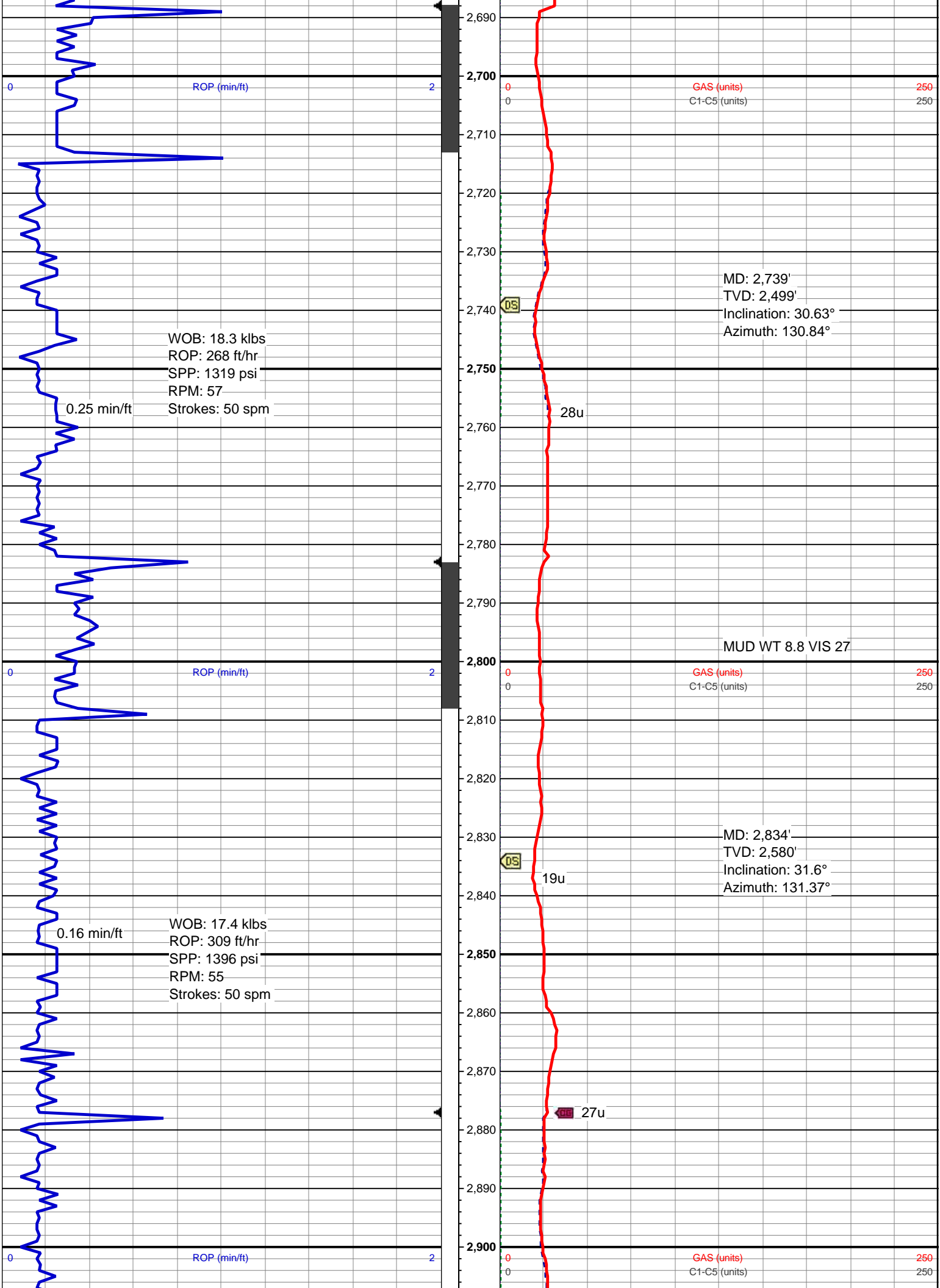
GAS (units) 250
C1-C5 (units) 250

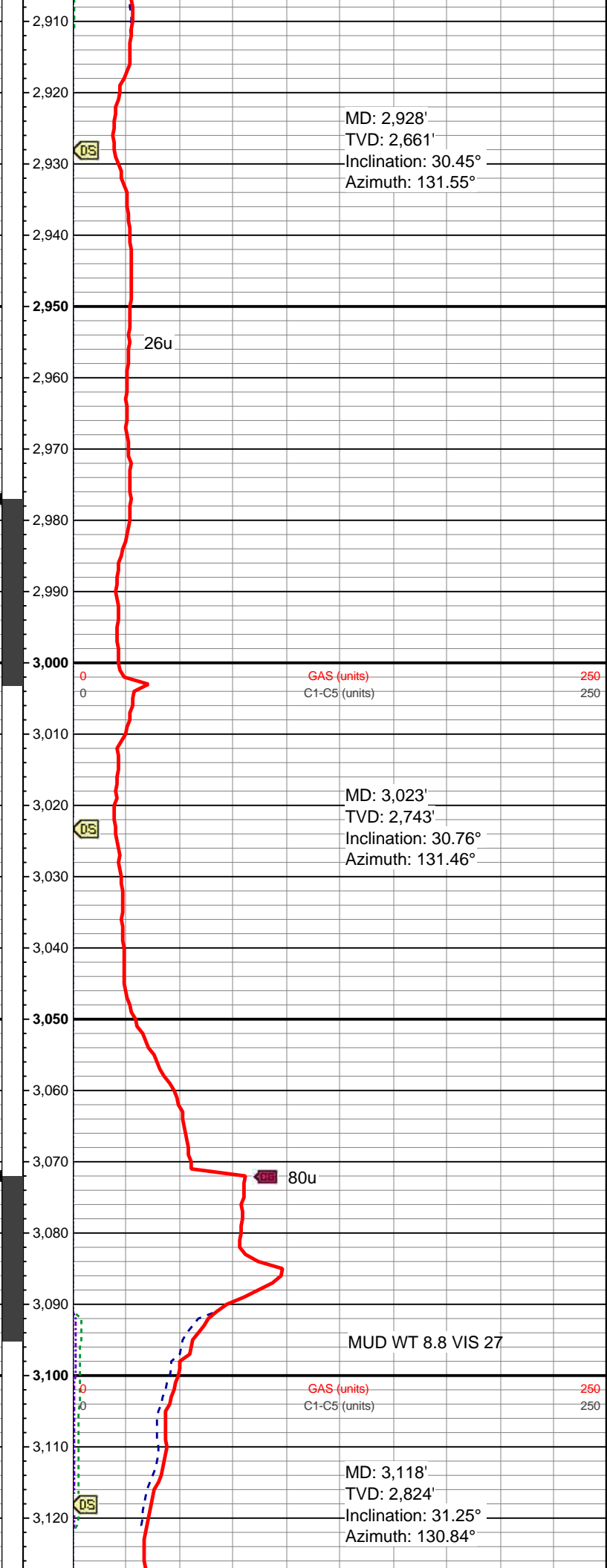
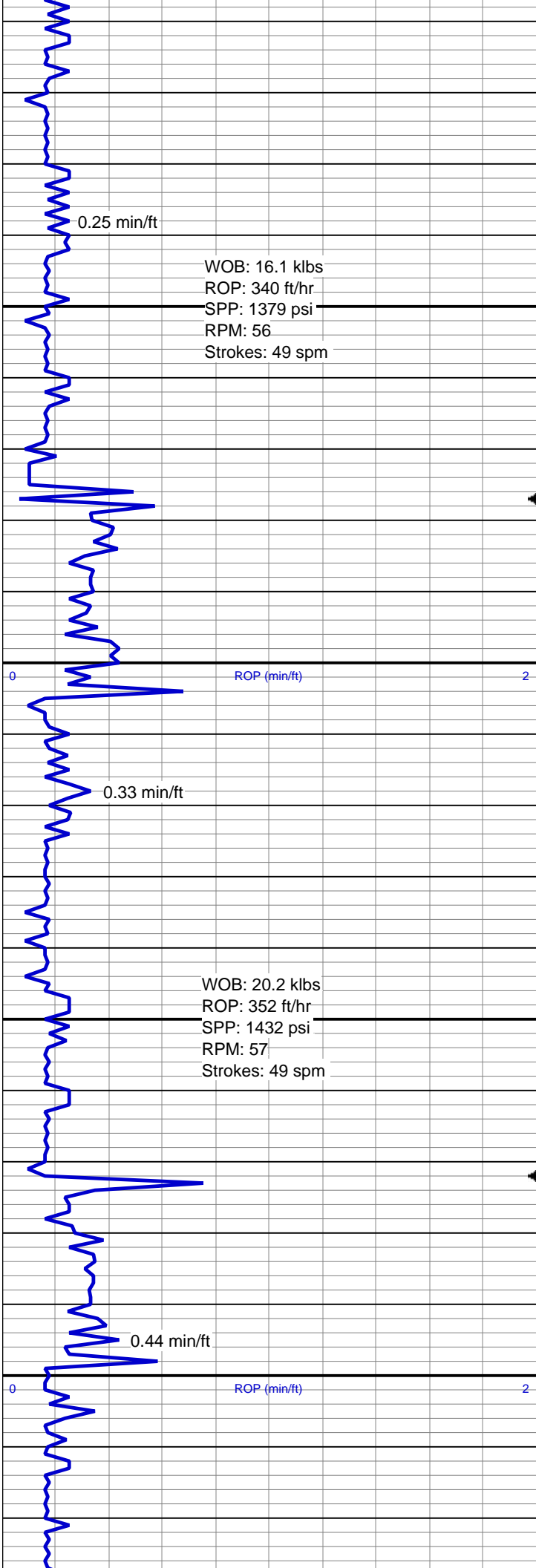


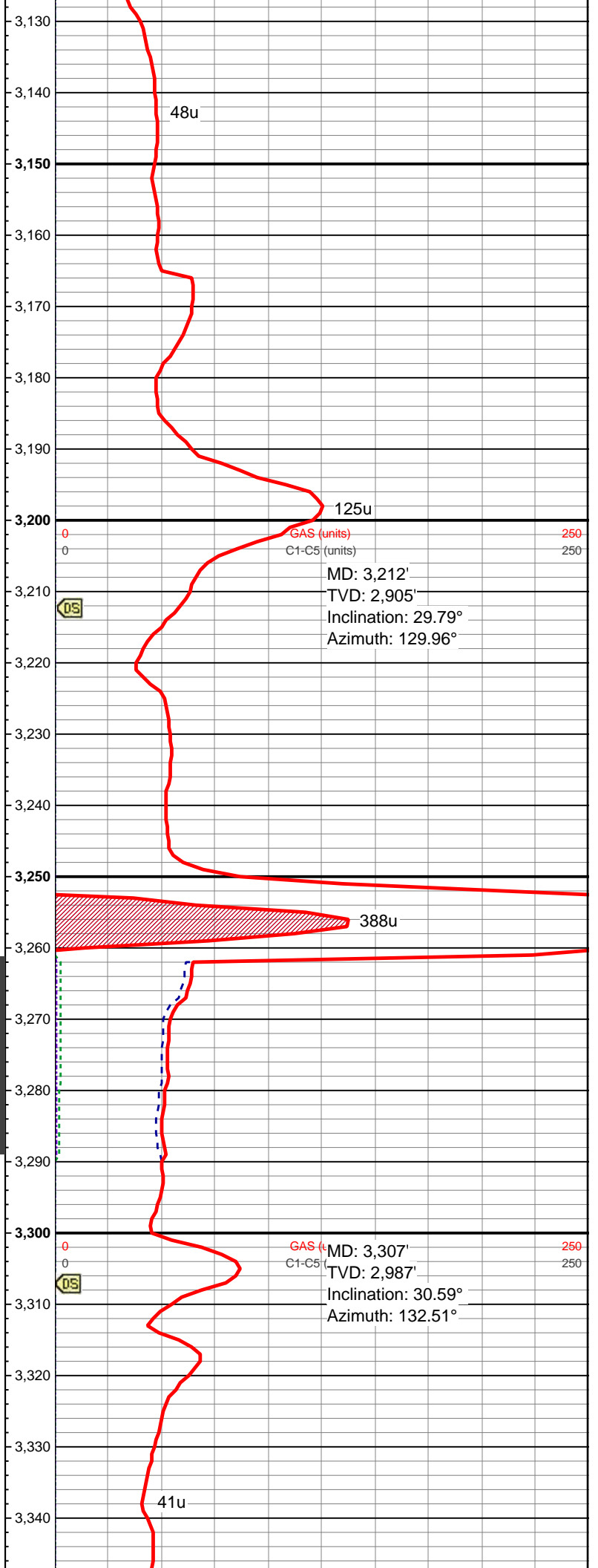
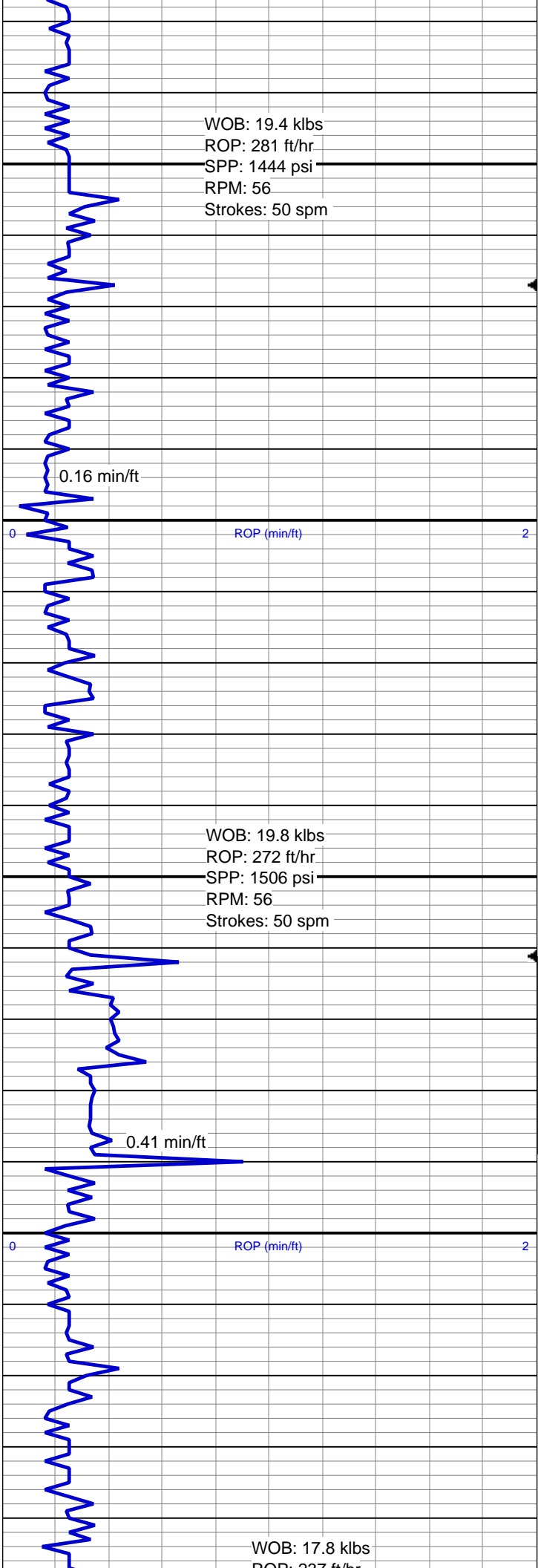












ROP: 237 ft/hr
SPP: 1443 psi
RPM: 53
Strokes: 50 spm

0.44 min/ft

ROP (min/ft)

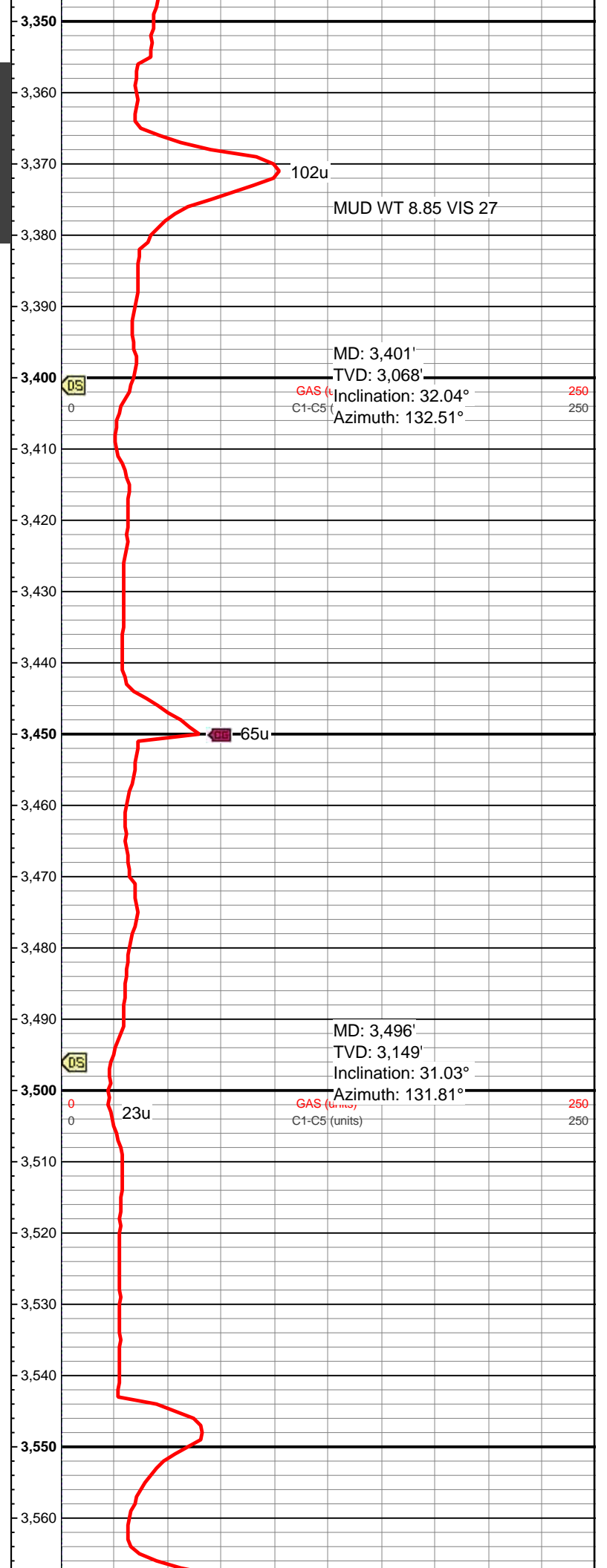
WOB: 15.8 klbs
ROP: 195 ft/hr
SPP: 1408 psi
RPM: 57
Strokes: 49 spm

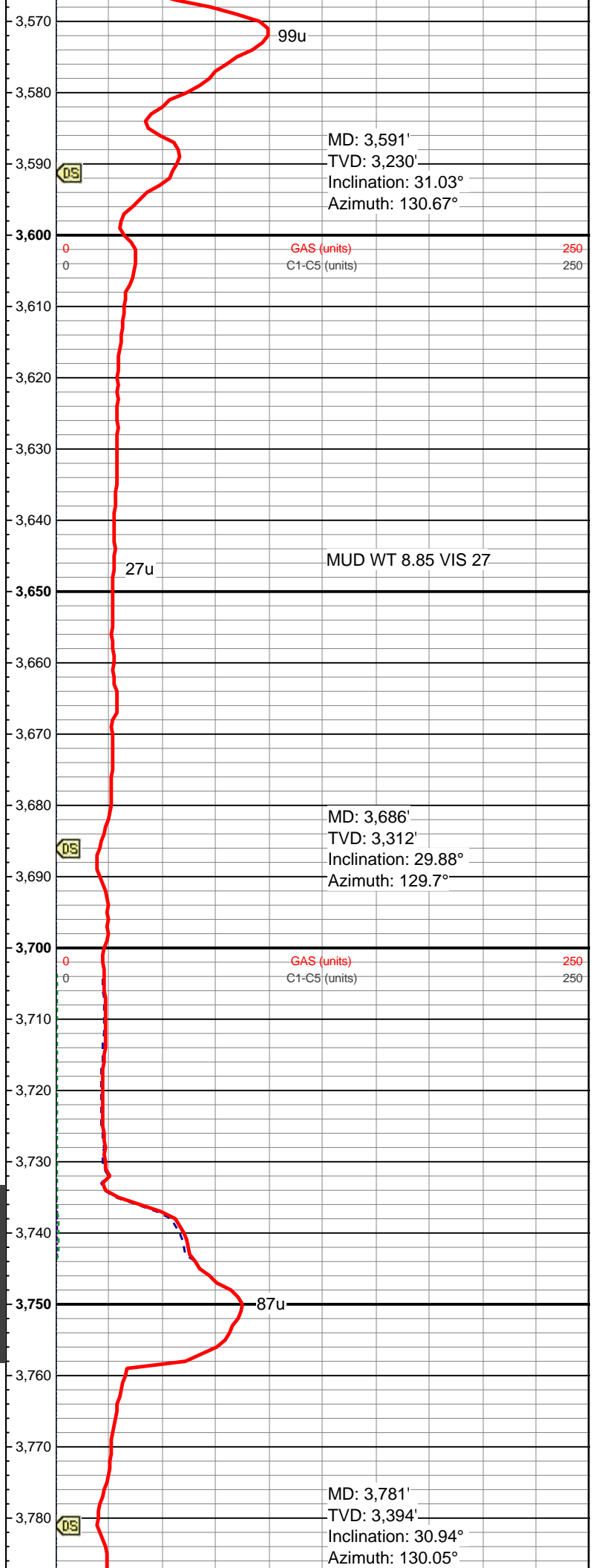
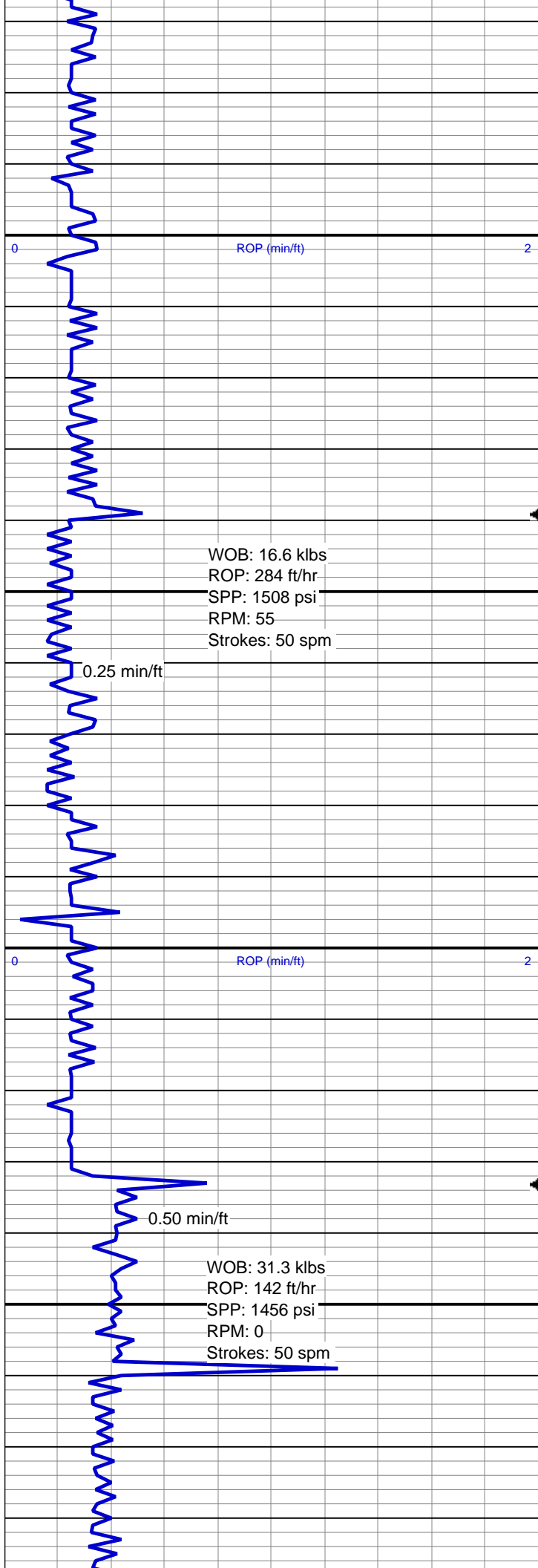
0.16 min/ft

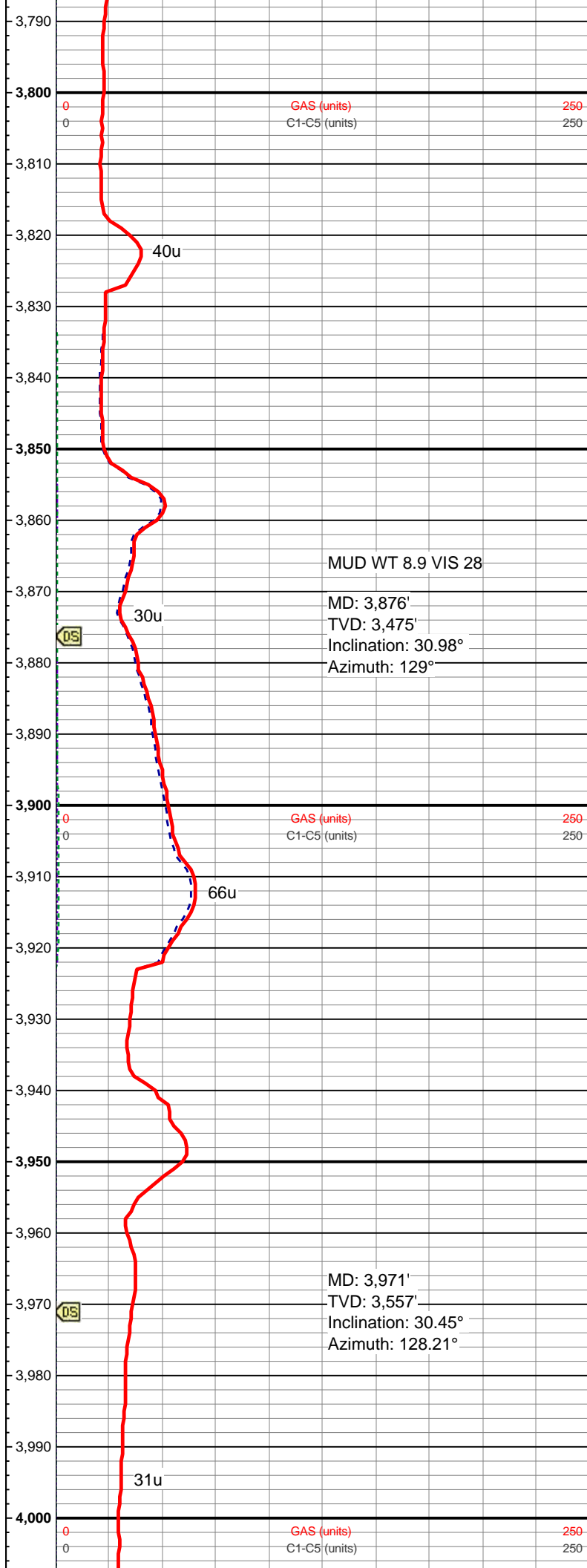
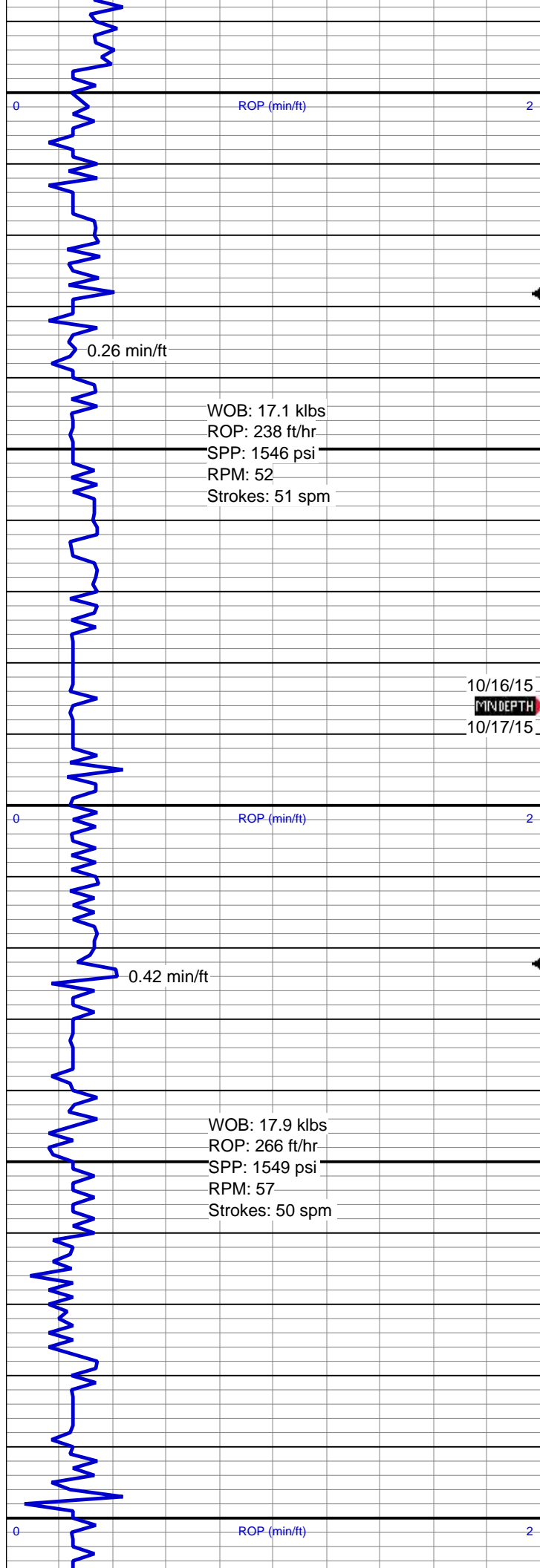
ROP (min/ft)

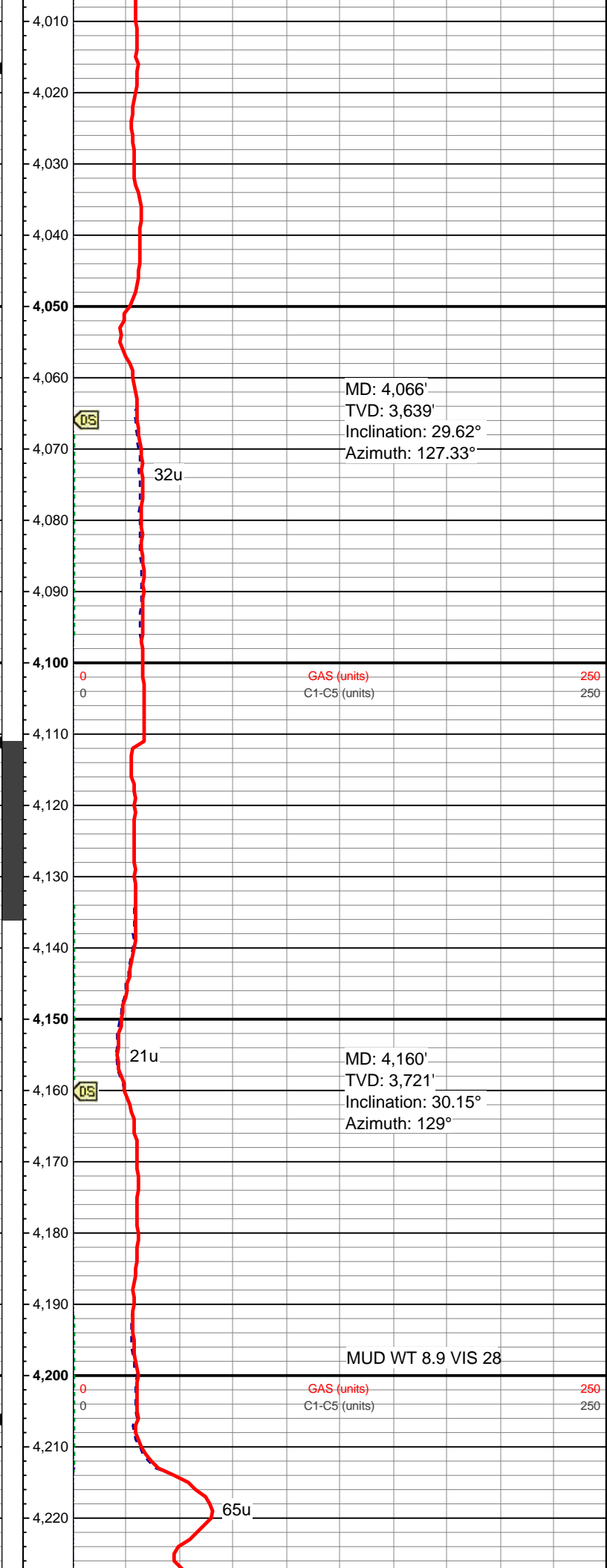
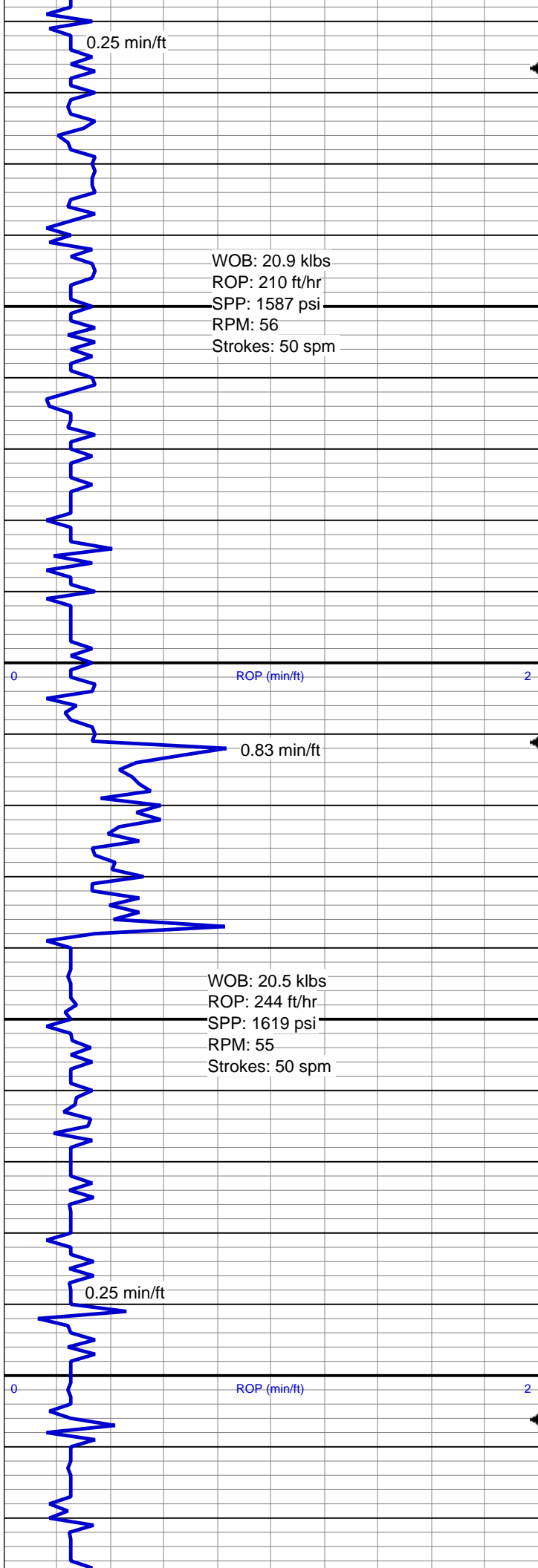
WOB: 17.5 klbs
ROP: 213 ft/hr
SPP: 1445 psi
RPM: 56
Strokes: 50 spm

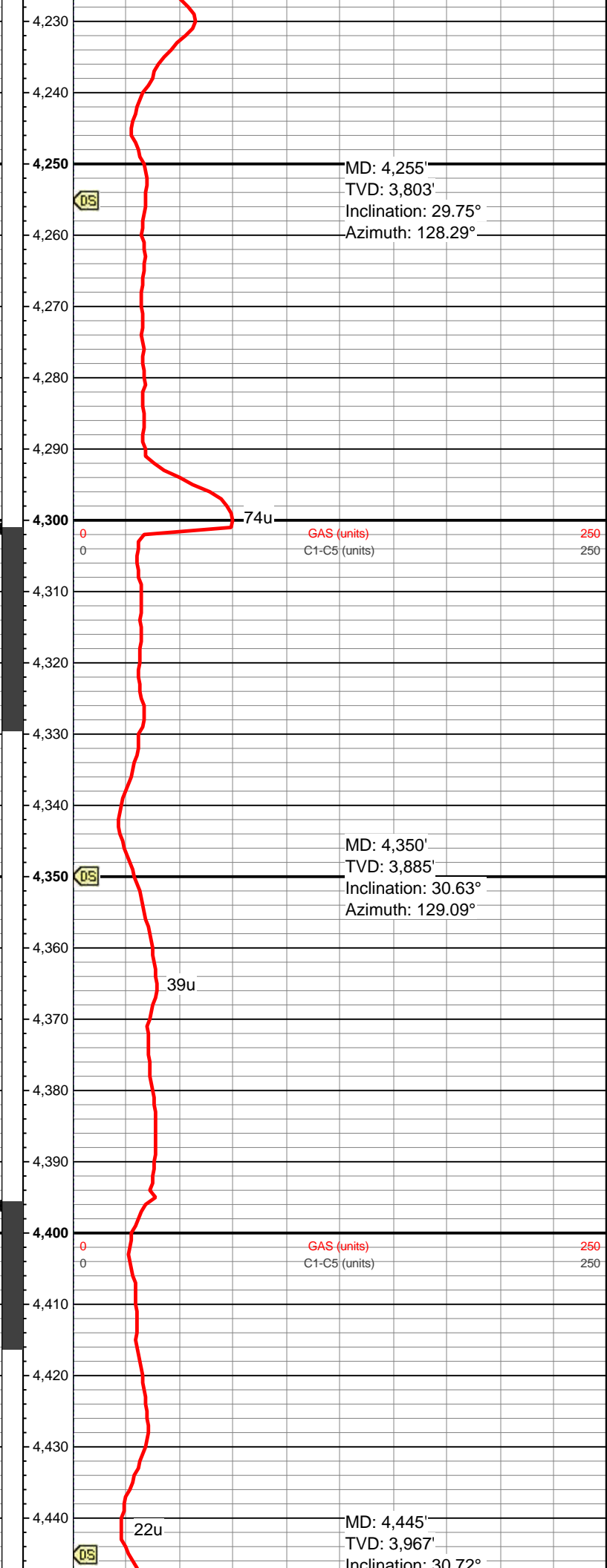
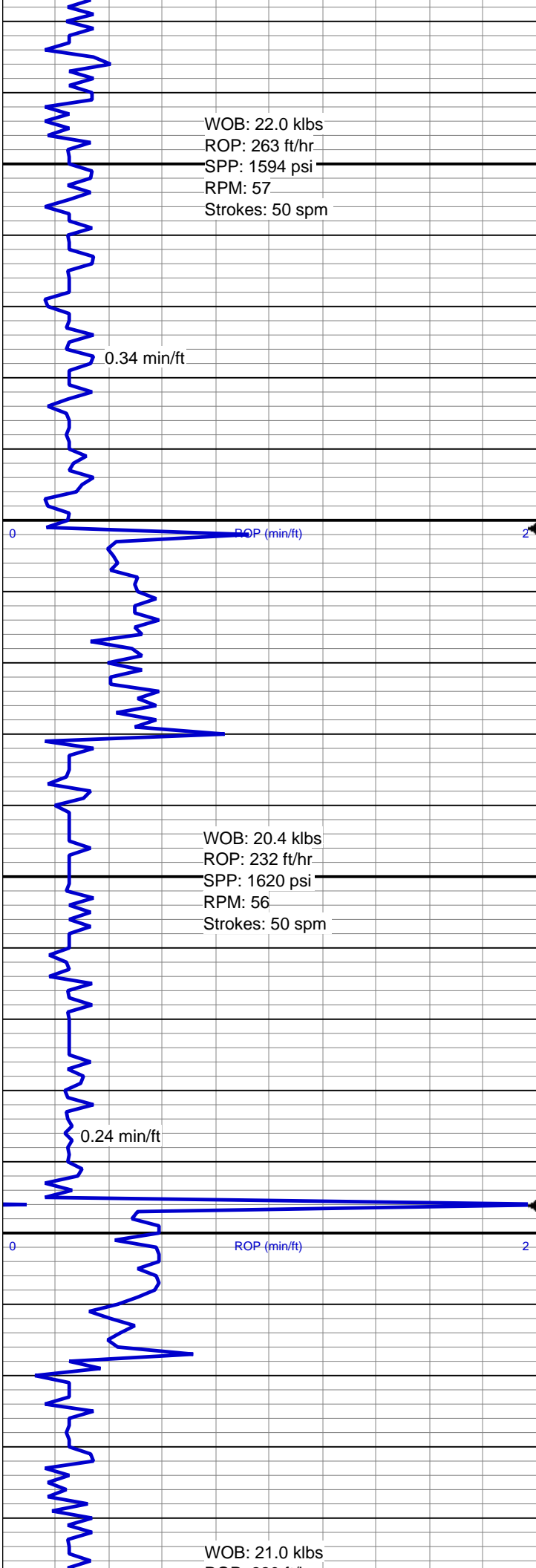
0.33 min/ft

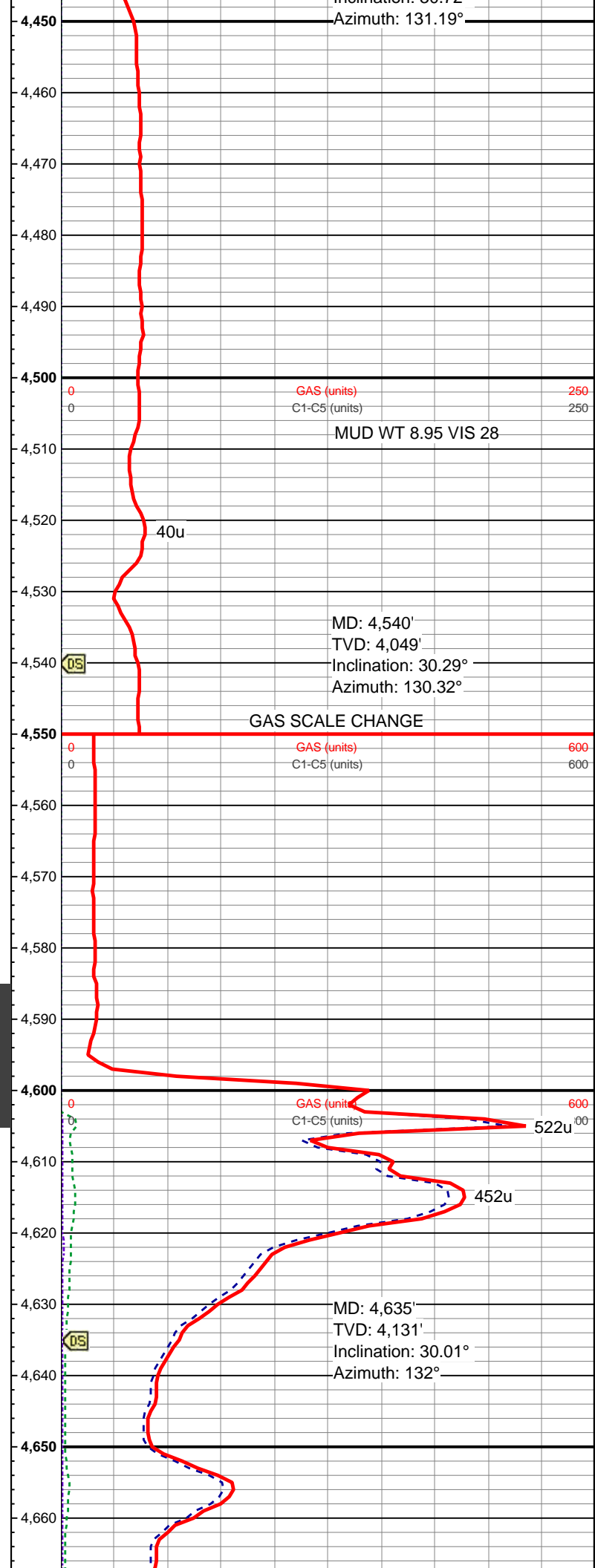
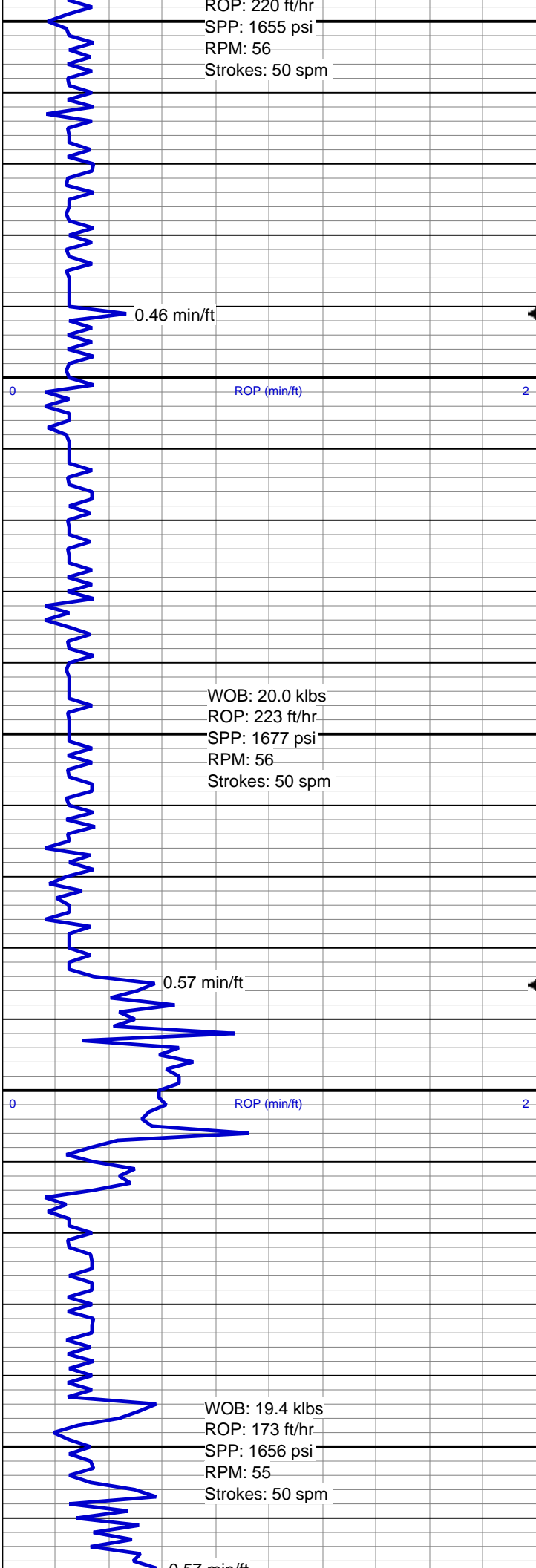


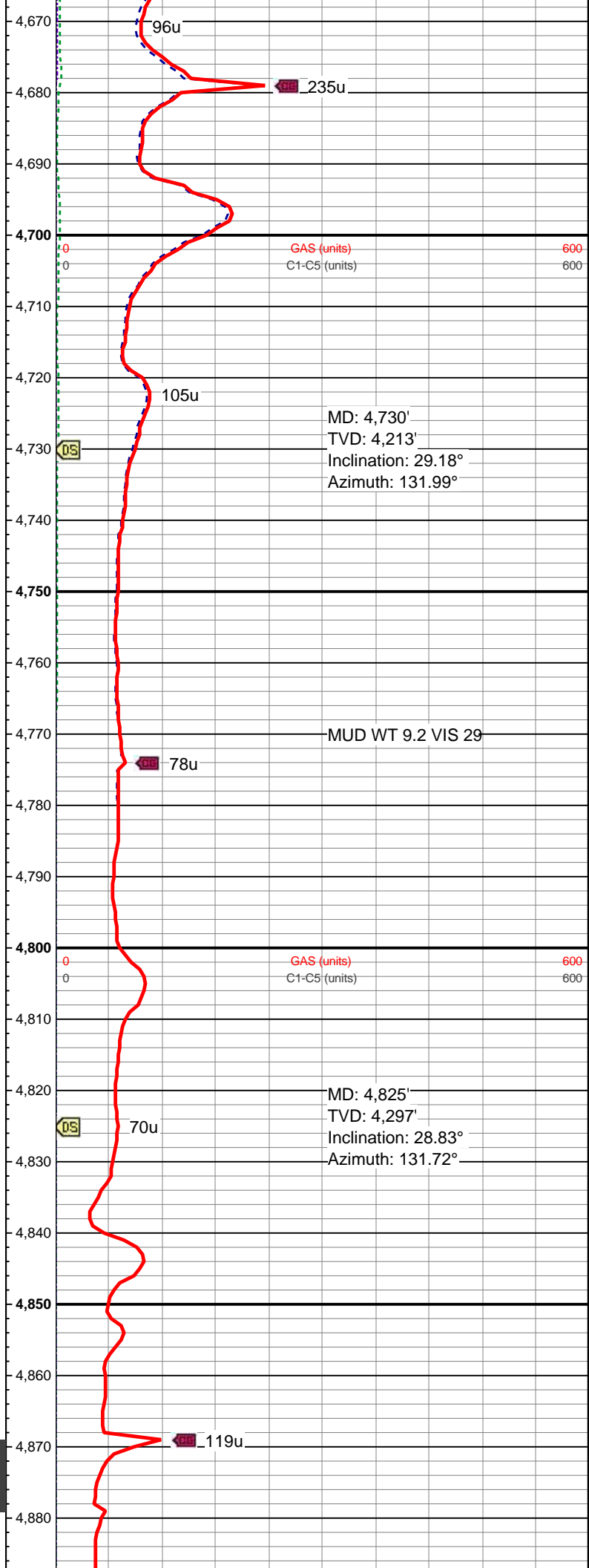
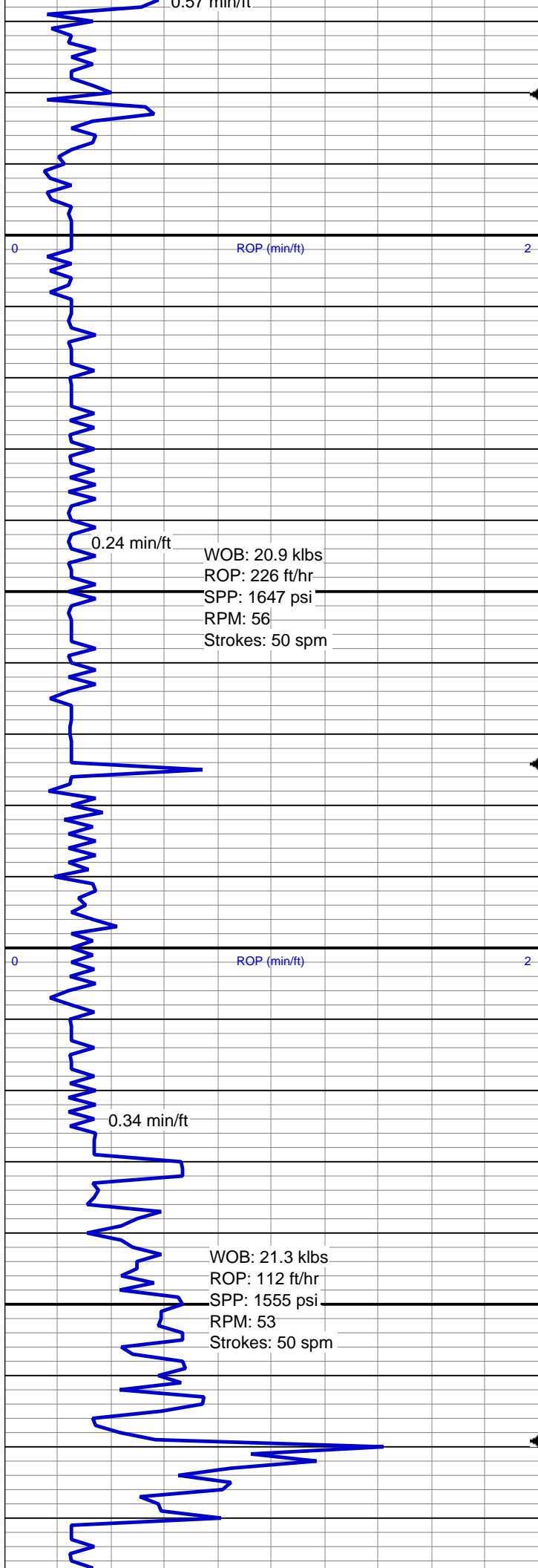


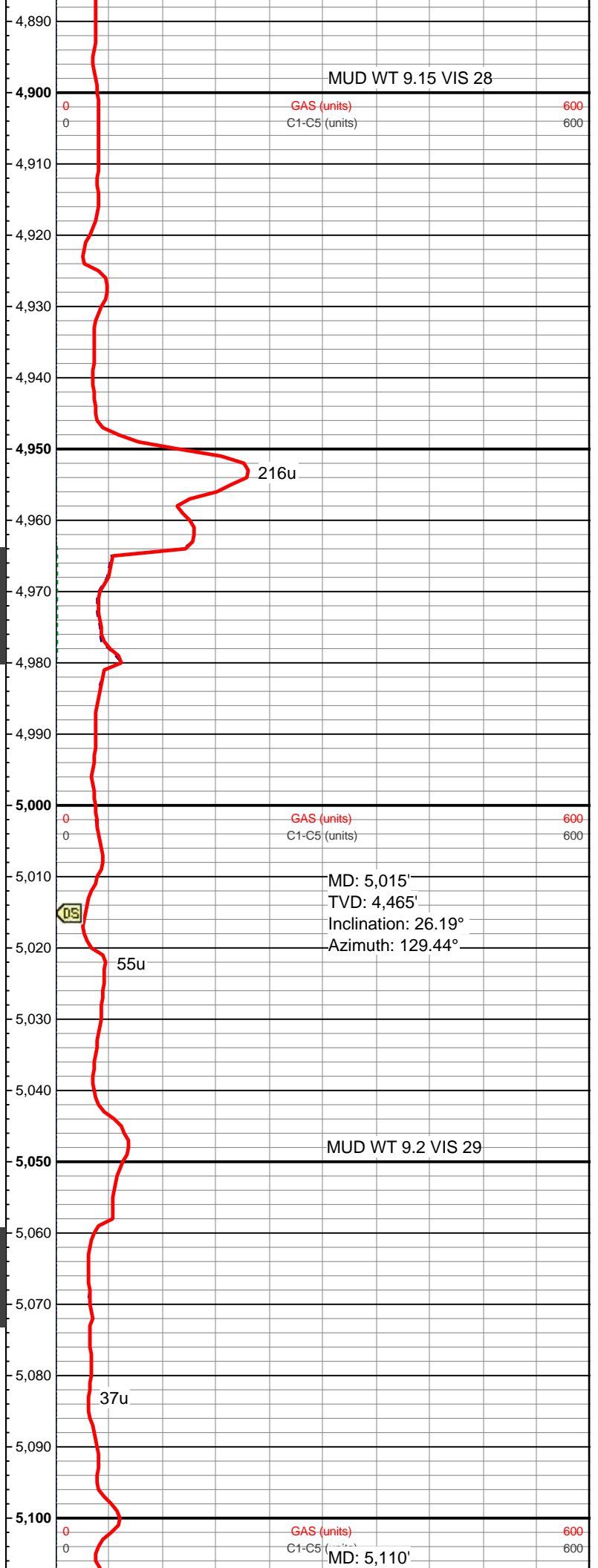
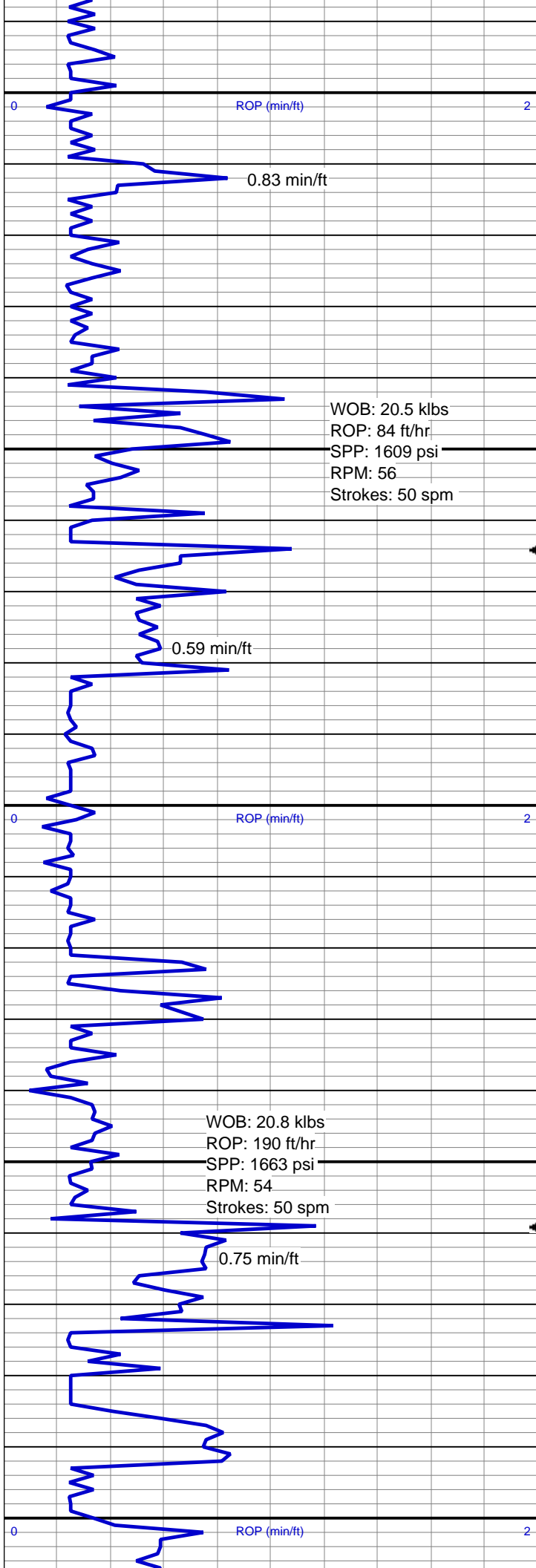


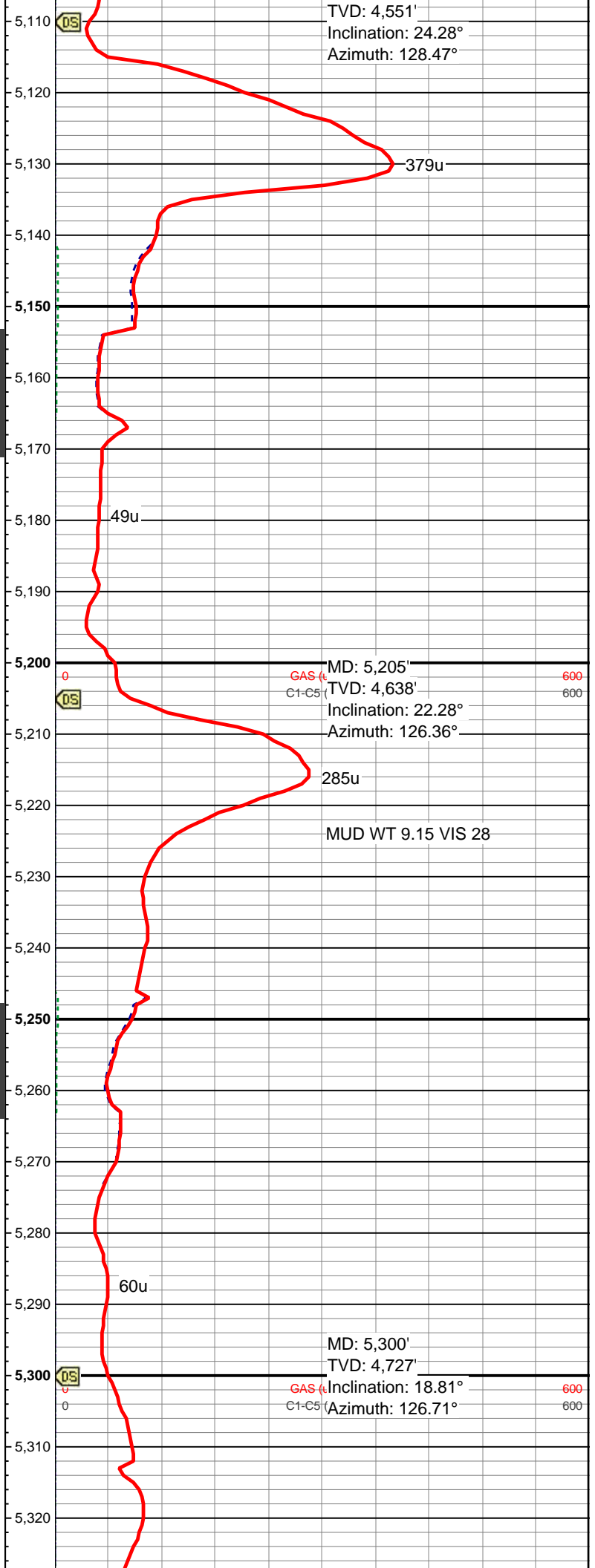
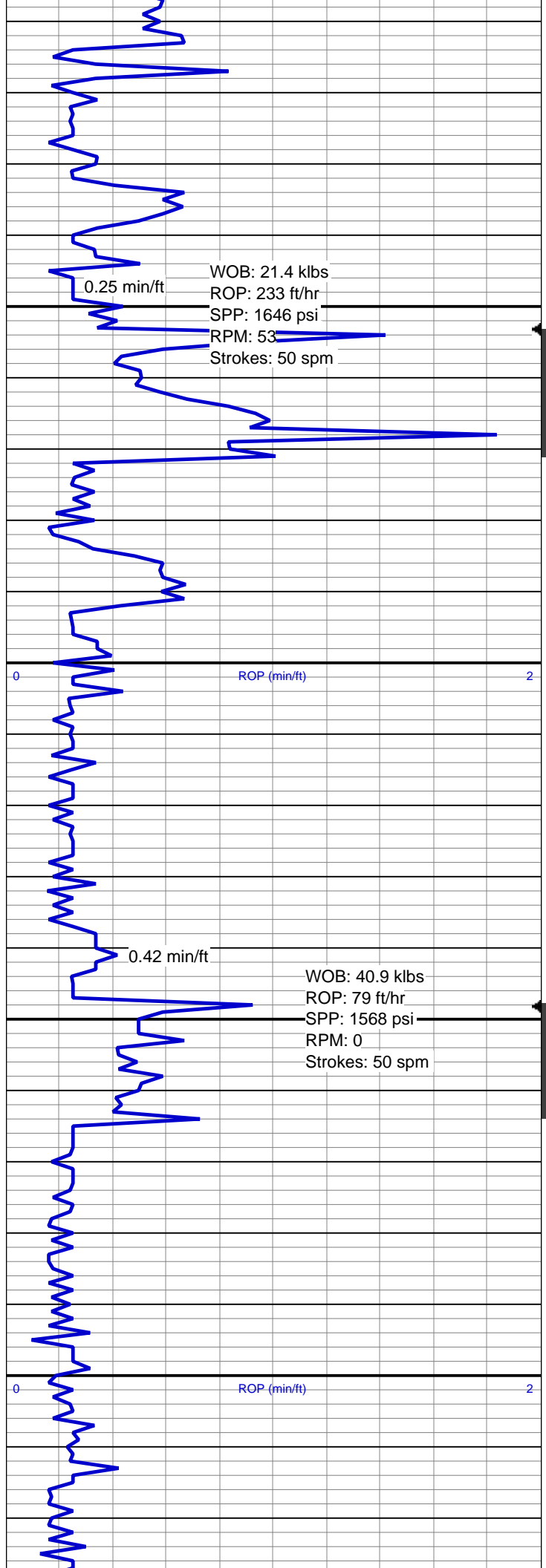


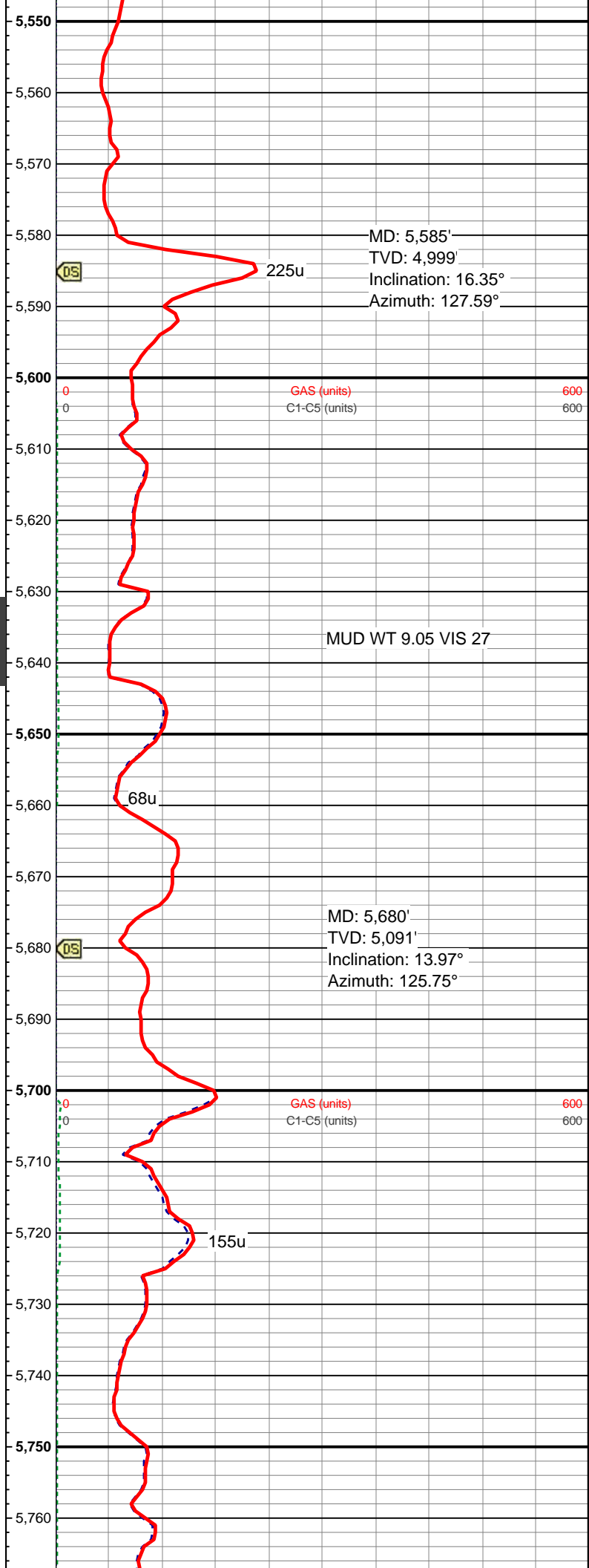
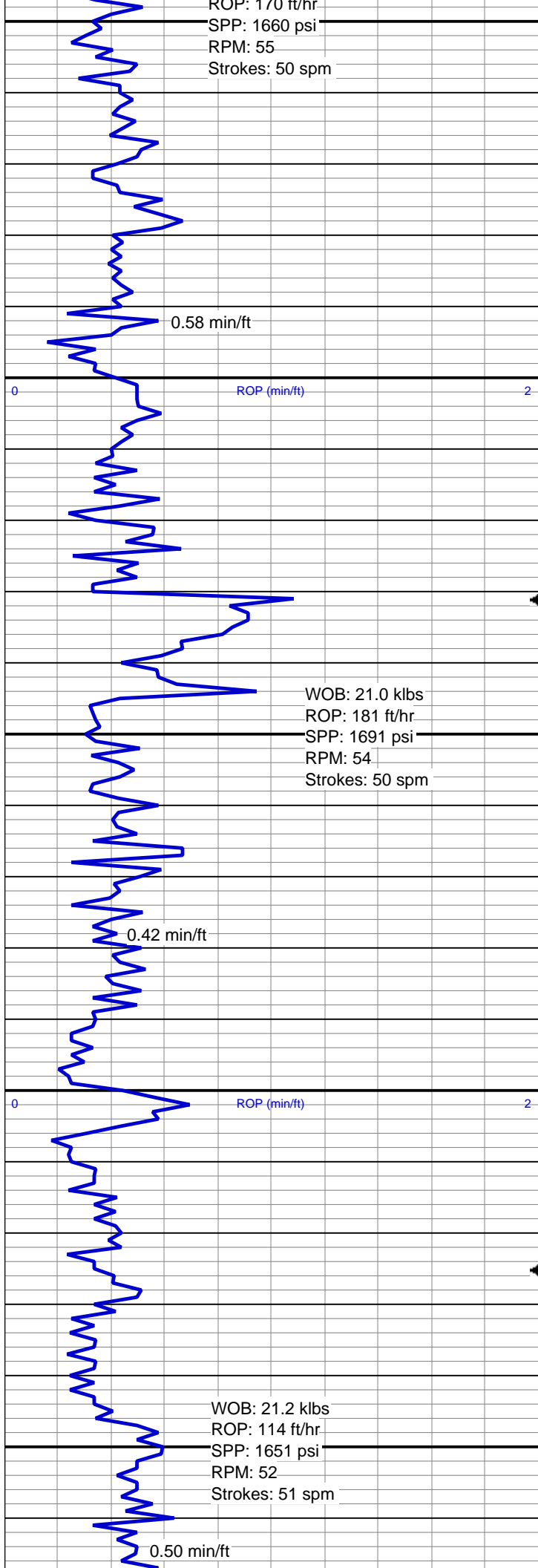


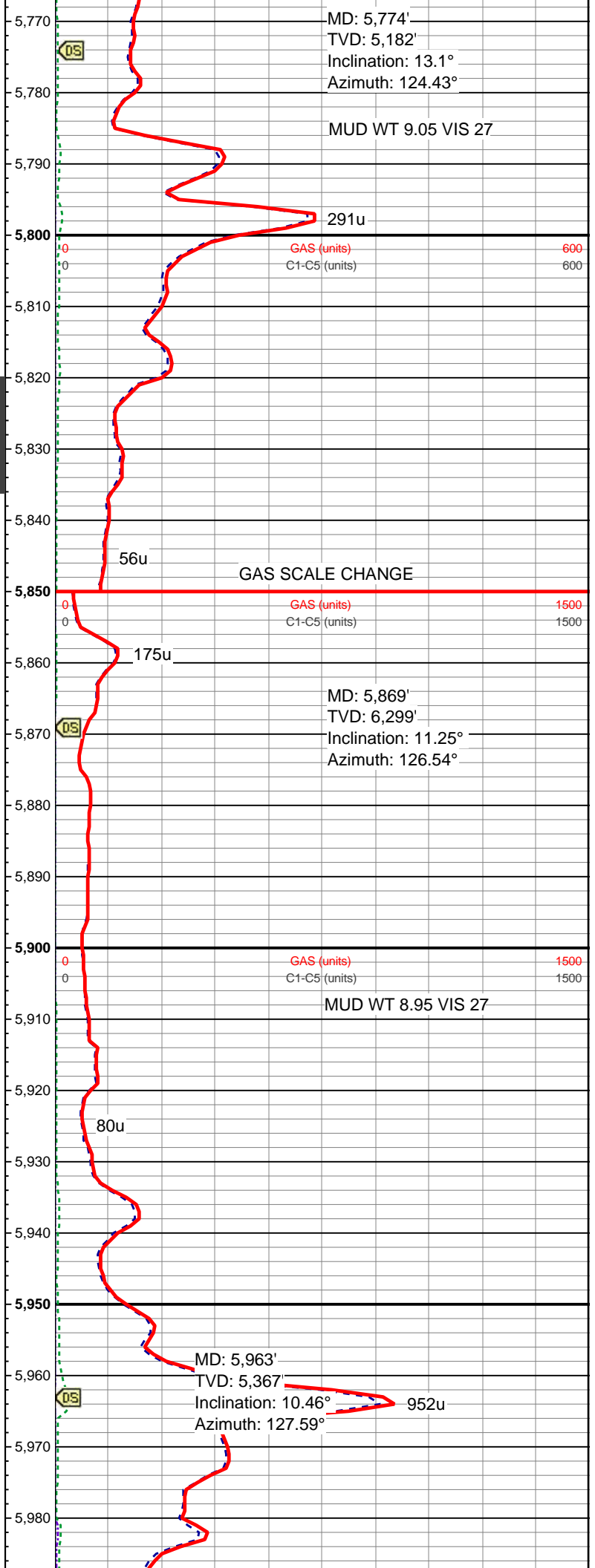
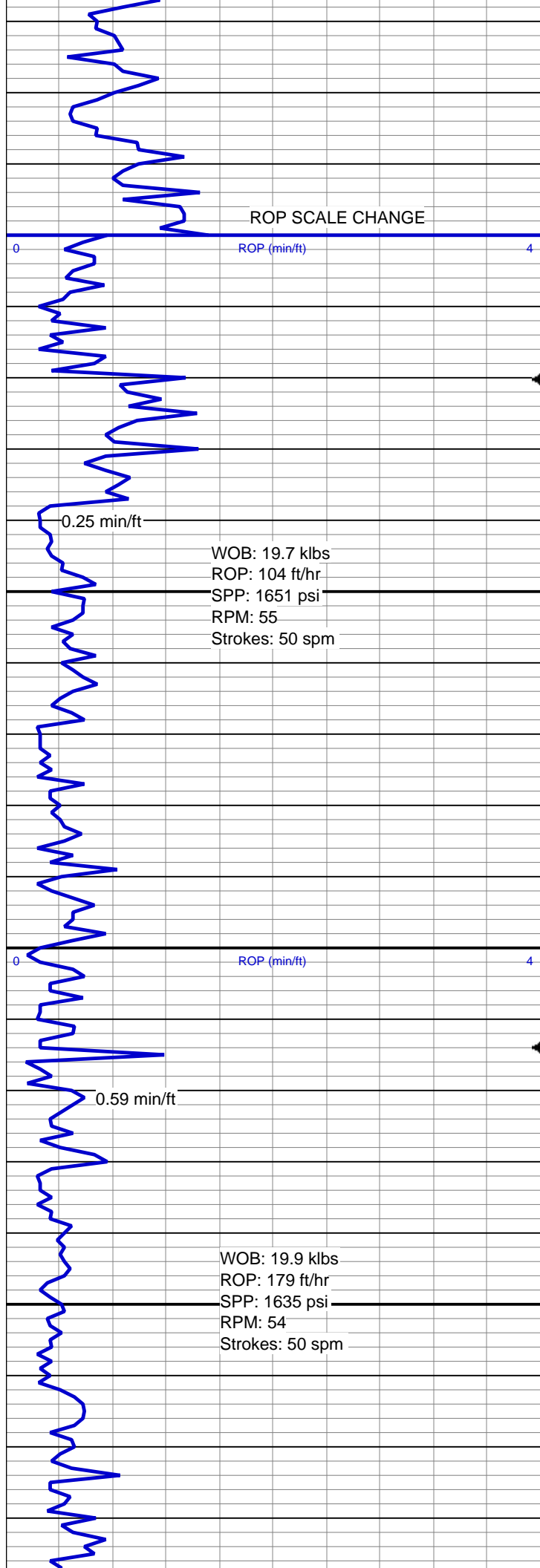


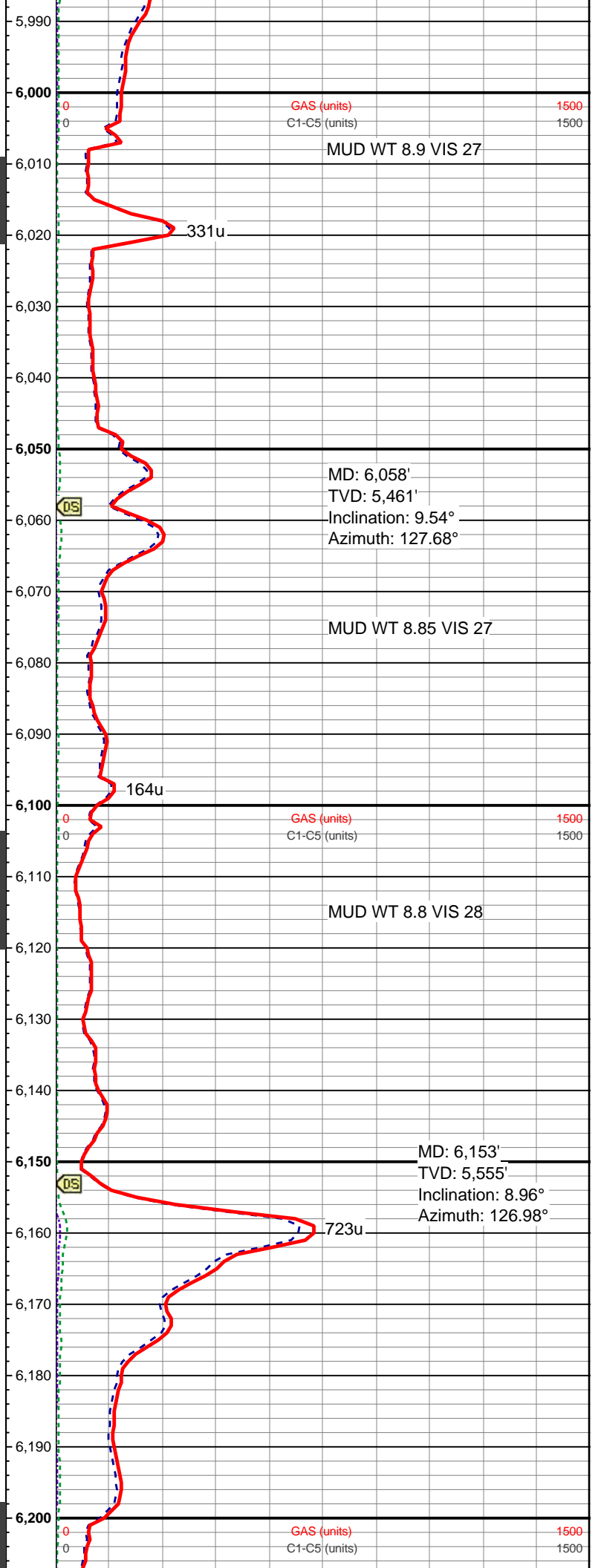
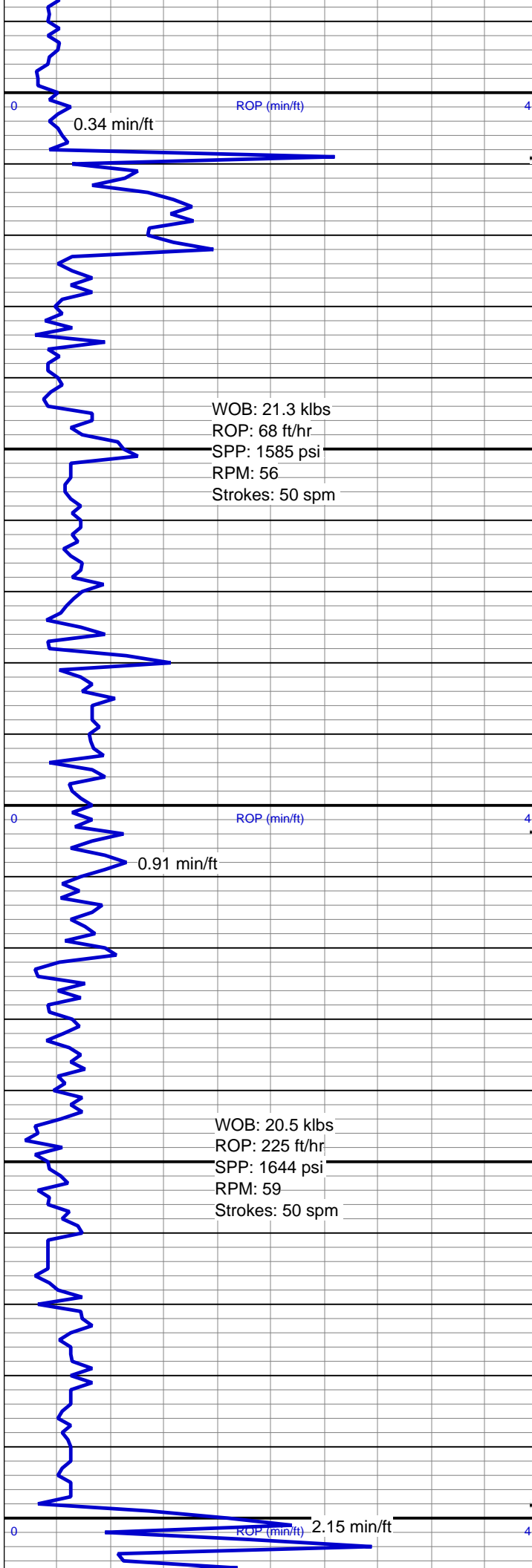


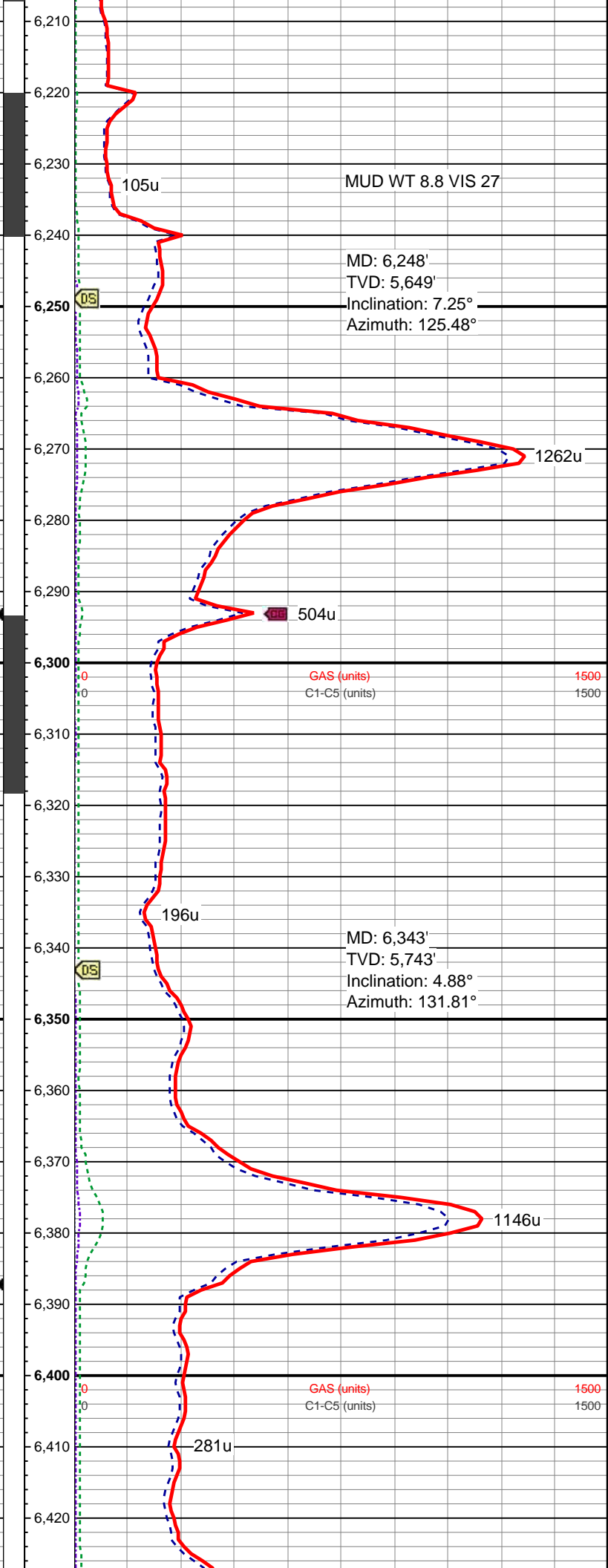
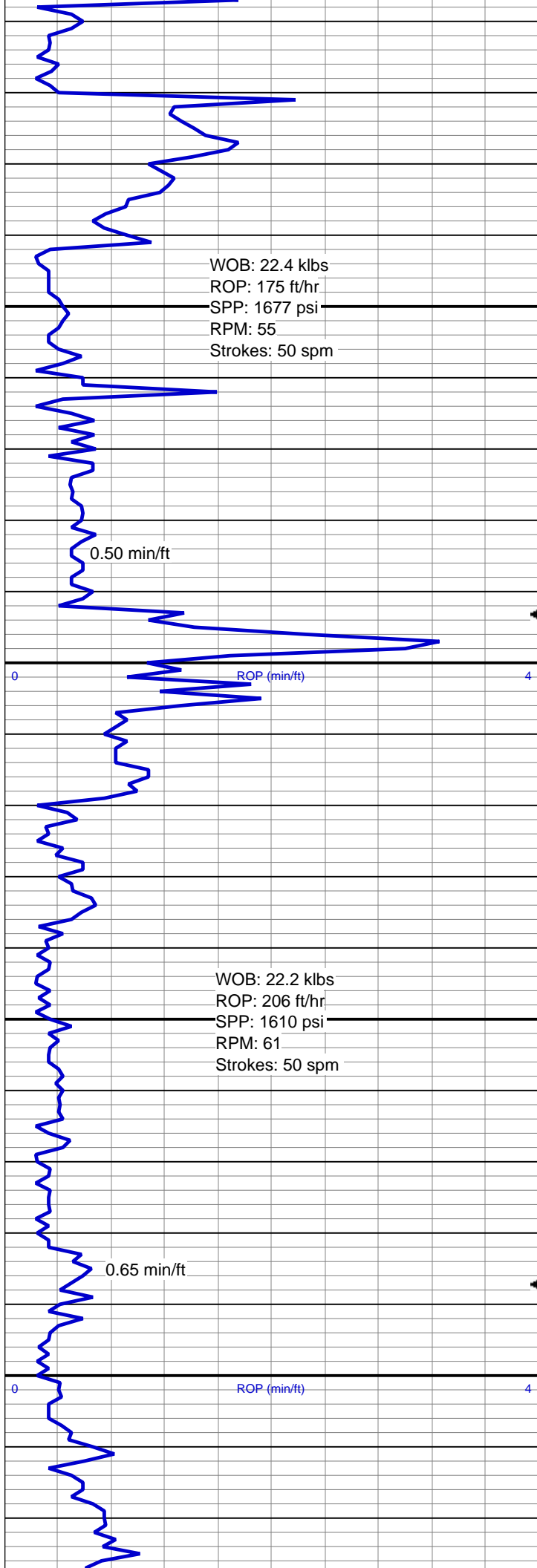












WOB: 20.2 klbs
ROP: 68 ft/hr
SPP: 1555 psi
RPM: 61
Strokes: 50 spm

0.91 min/ft

ROP (min/ft)

WOB: 24.7 klbs
ROP: 102 ft/hr
SPP: 1562 psi
RPM: 56
Strokes: 51 spm

0.34 min/ft

ROP (min/ft)

10/17/15
MINDEPTH
10/18/15

0.41 min/ft

WOB: 23.5 klbs
ROP: 131 ft/hr

