



RESERVOIR GROUP

Scale: 5" / 100'
Measured Depth Log

Well Name Echeverria 2F-2H-D267

Location Sec 2 T2N-R67W

State Colorado

County Weld

Country U.S.A.

Rig Number Ensign 142

API Number 05-123-48750

AFE # 16191922

Geographic Region Rockies

Field Wattenberg

Spud Date 1/30/2019

Drilling Completed 4/24/2019

Surface Coordinates LATITUDE 40.1720309 N
LONGITUDE 104.8647920 W

Ground Elevation 4,882'

K.B. Elevation 4,910'

Logged Interval 2,320' **To** 12,335'

Total Depth 12,335'

Formation Codell

Type of Drilling Fluid Oil Based Mud

Operator

Company Crestone Peak Resources

Address 1801 California Street, Suite 2500
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Geologist

Name John Ready

Company Crestone Peak Resources

Address 1801 California Street, Suite 2500
Denver, CO 80202



Zone Color Coding

Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

Other

Services Provided 2-Man Logging

Loggers: Micah Morgan / Hani Abushaeera / Robert Kelley

Equipment: ML-526, Digital Sample Pictures.

Address Reservoir Group - Empirica
6360 West Sam Houston Pkwy N
Houston, Texas 77041

Service End Date: 4/26/2019

Service Start Date: 4/20/2019

Job #: 2131RK1904

EDR RIGSENSE

Hole Profile

Bore Hole Records

Size	From	To
12.25	0.0	2313.0
8.5	2313.0	12335.0

Casing Records

Size	Wgt	From	To	Test
9.625	38	0	2303	0

Rock Types

UNKNOWN	CHERT	SILTY SHALE	BENTONITE
ANHYDRITE	COAL	SILTSTONE	TUFF
GYPSUM	MARLSTONE	SANDY SILTSTONE	IGNEOUS
SALT	CLAYSTONE	SANDSTONE	METAMORPHIC
CHALK	SHALE	CONGLOMERATE	CEMENT
LIMESTONE	SHALE GRAY	BRECCIA	
DOLOMITE	SHALE COLORED	TILL	

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

ORGANIC

PINPOINT

VUGGY

Engineering

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

Porosity

EARTHY
 FENESTRAL
 FRACTURE
 INTERCRYSTALLINE
 INTEROOLITIC
 MOLDIC

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

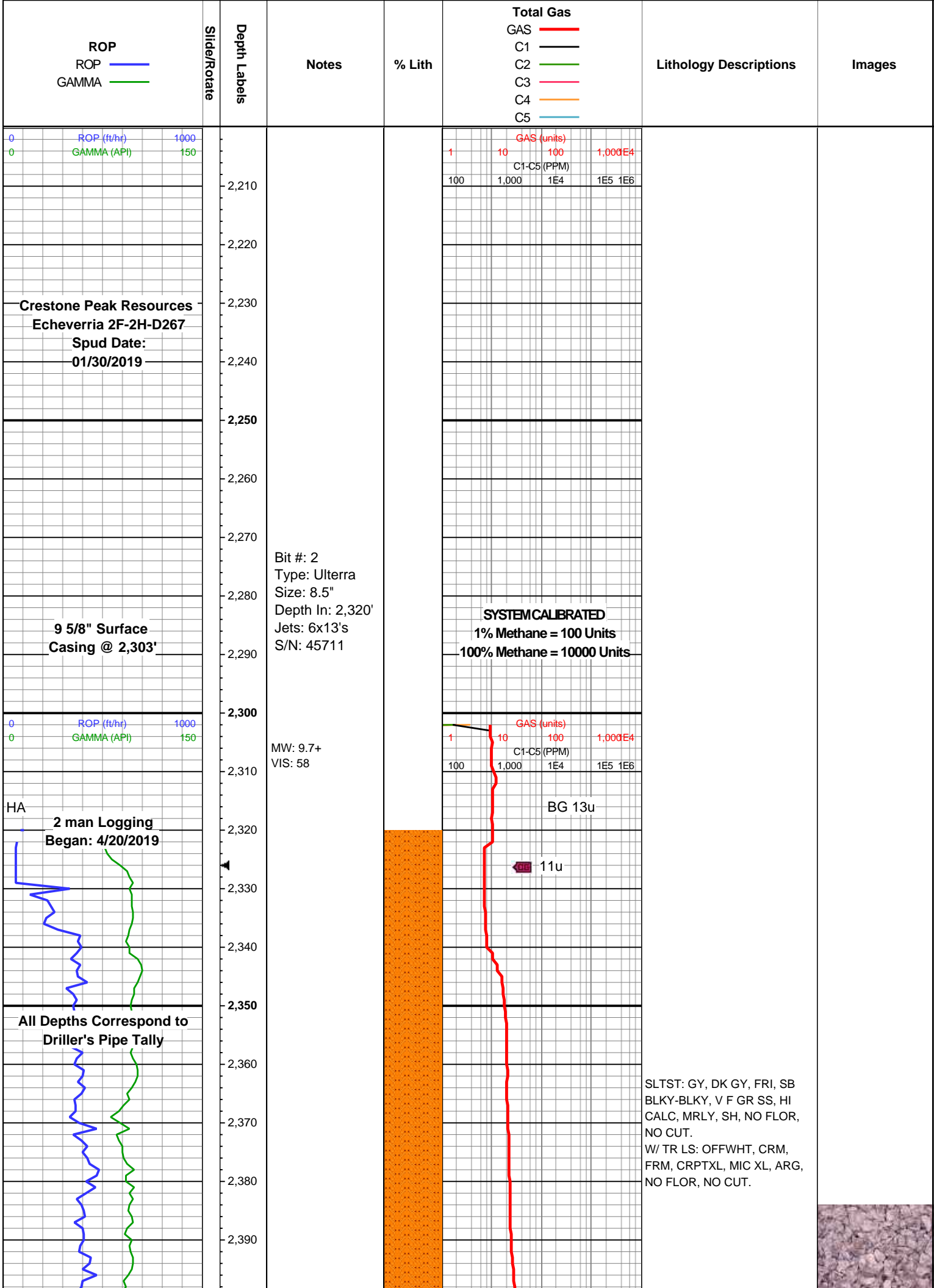
BOUNDSTONE
 CHALKY
 CRYPTOXLN
 EARTHY
 FINELYXLN
 GRAINSTONE

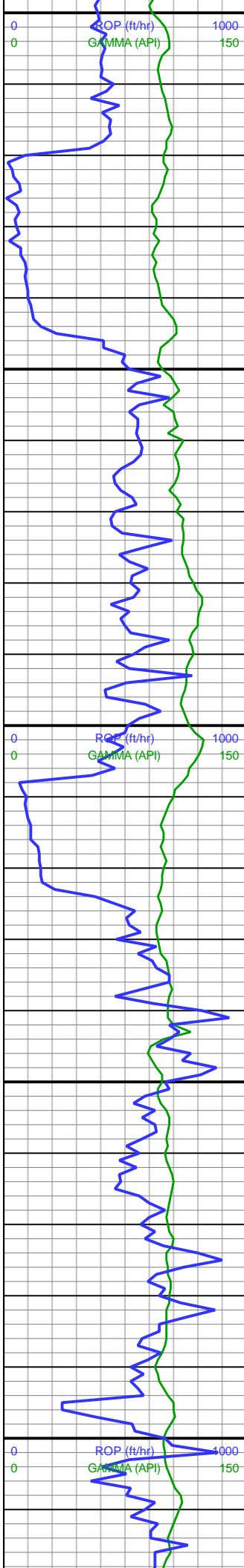
L LITHOGRAPHIC

MICROXLN
 MUDSTONE
 PACKSTONE
 WACKESTONE

Sorting

MODERATE
 POOR
 WELL



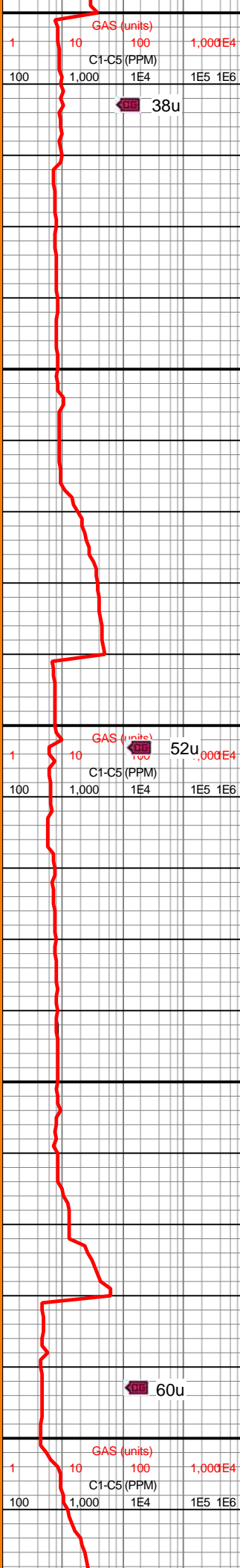
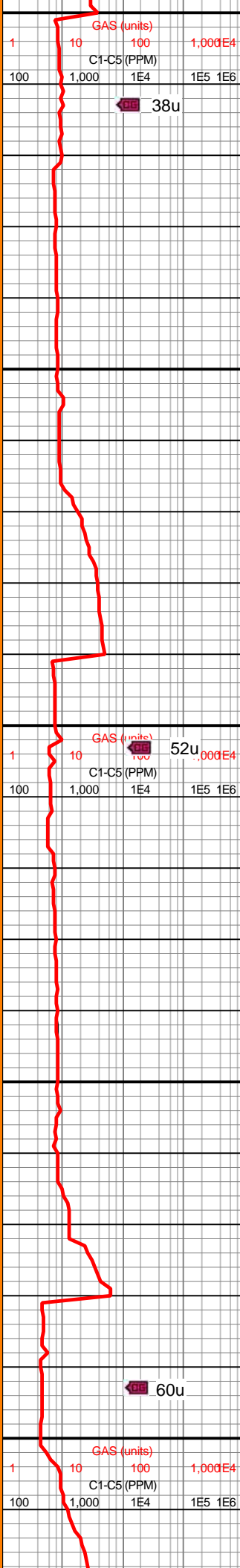
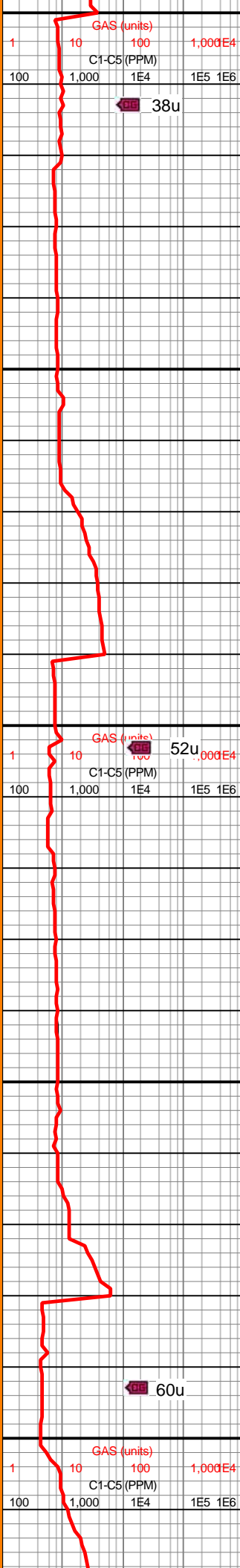
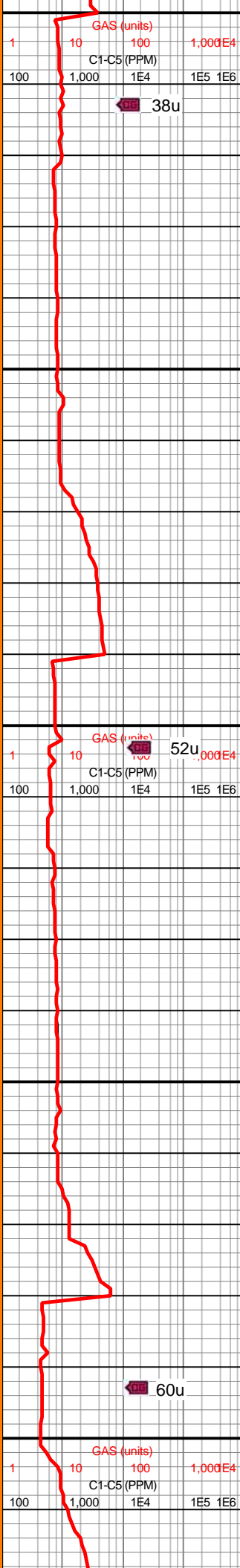
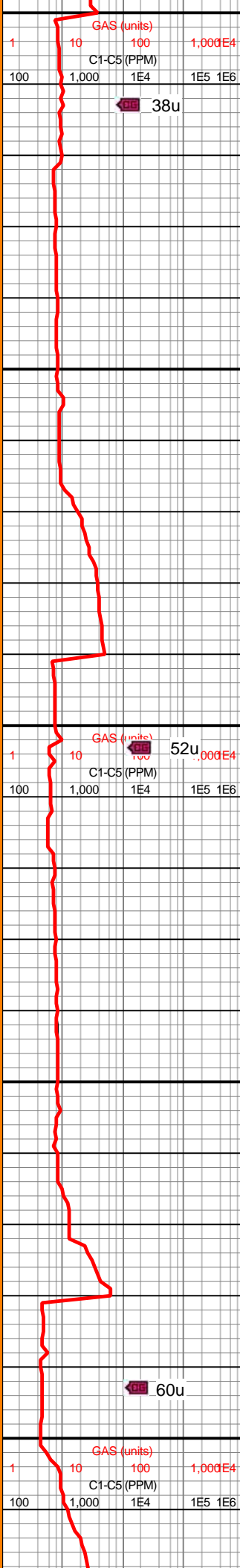
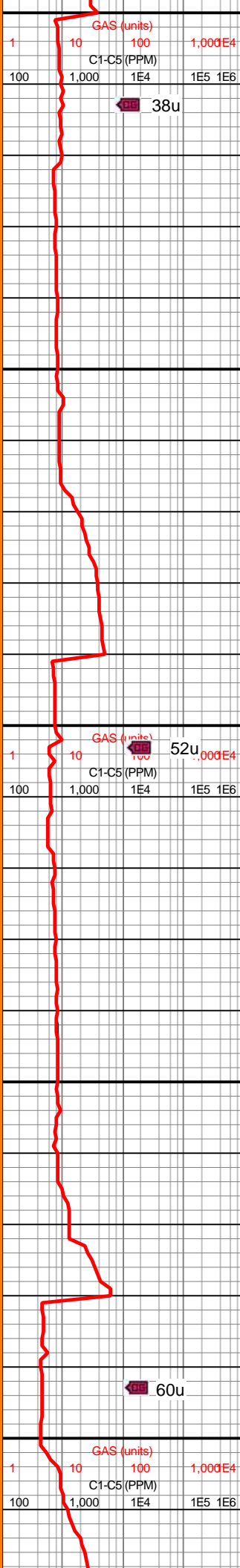
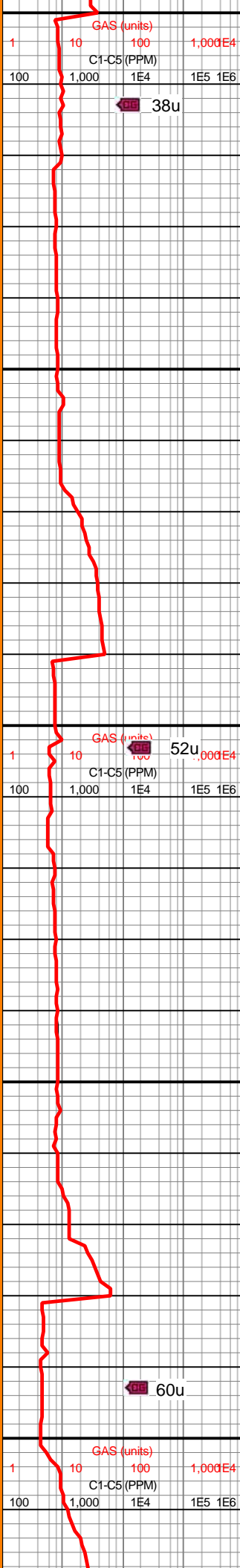
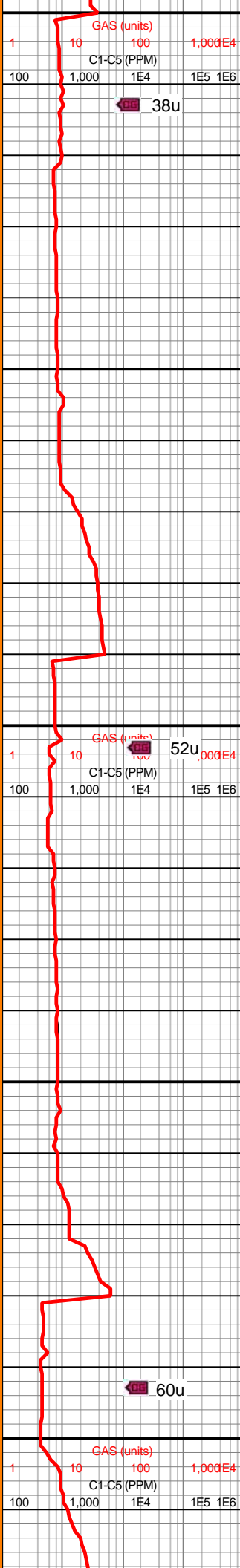
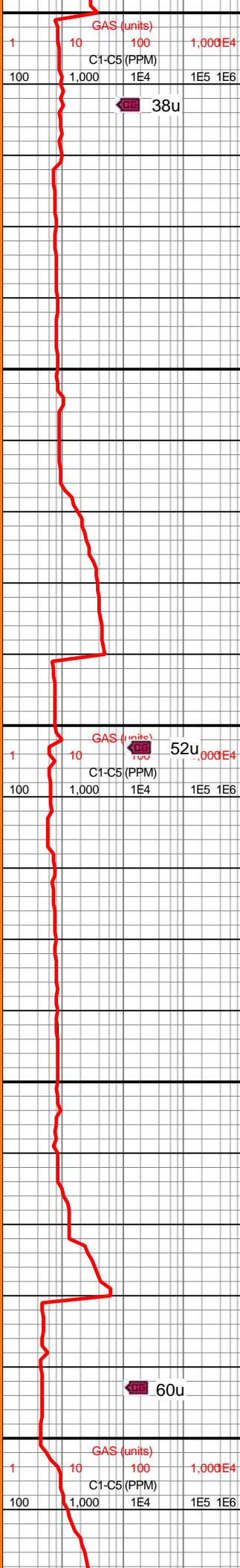
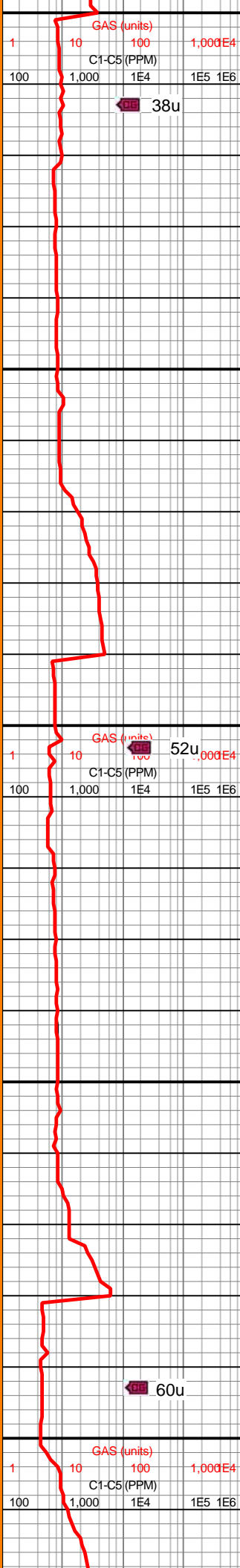
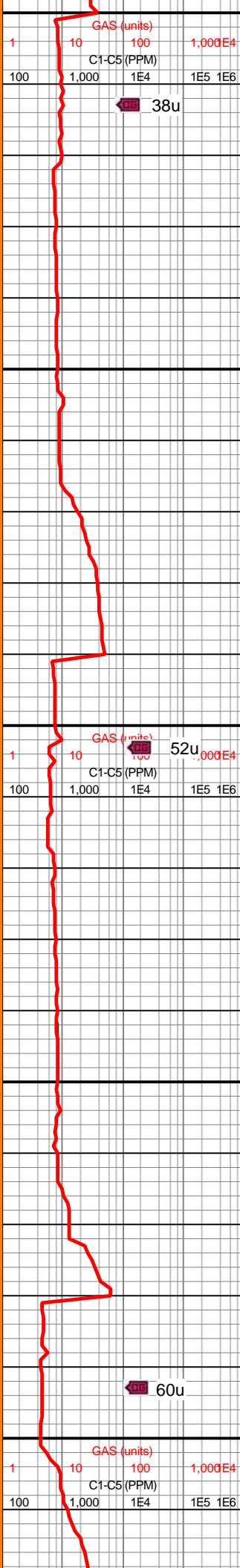
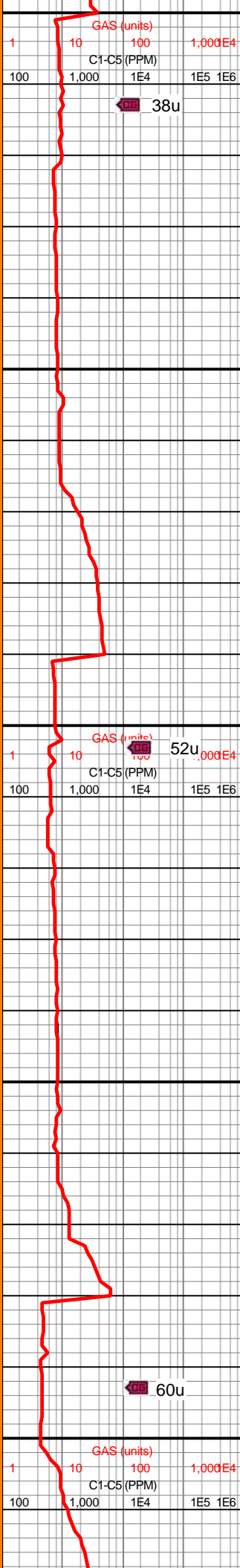
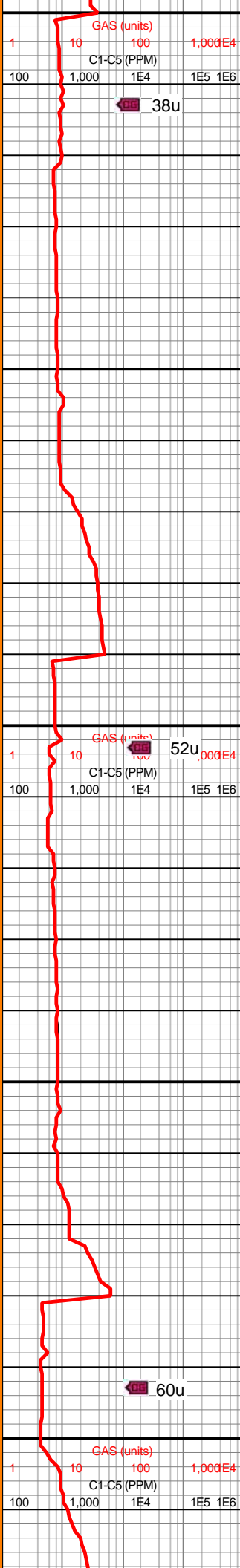
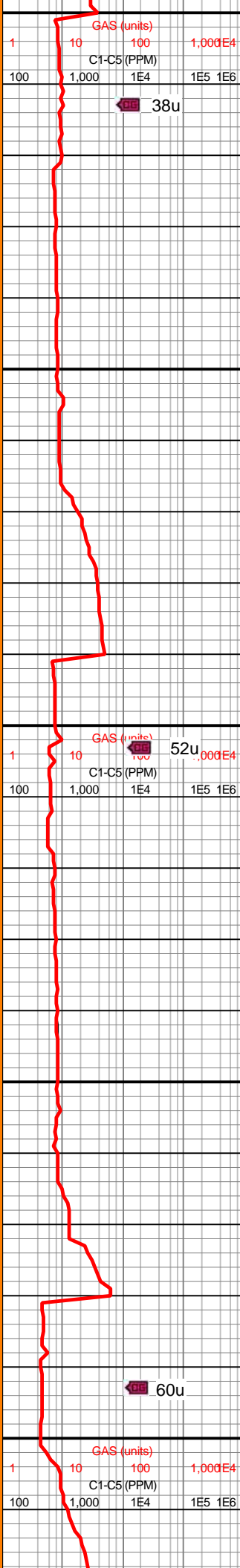
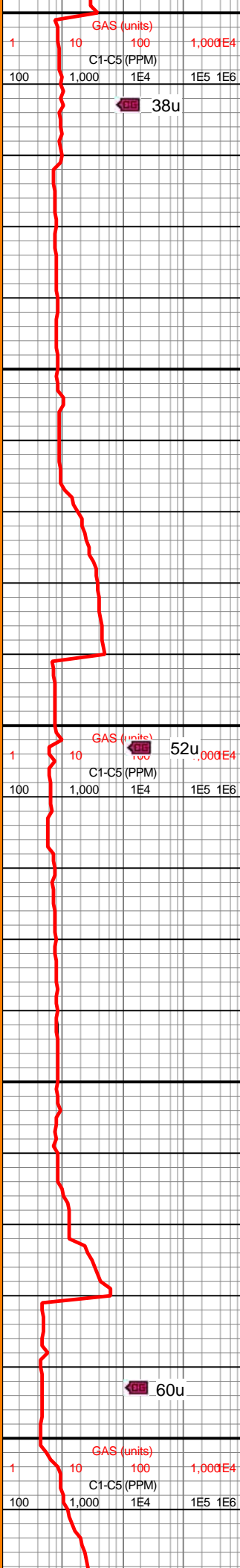
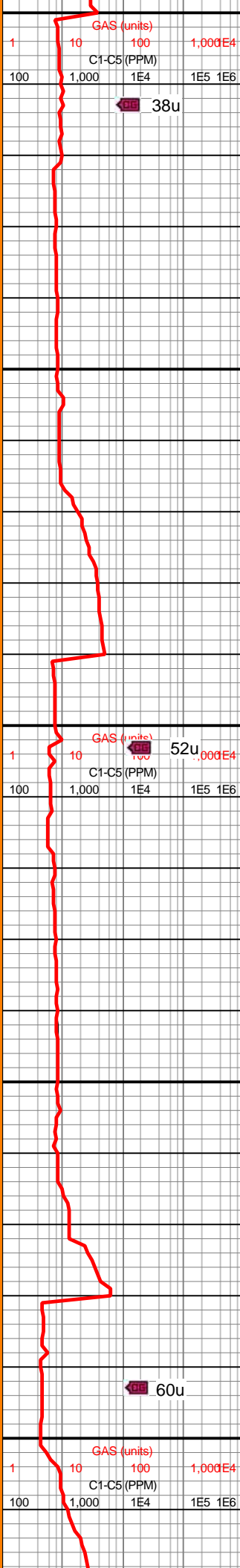
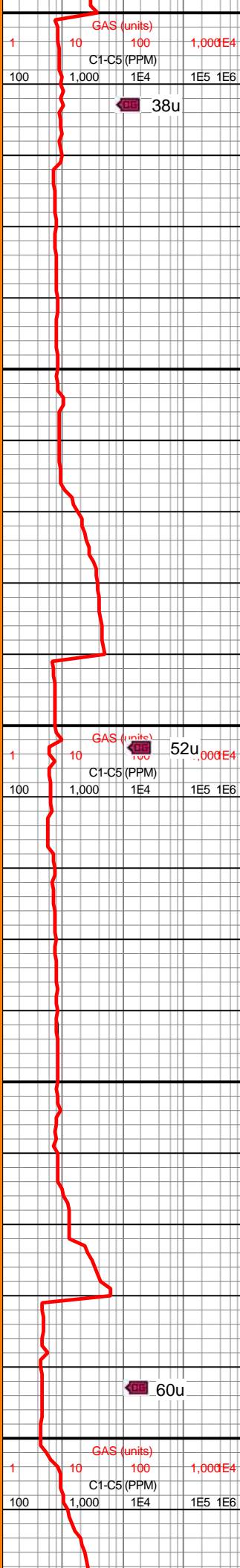
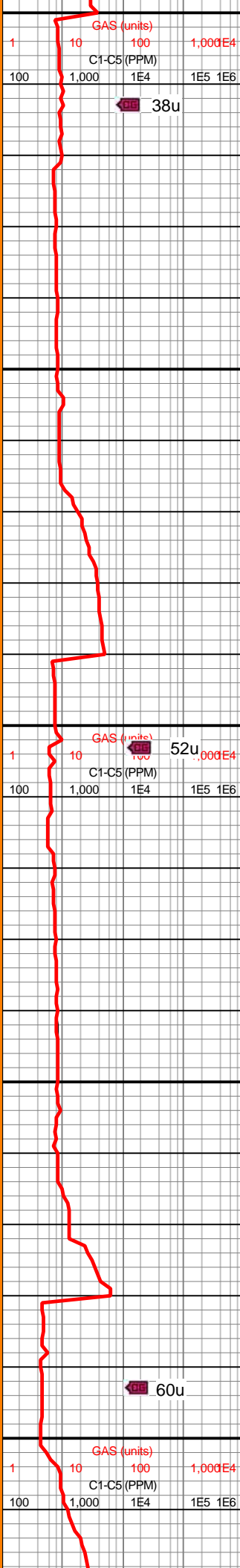
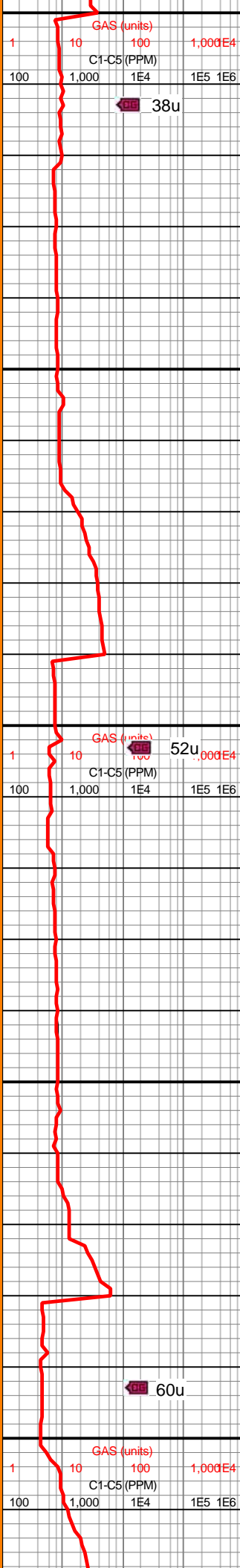
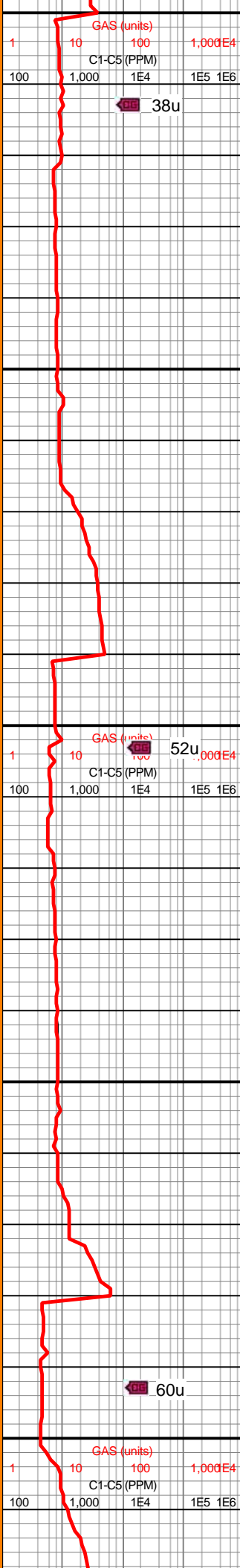
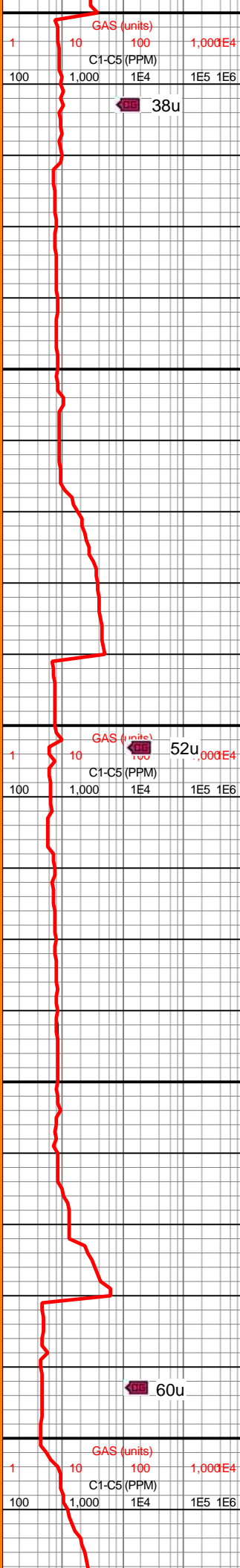
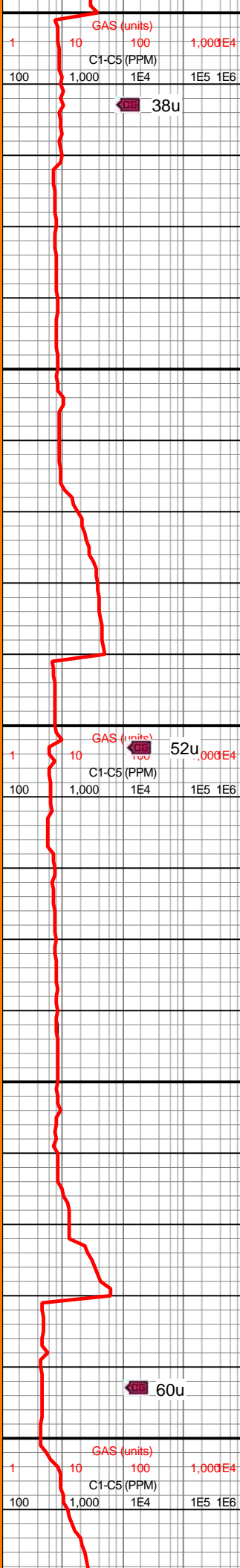
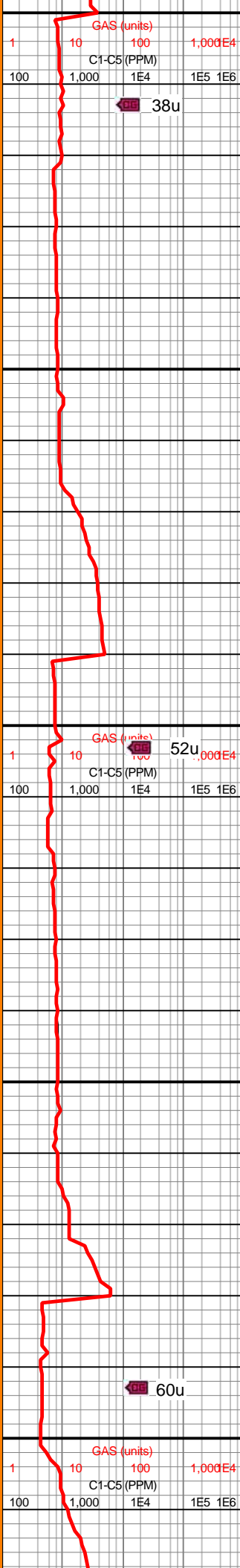
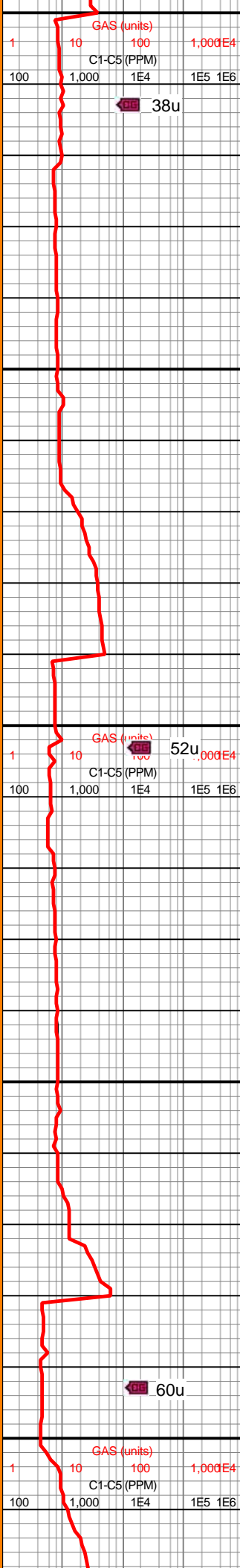
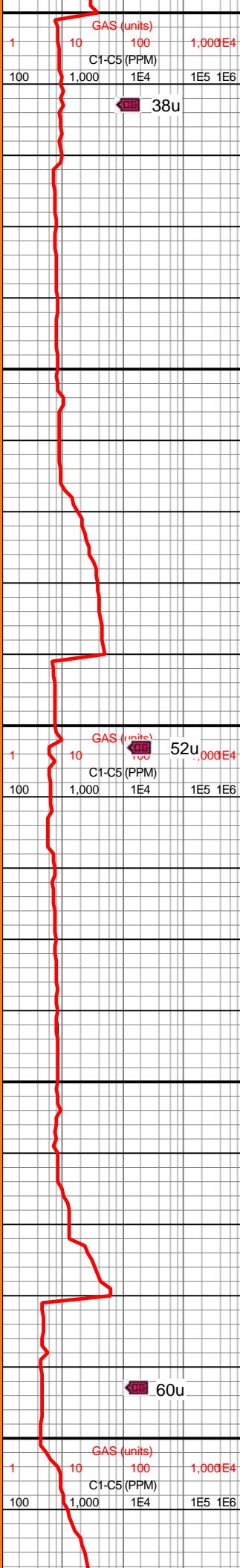
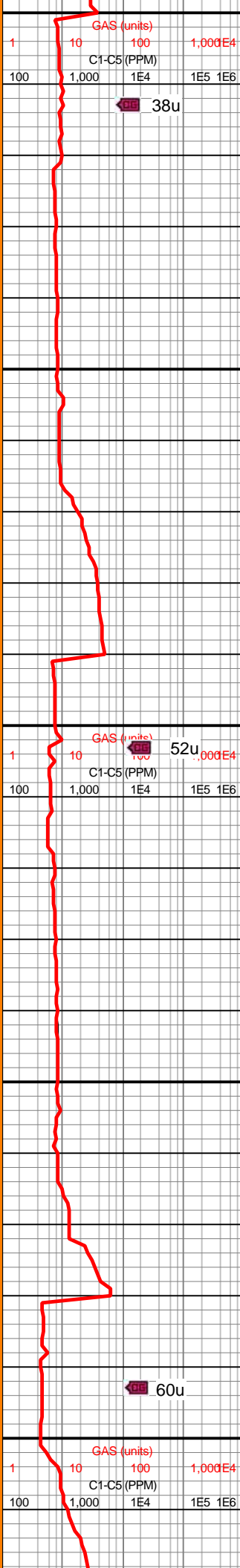
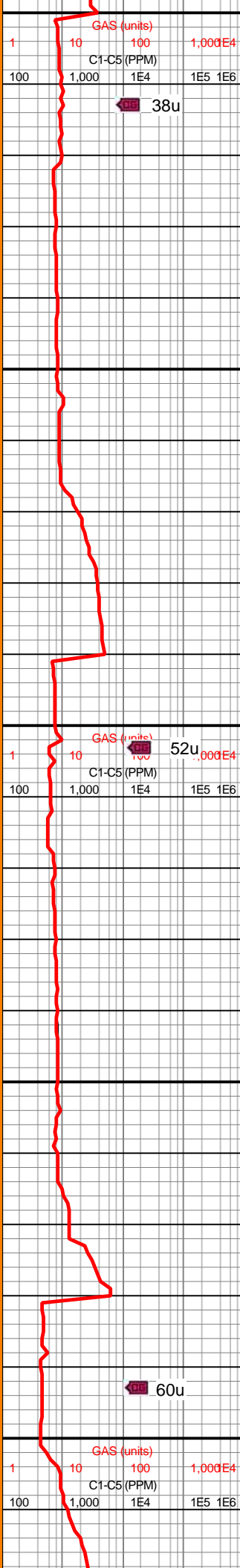
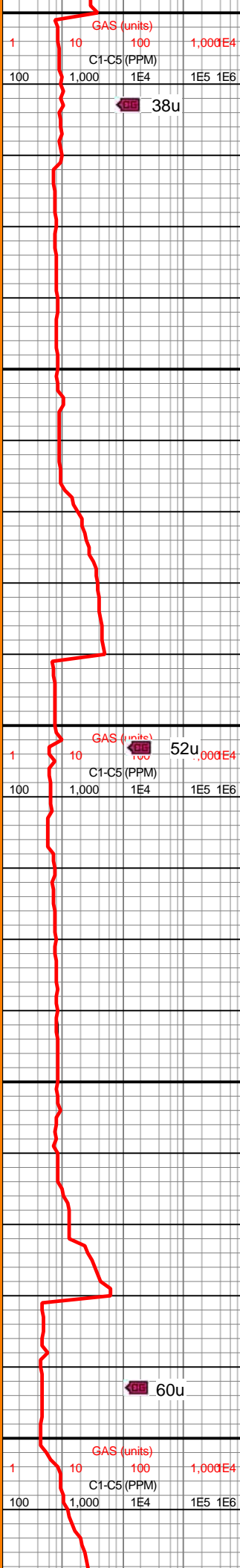
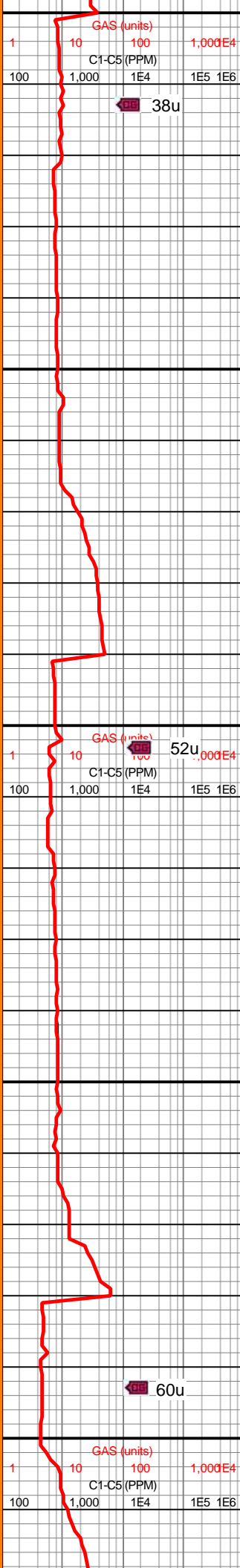
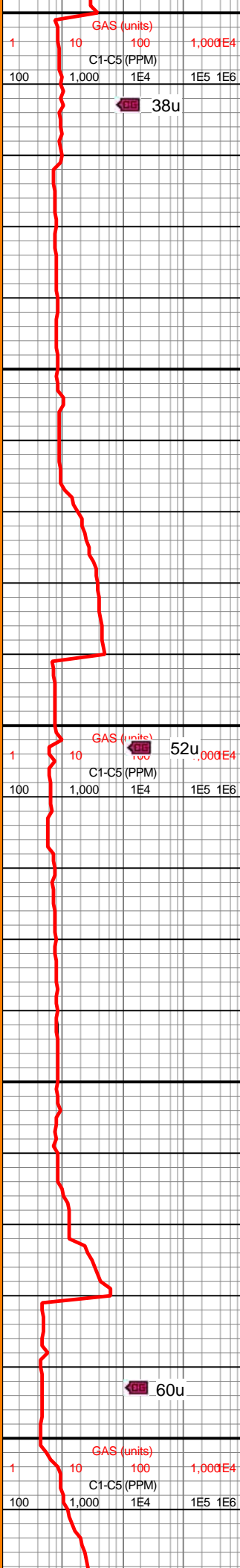
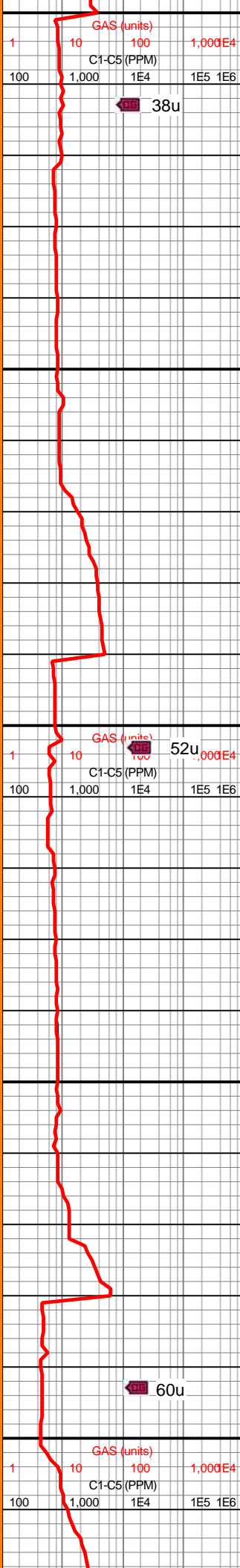
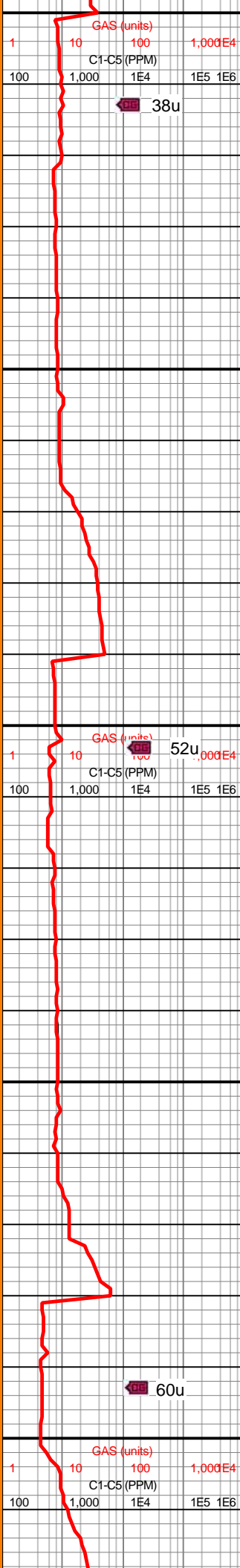
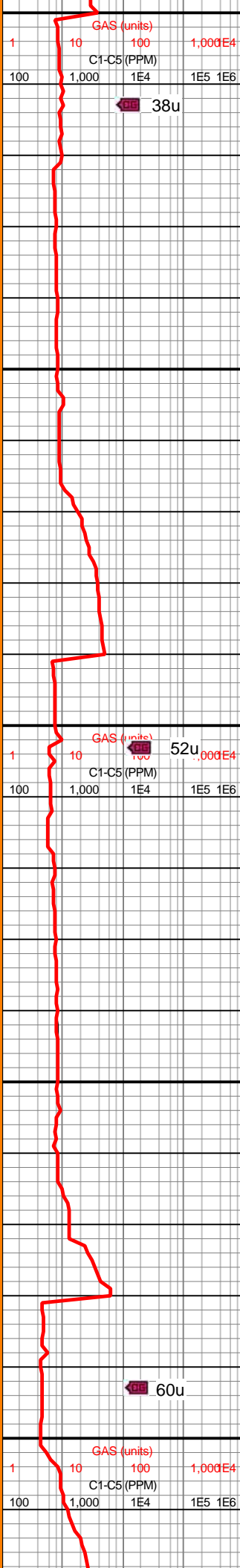
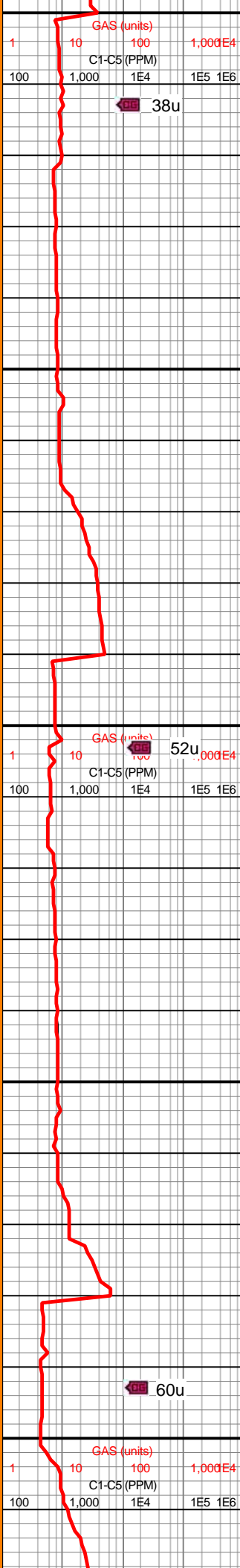
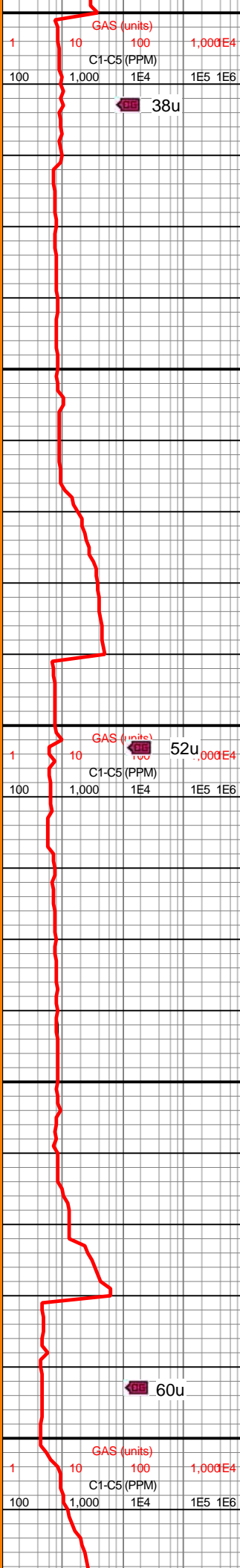
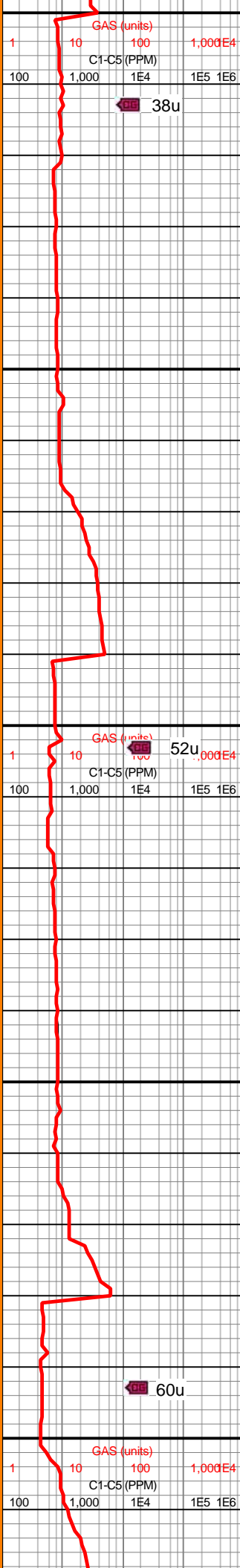
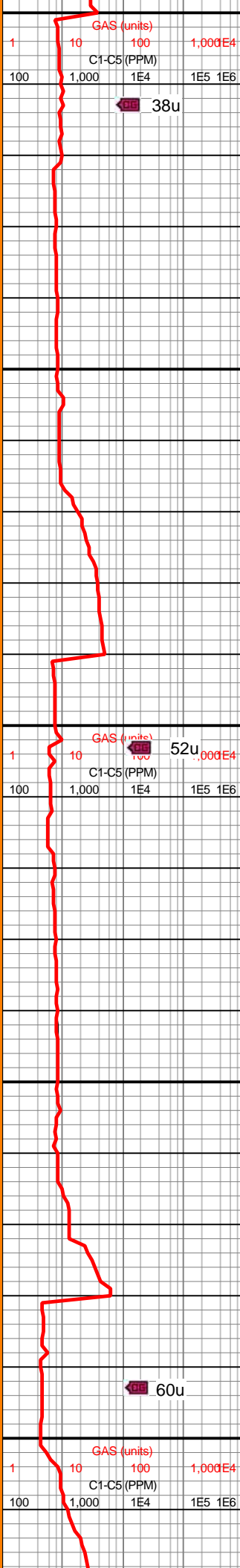
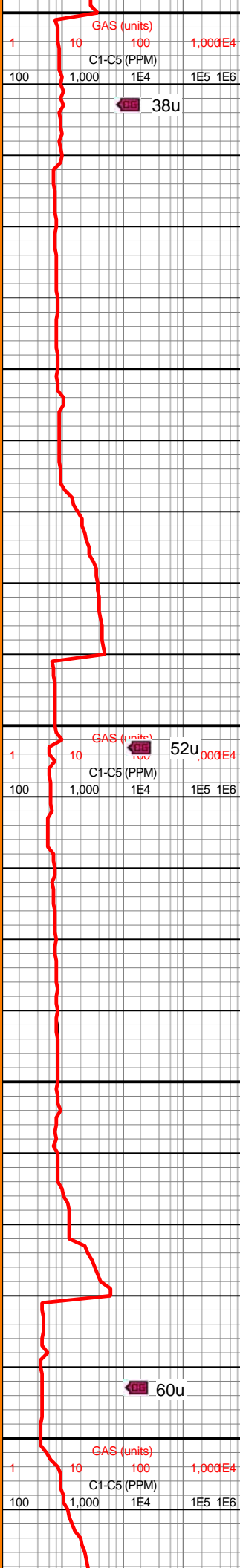
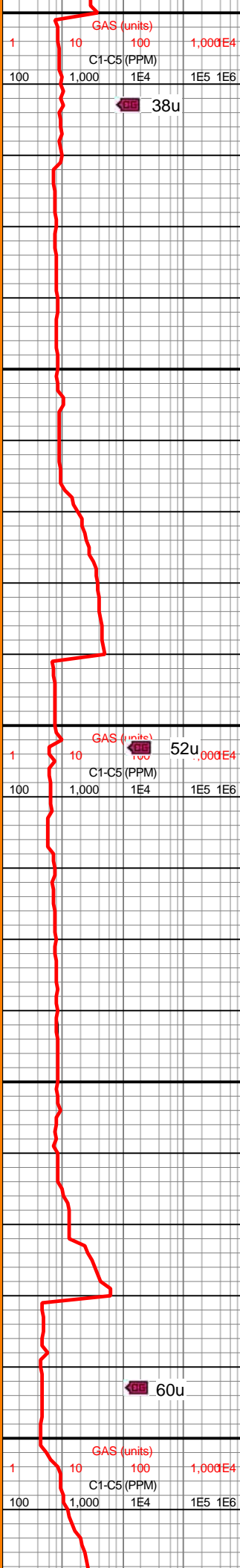
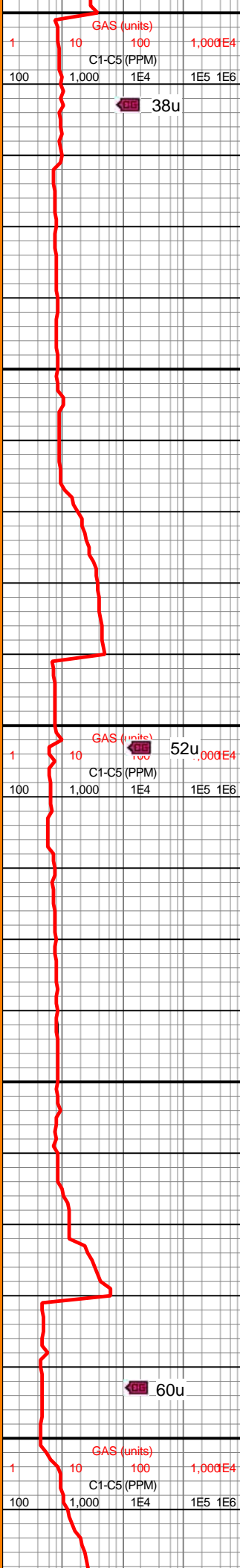
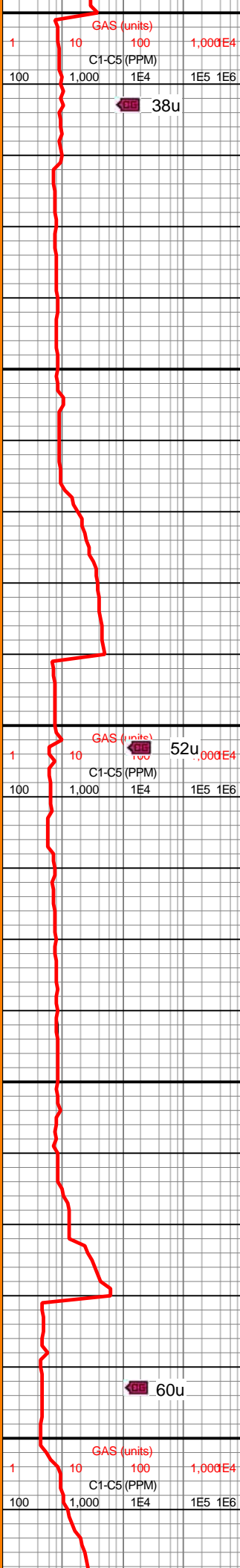
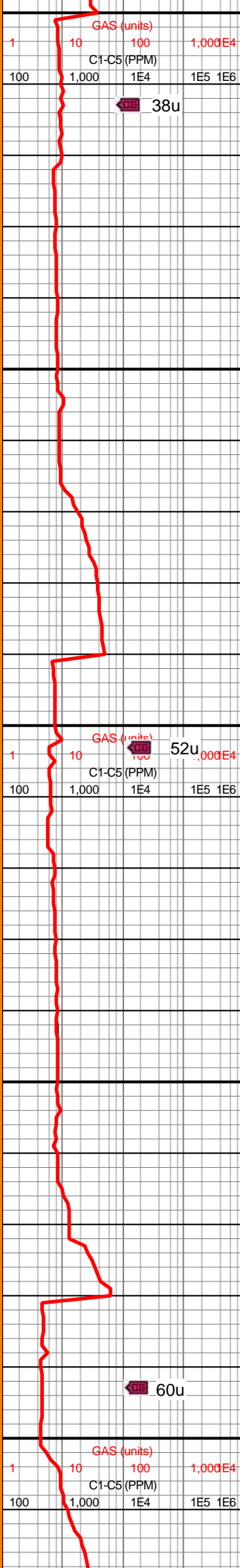
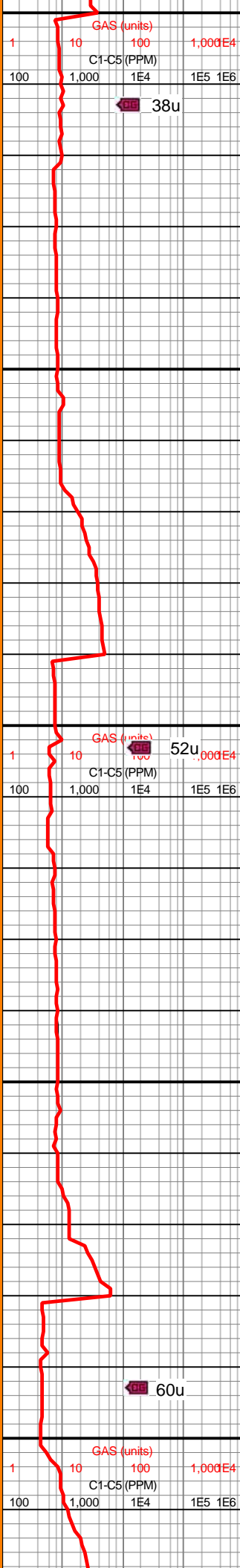
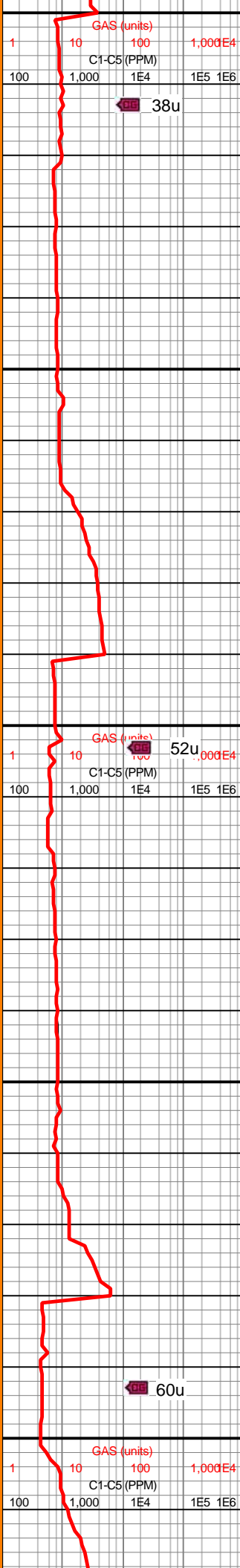
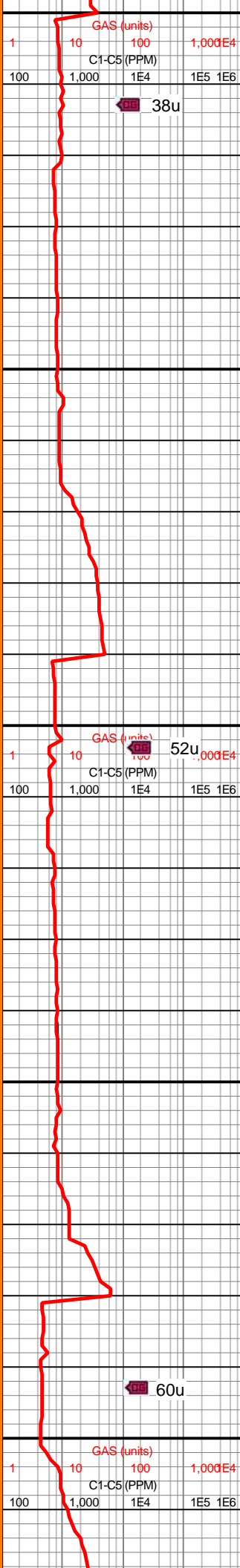
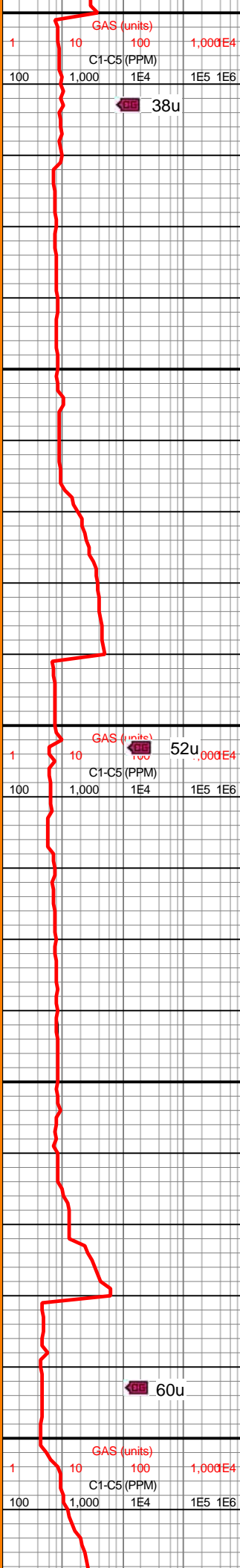
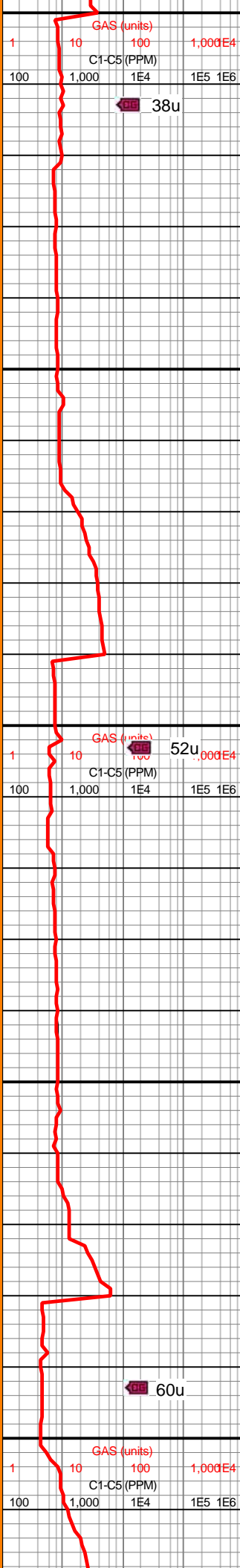
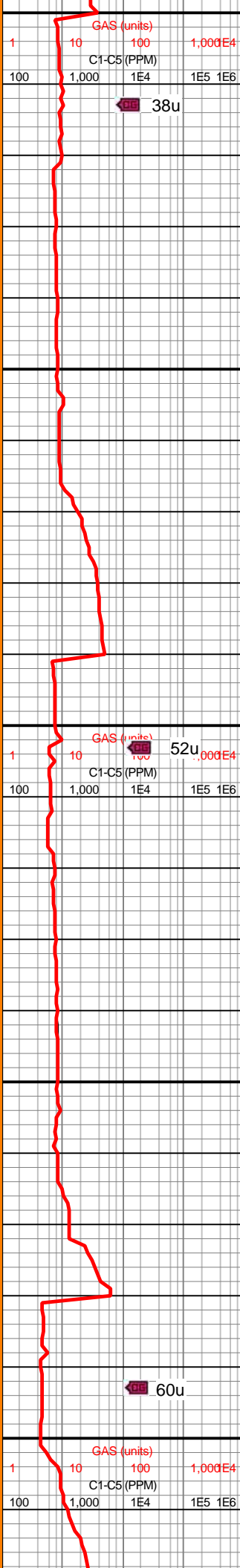
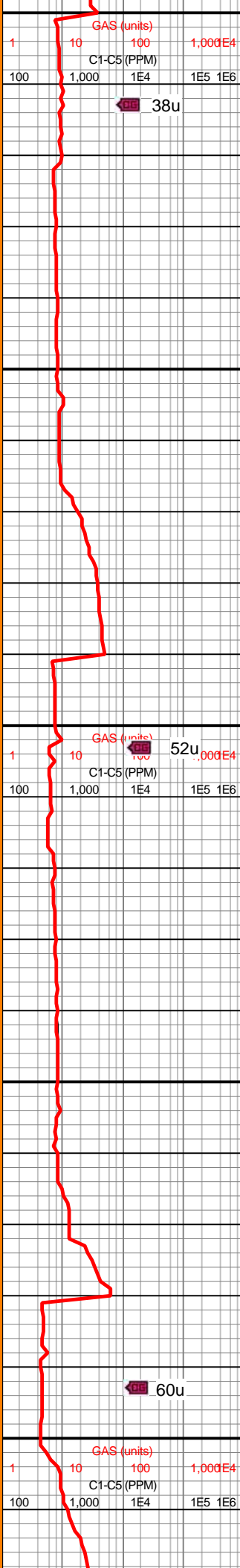
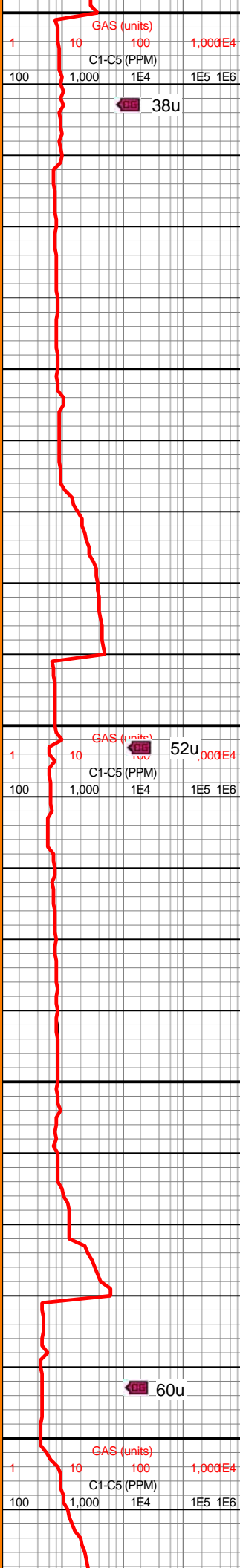
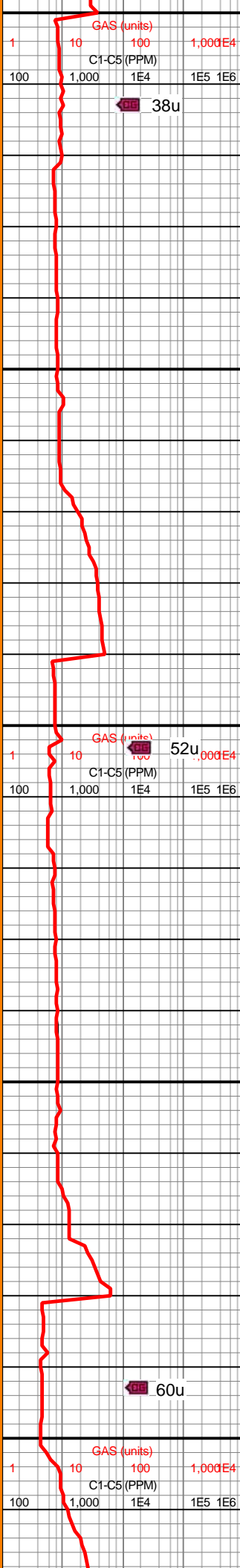
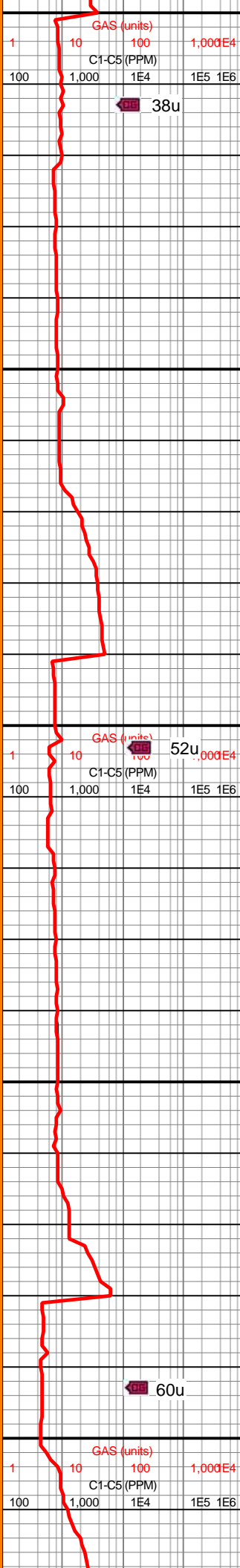
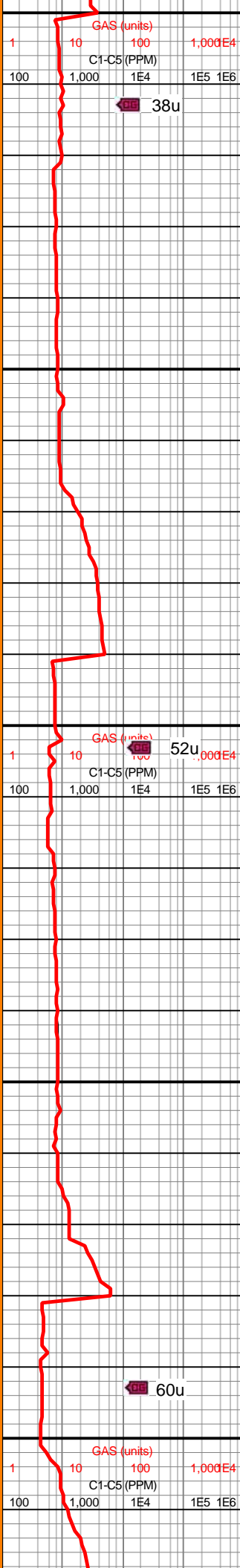
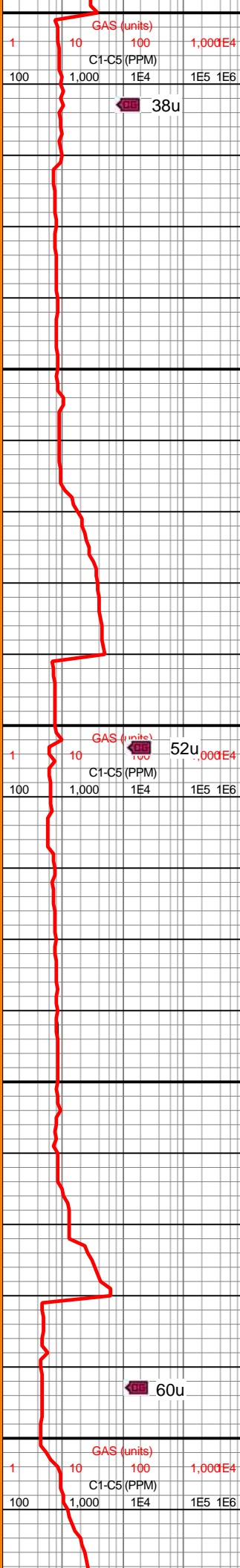
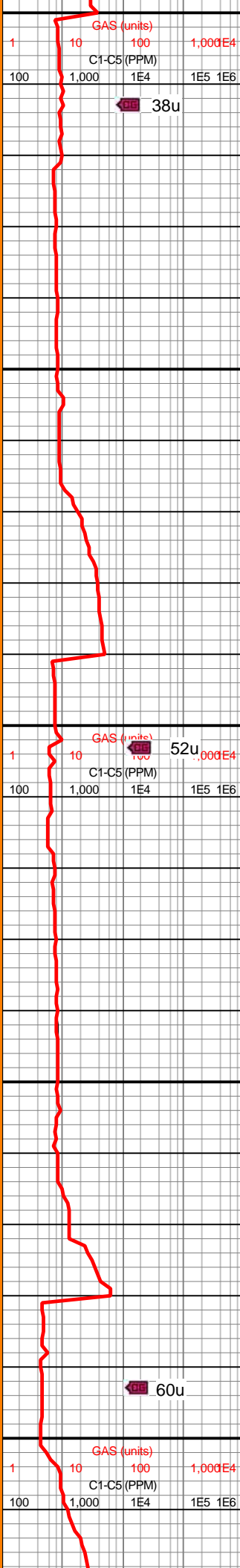
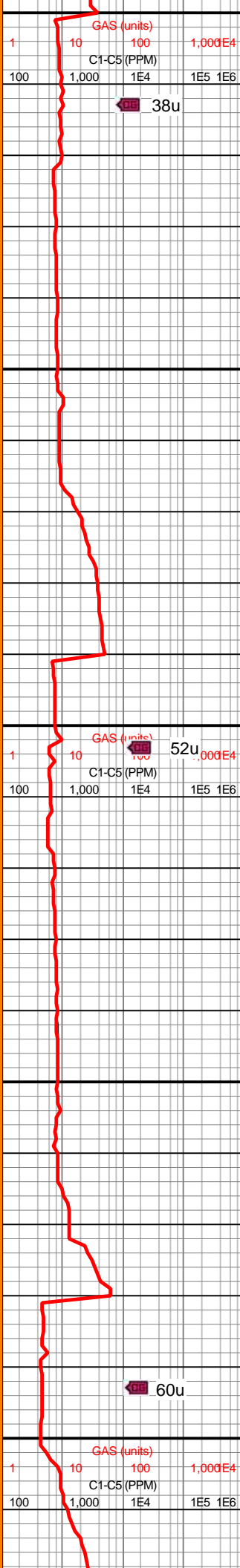
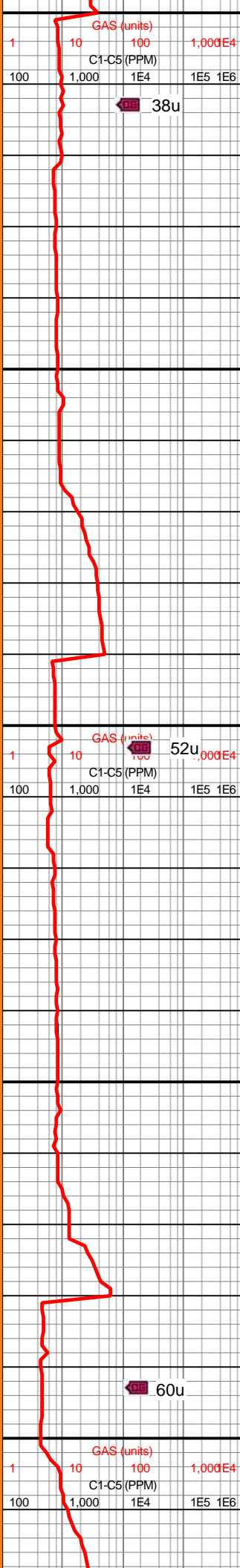
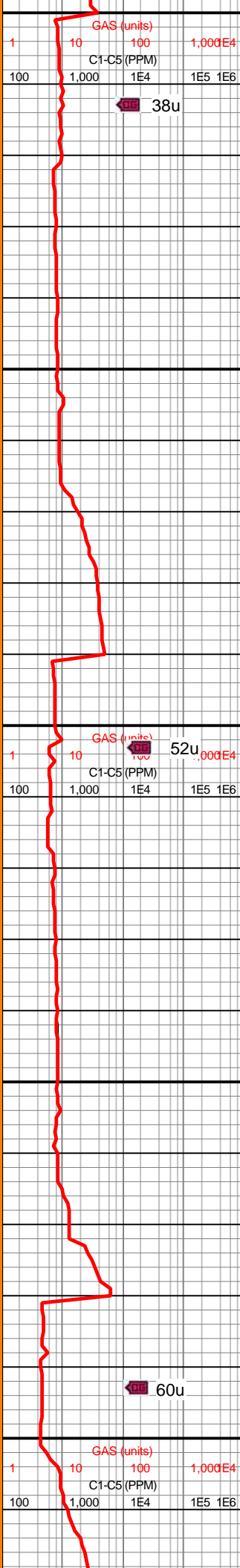
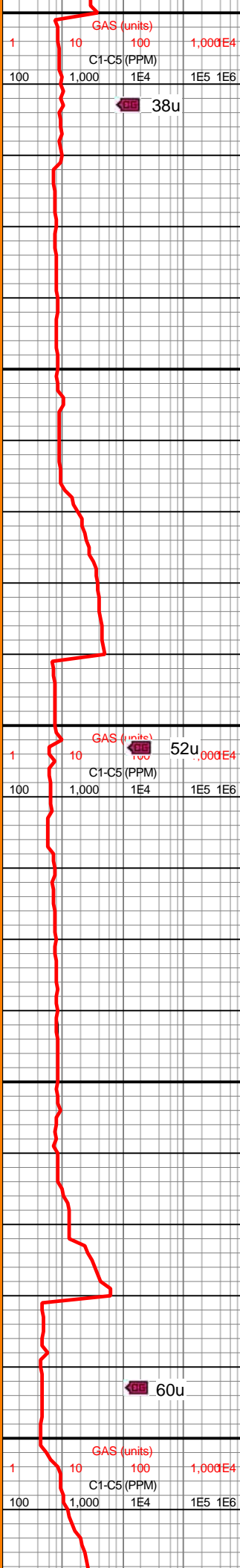
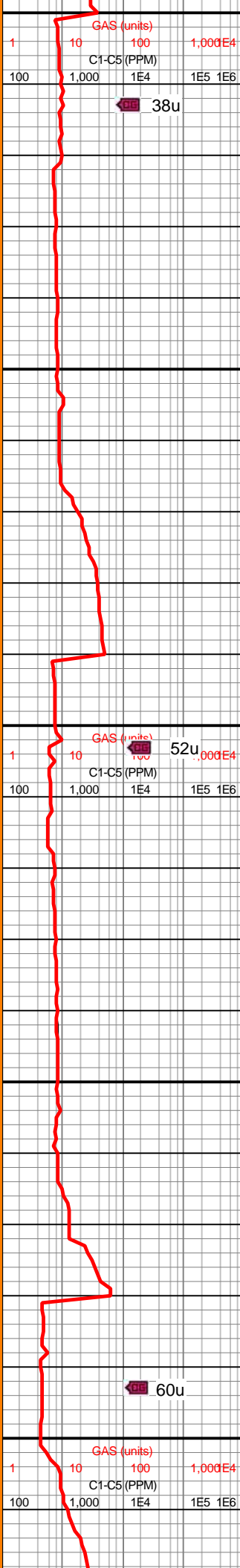
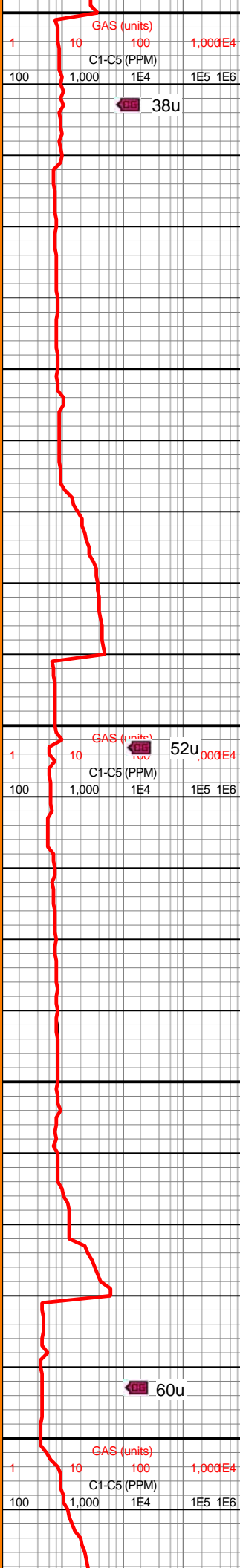
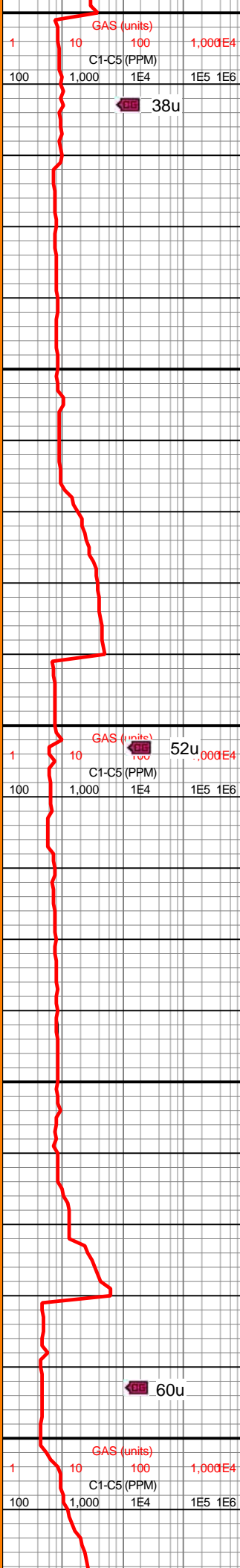
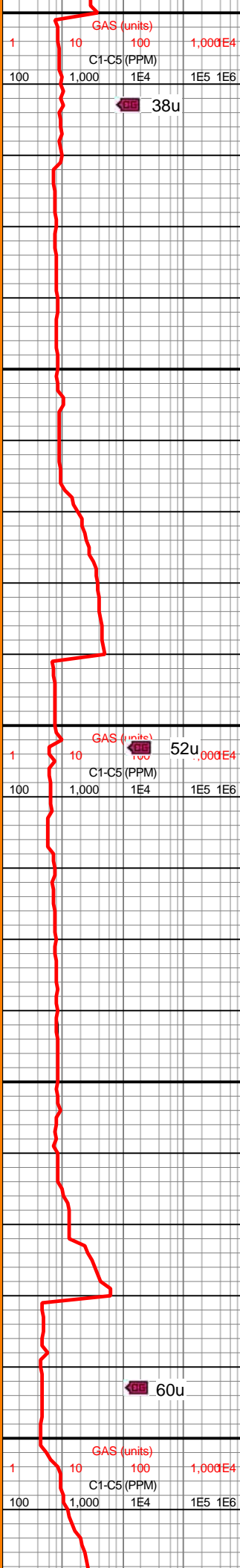
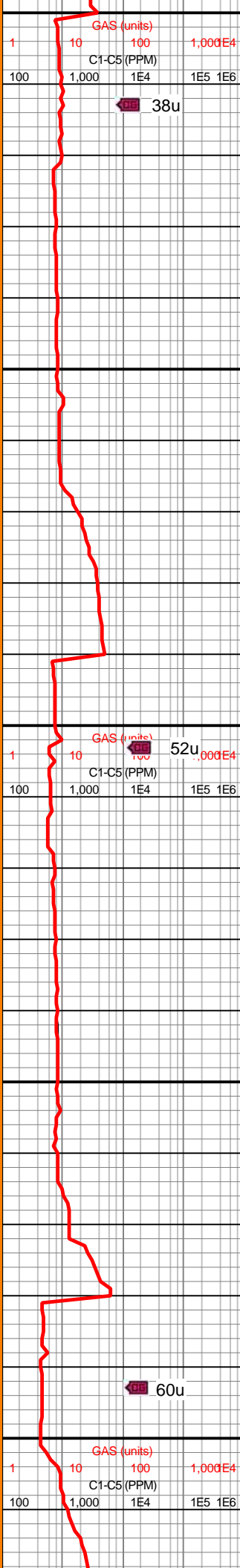


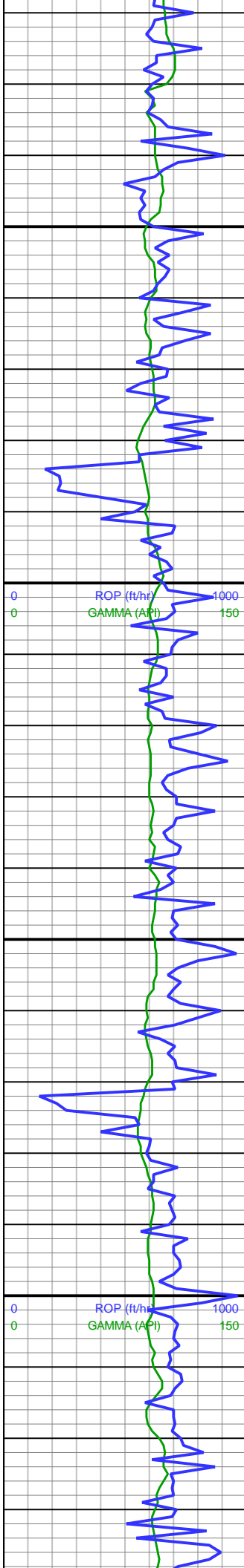
2,400
2,410
2,420
2,430
2,440
2,450
2,460
2,470
2,480
2,490
2,500
2,510
2,520
2,530
2,540
2,550
2,560
2,570
2,580
2,590
2,600
2,610

WOB: 25
RPM: 43
SPM: 130
SPP: 1,880

MW: 9.7
VIS: 54

WOB: 22
RPM: 54
SPM: 190
SPP: 2,680





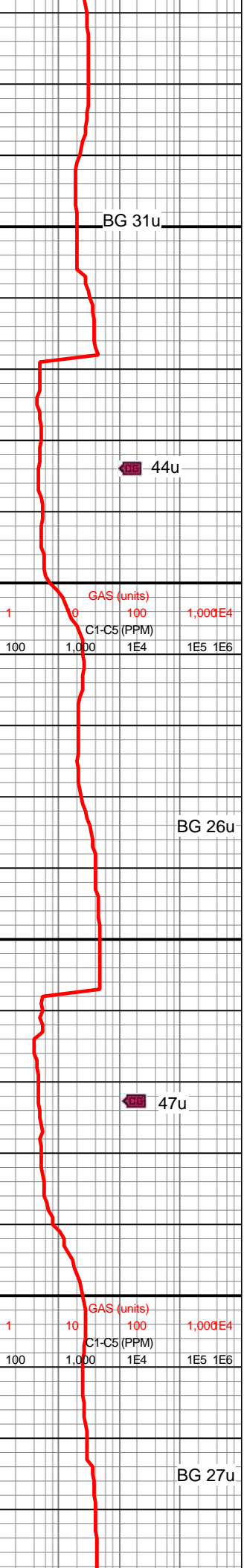
MD: 2,630'
INC: 12.23°
AZM: 14.84°
TVD: 2,594.22'
VS: -369.81'

MW: 9.7
VIS: 54

MD: 2,719'
INC: 11.83°
AZM: 15.63°
TVD: 2,681.26'
VS: -387.36'

WOB: 22
RPM: 55
SPM: 202
SPP: 2,990

MD: 2,809'
INC: 11.35°
AZM: 15.65°
TVD: 2,769.43'
VS: -404.43'



BG 31u

44u

BG 26u

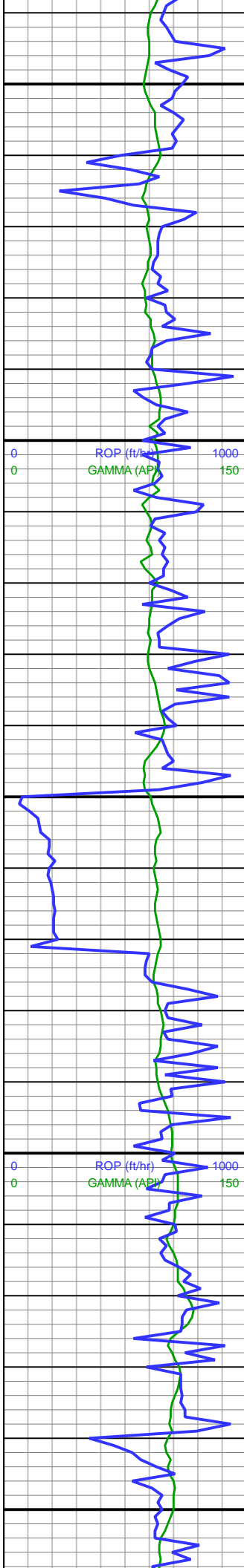
47u

BG 27u

SLTST: MOD GY, DK GY,
FRI, BLKY, V F GR SS, HI
CALC, MRLY, SH, NO FLOR,
NO CUT.

SLTST: MOD GY, DK GY,
FRI, BLKY, V F GR SS, HI
CALC, MRLY, SH, NO FLOR,
NO CUT.



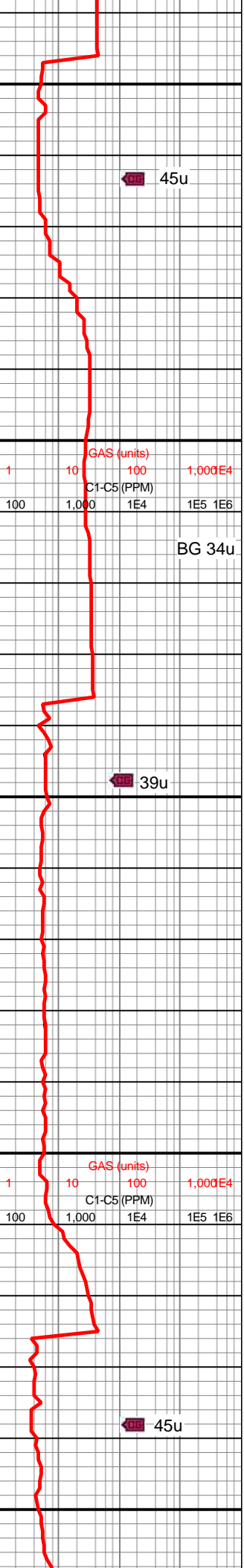
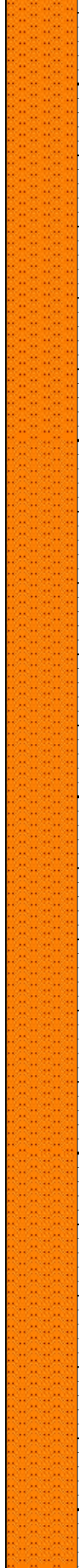


MD: 2,898'
INC: 10.81°
AZM: 15.36°
TVD: 2,856.77'
VS: -420.58'

MW: 9.7
VIS: 54

MD: 2,987'
INC: 13.79°
AZM: 17.04°
TVD: 2,943.71'
VS: -438.4'

WOB: 18
RPM: 55
SPM: 202
SPP: 2,920



45u

BG 34u

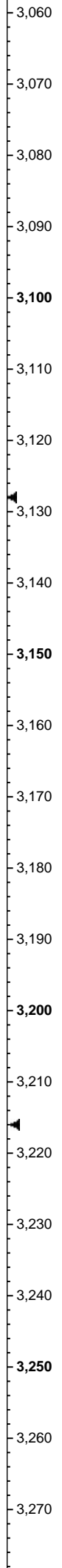
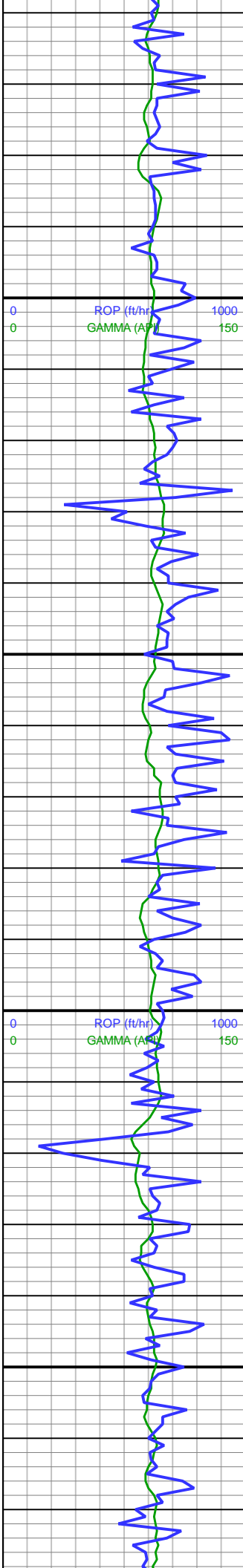
39u

45u

SLTST: GY, DK GY, FRI,
BLKY, V F GR SS, HI CALC,
MRLY, SH, NO FLOR, NO
CUT.
W/ TR LS: OFFWHT, CRM,
FRM, CRPTXL, MIC XL, ARG,
NO FLOR, NO CUT.

SLTST: GY, DK GY, FRI,
BLKY, V F GR SS, HI CALC,
MRLY, SH, NO FLOR, NO
CUT.
W/ TR LS: OFFWHT, CRM,
FRM, CRPTXL, MIC XL, ARG,
NO FLOR, NO CUT.





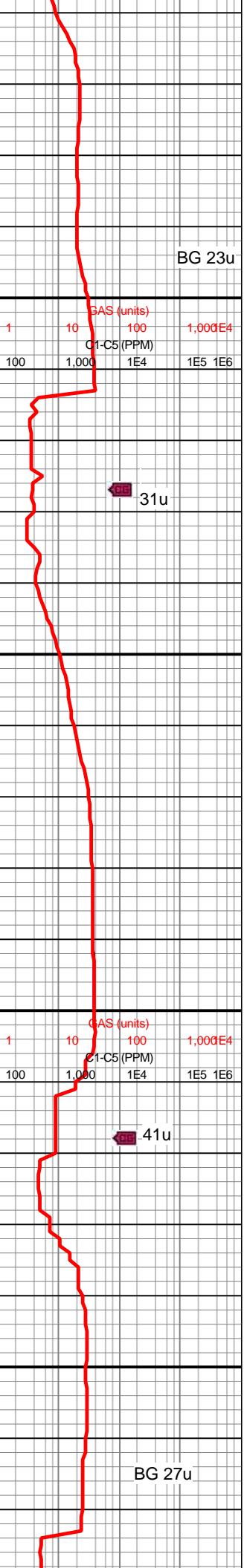
MD: 3,076'
INC: 13.06°
AZM: 16.42°
TVD: 3,030.28'
VS: -457.77'

MW: 9.7
VIS: 54

MD: 3,165'
INC: 12.59°
AZM: 15.93°
TVD: 3,117.06'
VS: -476.36'

WOB: 16
RPM: 57
SPM: 202
SPP: 2,979

MD: 3,276'
INC: 11.86°
AZM: 14.79°
TVD: 3,230.28'
VS: -457.77'



SLTST: GY, DK GY, FRI,
BLKY, V F GR SS, HI CALC,
MRLY, SH, NO FLOR, NO
CUT.
W/ TR LS: OFFWHT, CRM,
FRM, CRPTXL, MIC XL, ARG,
NO FLOR, NO CUT.

BG 23u

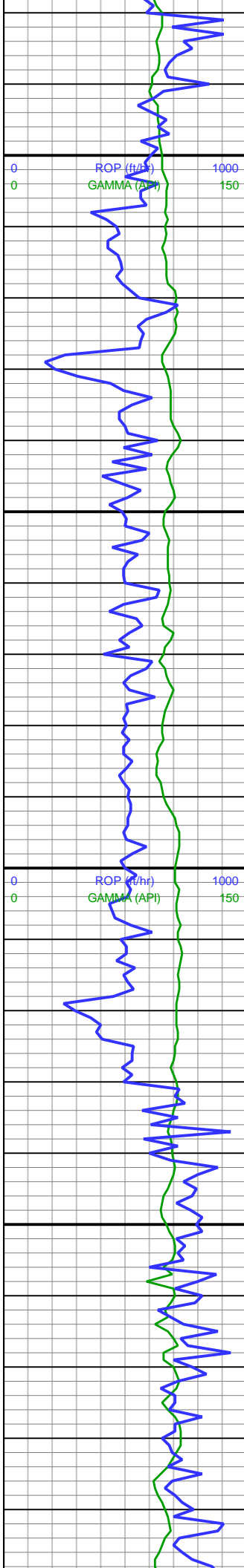
31u

SLTST: GY, DK GY, FRI,
BLKY, V F GR SS, HI CALC,
MRLY, SH, NO FLOR, NO
CUT.
LS: OFFWHT, CRM, FRM,
CRPTXL, MIC XL, ARG, NO
FLOR, NO CUT.

41u

BG 27u





3,280
3,290
3,300
3,310
3,320
3,330
3,340
3,350
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

TVD: 3,225.54'
VS: -498.57'

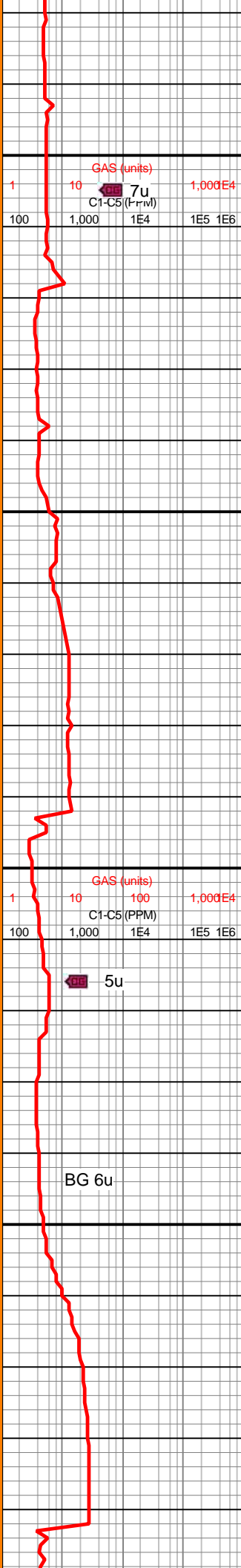
MW: 9.7
VIS: 53

MD: 3,365'
INC: 11.07°
AZM: 14.2°
TVD: 3,312.77'
VS: -515.38'

WOB: 19
RPM: 55
SPM: 202
SPP: 3,458

MD: 3,454'
INC: 10.01°
AZM: 14.88°
TVD: 3,400.26'
VS: -530.85'

MW: 9.6+

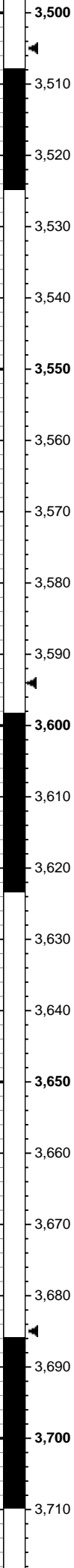
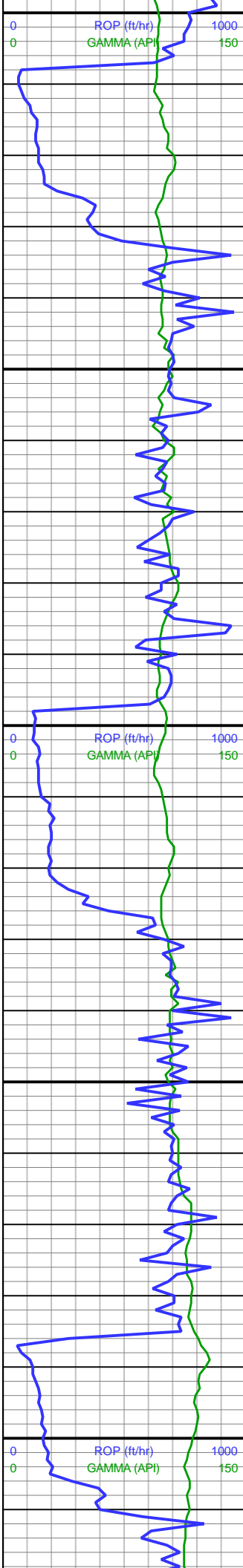


SLTST: MOD GY, DK GY,
FRI, BLKY, V F GR SS, HI
CALC, MRLY, SH, NO FLOR,
NO CUT.

SLTST: MOD GY, DK GY,
FRI, SB BLKY-BLKY, V F GR
SS, MOD CALC, SH, NO
FLOR, NO CUT.

SLTST: MOD GY, FRI-FRM,
SB BLKY-BLKY, V F GR SS,
MOD CALC, SH, NO FLOR,
NO CUT.





MW: 9.6+
VIS: 50

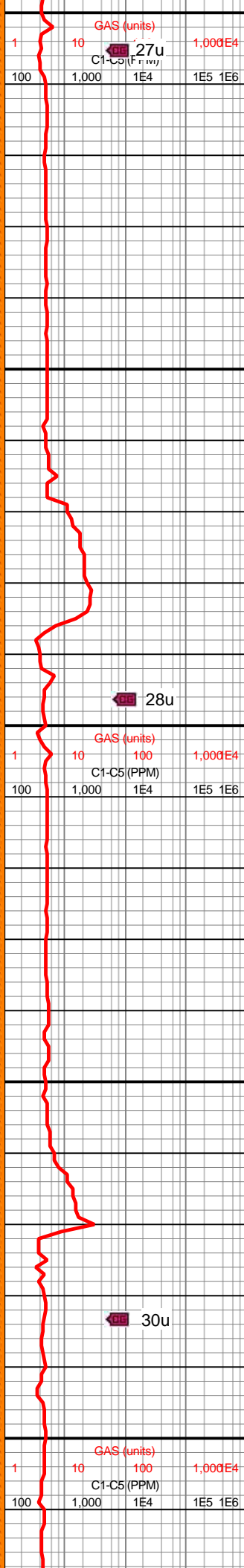
MD: 3,543'
INC: 10.98°
AZM: 8.52°
TVD: 3,487.78'
VS: -546.47'

WOB: 6.4
RPM: 0
SPM: 202
SPP: 2,909

MD: 3,632'
INC: 10.84°
AZM: 25.11°
TVD: 3,575.19'
VS: -562.1'

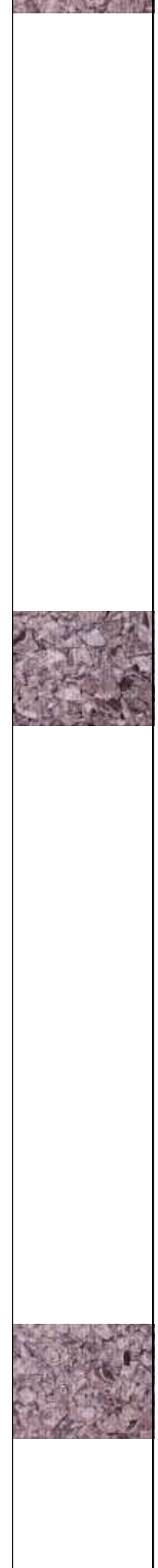
MW: 9.6+
VIS: 50

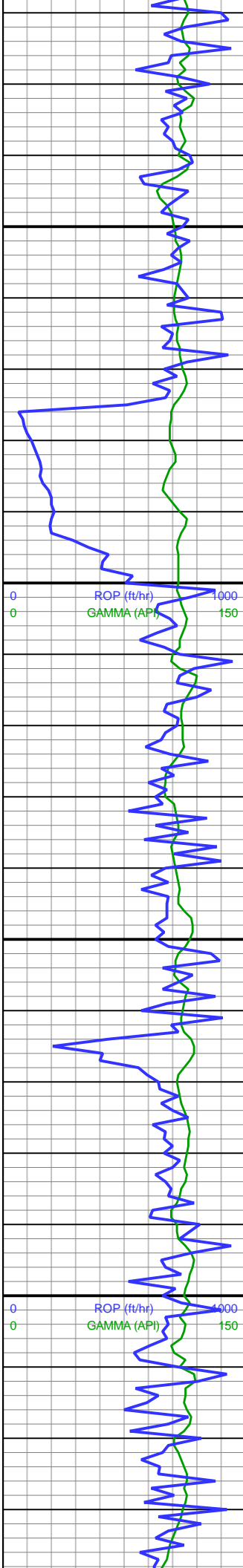
MD: 3,721'
INC: 2.55°
AZM: 1.11°
TVD: 3,658.51'
VS: -562.1'



SLTST: MOD GY, SME DK
GY, FRI-FRM, SB BLKY-
BLKY, V F GR SS, MOD
CALC, SH, NO FLOR, NO
CUT.

SLTST: MOD GY, SME DK
GY, FRI-FRM, SB BLKY-
BLKY, MRLY IP, V F GR SS,
MOD CALC, SH, NO FLOR,
NO CUT.





3,720
3,730
3,740
3,750
3,760
3,770
3,780
3,790
3,800
3,810
3,820
3,830
3,840
3,850
3,860
3,870
3,880
3,890
3,900
3,910
3,920
3,930

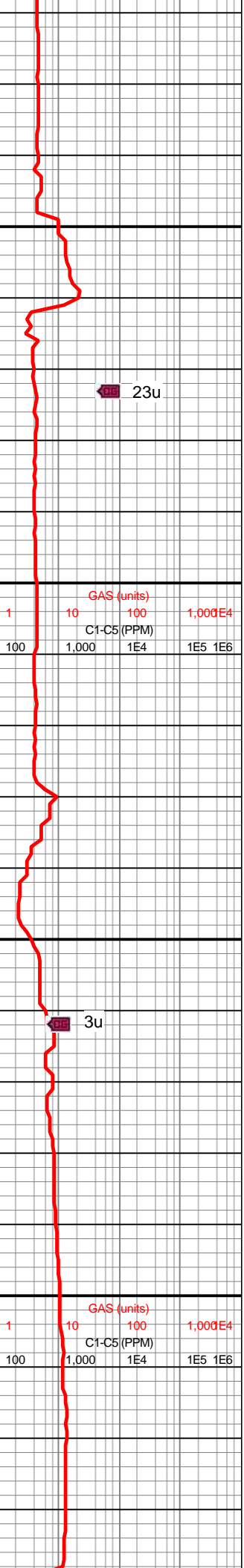
INC: 9.55°
AZM: 8.74°
TVD: 3,662.8'
VS: -576.65'

WOB: 16
RPM: 55
SPM: 202
SPP: 3,629

MD: 3,810'
INC: 10.58°
AZM: 18.13°
TVD: 3,750.44'
VS: -591.45'

MD: 3,899'
INC: 9.11°
AZM: 16.16°
TVD: 3,838.12'
VS: -605.67'

MW: 9.6+
VIS: 49



23u

3u

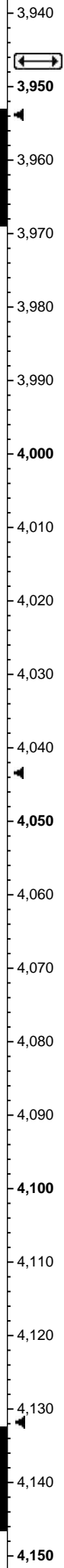
SLTST: MOD GY, SME DK
GY, FRI-FRM, SB BLKY-
BLKY, V F GR SS, MOD
CALC, SH, NO FLOR, NO
CUT.
TR LS: OFFWHT, CRM, MOD
FRM, CRPTXL, MIC XL, ARG,
NO FLOR, NO CUT.

SLTST: MOD GY, DK GY,
FRI-FRM, BLKY, V F GR SS,
MOD CALC, SH, NO FLOR,
NO CUT.
TR LS: OFFWHT, CRM, FRM,
CRPTXL, MIC XL, ARG, NO
FLOR, NO CUT.



Larimer
3,947'MD
3,885.5'TVD

ROP (ft/hr)
GAMMA (API)

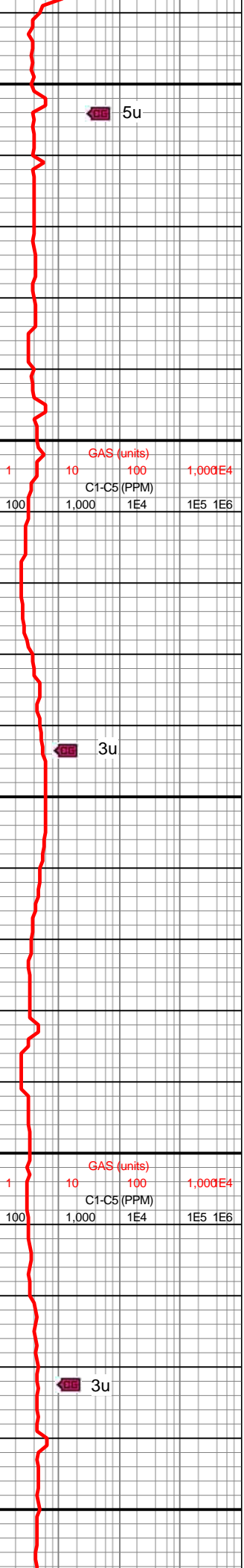


MD: 3,988'
INC: 10.35°
AZM: 9.59°
TVD: 3,925.84'
VS: -620.08'

WOB: 20
RPM: 55
SPM: 202
SPP: 3,957

MW: 9.6+
VIS: 49

MD: 4,077'
INC: 10.03°
AZM: 9.11°
TVD: 4,013.44'
VS: -635.42'



5u

3u

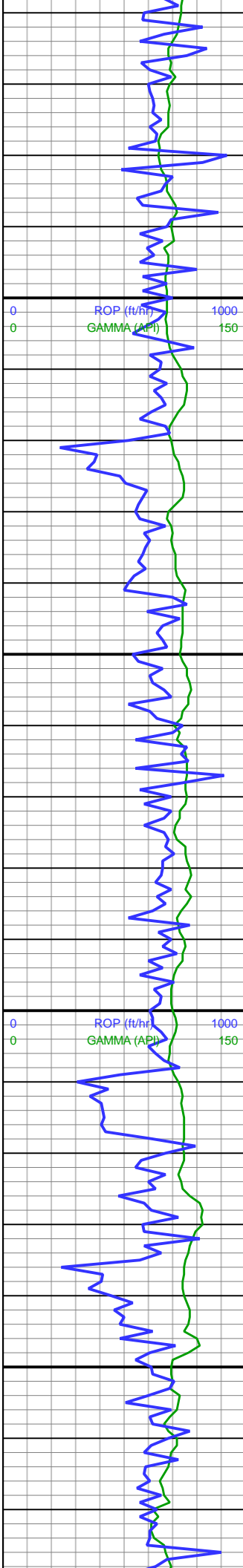
3u

SLTST: MOD GY, SME DK
GY, FRI-FRM, SB
BLKY-BLKY, MRLY, V F GR
SS, MOD CALC, SH, NO
FLOR, NO CUT.



SLTST: MOD GY, SME DK
GY, FRI-FRM, SB
BLKY-BLKY, MRLY, V F
GR SS, MOD CALC, SH,
NO FLOR, NO CUT.





4,160
4,170
4,180
4,190
4,200
4,210
4,220
4,230
4,240
4,250
4,260
4,270
4,280
4,290
4,300
4,310
4,320
4,330
4,340
4,350
4,360
4,370

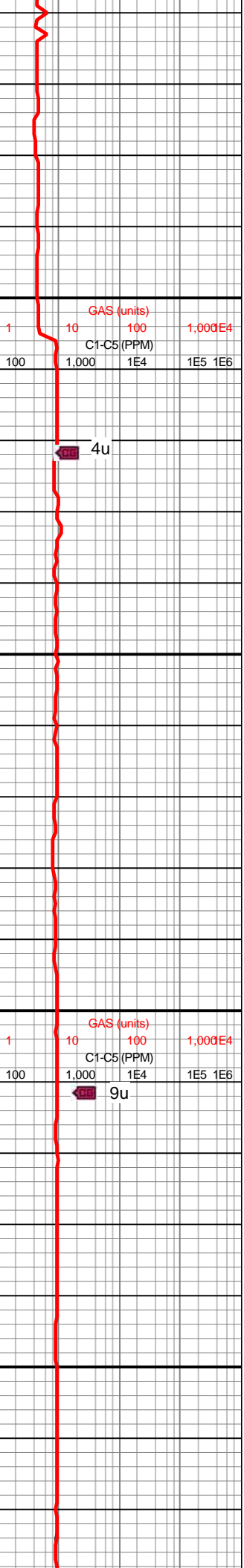
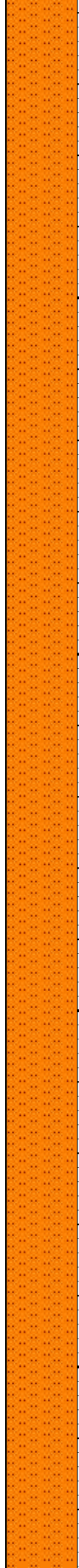
MD: 4,166'
INC: 11.31°
AZM: 16.95°
TVD: 4,100.9'
VS: -651.15'

WOB: 21
RPM: 55
SPM: 202
SPP: 4,007

MW: 9.6+
VIS: 49

MD: 4,256'
INC: 9.94°
AZM: 15.73°
TVD: 4,189.36'
VS: -666.74'

MD: 4,345'
INC: 8.78°
AZM: 15.26°
TVD: 4,277.17'
VS: -680.41'



SLTST: MOD GY, SME DK
GY, FRI-FRM, HD IP, SB
BLKY-BLKY, V F GR SS,
MOD CALC, SH, NO
FLOR, NO CUT.



SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR,
SLTY, CALC, SL H2O SENS



Sussex
4,395'MD
4,326.4'TVD

ROP (ft/hr)
GAMMA (API)

WOB: 1
RPM: 0
SPM: 202
SPP: 2,917

MD: 4,434'
INC: 11.72°
AZM: 8.52°
TVD: 4,364.75'
VS: -695.68'

MW: 9.6/9.6
VIS: 48/47

MD: 4,523'
INC: 10.64°
AZM: 5.61°
TVD: 4,452.06'
VS: -712.62'

WOB: 0

9u

GAS (units)

C1-C5 (PPM)

SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR,
SLTY, CALC, SL H2O
SENS

9u

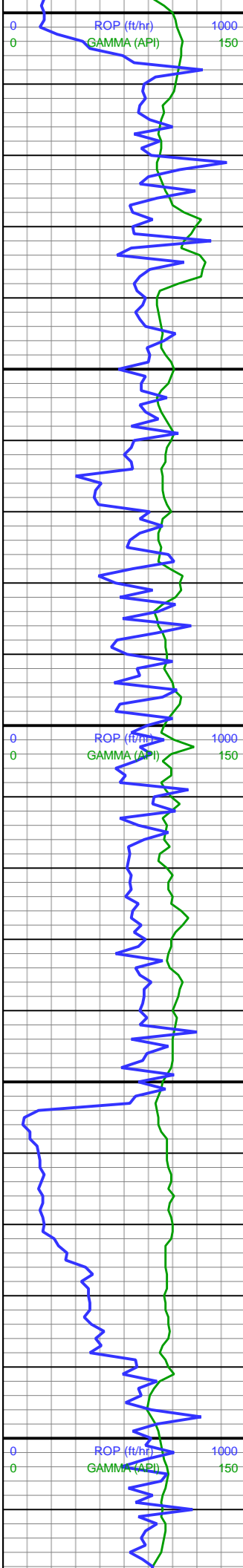
GAS (units)

C1-C5 (PPM)

SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, SB PLTY IP,
AMOR, V SLTY, SNDY, LMY
IP, CALC

10u

SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB



4,600
4,610
4,620
4,630
4,640
4,650
4,660
4,670
4,680
4,690
4,700
4,710
4,720
4,730
4,740
4,750
4,760
4,770
4,780
4,790
4,800
4,810

RPM: 55
SPM: 202
SPP: 2,831

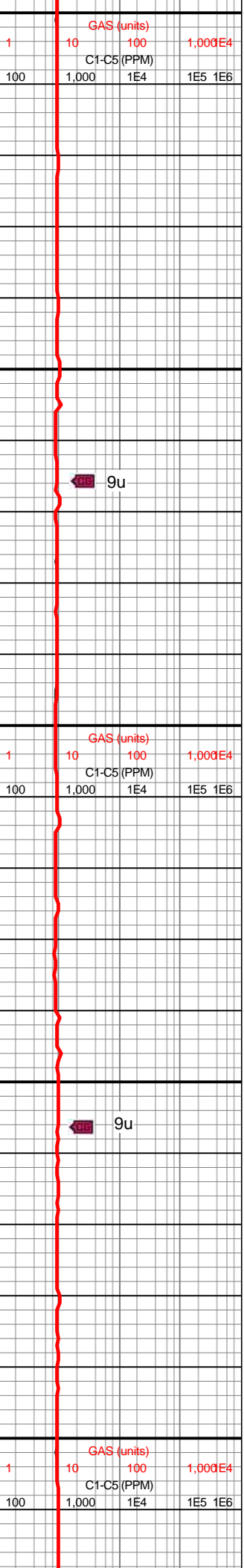
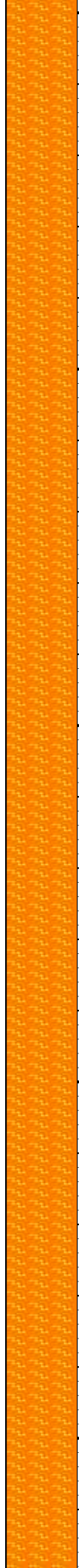
MD: 4,612'
INC: 12.52°
AZM: 20.11°
TVD: 4,539.26'
VS: -729.57'

MW: 9.6/9.6
VIS: 48/47

MD: 4,701'
INC: 11.81°
AZM: 20.48°
TVD: 4,626.26'
VS: -746.71'

MD: 4,790'
INC: 11.78°
AZM: 8.58°
TVD: 4,713.39'
VS: -763.9'

WOB: 7
RPM: 60
SPM: 202
SPP: 3,391



BLKY TO BLKY, SB PLTY IP,
AMOR, V SLTY, SNDY, CALC

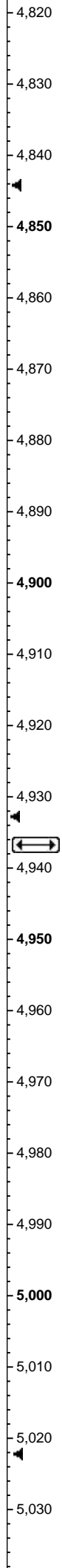
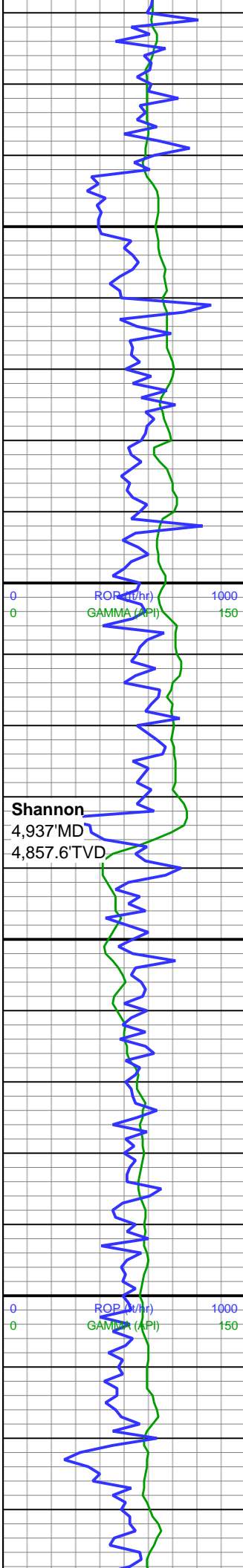
9u

SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, SB PLTY IP,
AMOR, V SLTY, V SNDY,
CALC

9u

SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, SB PLTY IP,
AMOR, V SLTY, SNDY IP,
CALC



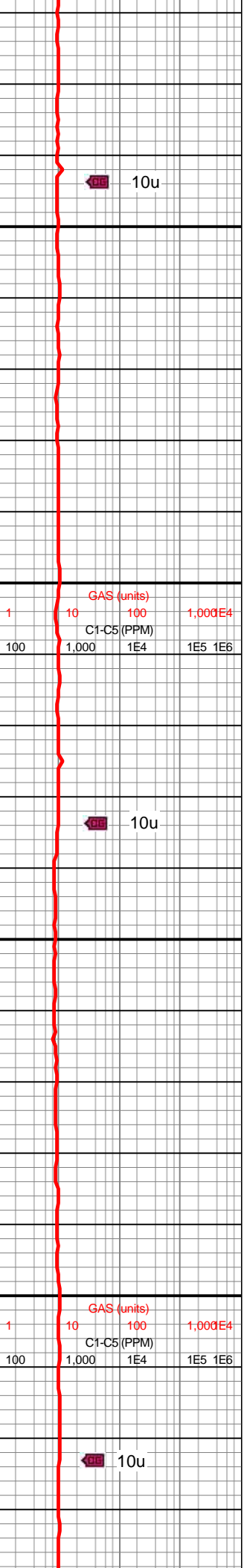
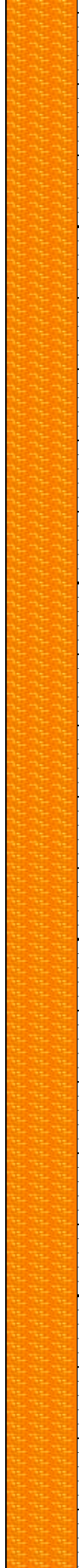


MW: 9.6/9.6+
VIS: 46/44

MD: 4,879'
INC: 10.87°
AZM: 9.69°
TVD: 4,800.66'
VS: -780.94'

MD: 4,969'
INC: 9.95°
AZM: 10.08°
TVD: 4,889.18'
VS: -796.76'

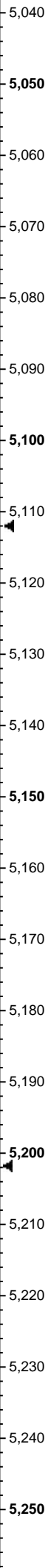
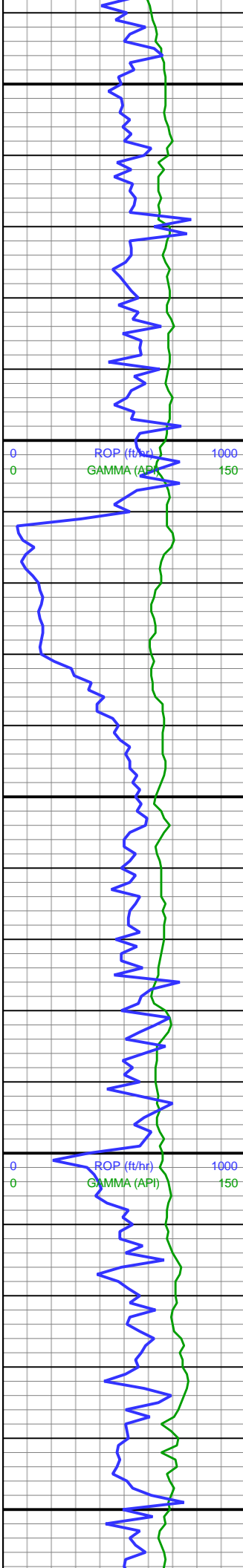
WOB: 11
RPM: 55
SPM: 202
SPP: 2,860



SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, V
SLTY, SNDY, CALC

SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, V
SLTY, CALC





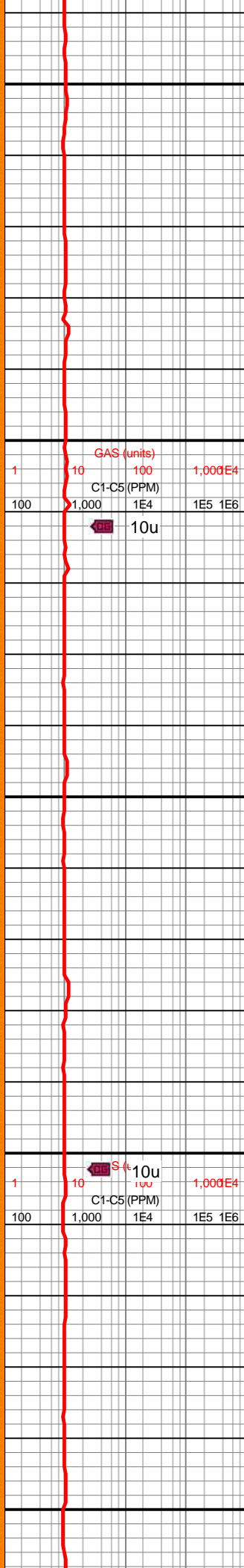
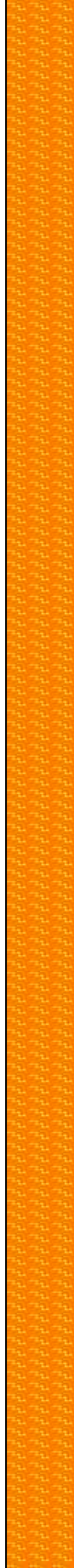
MW: 9.6/9.6+
VIS: 46/44
MD: 5,058'
INC: 9.3°
AZM: 7.97°
TVD: 4,976.93'
VS: -811.27'

MD: 5,147'
INC: 10.68°
AZM: 13.76°
TVD: 5,064.58'
VS: -826.18'

WOB: 2
RPM: 0
SPM: 202
SPP: 2,825

MD: 5,236'
INC: 9.4°
AZM: 13.95°
TVD: 5,152.21'
VS: -840.98'

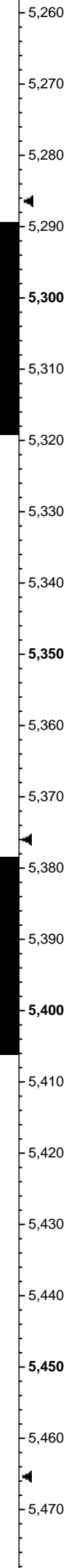
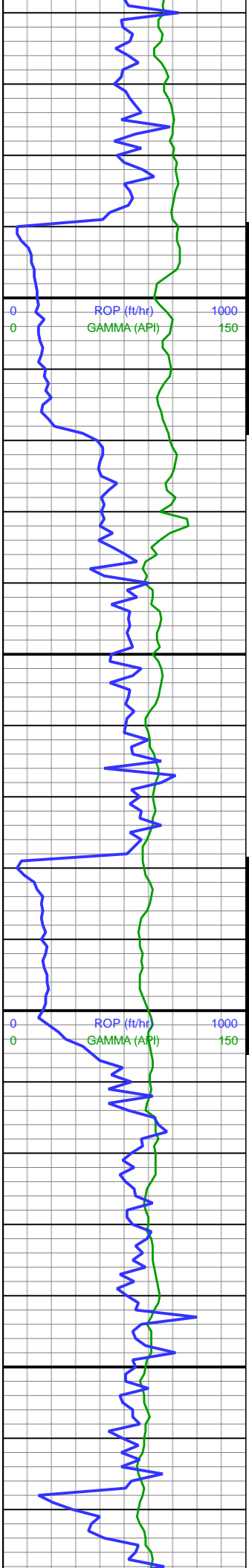
MW: 9.6/9.6
VIS: 48/44



SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY, CALC

SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
SNDY, CALC, SL H2O SENS



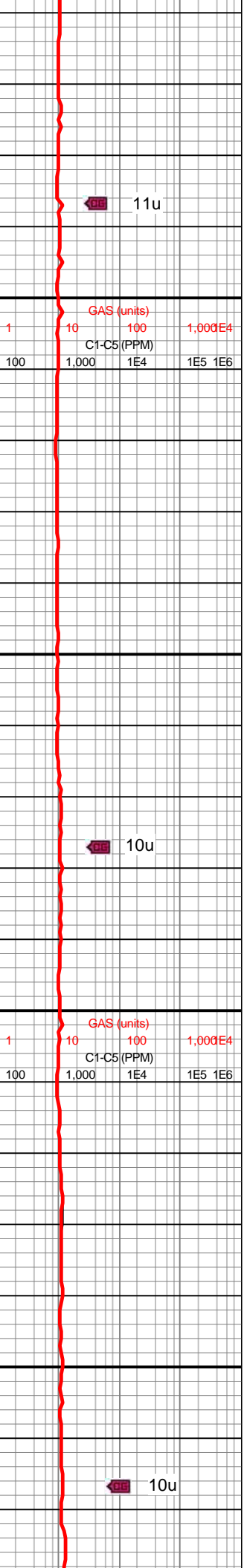


MD: 5,325'
INC: 11.94°
AZM: 10.05°
TVD: 5,239.67'
VS: -856.86'

WOB: 14
RPM: 60
SPM: 202
SPP: 3,607

MD: 5,414'
INC: 14.34°
AZM: 12.93°
TVD: 5,326.33'
VS: -876.37'

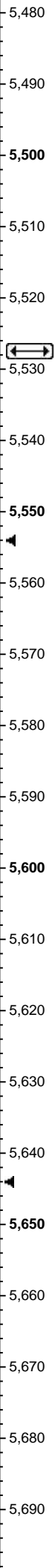
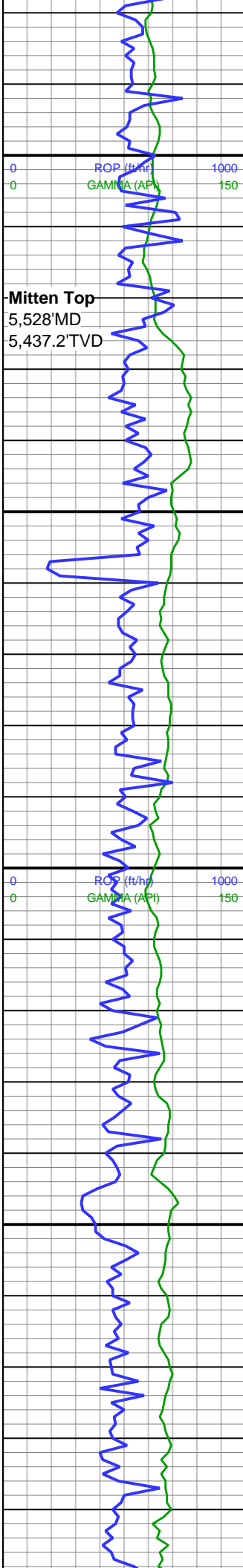
MW: 9.6/9.6
VIS: 48/44



SLTSS: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY, V
SNDY, CALC, SL H2O SENS

SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS, TR SH





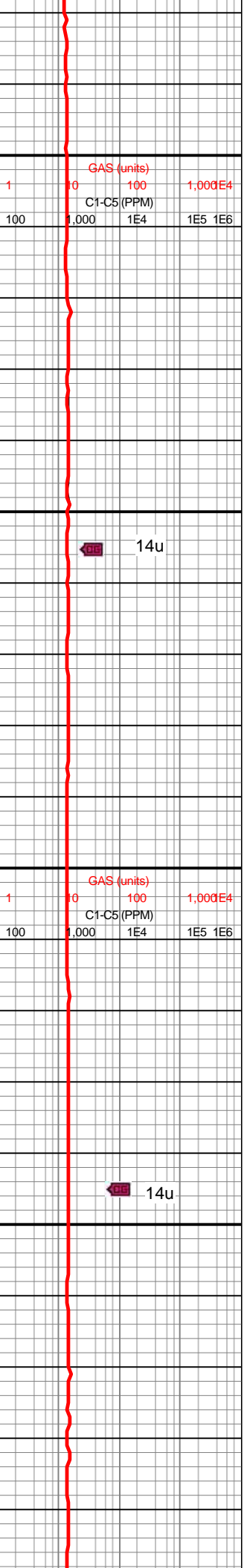
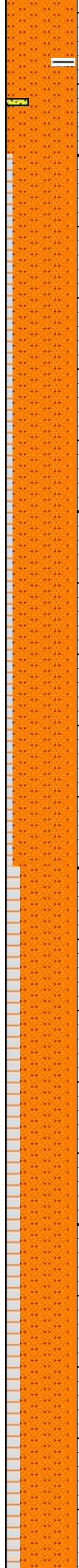
MD: 5,503'
INC: 12.78°
AZM: 11.55°
TVD: 5,412.85'
VS: -896.43'

MD: 5,592'
INC: 10.7°
AZM: 8.86°
TVD: 5,499.98'
VS: -914'

WOB: 21
RPM: 60
SPM: 202
SPP: 4,095

MW: 9.6/9.6
VIS: 48/44

MD: 5,681'
INC: 9.44°
AZM: 6.39°
TVD: 5,587.61'
VS: -929.25'

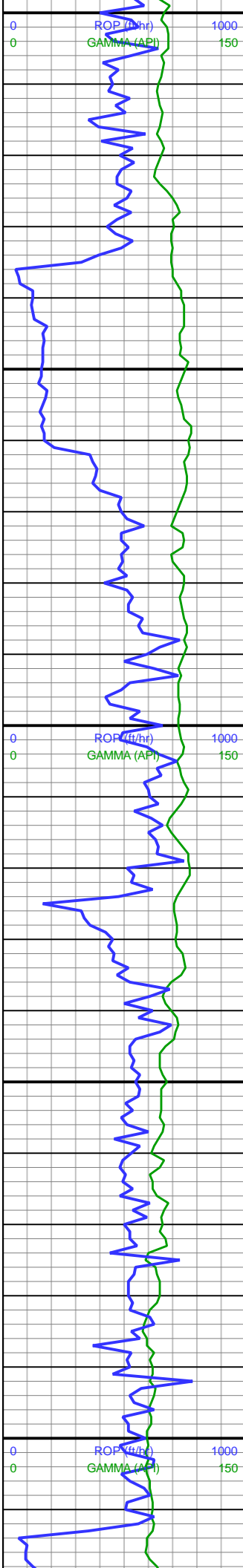


SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS, TR SH,
TR SS

SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS, TR SH

SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS, TR SH,





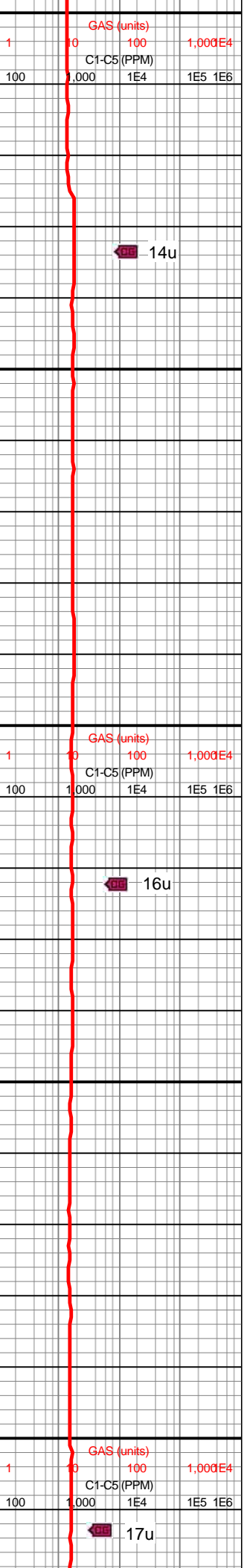
5,700
5,710
5,720
5,730
5,740
5,750
5,760
5,770
5,780
5,790
5,800
5,810
5,820
5,830
5,840
5,850
5,860
5,870
5,880
5,890
5,900
5,910

MD: 5,770'
INC: 11.41°
AZM: 10°
TVD: 5,675.14'
VS: -945'

WOB: 19
RPM: 60
SPM: 202
SPP: 4,049

MW: 9.7/9.6
VIS: 47/44

MD: 5,860'
INC: 9.12°
AZM: 7.81°
TVD: 5,763.69'
VS: -960.64'



TR SS

14u

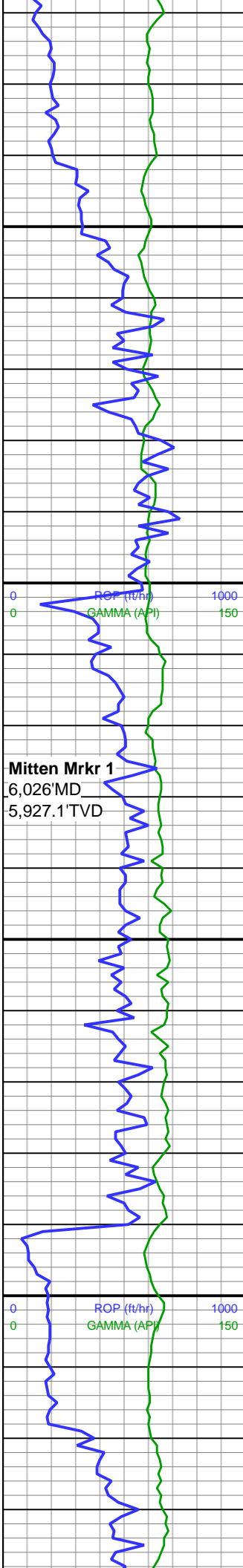
16u

17u

SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS; SLTSH:
GY, GRTTY TEX, BLKY,
CALC

SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS; SLTSH:





5,920
5,930
5,940
5,950
5,960
5,970
5,980
5,990
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

MD: 5,949'
INC: 10.82°
AZM: 16.53°
TVD: 5,851.35'
VS: -975.39'

WOB: 20
RPM: 55
SPM: 202
SPP: 4,095

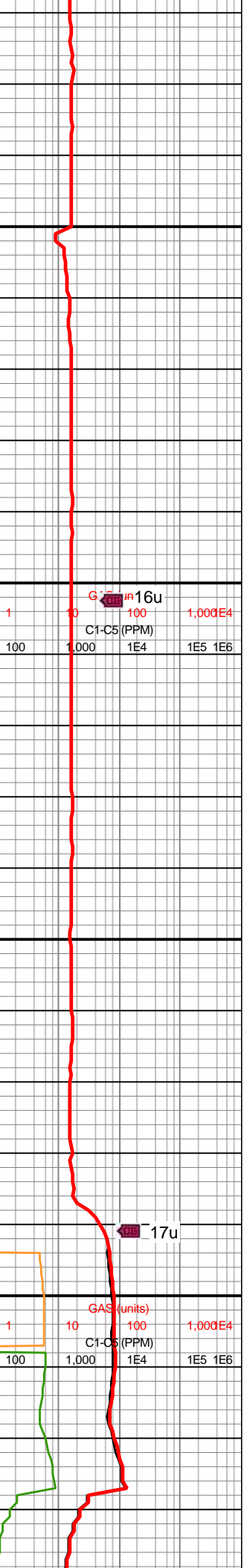
Mitten Mrkr 1
6,026'MD
5,927.1'TVD



MD: 6,038'
INC: 8.99°
AZM: 14.05°
TVD: 5,939.02'
VS: -989.86'

MW: 9.7/9.6
VIS: 47/44

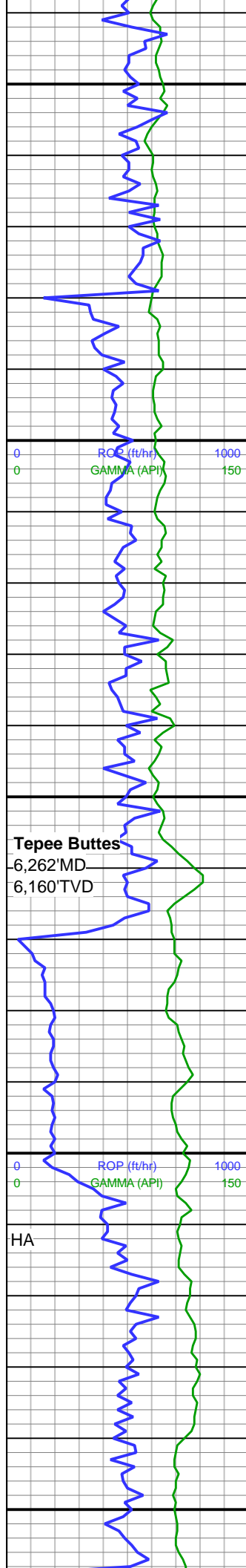
MD: 6,127'
INC: 11.15°
AZM: 9.89°
TVD: 6,026.64'
VS: -1,004.85'



CALC, SL H2O SENS; SLTSH:
GY, GRTTY TEX, BLKY,
CALC

SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS; SLTSH:
GY, GRTTY TEX, BLKY,
CALC





6,140
6,150
6,160
6,170
6,180
6,190
6,200
6,210
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

WOB: 20
RPM: 60
SPM: 202
SPP: 4,154

MD: 6,216'
INC: 9.82°
AZM: 6.34°
TVD: 6,114.16'
VS: -1,020.69'

MW: 9.8/9.7
VIS: 47/44

Tepee Buttes

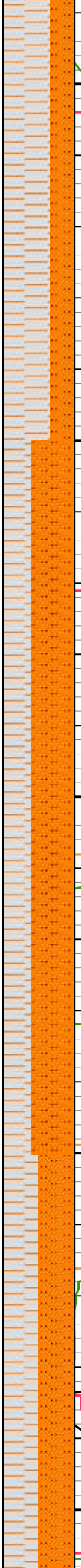
6,262'MD
6,160'TVD

HA

MD: 6,305'
INC: 12.15°
AZM: 15.01°
TVD: 6,201.53'
VS: -1,037.05'

WOB: 22
RPM: 60
SPM: 202
SPP: 4,321

MW: 9.8/9.7
VIS: 47/44



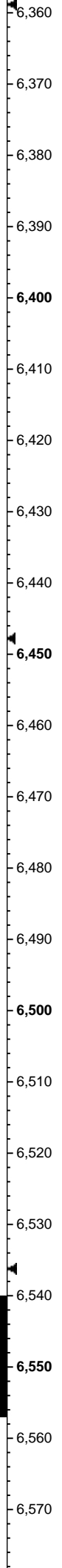
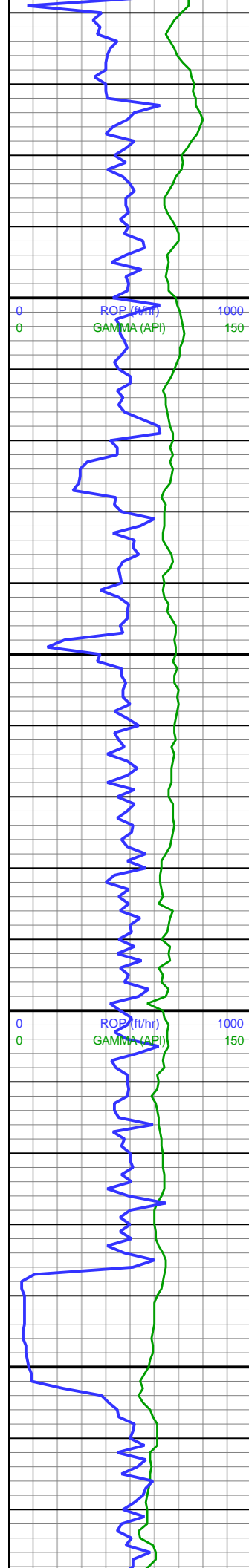
SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS; SLTSH:
GY, GRTTY TEX, BLKY,
CALC

204u

SLTST: LT GY TO GY, DK
GY IP, GRTTY TEX, DL
LSTR, FRM TO HRD, SB
BLKY TO BLKY, AMOR, SB
FISS TO FISS, V SLTY,
CALC, SL H2O SENS; SLTSH:
GY, GRTTY TEX, BLKY,
CALC

264u

BG232u



MD: 6,394'
INC: 10.65°
AZM: 12.65°
TVD: 6,288.77'
VS: -1,053.81'

WOB: 21
RPM: 60
SPM: 202
SPP: 4,275

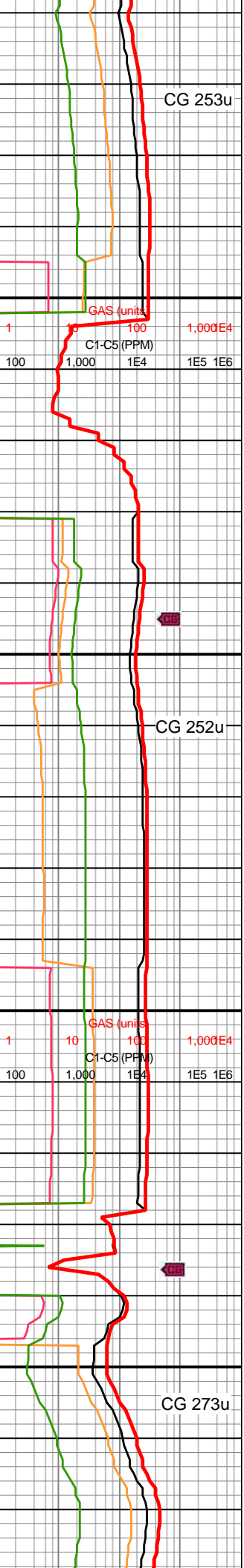
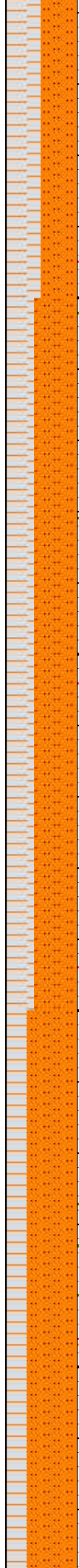
MW: 9.9+/10.3
VIS: 47/45

MD: 6,483'
INC: 9.31°
AZM: 7.56°
TVD: 6,376.42'
VS: -1,068.77'

WOB: 22
RPM: 60
SPM: 202
SPP: 4,340

MW: 10.1/10
VIS: 47/45

MD: 6,572'
INC: 10.47°
AZM: 4.06°
TVD: 6,464.1'
VS: -1,083.85'



CG 253u

SLTST: LT GY, MOD GY, DK GY IP, FRM, MED HD, HD IP, FRI IP, V F SST, SH, HI CALC. SH: DK GY, BLK GY, FRM, BRIT, BLKY,SB BLKY, SB FISS IP, CALC, SLTY,

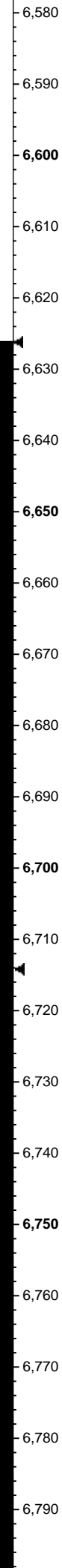
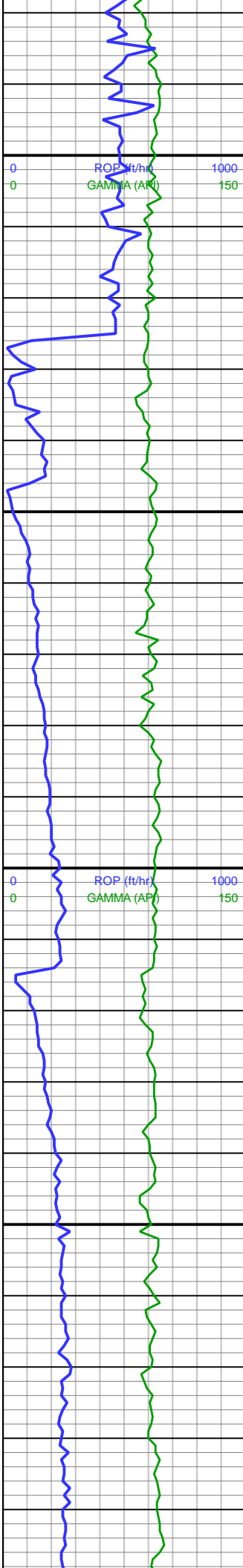
CG 252u

SLTST: LT GY, MOD GY, DK GY IP, FRM, MED HD, HD IP, FRI IP, V F SST, SH, HI CALC. SH: DK GY, BLK GY, FRM, BRIT, BLKY,SB BLKY, SB FISS IP, CALC, SLTY,

CG 273u

SLTST: LT GY, MOD GY, DK GY IP, FRM, MED HD, HD IP, FRI IP, V F SST, SH, HI CALC. SH: DK GY, BLK GY, FRM, BRIT, BLKY,SB BLKY, SB FISS IP, CALC, SLTY,





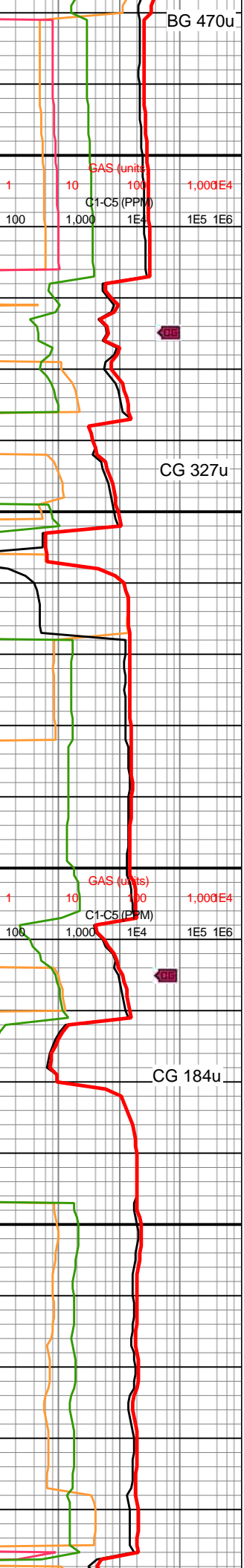
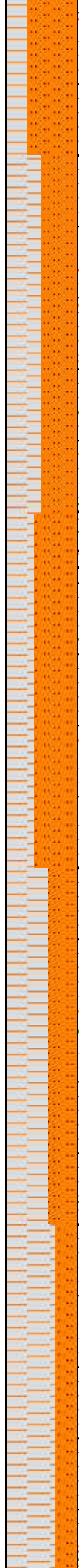
WOB: 23
RPM: 60
SPM: 202
SPP: 4,380

MW: 10.1/10
VIS: 47/45

MD: 6,662'
INC: 6.78°
AZM: 10.1°
TVD: 6,553.07'
VS: -1,097.12'

WOB: 22
RPM: 0
SPM: 202
SPP: 3,510

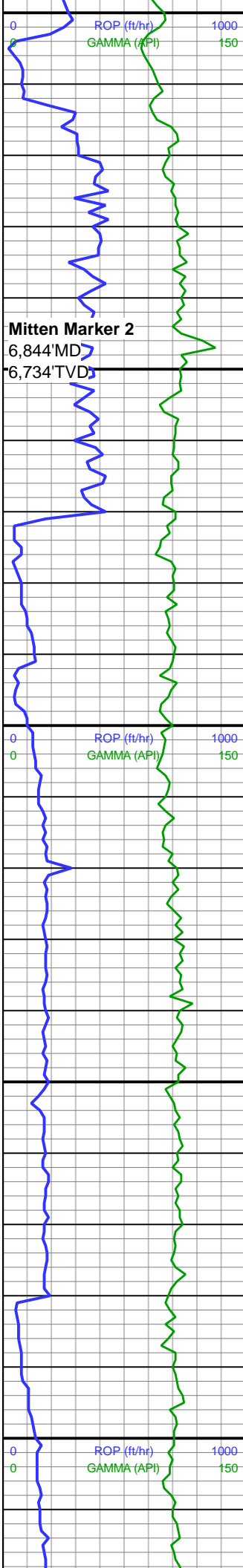
MW: 9.9+/10
VIS: 46/44
MD: 6,751'
INC: 4.25°
AZM: 182.83°
TVD: 6,641.91'
VS: -1,098.95'



SLTST: GY, MOD GY, OCC
LT GY, DK GY IP, FRM, MED
HD, HD IP, FRI IP, V F SST,
SH, HI CALC.
SH: DK GY, FRM, BRIT,
BLKY,SB BLKY, SB PLTY, SB
FISS IP, CALC, SLTY,

SH: DK GY, FRM, BRIT,
BLKY,SB BLKY, SB PLTY, SB
FISS IP, CALC, SLTY.
SLTST: GY, MOD GY, OCC
LT GY, DK GY IP, FRM, MED
HD, HD IP, FRI IP, V F SST,
SH, CALC.





Mitten Marker 2
6,844'MD
6,734'TVD

WOB: 23
RPM: 0
SPM: 202
SPP: 3,290

MD: 6,840'
INC: 4.42°
AZM: 244.18°
TVD: 6,730.7'
VS: -1,094.37'

MW: 9.9+/9.9
VIS: 45/43

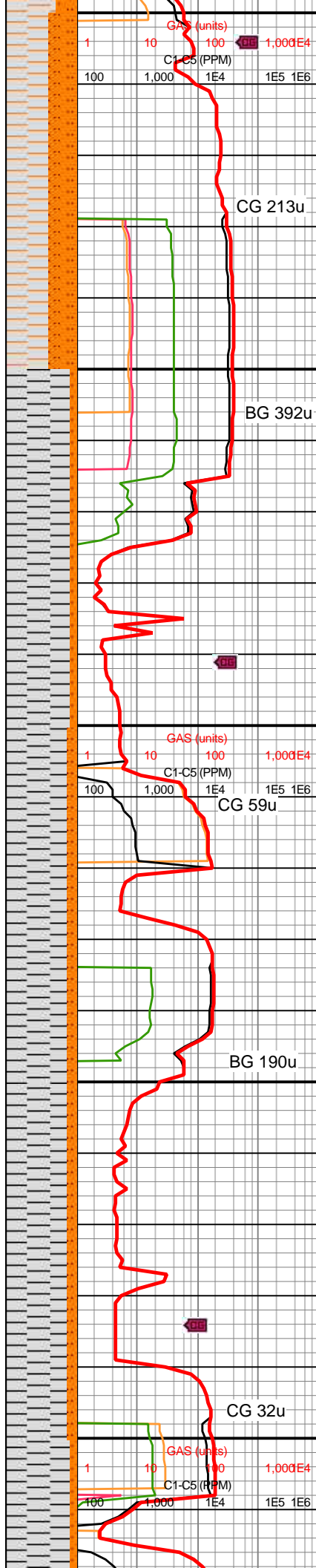
WOB: 14
RPM: 0
SPM: 202
SPP: 3,253

MD: 6,929'
INC: 11.15°
AZM: 239.26°
TVD: 6,818.83'
VS: -1,089.16'

MW: 9.9+/10
VIS: 46/44

WOB: 15
RPM: 0
SPM: 202
SPP: 3,420

MD: 7,018'
INC: 18.64°



CG 213u

BG 392u

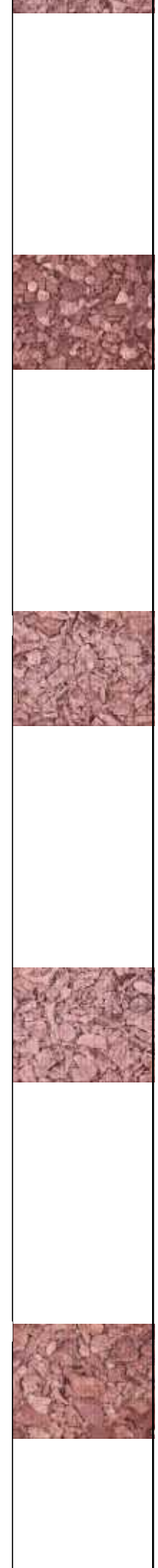
CG 59u

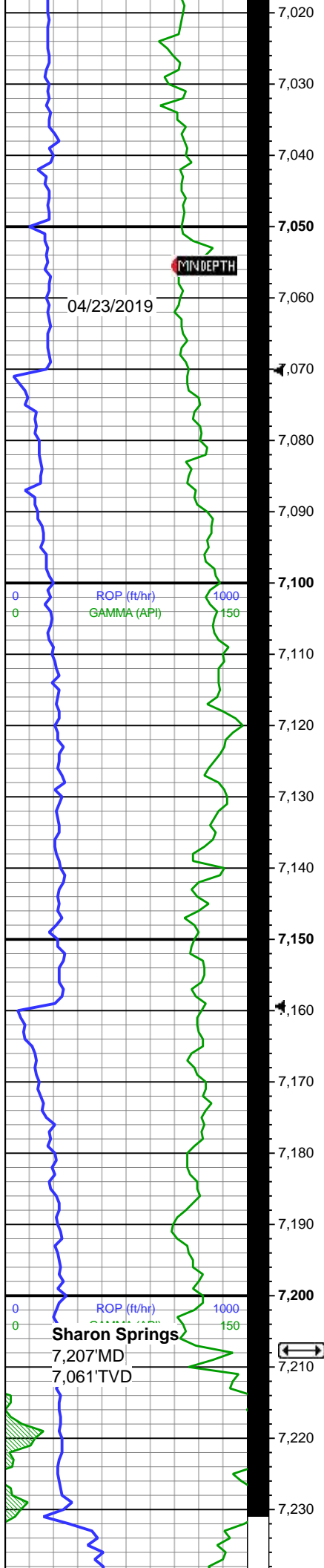
BG 190u

CG 32u

SH: DK GY, BLK GY, FRM, MED HD, BLKY, SB BLKY, SB PLTY, SB FISS IP, CALC, SLTY.
SLTST: GY, MOD GY, OCC LT GY, DK GY IP, FRM, MED HD, HD IP, FRI IP, V F SST, SH, CALC.

SH: DK GY, BLK GY, FRM, MED HD, BLKY, SB BLKY, SB PLTY, SB FISS IP, CALC, SLTY.
SLTST: GY, MOD GY, OCC LT GY, DK GY IP, FRM, MED HD, HD IP, FRI IP, V F SST, SH, CALC.





AZM: 223.69°
TVD: 6,904.81'
VS: -1,075.57'

MW: 10/9.9+
VIS: 45/42

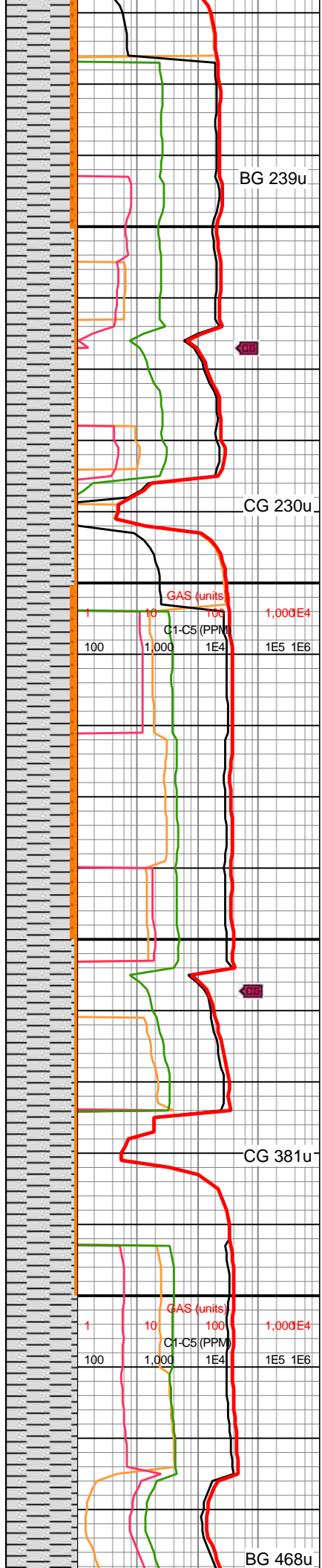
WOB: 17
RPM: 0
SPM: 202
SPP: 3,480

MD: 7,107'
INC: 24.49°
AZM: 197.63°
TVD: 6,987.73'
VS: -1,048.66'

MW: 10/10
VIS: 46/44

MD: 7,196'
INC: 31.01°
AZM: 180.25°
TVD: 7,066.58'
VS: -1,008.49'

WOB: 16
RPM: 0
SPM: 202
SPP: 3,780



BG 239u

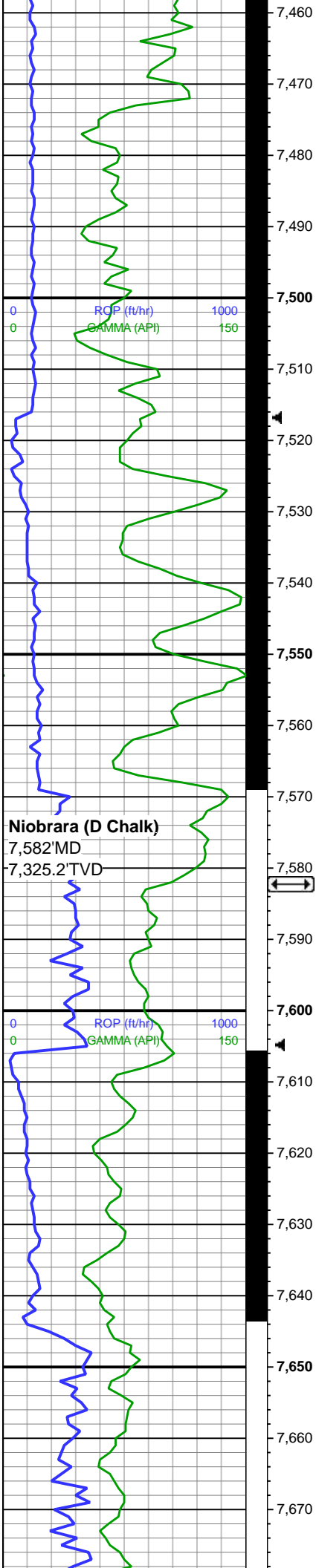
CG 230u

CG 381u

BG 468u

SH: DK GY, BLK GY, BLK, FRM, MED HD, BLKY, SB BLKY, SB PLTY, SB FISS IP, CALC, SLTY, CARB. W/TR SLTST

SH: DK GY, BLK GY, BLK, FRM, MED HD, BLKY, SB BLKY, SB PLTY, SB FISS IP, CALC, SLTY, CARB. W/TR SLTST



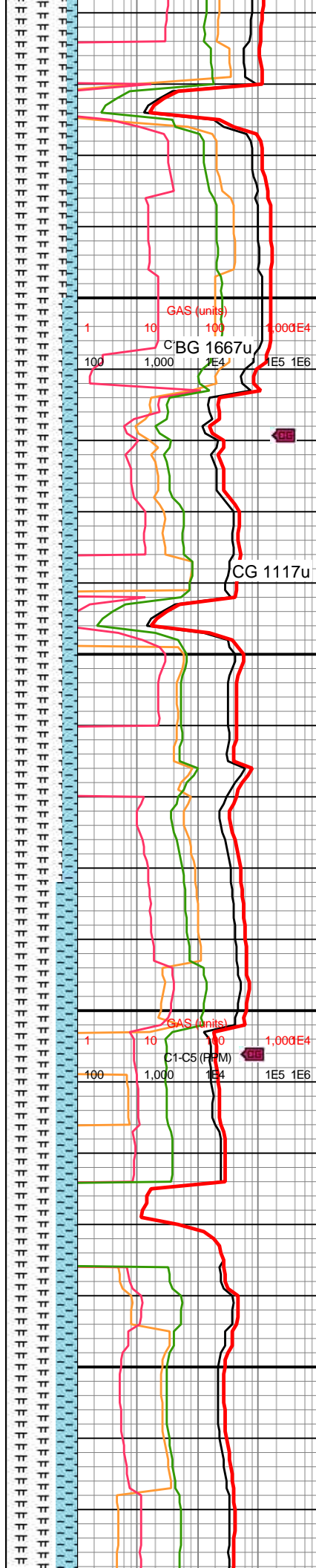
MD: 7,463'
INC: 52.19°
AZM: 172.37°
TVD: 7,265.32'
VS: -832.49'

WOB: 25
RPM: 0
SPM: 202
SPP: 3,500

Niobrara (D Chalk)
7,582'MD
7,325.2'TVD

MD: 7,552'
INC: 63.69°
AZM: 171.97°
TVD: 7,312.48'
VS: -757.39'

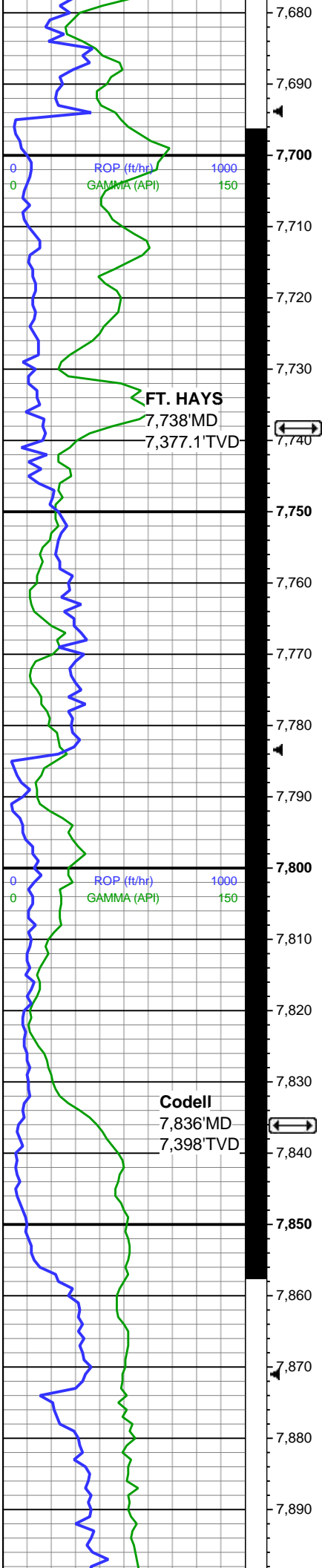
MD: 7,641'
INC: 70.26°
AZM: 171.68°
TVD: 7,347.28'
VS: -675.78'



MRLST: DK GY, MED GY, V
DK GN, MED HD , FRM, HD
IP, CRPTXL SL SLTY IP.
CHK: CRM, LT TN, OFFWHT,
MED HD, CRPTXL, MIC XL,
CHK LS, SLT, CALC

MRLST: DK GY, MED GY, V
DK GN, MED HD , FRM, HD
IP, CRPTXL SL SLTY IP.
CHK: CRM, LT TN, OFFWHT,
MED HD, CRPTXL, MIC XL,
CHK LS, SLT, CALC





WOB: 16
RPM: 0
SPM: 202
SPP: 3,974

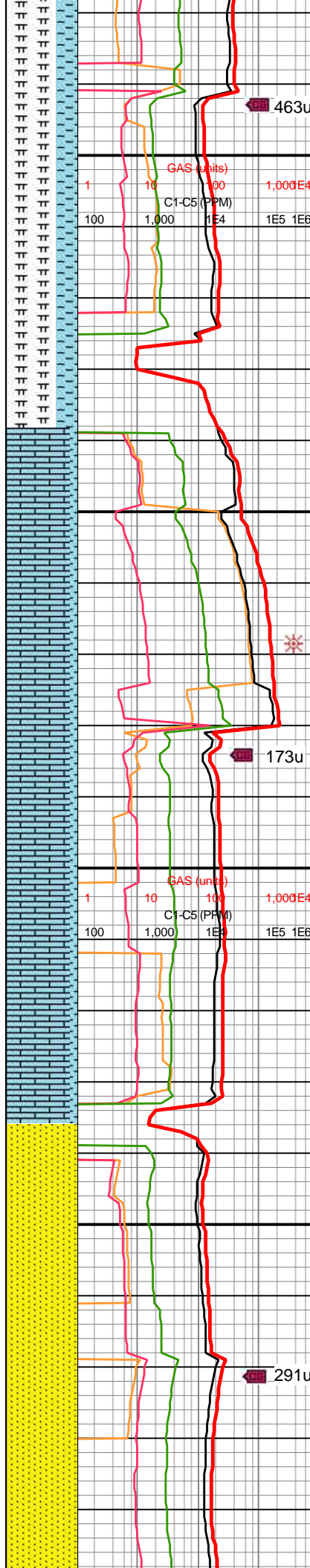
MD: 7,730'
INC: 73.56°
AZM: 175.4°
TVD: 7,374.92'
VS: -591.31'

MW: 10+/-10.1
VIS: 45/42

MD: 7,820'
INC: 80.15°
AZM: 175.57°
TVD: 7,407.42'
VS: -452.15'

Codell
7,836' MD
7,398' TVD

WOB: 16
RPM: 20



463u

GAS (units)
C1-C5 (PPM)
1 10 100 1,000 1E4 1E5 1E6

173u

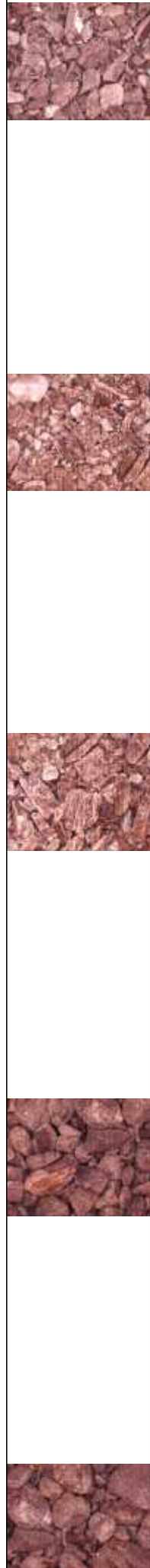
GAS (units)
C1-C5 (PPM)
1 10 100 1,000 1E4 1E5 1E6

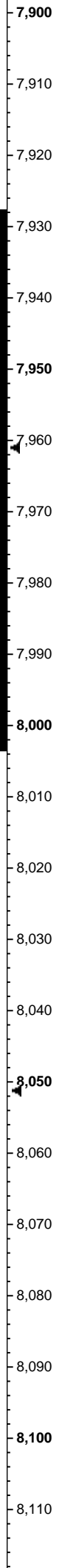
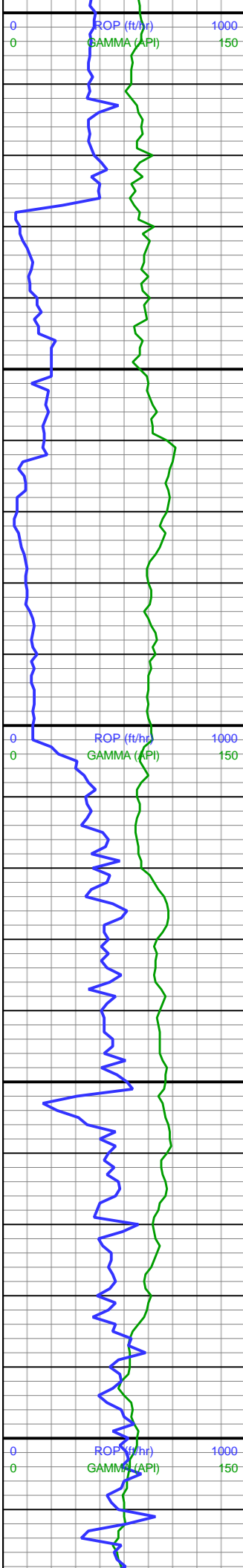
291u

MRLST: DK GY, MED GY, V
DK GN, MED HD, FRM, HD
IP, CRPTXL SL SLTY IP.
CHK: CRM, LT TN, OFFWHT,
MED HD, CRPTXL, MIC XL,
CHK LS, SLT, CALC

LS: LT GY TO GY, DK GY IP,
TN IP, MOTT, MASS, DNS,
AMOR, M SUC, V SLTY,
CALC

SS: LT GY TO GY, DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR





RPM: 30
SPM: 202
SPP: 4,285

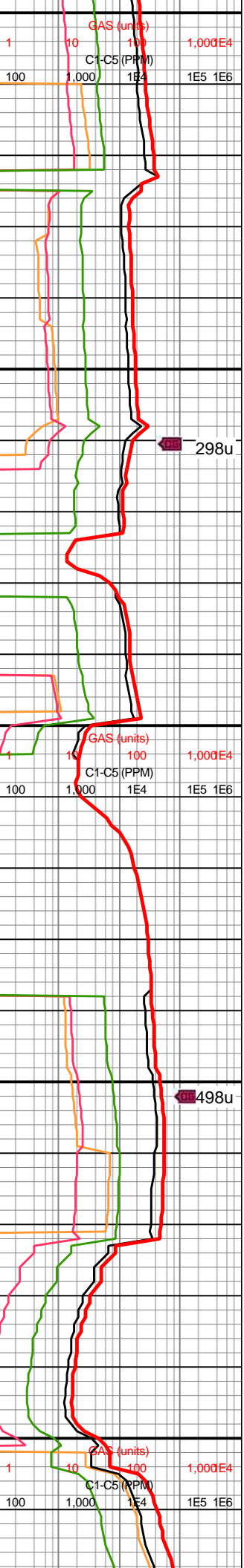
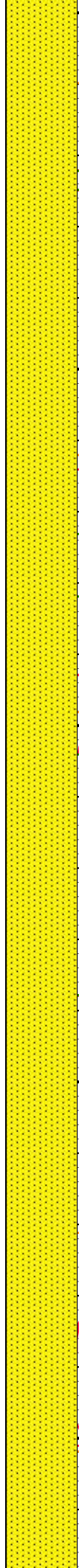
MD: 7,909'
INC: 83.84°
AZM: 173.45°
TVD: 7,407.77'
VS: -415.66'

MW: 10.2/10.1
VIS: 44/42

MD: 7,998'
INC: 89.42°
AZM: 180.02°
TVD: 7,413'
VS: -326.9'

MD: 8,087'
INC: 90.27°
AZM: 181.92°
TVD: 7,413.24'
VS: -238.2'

WOB: 22
RPM: 60
SPM: 202
SPP: 4,404



SRT, WL CONS, FRM, LMY
IP, CALC

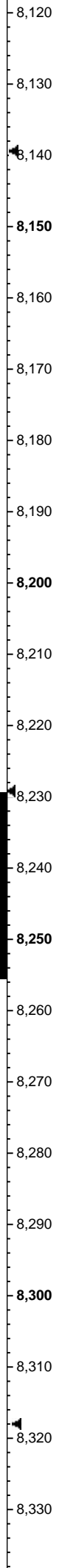
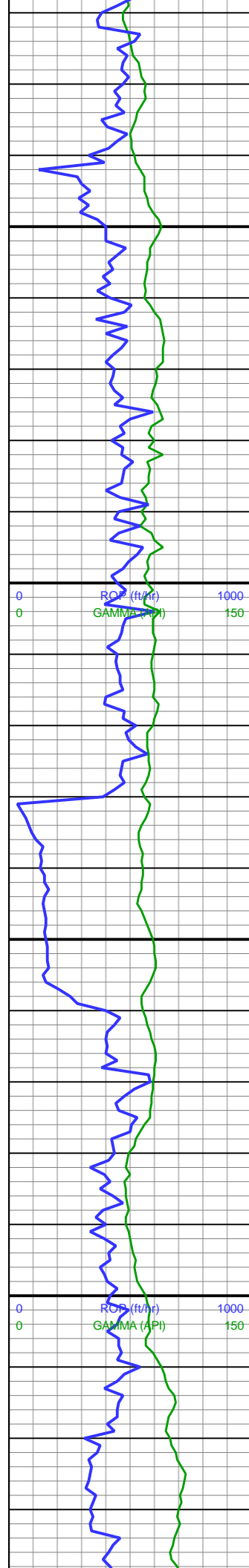
298u

SS: GY TO DK GY IP, GRTTY
TEX, VF TO F GRN, SB ANG
TO ANG, P TO FR SRT, WL
CONS, FRM, FRI IP, SL CALC

498u

SS: GY TO DK GY IP, GRTTY
TEX, VF TO F GRN, SB ANG
TO ANG, P TO FR SRT, WL
CONS, FRM, FRI IP, SL CALC



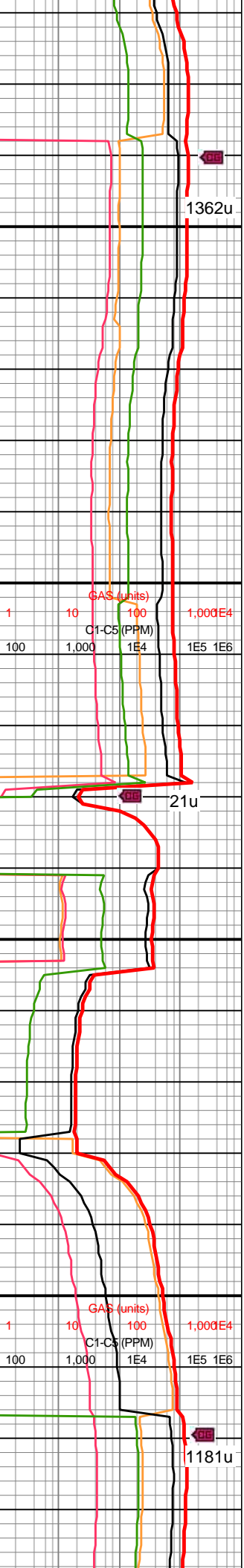
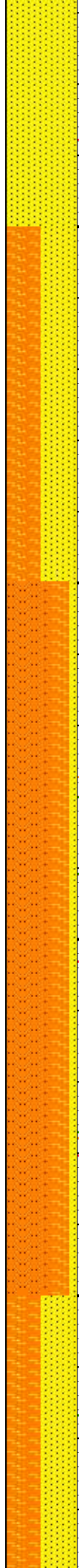


MW: 10.2/10.2
VIS: 45/42

MD: 8,176'
INC: 90.41°
AZM: 182.44°
TVD: 7,412.71'
VS: -149.66'

MD: 8,265'
INC: 88.11°
AZM: 178.3°
TVD: 7,413.86'
VS: -60.91'

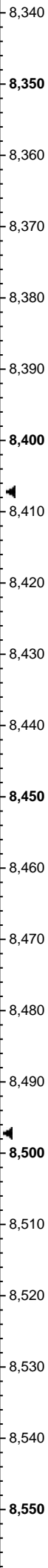
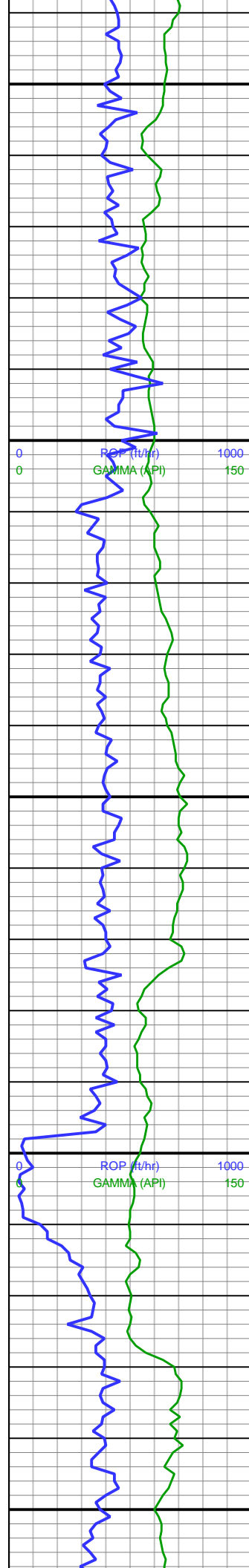
WOB: 22
RPM: 55
SPM: 202
SPP: 4,404



SS: GY TO DK GY IP, GRTTY
TEX, VF TO F GRN, SB ANG
TO ANG, P TO FR SRT, WL
CONS, FRM, FRI IP, N CALC,
SNDYSLT: DR GY, GRTTY
TEX, SB WXY LSTR, AMOR,
N CALC

SS: GY TO DK GY IP, GRTTY
TEX, VF TO F GRN, SB ANG
TO ANG, P TO FR SRT, WL
CONS, FRM, FRI IP, SL CALC,
SNDYSLT: DR GY, GRTTY
TEX, SB WXY LSTR, SB
FISS, AMOR, SL CALC





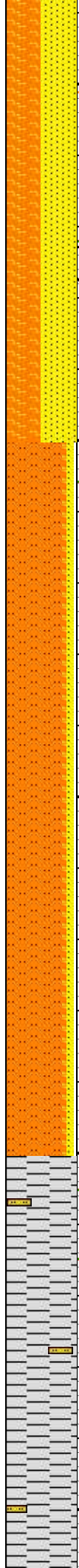
MW: 10.2/10.2
VIS: 45/42
MD: 8,354'
INC: 88.14°
AZM: 178.26°
TVD: 7,416.78'
VS: 27.99'

MD: 8,443'
INC: 87.88°
AZM: 177.69°
TVD: 7,419.87'
VS: 116.9'

WOB: 21
RPM: 55
SPM: 202
SPP: 4,145

MD: 8,532'
INC: 89.07°
AZM: 179°
TVD: 7,422.24'
VS: 205.81'

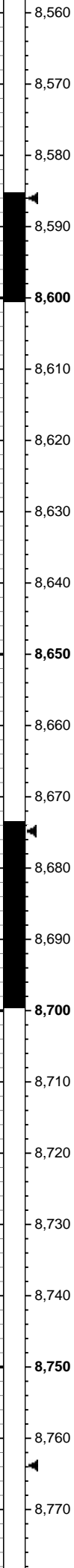
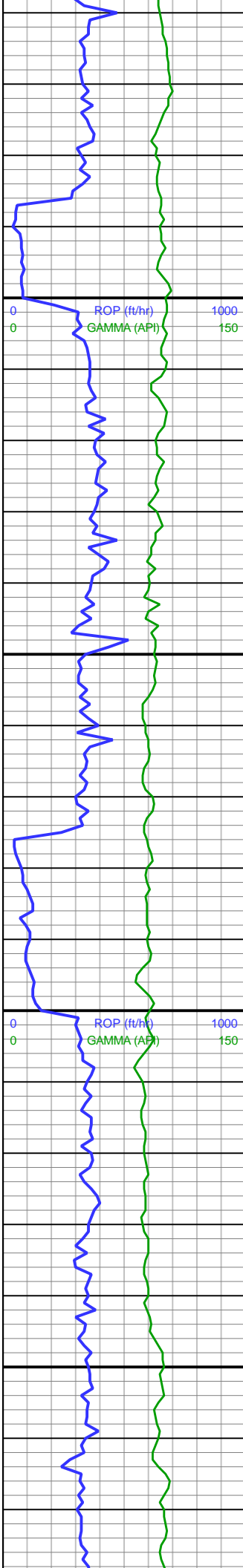
MW: 10.2/10.2
VIS: 44/42



SS: GY TO DK GY IP, GRTTY TEX, VF TO F GRN, SB ANG TO ANG, SB RND IP, P TO FR SRT, FR CONS, FRM, FRI IP, SL CALC, SNDYSLT: DR GY, GRTTY TEX, SB WXY LSTR, SB FISS, AMOR, SL CALC

SS: GY TO DK GY, BLK, GRTTY TEX, VF TO F GRN, SB ANG TO ANG, SB RND IP, P TO FR SRT, FR CONS, FRM, FRI, N CALC, SNDYSLT: DK GY, BLK, GRTTY TEX, SB RTHY TO SB WXY LSTR, SB FISS, AMOR, N CALC



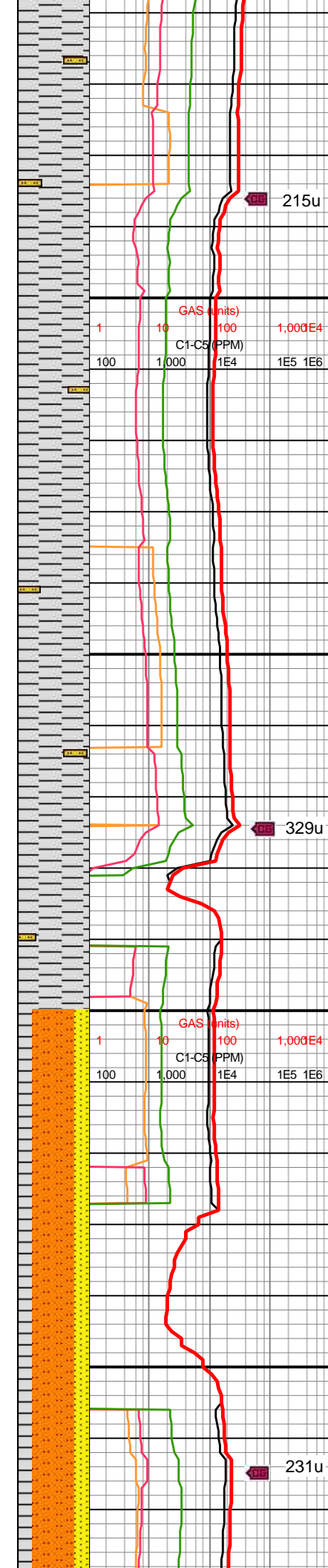


MD: 8,621'
INC: 90.16°
AZM: 176.9°
TVD: 7,422.83'
VS: 294.77'

WOB: 36
RPM: 0
SPM: 202
SPP: 3,654

MD: 8,710'
INC: 93.24°
AZM: 177.33°
TVD: 7,420.19'
VS: 383.71'

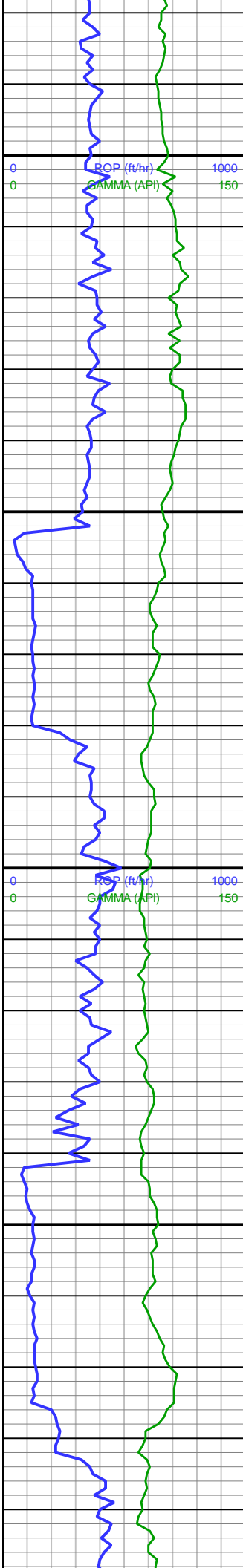
MW: 10.2/10.2+
VIS: 44/42



SH: DK GY TO BLK, SM TEX,
WXY LSTR, SFT TO FRM, SB
BLKY, AMOR, SB FISS IP,
SLTY IP, CALC; SLTST: DK
GY TO BLK, GRTTY TEX,
RTHY TO SB WXY LSTR,
FRM, SB BLKY, FISS IP,
SLTY, CALC, SL H2O SENS

SH: DK GY TO BLK, SM TEX,
WXY LSTR, SFT TO FRM, SB
BLKY, AMOR, SB FISS IP,
SLTY IP, CALC; SLTST: DK
GY TO BLK, GRTTY TEX,
RTHY TO SB WXY LSTR,
FRM, SB BLKY, FISS IP,
SLTY, CALC, SL H2O SENS





8,780
8,790
8,800
8,810
8,820
8,830
8,840
8,850
8,860
8,870
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
8,990

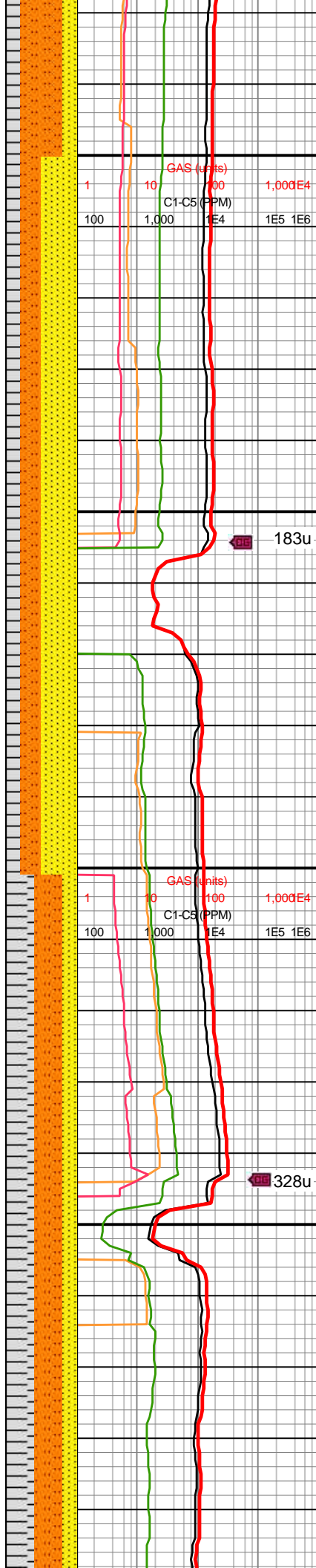
MD: 8,799'
INC: 93.98°
AZM: 177.27°
TVD: 7,414.59'
VS: 472.52'

MD: 8,888'
INC: 94.8°
AZM: 179.83°
TVD: 7,407.78'
VS: 561.19'

WOB: 20
RPM: 0
SPM: 202
SPP: 3,566

MW: 10.2/10.2+
VIS: 44/42

MD: 8,977'
INC: 93.66°
AZM: 183.18°
TVD: 7,401.21'
VS: 649.57'

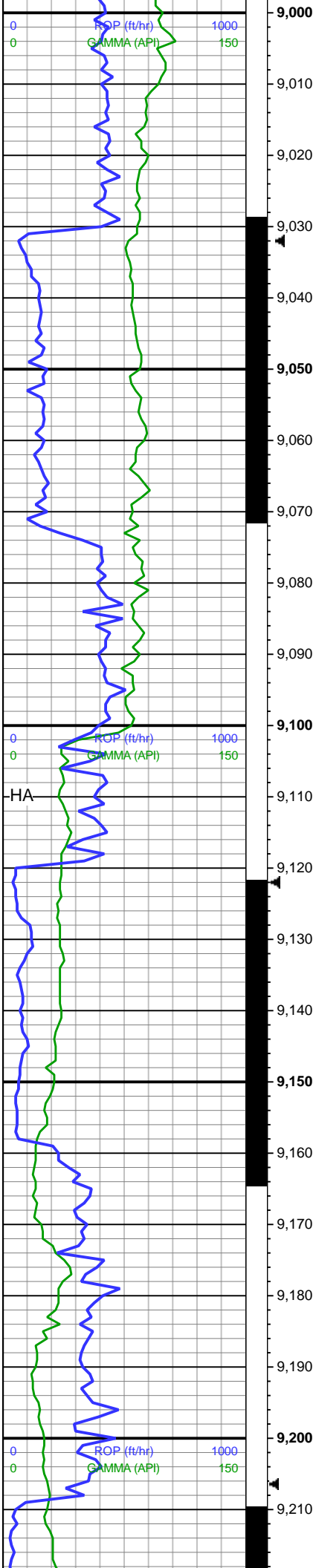


SLTST: LT TO DK GY,
GRTTY TEX, DL TO RTHY
LSTR, FRM, SB BLKY, FISS
IP, SLTY, CALC, TR SS

SS: GY TO DK GY IP, GRTTY
TEX, VF TO F GRN, SB ANG
TO ANG, P TO FR SRT, WL
CONS, FRM, FRI IP, SL CALC;
SLTST: LT TO DK GY,
GRTTY TEX, DL TO RTHY
LSTR, FRM, SB BLKY, FISS
IP, SLTY, SL CALC, TR SH

SH: DK GY TO BLK, SM TO
SL GRTTY, TEX, WXY LSTR,
SFT TO FRM, SB BLKY,
AMOR, SB FISS IP, SLTY IP,
CALC; SLTST: LT TO DK GY,
GRTTY TEX, DL TO RTHY
LSTR, FRM, SB BLKY, FISS
IP, SLTY, SL CALC





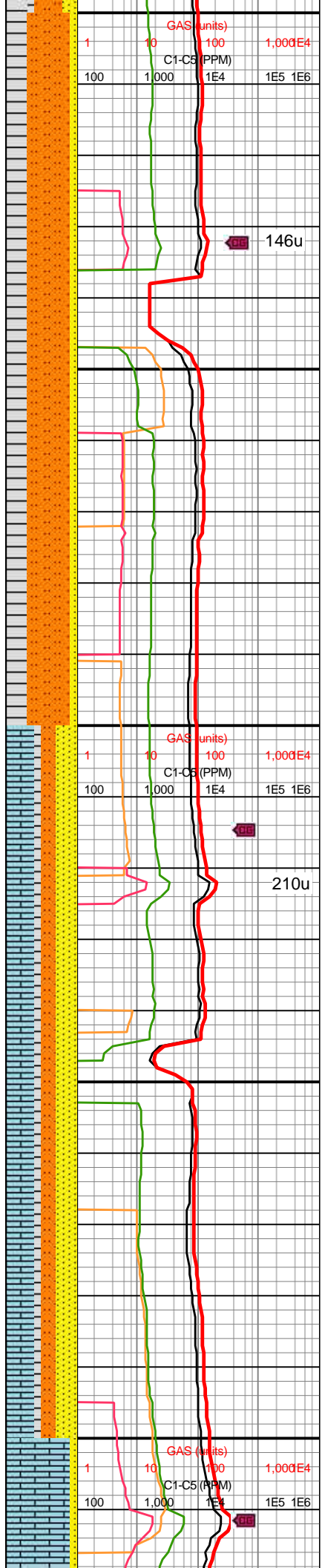
MD: 9,067'
INC: 91.24°
AZM: 186.7°
TVD: 7,397.36'
VS: 738.46'

WOB: 48
RPM: 0
SPM: 202
SPP: 3,663

MD: 9,156'
INC: 88.07°
AZM: 188.24°
TVD: 7,397.9'
VS: 825.77'

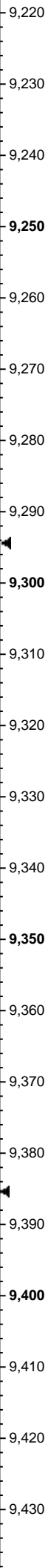
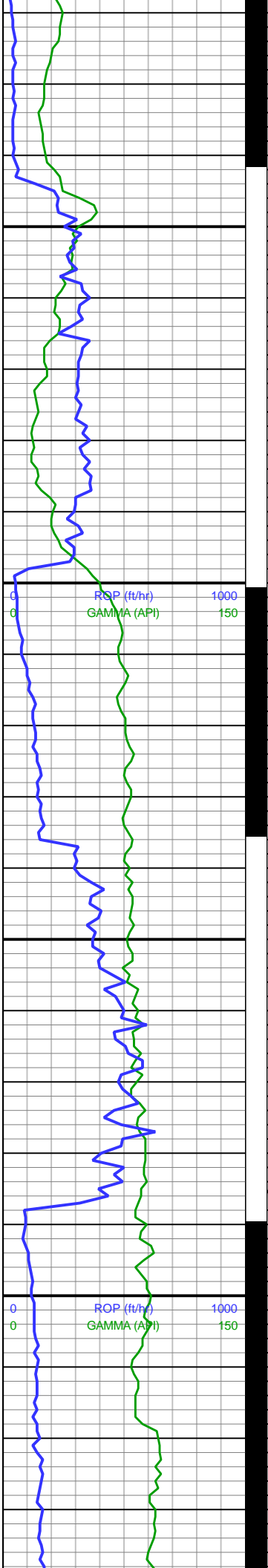
MW: 10.2/10.2
VIS: 45/43

WOB: 30
RPM: 57
SPM: 202
SPP: 4,570



SH: DK GY TO BLK, SM TO
SL GRTTY, TEX, WXY LSTR,
SFT TO FRM, SB BLKY,
AMOR, SB FISS IP, SLTY IP,
CALC; SLTST: LT TO DK GY,
GRTTY TEX, DL TO RTHY
LSTR, FRM, SB BLKY, FISS
IP, SLTY, SL CALC

SS: LT GY, MED GY, DK TN,
DK GY IP, FRM, MED HD, FRI
IP, V F GR, F GR, SLT GR IP,
SB ANG, SB RD, ANG IP,
MOD SRT, CALC CMT, ARG,
LMY IP.



MD: 9,245'
INC: 85.36°
AZM: 186.66°
TVD: 7,403'
VS: 912.95'

MW: 10.2/10.2
VIS: 45/43

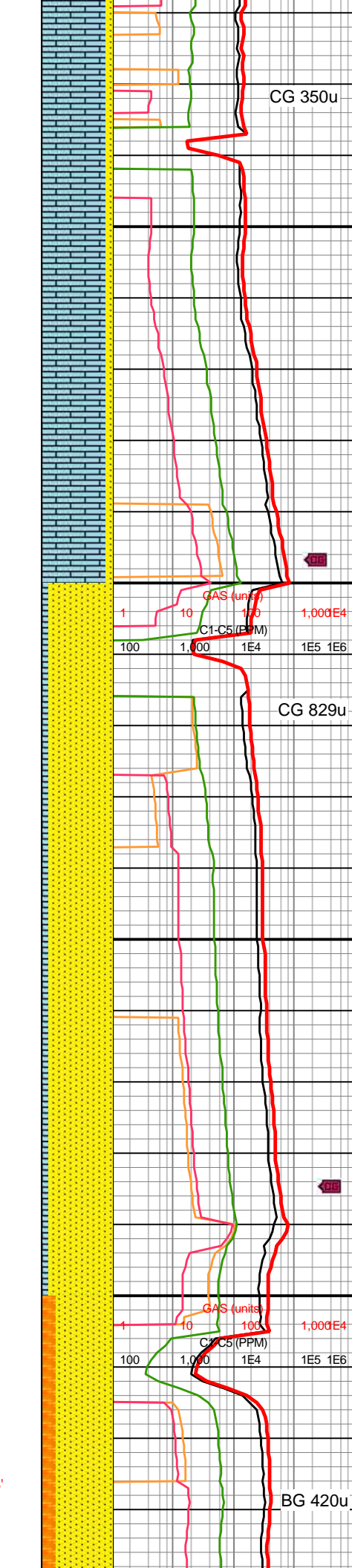
WOB: 26
RPM: 20
SPM: 202
SPP: 3,520

MD: 9,334'
INC: 84.84°
AZM: 183.04°
TVD: 7,410.6'
VS: 1,000.64'

MW: 10.2/10.2
VIS: 45/43

WOB: 20
RPM: 20
SPM: 202
SPP: 3,700

MD: 9,423'
INC: 87.39°
AZM: 179.13°
TVD: 7,416.63'
VS: 1,089.11'



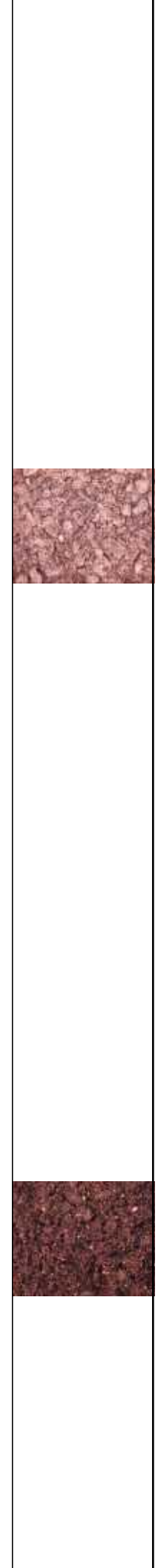
CG 350u

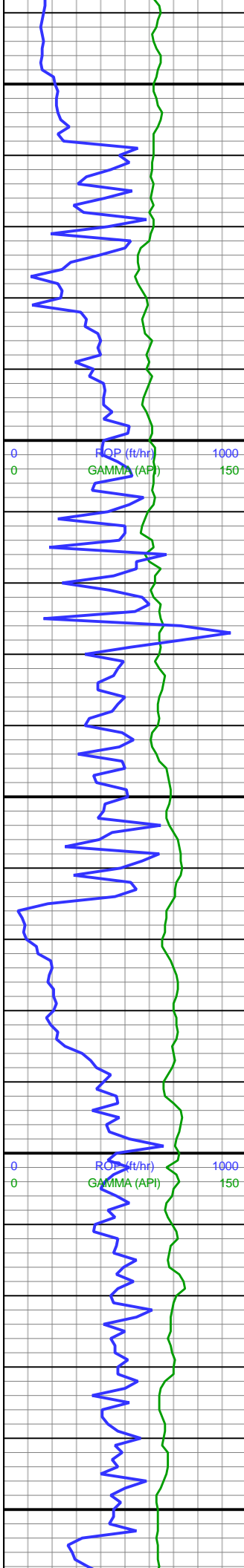
LS: LT GY, GY, TN, OFFWHT
IP, HD, MED HD, CRPTXL, V
MIC XL, ARG, SLT, NO VIS
POR.

CG 829u

SST: LT GY, MED GY, DK
TN, DK GY IP, FRM, FRI IP,
UNCONS, V F GR, F GR, SLT
GR IP, SB ANG, SB RD, ANG
IP, MOD SRT, CALC CMT IP,
ARG, LMY IP.

BG 420u





MW: 10.2/10.2
VIS: 47/44

WOB: 26
RPM: 55
SPM: 202
SPP: 4,660

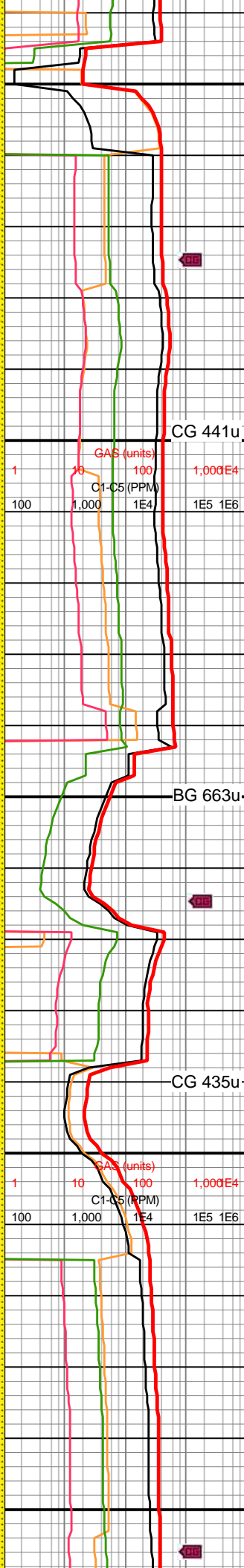
MD: 9,512'
INC: 88.45°
AZM: 176.62°
TVD: 7,419.86'
VS: 1,178.01'

MW: 10.2/10.2
VIS: 47/44

MD: 9,601'
INC: 91.12°
AZM: 176.67°
TVD: 7,420.2'
VS: 1,267'

WOB: 25
RPM: 57
SPM: 202
SPP: 4,610

MW: 10.2/10.3
VIS: 47/45



SST: LT GY, MED GY, DK
TN, DK GY IP, OFFWHT IP,
FRI, BRIT, V F GR, F GR, SLT
GR IP, SB ANG, SB RD, ANG
IP, MOD SRT, UNCONS, ARG,
CALC, P - FR INTGR POR.

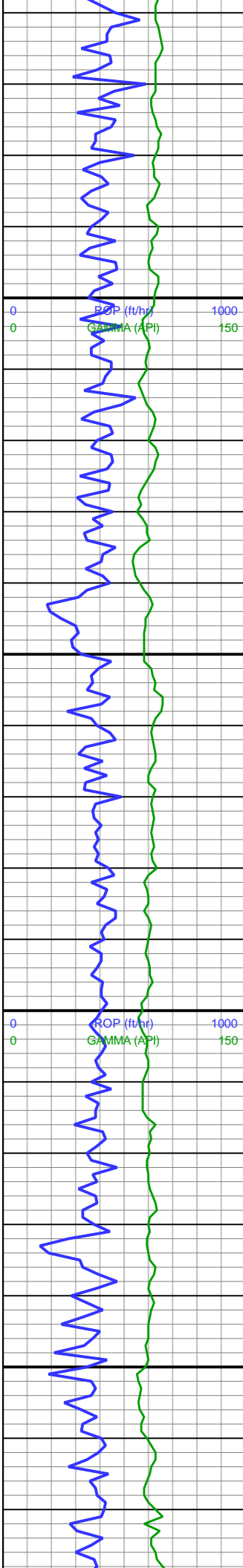
CG 441u

SLTST: MED GY, DK GY, FRI,
BRIT, SST, MOD SRT, CALC,
ARG, SH.

BG 663u

CG 435u

SST: LT GY, MED GY, DK
TN, DK GY IP, OFFWHT IP,
FRI, BRIT, V F GR, F GR, SLT
GR IP, SB ANG, SB RD, ANG
IP, MOD SRT, UNCONS, ARG,
CALC, P - FR INTGR POR.



9,660
9,670
9,680
9,690
9,700
9,710
9,720
9,730
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

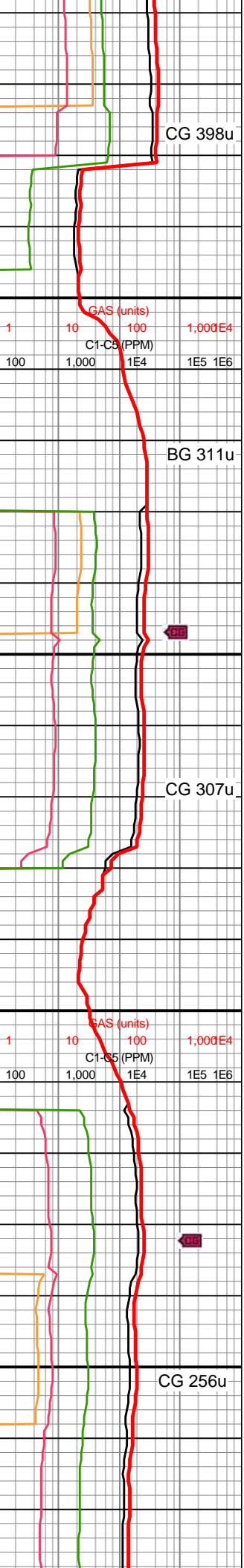
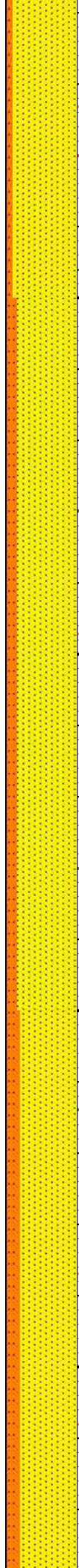
MD: 9,691'
INC: 91.09°
AZM: 176.93°
TVD: 7,418.46'
VS: 1,356.98'

MD: 9,780'
INC: 91.19°
AZM: 177.06°
TVD: 7,416.69'
VS: 1,445.96'

WOB: 24
RPM: 57
SPM: 202
SPP: 4,520

MW: 10.2/10.3
VIS: 47/45

MD: 9,869'
INC: 92.07°
AZM: 176.94°
TVD: 7,414.16'
VS: 1,534.91'

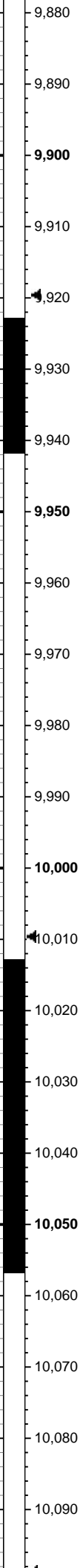
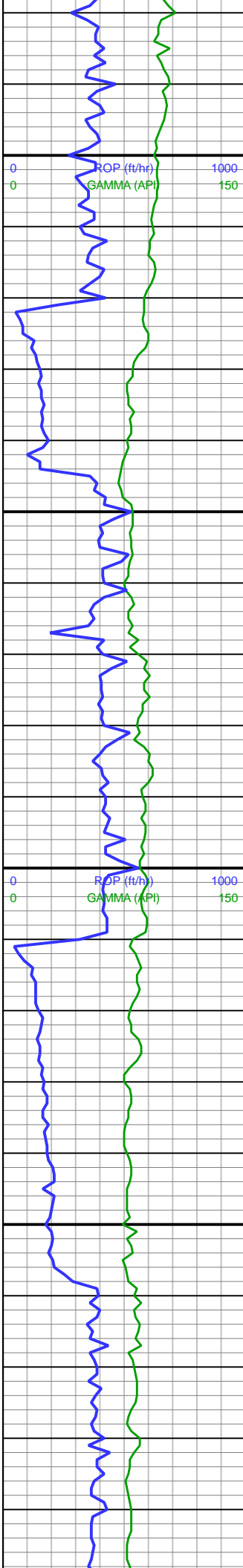


SST: LT GY, MED GY, DK TN, DK GY IP, OFFWHT IP, FRI, BRIT, V F GR, F GR, SLT GR IP, SB ANG, SB RD, ANG IP, MOD SRT, UNCONS, ARG, CALC, P - FR INTGR POR.

SLTST: MED GY, DK GY, FRI, BRIT, SST, MOD SRT, CALC, ARG, SH.

SST: LT GY, MED GY, DK TN, DK GY IP, OFFWHT IP, FRI, BRIT, V F GR, F GR, SLT GR IP, SB ANG, SB RD, ANG IP, MOD SRT, UNCONS, ARG, CALC, P - FR INTGR POR.





WOB: 40
RPM: 0
SPM: 202
SPP: 3,785

MW: 10.2/10.3
VIS: 47/45

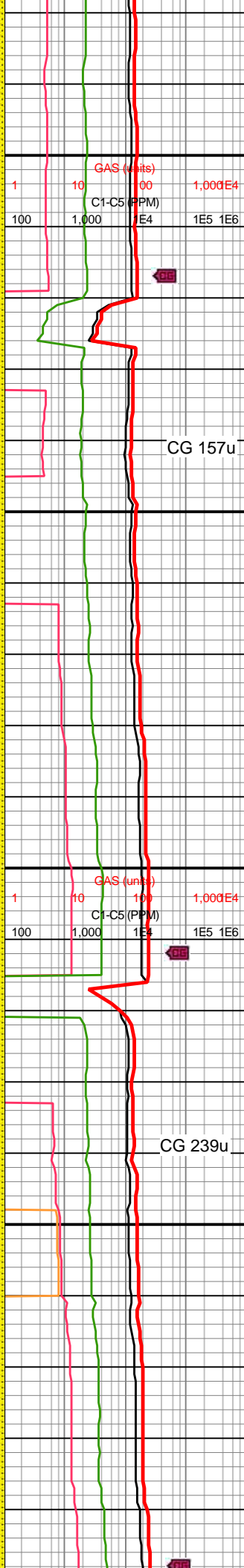
MD: 9,958'
INC: 92.76°
AZM: 179.53°
TVD: 7,410.41'
VS: 1,623.78'

WOB: 20
RPM: 56
SPM: 202
SPP: 4,500

MW: 10.2/10.3
VIS: 47/45

MD: 10,047'
INC: 90.35°
AZM: 182.41°
TVD: 7,407.99'
VS: 1,712.44'

WOB: 25
RPM: 0



LS: LT GY, GY, TN, OFFWHT IP, HD, MED HD, CRPTXL, V MIC XL, ARG, SLT, NO VIS POR.

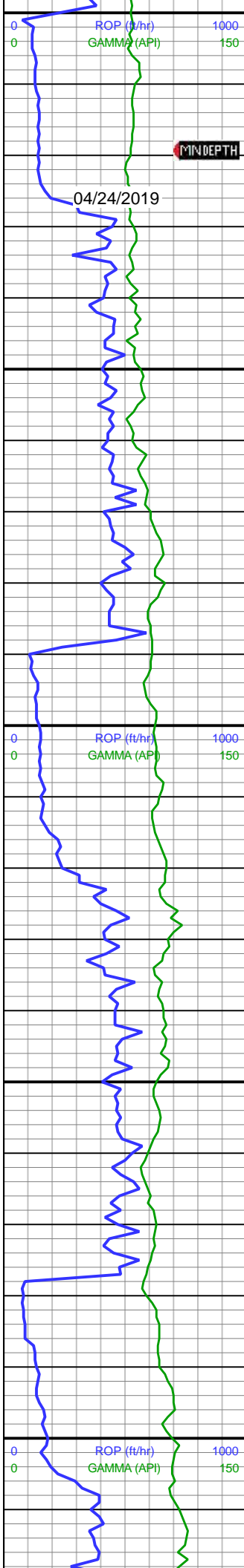
CG 157u

SST: LT GY, MED GY, DK TN, DK GY IP, OFFWHT IP, FRI, BRIT, V F GR, F GR, SLT GR IP, SB ANG, SB RD, ANG IP, MOD SRT, UNCONS, ARG, CALC, P - FR INTGR POR.

CG 239u

SST: LT GY, MED GY, DK TN, DK GY IP, OFFWHT IP,





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

SPM: 202
SPP: 3,480

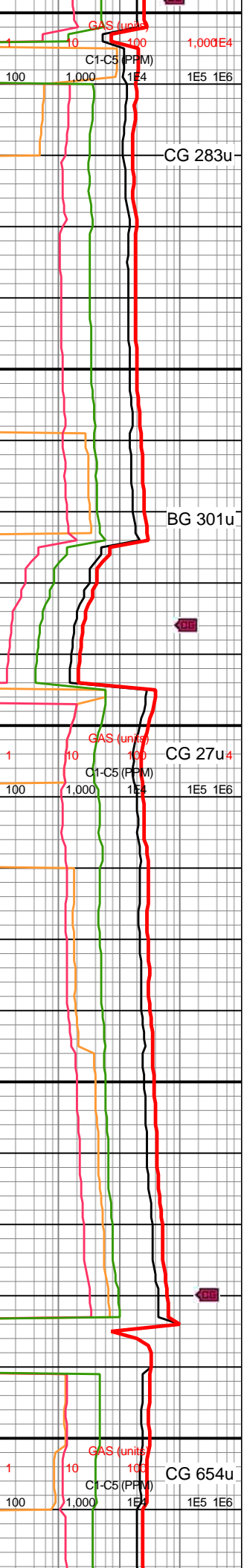
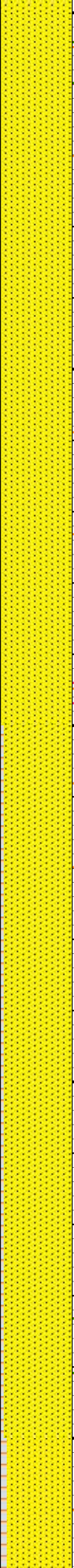
MD: 10,136'
INC: 87.82°
AZM: 184.38°
TVD: 7,409.42'
VS: 1,800.75'

MW: 10.2/10.3
VIS: 47/45

MD: 10,225'
INC: 85.34°
AZM: 182.84°
TVD: 7,414.72'
VS: 1,888.86'

WOB: 38
RPM: 0
SPM: 202
SPP: 3,890

MD: 10,314'
INC: 84.85°
AZM: 179.98°
TVD: 7,422.22'
VS: 1,900.00'

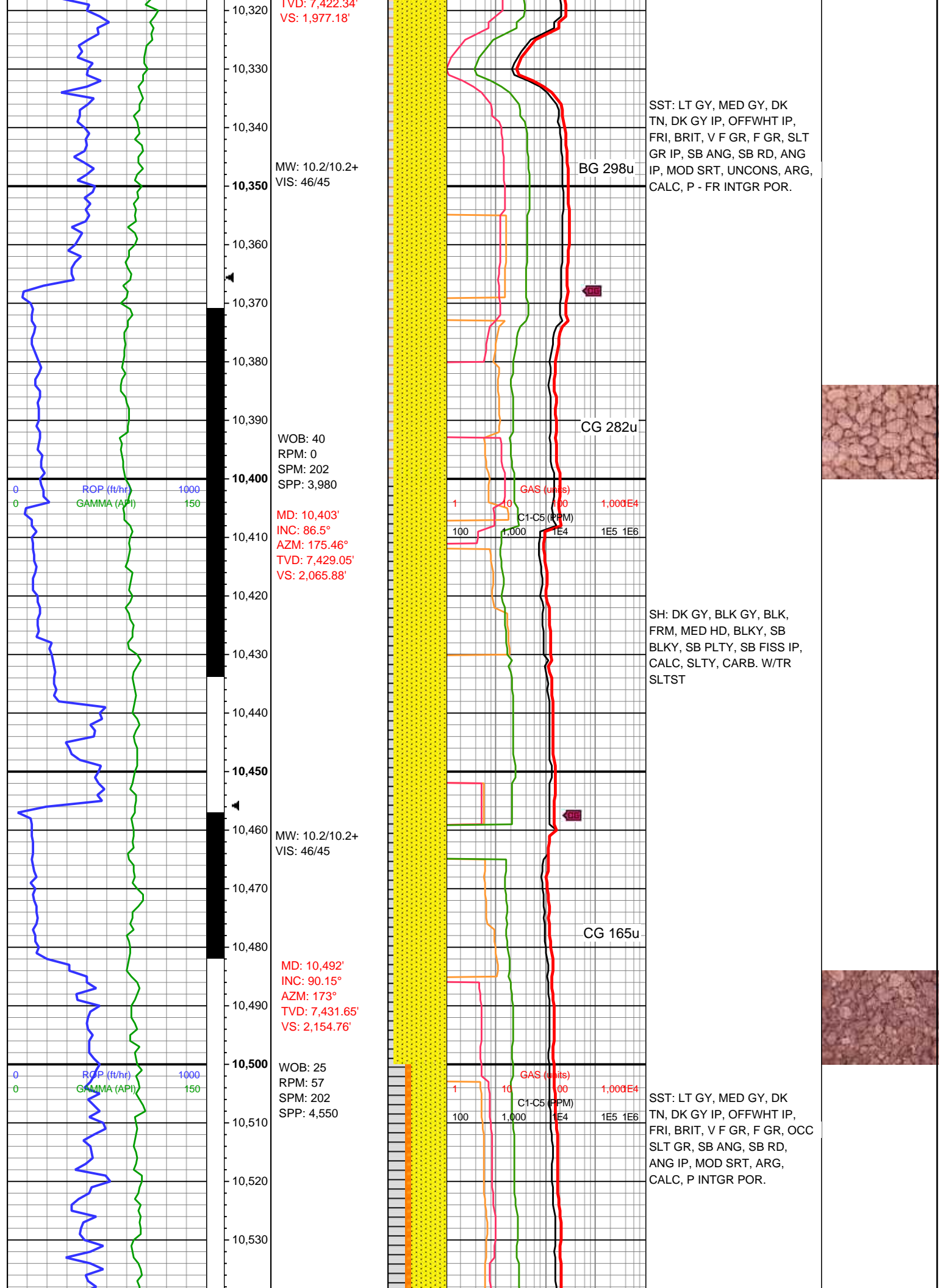


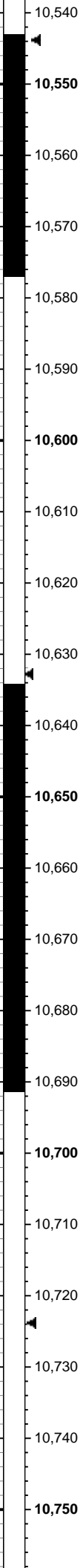
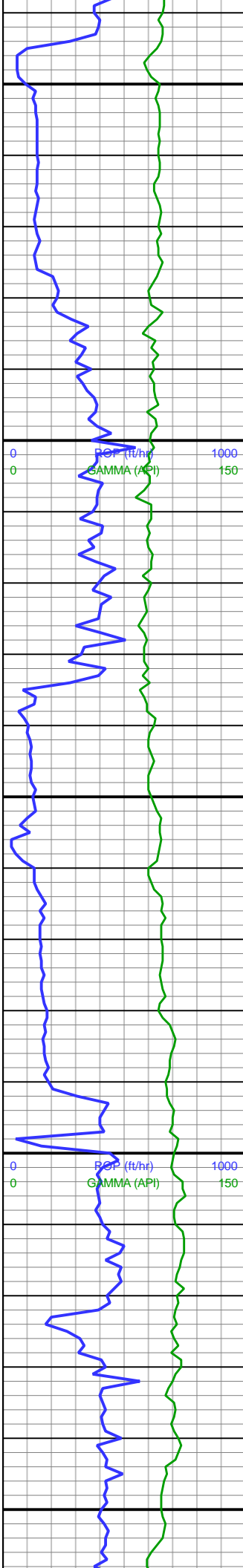
FRI, BRIT, V F GR, F GR, SLT
GR IP, SB ANG, SB RD, ANG
IP, MOD SRT, UNCONS, ARG,
CALC, P - FR INTGR POR.

SST: LT GY, MED GY, DK
TN, DK GY IP, OFFWHT IP,
FRI, BRIT, V F GR, F GR, SLT
GR IP, SB ANG, SB RD, ANG
IP, MOD SRT, UNCONS, ARG,
CALC, P - FR INTGR POR.

SLTST: MED GY, DK GY, FRI,
BRIT, SST, MOD SRT, CALC,
ARG, SH.







MW: 10.2/10.2
VIS: 47/45

MD: 10,581'
INC: 93.29°
AZM: 174.33°
TVD: 7,428.98'
VS: 2,243.61'

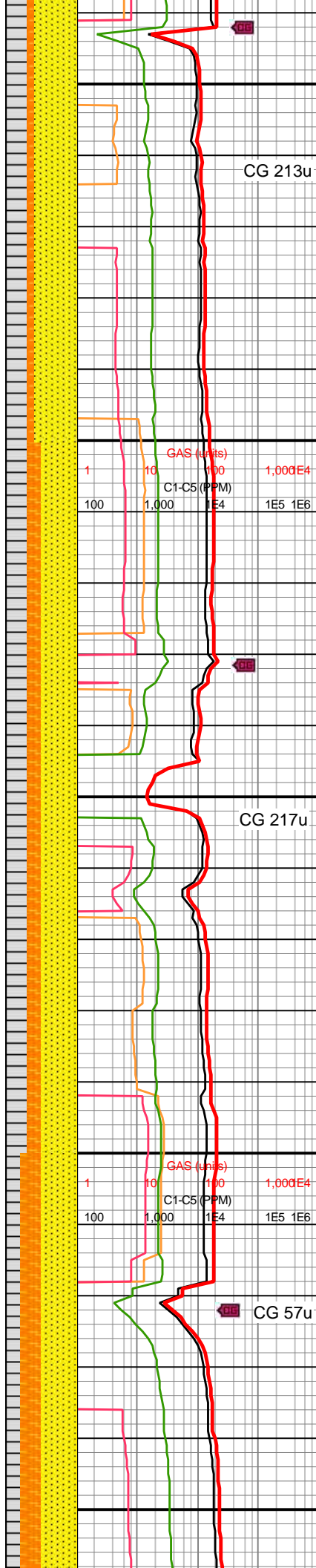
WOB: 25
RPM: 56
SPM: 202
SPP: 4,430

MW: 10.2/10.2
VIS: 46/45

MD: 10,670'
INC: 93.46°
AZM: 177.95°
TVD: 7,423.74'
VS: 2,332.44'

WOB: 24
RPM: 56
SPM: 202
SPP: 4,500

MD: 10,759'
INC: 94.07°
AZM: 180.41°
TVD: 7,417.89'
VS: 2,421.13'



CG 213u

SH: DK GY, BLK GY, BLK, FRM, MED HD, BLKY, SB BLKY, SB PLTY, SB FISS IP, CALC, SLTY, CARB.

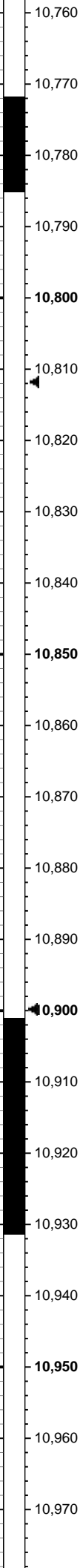
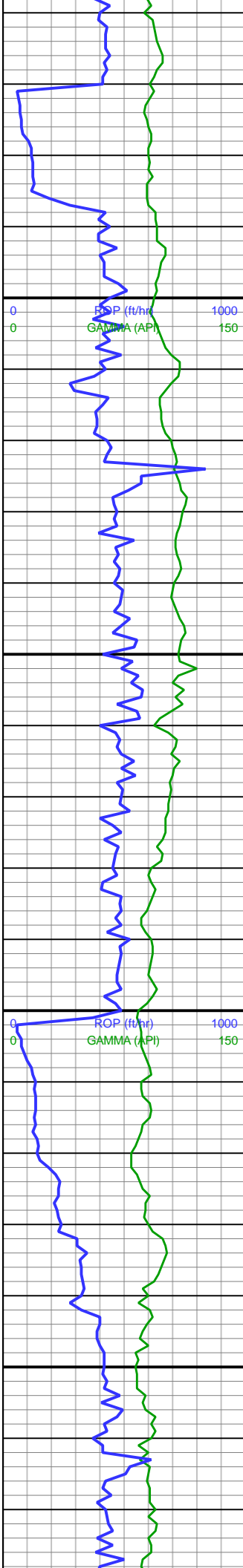
CG 217u

SLTST: MED GY, DK GY, FRI, BRIT, SST, MOD SRT, CALC, ARG, SH.

CG 57u

SST: LT GY, MED GY, DK TN, DK GY IP, OFFWHT IP, FRI, BRIT, V F GR, F GR, OCC SLT GR, SB ANG, SB RD, ANG IP, MOD SRT, ARG, CALC, P INTGR POR.



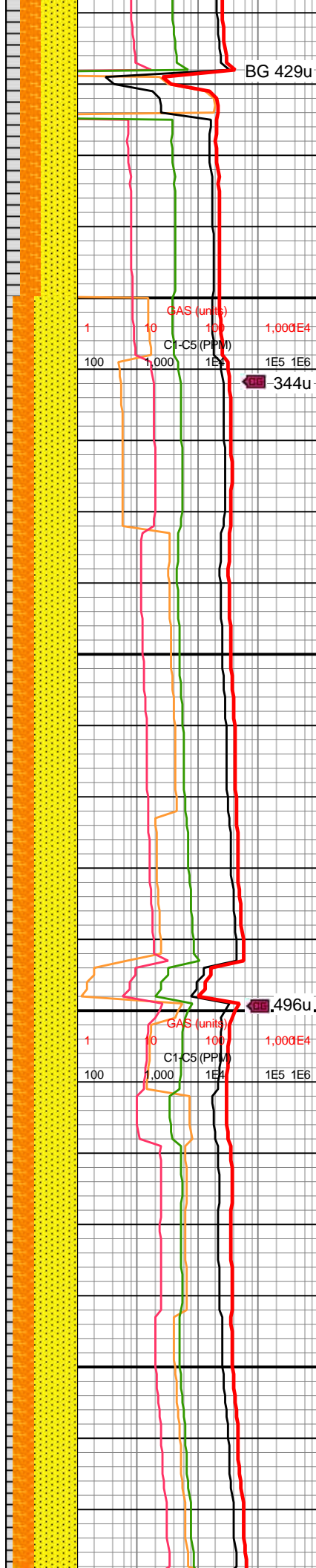


MW: 10.2/10.2
VIS: 46/45

WOB: 22
RPM: 57
SPM: 202
SPP: 4,520

MD: 10,849'
INC: 92.95°
AZM: 181.31°
TVD: 7,412.38'
VS: 2,510.68'

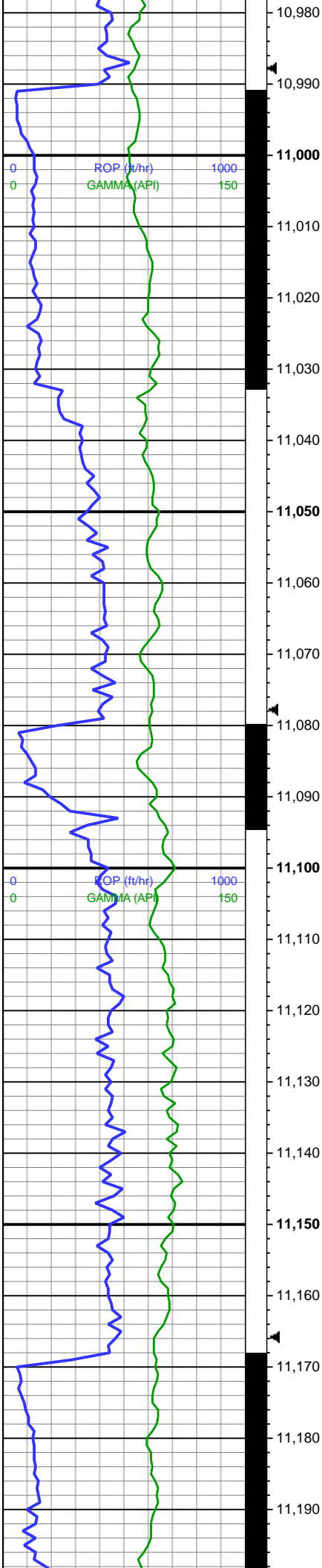
MD: 10,938'
INC: 91.42°
AZM: 182.13°
TVD: 7,408.99'
VS: 2,599.22'



SST: LT GY, MED GY, DK
TN, DK GY IP, OFFWHT IP,
FRI, BRIT, V F GR, F GR, OCC
SLT GR, SB ANG, SB RD,
ANG IP, MOD SRT, ARG,
CALC, P INTGR POR.

SST: LT GY, MED GY, DK
TN, DK GY IP, OFFWHT IP,
FRI, BRIT, V F GR, F GR, OCC
SLT GR, SB ANG, SB RD,
ANG IP, MOD SRT, ARG,
CALC, P INTGR POR.





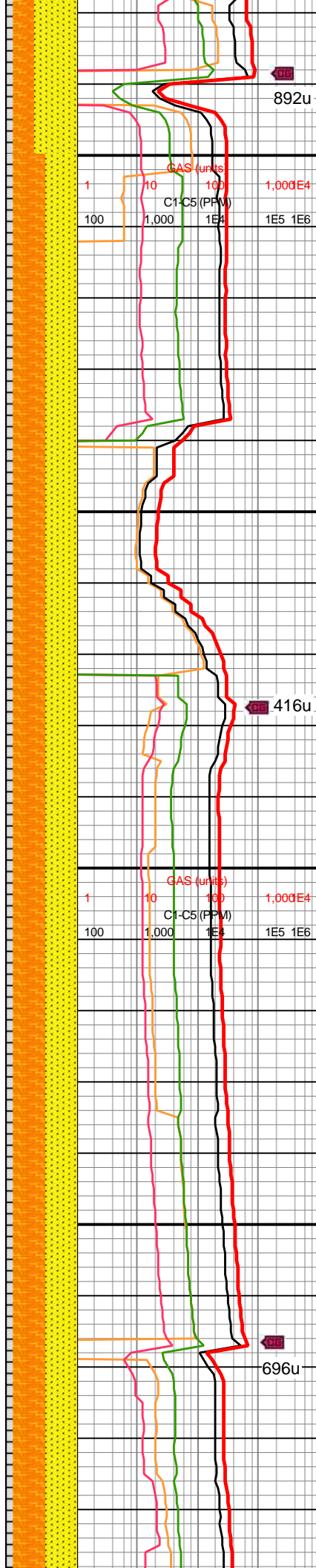
WOB: 40
RPM: 0
SPM: 202
SPP: 3,897

MD: 11,027'
INC: 87.85°
AZM: 182.24°
TVD: 7,409.56'
VS: 2,687.74'

MW: 10.2/10.2
VIS: 46/45

MD: 11,116'
INC: 87.59°
AZM: 181.74°
TVD: 7,413.1'
VS: 2,776.24'

WOB: 12
RPM: 60



892u

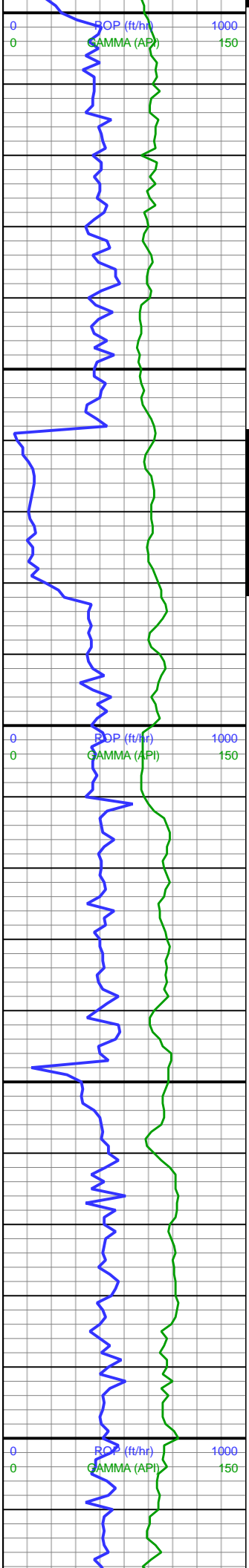
416u

696u

SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
N CALC; SLTST: LT TO DK
GY, GRTTY TEX, DL TO
RTHY LSTR, FRM, SB BLKY,
FISS IP, SLTY, N CALC, TR
SH

SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
N CALC; SLTST: LT TO DK
GY, GRTTY TEX, DL TO
RTHY LSTR, FRM, SB BLKY,
FISS IP, SLTY, N CALC, TR
SH





11,200
11,210
11,220
11,230
11,240
11,250
11,260
11,270
11,280
11,290
11,300
11,310
11,320
11,330
11,340
11,350
11,360
11,370
11,380
11,390
11,400
11,410

SPM: 202
SPP: 4,033

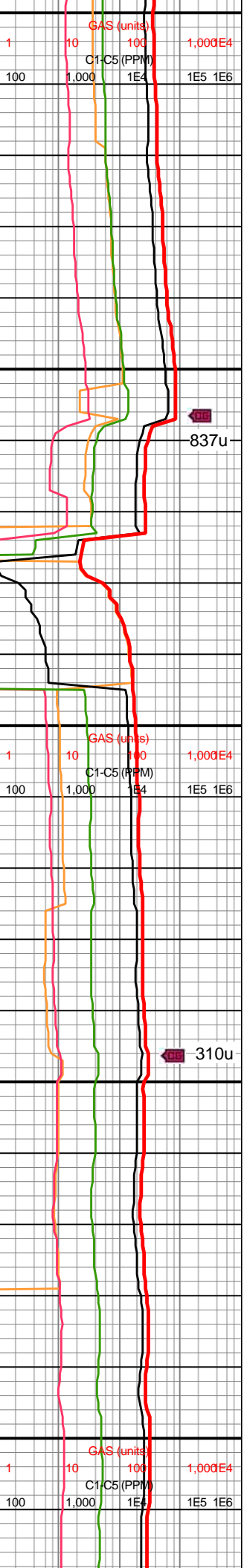
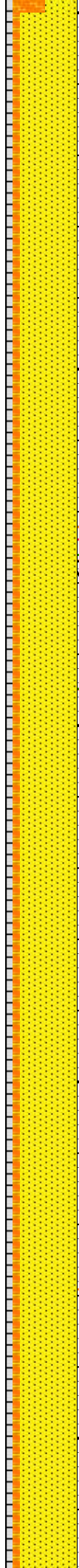
MD: 11,205'
INC: 89.79°
AZM: 179.61°
TVD: 7,415.13'
VS: 2,864.96'

MW: 10.2/10.2
VIS: 46/45

MD: 11,294'
INC: 91.41°
AZM: 180.61°
TVD: 7,414.2'
VS: 2,953.76'

MD: 11,383'
INC: 91.95°
AZM: 180.55°
TVD: 7,411.59'
VS: 3,042.47'

WOB: 19
RPM: 60
SPM: 202
SPP: 4,585



GAS (units)
C1-C5 (PPM)

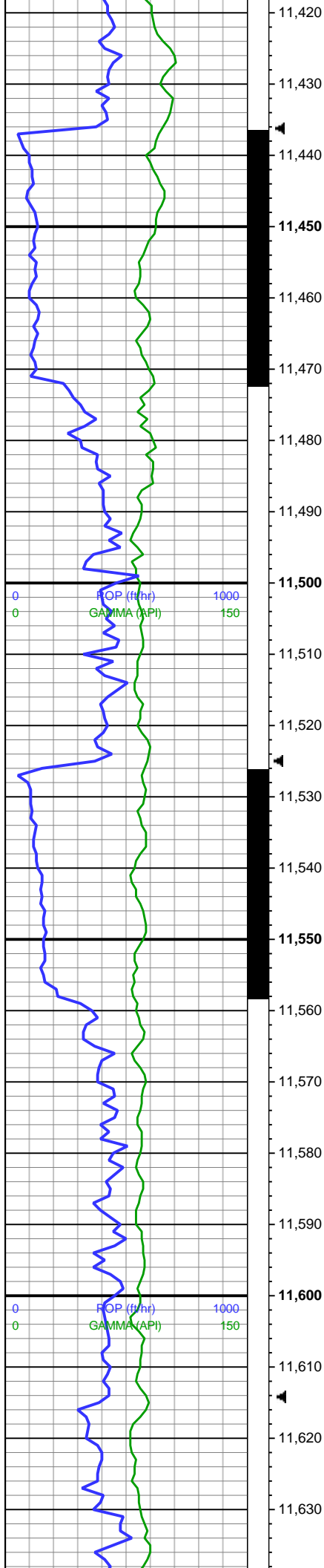
837u

310u

SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
N CALC, TR SLTST, TR SH

SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
N CALC, TR SLTST, TR SH

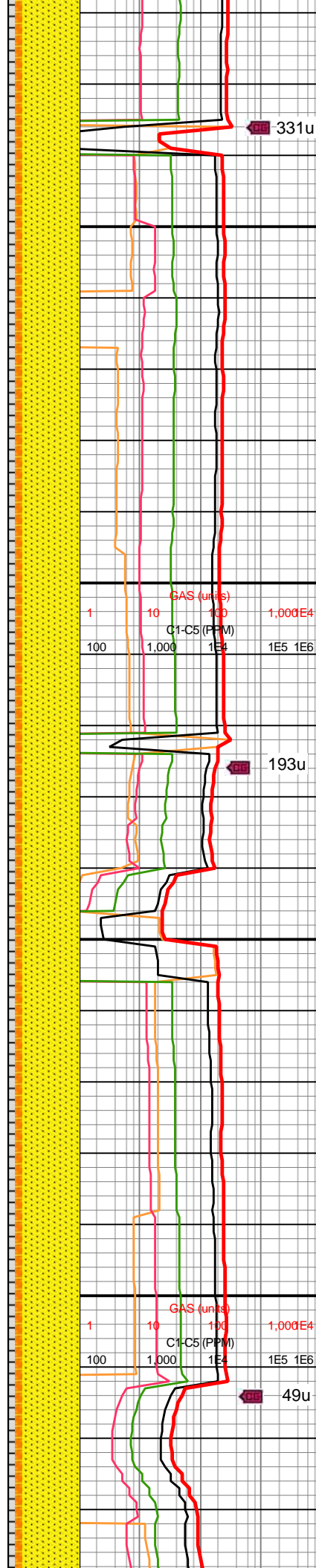




MW: 10.2/10.2+
VIS: 47/45

MD: 11,472'
INC: 91.13°
AZM: 183.64°
TVD: 7,409.2'
VS: 3,130.98'

WOB: 22
RPM: 60
SPM: 202
SPP: 4,695

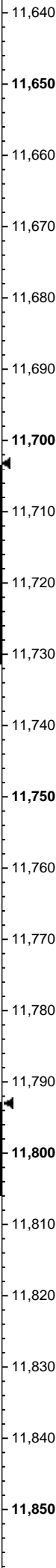
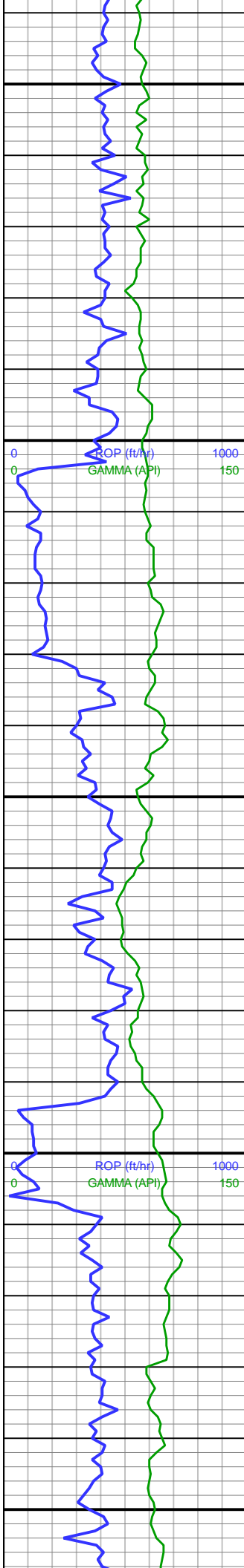


SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
N CALC, TR SLTST, TR SH

SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
SL CALC, TR SLTST, TR SH,
SL H2O SENS

SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
SL CALC, TR SLTST, TR SH,
SL H2O SENS





MD: 11,650'
INC: 88.64°
AZM: 184.95°
TVD: 7,411.18'
VS: 3,307'

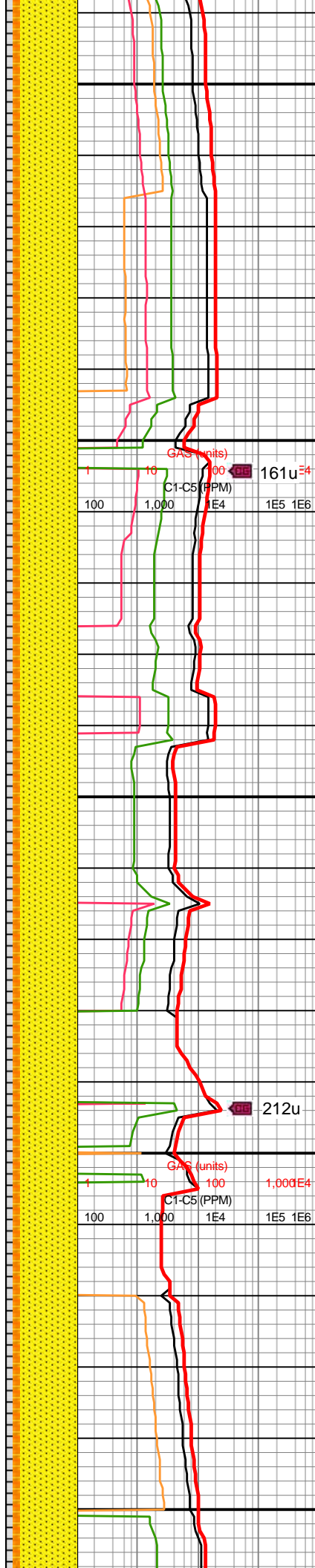
MW: 10.3/10.2+
VIS: 47/45

MD: 11,740'
INC: 88.68°
AZM: 183°
TVD: 7,413.29'
VS: 3,396.18'

WOB: 19
RPM: 57
SPM: 202
SPP: 4,819

MD: 11,829'
INC: 89.65°
AZM: 183.64°
TVD: 7,414.58'
VS: 3,484.51'

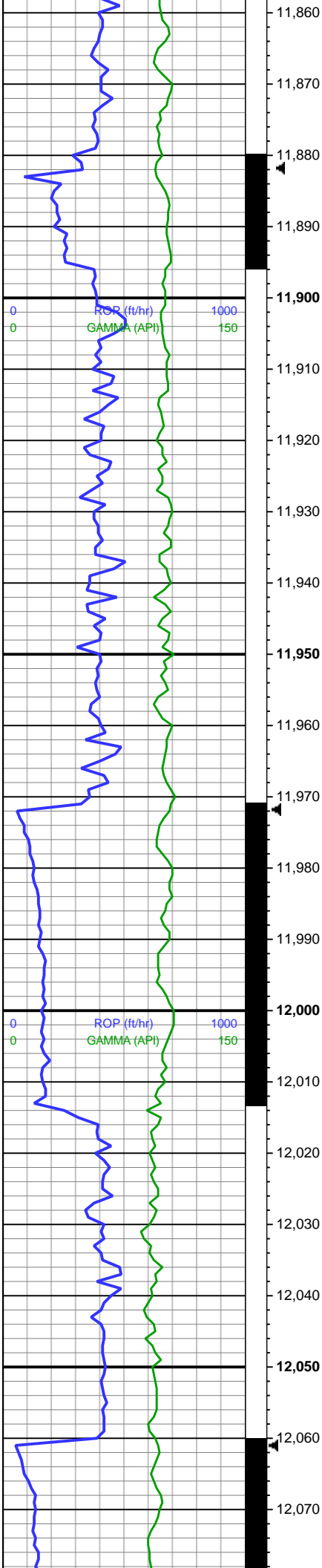
MW: 10.3/10.2+
VIS: 47/45



SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
SL CALC, TR SLTST, TR SH,
SL H2O SENS

SS: LT GY TO DK GY IP,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, P TO FR
SRT, WL CONS, FRM, FRI IP,
SL CALC, TR SLTST, TR SH,
SL H2O SENS



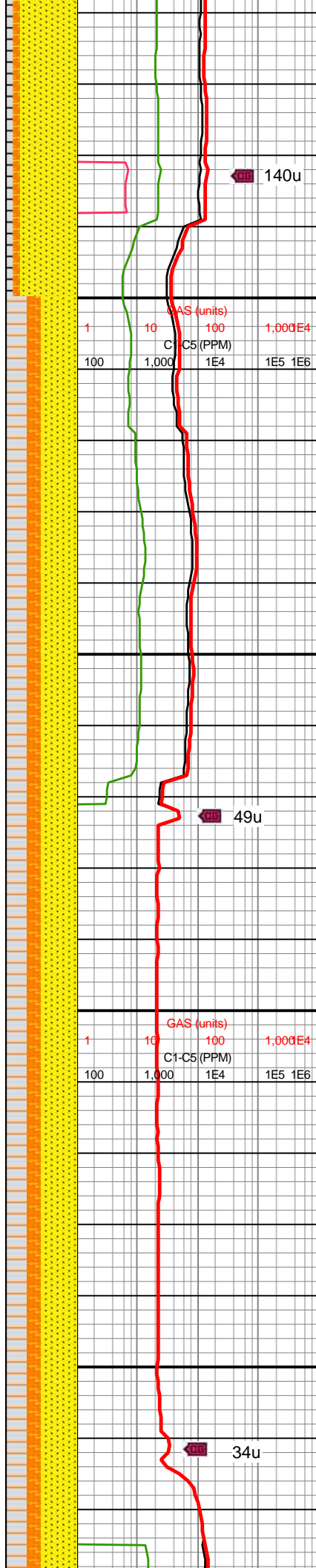


MD: 11,918'
INC: 89.9°
AZM: 183.11°
TVD: 7,414.93'
VS: 3,572.84'

WOB: 35
RPM: 20
SPM: 202
SPP: 4,077

MD: 12,007'
INC: 87.41°
AZM: 180.89°
TVD: 7,417.02'
VS: 3,661.37'

MW: 10.3/10.2+
VIS: 47/45



140u

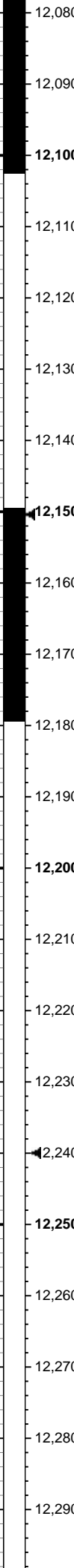
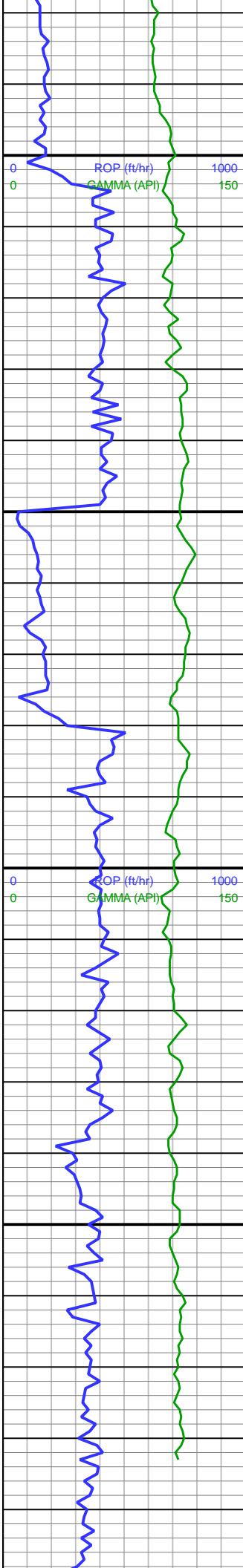
49u

34u

SS: LT GY TO DK GY,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, SB RND IP,
P TO FR SRT, WL CONS,
FRM, FRI IP, SL CALC, SL
H2O SENS; SLTSH: DRK GY
TO BLK IP, SM TO SL
GRTTY TEX, SB WXY LSTR,
AMOR, SLTY, N CALC

SS: LT GY TO DK GY,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, SB RND IP,
P TO FR SRT, WL CONS,
FRM, FRI IP, SL CALC, SL
H2O SENS; SLTSH: DRK GY
TO BLK IP, SM TO SL
GRTTY TEX, DL TO SB WXY
LSTR, AMOR, SLTY, N CALC





MD: 12,096'
INC: 87.78°
AZM: 176.73°
TVD: 7,420.76'
VS: 3,750.19'

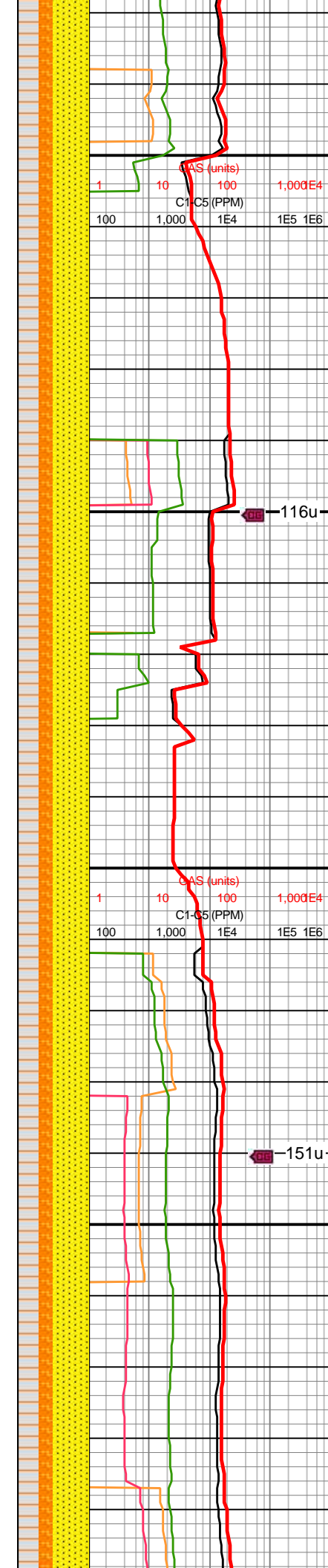
MD: 12,185'
INC: 90.82°
AZM: 176.18°
TVD: 7,421.84'
VS: 3,839.17'

WOB: 24
RPM: 60
SPM: 202
SPP: 4,741

MW: 10.3/10.2+
VIS: 47/45

MD: 12,274'
INC: 91.18°
AZM: 176.18°
TVD: 7,420.29'
VS: 3,928.16'

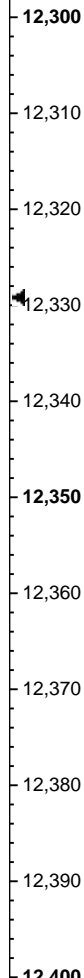
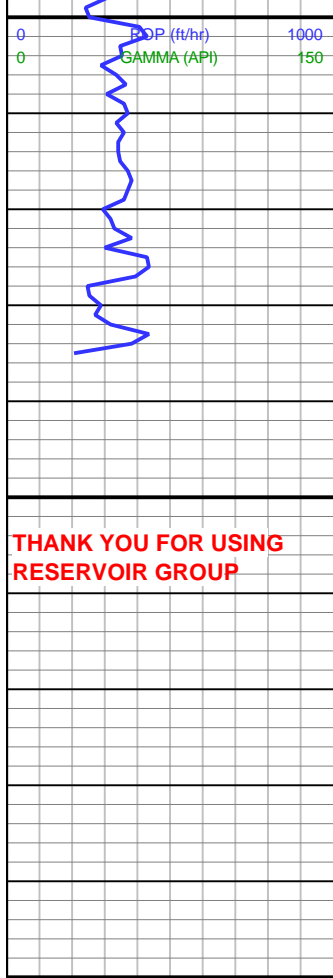
MD: 12,280'
INC: 91.19°
AZM: 176.49°
TVD: 7,420.17'
VS: 3,934.16'



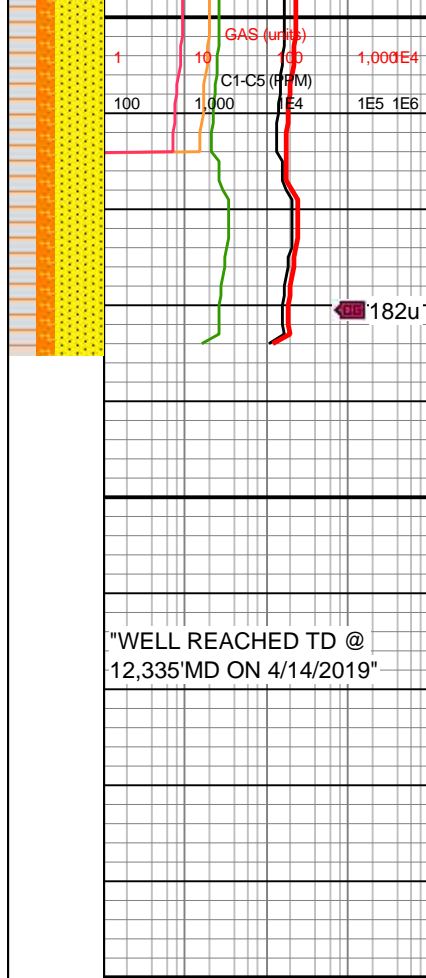
SS: LT GY TO DK GY,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, SB RND IP,
P TO FR SRT, WL CONS,
FRM, FRI IP, SL CALC, SL
H2O SENS; SLTSH: DRK GY
TO BLK IP, SM TO SL
GRTTY TEX, DL TO SB WXY
LSTR, AMOR, SLTY, N CALC

SS: LT GY TO DK GY,
GRTTY TEX, VF TO F GRN,
SB ANG TO ANG, SB RND IP,
P TO FR SRT, WL CONS,





MD: 12,335'
INC: 91.19°
AZM: 176.49°
TVD: 7,419.03'
VS: 3,989.15'



FRM, FRI IP, SL CALC, SL
H2O SENS; SLTSH: DRK GY
TO BLK IP, SM TO SL
GRTTY TEX, DL TO SB WXY
LSTR, AMOR, SLTY, N CALC