



Scale: 5" / 100'
Measured Depth Log

Well Name Herren 1F-33H-H367

Location Sec. 33 T3N R67W

State Colorado

County Weld

Country USA

Rig Number Ensign 153

API Number 05-123-47729

AFE # 16191565

Geographic Region Rockies

Field Wattenberg

Spud Date 11/25/2018

Drilling Completed Surface: 11/26/2018, Vertical-Lateral: 12/22/2018

Surface Coordinates Lat/Long: 40.183222/-104.886637

SHL: Sec: 33 Twp: 3N 67W
Footage: 1,204' FNL 460' FEL

Bottom Hole Coordinates Proposed BHL: Sec: 33 Twp: 3N 67W
Footages: 1,204' FNL 460' FWL

Ground Elevation 4,848'

K.B. Elevation 4,871'

Logged Interval 122' To 12,098'

Total Depth 12,098'

Formation Codell

Type of Drilling Fluid Surface: Water Base Mud ; Synthetic Oil Base Mud

Operator

Company Crestone Peak Resources

Address 1801 California Street
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Geologist

Zone Color Coding

Geologist

Name John Ready

Company Crestone Peak Resources

Address 1801 California Street
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Zone Color Coding

Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

Other

Loggers: Surface:Heather Davis/Vertical-Lateral: Heather Davis, Shana Swirin

Services Provided: 2-Man Mudlogging

Equipment: ML-567, ML-515

Contractor: Empirica, Reservoir Group
6360 West Sam Houston Pkwy N
Houston, Texas, 77041

Service Start Date 11/25/2018

Service End Date Surface:11/26/2018 Vertical-Lateral: 12/22/2018

Job # 1815RK1812

Release Date 12/24/2018

Rock Types

UNKNOWN	ANHYDRITE
GYPSUM	SALT
SIDERITE or LIMONITE	LIMESTONE

DOLOMITE	CHERT
COAL	MARLSTONE
CHALK	SHALE

SHALE GRAY	SHALE COLORED
SILTSTONE	SANDSTONE
CONGLOMERATE	BRECCIA

TILL	BENTONITE
TUFF	IGNEOUS
METAMORPHIC	CEMENT

Accessories

Fossils

ALGAE
AMPHIPORA
BELEMNITE
BIOCLASTIC
BRACHIOPOD
BRYOZOA
CEPHALOPOD
CORAL
CRINOID
ECHINOID

Fossil

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

Minerals

ARGILLACEOUS

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

GLAUCONITE

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

Stringer

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



FISH

ANHYDRITIC

FERRUGINOUS PELLET

SILTY

SILTSTONE STRINGER

FORAMINIFERA

ANHYDRITIC

FERRUGINOUS

TUFFACEOUS

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

LITHOGRAPHIC

MICROXLN

MUDSTONE

PACKSTONE

WACKESTONE

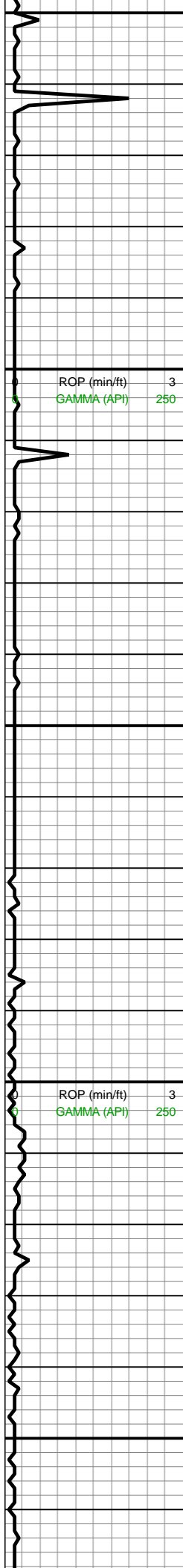
Sorting

MODERATE

POOR

WELL

Slide/Rotate	Depth Labels	Notes	% Lith	Total Gas		Lithology Descriptions	Images
				GAS	C1-C5		
<div> <div> <div>ROP</div> <div>ROP</div> <div>GAMMA</div> </div> <div> <div>ROP (min/ft)</div> <div>GAMMA (API)</div> </div> </div>							
<div> <div>Crestone Peak Resources</div> <div>Herren 1F-33H-H367</div> <div>9 5/8" Surface Casing @ 1,973'</div> <div>Spud Date: 11/25/18</div> <div>Logging Began: 11/25/18 @ 121'</div> <div>All Depths Correspond to Driller's Pipe Tally</div> </div>							
<div> <div>Bit #: 1</div> <div>Type: Ulterra</div> <div>Size: 13 1/2</div> <div>Depth In: 121'</div> <div>Depth Out: 1,988'</div> <div>Hours: 6 hrs</div> <div>Avg Ft/Hr: 311.17 'hr</div> <div>Jets: 7x13</div> <div>S/N: 27826</div> </div>							
<div> <div>SYSTEM CALIBRATED</div> <div>1% Methane = 100 Units</div> <div>100% Methane = 10000 Units</div> </div>							
<div> <div>GAS (units)</div> <div>C1-C5 (PPM)</div> </div>							
<div> <div>122-150 SST (90%):</div> <div>clr-trnsl wh-lt gy, w srtld f</div> <div>sb rd-rd unconsl sd grs,</div> <div>sb ang ip, predy non calc,</div> <div>sl calc ip; COAL (10%):</div> <div>blk, frm, buoyant, vf pyr,</div> <div>non calc</div> </div>							
<div> <div>150-200 SST (85%):</div> <div>predy lt gy-tn p srtld vf sst</div> <div>clus, occ clr-trnsl wh-lt gy</div> <div>w srtld unconsl sd grs, sb</div> <div>frm-crunchy gr-mtx sup</div> <div>arg sst clus, predy non</div> <div>calc, tr sl calc ip; COAL</div> <div>(15%): blk, frm, buoyant,</div> <div>vf pyr, non calc</div> </div>							
<div> <div>200-250 SST (95%):</div> <div>clr-trnsl wh-lt gy, v w srtld f</div> <div>sb rd-rd unconsl sd grs,</div> <div>sb ang ip, rr predy mtx</div> <div>sup gy arg ss clus wi vf</div> <div>sd grs, non calc, sl calc</div> <div>ip; COAL (5%): blk, frm,</div> <div>buoyant, vf pyr, non calc</div> </div>							



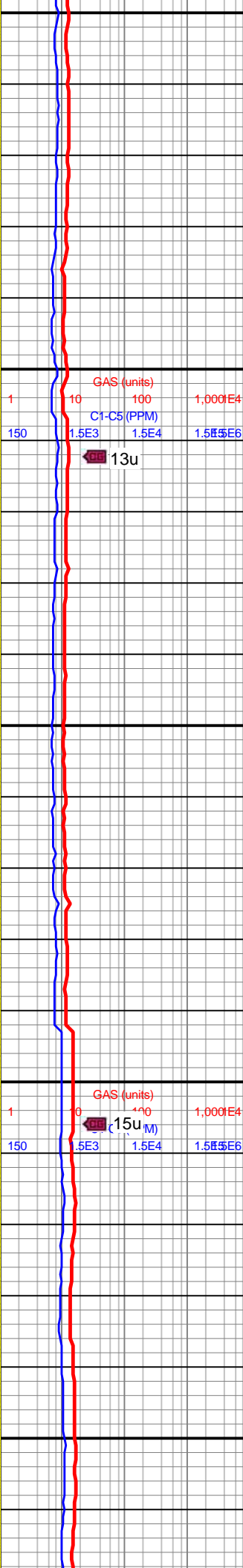
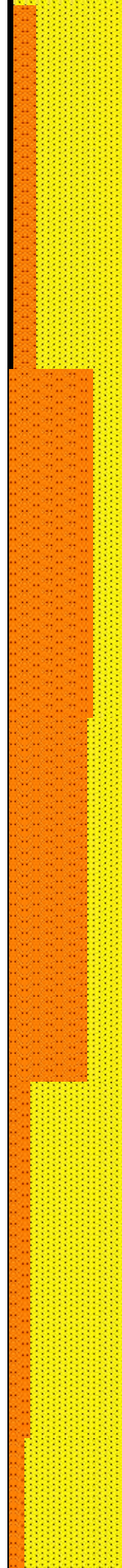
MD: 272'
INC: 0.79°
AZM: 118.83°
TVD: 271.99'
VS: -2.1'

MD: 367'
INC: 0.88°
AZM: 122.78°
TVD: 366.98'
VS: -3.43'

MW IN: 8.4
VIS IN: 28
MW OUT: 8.4
VIS OUT: 28

WOB: 3.1klbs
RPM: 50
SPM: 218
SPP: 1,127psi

MD: 461'
INC: 1.32°
AZM: 38.94°
TVD: 460.97'
VS: -4.56'



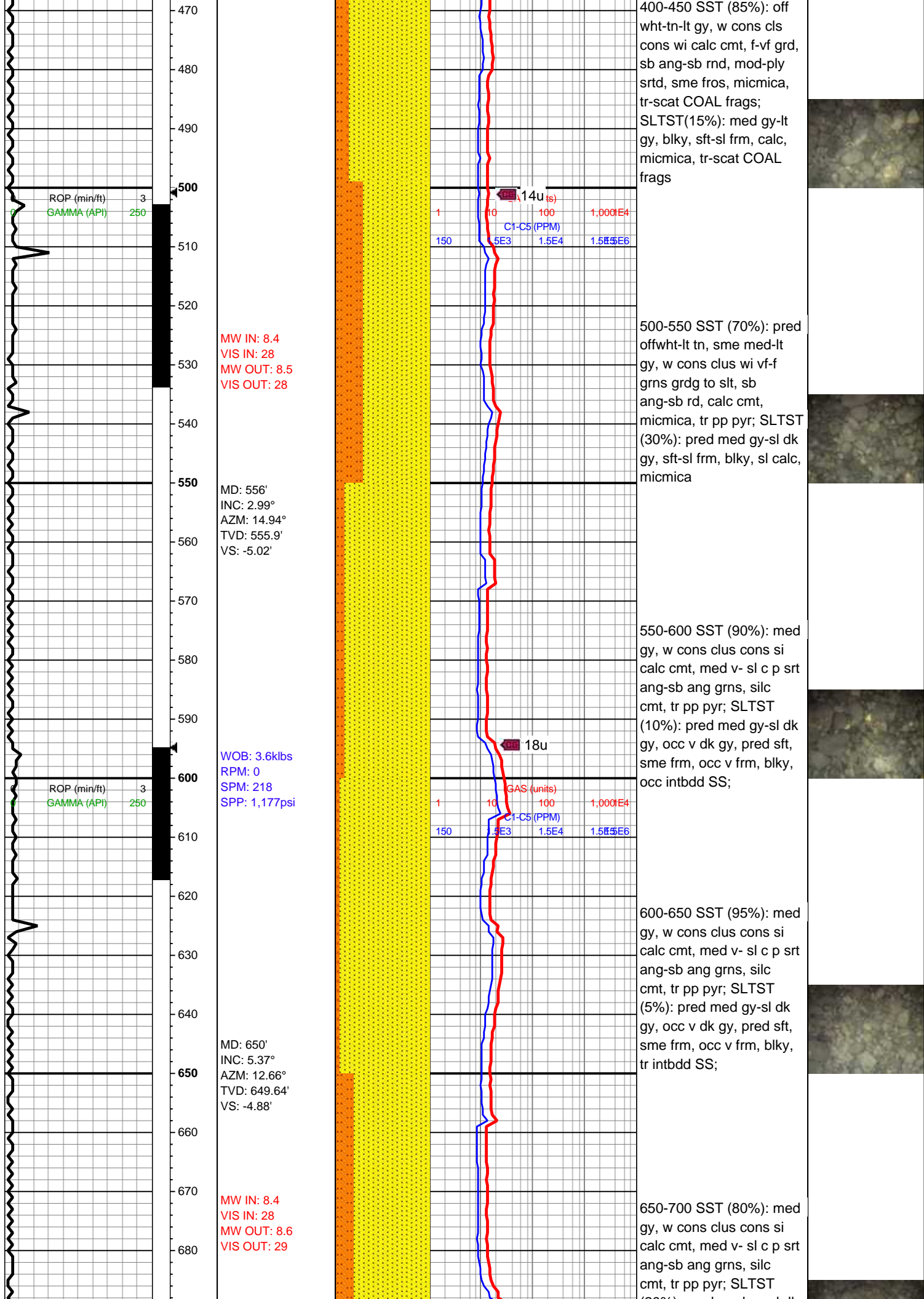
buoyant, vi pyr, non calc
SST (75%): med lt gy-off
wht, trnsl, w cons p srt
clus wi sb ang-ang med
f-f grns, calc cmt; SLTST
(20%): pred med gy, sme
dk gy, frm, blk, sme plty,
non calc, scat micmica;
COAL (5%): blk, frm, vf
pyr, buoyant, non calc

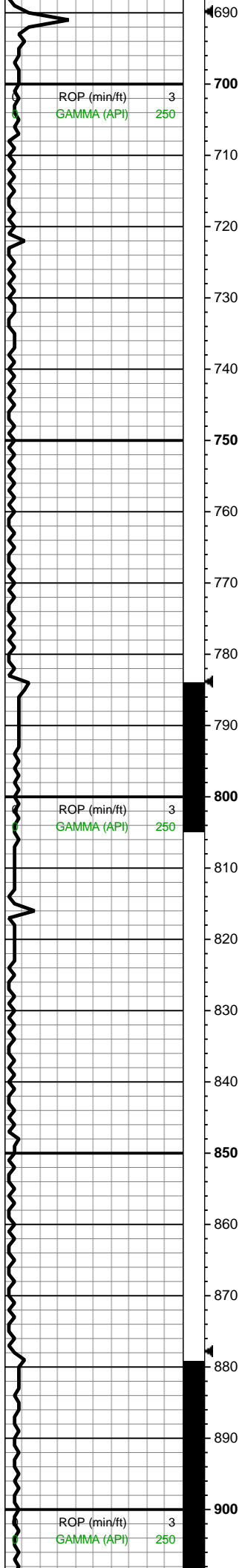
300-350 SLTST (75%):
pred med gy, sme dk gy,
frm, blk, sme plty, non
calc, scat micmica, occ
intbdd wi COAL; SST
(25%): med lt gy-off wht,
trnsl, w cons p srt clus
wi sb ang-ang med f-f
grns, calc cmt;

350-400 SLTST (70%):
pred med gy, sme dk gy,
frm, plty-sb rnd, non calc,
scat micmica, scat intbdd
wi COAL; SST (30%):
med lt gy-off wht, trnsl, w
cons p srt clus wi sb
ang-ang med f-f grns,
calc cmt;

400-450 SST (80%): off
wht-tn-lt gy, w cons cls
cons wi calc cmt, f-vf grd,
sb ang-sb rnd, mod-w
srt, fros, micmica,
tr-scat COAL frags;
SLTST(20%): med gy-lt
gy, blk, sft-sl frm, calc,
micmica, tr-scat COAL
frags







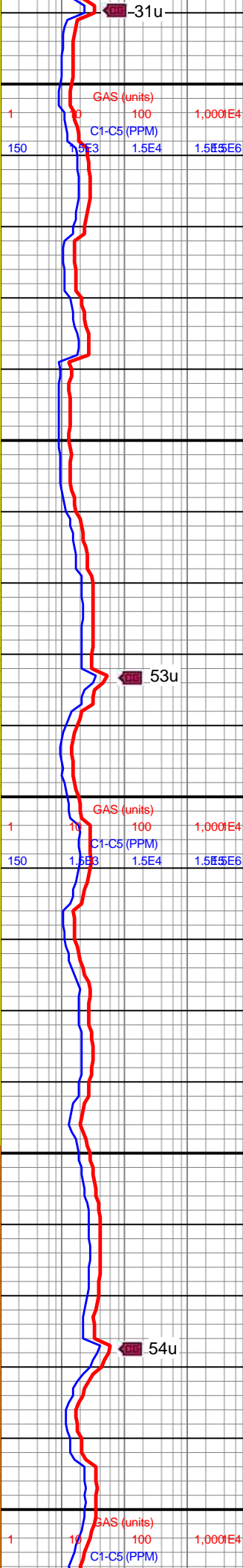
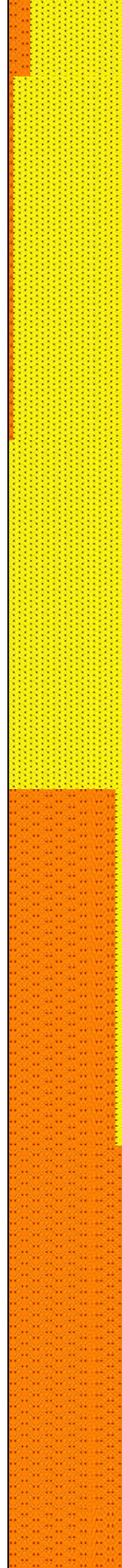
MD: 745'
INC: 6.42°
AZM: 9.32°
TVD: 744.14'
VS: -4.24'

WOB: 11.3klbs
RPM: 0
SPM: 216
SPP: 1,277psi

MD: 819'
INC: 7.79°
AZM: 14.6°
TVD: 817.57'
VS: -3.85'

MW IN: 8.4
VIS IN: 28
MW OUT: 8.7
VIS OUT: 29

MD: 913'



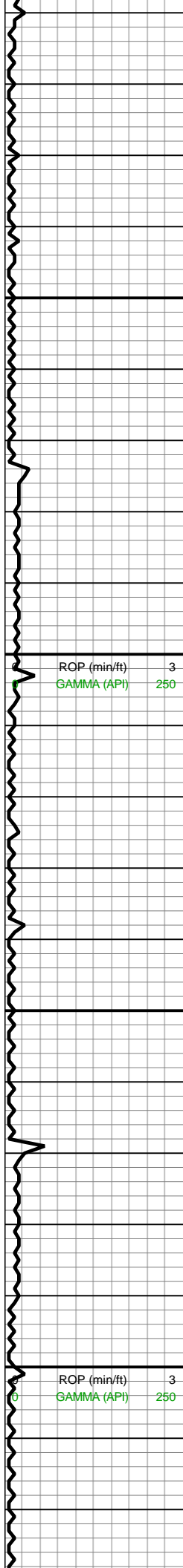
(20%): pred med gy-sl dk gy, occ v dk gy, pred sft, sme frm, occ v frm, blk, tr intbdd SS;

700-750 SST (95%): med gy, w cons clus cons si calc cmt, med v- sl c p srt ang-sb ang grns, silc cmt, tr pp pyr; SLTST (5%): pred med gy-sl dk gy, occ v dk gy, pred sft, sme frm, occ v frm, blk, tr intbdd SS;

750-800 SST (100%): pred med gy-tn, sme off wht, pred w cons cls wi calc cmt, sb ang-sb rnd sl fros grns, mod-w srt, f-vf grnd, grdg to slt, micmica, tr pyrc nod

750-800 SLTST (95%) med-dk gy wi pred med gy, rr dk gy, sl sft-frm, sub blk-nd wi sl rgh tex, pp-tr pyr, occ micmica; SST (5%) lt-med gy wi brn specs, cons cl wi non calc, f wi p srt ang-sb ang grns, silc cmt, tr pp pyr

850-900 SLTST (100%) pred med gr wi sme dk gy, sub blk-nd, rr micmica, sft-sl frm, occ pp pyr

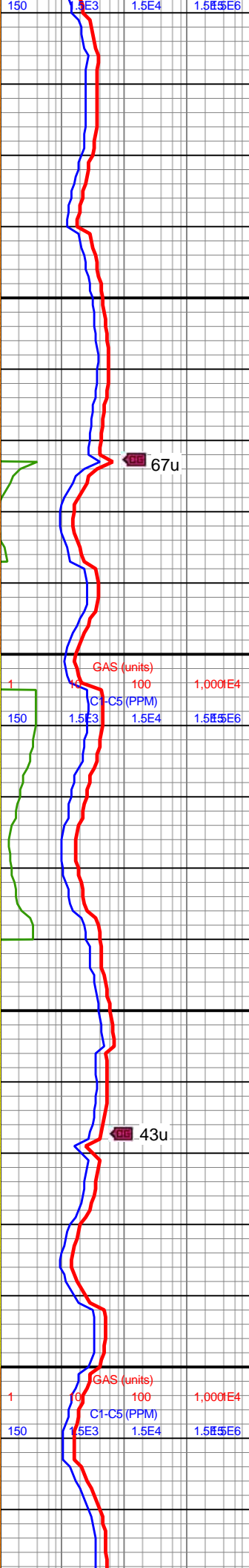


MD: 913'
INC: 9.58°
AZM: 26.02°
TVD: 910.49'
VS: -5.38'

WOB: 16.4klbs
RPM: 51
SPM: 219
SPP: 1,380psi

MD: 1,008'
INC: 10.66°
AZM: 33.54°
TVD: 1,004.02'
VS: -9.79'

MD: 1,102'
INC: 12.44°
AZM: 36.43°
TVD: 1,096.11'
VS: -16.36'



900-950 SLTST (100%)
pred med gy, blk-sub
ang, rr micmica wi sme tr
pyr, v frm,

950-1000 SST (100%):
pred med gy-dk gy, sme
gyshbn, frm, com sft,
blk, sme plty, v calc, tr
micmica, tr pp pyr

1000-1050 SLTST (95%):
med gy-dk gy, gyshbn ip,
pred sft, sme frm, blk,
calc-v calc, com micmica,
tr pp pyr; SST (5%): pred
med gy-dk gy, sme lt gy,
pred w cons cls cons wi
calc cmt, pred f-med f sb
ang-ang mod-w srtd grns

1050-1100 SLTST (85%):
med gy-dk gy, gyshbn ip,
pred sft, sme frm, blk,
calc-v calc, com micmica,
tr pp pyr; SST (15%): pred
med gy-dk gy, sme lt gy,
pred w cons cls cons wi
calc cmt, pred f-med, sb
ang-sb rnd, mod-w srtd
grns

1100-1150 SLTST
(100%): pred med
gyshbn-dk gyshbn, sme

11/26/2018

MW IN: 8.4
VIS IN: 29
MW OUT: 8.7
VIS OUT: 29

MD: 1,197'
INC: 13.18°
AZM: 41.26°
TVD: 1,188.75'
VS: -25.01'

WOB: 10.6klbs
RPM: 50
SPM: 218
SPP: 1,462psi

MD: 1,291'
INC: 13.6°
AZM: 38.11°
TVD: 1,280.2'
VS: -34.21'

dk brn, sft frm, blk, sme
plty, pred v calc, sme non
calc, tr micmica, v rr pp
pyr

73u

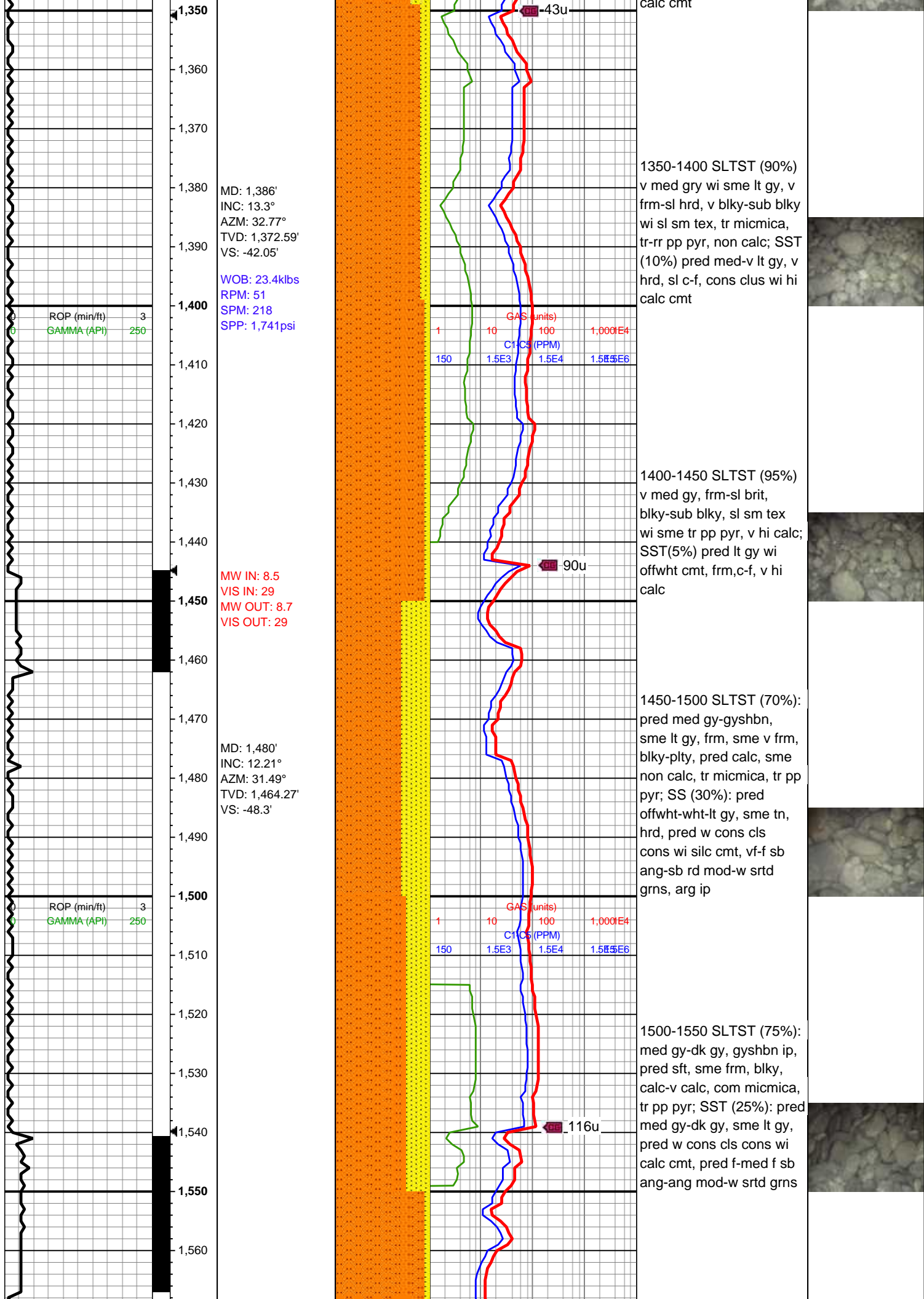
1150-1200SLTST
(100%) pred med gy,
pred sft-occ frm, sub
blk-sl rnd, hi calc, sme
non calc, occ micmica, tr
pp pyr

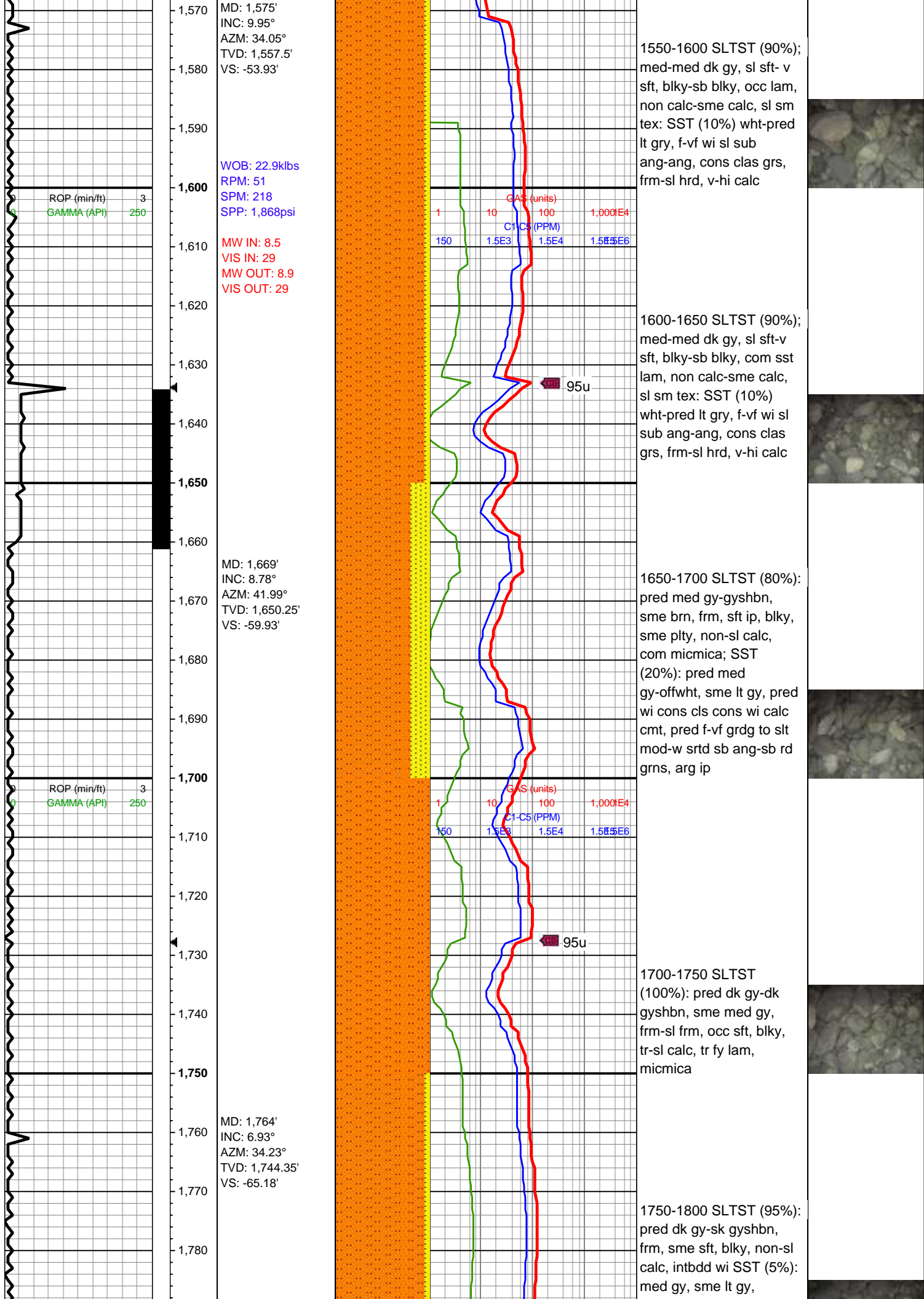
1200-1250 SLTST
(100%) pred med gy,
pred sft-occ frm, sub
blk-sl rnd, hi calc, sme
non calc, occ micmica, rr
pp pyr

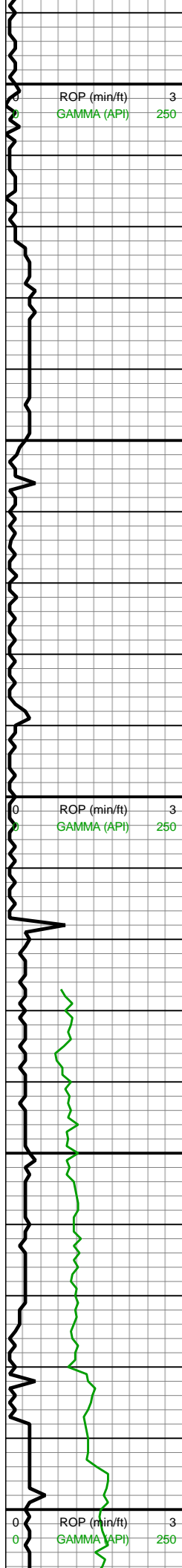
98u

1250-1300 SLTST (70%)
pred med gy wi sme lt
gry, v frm-sl sft, sub
ang-sl rnd wi sme blk,
occ micmica, sl calc, tr
micmica, pp pyr; SST
(30%) pred lt gy wi sme lt
gy, sub ang-ang, cons
clus wi calc cmt

1300-1350 SLTST (80%)
v med gry wi sme lt gy, v
frm-sl hrd, v blk-sub blk
wi sl sm tex, tr micmica,
tr-rr pp pyr, non calc; SST
(20%) pred med-v lt gy, v
hrd, sl c-f, cons clus wi hi







WOB: 25.1klbs
RPM: 51
SPM: 216
SPP: 2,125psi

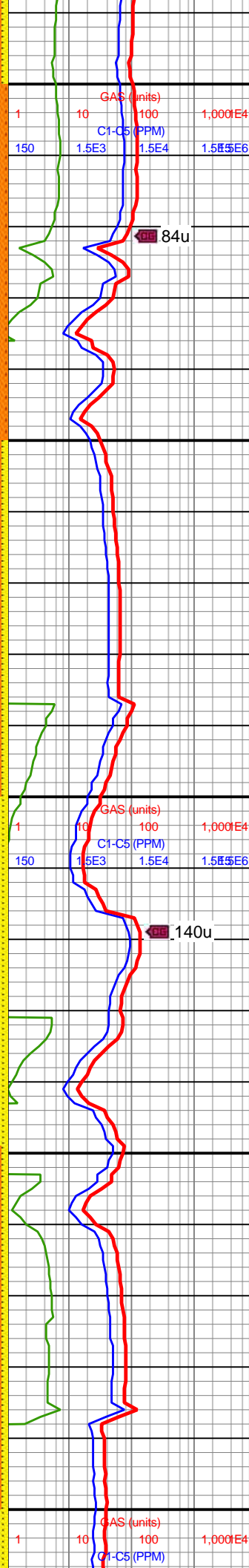
MW IN: 8.6
VIS IN: 29
MW OUT: 8.9
VIS OUT: 29

MD: 1,859'
INC: 7.07°
AZM: 39.24°
TVD: 1,838.65'
VS: -69.53'

MD: 1,929'
INC: 8.33°
AZM: 39.32°
TVD: 1,908.01'
VS: -73.44'

Total Depth on
Surface
Reached
11/26/2018 @
04:00hrs

Bit #: 1
Type: U516M
Size: 8 1/2
Depth In: 1,988'
Depth Out:
12,098'
Hours: 32.9 hrs
Avg Ft/Hr:
307.29 '/hr



84u

140u

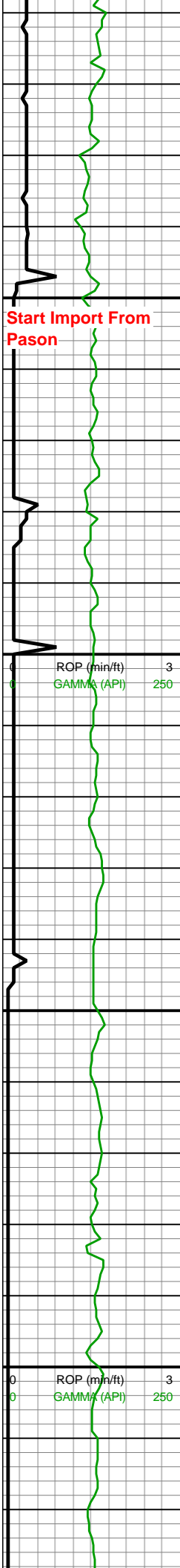
frm-hrd w cons cls cons
wi cal cmt, vf grnd grdg to
slt, sb ang-ang mod-w
srted, tr pp pyr

1800-1850 SLTST
(100%): pred dk gy-dk
gyshbn, sme med gy,
frm-sl frm, occ sft, blkly,
tr-sl calc, tr fy lam,
micmica

1850-1900 SLTST (95%):
pred dk gy-dk gyshbn,
frm, sme sft, blkly, non-sl
calc, intbdd wi SST (5%):
med gy, sme lt gy,
frm-hrd w cons cls cons
wi cal cmt, vf grnd grdg to
slt, sb ang-ang mod-w
srted, tr pp pyr

1900-1950 SLTST (85%):
pred med gy-dk gy, sme
gyshbn, frm-sl frm, blkly,
occ plty, non-sl calc,
micmica, tr pp pyr intbdd
wi SST (15%): med gy-lt
gy, sme s&p, frm-hrd,
pred w cons cls cmtd wi
cal cmt, vf-f grnd grdg to
slt, sb ang-sb rd, mod-w
srt, arg

1950-1988 SLTST (95%):
med gy-sl dk gy, occ
gyshbn, frm-sl frm, blkly,
non-sl calc, micmica, tr
pp pyr; SST (5%): pred
med gy-lt gy, frm-sl hrd, w
cons cls cons wi calc
cmt, vf grnd grdg to slt,
sb ang-sb rd, mod-w srt



Jets: 6x13
S/N: 44735

MD: 2,010'
INC: 9.32°
AZM: 40.84°
TVD: 1,988.05'
VS: -78.78'

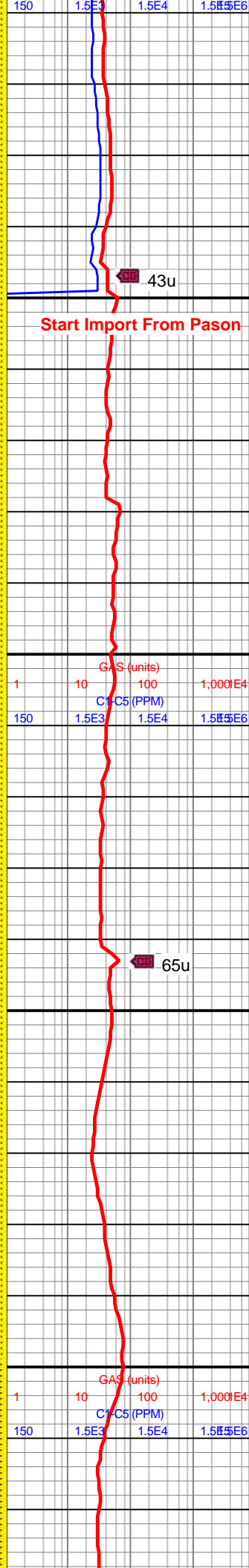
MW IN: 9.7
VIS IN: 67
MW OUT: 9.8
VIS OUT: 60

MIN DEPT 12/21/2018

MD: 2,073'
INC: 9.62°
AZM: 39.44°
TVD: 2,050.19'
VS: -83.24'

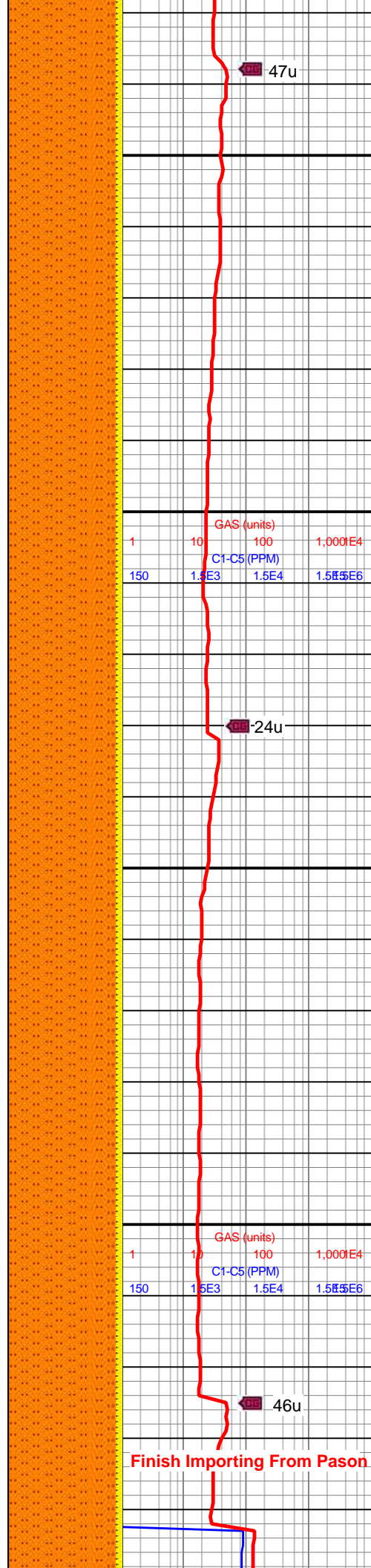
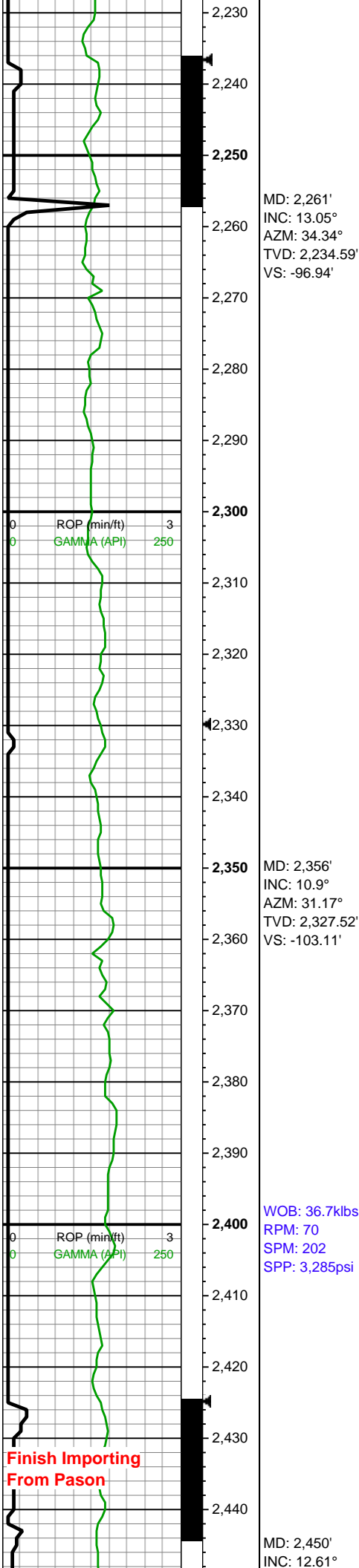
MD: 2,168'
INC: 11.07°
AZM: 36.89°
TVD: 2,143.65'
VS: -90.02'

WOB: 29.9klbs
RPM: 50
SPM: 158
SPP: 2,264psi



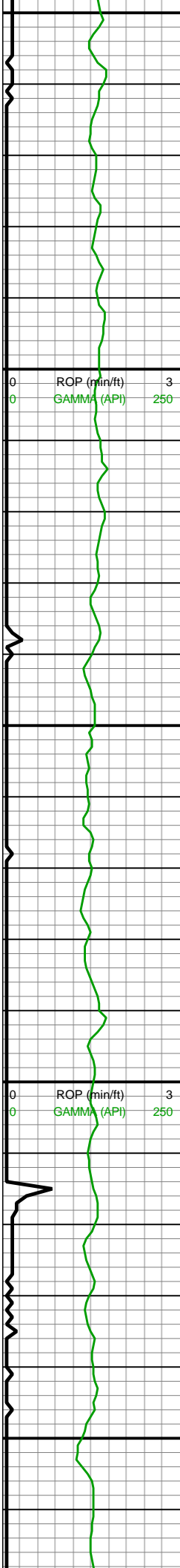
1988-2200 SLTST (90%):
med gy-sl dk gy, occ
gyshbn, frm-sl frm, blk,
non-sl calc, micmica;
SST (10%): med gy,
frm-sl hrd, w cons cls
cons wi calc cmt, vf grnd
to slt, sb ang-sb rd,
mod-w srt





2200-2400 SLTST (95%):
med gy-lt gy, frm-sl frm,
blky-sb plty, non-sl calc,
micmica; SST (5%): med
gy, frm-sl hrd, w cons cls
cons wi calc cmt, vf grnd
to slt, sb ang-sb rd,
mod-w srt





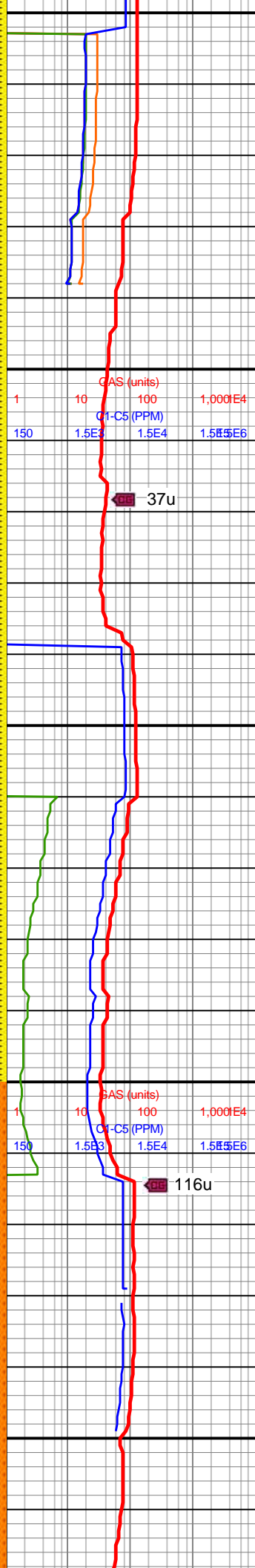
AZM: 33.11°
TVD: 2,419.55'
VS: -108.89'

MW IN: 9.8
VIS IN: 68
MW OUT: 9.8
VIS OUT: 60

MD: 2,545'
INC: 11.16°
AZM: 28.63°
TVD: 2,512.51'
VS: -114.39'

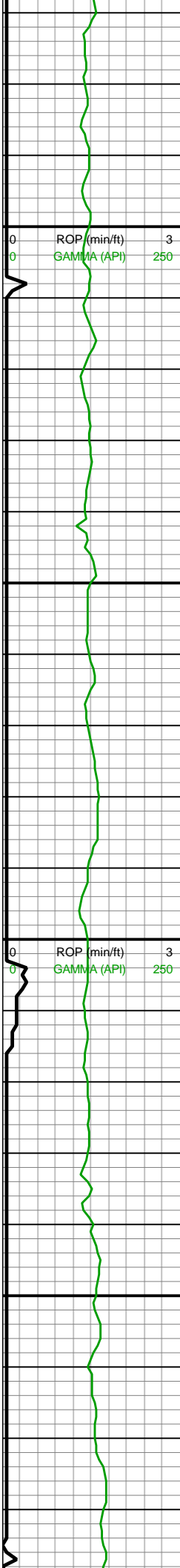
WOB: 33.3klbs
RPM: 70
SPM: 202
SPP: 3,410psi

MD: 2,639'
INC: 13.84°
AZM: 35.22°
TVD: 2,604.28'
VS: -120.54'



2400-2600 SLTST (95%):
med gy-lt gy, frm-sl frm,
blky-sb plty, non-sl calc;
SST (5%): med gy, sme
dk gy, frm-sl hrd, w cons
cls cons wi calc cmt, vf
grnd to slt, sb ang-sb rd,
mod-w srt



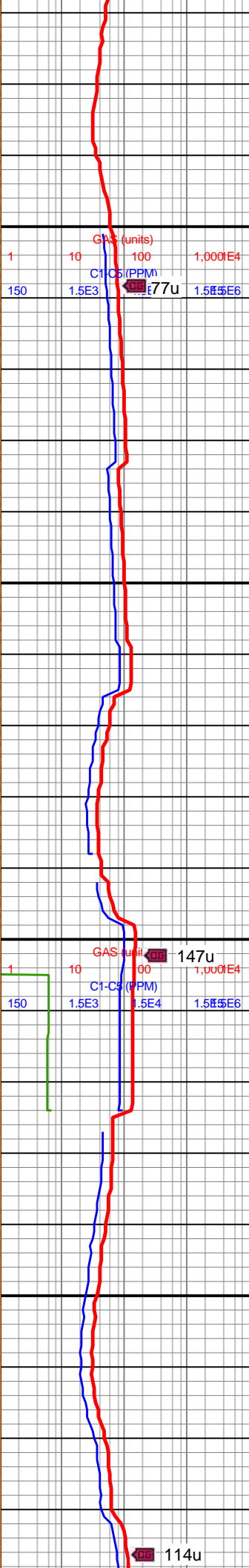
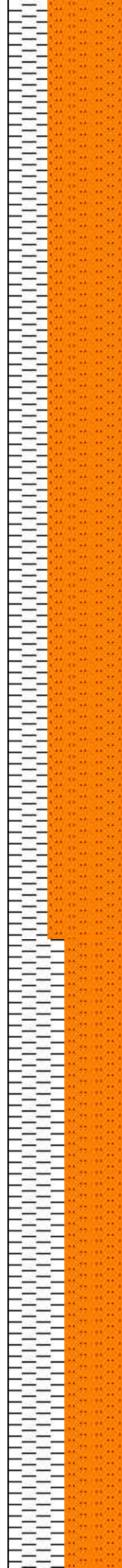


2,670
2,680
2,690
2,700
2,710
2,720
2,730
2,740
2,750
2,760
2,770
2,780
2,790
2,800
2,810
2,820
2,830
2,840
2,850
2,860
2,870
2,880

MD: 2,733'
INC: 12.88°
AZM: 31.26°
TVD: 2,695.73'
VS: -127.48'

WOB: 30.5klbs
RPM: 70
SPM: 201
SPP: 3,454psi

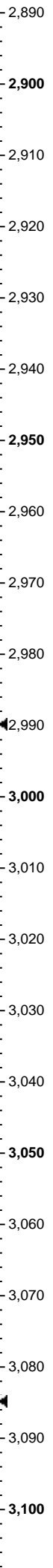
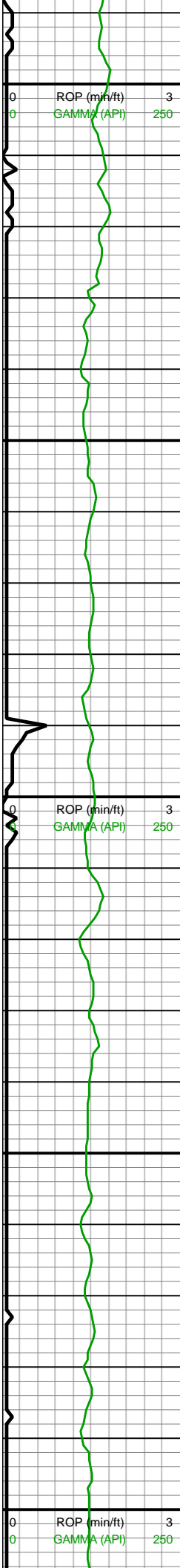
MD: 2,827'
INC: 12.35°
AZM: 39.08°
TVD: 2,787.47'
VS: -134.64'



2600-2800 SLTST (65%):
pred dk gy-gyshbn, frm, tr
sft, blk, tr sb plty, non-sl
calc; SH (35%): lt gy-med
gy, ang-sb blk, slty tex, sl
frm, mod cly content, non
calc



114u



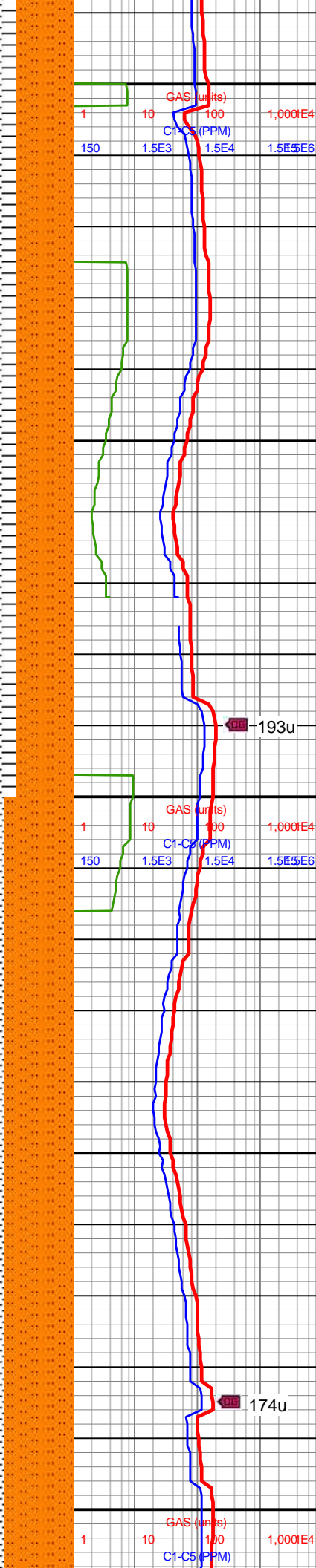
MW IN: 9.7
VIS IN: 64
MW OUT: 9.7+
VIS OUT: 56

MD: 2,922'
INC: 10.5°
AZM: 33.64°
TVD: 2,880.59'
VS: -141.66'

WOB: 9.1klbs
RPM: 43
SPM: 202
SPP: 3,166psi

MD: 3,016'
INC: 10.72°
AZM: 43.3°
TVD: 2,972.99'
VS: -148.64'

MD: 3,111'

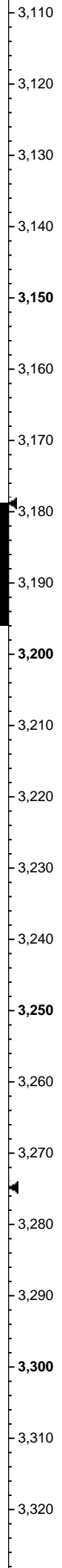
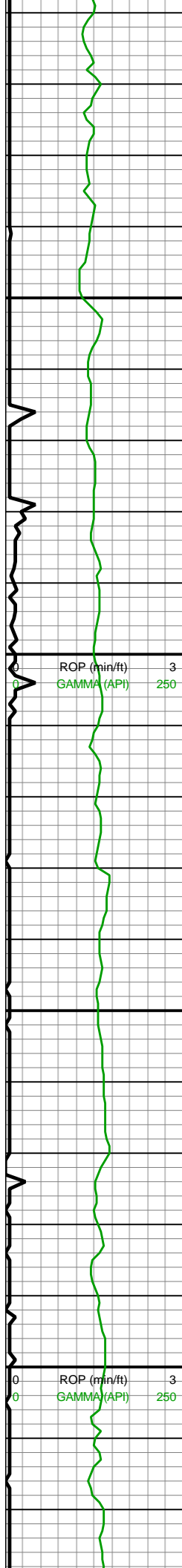


2800-3000 SLTST (50%):
predy dk gy-gyshbn, frm,
blky, tr sb plty, non-sl
calc; SH (50%): predy lt
gy-med gy, ang-sb blky,
silty tex, frm-sl hd, mod cly
content, non calc



193u

174u

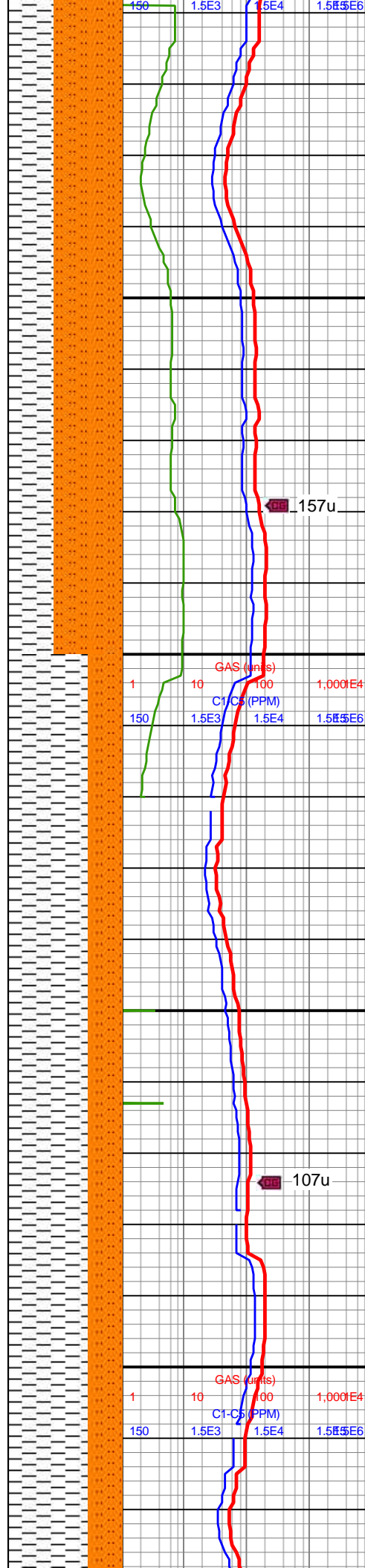


INC: 8.97°
AZM: 39.79°
TVD: 3,066.59'
VS: -156.02'

WOB: 0klbs
RPM: 70
SPM: 200
SPP: 3,249psi

MD: 3,206'
INC: 10.42°
AZM: 36.27°
TVD: 3,160.23'
VS: -162.33'

MD: 3,300'
INC: 8.48°
AZM: 32.14°
TVD: 3,252.95'
VS: -167.55'

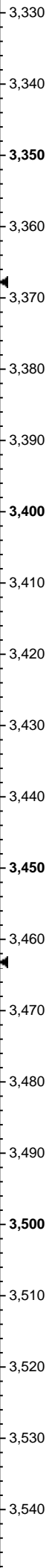
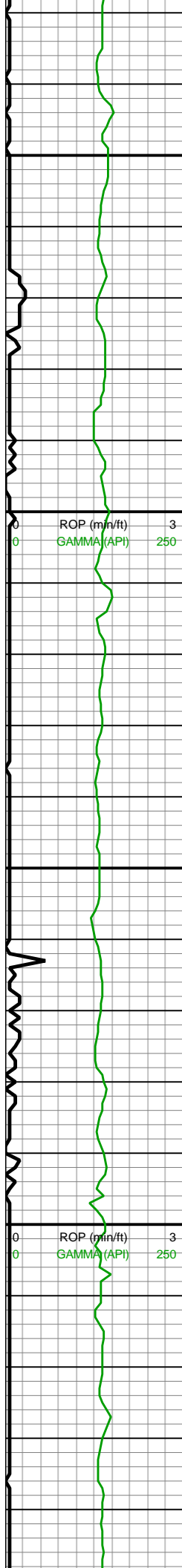


157u

107u

3000-3200 SLTST (65%):
predy gyshbn-dk gy, frm,
blky, non-sl calc; SH
(35%): predy lt gy-med
gy, ang-sb blky, slty tex,
frm-sl hd, mod cly
content, non calc



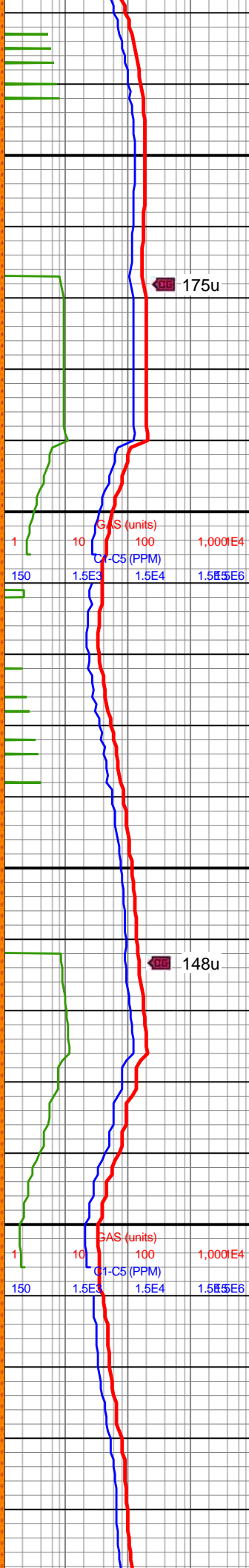


MW IN: 9.7+
VIS IN: 60
MW OUT: 9.7+
VIS OUT: 54

MD: 3,394'
INC: 10.33°
AZM: 35.39°
TVD: 3,345.68'
VS: -172.62'

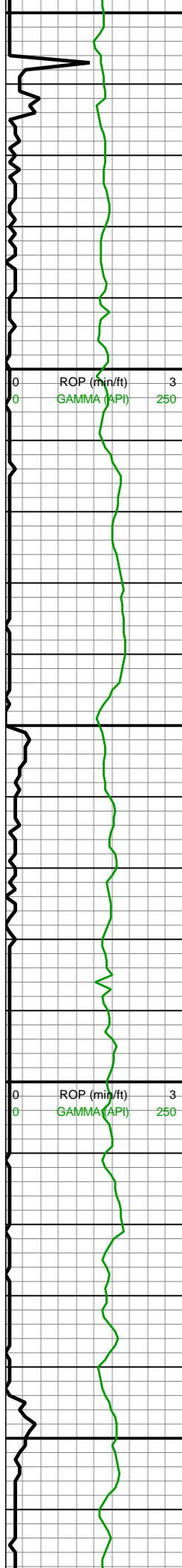
WOB: 7.3klbs
RPM: 70
SPM: 200
SPP: 3,472psi

MD: 3,489'
INC: 10.64°
AZM: 32.67°
TVD: 3,439.1'
VS: -178.34'



3200-3400 SH (70%):
predy lt gy-med gy,
ang-sb blk, slty tex, frm,
brit ip, mod cly content,
non calc; SLTST (30%):
gyshbn, frm, blk, non-sl
calc



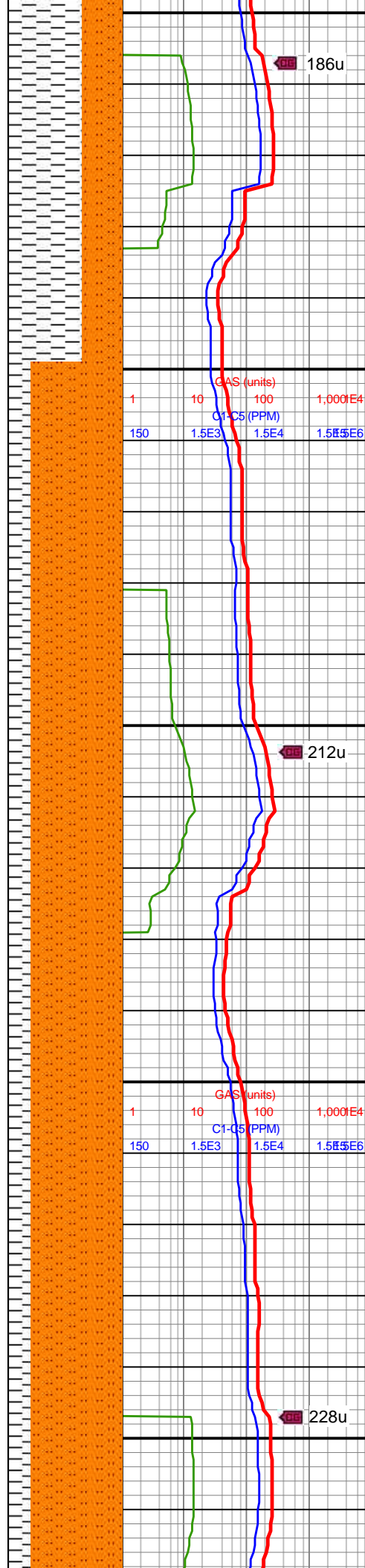


MD: 3,583'
INC: 9.01°
AZM: 37.94°
TVD: 3,531.72'
VS: -183.94'

WOB: 31.7klbs
RPM: 70
SPM: 202
SPP: 3,657psi

MD: 3,677'
INC: 10.9°
AZM: 28.54°
TVD: 3,624.3'
VS: -188.98'

MW IN: 9.7+
VIS IN: 59
MW OUT: 9.7
VIS OUT: 52



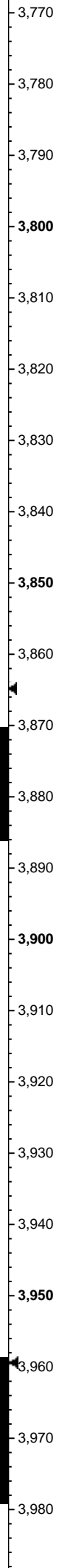
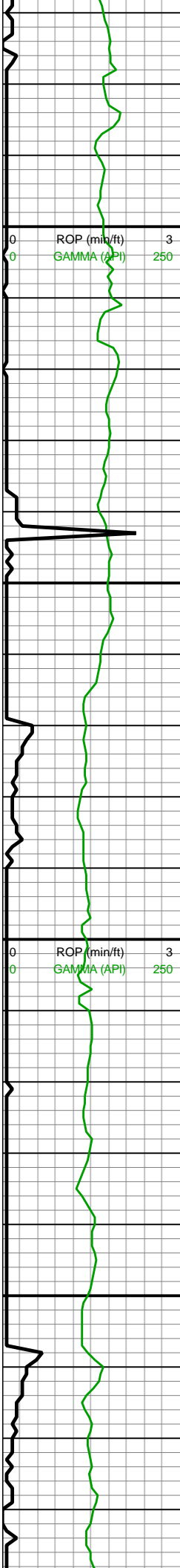
3400-3600 SH (65%): lt gy, sme med gy, ang-sb blk, slty tex, frm, brit ip, mod cly content, non calc; SLTST (35%): med gy-gyshbn, frm-sl hd, blk, non calc



186u

212u

228u

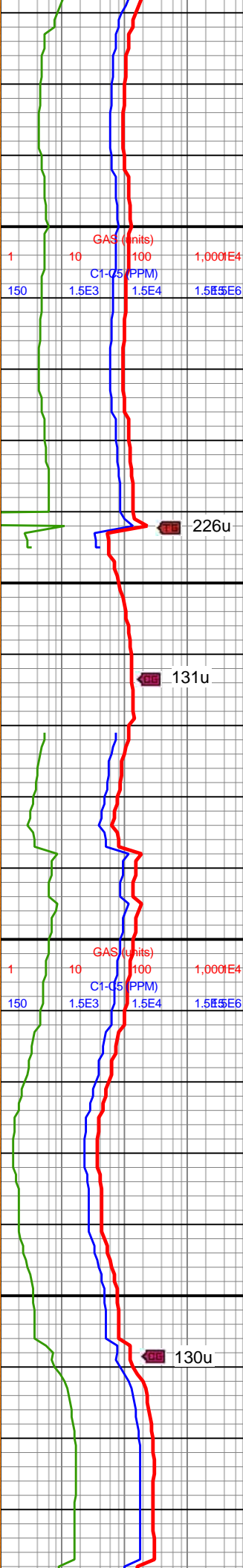
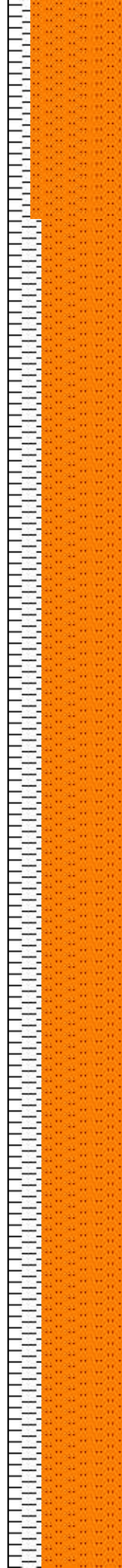


MD: 3,796'
INC: 11.65°
AZM: 26.09°
TVD: 3,741.01'
VS: -194.07'

WOB: 31.3klbs
RPM: 70
SPM: 202
SPP: 3,614psi

MD: 3,891'
INC: 11.12°
AZM: 28.54°
TVD: 3,834.14'
VS: -198.17'

MD: 3,985'
INC: 13.76°
AZM: 33.11°
TVD: 3,925.92'

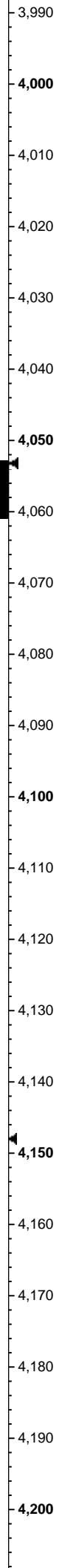
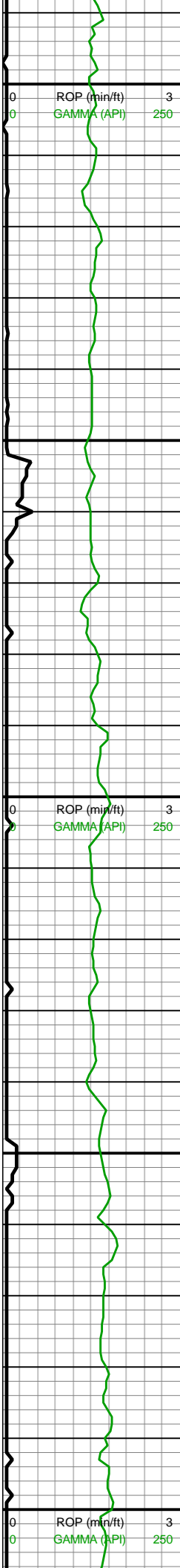


3600-3800 SLTST (80%):
med gy-dk gy, frm-sl hd,
blky, non calc; SH (20%):
lt gy, sme med gy,
ang-sb blky, slty tex, frm,
brit ip, mod cly content,
non calc



3800-4000 SLTST (70%):
med-dk gy, frm-sl hd,



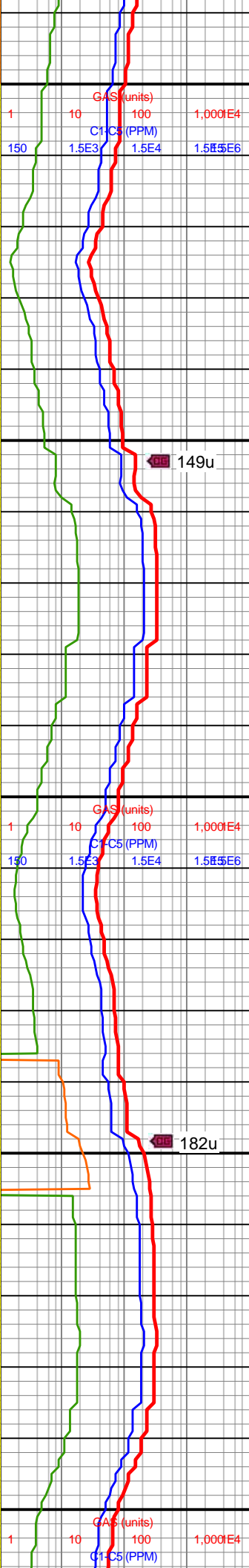
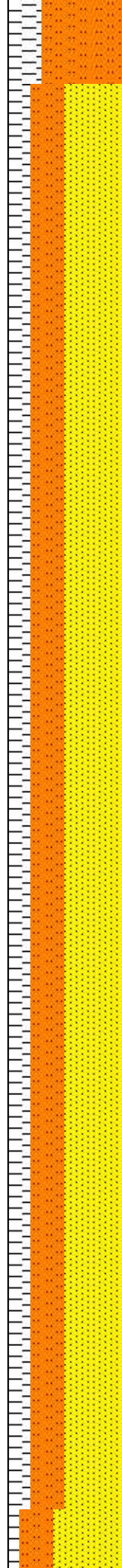


WOB: 32.3klbs
RPM: 70
SPM: 200
SPP: 4,500psi

MD: 4,080'
INC: 13.67°
AZM: 36.45°
TVD: 4,018.22'
VS: -211.63'

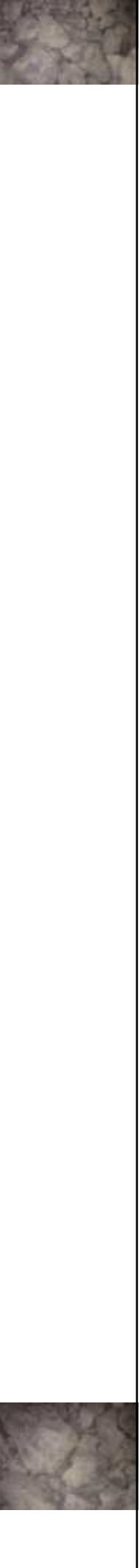
MD: 4,174'
INC: 11.03°
AZM: 33.11°
TVD: 4,110.03'
VS: -218.61'

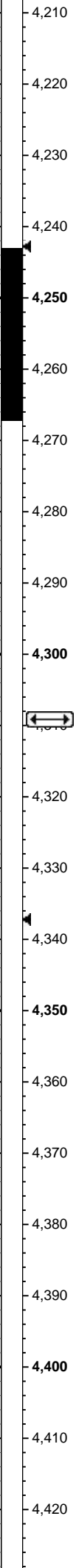
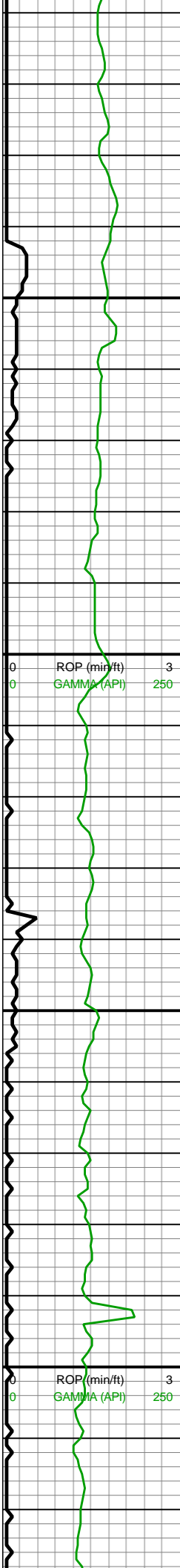
WOB: 30.2klbs
RPM: 70
SPM: 202
SPP: 4,379psi



blky, non calc; SH (30%):
lt-med gy, sb ang-sb blky,
silty tex, frm, brit ip, mod
cly content, non calc

4100-4200 SS (50%):
offwht-med gy, w srted, vf-f
gr, sft-fri, sl hd, cons wi
arg cmt, sl-mod calc;
SLTST (30%): med gy-lt
gy, silty tex, blky-sb plty,
frm-v frm, tr micmica, non
calc; SH (20%): med
gy-dk gy, sl frm-sft, sl sm
tex, blky-sb plty, micmica,
non calc





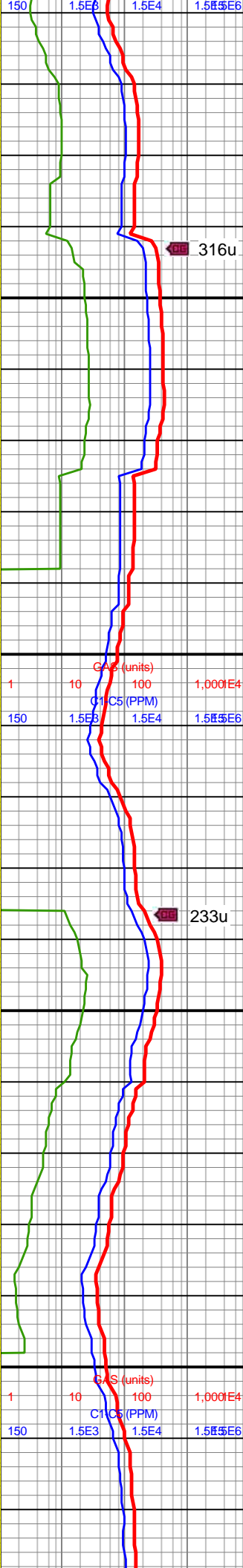
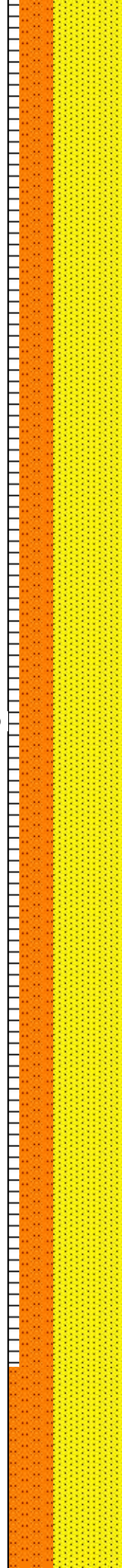
MW IN: 9.7
VIS IN: 59
MW OUT: 9.7
VIS OUT: 51

MD: 4,269'
INC: 10.9°
AZM: 44.71°
TVD: 4,203.31'
VS: -225.98'

Sussex
4,309'MD/4,243'TVD

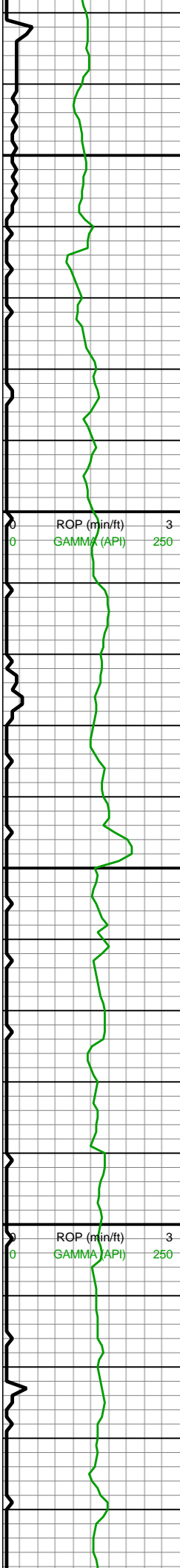
MD: 4,363'
INC: 12.17°
AZM: 42.86°
TVD: 4,295.41'
VS: -235.12'

WOB: 35.6klbs
RPM: 70
SPM: 200
SPP: 4,320psi



4200-4400 SS (60%):
offwht-med gy, w srted, vf-f
gr, sft-fri, sl hd, cons wi
arg cmt, sl-mod calc;
SLTST (30%): med gy-lt
gy, slty tex, blkly-sb plty,
frm-v frm, tr micmica, non
calc; SH (10%): med
gy-dk gy, sl frm-sft, sl sm
tex, blkly-sb plty, micmica,
non calc





4,430
4,440
4,450
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

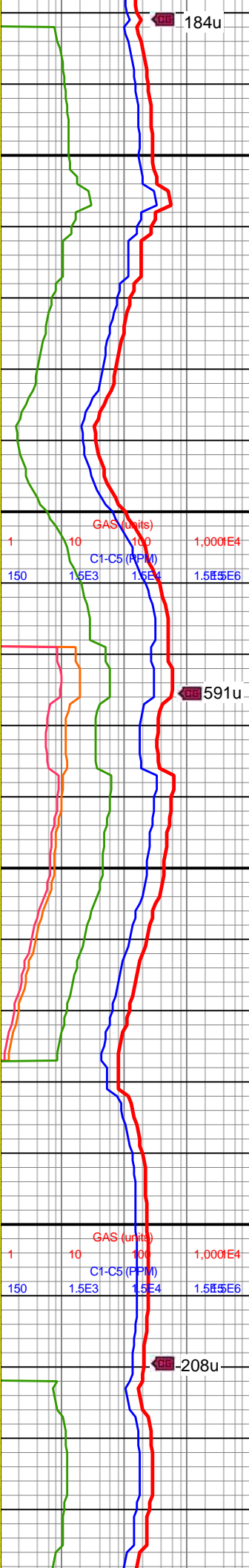
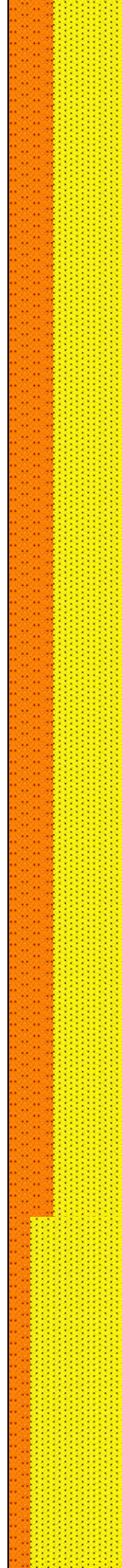
MD: 4,458'
INC: 13.23°
AZM: 39.08°
TVD: 4,388.09'
VS: -244.35'

MW IN: 9.7+
VIS IN: 56
MW OUT: 9.7
VIS OUT: 49

MD: 4,552'
INC: 12.57°
AZM: 35.66°
TVD: 4,479.72'
VS: -252.47'

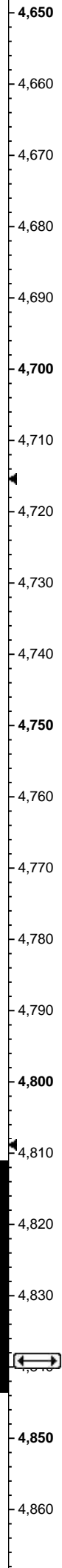
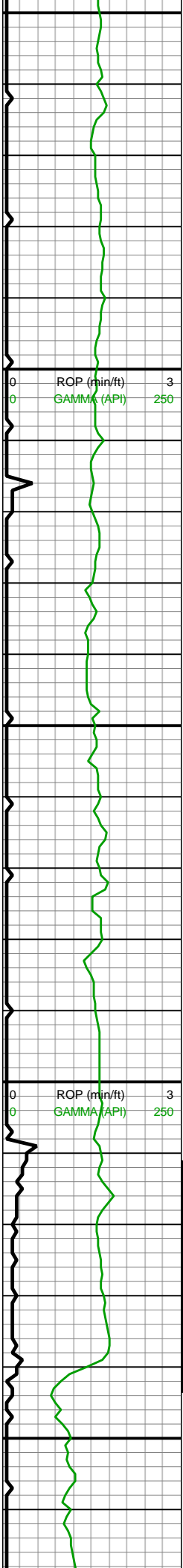
WOB: 34.9klbs
RPM: 70
SPM: 200
SPP: 4,598psi

MD: 4,647'
INC: 11.34°
AZM: 32.49°



4400-4600 SS (60%):
predy med gy, sme
crm-off wht, w srtd, vf-f gr,
sft-sl hd, cons wi arg cmt,
sl-mod calc; SLTST
(40%): med gy-lt gy, slty
tex, blk-y-sb plty, frm-v frm,
tr micmica, non calc;



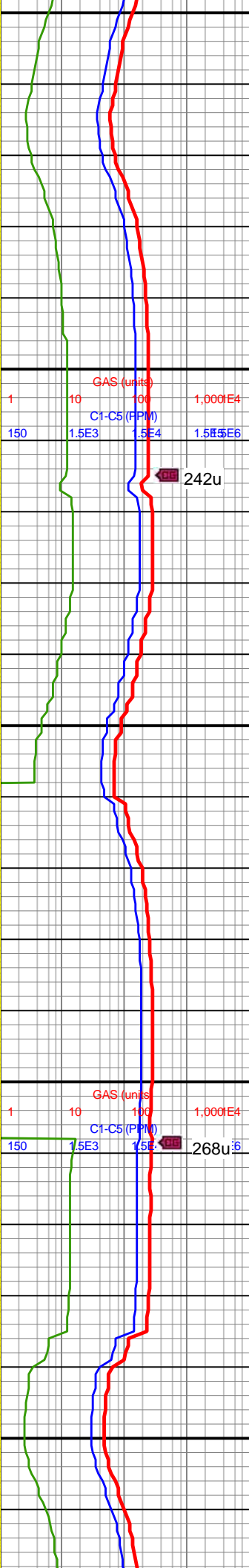
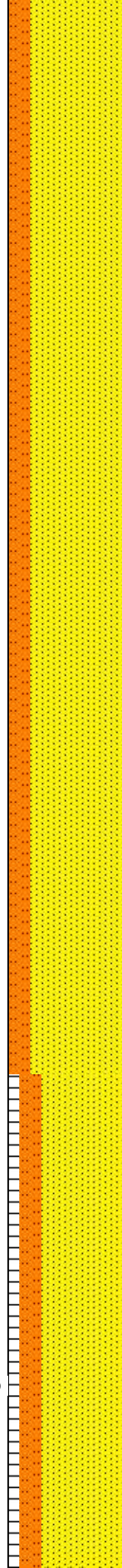


TVD: 4,572.65'
VS: -259.03'

MD: 4,741'
INC: 9.19°
AZM: 26.08°
TVD: 4,665.15'
VS: -263.35'

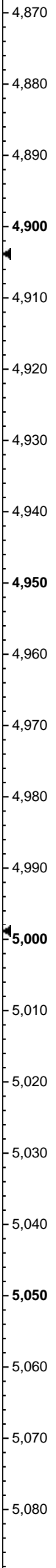
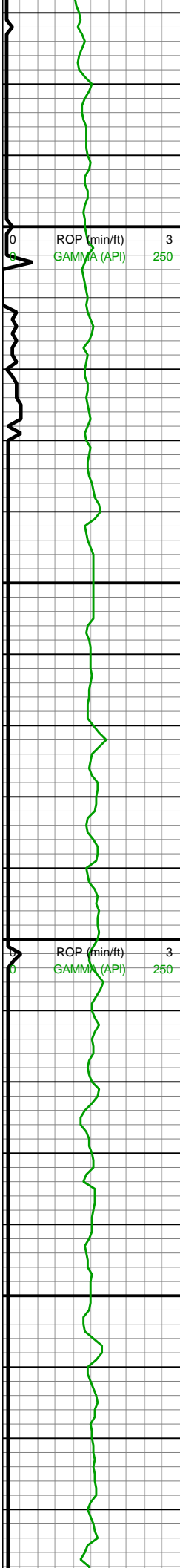
MD: 4,836'
INC: 11.03°
AZM: 32.4°
TVD: 4,758.67'
VS: -267.63'

Shannon
4,839'MD/4,762'TVD



4600-4800 SS (80%):
predy med gy, sme
crm-off wht, w srted, vf-f gr,
sft-sl hd, cons wi arg cmt,
sl-mod calc; SLTST
(20%): med gy-lt gy, slty
tex, blk-y-sb plty, frm-v frm,
tr micmica, non calc;



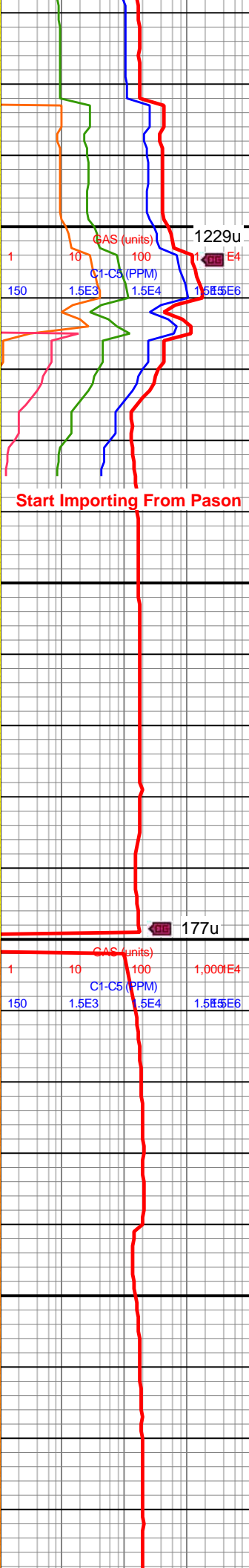
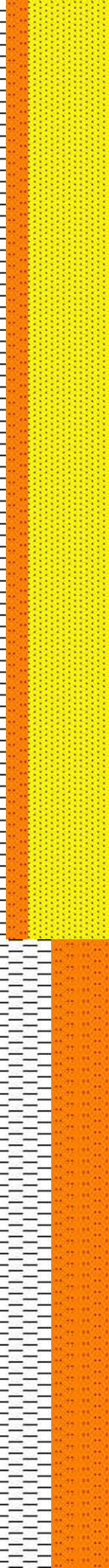


MW IN: 9.8
VIS IN: 54
MW OUT: 9.7+
VIS OUT: 48

MD: 4,930'
INC: 14.06°
AZM: 35.66°
TVD: 4,850.42'
VS: -274.47'

WOB: 37.2klbs
RPM: 70
SPM: 200
SPP: 4,662psi

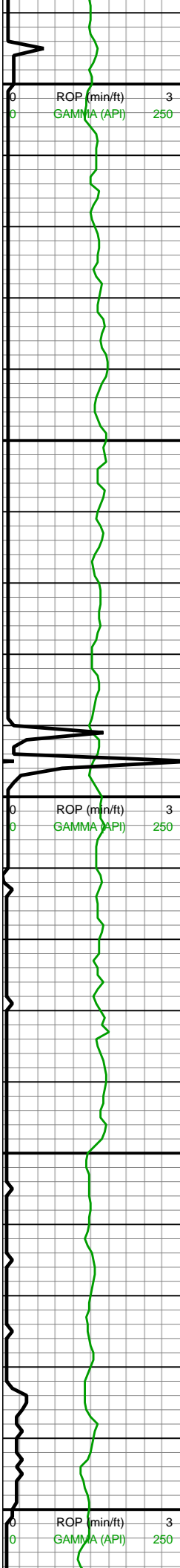
MD: 5,025'
INC: 12.92°
AZM: 31.88°
TVD: 4,942.8'
VS: -281.75'



Start Importing From Pason

4800-5000 SS (70%):
predy med gy, sme
crm-off wht, w srted, vf-f gr,
sft-sl hd, cons wi arg cmt,
sl-mod calc; SLTST
(20%): med gy-lt gy, slty
tex, blk-y-sb plty, frm-v frm,
tr micmica, non calc; SH
(10%): med gy-dk gy, sl
frm-sft, sl sm tex, blk-y-sb
plty, micmica, non calc





5,090
5,100
5,110
5,120
5,130
5,140
5,150
5,160
5,170
5,180
5,190
5,200
5,210
5,220
5,230
5,240
5,250
5,260
5,270
5,280
5,290
5,300

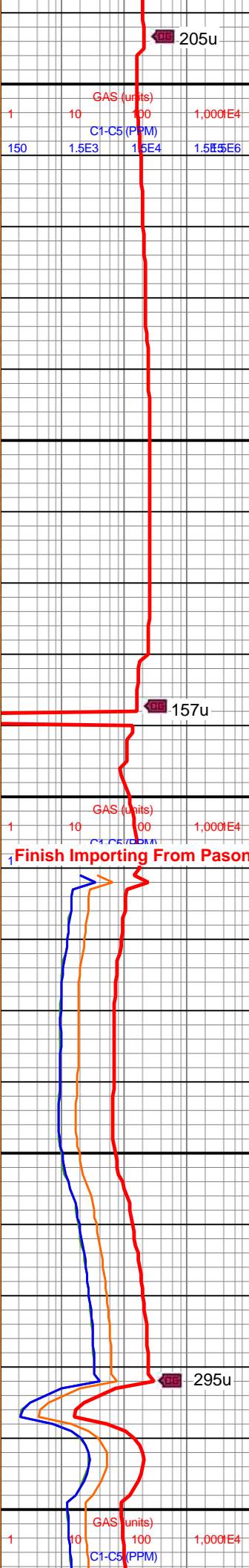
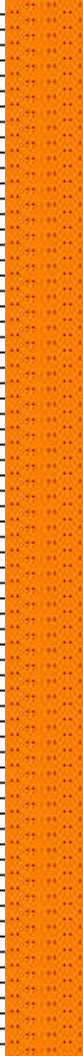
MD: 5,119'
INC: 10.99°
AZM: 29.94°
TVD: 5,034.75'
VS: -287.23'

WOB: 24.7klbs
RPM: 70
SPM: 201
SPP: 4,517psi

MD: 5,213'
INC: 9.19°
AZM: 28.71°
TVD: 5,127.3'
VS: -291.41'

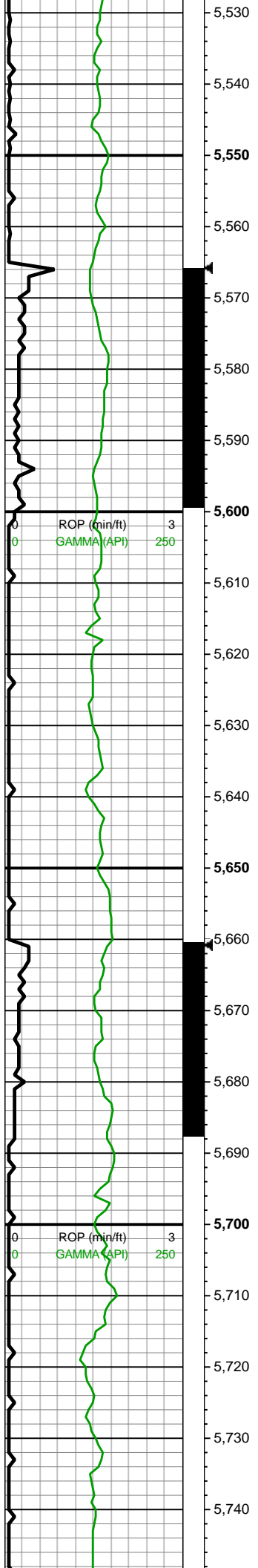
MW IN: 9.8
VIS IN: 52
MW OUT: 9.8
VIS OUT: 47

MD: 5,308'
INC: 9.67°
AZM: 28.71°
TVD: 5,227.3'
VS: -291.41'



5000-5200 SLTY SH
(50%): gyshbn-med gy,
mot lt gy, frm-v frm, sb
blky-tab, slty-rgh tex,
micmica; SLTST (50%):
dk gy-med gy, tab-blky,
frm-sl hrd, rgh-slty tex, v
wk calc

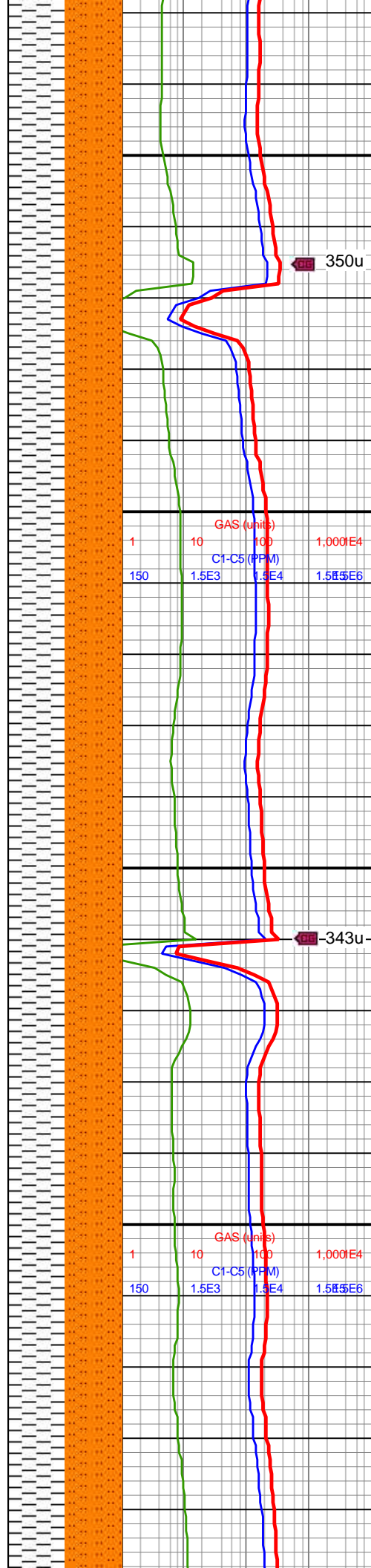




MW IN: 9.8
VIS IN: 51
MW OUT: 9.8
VIS OUT: 47

MD: 5,592'
INC: 11.21°
AZM: 40.49°
TVD: 5,501.31'
VS: -314.28'

WOB: 0klbs
RPM: 70
SPM: 200
SPP: 4,239psi

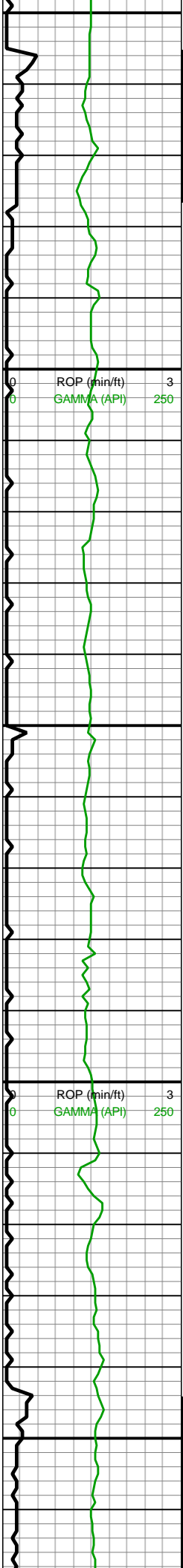


350u

343u

5400-5600 SLTY SH
(50%): lt gy-med, frm-v
frm, sb blk-y-tab, slty-rgh
tex, micmica; SLTST
(50%): dk gy-med gy,
tab-blky, frm-sl hrd,
rgh-slty tex, v wk calc





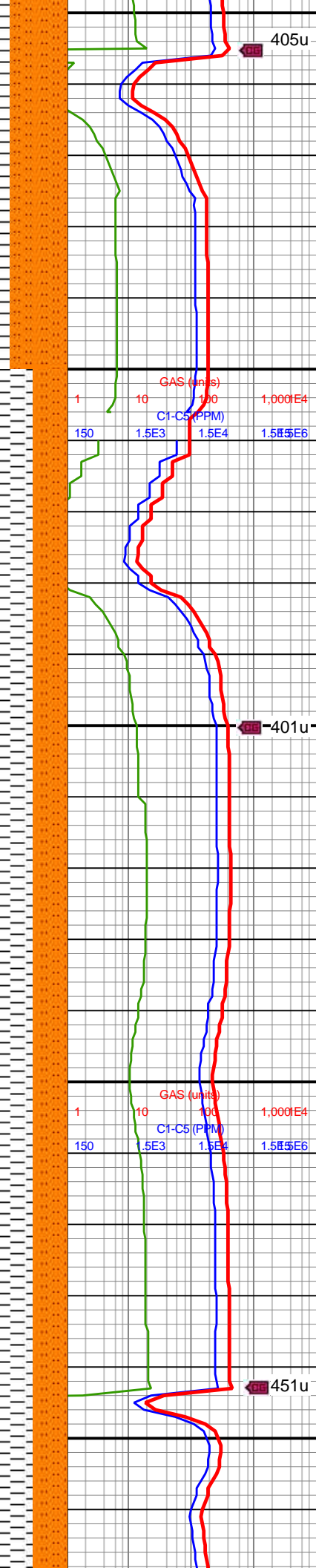
MW IN: 9.9
VIS IN: 50
MW OUT: 9.8+
VIS OUT: 46

MD: 5,781'
INC: 13.27°
AZM: 32.67°
TVD: 5,685.9'
VS: -330.75'

WOB: 36.1klbs
RPM: 71
SPM: 200
SPP: 4,765psi

MD: 5,875'
INC: 10.68°
AZM: 29.86°
TVD: 5,777.85'
VS: -336.37'

MD: 5,969'
INC: 11.03°
AZM: 26.52°



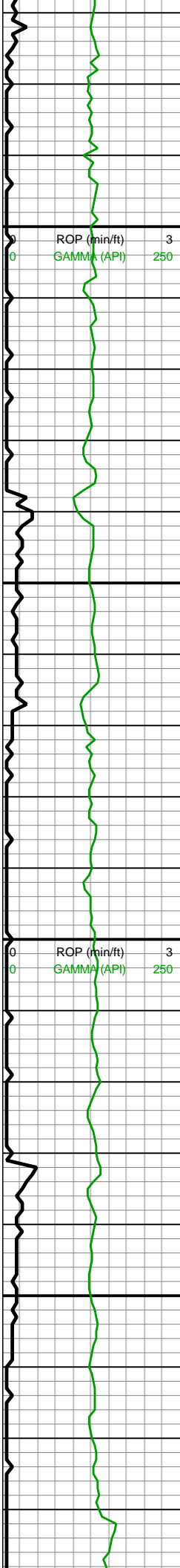
5600-5800 SLTY SH
(50%): gyshbn-med gy,
mot lt gy, frm-v frm, sb
blky-tab, slty-sl sm tex,
micmica; SLTST (50%):
dk gy-med gy, tab-blky,
frm-sl hrd, rgh-slty tex, v
wk calc



405u

401u

451u



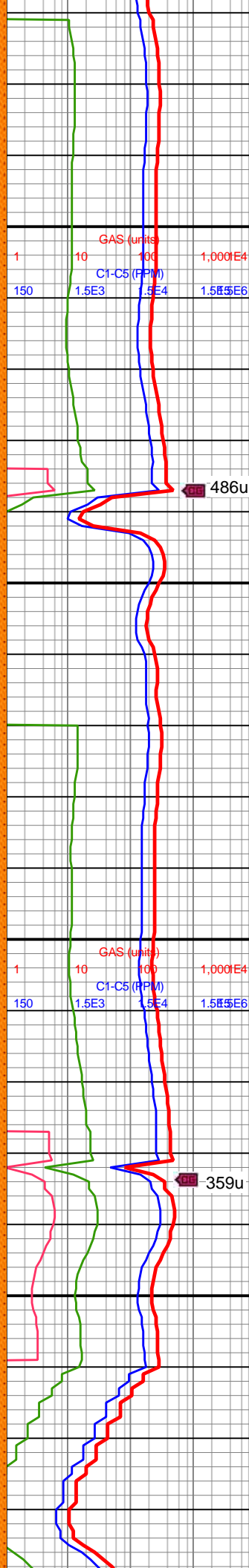
AZM: 20.32
TVD: 5,870.17'
VS: -340.5'

WOB: 34.3klbs
RPM: 70
SPM: 200
SPP: 4,881psi

MW IN: 9.9+
VIS IN: 49
MW OUT: 9.9
VIS OUT: 46

MD: 6,064'
INC: 12.35°
AZM: 28.45°
TVD: 5,963.19'
VS: -344.8'

MD: 6,158'
INC: 12.26°
AZM: 38.82°
TVD: 6,055.05'
VS: -351.28'

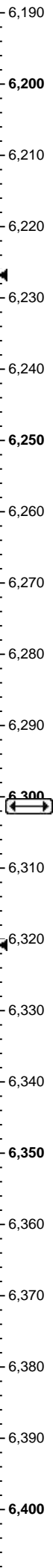
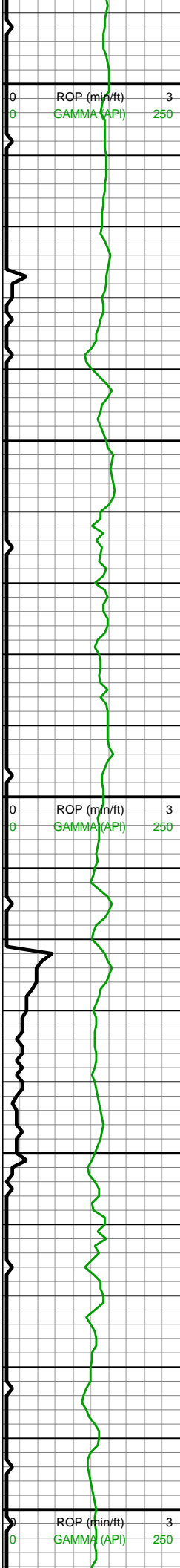


5800-6000 SLTY SH
(70%): gyshbn-med gy,
mot lt gy, frm-v frm, sb
blky-tab, slty-sl sm tex,
micmica; SLTST (30%):
dk-med gy, tab-blky,
frm-sl hrd, rgh-slty tex, v
wk calc

486u

359u

6000-6200 SLTY SH
(60%): predy med gy,
sme mot lt gy, frm-v frm,
sb blky-tab, slty-sl sm tex,
micmica; SLTST (40%):



WOB: 31.8klbs
RPM: 70
SPM: 200
SPP: 4,874psi

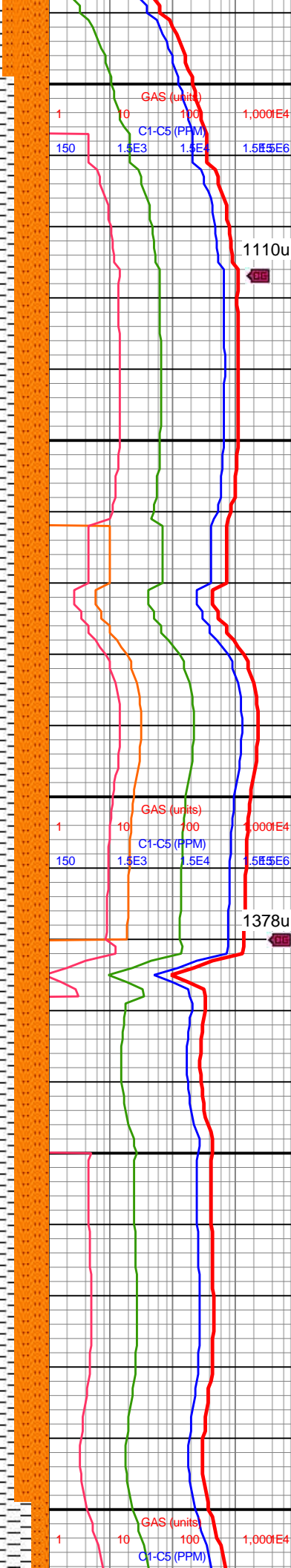
MD: 6,253'
INC: 9.58°
AZM: 35.13°
TVD: 6,148.32'
VS: -358.18'

MW IN: 10
VIS IN: 48
MW OUT: 10
VIS OUT: 46

Teepee Buttes
6,301'MD/6,196'TVD

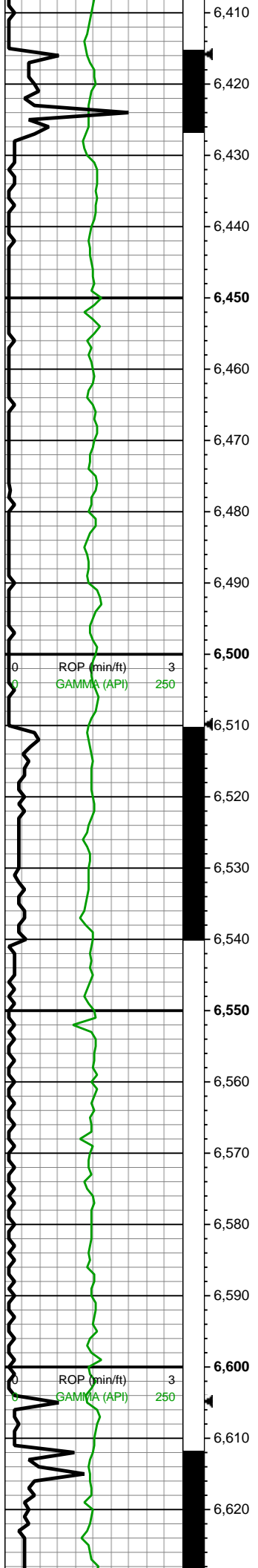
MD: 6,348'
INC: 11.03°
AZM: 43.48°
TVD: 6,241.79'
VS: -365.33'

WOB: 35.9klbs
RPM: 70
SPM: 200
SPP: 5,147psi



micmca, SLTST (40%):
dk gy-med gy, tab-blky,
frm-sl hrd, rgh-slty tex, v
wk calc

6200-6400 SLTY SH
(70%): gyshbn-med gy,
mot lt gy, frm-v frm, sb
blky-tab, slty-sl sm tex,
micmca; SLTST (30%):
dk gy-med gy, tab-blky,
frm-hrd, sl slty tex, v wk
calc, occ pyr nod



MD: 6,442'
INC: 9.05°
AZM: 34.69°
TVD: 6,334.35'
VS: -372.2'

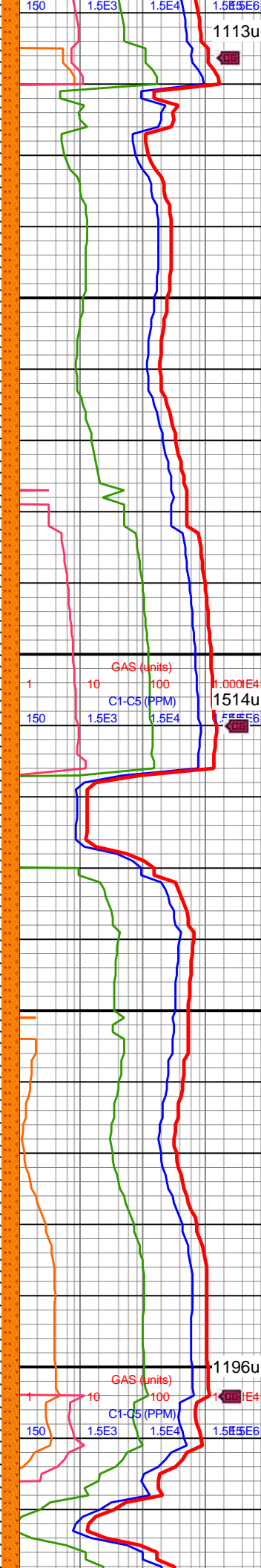
MD: 6,537'
INC: 10.5°
AZM: 31°
TVD: 6,427.97'
VS: -377.2'

MW IN: 10
VIS IN: 47
MW OUT: 10
VIS OUT: 45

WOB: 36.1klbs
RPM: 70
SPM: 200
SPP: 4,883psi

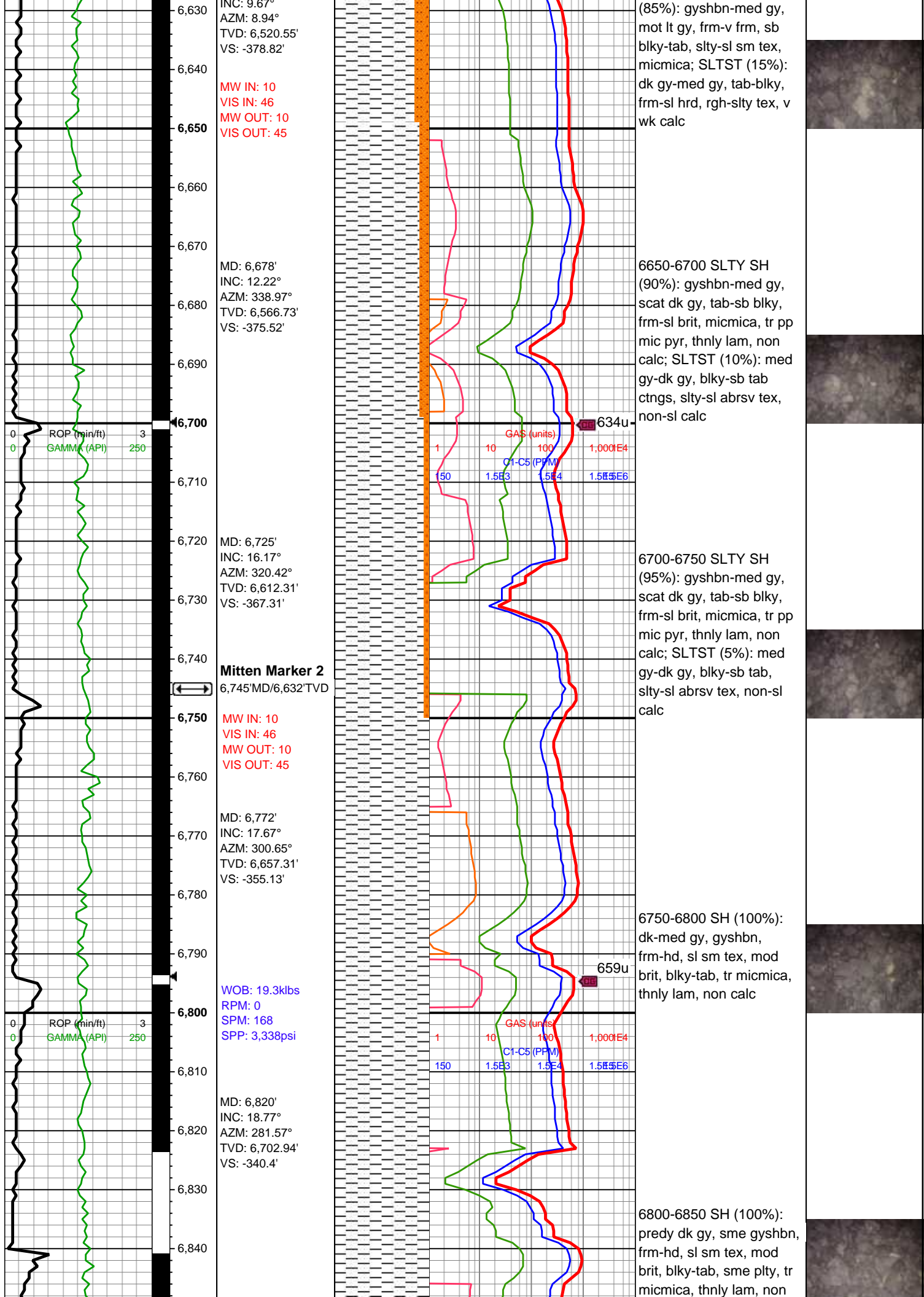
**KOP @
6,612'MD**

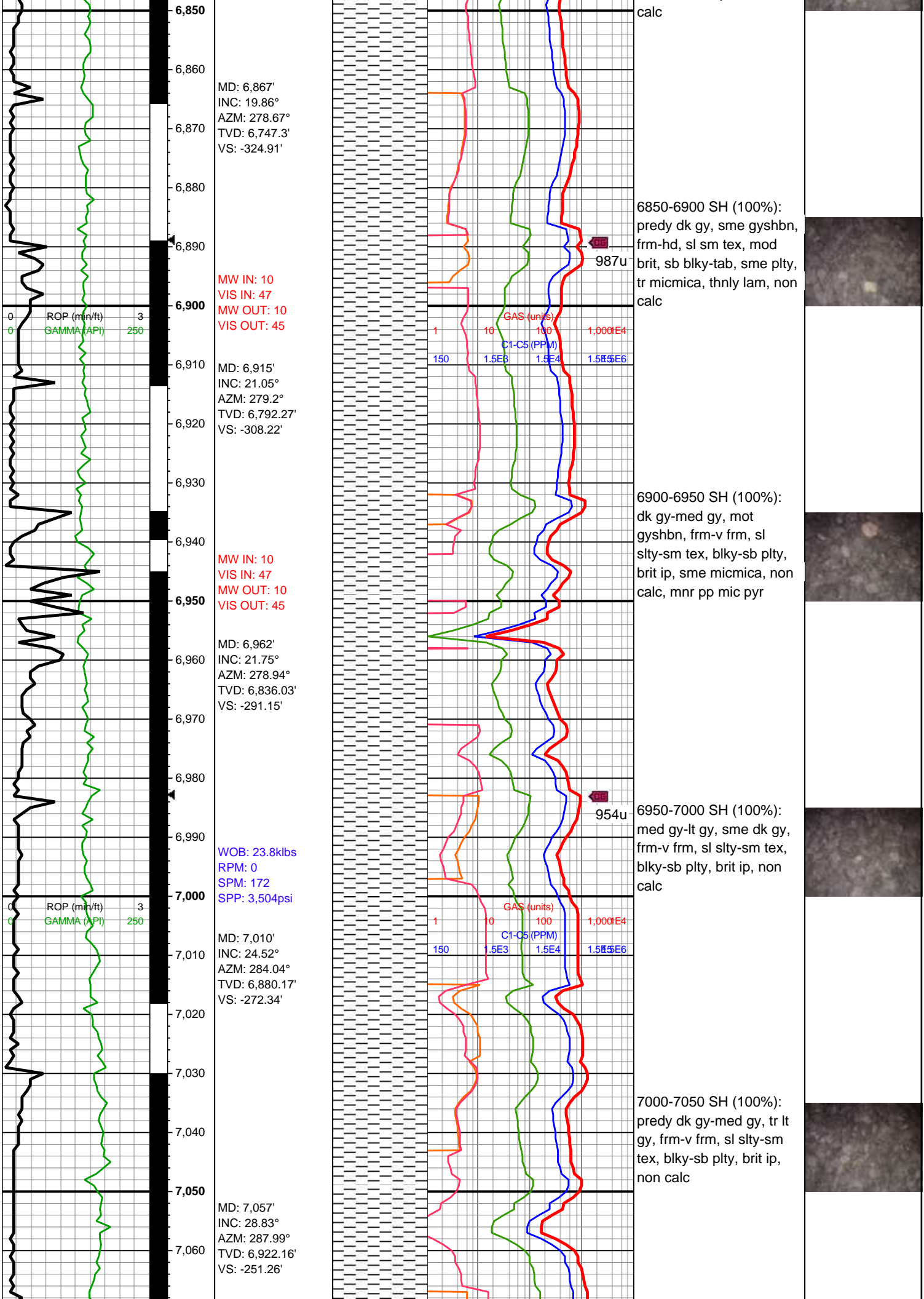
MD: 6,631'

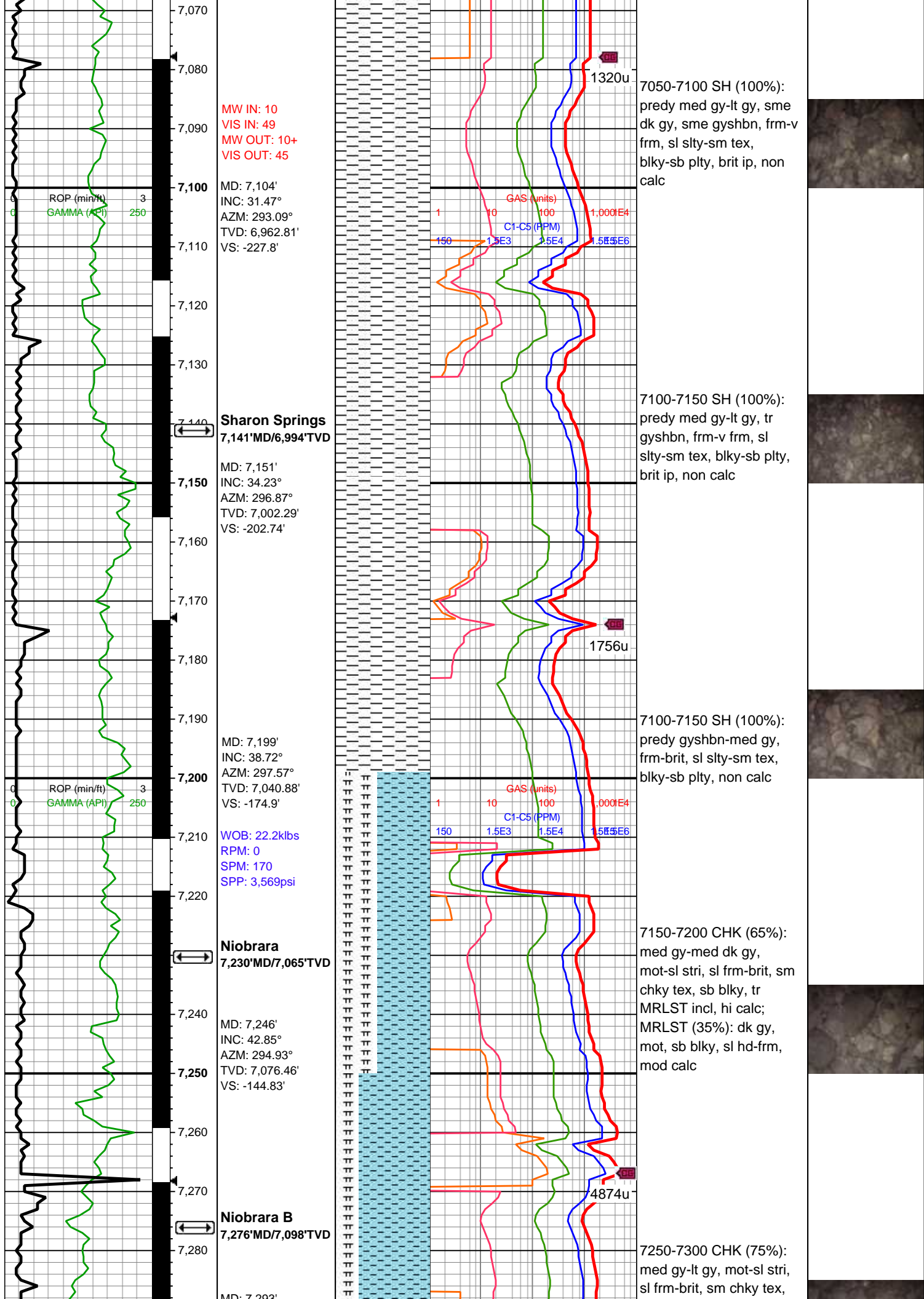


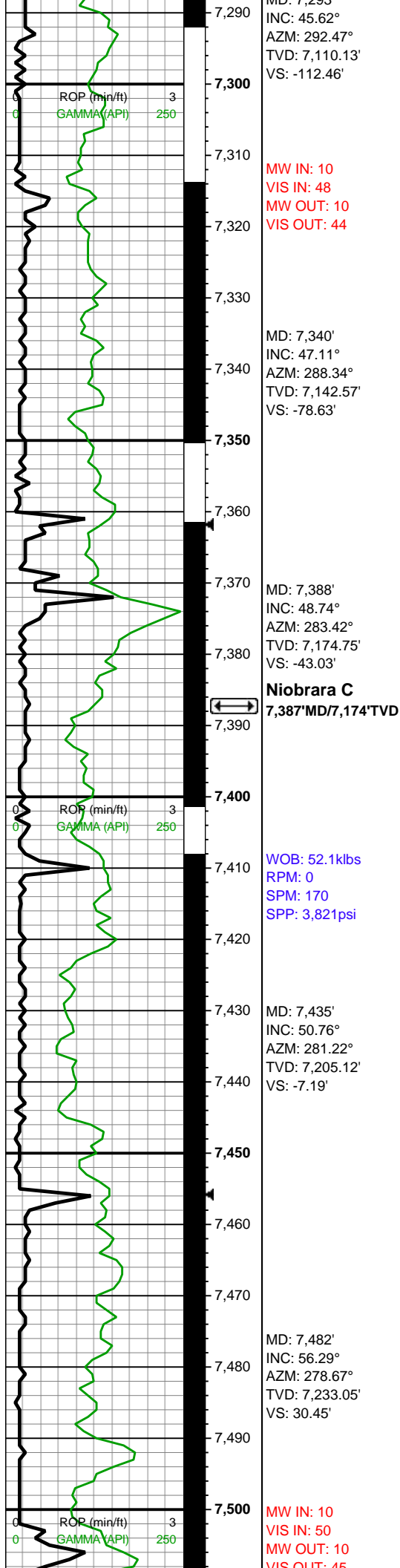
6400-6600 SLTY SH
(85%): gyshbn-med gy,
mot lt gy, frm-v frm, sb
blky-tab, slty-sl sm tex,
micmica; SLTST (15%):
dk gy-med gy, tab-blky,
frm-sl hrd, rgh-slty tex, v
wk calc

6600-6650 SLTY SH









MW IN: 10
VIS IN: 48
MW OUT: 10
VIS OUT: 44

MD: 7,340'
INC: 47.11°
AZM: 288.34°
TVD: 7,142.57'
VS: -78.63'

MD: 7,388'
INC: 48.74°
AZM: 283.42°
TVD: 7,174.75'
VS: -43.03'

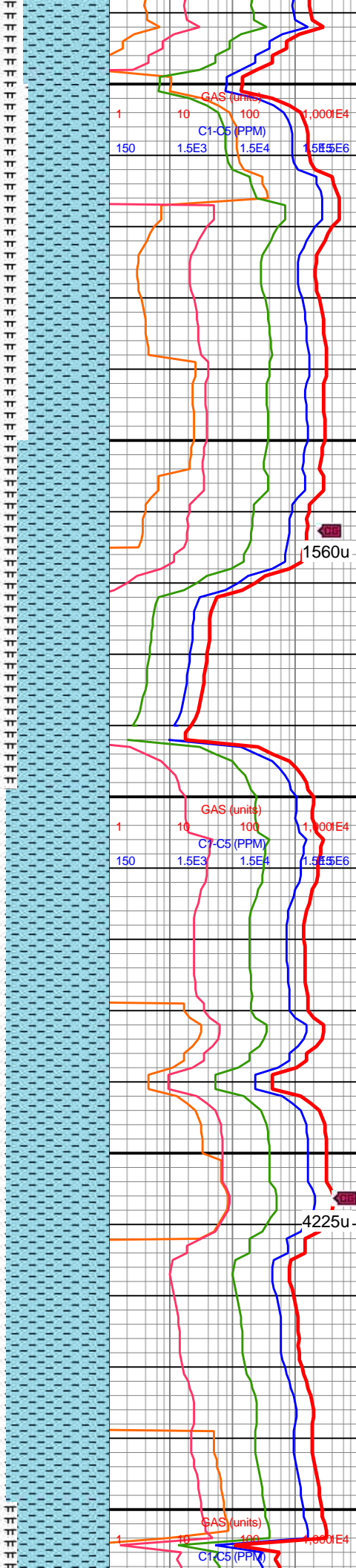
Niobrara C
7,387' MD/7,174' TVD

WOB: 52.1klbs
RPM: 0
SPM: 170
SPP: 3,821psi

MD: 7,435'
INC: 50.76°
AZM: 281.22°
TVD: 7,205.12'
VS: -7.19'

MD: 7,482'
INC: 56.29°
AZM: 278.67°
TVD: 7,233.05'
VS: 30.45'

MW IN: 10
VIS IN: 50
MW OUT: 10
VIS OUT: 45



sb blk, tr MRLST incl, hi
calc; MRLST (25%): dk
gy-gyshbn, mot, sb blk,
sl hd frm, mod calc

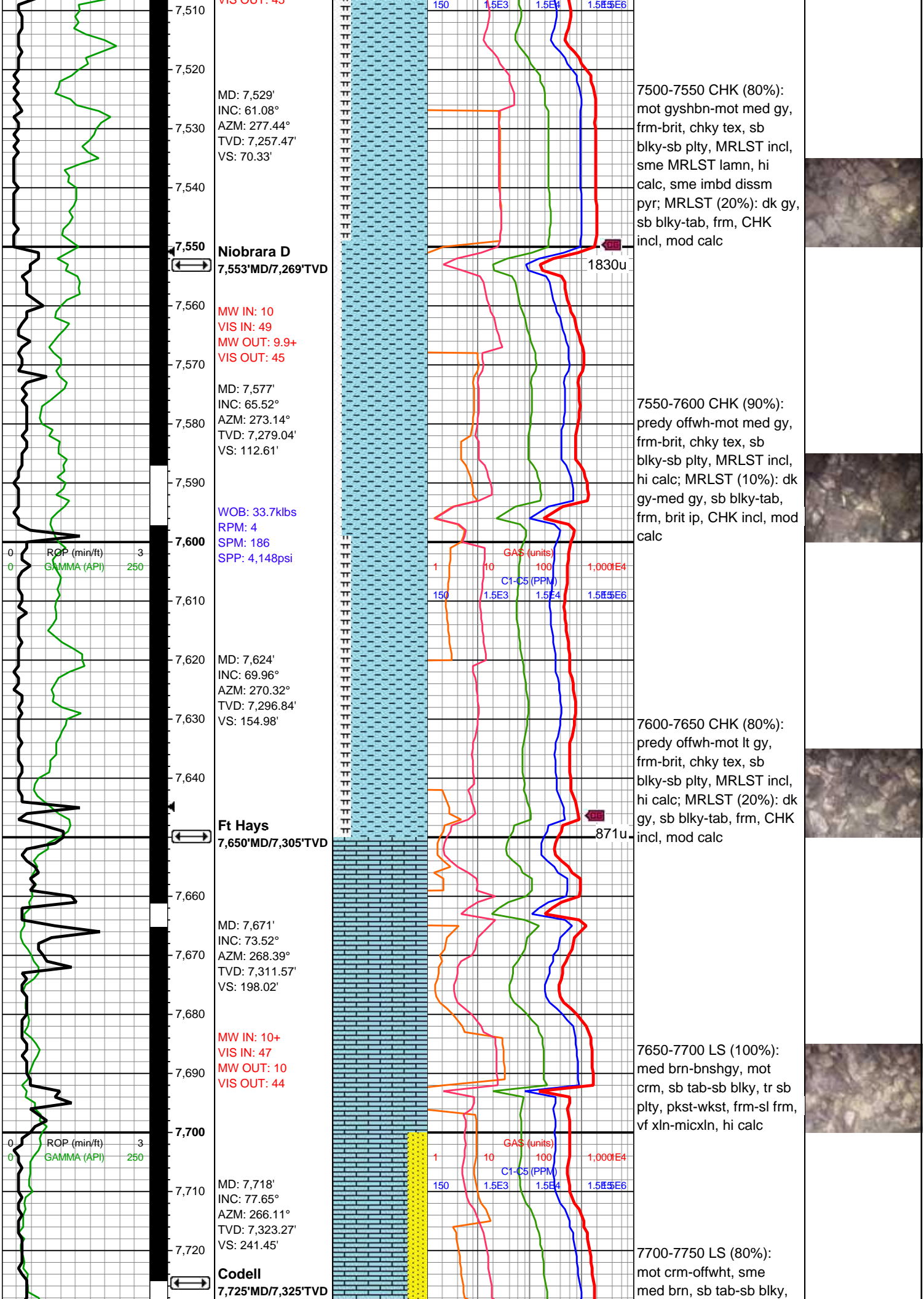
7300-7350 CHK (70%):
med gy, sme gyshbn,
mot-sl stri, sl frm-brit, sm
chky tex, sb blk-tr sb plty,
tr MRLST incl, hi calc;
MRLST (30%): dk
gy-gyshbn, mot, sb blk,
sl hd frm, mod calc

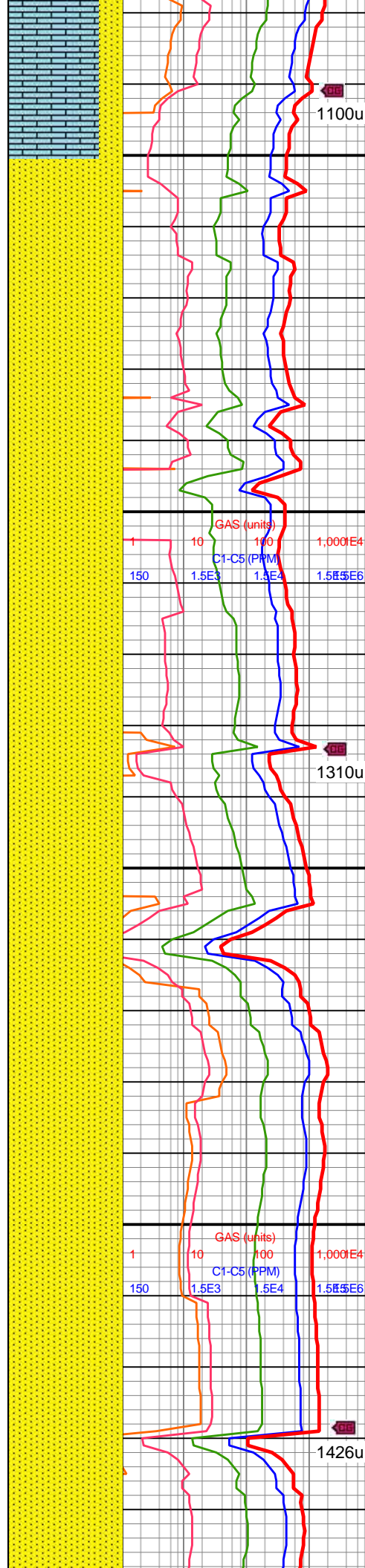
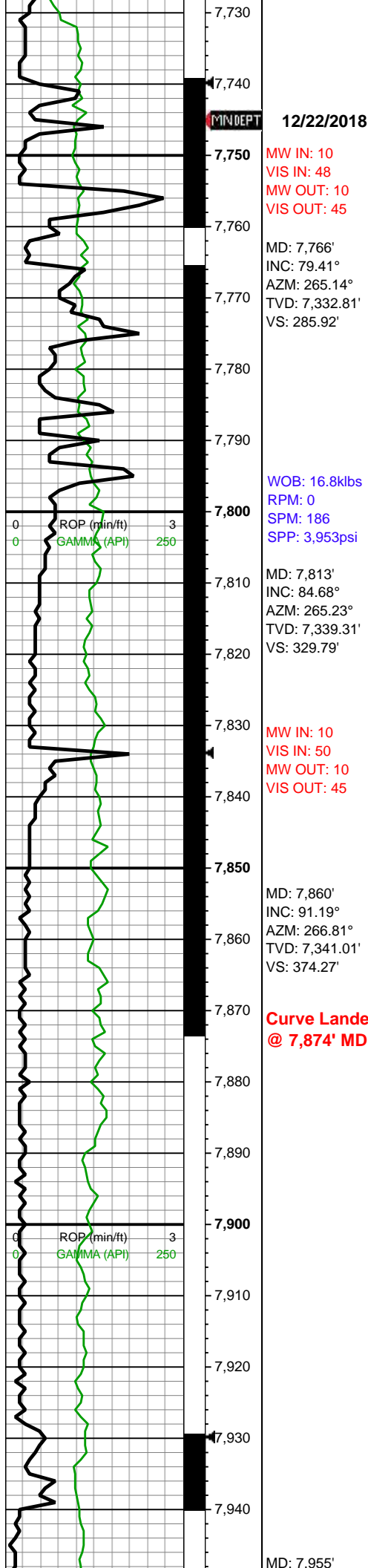
7350-7400 CHK (80%):
mot gyshbn-mot lt gy, sl
frm-brit, chky tex, sb
blk-sb plty, MRLST incl,
hi calc, imbd diss pyr;
MRLST (20%): dk gy-med
gy, sb blk, sl hd frm,
CHK incl, mod calc

7400-7450 CHK (90%):
mot gyshbn-mot lt gy,
frm-brit, chky tex, sb
blk-sb plty, MRLST incl,
hi calc, imbd diss pyr;
MRLST (10%): dk gy, sb
blk-tab, sl hd frm, CHK
incl, mod calc, tr free pyr

7450-7500 CHK (90%):
mot gyshbn-mot lt gy,
sme med gy, frm-brit,
chky tex, sb blk-sb plty,
MRLST incl, hi calc, imbd
diss pyr; MRLST (10%):
dk gy, sb blk-tab, frm,
CHK incl, mod calc, tr
free pyr







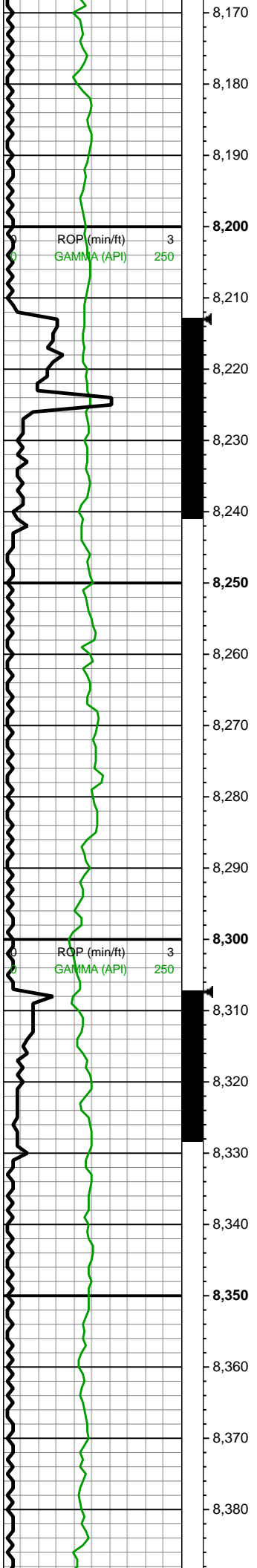
tr sb plty, pkst-wkst,
frm-sl frm, vf xln-micxln,
hi calc; SST (20%): pred
dk gyshbn, frm-sft, blkly,
pred mod-w cons gr sup
cls, silc cmt, non calc, vf-f
grnd

7750-7800 SST (100%):
pred med gyshbn-lt brn,
frm-v frm, blkly, pred
mod-w cons gr sup cls,
silc cmt, non calc, vf-f
grnd, sme sh frags

7800-7850 SST (100%):
pred med gyshbn-lt brn,
frm-sft, blkly, pred mod-w
cons gr sup cls, silc cmt,
non calc, vf-f grnd, tr sh
frags

7850-7900 SST (100%):
pred med gyshbn-dk
gyshbn, frm-sft, blkly, pred
mod-w cons gr sup cls,
silc & arg cmt, non calc,
vf-f grnd, tr sh frags





WOB: 35.5klbs
RPM: 71
SPM: 198
SPP: 5,164psi

MD: 8,238'
INC: 89.74°
AZM: 271.2°
TVD: 7,335.24'
VS: 737.52'

MW IN: 10.1
VIS IN: 48
MW OUT: 10.1
VIS OUT: 45

MD: 8,333'
INC: 92.59°
AZM: 271.82°
TVD: 7,333.31'
VS: 830'

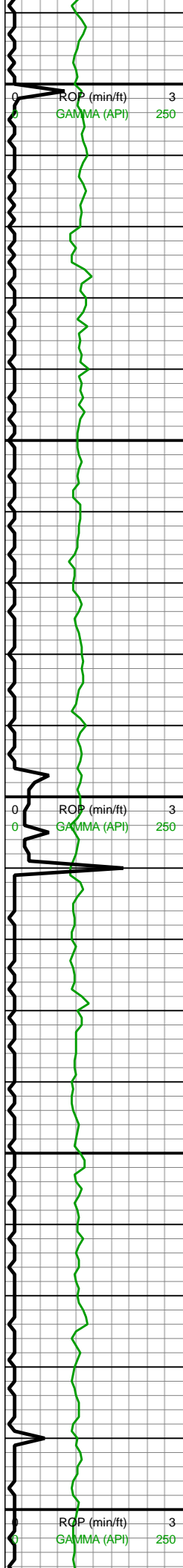


8100-8200 SST (100%):
pred med gyshbn-dk
gyshbn, lt brn, frm-sft,
blky, pred mod-w cons gr
sup cls, vf-f grnd, silc &
arg cmt, non calc, sme
sh frags

8200-8300 SST (100%):
pred lt brn-med gyshbn,
frm-sft, blky, pred mod-w
cons gr sup cls, vf-f grnd,
silc & arg cmt, non calc, tr
sh frags

8300-8400 SST (100%):
pred lt brn-med gyshbn,
frm sft, blky, pred mod w



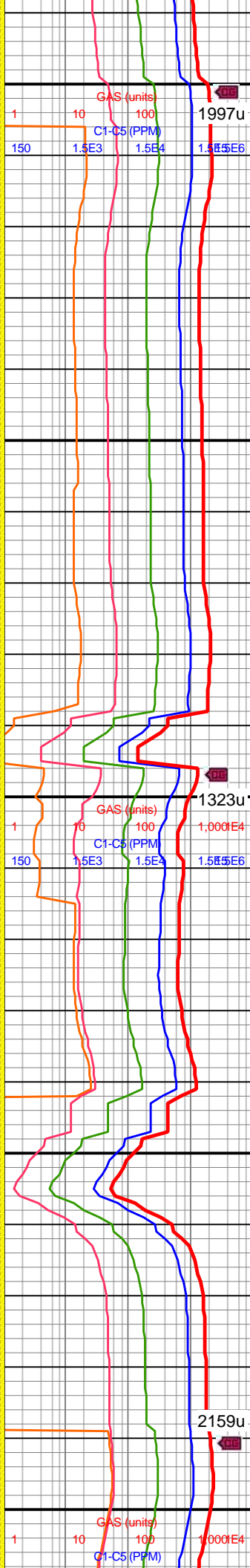


WOB: 22.6klbs
RPM: 71
SPM: 198
SPP: 4,773psi

MD: 8,428'
INC: 92.9°
AZM: 271.73°
TVD: 7,328.76'
VS: 922.51'

MD: 8,522'
INC: 90.97°
AZM: 272.61°
TVD: 7,325.58'
VS: 1,014.23'

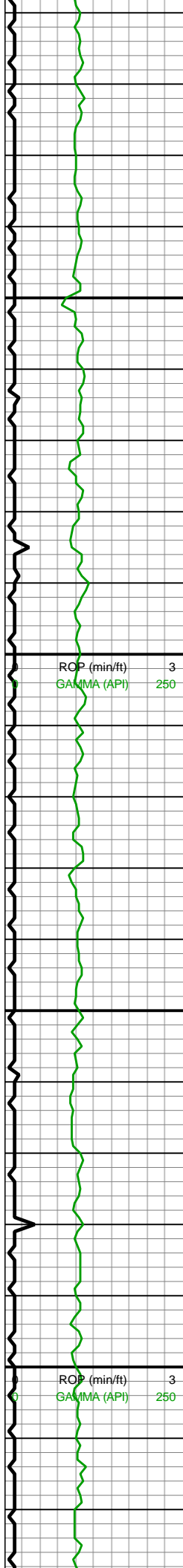
WOB: 32.7klbs
RPM: 71
SPM: 198
SPP: 5,215psi



mm-slt, blk, pred mod-w
cons gr sup cls, vf-f grnd,
silc & arg cmt, non calc,
rr sh frags

8300-8400 SST (100%):
pred lt brn-med gyshbn,
sme dk gyshbn, frm-sft,
blk, pred mod-w cons gr
sup cls, vf-f grnd, silc &
arg cmt, non calc

8500-8600 SST (100%):
pred lt brn, sme med-dk
gyshbn, frm-sft, blk, pred
mod-w cons gr sup cls,
vf-f grnd, silc & arg cmt,
abndt fros-clr free qtz,
non calc



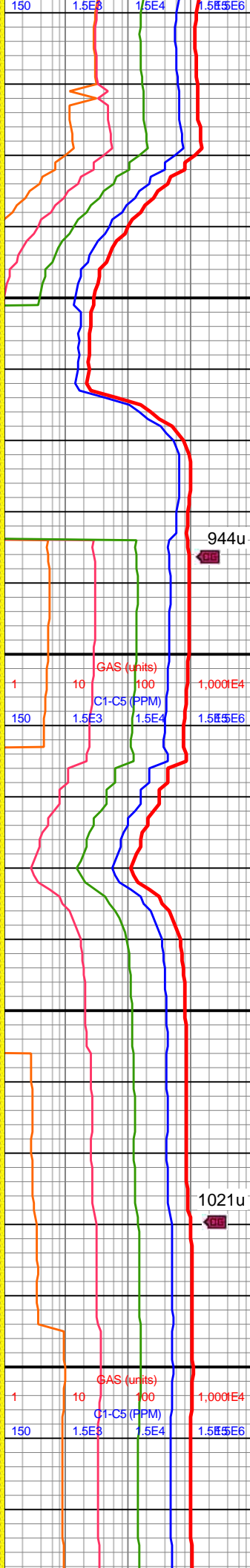
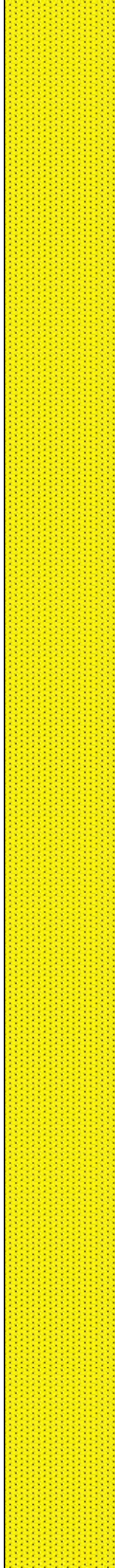
MD: 8,616'
INC: 90.48°
AZM: 272.17°
TVD: 7,324.39'
VS: 1,106.08'

MW IN: 10.1
VIS IN: 48
MW OUT: 10.1
VIS OUT: 45

MD: 8,710'
INC: 89.3°
AZM: 271.56°
TVD: 7,324.57'
VS: 1,197.74'

WOB: 33.6klbs
RPM: 71
SPM: 200
SPP: 5,349psi

MD: 8,805'
INC: 88.81°
AZM: 270.68°
TVD: 7,326.14'
VS: 1,290.09'



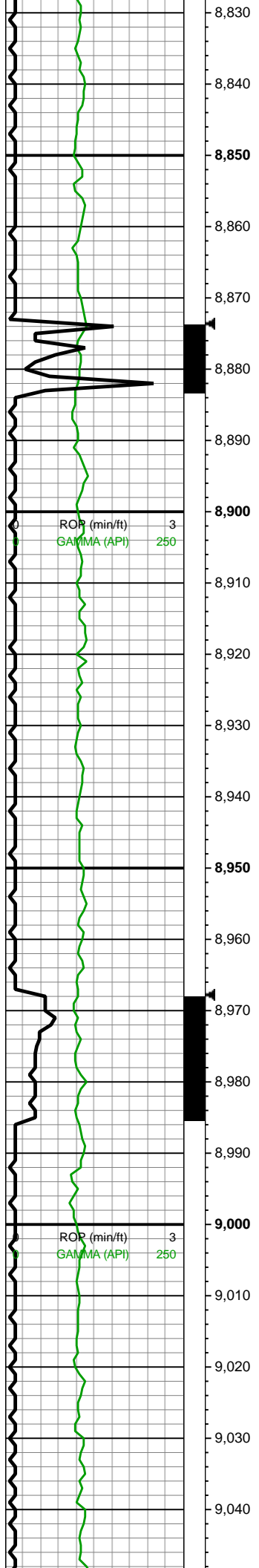
8600-8700 SST (100%):
pred lt brn, sme med-dk
gyshbn, frm-hrd, sb rnd,
mod-w cons gr sup cls,
vf-f grnd, silc & arg cmt,
abndt fros-clr free qtz,
non calc

944u

8700-8800 SST (100%):
pred lt brn, sme med-dk
gyshbn, abndt fros-clr
free qtz, frm-hrd, rnd-sb
rnd, mod-w cons gr sup
cls, vf-f grnd, silc & arg
cmt, non calc

1021u



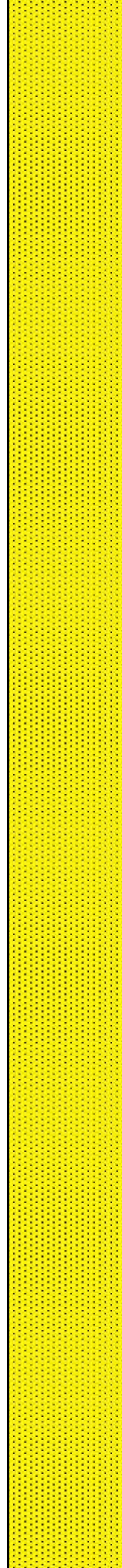


8,830
8,840
8,850
8,860
8,870
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
8,990
9,000
9,010
9,020
9,030
9,040

MW IN: 10.1
VIS IN: 48
MW OUT: 10.1+
VIS OUT: 45

MD: 8,899'
INC: 89.12°
AZM: 270.94°
TVD: 7,327.84'
VS: 1,381.35'

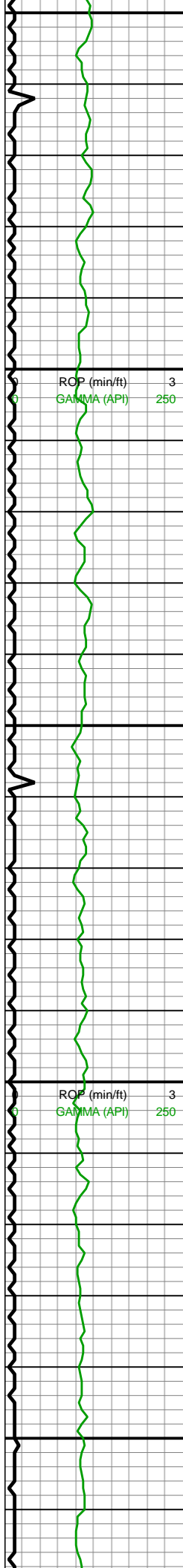
WOB: 31.3klbs
RPM: 71
SPM: 201
SPP: 5,401psi



8800-8900 SST (100%):
lt-med gyshbn, occ
fros-clr free qtz, frm-sl
hrd, rnd-sb rnd, mod-w
cons gr sup cls, vf-f grnd,
silc & arg cmt, non calc

8900-9000 SST (100%):
predy lt-med gyshbn,
sme dk gyshbn, occ
fros-clr free qtz, frm-sl
hrd, rnd-sb rnd, mod-w
cons gr sup cls, vf-f grnd,
silc & arg cmt, non calc





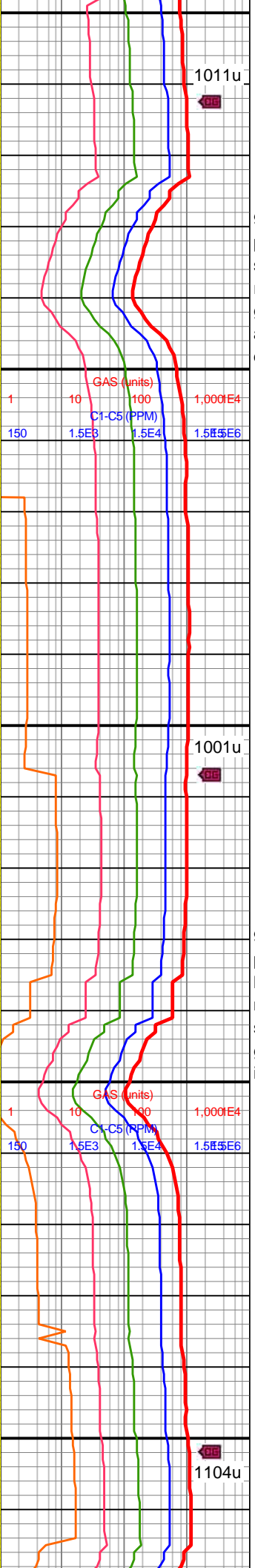
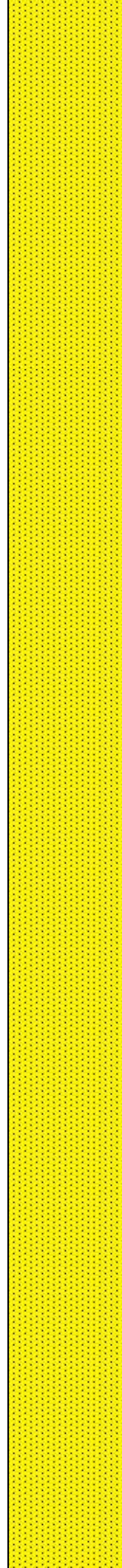
9,050
9,060
9,070
9,080
9,090
9,100
9,110
9,120
9,130
9,140
9,150
9,160
9,170
9,180
9,190
9,200
9,210
9,220
9,230
9,240
9,250
9,260

MD: 9,088'
INC: 91.06°
AZM: 271.12°
TVD: 7,325.93'
VS: 1,565.11'

MW IN: 10.1+
VIS IN: 48
MW OUT: 10.1+
VIS OUT: 45

MD: 9,183'
INC: 90.44°
AZM: 270.06°
TVD: 7,324.69'
VS: 1,657.26'

WOB: 33.8klbs
RPM: 71
SPM: 198
SPP: 5,241psi



9000-9100 SST (100%):
predy lt-med gyshbn,
sme dk gy, frm-sl hrd,
rnd-sb rnd, mod-w cons
gr sup cls, vf-f grnd, silc &
arg cmt, tr fros-clr free
qtz, non calc

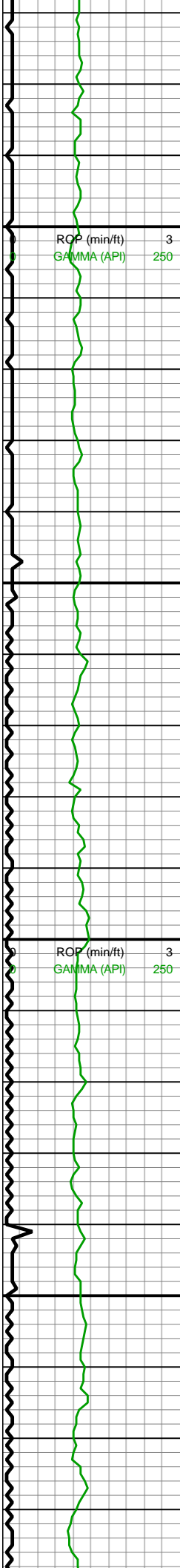
9100-9200 SST (100%):
pred med-dk gyshbn, occ
lt brn, frm-v frm, blk, pred
mod-w cons gr sup cls,
silc cmt, non calc, vf-f
grnd, occ micmica, tr
imbd pyr, rr sh frags



1011u

1001u

1104u



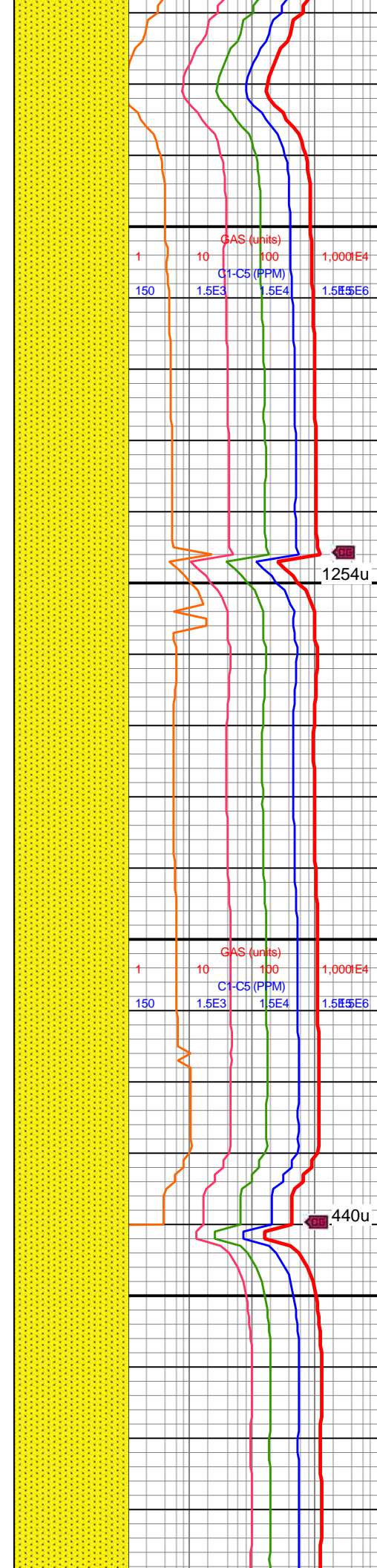
MD: 9,277'
INC: 90.26°
AZM: 270.24°
TVD: 7,324.12'
VS: 1,748.26'

MW IN: 10.1+
VIS IN: 48
MW OUT: 10.1+
VIS OUT: 44

MD: 9,372'
INC: 89.96°
AZM: 270.15°
TVD: 7,323.93'
VS: 1,840.26'

WOB: 31.2klbs
RPM: 71
SPM: 196
SPP: 5,532psi

MD: 9,466'
INC: 89.74°
AZM: 270.24°
TVD: 7,324.18'
VS: 1,931.28'

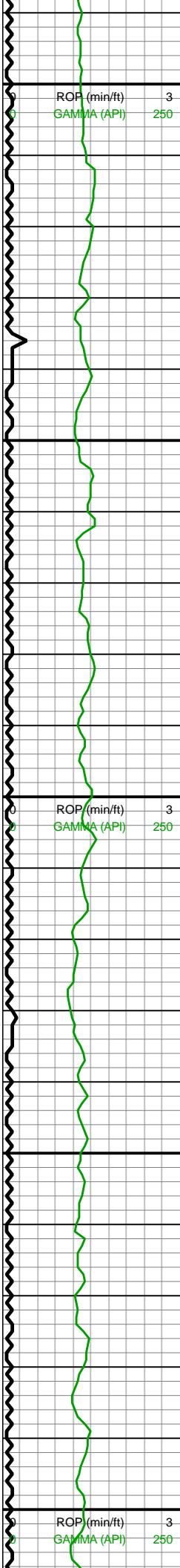


9200-9300 SST (100%):
pred med-dk gyshbn,
frm-v frm, rnd-sb rnd,
pred mod-w cons gr sup
cls, silc cmt, non calc,
vf-f, occ micmica, tr imbd
pyr, tr sh frags, rr free qtz

9300-9400 SST (100%):
pred med-dk gyshbn,
frm-v frm, rnd-sb rnd,
pred mod-w cons gr sup
cls, silc cmt, non calc,
vf-f, micmica, tr imbd pyr,
tr sh frags

9400-9500 SST (100%):
pred med-dk gyshbn,
frm-v frm, rnd-sb rnd,
pred mod-w cons gr sup



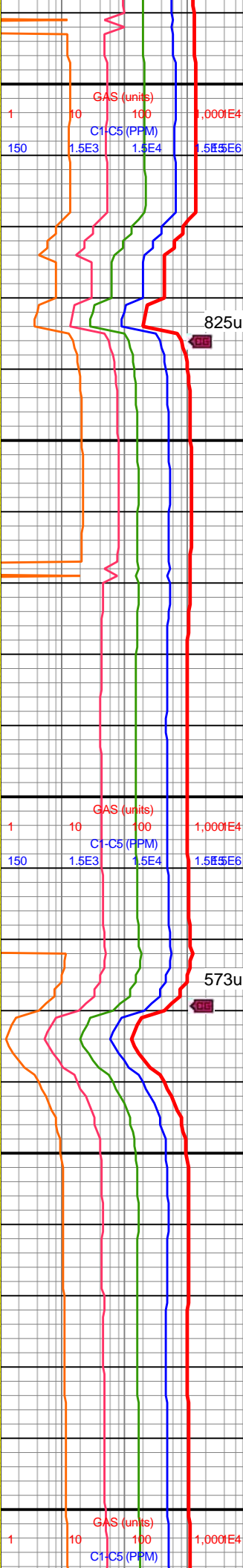
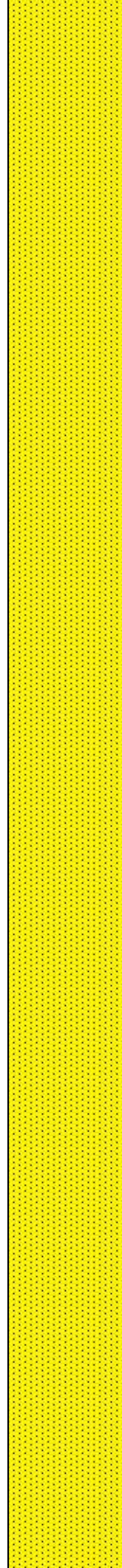


9,490
9,500
9,510
9,520
9,530
9,540
9,550
9,560
9,570
9,580
9,590
9,600
9,610
9,620
9,630
9,640
9,650
9,660
9,670
9,680
9,690
9,700

MD: 9,561'
INC: 90°
AZM: 269.97°
TVD: 7,324.39'
VS: 2,023.23'

WOB: 32.5klbs
RPM: 71
SPM: 196
SPP: 5,521psi

MD: 9,655'
INC: 90.44°
AZM: 270.41°
TVD: 7,324.03'
VS: 2,114.26'

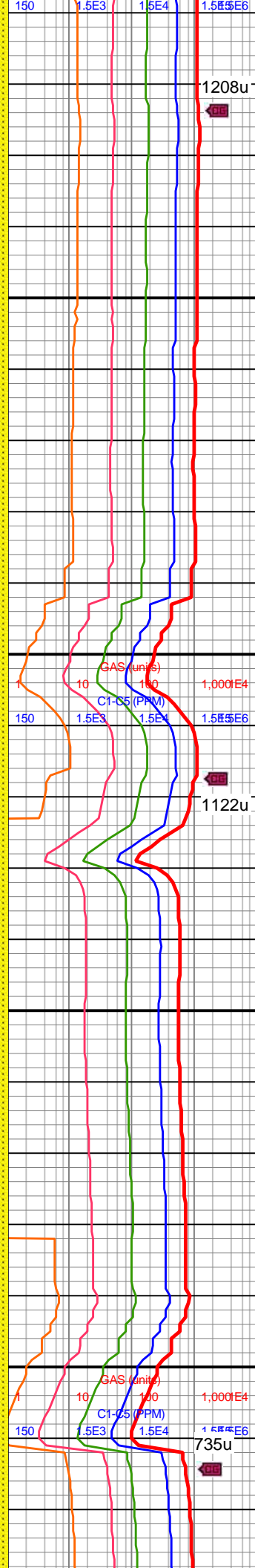
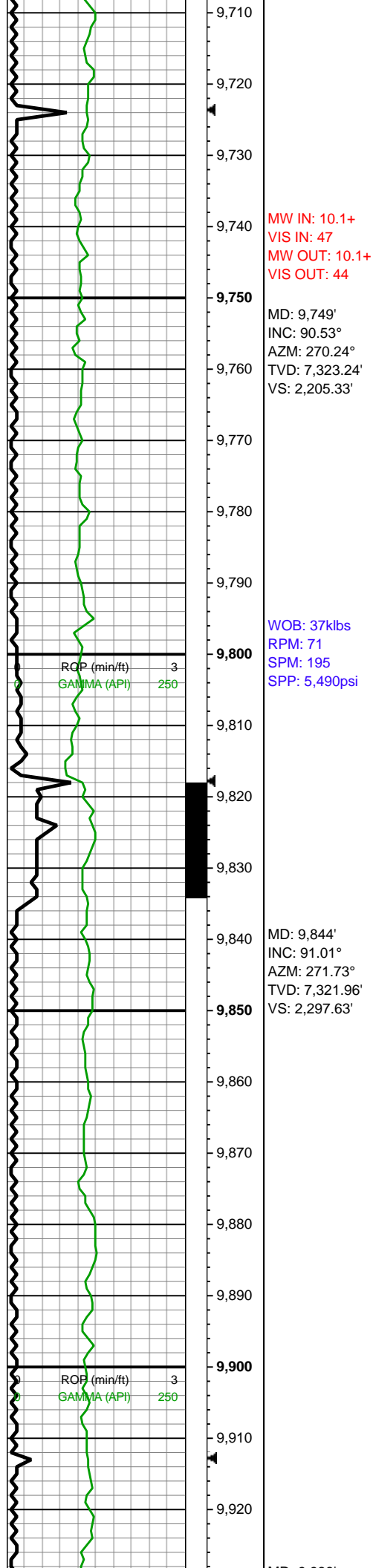


cls, silc-arg cmt, non
calc, vf-f, occ micmica, tr
imbd pyr, tr sh frags, rr
free qtz

9500-9600 SST (100%):
pred med-dk gyshbn,
frm-v frm, rnd-sb rnd,
pred mod-w cons gr sup
cls, silc-arg cmt, non
calc, vf-f, micmica, occ
imbd pyr, occ sh frags, tr
free qtz

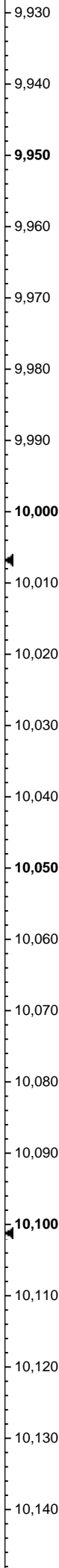
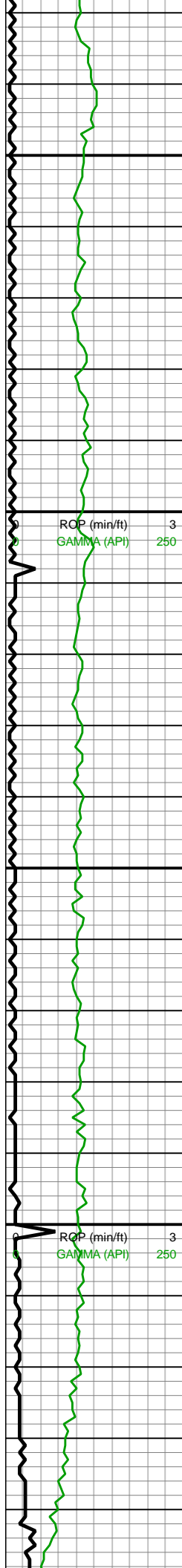
9600-9700 SST (100%):
pred med-dk gyshbn,
frm-v frm, rnd-sb rnd,
pred mod-w cons gr sup
cls, silc-arg cmt, non
calc, med-f, micmica, occ
imbd pyr, occ sh frags, tr
free qtz





9700-9800 SST (100%):
pred med-dk gyshbn,
frm-v frm, predy rnd-sb
rnd, sme sb ang, mod-w
cons gr sup cls, silc-arg
cmt, non calc, med-f,
micmica, occ imbd pyr,
scat sh frags, rr free qtz

9800-9900 SST (100%):
pred med-dk gyshbn,
frm-v frm, predy rnd-sb
rnd, sme sb ang-ang,
mod-w cons gr sup cls,
silc-arg cmt, non calc,
med-f, micmica, occ
imbd pyr, scat sh frags



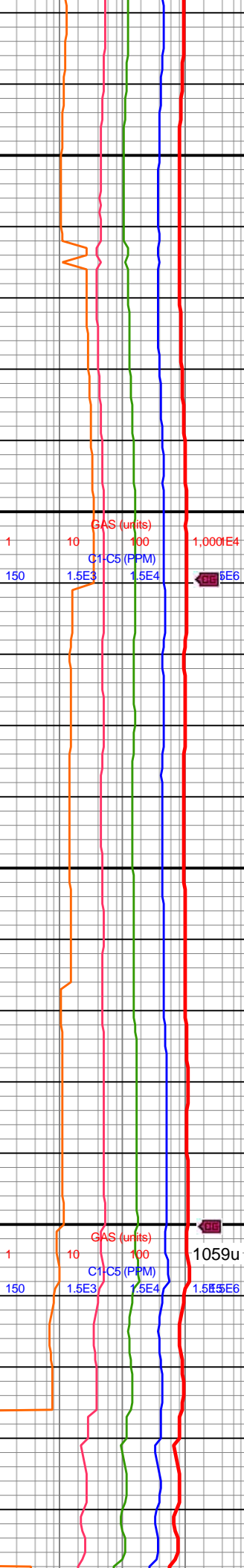
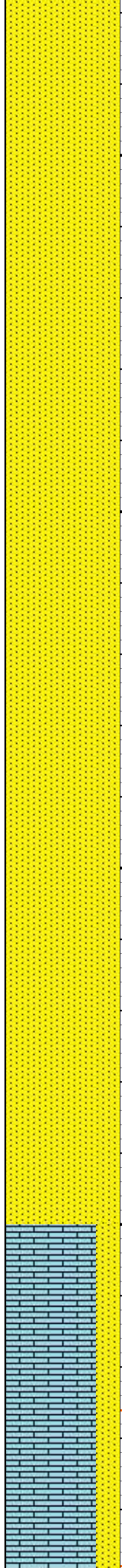
MD: 9,938'
INC: 90.62°
AZM: 271.29°
TVD: 7,320.62'
VS: 2,389.16'

WOB: 32.1klbs
RPM: 71
SPM: 192
SPP: 5,482psi

MD: 10,032'
INC: 90.62°
AZM: 270.76°
TVD: 7,319.61'
VS: 2,480.51'

MW IN: 10.2
VIS IN: 47
MW OUT: 10.2+
VIS OUT: 45

MD: 10,127'
INC: 89.82°
AZM: 269.8°
TVD: 7,319.24'
VS: 2,572.53'



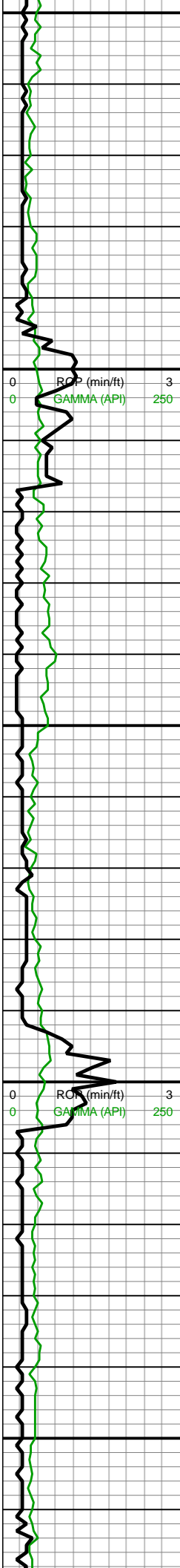
9900-10000 SST (100%):
pred med-dk gyshbn,
frm-v frm, sb rnd-sb ang,
mod-w cons gr sup cls,
silc-arg cmt, non calc,
med-f, micmica, occ
imbd pyr, scat sh frags



10000-10100 SST
(100%): pred med-dk
gyshbn, frm-v frm, sb
rnd-sb ang, mod-w cons
gr sup cls, silc-arg cmt,
non calc, f-vf, micmica, tr
imbd pyr



1059u



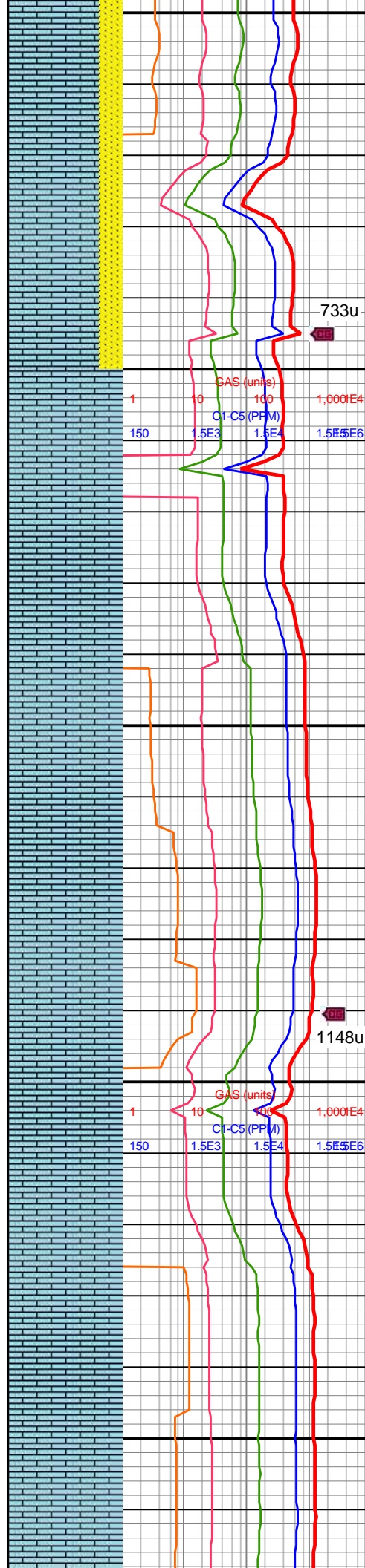
MW IN: 10.3
VIS IN: 47
MW OUT: 10.3
VIS OUT: 45

WOB: 61.1klbs
RPM: 0
SPM: 198
SPP: 5,105psi

MD: 10,221'
INC: 90.75°
AZM: 271.91°
TVD: 7,318.77'
VS: 2,663.81'

MW IN: 10.2
VIS IN: 47
MW OUT: 10.2+
VIS OUT: 44

MD: 10,316'
INC: 89.56°
AZM: 272.87°
TVD: 7,318.52'
VS: 2,756.64'



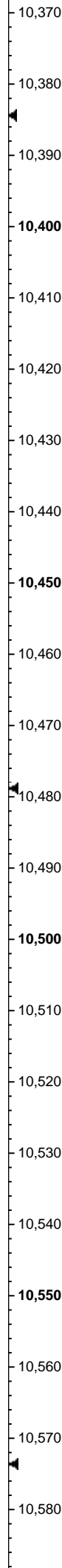
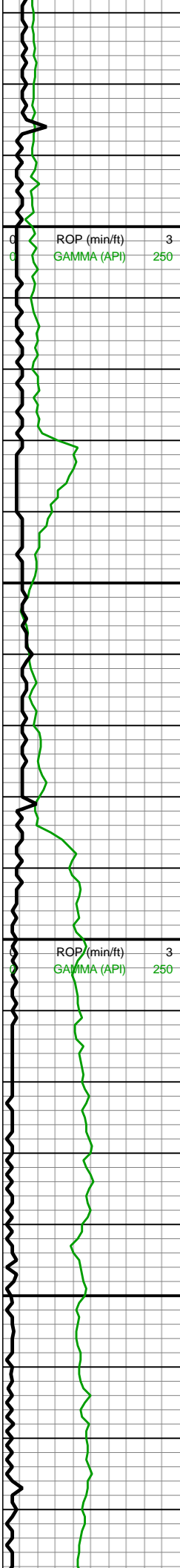
10100-10200 LS (80%):
mot crm-offwht, sme
med brn, sb tab-sb blkly,
tr sb plty, pkst-wkst,
frm-sl frm, vf xln-micxln,
hi calc; SST (20%): pred
dk gyshbn, frm-sft, blkly,
pred mod-w cons gr sup
cls, silc cmt, non calc, vf-f
grnd

733u

10200-10300 LS (100%):
med brn-mot crm-offwht,
sb tab-sb blkly, tr sb plty,
pkst-wkst, frm-sl frm, vf
xln-micxln, hi calc

1148u





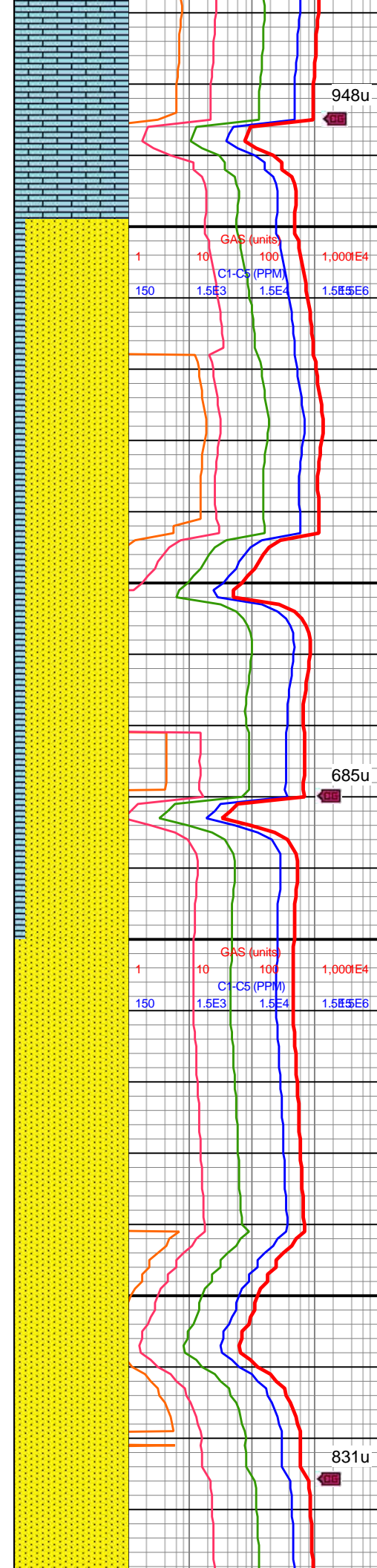
WOB: 34.7klbs
RPM: 71
SPM: 194
SPP: 5,280psi

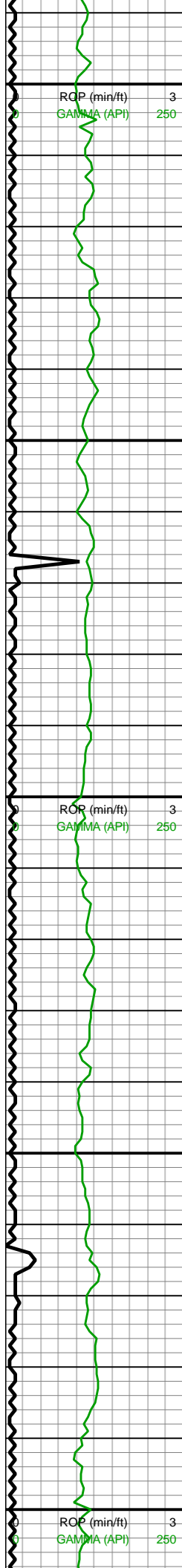
MD: 10,410'
INC: 88.99°
AZM: 272.43°
TVD: 7,319.71'
VS: 2,848.58'

MW IN: 10.1+
VIS IN: 47
MW OUT: 10.2
VIS OUT: 45

MD: 10,504'
INC: 88.68°
AZM: 272.35°
TVD: 7,321.62'
VS: 2,940.42'

MD: 10,599'
INC: 88.86°





AZM: 272.17°
TVD: 7,323.66'
VS: 3,033.19'

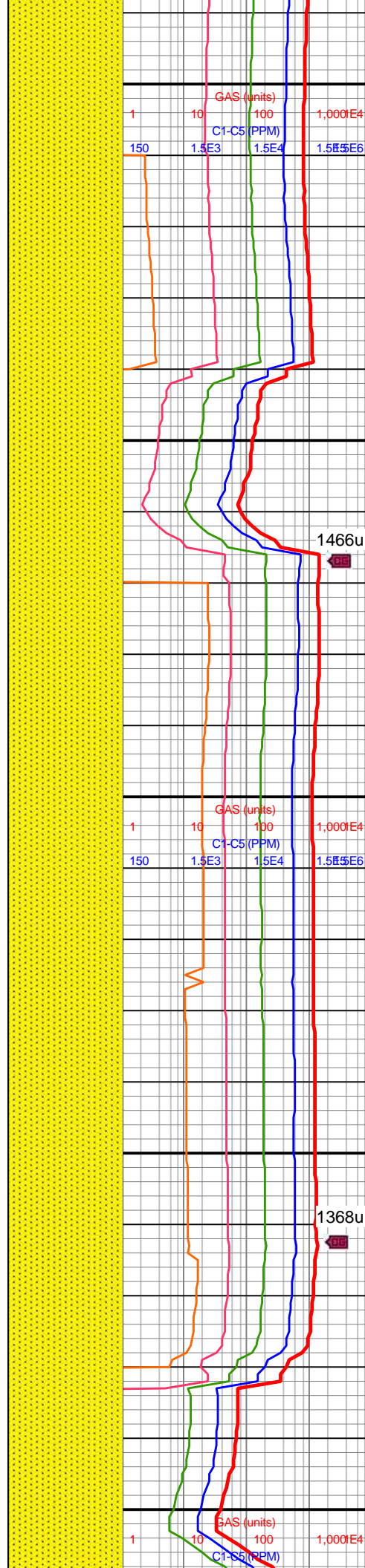
WOB: 33.2klbs
RPM: 71
SPM: 192
SPP: 5.551psi

MW IN: 10.1+
VIS IN: 47
MW OUT: 10.1+
VIS OUT: 45

MD: 10,694'
INC: 89.03°
AZM: 272.43°
TVD: 7,325.41'
VS: 3,125.97'

MD: 10,788'
INC: 88.95°
AZM: 272.43°
TVD: 7,327.06'
VS: 3,217.83'

WOB: 34.6klbs
RPM: 71
SPM: 191

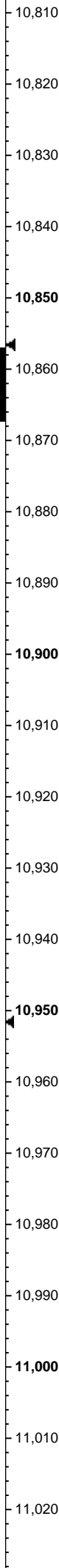
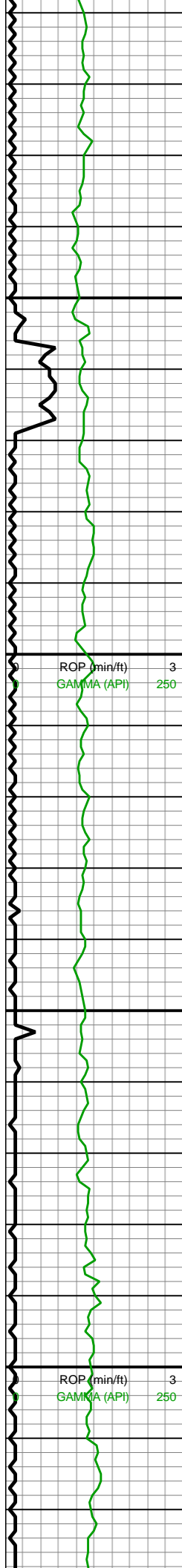


gr sup cls, silc-arg cmt,
non calc, med-f,
micmica, occ imbd pyr,
scat sh frags

10600-10700 SST
(100%): pred med-dk
gyshbn, frm-v frm, sb
rnd-sb ang, sme ang,
mod-w cons gr sup cls,
silc-arg cmt, med-f,
micmica, tr imbd pyr, scat
sh frags

10700-10800 SST
(100%): pred med-dk
gyshbn, frm-sl hrd, sb
rnd-sb ang, sme ang,
mod-w cons gr sup cls,
silc-arg cmt, med-f,
micmica, tr imbd pyr, scat
sh frags



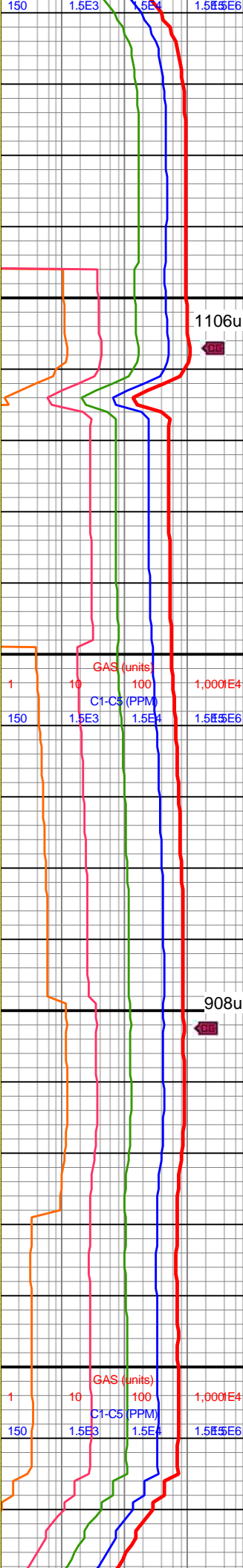
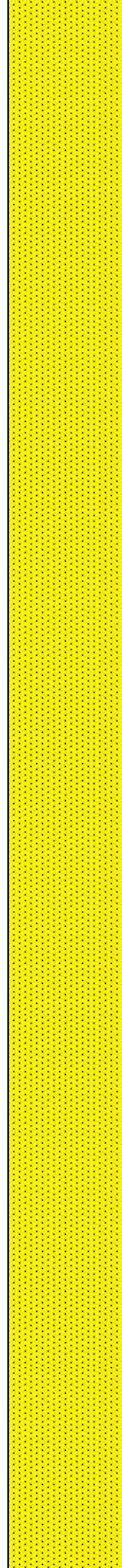


SPP: 5,544psi

MD: 10,883'
INC: 88.99°
AZM: 270.76°
TVD: 7,328.77'
VS: 3,310.35'

MW IN: 10.2
VIS IN: 46
MW OUT: 10.2
VIS OUT: 44

WOB: 30.9klbs
RPM: 71
SPM: 192
SPP: 5,511psi

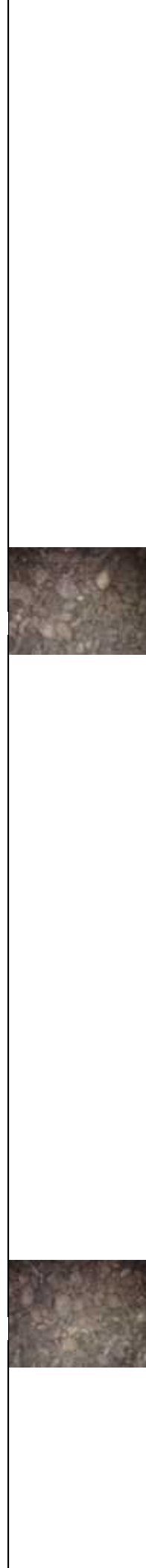


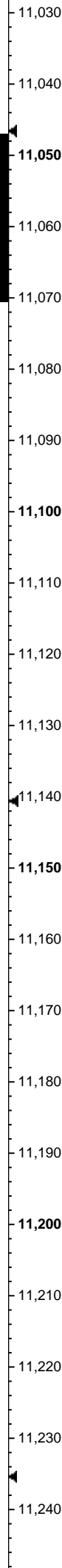
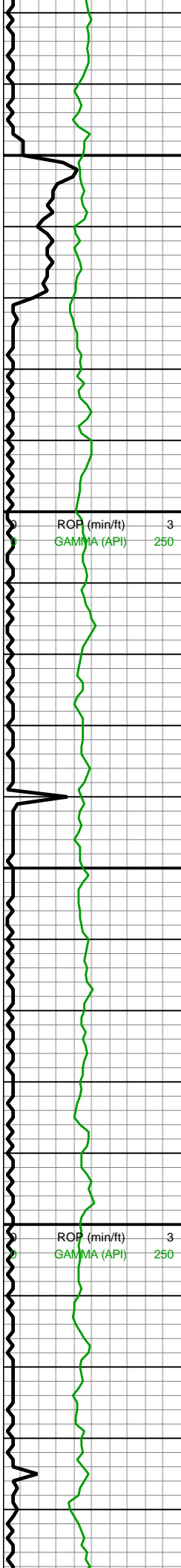
1106u

10800-10900 SST
(100%): pred med-dk
gyshbn, frm-sl hrd, sb
rnd-sb ang, sme ang,
mod-w cons gr sup cls,
silc-arg cmt, med-f,
micmica, tr imbd pyr, scat
sh frags

908u

10900-11000 SST
(100%): pred med-dk
gyshbn, frm-sl hrd, sb
rnd-sb ang, sme ang,
mod-w cons gr sup cls,
silc-arg cmt, med-f,
micmica, tr imbd pyr, scat
sh frags



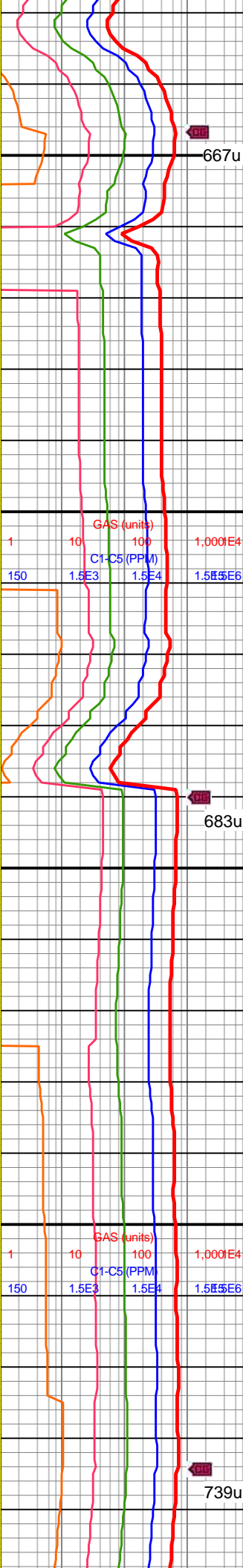
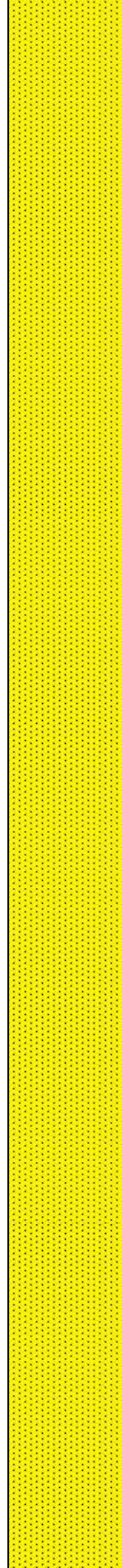


MD: 11,072'
INC: 88.9°
AZM: 269.62°
TVD: 7,331.02'
VS: 3,494.16'

MW IN: 10.2+
VIS IN: 49
MW OUT: 10.2+
VIS OUT: 46

MD: 11,166'
INC: 88.29°
AZM: 269.89°
TVD: 7,333.33'
VS: 3,584.97'

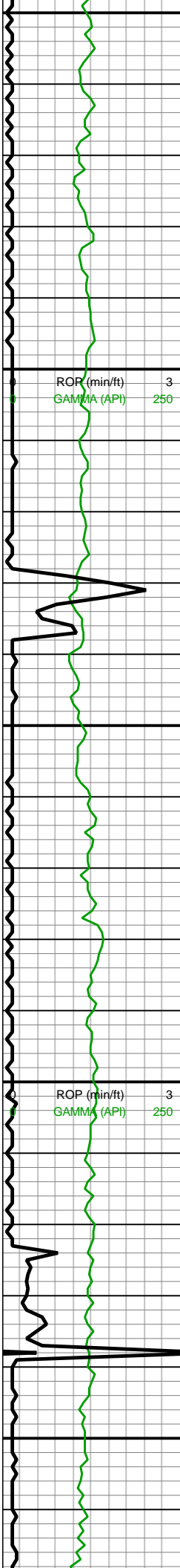
WOB: 35.3klbs
RPM: 71
SPM: 188
SPP: 5,622psi



11000-11100 SST
(100%): med-dk gyshbn,
frm-sl hrd, sb rnd-sb ang,
sme ang, mod-w cons gr
sup cls, silc-arg cmt,
med-f, micmica, occ sh
frags

11100-11200 SST
(100%): med gyshbn,
frm-sl hrd, sb rnd-sb ang,
sme ang, mod-w cons gr
sup cls, silc-arg cmt,
med-f, micmica, tr sh
frags





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
11,420
11,430
11,440
11,450
11,460

MD: 11,261'
INC: 88.02°
AZM: 270.41°
TVD: 7,336.39'
VS: 3,676.9'

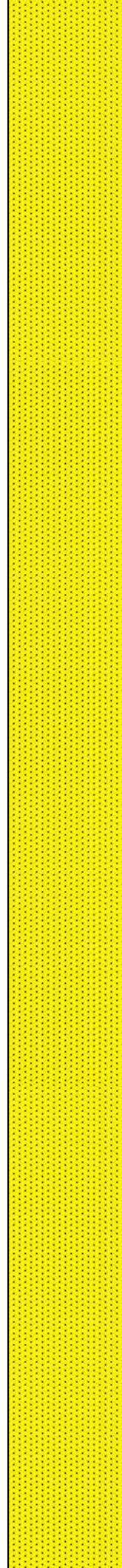
MW IN: 10.2+
VIS IN: 51
MW OUT: 10.2
VIS OUT: 47

MD: 11,356'
INC: 87.89°
AZM: 269.97°
TVD: 7,339.78'
VS: 3,768.83'

WOB: 34.9klbs
RPM: 71
SPM: 182
SPP: 5,515psi

MW IN: 10.3
VIS IN: 51
MW OUT: 10.3
VIS OUT: 47

MD: 11,451'
INC: 88.11°
AZM: 269.89°
TVD: 7,343.09'
VS: 3,860.66'



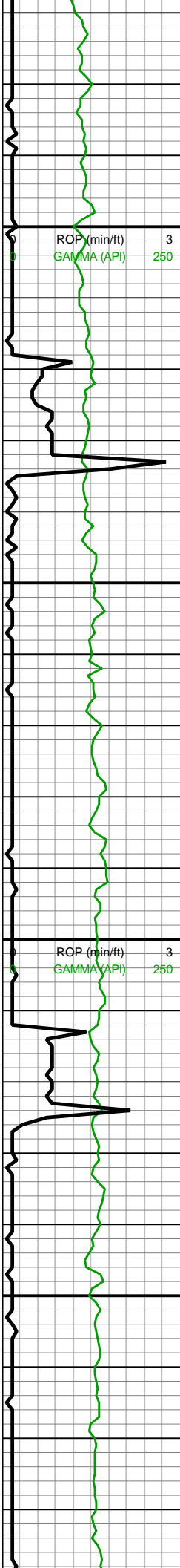
11200-11300 SST
(100%): predy
ltbn-med-dk gyshbn,
frm-sl hrd, sb rnd-sb ang,
sme ang, mod-w cons gr
sup cls, silc-arg cmt,
med-f, micmica, rr sh
frags

11300-11400 SST
(100%): predy med
gyshbn, sme lt brn-dk
gyshbn, frm-sl hrd, sb
rnd-sb ang, sme ang,
mod-w cons gr sup cls,
silc-arg cmt, med-f,
micmica, rr sh frags



685u

557u



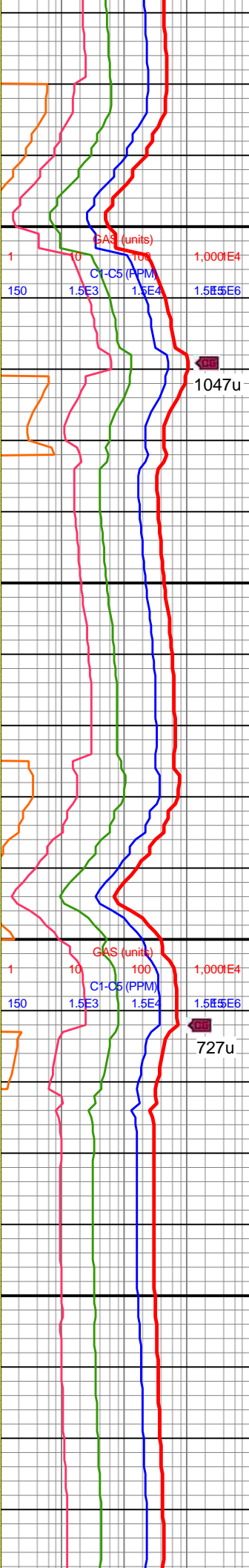
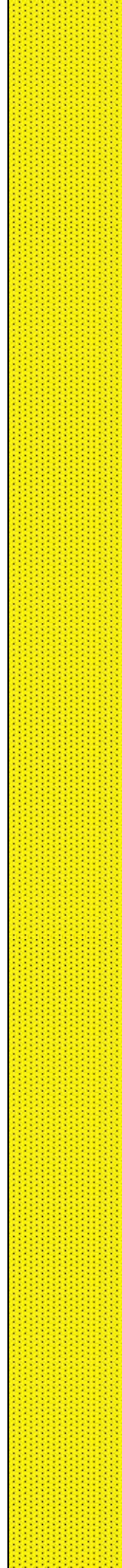
11,470
11,480
11,490
11,500
11,510
11,520
11,530
11,540
11,550
11,560
11,570
11,580
11,590
11,600
11,610
11,620
11,630
11,640
11,650
11,660
11,670
11,680

MD: 11,545'
INC: 88.77°
AZM: 269.53°
TVD: 7,345.65'
VS: 3,951.45'

WOB: 35.2klbs
RPM: 71
SPM: 184
SPP: 5,465psi

MW IN: 10.3+
VIS IN: 50
MW OUT: 10.3+
VIS OUT: 47

MD: 11,639'
INC: 89.82°
AZM: 270.41°
TVD: 7,346.81'
VS: 4,042.37'

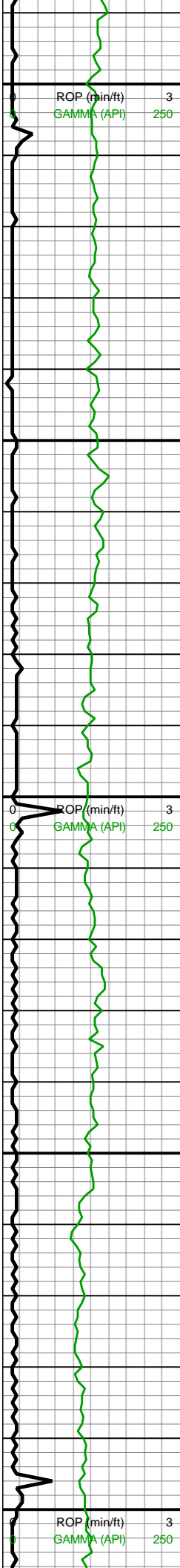


11400-11500 SST
(100%): predy lt-med
gyshbn, frm-sl hrd, sb
rnd-sb ang, sme ang,
mod-w cons gr sup cls,
silc-arg cmt, rr sh frags

11500-11600 SST
(100%): predy lt-med
gyshbn, frm-sl hrd, sb
rnd-sb ang, sme ang,
mod-w cons gr sup cls,
uncons ip, silc-arg cmt

11600-11700 SST
(100%): predy med-dk
gyshbn, sme lt gy, frm-sl





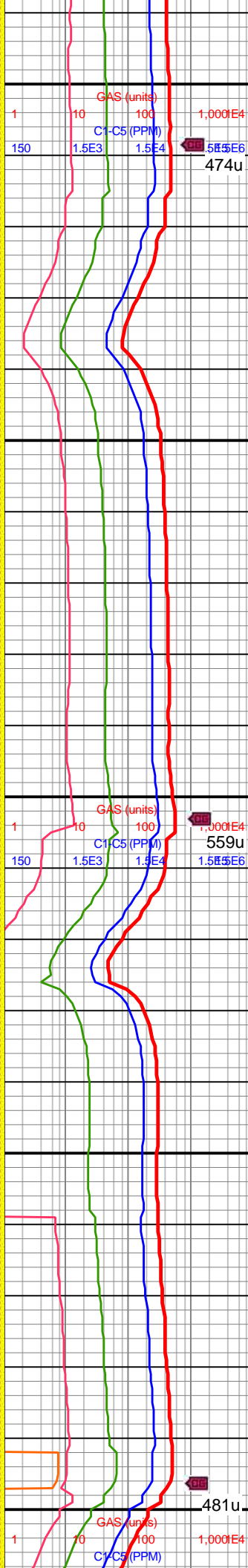
11,690
11,700
11,710
11,720
11,730
11,740
11,750
11,760
11,770
11,780
11,790
11,800
11,810
11,820
11,830
11,840
11,850
11,860
11,870
11,880
11,890
11,900

MD: 11,734'
INC: 90.09°
AZM: 270.32°
TVD: 7,346.88'
VS: 4,134.43'

WOB: 36.7klbs
RPM: 71
SPM: 186
SPP: 5,400psi

MD: 11,828'
INC: 90.22°
AZM: 269.62°
TVD: 7,346.63'
VS: 4,225.36'

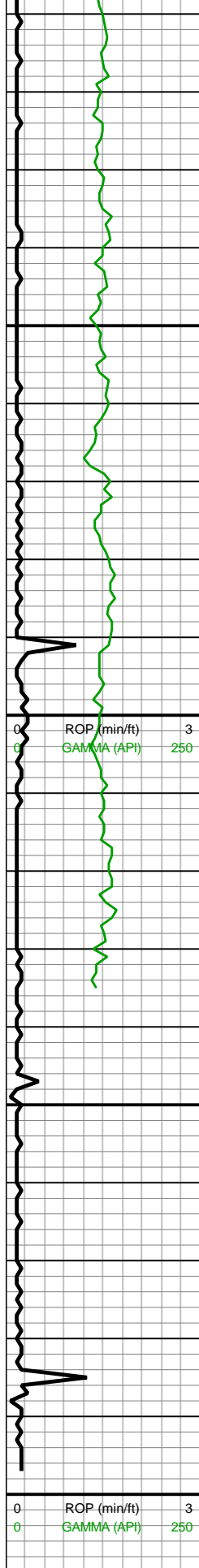
MW IN: 10.3
VIS IN: 50
MW OUT: 10.4
VIS OUT: 46



hrd, sb rnd-sb ang, sme ang, mod-w cons gr sup cls, uncons ip, silc-arg cmt, rr SH frags

11700-11800 SST (100%): predy dk-med gyshbn, tr lt gy, frm-sl hrd, sb rnd-sb ang, sme ang, mod-w cons gr sup cls, uncons ip, silc-arg cmt, rr SH frags

11800-11900 SST (100%): predy lt-med gyshbn, frm-sl hrd, sb rnd-sb ang, sme ang, mod-w cons gr sup cls, silc-arg cmt



MD: 11,923'
INC: 90.7°
AZM: 269.09°
TVD: 7,345.87'
VS: 4,316.99'

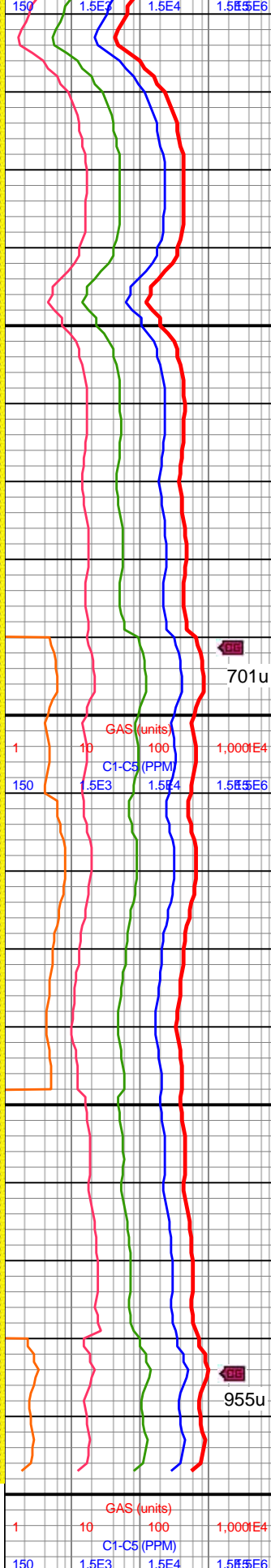
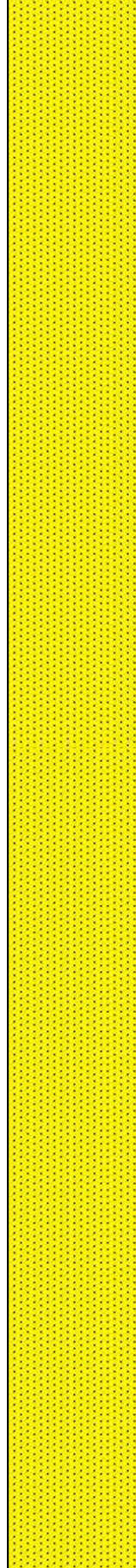
WOB: 36.2klbs
RPM: 71
SPM: 186
SPP: 5,481psi

MD: 12,017'
INC: 91.32°
AZM: 269.01°
TVD: 7,344.21'
VS: 4,407.52'

MD: 12,030'
INC: 91.27°
AZM: 268.92°
TVD: 7,343.91'
VS: 4,420.03'

Projection to Bit
MD: 12,098'
INC: 91.27°
AZM: 268.92°
TVD: 7,342.41'
VS: 4,485.47'

**Total Depth of
12,098' MD
Reached on
12/22/2018 @
22:07MST**



11900-12000 SST
(100%): med gyshbn,
sme lt gy, frm-sl hrd, sb
rnd-sb ang, sme ang,
mod-w cons gr sup cls,
silc-arg cmt

12000-12098 SST
(100%): predy med
gyshbn-lt gy, frm-sl hrd,
sb rnd-sb ang, sme ang,
mod-w cons gr sup cls,
silc-arg cmt



