



Scale: 5" / 100'
Measured Depth Log

Well Name HWY52 4U-32H-O268

Location Sec. 32 T2N R68W

State Colorado

County Weld

Country USA

Rig Number Ensign 140

API Number 05123431080000

AFE # 16190431

Geographic Region Rockies

Field Wattenberg

Spud Date 8/22/2017

Drilling Completed 8/25/2017

Surface Coordinates Lat/Long: 40.089353/-105.024714

SHL: Sec: 32 Twp: 2N 68W
Footage: 598 FSL 1964 FEL

Bottom Hole Coordinates Proposed BHL: Sec: 32 Twp: 2N 68W
Footages: 460 FNL 1380 FEL

Ground Elevation 4,992'

K.B. Elevation 5,015'

Logged Interval 6,80' **To** 11,990'

Total Depth 11,990'

Formation Niobrara C Chalk

Type of Drilling Fluid Syntehtic Oil Based Mud

Operator

Company Crestone Peak Resources

Address 370 17th Street #2170
Denver, CO 80202



CRESTONE PEAK

CRESTONE PEAK RESOURCES

Geologist

Name John Ready

Company Crestone Peak Resources

Address 370 17th Street #2170
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Zone Color Coding



Oil



Condensate



Gas



Note



Core



Pressure



Error



Water



Seal

Other

Loggers: Nick Watkins / Mark Gross

Contractor: ALS Empirica
6510 Guhn Road
Houston, TX 77040

Services Provided: 2-Man Mudlogging / Geosteering

Equipment: ML-556

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

F FOSSIL

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

ARGILLACEOUS

ARGILLITE GRAIN

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

GLAUCONITE

GYPSIFEROUS

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

Stringer

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

🪦 ECHINOID

🐟 FISH

🪨 FORAMINIFERA

Minerals

⚡ ANHYDRITIC

+ FELDSPAR

● FERRUGINOUS PELLET

🪨 FERRUGINOUS

^ SILICEOUS

☁ SILTY

✓ TUFFACEOUS

— SHALE STRINGER

🪨 SILTSTONE STRINGER

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

Other Symbols

🪦 FORMATION TOP

🪦 GAS SHOW

🪦 MNDEPTH 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

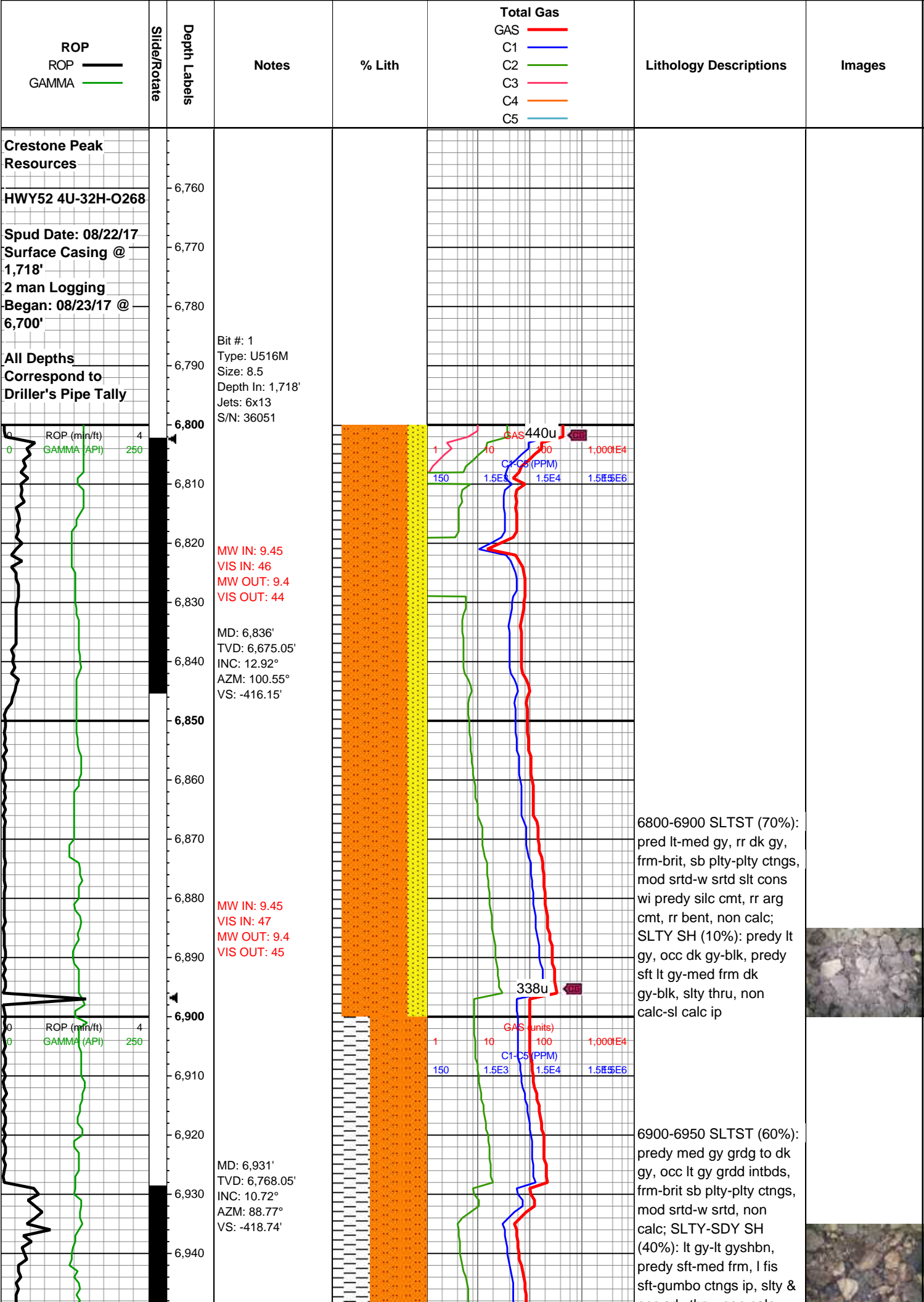
🪦 WACKESTONE

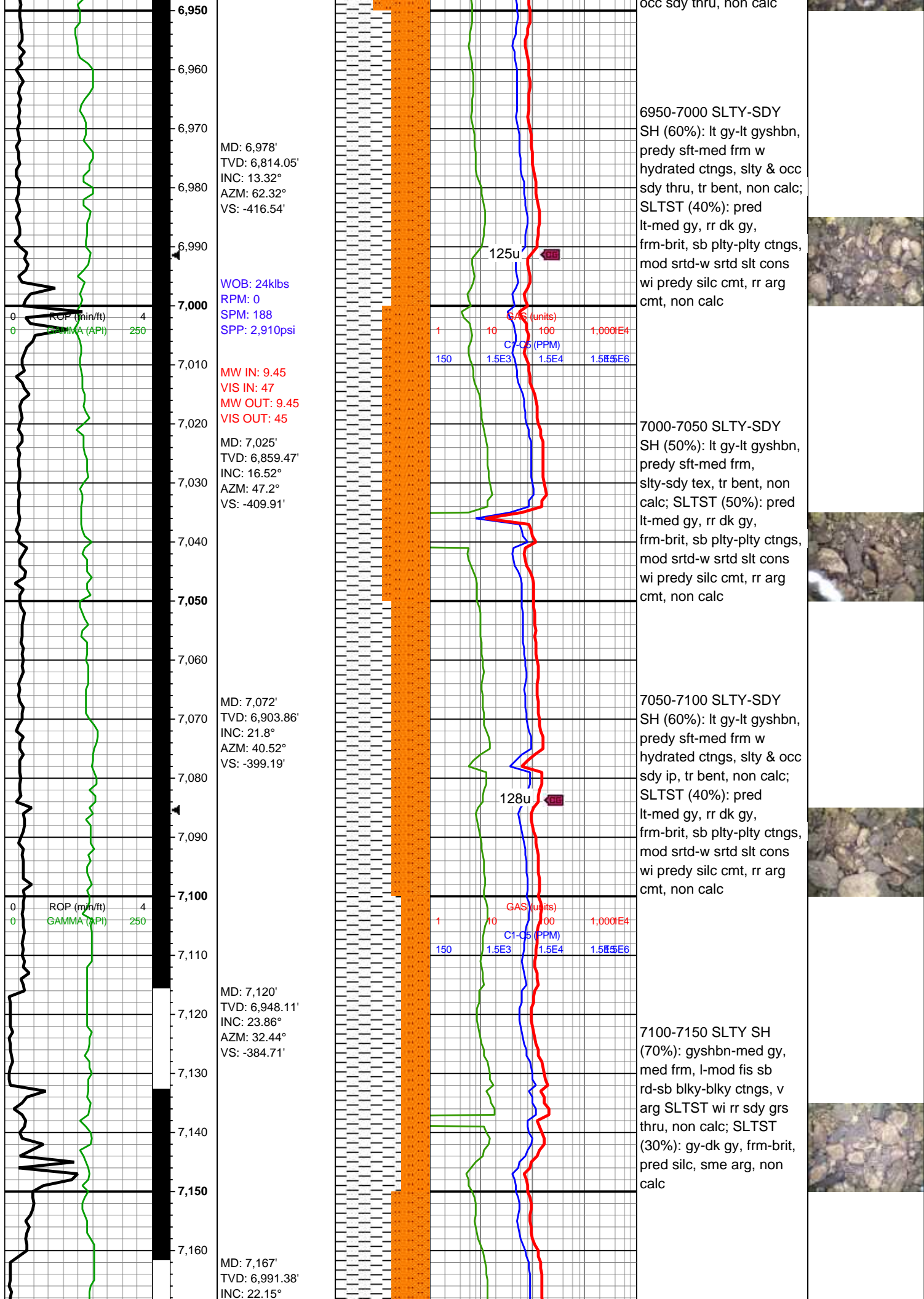
Sorting

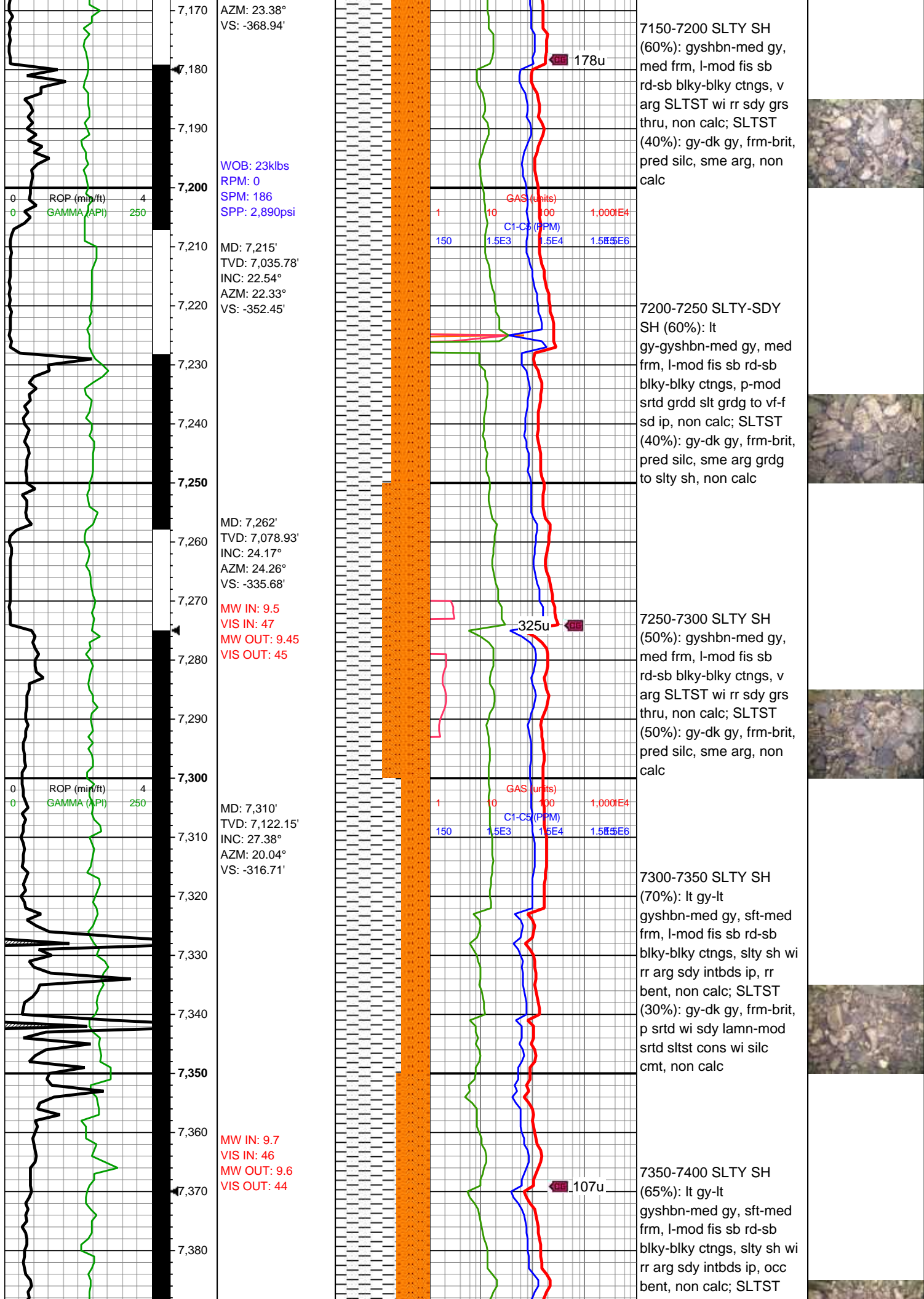
🪦 MODERATE

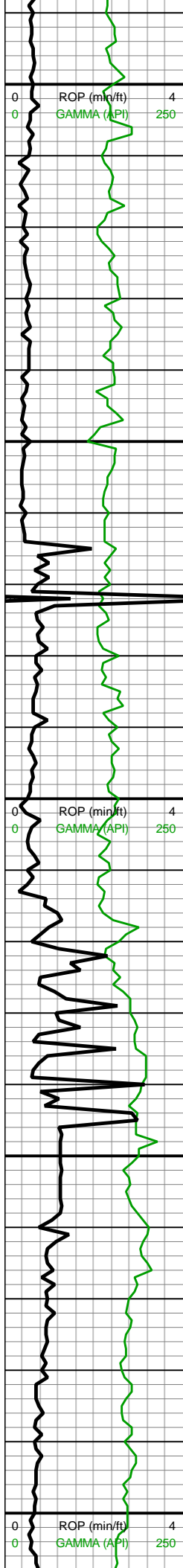
🪦 POOR

🪦 WELL









WOB: 20klbs
RPM: 0
SPM: 180
SPP: 2,870psi

MD: 7,405'
TVD: 7,203.91'
INC: 33.75°
AZM: 20.66°
VS: -272.23'

MW IN: 9.8
VIS IN: 45
MW OUT: 9.7
VIS OUT: 43

MINDEPTH 8/24/17

MD: 7,452'
TVD: 7,241.74'
INC: 38.98°
AZM: 18.81°
VS: -246.43'

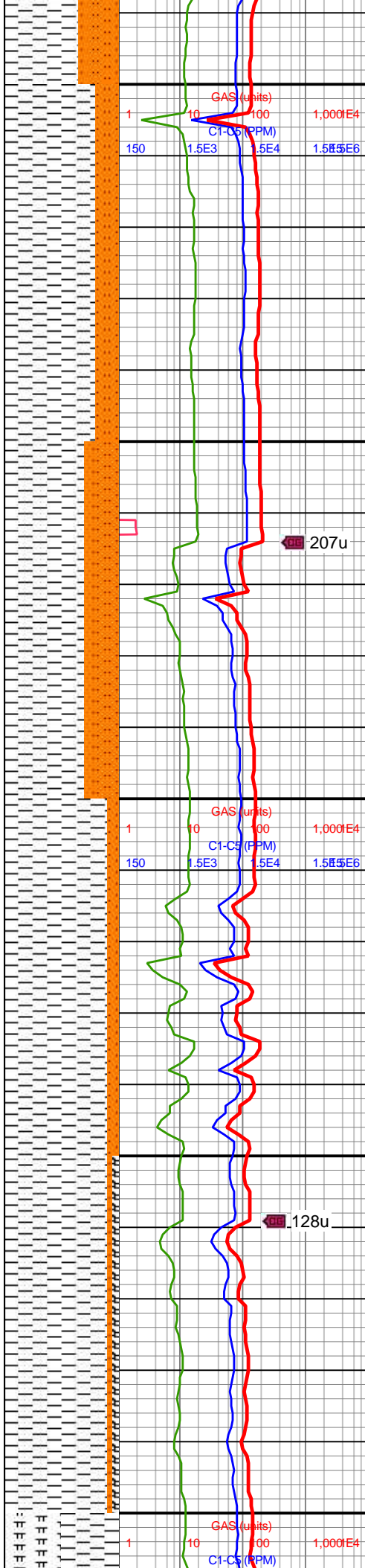
MD: 7,499'
TVD: 7,277.28'
INC: 42.76°
AZM: 19.6°
VS: -217.87'

Sharon Springs
7527' / 7298' TVD

MW IN: 9.85
VIS IN: 45
MW OUT: 9.8
VIS OUT: 43

MD: 7,594'
TVD: 7,343.19'
INC: 49.35°
AZM: 14.33°
VS: -153.4'

WOB: 20.2klbs
RPM: 0
SPM: 179



(35%): gy-dk gy, frm-brit,
p srted wi sdy lamn-mod
srted sltst cons wi silc
cmt, non calc

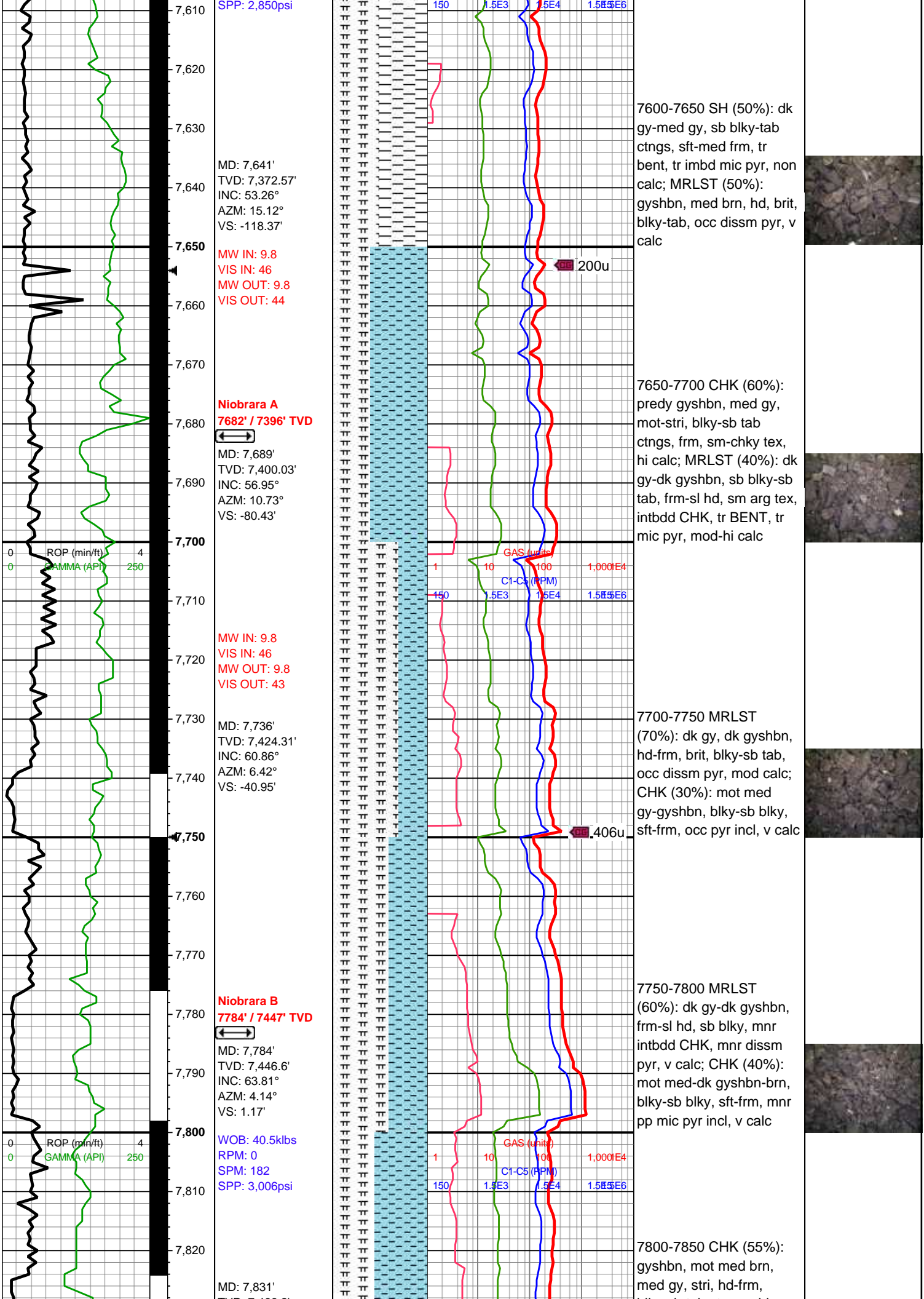
7400-7450 SLTY SH
(80%): lt gyshbn-med gy,
sft-med frm, l-mod fis sb
rd-sb blkly-blky ctngs, occ
sd grs, occ bent, non
calc; SLTST (20%): gy-dk
gy, frm-brit silc ctngs, tr vf
pyr, non calc

7450-7500 SLTY SH
(70%): lt gyshbn-med gy,
sft-med frm, l-mod fis sb
blkly-tab ctngs, occ bent,
tr sd grs, non calc;
SLTST (30%): gy-dk gy,
frm-brit silc ctngs, tr vf
pyr, non calc

7500-7550 SLTY SH
(90%): lt gyshbn-med gy,
l-mod fis sb blkly-tab
ctngs, sft-med frm, tr
bent, non calc; SLTST
(10%): gy-dk gy, sb
blkly-sb splt, frm-brit silc
ctngs, non calc, tr vf pyr

7550-7600 SLTY SH
(90%): lt gyshbn-med gy,
sb blkly-tab ctngs, intbdd
bent, sft-med frm, non
calc; SLTST (5%): gy-dk
gy, sb tab-sb blkly, frm-brit
silc ctngs, non calc, tr
mic pyr; BENT (5%): wht,
crm, sft, blkly-tab





SPP: 2,850psi

MD: 7,641'
TVD: 7,372.57'
INC: 53.26°
AZM: 15.12°
VS: -118.37'

MW IN: 9.8
VIS IN: 46
MW OUT: 9.8
VIS OUT: 44

Niobrara A
7682' / 7396' TVD

MD: 7,689'
TVD: 7,400.03'
INC: 56.95°
AZM: 10.73°
VS: -80.43'

MW IN: 9.8
VIS IN: 46
MW OUT: 9.8
VIS OUT: 43

MD: 7,736'
TVD: 7,424.31'
INC: 60.86°
AZM: 6.42°
VS: -40.95'

Niobrara B
7784' / 7447' TVD

MD: 7,784'
TVD: 7,446.6'
INC: 63.81°
AZM: 4.14°
VS: 1.17'

WOB: 40.5klbs
RPM: 0
SPM: 182
SPP: 3,006psi

MD: 7,831'

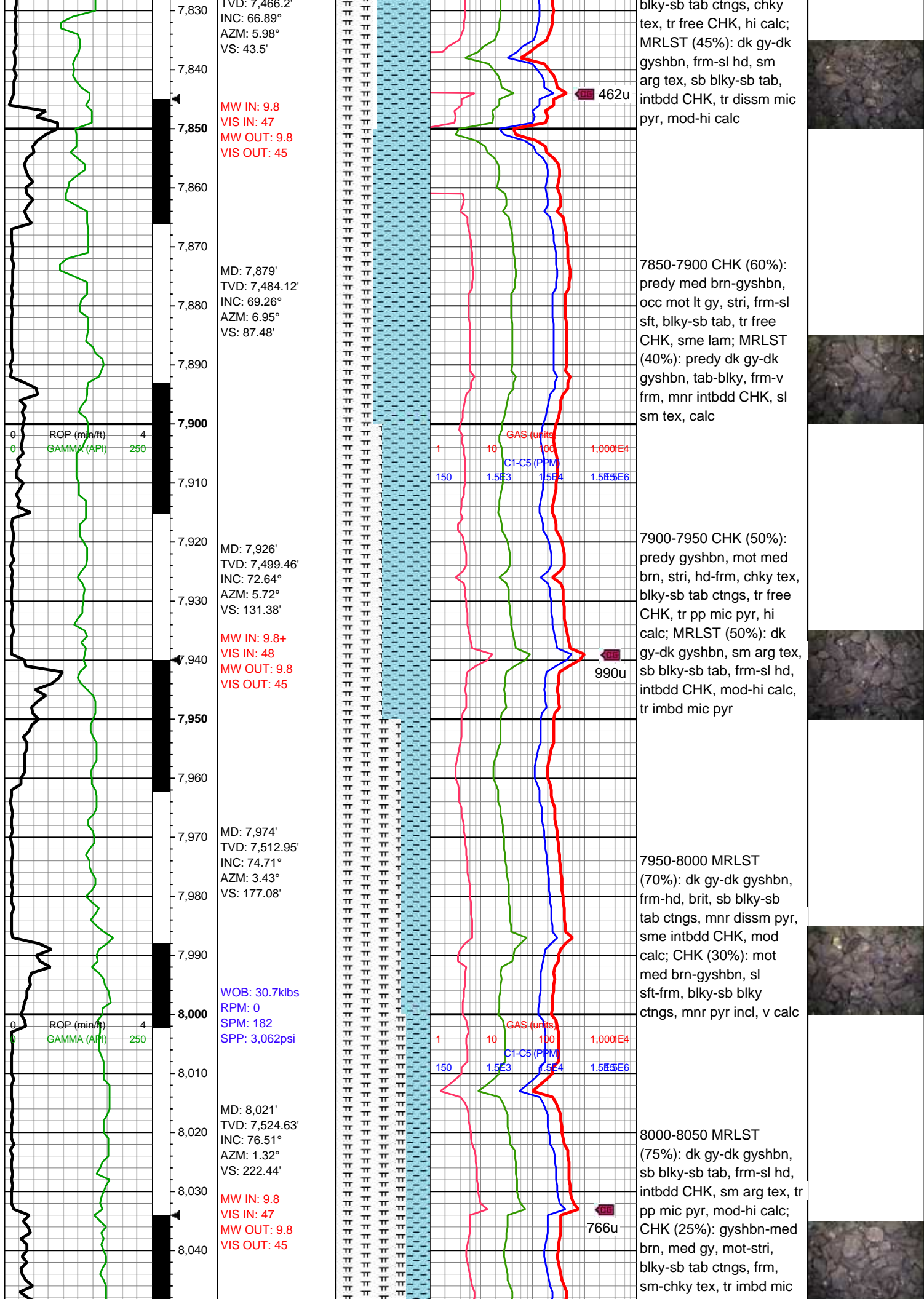
7600-7650 SH (50%): dk gy-med gy, sb blkly-tab ctngs, sft-med frm, tr bent, tr imbd mic pyr, non calc; MRLST (50%): gyshbn, med brn, hd, brit, blkly-tab, occ dissim pyr, v calc

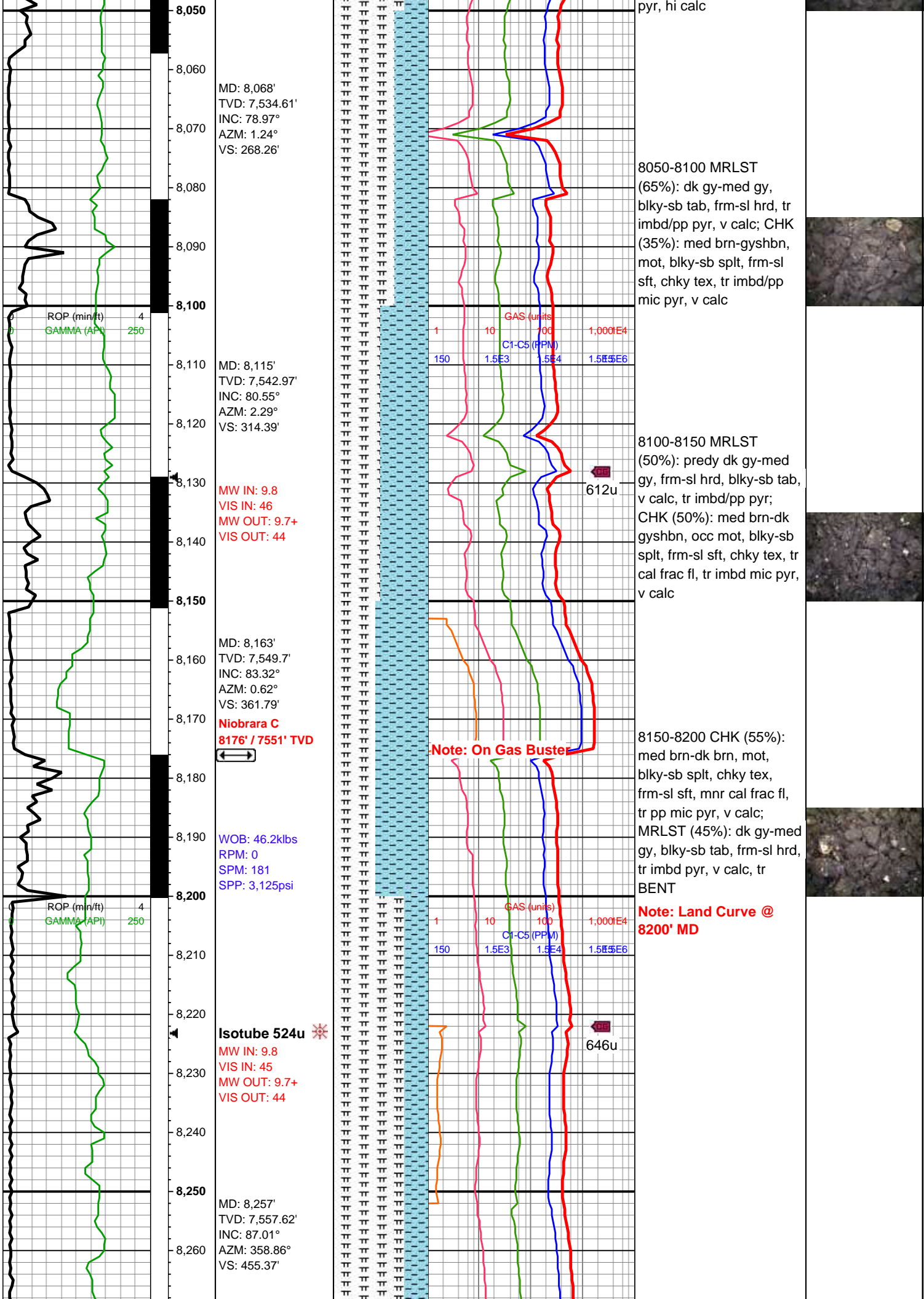
7650-7700 CHK (60%): predy gyshbn, med gy, mot-stri, blkly-sb tab ctngs, frm, sm-chky tex, hi calc; MRLST (40%): dk gy-dk gyshbn, sb blkly-sb tab, frm-sl hd, sm arg tex, intbdd CHK, tr BENT, tr mic pyr, mod-hi calc

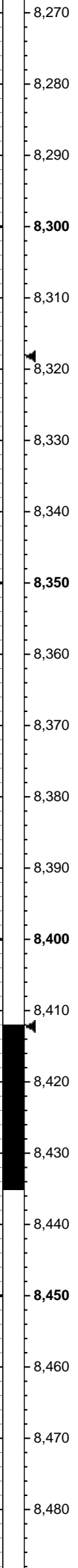
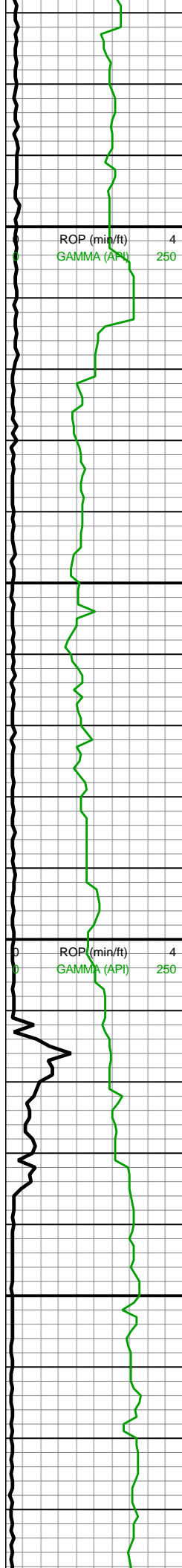
7700-7750 MRLST (70%): dk gy, dk gyshbn, hd-frm, brit, blkly-sb tab, occ dissim pyr, mod calc; CHK (30%): mot med gy-gyshbn, blkly-sb blkly, sft-frm, occ pyr incl, v calc

7750-7800 MRLST (60%): dk gy-dk gyshbn, frm-sl hd, sb blkly, mnr intbdd CHK, mnr dissim pyr, v calc; CHK (40%): mot med-dk gyshbn-brn, blkly-sb blkly, sft-frm, mnr pp mic pyr incl, v calc

7800-7850 CHK (55%): gyshbn, mot med brn, med gy, stri, hd-frm,



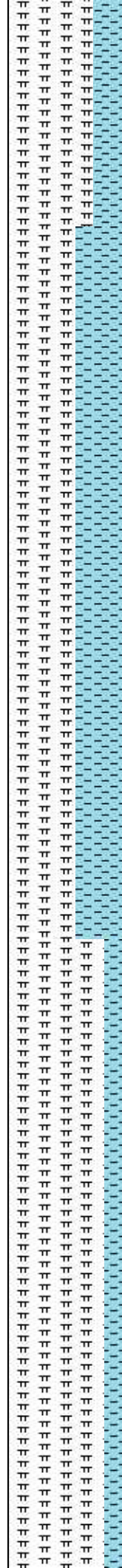




MD: 8,352'
TVD: 7,562.94'
INC: 86.57°
AZM: 357.81°
VS: 550.21'

WOB: 32klbs
RPM: 75
SPM: 188
SPP: 3,707psi

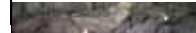
MW IN: 9.7+
VIS IN: 45
MW OUT: 9.7+
VIS OUT: 44

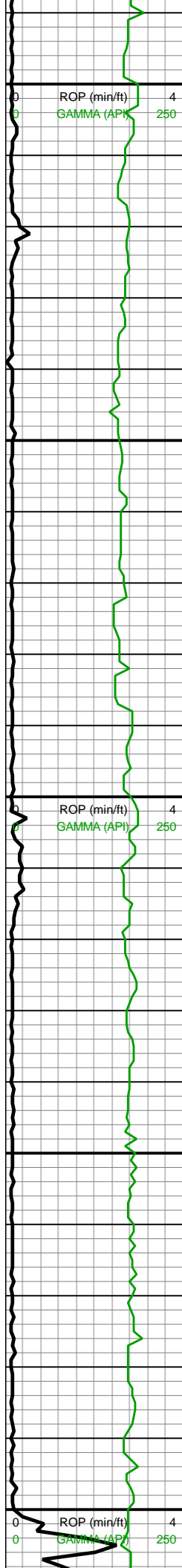


8200-8300 MRLST
(75%): predy dk gy-dk
gyshbn, frm-sl hrd,
blky-sb tab, tr imbd/pp
pyr, mnr lam CHK, v calc;
CHK (25%): med brn-dk
gyshbn, mot-stri, frm-sl
sft, chky tex, blky-sb splt,
tr cal frac fl, tr imbd mic
pyr, v calc

8300-8400 MRLST
(60%): dk gy-dk gyshbn,
frm-sl hrd, sb tab-sb splt
ctngs, tr imbd/pp pyr, mnr
lam CHK, v calc; CHK
(40%): med brn-dk
gyshbn, mot, frm-sl sft,
blky-sb splt, chky tex, tr
cal frac fl, tr mic pyr, v calc

8400-8500 MRLST
(85%): dk gy-dk gyshbn,
dk brn, sb tab-sb splt,
frm-sl hd, sm arg tex,
mnr intbdd CHK, tr cal
frac fl, mod-hi calc, tr pp
mic pyr; CHK (15%):





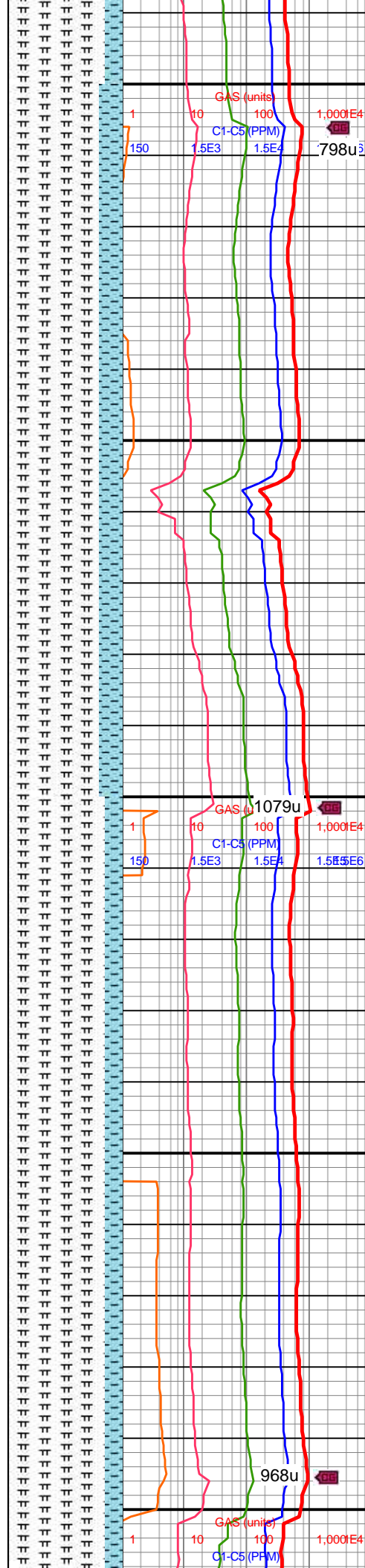
8,490
8,500
8,510
8,520
8,530
8,540
8,550
8,560
8,570
8,580
8,590
8,600
8,610
8,620
8,630
8,640
8,650
8,660
8,670
8,680
8,690
8,700

MD: 8,541'
TVD: 7,565.57'
INC: 90.44°
AZM: 359.21°
VS: 739.13'

MW IN: 9.8
VIS IN: 45
MW OUT: 9.7+
VIS OUT: 43
WOB: 32.6klbs
RPM: 70
SPM: 188
SPP: 3,741psi

MD: 8,636'
TVD: 7,565.06'
INC: 90.18°
AZM: 359.57°
VS: 834.08'

MW IN: 9.8

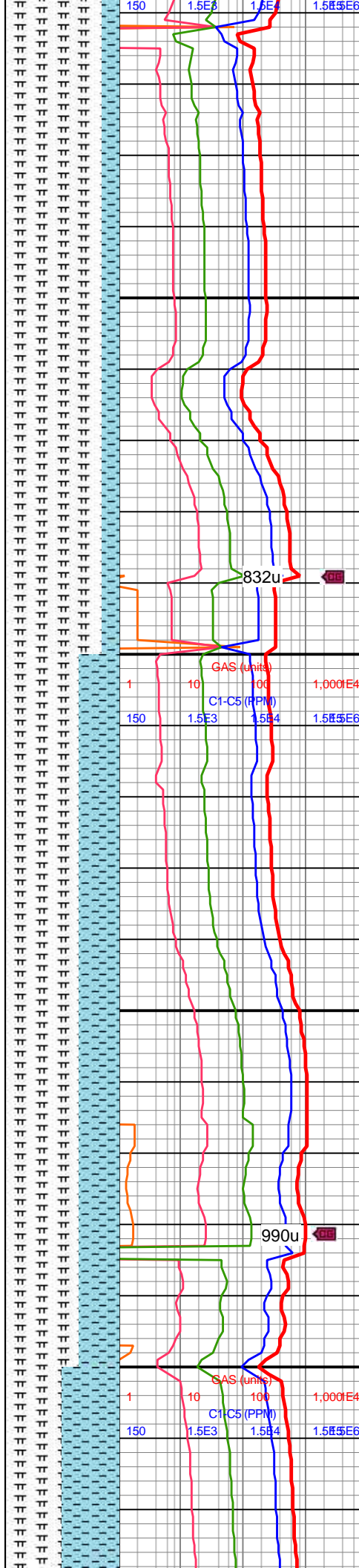
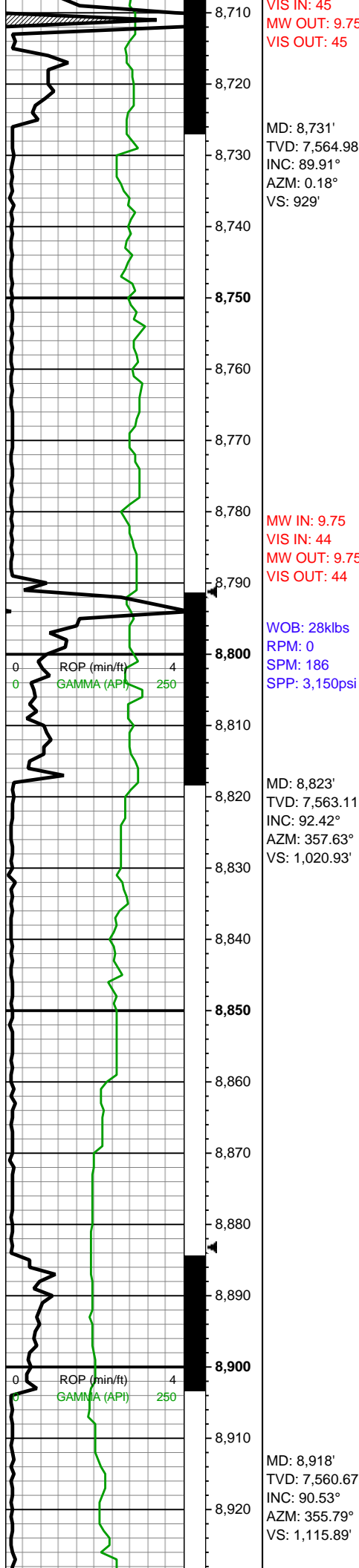


gyshbn-med brn, med gy,
mot, blk-y-sb tab ctngs,
sm-chky tex, frm, tr imbd
mic pyr, hi calc

8500-8600 MRLST
(80%): dk gy-v dk gy,
frm-brit mod fis sb
blk-y-blky ctngs, sm-sl slty
tex, tr vf pyr, ptch brn mrlly
incl & o stn ip, tr vf pyr, rr
forams, rr bent, mod calc
wi brn mrlly resdl; 20%
CHK: lt gy-med gy,
frm-brit, mod fis, slty-sl gt
tex, thn lamn ip, rr vf-f pyr
strg, hi calc

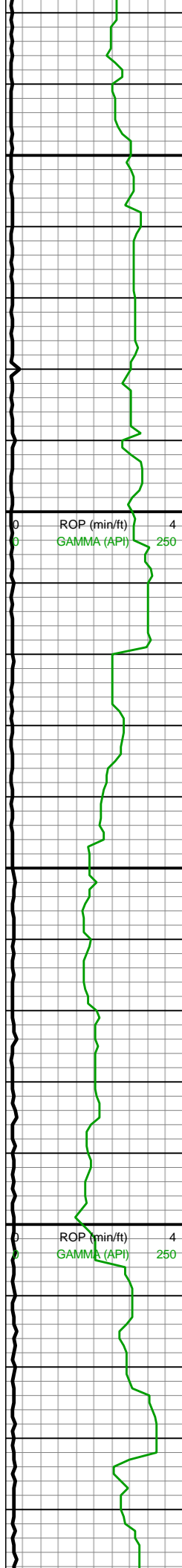
8600-8700 MRLST
(85%): dk gy-v dk gy,
frm-brit, mod-med hi fis
blk-y ctngs, occ sb blk-y,
sm tex, dul rthy-oily lstr, tr
vf pyr, tr bent, mod calc wi
brn mrlly resdl; CHK
(15%): lt gy-med gy,
frm-brit, mod fis, slty-sl gt
tex, thn lamn ip, rr vf-f pyr
strg, tr bent, hi calc





8700-8800 MRLST
(85%): dk gy-v dk gy,
frm-brit mod-med hi fis
blky-sb blky ctngs, sm
tex, slty-sl gt tex ip, tr vf
pyr, tr bent, mod calc wi
brn mrly resdl; 15% CHK:
lt gy-med gy, frm-brit,
mod fis, slty-sl gt tex, thn
lamn ip, rr vf-f pyr strg, rr
forams, hi calc

8800-8900 MRLST
(65%): dk gy-v dk gy,
frm-brit mod-med hi fis
blky-sb blky ctngs, sm
tex, slty-sl gt tex ip, tr vf
pyr, tr bent, mod calc wi
brn mrly resdl; 35% CHK:
lt gy-med gy, frm-brit,
mod fis, slty-sl gt tex, thn
lamn ip, rr vf-f pyr strg, rr
forams, hi calc



8,930
8,940
8,950
8,960
8,970
8,980
8,990
9,000
9,010
9,020
9,030
9,040
9,050
9,060
9,070
9,080
9,090
9,100
9,110
9,120
9,130
9,140

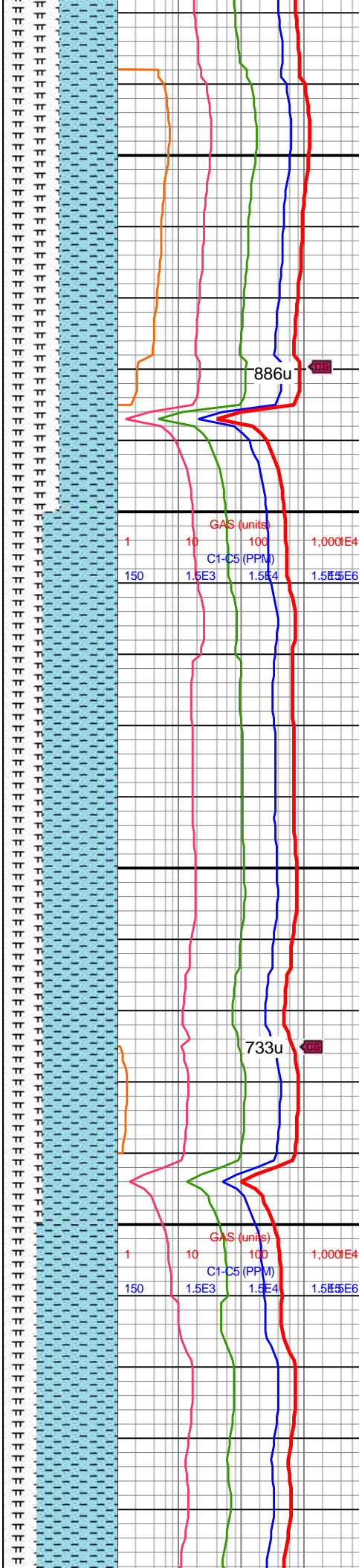
WOB: 34klbs
RPM: 70
SPM: 188
SPP: 3,860psi

MD: 9,012'
TVD: 7,559.84'
INC: 90.48°
AZM: 355.52°
VS: 1,209.83'

22' DTN

MD: 9,107'
TVD: 7,559.47'
INC: 89.96°
AZM: 354.56°
VS: 1,304.74'

MW IN: 9.85
VIS IN: 46
MW OUT: 9.65
VIS OUT: 43

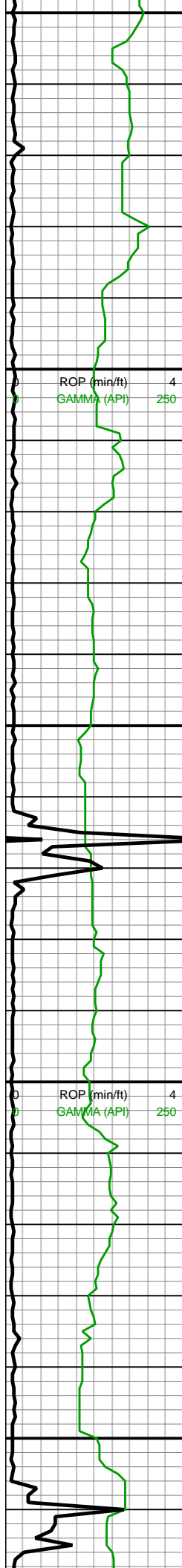


8900-9000 CHK (50%): lt gy-med gy-gyshbn, frm-brit, mod fis sb blkylkylk ctngs, slty-sl gt tex, rr vf-f pyr strg, rr bent & forams, hi calc; MRLST (50%): dk gy-v dk gy, frm-brit, mod fis sb blkylkylk ctngs, sm-sl slty tex, occ vf pyr ip, mod calc wi brn mrly resdl



9000-9100 CHK (65%): lt gy-med gy-gyshbn, frm-brit, mod fis sb blkylkylk ctngs, slty-sl gt tex, rr vf-f pyr strg, occ bent, rr forams, hi calc; MRLST (35%): dk gy-v dk gy, frm-brit, mod fis sb blkylkylk ctngs, sm-sl slty tex, occ vf pyr ip, mod calc wi brn mrly resdl





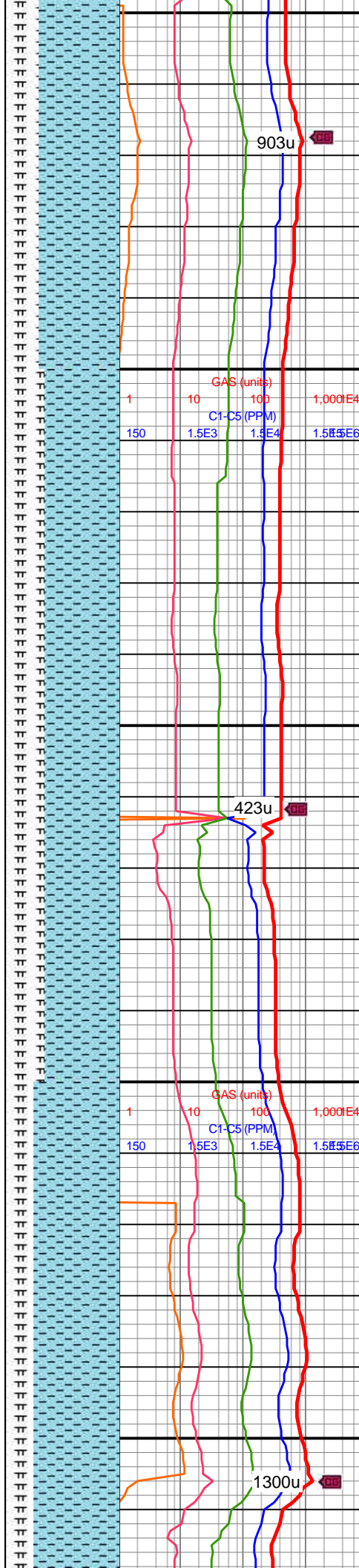
9,150
9,160
9,170
9,180
9,190
9,200
9,210
9,220
9,230
9,240
9,250
9,260
9,270
9,280
9,290
9,300
9,310
9,320
9,330
9,340
9,350
9,360

WOB: 34klbs
RPM: 71
SPM: 188
SPP: 3,970psi

MD: 9,202'
TVD: 7,560.13'
INC: 89.25°
AZM: 354.47°
VS: 1,399.61'

MW IN: 9.9
VIS IN: 46
MW OUT: 9.85
VIS OUT: 44

MD: 9,296'
TVD: 7,561.9'
INC: 88.59°
AZM: 355°
VS: 1,493.49'

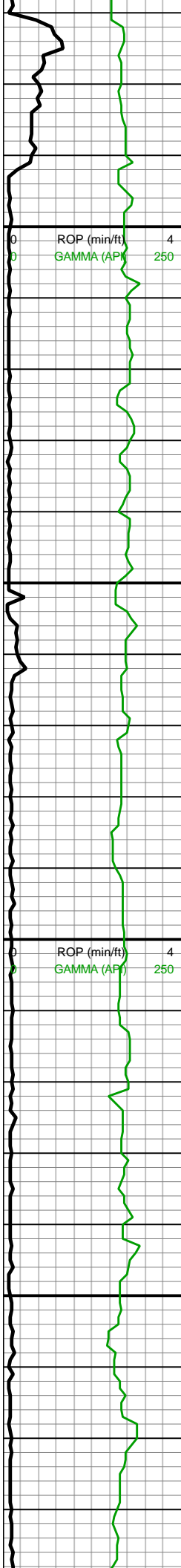


9100-9200 CHK (70%):
predy off wh-lt gy, occ
med gy mot wi cf chky
incl & forams, frm-brit,
mod fis sb blkly-blky
ctngs, slty-sl gt tex, occ
forams, rr bent, hi calc;
MRLST (30%): dk gy-v dk
gy, frm-brit, mod fis sb
blkly-blky ctngs, sm-sl slty
tex, occ vf pyr ip, mod calc
wi brn mrly resdl



9200-9300 CHK (65%):
pff wh-lt gy-med gy-occ
gyshbn, frm-brit, mod fis
sb blkly-blky ctngs, slty-sl
gt tex, rr vf-f pyr strg, rr
bent, rr forams, hi calc;
MRLST (35%): dk gy-v dk
gy, frm-brit, mod fis sb
blkly-blky ctngs, sm-sl slty
tex, occ vf pyr ip, mod calc
wi brn mrly resdl





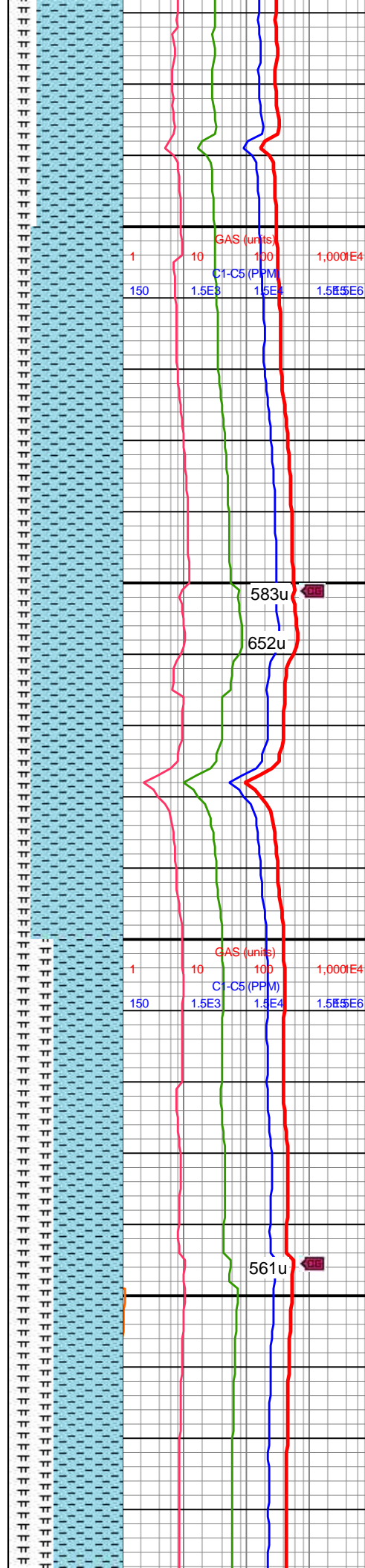
MD: 9,391'
TVD: 7,562.56'
INC: 90.62°
AZM: 357.02°
VS: 1,588.44'

WOB: 29klbs
RPM: 75
SPM: 190
SPP: 3,940psi

MD: 9,485'
TVD: 7,561.25'
INC: 90.97°
AZM: 356.84°
VS: 1,682.43'

MW IN: 9.9
VIS IN: 45
MW OUT: 9.85
VIS OUT: 43

MD: 9,579'
TVD: 7,559.52'
INC: 91.14°
AZM: 357.9°
VS: 1,776.41'

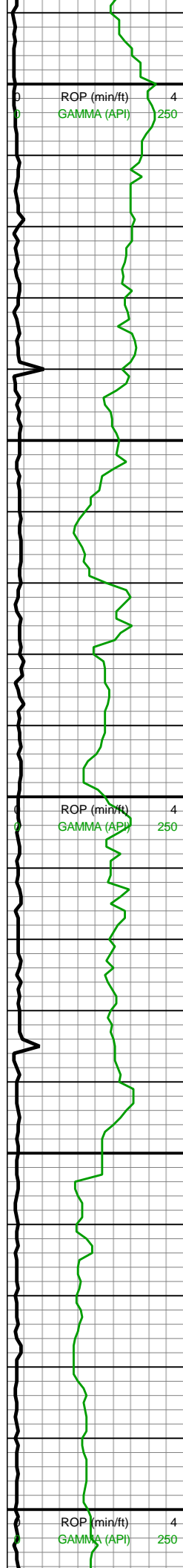


9300-9400 CHK (75%):
off wh-lt gy-med gy, sb
frm-frm-brit, mod fis sb
blky-blky ctngs, slty-sl
gt-chky tex, tr vf pyr, hi
calc; MRLST (25%): dk
gy, frm-brit, mod fis sb
blky-blky ctngs, sm-sl slty
tex, rr vf pyr ip, mod calc
wi brn mrly resdl

9400-9500 CHK (80%):
off wh-lt gy-med gy, sb
frm-frm-brit, mod fis sb
blky-blky ctngs, slty-sl
gt-chky tex, tr vf pyr, hi
calc; MRLST (20%): dk
gy, frm-brit, mod fis sb
blky-blky ctngs, sm-sl slty
tex, rr vf pyr ip, mod calc
wi brn mrly resdl

9500-9600 CHK (60%):
lt-med gy-gyshbn wi
occ-com f-u f wh chky incl
& forams, frm-brit mod fis
sb blky-blky ctngs, slty-sl
gt tex, tr vf pyr, hi calc;
MRLST (40%): dk gy,



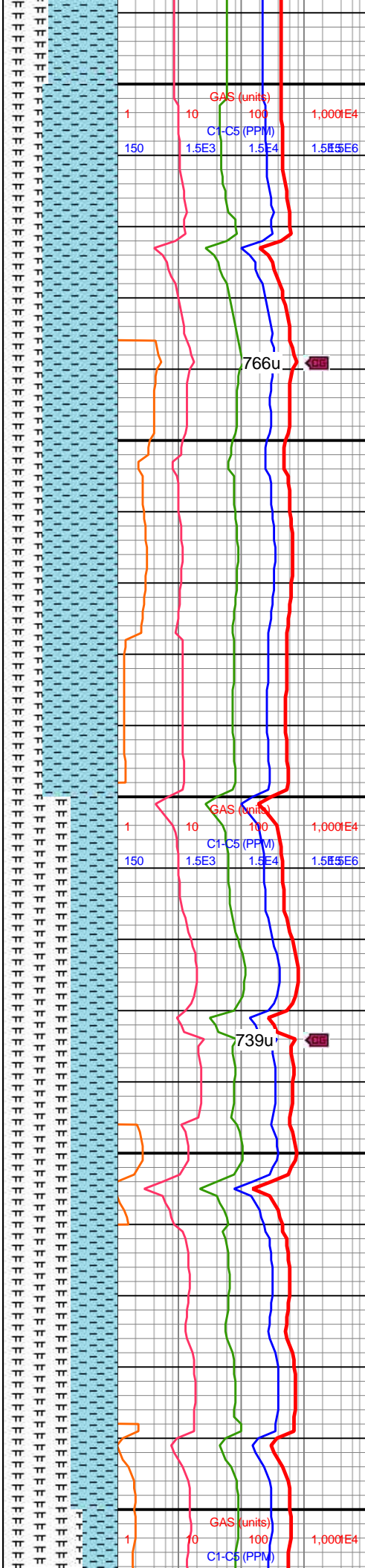


WOB: 31klbs
RPM: 75
SPM: 190
SPP: 3,950psi

MD: 9,674'
TVD: 7,558.03'
INC: 90.66°
AZM: 357.81°
VS: 1,871.4'

MD: 9,769'
TVD: 7,557.56'
INC: 89.91°
AZM: 358.34°
VS: 1,966.39'

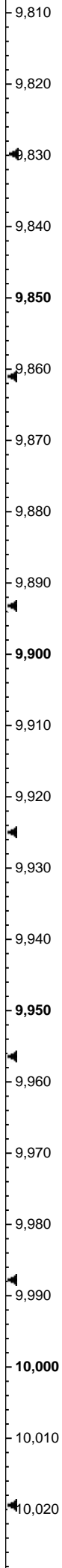
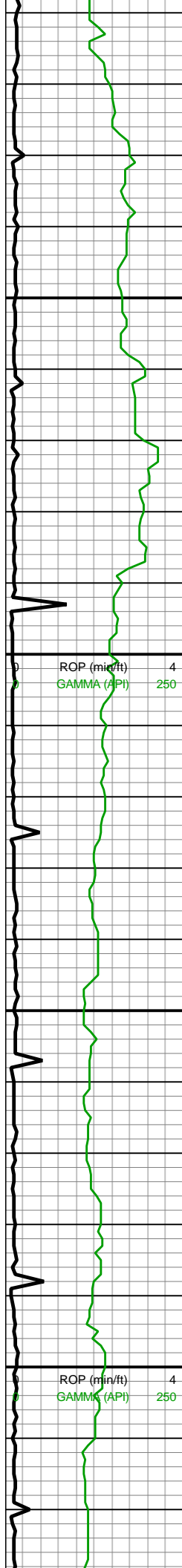
WOB: 31klbs
RPM: 75
SPM: 192
SPP: 3,910psi



frm-brit, mot, mod fis sb
blky-blky ctngs, sm-sl slty
tex, tr vf pyr, mod calc wi
brn mrly resdl

9600-9700 CHK (60%):
lt-med gy-gyshbn wi
occ-com f-u f wh chky incl
& forams, frm-brit mod fis
sb blkly-blky ctngs, slty-sl
gt tex, rgh tex ip, tr vf pyr,
hi calc; MRLST (40%):
gy-dk gy, frm-brit, ang-sb
blkly mod fis ctngs, predy
sm tex, sl slty ip, tr vf pyr,
mod calc wi brn mrly
resdl

9700-9800 MRLST
(60%): dk gy, frm-brit
mod fis sb blkly-blky
ctngs, sm-sl slty tex, tr vf
pyr, mod calc wi brn mrlly
resdl; CHK (40%): predy
med gy-gyshbn wi occ f-u
f wh chky incl, occ off
wh-lt gy chk wi gt tex ip,
frm-brit mod fis sb
blkly-blky ctngs, rr vf-u f
pyr, tr forams, hi calc

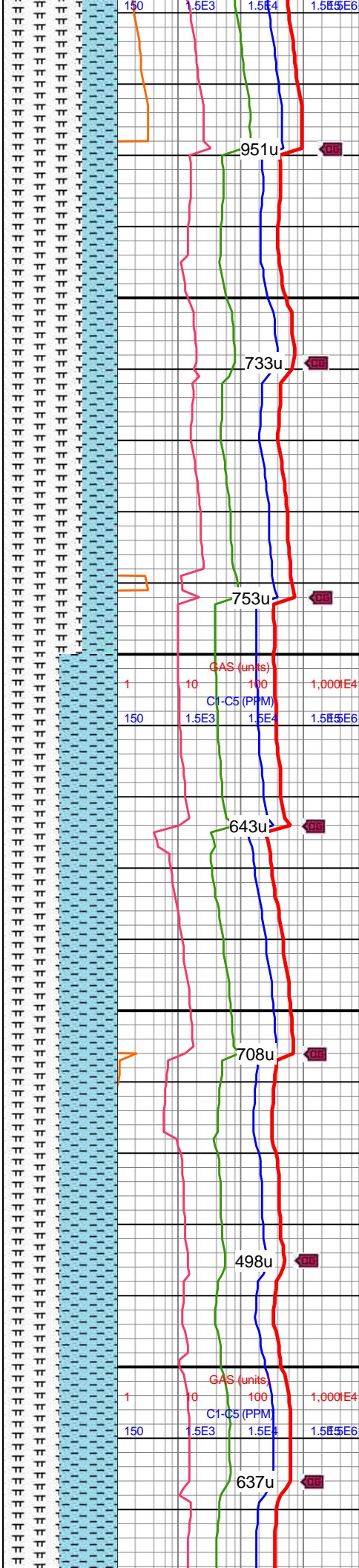


MW IN: 9.85
VIS IN: 45
MW OUT: 9.85
VIS OUT: 43

MD: 9,864'
TVD: 7,557.74'
INC: 89.87°
AZM: 357.72°
VS: 2,061.38'

MD: 9,959'
TVD: 7,557.88'
INC: 89.96°
AZM: 358.42°
VS: 2,156.38'

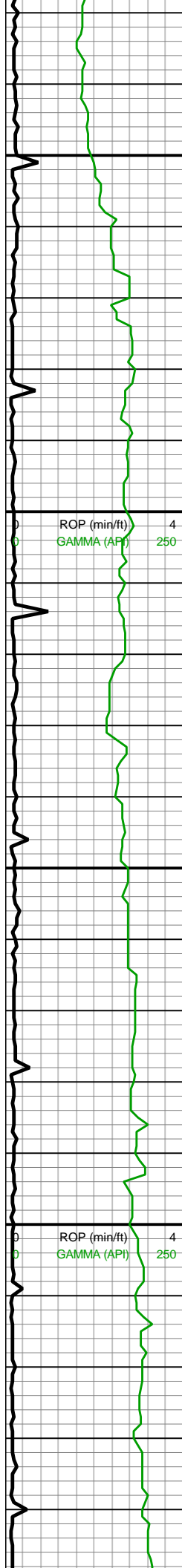
WOB: 33.7klbs
RPM: 75
SPM: 190
SPP: 3,829psi



9800-9900 MRLST
(70%): dk gy, occ v dk gy,
frm-brit, sm-arg tex, mod
fis sb blkly-blky ctngs, rr
vf-u f pyr, mod calc wi brn
mrly resdl; CHK (30%):
predy med gy-gyshbn wi
occ f-u f wh chky incl, occ
off wh-lt gy chk wi gt tex
ip, frm-brit mod fis sb
blkly-blky ctngs, rr vf-u f
pyr, tr forams, hi calc

9900-10000 CHK (50%):
lt-med gy, frm-brit mod fis
sb blkly-blky ctngs,
sm-sltly tex, rr forams, tr vf
pyr, hi calc; MRLST
(50%): gy-dk gy, frm-brit,
ang-sb blkly mod fis
ctngs, predy sm tex, sl
slty ip, tr vf pyr, mod calc
wi brn mrly resdl





MW IN: 9.85
VIS IN: 45
MW OUT: 9.85
VIS OUT: 43

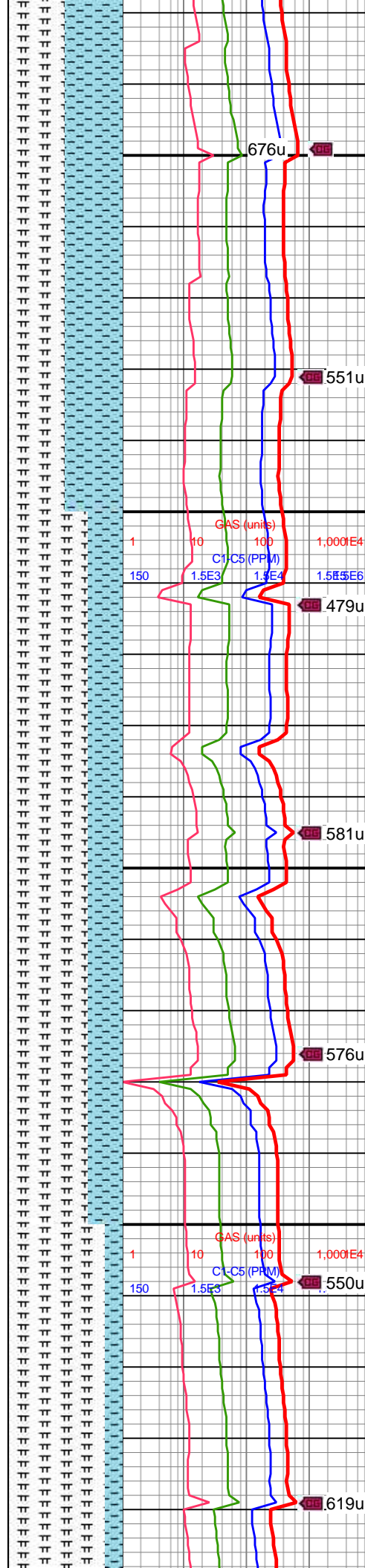
MD: 10,053'
TVD: 7,557.88'
INC: 90.04°
AZM: 358.34°
VS: 2,250.37'

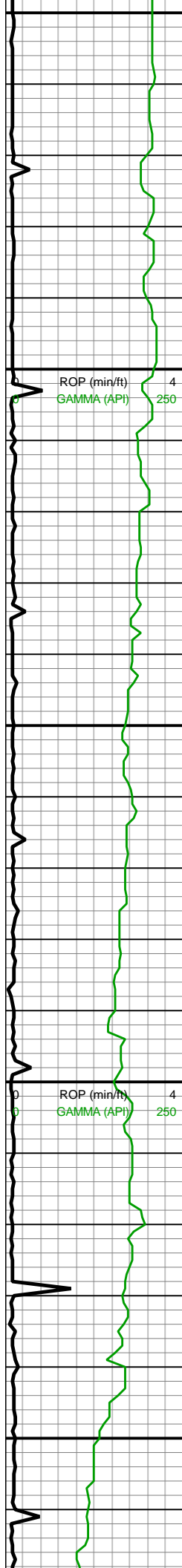
MD: 10,148'
TVD: 7,557.48'
INC: 90.44°
AZM: 358.42°
VS: 2,345.36'

MINDEPTH 8/25/17

WOB: 31klbs
RPM: 75
SPM: 188
SPP: 3,950psi

MD: 10,243'
TVD: 7,557.15'
INC: 89.96°
AZM: 356.67°
VS: 2,442.95'





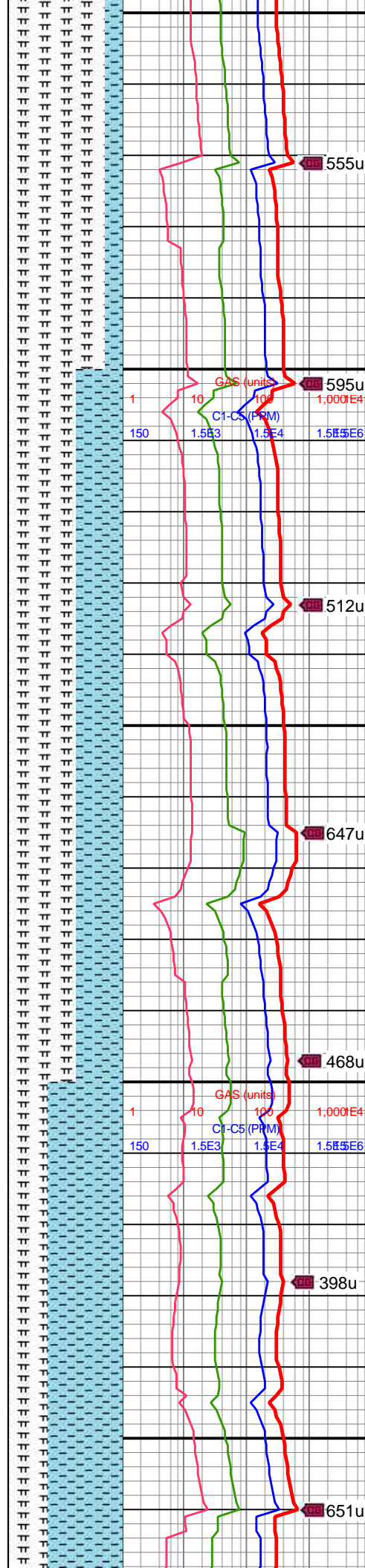
VS: 2,440.35'

MW IN: 9.85
VIS IN: 45
MW OUT: 9.8
VIS OUT: 43

MD: 10,337'
TVD: 7,556.67'
INC: 90.62°
AZM: 355.17°
VS: 2,534.31'

WOB: 20klbs
RPM: 75
SPM: 189
SPP: 3,450psi

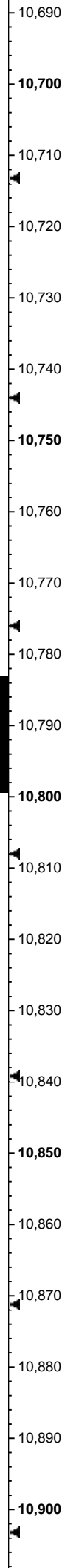
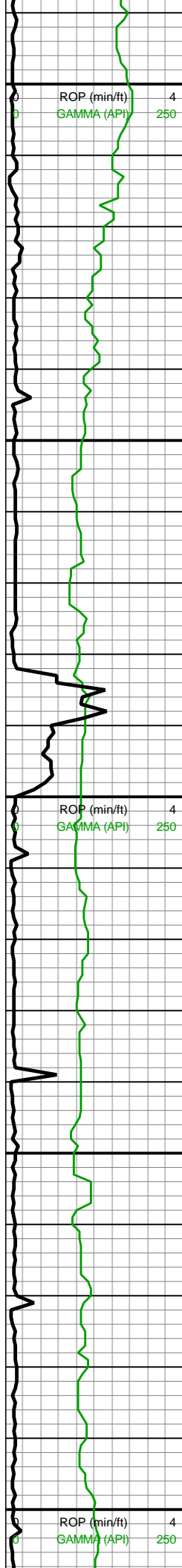
MD: 10,432'
TVD: 7,555.4'
INC: 90.92°
AZM: 354.82°
VS: 2,629.21'



10200-10300 MRLST
(85%): dk gy-v dk gy,
frm-brit, mod-mod hi fis,
blky-sb splt ctngs, sm-sl
silty tex, tr pp mic pyr, tr
bent, mod calc; CHK
(15%): med brn-dk
gyshbn, mot, frm-brit, sl
sm-chky tex, thn lamn ip,
tr diss/mbd mic pyr, hi
calc

10300-10400 MRLST
(60%): dk gy-dk gyshbn,
frm-sl hd, sb blky-sb splt,
mnr intbdd CHK, mnr
dissm mic pyr, mnr
BENT frags/incl, v calc;
CHK (40%): med gy, mot
gyshbn-brn, blky-sb blky,
sl sft-frm, mnr pp mic pyr
incl, tr free CHK, v calc



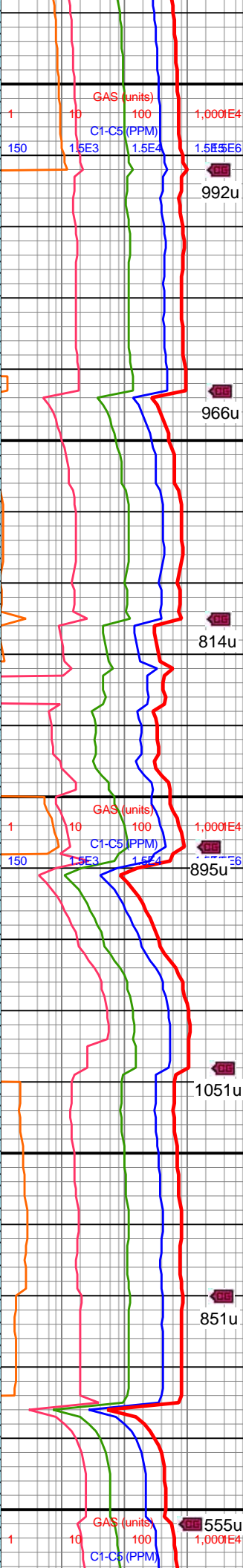
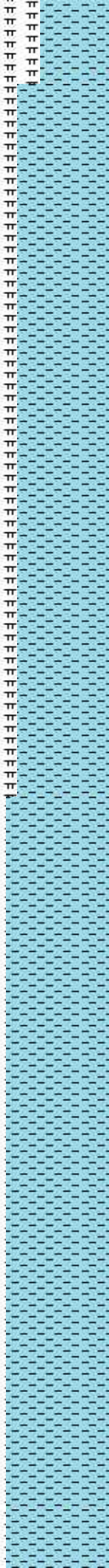


MD: 10,716'
TVD: 7,552.51'
INC: 90.31°
AZM: 356.67°
VS: 2,912.84'

MW IN: 9.9
VIS IN: 46
MW OUT: 9.9
VIS OUT: 44
WOB: 42klbs
RPM: 0
SPM: 190
SPP: 3,638psi

MD: 10,810'
TVD: 7,553.05'
INC: 89.03°
AZM: 356.49°
VS: 3,006.82'

MD: 10,905'
TVD: 7,554.54'
INC: 89.17°
AZM: 357.46°



992u

966u

814u

895u

1051u

851u

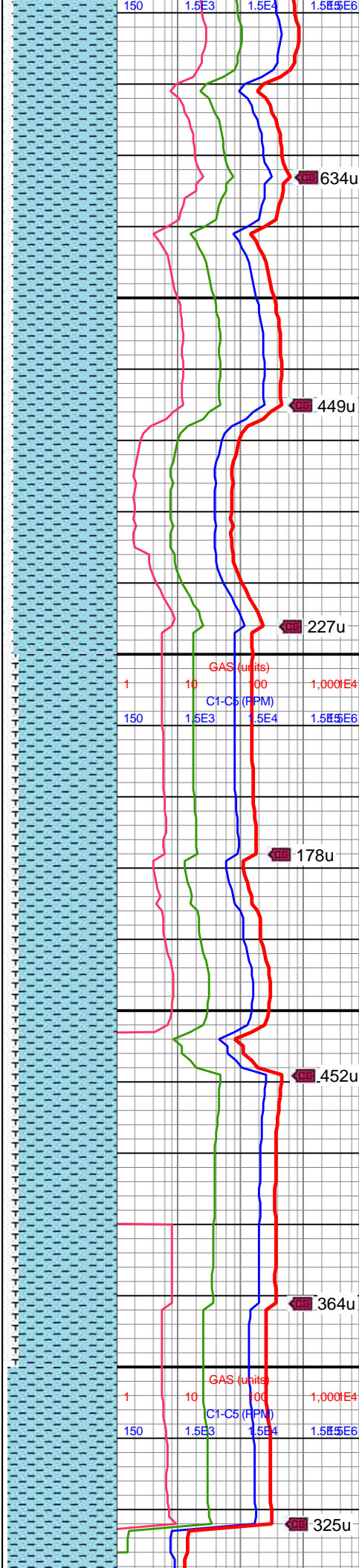
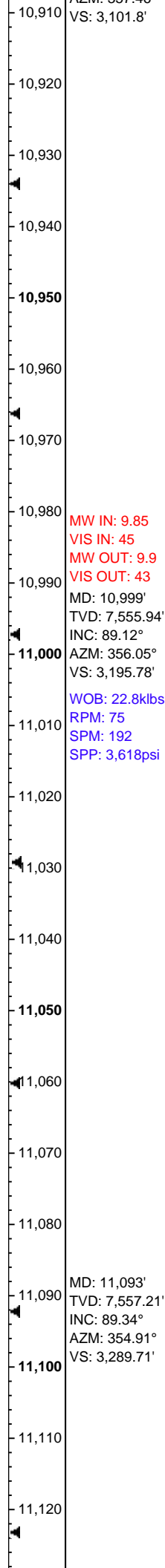
555u

MRLST (40%): predy dk gy-dk gyshbn, frm-v frm, tab-blky, mntr intbdd CHK, sl sm tex, mod-hi calc

10700-10800 CHK (80%): gyshbn-med brn, mot-stri, sl frm-frm, brit, mod fis, sb blky-sb tab ctngs, sl sm-chky tex, tr diss mic pyr, hi calc; MRLST (20%): dk gy-dk gyshbn, frm-brit, mod fis, sb blky-blky ctngs, sm-sl slty tex, tr mic pyr, mod calc wi brn mrly resdl

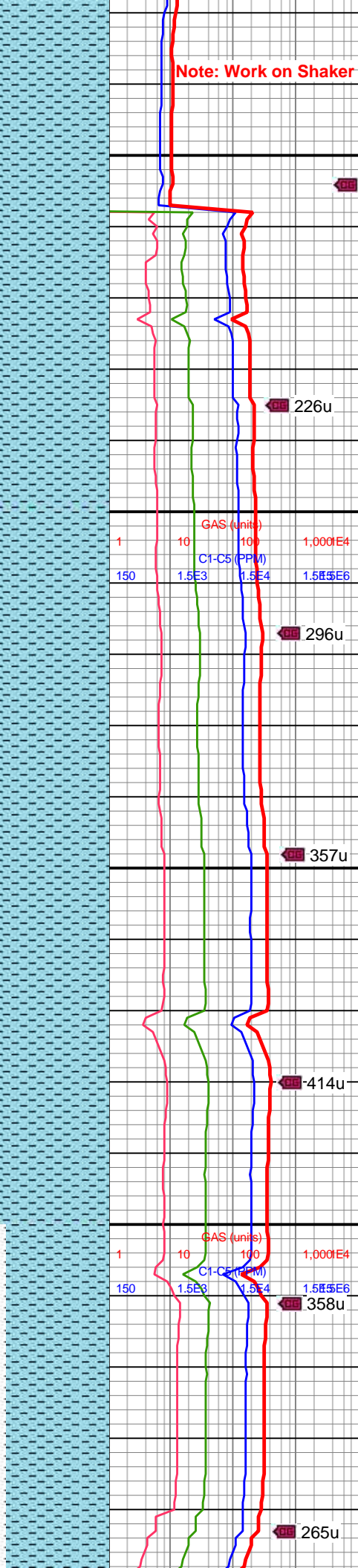
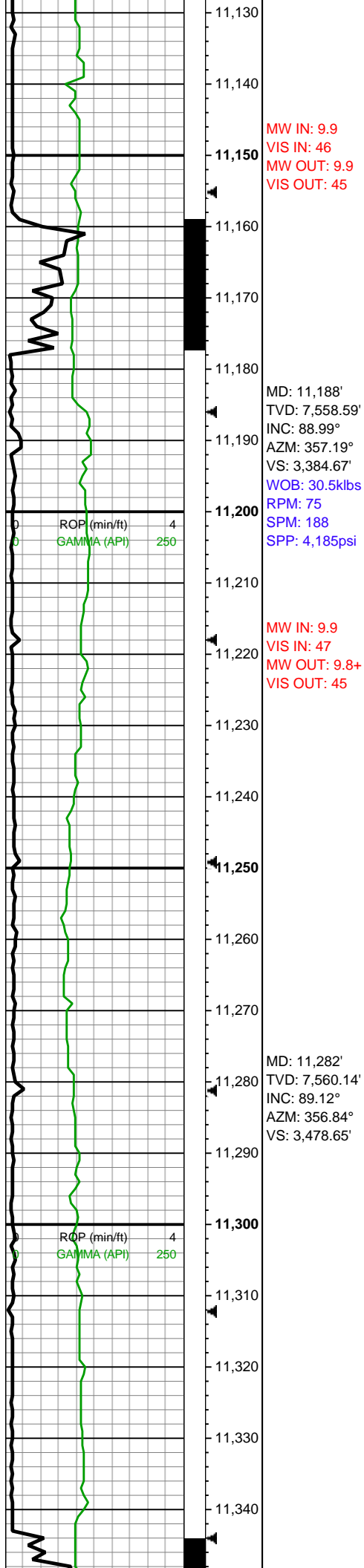
10800-10900 CHK (90%): gyshbn-med brn, mot-stri, mod fis, sb blky-sb tab ctngs, sl frm-frm, sl sm-chky tex, brit, tr diss mic pyr, hi calc; MRLST (10%): dk gy-dk gyshbn, sb blky-tab ctngs, mod fis, frm-brit, sm-sl slty tex, tr mic pyr, mod calc





10900-11000 CHK
(90%): gyshbn-med brn,
mot lt brn, stri, sb blk-y-sb
tab ctngs, sl frm-sl hd, sl
sm-chky tex, tr free CHK,
tr mic pyr, hi calc; MRLST
(10%): dk gy-dk gyshbn,
frm-brit, sm-sl slty tex, sb
blk-y-tab ctngs, tr mic pyr,
mod calc

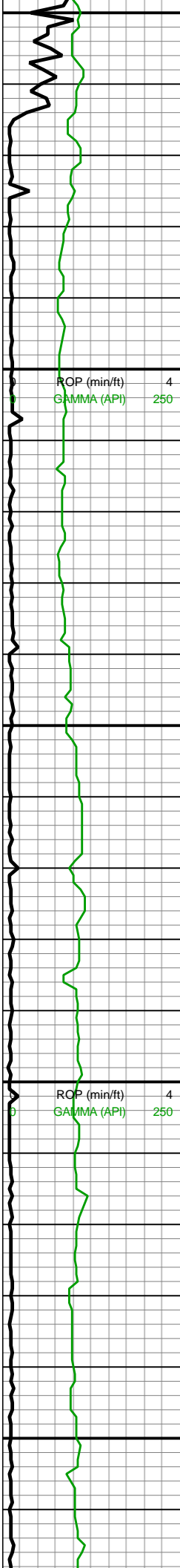
11000-11100 CHK
(85%): gyshbn-lt brn, mot
med brn, stri, sb blkly-sb
tab ctngs, sl frm, sm-chky
tex, tr free CHK, tr pp mic
pyr, hi calc; MRLST
(15%): dk gy-med gy, sb
blkly-tab ctngs, sl hd-frm,
sm-sl slty tex, mod calc,
intbdd CHK, tr mic pyr



11100-11200 CHK
(95%): gyshbn-lt brn, med brn, mot-stri, sl sm-chky tex, sb blk-y-sb spl tngs, sl frm-sl hd, tr free CHK, tr mic pyr, hi calc; MRLST (5%): predy dk gy, mot med gy, frm, sm-sl slty tex, tr mic pyr, sb blk-y-tab ctngs, mod calc, CHK lamn/incl

11200-11300 CHK
(95%): gyshbn-lt brn, mot med brn, stri, sl sm-chky tex, sb tab-sb blk-y ctngs, sl frm-frm, mnr free CHK, tr mic pyr, hi calc; MRLST (5%): dk gy, mot med gy, sb blk-y-tab ctngs, frm, sm-sl slty tex, tr mic pyr, CHK lamn/incl, mod calc





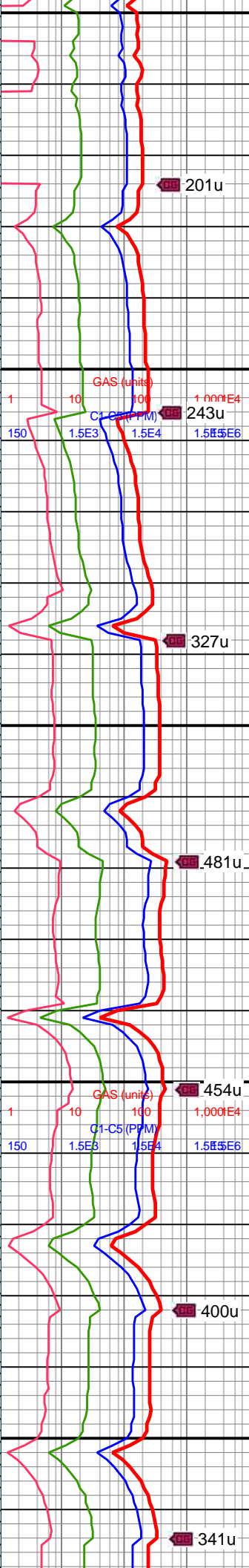
MW IN: 9.9
VIS IN: 47
MW OUT: 9.9
VIS OUT: 45
MD: 11,377'
TVD: 7,561.78'
INC: 88.9°
AZM: 359.39°
VS: 3,573.62'

WOB: 35.5klbs
RPM: 75
SPM: 187
SPP: 4,220psi

MD: 11,472'
TVD: 7,563.75'
INC: 88.73°
AZM: 0.88°
VS: 3,668.5'

MW IN: 9.9
VIS IN: 47
MW OUT: 9.9
VIS OUT: 46

MD: 11,566'
TVD: 7,565.59'
INC: 89.03°

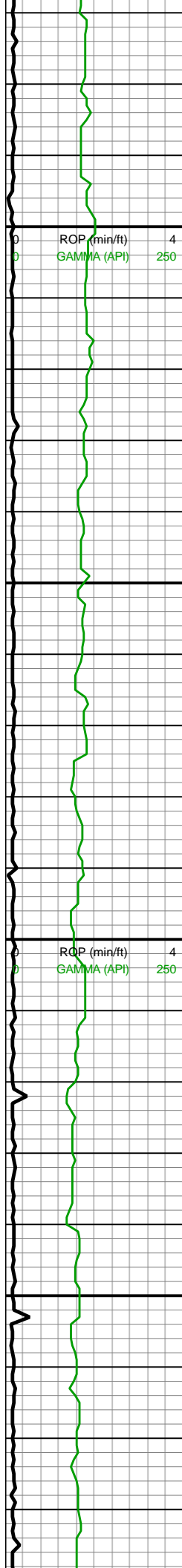


11300-11400 CHK
(90%): gyshbn, mot lt
brn-med brn, stri, sl
frm-sl hd, sb blkyl-sb tab
ctngs, sl sm-chky tex, tr
dissm mic pyr, tr free
CHK, hi calc; MRLST
(10%): dk gy-dk gyshbn,
sb blkyl-tab ctngs,
frm-brit, sm-sl slty tex, tr
mic pyr, mod calc

11400-11500 CHK
(90%): gyshbn, mot lt brn,
med brn, stri, sb blkyl-sb
tab ctngs, sl sm-chky tex,
sl frm-sl hd, tr free CHK,
tr dissd mic pyr, hi calc;
MRLST (10%): dk gy-dk
gyshbn, sb blkyl-tab
ctngs, frm-sl hd, sm-sl
slty tex, mod calc, tr pp
mic pyr

11500-11600 CHK





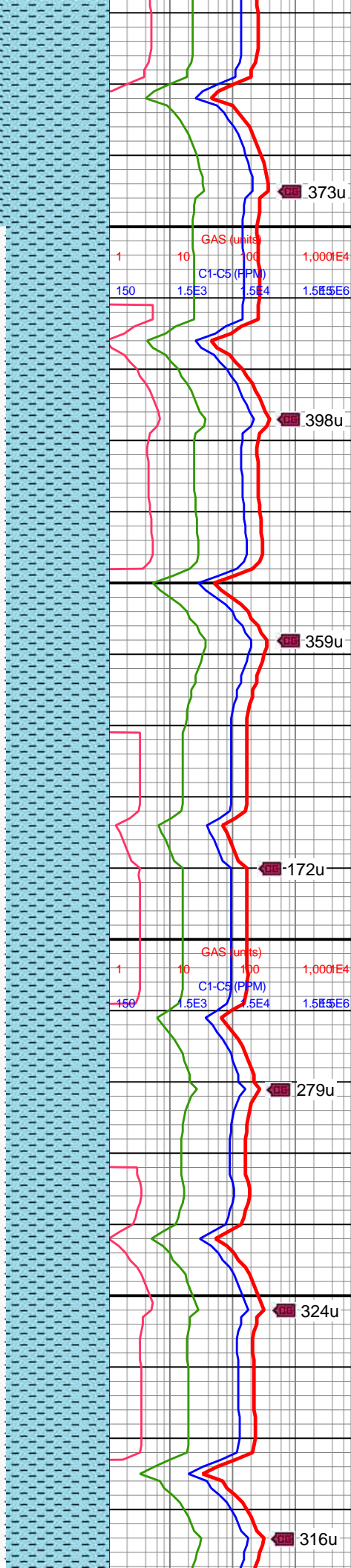
AZM: 0.27°
VS: 3,762.35'

WOB: 29.7klbs
RPM: 75
SPM: 187
SPP: 4,041psi

MD: 11,661'
TVD: 7,566.79'
INC: 89.52°
AZM: 0.97°
VS: 3,857.2'

MD: 11,755'
TVD: 7,566.71'
INC: 90.57°
AZM: 0.53°
VS: 3,951.04'

MW IN: 9.9
VIS IN: 47
MW OUT: 9.8+
VIS OUT: 44

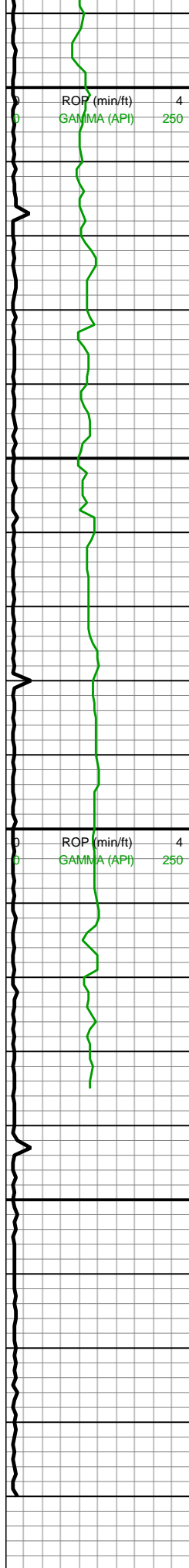


(95%): gyshbn-lt brn, mot lt gy, med brn, stri, sl chky tex, sl frm-frm, sb tab-sb blk cytns, mn free CHK, hi calc, tr mic pyr; MRLST (5%): dk gy, mot med gy, sb blk cytns, frm, sm-sl slty tex, CHK lamn/incl, mod calc, tr imbd/pp mic pyr

11600-11700 CHK (90%): predy lt gy, occ med gy, rr off wh, frm, brit, sb blk cytns, sm-sl slty-chky tex, thn lamn ip, tr bent, rr vf pyr, rr c pyr strg, hi calc; MRLST (10%): dk gy, mot, frm-brit, mod fis, rr brn mrly-o stn, rr vf pyr, sm arg tex-sl slty, mod calc wi brn mrly resdl

11700-11800 CHK (90%): off wh-lt gy-occ med gy, frm, brit, sb blk cytns, sm-sl slty-chky tex, thn lamn ip, tr bent, rr vf pyr, rr c pyr strg, hi calc; MRLST (10%): dk gy, mot, frm-brit, mod fis, rr brn mrly-o stn, rr vf pyr, sm arg tex-sl slty, mod calc





WOB: 33.2klbs
RPM: 75
SPM: 188
SPP: 4,335psi

MD: 11,850'
TVD: 7,565.22'
INC: 91.23°
AZM: 1.15°
VS: 4,045.87'

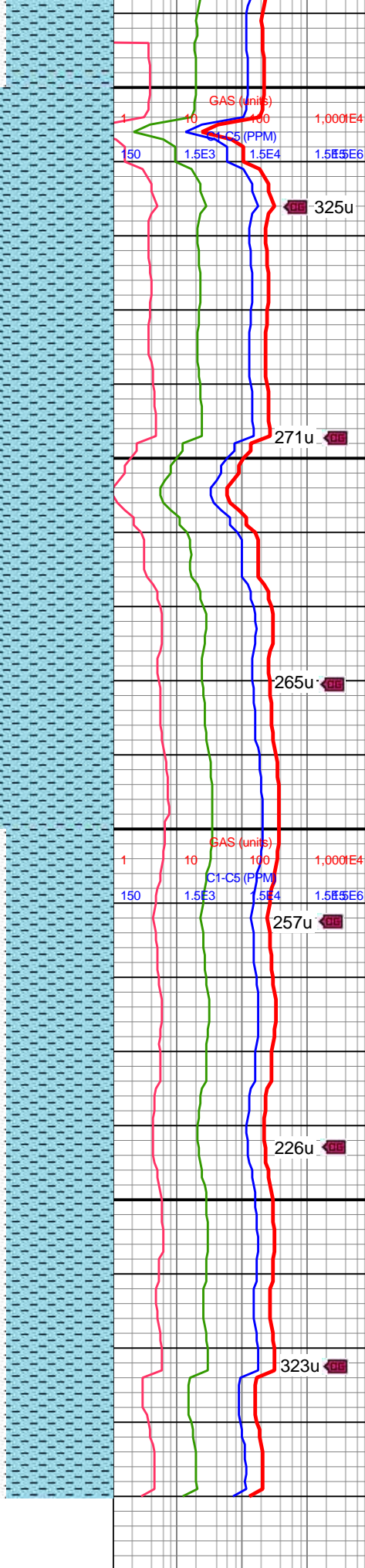
MW IN: 9.9
VIS IN: 46
MW OUT: 9.9
VIS OUT: 45

MD: 11,930'
TVD: 7,563.07'
INC: 91.85°
AZM: 0.44°
VS: 4,125.71'

Bit #: 1
Type: U516M
Size: 8 1/2
Depth In: 1,718'
Depth Out: 11,990'
Hours: 43.8 hrs
Avg Ft/Hr: 234 ' /hr
Jets: 6x13
S/N: 36051

**TD well @
13:00hrs on
8/25/17**

****Proj to Bit****
MD: 11,990'
TVD: 7,561.14'
INC: 91.85°
AZM: 0.44°
VS: 4,185.6'



wi brn resdl

325u

271u

265u

257u

226u

323u

11800-11900 CHK
(95%): predy lt gy, occ med gy, occ off wh lamn, frm-brit, sb rd-blky ctngs, sm-sl slty-chky tex, tr bent, rr vf pyr, tr c pyr strg, hi calc; MRLST (5%): dk gy, frm-brit, mod fis, rr vf pyr, sm arg tex-sl slty tex, mod calc wi brn mrly resdl

11900-11990 CHK
(95%): predy lt gy wi occ off wh lamn, occ med gy, frm-brit mod fis sb blky-blky ctngs, sm-sl slty-chky tex, tr bent, rr vf pyr, tr c pyr strg, hi calc; MRLST (5%): dk gy, frm-brit, mod fis, rr vf pyr, sm arg tex-sl slty tex, mod calc wi brn mrly resdl

