



Scale: 5" / 100'
Measured Depth Log

Well Name Davis 1H-9H-G266

Location Sec. 9 T2N R66W

State Colorado

County Weld

Country USA

Rig Number Ensign 153

API Number 05123465120000

AFE # 16191026

Geographic Region Rockies

Field Wattenberg

Spud Date 8/13/2018

Drilling Completed 8/17/2018

Surface Coordinates Lat/Long: 40.154464/-104.777875

SHL: Sec: 9 Twp: 2N 66W
Footage: 1952 FSL 1418 FEL

Bottom Hole Coordinates Proposed BHL:
Sec: 4 Twp: 2N 66W
Footages: 460 FNL 1837 FWL

Ground Elevation 4,917'

K.B. Elevation 4,940'

Logged Interval 6,500' **To** 14,650'

Total Depth 14,650'

Formation Niobrara B Chalk

Type of Drilling Fluid Synthetic 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

Loggers: Heather Davis / Mark Gross

Services Provided: 2-Man Mudlogging / Geosteering

Equipment: ML-526

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

Job #: 1459RK1808

Start Date 8/13/2018

Release Date: 08/18/2018

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
FISH

F 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
FERRUGINOUS PELLET
SILICEOUS
SILTY

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

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

FORMATION

FORAMINIFERA

ANHYDRITIC

FERRUGINOUS FEELEY

FERRUGINOUS

GIETT

TUFFACEOUS

SLISTONE STRINGER

Other Symbols

Oil Show

DEAD

EVEN

QUESTIONABLE

SPOTTED STAINING

Porosity

E EARTHY

F FENESTRAL

F FRACTURE

X INTERCRYSTALLINE

Q INTEROOLITIC

M MOLDIC

O ORGANIC

P PINPOINT

V VUGGY

Engineering

BIT

CASING

CONNECTION (LEFT)

CONNECTION (RIGHT)

CONNECTION GAS

CORE - LOST

CORE - RECOVERED

DST INTERVAL

FAULT

FORMATION TOP

GAS SHOW

MN DEPTH 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

E EARTHY

F FINELYXLN

GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

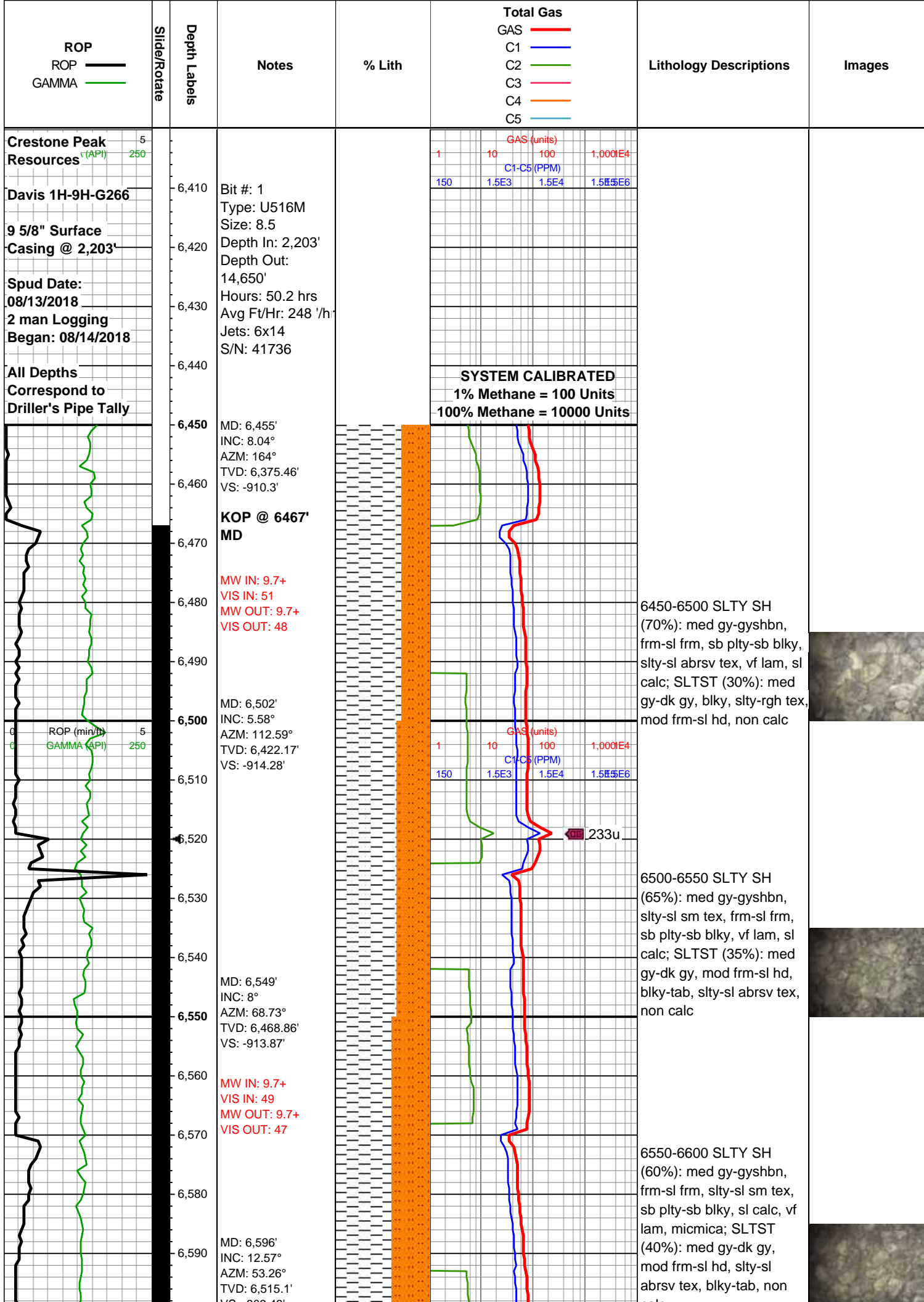
WS WACKESTONE

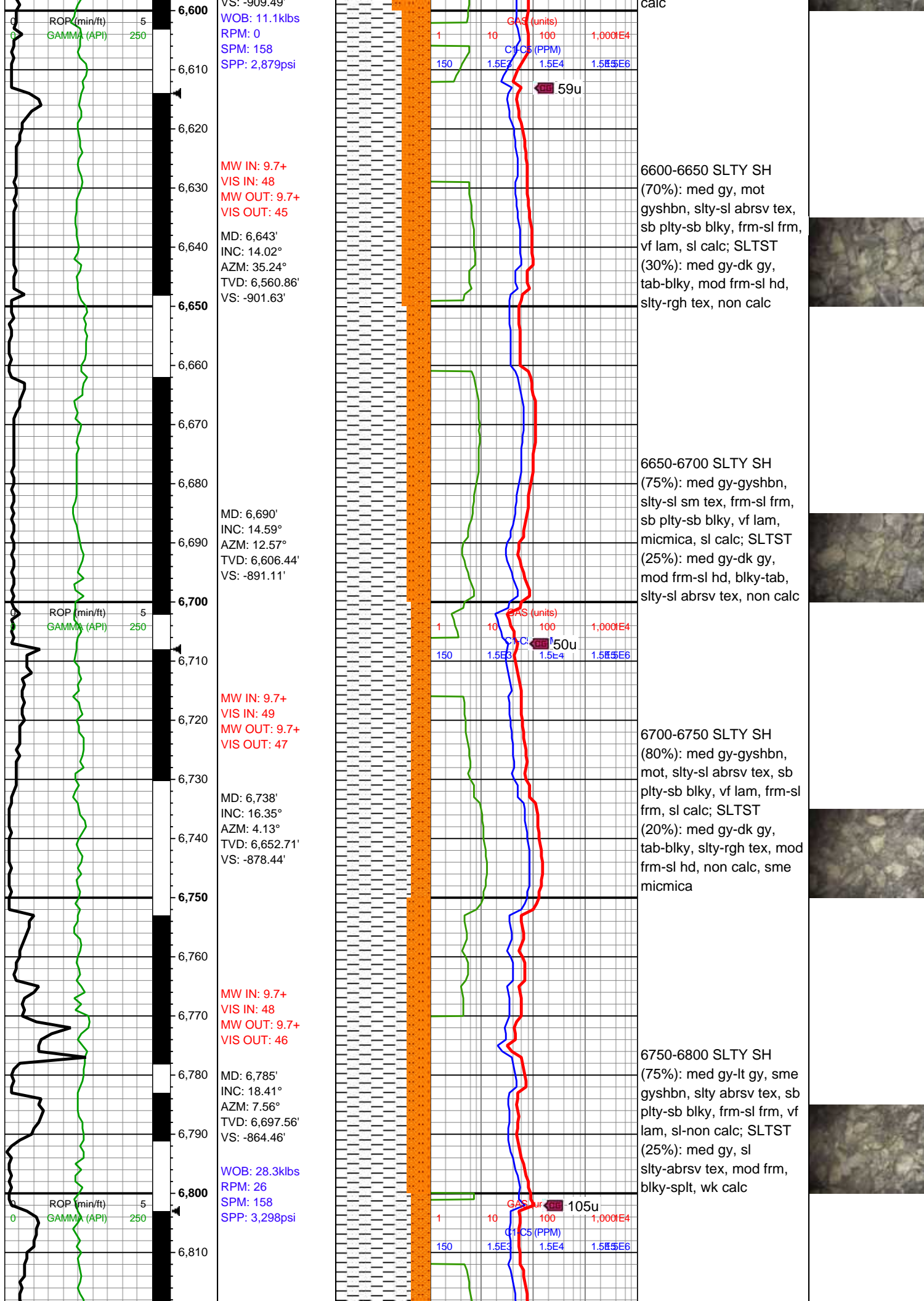
Sorting

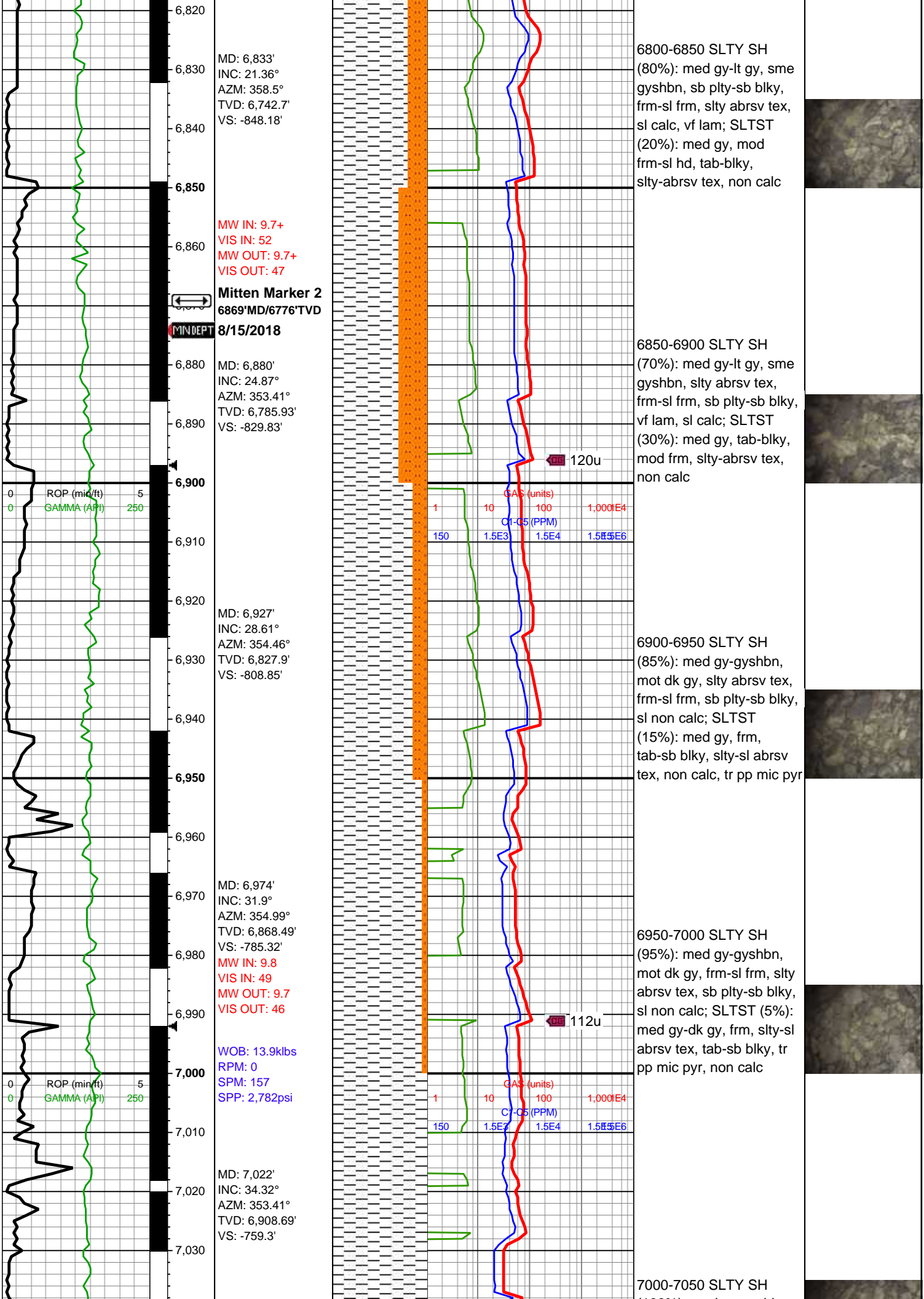
M MODERATE

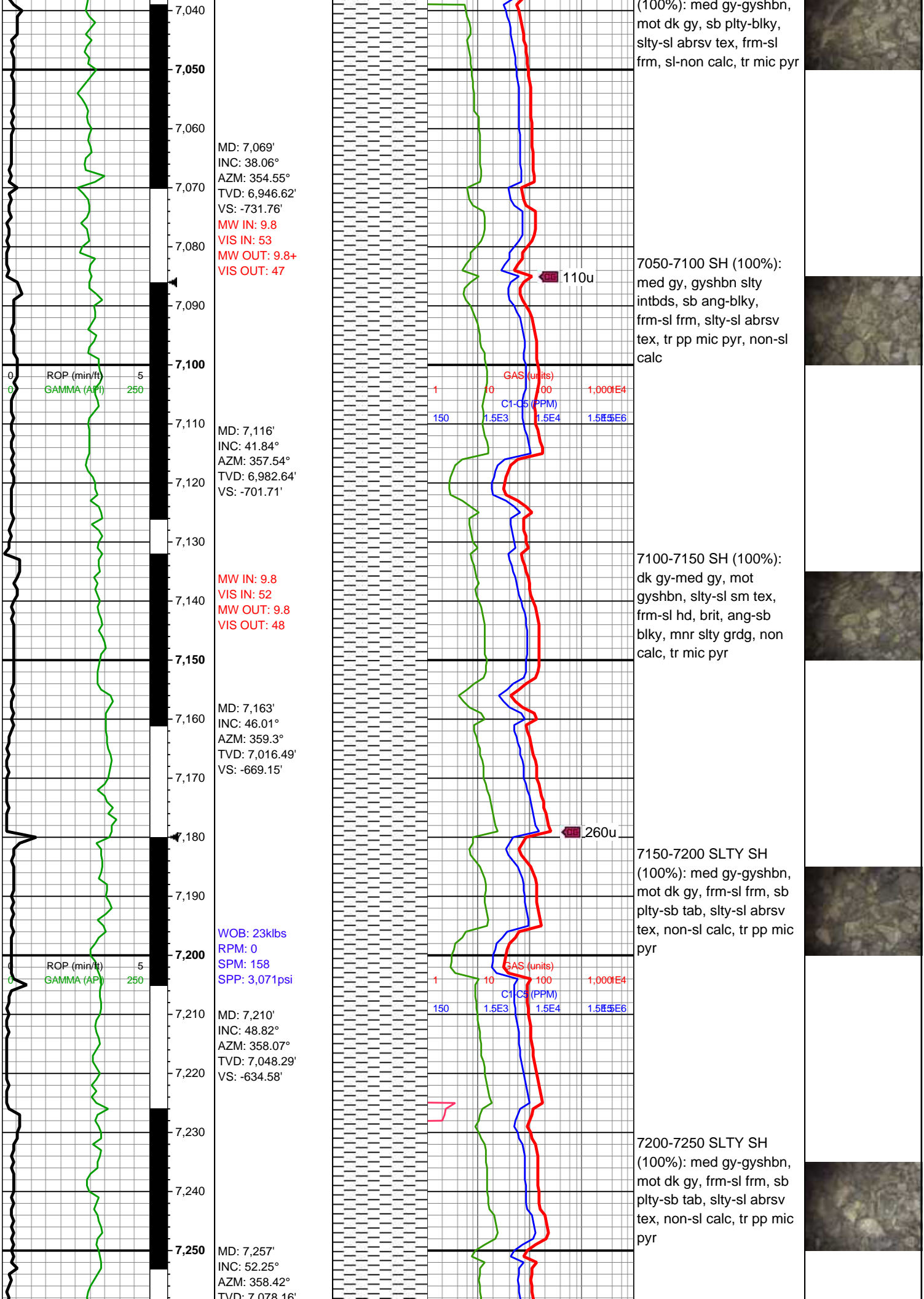
P POOR

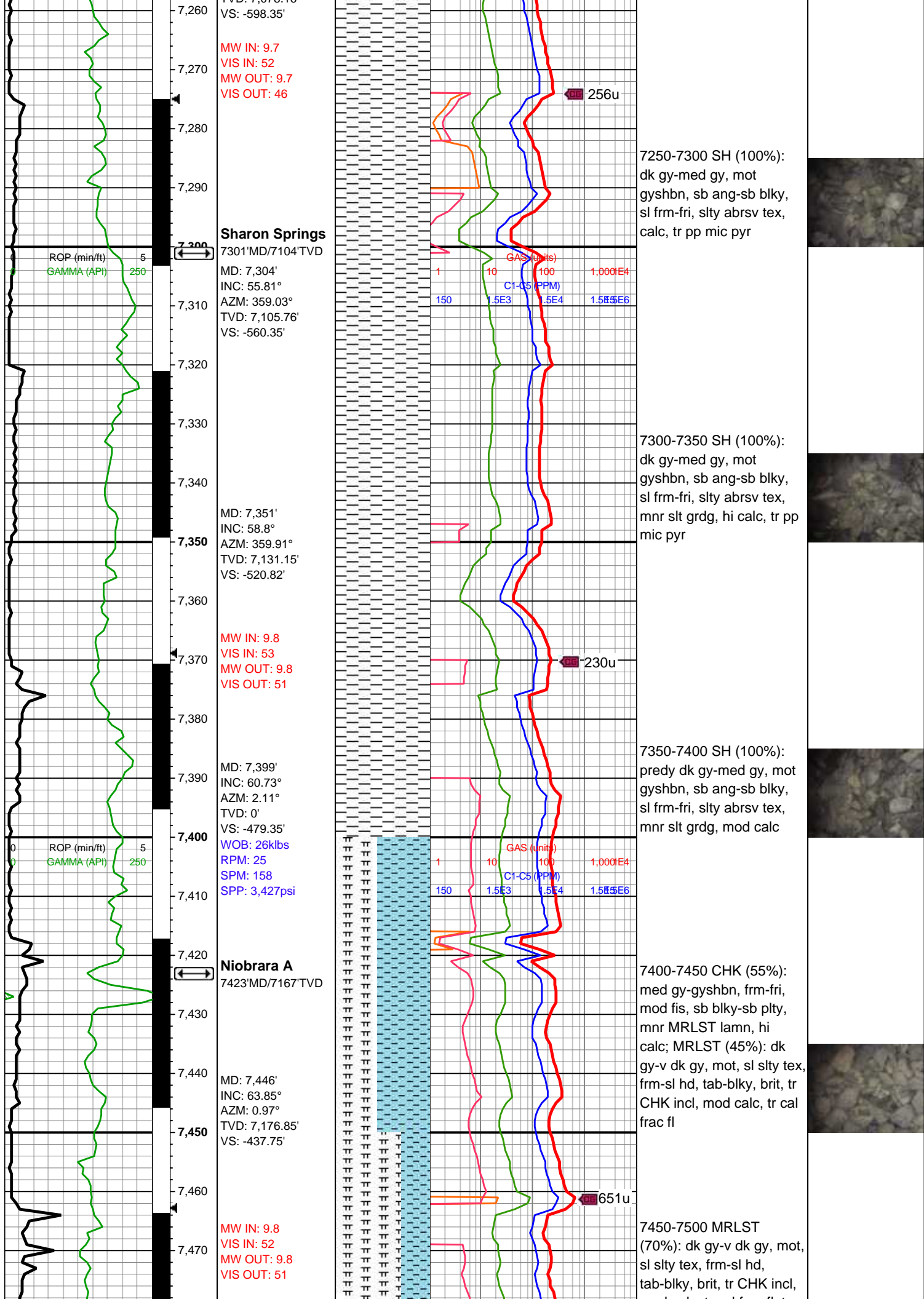
W WELL

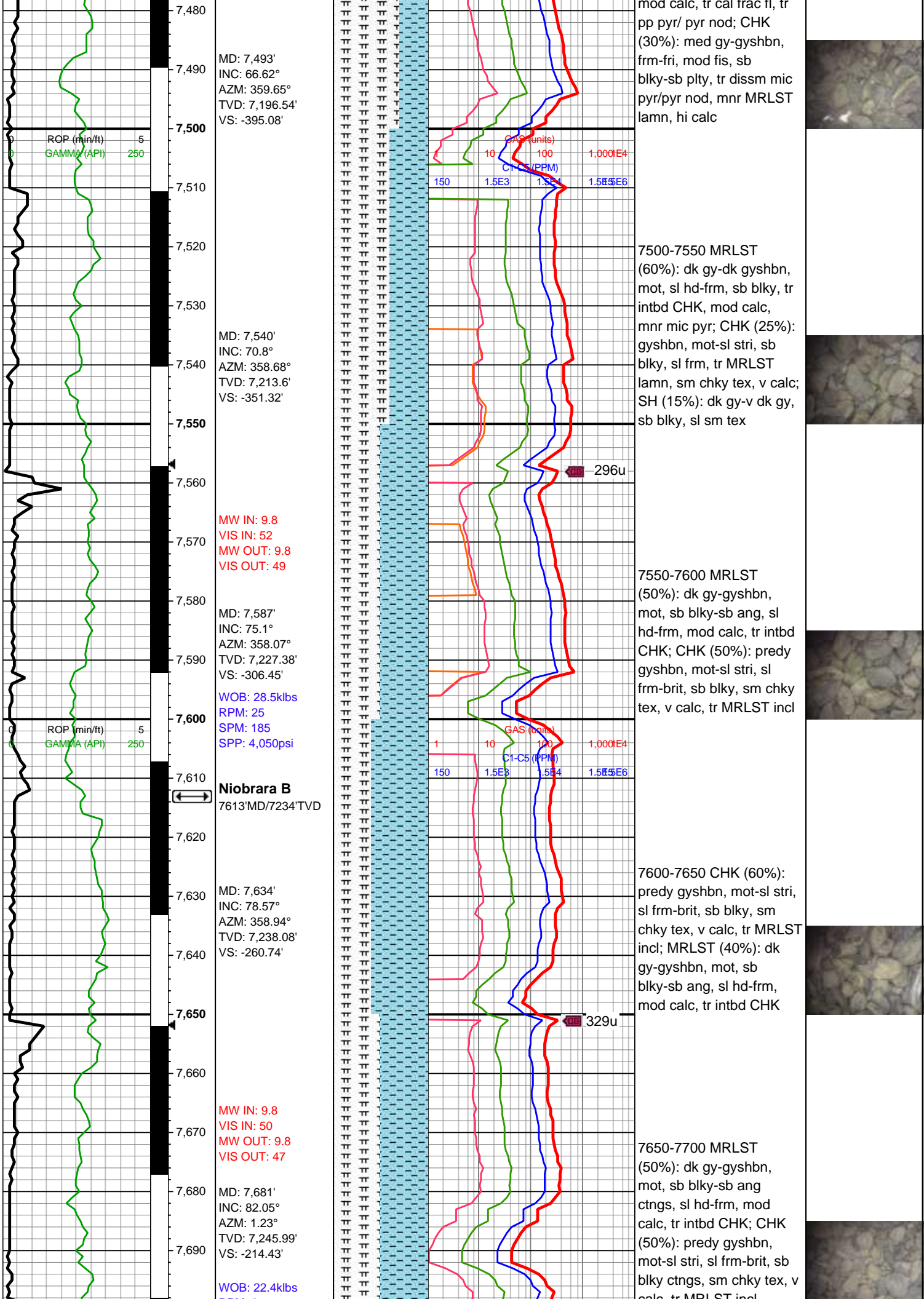


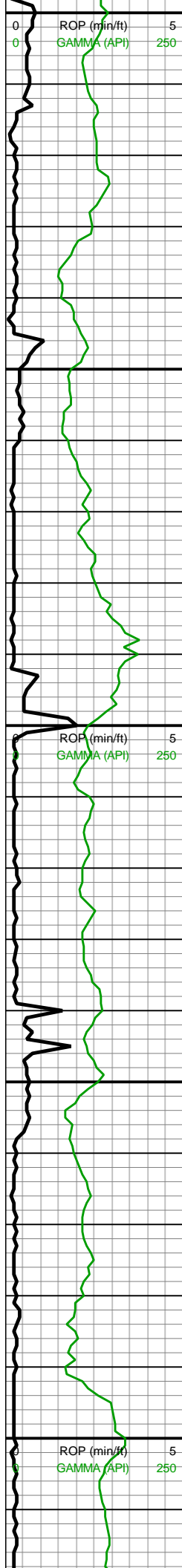












RPM: 0
SPM: 188
SPP: 3,859psi

MD: 7,728'
INC: 84.29°
AZM: 2.11°
TVD: 7,251.58'
VS: -167.77'

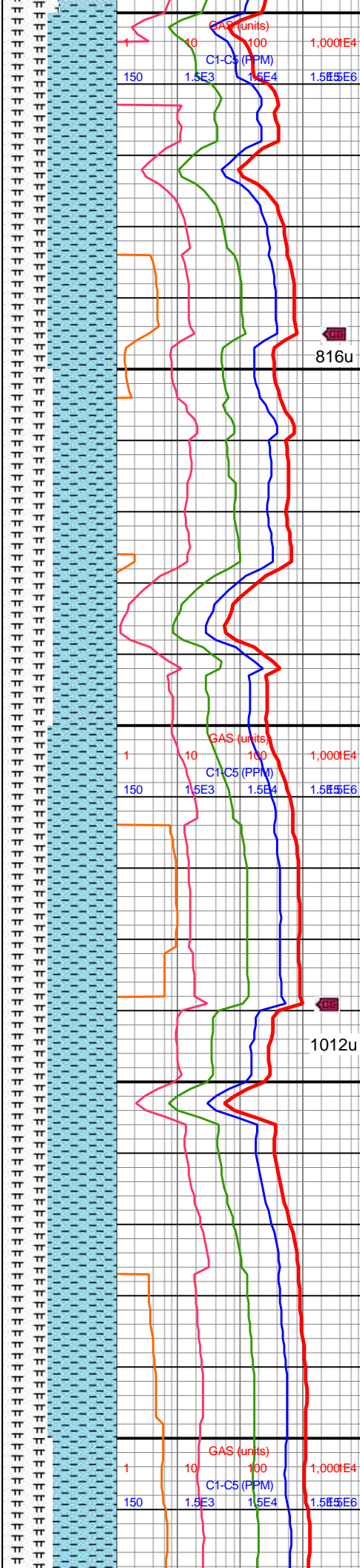
MD: 7,776'
INC: 85.78°
AZM: 1.84°
TVD: 7,255.74'
VS: -119.96'

WOB: 27.1klbs
RPM: 0
SPM: 188
SPP: 3,687psi

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

Land Curve @
7,853' MD

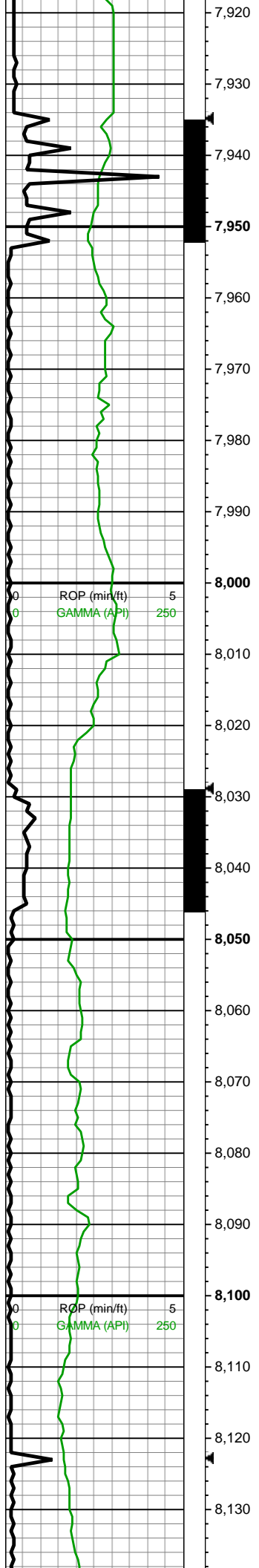
MD: 7,870'
INC: 87.94°
AZM: 1.14°
TVD: 7,260.88'
VS: -26.1'



7700-7750 CHK (60%):
predy gyshbn, mot-sl stri,
sl frm-brit, sb blkly ctngs,
sm chky tex, v calc, tr
MRLST incl; MRLST
(40%): dk gy-gyshbn,
mot, sb blkly-sb ang
ctngs, sl hd-frm, mod
calc, tr intbd CHK

7750-7800 CHK (55%):
predy gyshbn, mot-sl stri,
sl frm-brit, sb blkly ctngs,
sm chky tex, v calc, tr
MRLST incl; MRLST
(45%): dk gy-gyshbn,
mot, sb blkly-sb ang
ctngs, sl hd-frm, mod
calc, tr intbd CHK

7800-7900 CHK (60%):
predy gyshbn, mot-sl stri,
sl frm-brit, sb blkly ctngs,
sm chky tex, v calc, tr
MRLST incl; MRLST
(40%): dk gy-gyshbn,
mot, sb blkly-sb ang
ctngs, sl hd-frm, mod
calc, tr intbd CHK

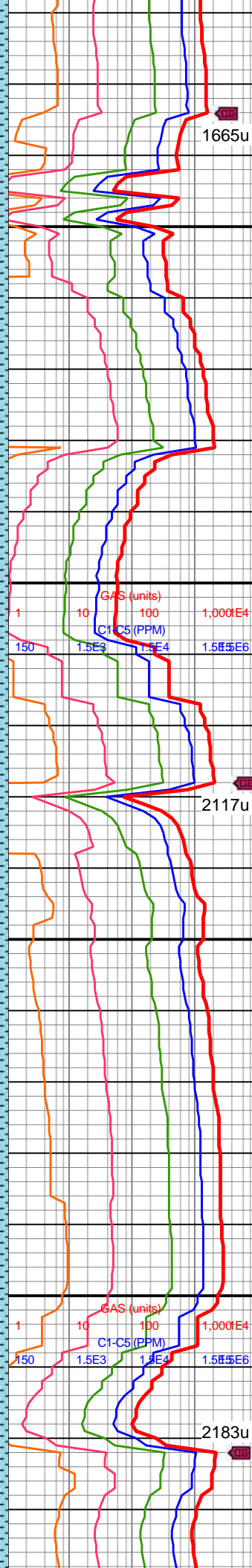


MW IN: 9.8
VIS IN: 50
MW OUT: 9.8
VIS OUT: 47

MD: 7,964'
INC: 88.2°
AZM: 1.41°
TVD: 7,264.05'
VS: 67.84'

WOB: 40.5klbs
RPM: 69
SPM: 215
SPP: 5,413psi

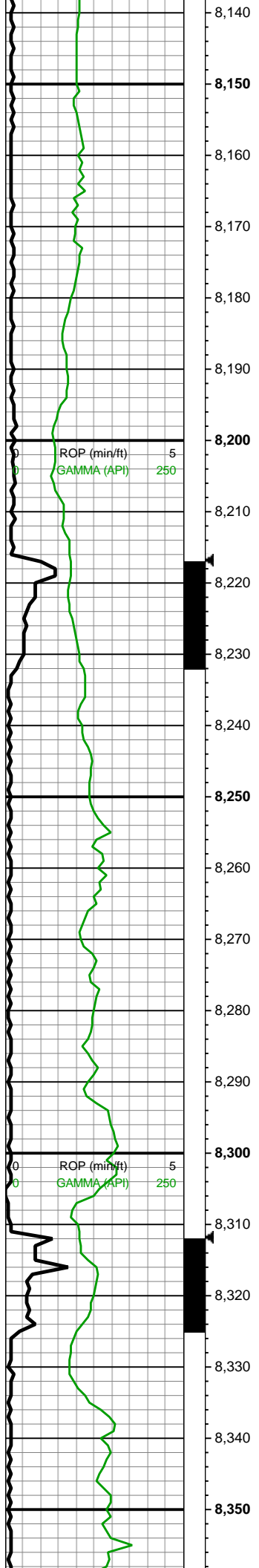
MD: 8,059'
INC: 89.6°
AZM: 1.14°
TVD: 7,265.87'
VS: 162.82'



7900-8000 CHK (55%):
predy gyshbn, mot-sl stri,
sl frm-brit, sb blkly ctngs,
sm chky tex, v calc, tr
MRLST incl; MRLST
(45%): dk gy-gyshbn,
mot, sb blkly-sb ang
ctngs, sl hd-frm, mod
calc, tr intbd CHK

8000-8100 CHK (65%):
gyshbn, med gy, sb
blkly-sb plty, frm-sl frm,
med fis, mnr MRLST
lamn, hi calc, tr diss
mic pyr; MRLST (35%):
dk gyshbn-dk gy, frm-sl
hd, sl slty-sm tex, mod
brit, mod calc, tr CHK incl





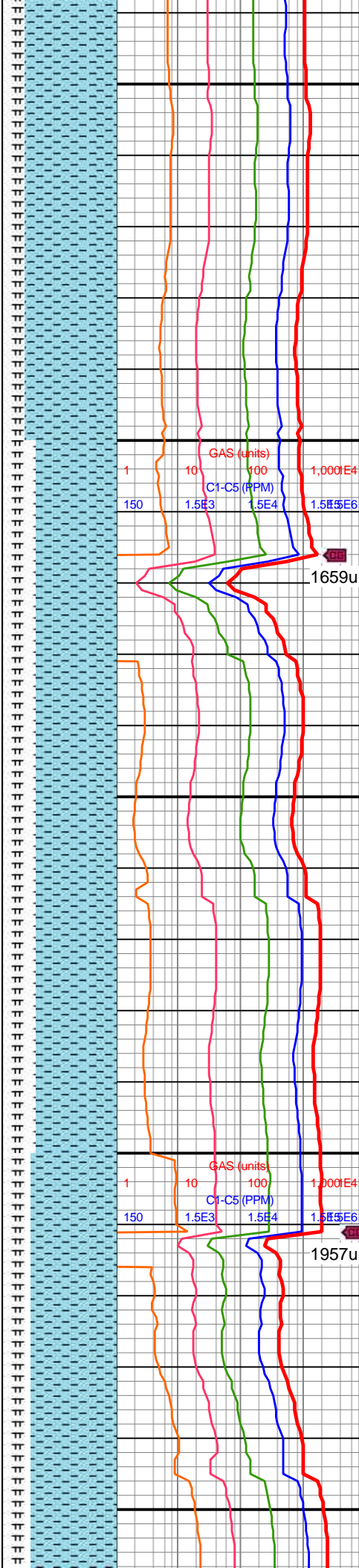
MD: 8,153'
INC: 88.77°
AZM: 1.23°
TVD: 7,267.21'
VS: 256.81'

MW IN: 9.8
VIS IN: 49
MW OUT: 9.8
VIS OUT: 46

WOB: 37.1klbs
RPM: 69
SPM: 219
SPP: 5,398psi

MD: 8,247'
INC: 89.69°
AZM: 0.7°
TVD: 7,268.47'
VS: 350.8'

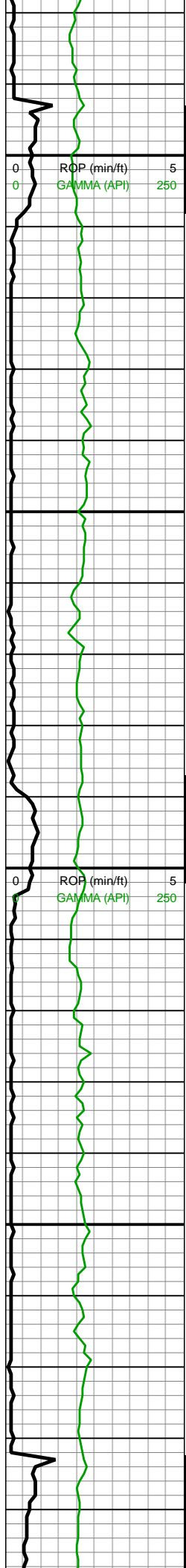
MD: 8,342'
INC: 89.56°
AZM: 360°
TVD: 7,269.1'
VS: 445.79'



8100-8200 CHK (80%):
gyshbn-med gy, mot lt gy,
sl sm-chky tex, sl frm, sb
blky-blky, sme free CHK,
hi calc, tr imbd mic pyr;
MRLST (20%): med gy-dk
gy, frm-sl hd, mod brit, sb
blky-tab, mod fis, mnr f
chky incl, vf lamn, mod
calc,

8200-8300 CHK (70%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blky-blky, tr free
CHK, hi calc, tr imbd mic
pyr; MRLST (30%): med
gy-dk gy, frm-sl hd, mod
brit, sb blky-tab, mod fis,
vf lamn, mod calc





WOB: 35klbs
RPM: 0
SPM: 186
SPP: 4,120psi

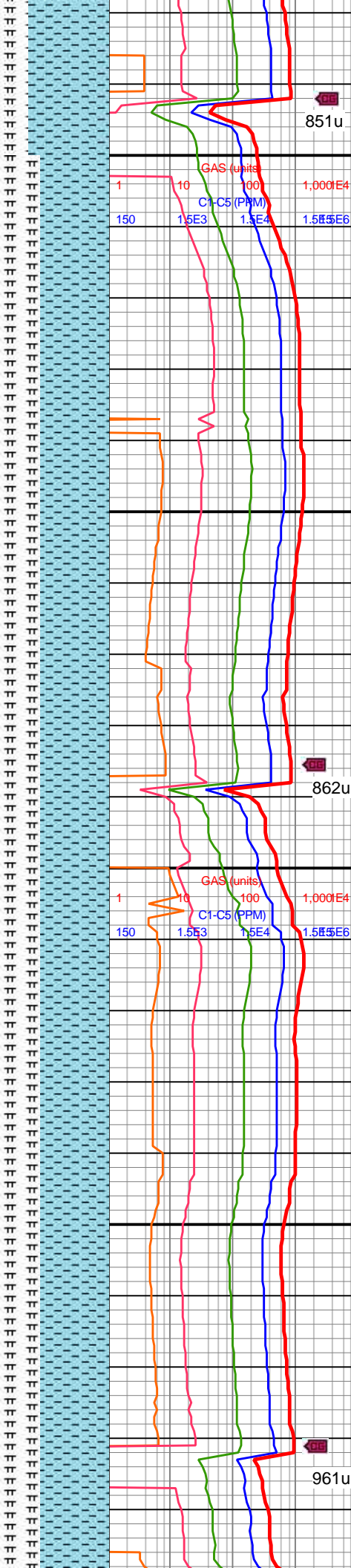
MW IN: 10.1
VIS IN: 59
MW OUT: 9.9+
VIS OUT: 53

MD: 8,625'
INC: 89.47°
AZM: 358.42°
TVD: 7,268.03'
VS: 728.5'

MD: 8,719'
INC: 91.67°
AZM: 358.94°
TVD: 7,267.1'
VS: 822.41'

MW IN: 10
VIS IN: 59
MW OUT: 9.9
VIS OUT: 52

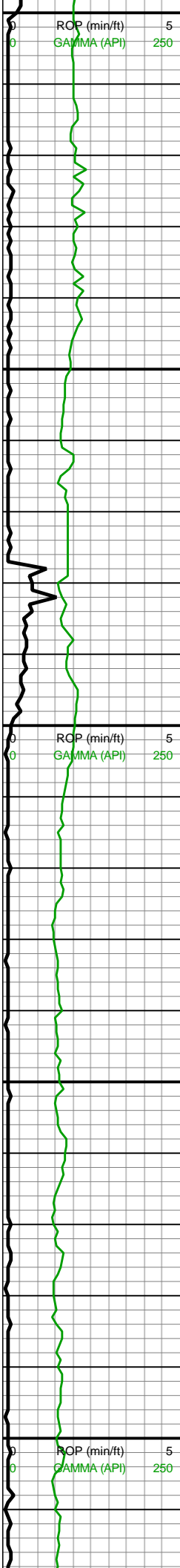
WOB: 25.9klbs



frm, sb blkly-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbd;
MRLST (30%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkly-tab, mod fis, occ chk
intbd, mod calc

8600-8700 CHK (60%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkly-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbd;
MRLST (40%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkly-tab, mod fis, occ chk
intbd, mod calc

8700-8800 CHK (60%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkly-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbd;
MRLST (40%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkly-tab, mod fis, occ chk
intbd, mod calc



RPM: 70
SPM: 186
SPP: 4,245psi

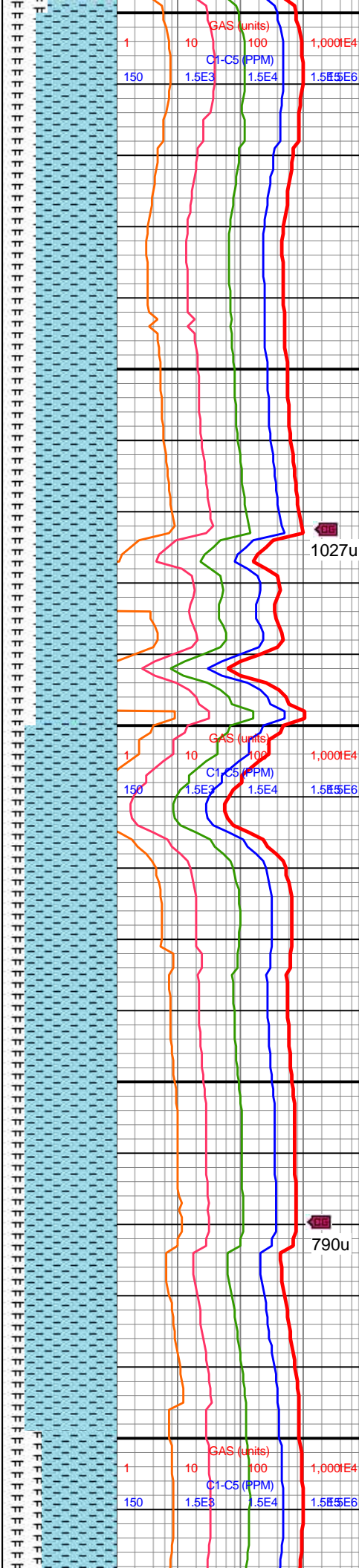
MD: 8,813'
INC: 91.58°
AZM: 0.35°
TVD: 7,264.43'
VS: 916.33'

MD: 8,907'
INC: 90.18°
AZM: 1.76°
TVD: 7,262.99'
VS: 1,010.32'

MW IN: 10
VIS IN: 58
MW OUT: 10
VIS OUT: 51

WOB: 35.9klbs
RPM: 70
SPM: 184
SPP: 4,506psi

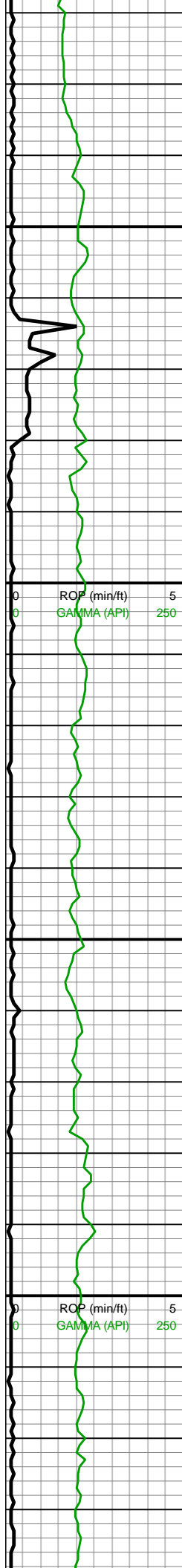
MD: 9,002'
INC: 89.87°
AZM: 2.46°
TVD: 7,262.95'
VS: 1,105.3'



intbdt, mod calc

8800-8900 CHK (70%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkyl-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbdt;
MRLST (30%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkyl-tab, mod fis, occ chk
intbdt, mod calc

8900-9000 CHK (80%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkyl-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbdt;
MRLST (20%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkyl-tab, mod fis, occ chk
intbdt, mod calc

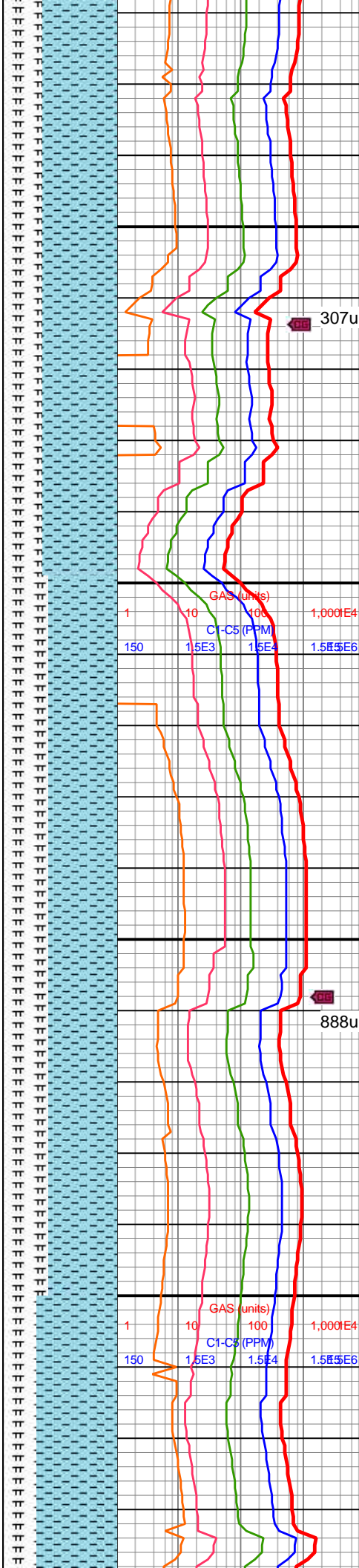


MD: 9,097'
INC: 89.65°
AZM: 0.53°
TVD: 7,263.35'
VS: 1,200.3'

MW IN: 10
VIS IN: 57
MW OUT: 10
VIS OUT: 50

MD: 9,191'
INC: 91.89°
AZM: 0.52°
TVD: 7,262.08'
VS: 1,294.28'

WOB: 38klbs
RPM: 70
SPM: 187
SPP: 4,644psi

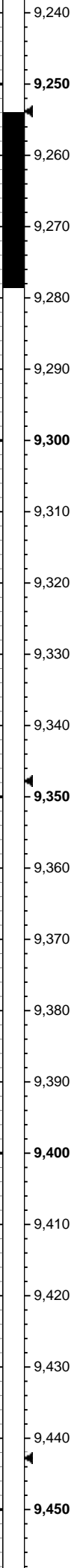
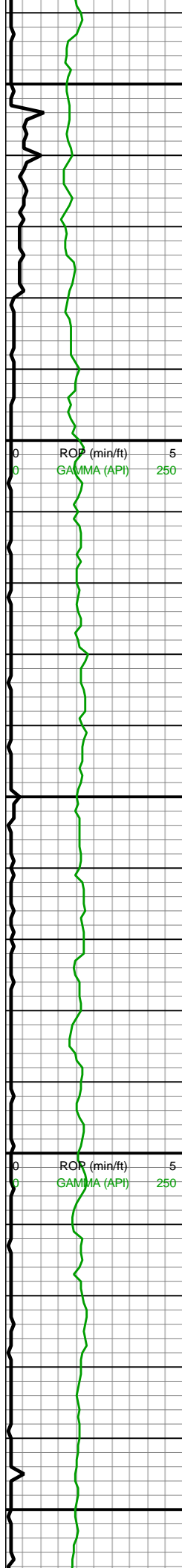


307u

888u

9000-9100 CHK (65%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkyl-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbd;
MRLST (35%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkyl-tab, mod fis, occ chk
intbd, mod calc, vf lamn

9100-9200 CHK (60%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkyl-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbd;
MRLST (40%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkyl-tab, mod fis, occ chk
intbd, mod calc, vf lamn

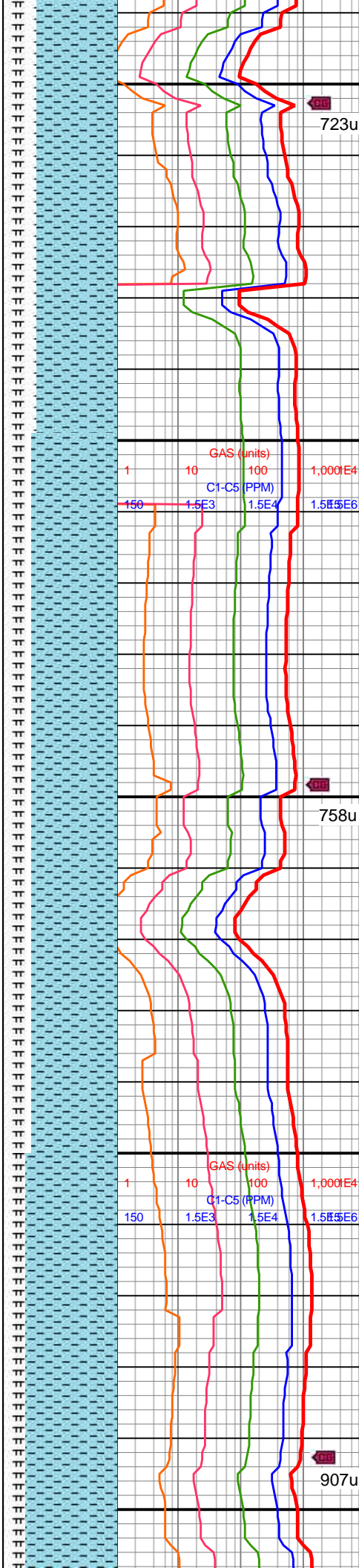


MD: 9,286'
INC: 89.25°
AZM: 358.68°
TVD: 7,261.14'
VS: 1,389.23'

MW IN: 10
VIS IN: 55
MW OUT: 10+
VIS OUT: 48

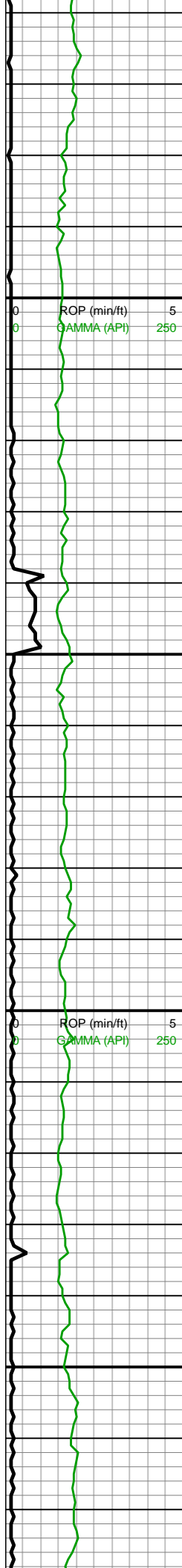
MD: 9,380'
INC: 88.99°
AZM: 358.5°
TVD: 7,262.58'
VS: 1,483.13'

WOB: 36.2klbs
RPM: 70
SPM: 186
SPP: 4,665psi



9200-9300 CHK (70%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkyl-blky, tr free
CHK, hi calc, tr imbd mic
pyr, tr mrlst intbd; MRLST
(30%): med gy-dk gy,
frm-sl hd, mod brit, sb
blkyl, mod fis, occ chk
intbd, mod calc, tr vf lamn

9300-9400 CHK (75%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkyl-blky, tr free
CHK, hi calc, tr imbd mic
pyr, tr mrlst intbd; MRLST
(25%): med gy-dk gy,
frm-sl hd, mod brit, sb
blkyl, mod fis, occ chk
intbd, mod calc, tr vf lamn



9,460
9,470
9,480
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

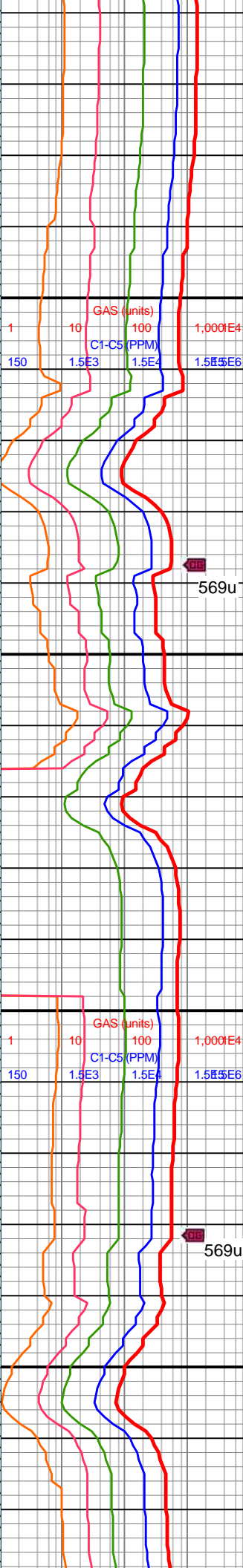
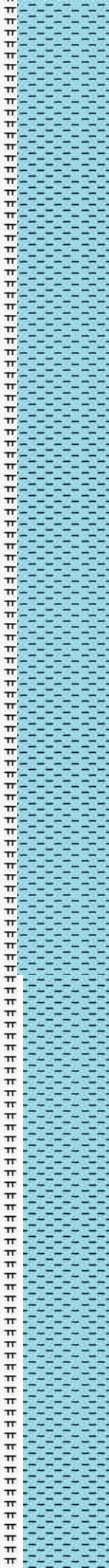
MD: 9,475'
INC: 89.47°
AZM: 358.5°
TVD: 7,263.86'
VS: 1,578.02'

MD: 9,569'
INC: 90.09°
AZM: 359.47°
TVD: 7,264.22'
VS: 1,671.95'

WOB: 37.1klbs
RPM: 69
SPM: 186
SPP: 4,653psi

MW IN: 10
VIS IN: 52
MW OUT: 10
VIS OUT: 47

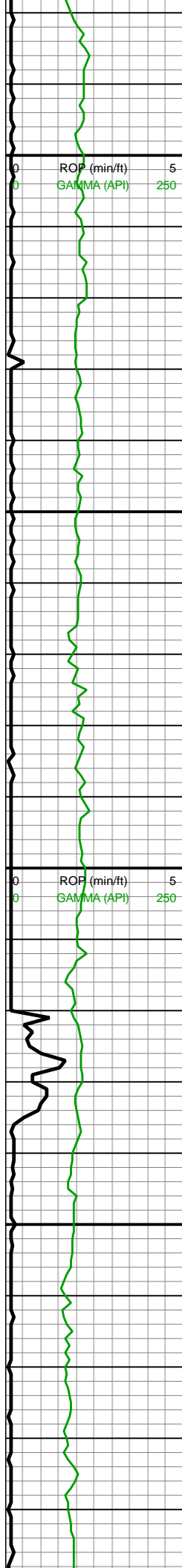
MD: 9,664'
INC: 90.62°
AZM: 359.65°
TVD: 7,263.63'
VS: 1,766.92'



9400-9500 CHK (80%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkyl-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbd;
MRLST (20%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkyl-tab, mod fis, occ chk
intbd, mod calc

9600-9700 CHK (80%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkyl-blky, tr free
CHK, hi calc, tr imbd mic
pyr, occ mrlst intbd;
MRLST (20%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkyl-tab, mod fis, occ chk
intbd, mod calc

9600-9700 CHK (75%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl



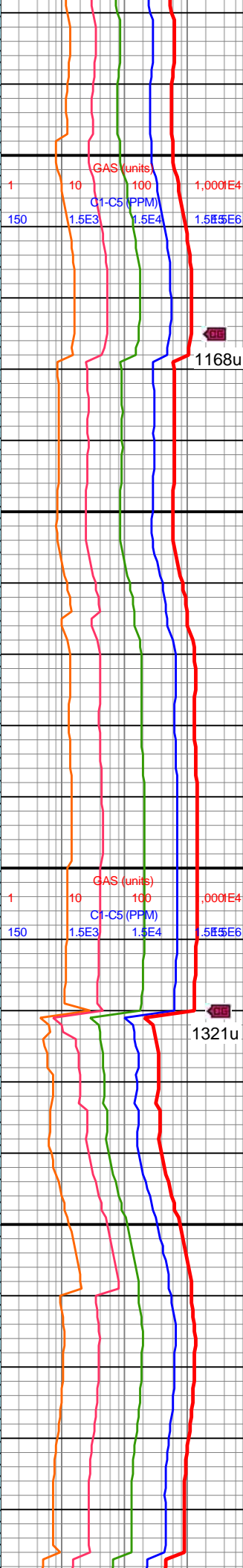
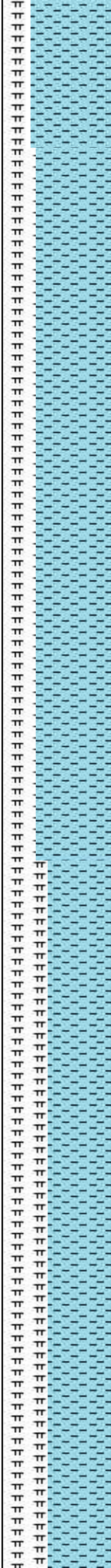
9,680
9,690
9,700
9,710
9,720
9,730
9,740
9,750
9,760
9,770
9,780
9,790
9,800
9,810
9,820
9,830
9,840
9,850
9,860
9,870
9,880
9,890

MD: 9,758'
INC: 90.79°
AZM: 358.86°
TVD: 7,262.47'
VS: 1,860.86'

WOB: 33.8klbs
RPM: 70
SPM: 186
SPP: 4,748psi

MW IN: 10
VIS IN: 53
MW OUT: 10+
VIS OUT: 48

MD: 9,852'
INC: 90.84°
AZM: 359.56°
TVD: 7,261.14'
VS: 1,954.8'

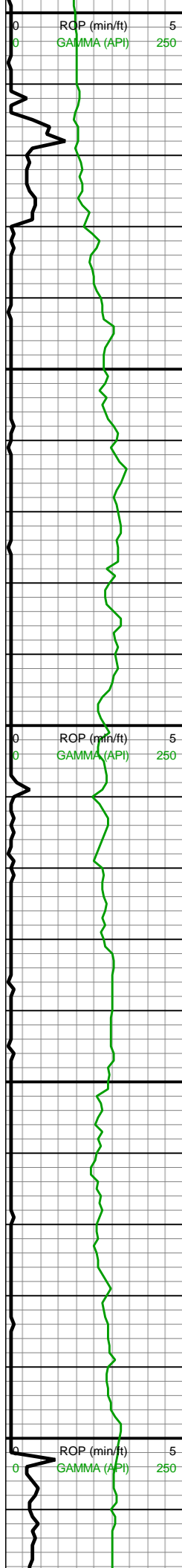


frm, sb blkly-blky, tr free
CHK, hi calc, tr imbd mic
pyr, tr mrlst intbd; MRLST
(25%): med gy-dk gy,
frm-sl hd, mod brit, sb
blkly, mod fis, occ chk
intbd, mod calc, tr vf lamn

9700-9800 CHK (70%):
gyshbn-med gy, sme mot
lt gy, sl sm-chky tex, sl
frm, sb blkly-blky, hi calc,
tr imbd mic pyr, tr mrlst
intbd; MRLST (30%):
med gy-dk gy, frm-sl hd,
sb blkly, mod fis, tr chk
intbd, mod calc, tr vf lamn

9800-9900 CHK (60%):
gyshbn-med gy, mot lt gy,
sl sm-chky tex, sl frm, sb
blkly-blky, sme free CHK,
hi calc, tr imbd mic pyr;
MRLST (40%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkly-tab, mod fis, mnr f
chky incl, vf lamn, mod
calc



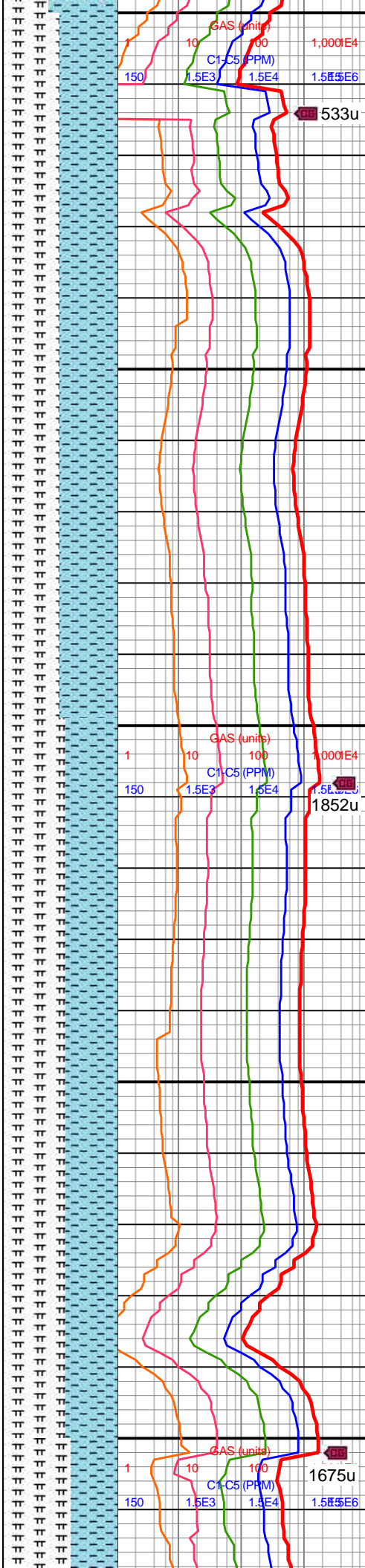


MD: 9,946'
INC: 90.97°
AZM: 0.44°
TVD: 7,259.65'
VS: 2,048.77'

WOB: 35.9klbs
RPM: 69
SPM: 185
SPP: 4,673psi

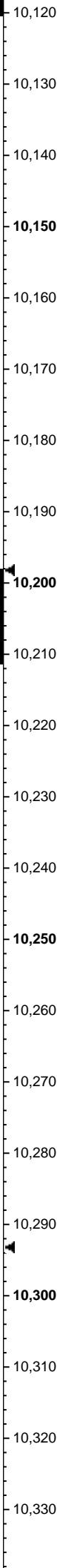
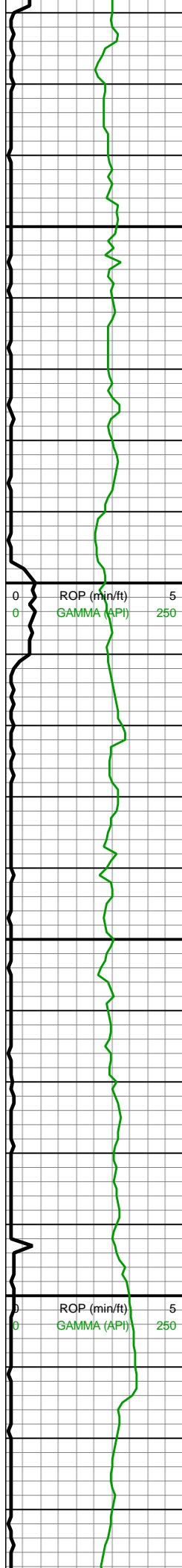
MW IN: 10+
VIS IN: 53
MW OUT: 10+
VIS OUT: 47

MD: 10,041'
INC: 91.8°
AZM: 0.53°
TVD: 7,257.35'
VS: 2,143.73'



9900-10000 CHK (50%):
gyshbn-med gy, mot lt gy,
sl sm-chky tex, sl frm, sb
blky-blky, sme free CHK,
hi calc, tr imbd mic pyr;
MRLST (50%): med gy-dk
gy, frm-sl hd, mod brit, sb
blky-tab, mod fis, mnr f
chky incl, vf lamn, mod
calc

10000-10100 MRLST
(55%): dk gy-med gy,
mot, sl slty tex, sl hd-frm,
sb blky-sb tab ctngs,
mod calc, sme CHK
intbds; CHK (45%): predy
gyshbn, mot-sl stri, sm
chky tex, sb blky ctngs, sl
frm-brit, v calc, tr free
CHK



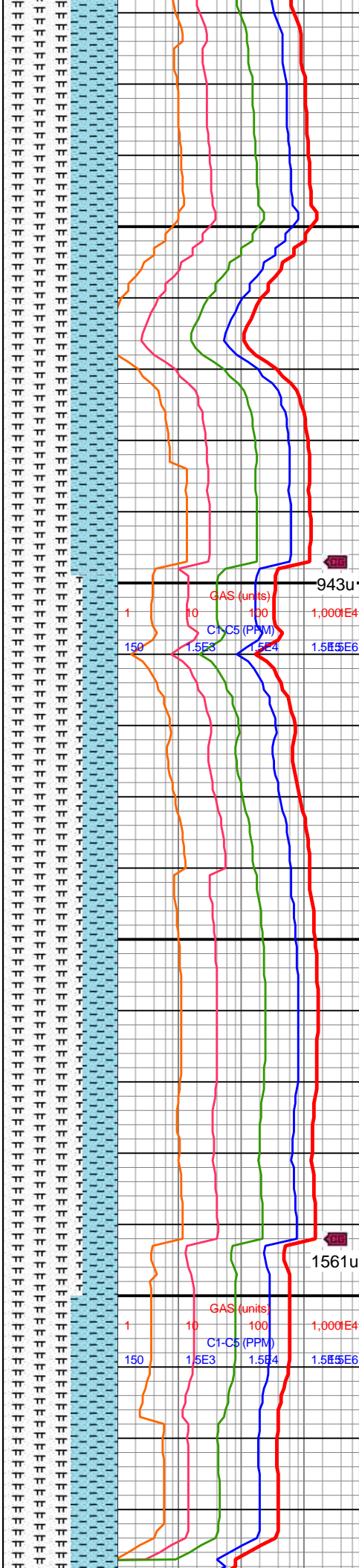
MD: 10,135'
INC: 90.4°
AZM: 0.09°
TVD: 7,255.55'
VS: 2,237.71'

WOB: 38.2klbs
RPM: 0
SPM: 187
SPP: 4,380psi

MD: 10,230'
INC: 88.42°
AZM: 0.7°
TVD: 7,256.53'
VS: 2,332.69'

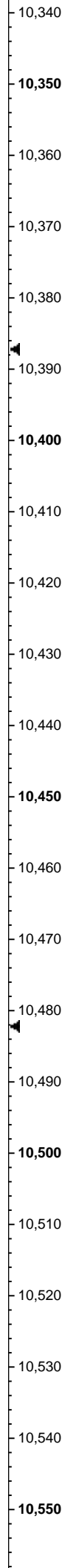
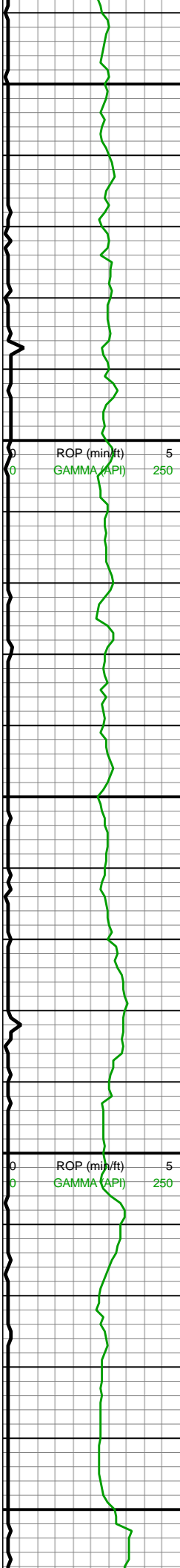
MW IN: 10
VIS IN: 51
MW OUT: 10+
VIS OUT: 46

MD: 10,325'
INC: 89.21°
AZM: 0.44°
TVD: 7,258.49'
VS: 2,427.66'



10100-10200 MRLST
(60%): dk gy-med gy,
mot, sl slty tex, sl hd-frm,
sb blkgy-sb tab ctngs,
mod calc, sme CHK
intbds; CHK (40%): predy
gyshbn, mot-sl stri, sm
chky tex, sb blkgy ctngs, sl
frm-brit, v calc, tr free
CHK

10200-10300 MRLST
(70%): dk gyshbn-dk gy,
tab-sb blkgy, brit, frm-sl
hd, tr CHK incl, mod calc;
CHK (30%): med
gy-gyshbn, frm-sft, sb
blkgy-sb plty, med fis
ctngs, mnr MRLST lamn,
tr imbd/dissm mic pyr, hi
calc

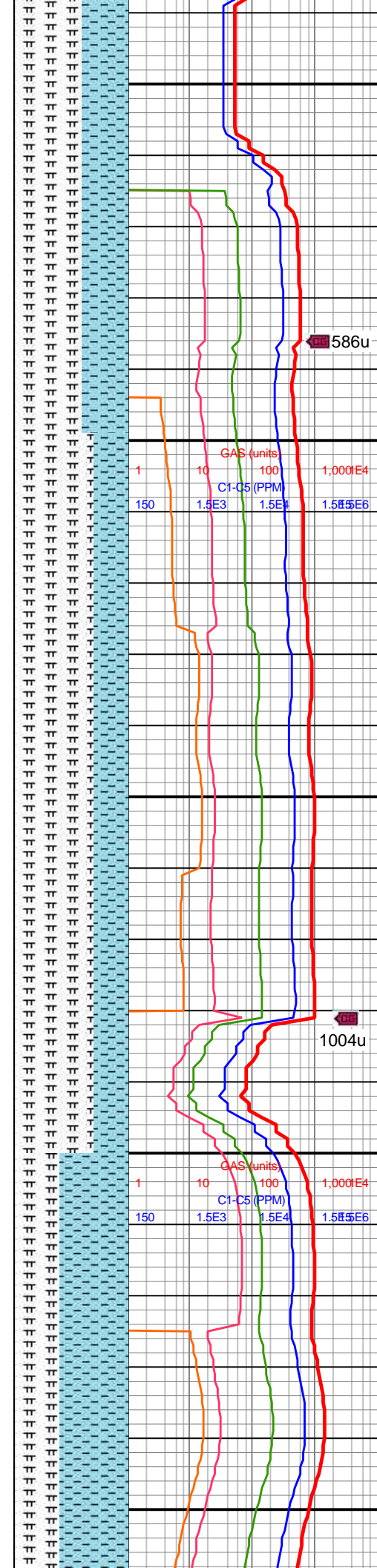


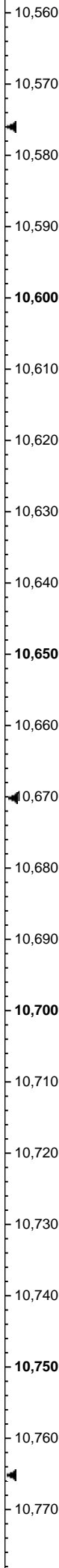
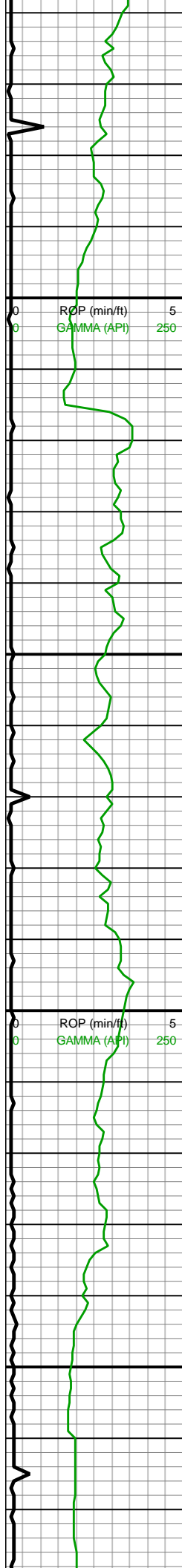
WOB: 29.2klbs
RPM: 69
SPM: 186
SPP: 4,651psi

MD: 10,419'
INC: 90.66°
AZM: 0.79°
TVD: 7,258.6'
VS: 2,521.66'

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

MD: 10,514'
INC: 90.53°
AZM: 0.79°
TVD: 2,613.59'
VS: 0'



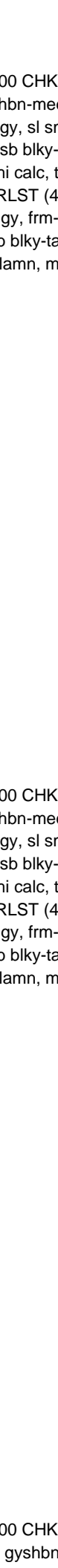
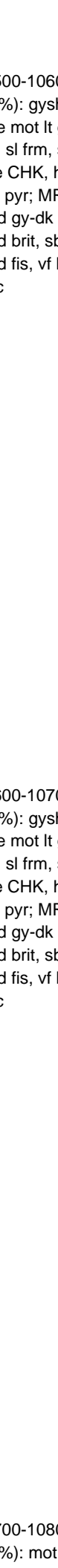
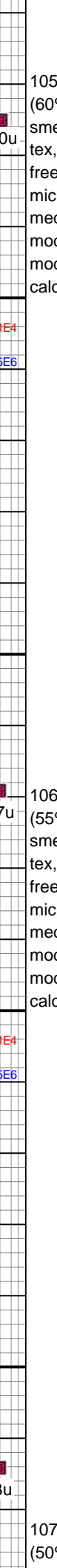
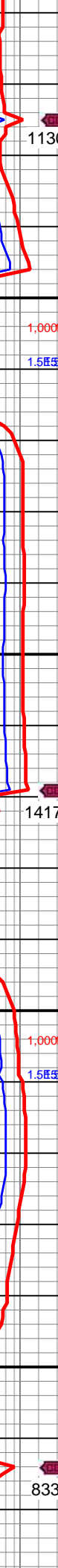
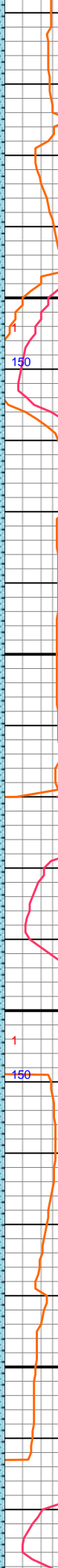


WOB: 35.6klbs
RPM: 70
SPM: 188
SPP: 4,904psi

MD: 10,608'
INC: 90.7°
AZM: 0.09°
TVD: 7,256.6'
VS: 2,710.64'

MD: 10,702'
INC: 91.14°
AZM: 359.91°
TVD: 7,255.1'
VS: 2,804.61'

MW IN: 10
VIS IN: 49
MW OUT: 10
VIS OUT: 46



10500-10600 CHK
(60%): gyshbn-med gy,
sme mot lt gy, sl sm-chky
tex, sl frm, sb blkyl-blky, tr
free CHK, hi calc, tr imbd
mic pyr; MRLST (40%):
med gy-dk gy, frm-sl hd,
mod brit, sb blkyl-tab,
mod fis, vf lamn, mod
calc

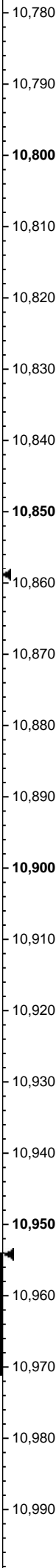
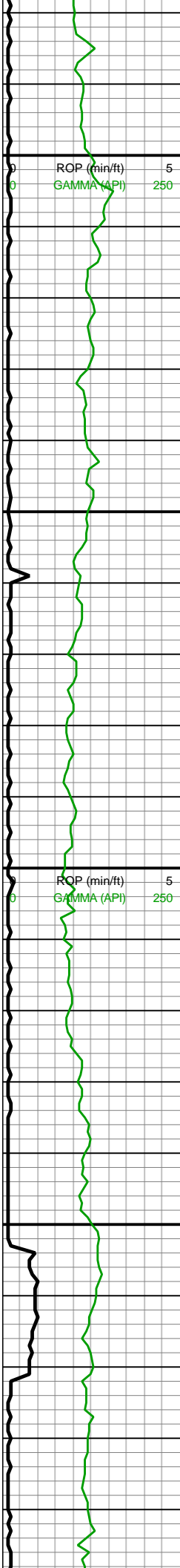
1130u

10600-10700 CHK
(55%): gyshbn-med gy,
sme mot lt gy, sl sm-chky
tex, sl frm, sb blkyl-blky, tr
free CHK, hi calc, tr imbd
mic pyr; MRLST (45%):
med gy-dk gy, frm-sl hd,
mod brit, sb blkyl-tab,
mod fis, vf lamn, mod
calc

1417u

10700-10800 CHK
(50%): mot gyshbn-med

833u



MD: 10,797'
INC: 91.14°
AZM: 359.56°
TVD: 7,253.21'
VS: 2,899.56'

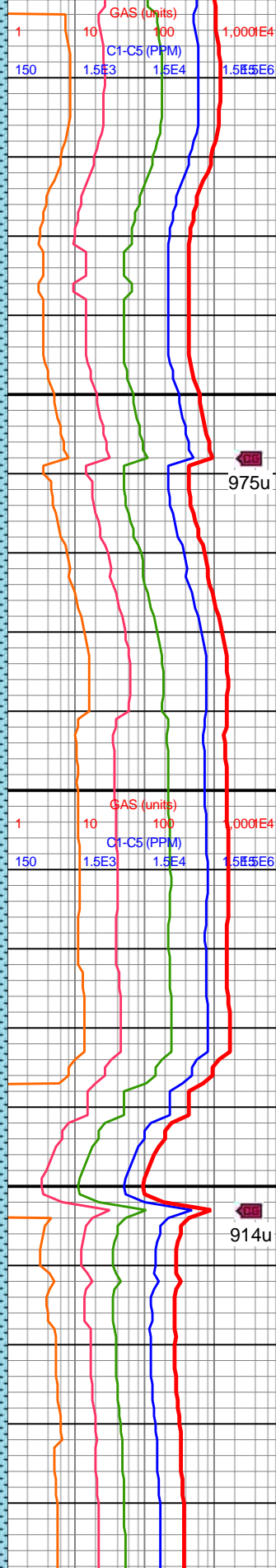
WOB: 35.6klbs
RPM: 70
SPM: 188
SPP: 4,914psi

MD: 10,891'
INC: 91.49°
AZM: 359.3°
TVD: 7,251.05'
VS: 2,993.5'

MW IN: 10+
VIS IN: 50
MW OUT: 10+
VIS OUT: 47

MD: 10,986'
INC: 90.22°
AZM: 0.7°
TVD: 7,249.63'
VS: 3,088.46'

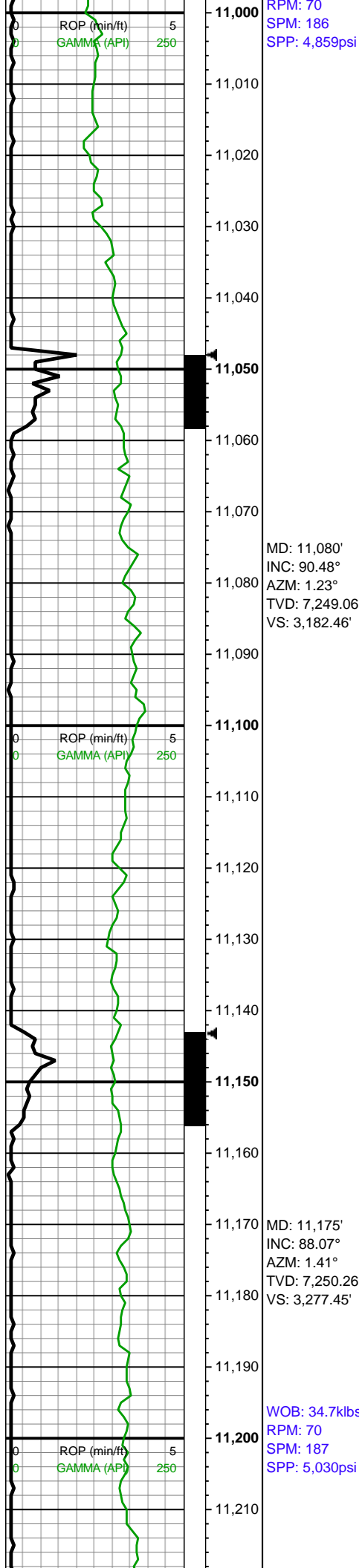
WOB: 36.2klbs



gy, sl sm-chky tex, sl frm,
sb blkyl-bky, rr free CHK,
hi calc, tr imbd mic pyr;
MRLST (50%): med gy-dk
gy, frm-sl hd, mod brit, sb
blkyl-tab, mod fis, vf lamn,
occ intbd chk, mod calc

10800-10900 CHK
(65%): gyshbn-med gy,
mot, lt gy stri, sb blkyl-tab,
sl sm-chky tex, sl frm,
sme free CHK, tr mic pyr
cls, v calc; MRLST (35%):
med gy-dk gy, frm-sl hd,
mod brit, sb blkyl-tab, vf
lamn, mnrf chky incl, tr
amts cal frac fl, mod calc

10900-11000 CHK
(55%): gyshbn, med gy,
mot-sl stri, sb blkyl-tab, sl
frm-brit, sm chky tex, mnrf
pp pyr cls, v calc; MRLST
(45%): dk gy-gyshbn,
mot, sl slty-sm tex, sl
hd-frm, sb blkyl-sb spl, tr

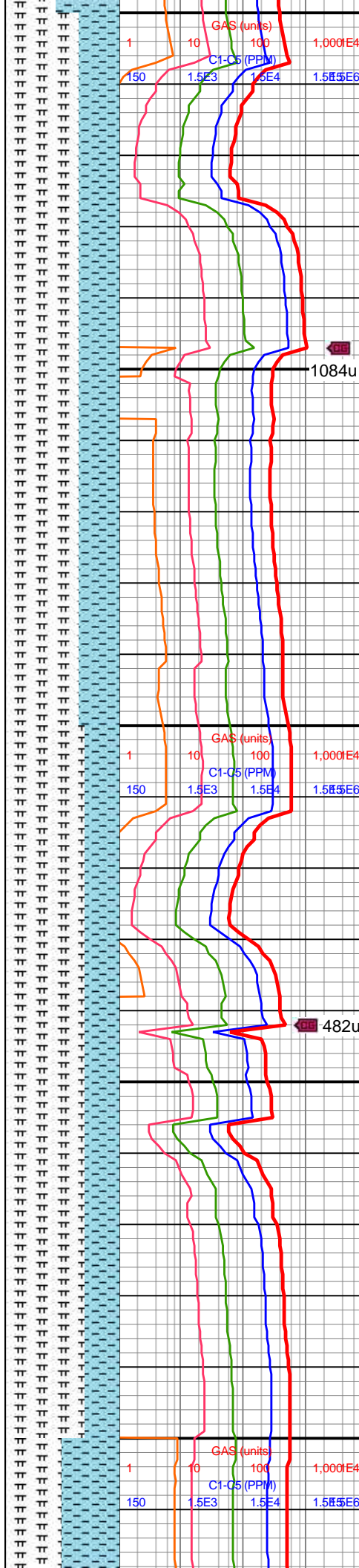


RPM: 70
SPM: 186
SPP: 4,859psi

MD: 11,080'
INC: 90.48°
AZM: 1.23°
TVD: 7,249.06'
VS: 3,182.46'

MD: 11,175'
INC: 88.07°
AZM: 1.41°
TVD: 7,250.26'
VS: 3,277.45'

WOB: 34.7klbs
RPM: 70
SPM: 187
SPP: 5,030psi

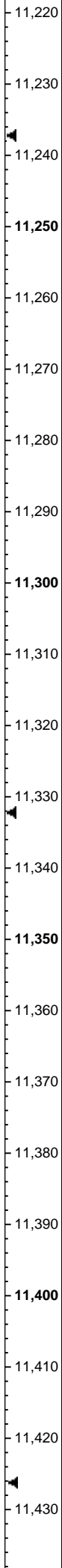
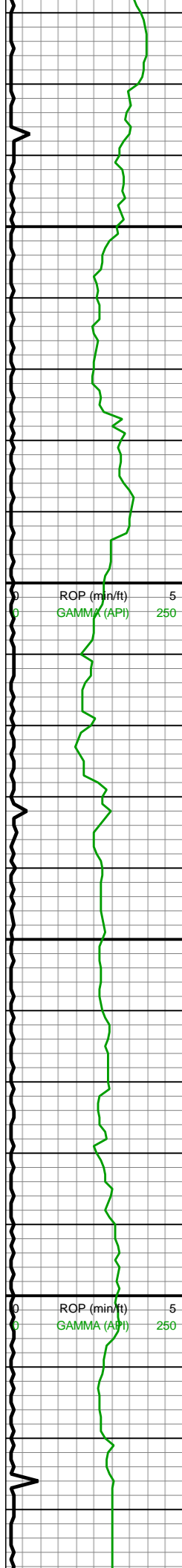


intbd CHK, mod calc

1084u

11000-11100 MRLST
(65%): dk gyshbn-dk gy,
mot, tab-sb blk, brit,
frm-sl hd, tr CHK incl,
mnr cal frac fl, mod calc;
CHK (35%): med gy,
gyshbn, crm, sb blk-sb
ply, mod fis, frm-sft, mnr
MRLST lamn, v calc, tr
imbd/pp mic pyr

11100-11200 MRLST
(70%): dk gy-med gy,
mot, sl slty-sm tex, sl
hd-frm, sb blk-sb tab,
mod calc, sme CHK
intbds, tr cal frac fl; CHK
(30%): predy gyshbn,
mot-sl stri, sm chky tex,
sb blk-sb tab ctngs, sl
frm-brit, occ free CHK, v
calc

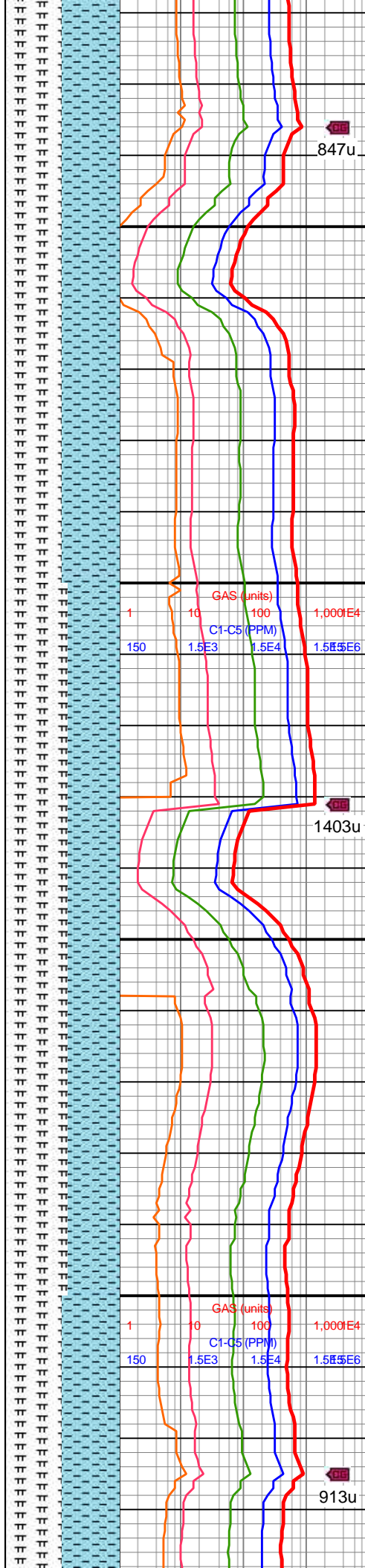


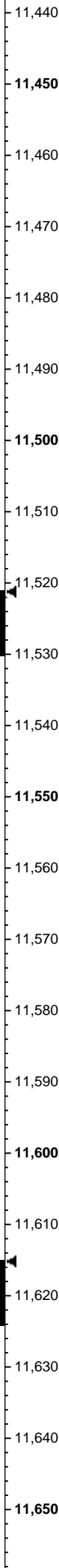
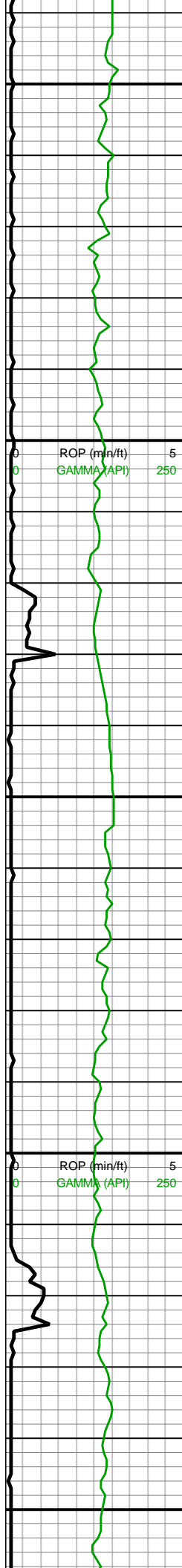
MW IN: 10.0+
VIS IN: 50
MW OUT: 10.0+
VIS OUT: 47

MD: 11,269'
INC: 87.76°
AZM: 0.88°
TVD: 7,253.68'
VS: 3,371.38'

MD: 11,363'
INC: 87.8°
AZM: 0.09°
TVD: 7,257.32'
VS: 3,465.31'

WOB: 33.7klbs
RPM: 70
SPM: 188
SPP: 4,989psi





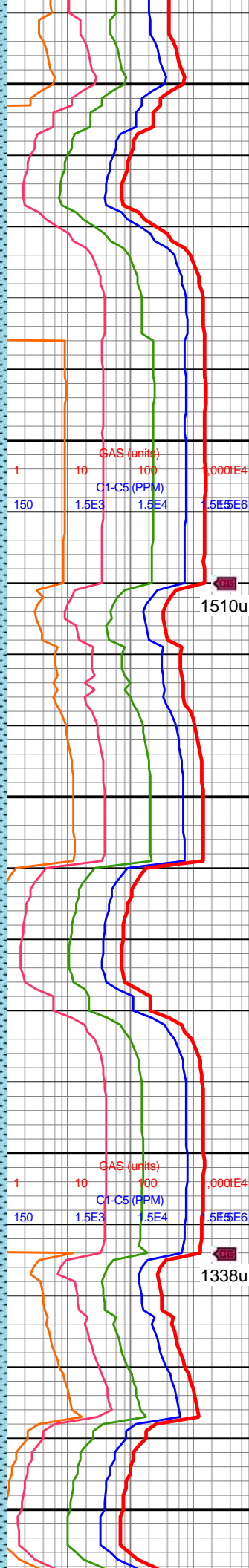
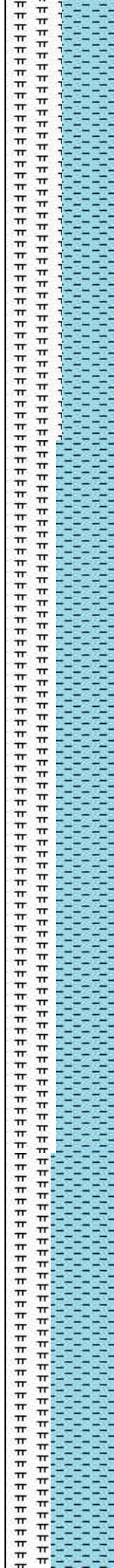
MD: 11,458'
INC: 87.28°
AZM: 359.82°
TVD: 7,261.4'
VS: 3,560.2'

MW IN: 10.0+
VIS IN: 49
MW OUT: 10.0+
VIS OUT: 46

MD: 11,552'
INC: 88.37°
AZM: 0.26°
TVD: 7,264.96'
VS: 3,654.12'

WOB: 35.1klbs
RPM: 69
SPM: 187
SPP: 5,107psi

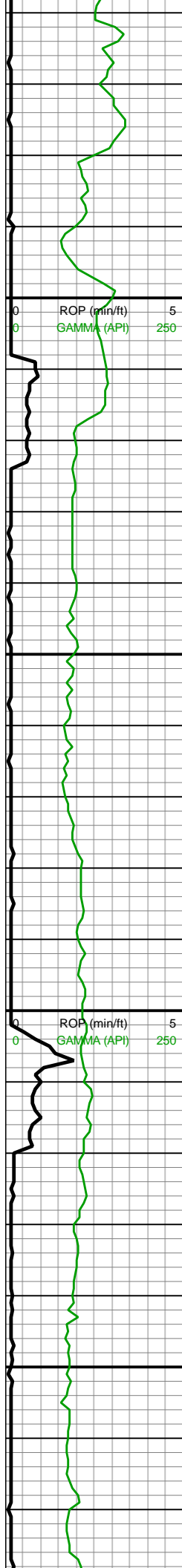
MD: 11,647'
INC: 88.46°
AZM: 359.56°
TVD: 7,267.59'
VS: 3,749.06'



11400-11500 CHK
(50%): med gy-gyshbn, crm-lt brn, mot, frm-sft, sm chky tex, sb blk-y-sb plty, mod fis, tr pp/dissm mic pyr, mnr MRLST lamn, hi calc; MRLST (50%): dk gyshbn-dk gy, tab-sb blk-y, brit, frm-sl hd, tr CHK incl, mod calc, tr cal frac fl

11500-11600 CHK
(55%): gyshbn-med gy, mot, stri crm, frm-sft, sb blk-y-sb plty, med fis ctngs, tr imbd/dissm mic pyr, hi calc, mnr MRLST lamn; MRLST (45%): dk gyshbn-dk gy, tab-sb blk-y, brit, frm-sl hd, tr CHK incl, mod calc





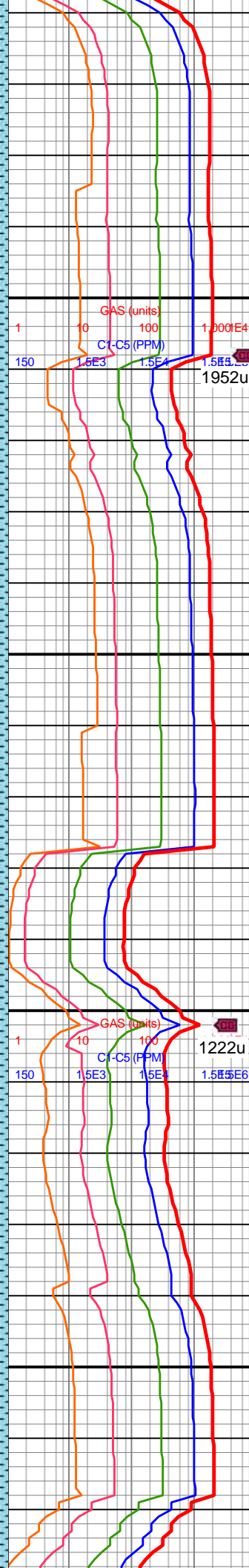
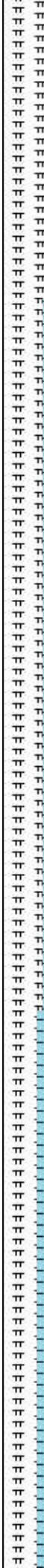
MW IN: 10.0+
VIS IN: 52
MW OUT: 10.0
VIS OUT: 48

MD: 11,741'
INC: 88.2°
AZM: 0.35°
TVD: 7,270.33'
VS: 3,843'

WOB: 33klbs
RPM: 70
SPM: 186
SPP: 5,138psi

MD: 11,835'
INC: 89.25°
AZM: 359.74°
TVD: 7,272.42'
VS: 3,936.96'

MW IN: 10.0+
VIS IN: 50
MW OUT: 10.0
VIS OUT: 46

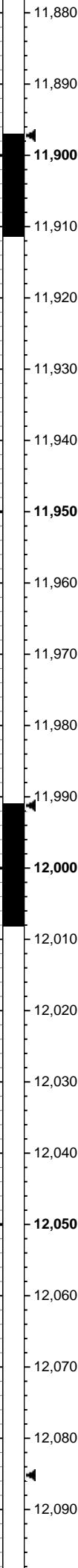
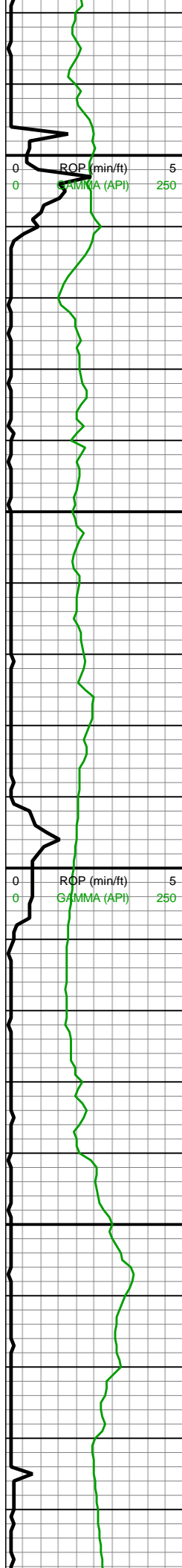


11600-11700 CHK
(60%): med gy-gyshbn,
crm, mot-sl stri, mod fis,
frm-sft, sb blkyl-sb plty,
mnr MRLST lamn, hi
calc, tr mic pyr; MRLST
(40%): dk gyshbn-dk gy,
tab-sb blkyl, frm-sl hd,
brit, tr CHK incl, mod
calc, tr cal frac fl

11700-11800 CHK
(65%): med gy-gyshbn,
mot crm, sb blkyl-sb plty,
sm chky tex, frm-sl sft,
mod fis, hi calc, mnr
MRLST lamn, tr diss
mic pyr; MRLST (35%):
dk gy-dk gyshbn, brit,
frm-sl hd, tab-sb blkyl, tr
CHK incl, mod calc, tr cal
frac fl

11800-11900 CHK
(70%): gyshbn-med gy,
mot crm, mod fis, frm-sl



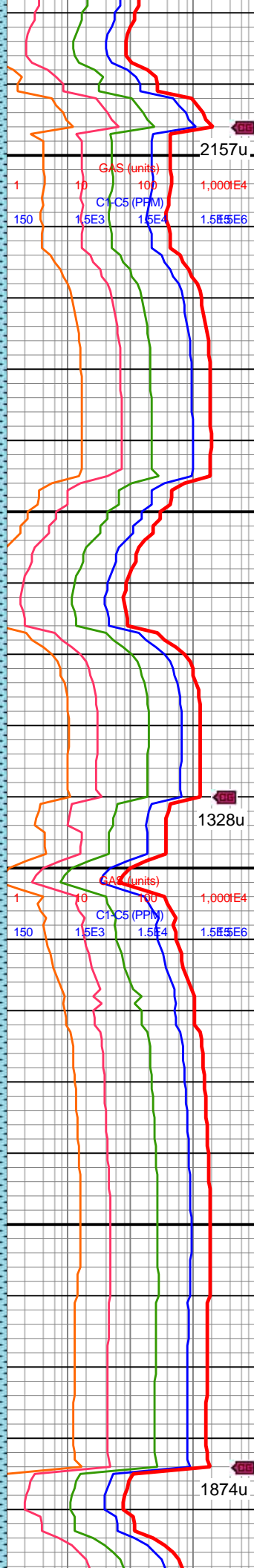


MD: 11,929'
INC: 89.96°
AZM: 0.26°
TVD: 7,273.07'
VS: 4,030.94'

MW IN: 9.9+
VIS IN: 51
MW OUT: 10.0
VIS OUT: 49

WOB: 36klbs
RPM: 0
SPM: 187
SPP: 4,724psi

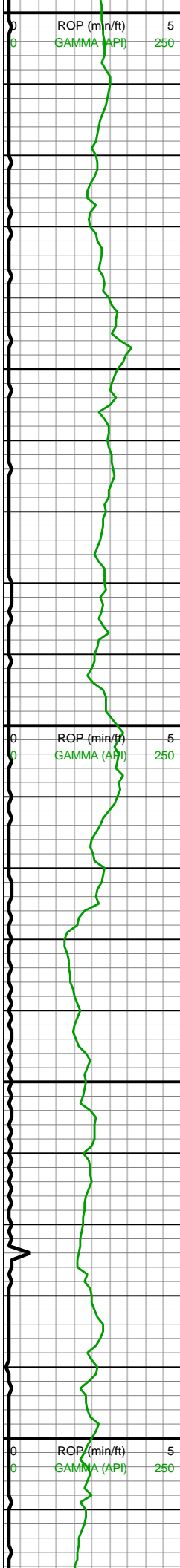
MD: 12,023'
INC: 91.1°
AZM: 358.94°
TVD: 7,272.2'
VS: 4,124.9'



sft, sb blkly-sb tab, tr mic
pyr, sme MRLST lamn, hi
calc; MRLST (30%): dk
gy, mot med gy, frm-sl
hd, sl slty-sm tex, brit,
tab-sb blkly, tr CHK incl, vf
lam, mod calc

11900-12000 CHK
(65%): gyshbn-med gy, lt
gy mot, fri-frm, sm chky
tex, sb tab-sb blkly ctngs,
mnr scat crm CHK, hi
calc, mnr intbd MRLST;
MRLST (35%): dk gy-dk
gyshbn, frm-sl hd, sb
blkly-tab, sl sm tex, mod
calc, scat dissm mic pyr
cls

12000-12100 CHK
(50%): med gy-gyshbn,
mot crm, sb blkly-sb plty,
frm-sft, mnr MRLST
lamn, tr free CHK, hi calc,
tr dissm mic pyr; MRLST
(50%): dk gyshbn-dk gy,
sl slty-sm tex, brit, tab-sb
blkly, frm-sl hd, mod calc,
tr CHK incl

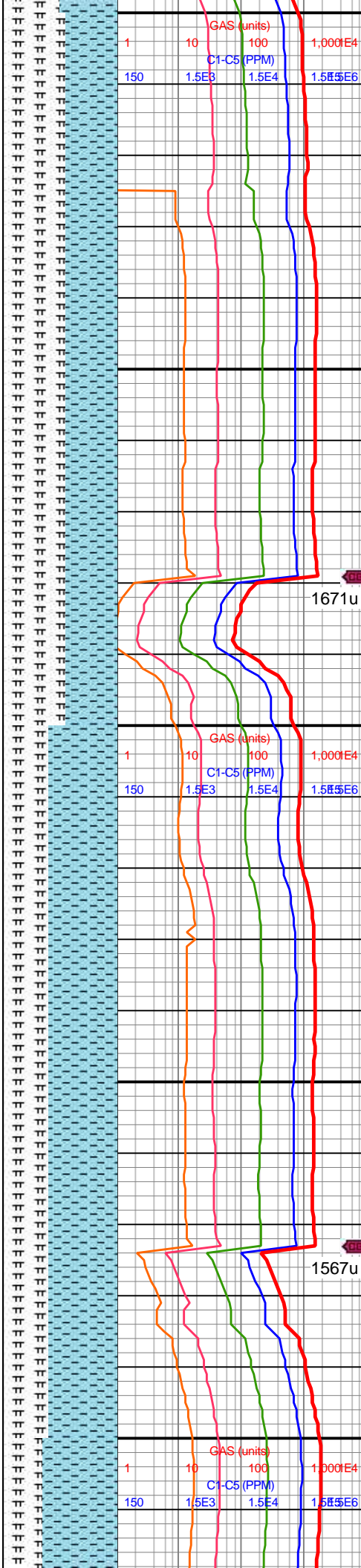


MD: 12,117'
INC: 91.19°
AZM: 358.77°
TVD: 7,270.32'
VS: 4,218.81'

MINDEPTH 8/17/2018
12,180
MW IN: 10
VIS IN: 50
MW OUT: 9.9+
VIS OUT: 47

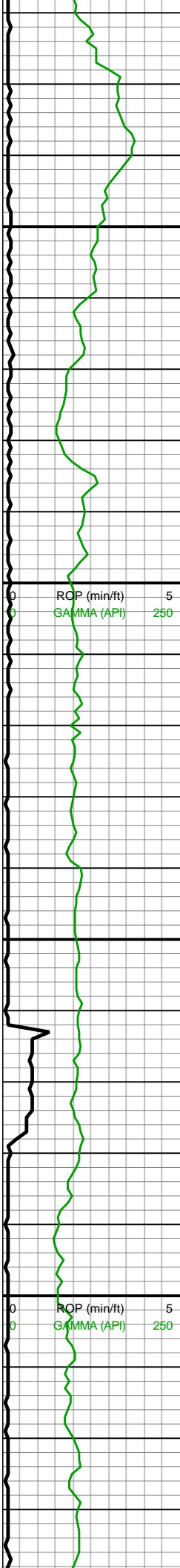
WOB: 34.7klbs
RPM: 70
SPM: 188
SPP: 5,262psi
MD: 12,212'
INC: 91.27°
AZM: 358.33°
TVD: 7,268.28'
VS: 4,313.69'

MD: 12,306'
INC: 91.89°
AZM: 357.63°
TVD: 7,265.69'
VS: 4,407.51'



12100-12200 MRLST
(55%): dk gy-med gy,
mot, sb blkly-sb tab ctngs,
sl slty tex, sl hd-frm, sme
CHK intbds, mod calc;
CHK (45%): gyshbn-med
gy, mot, sm chky tex, sb
blkly ctngs, sl frm-brit, v
calc, tr free CHK, sl stri
CHK frags

12200-12300 CHK
(60%): gyshbn-med gy,
mot crm, sb blkly-sb plty,
sm chky tex, frm-sft, mod
fis, mnr MRLST lamn, tr
mic pyr, hi calc; MRLST
(40%): dk gyshbn-dk gy,
brit, tab-sb blkly, frm-sl
hd, mod calc, tr CHK incl,
tr cal frac fl



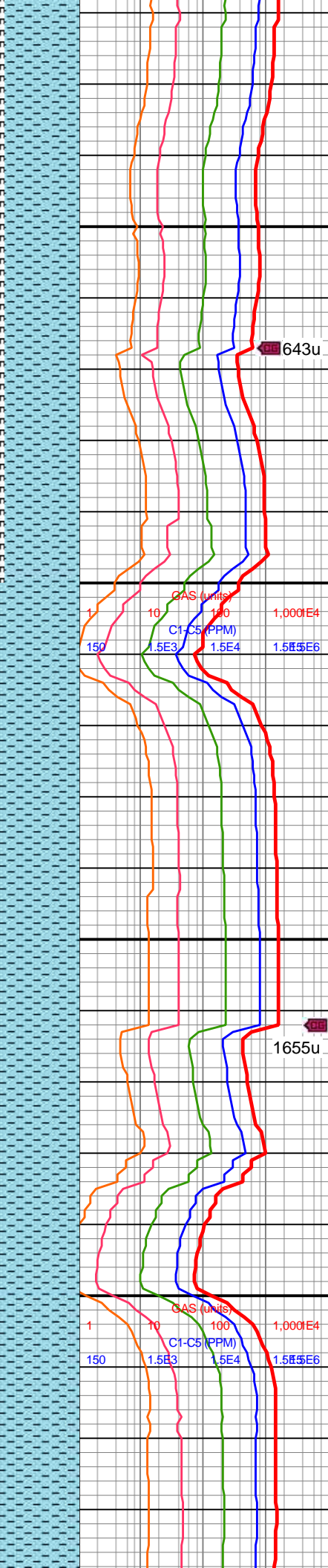
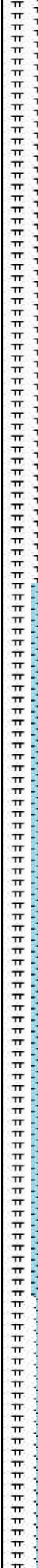
12,320
12,330
12,340
12,350
12,360
12,370
12,380
12,390
12,400
12,410
12,420
12,430
12,440
12,450
12,460
12,470
12,480
12,490
12,500
12,510
12,520
12,530

MW IN: 10
VIS IN: 52
MW OUT: 10.0
VIS OUT: 48

WOB: 34.9klbs
RPM: 70
SPM: 186
SPP: 5,255psi

MD: 12,400'
INC: 92.2°
AZM: 357.45°
TVD: 7,262.34'
VS: 4,501.27'

MD: 12,494'
INC: 91.49°
AZM: 359.56°
TVD: 7,259.31'
VS: 4,595.12'



643u

12300-12400 CHK
(65%): gyshbn-med gy,
mot-sl stri crm, sb
blky-sb plty, frm-sft, mod
fis ctngs, hi calc, mn
MRLST lamn, tr pp/dissm
mic pyr; MRLST (35%):
dk gyshbn-dk gy, frm-sl
hd, sl slty tex, tab-sb blky,
brit, mod calc, tr CHK incl

1655u

12400-12500 CHK
(75%): gyshbn, med-dk
gy, sb blky-sb plty, chky
tex, frm-sft, tr diss mic
pyr, tr pyr nod, tr free CHK
cls, mn MRLST lamn, hi
calc; MRLST (25%): dk
gyshbn-dk gy, frm-sl hd,
brit, tab-sb blky, mod
calc, tr CHK incl



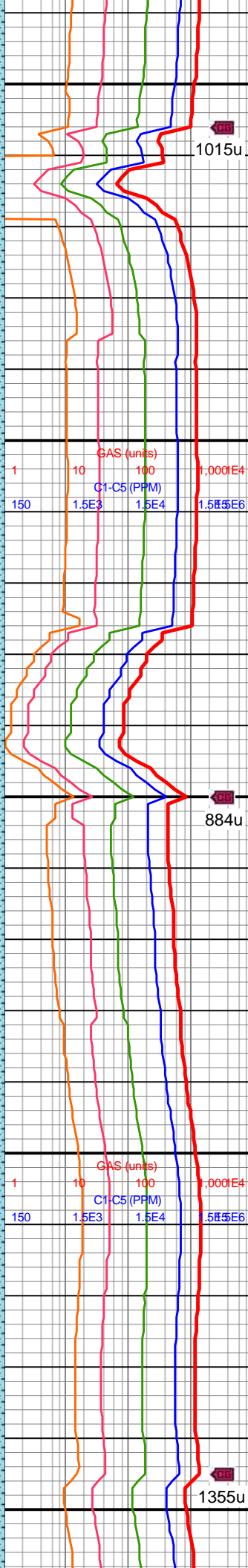
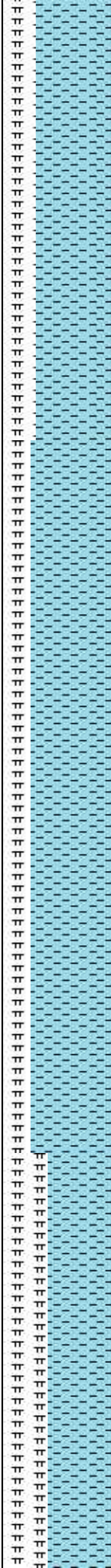


12,540
12,550
12,560
12,570
12,580
12,590
12,600
12,610
12,620
12,630
12,640
12,650
12,660
12,670
12,680
12,690
12,700
12,710
12,720
12,730
12,740
12,750

MW IN: 10
VIS IN: 51
MW OUT: 9.9+
VIS OUT: 47

MD: 12,589'
INC: 90.18°
AZM: 359.3°
TVD: 7,257.93'
VS: 4,690.07'
WOB: 36.5klbs
RPM: 69
SPM: 187
SPP: 5,370psi

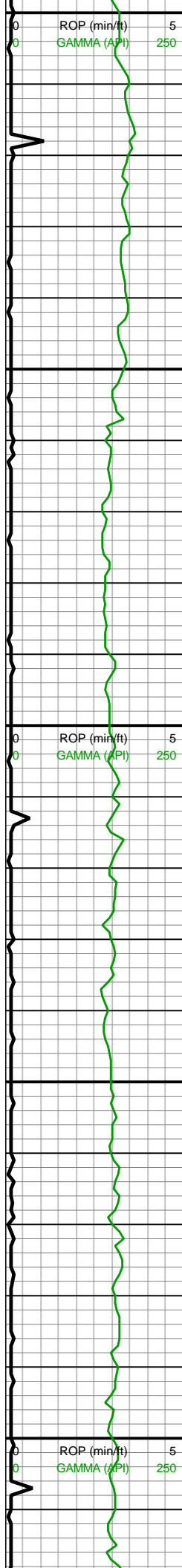
MD: 12,683'
INC: 90.53°
AZM: 358.94°
TVD: 7,257.34'
VS: 4,784.01'



12500-12600 CHK
(70%): gyshbn-med gy,
mot crm, mod fis ctngs,
sb blkly-sb tab, frm-sl sft,
sme MRLST lamn, tr
dissm mic pyr, v calc;
MRLST (30%): dk gy, mot
med gy, tab-sb blkly,
frm-sl hd, brit, mod calc,
tr CHK incl

12600-12700 CHK
(75%): gyshbn, med gy,
mot, frm-sl frm, mnr free
CHK frags, sb blkly-sb
plty, tr dissm/pp mic pyr
cls, mnr MRLST lamn, v
calc; MRLST (25%): dk
gy-dk gyshbn, mod brit, sl
silty-sm tex, frm-sl hd, tr
CHK incl, mod calc





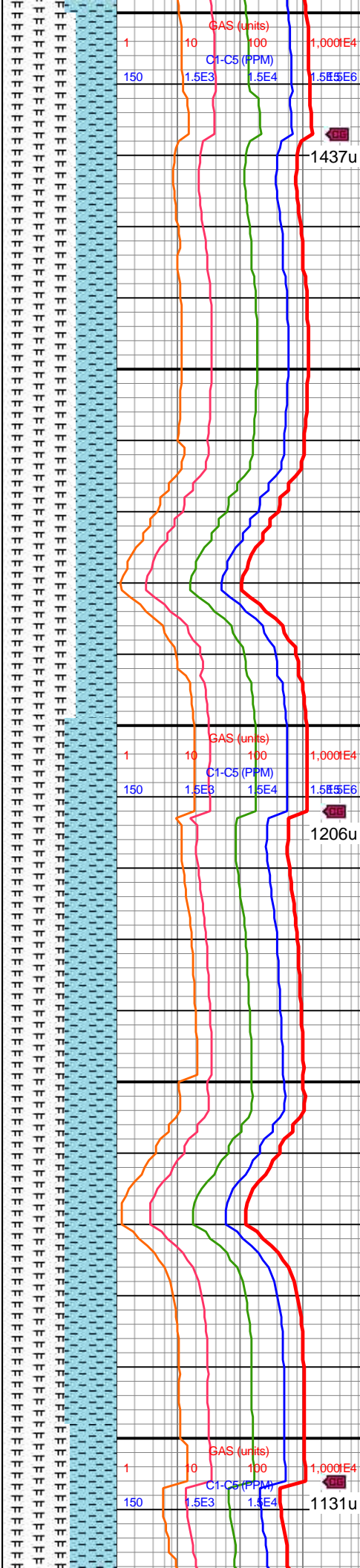
RPM: 70
SPM: 188
SPP: 5,500psi

MD: 13,250'
INC: 89.56°
AZM: 358.59°
TVD: 7,254.96'
VS: 5,350.55'

MW IN: 10
VIS IN: 58
MW OUT: 10
VIS OUT: 56

MD: 13,345'
INC: 89.87°
AZM: 358.5°
TVD: 7,255.43'
VS: 5,445.46'

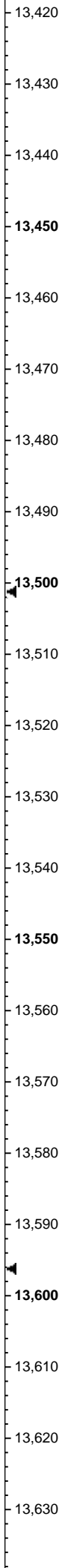
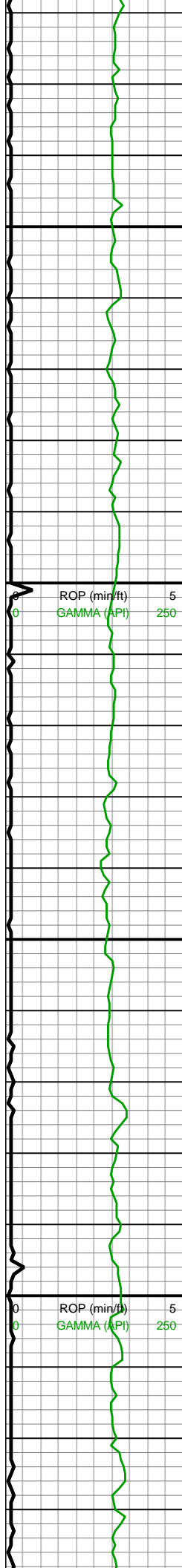
WOB: 31.4klbs
RPM: 69
SPM: 188
SPP: 5,555psi



13200-13300 MRLST
(65%): dk gyshbn-dk gy,
sl slty tex, tab-sb blkly,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(35%): med gy-gyshbn,
crm, mot-sl stri, frm-sft,
sb blkly-sb plty, mod fis, tr
dissm mic pyr, v calc,
mnr MRLST lamn

13300-13400 MRLST
(55%): dk gyshbn-dk gy,
sl slty tex, tab-sb blkly,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(45%): med gy-gyshbn,
crm, mot-sl stri, frm-sft,
sb blkly-sb plty, mod fis, tr
dissm mic pyr, v calc, tr
free chk, mnr MRLST
lamn





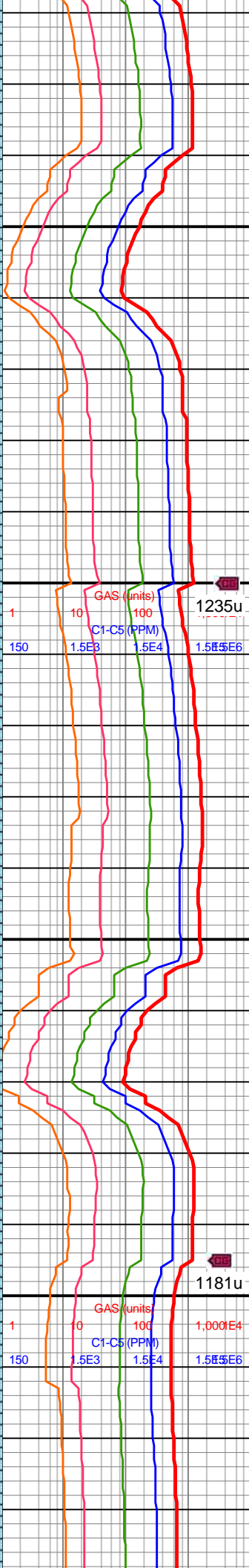
MD: 13,439'
INC: 89.43°
AZM: 357.54°
TVD: 7,256'
VS: 5,539.32'

MD: 13,533'
INC: 90.79°
AZM: 358.24°
TVD: 7,255.82'
VS: 5,633.17'

MW IN: 10
VIS IN: 57
MW OUT: 10
VIS OUT: 55

WOB: 34.8klbs
RPM: 70
SPM: 186
SPP: 5,499psi

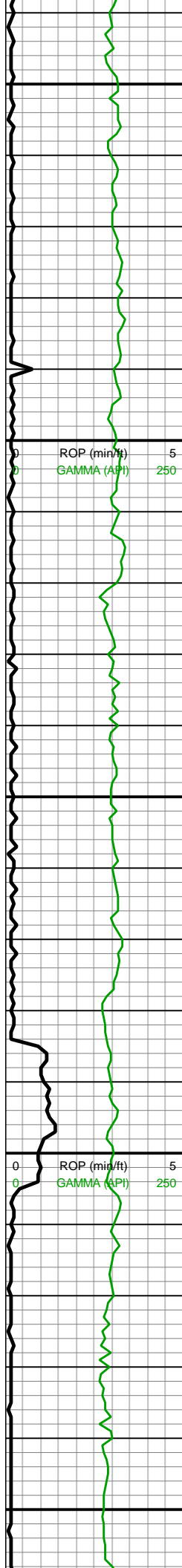
MD: 13,628'
INC: 91.23°
AZM: 358.42°
TVD: 7,254.15'
VS: 5,728.04'



13400-13500 MRLST
(60%): dk gyshbn-dk gy,
sl slty tex, tab-sb blkly,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(40%): med gy-gyshbn,
crm, mot-sl stri, frm-sft,
sb blkly-sb plty, mod fis, tr
dissm mic pyr, v calc, tr
free chk, mnrl MRLST
lamn

13500-13600 MRLST
(55%): dk gyshbn-dk gy,
sl slty tex, tab-sb blkly,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(45%): med gy-gyshbn,
crm, mot-sl stri, frm-sft,
sb blkly-sb plty, mod fis, tr
dissm mic pyr, v calc, tr
free chk, mnrl MRLST
lamn





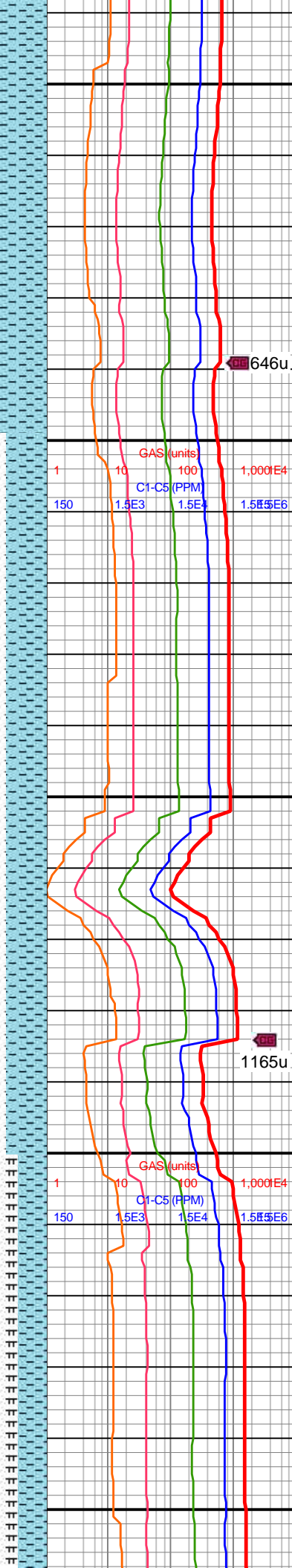
13,640
13,650
13,660
13,670
13,680
13,690
13,700
13,710
13,720
13,730
13,740
13,750
13,760
13,770
13,780
13,790
13,800
13,810
13,820
13,830
13,840
13,850

MD: 13,722'
INC: 90°
AZM: 356.48°
TVD: 7,253.14'
VS: 5,821.84'

MW IN: 10
VIS IN: 56
MW OUT: 10
VIS OUT: 54

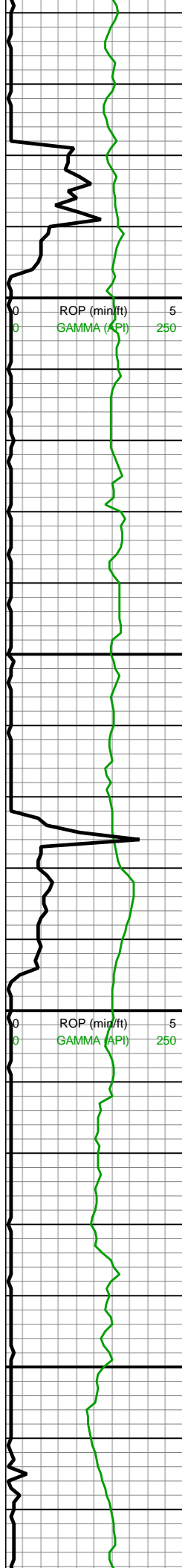
WOB: 63.3klbs
RPM: 0
SPM: 184
SPP: 5,043psi

MD: 13,817'
INC: 90.66°
AZM: 357.98°
TVD: 7,252.59'
VS: 5,916.62'



13600-13700 MRLST
(60%): dk gyshbn-dk gy,
sl slty tex, tab-sb blk,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(40%): med gy-gyshbn,
crm, mot-sl stri, frm-sft,
sb blk-sb plty, mod fis, tr
dissm mic pyr, v calc, tr
free chk, mnrl MRLST
lamn

13700-13800 MRLST
(65%): dk gyshbn-dk gy,
sl slty tex, tab-sb blk,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(35%): med gy-gyshbn,
crm, mot-sl stri, frm-sft,
sb blk-sb plty, mod fis, tr
dissm mic pyr, v calc, tr
free chk, mnrl MRLST
lamn



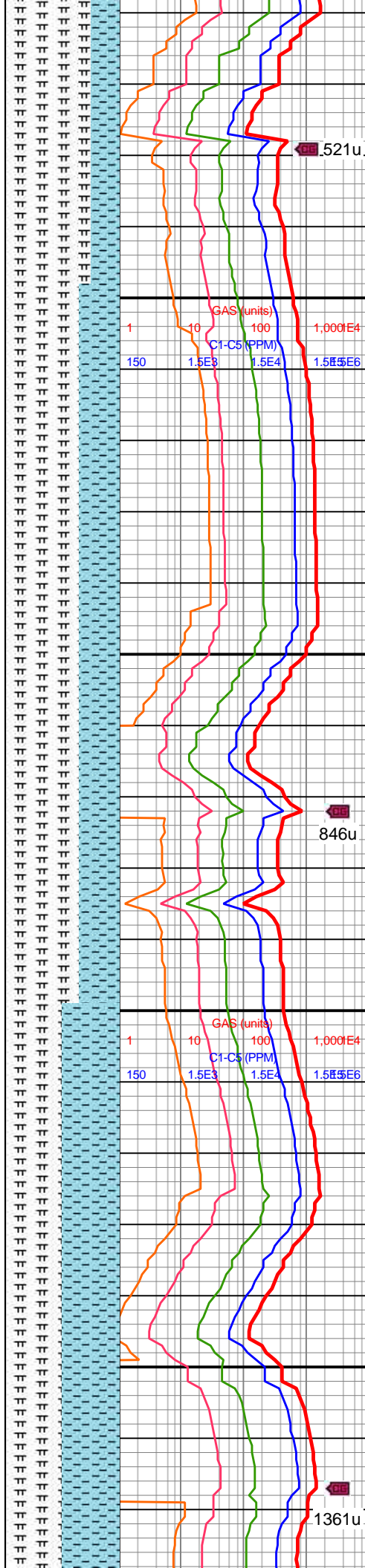
MW IN: 10
VIS IN: 55
MW OUT: 10
VIS OUT: 50

MD: 13,911'
INC: 90.88°
AZM: 359.91°
TVD: 7,251.33'
VS: 6,010.54'

WOB: 32.2klbs
RPM: 70
SPM: 187
SPP: 5,593psi

MD: 14,005'
INC: 88.64°
AZM: 359.91°
TVD: 7,251.72'
VS: 6,104.51'

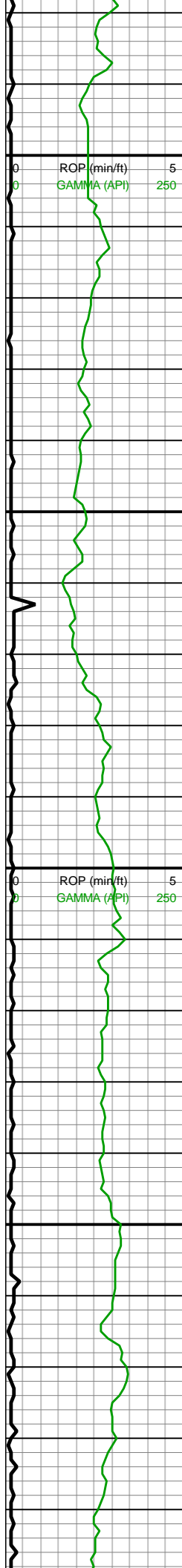
MW IN: 10
VIS IN: 54
MW OUT: 10
VIS OUT: 49



13800-13900 MRLST
(75%): dk gyshbn-dk gy,
sl slty tex, tab-sb blkly,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(25%): med gy-gyshbn,
crm, mot-sl stri, frm-sft,
sb blkly-sb plty, mod fis,
com diss mic pyr, v
calc, mnr MRLST lamn

13900-14000 MRLST
(65%): dk gyshbn-dk gy,
sl slty tex, tab-sb blkly,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(35%): med gy-gyshbn,
sme crm, mot-sl stri,
frm-sft, sb blkly-sb plty,
mod fis, abnt diss mic
pyr, scat free chk, v calc,
mnr MRLST lamn

14000-14100 MRLST
(50%): dk gyshbn-dk gy,
sl slty tex, tab-sb blkly,
frm-sl hd, brit, mod calc,
tr CHK incl/intbds; CHK
(50%): med gy-gyshbn,
sme crm, mot-sl stri, frm-sft,
sb blkly-sb plty, mod fis,
com diss mic pyr, v calc,
mnr MRLST lamn



14,080
14,090
14,100
14,110
14,120
14,130
14,140
14,150
14,160
14,170
14,180
14,190
14,200
14,210
14,220
14,230
14,240
14,250
14,260
14,270
14,280
14,290

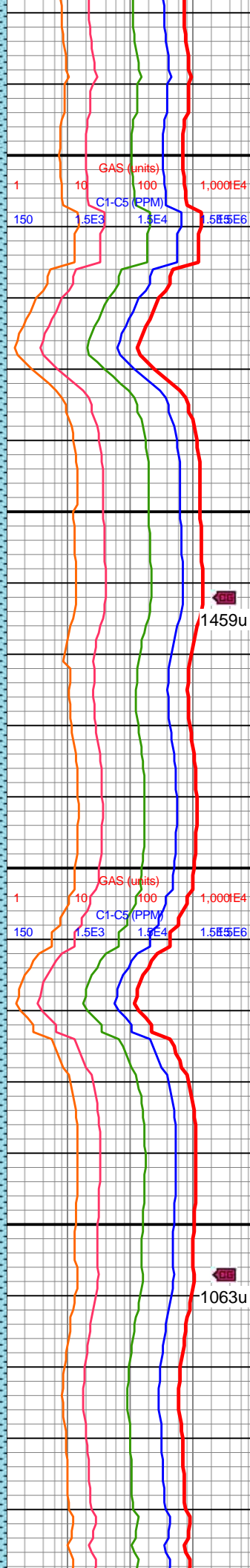
MD: 14,100'
INC: 88.77°
AZM: 359.74°
TVD: 7,253.87'
VS: 6,199.47'

MD: 14,194'
INC: 88.81°
AZM: 359.3°
TVD: 7,255.85'
VS: 6,293.41'

WOB: 33.4klbs
RPM: 70
SPM: 184
SPP: 5,578psi

MW IN: 10
VIS IN: 55
MW OUT: 10
VIS OUT: 51

MD: 14,290'
INC: 88.64°
AZM: 358.59°
TVD: 251'
VS: 7,257.99'

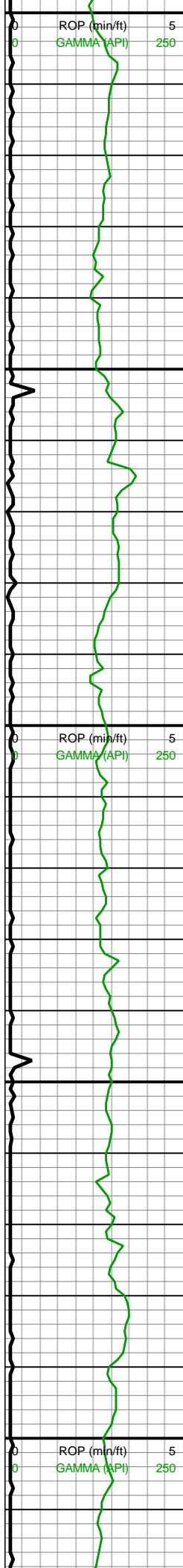


tr CHK incl/intbds: CHK
(50%): med gy-gyshbn,
sme crm, mot-sl stri,
frm-sft, sb blkyl-sb plty,
mod fis, abnt diss mic
pyr, scat free chk, v calc,
mnr MRLST lamn

14100-14200 CHK
(55%): gyshbn, med gy,
mot-sl stri, sb blkyl-tab, sl
frm-brit, sm chky tex, mnr
pp pyr cls, v calc; MRLST
(45%): dk gy-gyshbn,
mot, sl slty-sm tex, sl
hd-frm, sb blkyl-sb spl, tr
intbd CHK, mod calc

14200-14300 CHK
(65%): gyshbn, med gy,
sb blkyl-sb plty, frm-sl frm,
med fis, mnr MRLST
lamn, hi calc, tr diss
mic pyr; MRLST (35%):
dk gyshbn-dk gy, frm-sl
hd, sl slty-sm tex, mod





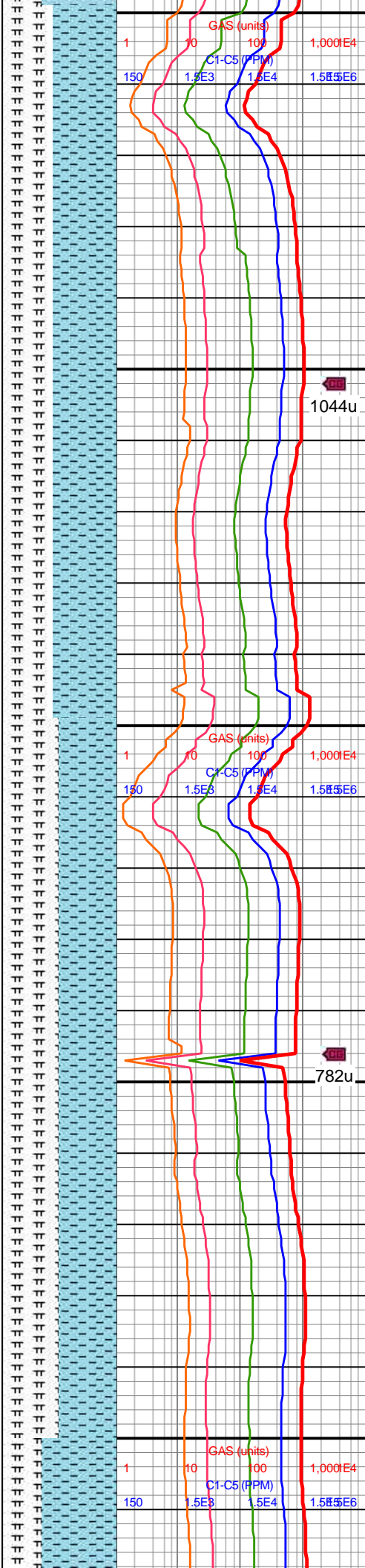
14,300
14,310
14,320
14,330
14,340
14,350
14,360
14,370
14,380
14,390
14,400
14,410
14,420
14,430
14,440
14,450
14,460
14,470
14,480
14,490
14,500
14,510

MD: 14,384'
INC: 88.99°
AZM: 358.42°
TVD: 7,259.93'
VS: 6,483.2'

WOB: 35.4klbs
RPM: 70
SPM: 184
SPP: 5,589psi

MD: 14,478'
INC: 89.08°
AZM: 358.33°
TVD: 7,261.52'
VS: 6,577.08'

MW IN: 10



brit, mod calc, tr CHK incl

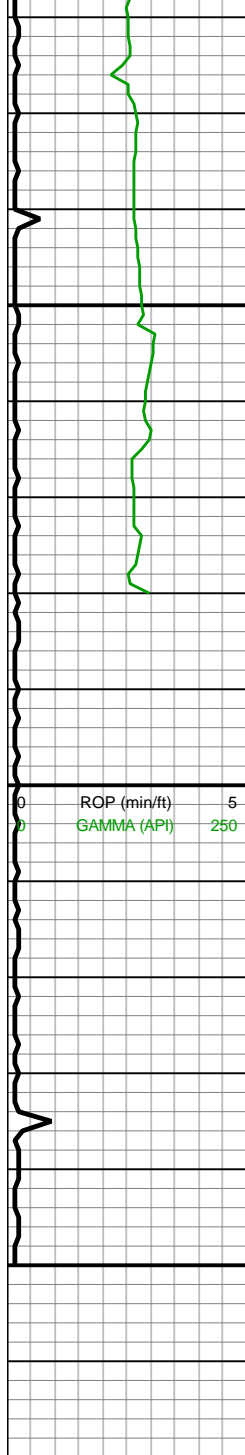
1044u

14300-14400 CHK
(55%): gyshbn, med gy,
sb blkly-sb plty, frm-sl frm,
med fis, mnr MRLST
lamn, hi calc, tr diss
mic pyr; MRLST (45%):
dk gyshbn-dk gy, frm-sl
hd, sl slty-sm tex, mod
brit, mod calc, tr CHK incl

782u

14400-14500 CHK
(50%): gyshbn, med gy,
sb blkly-sb plty, frm-sl frm,
med fis, mnr MRLST
lamn, hi calc, tr diss
mic pyr; MRLST (50%):
dk gyshbn-dk gy, frm-sl
hd, sl slty-sm tex, mod
brit, mod calc, tr CHK incl





VIS IN: 55
MW OUT: 10+
VIS OUT: 49

MD: 14,573'
INC: 89.34°
AZM: 357.98°
TVD: 7,262.83'
VS: 6,671.95'

MD: 14,588'
INC: 89.25°
AZM: 358.33°
TVD: 7,263.01'
VS: 6,686.92'

WOB: 36.9klbs
RPM: 70
SPM: 180
SPP: 5,537psi

Projection to Bit:

MD: 14,650'
INC: 89.25°
AZM: 358.33°
TVD: 7,263.82'
VS: 6,748.85'

TD of 14,650
Reached on
08/17/2018 @
12:39 MST

