



Scale: 5" / 100'
Measured Depth Log

Well Name Davis 1K-9H-G266

Location Sec. 9 T2N R66W

State Colorado

County Weld

Country USA

Rig Number Ensign 153

API Number 05-123-46517

AFE # 16191029

Geographic Region Rockies

Field Wattenberg

Spud Date 7/29/2018

Drilling Completed 7/31/2018

Surface Coordinates Lat/Long: 40.154416/-104.777911

SHL: Sec: 9 Twp: 2N 66W
Footage: 1969 FNL 1428 FEL

Bottom Hole Coordinates Proposed BHL:
Sec: 4 Twp: 2N 66W
Footage: 460 FNL 2334 FWL

Ground Elevation 4,917'

K.B. Elevation 4,940'

Logged Interval 6,500' MD **To** 14,639' MD

Total Depth 14,639' MD

Formation Nio B Chalk

Type of Drilling Fluid Synthetic Oil Based Mud

Operator

Company Crestone Peak Resources

Address 370 17th Street #2170
Denver, CO 80202



CRESTONE PEAK
RESOURCES

Geologist

Name John Ready

Company Crestone Peak Resources

Address 370 17th Street #2170
Denver, CO 80202



Zone Color Coding

Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

Other

Loggers: Byron Pitulski / Mark Gross

Services Provided: 2-Man Mudlogging / Geosteering

Equipment: ML-526

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

Job #: 1454RK1808

Start Date 7/29/2018

Release Date: TBD

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

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 FEELE

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

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

E EARTHY

F FINELYXLN

GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKESTONE

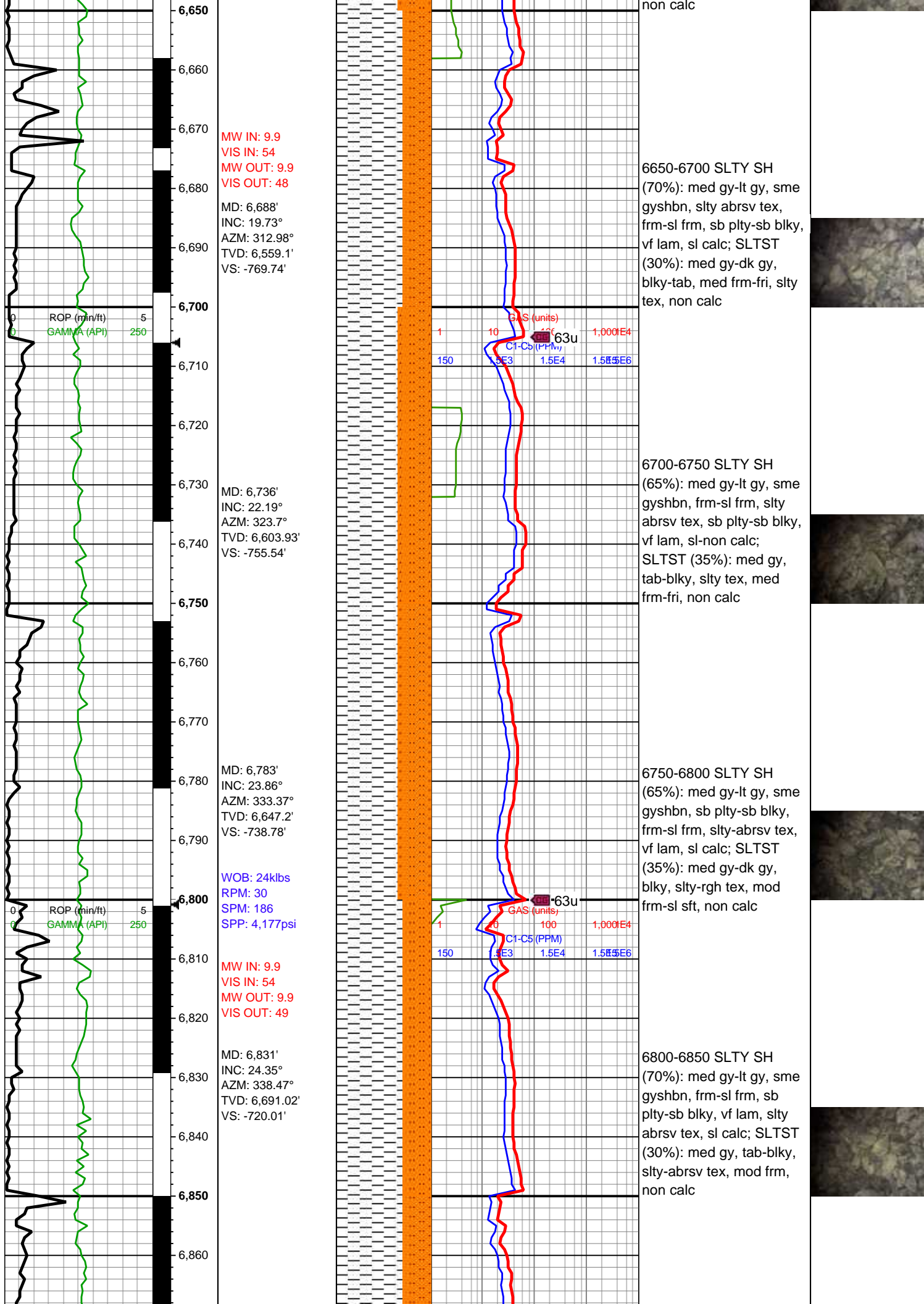
Sorting

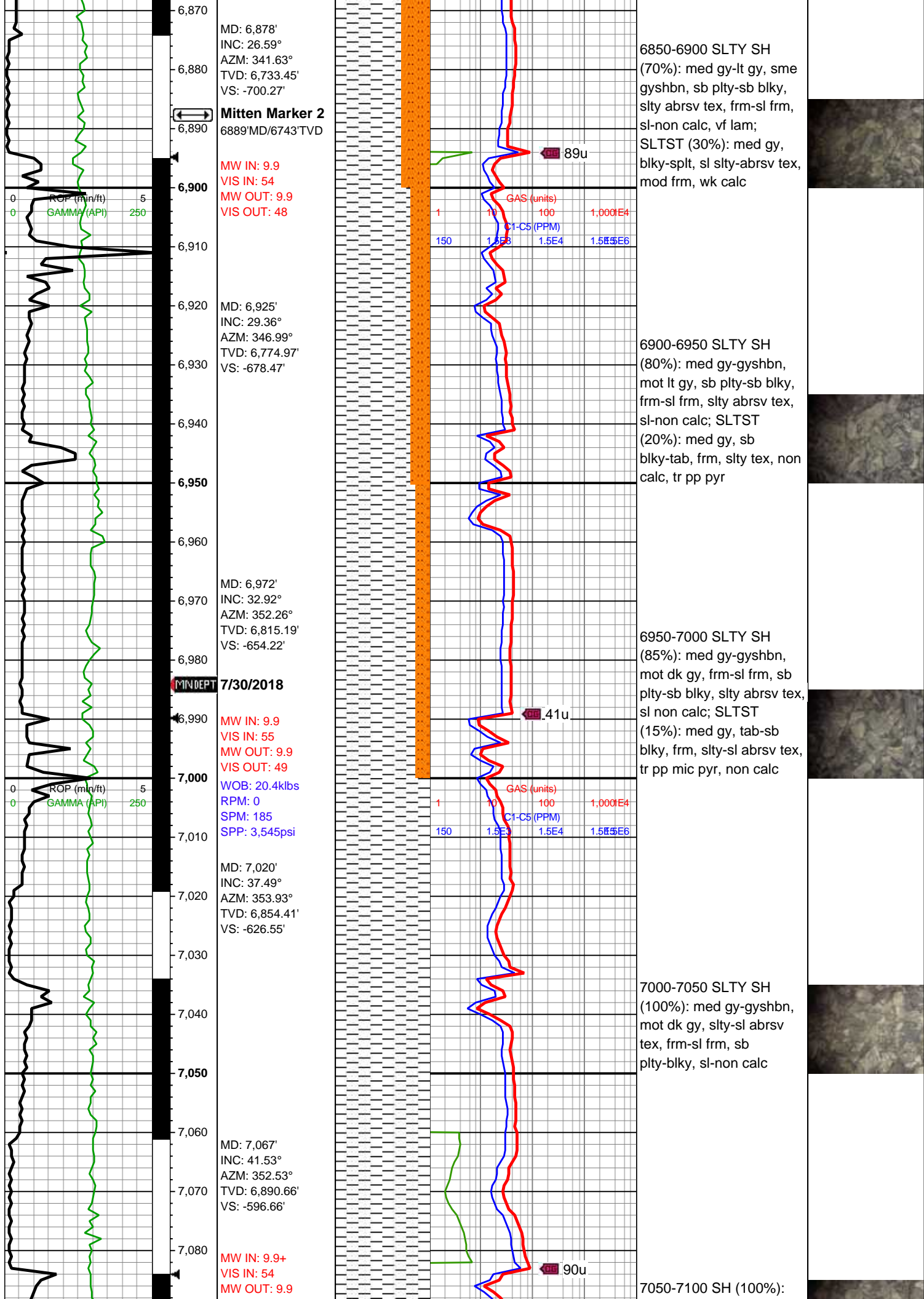
M MODERATE

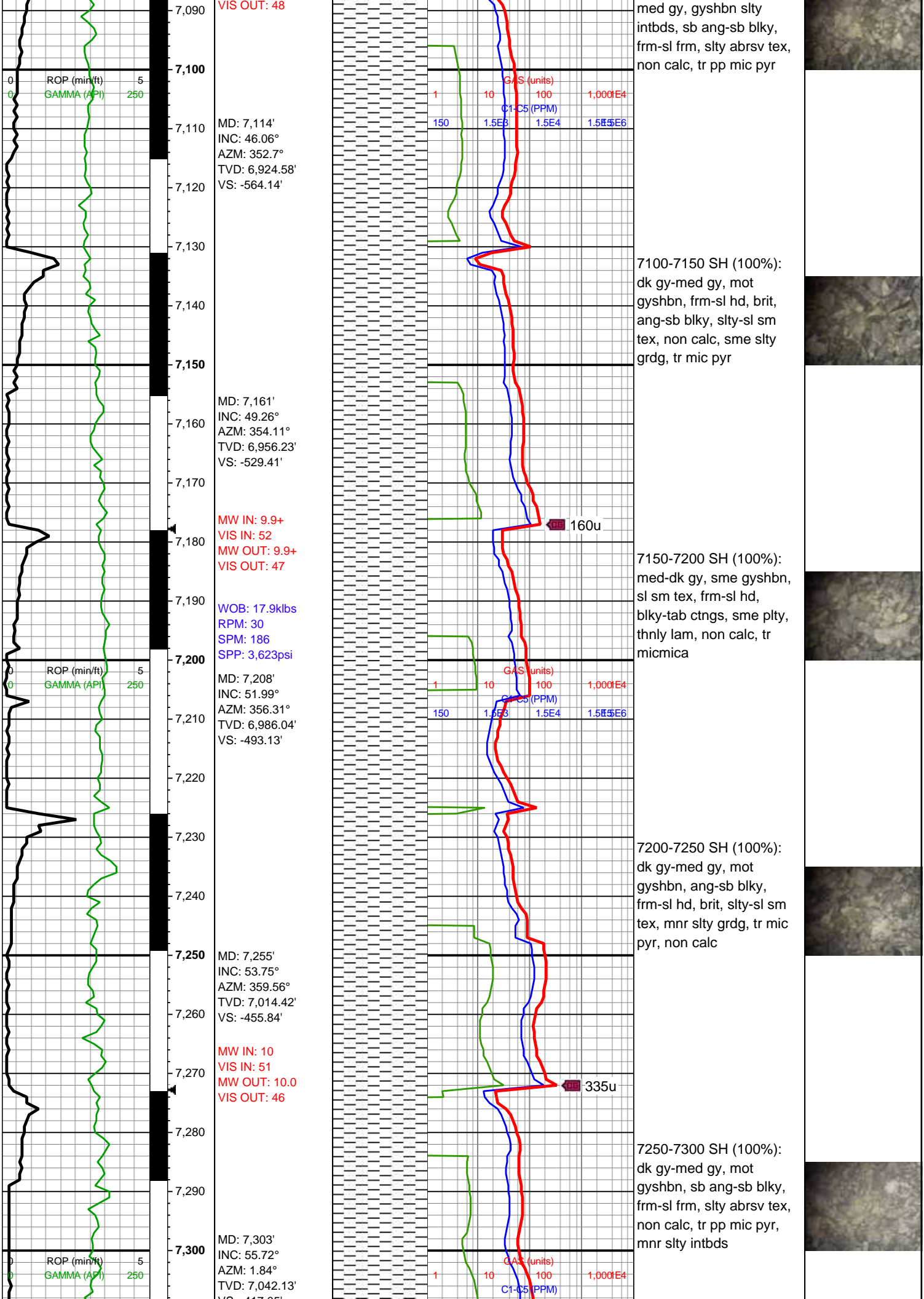
P POOR

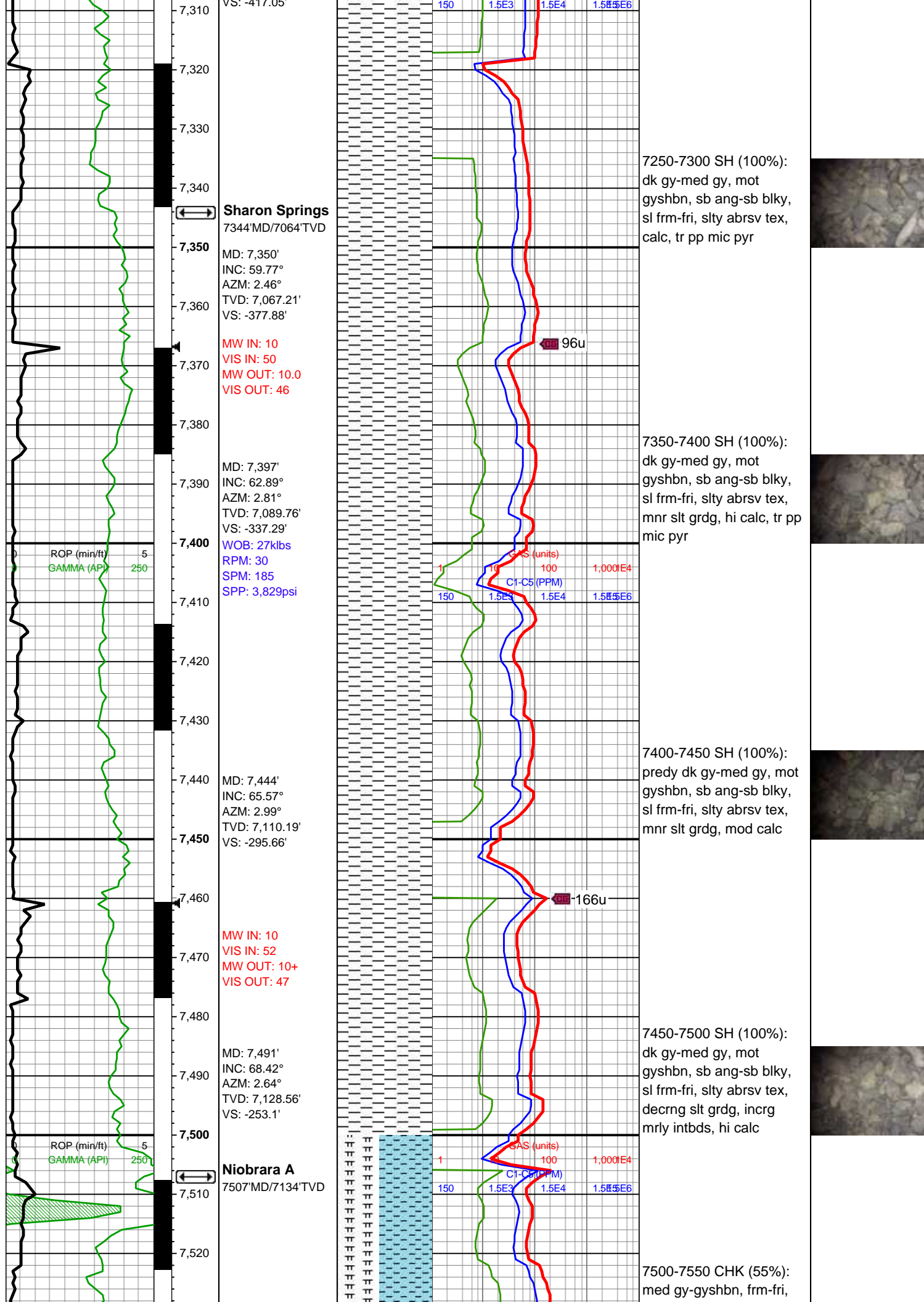
W WELL

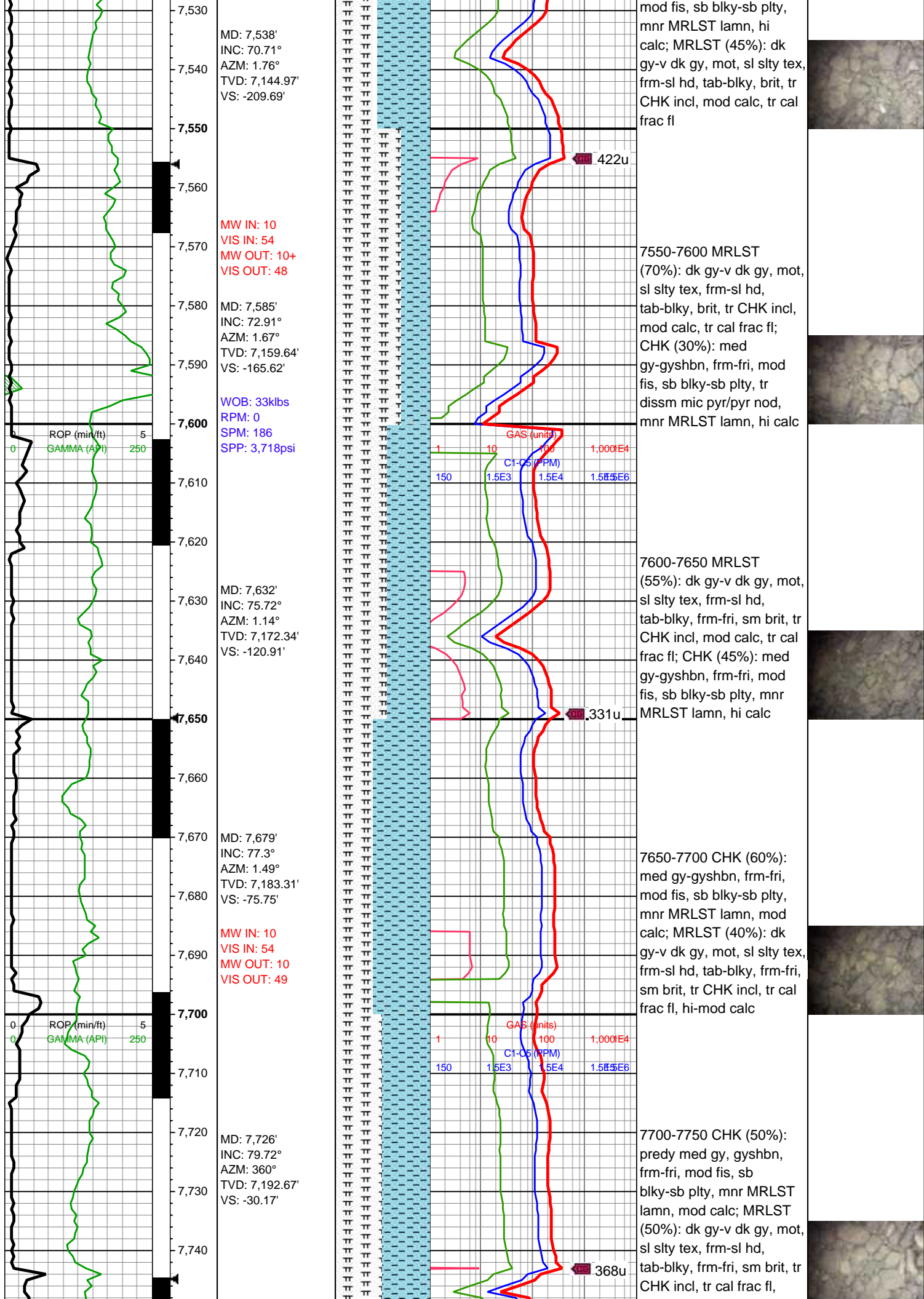
ROP ROP GAMMA	Slide/Rotate	Depth Labels	Notes	% Lith	Total Gas					Lithology Descriptions	Images
					GAS	C1	C2	C3	C4		
Crestone Peak Resources Davis 1K-9H-G266											
9 5/8" Surface Casing @ 2,184'											
Spud Date: 07/29/2018 2 man Logging Began: 07/29/2018 @ 6,500' MD											
All Depths Correspond to Driller's Pipe Tally											
Bit #: 1 Type: U516M Size: 8.5 Depth In: 2,200' Depth Out: 14,639' Hours: 42 hrs Avg Ft/Hr: 296 '/hr Jets: 6x14 S/N: 41736											
KOP 6441' MD 6292' TVD											
MD: 6,500' INC: 11.51° AZM: 254.44° TVD: 6,379.28' VS: -797.88'											
MW IN: 9.9 VIS IN: 54 MW OUT: 9.9 VIS OUT: 49											
MD: 6,547' INC: 15.43° AZM: 280.72° TVD: 6,425.02' VS: -796.58'											
MD: 6,594' INC: 17.93° AZM: 297.42° TVD: 6,470.06' VS: -790.48'											
WOB: 10.6klbs RPM: 31 SPM: 186 SPP: 3,555psi											
MD: 6,641' INC: 18.63° AZM: 306.74° TVD: 6,514.7' VS: -781.1'											
					SYSTEM CALIBRATED 1% Methane = 100 Units 100% Methane = 10000 Units						
					GAS (units) C1-C5 (PPM)						
					1 10 100 1,000E4 150 1.5E3 1.5E4 1.5E5E6						
					20u						
										6500-6550 SLTY SH (80%): med gy-lt gy, sme gyshbn, frm-sl frm, sb plty-sb blk, slty-abrsv tex, vf lam, sl calc; SLTST (20%): med gy-dk gy, blk, slty-rgh tex, med frm-sl sft, non calc	
										6550-6600 SLTY SH (70%): predy med gy-lt gy, sme gyshbn, sb plty-sb blk, frm-sl frm, slty-abrsv tex, vf lam, sl-non calc; SLTST (30%): med gy-dk gy, rgh-slty tex, blk-sb blk, med frm-fri, non calc	
					62u						
										6600-6650 SLTY SH (65%): med gy-lt gy, sme gyshbn, frm-sl frm, slty abrsv tex, sb plty-sb blk, vf lam, wk calc; SLTST (35%): med gy, med frm-fri, blk, rgh-slty tex,	

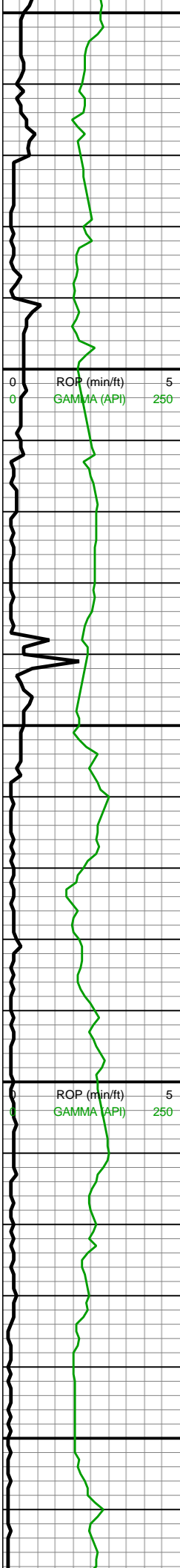












MD: 7,774'
INC: 83.06°
AZM: 358.42°
TVD: 7,199.85'
VS: 16.96'

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

WOB: 36klbs
RPM: 0
SPM: 186
SPP: 3,824psi

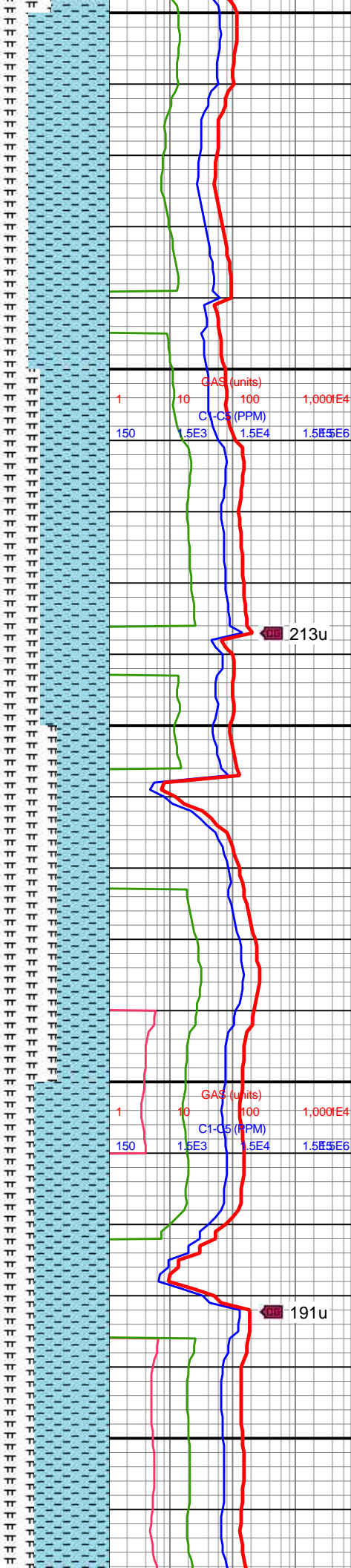
MD: 7,821'
INC: 86.53°
AZM: 358.24°
TVD: 7,204.12'
VS: 63.51'

Land curve
7856' MD
7206' TVD

MD: 7,868'
INC: 88.99°
AZM: 358.15°
TVD: 7,205.95'
VS: 110.24'

MW IN: 10
VIS IN: 53
MW OUT: 10
VIS OUT: 49

MD: 7,962'
INC: 88.37°
AZM: 358.15°
TVD: 7,208.12'
VS: 222.70'



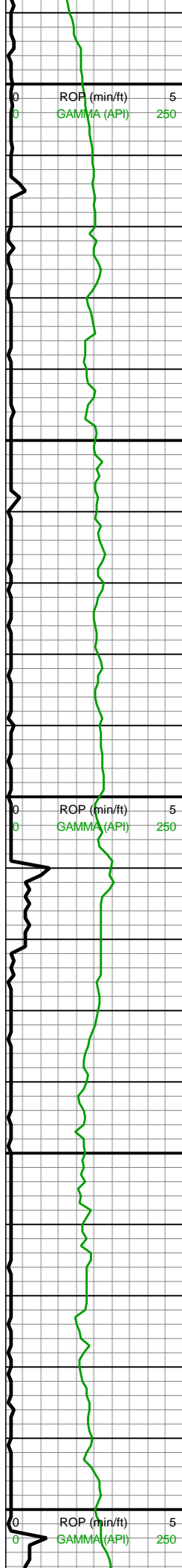
hi-mod calc

7750-7800 CHK (70%):
predy med gy, gyshbn,
frm-fri, mod fis, sb
blky-sb plty, tr MRLST
lamn, mod calc; MRLST
(30%): dk gy-v dk gy, mot
gyshbn, sl slty tex, frm-sl
hd, tab-blky, frm-fri, sm
brit, tr CHK incl, tr cal frac
fl, hi calc

7800-7850 CHK (60%):
med gy, sme
gyshbn-offwht, frm-fri,
mod fis, sb blky-sb plty, tr
MRLST lamn, mod calc;
MRLST (40%): dk gy-v dk
gy, mot gyshbn, sl slty
tex, frm-sl hd, tab-blky,
frm-fri, sm brit, tr CHK
incl, tr cal frac fl, hi calc

7850-7900 MRLST
(55%): dk gy-v dk gy, mot
gyshbn, sl slty tex, frm-sl
hd, tab-blky, frm-fri, sm
brit, tr CHK incl, tr cal frac
fl, hi calc; CHK (45%):
med gy, gyshbn-offwht,
frm-fri, mod fis, sb
blky-sb plty, incrg MRLST
lamn, mod calc





8,190
8,200
8,210
8,220
8,230
8,240
8,250
8,260
8,270
8,280
8,290
8,300
8,310
8,320
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8,340
8,350
8,360
8,370
8,380
8,390
8,400

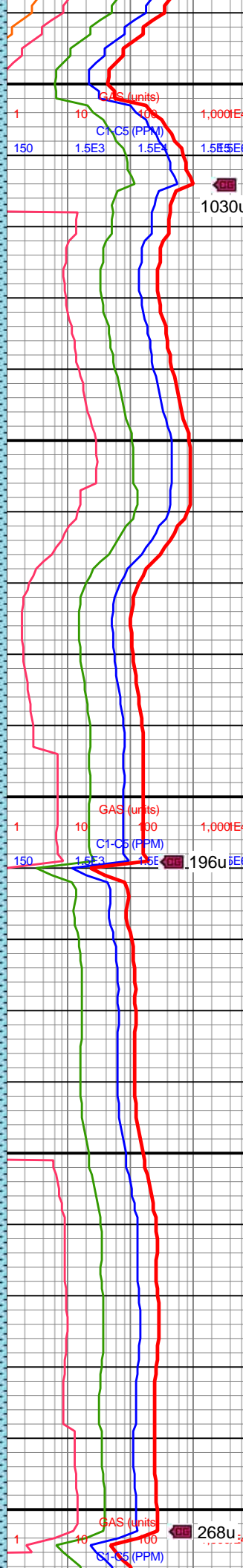
WOB: 32klbs
RPM: 69
SPM: 217
SPP: 5,345psi

MD: 8,245'
INC: 89.56°
AZM: 358.5°
TVD: 7,207.95'
VS: 485.01'

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

MD: 8,340'
INC: 89.47°
AZM: 359.56°
TVD: 7,208.76'
VS: 579.39'

WOB: 34klbs
RPM: 70
SPM: 217
SPP: 5,364psi

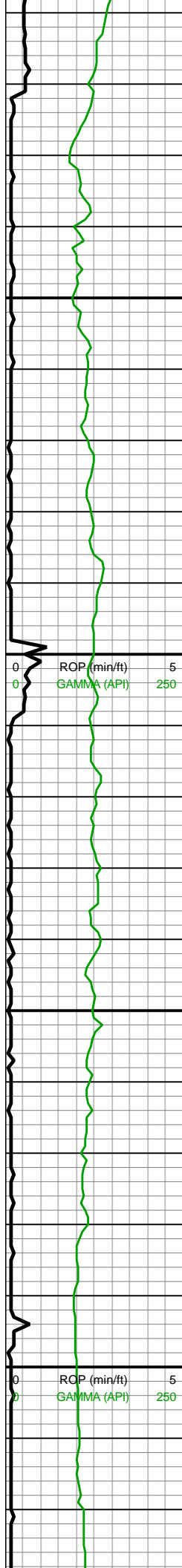


gyshbn, sl slty tex, frm-sl
hd, tab-blky, frm-fri, sm
brit, tr bent frags, com
CHK incl, hi calc

8200-8300 CHK (50%):
med gy, mot gyshbn,
frm-fri, mod fis, sb
blky-sb plty, mnr MRLST
lamn, mod calc; MRLST
(50%): dk gy-v dk gy, mot
gyshbn, sl slty tex, frm,
tab-blky, frm-fri, sm brit, tr
scat bent, com CHK incl,
mod-hi calc

8300-8400 MRLST
(55%): dk gy-v dk gy, mot
gyshbn, sl slty tex, frm,
tab-blky, frm-fri, sm brit, tr
scat bent, com CHK incl,
calc; CHK (45%): med gy,
mot gyshbn, frm-fri, mod
fis, sb blky-sb plty, hi
MRLST lamn, mod calc





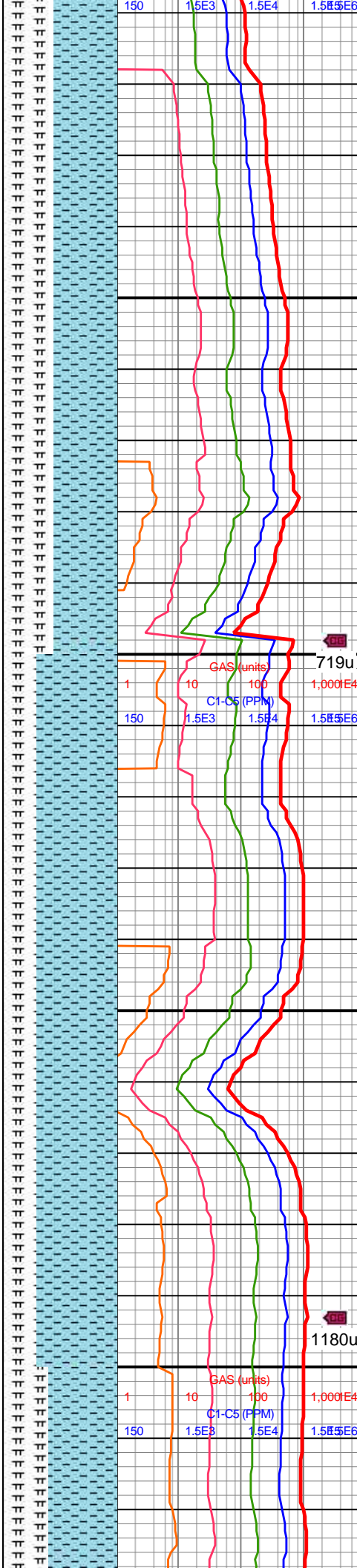
MD: 8,435'
INC: 90.88°
AZM: 0.88°
TVD: 7,208.47'
VS: 673.53'

MD: 8,530'
INC: 91.45°
AZM: 1.67°
TVD: 7,206.54'
VS: 767.4'

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

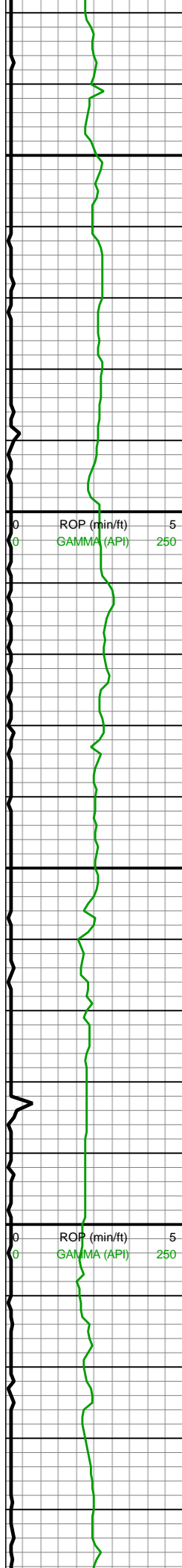
WOB: 33klbs
RPM: 69
SPM: 217
SPP: 5,337psi

MD: 8,624'
INC: 91.1°



8400-8500 CHK (55%):
med gy, mot gyshbn,
frm-fri, mod fis, sb
blky-sb plty, hi MRLST
lamn, mod calc; MRLST
(45%): dk gy-v dk gy, mot
gyshbn, sl slty tex, frm,
tab-blky, frm-fri, sm brit, tr
scat bent, com CHK incl,
calc

8500-8600 CHK (70%):
predy med gy, mot
gyshbn, frm-fri, mod fis,
sb blky-sb plty, hi MRLST
lamn, mod calc; MRLST
(30%): dk gy-v dk gy, mot
gyshbn, sl slty tex, frm,
tab-blky, frm-fri, sm brit, tr
scat bent, com CHK incl,
mod-hi calc



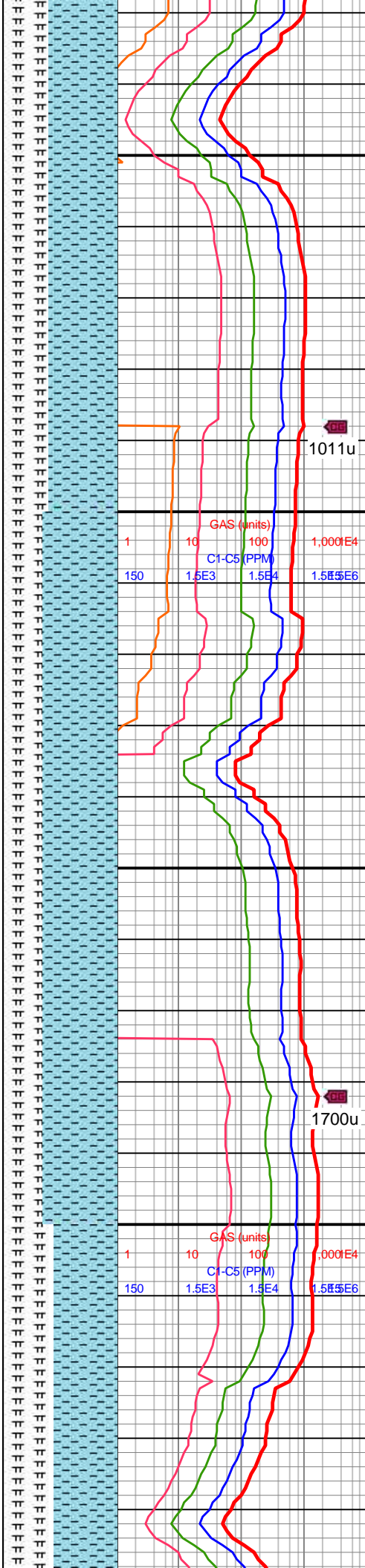
AZM: 0.88°
TVD: 7,204.44'
VS: 860.27'

MD: 8,718'
INC: 91.67°
AZM: 0.97°
TVD: 7,202.17'
VS: 953.23'

MW IN: 10
VIS IN: 53
MW OUT: 10.1
VIS OUT: 49

WOB: 33klbs
RPM: 70
SPM: 212
SPP: 5,308psi

MD: 8,812'
INC: 91.8°
AZM: 0.44°
TVD: 7,199.33'
VS: 1,046.23'

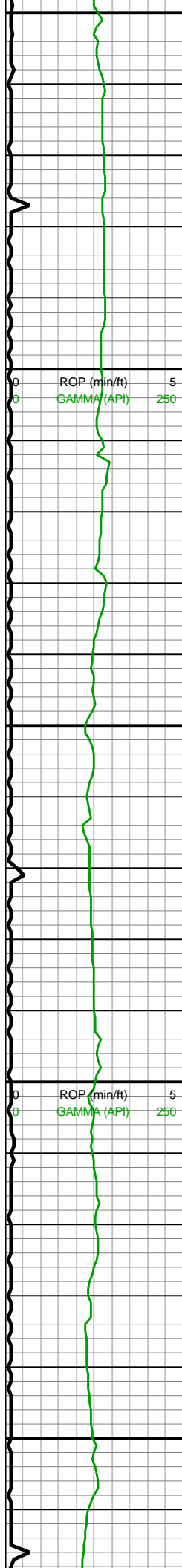


8600-8700 CHK (60%):
med gy, mot gyshbn,
frm-fri, mod fis, sb
blky-sb plty, hi MRLST
lamn, mod calc; MRLST
(40%): dk gy-v dk gy, mot
gyshbn, sl slty tex,
tab-blky, frm-fri, sm brit,
com CHK incl, tr scat
bent, mod-hi calc



8700-8800 CHK (65%):
med gy, mot gyshbn, free
offwht chk frags, frm-fri,
mod fis, sb blky-sb plty,
mnr MRLST lamn, mod
calc; MRLST (35%): dk
gy-v dk gy, mot gyshbn, sl
slty tex, tab-blky, frm-fri,
sm brit, com CHK incl, hi
calc





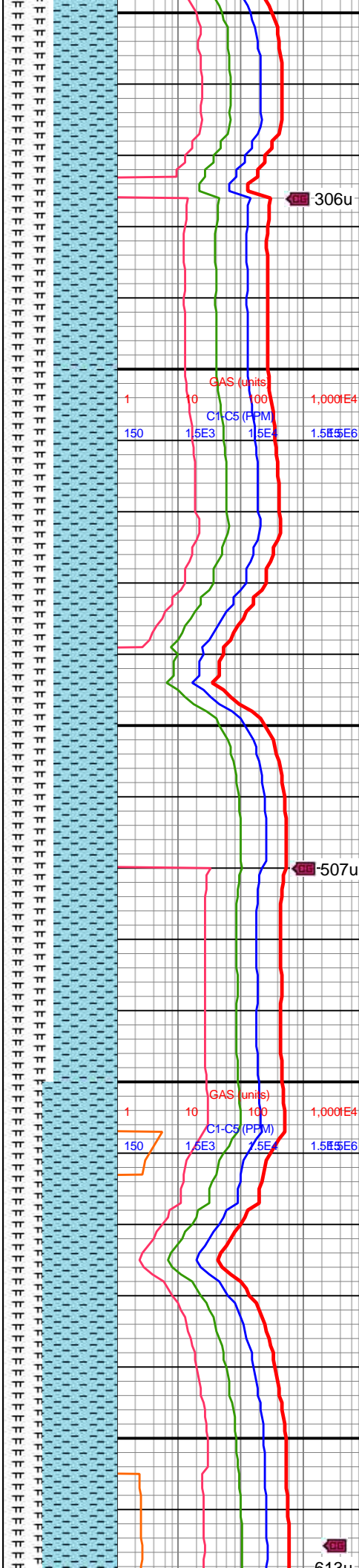
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8,860
8,870
8,880
8,890
8,900
8,910
8,920
8,930
8,940
8,950
8,960
8,970
8,980
8,990
9,000
9,010
9,020
9,030
9,040
9,050
9,060

MD: 8,907'
INC: 92.02°
AZM: 360°
TVD: 7,196.16'
VS: 1,140.32'

WOB: 34klbs
RPM: 69
SPM: 216
SPP: 5,538psi

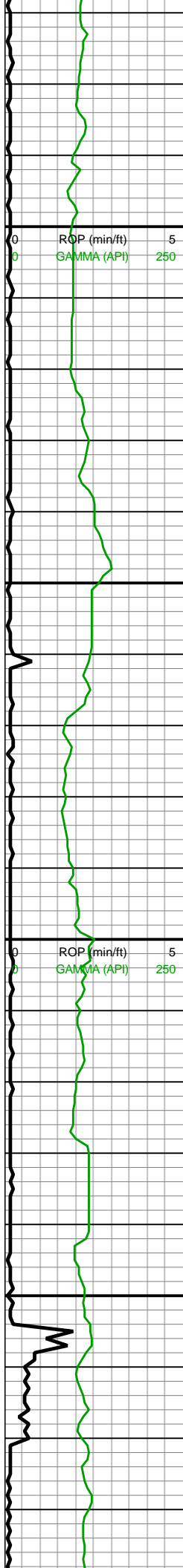
MD: 9,001'
INC: 92.2°
AZM: 359.74°
TVD: 7,192.7'
VS: 1,233.48'

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



8800-8900 CHK (55%):
med gy, mot gyshbn, free
offwht chk frags, frm-fri,
mod fis, sb blkyl-sb plty,
mnr MRLST lamn, mod
calc; MRLST (45%): dk
gy-v dk gy, mot gyshbn,
frm-fri, sm brit, tab-blky,
sl slty tex, com CHK incl,
hi calc

8900-9000 CHK (55%):
predy med gy, mot
gyshbn, tr free offwht chk,
frm-fri, mod fis, sb
blkyl-sb plty, mnr MRLST
lamn, mod calc; MRLST
(45%): dk gy-v dk gy, mot
gyshbn, frm-fri, sm brit,
tab-blky, sl slty tex, com
CHK incl, hi calc



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
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9,280

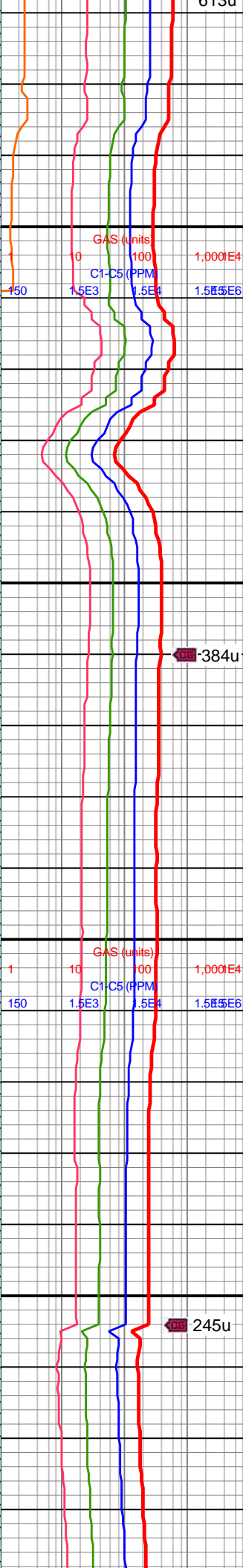
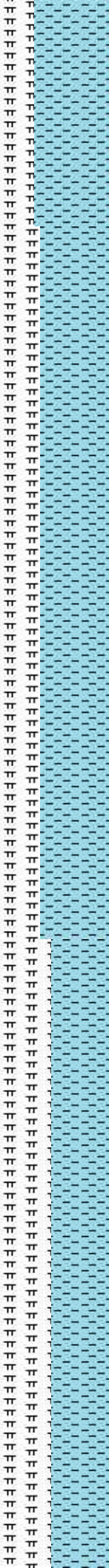
MD: 9,096'
INC: 92.51°
AZM: 359.56°
TVD: 7,188.8'
VS: 1,327.67'

MD: 9,191'
INC: 92.9°
AZM: 359.12°
TVD: 7,184.31'
VS: 1,421.89'

WOB: 36klbs
RPM: 70
SPM: 210
SPP: 5,353psi

MW IN: 10
VIS IN: 51
MW OUT: 10.1
VIS OUT: 48

MD: 9,285'
INC: 91.01°
AZM: 359.65°
TVD: 7,181.11'

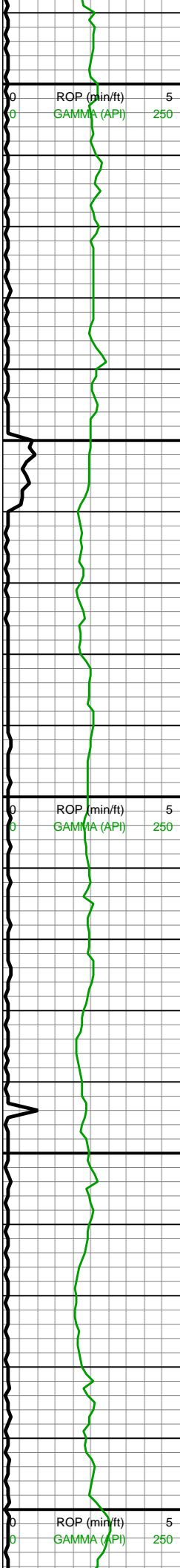


9000-9100 CHK (65%):
med gy, mot gyshbn, tr
free offwht chk, frm-fri,
mod fis, sb blkly-sb plty,
mnr MRLST lamn, mod
calc; MRLST (35%): dk
gy-v dk gy, mot gyshbn,
frm-fri, sm brit, tab-blky,
sl slty tex, com CHK incl,
hi calc

9100-9200 CHK (60%):
med gy, mot gyshbn,
frm-fri, mod fis, sb
blkly-sb plty, mnr MRLST
lamn, mod calc; MRLST
(40%): dk gy-v dk gy, mot
gyshbn, frm-fri, sm brit,
tab-blky, sl slty tex, com
CHK incl, tr cal frac fill, hi
calc

9200-9300 CHK (50%):
med gy, mot gyshbn,
frm-fri, mod fis, sb
blkly-sb plty, mnr MRLST
lamn, mod calc; MRLST
(50%): dk gy-v dk gy, mot





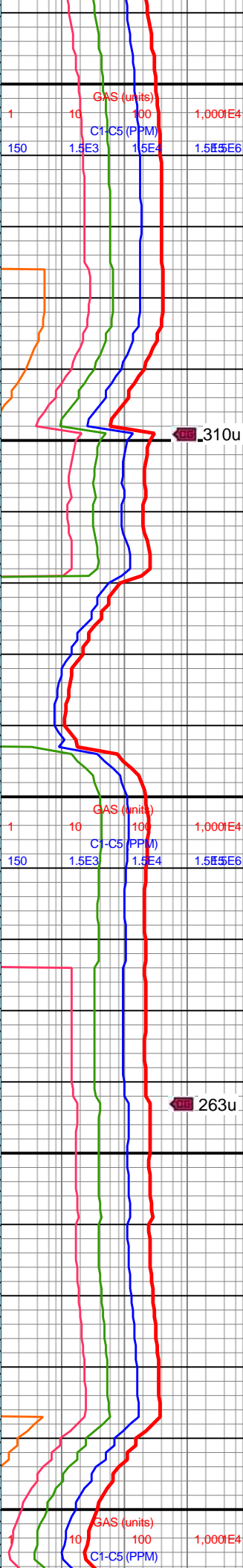
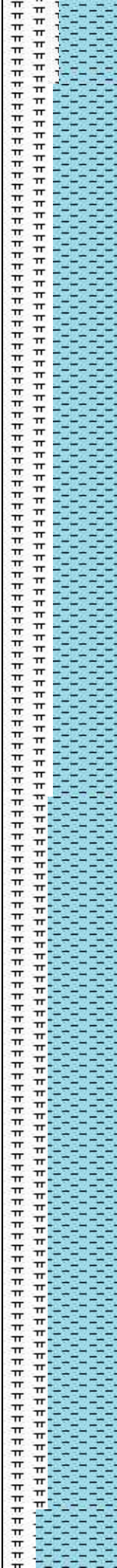
9,290
9,300
9,310
9,320
9,330
9,340
9,350
9,360
9,370
9,380
9,390
9,400
9,410
9,420
9,430
9,440
9,450
9,460
9,470
9,480
9,490
9,500

VS: 1,515.15'

MD: 9,380'
INC: 89.34°
AZM: 358.77°
TVD: 7,180.82'
VS: 1,609.5'

WOB: 35klbs
RPM: 70
SPM: 210
SPP: 5,373psi

MD: 9,474'
INC: 91.01°
AZM: 359.21°
TVD: 7,180.53'
VS: 1,702.89'

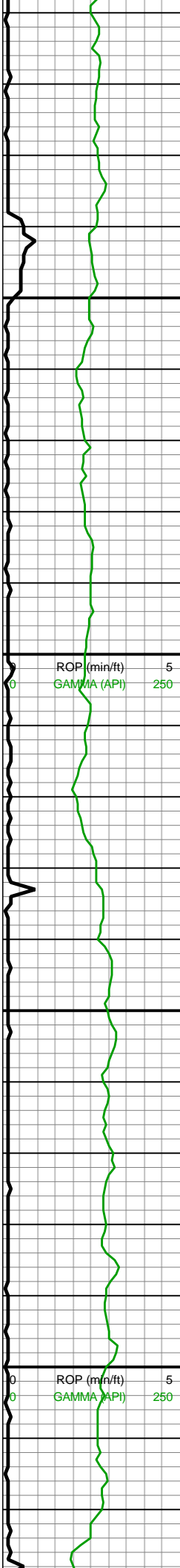


gyshbn, frm-fri, sm brit, tab-blky, sl slty tex, com CHK incl, tr cal frac fill, pp mic pyr incl, hi calc

9300-9400 CHK (55%): med gy-gyshbn, mot crm, frm-sft, chky tex, sb blky-sb plty, mod fis, mnr MRLST lamn, hi calc, tr imbd mic pyr; MRLST (45%): dk gy, mot med gy, brit, frm-sl hd, sl slty tex, tab-sb blky, tr CHK incl, mod calc

9400-9500 CHK (65%): med gy-gyshbn, crm, sb blky-sb plty, frm-sft, mod fis ctngs, mnr MRLST lamn, tr imbd mic pyr, hi calc; MRLST (35%): dk gyshbn-dk gy, brit, frm-sl hd, tr CHK incl, tab-sb blky, com CHK intbds, mod calc



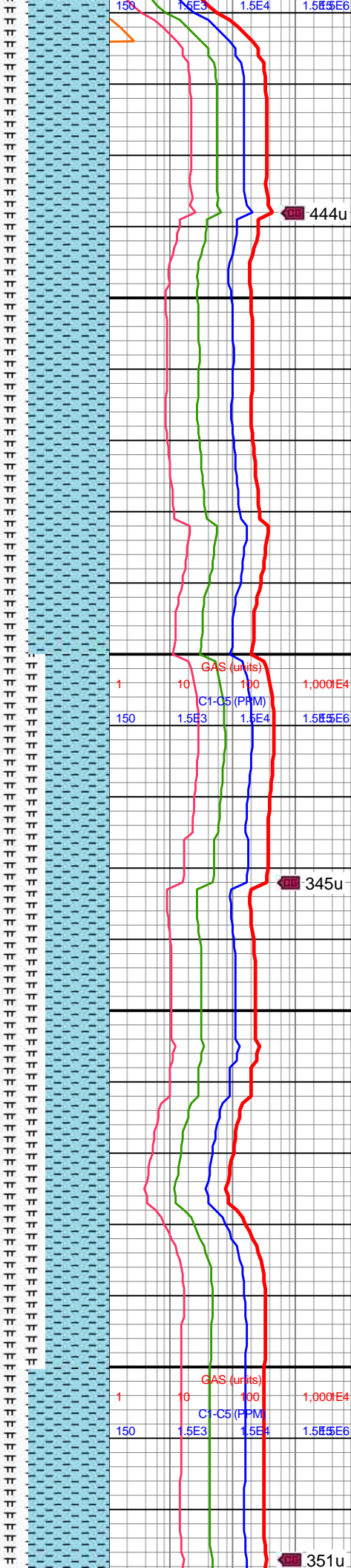


MW IN: 10
VIS IN: 50
MW OUT: 10+
VIS OUT: 46

MD: 9,569'
INC: 90°
AZM: 358.24°
TVD: 7,179.69'
VS: 1,797.33'

WOB: 32.7klbs
RPM: 69
SPM: 211
SPP: 5,478psi

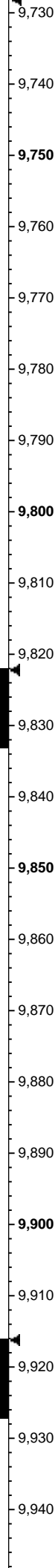
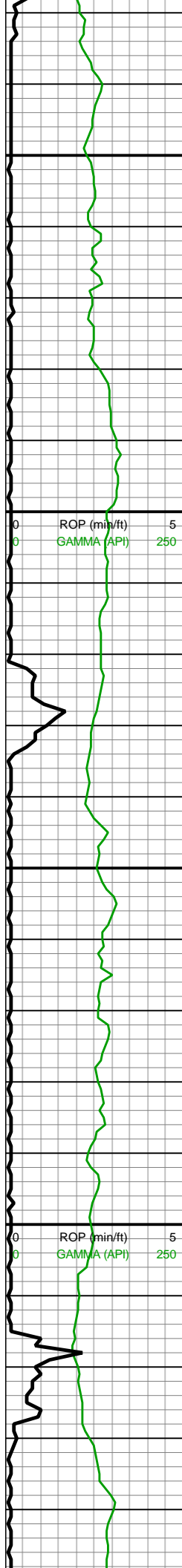
MD: 9,663'
INC: 90.44°
AZM: 357.89°
TVD: 7,179.33'
VS: 1,890.89'



9500-9600 CHK (70%):
predy gyshbn, lt gy, mot
crm, frm-sft, sb blk-y-sb
plty, sm-chky tex, mod
calc, mnr MRLST lamn;
MRLST (30%): dk
gyshbn-dk gy, sb tab-sb
blk-y, mnr slty tex, hd-frm,
mnr CHK intbd, mod
calc, mnr pyrc cls

9600-9700 CHK (55%):
med gy-gyshbn, mot crm,
sb blk-y-sb plty, frm-sft,
mod fis ctngs, mnr
MRLST lamn, hi calc, tr
pp mic pyr; MRLST
(45%): dk gyshbn-dk gy,
frm-sl hd, brit, tab-sb
blk-y, mod calc, tr CHK
incl





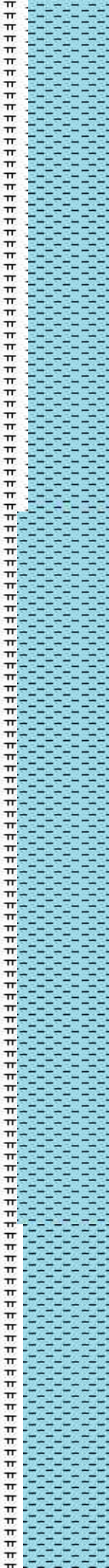
MW IN: 10
VIS IN: 50
MW OUT: 10.0+
VIS OUT: 46

MD: 9,757'
INC: 90.57°
AZM: 357.36°
TVD: 7,178.5'
VS: 1,984.51'

WOB: 33.4klbs
RPM: 70
SPM: 210
SPP: 5,551psi

MD: 9,852'
INC: 91.66°
AZM: 358.33°
TVD: 7,176.65'
VS: 2,079.08'

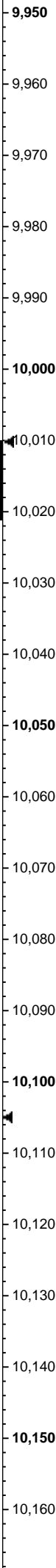
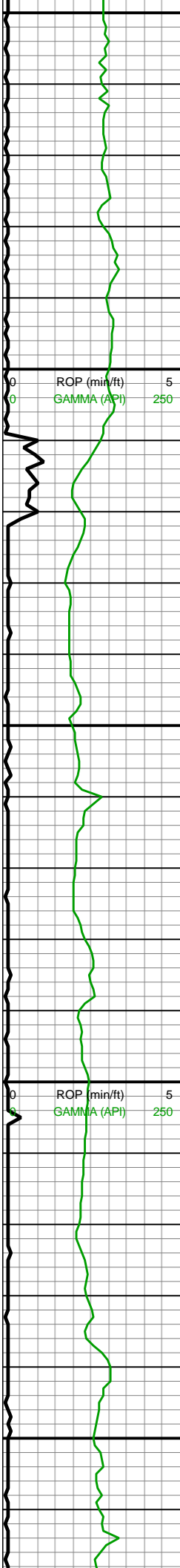
MD: 9,946'
INC: 90.79°
AZM: 359.65°



9700-9800 CHK (70%): lt gy-gyshbn, occ mot crm, frm-sft, sb blk-y-sb plty, rthy tex, mod calc, mnrl MRLST lamn; MRLST (30%): dk gyshbn-dk gy, sl hd-frm, sb tab-sb blk-y, sme slty tex, mnrl CHK incl, hi calc

9800-9900 CHK (80%): gyshbn, lt-med gy, mot crm, chky tex, sl frm-frm, sb blk-y-sb tab, mnrl MRLST lamn, mod calc; MRLST (20%): dk gy, mot med gy, tab-sb blk-y, frm-sl hd, sl sm tex, intbd CHK lam, hi calc, mnrl imbd pyrc cls





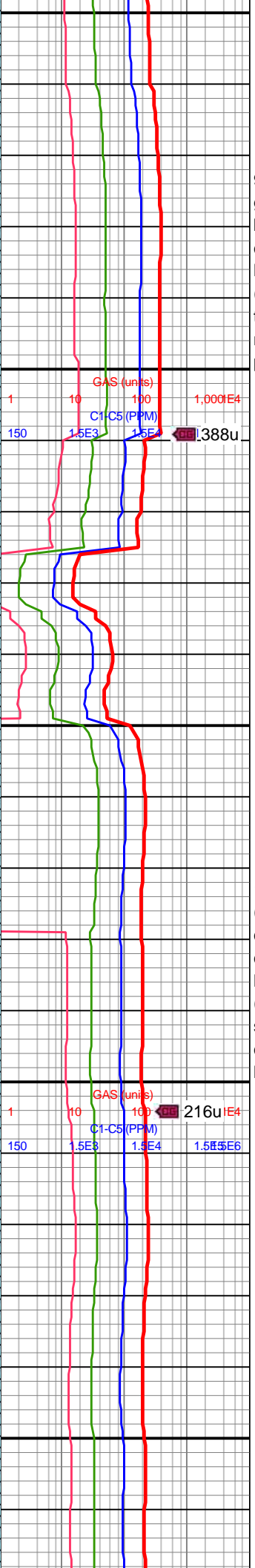
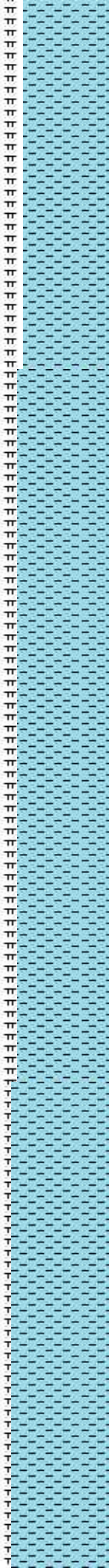
TVD: 7,174.64'
VS: 2,172.45'

MW IN: 10
VIS IN: 50
MW OUT: 10.0+
VIS OUT: 46

WOB: 33.2klbs
RPM: 70
SPM: 210
SPP: 5,577psi

MD: 10,040'
INC: 90.13°
AZM: 0.53°
TVD: 7,173.89'
VS: 2,265.63'

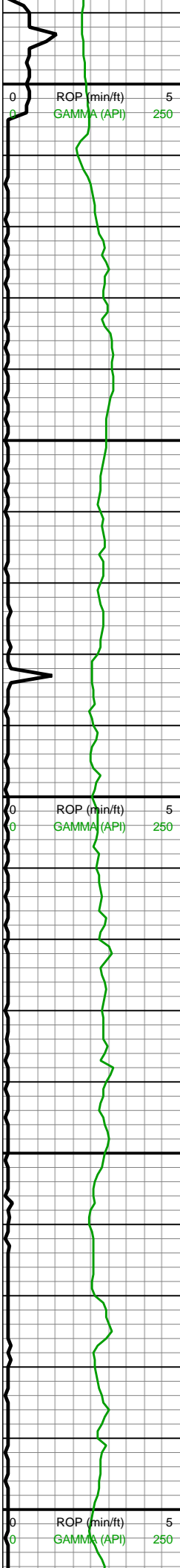
MD: 10,135'
INC: 91.23°
AZM: 0.26°
TVD: 7,172.76'
VS: 2,359.72'



9900-10000 CHK (75%):
gyshbn-lt gy, mot crm, sb
blky-sb plty, sl frm,
chky-rthy tex, mnr MRLST
lamn, mod calc; MRLST
(25%): dk gy-med gy, sb
tab-sb blky, sl hd-frm,
mnr CHK incl, tr imbd pp
pyr, hi calc

10000-10100 CHK
(80%): gyshbn-lt gy, mot
crm, sb blky-tab, fri-frm,
chky tex, mnr MRLST
lamn, mod calc; MRLST
(20%): dk gyshbn-dk gy,
sb tab-sb blky, hd-frm, tr
cal frac fl, mnr CHK incl,
hi calc, tr imbd pp pyr





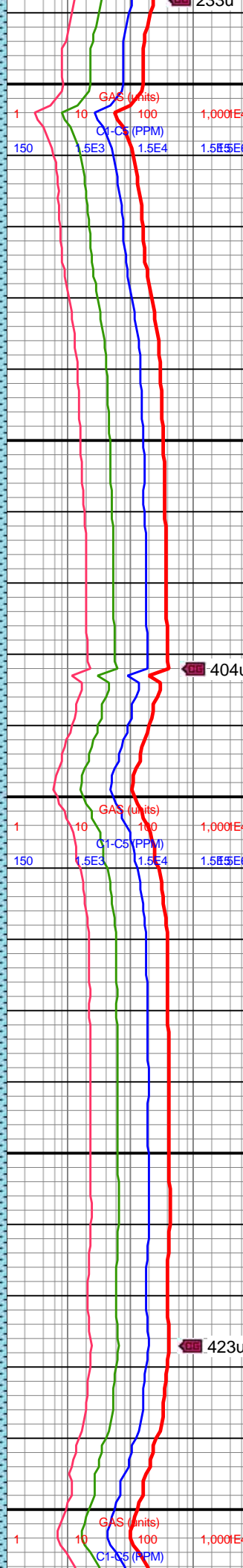
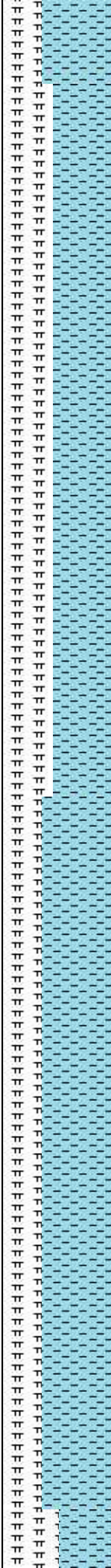
WOB: 51.6klbs
RPM: 0
SPM: 208
SPP: 5,103psi

MD: 10,419'
INC: 90.22°
AZM: 1.05°
TVD: 7,166.05'
VS: 2,640.88'

MD: 10,513'
INC: 90.18°
AZM: 0.88°
TVD: 7,165.72'
VS: 2,733.86'

WOB: 37klbs
RPM: 70
SPM: 209
SPP: 5,655psi

MD: 10,607'
INC: 89.96°
AZM: 0.61°

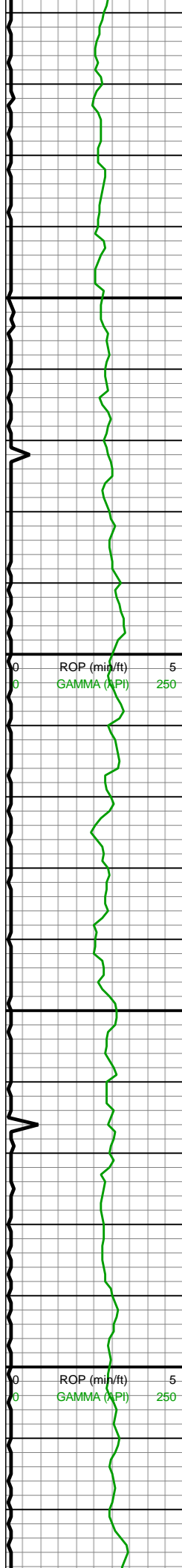


MRLST (35%): dk gy, mot
med gy, frm-sl hd, sl sm
tex, tab-sb blk, mod calc,
sme intbd CHK lam

10400-10500 CHK
(55%): gyshbn-lt gy, mot
crm, frm-sft, sb blk-sb
ply, rthy tex, v calc, mnr
MRLST lamn, mnr diss
pyrc frags; MRLST (45%):
dk gyshbn-dk gy, sb
tab-sb blk, mnr slty tex,
hd-frm, mnr CHK intbd,
mod calc

10500-10600 CHK
(65%): gyshbn-lt gy, mot
crm, sb blk-sb ply, chky
tex, frm-sl sft, mnr
MRLST lamn, hi calc, tr
imbd mic pyr; MRLST
(35%): dk gyshbn-dk gy,
brit, frm-sl hd, tab-sb
blk, tr CHK incl, mod
calc



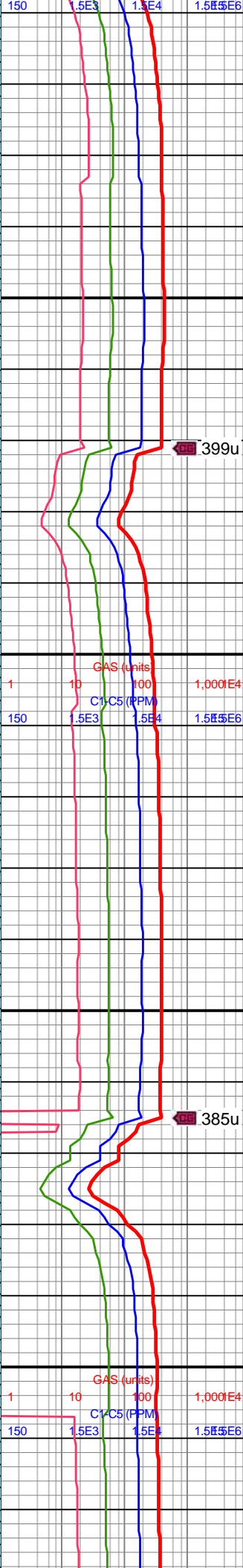
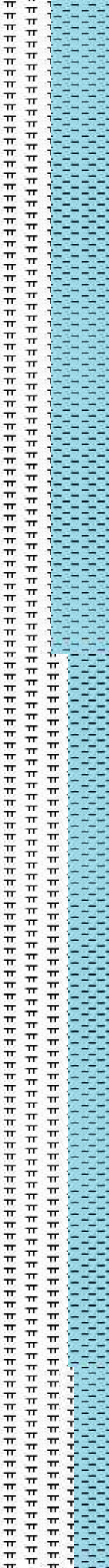


TVD: 7,165.61'
VS: 2,826.89'

MW IN: 10
VIS IN: 51
MW OUT: 10.0+
VIS OUT: 47

MD: 10,702'
INC: 90.22°
AZM: 0.44°
TVD: 7,165.46'
VS: 2,920.96'

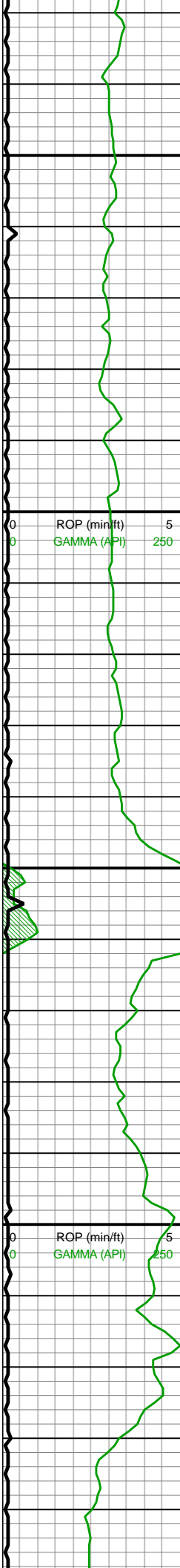
MD: 10,796'
INC: 90.26°
AZM: 0.09°
TVD: 7,165.07'
VS: 3,014.1'
WOB: 35.8klbs
RPM: 70
SPM: 206
SPP: 5,676psi



10600-10700 CHK
(50%): gyshbn, mot, sb
blky ctngs, sl frm-brit, sm
chky tex, v calc, tr free
CHK; MRLST (50%): dk
gy-med gy, mot, sl slty
tex, sl hd-frm, sb blky-tab
ctngs, sme CHK intbds,
mnr pyrc clus, mod calc

10700-10800 MRLST
(65%): dk gy-v dk gy, mot,
brit, sl slty tex, frm-sl hd,
tab-blky, mod calc, tr
CHK incl; CHK (35%):
med gy-gyshbn, frm-fri,
mod fis, sb blky-sb plty,
mnr MRLST lamn, hi
calc, tr diss mic pyr





10,830
10,840
10,850
10,860
10,870
10,880
10,890
10,900
10,910
10,920
10,930
10,940
10,950
10,960
10,970
10,980
10,990
11,000
11,010
11,020
11,030
11,040

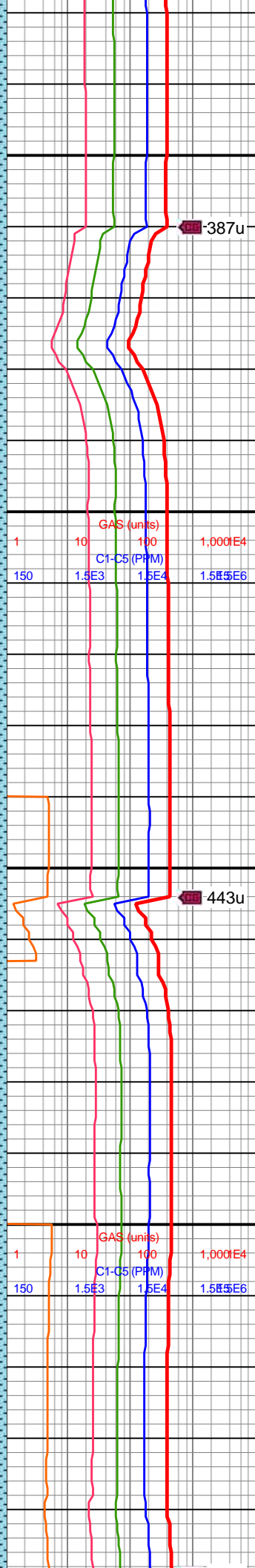
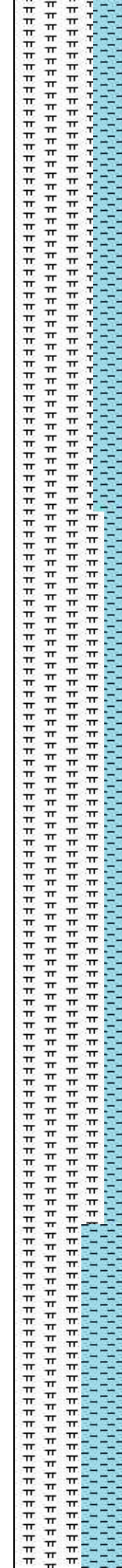
MD: 10,891'
INC: 90.4°
AZM: 359.65°
TVD: 7,164.52'
VS: 3,108.32'

MW IN: 10
VIS IN: 51
MW OUT: 10.0+
VIS OUT: 47

MD: 10,985'
INC: 90.44°
AZM: 359.38°
TVD: 7,163.83'
VS: 3,201.61'

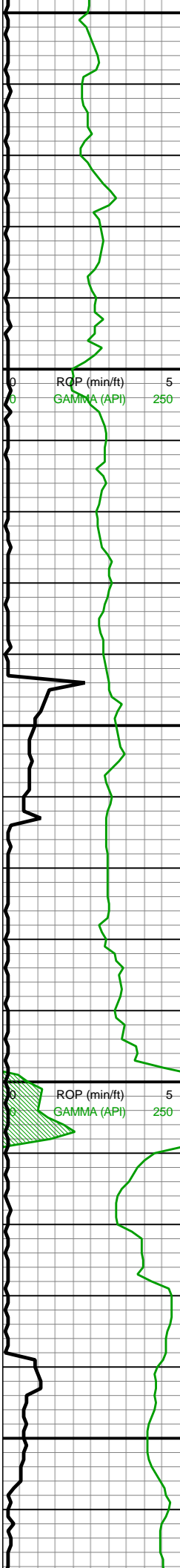
WOB: 36.1kbs
RPM: 70
SPM: 205
SPP: 5,600psi

MIN DEPT 7/31/2018



10800-10900 MRLST
(65%): dk gyshbn-dk gy,
frm-sl hd, brit, tab-sb
blky, mnr CHK incl/lamn,
mod calc; CHK (35%):
med gy-gyshbn, chky-sm
tex, sb blky-sb plty, frm-fri,
mnr MRLST lamn, tr
dissm mic pyr, hi calc

10900-11000 MRLST
(80%): dk gy, mot med
gy, frm-sl hd, tab-sb blky,
brit, tr pp mic pyr, tr CHK
incl, mod calc; CHK
(20%): gyshbn-med gy,
mot crm, sb blky-sb tab,
frm-sl sft, sme MRLST
lamn, hi calc



11,050
11,060
11,070
11,080
11,090
11,100
11,110
11,120
11,130
11,140
11,150
11,160
11,170
11,180
11,190
11,200
11,210
11,220
11,230
11,240
11,250
11,260

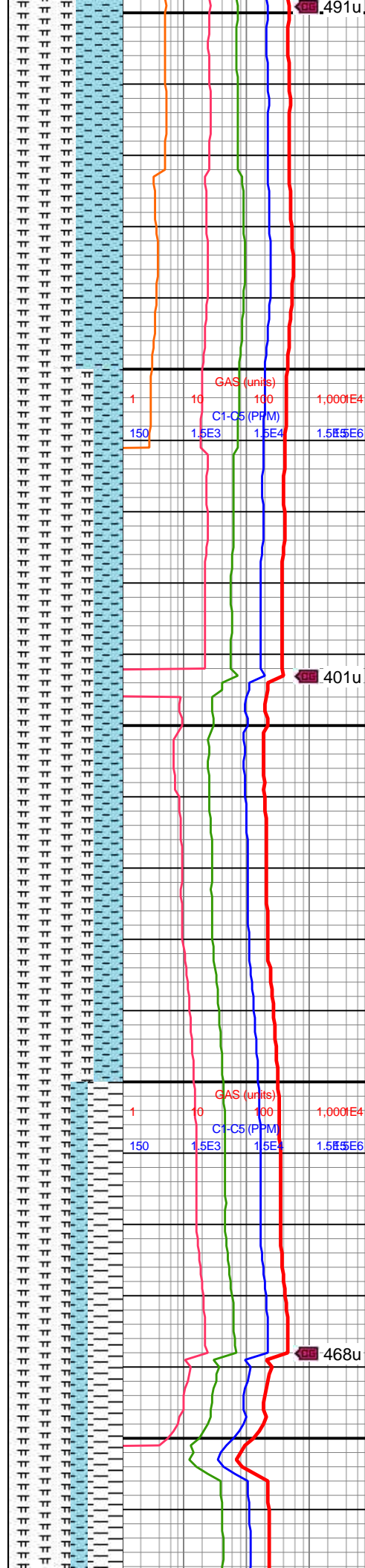
MD: 11,080'
INC: 91.67°
AZM: 359.21°
TVD: 7,162.08'
VS: 3,295.93'

MD: 11,174'
INC: 90.79°
AZM: 359.91°
TVD: 7,160.06'
VS: 3,389.19'

WOB: 33.8klbs
RPM: 70
SPM: 207
SPP: 5,695psi

MW IN: 10
VIS IN: 51
MW OUT: 10.0
VIS OUT: 48

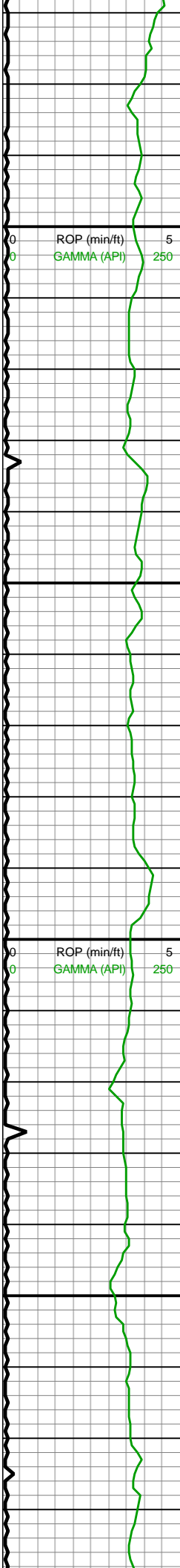
MD: 11,269'
INC: 90.13°



11000-11100 MRLST
(60%): dk gy, mot med
gy, brit, tab-sb blk, frm-sl
hd, mn CHK incl, mod
calc, mnr imbd pyr cls;
CHK (40%): gyshbn-med
gy, offwht, mot crm, frm-sl
sft, sb blk-sb tab, sme
MRLST lamn, v calc, mn
free CHK, mn pyr cls

11100-11200 MRLST
(60%): dk gy, mot med
gy, frm-sl hd, brit, tab-sb
blk, mod calc, tr CHK
incl; CHK (40%): gyshbn,
med gy, mot crm, sb
blk-sb tab, frm-sl sft,
mod fis, sme MRLST
lamn, tr diss mic pyr, hi
calc



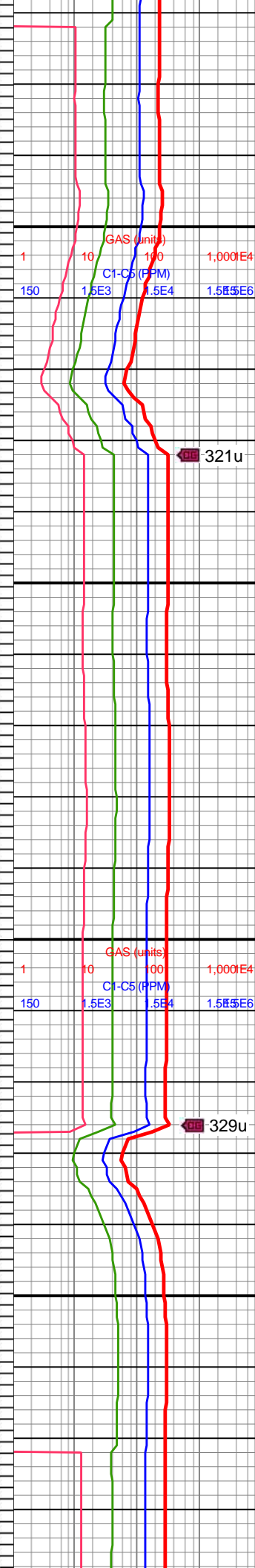
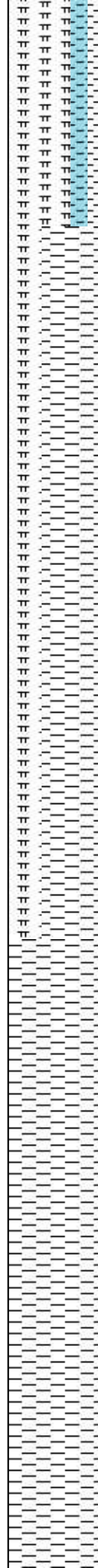


AZM: 1.76°
TVD: 7,159.3'
VS: 3,483.19'

MD: 11,363'
INC: 90°
AZM: 1.67°
TVD: 7,159.19'
VS: 3,575.98'

WOB: 34.1klbs
RPM: 69
SPM: 205
SPP: 5,703psi

MD: 11,458'
INC: 89.96°
AZM: 1.49°
TVD: 7,159.23'
VS: 3,669.79'

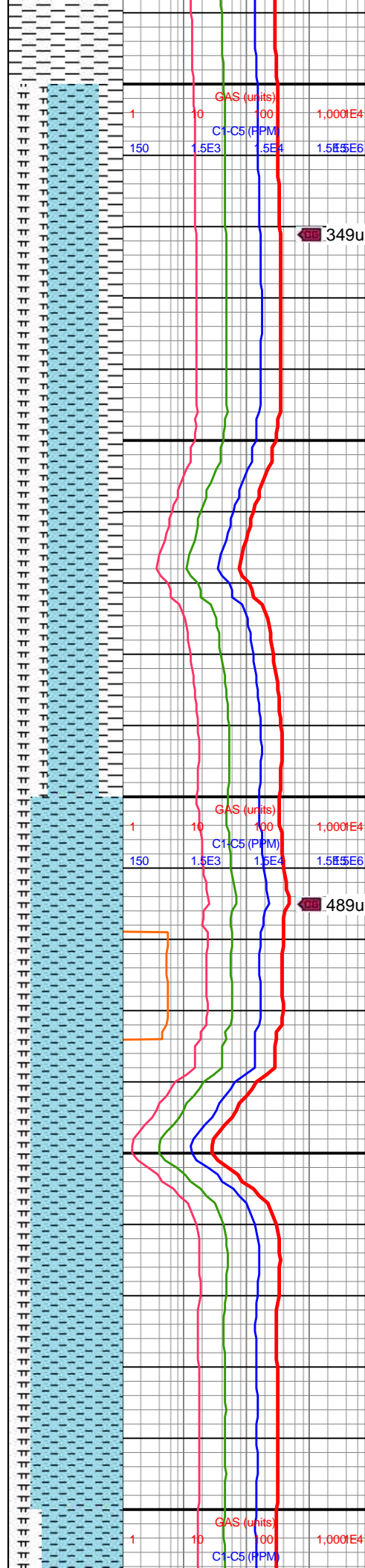
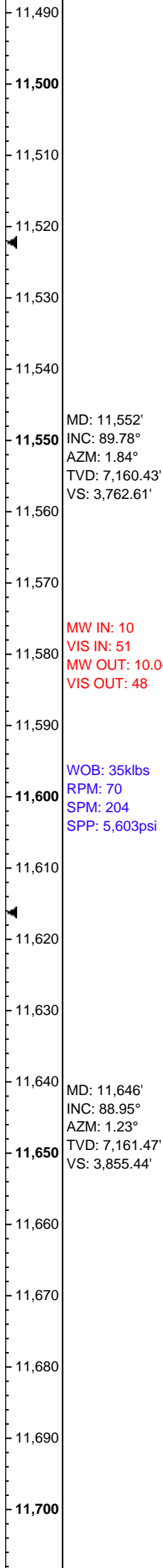
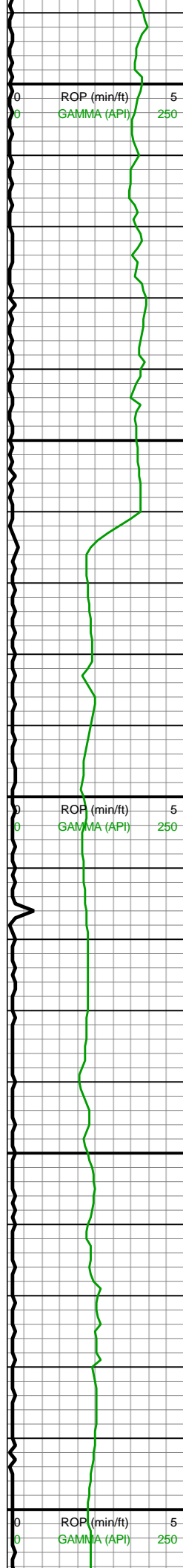


11200-11300 MRLST (55%): dk gy-med gy, frm, sb tab, tr CHK incl, mod calc; SH (30%): dk gy, plty-splt ctngs, sl slty tex, sl hd-frm, brit, sl-mod calc; CHK (15%): gyshbn-med gy, mot crm, sb blk-y-tab, frm-sl sft, tr mic pyr, hi calc

11300-11400 SH (70%): med gy-dk gy, tr gyshbn intbd, sl slty tex, frm-sl hd, blk-y-sb ang ctngs, vf lam, hi calc, tr pp mic pyr; MRLST (30%): dk gy, mot med gy, brit, frm-sl hd, tab-sb blk-y, mod calc, tr CHK incl

11400-11500 SH (100%): med gy-lt gy, tr

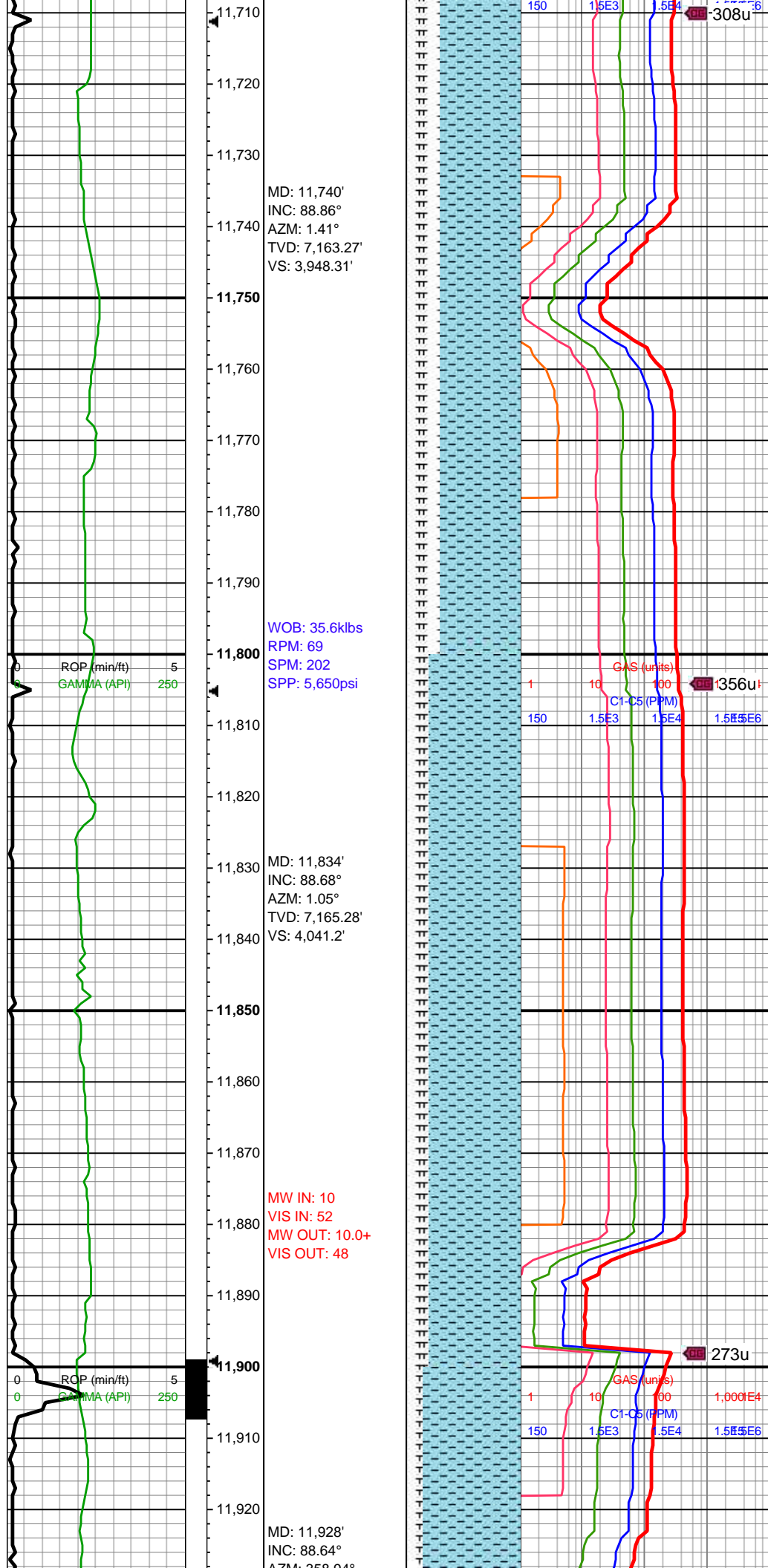


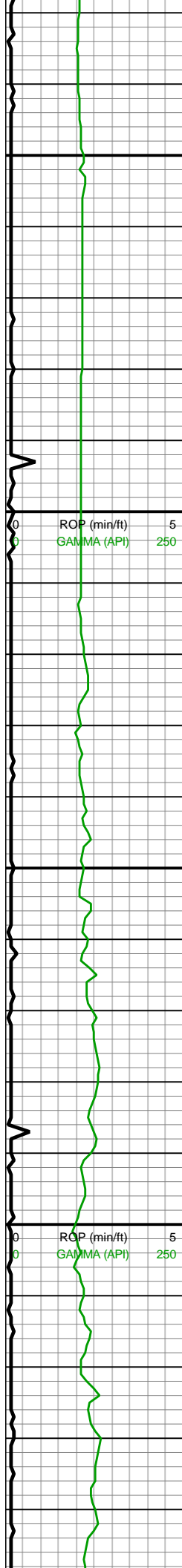


gyshbn intbd, sl sm-slt
tex, frm-sl hd, blk-sb ang
ctngs, mod srt, vf lam, tr
pp mic pyr, hi calc

11500-11600 CHK
(45%): gyshbn-med gy,
mot crm, sb blk-y-tab,
frm-sl sft, hi calc, tr mic
pyr; MRLST (35%): dk
gy-med gy, frm, sb tab, tr
CHK incl, mod calc; SH
(20%): dk gy, sl hd-frm,
pty-splt ctngs, sl slty tex,
sl-mod calc

11600-11700 CHK
(80%): med gy-gyshbn,
mot crm, frm-sl sft, mod
fis ctngs, sb blk-y-sb tab,
sme MRLST lamn, mnr
free CHK, v calc; MRLST
(20%): dk gy, mot med
gy, tab-sb blk-y, frm-sl hd,
mnr CHK incl. mod calc





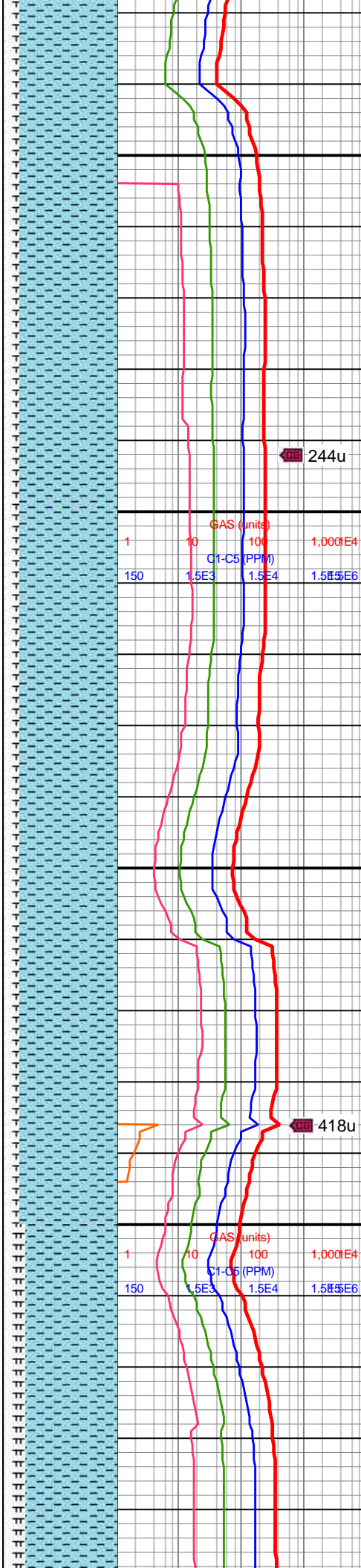
AZM: 358.94
TVD: 7,167.48'
VS: 4,134.37'

WOB: 34.4klbs
RPM: 70
SPM: 203
SPP: 5,612psi

MD: 12,022'
INC: 89.12°
AZM: 359.3°
TVD: 7,169.32'
VS: 4,227.73'

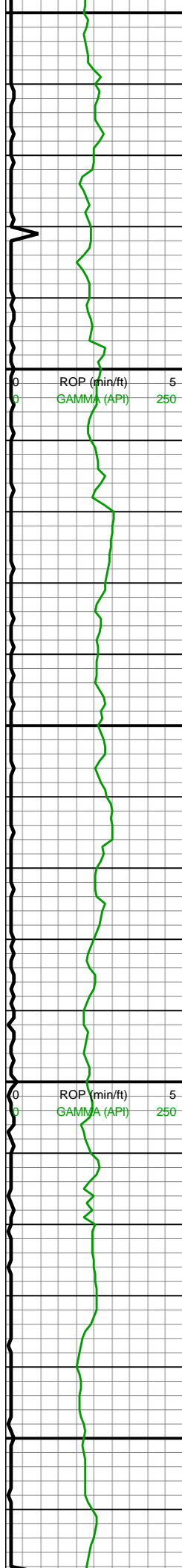
MW IN: 10
VIS IN: 53
MW OUT: 10.0+
VIS OUT: 48

MD: 12,117'
INC: 88.81°
AZM: 358.59°
TVD: 7,171.04'
VS: 4,322.11'



11900-12000 CHK
(85%): med gy-gyshbn,
mot crm, frm-sft, sb
blky-sb plty, tr imbd mic
pyr cls, hi calc, mnr free
CHK frags, mnr MRLST
lamn; MRLST (15%): dk
gy, mot med gy, tab-blky,
brit, frm-sl hd, mnr CHK
incl, tr lt brn cal frac fl,
mod calc

12000-12100 CHK
(85%): med gy-gyshbn,
mot crm, frm-sft, sb
blky-sb plty, hi calc, tr free
CHK frags, mnr MRLST
lamn; MRLST (15%): dk
gy, mot med gy, tab-blky,
brit, frm-sl hd, mnr CHK
incl, tr lt brn cal frac fl,
calc



12,150
12,160
12,170
12,180
12,190
12,200
12,210
12,220
12,230
12,240
12,250
12,260
12,270
12,280
12,290
12,300
12,310
12,320
12,330
12,340
12,350
12,360

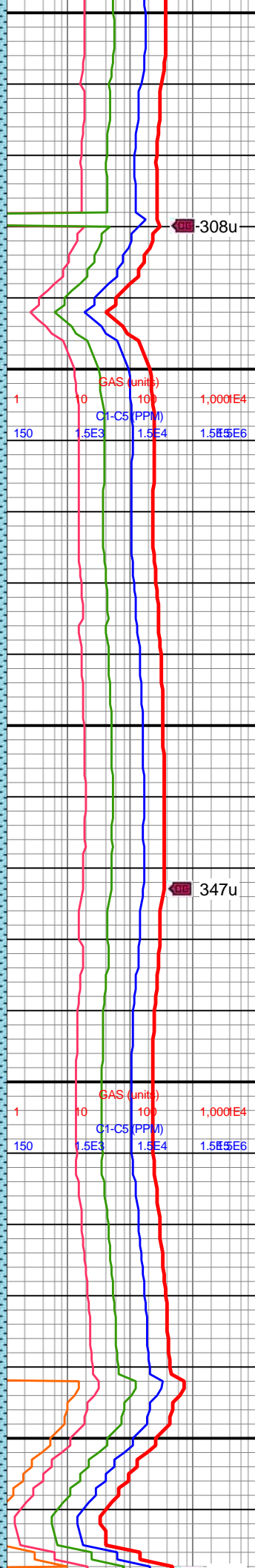
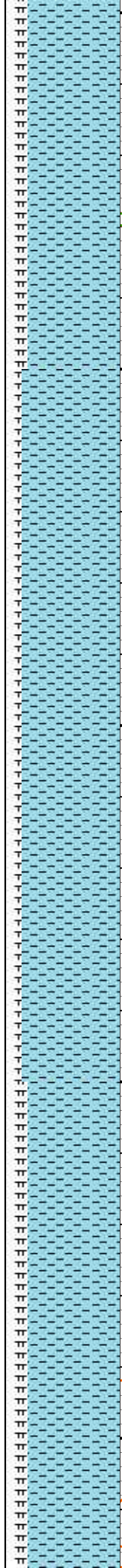
WOB: 34.4klbs
RPM: 70
SPM: 203
SPP: 5,708psi

MD: 12,211'
INC: 89.3°
AZM: 358.24°
TVD: 7,171.6'
VS: 4,415.58'

MW IN: 10
VIS IN: 54
MW OUT: 10.0+
VIS OUT: 48

MD: 12,305'
INC: 89.56°
AZM: 357.27°
TVD: 7,172.53'
VS: 4,509.18'

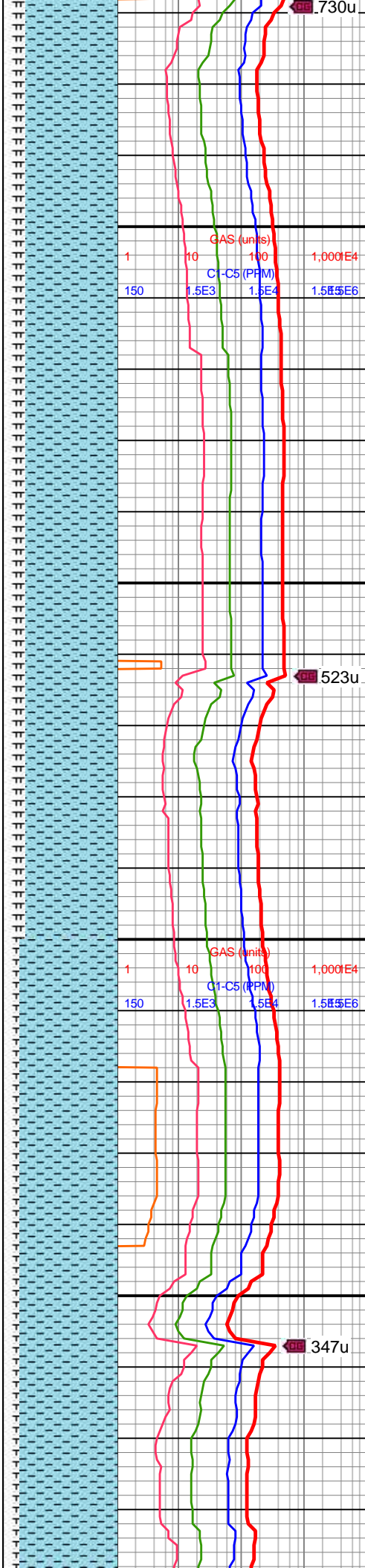
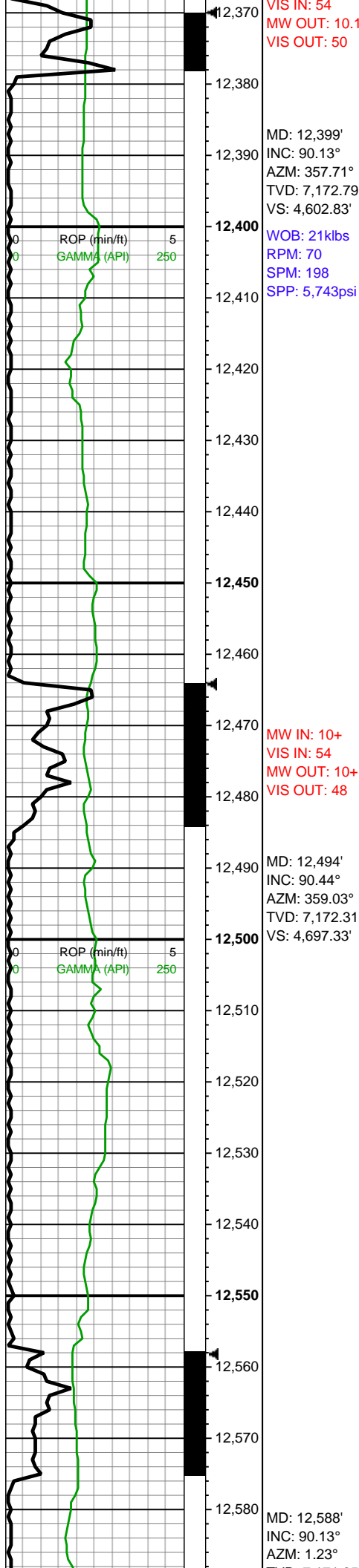
MW IN: 10



12100-12200 CHK
(80%): med gy-gyshbn,
mot crm, frm-sft, sb
blky-sb plty, mod calc, tr
free CHK frags, mn
MRLST lamn; MRLST
(20%): dk gy, mot med
gy, tab-blky, brit, frm-sl
hd, mnr CHK incl, tr lt brn
cal frac fl, calc

12200-12300 CHK
(85%): med gy-gyshbn,
mot crm, frm-sft, sb
blky-sb plty, mod calc, tr
free CHK frags, mn
MRLST lamn wi pyr incl;
MRLST (15%): dk gy, mot
med gy, tab-blky, brit,
frm-sl hd, mnr CHK incl,
tr cal frac fl, calc



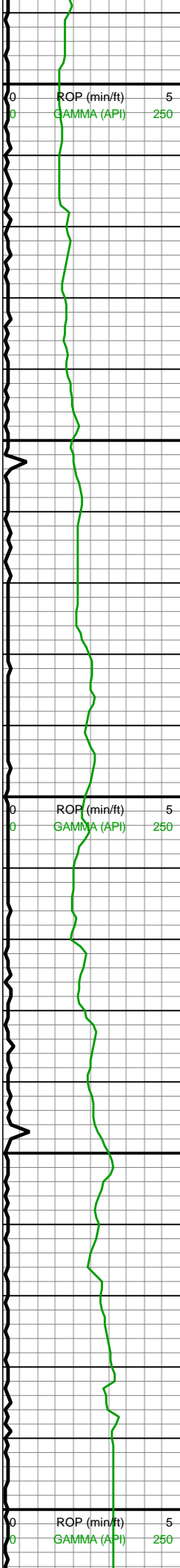


12300-12400 CHK
(80%): gyshbn mot
crm-med gy, frm-sft, sb
blky-sb plty, mod calc, tr
free CHK frags, mn
MRLST lamn; MRLST
(20%): dk gy, mot med
gy, tab-blky, brit, frm-sl
hd, mn CHK incl, tr cal
frac fl, hi calc

12400-12500 CHK
(80%): predy med gy,
gyshbn mot crm, frm-fri,
sb blky-sb plty, mod-hi
calc, tr free CHK frags,
mn MRLST lamn;
MRLST (20%): dk gy, mot
med gy, tab-blky, brit,
frm-sl hd, com CHK incl,
tr cal frac fl, hi calc

12500-12600 CHK
(85%): predy med gy,
gyshbn mot crm, frm-fri,
sb blky-sb plty, mod-hi
calc, tr free CHK frags,
mn MRLST lamn;
MRLST (15%): dk gy, mot





TVD: 7,171.85'
VS: 4,790.49'

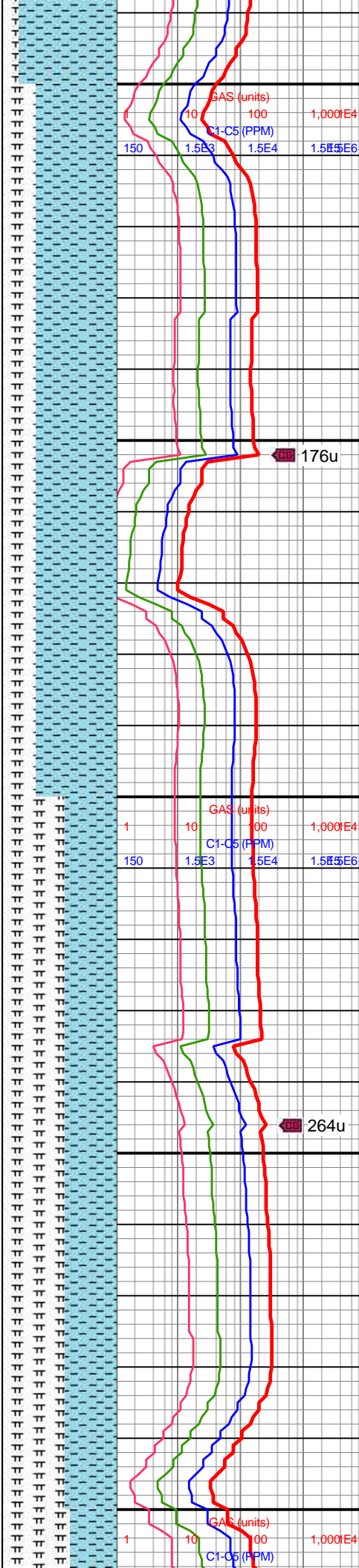
WOB: 26klbs
RPM: 69
SPM: 197
SPP: 5,698psi

MD: 12,683'
INC: 90.09°
AZM: 0.97°
TVD: 7,171.66'
VS: 4,884.43'

MW IN: 10
VIS IN: 54
MW OUT: 10.1
VIS OUT: 50

MD: 12,777'
INC: 90.22°
AZM: 0.44°
TVD: 7,171.41'
VS: 4,977.47'

WOB: 25klbs
RPM: 70
SPM: 199
SPP: 5,711psi

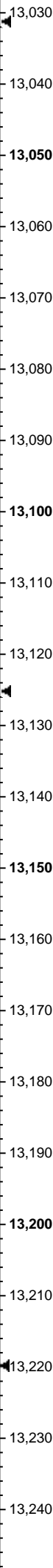
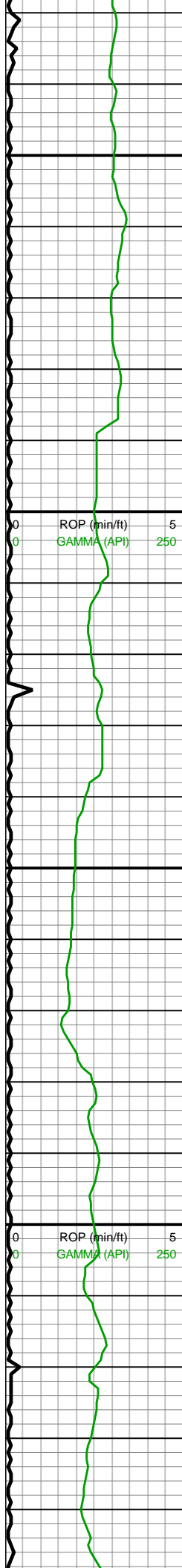


med gy, tab-blky, brit,
frm-sl hd, sme sm tex, tr
scat bent, mnR CHK incl,
hi calc

12600-12700 CHK
(70%): predy med gy,
gyshbn mot crm, tr free
offwht CHK frags, frm-fri,
sb blky-sb plty, mod-hi
calc, mnR MRLST lamn;
MRLST (30%): dk gy, mot
med gy, tab-blky, brit,
frm-sl hd, sme sm tex, tr
scat bent, mnR CHK incl,
mod-hi calc

12700-12800 MRLST
(55%): dk gy, mot med
gy, tab-blky, brit, frm-sl
hd, sme sm tex, tr scat
bent, incrg CHK intbds,
mod-hi calc; CHK (45%):
predy med gy, gyshbn
mot crm, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, mod-hi calc,
mnR MRLST lamn





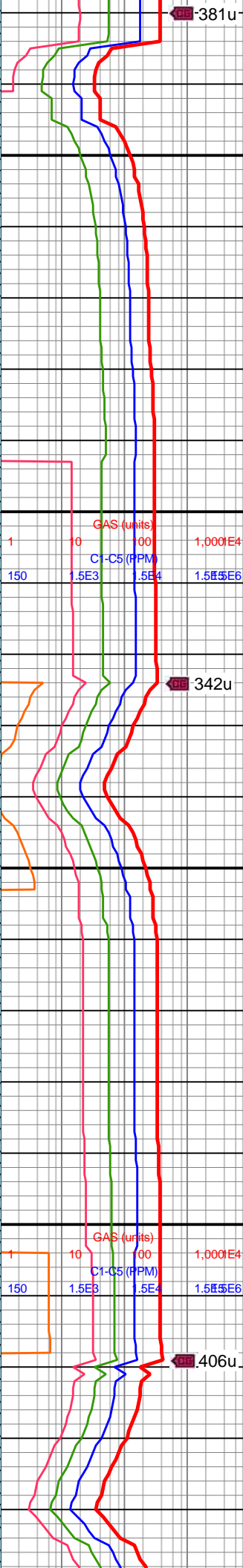
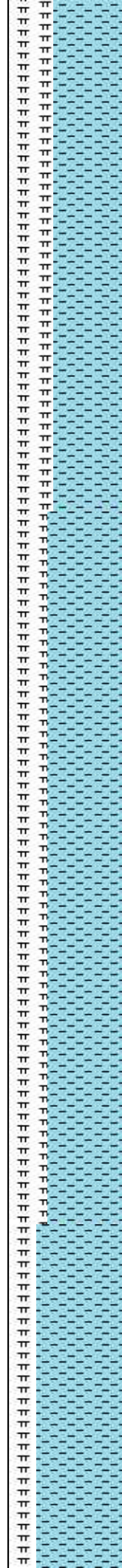
MD: 13,061'
INC: 90°
AZM: 0.09°
TVD: 7,170.43'
VS: 5,258.98'

MD: 13,155'
INC: 89.47°
AZM: 0.17°
TVD: 7,170.87'
VS: 5,352.15'

WOB: 32klbs
RPM: 70
SPM: 193
SPP: 5,690psi

MW IN: 10
VIS IN: 53
MW OUT: 10.1
VIS OUT: 50

MD: 13,250'
INC: 88.77°



13000-13100 CHK
(60%): med gy, gyshbn
mot crm ip, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, mnrlst
lamn, hi calc; MRLST
(40%): dk gy, mot med gy
ip, tab-blky, brit, frm-sl hd,
sme sm tex, CHK intbds,
mod-hi calc

13100-13200 CHK
(65%): med gy, gyshbn
mot crm ip, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, mnrlst
lamn, hi calc; MRLST
(35%): dk gy, mot med gy
ip, tab-blky, brit, frm-sl hd,
sme sm tex, mnrlst
intbds, hi calc



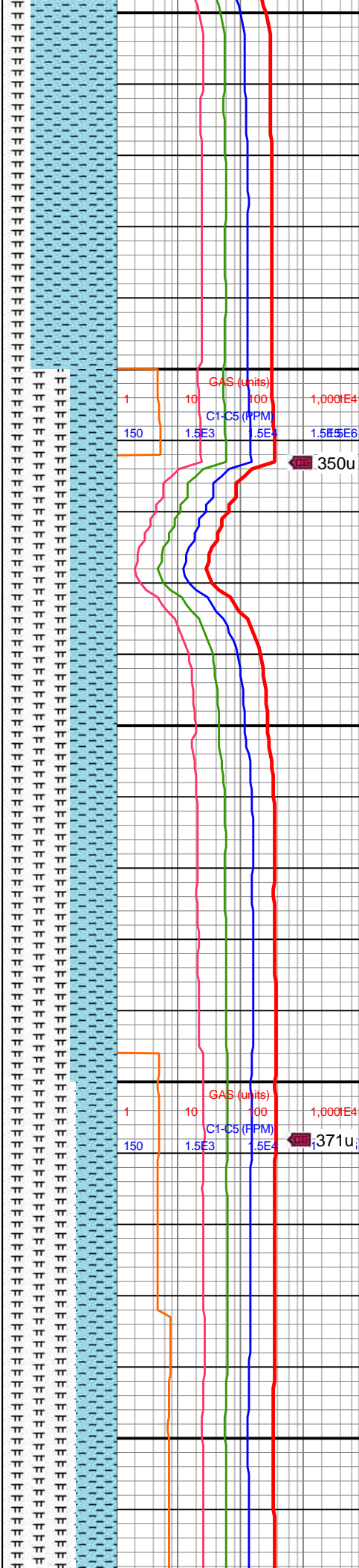


13,250 AZM: 360°
TVD: 7,172.33'
VS: 5,446.31'

13,350 MD: 13,344'
INC: 88.51°
AZM: 0.09°
TVD: 7,174.56'
VS: 5,539.47'

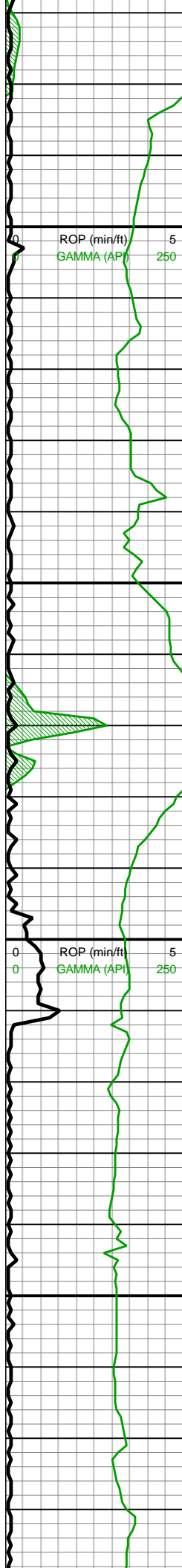
13,400 WOB: 30klbs
RPM: 69
SPM: 193
SPP: 5,693psi

13,450 MD: 13,438'
INC: 88.55°
AZM: 359.82°
TVD: 7,176.97'
VS: 5,632.65'



13200-13300 CHK
(75%): med gy, gyshbn
mot crm ip, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, mnrl MRLST
lamn, hi calc; MRLST
(25%): predy dk gy, mot
med gy ip, tab-blky, brit,
frm-sl hd, sme sm tex,
mnrl CHK intbds, hi calc

13300-13400 MRLST
(60%): predy dk gy, mot
med gy ip, tab-blky, brit,
frm-sl hd, sme sm tex,
mnrl CHK intbds, hi calc;
CHK (40%): med gy,
gyshbn mot crm ip, tr free
offwht CHK frags, frm-fri,
sb blky-sb plty, calc, incrg
MRLST lamn, tr SH

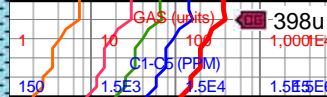


MW IN: 10
VIS IN: 53
MW OUT: 10.1
VIS OUT: 50

MD: 13,533'
INC: 88.11°
AZM: 359.74°
TVD: 7,179.74'
VS: 5,726.85'

WOB: 55klbs
RPM: 13
SPM: 192
SPP: 4,983psi

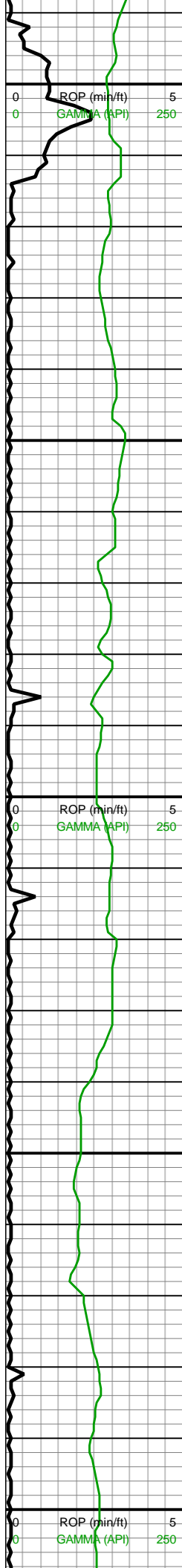
MD: 13,627'
INC: 88.99°
AZM: 1.93°
TVD: 7,182.12'
VS: 5,819.82'



13400-13500 MRLST
(65%): dk gy, mot med gy
ip, tab-blky, brit, frm-sl hd,
sme sm tex, mnr CHK
intbds, hi calc; CHK
(35%): med gy, gyshbn
mot crm ip, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, calc, MRLST
lamn ip, tr dk SH

13500-13600 MRLST
(55%): dk gy, mot med gy
ip, tab-blky, brit, frm-sl hd,
sme sm tex, mnr CHK
intbds, hi calc; CHK
(45%): gyshbn mot crm,
med gy, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, calc, MRLST
lamn ip, incrg tr dk SH

13600-13700 MRLST
(55%): dk gy, mot med gy
ip, tab-blky, brit, frm-sl hd,
sme sm tex, mnr CHK
intbds, hi calc; CHK
(45%): gyshbn mot crm,



MW IN: 10
VIS IN: 53
MW OUT: 10.1
VIS OUT: 49

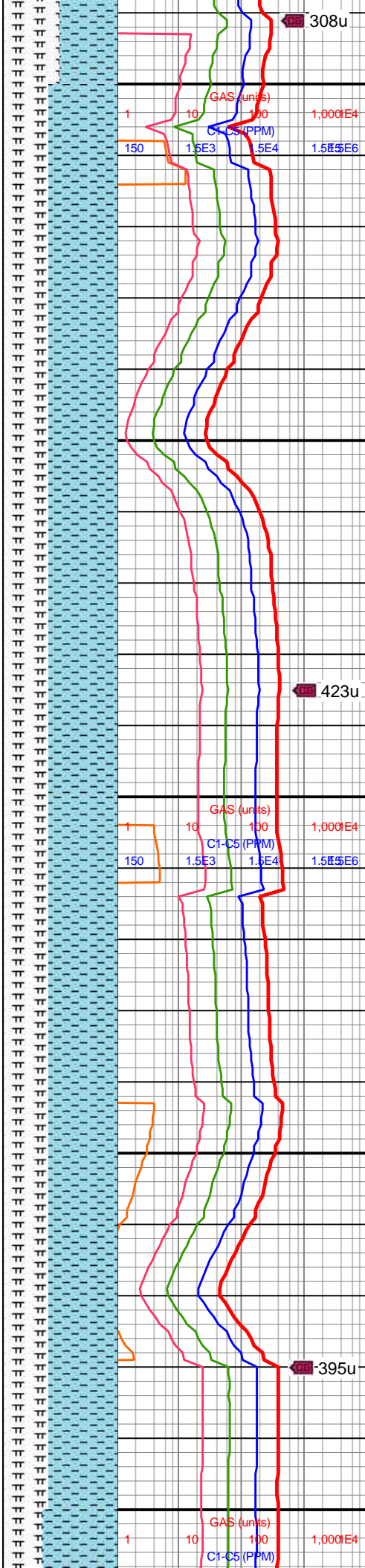
MD: 13,722'
INC: 90.18°
AZM: 0.88°
TVD: 7,182.8'
VS: 5,913.67'

WOB: 31klbs
RPM: 69
SPM: 190
SPP: 5,677psi

MD: 13,816'
INC: 89.69°
AZM: 0.97°
TVD: 7,182.91'
VS: 6,006.66'

MW IN: 10
VIS IN: 52
MW OUT: 10.1
VIS OUT: 49

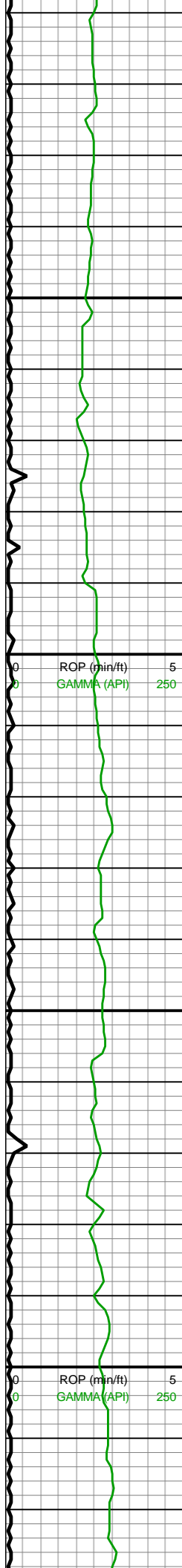
MD: 13,910'
INC: 89.52°



med gy, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, calc, MRLST
lamn ip, decrng tr dk SH

13700-13800 CHK
(60%): gyshbn mot crm,
med gy, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, calc, MRLST
lamn ip, decrng tr dk SH;
MRLST (40%): dk gy, mot
med gy ip, tab-blky, brit,
frm-sl hd, sme sm tex,
mnr CHK intbds, hi calc

13800-13900 CHK
(60%): predy gyshbn mot
crm, med gy, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, calc, MRLST
lamn ip, decrng tr dk SH;
MRLST (40%): dk gy, mot
med gy ip, tab-blky, p srt,
brit, frm-sl hd, sme sm
tex, mnr CHK intbds, hi
calc

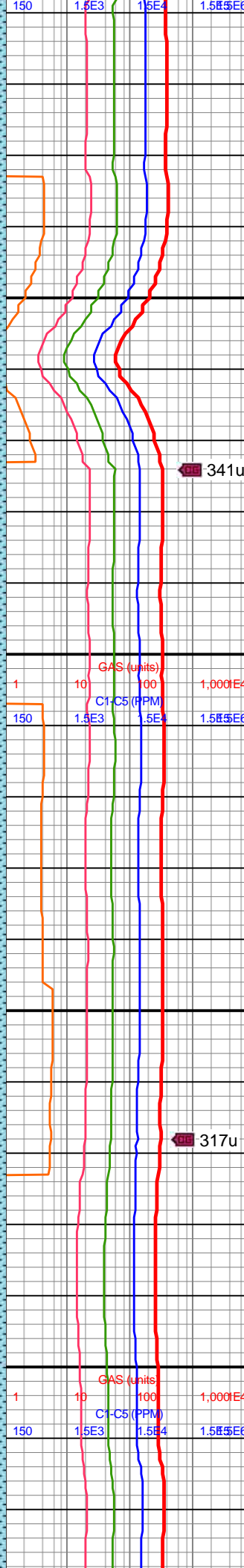


AZM: 0.61°
TVD: 7,183.56'
VS: 6,099.68'

WOB: 26klbs
RPM: 70
SPM: 192
SPP: 5,785psi

MD: 14,005'
INC: 89.43°
AZM: 0.53°
TVD: 7,184.43'
VS: 6,193.73'

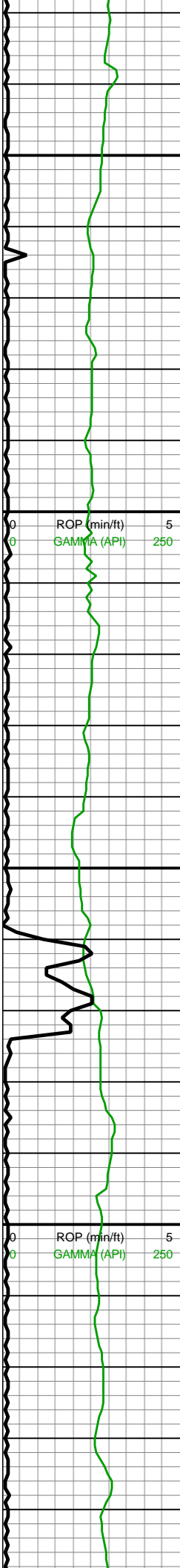
MD: 14,100'
INC: 89.17°
AZM: 0.44°
TVD: 7,185.59'
VS: 6,287.81'



13900-14000 CHK
(65%): predy gyshbn mot
crm, med gy, tr free offwht
CHK frags, frm-fri, sb
blky-sb plty, calc, MRLST
lamn ip, decrng tr dk SH;
MRLST (35%): dk gy, mot
med gy ip, tab-blky, p srt,
brit, frm-sl hd, sme sm
tex, mntr CHK intbds,
hi-mod calc

14000-14100 CHK
(55%): predy gyshbn mot
crm, med gy, tr free offwht
CHK frags, frm-fri, sb
plty-sb blky, calc, MRLST
lamn ip; MRLST (45%):
dk gy, mot med gy ip,
tab-blky, brit, frm-sl hd,
sme sm tex, tr pp pyr,
mntr CHK intbds, mod
calc



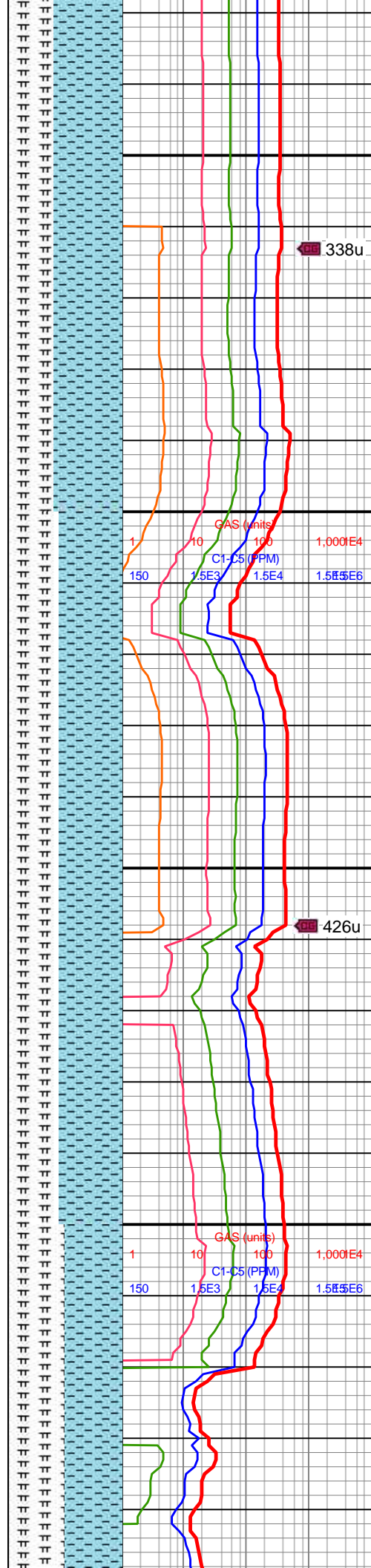


14,130
14,140
14,150
14,160
14,170
14,180
14,190
14,200
14,210
14,220
14,230
14,240
14,250
14,260
14,270
14,280
14,290
14,300
14,310
14,320
14,330
14,340

MD: 14,194'
INC: 89.03°
AZM: 0.7°
TVD: 7,187.07'
VS: 6,380.87'
WOB: 32klbs
RPM: 59
SPM: 187
SPP: 5,685psi

MW IN: 10
VIS IN: 52
MW OUT: 10.1
VIS OUT: 50

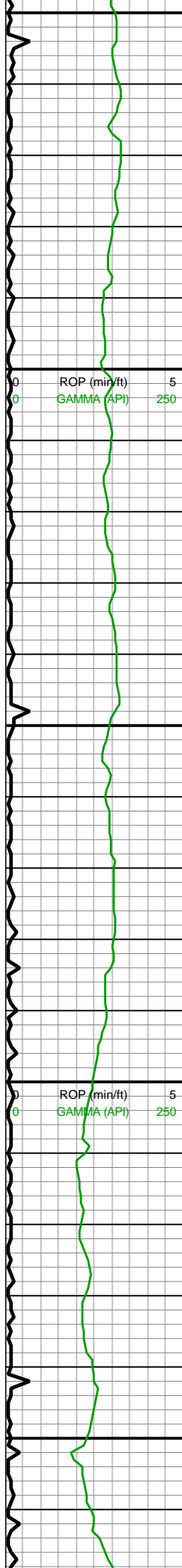
MD: 14,289'
INC: 90.04°
AZM: 359.56°
TVD: 7,187.84'
VS: 6,475.02'



14100-14200 CHK
(60%): predy gyshbn mot
crm, med gy, tr free offwht
CHK frags, frm-fri, sb
ply-sb blk, calc, MRLST
lamn ip; MRLST (40%):
dk gy, mot med gy ip,
tab-blky, brit, frm-sl hd,
sme sm tex, tr pp pyr,
mnr CHK intbds, hi-mod
calc

14200-14300 CHK
(55%): predy gyshbn mot
crm, med gy, frm-fri, tr
free offwht CHK frags, sb
ply-sb blk, calc, MRLST
lamn ip; MRLST (45%):
dk gy, mot med gy ip,
tab-blky, brit, frm-sl hd,
sme sm tex, mnr CHK
intbds, hi-mod calc





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
14,520
14,530
14,540
14,550
14,560

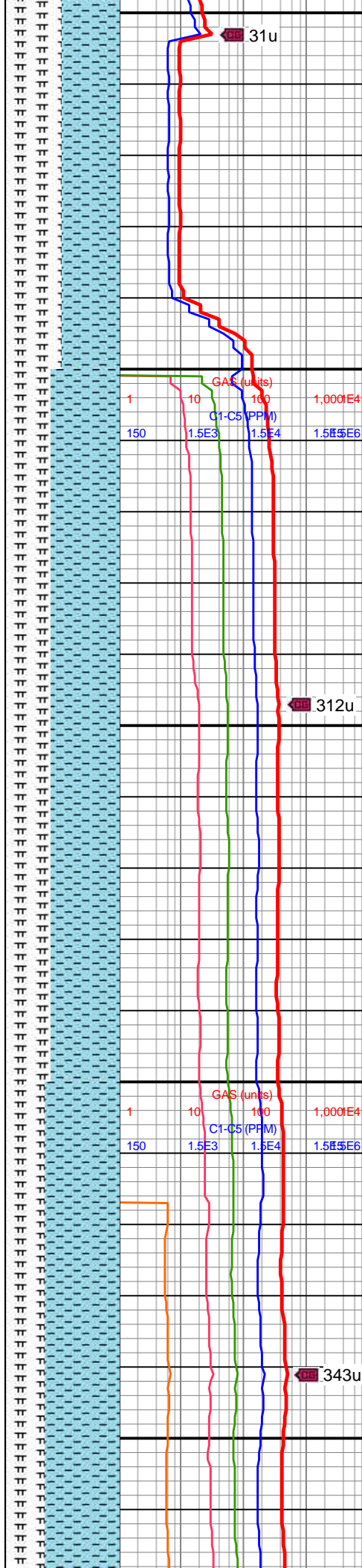
MW IN: 10
VIS IN: 52
MW OUT: 10.1
VIS OUT: 50

MD: 14,383'
INC: 89.82°
AZM: 359.21°
TVD: 7,187.95'
VS: 6,568.35'

WOB: 30klbs
RPM: 69
SPM: 185
SPP: 5,560psi

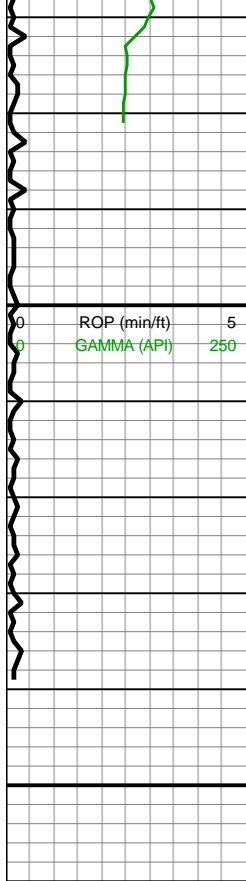
MD: 14,478'
INC: 89.6°
AZM: 359.3°
TVD: 7,188.43'
VS: 6,662.69'

MD: 14,572'
INC: 89.34°
AZM: 359.3°



14300-14400 CHK
(50%): med gy, sme
gyshbn mot crm, frm-fri, tr
free offwht CHK frags, sb
ply-sb blkly, calc, MRLST
lamn ip; MRLST (50%):
dk gy, mot med gy ip,
tab-blky, brit, frm-sl hd,
sme sm tex, mnR CHK
intbds, tr cal frac fill,
hi-mod calc

14400-14500 CHK
(60%): med gy, sme
gyshbn mot crm, frm-fri, tr
free offwht CHK frags, sb
ply-sb blkly, calc, MRLST
lamn ip; MRLST (40%):
dk gy, mot med gy ip,
tab-blky, brit, frm-sl hd,
sme sm tex, mnR CHK
intbds, tr cal frac fill,
hi-mod calc



14,570
14,580
14,590
14,600
14,610
14,620
14,630
14,640
14,650
14,660

TVD: 7,189.3'
VS: 6,756.02'

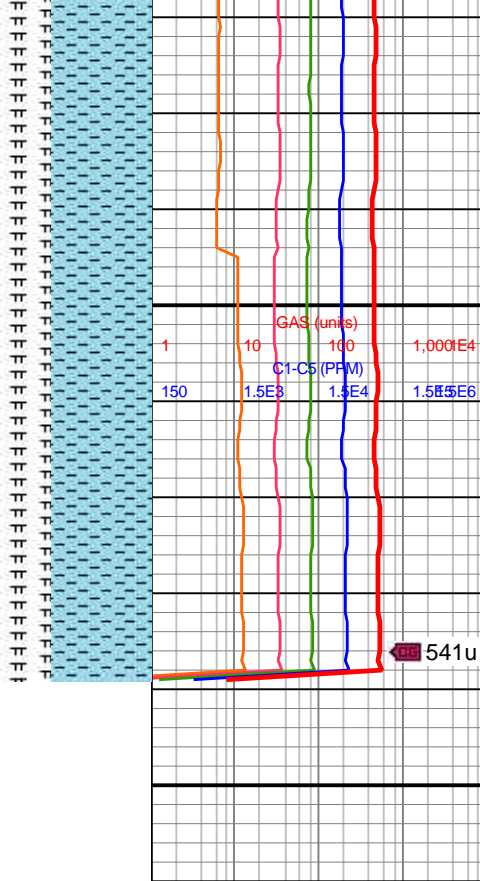
WOB: 26klbs
RPM: 70
SPM: 186
SPP: 5,674psi

MW IN: 10
VIS IN: 52
MW OUT: 10.1
VIS OUT: 49

Projection to bit:
MD: 14,639'
INC: 89.34°
AZM: 359.3°
TVD: 7,190.07'
VS: 6,822.55'

TD @ 14639'
MD (7190' TVD)
on 7/31/2018

End of vertical
log



14500-14639 CHK
(65%): med gy, gyshbn
mot crm ip, frm-fri, tr free
offwht CHK frags, sb
plty-sb blkly, mod calc,
MRLST lamn ip; MRLST
(35%): dk gy, mot med gy
ip, tab-blky, brit, frm-sl hd,
sme sm tex, mnr CHK
intbds, tr cal frac fill,
hi-mod calc

