

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Fiducial 6-62-34-4956 BH2

Location SWSW SEC 34-T6N-R62W

State CO

County WELD

Country USA

Rig Number NABORS M22

API Number 05-123-39297

AFE # 18775D

Region DJ BASIN

Field WATTENBERG

Spud Date 9/24/2014

Drilling Completed 10/6/2014

Surface Coordinates SWSW SEC 34-T6N-R62W
1045' FSL 350' FWL

Bottom Hole Coordinates PROJECTED:
NESE SEC 35-T6N-R62W
1657' FSL 500' FEL

Ground Elevation 4677'

K.B. Elevation 4699'

Logged Interval 4800' **To** 5910'

Total Depth 16200'

Formation Shannon

Type of Drilling Fluid LSND

Other Symbols

Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

- E EARTHY
- F FENESTRAL
- F FRACTURE
- X INTERCRYSTALLINE
- INTEROOLITIC
- MOLDIC

ORGANIC

P PINPOINT

V VUGGY

Engineering

- BIT CHANGE
- CONNECTION (LEFT)
- CONNECTION (RIGHT)
- CONNECTION GAS
- TRIP GAS
- DOWN TIME GAS
- CORE - LOST
- CORE - RECOVERED
- DST INTERVAL



FAULT



FORMATION TOP



GAS SHOW



OIL SHOW



MN DEPTH



MN DEPTH (RIGHT)



NORMAL FAULT



OVERTURNED STRATA



REVERSE FAULT



CASING



SIDEWALL CORE (LEFT)



SIDEWALL CORE (RIGHT)



SLIDE



SURVEY



DRILL STEM TEST



WIRELINE TESTED - LEFT



WIRELINE TESTED - RT

Rounding

- ANGULAR
- ROUNDED
- SUBANG
- SUBRND

Textures

- BOUNDSTONE
- CHALKY
- CRYPTOXLN

E EARTHY

FX FINELYXLN

GS GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKSTONE

Sorting

M MODERATE

P POOR

W WELL

Accessories

Fossils

GASTROPOD

INOCERAMUS

ARGILLITE GRAIN

B BENTONITE

HEAVY MINERAL

K KAOLIN

Stringer

ALGAE
AMPHIPORA
BELEMNITE
BIOCLASTIC
BRACHIOPOD
BRYOZOA
CEPHALOPOD
CORAL
CRINOID
ECHINOID
FISH
FORAMINIFERA
FOSSIL

OOLITE
OSTRACOD
PELECYPOD
PELLET
PISOLITE
PLANT REMAINS
PLANT SPORES
SCAPHOPOD
STROMATOPOROID

Minerals

ANHYDRITIC
ARGILLACEOUS

BITUMENOUS SUBSTANCE
BRECCIA FRAGMENTS
CALCAREOUS
CARBONACEOUS FLAKES
CHTDK
CHTLT
COAL - THIN BEDS
DOLOMITIC
FELDSPAR
FERRUGINOUS PELLET
FERRUGINOUS
GLAUCONITE
GYPSIFEROUS

MARCASITE
MARLSTONE
MICACEOUS
MINERAL CRYSTALS
NODULES
PHOSPHATE PELLETS
PYRITE
SALT CAST
SANDY
SIDERITE
SILICEOUS
SILTY
TUFFACEOUS

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

Rock Types

UNKNOWN
ANHYDRITE
BENTONITE
BRECCIA
CEMENT
CHALK
CHERT
CLAY CHOKE SAND
CLAYSTONE

COAL
CONGLOMERATE
DOLOMITE
DOLOMITIC LIMESTONE
GRANITE
GYPSUM
IGNEOUS
LIMESTONE
SIDERITE or LIMONITE

MARLSTONE
METAMORPHIC
NO SAMPLE
SALT
SALT- PEPPER SAND
SANDSTONE
SHALE
SHALE COLORED
SHALE GRAY

SHALY SANDSTONE
SHALY SILTSTONE
SILTSTONE
SILTY SHALE
TILL
TUFF
WELDED TUFF

Operator

Company Bill Barrrt Corp.

Address 1099 18th Street, Suite 2300
Denver, CO 80202

Geologist

Name Scott Hampton

Company Bill Barrett Corp.

Address 1099 18th Street, Suite 2300
Denver, CO 80202

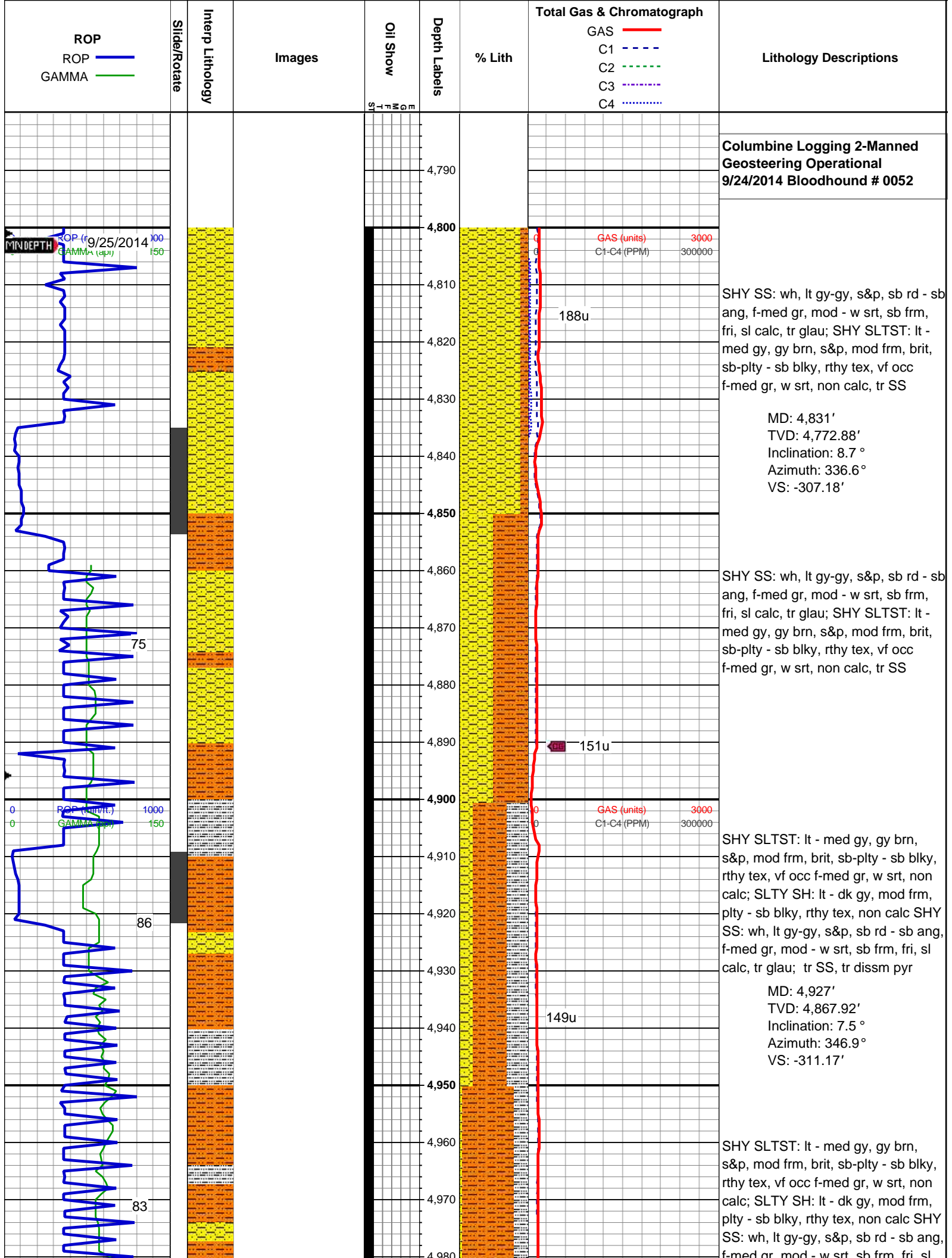
Zone Color Coding

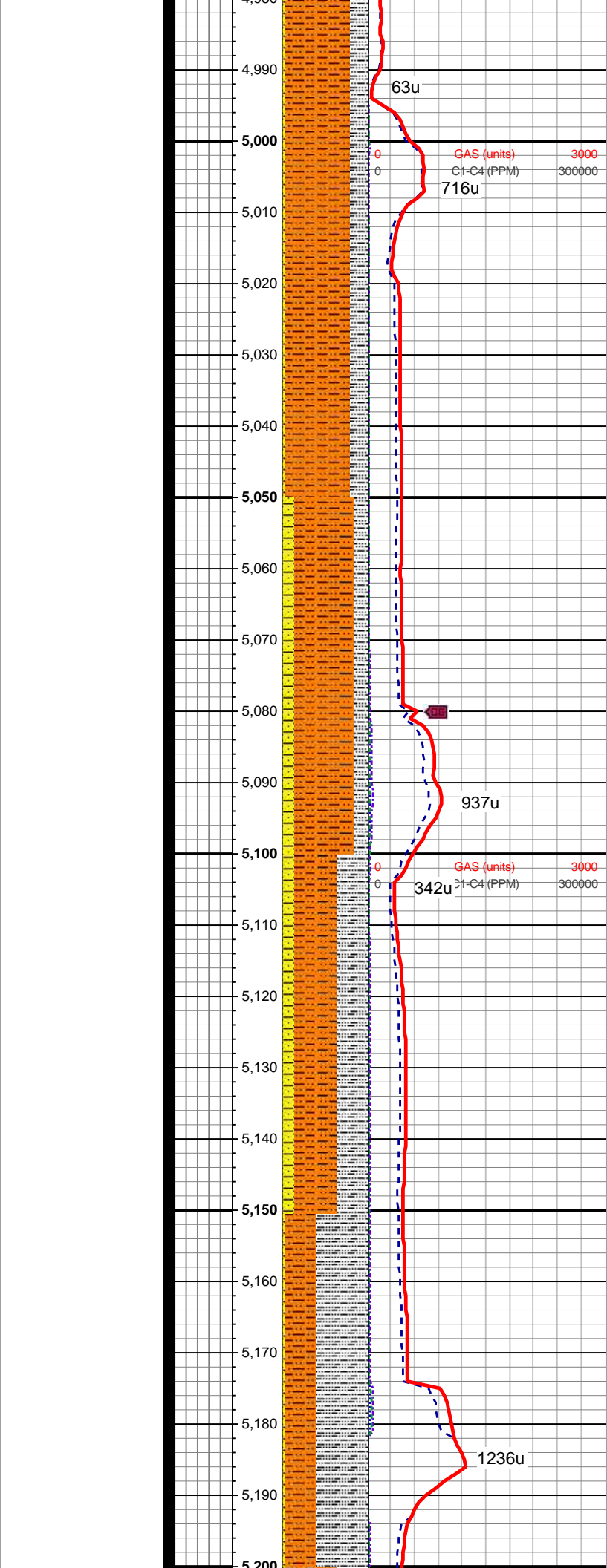
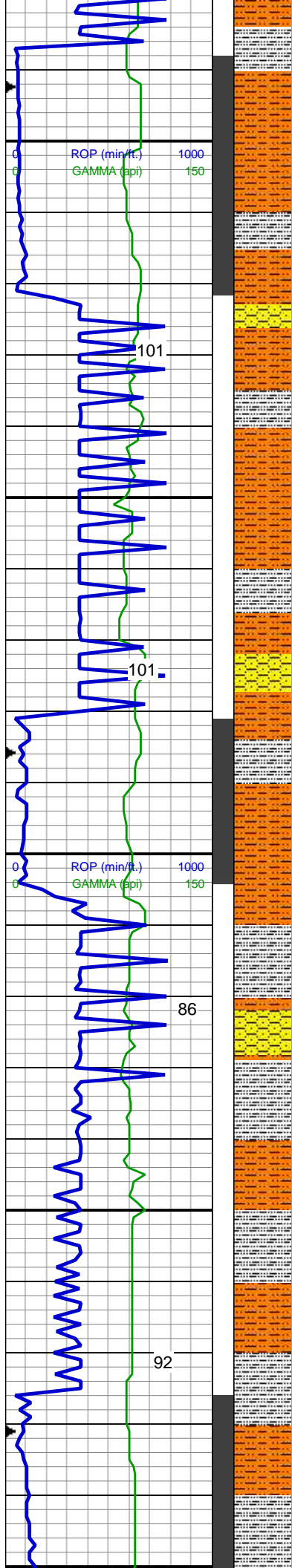
Oil	Condensate	Gas
Note	Core	Pressure
Error	Water	Seal

Other

Charles Trodick Senior Wellsite Geologist

Mark Raimo Senior Wellsite Geologist





med gr, med w srt, sb blk, m, s
calc, tr glau; tr SS, tr diss pyr

In/Out Mud Wt: 9.5/9.5 Vis 43/44

MD: 5,021'
TVD: 4,961.35'
Inclination: 5.2 °
Azimuth: 6.4 °
VS: -311.83'

SHY SLTST: lt - med gy, gy brn,
s&p, mod frm, brit, sb-pty - sb blk,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blk, rthy tex, non calc SHY
SS: wh, lt gy-gy, s&p, sb rd - sb ang,
f-med gr, mod - w srt, sb frm, fri, sl
calc, tr glau; tr SS, tr diss pyr

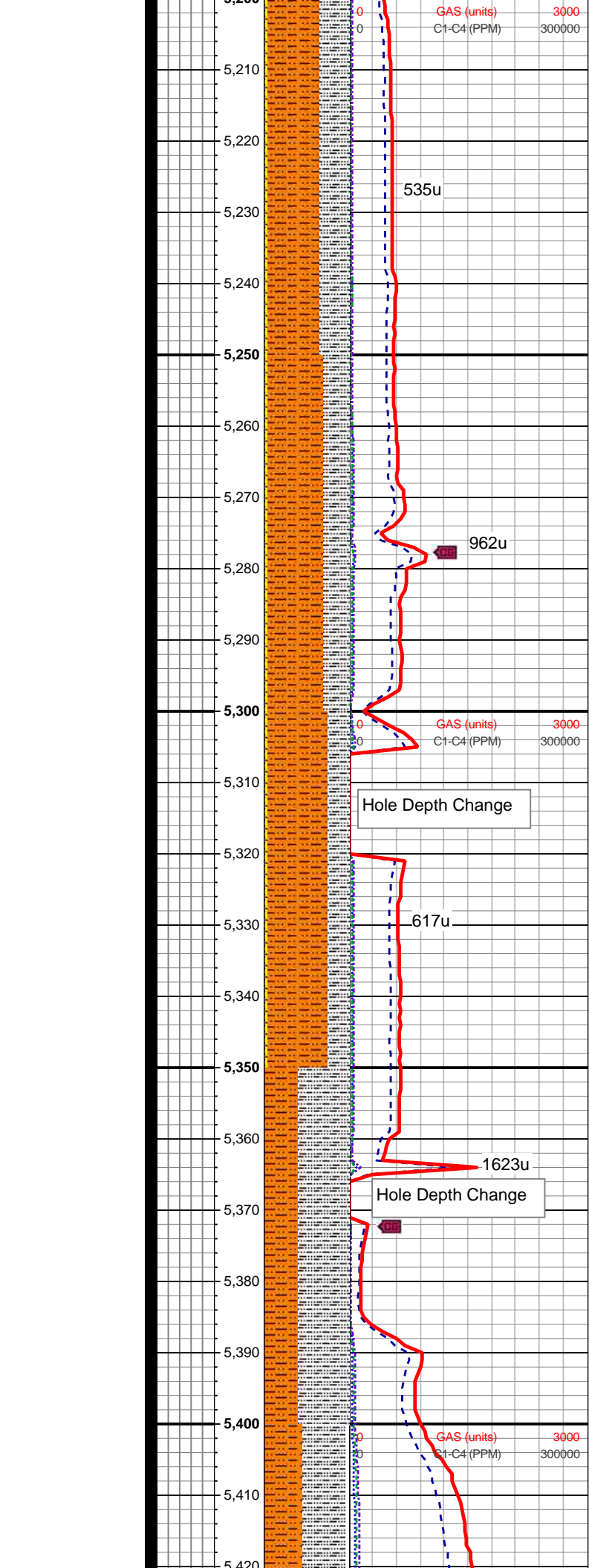
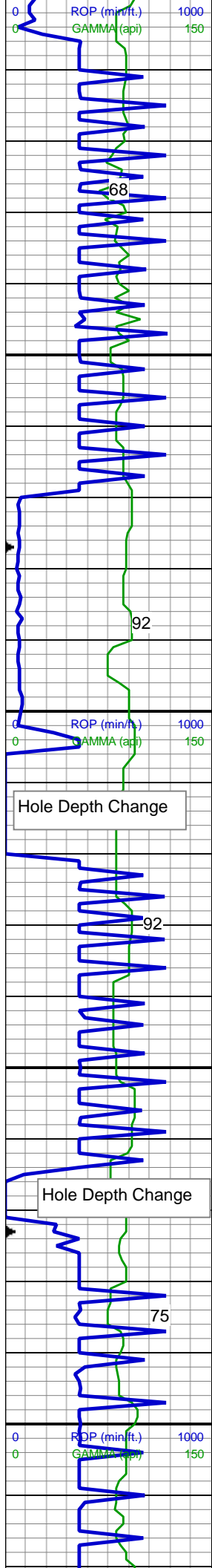
SHY SLTST: lt - med gy, gy brn,
s&p, mod frm, brit, sb-pty - sb blk,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blk, rthy tex, non calc SHY
SS: wh, lt gy-gy, s&p, sb rd - sb ang,
f-med gr, mod - w srt, sb frm, fri, sl
calc, tr glau; tr SS, tr diss pyr

MD: 5,117'
TVD: 5,057.06'
Inclination: 3.7 °
Azimuth: 358.1 °
VS: -311.27'

SHY SLTST: lt - med gy, gy brn,
s&p, mod frm, brit, sb-pty - sb blk,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blk, rthy tex, non calc SHY
SS: wh, lt gy-gy, s&p, sb rd - sb ang,
f-med gr, mod - w srt, sb frm, fri, sl
calc, tr glau; tr SS, tr diss pyr

SHY SLTST: lt - med gy, gy brn,
s&p, mod frm, brit, sb-pty - sb blk,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blk, rthy tex, non calc SHY
SS: wh, lt gy-gy, s&p, sb rd - sb ang,
f-med gr, mod - w srt, sb frm, fri, sl
calc, tr glau; tr SS, tr diss pyr

MD: 5,211'
TVD: 5,150.94'



Inclination: 2.1 °
Azimuth: 323.3 °
VS: -312.29'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau; tr diss pyr

MD: 5,306'
TVD: 5,245.92'
Inclination: 0.7 °
Azimuth: 107.2 °
VS: -312.74'

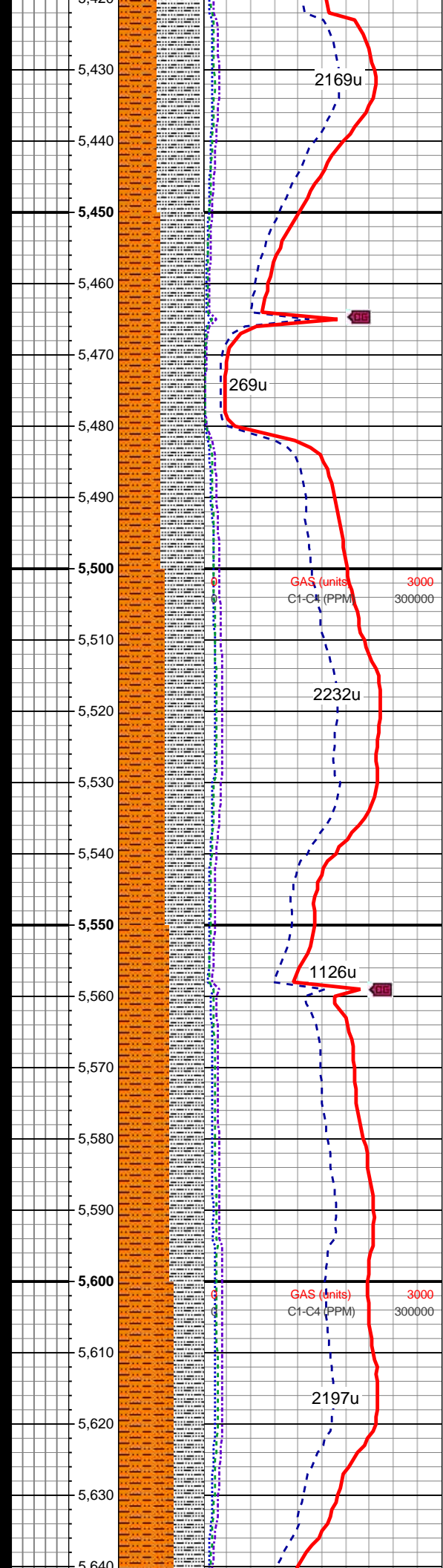
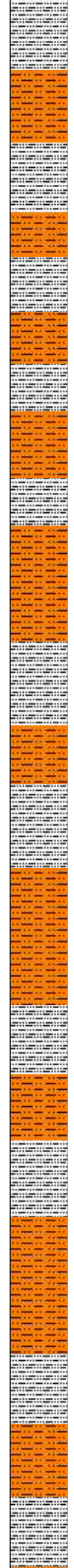
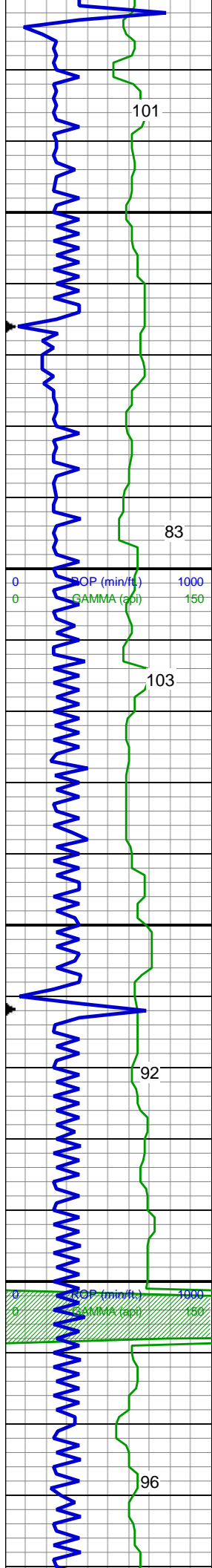
SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau, tr diss pyr

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blkly, rthy tex, non calc, tr shy ss

In/Out Mud Wt: 9.4/9.4 Vis 46/47

MD: 5,401'
TVD: 5,340.91'
Inclination: 1 °
Azimuth: 116.8 °
VS: -311.46'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blkly, rthy tex, non calc SHY SS: wh, lt gy-gy, s&p, sb rd - sb ang, f-med gr, mod - w srt, sb frm, fri, sl calc, tr glau, tr diss pyr



s&p, mod frm, bnt, sb-pty - sb blkly,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blkly, rthy tex, non calc, tr
shy ss

SHY SLTST: lt - med gy, gy brn,
s&p, mod frm, brit, sb-pty - sb blkly,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blkly, rthy tex, non calc, tr
shy ss

MD: 5,497'
TVD: 5,436.9'
Inclination: 0.7 °
Azimuth: 112.2°
VS: -310.19'

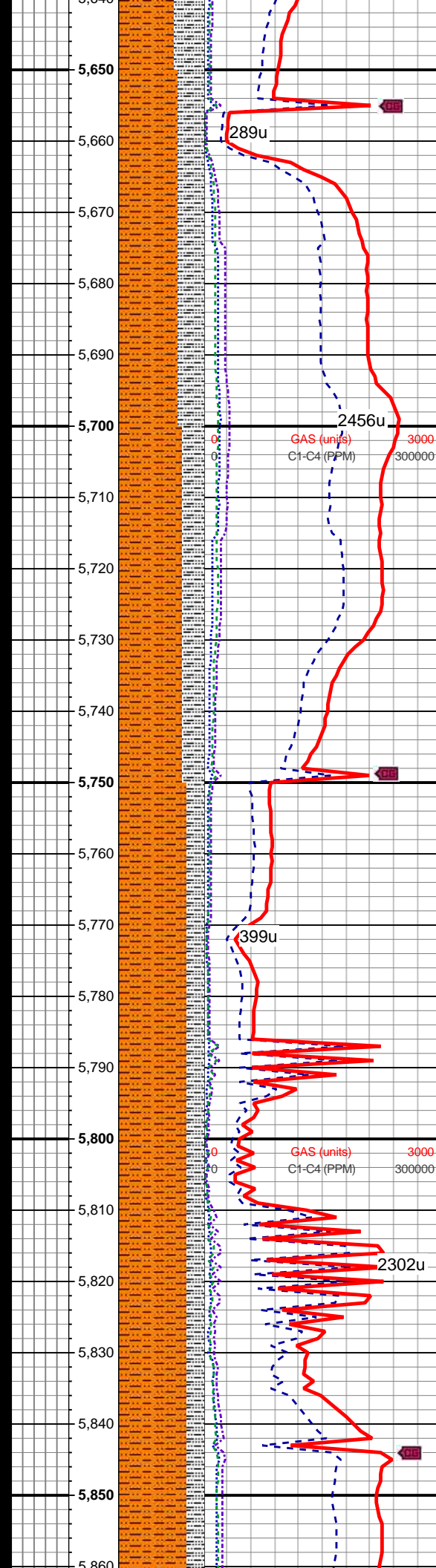
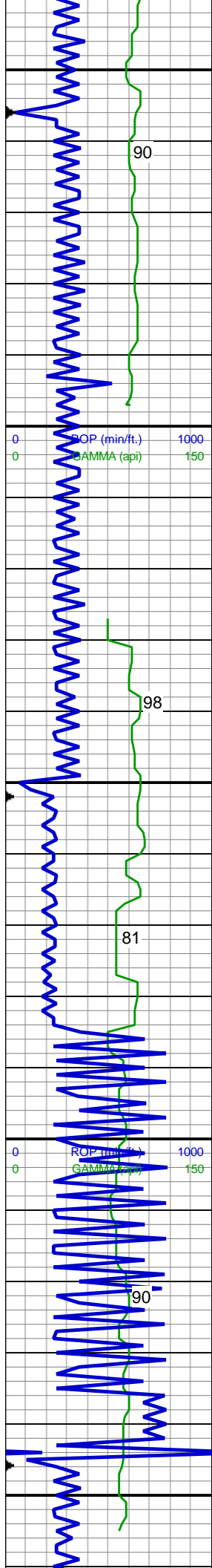
SHY SLTST: lt - med gy, gy brn,
s&p, mod frm, brit, sb-pty - sb blkly,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blkly, rthy tex, non calc, tr
shy ss

SHY SLTST: lt - med gy, gy brn,
s&p, mod frm, brit, sb-pty - sb blkly,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blkly, rthy tex, non calc, tr
shy ss

MD: 5,591'
TVD: 5,530.9'
Inclination: 0.7 °
Azimuth: 130.4°
VS: -309.23'

In/Out Mud Wt: 9.5/9.6 Vis 36/34

SHY SLTST: lt - med gy, gy brn,
s&p, mod frm, brit, sb-pty - sb blkly,
rthy tex, vf occ f-med gr, w srt, non
calc; SLTY SH: lt - dk gy, mod frm,
pty - sb blkly, rthy tex, non calc, tr
shy ss



SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blkly, rthy tex, non calc, tr shy ss

MD: 5,686'
TVD: 5,625.89'
Inclination: 0.7 °
Azimuth: 132.6 °
VS: -308.38'

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blkly, rthy tex, non calc, tr shy ss

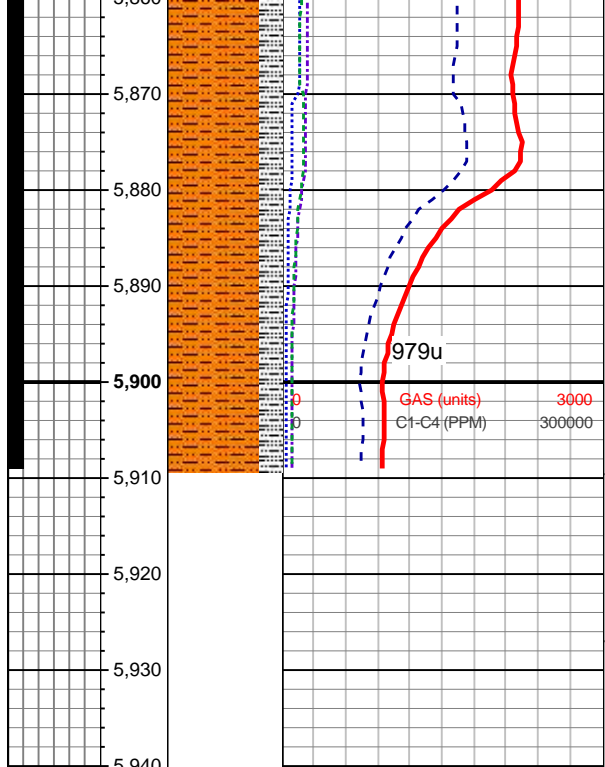
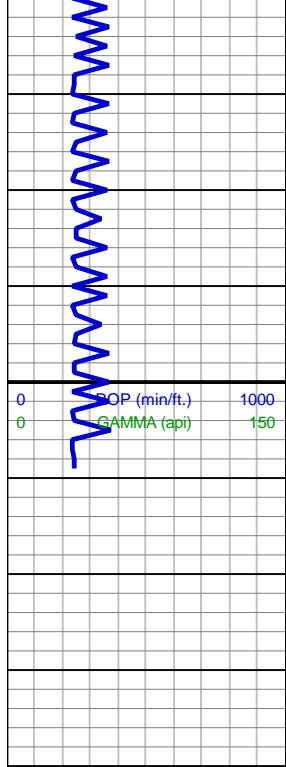
SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blkly, rthy tex, non calc, tr shy ss

MD: 5,781'
TVD: 5,720.88'
Inclination: 0.5 °
Azimuth: 129.6 °
VS: -307.65'

In/Out Mud Wt: 9.4/9.55 Vis 30/36

SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-pty - sb blkly, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, pty - sb blkly, rthy tex, non calc, tr shy ss

MD: 5,844'
TVD: 5,783.88'
Inclination: 0.5 °
Azimuth: 144 °
VS: -307.29'



SHY SLTST: lt - med gy, gy brn, s&p, mod frm, brit, sb-plty - sb blk, rthy tex, vf occ f-med gr, w srt, non calc; SLTY SH: lt - dk gy, mod frm, plty - sb blk, rthy tex, non calc, tr shy ss

VERTICAL TD, KOP REACHED @ 5909' MD, TOOH TO CHANGE MWD TOOLS: 08:45 MST ON 9/25/2014 DATA CONTINUED ON HORIZONTAL LOG

THANK YOU FOR USING COLUMBINE LOGGING INC.