



Scale: 5" / 100'  
Measured Depth Log

**Well Name** SHOOK 3-10-5CDH\_VERT\_CURVE

**Location** SECTION 3 T1S R67W

**State** COLORADO

**County** ADAMS

**Country** USA

**Rig Number** ENSIGN 145

**API Number** 05-001-09979

**AFE #** 1700013

**Geographic Region** DJ BASIN

**Field** WATTENBERG

**Spud Date** 4/17/2017

**Drilling Completed** 7/25/2017

**Surface Coordinates** Section 3, 2058' FSL x 2139' FEL  
39.99222, -104.87317

**Bottom Hole Coordinates** Section 3, 894' FSL x 1318' FEL  
39.988333, -104.870207

**Ground Elevation** 5098'

**K.B. Elevation** 5111'

**Logged Interval** 1813' **To** 8243'

**Total Depth** 6430'

**Formation** SURFACE thru CODELL

**Type of Drilling Fluid** OBM - OIL BASED MUD

## Operator

**Company** Petro Share

**Address** 7200 S Alton Way  
Englewood, CO 80112



**Geologist**

**Color Coding**

Name JOEY LUCE, SAGE BETTS

Company TERRA GUIDANCE

Address 1298 O Road  
Loma CO 81524  
(970) 260-5408

Oil



Condensate



Gas



Note



Core



Pressure



Error



Water



Seal

## Rock Types

UNKNOWN

ANHYDRITE  
GYPSUM  
SALT  
SIDERITE or LIMONITE  
LIMESTONE

CHALK

CHERT

COAL

MARLSTONE

CLAYSTONE

SHALE

CHALK

CHERT

COAL

MARLSTONE

CLAYSTONE

SHALE

SILTSTONE

SANDSTONE

SILTY SHALE

SHALY SILTSTONE

SHALY SANDSTONE

BENTONITE

SILTSTONE

SANDSTONE

SILTY SHALE

SHALY SILTSTONE

SHALY SANDSTONE

BENTONITE

CONGLOMERATE

SHALE GRAY

SHALE COLORED

IGNEOUS

METAMORPHIC

CEMENT

CONGLOMERATE

SHALE GRAY

SHALE COLORED

IGNEOUS

METAMORPHIC

CEMENT

## Accessories

### Fossils

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

FOSSIL

GASTROPOD

OOLITE

OSTRACOD

PELECYPOD

PELLET

PISOLITE

PLANT REMAINS

PLANT SPORES

SCAPHOPOD

STROMATOPOROID

MINERALS

ANHYDRITIC

ARGILLACEOUS

ARGILLITE GRAIN

BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

CHTLT

COAL - THIN BEDS

DOLOMITIC

FELDSPAR

FERRUGINOUS PELLET

FERRUGINOUS

GLAUCONITE

GYPSIFEROUS

HEAVY MINERAL

KAOLIN

MARLSTONE

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLETS

PYRITE

SALT CAST

SANDY

SILICEOUS

SILTY

TUFFACEOUS

### 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

## Other Symbols

### Oil Show

DEAD  
EVEN  
QUESTIONABLE  
SPOTTED STAINING

ORGANIC

PINPOINT

VUGGY

### Porosity

EARTHY  
FENESTRAL  
FRACTURE  
INTERCRYSTALLINE  
INTEROOLITIC  
MOLDIC

BIT

CASING

CONNECTION (LEFT)

CONNECTION (RIGHT)

CONNECTION GAS

CORE - LOST

CORE - RECOVERED

DST INTERVAL

FAULT

FORMATION TOP

GAS SHOW

MINDEPTH MN DEPTH

NORMAL FAULT

OIL SHOW

OVERTURNED STRATA

REVERSE FAULT

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

TRIP GAS

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

### Rounding

ANGULAR  
ROUNDED  
SUBANG  
SUBRND

### Textures

BOUNDSTONE  
CHALKY  
CRYPTOXLN  
EARTHY  
FINELYXLN  
GRAINSTONE

LITHOGRAPHIC

MICROXLN

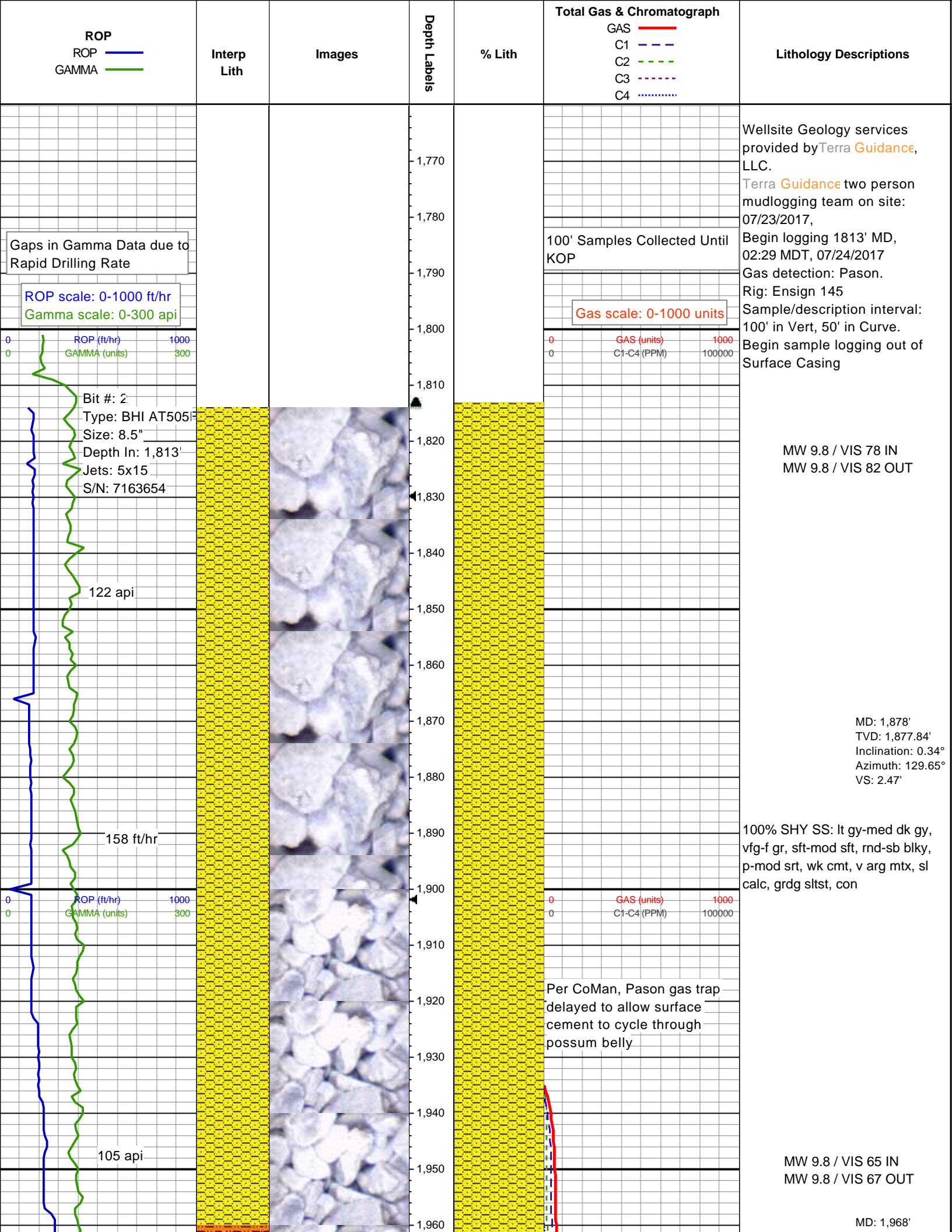
MUDSTONE

PACKSTONE

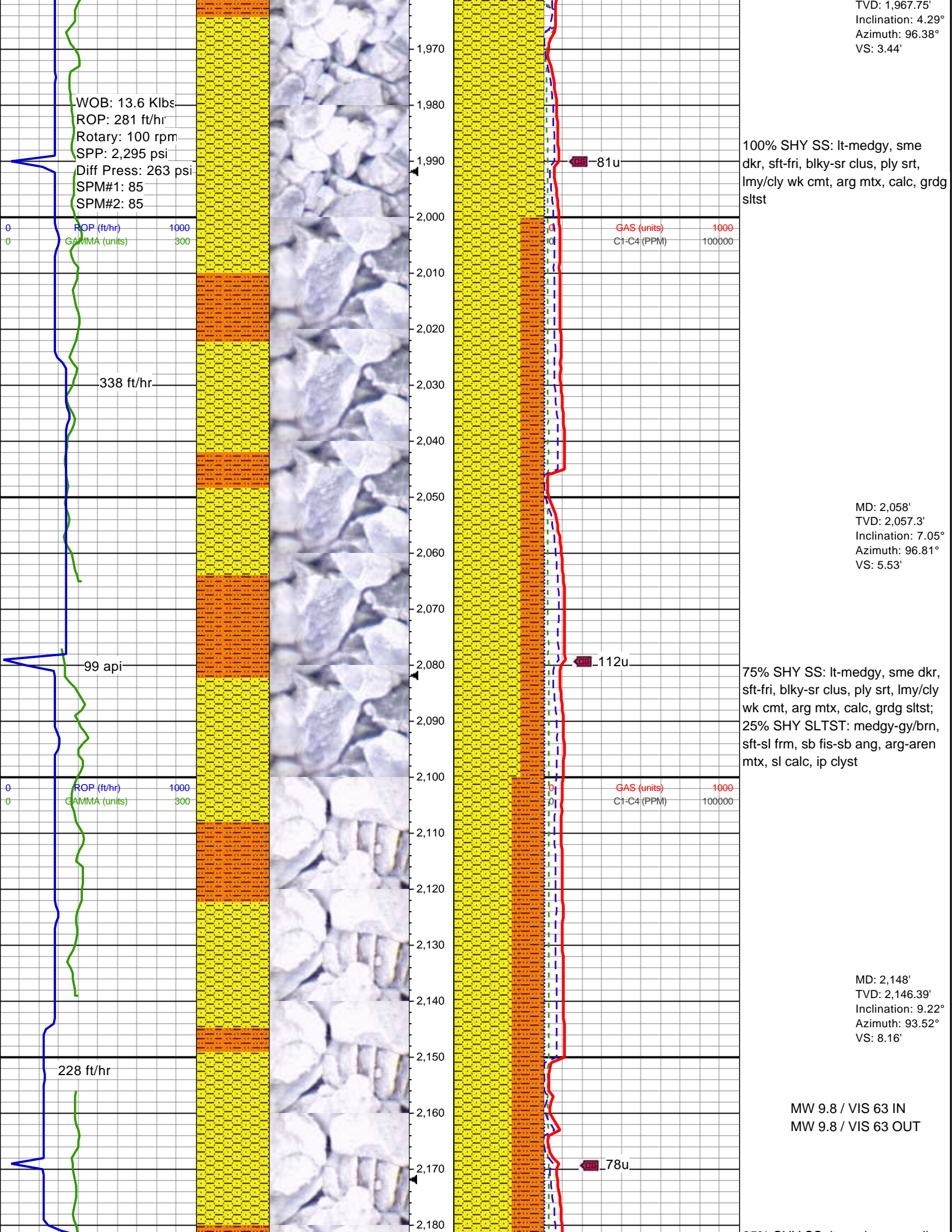
WACKESTONE

### Sorting

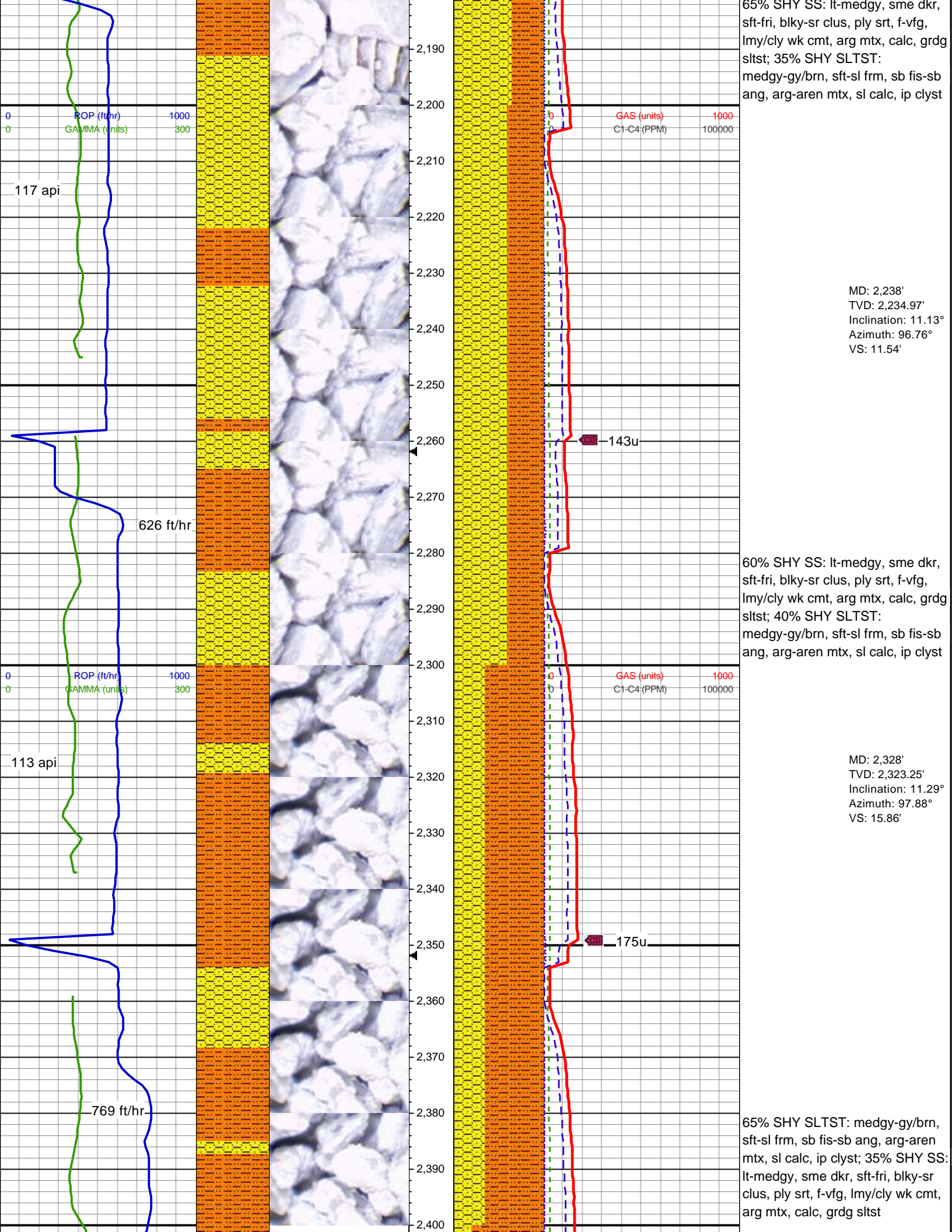
MODERATE  
POOR  
WELL



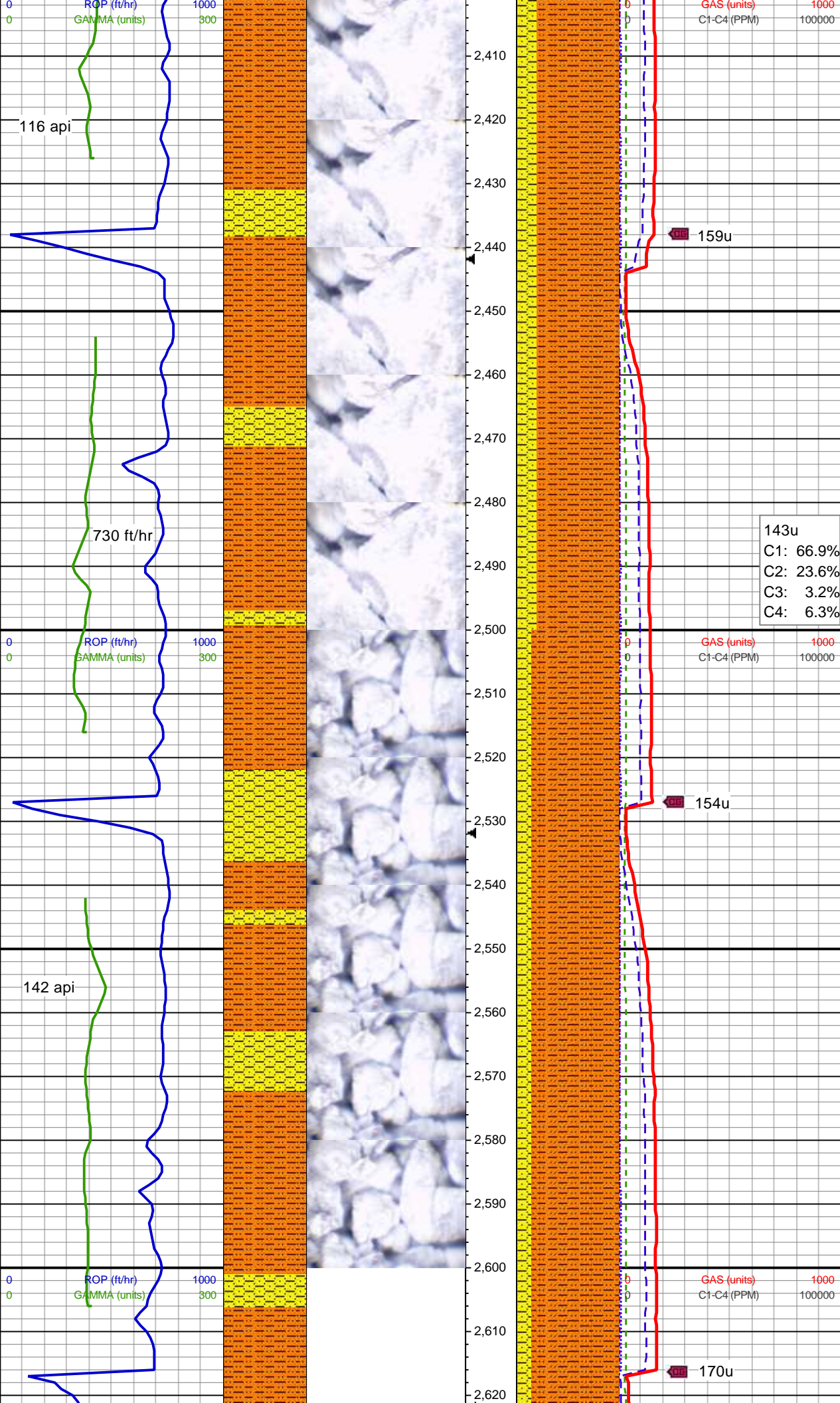












MD: 2,418'  
TVD: 2,411.53'  
Inclination: 11.2°  
Azimuth: 104.31°  
VS: 21.29'

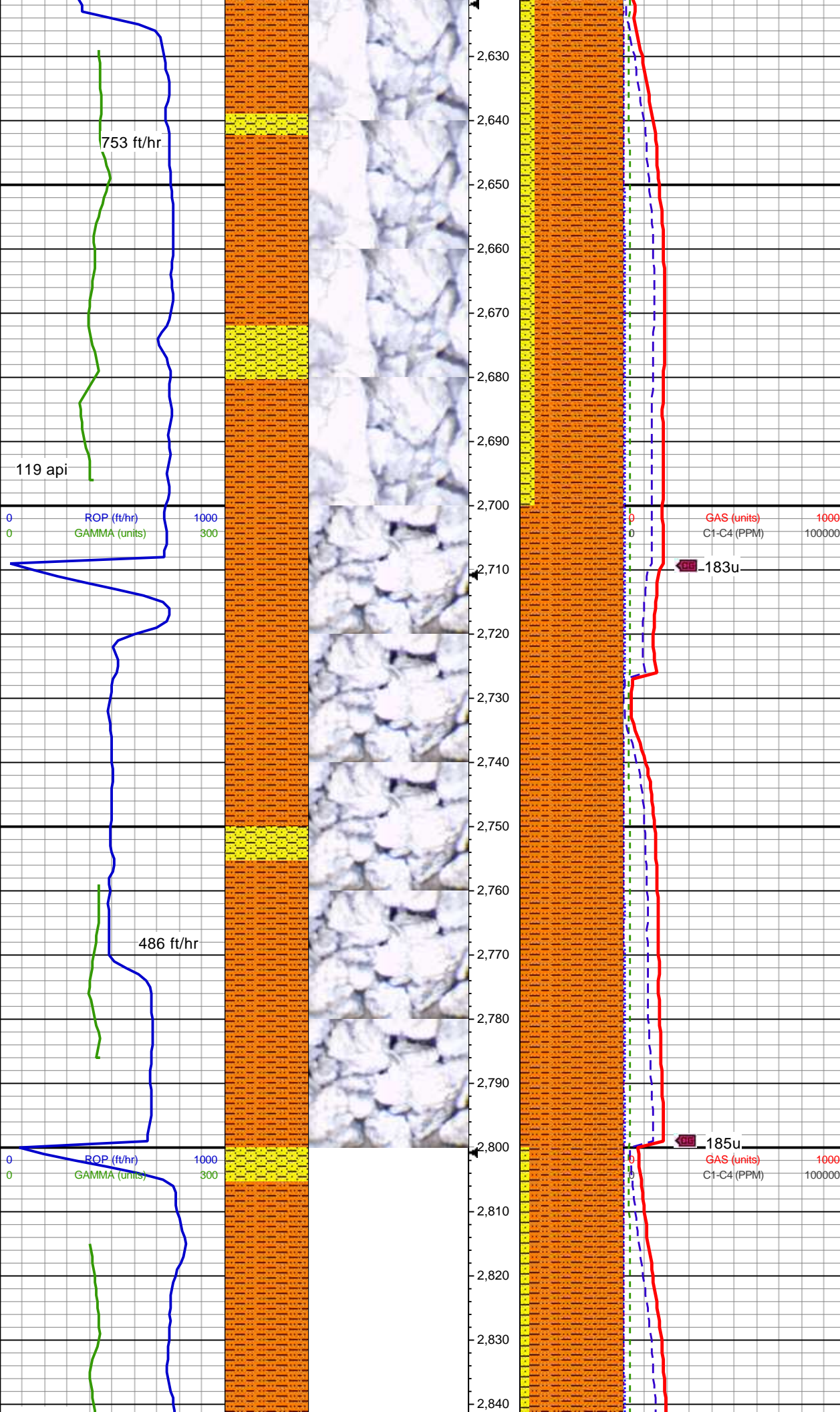
80% SHY SLTST: lt-medgy,  
gy/brn, ip drkgy, mod sft-frn, sb  
blky-sb fis, vfg, p-mod srt, arg mtx,  
sl calc, ip clyst; 20% SHY SS: ltgy,  
sft-fri, blky-sb ang clus, vfg,  
mod-w srt, lmy/cly cmt, arg mtx, sl  
calc

MD: 2,508'  
TVD: 2,499.82'  
Inclination: 11.17°  
Azimuth: 110.83°  
VS: 28.52'

85% SHY SLTST: lt-medgy,  
gy/brn, ip drkgy, mod sft-frn, sb  
blky-sb fis, vfg, p-mod srt, arg mtx,  
sl calc, ip clyst; 15% SHY SS: ltgy,  
sft-fri, blky-sb ang clus, vfg,  
mod-w srt, lmy/cly cmt, arg mtx, sl  
calc

MD: 2,598'  
TVD: 2,588.12'  
Inclination: 11.15°  
Azimuth: 120.06°  
VS: 37.83'





MD: 2,687'  
TVD: 2,675.44'  
Inclination: 11.25°  
Azimuth: 130.14°  
VS: 49.38'

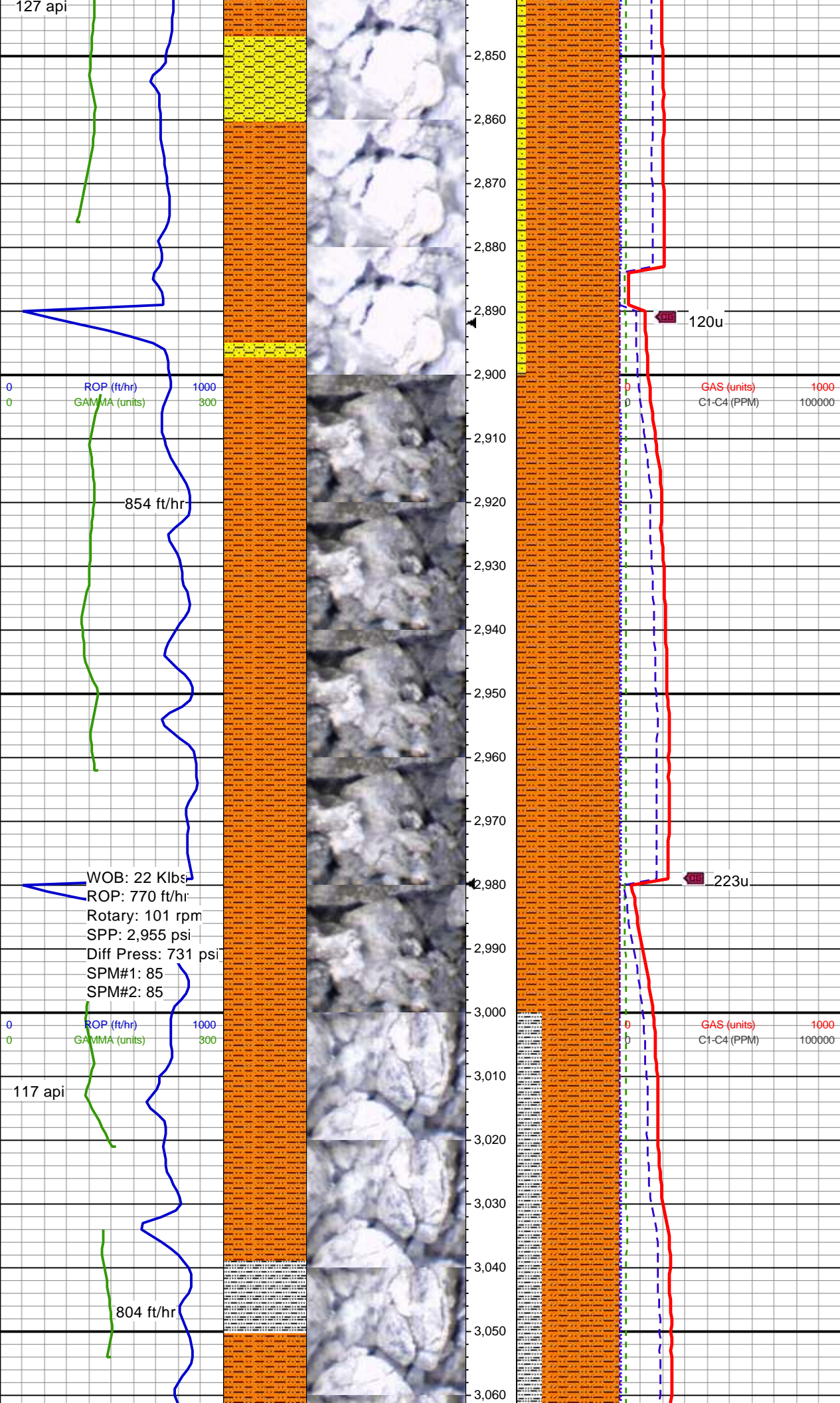
85% SHY SLTST: lt-medgy,  
gy/brn, ip drkgy, mod sft-frn, sb  
blky-sb fis, vfg, p-mod srt, arg mtx,  
sl calc, ip clyst; 15% SHY SS: ltgy,  
sft-fri, blky-sb ang clus, vfg,  
mod-w srt, lmy/cly cmt, arg mtx, sl  
calc

MW 9.8 / VIS 55 IN  
MW 9.8 / VIS 55 OUT

MD: 2,777'  
TVD: 2,763.71'  
Inclination: 11.26°  
Azimuth: 134.81°  
VS: 62.71'

100% SHY SLTST: medgy, gy/brn,  
ip drkgy, mod sft-frn, sb blky-sb  
ang, vfg, p-mod srt, arg mtx, sl  
calc, grdg sh





MD: 2,867'  
TVD: 2,851.99'  
Inclination: 11.19°  
Azimuth: 128.9°  
VS: 75.88'

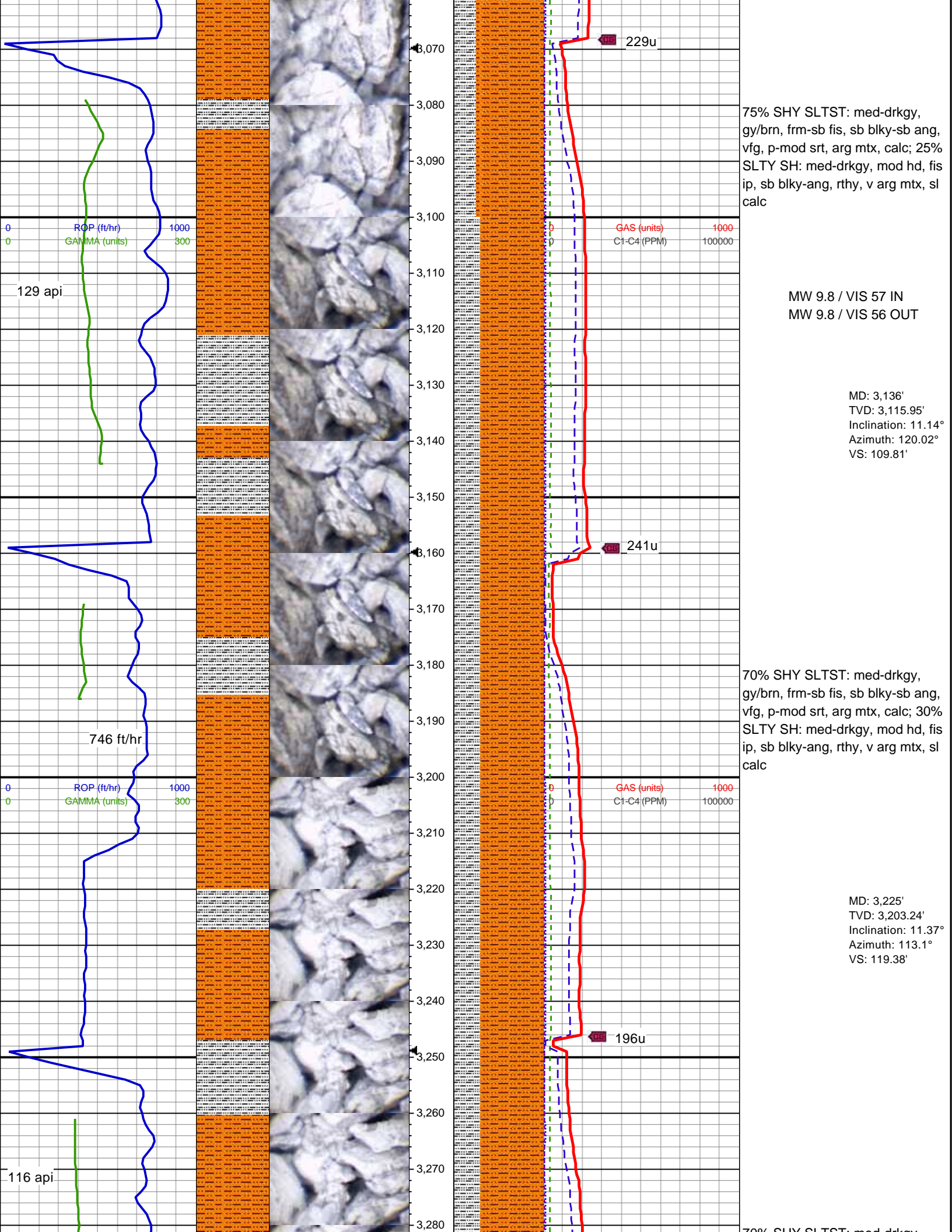
90% SHY SLTST: lt-medgy, gy/brn, ip drkgy, mod sft frm, sb blkgy-sb fis, vfg, p-mod srt, arg mtx, sl calc, grdg shy; 10% SHY SS: lt-medgy, mod hd-occ fri, blkgy-sb ang clus, vfg, mod-w srt, wk lmy/cly cmt, arg mtx, sl calc

MD: 2,956'  
TVD: 2,939.3'  
Inclination: 11.22°  
Azimuth: 125.63°  
VS: 87.94'

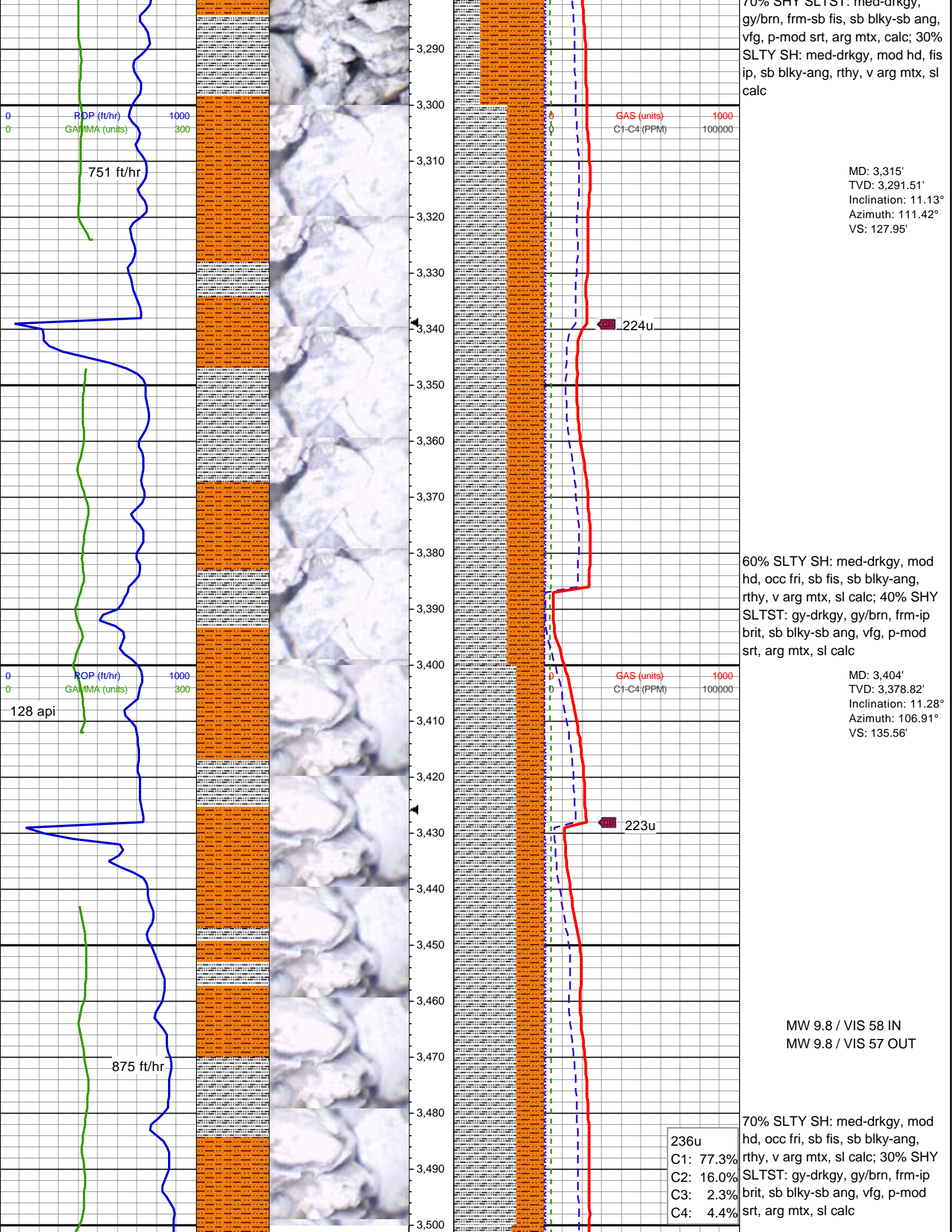
100% SHY SLTST: medgy, gy/brn, ip drkgy, mod sft frm, sb blkgy-sb ang, vfg, p-mod srt, arg mtx, sl calc, grdg sh

MD: 3,046'  
TVD: 3,027.62'  
Inclination: 10.95°  
Azimuth: 121.81°  
VS: 99.22'

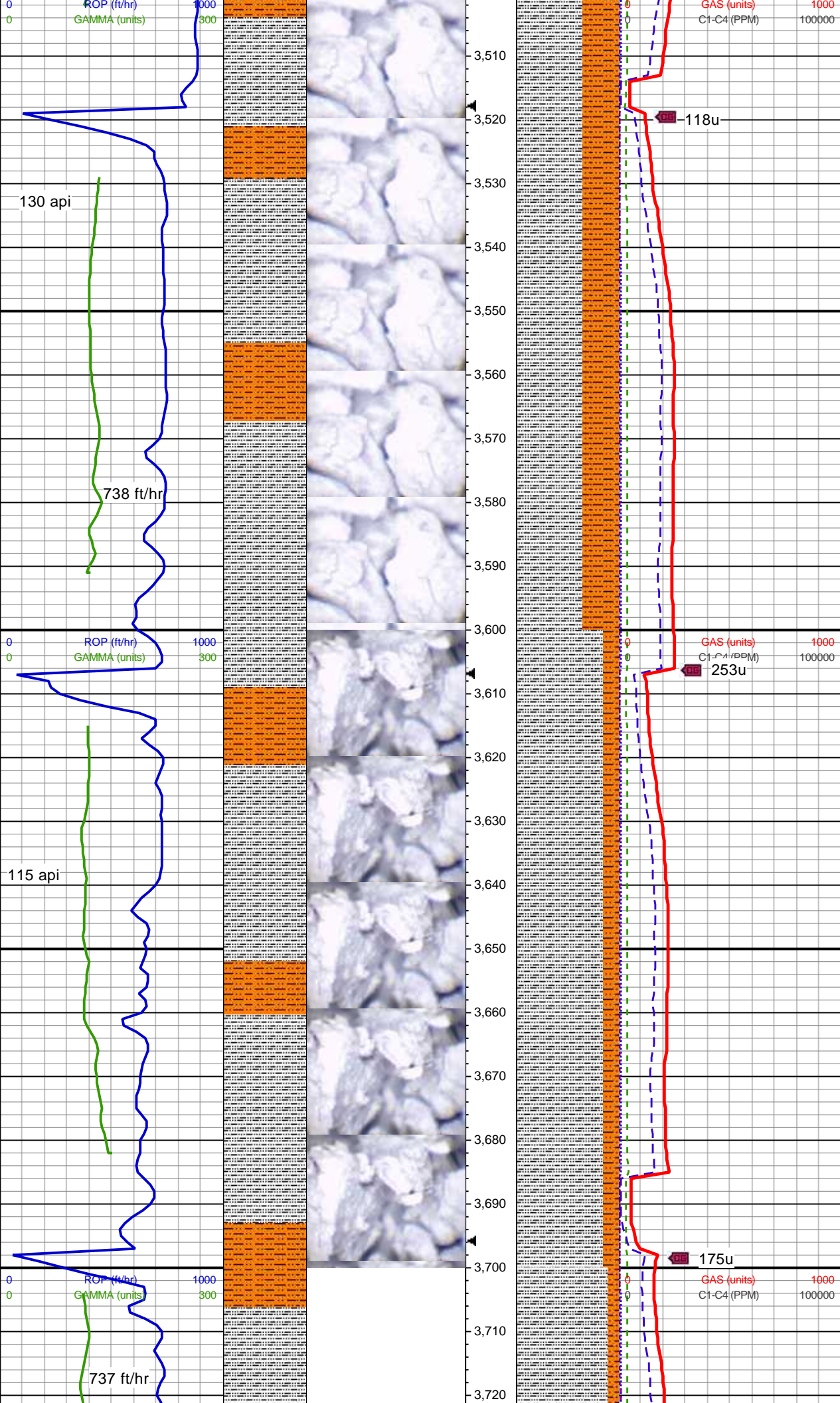












MD: 3,494'  
TVD: 3,467.23'  
Inclination: 10.27°  
Azimuth: 111.41°  
VS: 142.94'

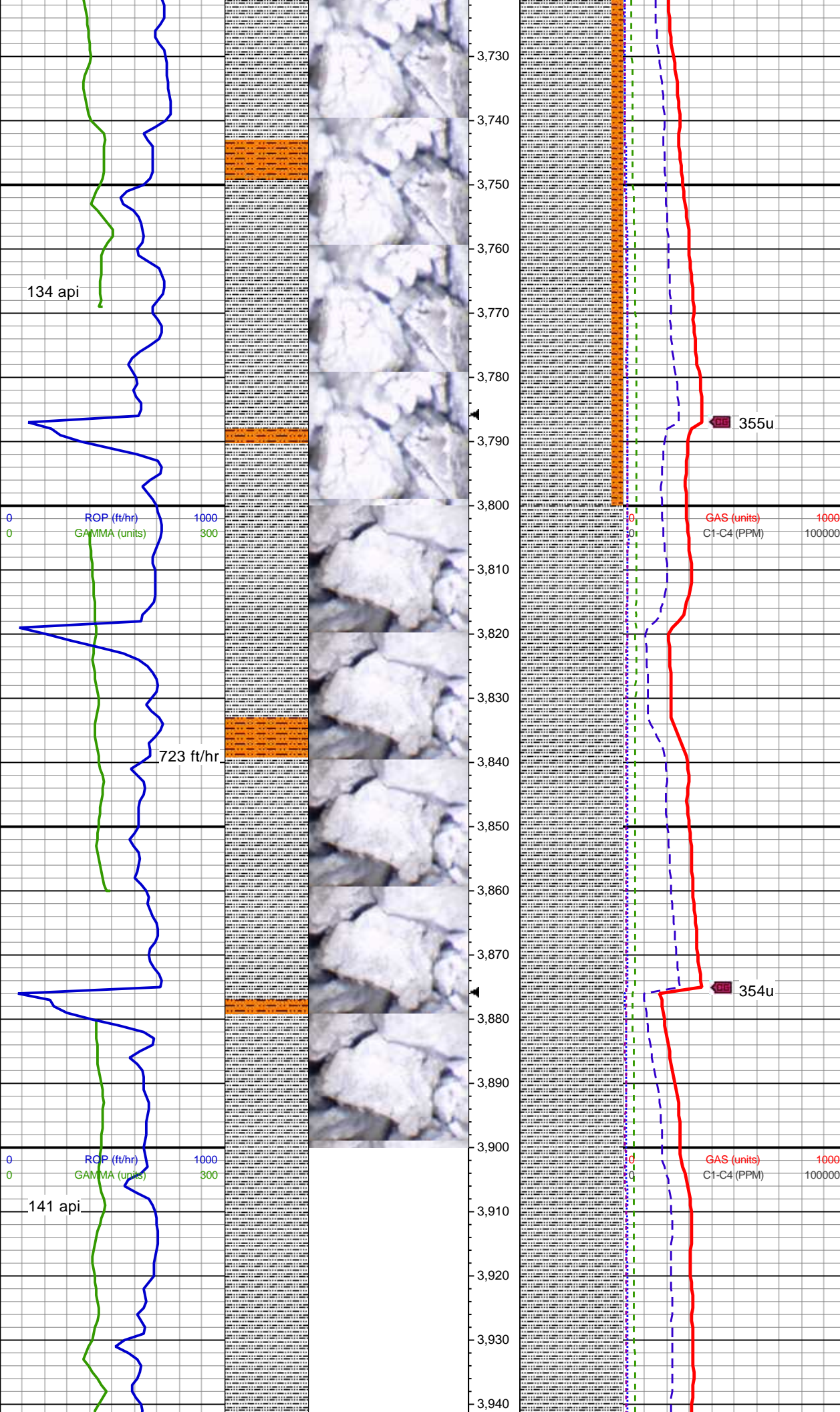
MD: 3,583'  
TVD: 3,554.72'  
Inclination: 10.91°  
Azimuth: 121.71°  
VS: 151.97'

65% SLTY SH: med-drkgy, mod  
hd, occ fri, sb fis, sb blk-ang,  
rthy, v arg mtx, sl calc; 35% SHY  
SLTST: gy-drkgy, gy/brn, frm-ip  
brit, sb blk-ang, vfg, p-mod  
srt, arg mtx, sl calc

MD: 3,672'  
TVD: 3,642.13'  
Inclination: 10.82°  
Azimuth: 123.84°  
VS: 162.7'

85% SLTY SH: med-drkgy,  
frm-brit, sb blk-ang, fis ip, rthy, v  
arg mtx, sl calc; 15% SHY SLTST:  
medgy-gy/brn, sl hd, sb blk-ang  
ang, vfg, p-mod srt, arg mtx, calc





MD: 3,762'  
TVD: 3,730.52'  
Inclination: 10.91°  
Azimuth: 131.07°  
VS: 174.55'

90% SLTY SH: med-drkgy,  
frm-brit, sb blk-ang, fis ip, rthy, v  
arg mtx, sl calc; 10% SHY SLTST:  
medgy-gy/brn, sl hd, sb blk-sb  
ang, vfg, p-mod srt, arg mtx, calc

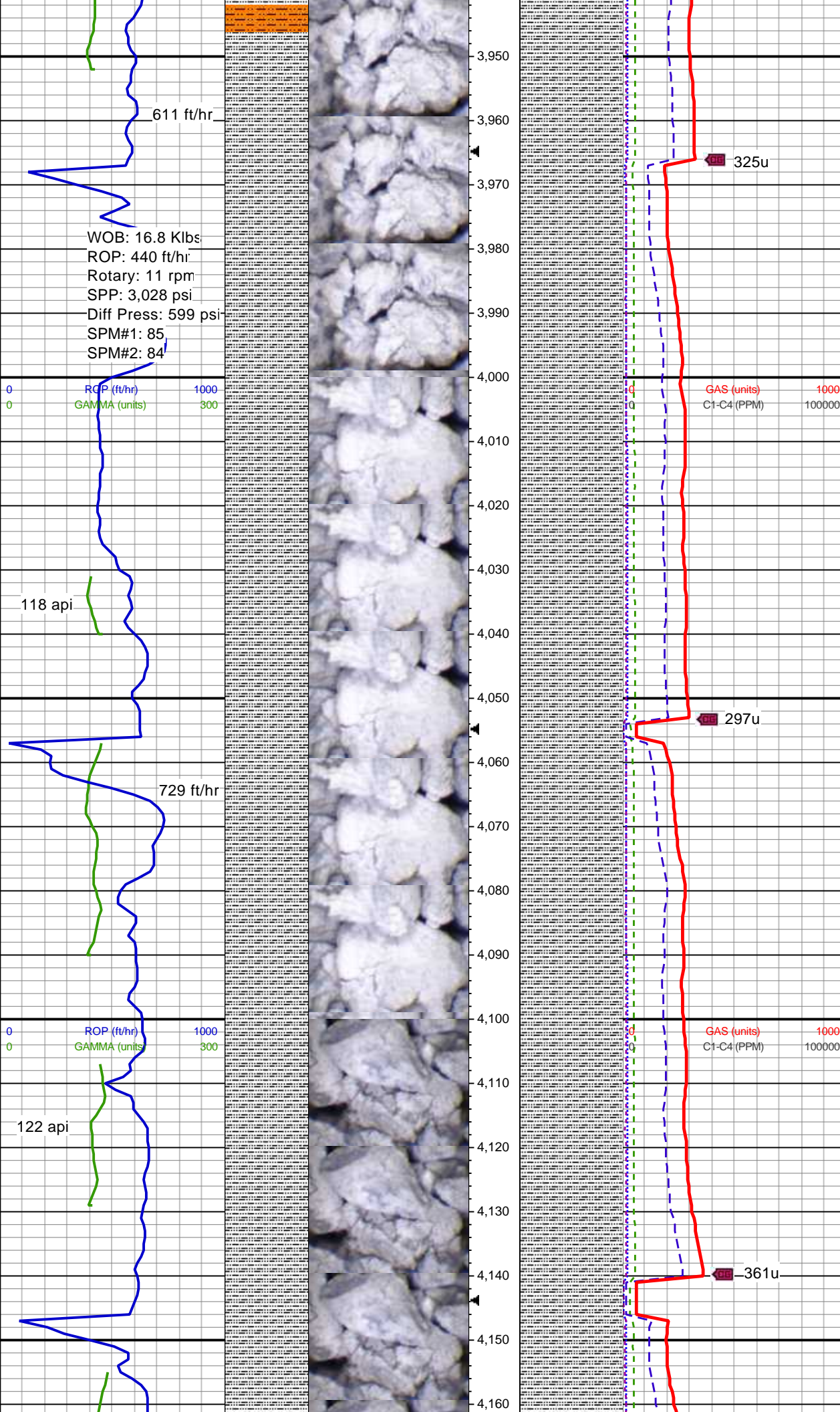
MW 9.8 / VIS 59 IN  
MW 9.8 / VIS 57 OUT

MD: 3,852'  
TVD: 3,818.93'  
Inclination: 10.69°  
Azimuth: 139.75°  
VS: 187.86'

100% SLTY SH: med-drkgy,  
frm-hd, sb blk-sb ang, fis, rthy, v  
arg-sity mtx, sl-mod calc

MD: 3,941'  
TVD: 3,900.00'  
Inclination: 10.00°  
Azimuth: 135.00°  
VS: 180.00'





TVD: 3,906.36'  
Inclination: 10.88°  
Azimuth: 146.74°  
VS: 202.3'

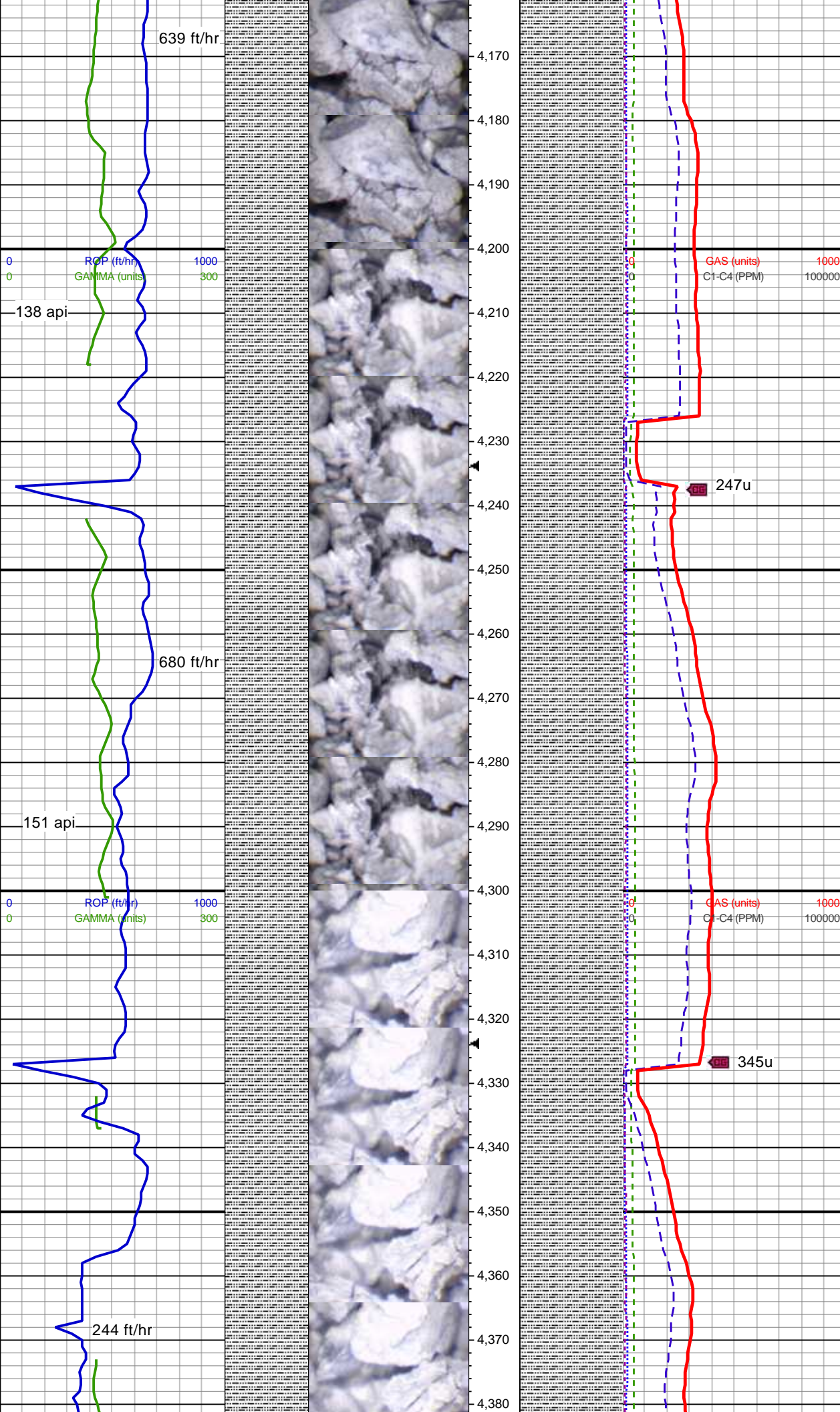
100% SLTY SH: med-drkgy,  
frm-hd, sb blk-y-sb ang, fis, rthy, v  
arg-slty mtx, sl-mod calc

MD: 4,031'  
TVD: 3,994.75'  
Inclination: 10.84°  
Azimuth: 149.87°  
VS: 217.69'

100% SLTY SH: med-drkgy,  
frm-hd, sb blk-y-sb ang, fis, rthy, v  
arg-slty mtx, sl-mod calc

MD: 4,120'  
TVD: 4,082.17'  
Inclination: 10.79°  
Azimuth: 148.51°  
VS: 232.97'





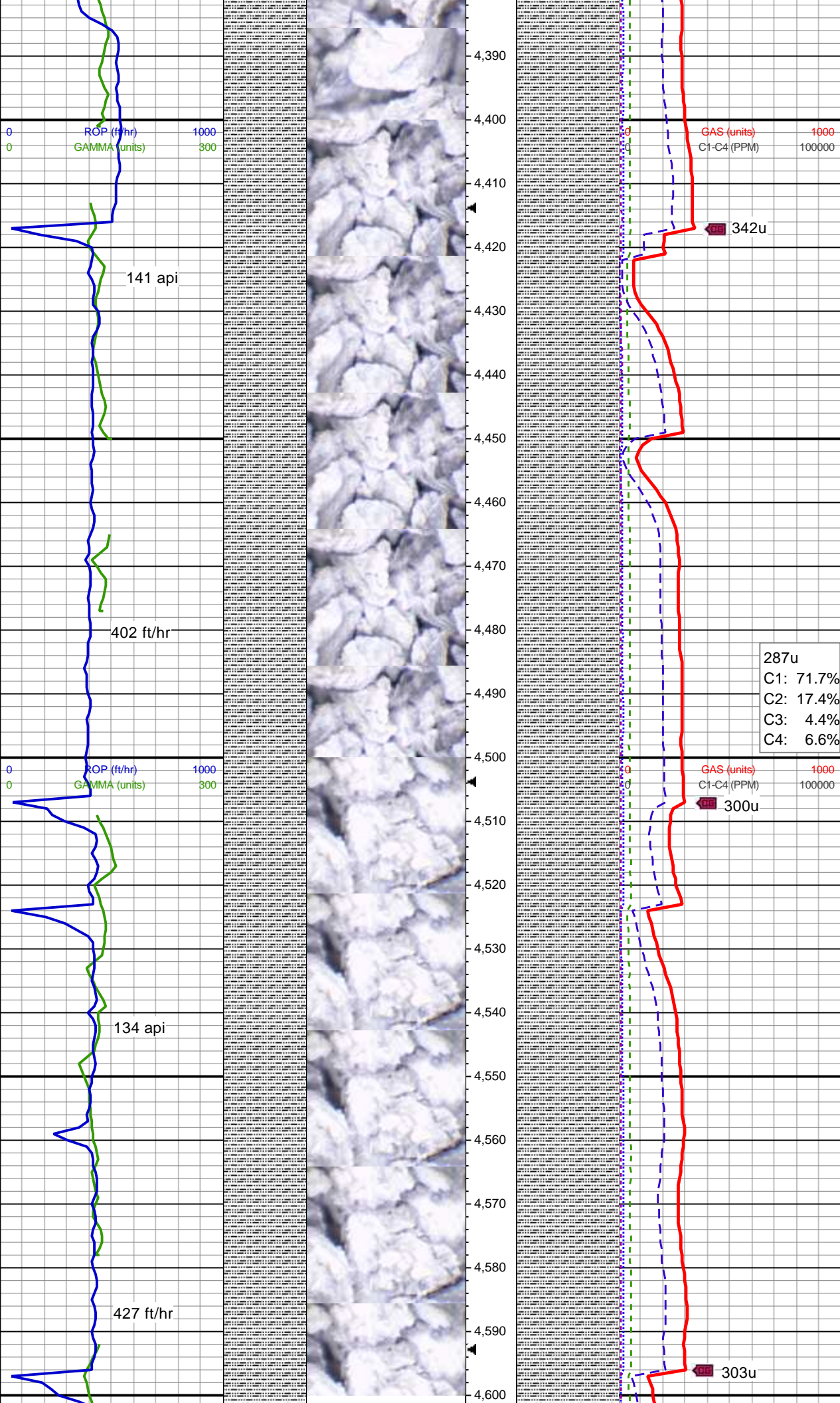
100% SLTY SH: med-drkgy, frm-hd, blkly-sb ang, brit-fis, rthy, v arg-slty mtx, sl calc

MD: 4,210'  
TVD: 4,170.62'  
Inclination: 10.5°  
Azimuth: 151.3°  
VS: 248.25'

100% SLTY SH: med-drkgy, frm-hd, blkly-sb ang, brit-fis, rthy, v arg-slty mtx, sl calc

MD: 4,390'  
TVD: 4,347.5'





Inclination: 10.89°  
Azimuth: 154.24°  
VS: 279.58'

100% SLTY SH: med-drkgy,  
frm-hd, blkly-sb ang, brit-fis, rthy, v  
arg-slty mtx, ip aren, sl calc

MD: 4,479'  
TVD: 4,434.92'  
Inclination: 10.71°  
Azimuth: 151.45°  
VS: 295.23'

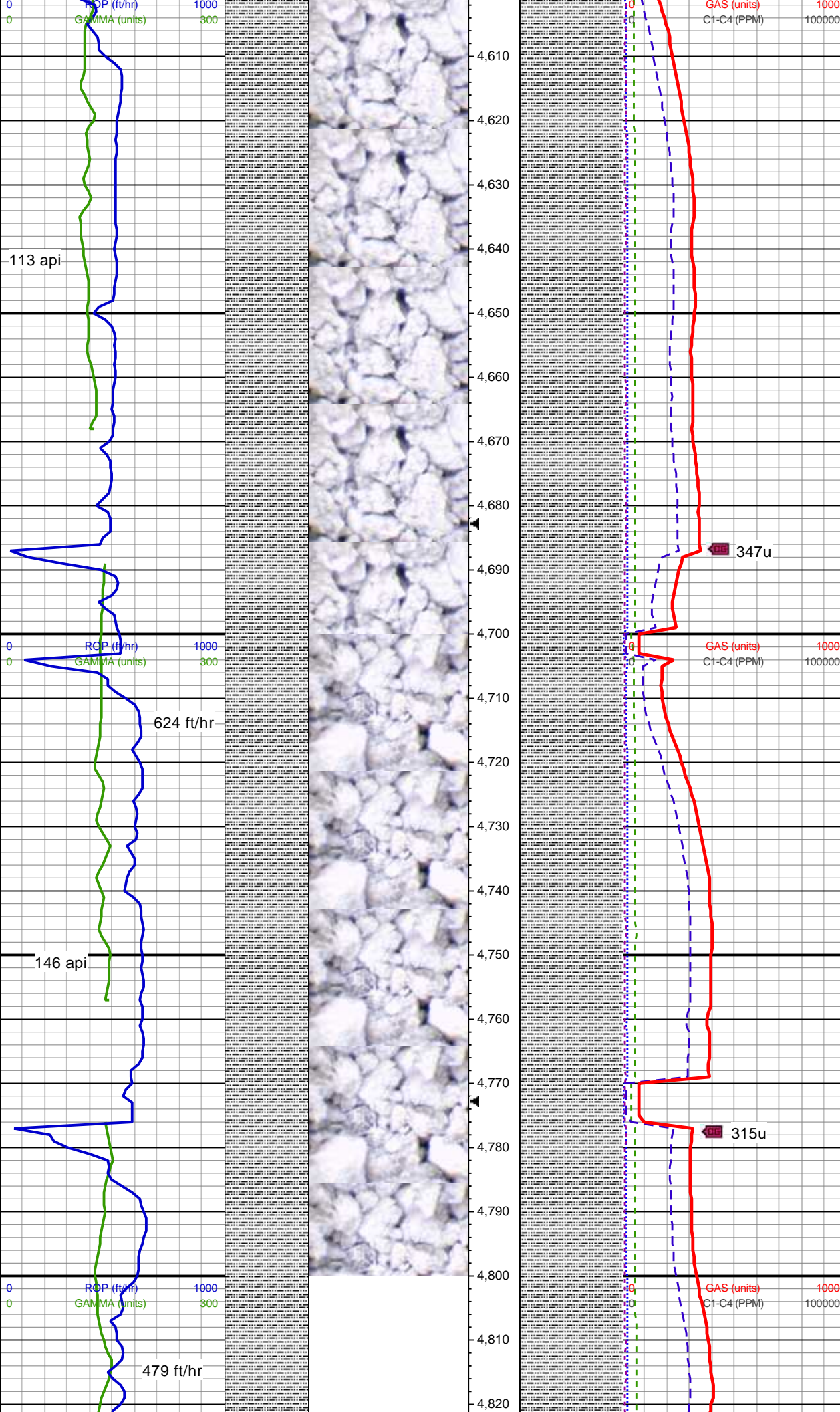
100% SLTY SH: med-drkgy,  
frm-hd, blkly-sb ang, brit-fis, rthy, v  
arg-slty mtx, ip aren, sl calc

MW 9.8 / VIS 56 IN  
MW 9.8 / VIS 54 OUT

MD: 4,569'  
TVD: 4,523.32'  
Inclination: 10.98°  
Azimuth: 143.1°  
VS: 310.44'

100% SLTY SH: med-drkgy,  
frm-hd, blkly-sb ang, brit-fis, rthy, v  
arg-slty mtx, sl calc





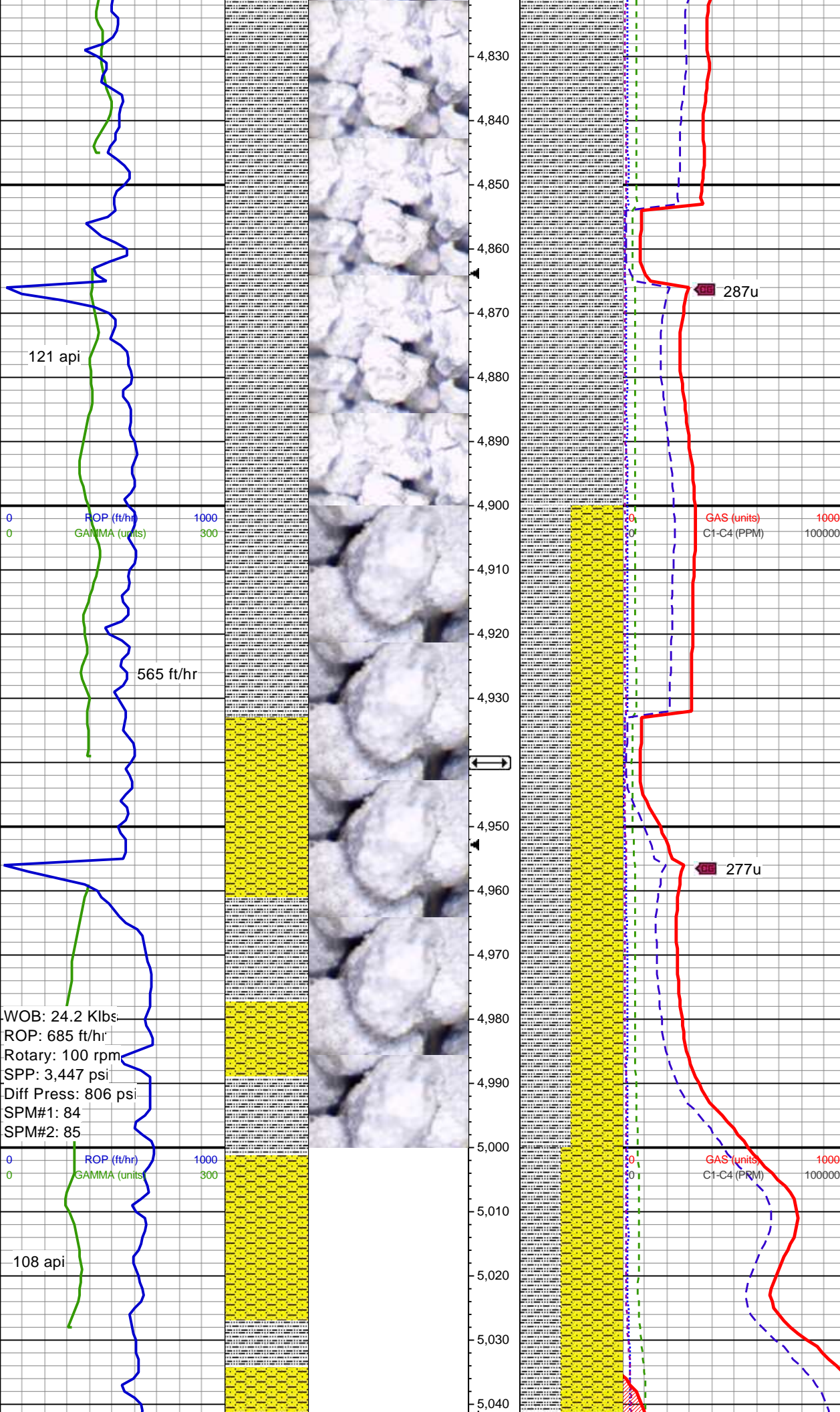
MD: 4,659'  
TVD: 4,611.68'  
Inclination: 11.02°  
Azimuth: 132.05°  
VS: 324.36'

100% SLTY SH: med-drkgy,  
frm-hd, blkly-sb ang, brit-fis, rthy, v  
arg-slty mtx, aren, sl calc

MD: 4,749'  
TVD: 4,700.04'  
Inclination: 10.86°  
Azimuth: 124.67°  
VS: 336.49'

100% SLTY SH: med-drkgy,  
frm-hd, blkly-sb ang, brit-fis, rthy, v  
arg-slty mtx, aren-rr scat sd, sl  
calc





MD: 4,840'  
TVD: 4,789.42'  
Inclination: 10.81°  
Azimuth: 122.87°  
VS: 347.65'

100% SLTY SH: med-drkgy, frm-hd, blk-y-sb ang, brit-fis, rthy, v arg-sltly mtx, aren-rr scat sd, sl calc

MD: 4,929'  
TVD: 4,876.85'  
Inclination: 10.78°  
Azimuth: 120.15°  
VS: 358.02'

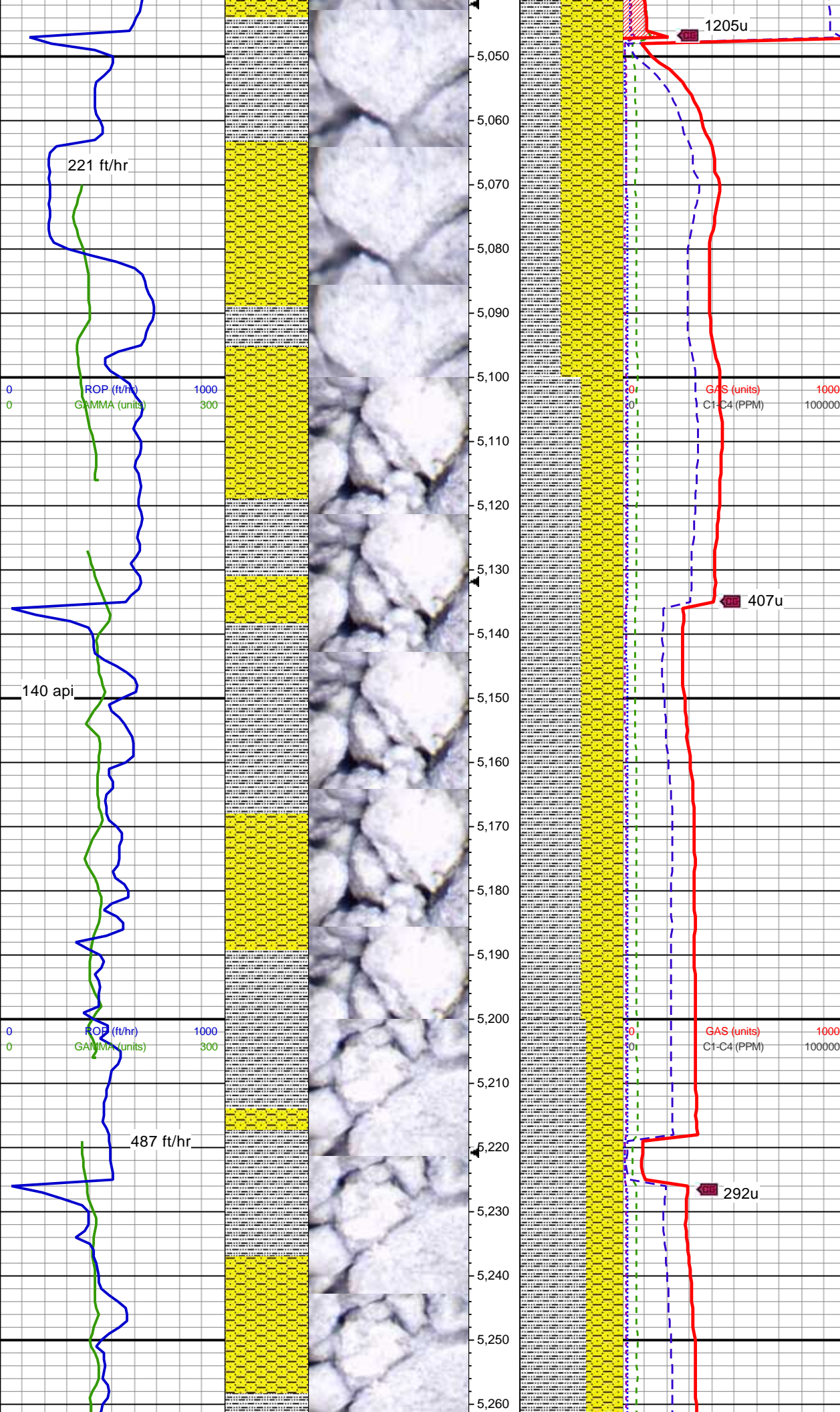
Sussex/Shannon Top  
4940' MD / 4888' TVD

ON GAS BUSTER

50% SHY SS: ltgy-med, sme wh, sl hd, blk-y-sb ang clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, calc; 50% SLTY SH: med-drkgy, v frm, blk-y-ang, ip fis, rthy, slty grdgy sdy, v arg mtx, calc

MD: 5,018'  
TVD: 4,964.28'  
Inclination: 10.77°  
Azimuth: 115.84°  
VS: 367.55'





60% SHY SS: ltgy-med, sme wh, sl hd, blkly-sb ang clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, calc; 40% SLTY SH: med-drkgy, v frm, blkly-ang, ip fis, rthy, slty grdg sdy, v arg mtx, calc

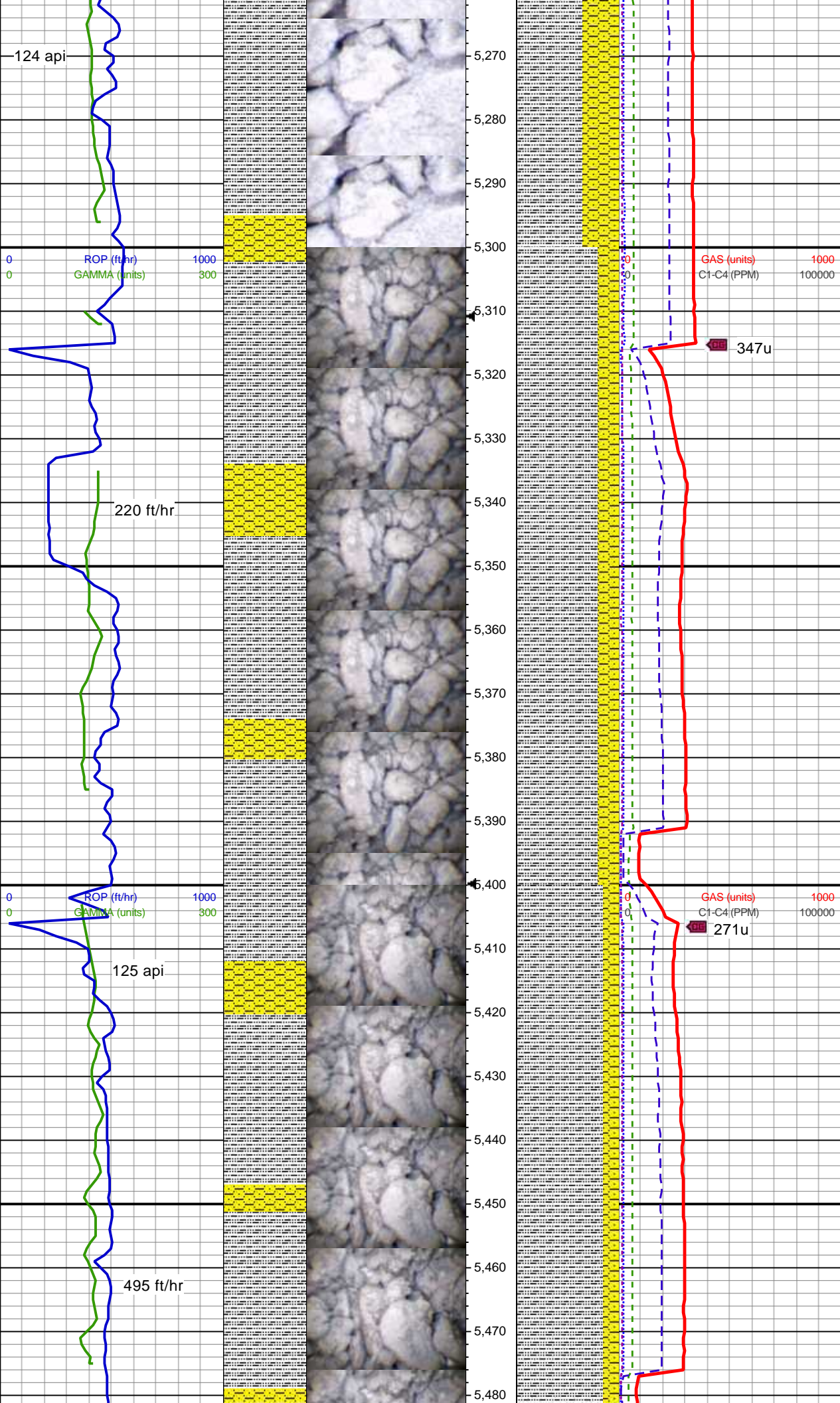
MD: 5,108'  
TVD: 5,052.68'  
Inclination: 10.89°  
Azimuth: 114.39°  
VS: 376.53'

MW 9.8 / VIS 57 IN  
MW 9.8 / VIS 53 OUT

60% SLTY SH: med-drkgy, v frm, blkly-ang, ip fis, rthy, slty grdg sdy, v arg mtx, calc; 40% SHY SS: ltgy-med, sme wh, sl hd, blkly-sb ang clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, calc

MD: 5,197'  
TVD: 5,140.08'  
Inclination: 10.85°  
Azimuth: 117.3°  
VS: 385.62'





65% SLTY SH: med-drkgy, v frm, blky-ang, ip fis, rthy, slty grdgy sdy, v arg mtx, sl calc; 35% SHY SS: ltgy-med, sme wh, sl hd, blky-sb ang clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, mod calc

MD: 5,287'  
TVD: 5,228.47'  
Inclination: 10.88°  
Azimuth: 125.44°  
VS: 396.12'

MD: 5,376'  
TVD: 5,315.89'  
Inclination: 10.8°  
Azimuth: 132.43°  
VS: 408.12'

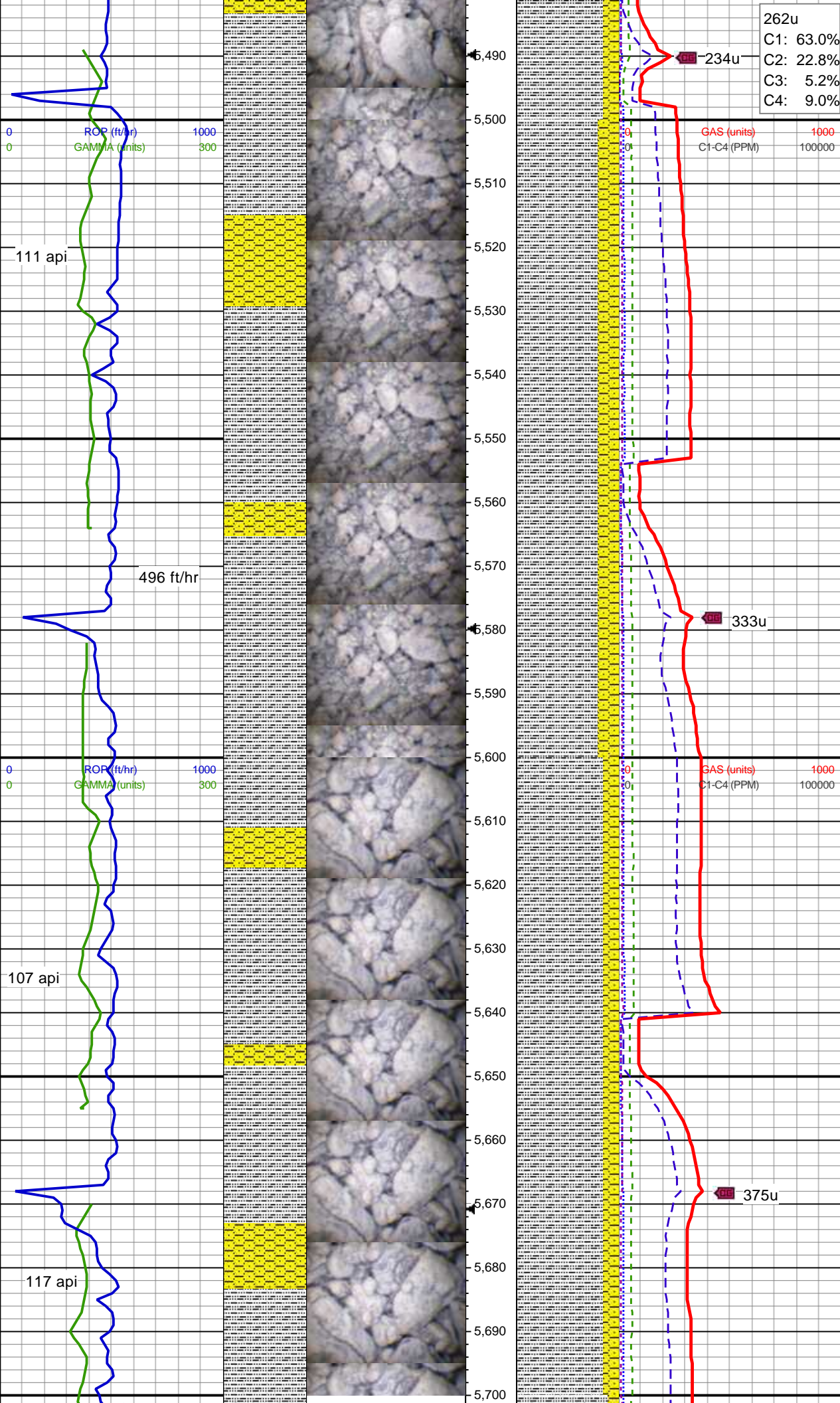
80% SLTY SH: med-occ ltgy, ip drkgy, frm-sme mod sft, blky-sb ang, ip fis, rthy, slty, v arg mtx, sl calc; 20% SHY SS: medgy, sme ltgy-wh, sl hd, blky-sb blky clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, sl calc

MW 9.8 / VIS 58 IN  
MW 9.8 / VIS 58 OUT

MD: 5,466'  
TVD: 5,404.29'  
Inclination: 10.86°  
Azimuth: 133.36°  
VS: 421.05'

85% SLTY SH: med-occ ltgy, ip





drkgy, frm-sme mod sft, blkysb ang, ip fis, rthy, slty, v arg mtx, sl calc; 15% SHY SS: medgy, sme ltgy-wh, sl hd, blkysb blkysb clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, sl calc

MD: 5,556'  
TVD: 5,492.67'  
Inclination: 10.88°  
Azimuth: 136.61°  
VS: 434.41'

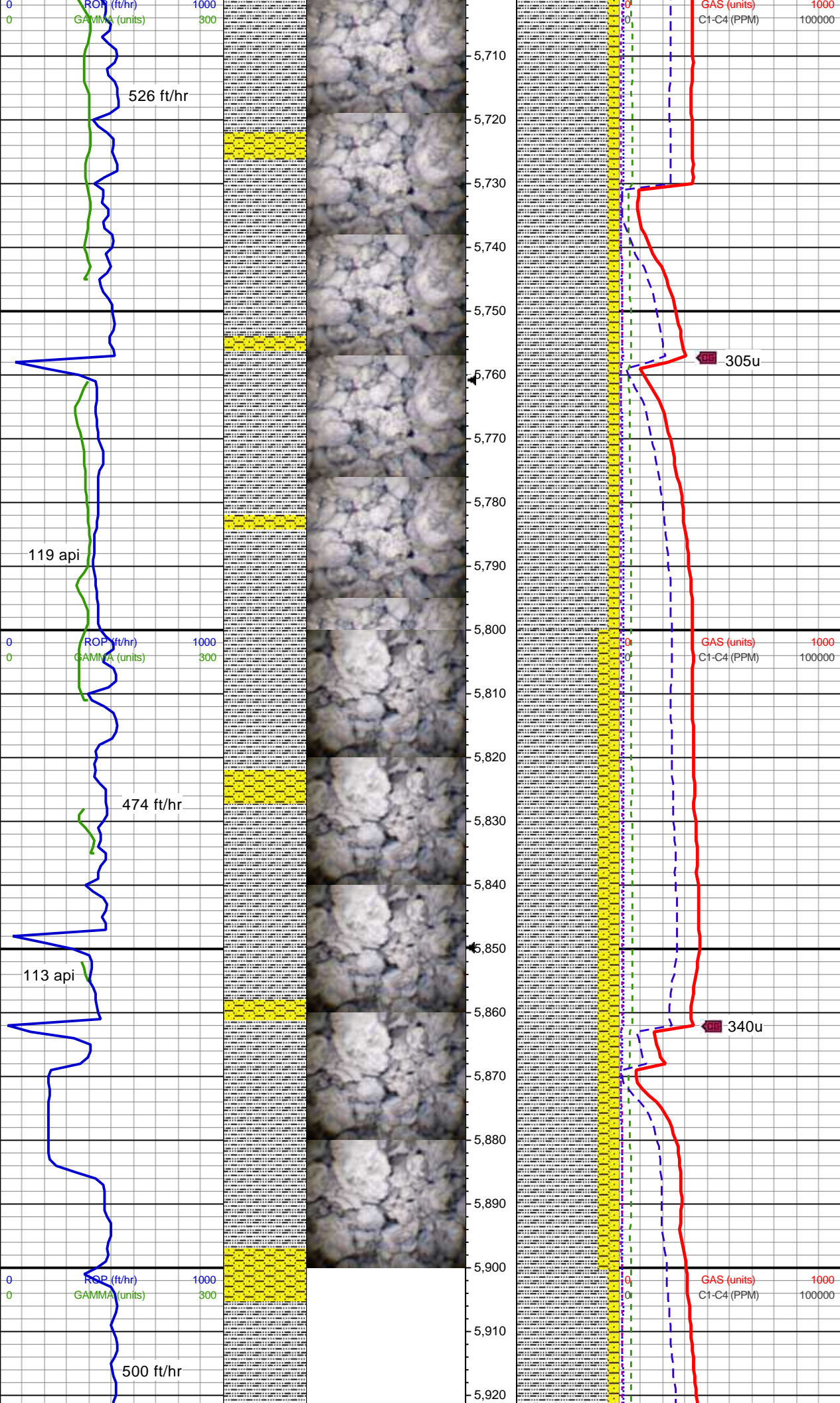
80% SLTY SH: med-drkgy, occ ltr gy, frm-sme mod sft, blkysb ang, ip fis, rthy, slty, v arg mtx, sl calc; 20% SHY SS: medgy, sme ltgy-wh, sl hd, blkysb blkysb clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, sl calc

MW 9.8 / VIS 55 IN  
MW 9.8 / VIS 53 OUT

MD: 5,647'  
TVD: 5,582.04'  
Inclination: 10.84°  
Azimuth: 138.83°  
VS: 448.4'

85% SLTY SH: med-drkgy, occ ltr gy, frm-sme mod sft, blkysb ang, ip fis, rthy, slty, v arg mtx, sl calc; 15% SHY SS: medgy, sme ltgy-wh, sl hd, blkysb blkysb clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, sl calc





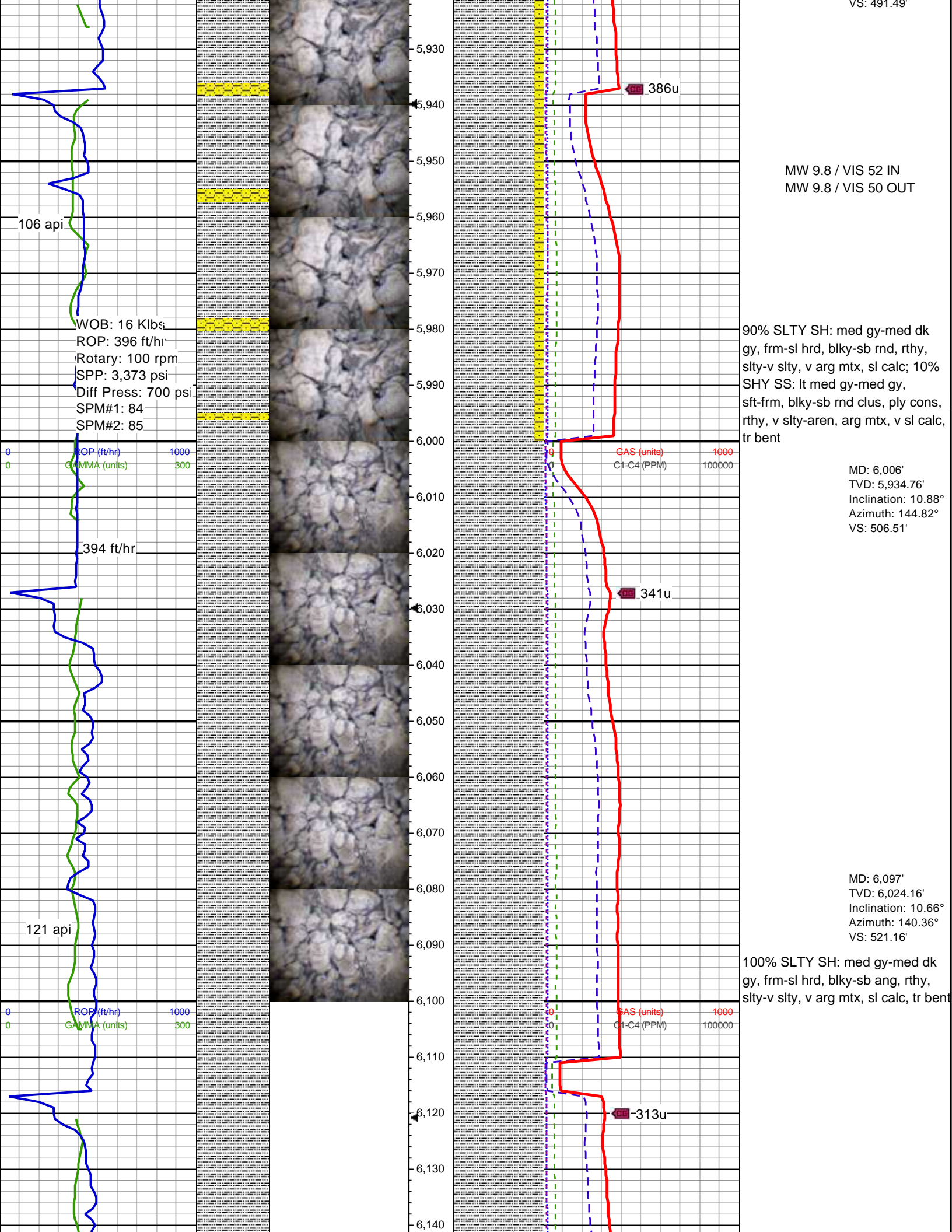
90% SLTY SH: med-drkgy, mod frm-v hd, blkly-sb ang, ip fis, rthy, slty, v arg mtx, sl calc; 10% SHY SS: medgy, sme ltgy-wh, sl-v hd, blkly-sb blkly clus, ply cons, occ lse grns, rthy, slty-aren, arg mtx, sl calc

MD: 5,826'  
TVD: 5,757.91'  
Inclination: 10.64°  
Azimuth: 143.68°  
VS: 476.72'

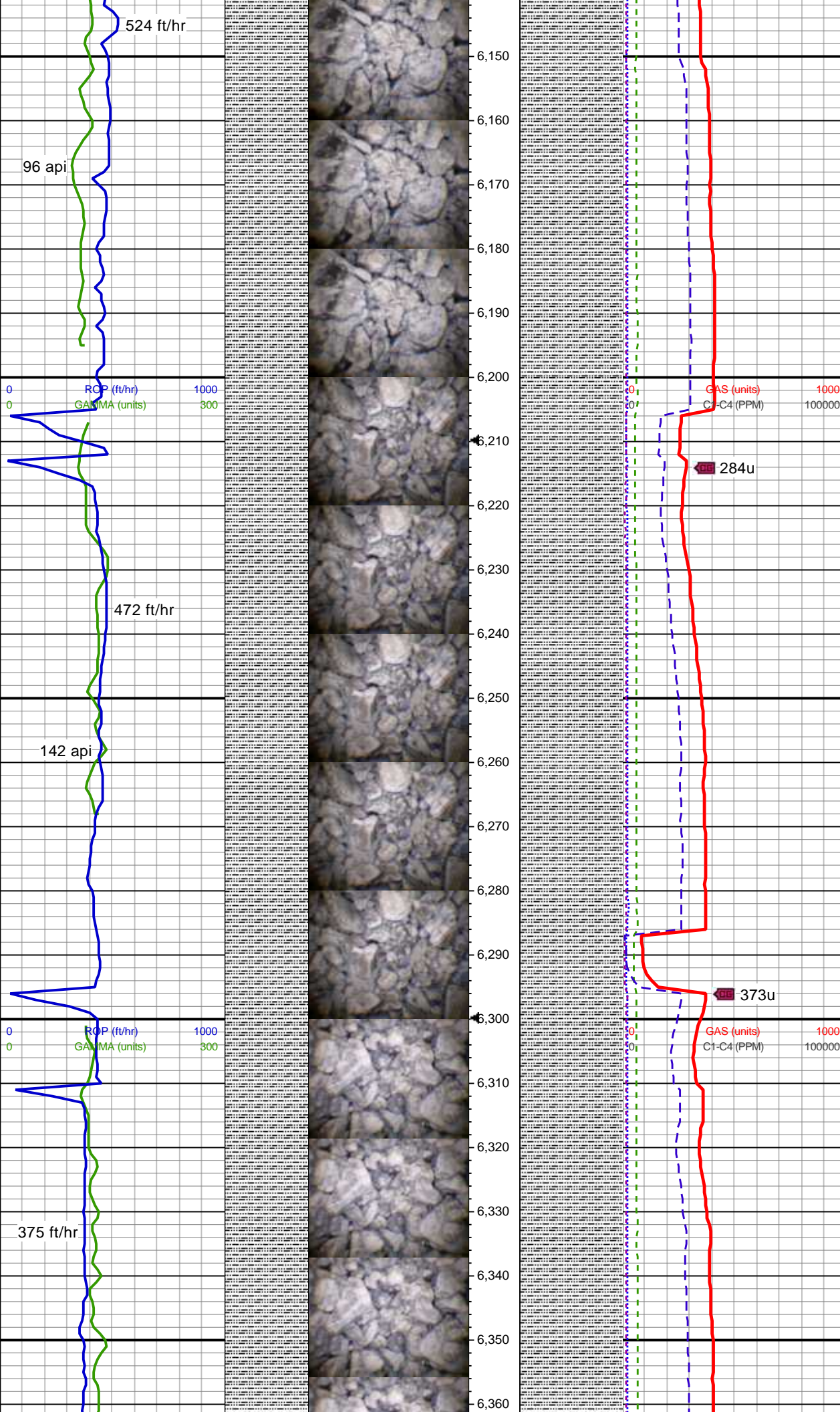
80% SLTY SH: med gy-med dk gy, frm-hrd, blkly-sb rnd, rr fis, rthy, slty-v slty, v arg mtx, sl calc; 20% SHY SS: lt med gy-med gy, sft-frm, blkly-sb blkly clus, ply cons, rthy, v slty-aren, arg mtx, v sl calc, tr bent

MD: 5,916'  
TVD: 5,846.35'  
Inclination: 10.72°  
Azimuth: 147.1°  
VS: 476.72'









MD: 6,186'  
TVD: 6,111.62'  
Inclination: 10.69°  
Azimuth: 139.87°  
VS: 535'

100% SLTY SH: med gy-med dk gy, frm-hrd, blk-y-sb ang, rthy, sl slty-slty, v arg mtx, sl calc, tr Inoc frags

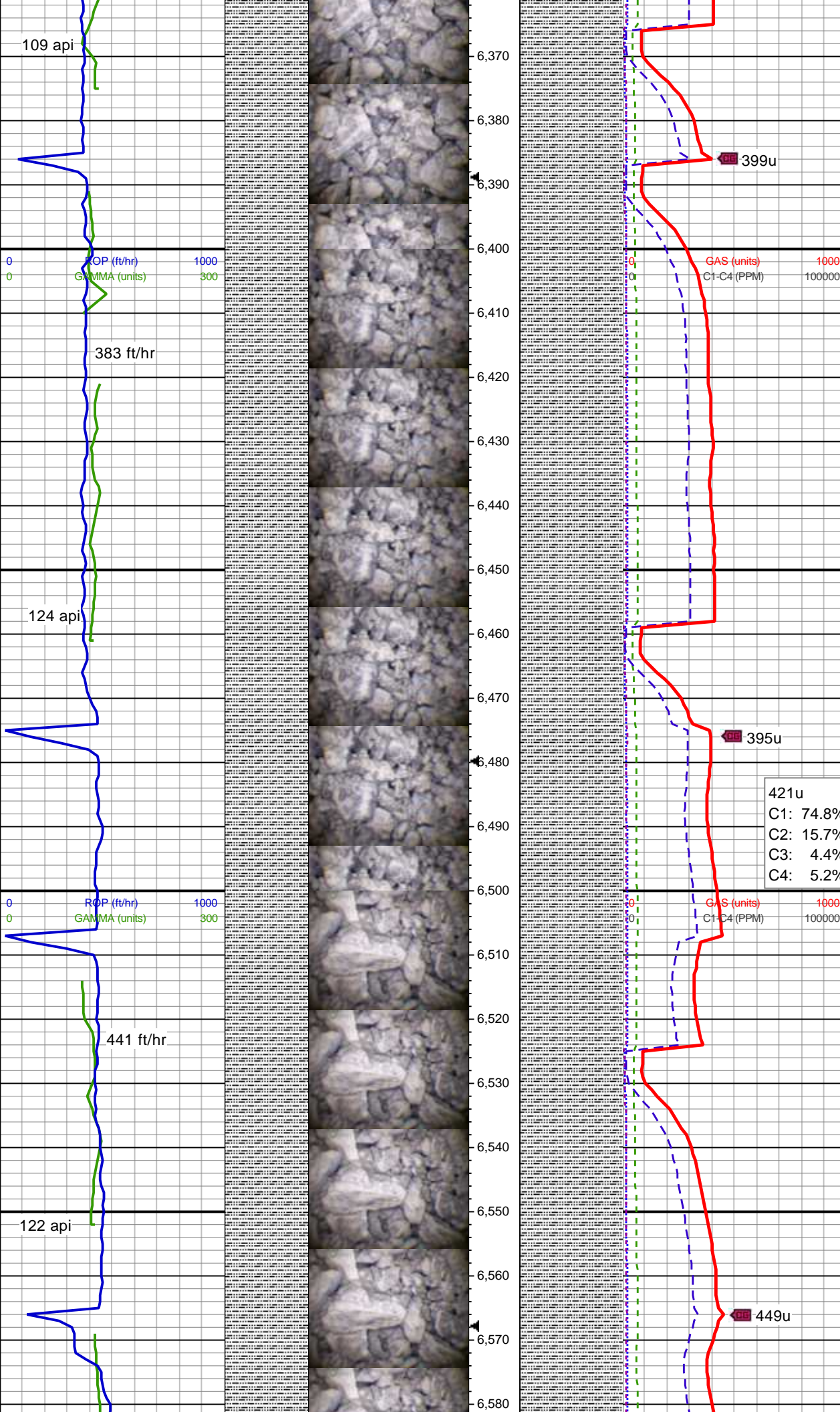
MW 9.8 / VIS 45 IN  
MW 9.8 / VIS 46 OUT

MD: 6,276'  
TVD: 6,200.05'  
Inclination: 10.75°  
Azimuth: 137.22°  
VS: 548.79'

100% SLTY SH: med dk gy-dk gy, frm-hrd, blk-y-sb ang, rthy, sl slty-slty, v arg mtx, calc, tr Inoc frags

MD: 6,365'  
TVD: 6,287.5'





TVD: 6,267.3'  
Inclination: 10.68°  
Azimuth: 134.8°  
VS: 562'

100% SLTY SH: med dk gy-dk gy,  
frm-hrd, blk-y-sb ang, rthy, sl  
slty-slty, v arg mtx, calc

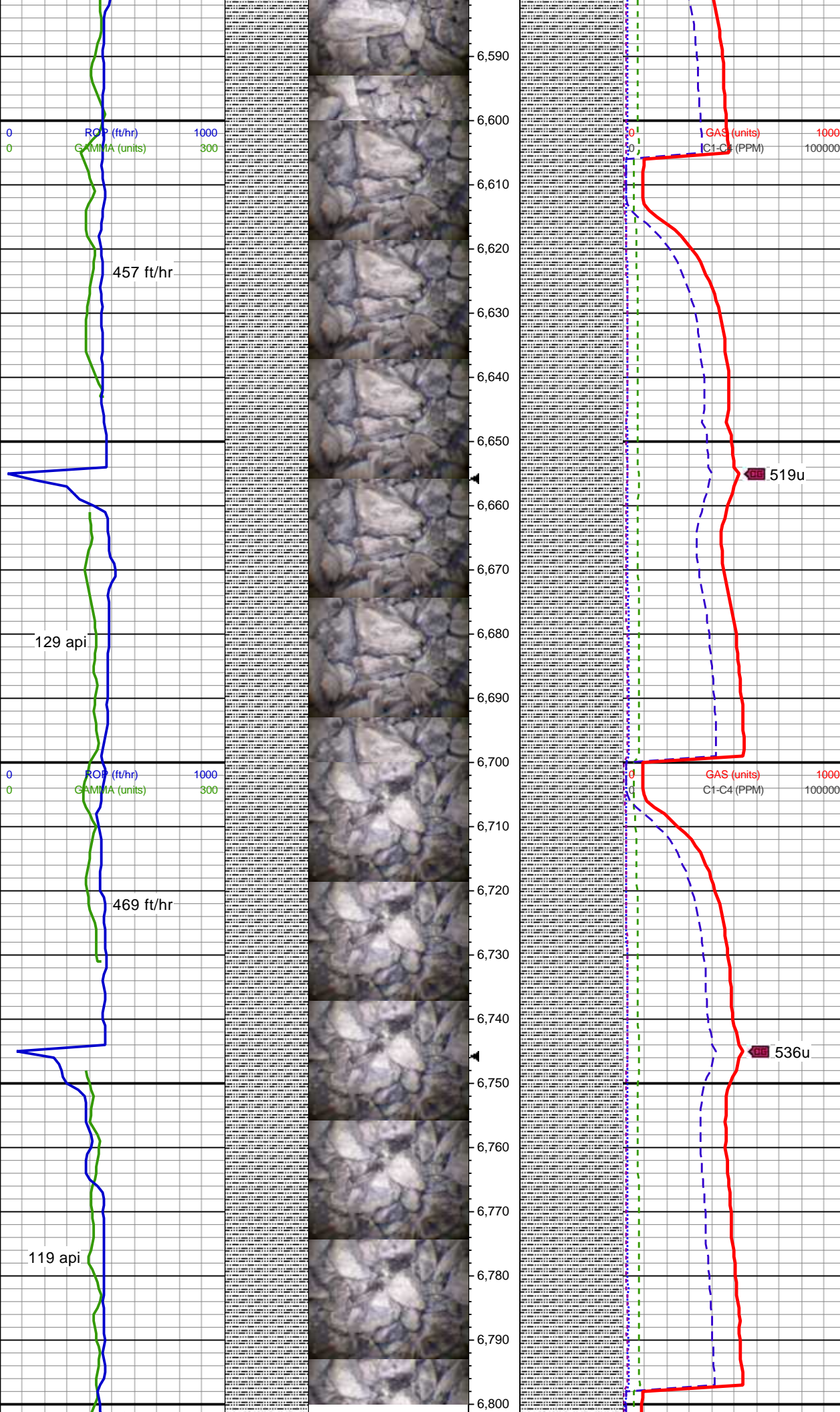
MD: 6,455'  
TVD: 6,375.93'  
Inclination: 10.72°  
Azimuth: 131.71°  
VS: 574.84'

100% SLTY SH: med dk gy-dk gy,  
sft-frm, blk-y-sb ang, rthy, sl  
slty-slty, v arg mtx, sl calc

MD: 6,544'  
TVD: 6,463.36'  
Inclination: 10.88°  
Azimuth: 130.4°  
VS: 587.24'

421u
C1: 74.8%
C2: 15.7%
C3: 4.4%
C4: 5.2%





100% SLTY SH: med dk gy-dk gy,  
sft frm, blk-y-sb rnd, mnr ang, rthy,  
sl slty-slty, v arg mtx, sl calc

MD: 6,634'  
TVD: 6,551.75'  
Inclination: 10.78°  
Azimuth: 129.98°  
VS: 599.64'

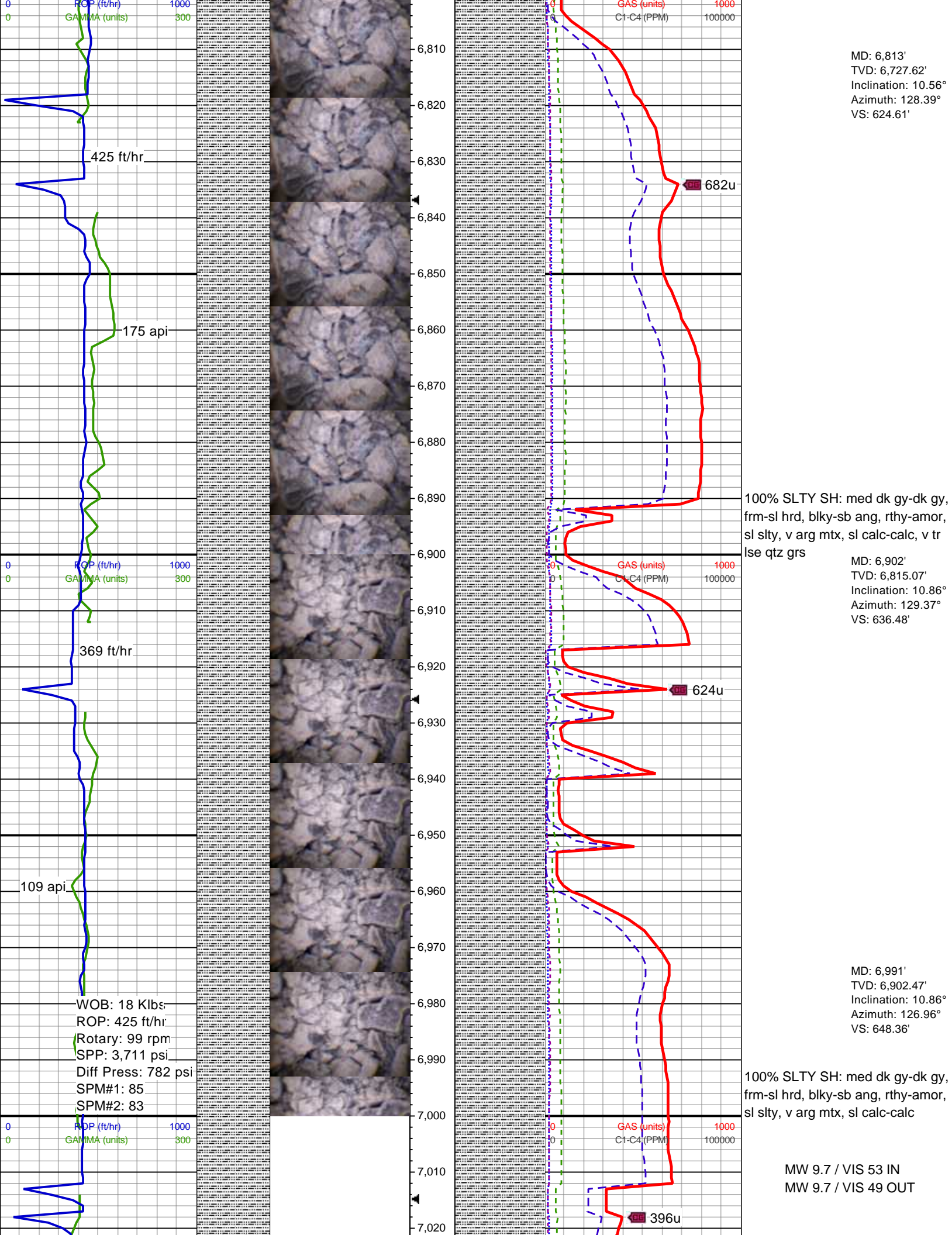
100% SLTY SH: med dk gy-dk gy,  
sft frm, blk-y-sb ang, rthy, sl  
slty-slty, v arg mtx, sl calc-calc

MW 9.8 / VIS 44 IN  
MW 9.8 / VIS 43 OUT

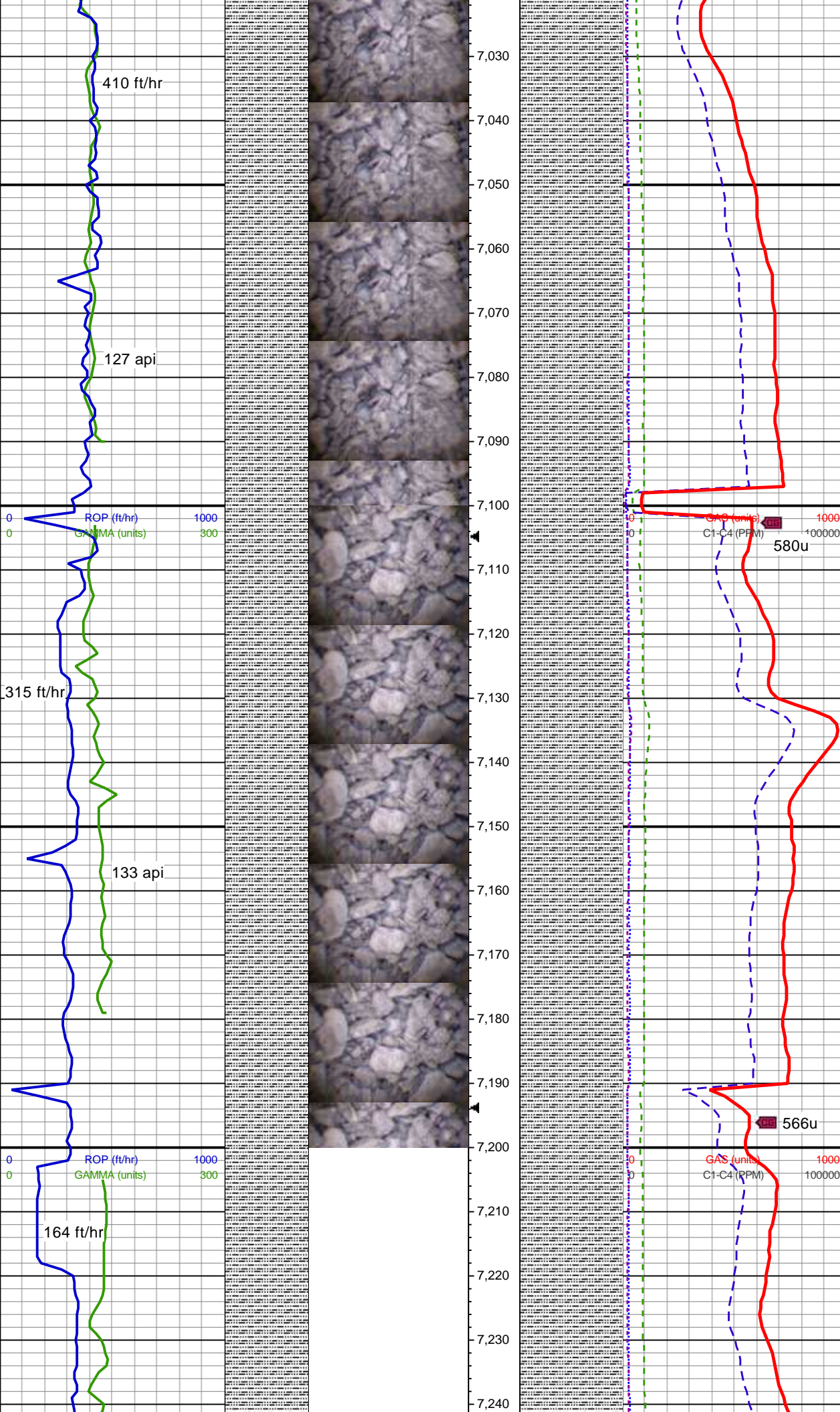
MD: 6,724'  
TVD: 6,640.16'  
Inclination: 10.82°  
Azimuth: 133.81°  
VS: 612.33'

100% SLTY SH: med dk gy-dk gy,  
frm-sl hrd, blk-y-sb ang, mnr rnd,  
rthy, sl slty, v arg mtx, sl calc-calc





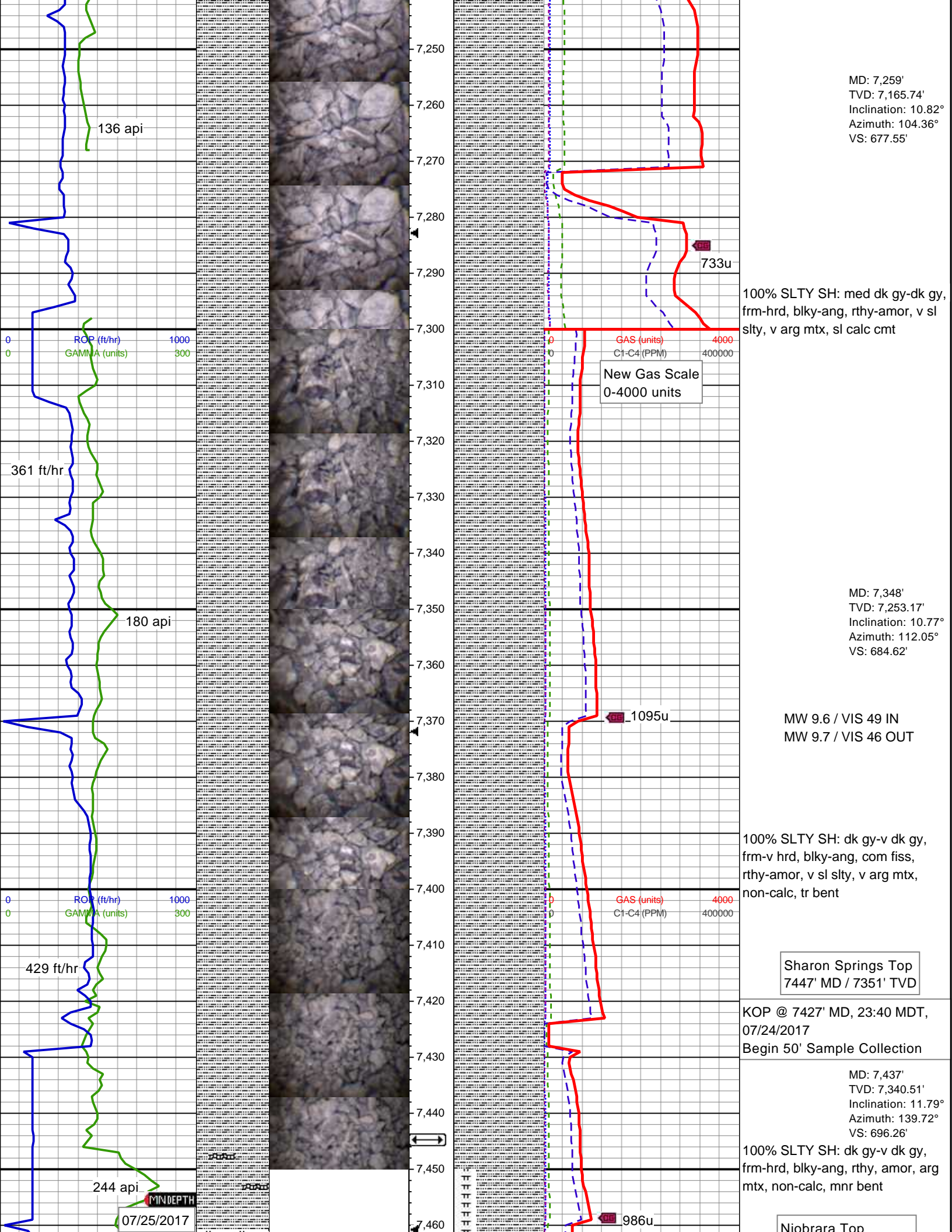




MD: 7,081'  
TVD: 6,990.87'  
Inclination: 10.78°  
Azimuth: 127.68°  
VS: 660.16'

MD: 7,170'  
TVD: 7,078.31'  
Inclination: 10.82°  
Azimuth: 113.61°  
VS: 670.26'





MD: 7,259'  
TVD: 7,165.74'  
Inclination: 10.82°  
Azimuth: 104.36°  
VS: 677.55'

100% SLTY SH: med dk gy-dk gy,  
frm-hrd, blk-ang, rthy-amor, v sl  
silty, v arg mtx, sl calc cmt

New Gas Scale  
0-4000 units

MD: 7,348'  
TVD: 7,253.17'  
Inclination: 10.77°  
Azimuth: 112.05°  
VS: 684.62'

MW 9.6 / VIS 49 IN  
MW 9.7 / VIS 46 OUT

100% SLTY SH: dk gy-v dk gy,  
frm-v hrd, blk-ang, com fiss,  
rthy-amor, v sl silty, v arg mtx,  
non-calc, tr bent

Sharon Springs Top  
7447' MD / 7351' TVD

KOP @ 7427' MD, 23:40 MDT,  
07/24/2017  
Begin 50' Sample Collection

MD: 7,437'  
TVD: 7,340.51'  
Inclination: 11.79°  
Azimuth: 139.72°  
VS: 696.26'

100% SLTY SH: dk gy-v dk gy,  
frm-hrd, blk-ang, rthy, amor, arg  
mtx, non-calc, mntr bent

Niobrara Top

07/25/2017



