

COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name Fiscus Federal LD15-76HN

Location NENW SEC15 T9N R58W

State CO

County WELD

Country USA

Rig Number PRECISION 828

API Number 05-123-37368

AFE # 200240

Region DENVER-JULESBURG BASIN

Field WILDCAT

Spud Date 11/11/2014

Drilling Completed 11/18/2014

Surface Coordinates 280' FNL, 1757' FWL

Lat/Long: 40.75786/-103.8535

Ground Elevation 4700'

K.B. Elevation 4716'

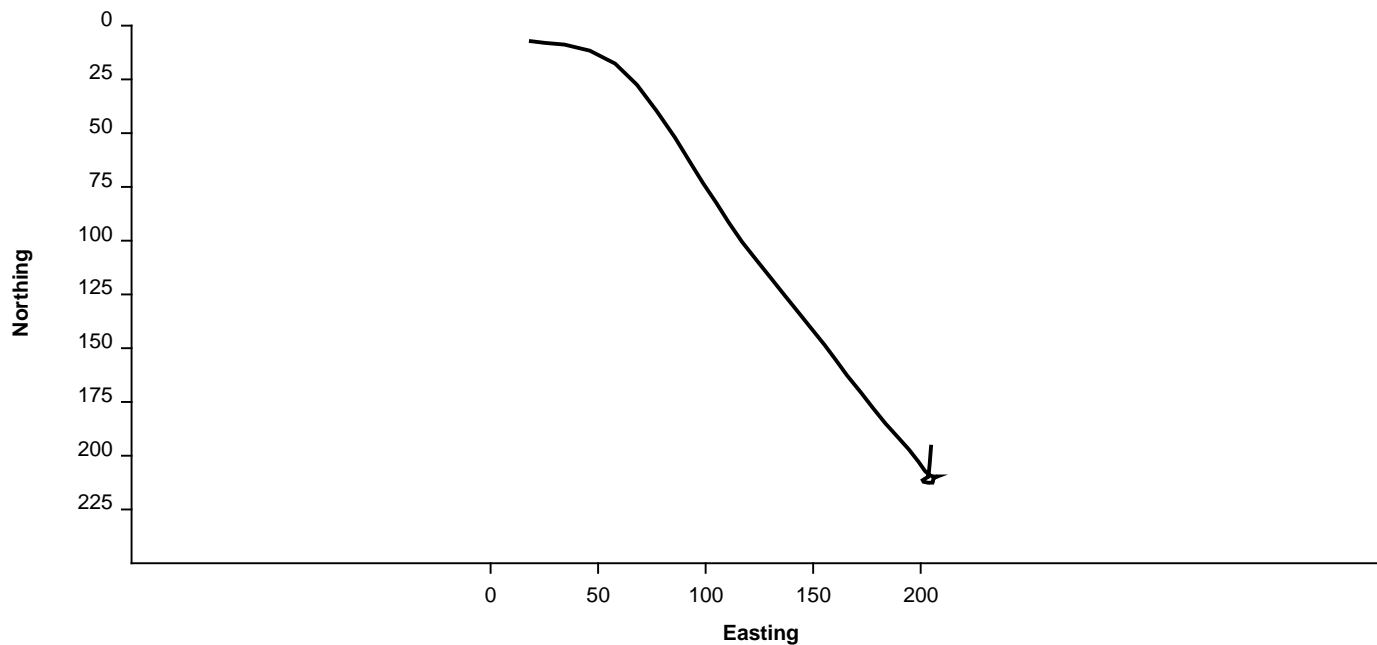
Logged Interval 1200' **To** 5000'

Total Depth 9886'

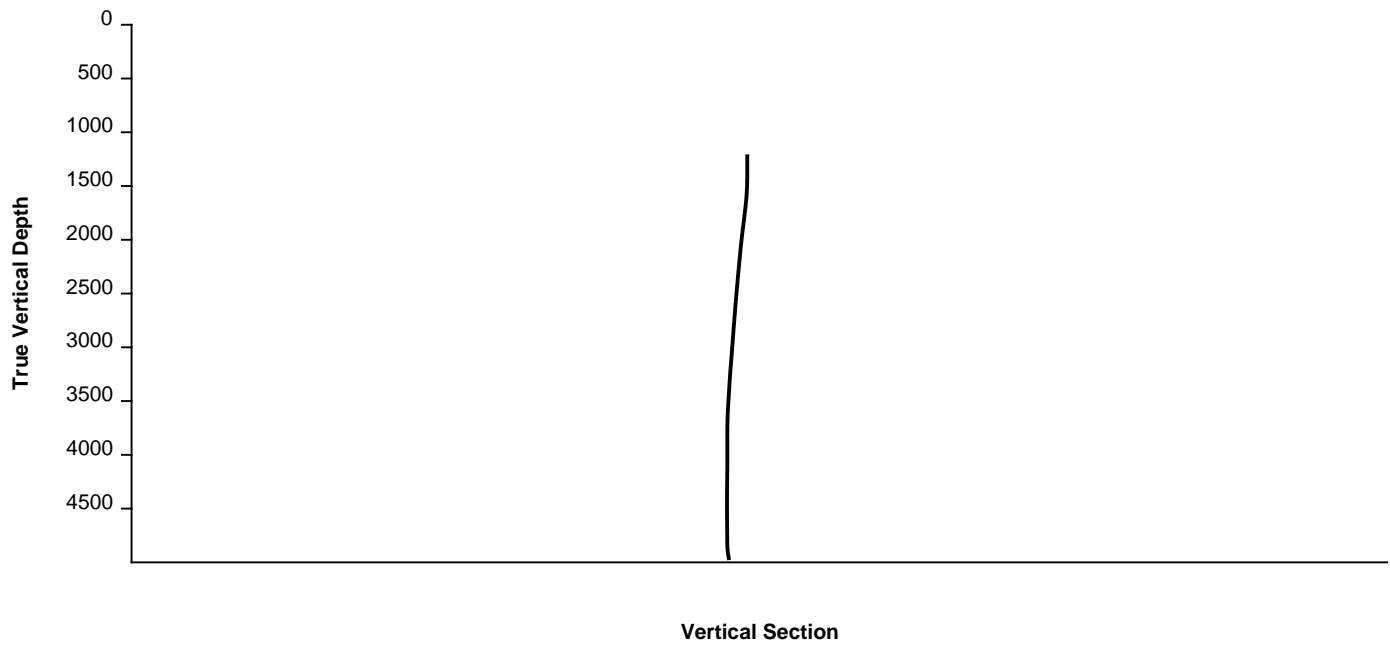
Formation FOX HILLS, PIERRE (PARKMAN, SUSSEX, SHANNON, TEEPEE BUTTES)

Type of Drilling Fluid FRESH WATER, LSND

Survey Plan



Survey Elevation



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 WACKESTONE

Sorting

- M MODERATE
- P POOR
- W WELL

Accessories

Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC
- BRACHIOPOD
- BRYOZOA
- CEPHALOPOD
- CORAL
- CRINOID
- ECHINOID

- GASTROPOD
- INOCERAMUS
- OOOLITE
- OSTRACOD
- PELECYPOD
- PELLET
- PISOLITE
- PLANT REMAINS
- PLANT SPORES
- SCAPHOPOD
- STROMATOPOROID

Minerals

- ARGILLITE GRAIN
- BENTONITE
- BITUMENOUS SUBSTANCE
- BRECCIA FRAGMENTS
- CALCAREOUS
- CARBONACEOUS FLAKES
- CHTDK
- CHTLT
- COAL - THIN BEDS
- DOLOMITIC
- FELDSPAR
- FERRUGINOUS PELLET

- HEAVY MINERAL
- KAOLIN
- MARLSTONE
- MICACEOUS
- MINERAL CRYSTALS
- NODULES
- PHOSPHATE PELLETS
- PYRITE
- SALT CAST
- SANDY
- SILICEOUS
- SILTY

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

FISH

FORAMINIFERA

FOSSIL

ANHYDRITIC

ARGILLACEOUS

FERRUGINOUS

GLAUCONITE

GYPSIFEROUS

TUFFACEOUS

Stringer

Other

WELLSITE GEOLOGISTS: GARY L. MYERS
C.S. METZ

LOG CONTINUES ON FILE: Fiscus Federal LD15-76HN Horiz.mplot

GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING, INC.

Rock Types

UNKNOWN

SANDSTONE

SHALY SANDSTONE

SHALY SILTSTONE

SILTY SHALE

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

SHALE

SHALE COLORED

SHALE GRAY

SILTSTONE

TILL

TUFF

WELDED TUFF

Operator

Company Noble Energy Inc

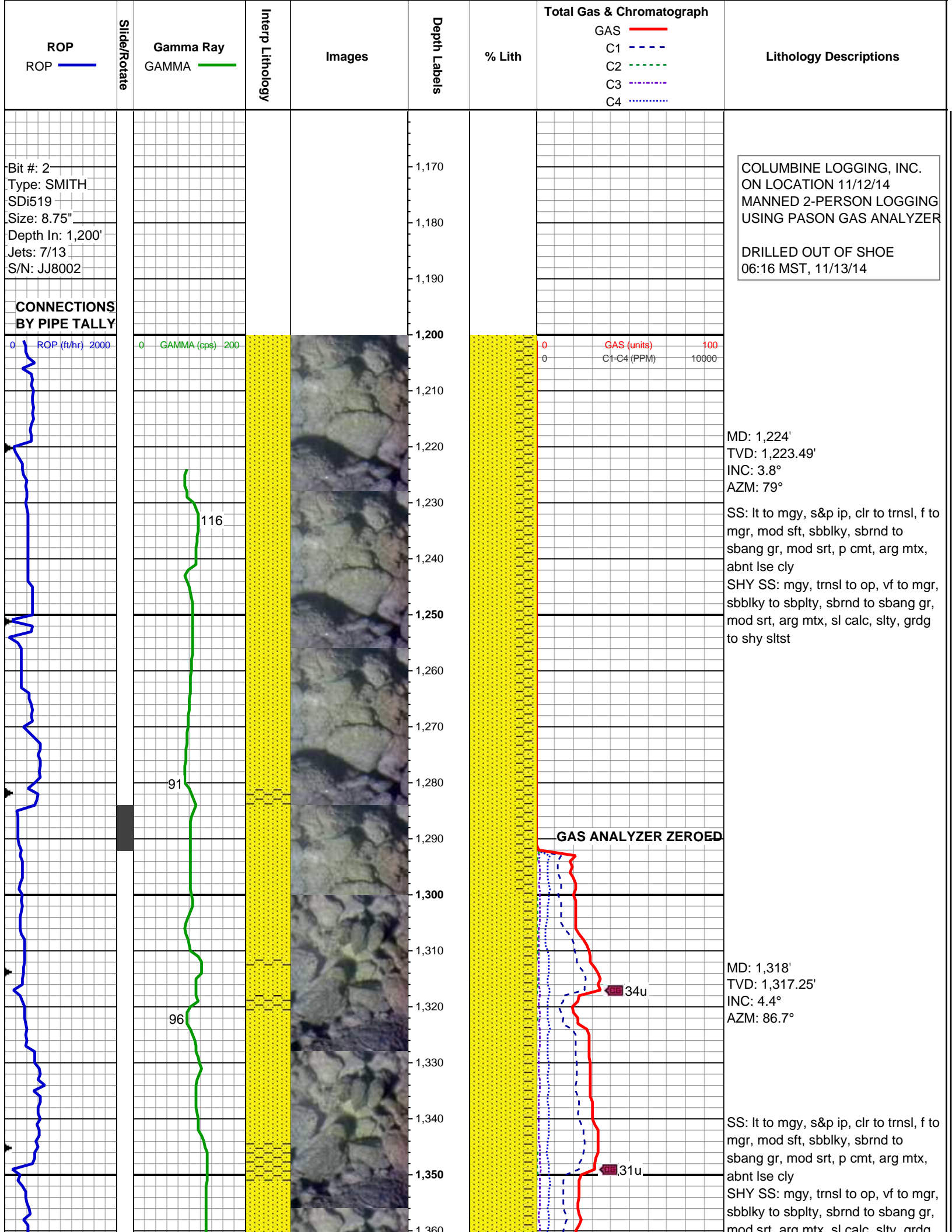
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Denver, CO 80202

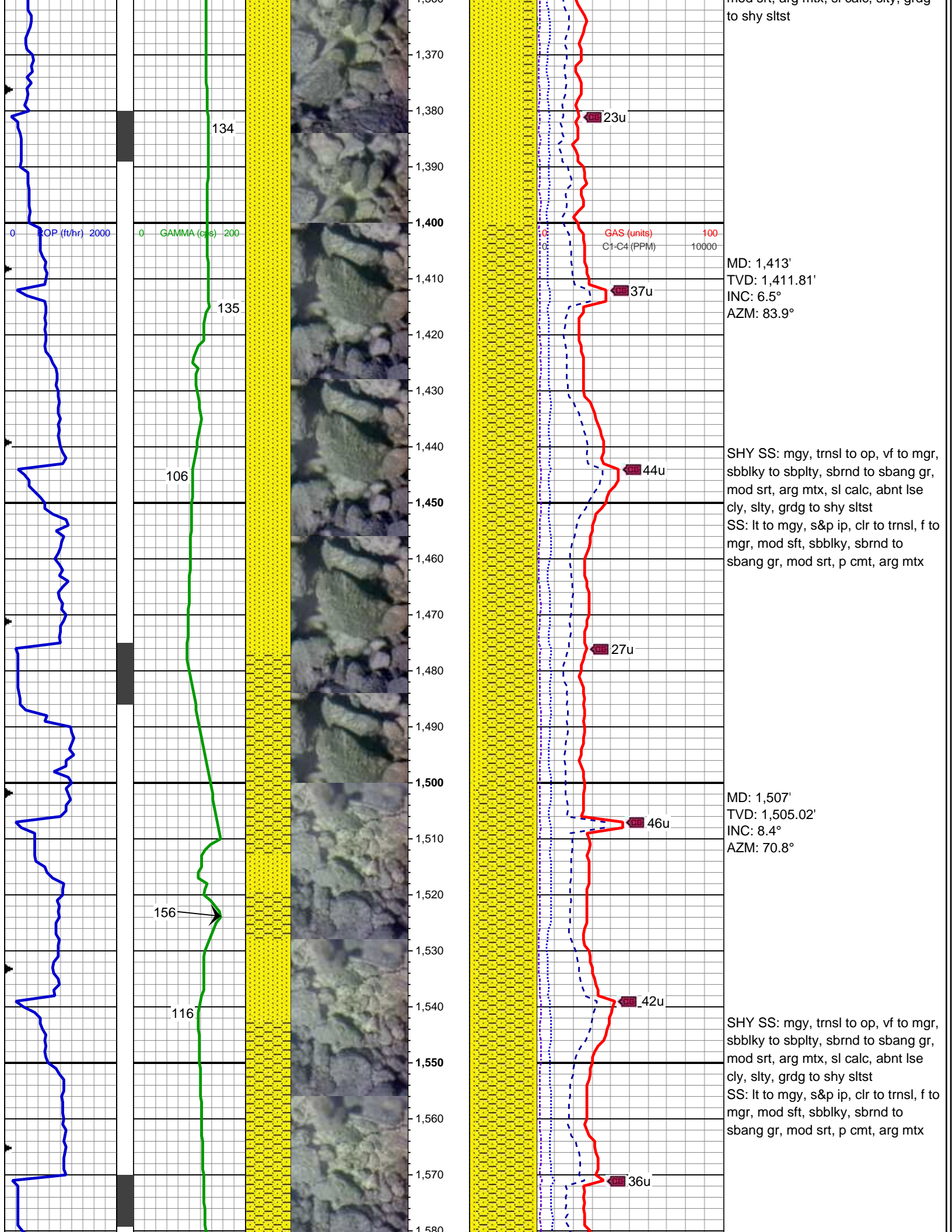
Geologist

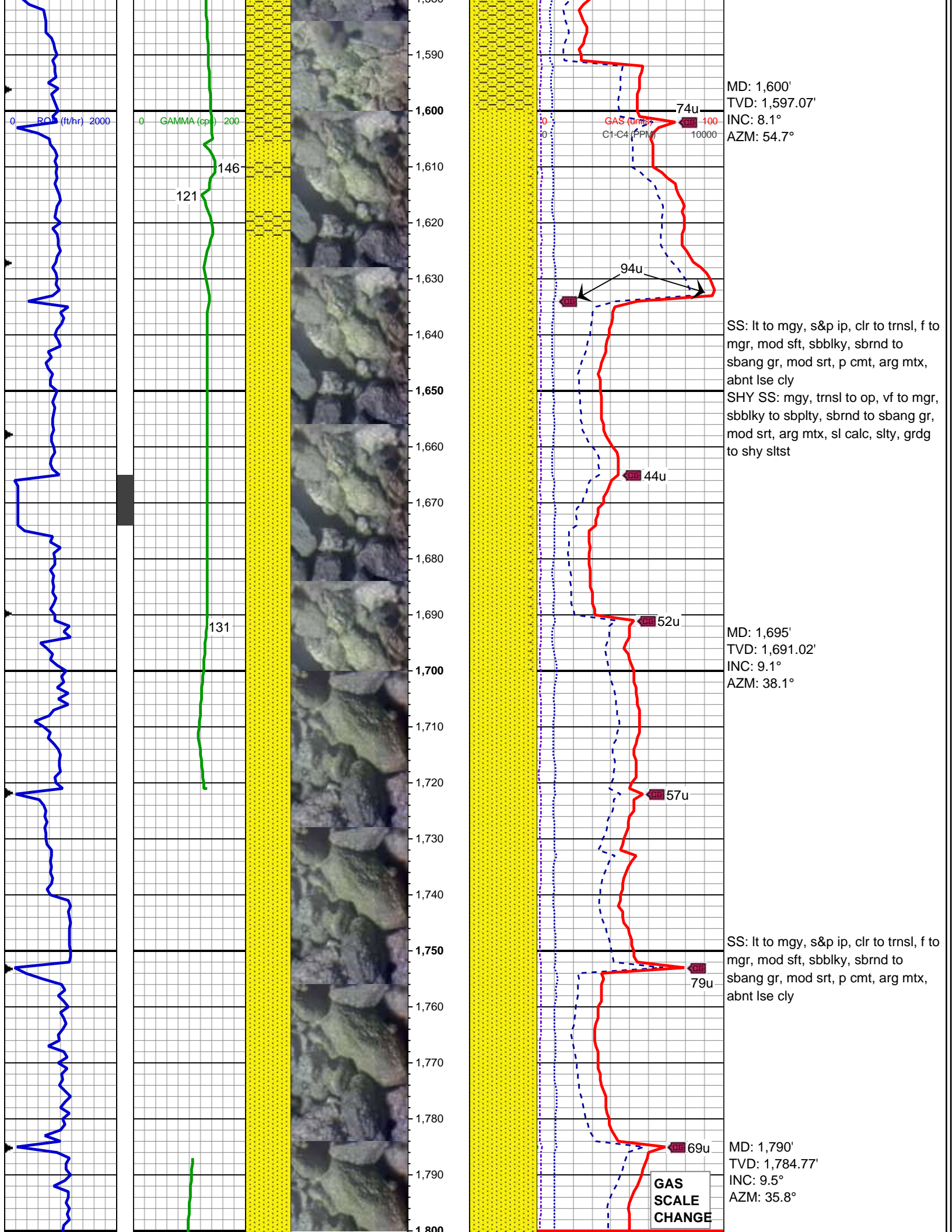
Name TERESA MALESARDI

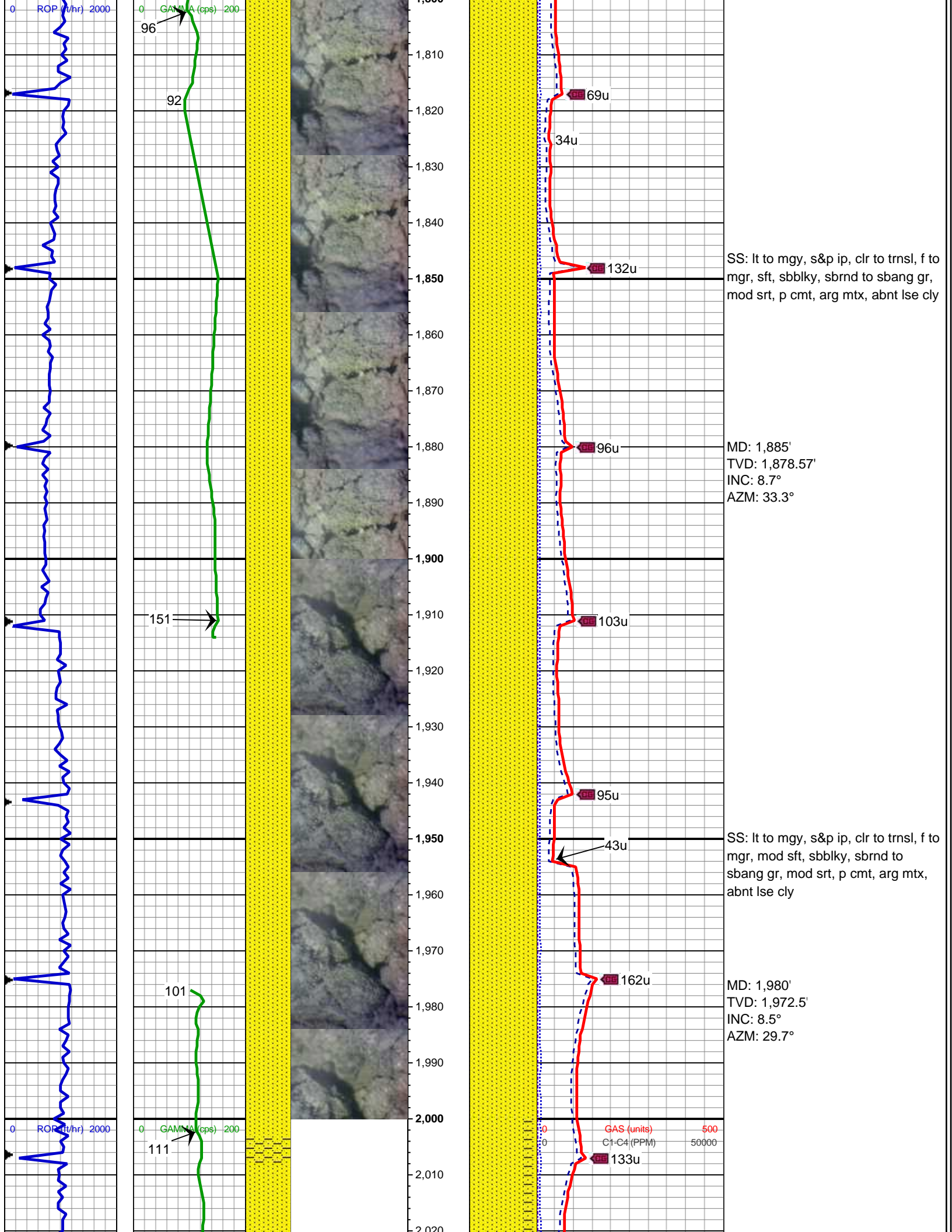
Company NOBLE ENERGY, INC.

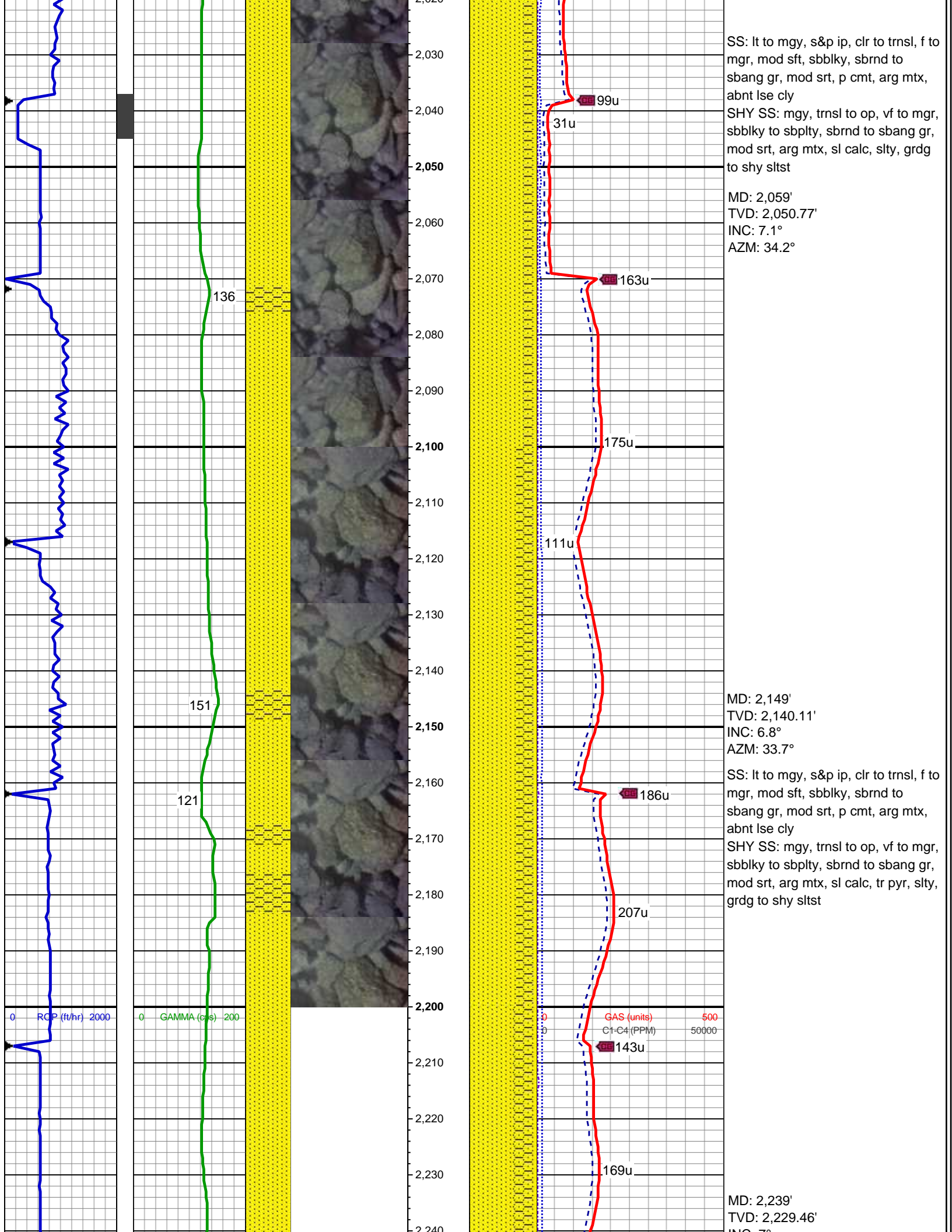
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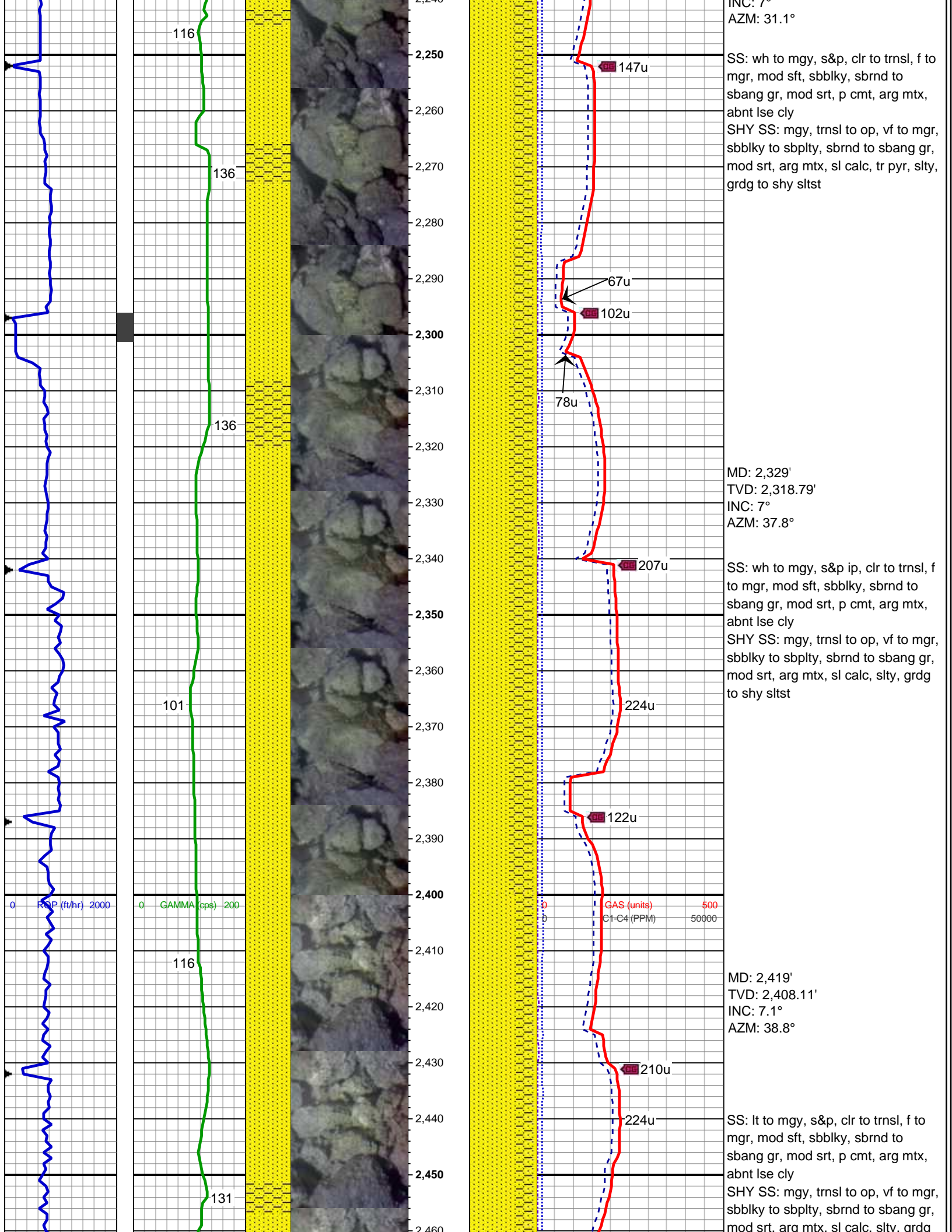


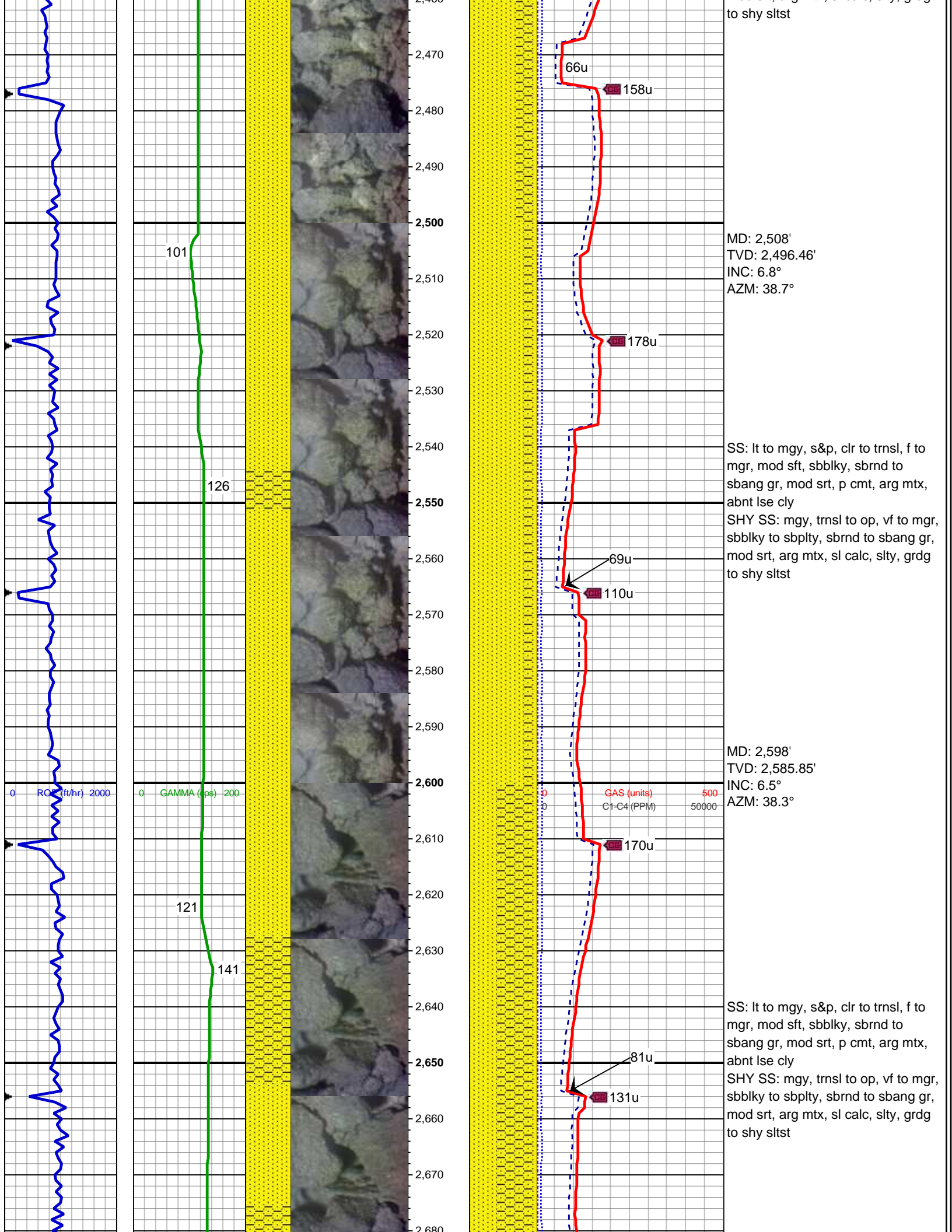


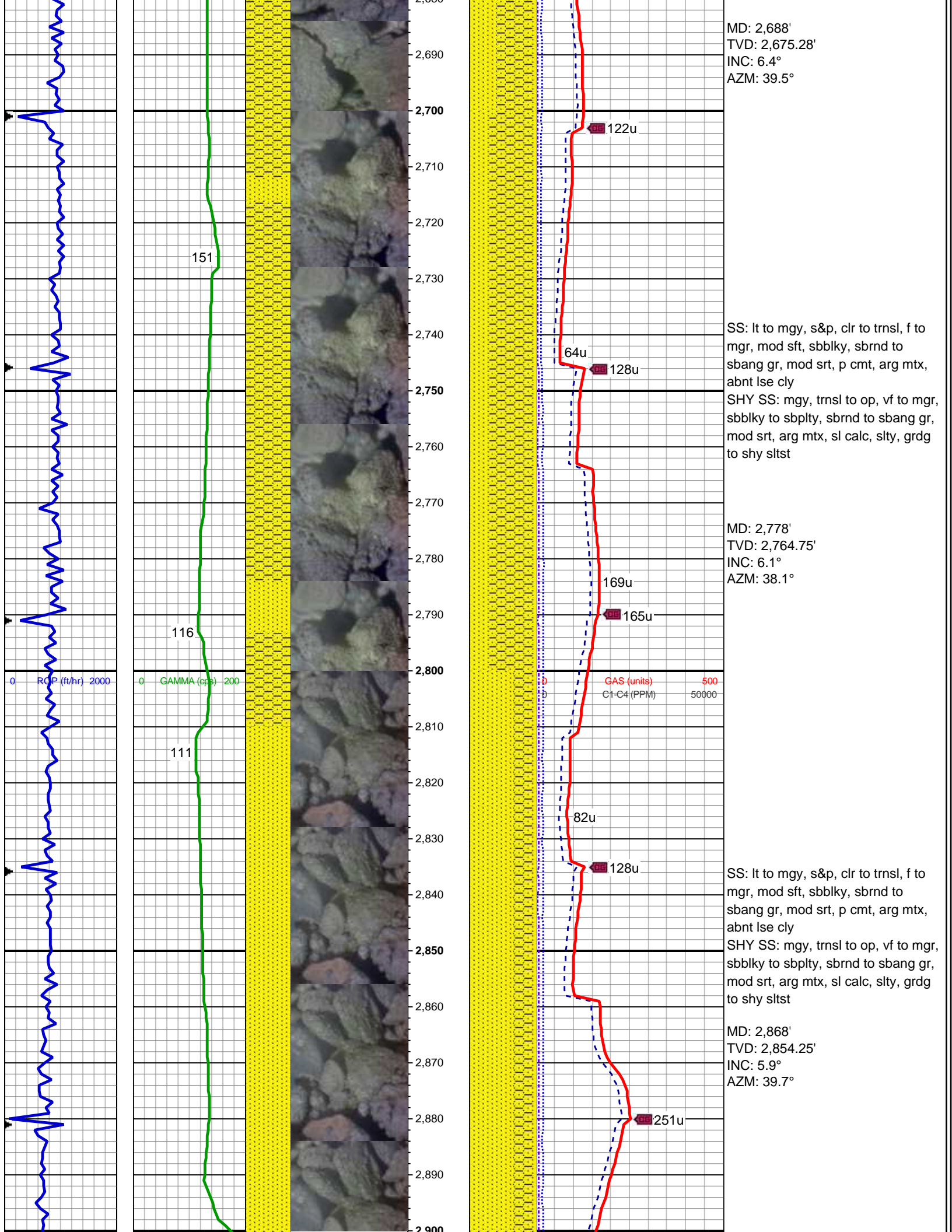


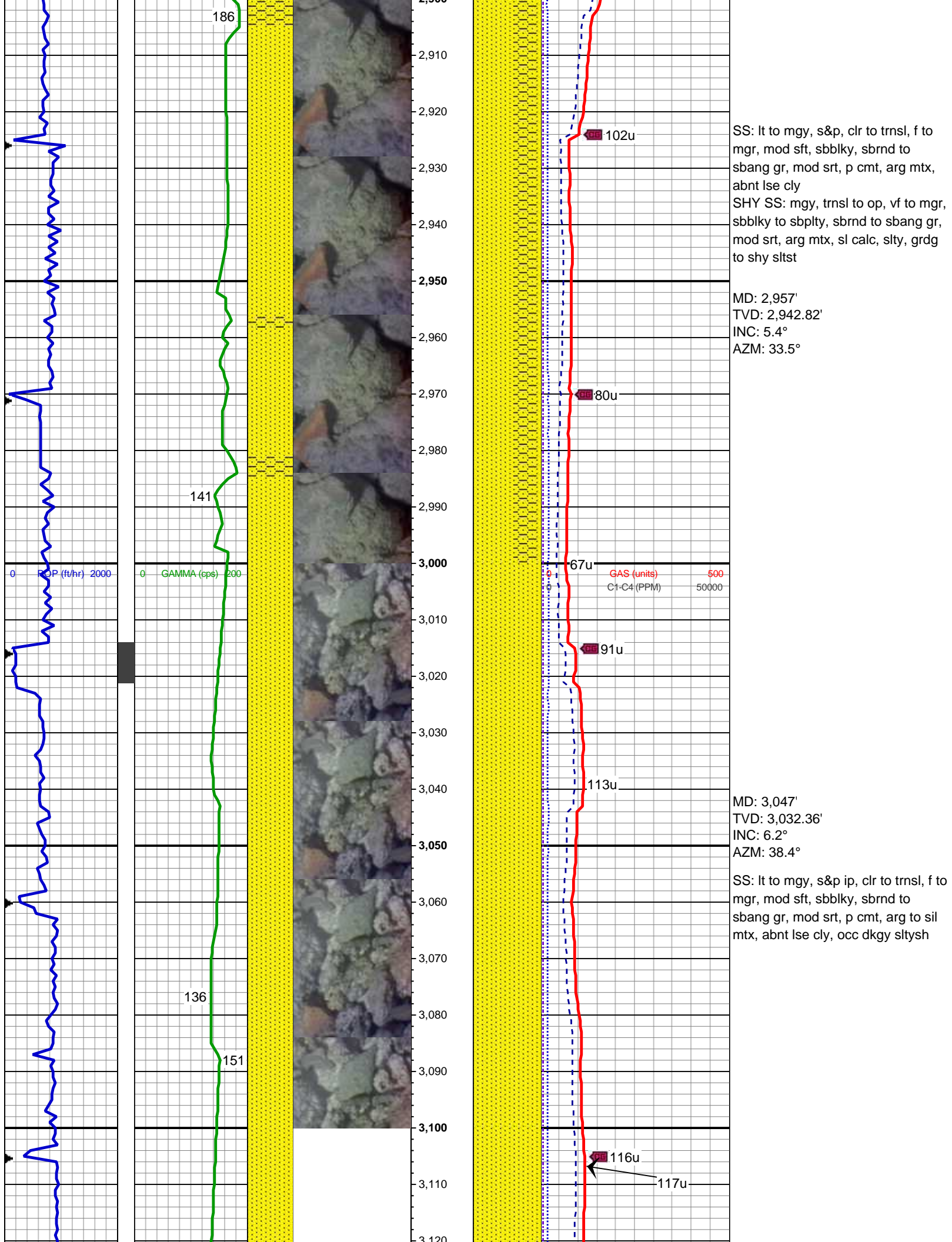


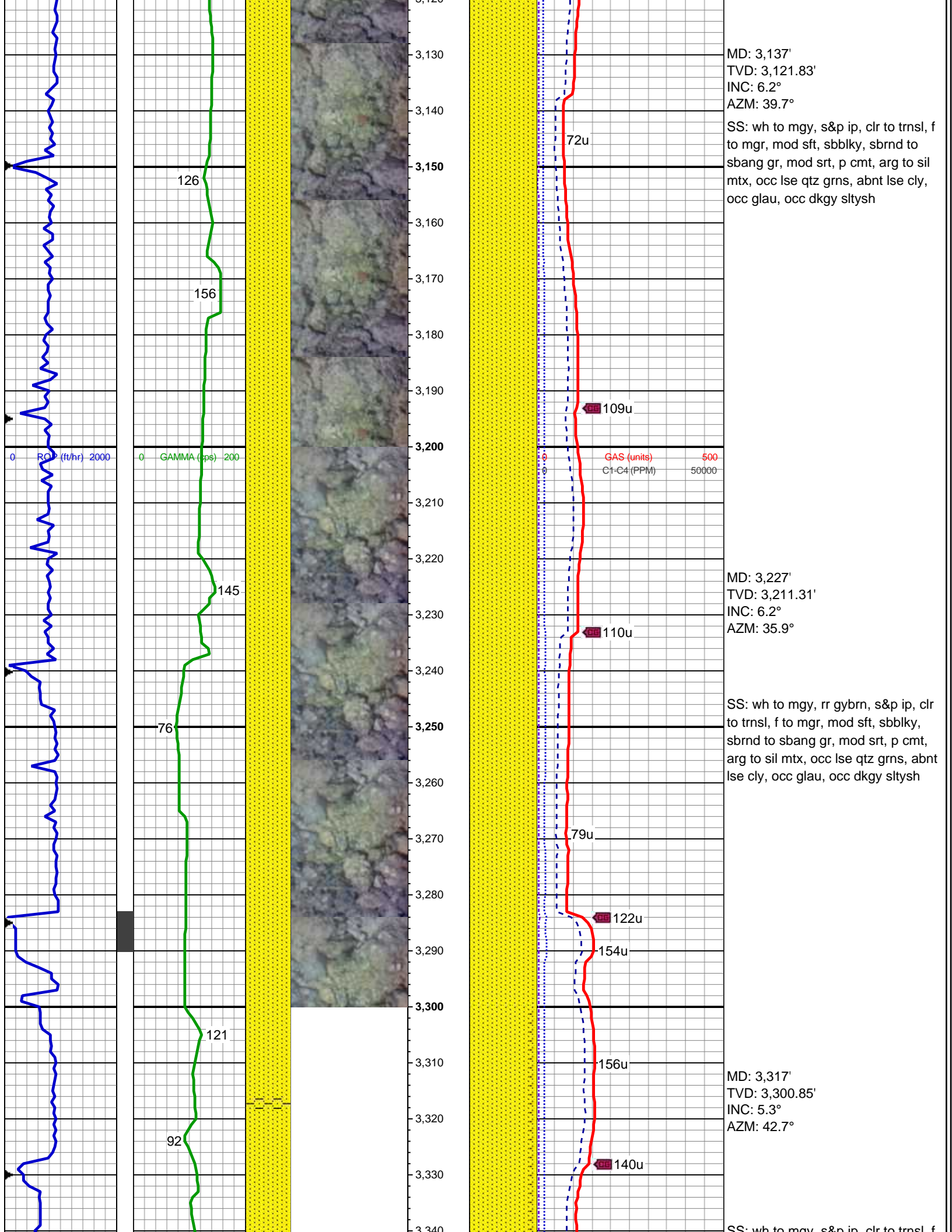


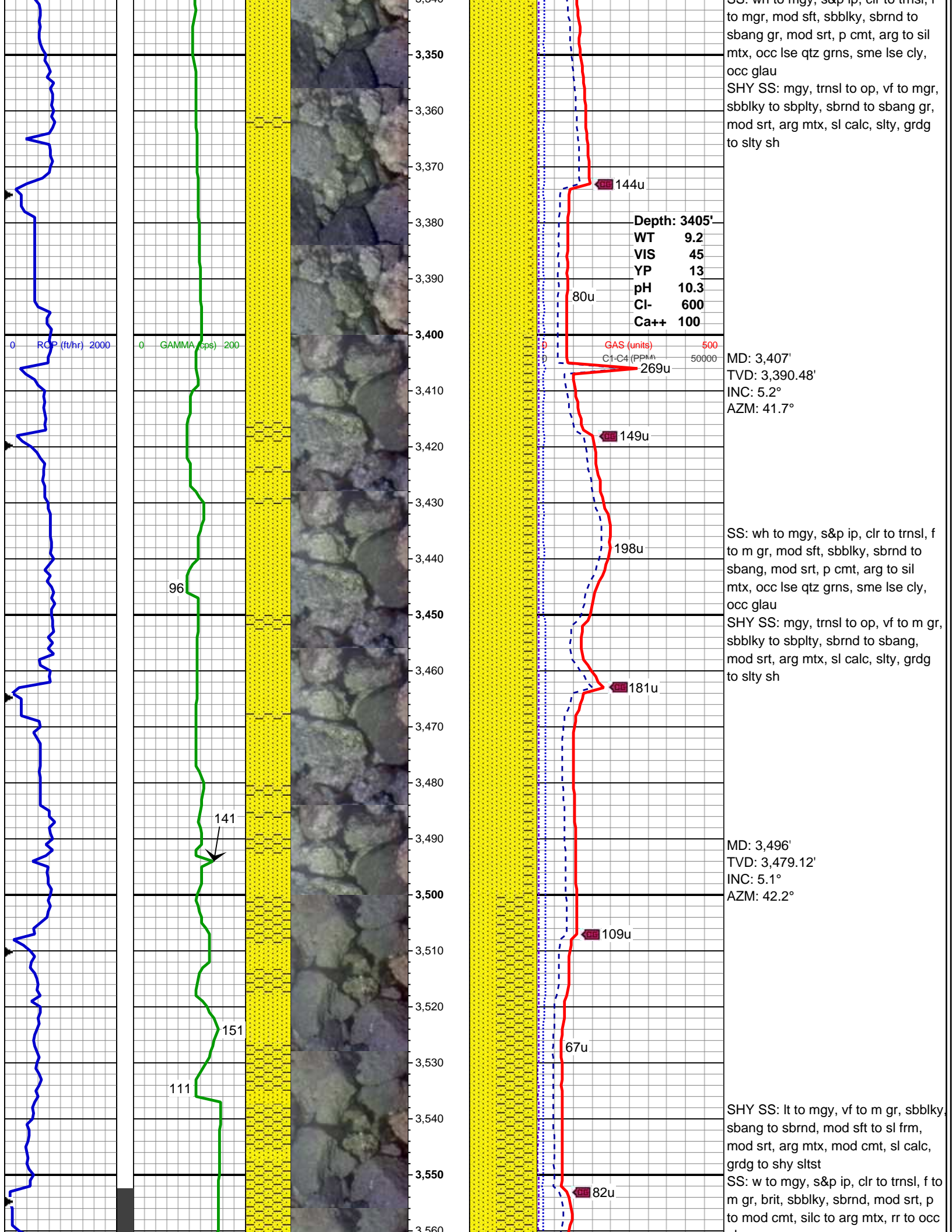


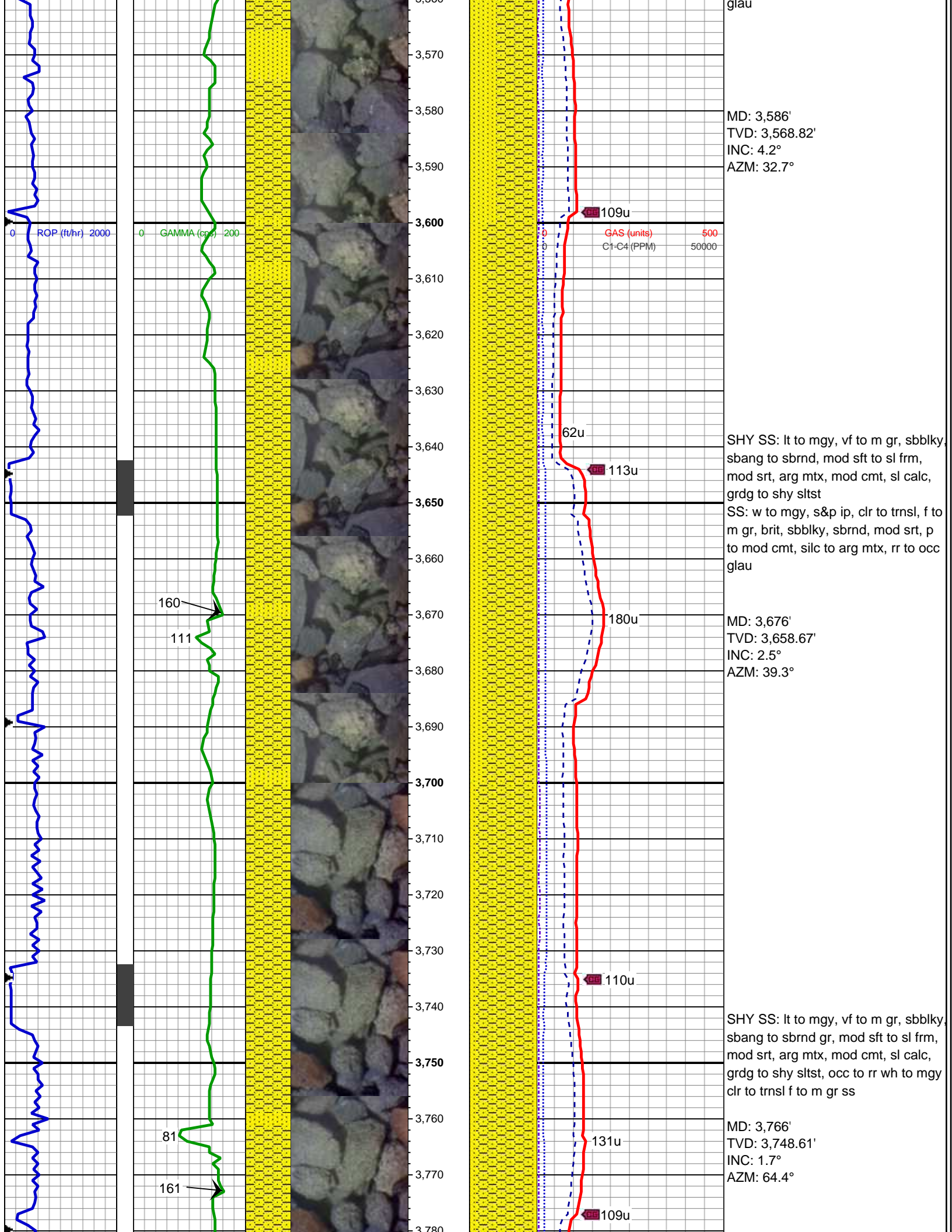


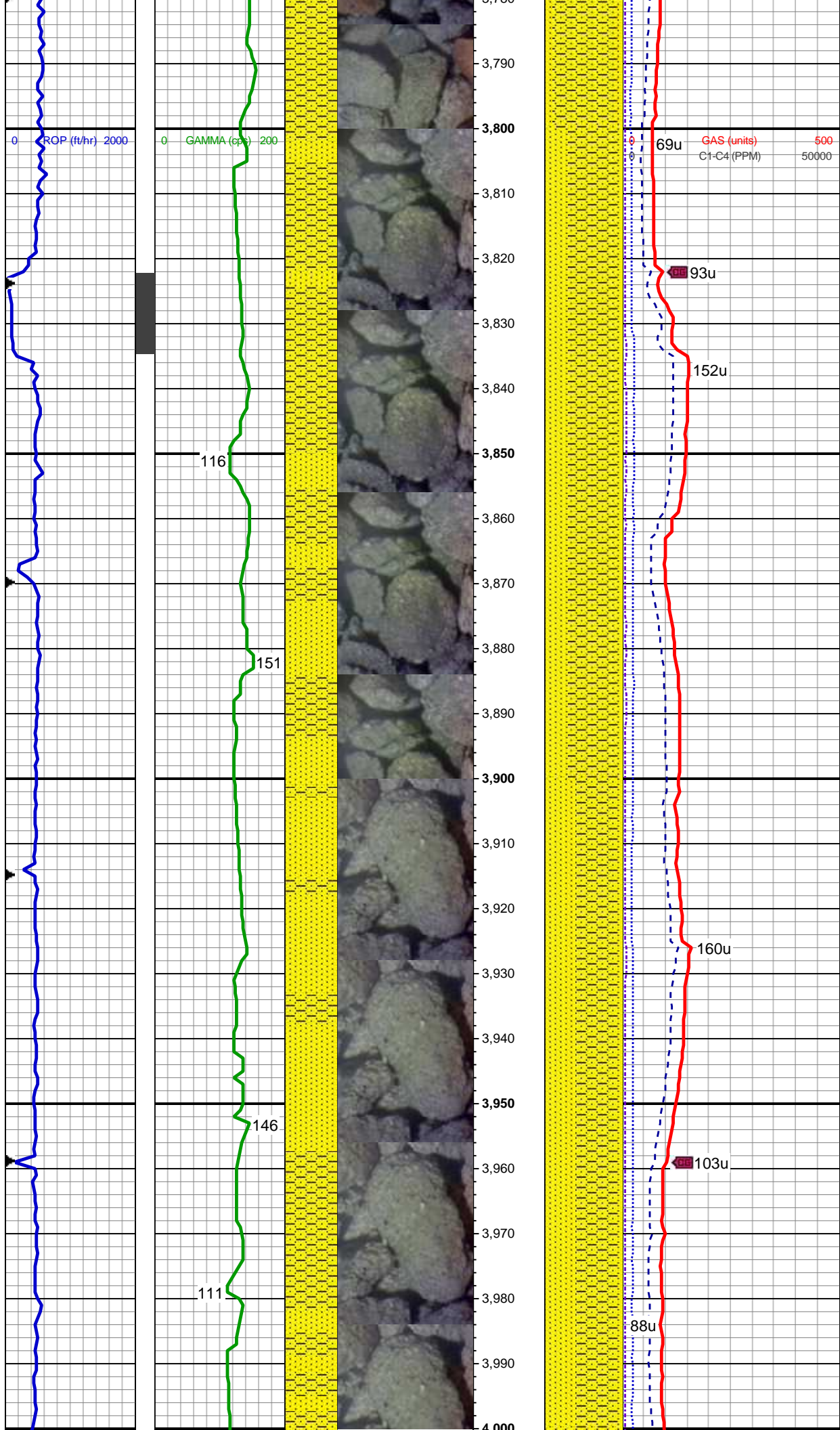












SHY SS: lt to mgy, vf to m gr, sbblky, sbang to sbrnd, mod sft to sl frm, mod srt, arg mtx, mod cmt, sl calc, grdg to shy sltst

SS: w to mgy, s&p ip, clr to trnsl, f to m gr, brit, sbblky, sbrnd, mod srt, p to mod cmt, silc to arg mtx, rr to occ glau

MD: 3,855'
TVD: 3,837.59'
INC: 0.7°
AZM: 103.8°

MD: 3,945'
TVD: 3,927.58'
INC: 0.9°
AZM: 85.4°

SHY SS: lt to mgy, vf to m gr, sbblky, sbang to sbrnd, mod sft to sl frm, mod srt, arg mtx, mod cmt, sl calc, grdg to shy sltst

SS: w to mgy, s&p ip, clr to trnsl, f to m gr, brit, sbblky, sbrnd, mod srt, p to mod cmt, silc to arg mtx, rr to occ glau

