

COLUMBINE LOGGING

Wellsite Geology

Scale: 5" / 100'
Measured Depth Log

Well Name Salt Ranch Fee 502-1034H

Location S.10 T11N R64W

State Colorado

County Weld

Country United States

Rig Number Unit 406

API Number 0512346501

Field DJ Basin

Spud Date 4/09/2019

Drilling Completed 4/27/2019

Surface Coordinates 40.94220977,-104.5253904
S.10 T11N R64W
637' FEL (sec 10)
357' FNL (sec 10)

Bottom Hole Coordinates 40.97074486,-104.5290812
1620' FEL (sec 34)
600' FNL (sec 34)

Ground Elevation 5434

K.B. Elevation 5456

Logged Interval 5000 **To** 8550

Total Depth 17884

Formation Codell

Type of Drilling Fluid OBM

Operator

Company Clear Creek Resource Partners

Address 717 17th Street, Suite 1525
Denver, CO 80202



CLEAR CREEK
Resource Partners

Geologist

Name Steen Jergenson

Company Clear Creek Resource Partners

Color Coding



Other

Mudlogging Company Columbine Logging Inc.

Wellsite Geologist (Days) Jeremy Loftness

Wellsite Geologist (Nights) Ty Gallaway

Rock Types

<ul style="list-style-type: none"> UNKNOWN ANHYDRITE BENTONITE BRECCIA CEMENT CHALK CHERT CLAY CHOKE SAND CLAYSTONE 	<ul style="list-style-type: none"> COAL CONGLOMERATE DOLOMITE DOLOMITIC LIMESTONE GRANITE GYPSUM IGNEOUS LIMESTONE SIDERITE or LIMONITE 	<ul style="list-style-type: none"> MARLSTONE METAMORPHIC NO SAMPLE SALT SALT- PEPPER SAND SANDSTONE SHALE SHALE COLORED SHALE GRAY 	<ul style="list-style-type: none"> SHALY SANDSTONE SHALY SILTSTONE SILTSTONE SILTY SHALE TILL TUFF WELDED TUFF
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Accessories

Fossils

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

GASTROPOD

INOCERAMUS

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

MARCASITE

MARLSTONE

MICACEOUS

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLETS

PYRITE

SALT CAST

SANDY

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

Stringer

Other Symbols

Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

Porosity

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

ORGANIC

P PINPOINT

V VUGGY

Engineering

BIT

CONNECTION (LEFT)

CONNECTION (RIGHT)

CONNECTION GAS

TRIP GAS

DOWN TIME GAS

CORE - LOST

CORE - RECOVERED

DST INTERVAL

FORMATION TOP

GAS SHOW

OIL SHOW

MN DEPTH

MN DEPTH (RIGHT)

FAULT

NORMAL FAULT

OVERTURNED STRATA

REVERSE FAULT

CASING

SIDEWALL CORE (LEFT)

SIDEWALL CORE (RIGHT)

SLIDE

SURVEY

DST DRILL STEM TEST

WIRELINE TESTED - LEFT

WIRELINE TESTED - RT

Rounding

A ANGULAR

R ROUNDED

S SUBANG

S SUBRND

Textures

BS BOUNDSTONE

C CHALKY

CX CRYPTOXLN

E EARTHY

FX FINELYXLN

GS GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKESTONE

Sorting

M MODERATE

P POOR

W WELL

ROP/Gamma

ROP —
Gamma —

RPM

Slide/Rotate

Depth Labels

Interp Lithology

Lithology Descriptions

Gas Data

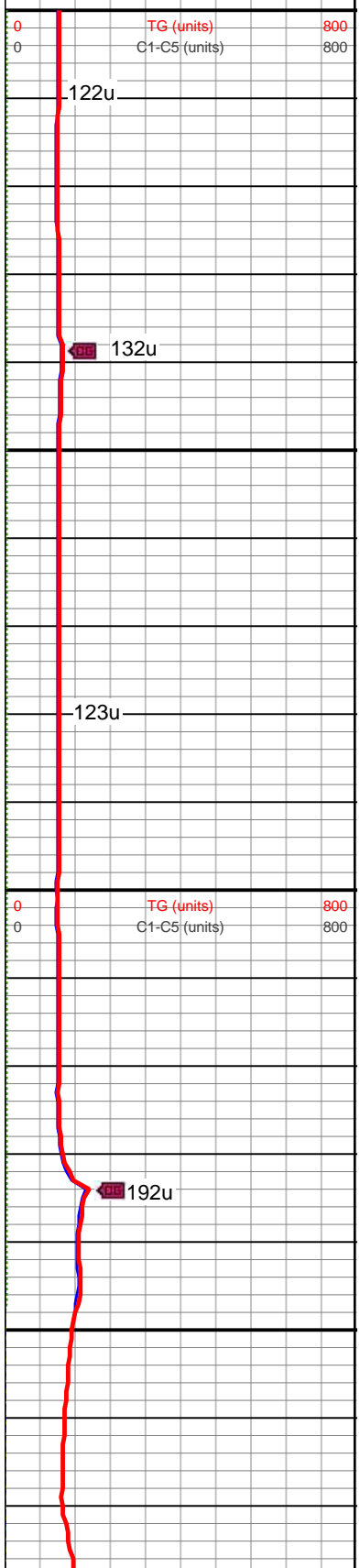
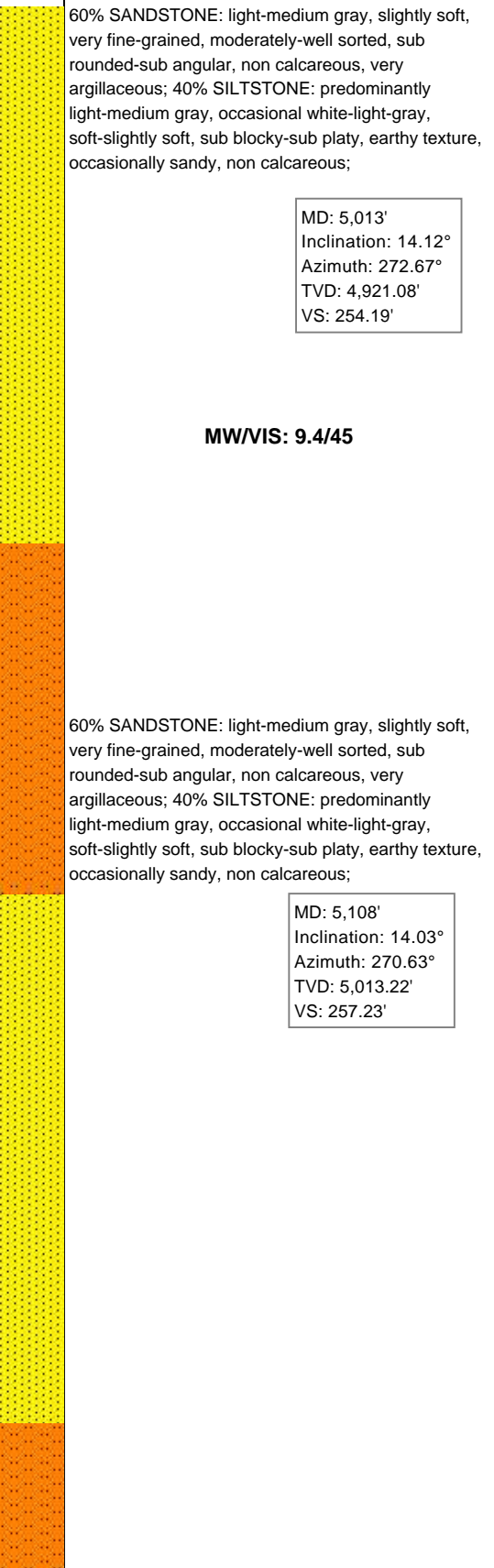
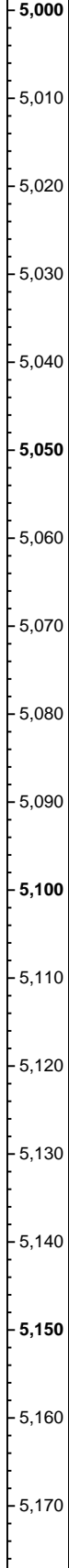
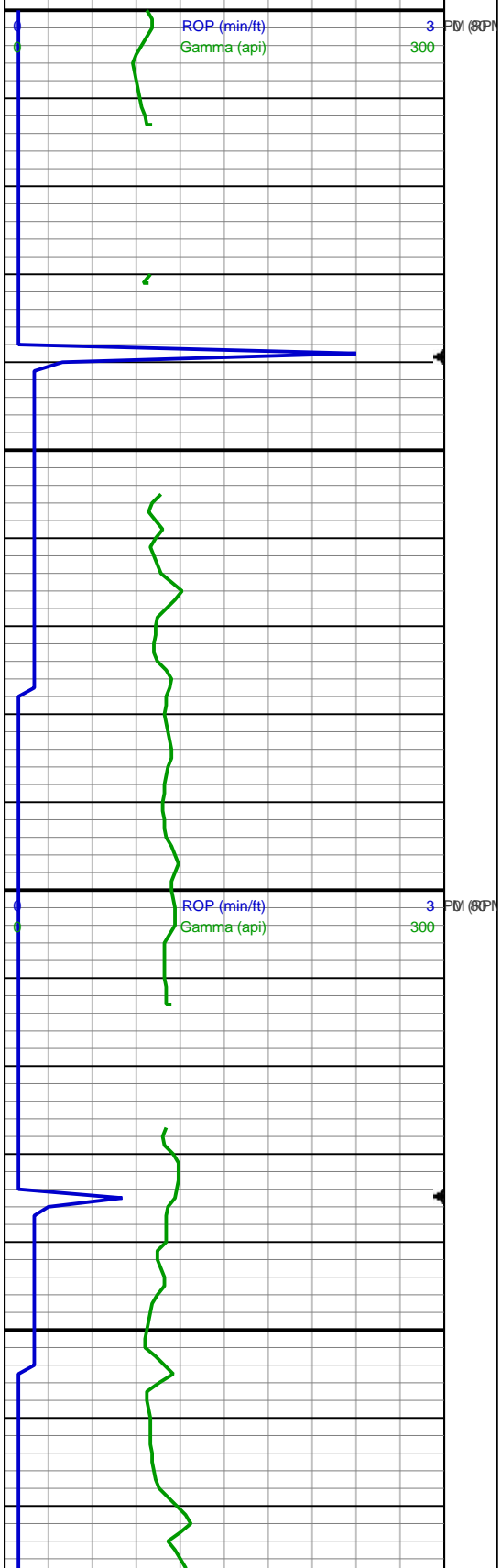
TG —
C1 —
C2 —
C3 —
C4 —
C5 —



ROP Imported from Pason
Gamma from Baker Hughes

Columbine Logging Inc. Rigged Up 2 man logging 04/24/2019 Chromatograph Gas Unit #524, began logging from 5000' MD at 04:30 MST on 04/25/2019.

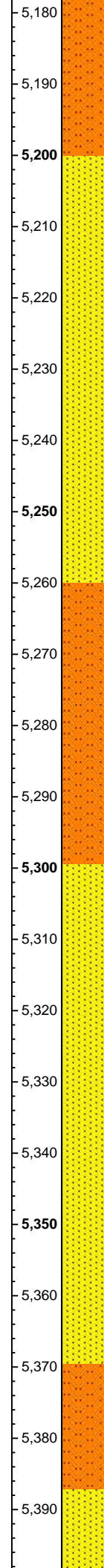
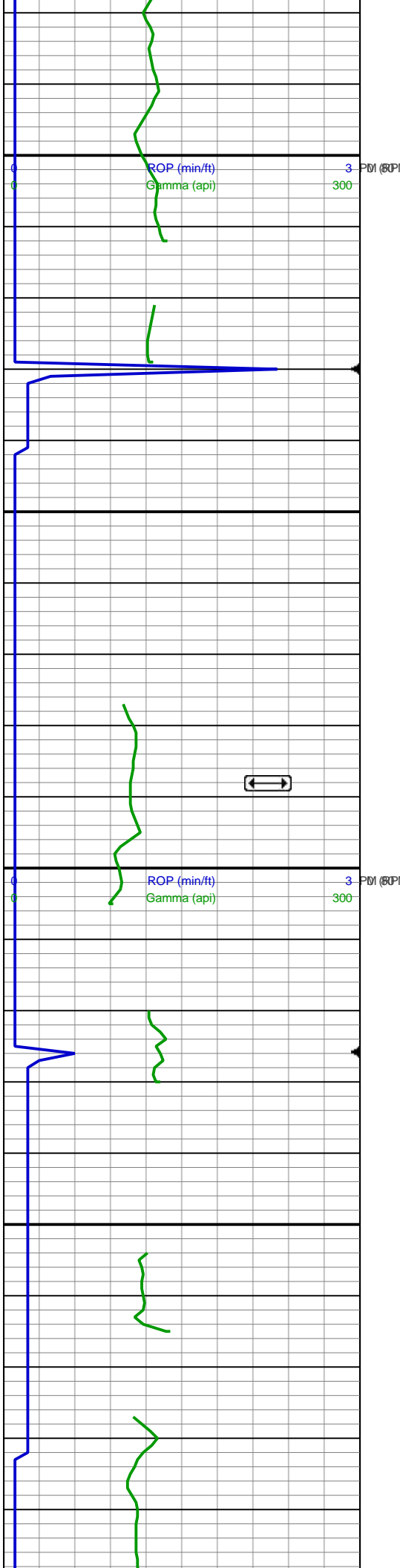
Gas Data From Bloodhound Unit #524, data imported via Pason and Gas Chart



MD: 5,013'
Inclination: 14.12°
Azimuth: 272.67°
TVD: 4,921.08'
VS: 254.19'

MW/VIS: 9.4/45

MD: 5,108'
Inclination: 14.03°
Azimuth: 270.63°
TVD: 5,013.22'
VS: 257.23'



60% SANDSTONE: light-medium gray, slightly soft, very fine-grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous; 40% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;

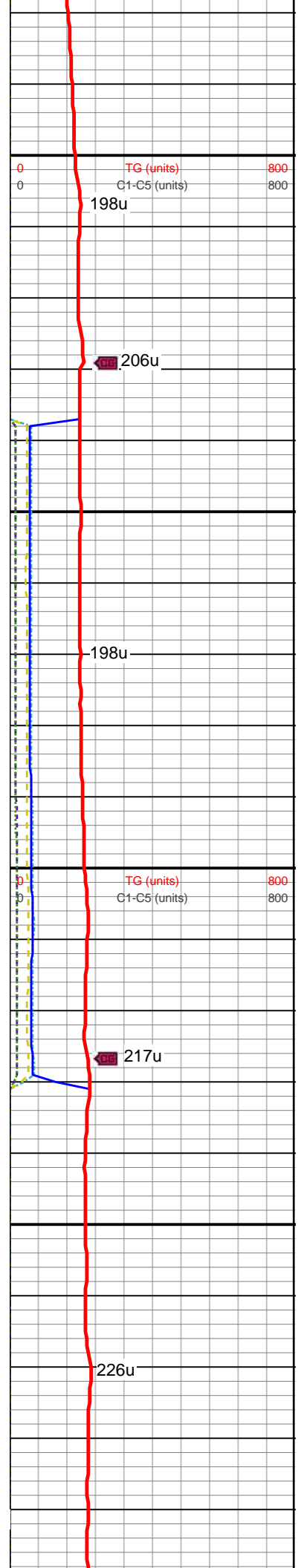
MD: 5,204'
Inclination: 13.92°
Azimuth: 271.46°
TVD: 5,106.38'
VS: 260.04'

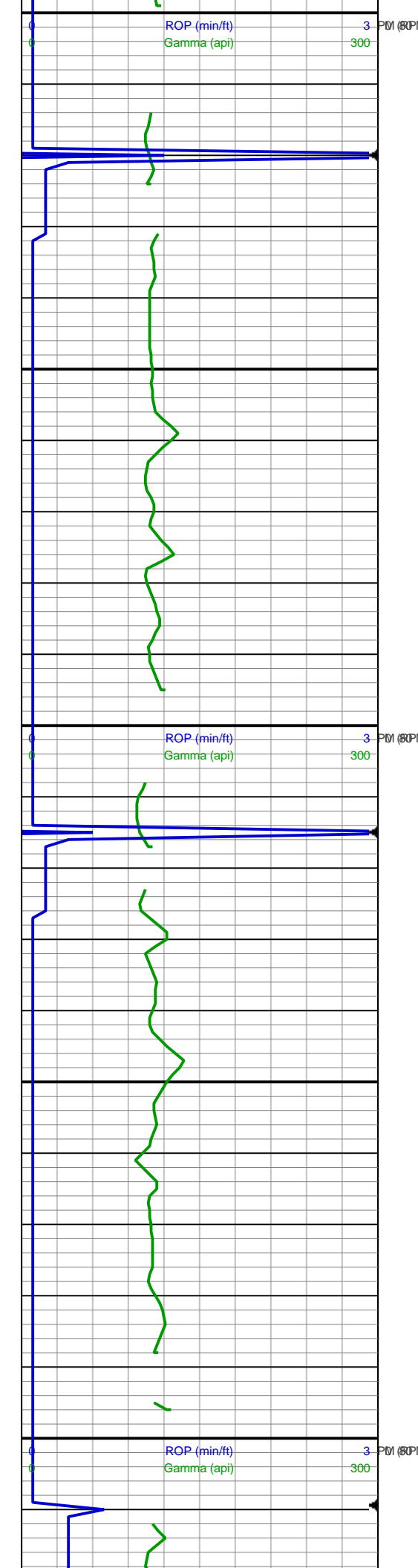
MD: 5,298'
Inclination: 13.9°
Azimuth: 273.35°
TVD: 5,197.63'
VS: 263.3'

Sussex SS
5,288' MD 5,186' TVD 270' SSD

60% SANDSTONE: light-medium gray, slightly soft, very fine-grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous; 40% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;

70% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous; 30% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy,





5,400
5,410
5,420
5,430
5,440
5,450
5,460
5,470
5,480
5,490
5,500
5,510
5,520
5,530
5,540
5,550
5,560
5,570
5,580
5,590
5,600
5,610

non calcareous;

MD: 5,394'
Inclination: 13.96°
Azimuth: 275.11°
TVD: 5,290.8'
VS: 267.37'

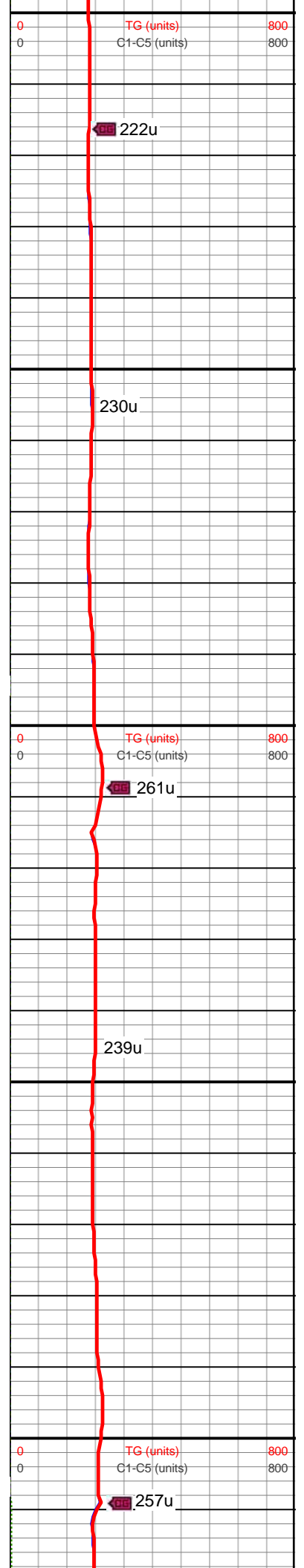
MD: 5,489'
Inclination: 13.93°
Azimuth: 276.87°
TVD: 5,383'
VS: 272.09'

70% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;
30% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;

MW/VIS: 9.4/45

MD: 5,582'
Inclination: 14°
Azimuth: 279.2°
TVD: 5,473.26'
VS: 277.5'

70% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;
30% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;



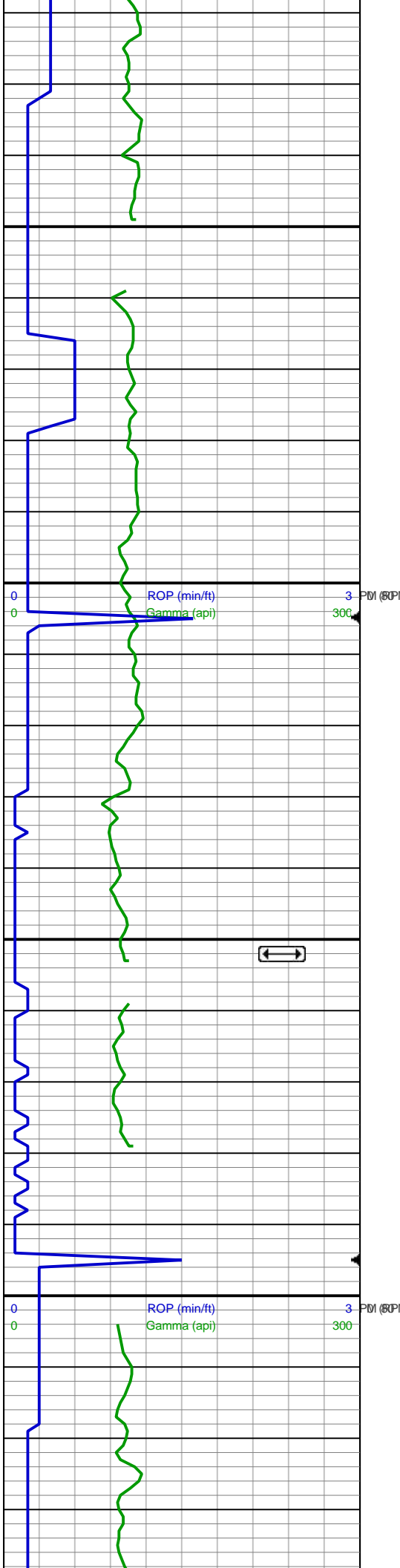
222u

230u

261u

239u

257u



5,620
5,630
5,640
5,650
5,660
5,670
5,680
5,690
5,700
5,710
5,720
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5,770
5,780
5,790
5,800
5,810
5,820
5,830



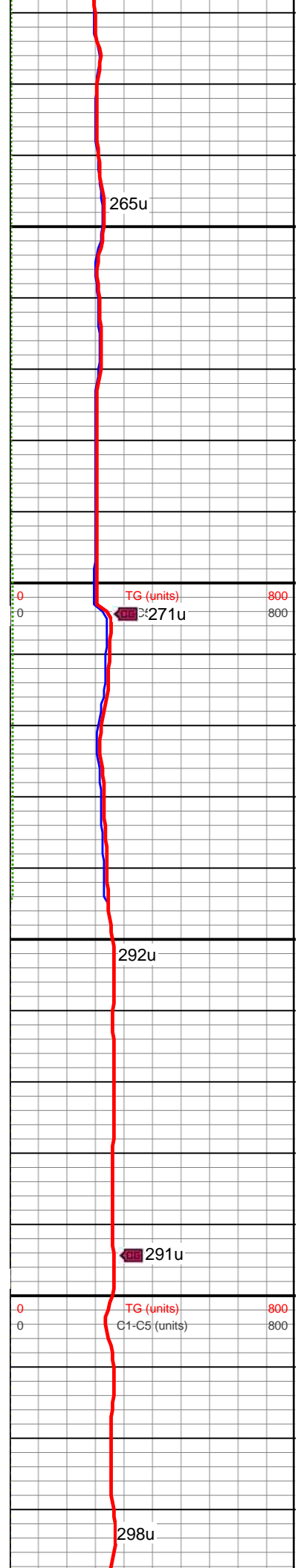
70% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;
30% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;

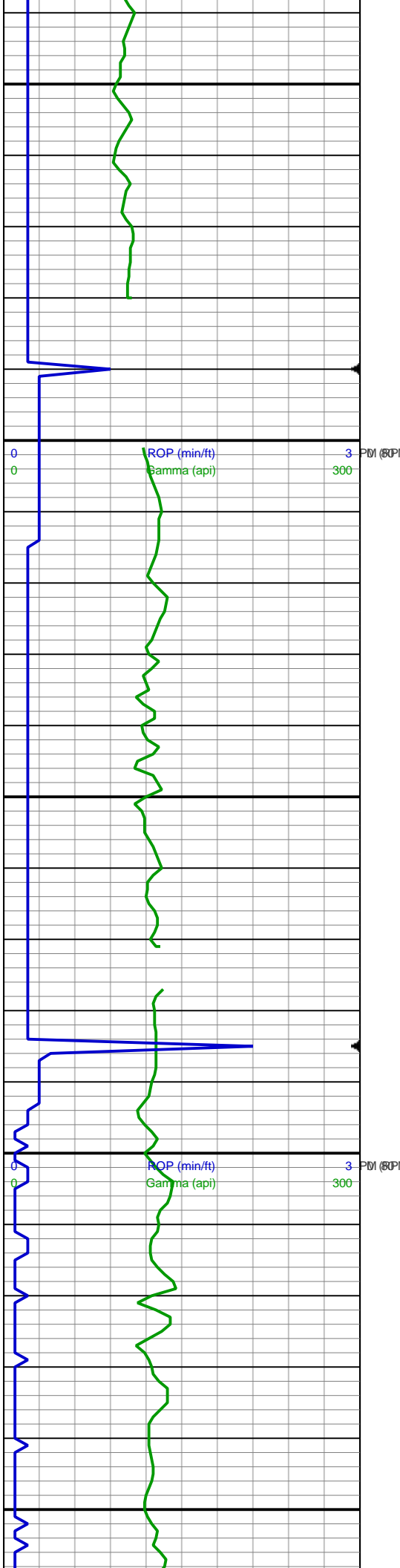
Shannon
5,752' MD 5,639' TVD -183' SSD

MD: 5,677'
Inclination: 13.06°
Azimuth: 281.46°
TVD: 5,565.62'
VS: 283.7'

MD: 5,772'
Inclination: 12.04°
Azimuth: 281.4°
TVD: 5,658.35'
VS: 289.85'

70% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;
30% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;





5,840
5,850
5,860
5,870
5,880
5,890
5,900
5,910
5,920
5,930
5,940
5,950
5,960
5,970
5,980
5,990
6,000
6,010
6,020
6,030
6,040
6,050



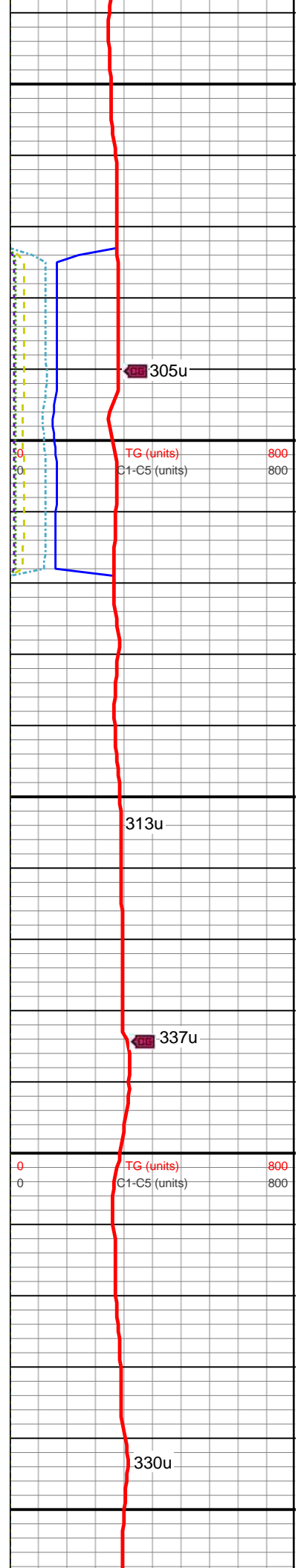
60% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, 40% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;

MW/VIS: 9.4/45

MD: 5,867'
Inclination: 10.14°
Azimuth: 281.14°
TVD: 5,751.57'
VS: 295.25'

MD: 5,961'
Inclination: 7.25°
Azimuth: 281.35°
TVD: 5,844.48'
VS: 299.44'

MD: 6,057'
Inclination: 4.72°
Azimuth: 276.33°

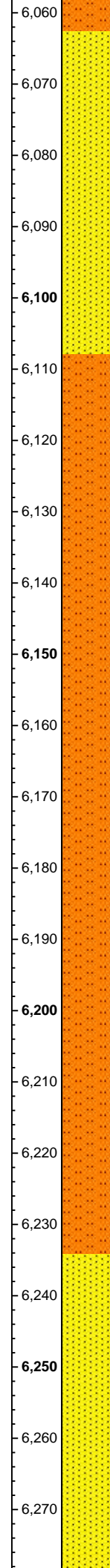
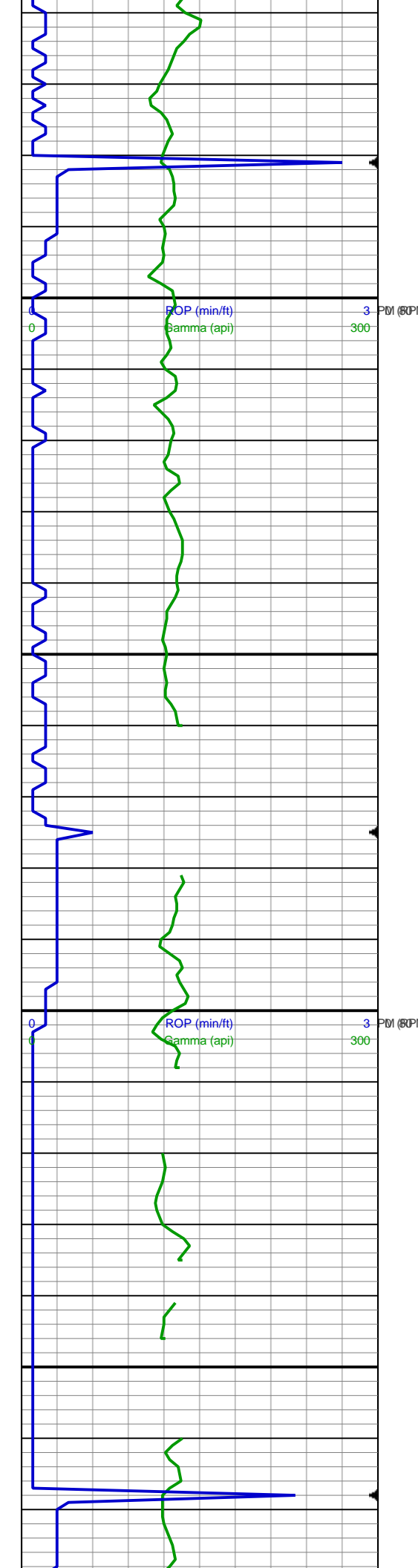


305u

313u

337u

330u



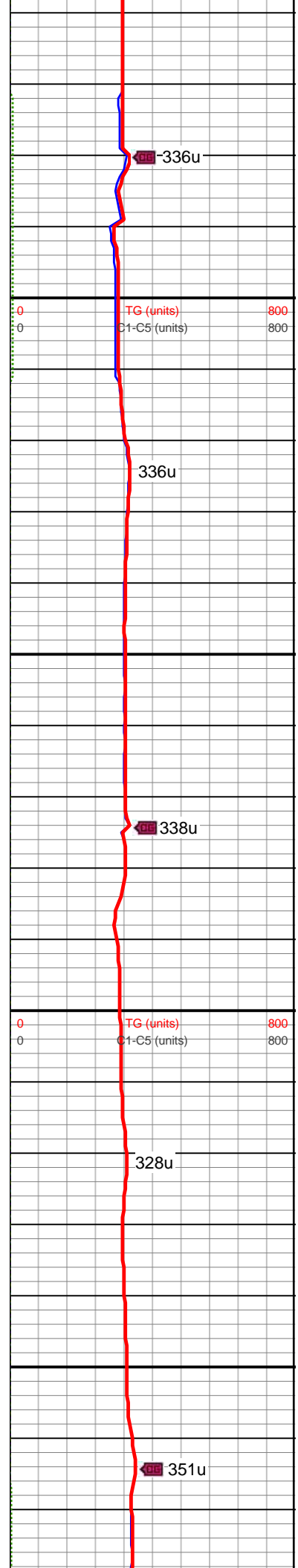
60% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, 40% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;

50% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, 50% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;

TVD: 5,939.95'
VS: 302.08'

MD: 6,152'
Inclination: 2.61°
Azimuth: 271.31°
TVD: 6,034.75'
VS: 303.18'

MD: 6,245'
Inclination: 0.34°
Azimuth: 76.98°
TVD: 6,127.72'
VS: 303.48'



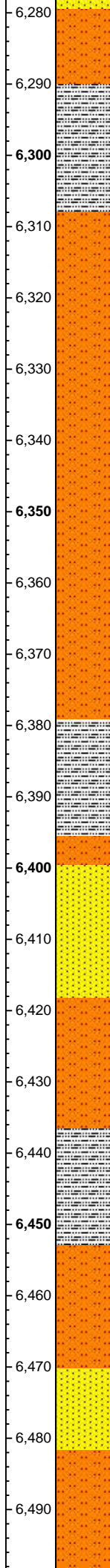
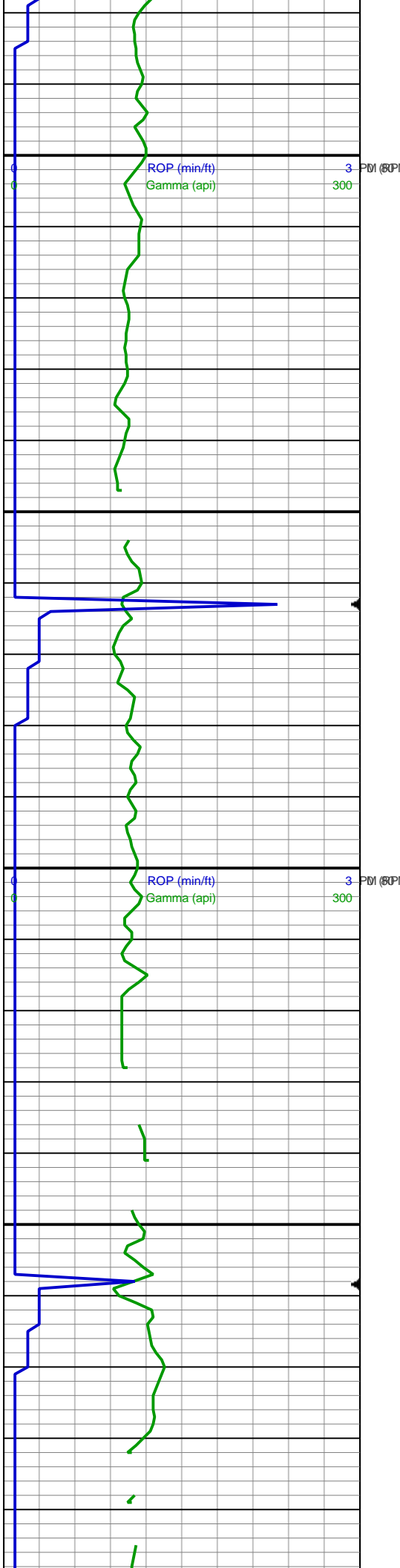
336u

336u

338u

328u

351u



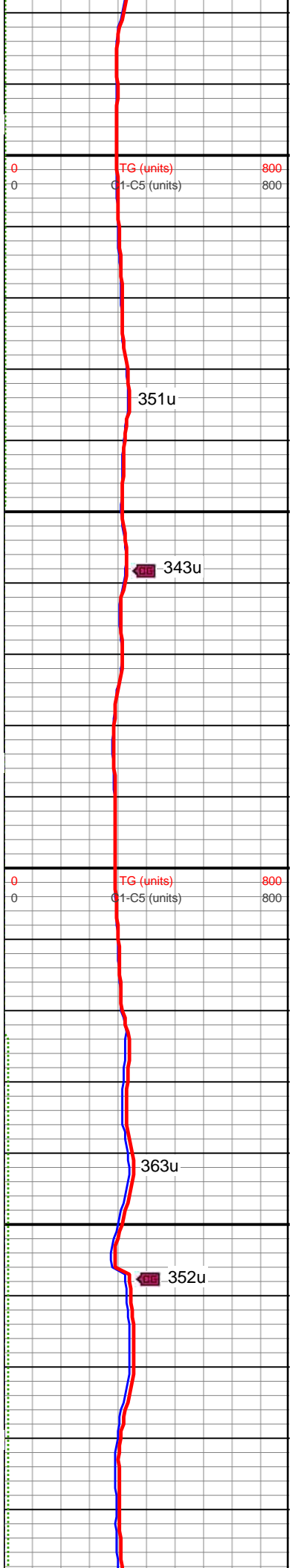
60% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;
 30% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;
 10% SILTY SHALE: light-medium tan, silty, sub blocky-sub platy, occasional grading to siltstone, abundant grade to claystone, slightly soft-slightly firm, non calcareous;

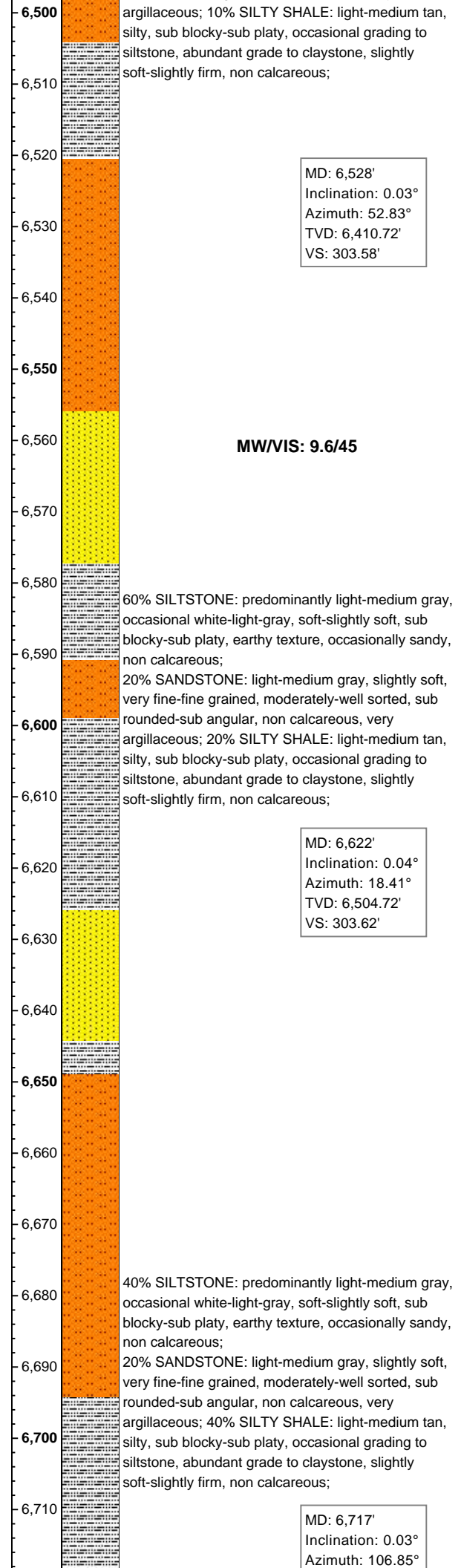
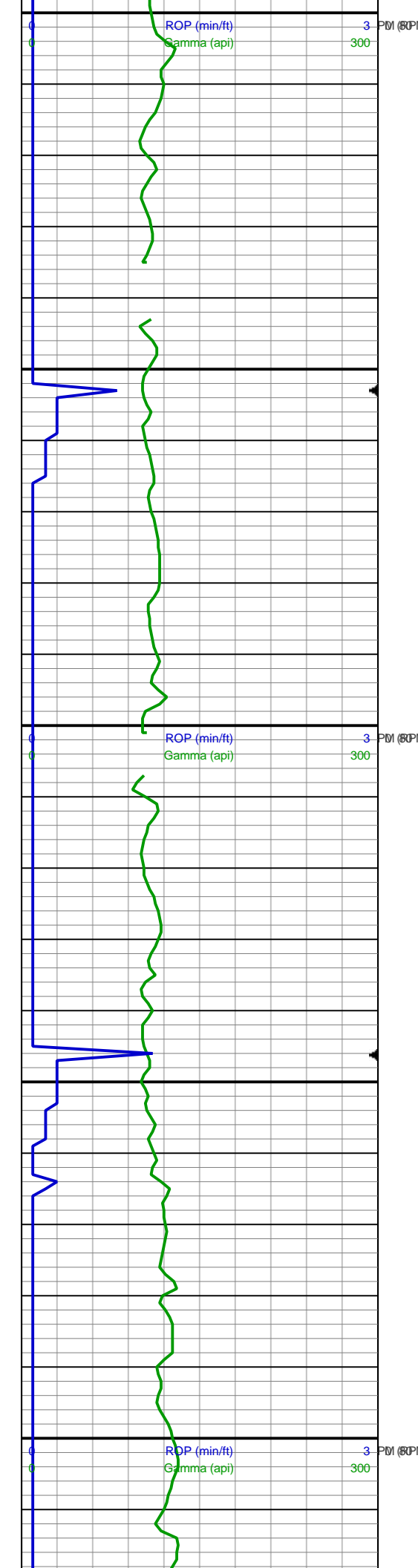
MD: 6,339'
 Inclination: 0.07°
 Azimuth: 121.23°
 TVD: 6,221.72'
 VS: 303.48'

70% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;
 20% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous; 10% SILTY SHALE: light-medium tan, silty, sub blocky-sub platy, occasional grading to siltstone, abundant grade to claystone, slightly soft-slightly firm, non calcareous;

MD: 6,434'
 Inclination: 0.11°
 Azimuth: 305.77°
 TVD: 6,316.72'
 VS: 303.5'

70% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous;
 20% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very



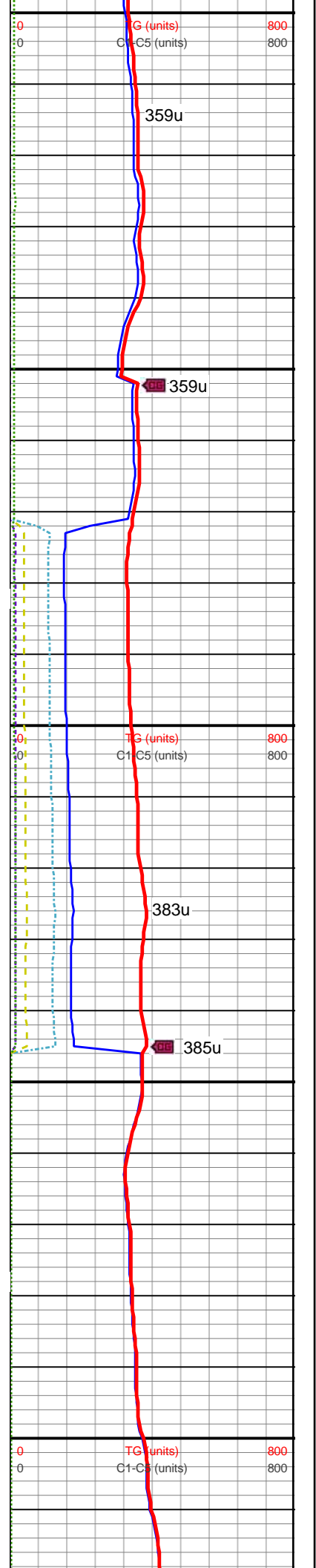


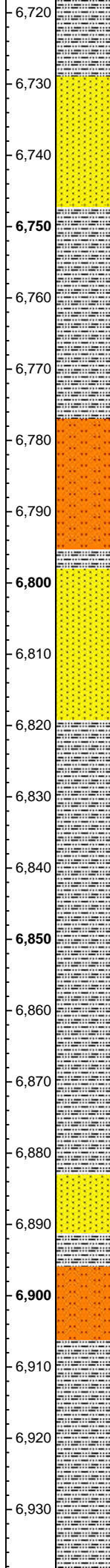
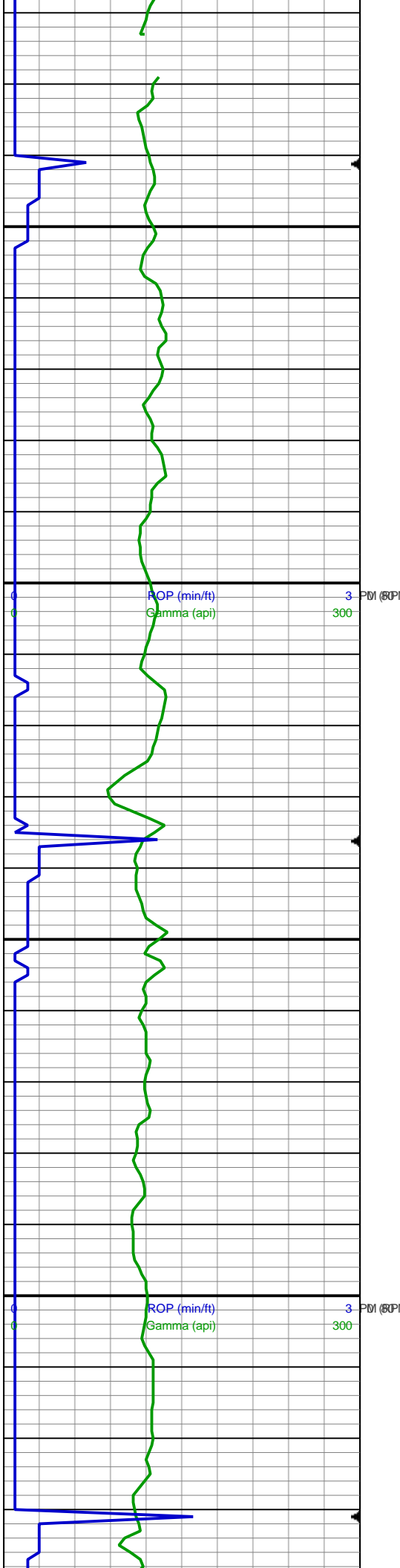
MD: 6,528'
 Inclination: 0.03°
 Azimuth: 52.83°
 TVD: 6,410.72'
 VS: 303.58'

MW/VIS: 9.6/45

MD: 6,622'
 Inclination: 0.04°
 Azimuth: 18.41°
 TVD: 6,504.72'
 VS: 303.62'

MD: 6,717'
 Inclination: 0.03°
 Azimuth: 106.85°





60% SILTY SHALE: light-medium tan, silty, sub blocky-sub platy, occasional grading to siltstone, abundant grade to claystone, slightly soft-slightly firm, non calcareous; 20% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous; 20% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;

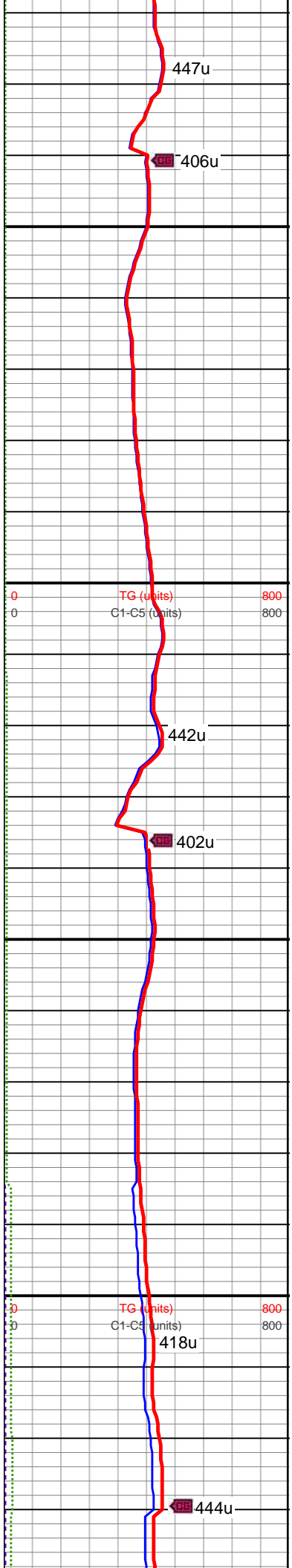
80% SILTY SHALE: light-medium tan, silty, sub blocky-sub platy, occasional grading to siltstone, abundant grade to claystone, slightly soft-slightly firm, non calcareous; 10% SILTSTONE: predominantly light-medium gray, occasional white-light-gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non calcareous; 10% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;

TVD: 6,599.72'
VS: 303.64'

MD: 6,811'
Inclination: 0.18°
Azimuth: 192.96°
TVD: 6,693.72'
VS: 303.49'

MW/VIS: 9.6/45

MD: 6,907'
Inclination: 0.03°
Azimuth: 93.6°
TVD: 6,789.72'
VS: 303.34'



447u

406u

442u

402u

418u

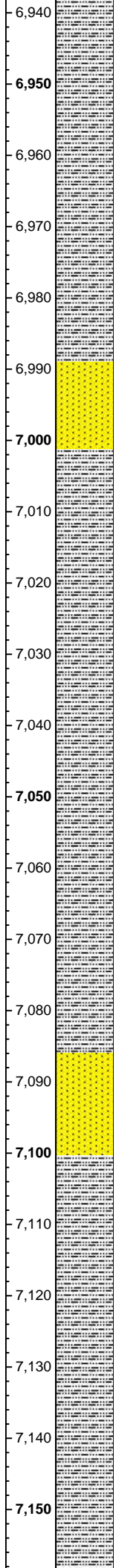
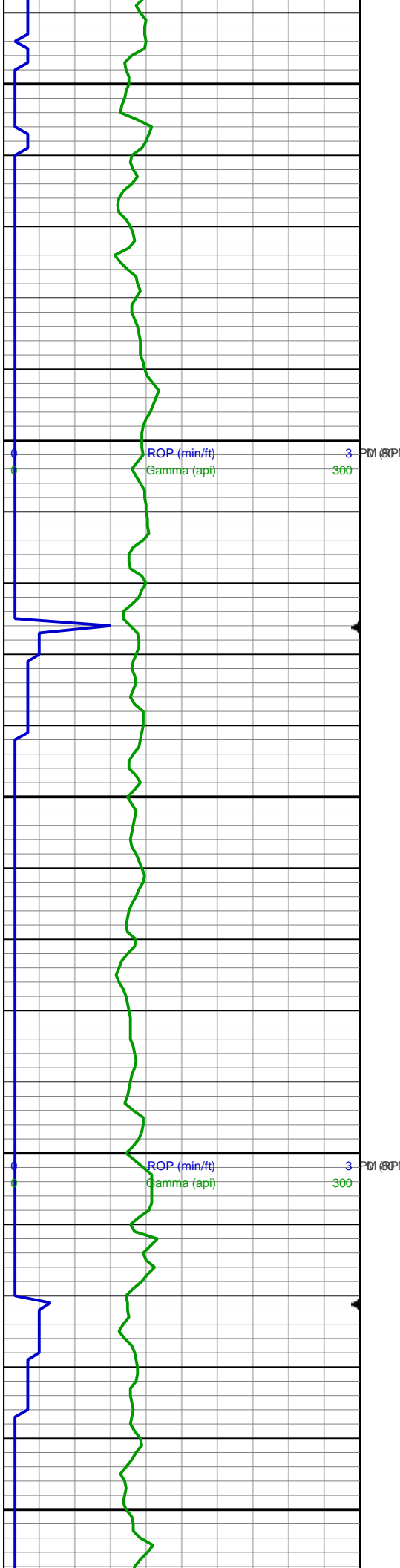
444u

TG (units) 800

C1-C5 (units) 800

TG (units) 800

C1-C5 (units) 800



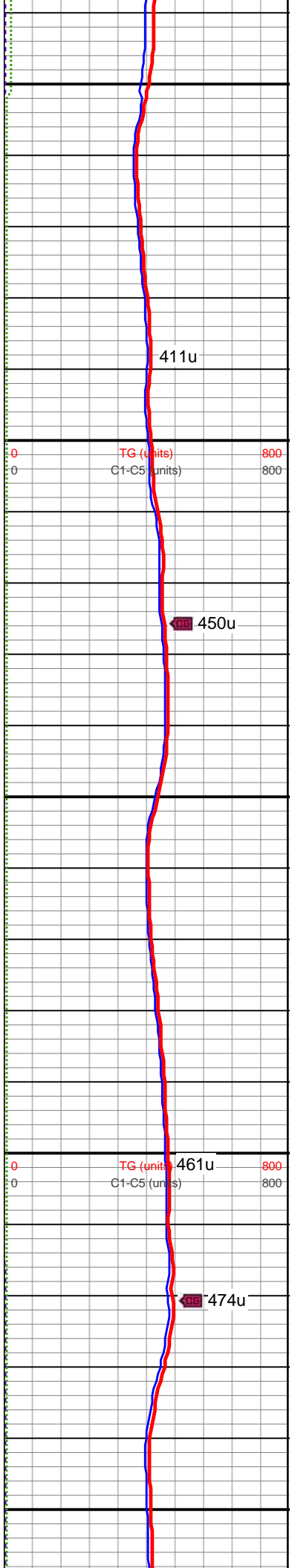
90% SILTY SHALE: light-medium tan, silty, sub blocky-sub platy, occasional grading to siltstone, abundant grade to claystone, slightly soft-slightly firm, non calcareous;
 10% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;

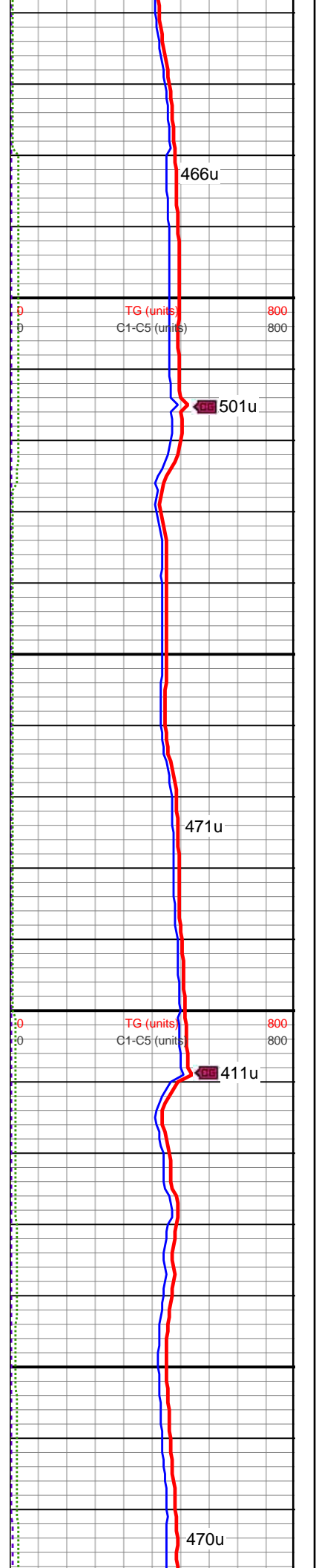
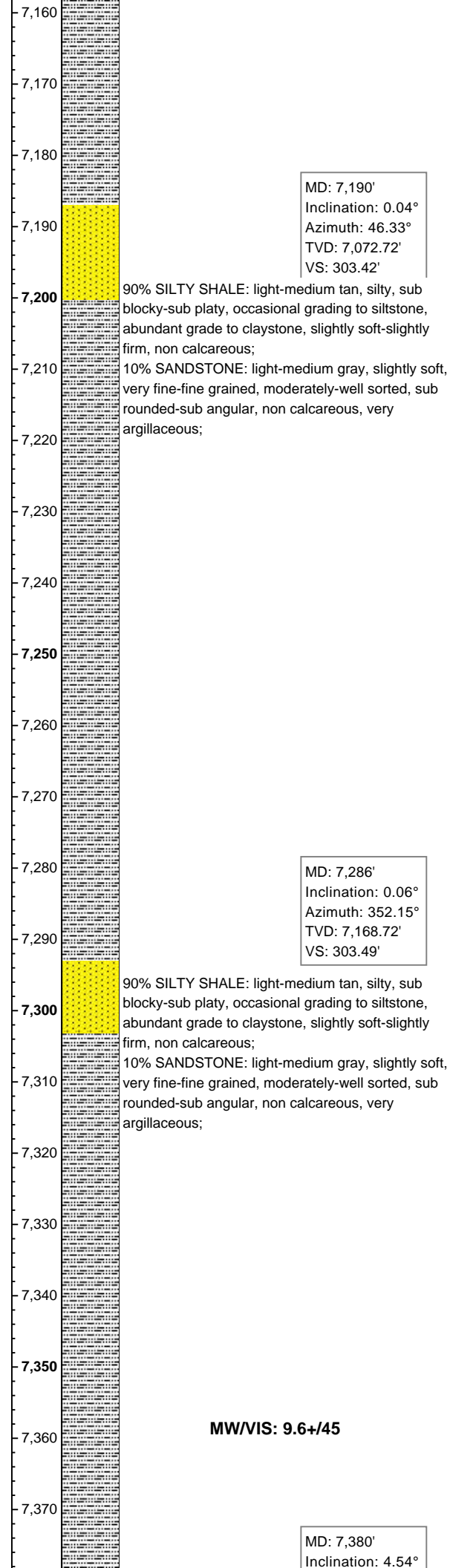
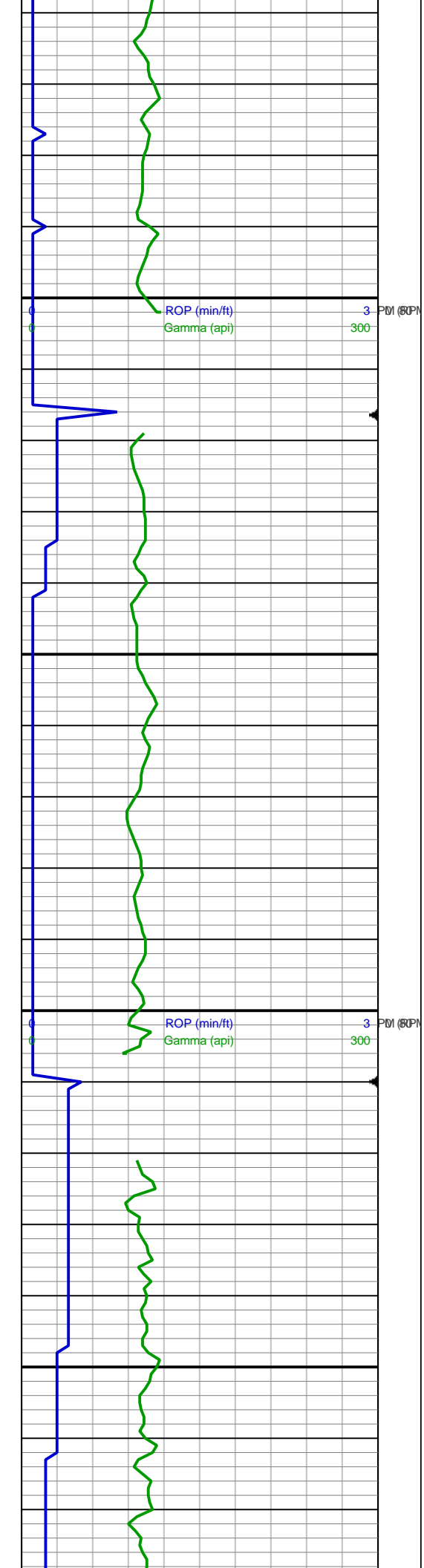
MD: 7,000'
 Inclination: 0.06°
 Azimuth: 319.91°
 TVD: 6,882.72'
 VS: 303.38'

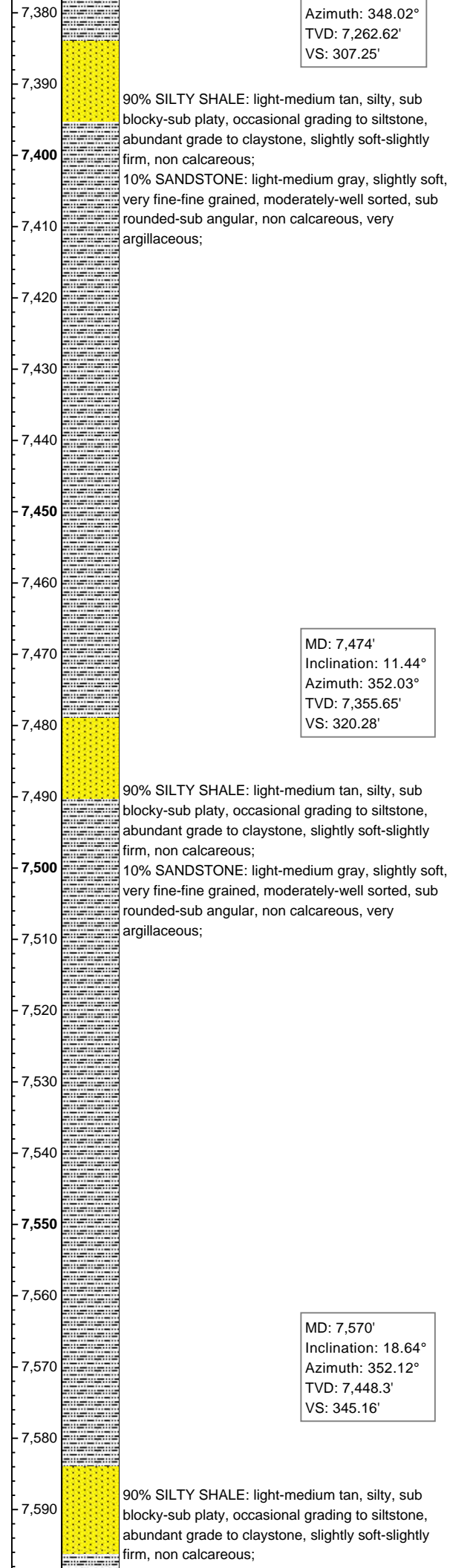
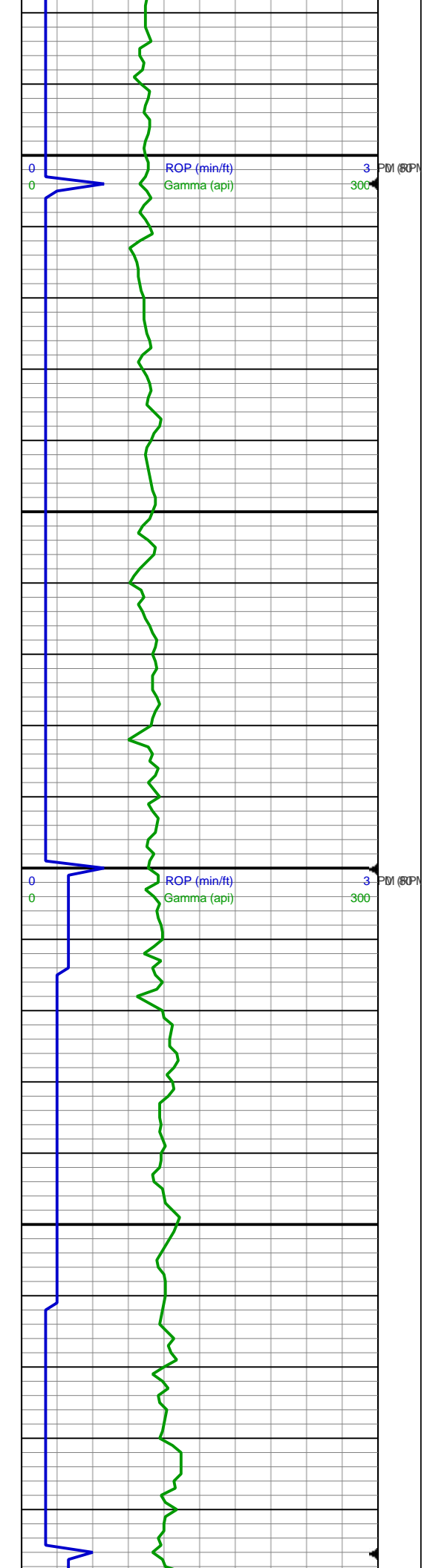
MW/VIS: 9.6/45

90% SILTY SHALE: light-medium tan, silty, sub blocky-sub platy, occasional grading to siltstone, abundant grade to claystone, slightly soft-slightly firm, non calcareous;
 10% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;

MD: 7,095'
 Inclination: 0.03°
 Azimuth: 243.72°
 TVD: 6,977.72'
 VS: 303.41'







Azimuth: 348.02°
TVD: 7,262.62'
VS: 307.25'

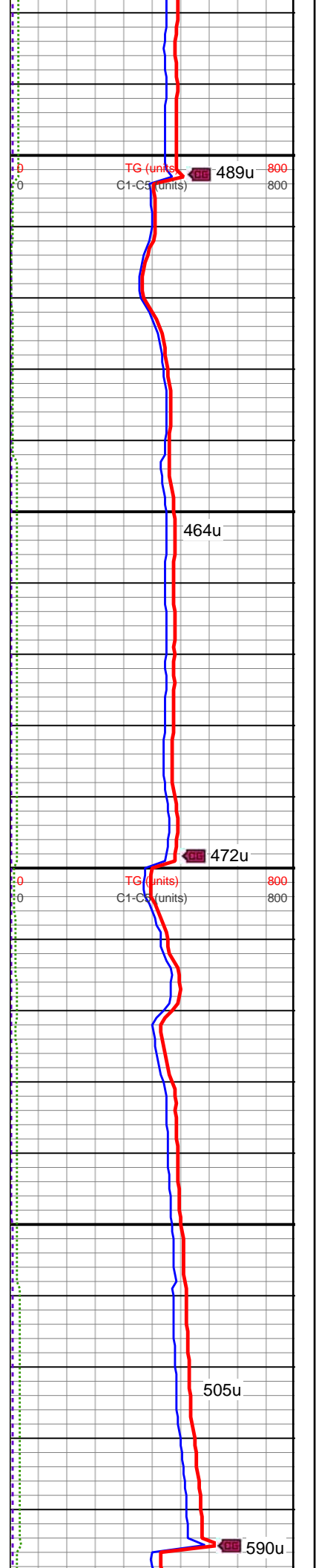
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10% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;

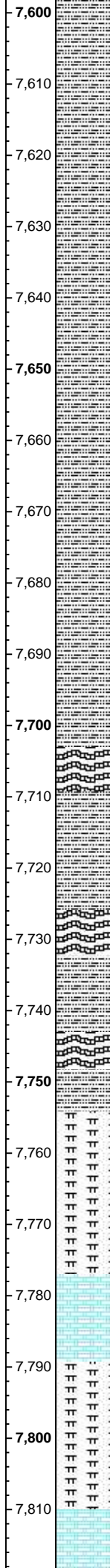
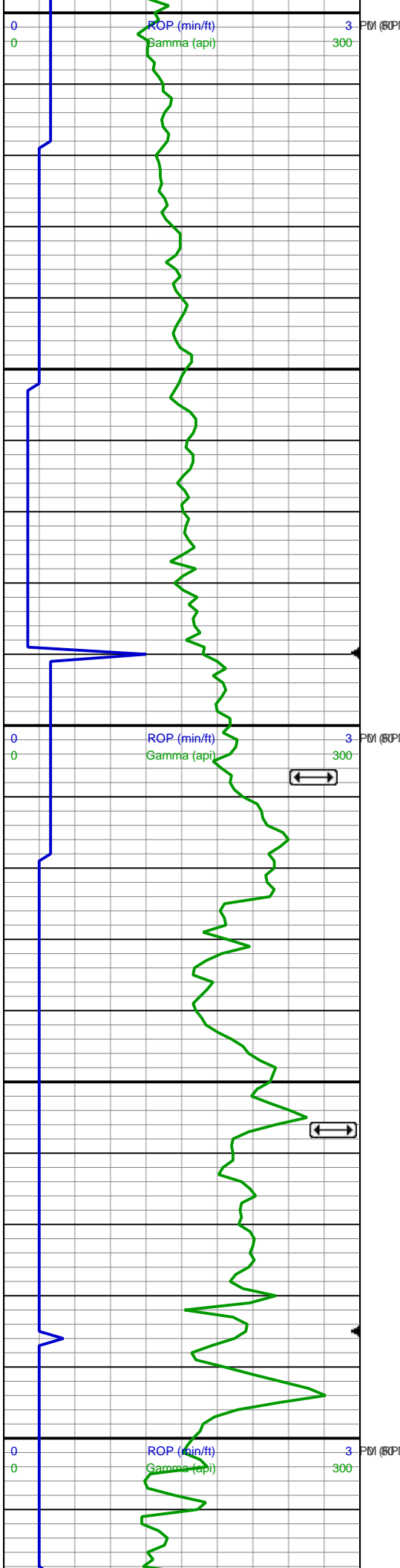
MD: 7,474'
Inclination: 11.44°
Azimuth: 352.03°
TVD: 7,355.65'
VS: 320.28'

90% SILTY SHALE: light-medium tan, silty, sub blocky-sub platy, occasional grading to siltstone, abundant grade to claystone, slightly soft-slightly firm, non calcareous;
10% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;

MD: 7,570'
Inclination: 18.64°
Azimuth: 352.12°
TVD: 7,448.3'
VS: 345.16'

90% SILTY SHALE: light-medium tan, silty, sub blocky-sub platy, occasional grading to siltstone, abundant grade to claystone, slightly soft-slightly firm, non calcareous;





10% SANDSTONE: light-medium gray, slightly soft, very fine-fine grained, moderately-well sorted, sub rounded-sub angular, non calcareous, very argillaceous;

100% SILTY SHALE: predominantly medium-dark gray, occasional light-medium gray, soft-slightly soft, sub blocky-sub platy, earthy texture, occasionally sandy, non-slightly calcareous; abundant bentonite,

70% MARLSTONE: dark gray-black, sub blocky-blocky, moderately soft-slightly firm, silty texture, occasional earthy-slightly mottled texture, argillaceous, moderately-very calcareous;

30% CHALK: light-medium gray, occasional dark gray, blocky-sub blocky, soft, friable, silty in part, very calcareous; occasional bentonite;

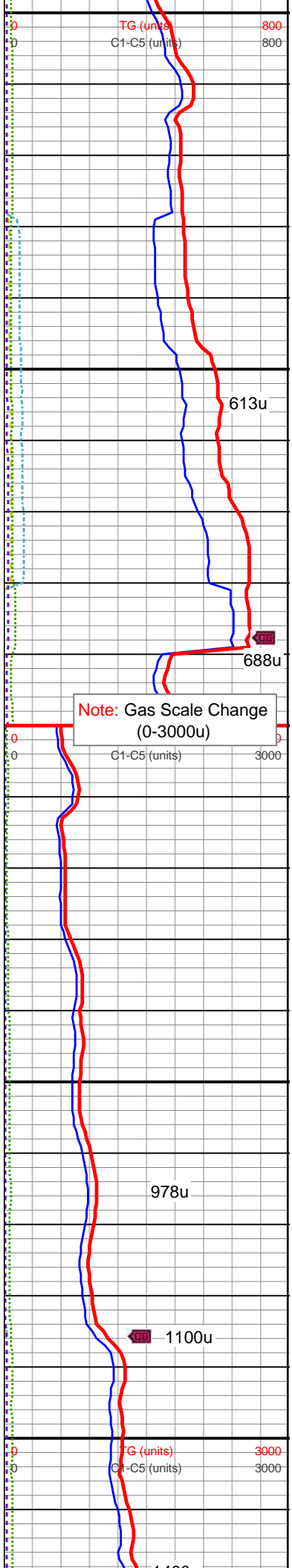
MD: 7,666'
 Inclination: 27.18°
 Azimuth: 352.66°
 TVD: 7,536.65'
 VS: 382.48'

MW/VIS: 9.7/45

Sharon Springs
 7,707' MD 7,573' TVD -2117' SSD

Niobrara
 7,757' MD 7,614' TVD -2158' SSD

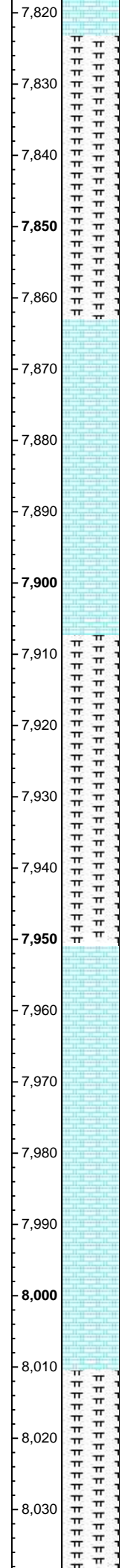
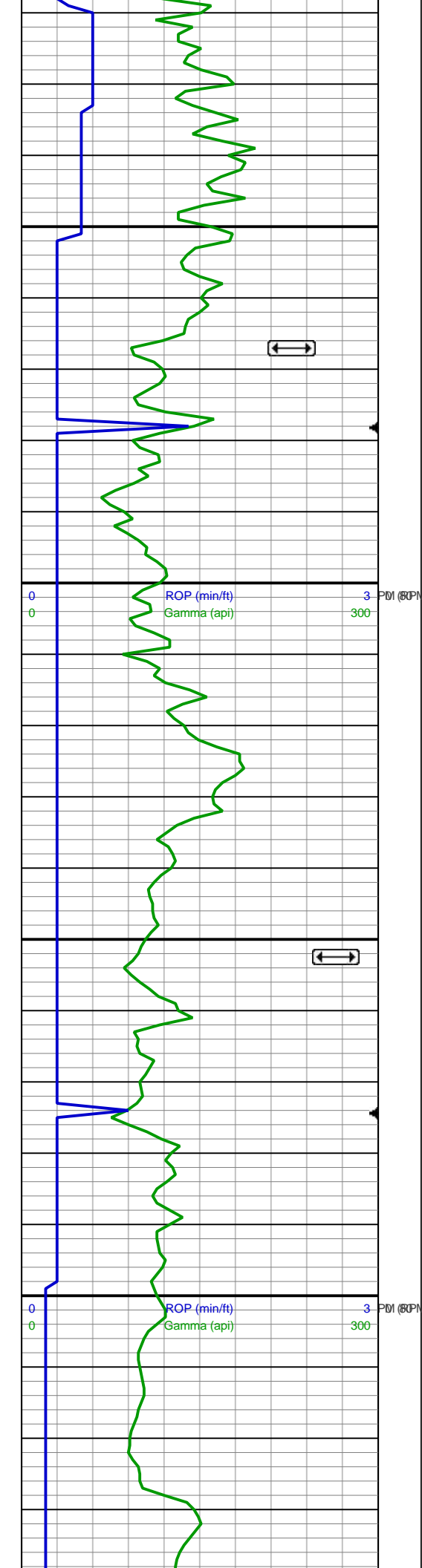
MD: 7,759'
 Inclination: 35.62°
 Azimuth: 353.64°
 TVD: 7,615.96'
 VS: 430.88'



Note: Gas Scale Change
 (0-3000u)

978u

1100u



MD: 7,855'
 Inclination: 42.85°
 Azimuth: 357.38°
 TVD: 7,690.28'
 VS: 491.51'

Niobrara B-Chalk
 7,867' MD 7,699' TVD -2243' SSD

MW/VIS: 9.7+/45

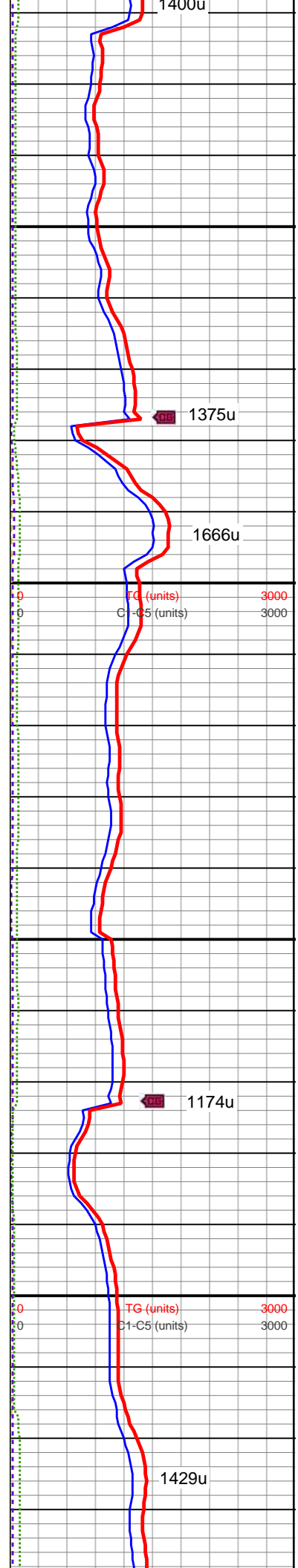
70% CHALK: light-medium gray, occasional dark gray, blocky-sub blocky, soft, friable, silty in part, very calcareous;
 30% MARLSTONE: dark gray-black, blocky, moderately-slightly firm, silty texture, occasional earthy-slightly mottled texture, argillaceous, moderately-very calcareous;

MD: 7,951'
 Inclination: 49.71°
 Azimuth: 0.77°
 TVD: 7,756.6'
 VS: 560.56'

Niobrara C-Chalk
 7,952' MD 7,757' TVD -2301' SSD

MW/VIS: 9.8/45

60% MARLSTONE: dark gray-black, blocky, moderately-slightly firm, silty texture, occasional earthy-slightly mottled texture, argillaceous, moderately-very calcareous;
 40% CHALK: light-medium gray, occasional dark gray, blocky-sub blocky, soft, friable, silty in part, very calcareous;

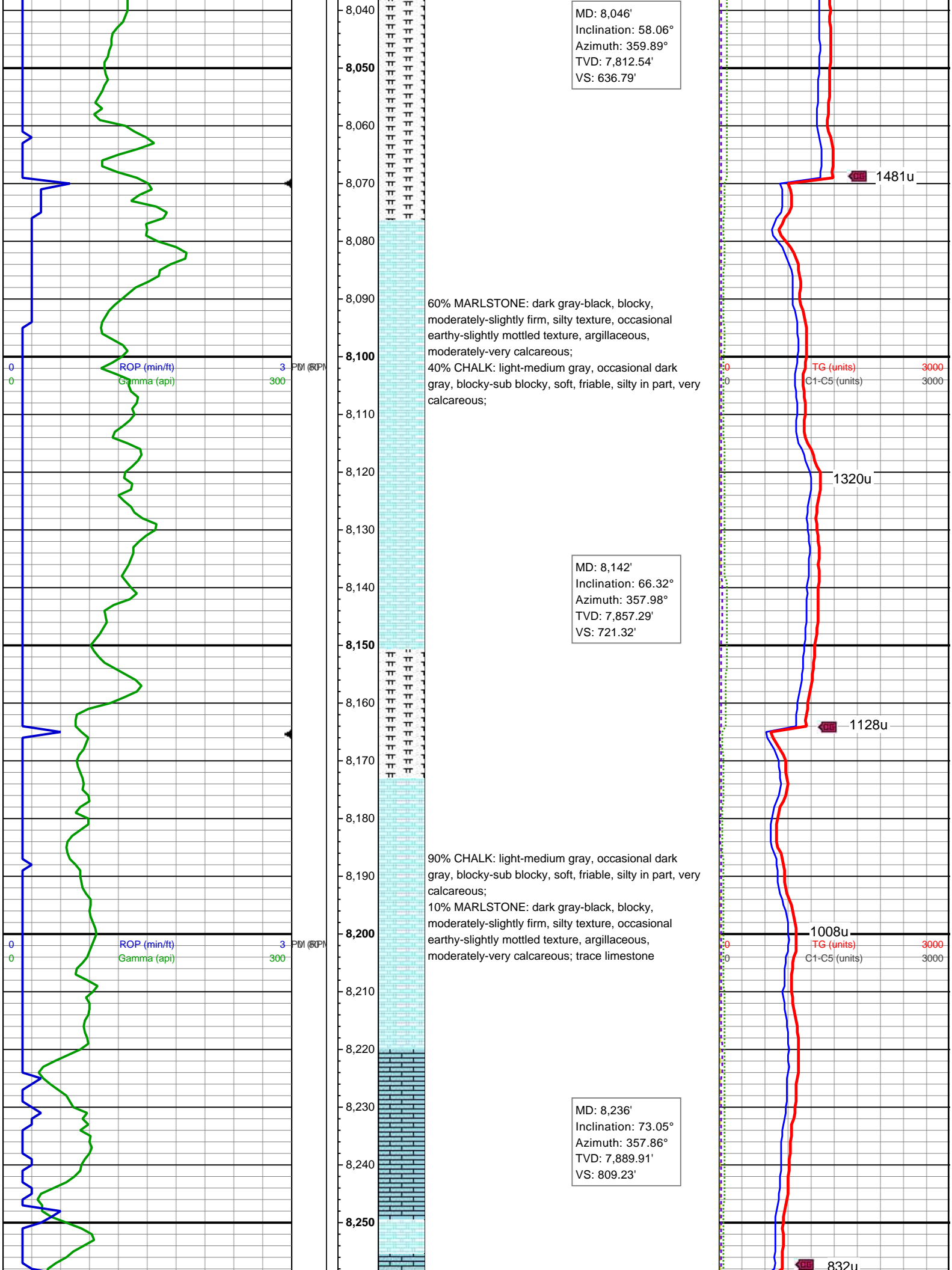


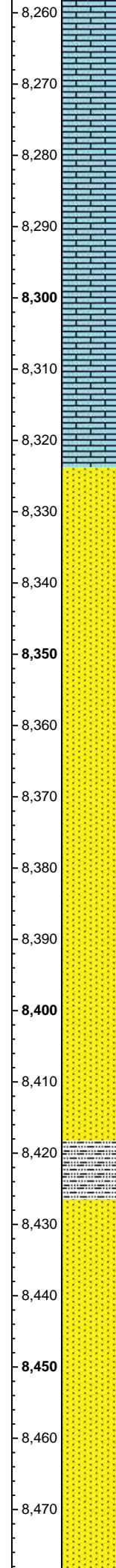
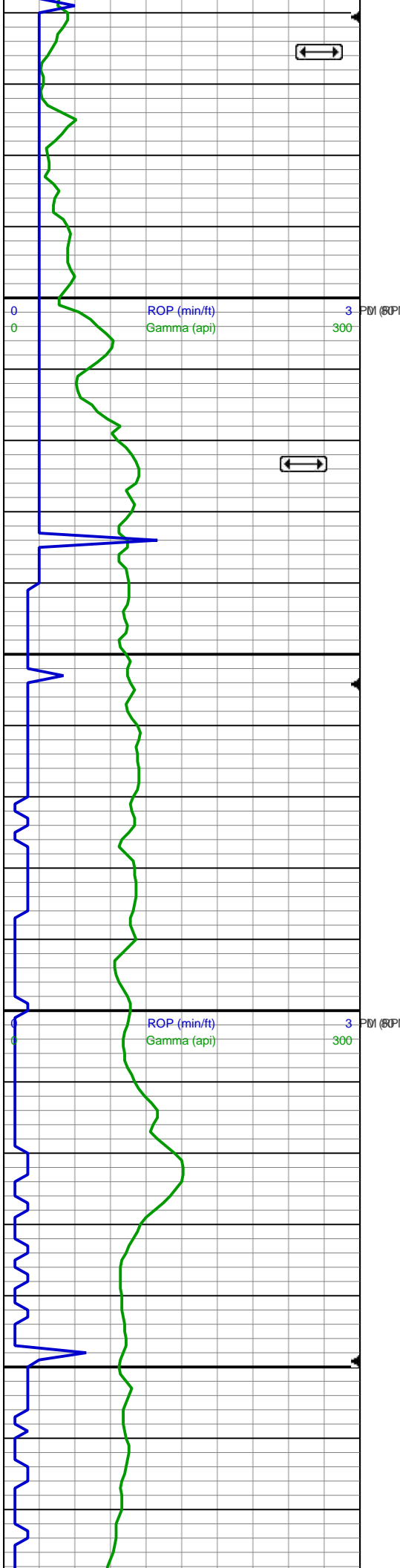
1375u

1666u

1174u

1429u





Ft. Hayes Limestone
 8,266' MD 7,896' TVD -2,440' SSD

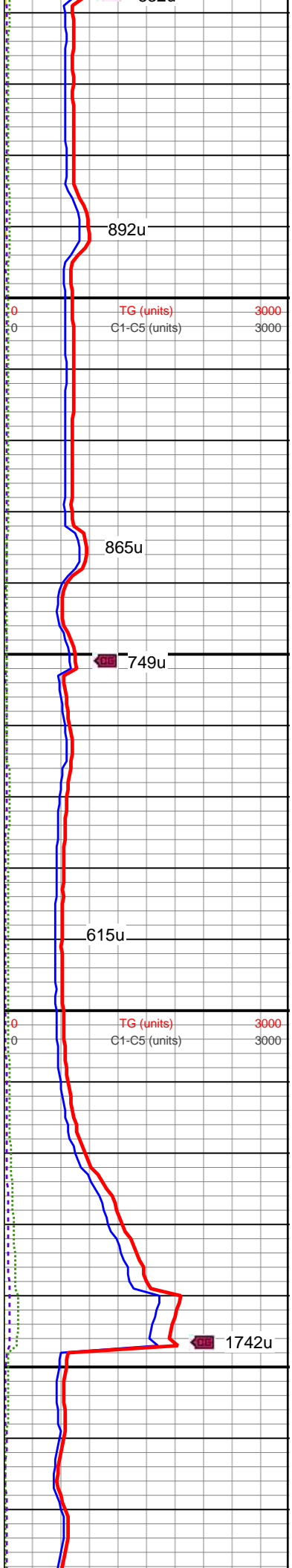
70% LIMESTONE: light gray brown - tan, sub platy-sub blocky, soft, micro crystalline, waxy, silty in part, very calcareous;
 30% CHALK: light-medium gray, occasional dark gray, blocky-sub blocky, soft, friable, silty in part, very calcareous;

Codell
 8,323' MD 7,910' TVD -2,454' SSD

MD: 8,331'
 Inclination: 79.98°
 Azimuth: 357.78°
 TVD: 7,912.05'
 VS: 901.36'

100% SANDSTONE: medium gray, very fine-grained, sub rounded-rounded, moderately consolidated, predominantly soft, very silty matrix, very argillaceous, slightly calcareous, predominant laminated, occasional bioturbated; trace silty shale

MD: 8,425'
 Inclination: 85.01°
 Azimuth: 358.76°
 TVD: 7,924.32'
 VS: 994.27'



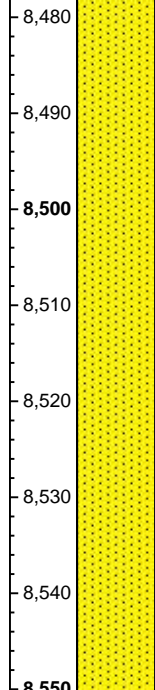
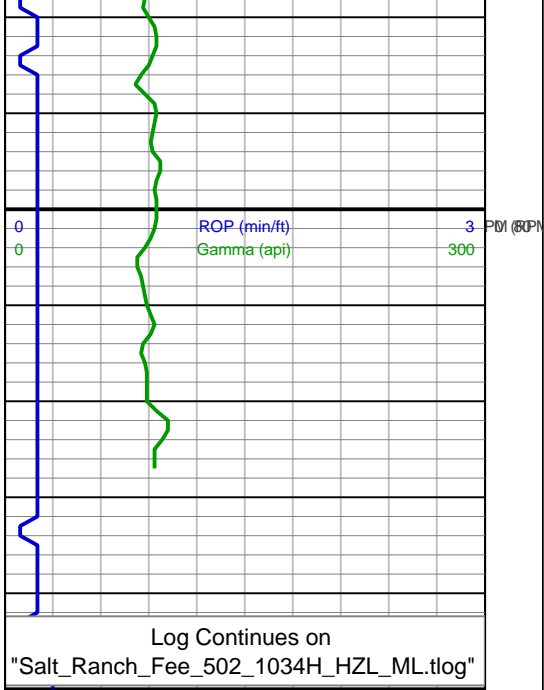
892u

865u

749u

615u

1742u



100% SANDSTONE: medium gray, very fine-fine grained, sub rounded-rounded, moderately consolidated, predominantly soft, very silty matrix, very argillaceous, slightly calcareous, predominant laminated, occasional bioturbated;

Curve Landing
MD: 8,521'
Inclination: 90.06°
Azimuth: 0.82°
TVD: 7,928.45'
VS: 1,089.67'

