



Empirica

Scale: 5" / 100'
Measured Depth Log

Well Name Windsor_LV_D_14-H_Horizontal

Location SEC.14-T6N-R67W

State Colorado

County Weld

Country USA

Rig Number H&P 319

API Number 051233817300

AFE # 14-755

Region DJ Basin

Field Wattenberg

Spud Date 12/2/2014

Ground Elevation 4846'

K.B. Elevation 4896'

Logged Interval 6500'

Formation Codell

Type of Drilling Fluid WBM

Operator

Company Extraction Oil & Gas, LLC

Address 1888 Sherman St, Suite 200
Denver, Colorado 80203

Geologist

Name Justin Perry & Geoff Sterling

Company ALS Empirica

Address 6360 W Sam Houston Pkwy N
Suite 100
Houston, TX 77041

Other

Logging Start Date 12/03/2014

Zone Color Coding

Oil
Note
Error

Condensate
Core
Water

Gas
Pressure
Seal

Rock Types

UNKNOWN	CHERT	SILTSTONE	IGNEOUS
ANHYDRITE	COAL	SANDSTONE	METAMORPHIC
GYPSUM	MARLSTONE	CONGLOMERATE	CEMENT
SALT	CHALK	BRECCIA	SILTY SH
SIDERITE or LIMONITE	SHALE	TILL	SHY SS
LIMESTONE	SHALE GRAY	BENTONITE	
DOLOMITE	SHALE COLORED	TUFF	

Accessories

F FOSSIL	ARGILLACEOUS	GLAUCONITE	
GASTROPOD	ARGILLITE GRAIN	GYPSIFEROUS	
OOLITE	BENTONITE	HEAVY MINERAL	
OSTRACOD	BITUMENOUS SUBSTANCE	KAOLIN	
BELEMNITE	BRECCIA FRAGMENTS	MARLSTONE	
BIOCLASTIC	CALCAREOUS	MINERAL CRYSTALS	
PELLET	CARBONACEOUS FLAKES	NODULES	
PISOLITE	CHTDK	PHOSPHATE PELLETS	
BRYOZOA	PLANT REMAINS	PYRITE	
CEPHALOPOD	PLANT SPORES	MARLSTONE (CALC) STRG	
CORAL	SCAPHOPOD	MARLSTONE (DOL) STRG	
CRINOID	STROMATOPOROID	SANDY	
ECHINOID	FELDSPAR	SILTY	
FISH	FERRUGINOUS PELLET	SILTY	
FORAMINIFERA	ANHYDRITIC	TUFFACEOUS	
		SILTSTONE STRINGER	

Stringer

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

Other Sym

ORGANIC	FAULT
PINPOINT	FORMATION
DEAD	VUGGY
EVEN	GAS SHOW
QUESTIONABLE	NORMAL FAULT
SPOTTED STAINING	OIL SHOW
BIT	OVERTURNED
CASING	REVERSE FAULT
E EARTHY	SIDEWALL COR
FENESTRAL	CONNECTION GAS
F FRACTURE	SLIDE
INTERCRYSTALLINE	CORE - LOST
INTEROOLITIC	CORE - RECOVERED
MOLDIC	TRIP GAS
	DST INTERVAL
	WIRELINE TEST

Engineering

MN DEPTH	NORMAL FAULT
DEAD	VUGGY
EVEN	GAS SHOW
QUESTIONABLE	NORMAL FAULT
SPOTTED STAINING	OIL SHOW
BIT	OVERTURNED
CASING	REVERSE FAULT
E EARTHY	SIDEWALL COR
FENESTRAL	CONNECTION GAS
F FRACTURE	SLIDE
INTERCRYSTALLINE	CORE - LOST
INTEROOLITIC	CORE - RECOVERED
MOLDIC	TRIP GAS
	DST INTERVAL
	WIRELINE TEST

Abols

WIRELINE TESTED - RT **FX** FINELYXLN

ON TOP



MIN DEPTH

BS GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

PTH

Rounding

A ANGULAR

MS MUDSTONE

R ROUNDED

PS PACKSTONE

S SUBANG

WS WACKESTONE

T SUBRND

E (LEFT)

Sorting

E (RIGHT)

M MODERATE

Textures

BS BOUNDSTONE

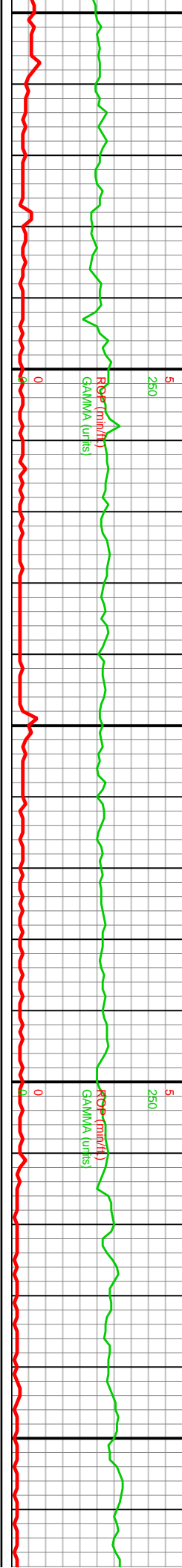
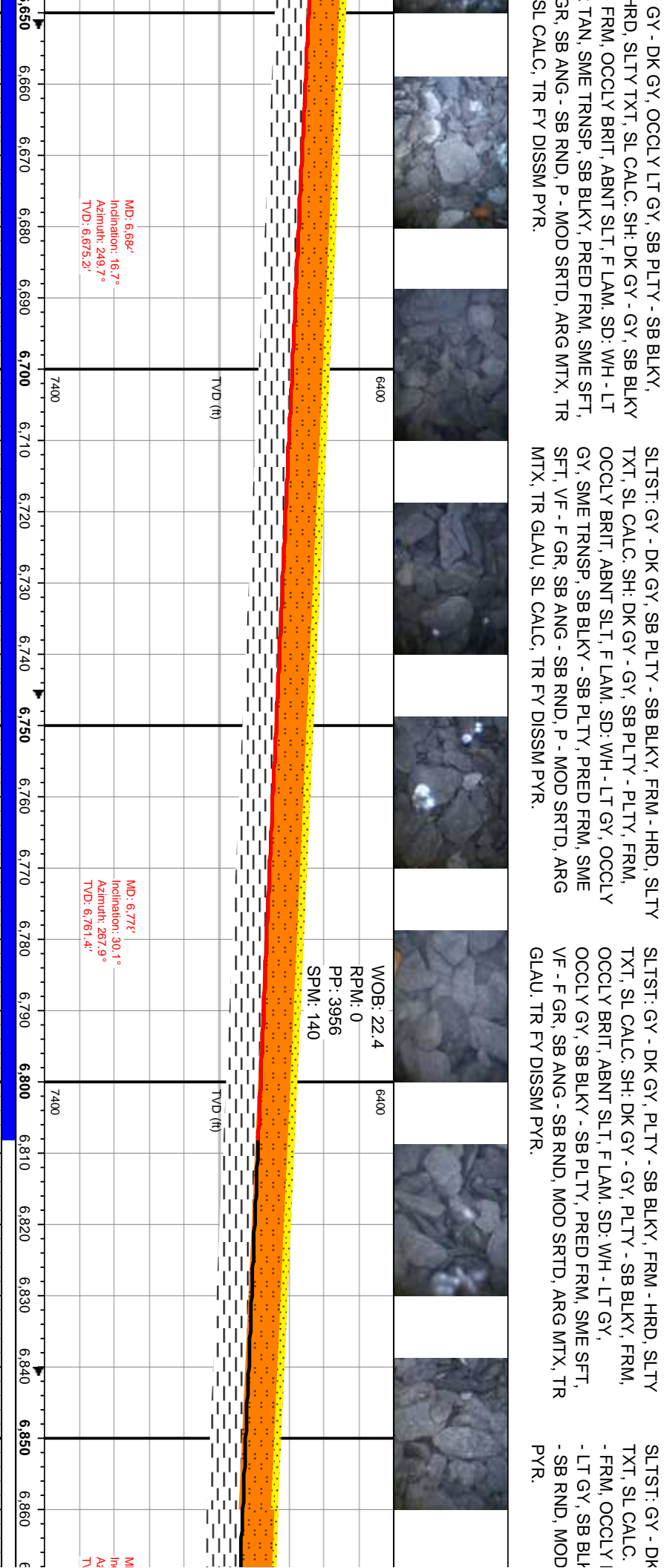
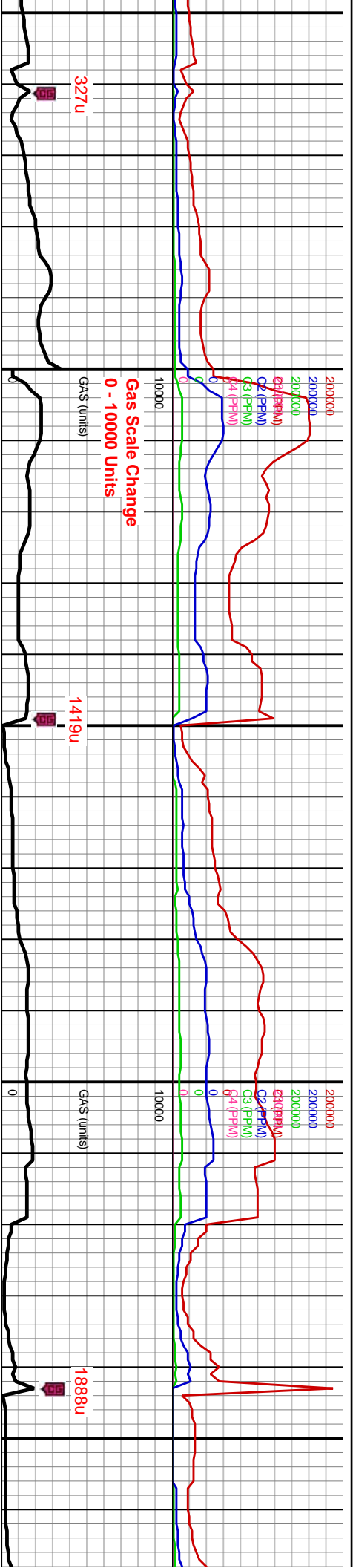
P POOR

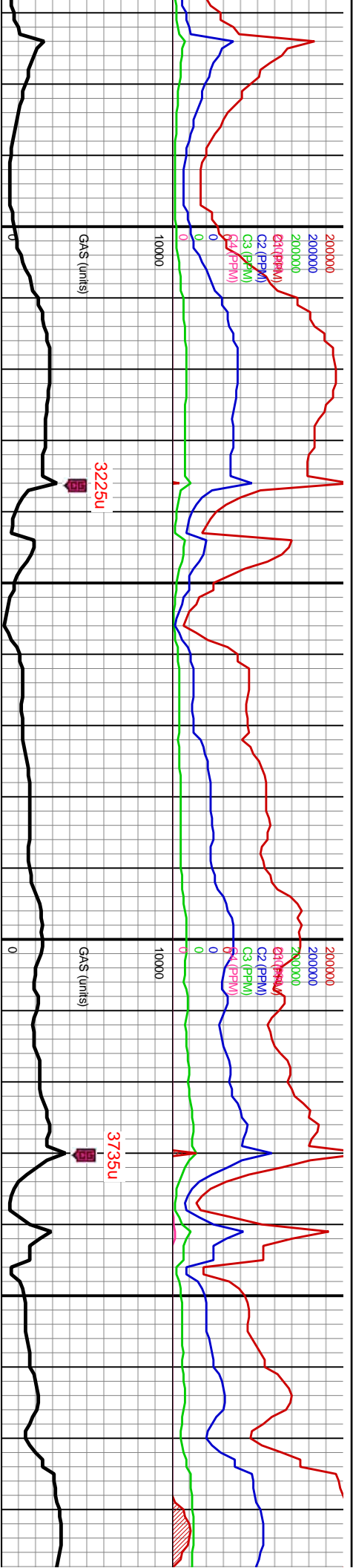
C CHALKY

W WELL

CX CRYPTOXLN

ED - LEFT **E** EARTHY

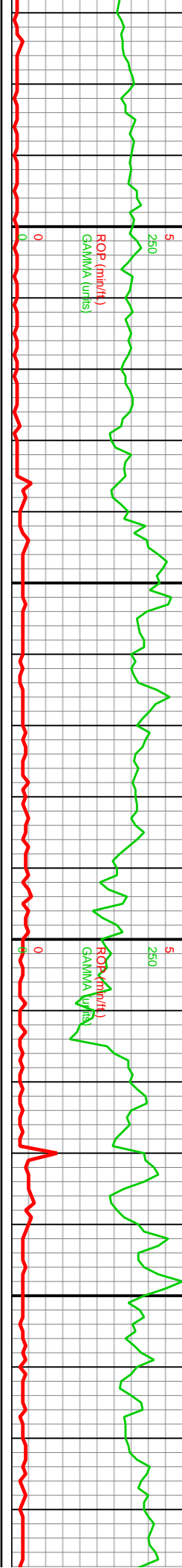
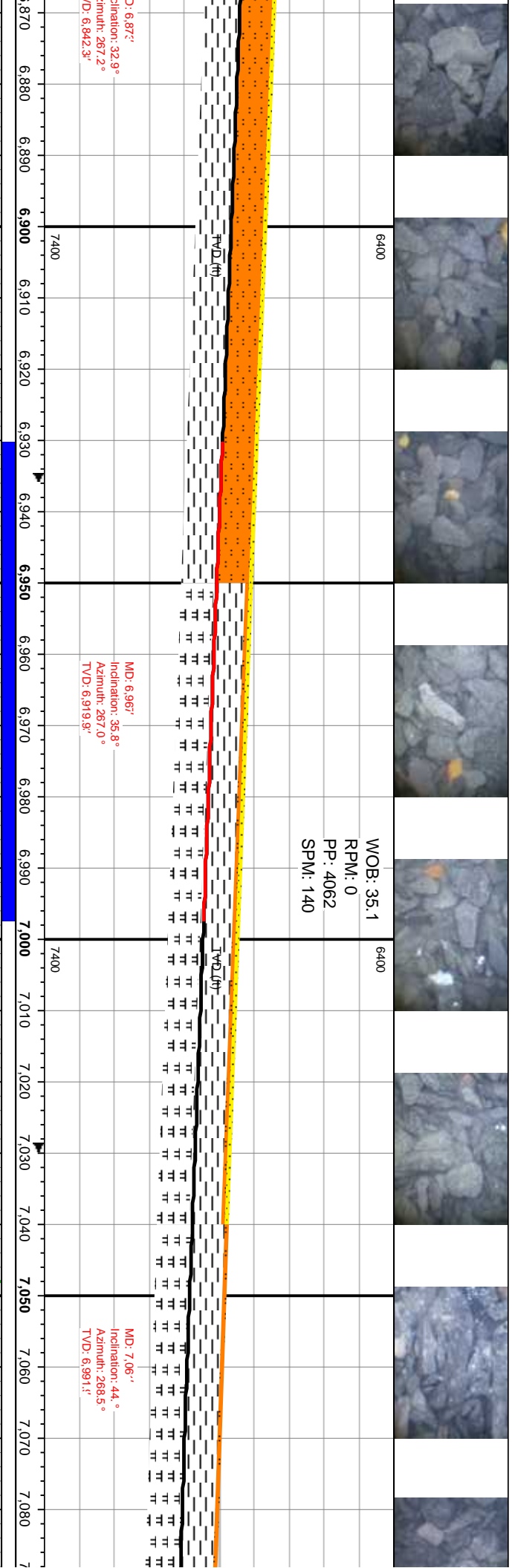


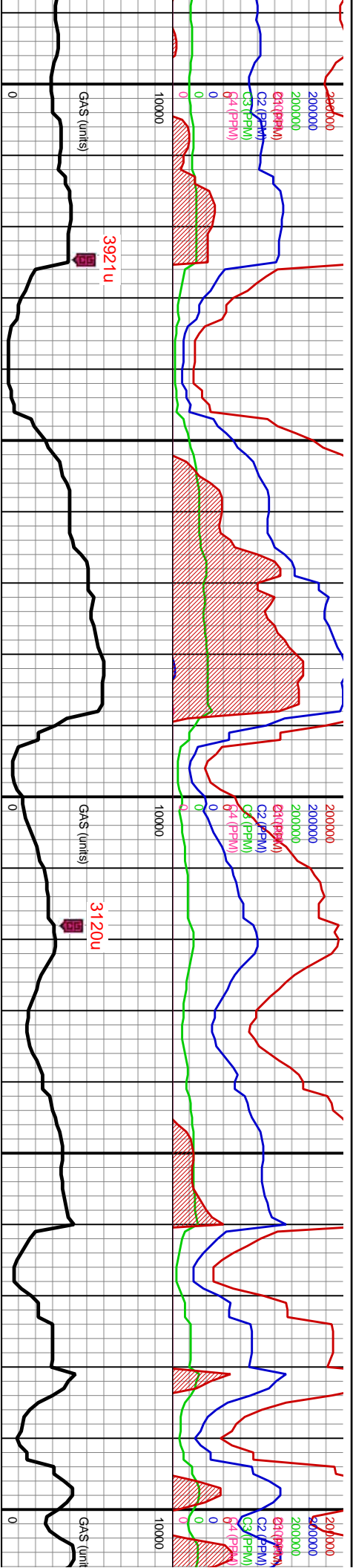


GY, PLTY - SB BLKY, FRM - HRD, SLTY
SLTY DK GY - GY, PLTY - SB PLTY, MOD FRM
PLTY, ABNT SLT, F LAM, MOD FISS, SD: WH
LAM, MOD FISS, SD: WH - LT GY, SB BLKY, PRED
FRM, SME SFT, VF - F GR, SB ANG - SB RND, MOD
SRD, TR GLAU, ARG MTX. TR FY DISSM

SLTST: GY - DK GY, PLTY - SB BLKY, FRM - HRD,
SLTY TXT, SL CALC. SH: DK GY - GY, PLTY - SB
PLTY, MOD FRM - FRM, OCCLY BRIT, ABNT SLT, F
LAM, MOD FISS, SD: WH - LT GY, SB BLKY, PRED
FRM, SME SFT, VF - F GR, SB ANG - SB RND, MOD
SRD, TR GLAU, ARG MTX. TR FY DISSM PYR.

MARL: GY - BRN GY, PLTY - SB PLTY, MOD FRM - SL HRD,
SLTY, FY LAM, RAPID HCL RXN. SH: DK GY - GY, PLTY - SB
PLTY, MOD FRM - FRM, OCCLY BRIT, ABNT SLT, F LAM,
MOD FISS. SLTST: GY - DK GY, PLTY - SB BLKY, FRM -
HRD, SLTY TXT, SL CALC. SD: LT GY, SB BLKY, PRED
FRM, SME SFT, VF - F GR, SB ANG - SB RND, MOD SRD,
TR GLAU, ARG MTX. 1% VF DISSM PYR.





SB PLTY - MARL: GY - BRN GY, OCCLY LT GY, SB PLTY - SB BLKY, MOD FRM - FRM, SLTY, FY LAM, PLTY - SB RAPID HCL RXN. SH: DK GY - GY, PLTY - SB PLTY, MOD FRM - FRM, ABNT SLT, F LAM, WK IT, F LAM, WK FISS. SLTST: GY - DK GY, PLTY - SB BLKY, FRM -HRD, SLTY TXT, SL CALC. 1% VF DISSM PYR.

MARL: MED-DK GY, OCCLY BRN-GY, FRM-SL HRD, OCCLY BRIT, SB PLTY-SB BLKY, FY LAM, RAPID HCL RXN. SH: GY BRN-DK GY, MOD FRM-FRM, PLTY-SB BLKY, SLTY, WK-MOD CALC, ELG STRG OF CHK. RR SS: OFF WH - LT GY, SB BLKY, MOD-FRM, VF GR, MOD SRT, ARG MTX. TR DISS VF PYR. NO FLOR, NO CUT.

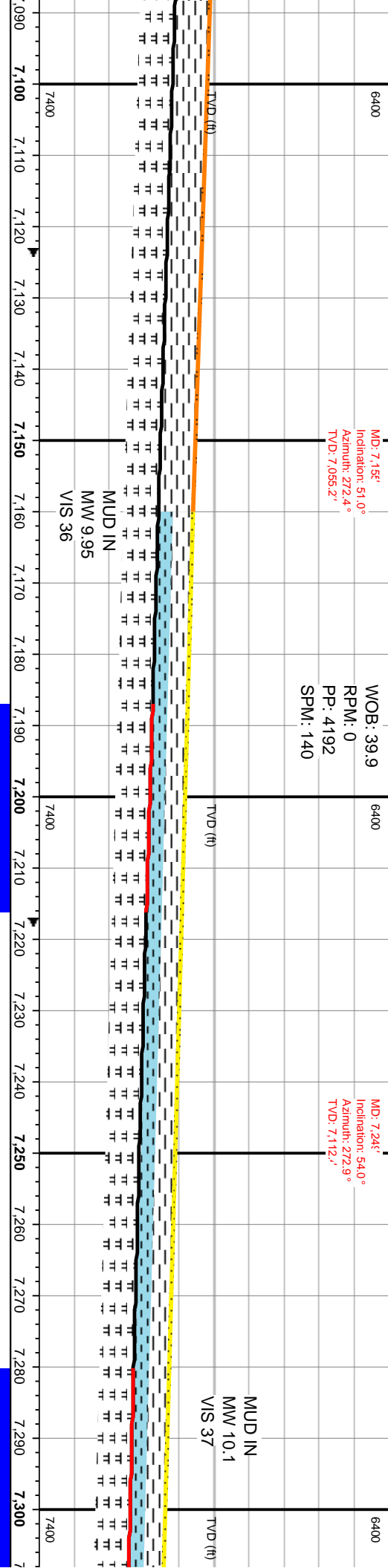
MARL: MED-DK GY, OCCLY BRN-GY, FRM-SL HRD, OCCLY BRIT, SB PLTY-SB BLKY, FY LAM, RAPID HCL RXN. SH: GY BRN-DK GY, MOD FRM-FRM, PLTY-SB BLKY, SLTY, WK-MOD CALC, ELG STRG OF CHK. RR SS: OFF WH - LT GY, SB BLKY, MOD-FRM, VF GR, MOD SRT, ARG MTX. TR DISS VF PYR. NO FLOR, NO CUT.



MD: 7.15°
Inclination: 51.0°
Azimuth: 272.4°
TVD: 7.055.2'

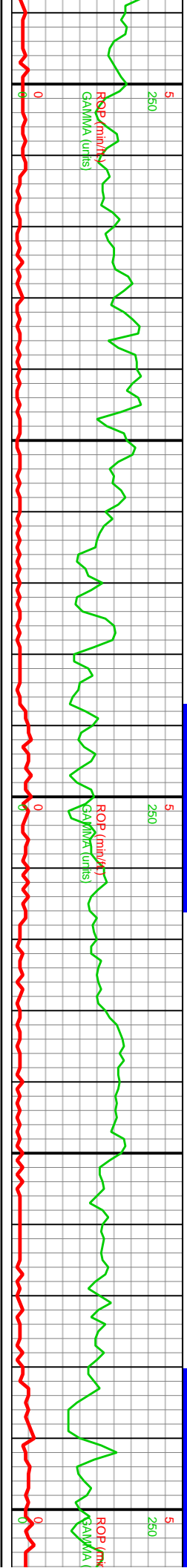
WOB: 39.9
RPM: 0
PP: 4192
SPM: 140

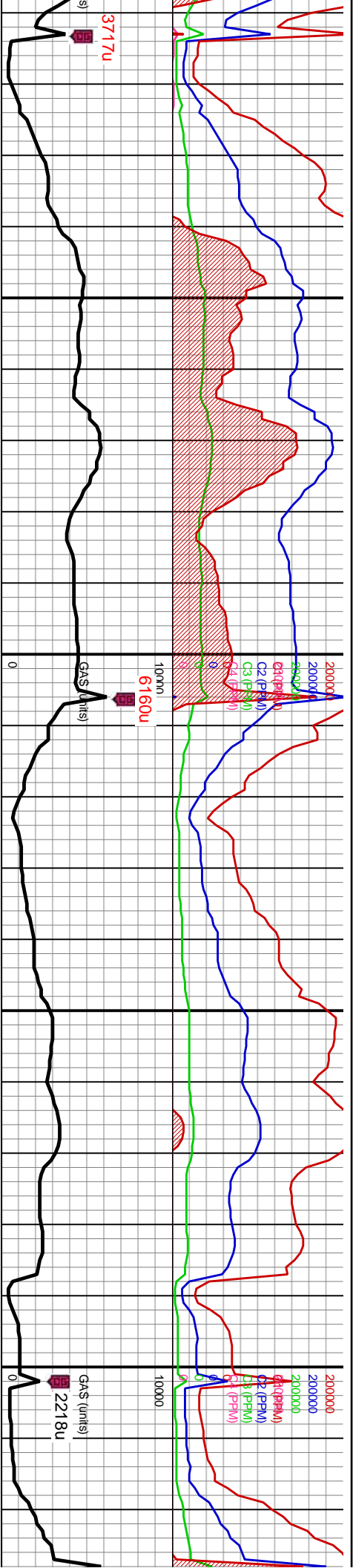
MD: 7.24°
Inclination: 54.0°
Azimuth: 272.9°
TVD: 7.112.2'



MUD IN
MW 9.95
VIS 36

MUD IN
MW 10.1
VIS 37





MED-DK GY, OCCLY BRN-GY, FRM-SL HRD, BRIT, PREDY SB PLTY, SME SB BLKY, FY APID HCL RXN. SH: GY BRN-DK GY, MOD FRM-FRM, PLTY-SB BLKY, SLTY, MOD CALC, ELG STRG OF CHK. TR DISS VF PYR. NO FLOR, NO CUT.

MARL: MED-DK GY, OCCLY BRN-GY, FRM-SL HRD, OCCLY BRIT, PREDY SB PLTY, SME SB BLKY, FY LAM, RAPID HCL RXN. SH: GY BRN-DK GY, MOD FRM-FRM, PLTY-SB BLKY, SLTY, MOD CALC, ELG STRG OF CHK. TR DISS VF PYR. NO FLOR, NO CUT.

CHK: OFF WH - CRPTXL, VF-F DK GY, PLTY - LT GY - GY, FR MOD SRD, VV GY - LT GY, TR RND. TR BENT,



MUD IN MW 10.2 VIS 36

WOB: 27.4 RPM: 30 PP: 4600 SPM: 140

MD: 7.343' Inclination: 62.4° Azimuth: 270.1° TVD: 7.161.8'

MD: 7.437' Inclination: 69.6° Azimuth: 267.9° TVD: 7.199.9'

MD: 7.510' Inclination: 69.6° Azimuth: 267.9° TVD: 7.199.9'

