

COMPUTERIZED MUDLOGGING SERVICE, LLC

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COMPANY: TRIANA ENERGY WELL: CARBON FUELS TCF C14H

FIELD: _____ COUNTY: MINGO STATE: WV

LOCATION: 37.563946 N
89.999291 W

Interval Logged 3845 To: _____ G.L.: 1583 K.B.: 1593

Date Logged: 4/27/11 To: _____ Spud Date: _____

Rig: HIGHLANDS Unit No.: 8

Loggers: MITCH KEOUGH

Api No.: 47-059-02143

Filename: CARBON_FUEL_14.mlw

Geologist: ANDREW WAGGENER

Abbreviations:

NB...New Bit
 CO...Circ Out
 NR...No Returns
 TG...Trip Gas
 WOB...Wt on Bit
 RPM...Rev/Min
 SG...Survey Gas
 DST...Drill Stem Test
 DS...Directional Survey
 CG...Connection gas
 LAT...Logged After Trip
 PP...Pump Pressure
 SPM...Strokes/Min
 DTG...Down Time Gas

Mud Data

WT...Weight
 PH...Acidity
 CHL...Chlorides
 V...Viscosity
 F...Filtrate
 SC..Solids Content

Lithology Symbols:

Anhydrite Salt Granite
 Siltstone Chert Sandstone
 Dolomite Conglomerate Limestone
 Coal Shale Bentonite
 Carb Shale Granite Wash Quartz Wash

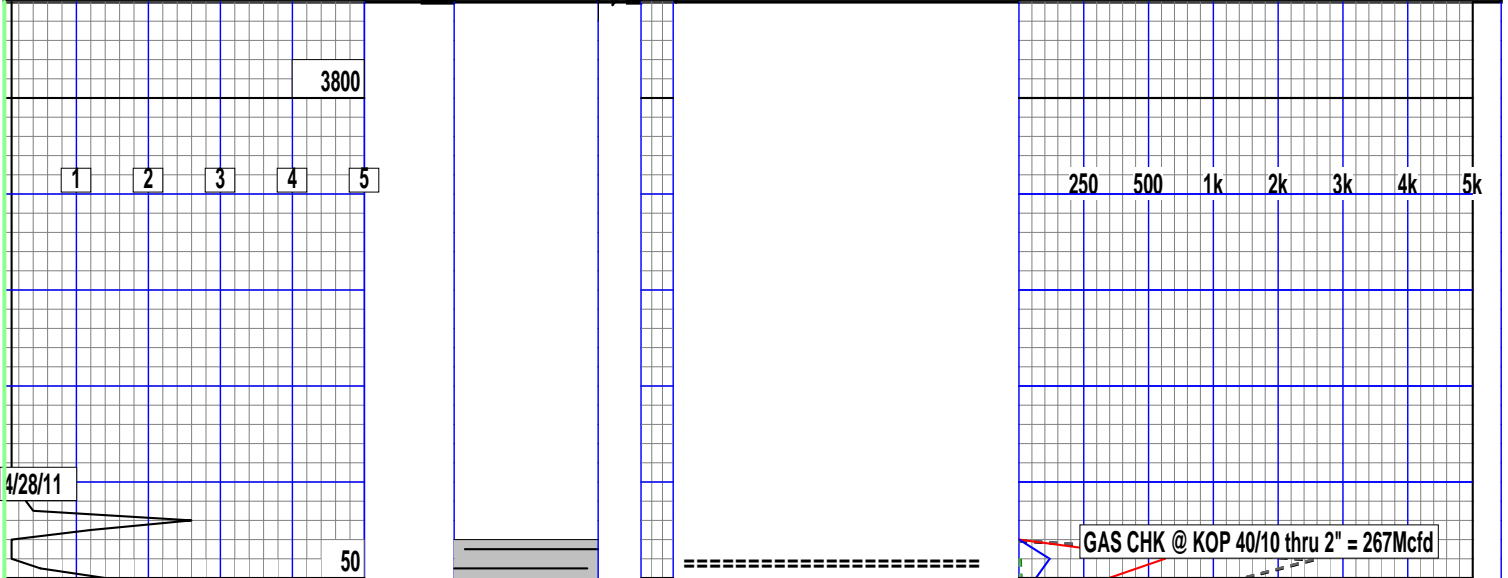
Accessories

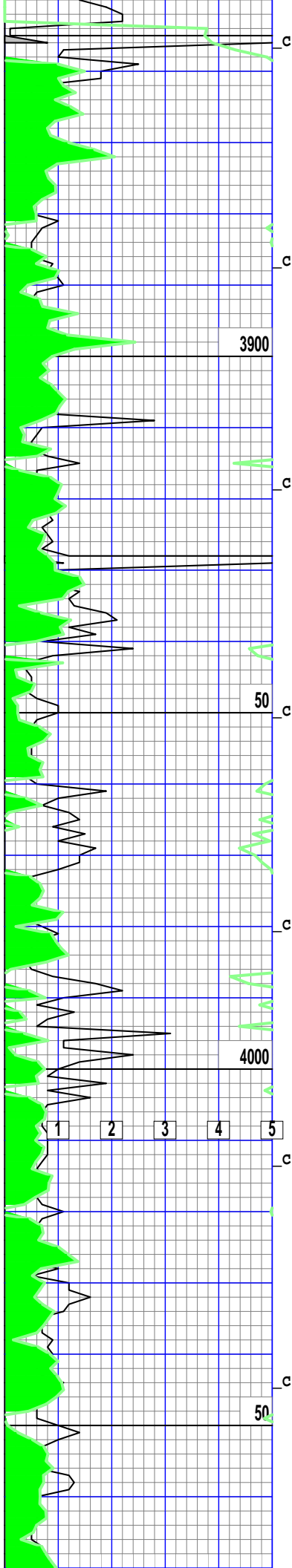
Glaucanite Pyrite Fossils Oolites
 Fractures Cement

Gas Chromatograph Analysis:

HW -----
 C1 -----
 C2 -----
 C3 -----
 IC4 -----
 NC4 -----
 IC5 -----

Drilling Rate MIN/FT	Vis Por Tr / p g	Lithology	% Oil Cut Flu Tr / p f g p f g	Descriptions/Remarks	Total Gas/Chromatograph
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BEGIN LOGGING 3845'
 AT KICKOFF POINT
 DIRECTIONAL DRILLING
 ON AIR - MOTOR 1.83 DEG
 =====

SH: MGRY,SL SLTY,BLKY,
 NCALC,FRM

SH: MGRY,SL SLTY,BLKY,
 NCALC,FRM

SH: M-LTGRY,SME SL SLTY
 NCALC,BLKY,FRM

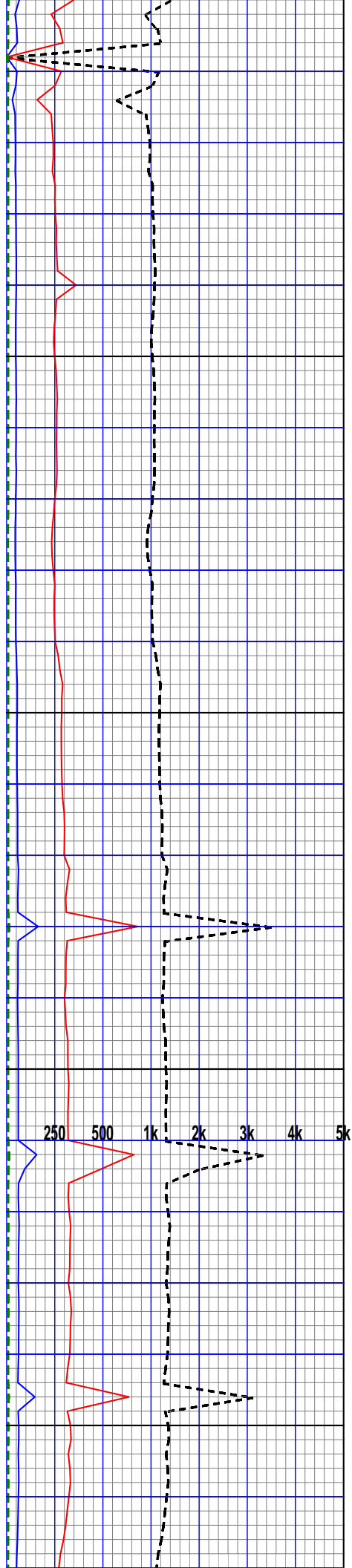
SH: MGRY,SL SLTY,BLKY,
 NCALC,FRM

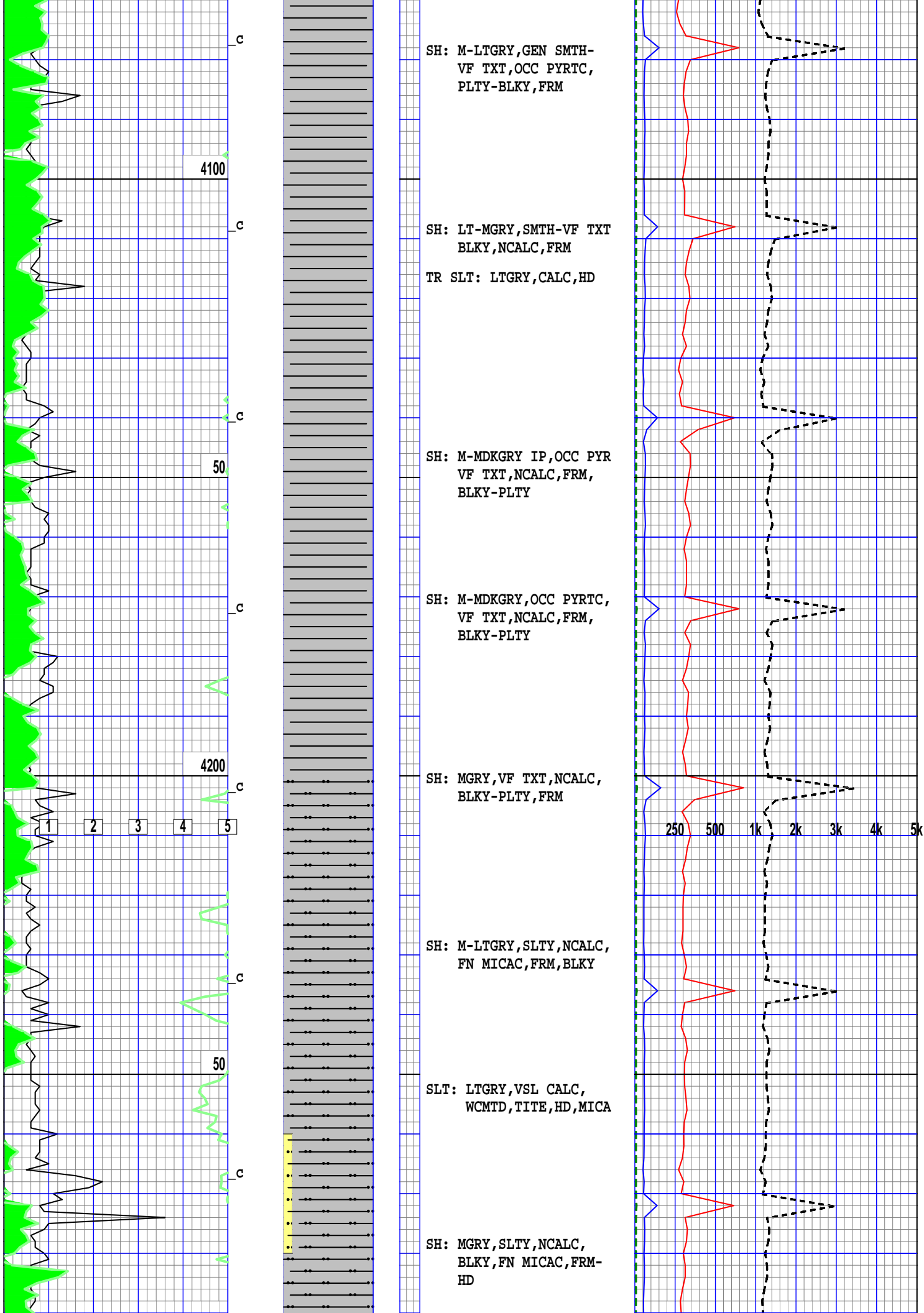
SH: MGRY-MGRYBRN,SME SL
 MORE SLTY & MICAC,
 NCALC,BLKY,FRM

SH: MGRY,SL SLTY,BLKY,
 SME PYRTC,FRM

TR SLT: LT-MGRY,SHLY,
 WCMTD,HD

SH: MGRY,OCC BRNGRY,
 LESS SLTY,NON PYRTC
 BLKY,FRM





SH: M-LTGRY,GEN SMTH-
VF TXT,OCC PYRTC,
PLTY-BLKY,FRM

SH: LT-MGRY,SMTH-VF TXT
BLKY,NCALC,FRM
TR SLT: LTGRY,CALC,HD

SH: M-MDKGRY IP,OCC PYR
VF TXT,NCALC,FRM,
BLKY-PLTY

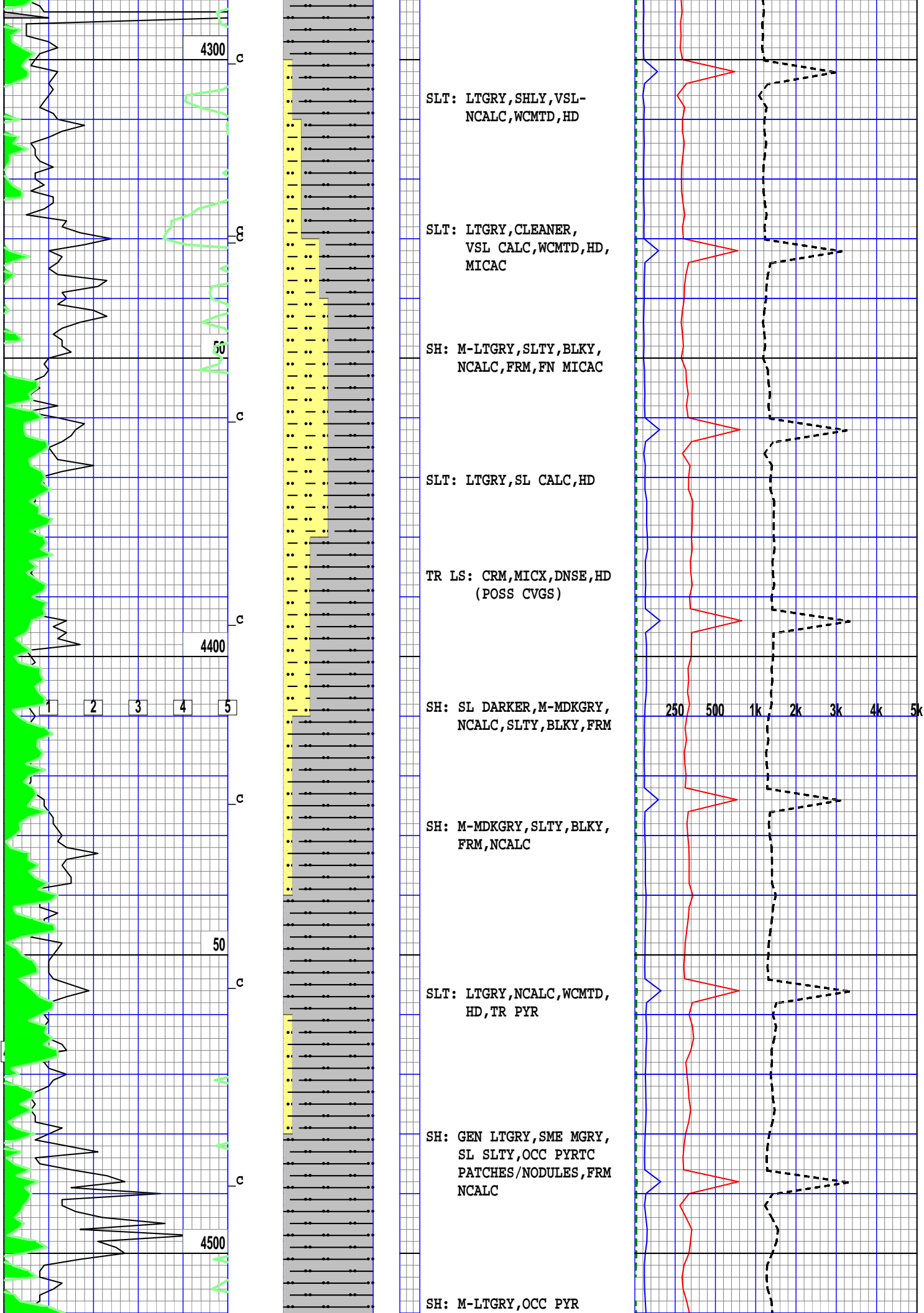
SH: M-MDKGRY,OCC PYRTC,
VF TXT,NCALC,FRM,
BLKY-PLTY

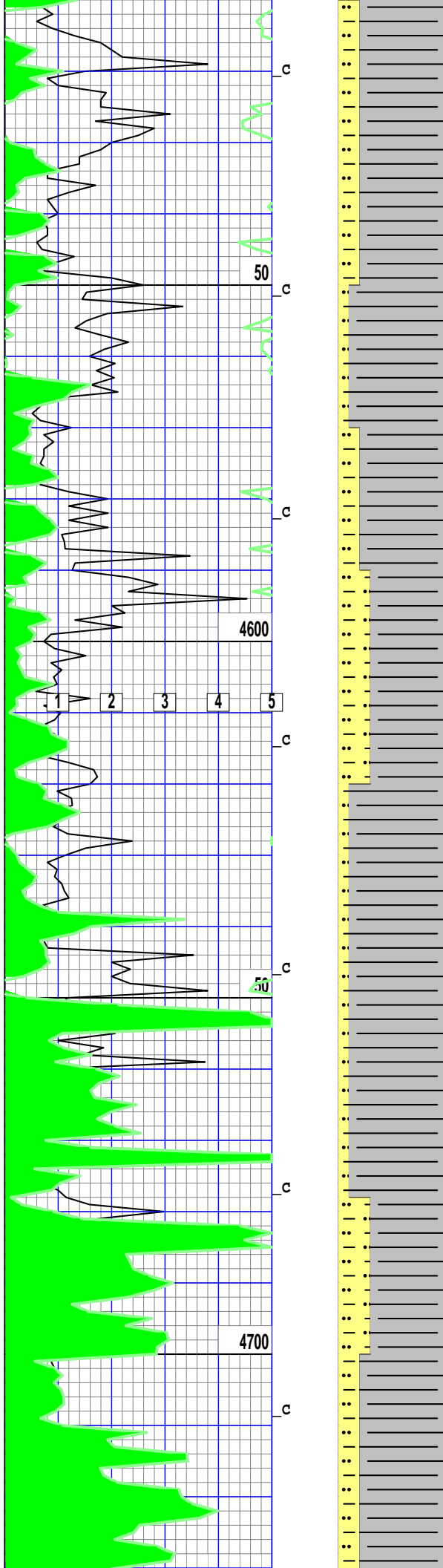
SH: MGRY,VF TXT,NCALC,
BLKY-PLTY,FRM

SH: M-LTGRY,SLTY,NCALC,
FN MICAC,FRM,BLKY

SLT: LTGRY,VSL CALC,
WCMTD,TITE,HD,MICA

SH: MGRY,SLTY,NCALC,
BLKY,FN MICAC,FRM-
HD





NODULES, MORE MICAC,
SME FNLY PYRTC, W/
THIN SLTY LAMINAE
(SL CALC)

SLT: LTGRYBRN, LTGRY,
GEN NCALC, MOD MICA
SME FN PYR, HD-MHD

SH: LT-MGRY, SL SLTY, FRM
NCALC, BLKY

SLT: LTGRY, WCMTD, SL
MICAC, HD, SL CALC

SH: LT-MGRY, SME SLTY
LAMIN, GEN VF TXT,
NCALC, BLKY, FRM

SH: M-MDKGRY, OCC GRYBRN
& SLTY, NCALC, MICAC,
FRM

=====

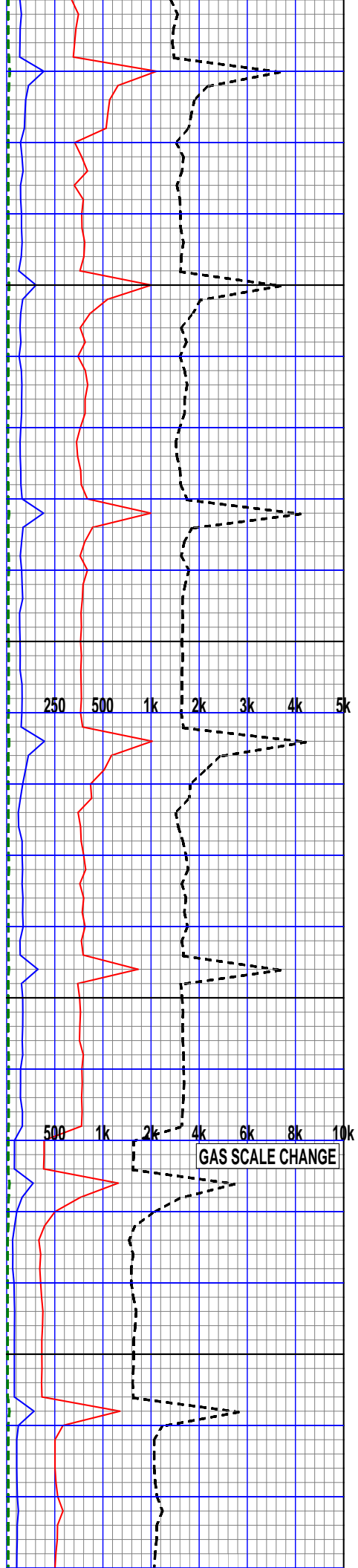
NOTE GAS SCALE CHANGE
AT 4670' NOW 0-10,000

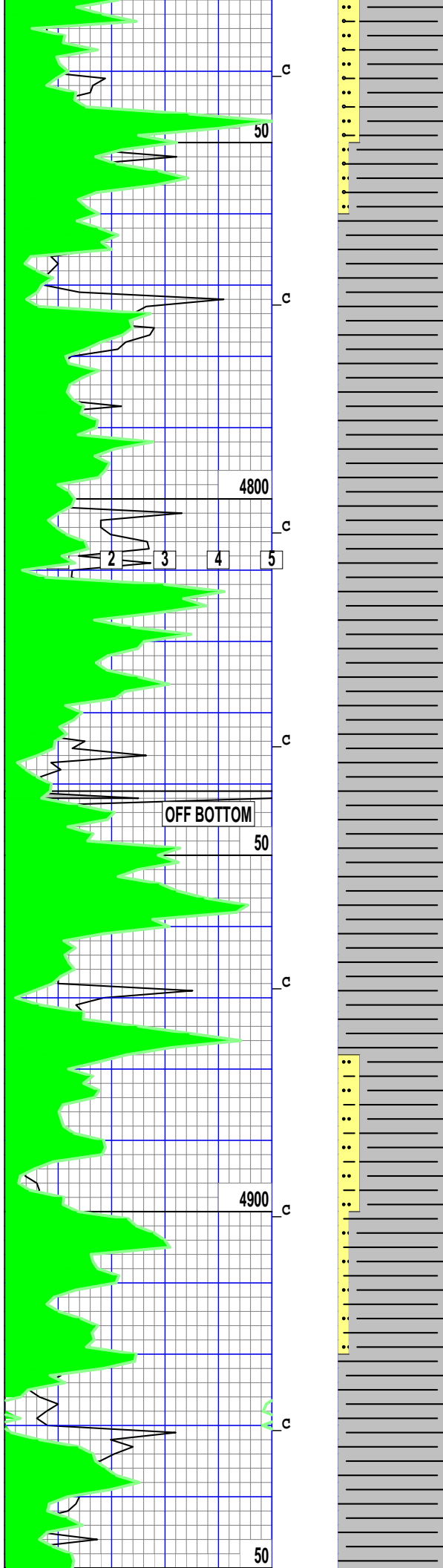
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TITE, WCMTD, HD, SL
CALC, OCC MOD CALC

SLT: MDKBRN W/ LT-MGRY,
PYRTC, MICAC, HD,
SL CALC, TR MOD
CALC, HD

SH: MGRY BRNGRY, GEN VF
TXT, SME GRDG SLTY,
N-VSL CALC, FRM, BLKY
-PLTY





SLT: LT-MGRYBRN,MICAC,
SME PYR,HD,TR CARB
MTRL,TR GRDG VF SS

SH: GEN MGRY,VF-SMTH
TXT,TR SPHRCL PYRTC
NODULES & V FINE
BLK CARB INCLS,V
SLOW BLDG GAS BUBLS

SH: MGRY,VF TXT,NCALC,
BLKY-PLTY,FRM,TR
PYR

SH: MGRY,VF TXT,NCALC,
BLKY-PLTY,FRM

TR SLT: LTGRY,WCMTD.HD

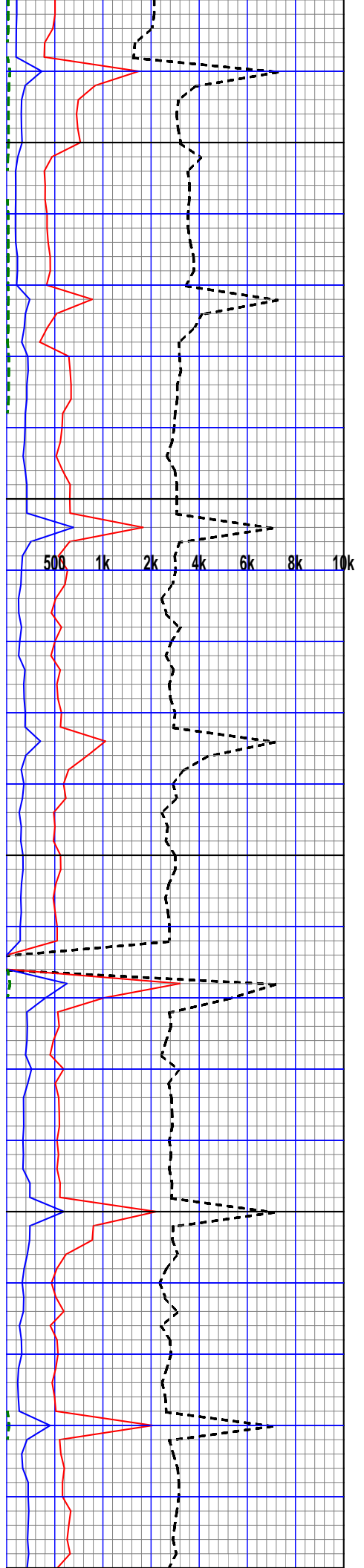
SH: MGRY,AA,SME LT-MGRY
SLTY,MICAC,FRM,NCAL

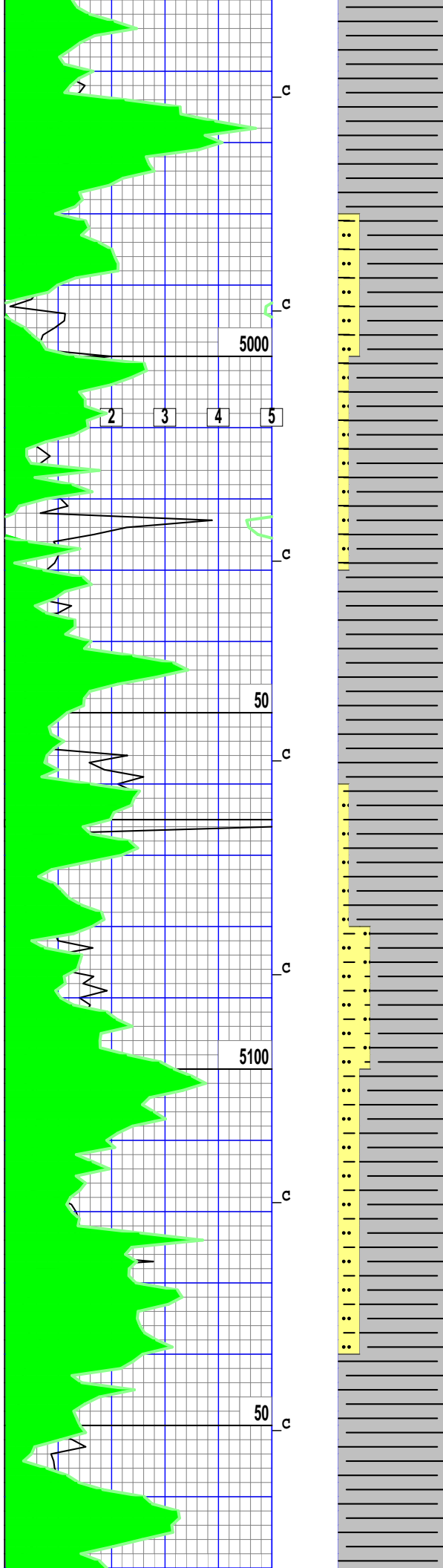
SH: M-LTGRY,VF-F TXT,
SME SLTY W/ MICA &
V FN PYR,NCALC,BLKY
TR MDKGRY,VF TXT

SLT: M-LTGRY,WCMTD,HD,
GEN NCALC,SME SHLY

SH: GEN MGRY,INCRSNG
MDKGRY,BLKY,NCALC,
VF TXT,FRM

SH: M-MDKGRY,OCC PYRTC,
NCALC,BLKY,FRM





SH: MGRY W/MINOR MDKGRY
NCALC, BLKY, FRM

SLT: MGRY MBRNGRY, SHLY,
FN MICA, WCMTD, HD,
NCALC

SH: MGRY, VF TXT, NCALC,
BLKY, FRM-HD, SME SL
SLTY W/ SME THIN
SLT LAMIN

SH: M-LTGRY, VFTXT-SL
SLTY, BLKY, FRM, NCALC

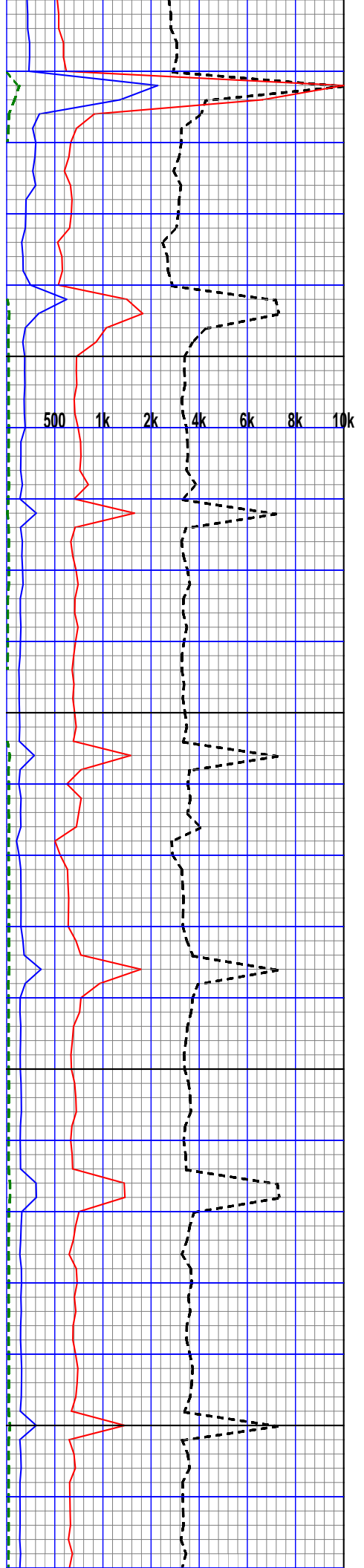
SH: M-LTGRY, GEN VF TXT,
NCALC, FRM

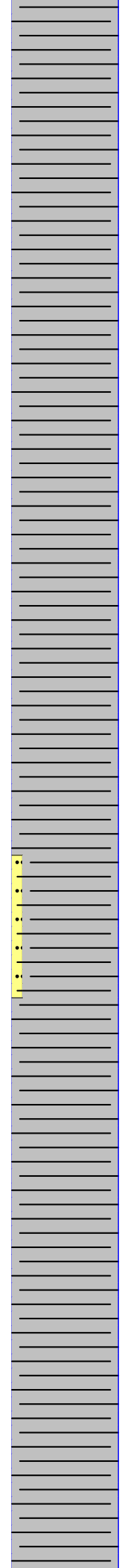
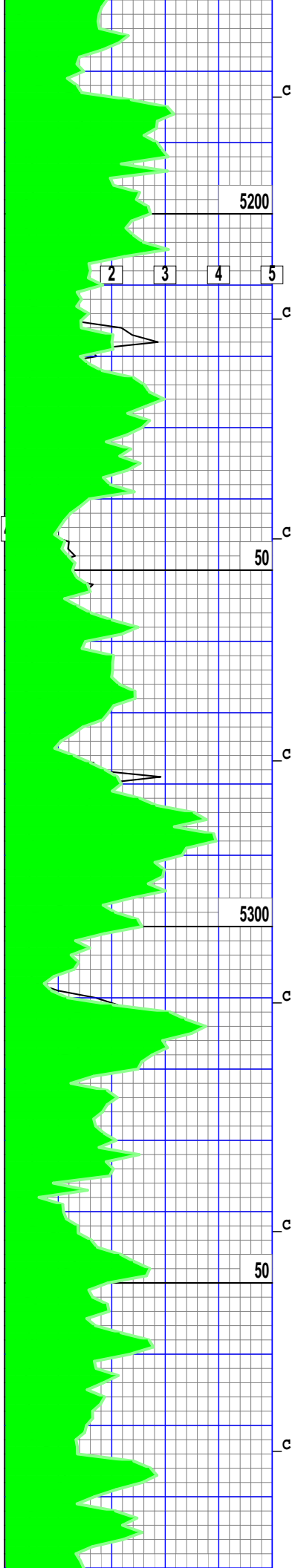
SLT: LTGRY, TITE, NCALC,
WCMTD, CLEANER, HD

SLT: BCMG MORE GRYBRN,
NCALC, WCMTD, HD

SH: MGRY, NCALC, BLKY, FRM
GEN VFTXT, SME GRDG
MDKGRYBRN & SLTY

SH: MGRY, VFTXT, NCALC,
SME M-LTGRYBRN, SMTH
TXT, PLTY-BLKY, NCALC
TRPYR INCLS





SH: MGRY,VF TXT,NCALC,
 PLTY-BLKY,FRM,TR
 PYR

SH: MGRY,VF TXT,NCALC,
 PLTY-BLKY,FRM
 TR SLT: MGRY-GRYBRN,
 SHLY

SH: MGRY,GEN SMTHR TXT,
 NCALC,FRM,OCC FSSL,
 W/ SCTTRD MDKGRY,VF
 TXT,W MGRY PYRTC
 SLT LAMIN,NCALC,FRM

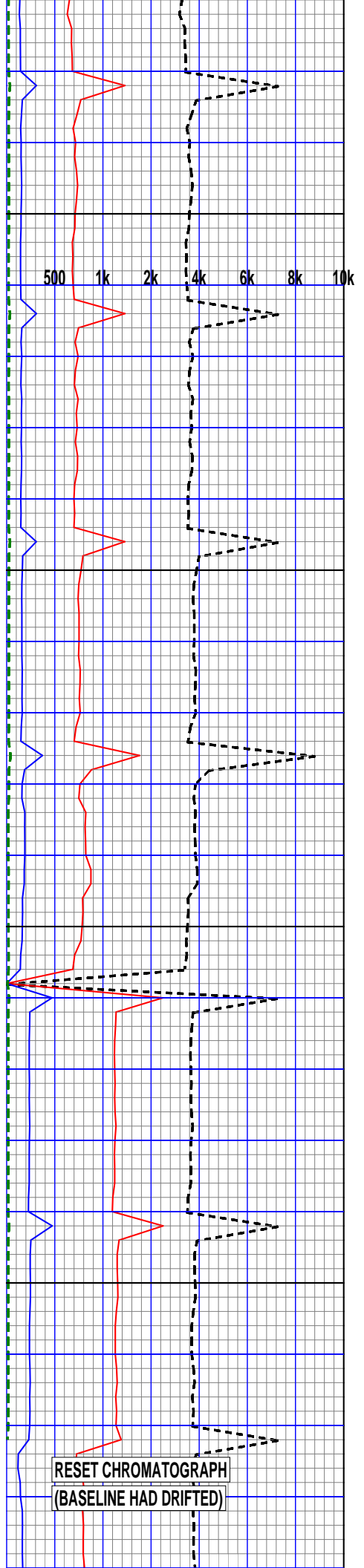
SH: MGRY,VF-SMTH TXT,
 NCALC,SME SL CALC,
 PLTY-BLKY,FRM-MFRM

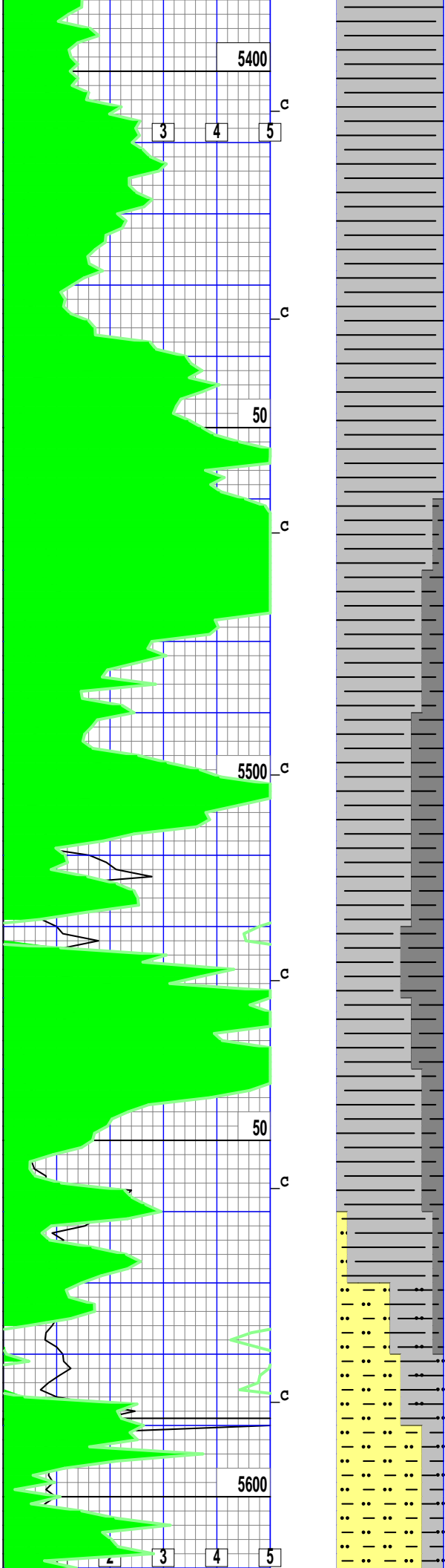
SLT: LTGRY-MGRY,WCMTD,
 HD,SL CALC IP,MICA
 SH: MGRY AA,TR W/ MBRN
 NCALC INCLS SL WAXY
 LSTR

SH: M-LTGRY,VF TXT,FRM,
 GEN BLKY,NCALC,TR
 SCTTRD MDKGRY

SH: M-LTGRY,SL GRYBRN,
 NCALC,BLKY,VF TXT

TR SLT: MBRNGRY,V FNLY
 MICAC & PYRTC,FRIA





SH: MGRY,VF TXT,NCALC,
BLKY,OCC FN PYRTC,
FRM

SH: MGRY,AA W/OCC MDKGY
NCALC,FRM

SH: MGRY,VF TXT,NCALC,
BLKY,FRM

SH: MGRY AA,W DK-MDKGYR
NCALC,V FNLY PYRTC,
BLKY,FRM,SLOW BLDG
GAS BUBLS,CARB

SH: INCRG DKGRY,CARB,
NCALC,BLKY,FRM,SME
FNLY PYRTC,SLOW
BLDG GAS

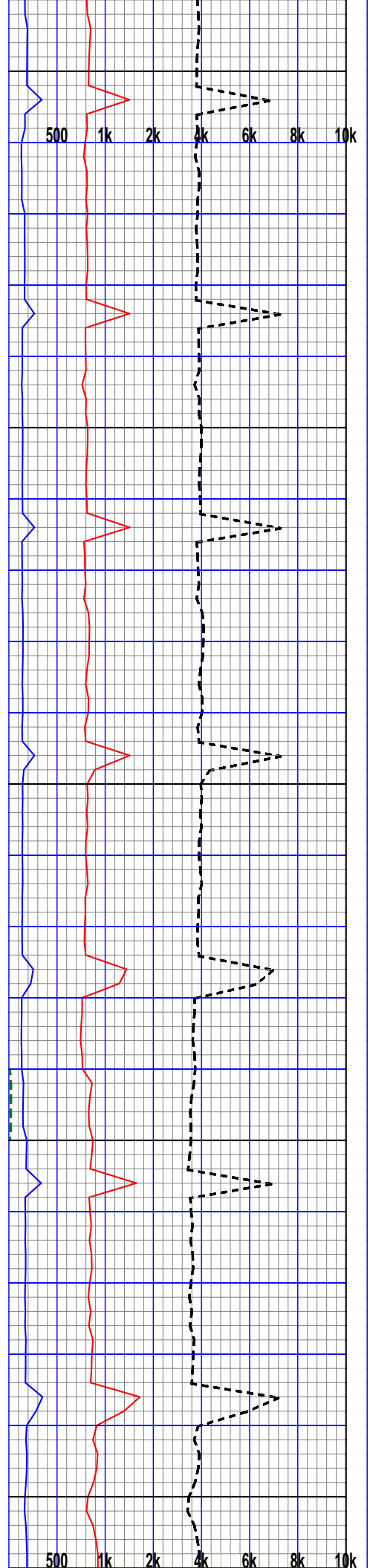
SH: DKGRY,CARB,NCALC,
SME FNLY PYRTC,BLDG
GAS BUBLS

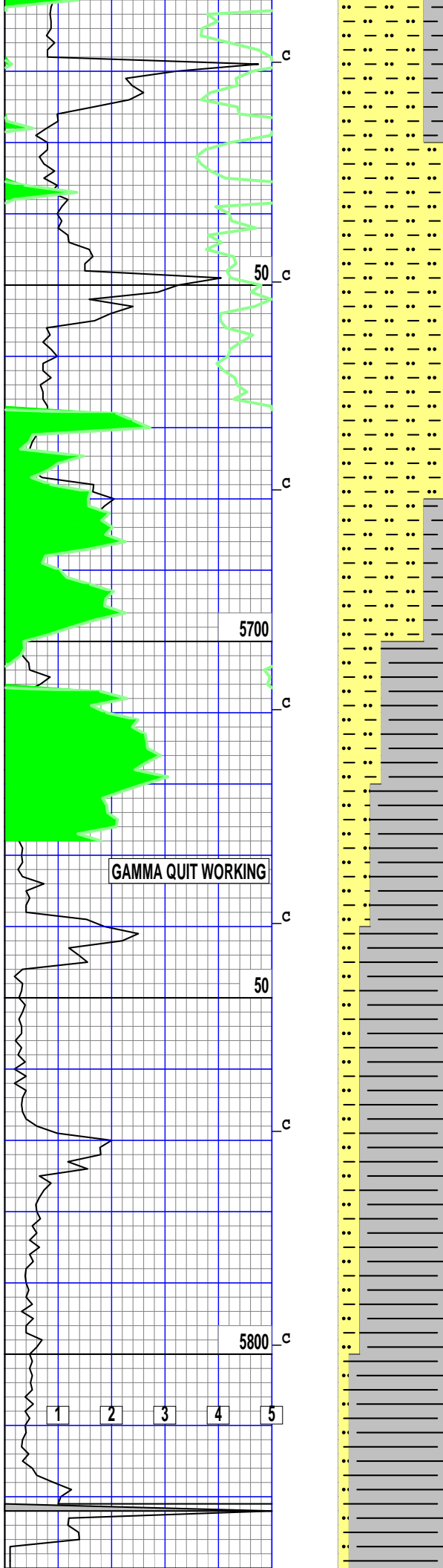
SH: DK-MDKGRY,NCALC,
VF TXT,SME FN PYRTC
W/ MGRY,VF-F TXT,
NCALC,FRM
TR FREE PYRITE

SLT: M-LTBRN BRNGRY,
TITE,WCMTD,HD,FN
MICA,SME VFN PYR

SLT: MBRN-MGRYBRN,NCALC
TR SL CALC,FN MICA
SME VF PYR,WCMTD,

SH: MGRY,F-VF TXT,SME
SLTY,NCALC,BLKY,FRM





SLT: M-LTBRN, SME VLTGRY
 W-MCMTD, SME FN
 MICA, SME MOD CALC

SLT: MBRN, N-VSL CALC,
 WCMTD, HD-FRIA, SME
 FN MICA, SME VLTBRN
 -VLTGRY, MOD CALC

SLT: MBRN, N-SL CALC,
 WCMTD, HD, W/ VLTGRY
 -VLTBRN, MOD CALC,
 WCMTD, TITE, HD

SH: MGRY, VF TXT, NCALC,
 BLKY, FRM

SLT: PRED MBRN, WCMTD,
 TITE, HD, GEN NCALC,
 W/ VLTBRN-VLTGRYBN
 MOD CALC, WCMTD, HD
 TITE

* POSSIBLE BAD SAMPLE
 CAUGHT AT OTHER AREA

SH: MGRY, VF-F TXT, NCALC
 BLKY, FRM
 * SAMPLE TAKEN FROM
 NORMAL SAMPLING AREA

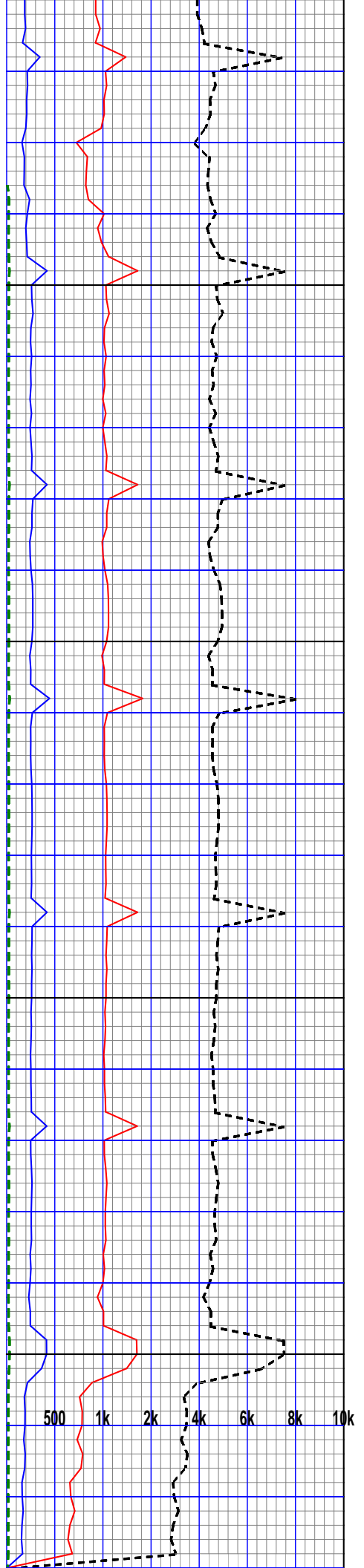
SLT: MBRN, NCALC, WCMTD,
 HD, W/ LTBRN & VLT
 GRY, CALC, WCMTD, HD

SH: M-MDKGRY, NCALC, BLKY
 FRM, VF TXT

SH: M-MDKGRY, VF TXT,
 BLKY, NCALC, FRM

SLT: M-LTGRY, M-MDKBRN,
 WCMTD, GEN NCALC, HD

SH: M-MDKGRY, NCALC, FRM,



LOST POWER

TOH

RESET DEPTH

50

c

5900

c

c

50

c

6000

c

1 2 3 4 5

c

50

VF TXT

=====
TOH FOR MWD TOOL ISSUE
GAMMA NOT WORKING -
DRILL AHEAD W/O GAMMA
=====

SLT: M-MDKBRN,GEN NCALC
W-MCMTD,OCC M-LTGY
CALC

SLT: MBRN MGRY,W-MCMTD,
SME SHLY & GRDG TO
SH,MICAC,FRM

SLT: MBRN MBRNGRY,MICAC
M-WCMTD,HD-FRIA,
GEN NCALC

SH: MGRY MDKGRY,SME
SLTY,MICAC,BLKY,FRM
NCALC

SLT: MGRY-MBRNGRY,MCMTD
GEN NCALC,MICAC

SLT: MGRYBRN MGRY MBRN,
NCALC,SME SL CALC,
MICAC,OCC FN PYR,

SH: M-MDKGRY,VF-F TXT,
SME SLTY & MICAC,
BLKY,NCALC,FRM

SLT: MBRN MBRNGRY,M-W
CMTD,MICAC,SME FN
PYR,OCC LTGRY-LTBR
CALC,WCMTD,HD

SH: MGRY,F-VF TXT,FRM,

GAS CHECK AT TRIP - 16/10 THRU 2" = 169Mcf/d

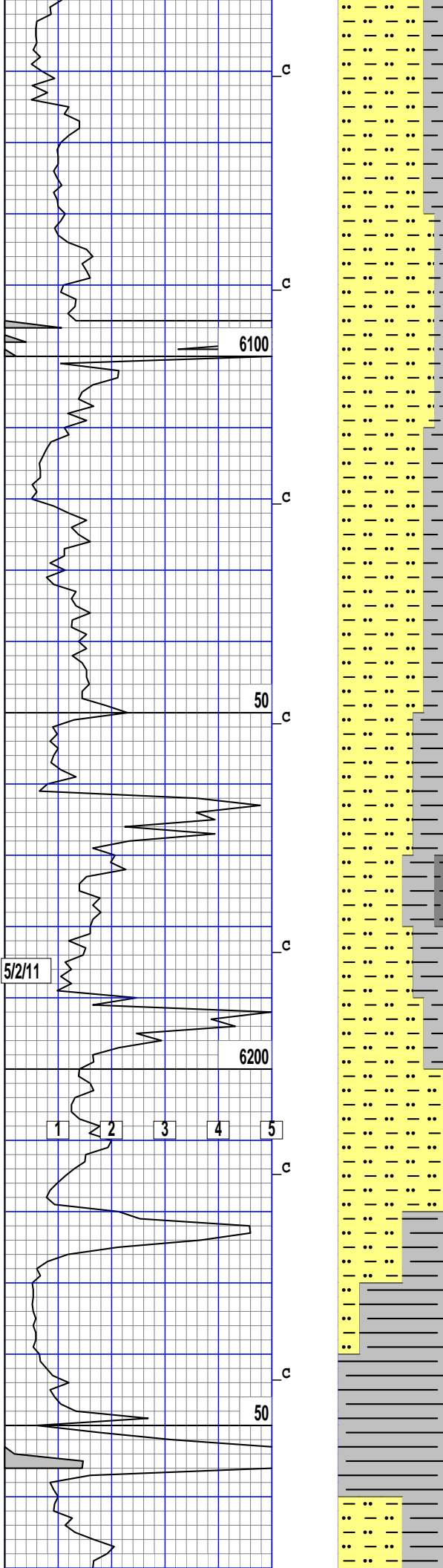
250 500 1k 2k 3k 4k 5k

CIRC W/3 COMPR & BOOSTER

PSI=635

250 500 1k 2k 3k 4k 5k

NCALC, SME SLTY



SLT: M-LTBRN, MCMTD, N-SL
 CALC, VERY FINE
 CUTTINGS, MUCH IS
 PULVERIZED, ALSO
 VLTGRY, CALC

SLT: MBRN, GEN NCALC,
 OCC FN PYR, LESSER
 VLTGRY, CALC

SLT: MBRN LTBRN, N-SL
 CALC, M-WCMTD, FRIA

SH: GEN MGRY SME DKGRY,
 NCALC, VF TXT, BLKY

TR LS: TAN-VLTBRN, MICX,
 DNSE, HD, CLN

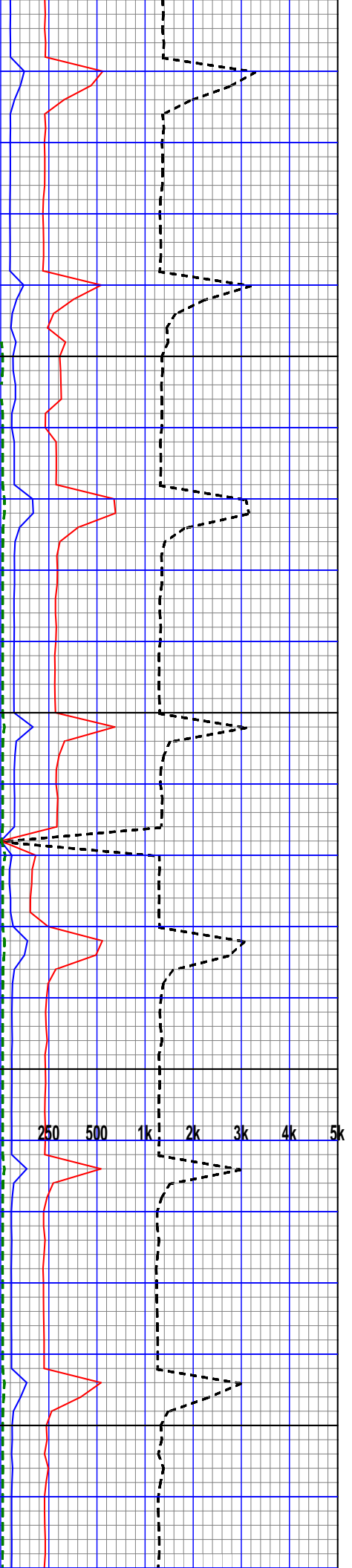
SH: MORE DKGRY, NCALC,
 BLKY, VFN PYR, MOSTLY
 MGRY, F-VF TXT, NCALC

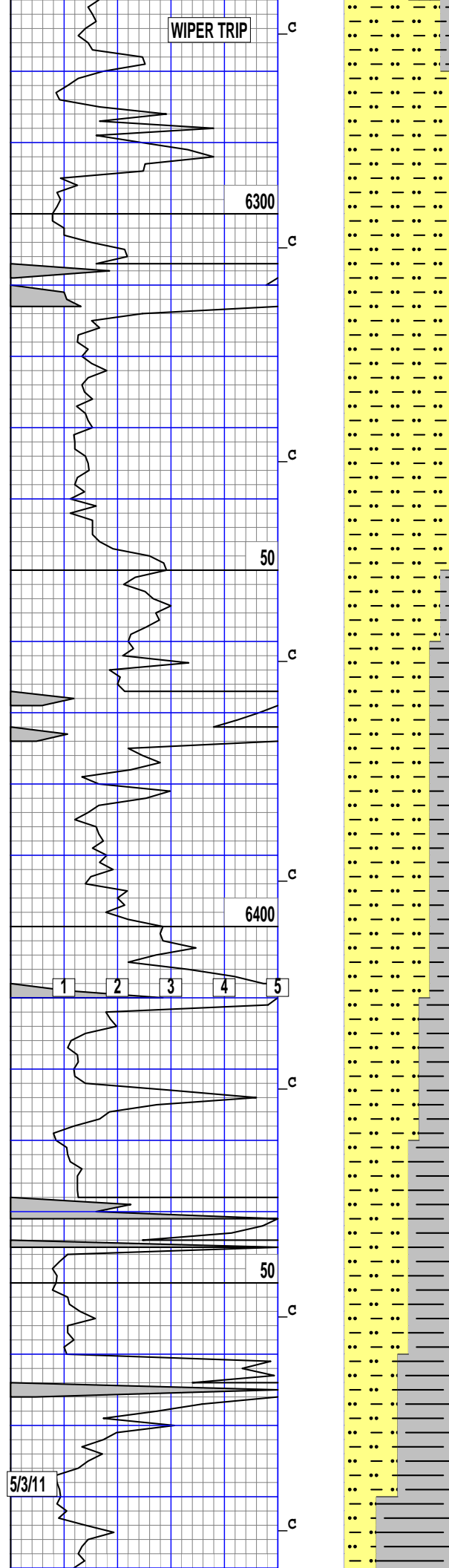
SLT: LTGRY-LT-MBRNGRY,
 WCMTD, MOST MOD
 CALC, TR PYRTC, HD

SH: M-MDKGRY, NCALC, FRM,
 VF TXT, BLKY,

SH: M-MDKGRY, VF-F TXT,
 NCALC, BLKY, FRM

SLT: MBRN-GRYBRN, MICAC,
 SL CALC, MCMT, FRIA





SLT: M-VLTBRN LTBRNGRY,
SL CALC,VERY FINE
CUTTINGS,MCMTD,OCC
MOD CALC (VLTGRY)

SLT: GEN M-LTBRN,MCMTD,
FRIA,SL CALC,FN
MICA,ALSO VLT-LTGR
WCMT,TITE,MOD CALC
VERY FINE CUTTINGS

SLT: M-LTBRN,BRN/WHT,
MCMTD,GEN SL CALC,
SME VFN PYR,FRIA,
RARE LTGRY

SH: MDKGRY,VF MICA &
PYR,PLTY-BLKY,MFRM
NCALC

SLT: M-LTBRN,SL CALC,
MCMTD,FRIA-SME
VFRIA-CRMBLY,MICAC
SME VFN PYR

SH: M-MDKGRY,TR DKGRY,
PLTY-BLKY,NCALC,FRM

SLT: M-LTBRN,MCMTD,SL
CALC,FRIA-MHD,SME
FN PY,SL MORE SHLY

SH: M-MDKGRY,F TXT-SLTY
GEN NCALC,BLKY,FRM
W/ OCC MDKGRY,VFTXT
NCALC,BLKY-PLTY,FRM

SLT: M-LTBRN,SL CALC,
M-WCMTD,FRIA-MHD

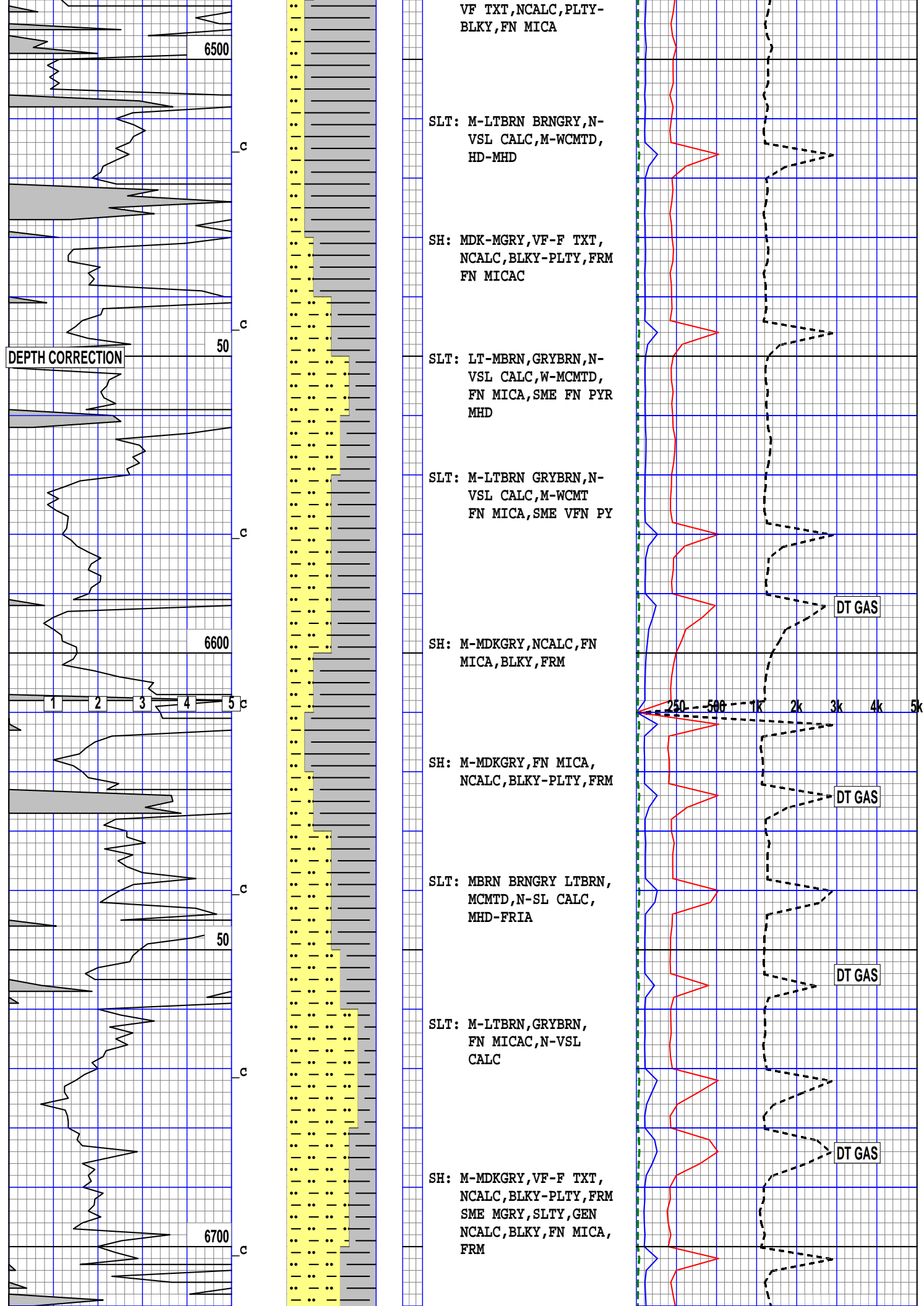
SH: MGRY-MDKGRY,BRNGRY,

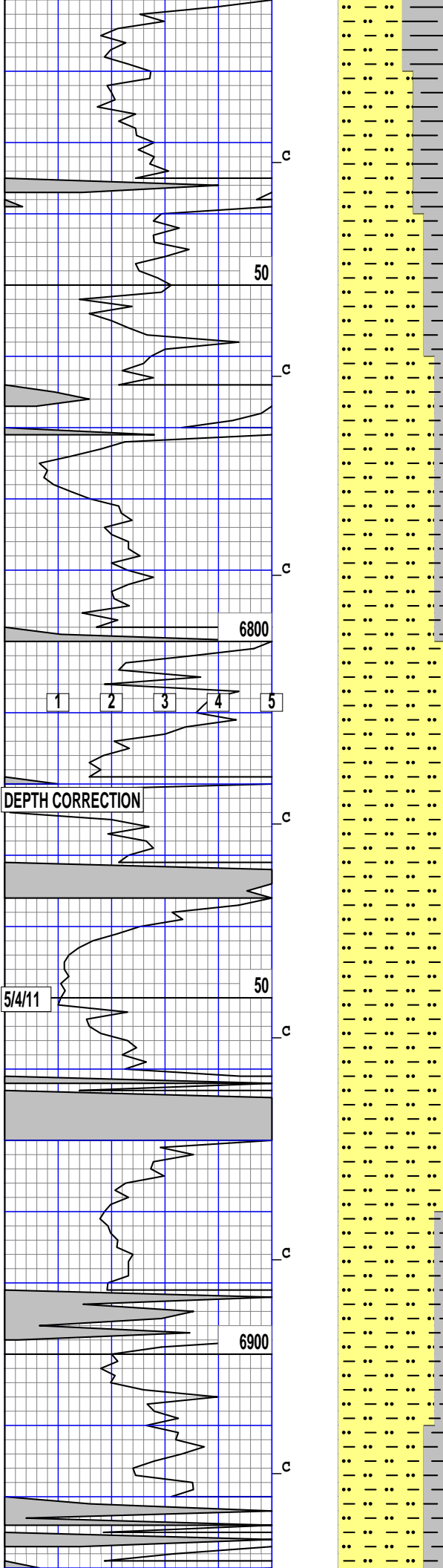
GAS SHOW 2611 U

DT GAS

250 500 1k 2k 3k 4k 5k

DT GAS





SLT: MBRNGRY M-LTBRN,
VSL CALC,M-WCMTD,
SME MDGRY,SHLY

SLT: M-LTBRN LTGRYBRN,
SL MORE CALC W/ TR
MOD CALC,TR CLN
WHT-CLR CALCT

SLT: LT-MBRN GRYBRN,SL
CALC,MCMTD,SME
WCMTD,MORE SCTTRD
CLN WHT CALCT

SH: MGRY,GEN NCALC,BLKY
-PLTY,FN MICA,F TXT
FRM-MFRM

SLT: LT-MBRN BRN/WHT,
SL CALC,MCMTD,MORE
CLEAN,FN MICA,SME
VFN PYR,TR WHT-TAN
CALCT

SLT: M-LTBRN GRYBRN,SL
CALC,VFN MICAC,SME
VFN PYR,GEN MCMTD

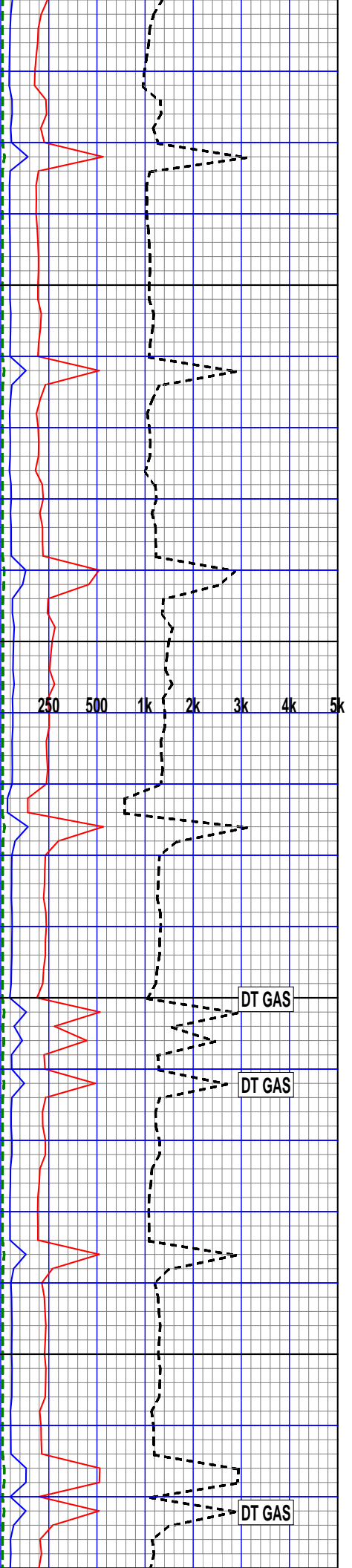
SLT: M-LTBRN,SL CALC,
MCMTD,SME W CMTD,
FN MICAC,SME FN PY

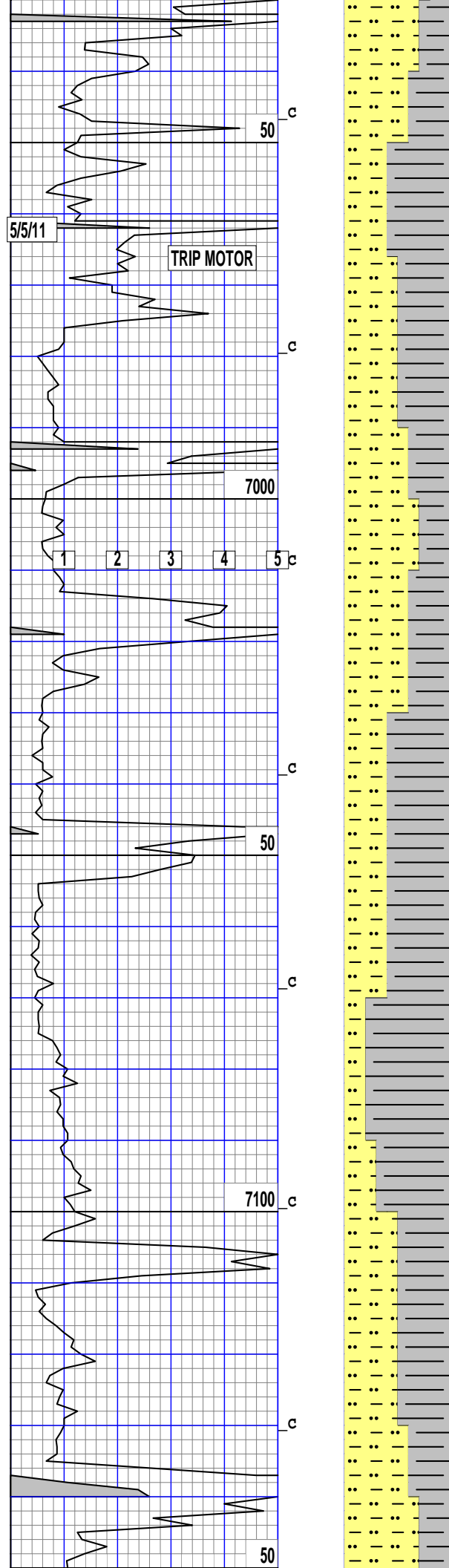
SLT: M-LTBRN BRN/WHT,
GEN MCMTD,SME WCMT
SL CALC,FN MICAC,
FN PYR

SH: MGRY,NCALC,F-VF TXT
FRM,SME MDKGRY,VF
TXT,BLKY-PLTY,NCALC

SLT: M-LTBRN BRN/WHT,
SL CALC,MCMTD,FRIA

SH: MGRY W/ MINOR MDKGR





NCALC, BLKY-PLTY, FN MICAC

SH: M-MDKGRY, VF TXT, SME F TXT-SL SLTY, NCALC FN MICAC

SLT: M-LTBRN, SL CALC, M-WCMTD, FN MICAC, FN PYR, SME GRYBRN, SHLY

SLT: M-LTBRN, M-WCMTD, SL CALC, FN MICAC, FN PYR, OCC VLTGRY, WCMTD, MOD CALC, HD

SLT: MBRN LTBRN, SME GRYBRN, M-WCMTD, VSL CALC-SME NCALC MORE SHLY

SH: M-MDKGRY, VF-F TXT, NCALC, VFN MICAC, FRM -MFRM, GEN BLKY

SH: INCREASING MDKGRY, NCALC, VFN MICAC, FRM

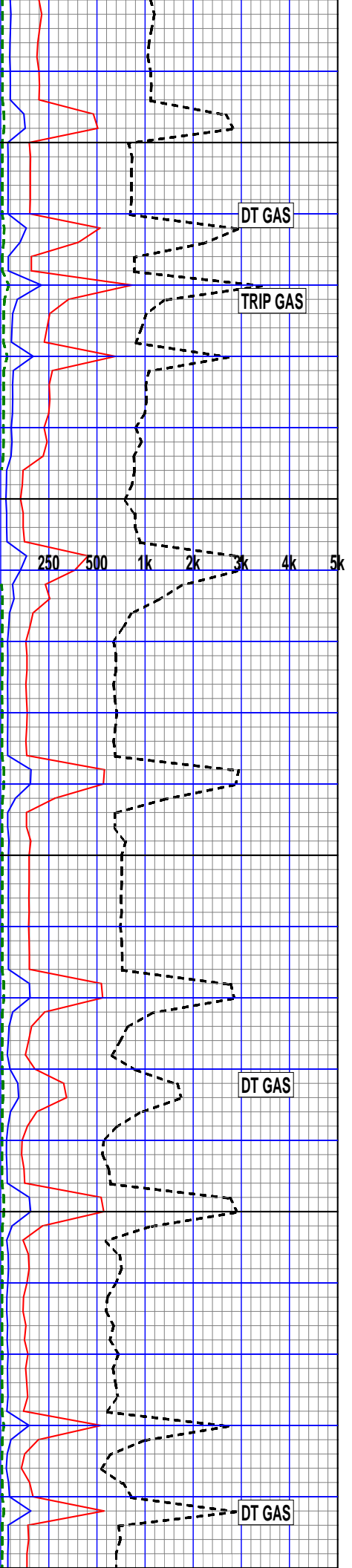
SH: MDK-MGRY, NCALC, FRM

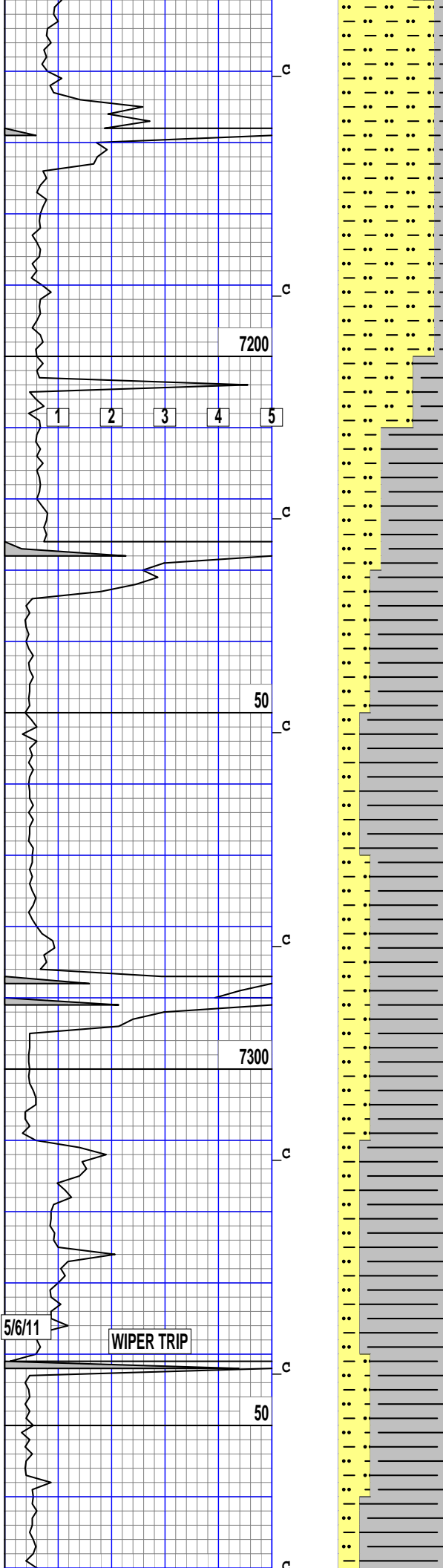
SLT: M-LTBRN GRYBRN, SL-NCALC, MCMTD, MHD

SLT: LT-MBRN, SME BRN/WH VSL CALC, W-MCMTD, MORE WCMTD

SH: MDK-MGRY, NCALC, VFN MICAC, BLKY-PLTY

SLT: LT-MBRN, VSL CALC, MCMTD, FRIA, VERY FINE & WELL PULVERIZD CUTTINGS





SLT: M-LTBRN, M-WCMTD,
 MORE CALCAREOUS,
 SME BRN/WHT, W-M
 CMTD, FN PYR & MICA

GAS SHOW 1011 U

SLT: MBRN, LESSER LTBRN,
 M-WCMTD, SL CALC,
 SME VFN PYR, FN MIC

7200

SH: MGRY, NCALC, VF-F TXT
 SME GRYBRN & SL
 SLTY, FN MICAC, FRM

DT GAS

250 500 1k 2k 3k 4k 5k

SLT: MBRN MGRYBRN, SHLY,
 VSL-NCALC, FN MICAC
 M-WCMTD

50

SH: MGRY, OCC MDKGRY, F-
 VF TXT, NCALC, BLKY

SLT: MGRYBRN MBRN, SME
 LTBRN, M-WCMTD, VSL
 CALC

7300

SH: MGRY W/ SME GRDG
 MDKGRY, F TXT, OCC SL
 SLTY

SLT: GRYBRN, SHLY, W SME
 MBRN, WCMTD, SL CALC

5/6/11

WIPER TRIP

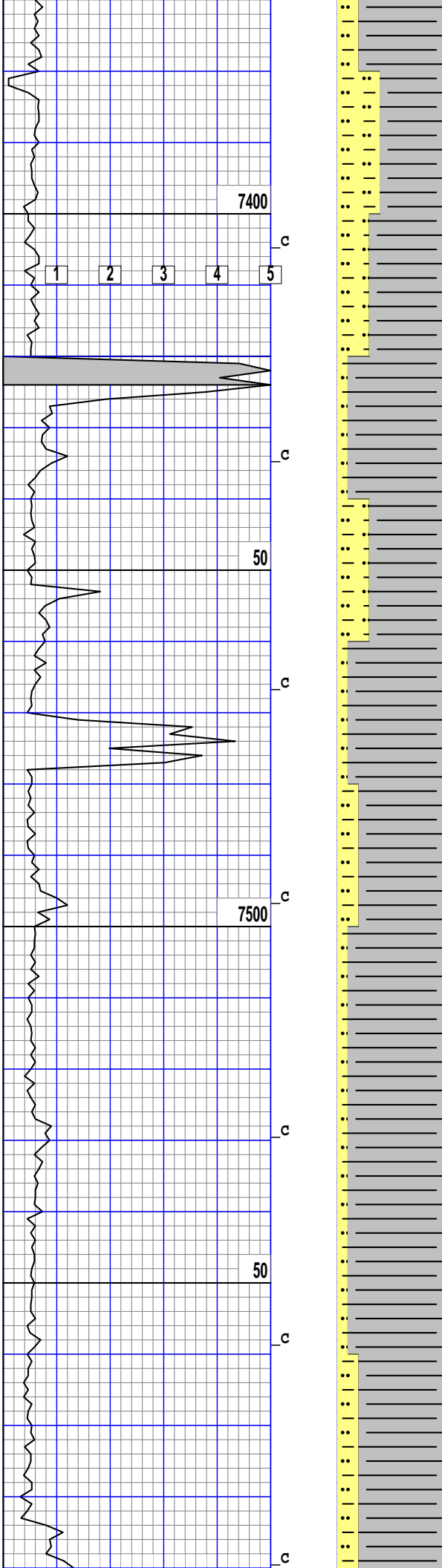
SLT: MBRN MDKBRN BRNGRY
 SHLY, MCMTD, VSL-N
 CALC, GRADING TO SH

TRIP GAS

50

SH: M-MDKGRY, FN MICAC,
 NCALC, BLKY-PLTY, FRM
 SME GRADING TO SHLY
 SILTSTONE

DT GAS



SLT: MORE SHLY, MGRYBRN
 MGRY, SHLY, FN MICAC
 GEN NCALC

SH: MGRY, F TXT-SLTY,
 NCALC, BLKY, FN MICAC
 FRM

SLT: MGRY, SME SL GRYBRN
 V SHLY, NCALC, MICAC

SLT: MGRY GRYBRN W/ SME
 MBRN, CLEANER, SME V
 SL CALC, FN MICAC &
 VFN PYR

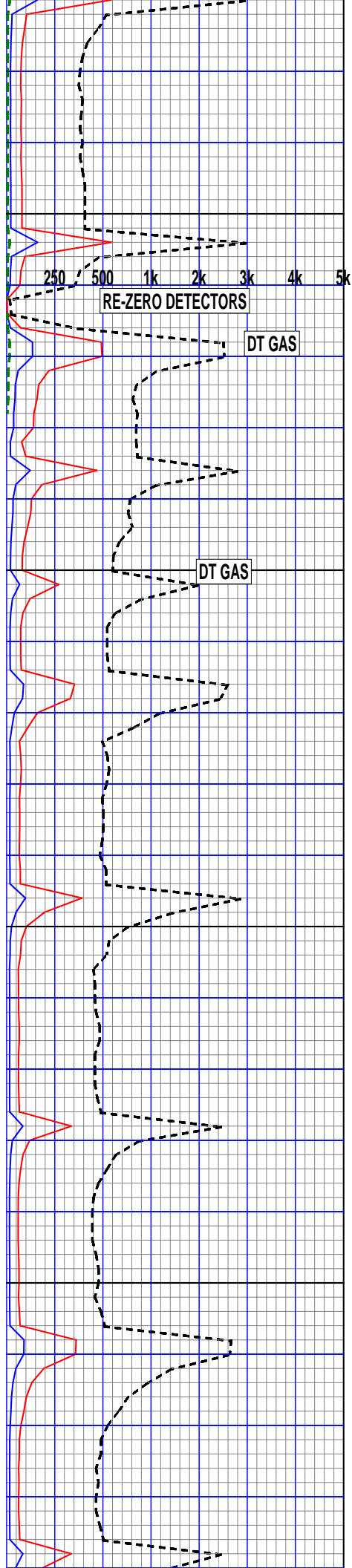
SH: MGRY, NCALC, VF TXT,
 SME SL SLTY, BLKY,
 MFRM-FRM

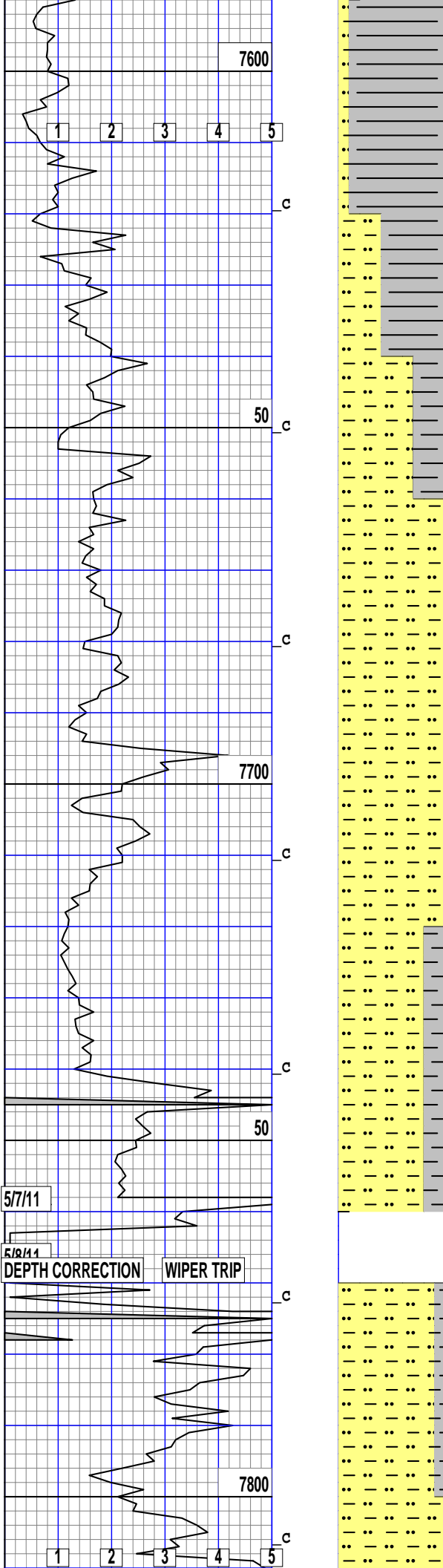
SLT: MGRY GRYBRN, GEN
 NCALC, FN MICAC, MHD
 SHLY

SH: MGRY, VF TXT, NCALC,
 PLTY-BLKY, MFRM-FRM

SH: MGRY, NCALC, VF TXT,
 PLTY-BLKY, MFRM-FRM
 SME SL GRYBRN

SLT: MGRY, VFN MICA, AA,
 W/ SME MBRN, M-WCMT
 TITE,





SH: MGRY,VF TXT,NCALC,
PLTY-BLKY,MFRM-FRM

SLT: TAN LTBRN,MOST MOD
CALC,CLN,GEN WCMTD
HD-MHD

SLT: LTTAN-LTBRN BRN/WH
GEN WCMTD,MOD CALC
CLN,HD-MHD,TR
MLKY WHT CALCT

SLT: OFFWH TAN LTBRN,
CLN,MCMTD,CALC,
FRJA,TR WHT CALCT

SLT: OFFWH TAN-VLTBRN,
CLN,CALC-MOD CALC,
M-WCMTD,OCC GRADNG
NEAR VFG SS

SLT: OFFWH TAN LT-MBRN,
GEN CLN,CALC,SME
FN MICA & PYR

SH: MGRY,VF TXT,NCALC,
BLKY,FRM

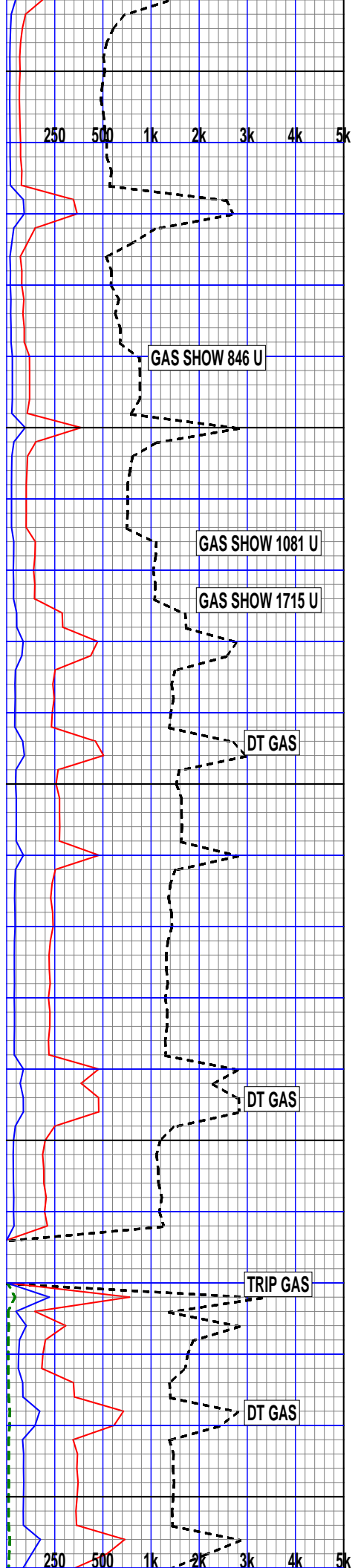
SLT: INCRSG M-LTBRN,SL
CALC,MCMTD,MICAC

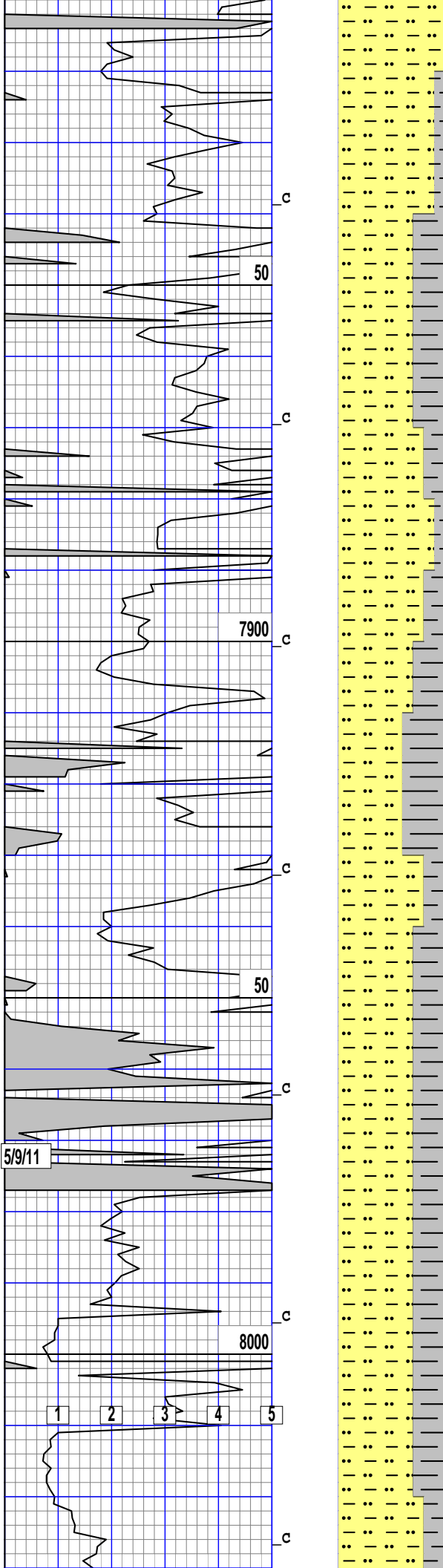
SH: MGRY,NCALC,PLTY-
BLKY,VFN MICAC,MFRM

SLT: TAN-VLTBRN OFFWH,
CLN,CALC,M-WCMTD

SLT: TAN-LTBRN,BRN/WHT,
CALC,MCMTD,SME W
CMTD,FN PYR,MICAC

SLT: TAN-VLTBRN,OCC
OFFWHT,CLN,MCMTD,
CALC-SL CALC,SME





VFN PYR

SH: GEN MGRY, VF TXT, NCALC, MFRM-FRM, TR MDKGRY, NCALC

SCATTERED FREE PYRITE

SLT: LT-MBRN BRN/WHT, SM LTGRY & SHLY, FN MICAC & PYR W/ TR FREE PYR

SH: MGRY, VF TXT, SME F TXT, FN MICA, NCALC

SLT: TAN-LTBRN LTBRN/WH CALC, MCMTD, CLN, SL TR PYR

SH: MGRY W/ TR MDK-DKGR NCALC, VF-F TXT, PLTY -BLKY, MFRM

SLT: M-LTBRN TAN BRN/WH

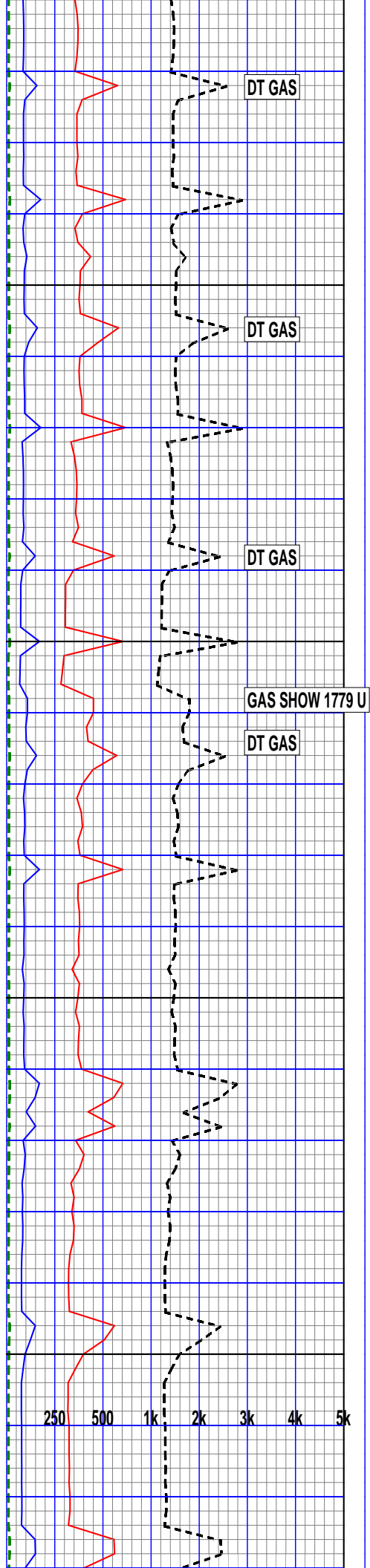
SLT: LT-MBRN BRN/WHT, MORE CALC, MCMTD, CLN, SCATTERED FREE PYRITE

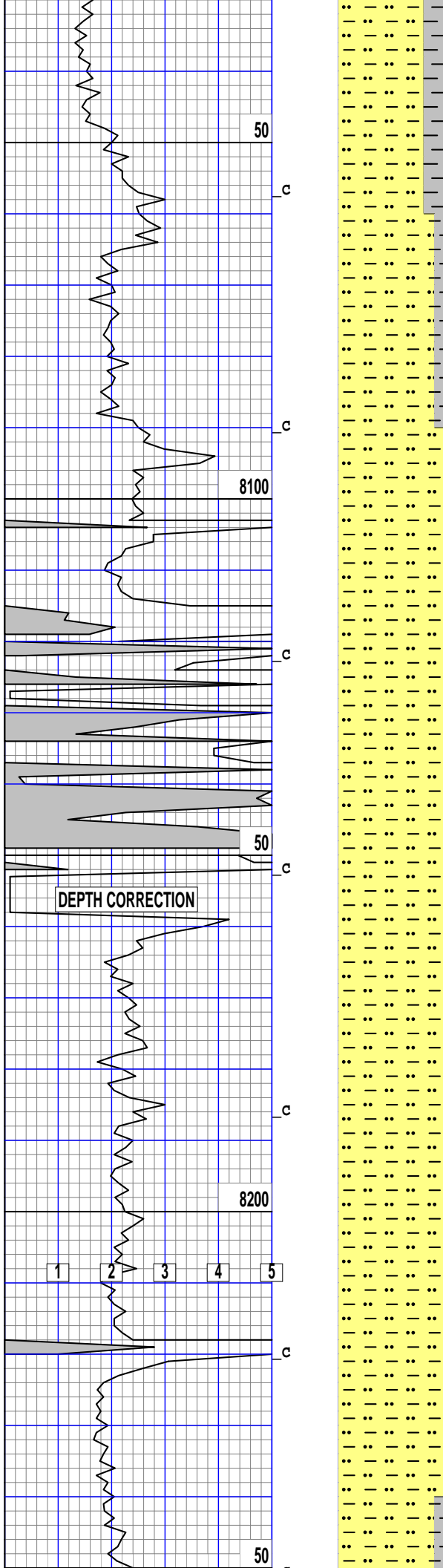
SH: MGRY, VF-F TXT, GEN PLTY, NCALC, MFRM

SLT: LT-MBRN, CALC, MCMTD FN PYR

SH: MGRY, VF TXT, PLTY, MFRM

SLT: LT-MBRN, CALC, MCMTD TR FN PYR, MHD





SH: MGRY,NCALC,PLTY-
BLKY,MFRM

SLT: LTBRN TAN MBRN,
MCMTD,CLN,MORE
CALC,TR FN PYR

SLT: OFFWHT-TAN-VLTBRN,
CLN,MCMTD,MOD-V
CALC

SLT: OFFWHT-TAN-VLTBRN,
MCMTD,CLN,MOD-V
CALC

SLT: TAN-VLTBRN,MCMTD,
CLN,MOD CALC

TR SH: MGRY,PLTY,VF TXT

SLT: TAN VLTBRN SME
OFFWHT,MCMTD,CLN,
CALC,

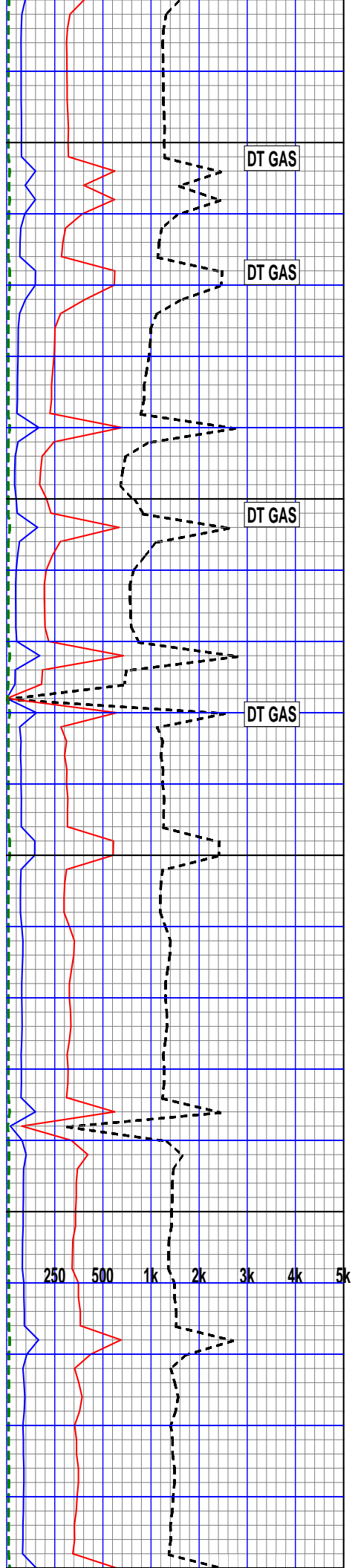
SLT: TAN LTBRN,MCMTD,
LESS CALC,CLN,FRIA

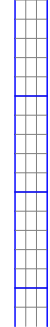
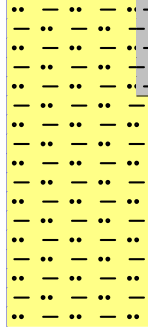
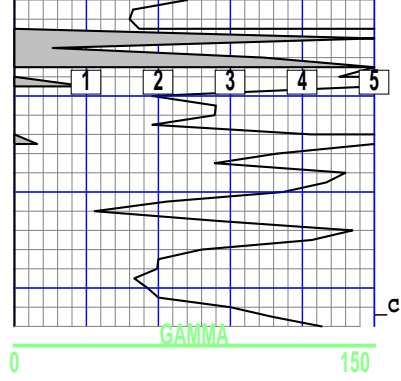
SLT: TAN LTBRN LTBRN/WH
CLN,CALC,MCMTD

* VERY FINE CUTTINGS

SLT: LTBRN TAN,SL CALC,
CLN,VERY FINE WELL
PULVERIZED SAMPLES

SH: MGRY,NCALC,PLTY,





MFRM

SLT: TAN LTBRN BRN/WHT,
 CALC, MCMTD, FRIA,
 CLN, OCC V CALC,
 * VERY FINE CUTTINGS

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TD @ 8284' DUE TO HIGH
 TORQUE (12,681 FTLBS)

