

MD 3165 TVD 3154.03
INC 7.46 AZ 276.15
VS 125.88

MD 3260 TVD 3248.54
INC 4.09 AZ 279.21
VS 135.33

MD 3354 TVD 3342.4
INC 2 AZ 274.71
VS 140.27

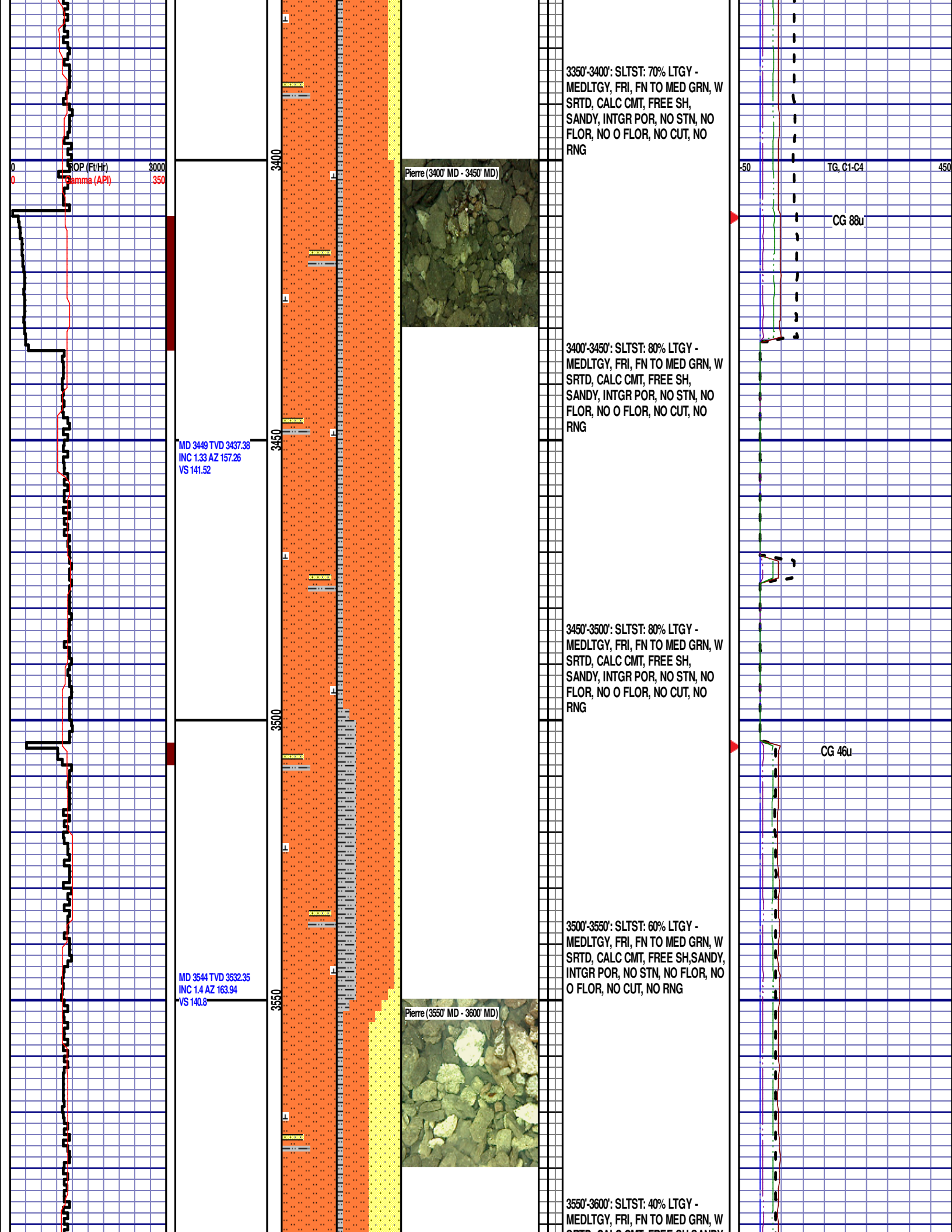
3150'-3200': SLTST: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG

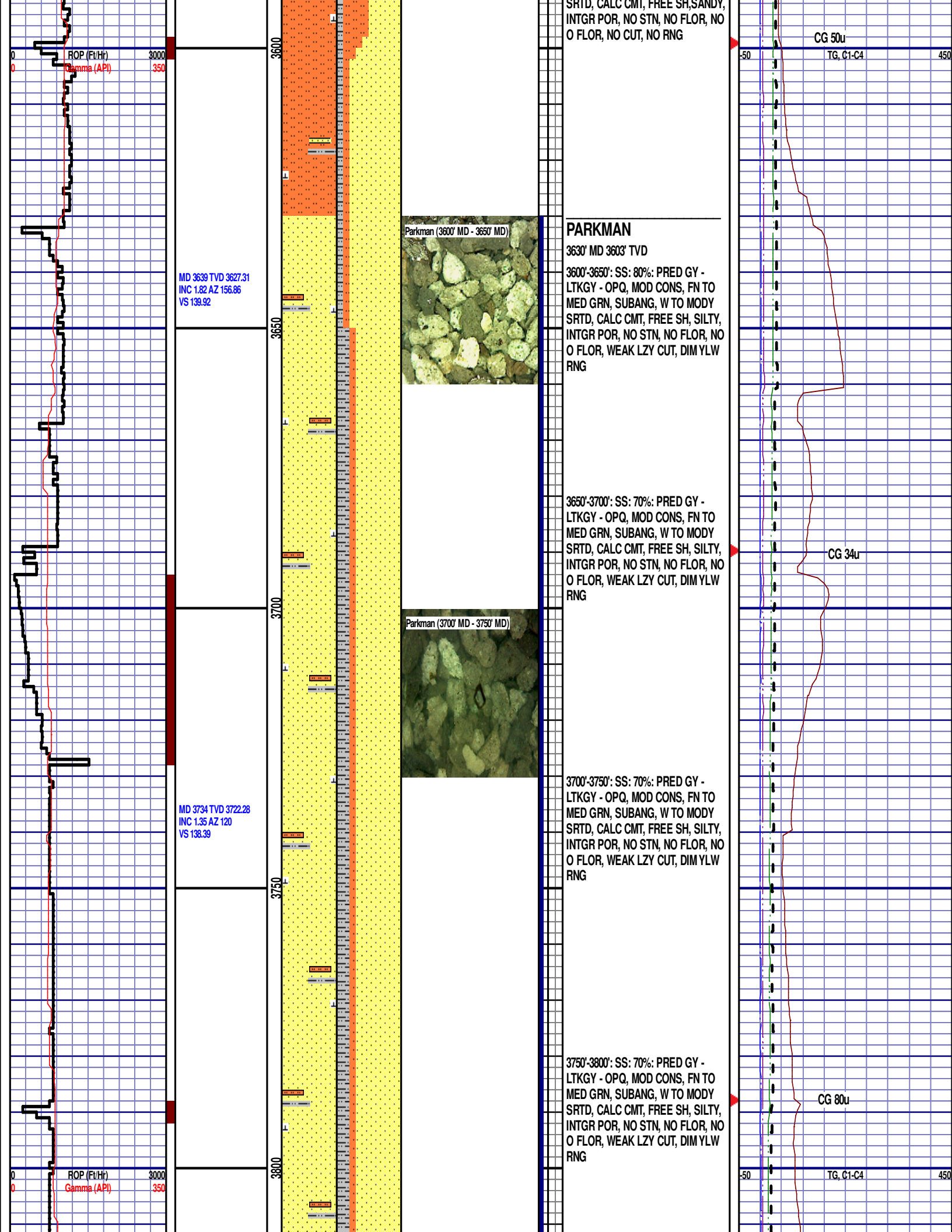
3200'-3250': SLTST: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD GLAU,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, NO CUT, NO
RNG

3250'-3300': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, NO CUT, NO
RNG

3300'-3350': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, NO CUT, NO
RNG

CG 66u MD 3314'
WT 8.70
VIS 31
PH 9.9
FIL 21.8
CL 1400
CAL 40.0
H2O 97.2
OIL 0.0
SOL 2.5
CAKE 1/0
GELS 2/4/7
PV 5
YP 1





MD 3829 TVD 3817.25
INC 1.4 AZ 110.31
VS 136.35

MD 3924 TVD 3912.22
INC 1.57 AZ 115.77
VS 134.1

MD 4019 TVD 4007.18
INC 1.5 AZ 118.4
VS 131.85

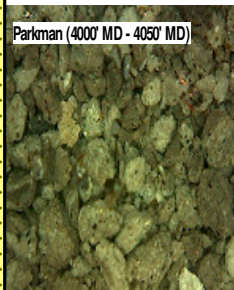
3800'-3850': SS: 70%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, FREE SH, SILTY,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, WEAK LZY CUT, DIM YLW
RNG

3850'-3900': SS: 80%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, WEAK LZY CUT, DIM YLW
RNG

3900'-3950': SS: 80%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, WEAK LZY CUT, DIM YLW
RNG

3950'-4000': SS: 80%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, FREE SH, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, WEAK LZY CUT, DIM YLW
RNG

Parkman (4000' MD - 4050' MD)

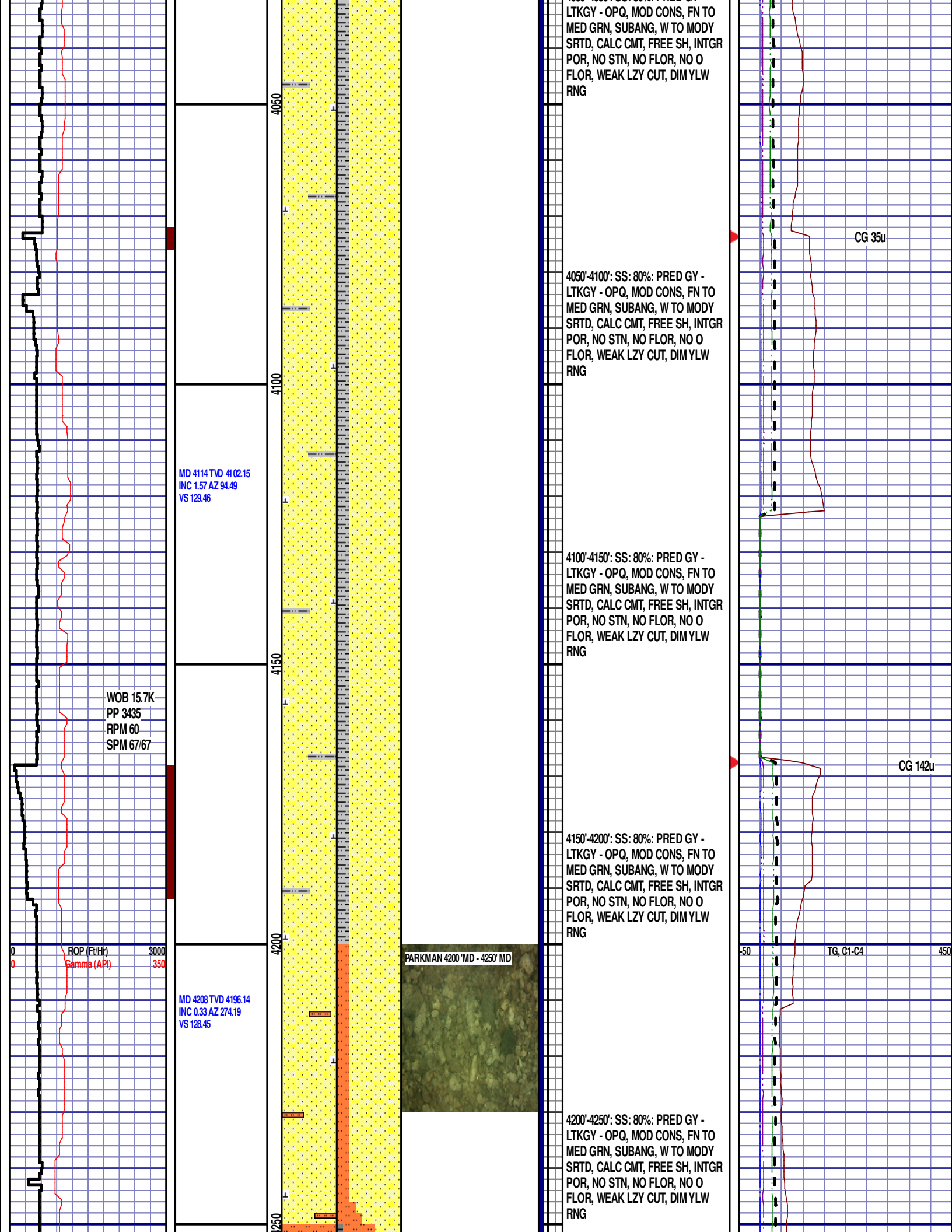


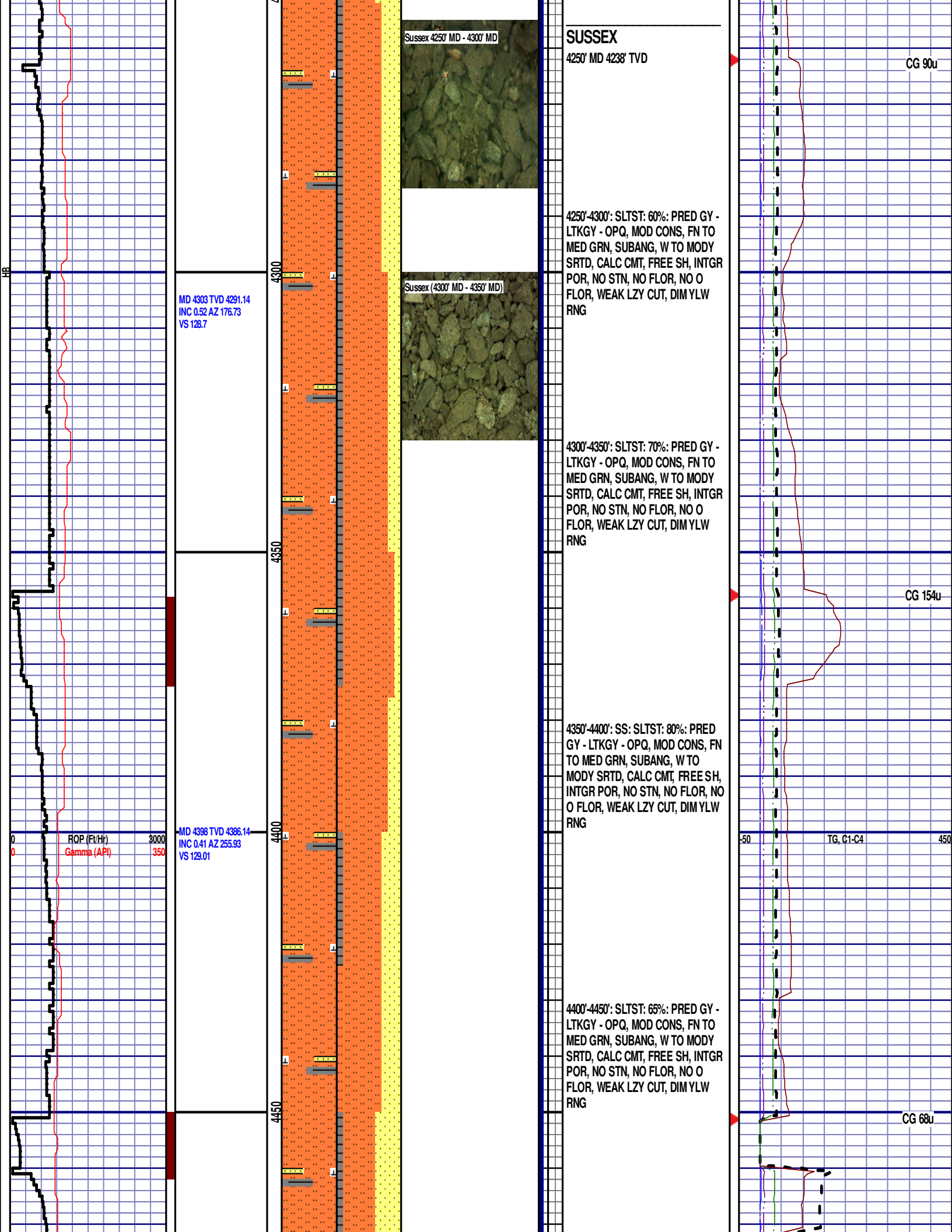
4000'-4050': SS: 80%: PRED GY -

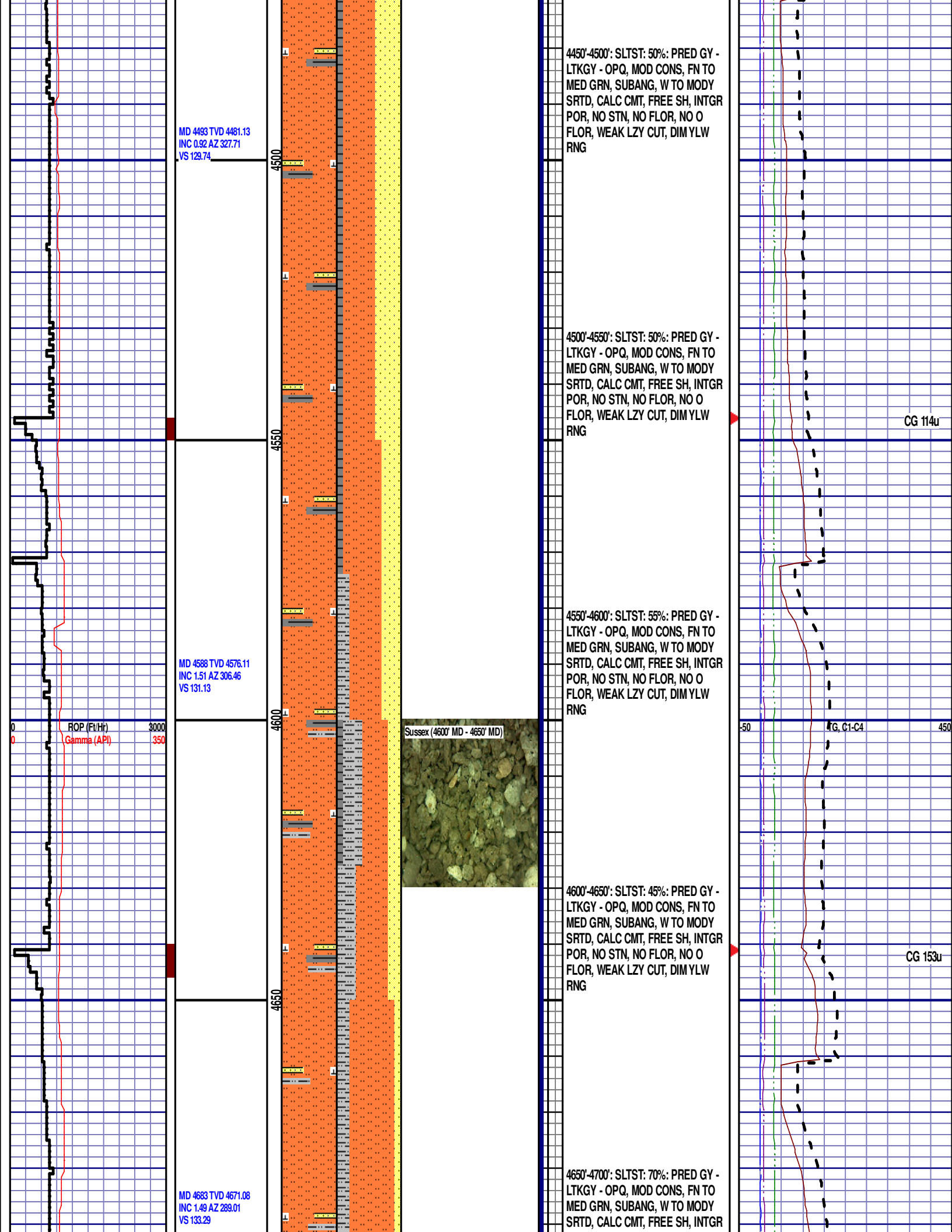
CG 60u

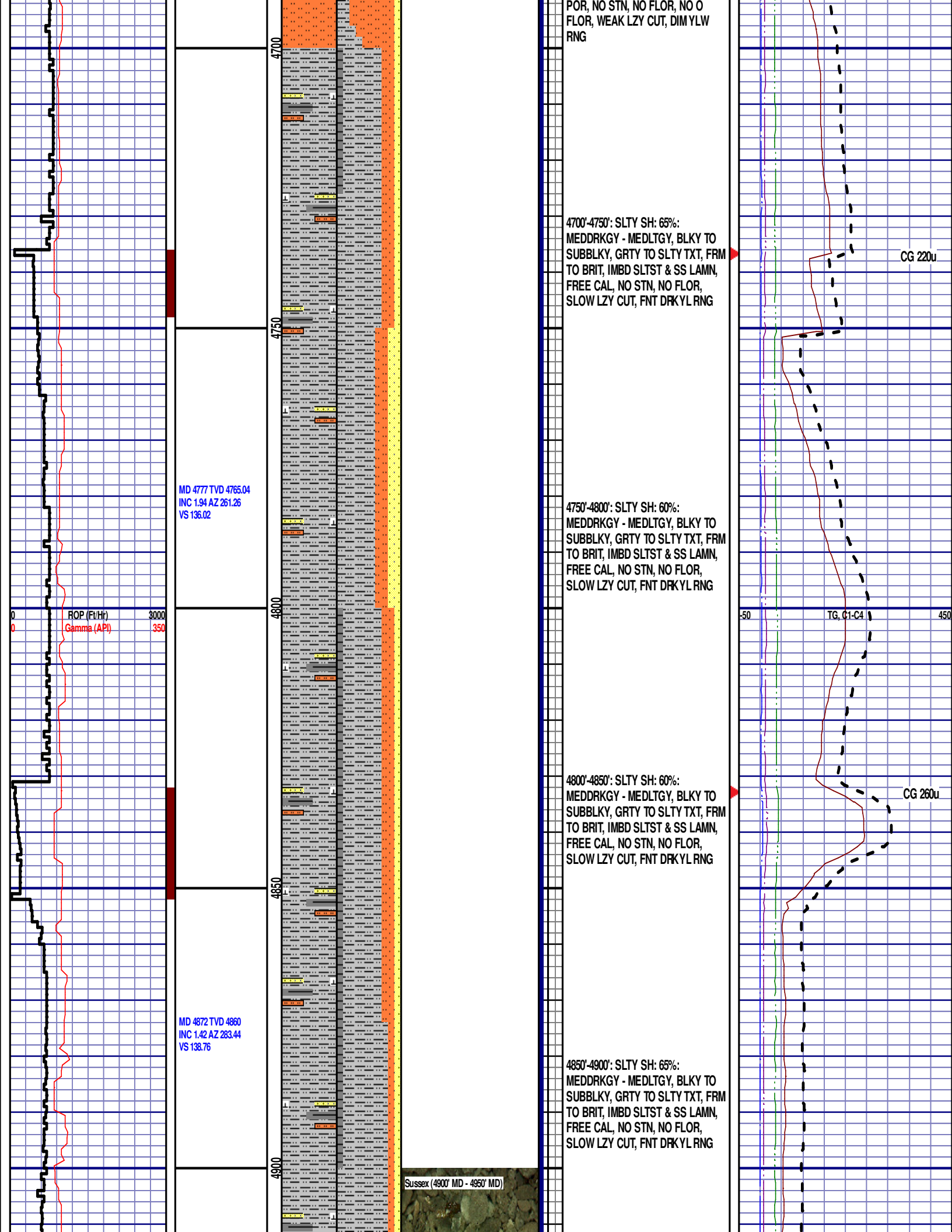
CG 34u

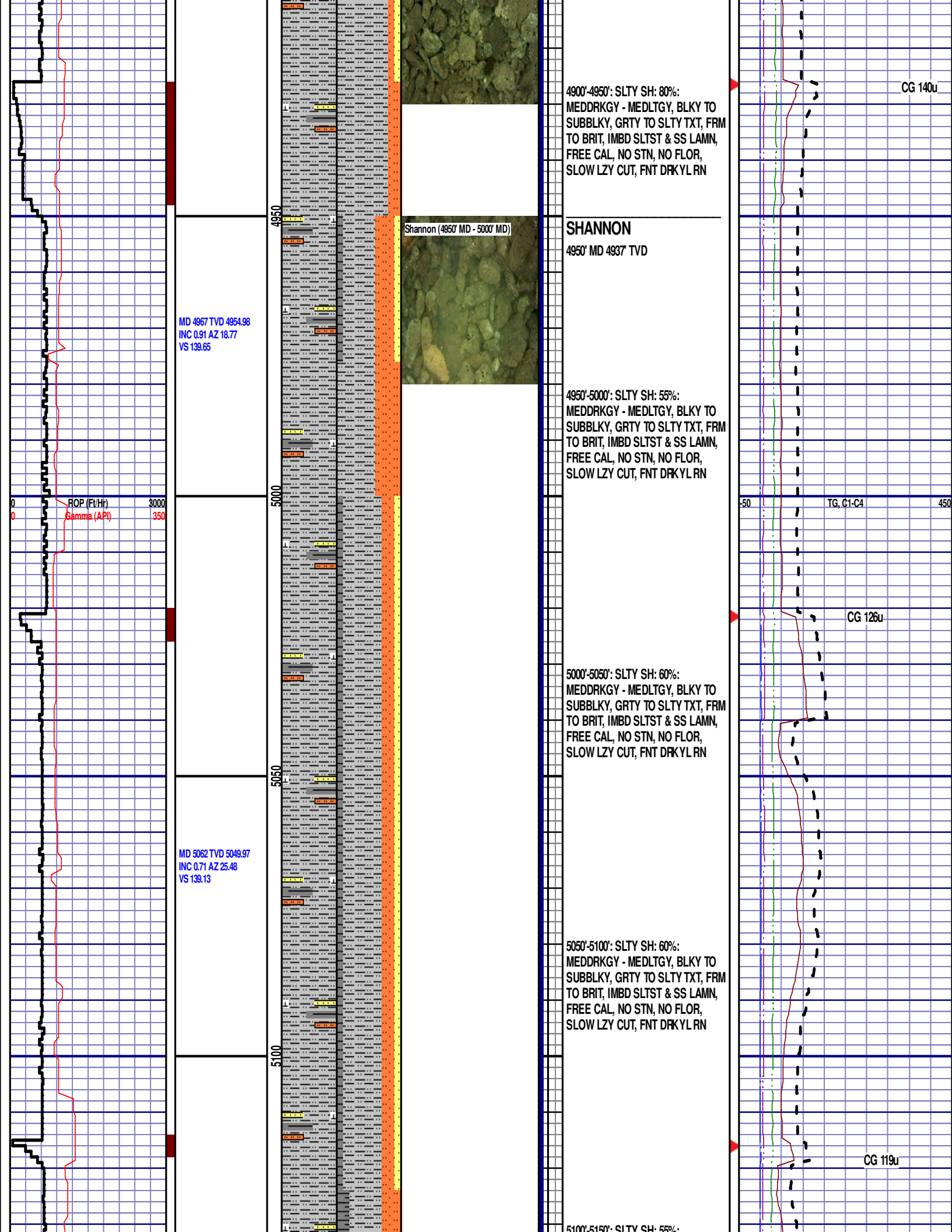
TG, C1-C4











4900'-4950': SLTY SH: 80%:
MEDDRKGY - MEDLTGY, BLKY TO
SUBBLKY, GRTY TO SLTY TXT, FRM
TO BRIT, IMBD SLTST & SS LAMN,
FREE CAL, NO STN, NO FLOR,
SLOW LZY CUT, FNT DRKYL RN

CG 140u

Shannon (4950' MD - 5000' MD)

SHANNON
4950' MD 4937 TVD

MD 4967 TVD 4954.98
INC 0.91 AZ 18.77
VS 139.65

4950'-5000': SLTY SH: 55%:
MEDDRKGY - MEDLTGY, BLKY TO
SUBBLKY, GRTY TO SLTY TXT, FRM
TO BRIT, IMBD SLTST & SS LAMN,
FREE CAL, NO STN, NO FLOR,
SLOW LZY CUT, FNT DRKYL RN

TG, C1-C4

CG 126u

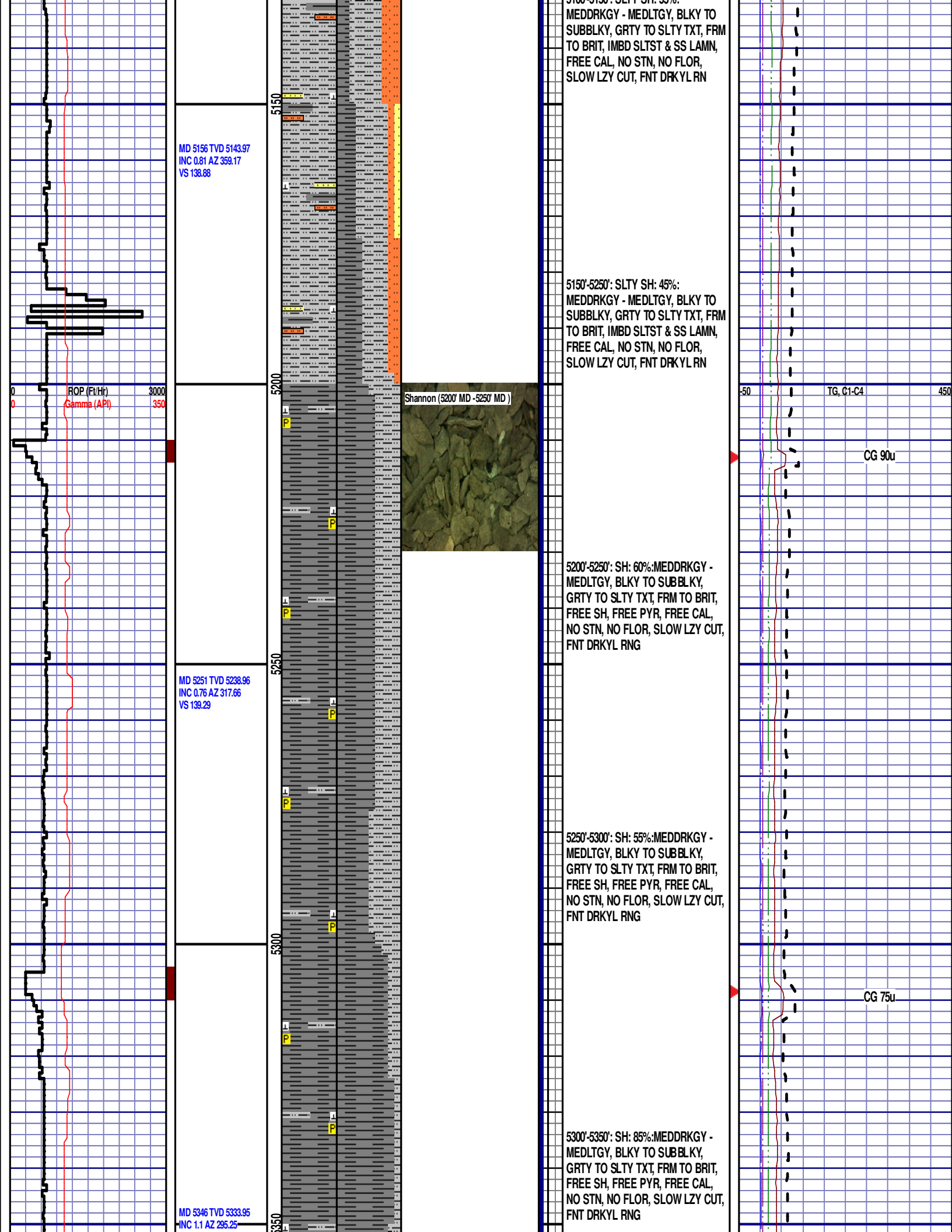
5000'-5050': SLTY SH: 60%:
MEDDRKGY - MEDLTGY, BLKY TO
SUBBLKY, GRTY TO SLTY TXT, FRM
TO BRIT, IMBD SLTST & SS LAMN,
FREE CAL, NO STN, NO FLOR,
SLOW LZY CUT, FNT DRKYL RN

MD 5062 TVD 5049.97
INC 0.71 AZ 25.48
VS 139.13

5050'-5100': SLTY SH: 60%:
MEDDRKGY - MEDLTGY, BLKY TO
SUBBLKY, GRTY TO SLTY TXT, FRM
TO BRIT, IMBD SLTST & SS LAMN,
FREE CAL, NO STN, NO FLOR,
SLOW LZY CUT, FNT DRKYL RN

CG 119u

5100'-5150': SLTY SH: 55%:



MD 5156 TVD 5143.97
INC 0.81 AZ 359.17
VS 138.88

ROP (Ft/Hr)
Gamma (API)

MD 5251 TVD 5238.96
INC 0.76 AZ 317.66
VS 139.29

MD 5346 TVD 5333.95
INC 1.1 AZ 295.25

Shannon (5200' MD - 5250' MD)

5150'-5250': SLTY SH: 45%:
MEDDRKGY - MEDLTGY, BLKY TO
SUBBLKY, GRTY TO SLTY TXT, FRM
TO BRIT, IMBD SLTST & SS LAMN,
FREE CAL, NO STN, NO FLOR,
SLOW LZY CUT, FNT DRKYL RN

5200'-5250': SH: 60%:MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE PYR, FREE CAL,
NO STN, NO FLOR, SLOW LZY CUT,
FNT DRKYL RNG

5250'-5300': SH: 55%:MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE PYR, FREE CAL,
NO STN, NO FLOR, SLOW LZY CUT,
FNT DRKYL RNG

5300'-5350': SH: 85%:MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE PYR, FREE CAL,
NO STN, NO FLOR, SLOW LZY CUT,
FNT DRKYL RNG

TG, C1-C4

CG 90u

CG 75u

VS 140.53

ROP (Ft/Hr)
Gamma (API)

3000
350

MD 5441 TVD 5428.93
INC 0.62 AZ 312.03
VS 141.73

MD 5535 TVD 5522.93
INC 0.4 AZ 277.61
VS 142.42

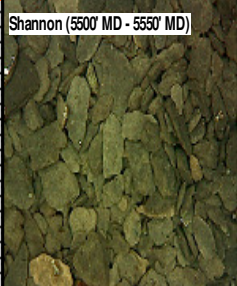
5400

5450

5500

5550

Shannon (5500' MD - 5550' MD)



5350'-5400': SH: 80%:MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE PYR, FREE CAL,
NO STN, NO FLOR, SLOW LZC CUT,
FNT DRKYL RNG

5400'-5450': SH: 85%:MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE PYR, FREE CAL,
NO STN, NO FLOR, SLOW LZC CUT,
FNT DRKYL RNG

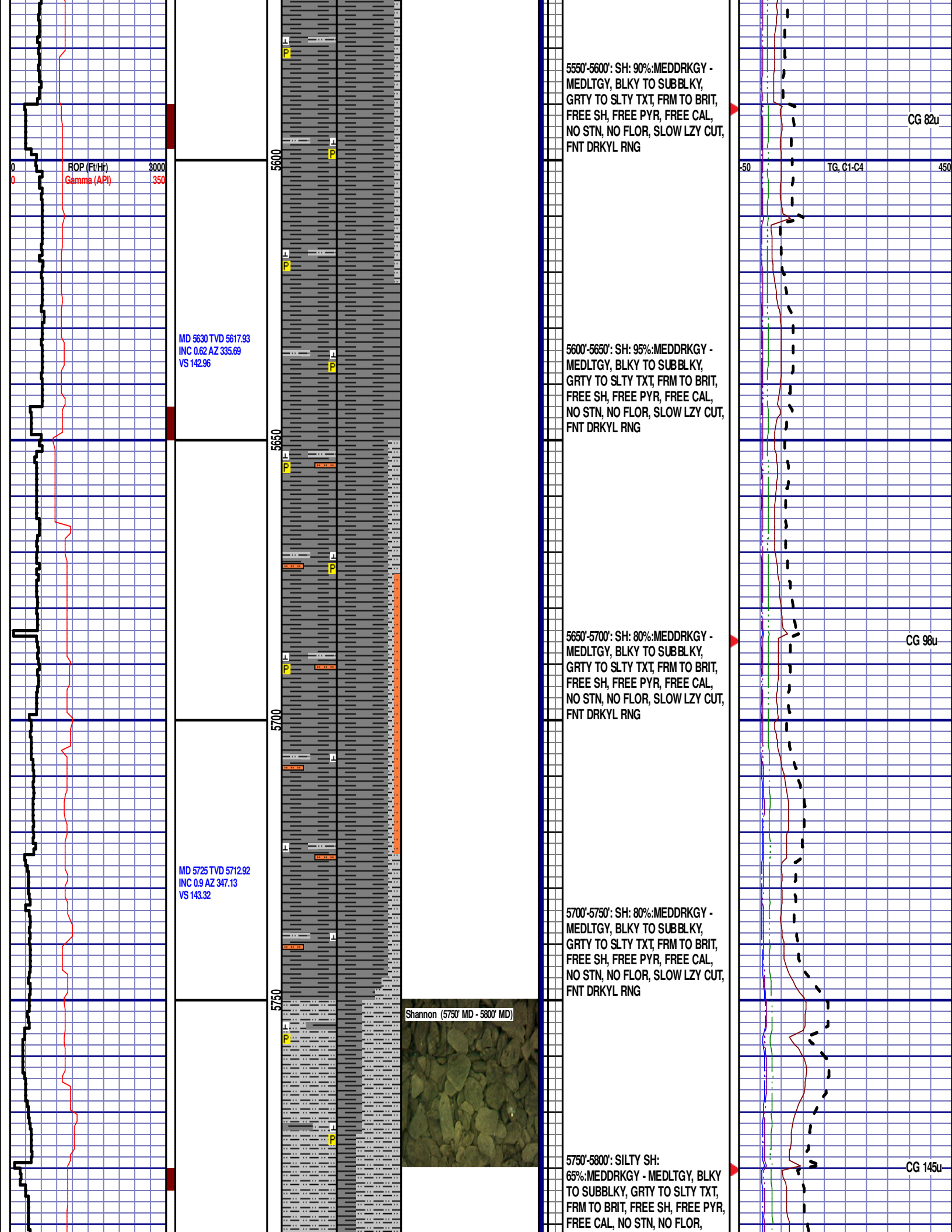
5450'-5500': SH: 80%:MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE PYR, FREE CAL,
NO STN, NO FLOR, SLOW LZC CUT,
FNT DRKYL RNG

5500'-5550': SH: 90%:MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE PYR, FREE CAL,
NO STN, NO FLOR, SLOW LZC CUT,
FNT DRKYL RNG

CG 80u

TG, C1-C4

CG 86u



5550'-5600': SH: 90%:MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE SH, FREE PYR, FREE CAL, NO STN, NO FLOR, SLOW LZY CUT, FNT DRKYL RNG

CG 82u

5600'-5650': SH: 95%:MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE SH, FREE PYR, FREE CAL, NO STN, NO FLOR, SLOW LZY CUT, FNT DRKYL RNG

5650'-5700': SH: 80%:MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE SH, FREE PYR, FREE CAL, NO STN, NO FLOR, SLOW LZY CUT, FNT DRKYL RNG

CG 98u

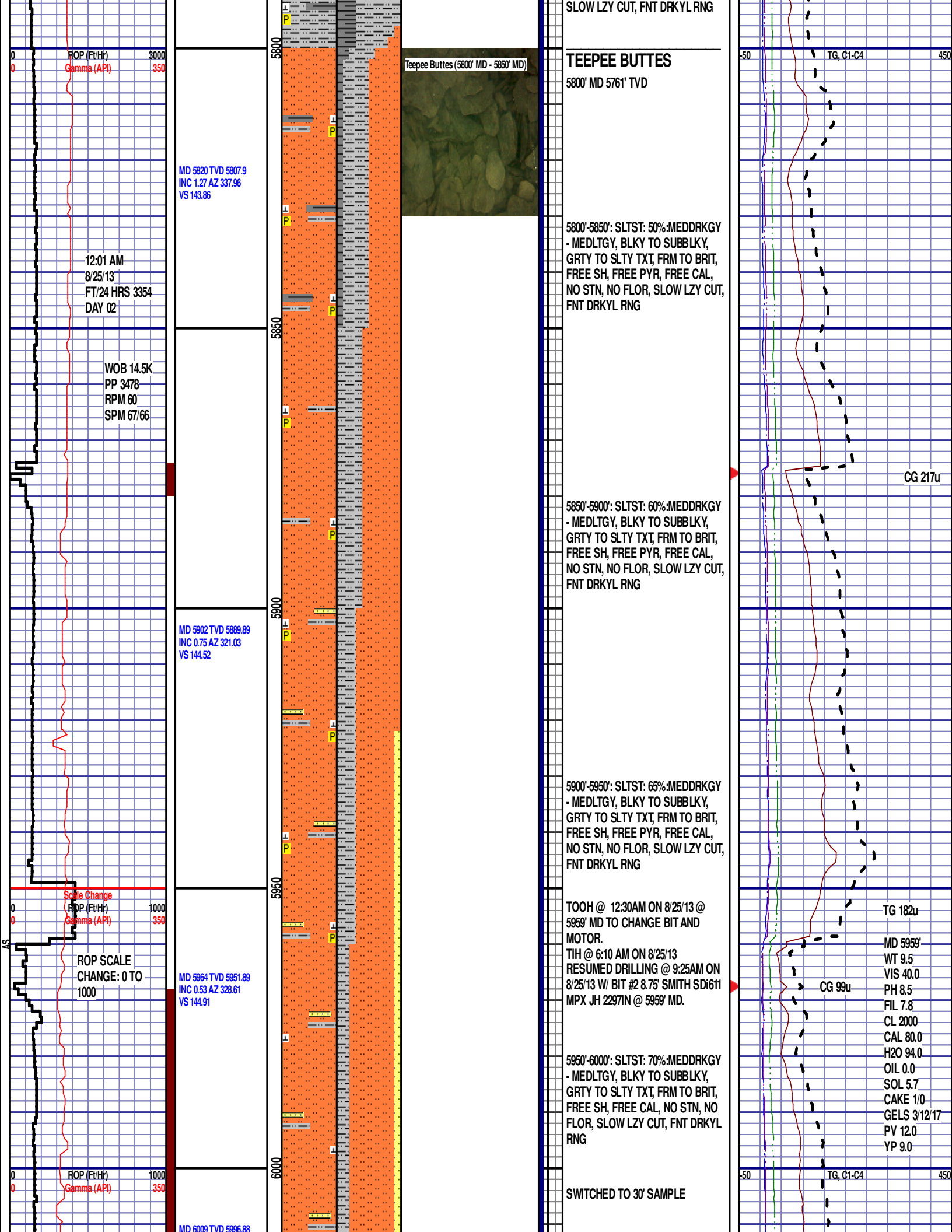
5700'-5750': SH: 80%:MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE SH, FREE PYR, FREE CAL, NO STN, NO FLOR, SLOW LZY CUT, FNT DRKYL RNG

5750'-5800': SILTY SH: 65%:MEDDRKGY - MEDLTGY, BLKY TO SUBBLKY, GRTY TO SLTY TXT, FRM TO BRIT, FREE SH, FREE PYR, FREE CAL, NO STN, NO FLOR,

CG 145u

Shannon (5750' MD - 5800' MD)





INC 0.88 AZ 288.86
VS 145.34

MD 6057 TVD 6044.81
INC 5.15 AZ 269.54
VS 147.84

MD 6104 TVD 6091.36
INC 10.37 AZ 271.23
VS 154.19

MD 6152 TVD 6138.28
INC 13.94 AZ 270.81
VS 164.29

MD 6198 TVD 6182.57
INC 17.34 AZ 266.82
VS 176.68

ROP (Ft/Hr)
Gamma (API)

1000
350

6050

6100

6150

6200

Teepee Buttes (6100' MD - 6150' MD)



6000'-6030': SLTST: 70%:MEDDRKGY
- MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE CAL, NO STN, NO
FLOR, SLOW LZY CUT, FNT DRKYL
RNG

6030'-6060': SLTST: 70%:MEDDRKGY
- MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE CAL, NO STN, NO
FLOR, SLOW LZY CUT, FNT DRKYL
RNG

6060'-6090': SLTST: 70%:MEDDRKGY
- MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE CAL, NO STN, NO
FLOR, SLOW LZY CUT, FNT DRKYL
RNG

6090'-6120': SLTST: 70%:MEDDRKGY
- MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE CAL, NO STN, NO
FLOR, SLOW LZY CUT, FNT DRKYL
RNG

6120'-6150': SLTST: 70%:MEDDRKGY
- MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE CAL, NO STN, NO
FLOR, SLOW LZY CUT, FNT DRKYL
RNG

6150'-6180': SLTST: 70%:MEDDRKGY
- MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE CAL, NO STN, NO
FLOR, SLOW LZY CUT, FNT DRKYL
RNG

6180'-6210': SLTST: 70%:MEDDRKGY
- MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
FREE SH, FREE CAL, NO STN, NO
FLOR, SLOW LZY CUT, FNT DRKYL
RNG

6210'-6240': SLTST: 40%:MEDDRKGY
- MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,

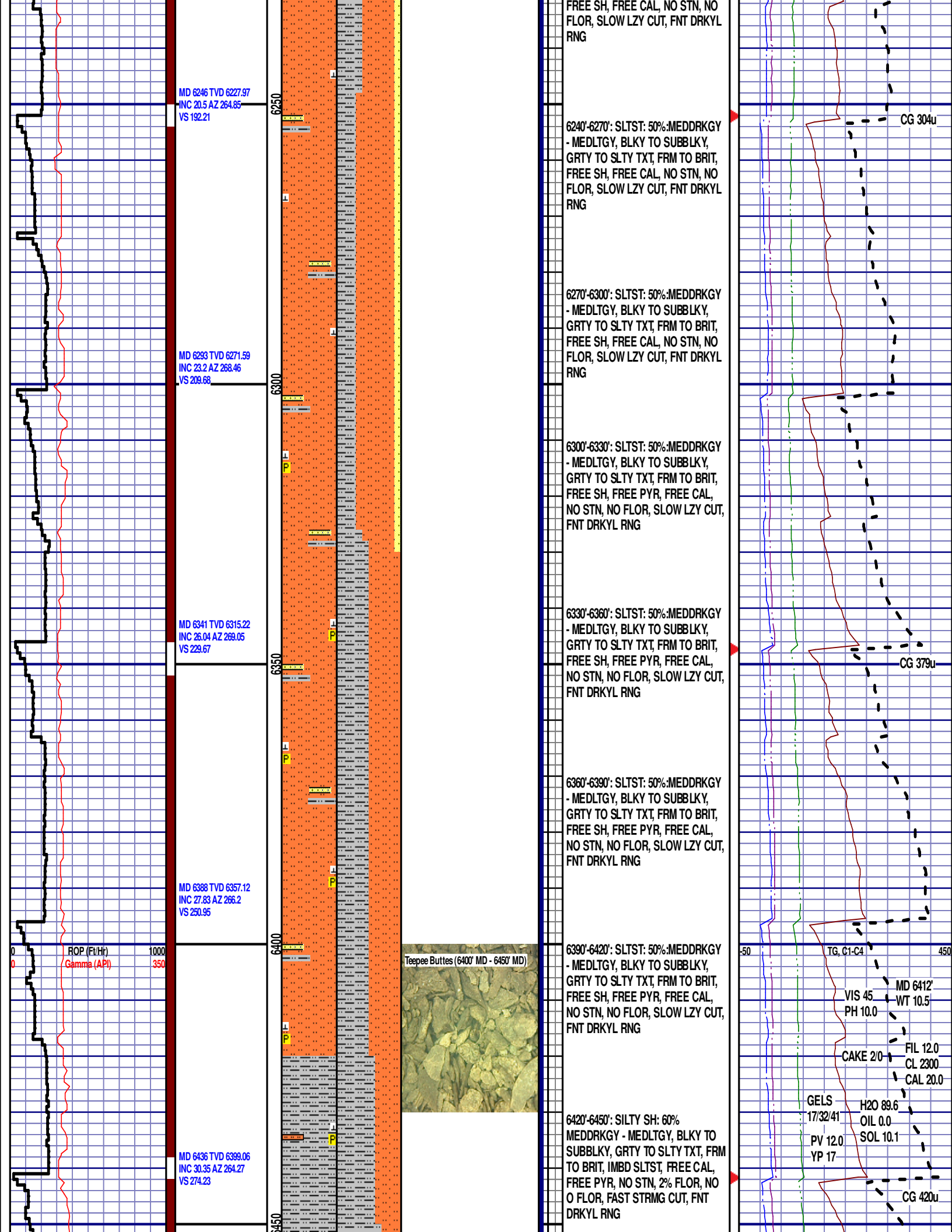
CG 185u

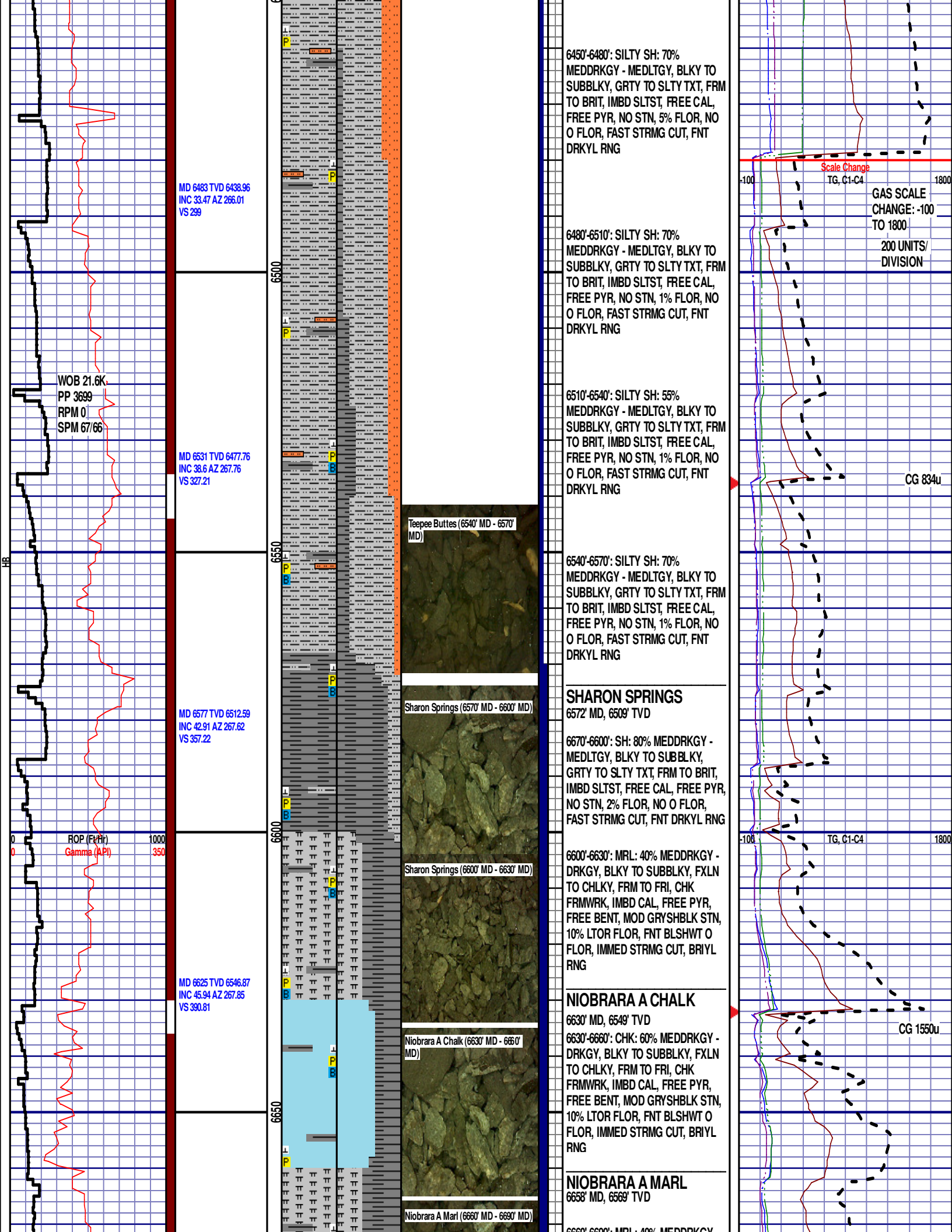
CG 234u

-50

TG, C1-C4

450





MD 6672 TVD 6578.76
INC 48.59 AZ 269.55
VS 425.32

MD 6720 TVD 6609.66
INC 51.25 AZ 270.9
VS 462.04

MD 6767 TVD 6637.46
INC 56.22 AZ 269.98
VS 499.91

MD 6815 TVD 6661.05
INC 64.83 AZ 268.43
VS 541.66

ROP (Ft/Hr)
Gamma (API)

1000
350

6700

6750

6800

6850

Niobrara A Marl (6720' MD - 6750' MD)

Niobrara B Chalk (6750' MD - 6780' MD)

Niobrara B Chalk (6780' MD - 6810' MD)

Niobrara B Marl (6810' MD - 6840' MD)

6660'-6690' : MRL: 40% MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
IMBD SLTST, IMBD CAL, PYR LAMN,
FREE BENT, NO STN, 2% FLOR, NO
O FLOR, FAST STRMG CUT, FNT
DRKYL RNG

6690'-6720' : MRL: 45% MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
IMBD SLTST, FREE CAL, TRC FREE
PYR, TRC FREE BENT, NO STN,
2% FLOR, NO O FLOR, FAST
STRMG CUT, FNT DRKYL RNG

6720'-6750' : MRL: 45% MEDDRKGY -
MEDLTGY, BLKY TO SUBBLKY,
GRTY TO SLTY TXT, FRM TO BRIT,
IMBD SLTST, FREE CAL, TRC FREE
PYR, TRC FREE BENT, NO STN, 2%
FLOR, NO O FLOR, FAST STRMG
CUT, FNT DRKYL RNG

NIORRARA B CHALK

6748' MD, 6626' TVD

6750'-6780' : CHK: 55% V/LTGY -
MEDGY -DRKGY, BLKY TO
SUBBLKY, FXLN TO CHLKY, SFT,
CHK FRMWRK, IMBD PYR, FREE
BENT, OCC FREE CAL, FREE SH,
MOD GYSHBLK STN, 10% LTOR
FLOR, FNT BLSHWT O FLOR,
IMMED STRMG CUT, BRIYL RNG

6780'-6810' : CHK: 60% V/LTGY -
MEDGY -DRKGY, BLKY TO
SUBBLKY, FXLN TO CHLKY, SFT,
CHK FRMWRK, IMBD PYRC SPEC,
FREE BENT, ABNT FREE CAL, FREE
SH, MOD GYSHBLK STN, 10% LTOR
FLOR, FNT BLSHWT O FLOR,
IMMED STRMG CUT, BRIYL RNG

NIORRARA B MARL

6811' MD, 6659' TVD

6810'-6840' : MRL: 45% MEDDRKGY -
DRKGY, BLKY TO SUBBLKY, FXLN
TO CHLKY, FRM TO FRI, CHK
FRMWRK, IMBD CAL, FREE CAL,
FREE PYR, FREE BENT, MOD
GRYSHBLK STN, 10% LTOR FLOR,
FNT BLSHWT O FLOR, IMMED
STRMG CUT, BRIYL RNG

END OF VERTICAL LOG @ 6850' MD
ON 8/25/13. CONTINUED ON
HORIZONTAL LOG.

CG 924u

XG, C1-C4

CG 952u

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