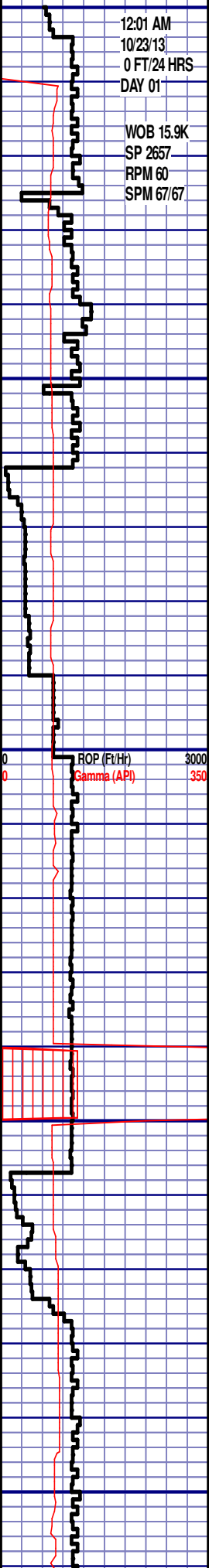


(GAMMA DATA AS RECEIVED)

AC

12:01 AM
10/23/13
0 FT/24 HRS
DAY 01

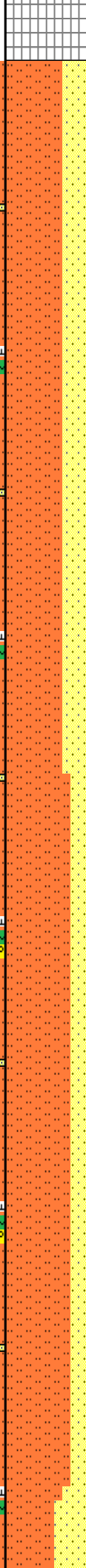
WOB 15.9K
SP 2657
RPM 60
SPM 67/67



MD 2598 TVD 2581.52
INC 15.5 AZ 348.48
VS -71.04

MD 2693 TVD 2673.23
INC 14.76 AZ 353.85
VS -71.49

2500
2550
2600
2650
2700

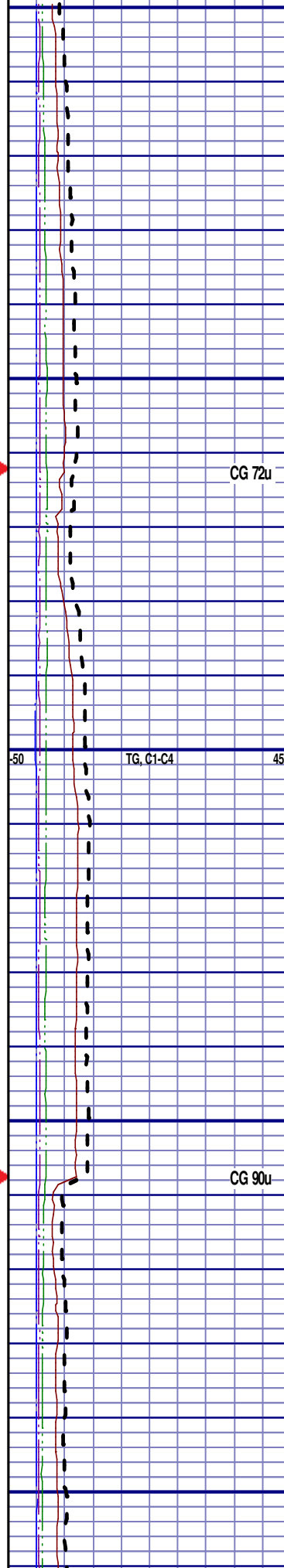


@ 2500' MD ON 10/23/13 W/BIT # 2
8.75 SECURITY MMD56 S/N 12309266
IN @ 960' MD

PIERRE BEFORE LOGGING DEPTH

2500'- 2600': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
GLAU, IMBD SS LAMN, INTGR POR,
NO STN, NO FLOR, NO O FLOR, NO
CUT, NO RNG

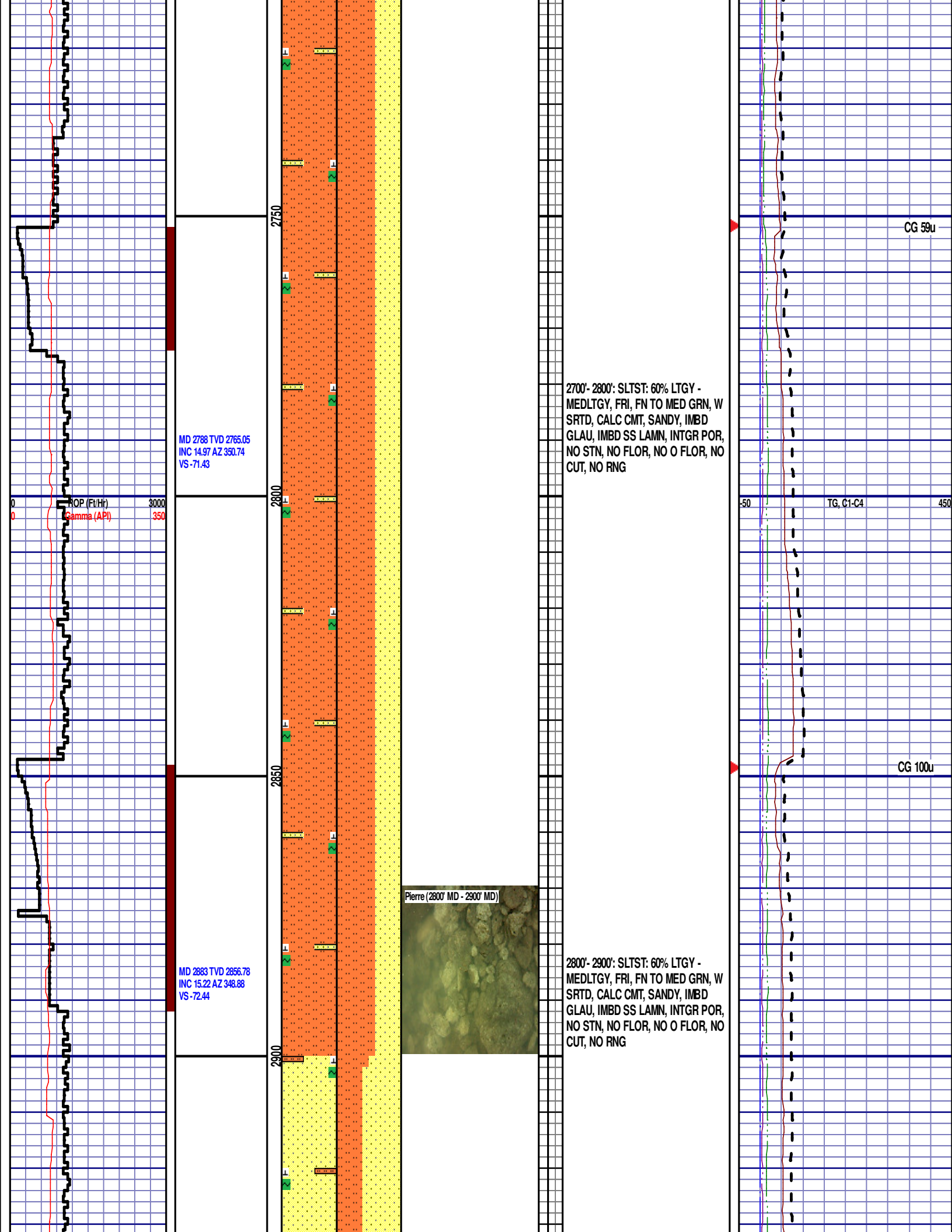
2600'- 2700': SLTST: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, FREE
PYR, IMBD GLAU, IMBD SS LAMN,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, NO CUT, NO RNG

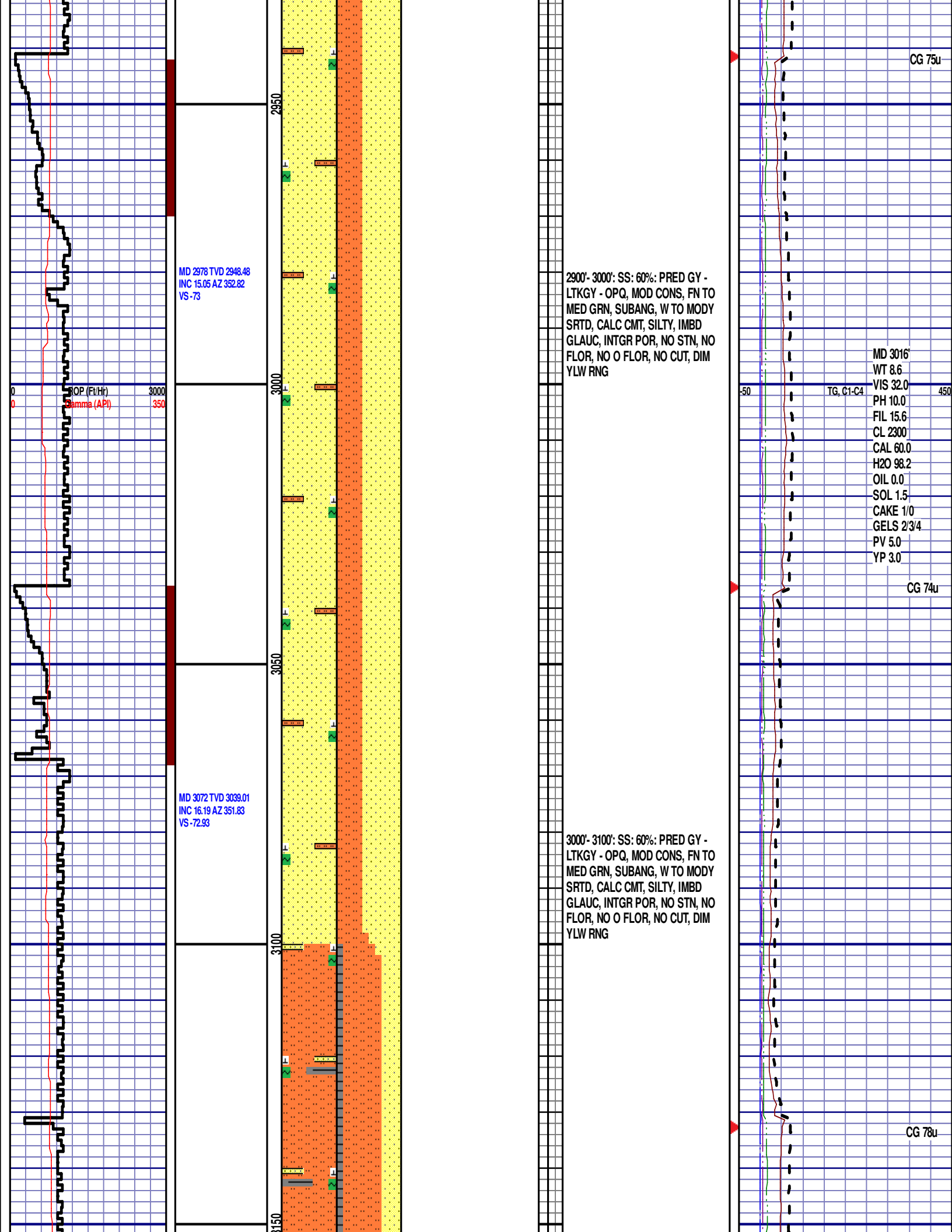


CG 72u

TG, C1-C4

CG 90u





MD 2978 TVD 2948.48
INC 15.05 AZ 352.82
VS -73

2900'- 3000': SS: 60%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, SILTY, IMBD
GLAUC, INTGR POR, NO STN, NO
FLOR, NO O FLOR, NO CUT, DIM
YLW RNG

MD 3016'
WT 8.6
VIS 32.0
PH 10.0
FIL 15.6
CL 2300
CAL 60.0
H2O 98.2
OIL 0.0
SOL 1.5
CAKE 1/0
GELS 2/3/4
PV 5.0
YP 3.0

MD 3072 TVD 3039.01
INC 16.19 AZ 351.83
VS -72.93

3000'- 3100': SS: 60%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, SILTY, IMBD
GLAUC, INTGR POR, NO STN, NO
FLOR, NO O FLOR, NO CUT, DIM
YLW RNG

CG 78u

MD 3167 TVD 3130.84
INC 13.46 AZ 349.68
VS -73.47

ROP (Ft/Hr)
Gamma (API)

3000
350

3200

3250

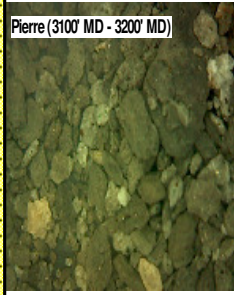
3300

3350

MD 3262 TVD 3222.91
INC 15.07 AZ 351
VS -74.19

MD 3357 TVD 3314.72
INC 14.72 AZ 346.45
VS -75.63

Pierre (3100' MD - 3200' MD)



3100'- 3200': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
GLAU, IMBD SS LAMN, INTGR POR,
NO STN, NO FLOR, NO O FLOR, NO
CUT, NO RNG

3200'- 3300': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
GLAU, IMBD SS LAMN, INTGR POR,
NO STN, NO FLOR, NO O FLOR, NO
CUT, NO RNG

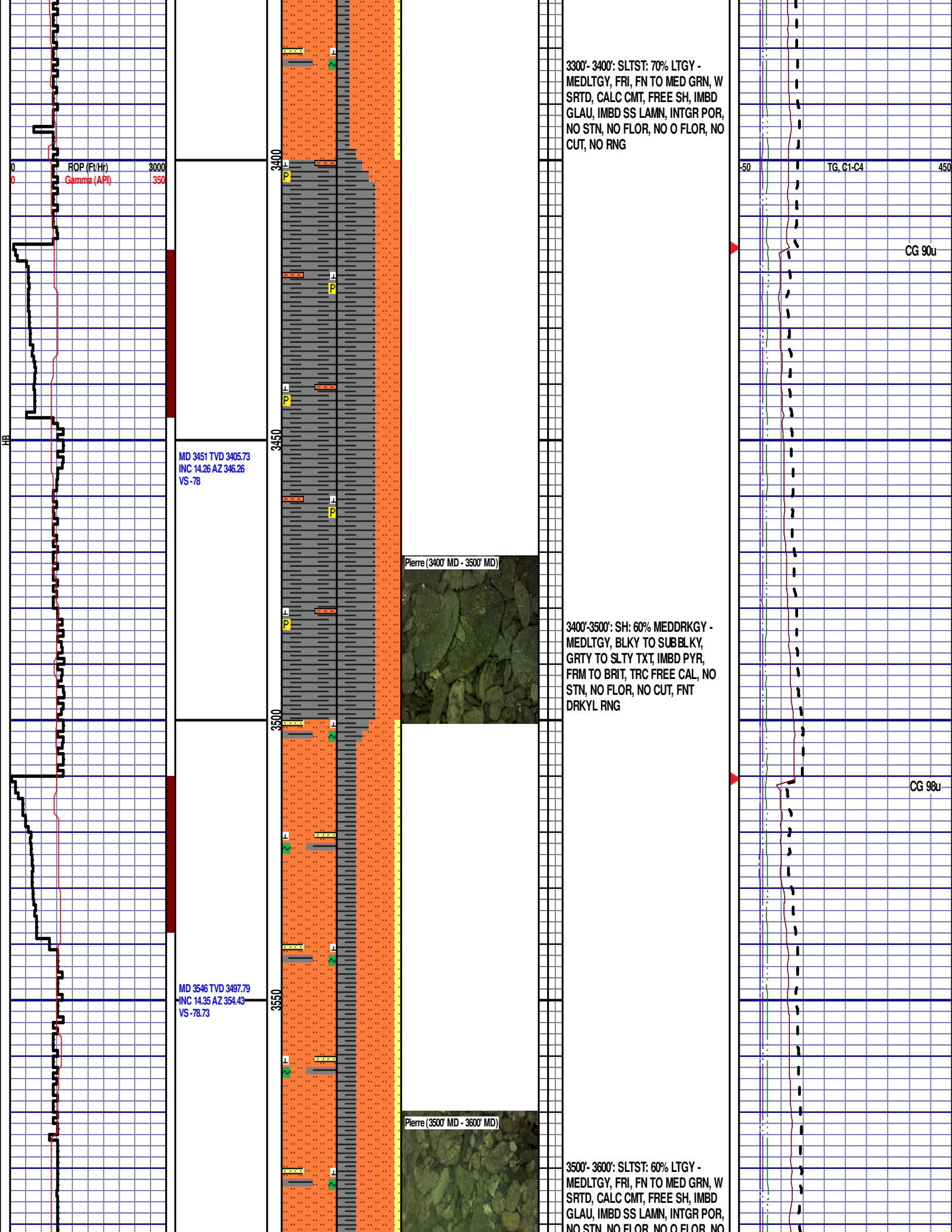
-50

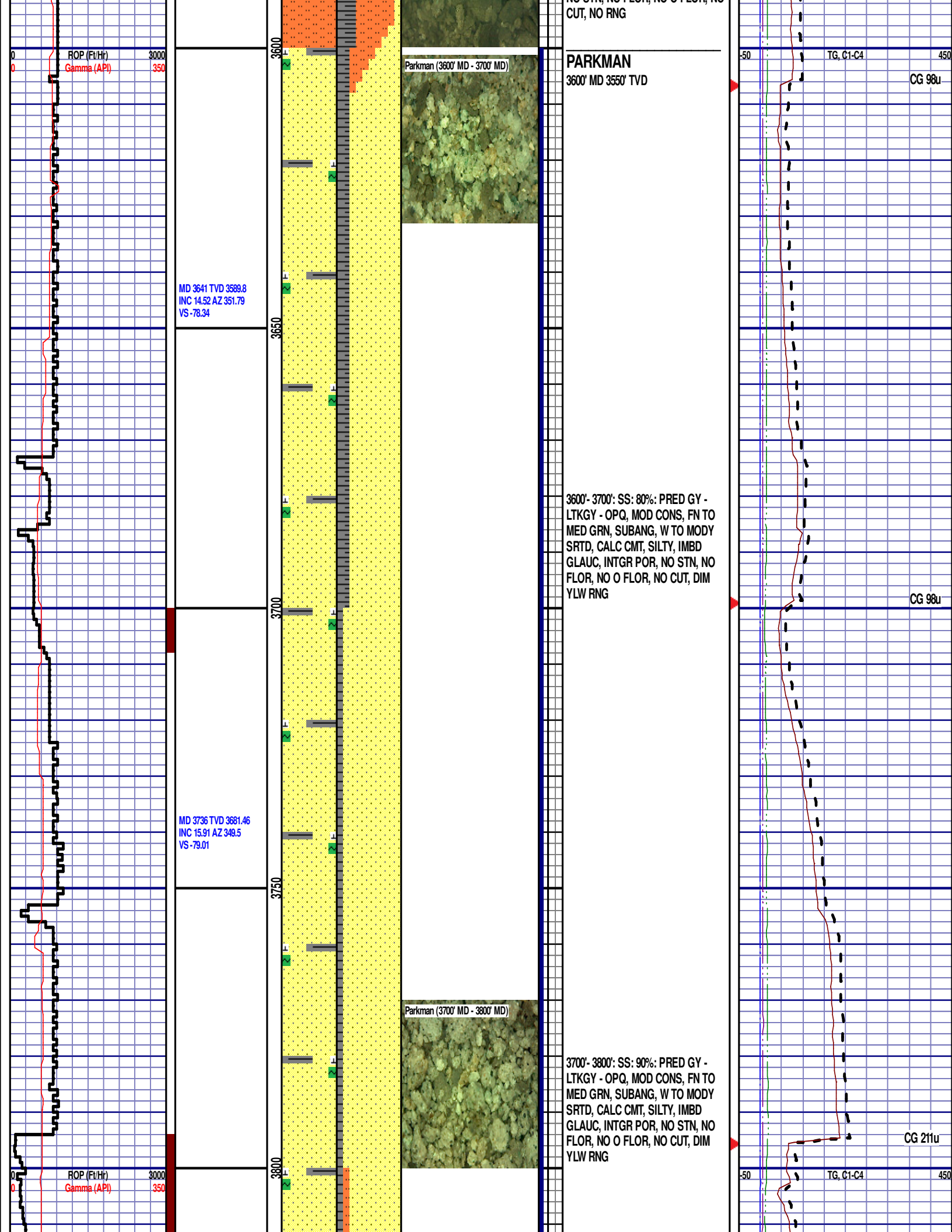
TG, C1-C4

450

CG 81u

CG 75u





MD 3831 TVD 3773.33
INC 13.6 AZ 349.11
VS -80.2

MD 3926 TVD 3866.06
INC 11.46 AZ 345.01
VS -81.96

MD 4020 TVD 3958.6
INC 8.73 AZ 349.8
VS -83.41

ROP (Ft/Hr)
Gamma (API)

3000
350

3850

3900

3950

4000

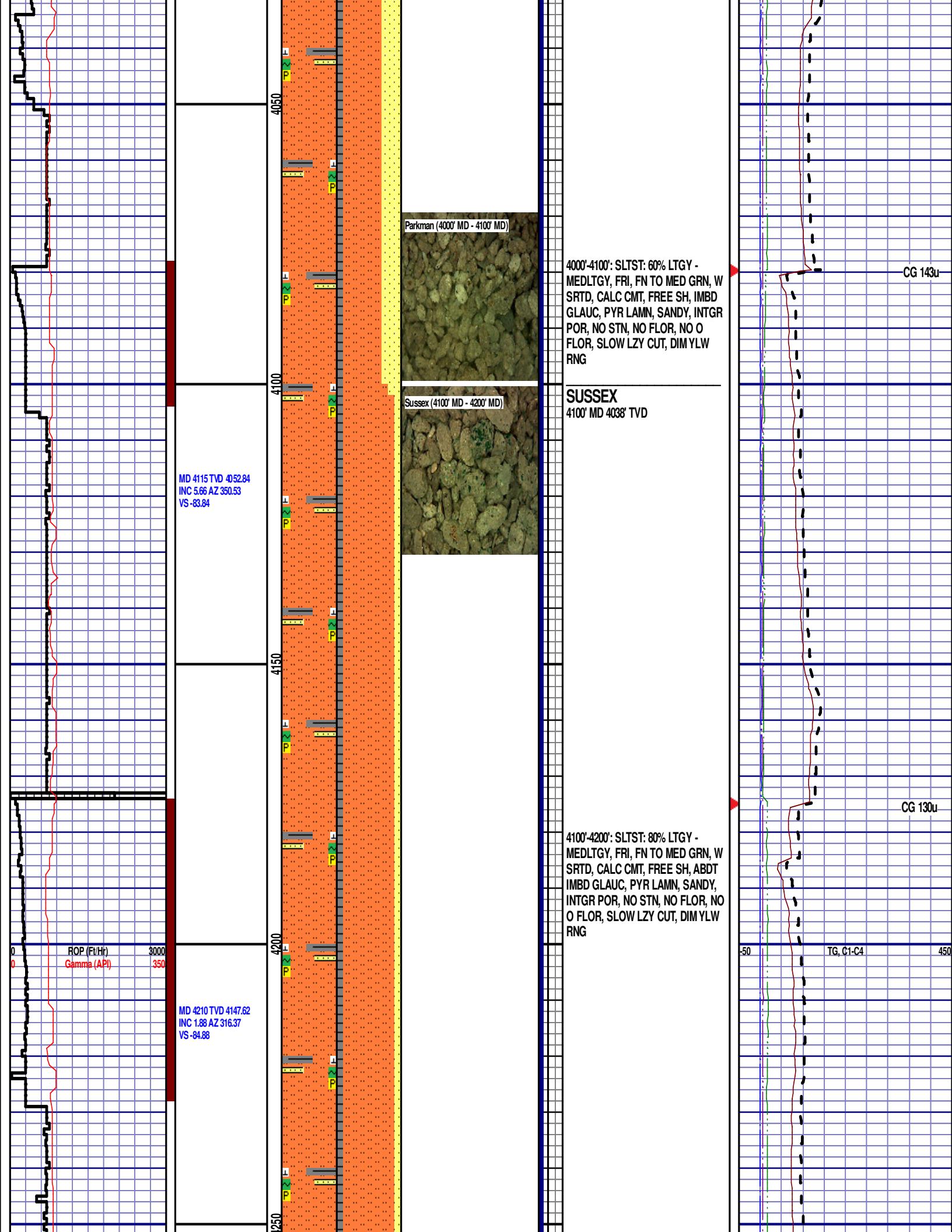
3800'- 3900': SS: 80%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, SILTY, IMBD
GLAUC, INTGR POR, NO STN, NO
FLOR, NO O FLOR, NO CUT, DIM
YLW RNG

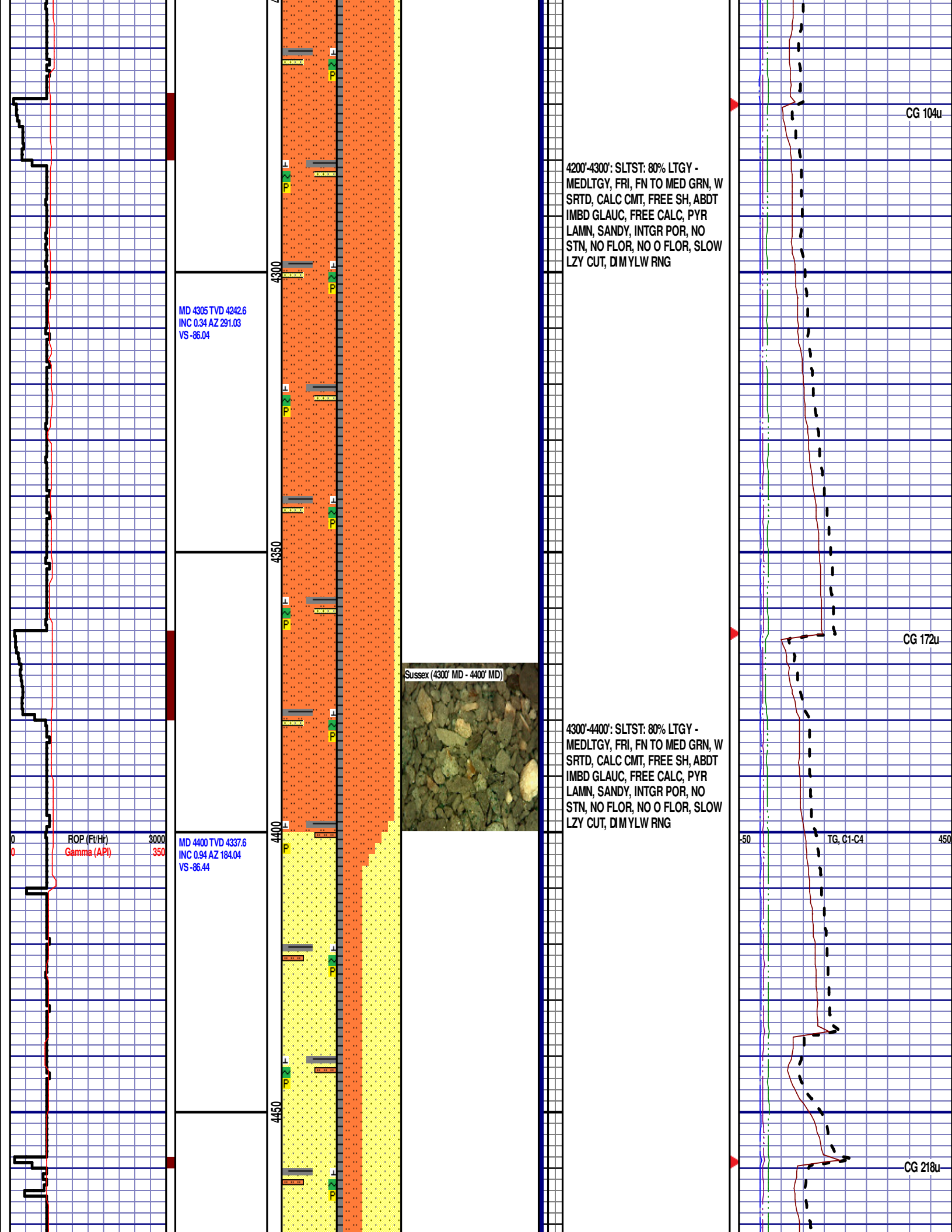
3900'-4000': SLTST: 50% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
GLAUC, PYR LAMN, SANDY, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, DIM YLW
RNG

CG 179u

CG 174u

TG, C1-C4





MD 4495 TVD 4432.59
JNC 0.98 AZ 143.4
VS -86.22

MD 4590 TVD 4527.57
JNC 1.17 AZ 156.87
VS -86.57

MD 4685 TVD 4622.55
JNC 1.22 AZ 98.03
VS -81.24

ROP (Ft/Hr)
Gamma (API)

3000
350

4500

4550

4600

4650

Sussex (4500' MD - 4600' MD)

Sussex (4600' MD - 4700' MD)

4400'-4500': SS: 60%: PRED GY -
LTKGY - OPQ, MOD CONS, FN TO
MED GRN, SUBANG, W TO MODY
SRTD, CALC CMT, SILTY, IMBD
GLAUC, FREE CALC, INTGR POR,
NO STN, NO FLOR, NO O FLOR, NO
CUT, DIM YLW RNG

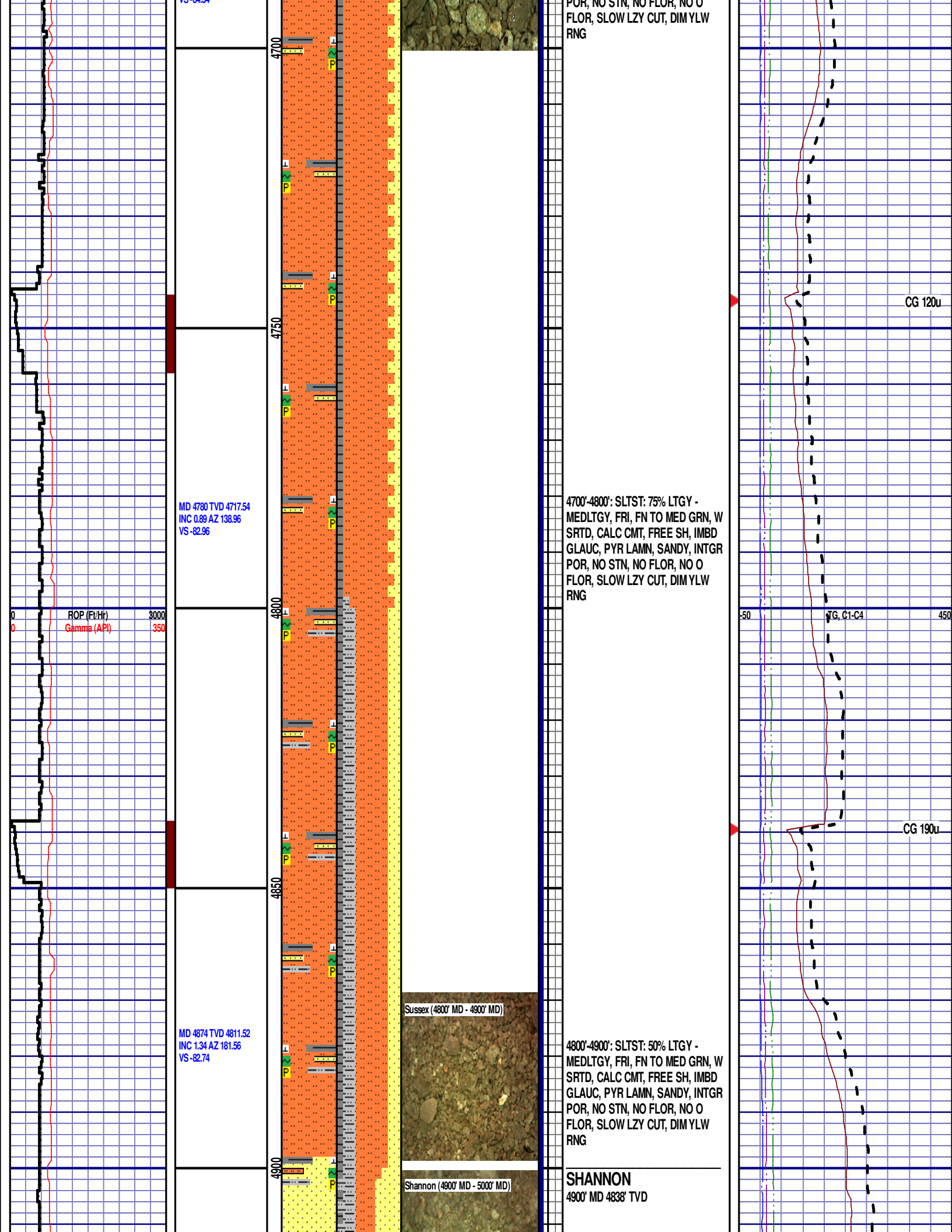
4500'-4600': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
GLAUC, FREE CALC, PYR LAMN,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, SLOW LZ CUT,
DIM YLW RNG

4600'-4700': SLTST: 75% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
GLAUC, PYR LAMN, SANDY, INTGR
POR, NO STN, NO FLOR, NO C

CG 204u

50 1TG, C1-C4 450

CG 192u



POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, DIM YLW
RNG

CG 120u

MD 4780 TVD 4717.54
INC 0.89 AZ 138.96
VS -82.96

ROP (Ft/Hr)
Gamma (API)

3000
350

4700'-4800': SLTST: 75% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
GLAUC, PYR LAMN, SANDY, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, DIM YLW
RNG

CG, C1-C4

CG 190u

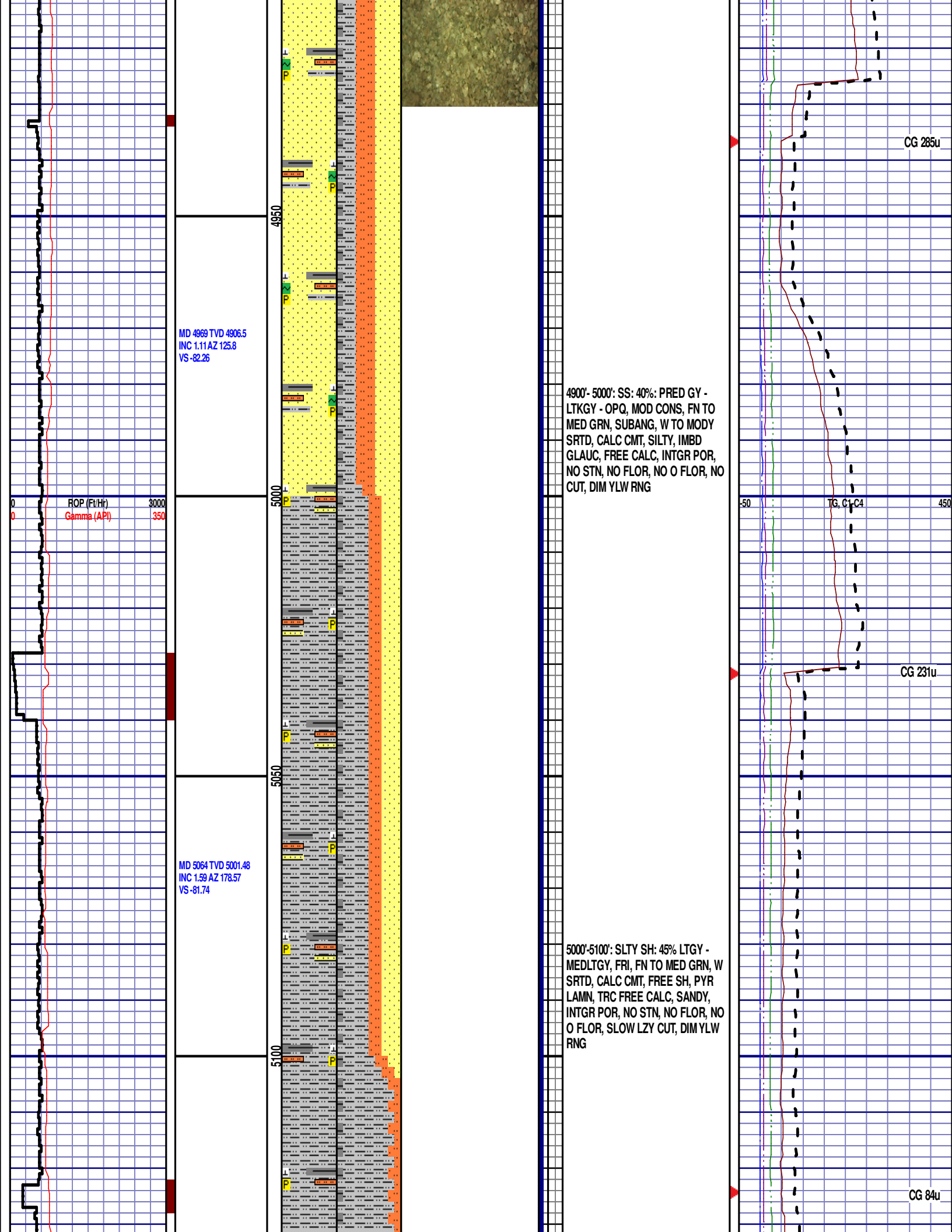
MD 4874 TVD 4811.52
INC 1.34 AZ 181.56
VS -82.74

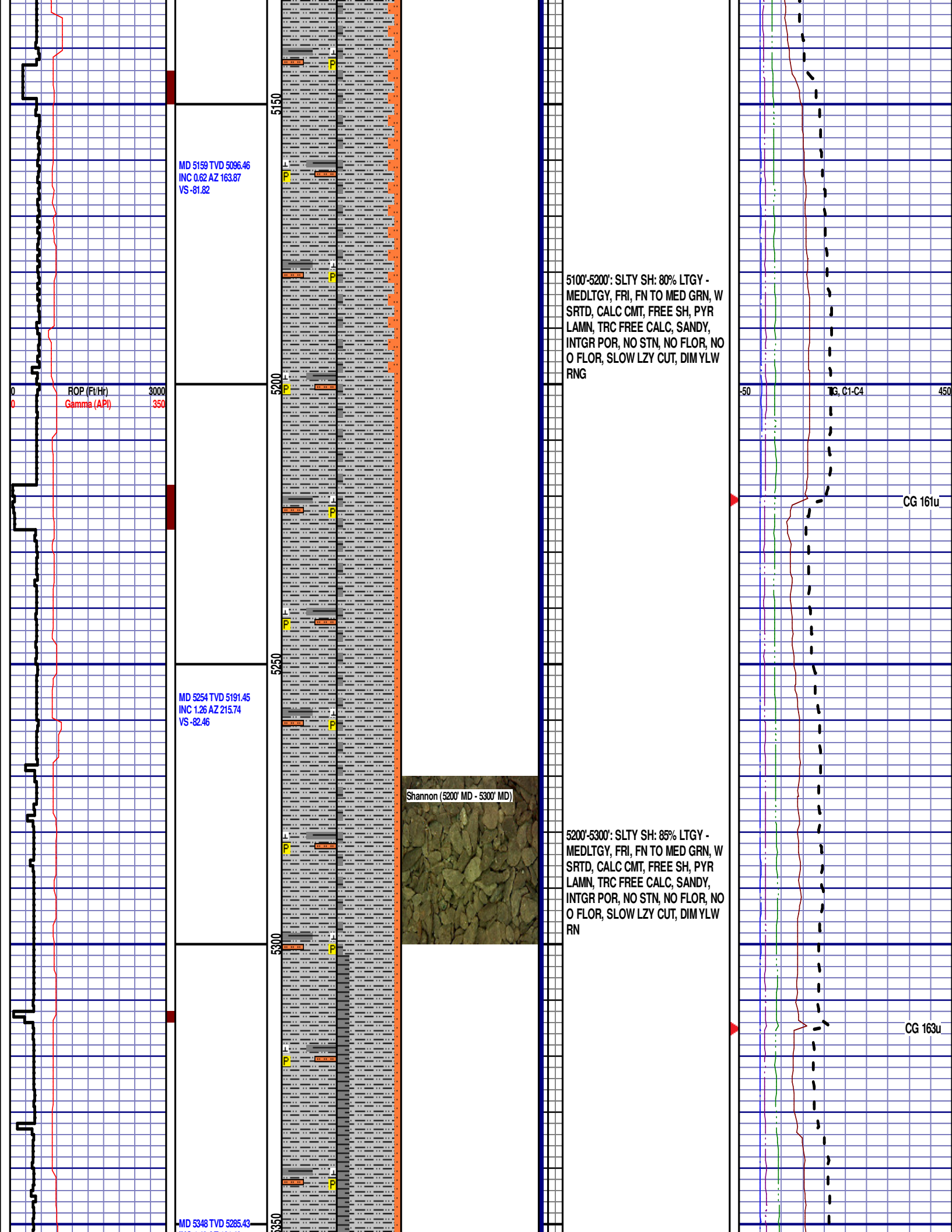
Sussex (4800' MD - 4900' MD)

4800'-4900': SLTST: 50% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
GLAUC, PYR LAMN, SANDY, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, SLOW LZY CUT, DIM YLW
RNG

Shannon (4900' MD - 5000' MD)

SHANNON
4900' MD 4838' TVD



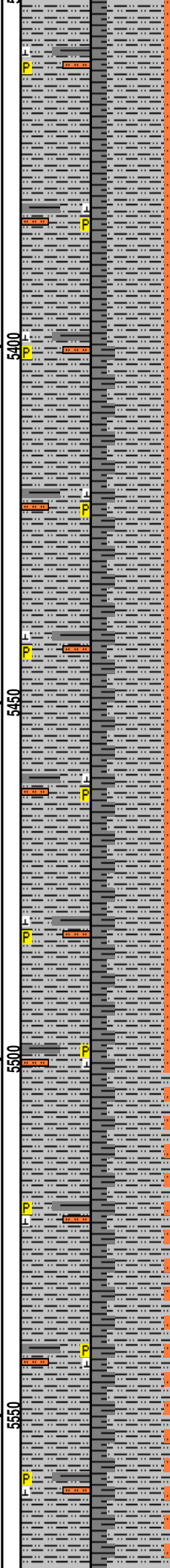


INC 1.49 AZ 161.49
VS -82.95

ROP (Ft/Hr)
Gamma (API)

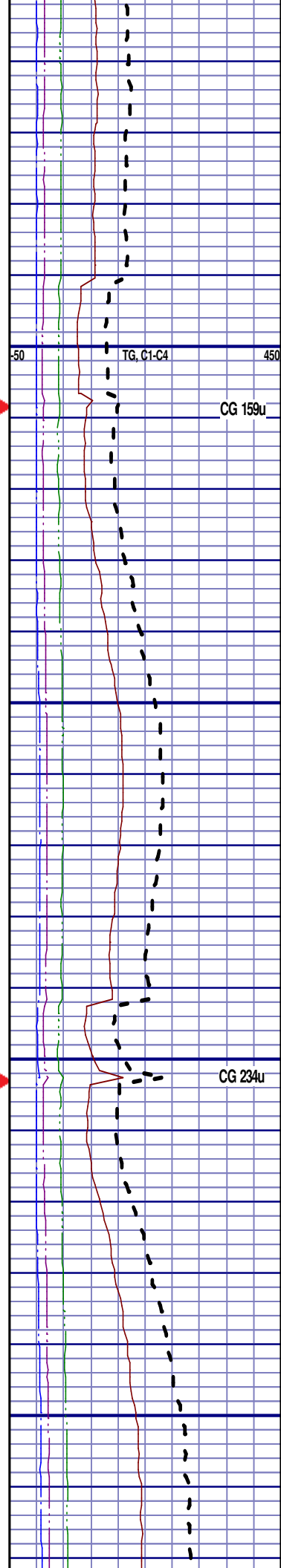
MD 5443 TVD 5380.41
INC 0.51 AZ 169.91
VS -82.7

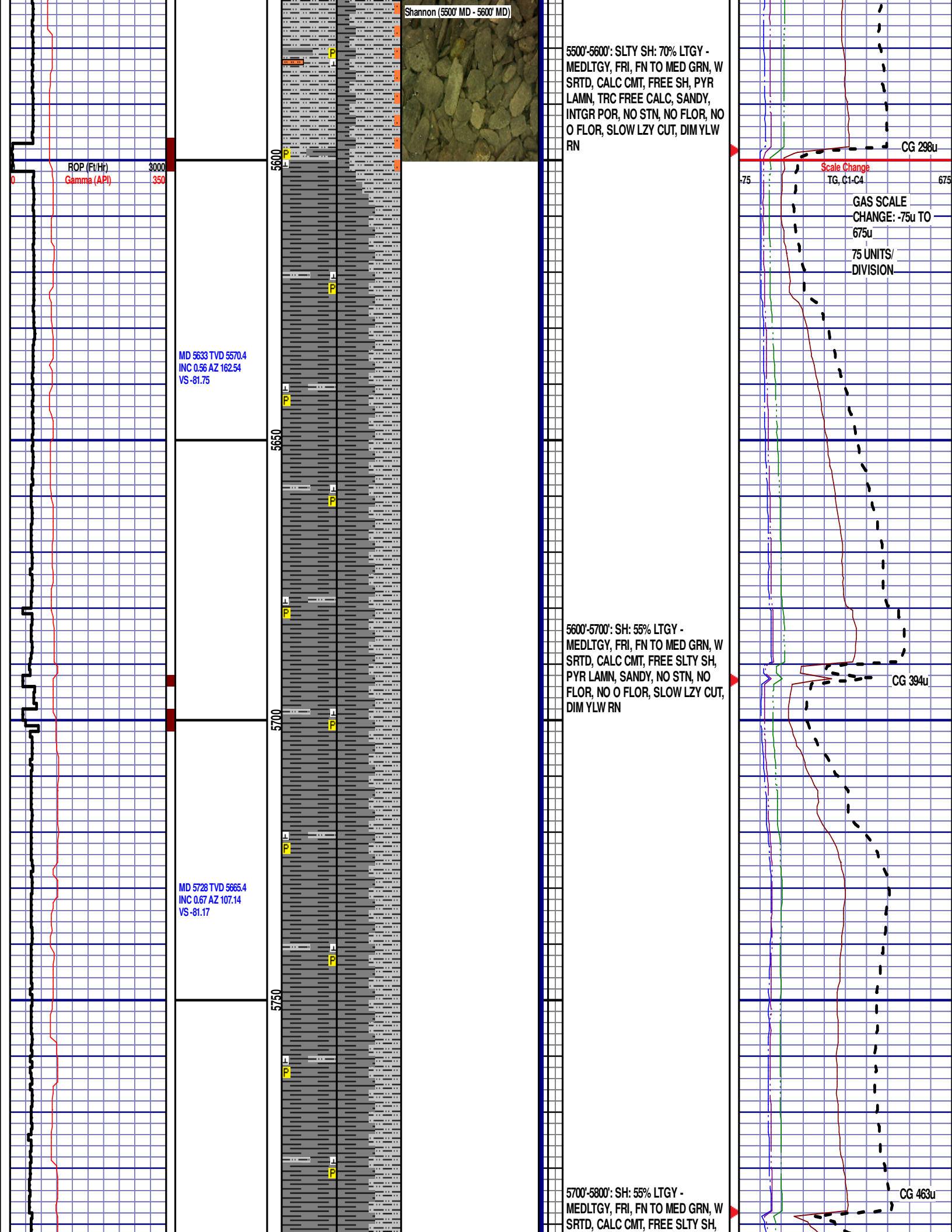
MD 5538 TVD 5475.41
INC 0.58 AZ 108.99
VS -82.26

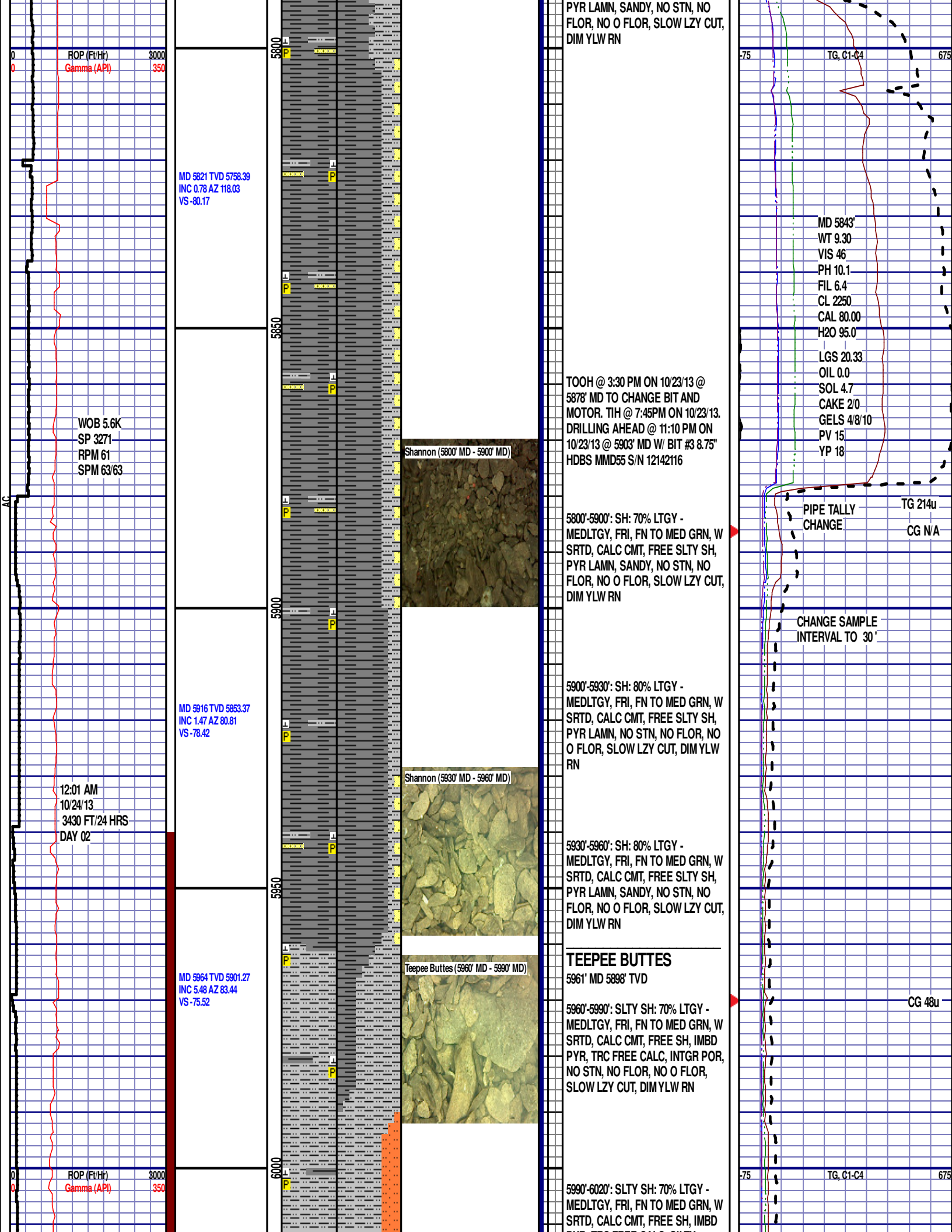


5300'-5400': SLTY SH: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, PYR
LAMN, TRC FREE CALC, SANDY,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZC CUT, DIM YLW
RN

5400'-5500': SLTY SH: 65% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, PYR
LAMN, TRC FREE CALC, SANDY,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZC CUT, DIM YLW
RN







WOB 22.9K
SP 3122
RPM 0
SPM 61/61

MD 6011 TVD 5947.66
INC 12.63 AZ 80.37
VS -68.13

MD 6059 TVD 5994.08
INC 16.76 AZ 83.85
VS -55.96

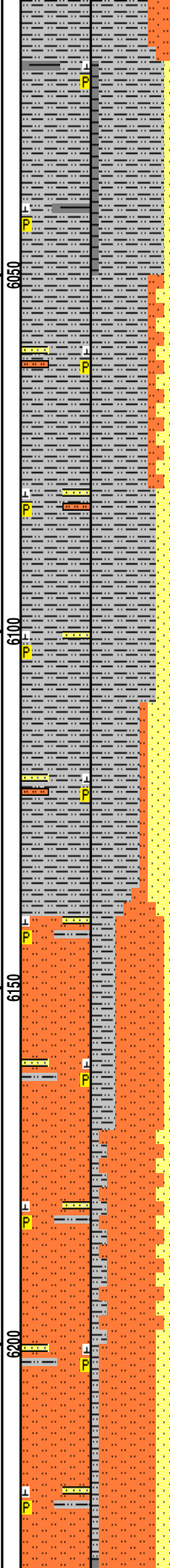
MD 6106 TVD 6038.96
INC 17.8 AZ 88.15
VS -42.04

MD 6154 TVD 6084.47
INC 19.25 AZ 93.43
VS -26.98

MD 6201 TVD 6128.49
INC 21.79 AZ 92.21
VS -10.79

ROP (Ft/Hr)
Gamma (API)

3000
350



PYR, TRC FREE CALC, SILTY,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZ Y CUT, DIM YLW
RN

6020'-6050': SLTY SH: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
PYR, TRC FREE CALC, SANDY,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZ Y CUT, DIM YLW
RN

6050'-6080': SLTY SH: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
PYR, TRC FREE CALC, SILTY,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, SLOW LZ Y CUT,
DIM YLW RN

6080'-6110': SLTY SH: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
PYR, TRC FREE CALC, SANDY,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, SLOW LZ Y CUT, DIM YLW
RN

6110'-6140': SLTY SH: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE SH, IMBD
PYR, TRC FREE CALC, SILTY,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, SLOW LZ Y CUT,
DIM YLW RN

6140'-6170': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, SLOW LZ Y CUT,
DIM YLW RNg

6170'-6200': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, SLOW LZ Y CUT,
DIM YLW RNg

6200'-6230': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, IMBD PYR,
SANDY, INTGR POR, NO STN, NO
FLOR, NO O FLOR, SLOW LZ Y CUT,
DIM YLW RNg

CG 133u

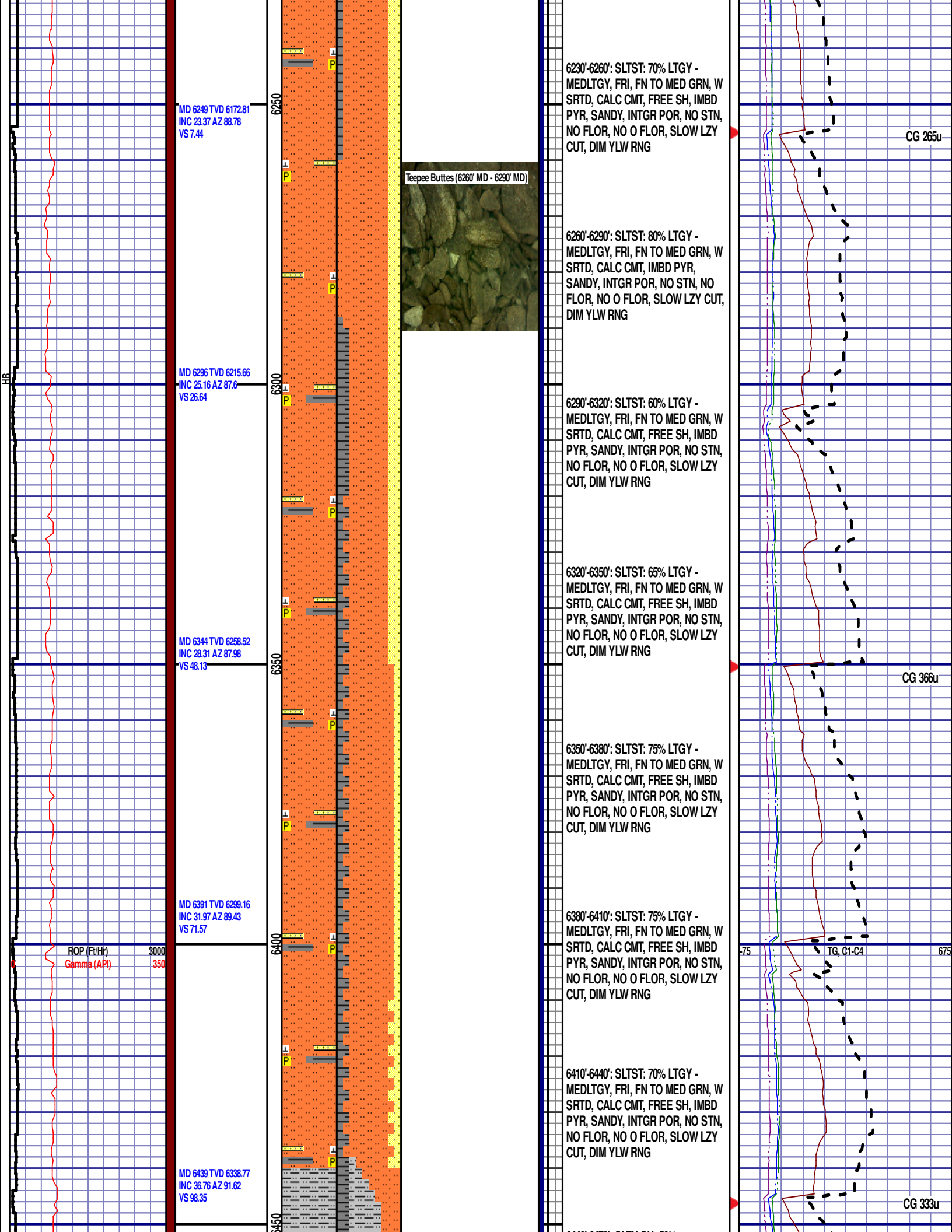
MD 6114'
WT 10.35
VIS 42
PH 9.1
FIL 7.0
CL 2400
CAL 60.00
H2O 91.0
LGS 21.81
OIL 0.0
SOL 8.7
CAKE 2/0
GELS 4/8/9
PV 15
YP 13

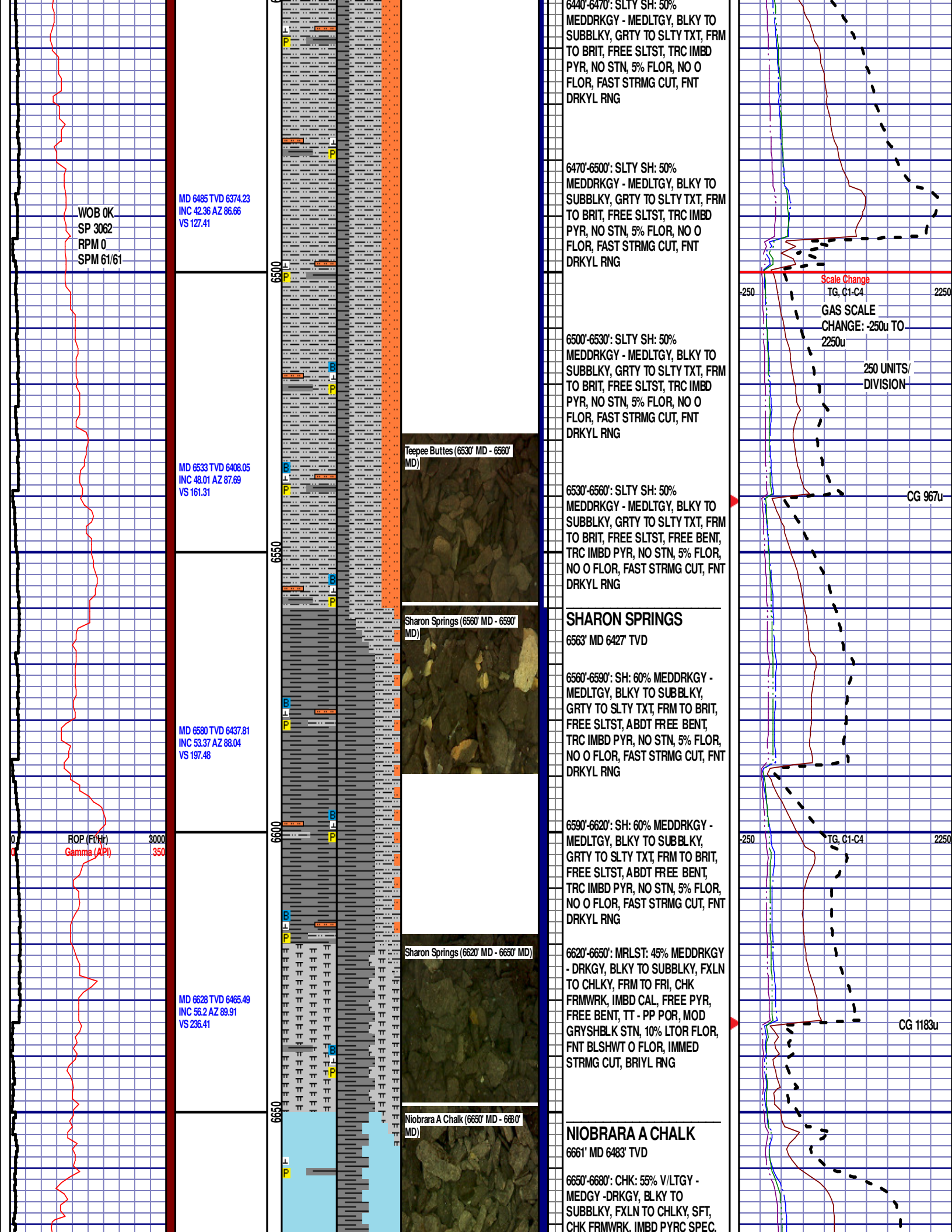
CG 114u

75

TG, C1-C4

675





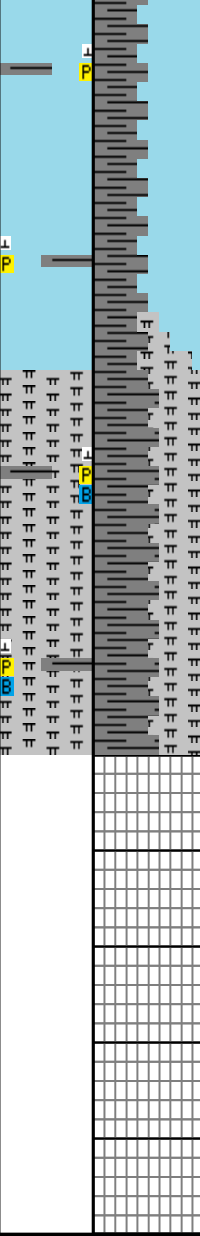
MD 6675 TVD 6490.86
INC 58.47 AZ 89.74
VS 275.62

MD 6723 TVD 6515.08
INC 60.91 AZ 89.61
VS 316.7

6700

6750

00



Niobrara A Chalk (6680' MD - 6710' MD)

Niobrara A Marl (6710' MD - 6740' MD)

FREE SH, MOD GYSHBLK STN, FNT
BLSHWT O FLOR, IMMED STRMG
CUT, BRIYL RNG

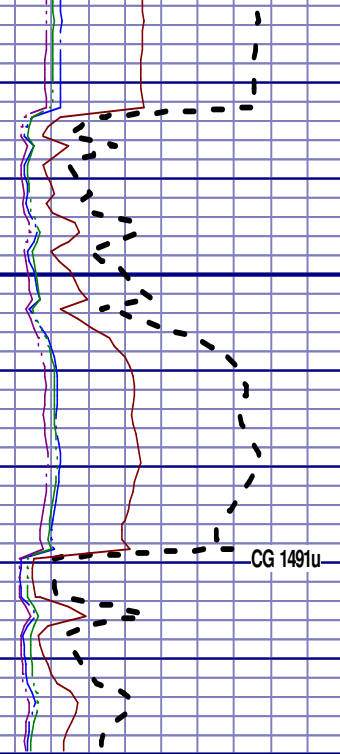
6680'-6710': CHK: 55% V/LTGY -
MEDGY -DRKGY, BLKY TO
SUBBLKY, FXLN TO CHLKY, SFT,
CHK FRMWRK, IMBD PYRC SPEC,
FREE SH, MOD GYSHBLK STN, FNT
BLSHWT O FLOR, IMMED STRMG
CUT, BRIYL RNG

NIOBRARA A MARL

6714' MD 6510' TVD

6710'-6740': MRLST: 45% MEDDRKGY
- DRKGY, BLKY TO SUBBLKY, FXLN
TO CHLKY, FRM TO FRI, CHK
FRMWRK, IMBD CAL, FREE PYR,
TRC FREE BENT, TT - PP POR, MOD
GRYSHBLK STN, 10% LTOR FLOR,
FNT BLSHWT O FLOR, IMMED
STRMG CUT, BRIYL RNG

END OF VERTICAL LOG @ 6750' MD
ON 10/24/13. CONTINUED ON
HORIZONTAL LOG.



CG 1491u