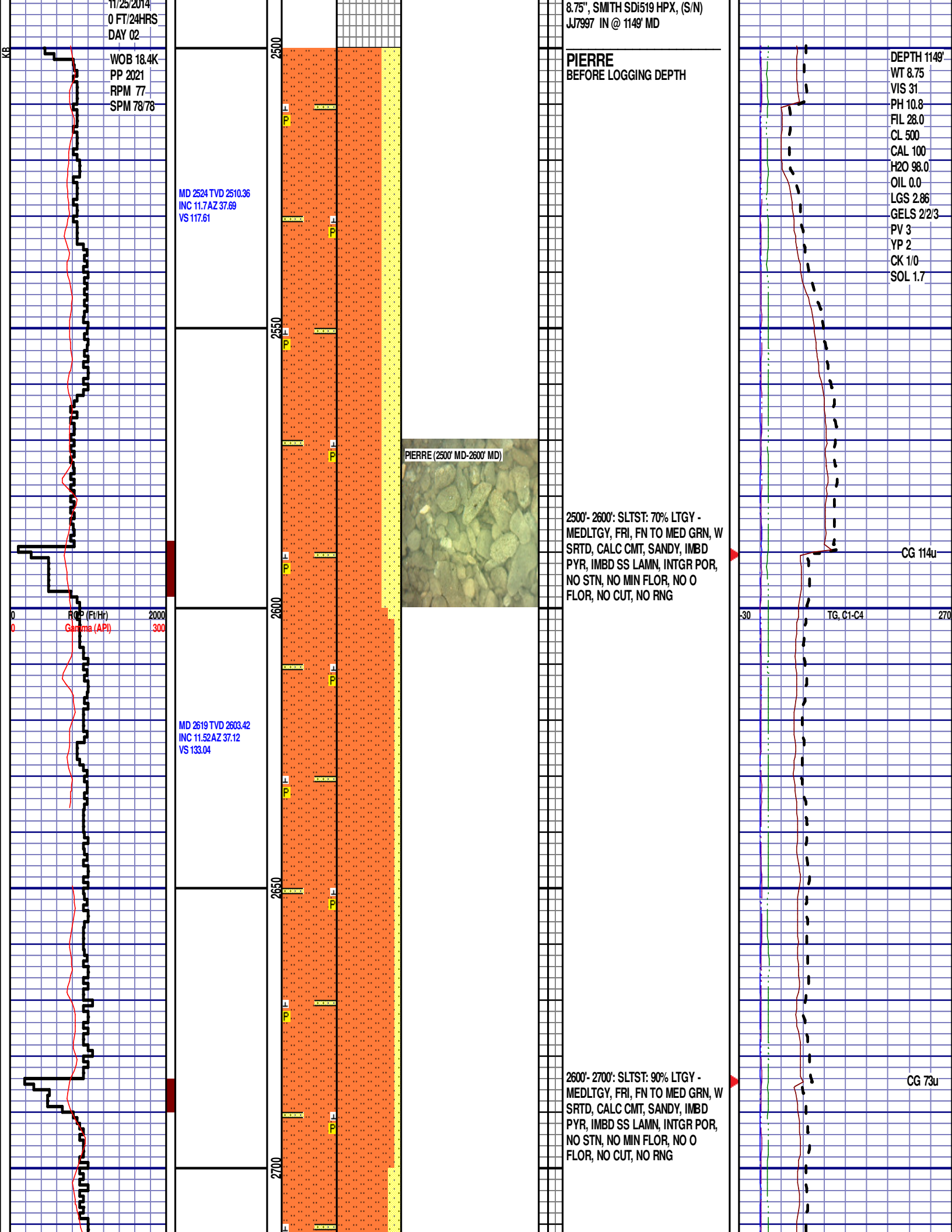


[illegible]



MD 2713 TVD 2695.63
INC 10.82 AZ 36.81
VS 147.82

MD 2808 TVD 2789
INC 10.46 AZ 34.41
VS 162.29

MD 2902 TVD 2881.43
INC 10.55 AZ 34.65
VS 176.62

2750

2800

2850

2900

2700'- 2800': SLTST: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

PIERRE (2800' MD-2900' MD)

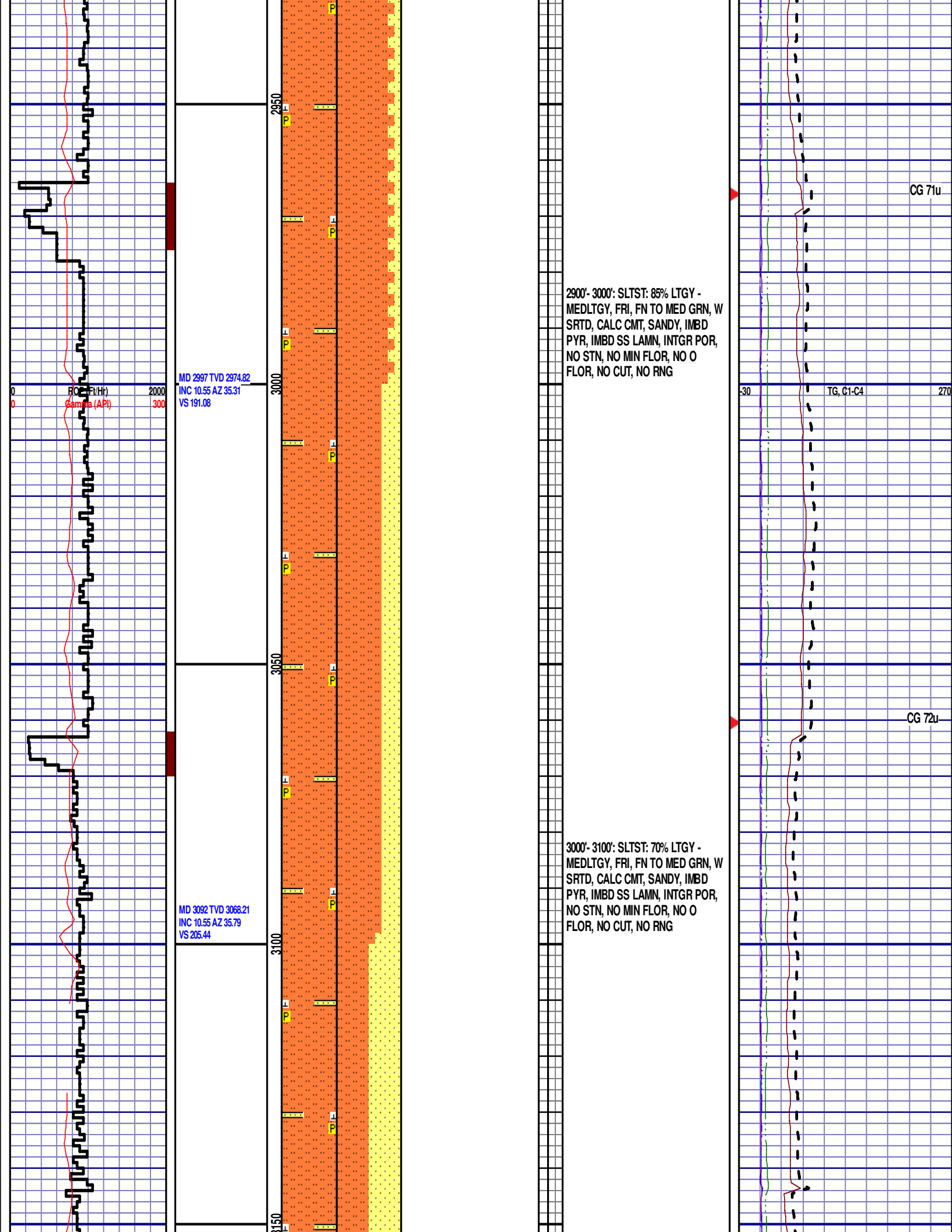


2800'- 2900': SLTST: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

CG 98u

TG, C1-C4

CG 77u



MD 2997 TVD 2974.82
INC 10.55 AZ 35.31
VS 191.08

MD 3092 TVD 3068.21
INC 10.55 AZ 35.79
VS 205.44

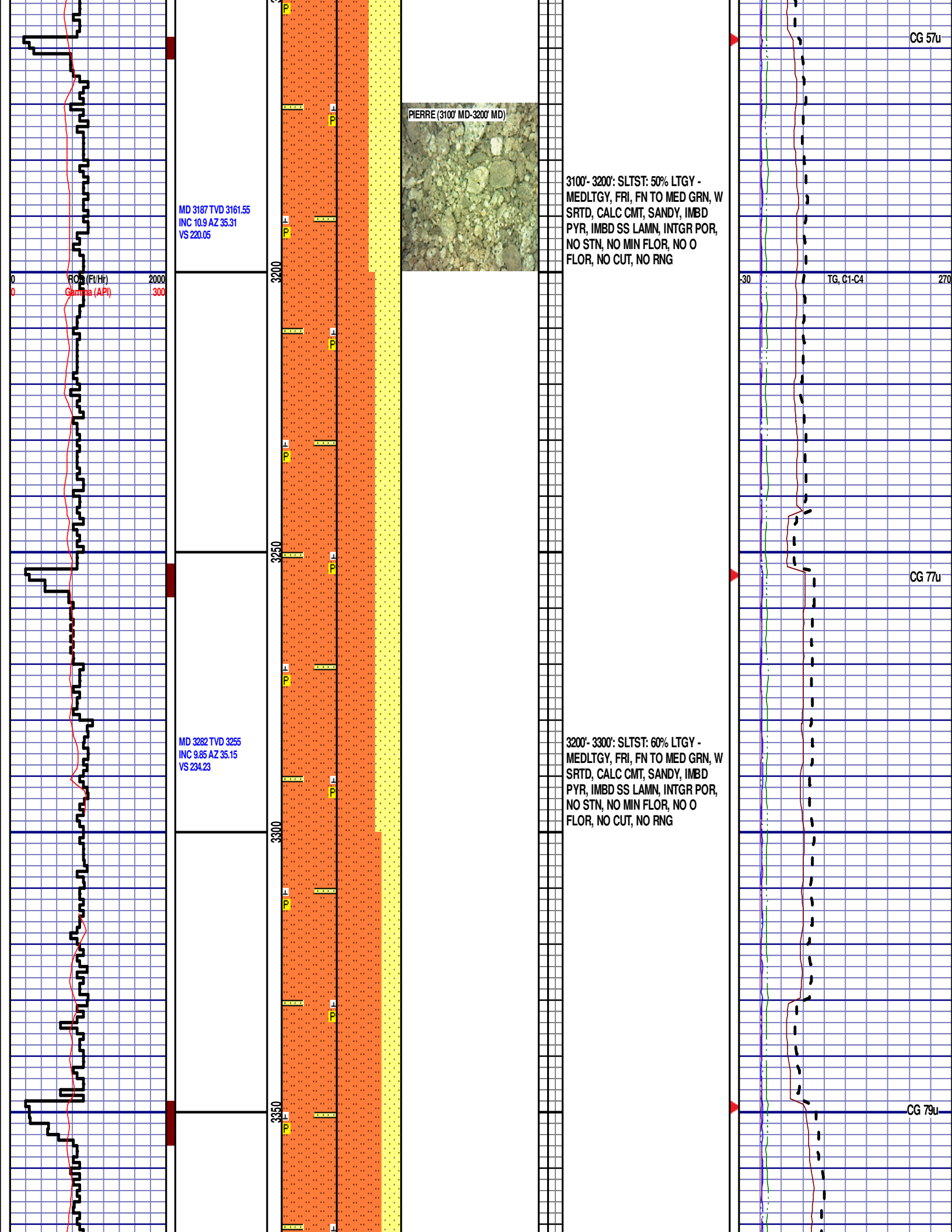
2900'- 3000': SLTST: 85% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

3000'- 3100': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

CG 71u

TG, C1-C4

CG 72u



MD 3376 TVD 3347.58
INC 10.11 AZ 34.92
VS 247.77

RF (Ft/Hr)
Gamma (API)

2000
300

3400

3450

3500

3550

MD 3471 TVD 3441.17
INC 9.67 AZ 32.42
VS 261.53

MD 3566 TVD 3534.92
INC 8.88 AZ 33.06
VS 274.58

3300'- 3400': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

PIERRE (3400' MD-3500' MD)



3400'- 3500': SLTST: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

3500'- 3600': SLTST: 90% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD

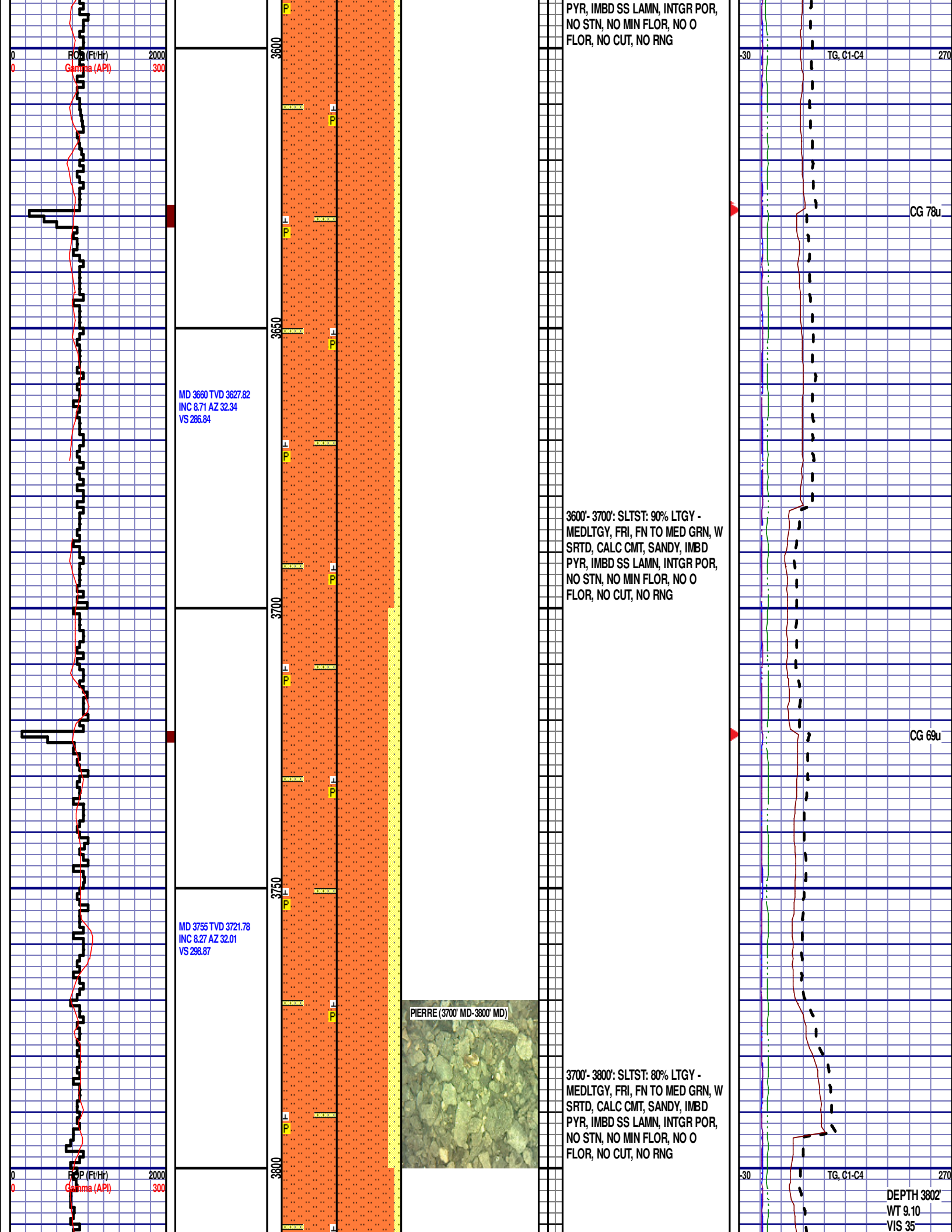
30

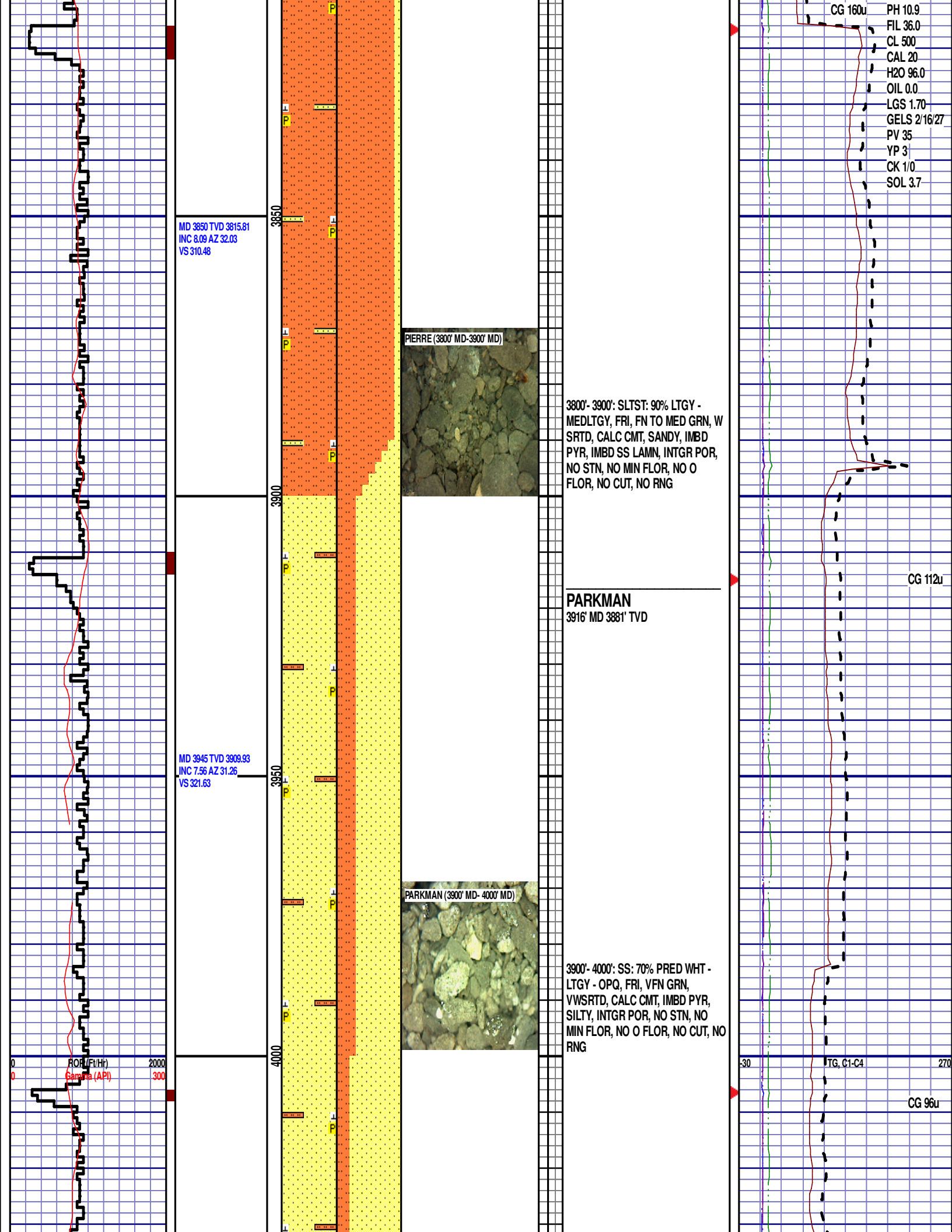
TG, C1-C4

270

CG 82u

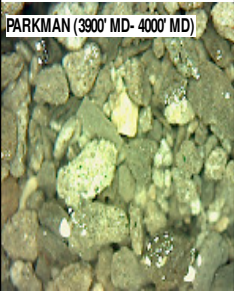
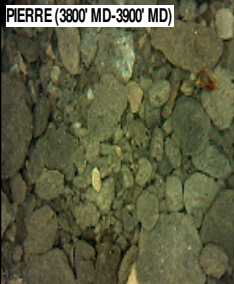
CG 100u





MD 3850 TVD 3815.81
INC 8.09 AZ 32.03
VS 310.48

MD 3945 TVD 3909.93
INC 7.56 AZ 31.26
VS 321.63



3800'- 3900': SLTST: 90% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

PARKMAN
3916' MD 3881' TVD

3900'- 4000': SS: 70% PRED WHT -
LTGY - OPQ, FRI, VFN GRN,
VWSRTD, CALC CMT, IMBD PYR,
SILTY, INTGR POR, NO STN, NO
MIN FLOR, NO O FLOR, NO CUT, NO
RNG

CG 160u PH 10.9
FIL 36.0
CL 500
CAL 20
H2O 96.0
OIL 0.0
LGS 1.70
GELS 2/16/27
PV 35
YP 3
CK 1/0
SOL 3.7

CG 112u

30 TG, C1-C4 270

CG 96u

ROF (Ft/Hr)
Gamma (API)

MD 4039 TVD 4003.06
INC 8 AZ 31.22
VS 332.65

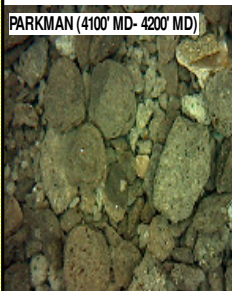
WOB 13.3K
PP 3988
RPM 76
SPM 78/78

MD 4134 TVD 4097.05
INC 8.71 AZ 29.16
VS 344.73

MD 4229 TVD 4191.06
INC 7.83 AZ 25.73
VS 356.98

4000'- 4100': SS: 70% PRED WHT -
LTGY - OPQ, FRI, VFN GRN,
VWSRTD, CALC CMT, IMBD PYR,
SILTY, INTGR POR, NO STN, NO
MIN FLOR, NO O FLOR, NO CUT, NO
RNG

PARKMAN (4100' MD- 4200' MD)

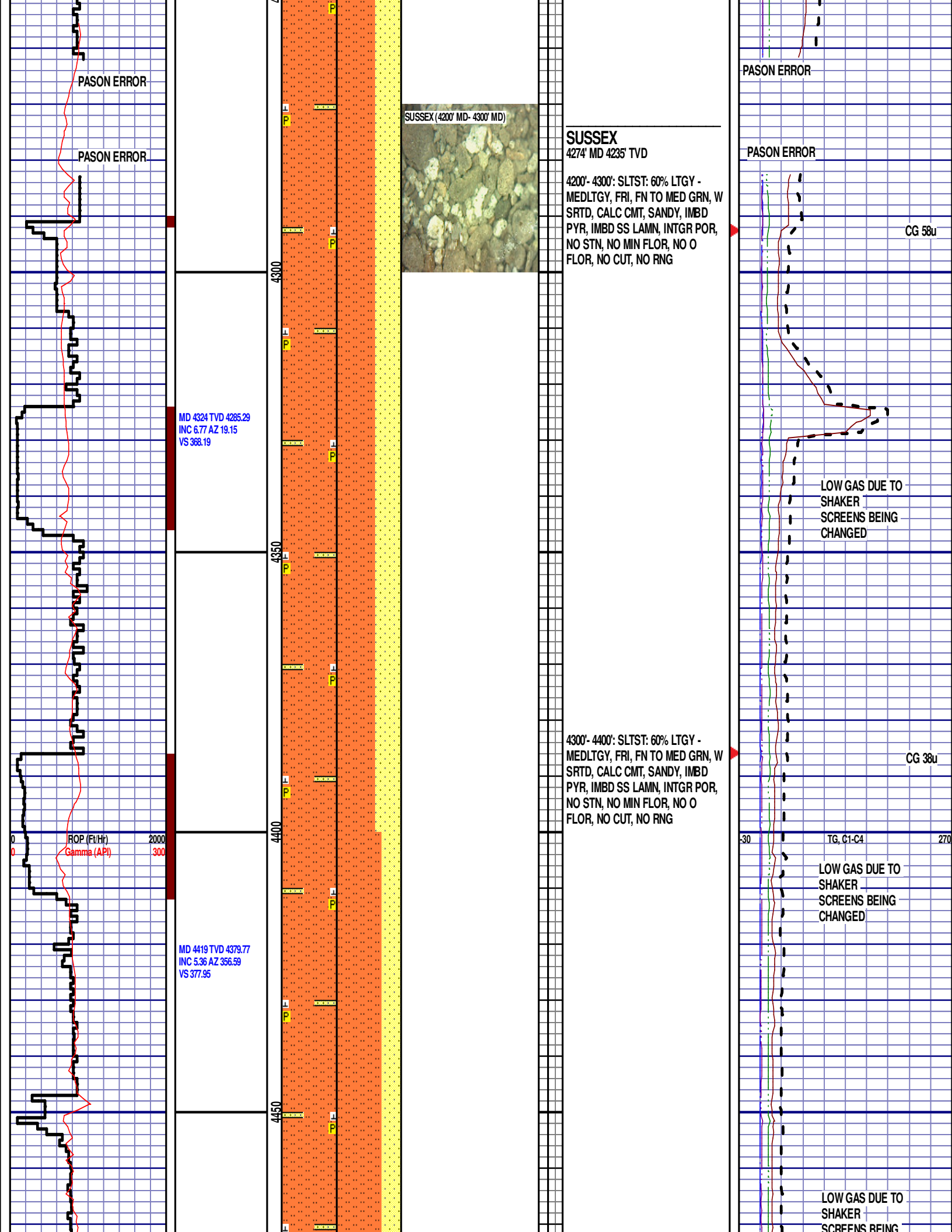


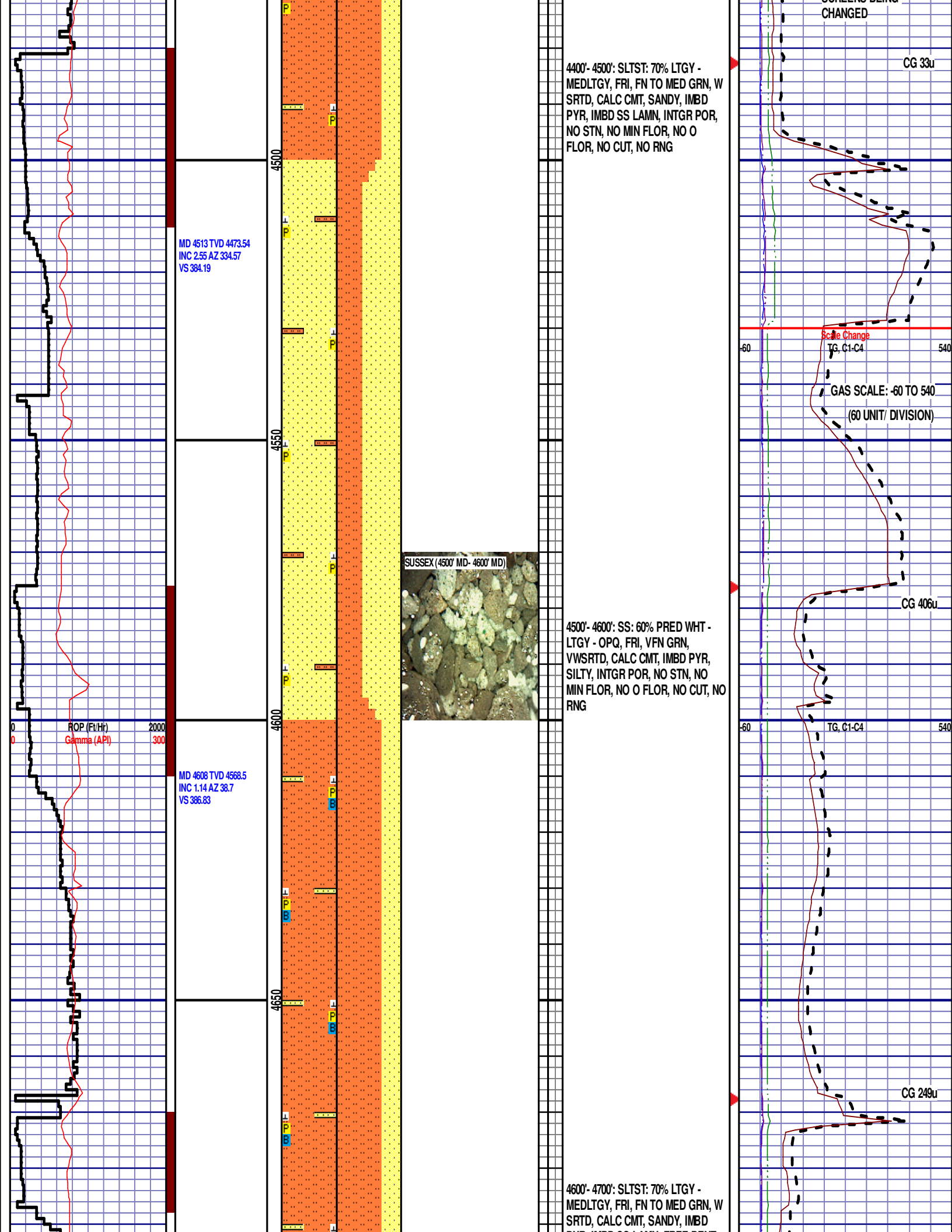
4100'- 4200': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

CG 142u

CG 197u

TG, C1-C4





SCREENS BEING
CHANGED

CG 33u

4400'- 4500': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

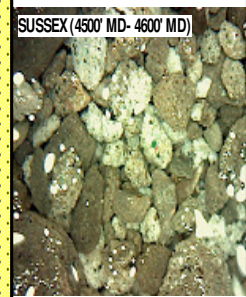
MD 4513 TVD 4473.54
INC 2.55 AZ 334.57
VS 384.19

4500

4550

4600

4650



SUSSEX (4500' MD- 4600' MD)

4500'- 4600': SS: 60% PRED WHT -
LTGY - OPQ, FRI, VFN GRN,
VWSRTD, CALC CMT, IMBD PYR,
SILTY, INTGR POR, NO STN, NO
MIN FLOR, NO O FLOR, NO CUT, NO
RNG

ROP (Ft/Hr)
Gamma (API)

2000
300

MD 4608 TVD 4568.5
INC 1.14 AZ 38.7
VS 386.83

Scale Change
TG, C1-C4

GAS SCALE: -60 TO 540
(60 UNIT/ DIVISION)

CG 406u

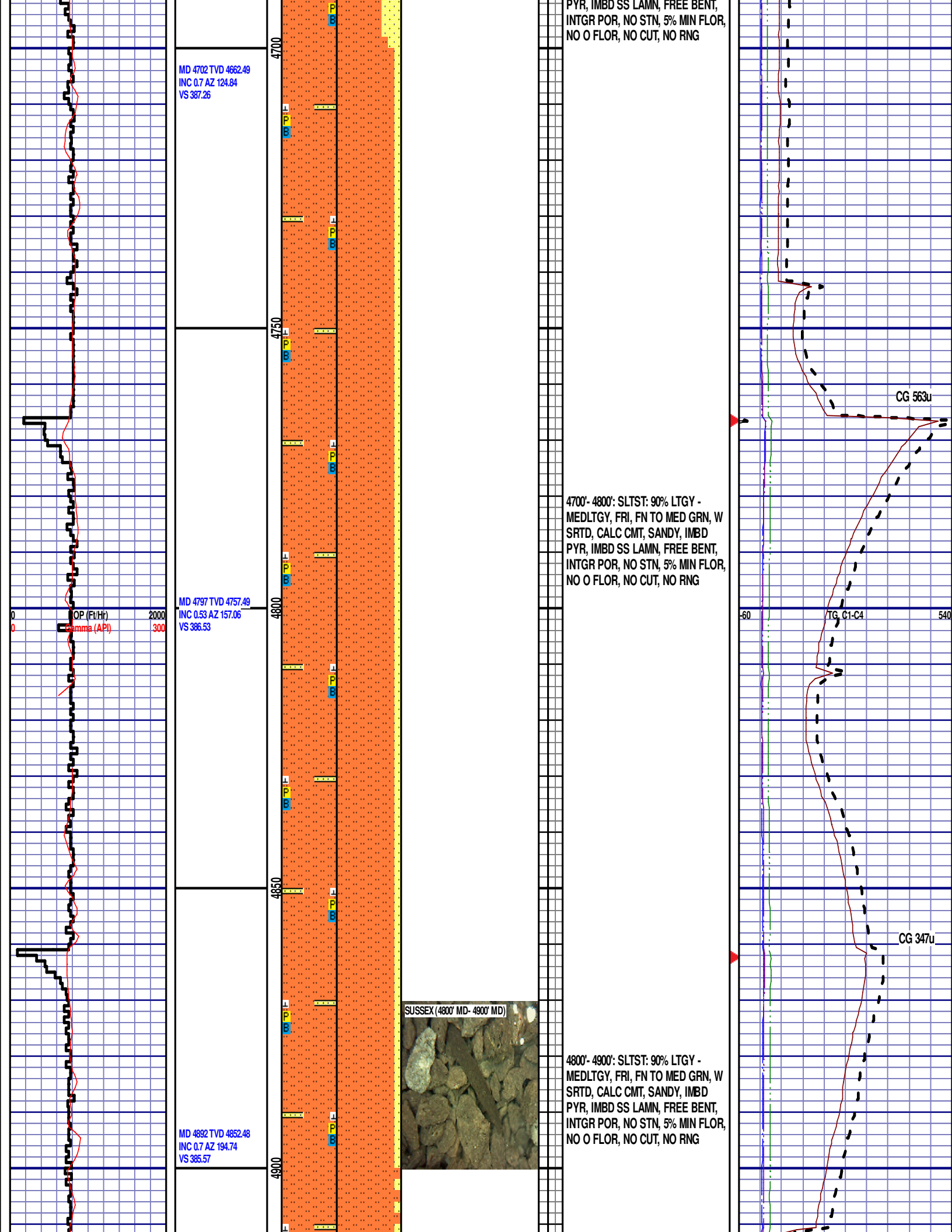
TG, C1-C4

CG 249u

4600'- 4700': SLTST: 70% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

4700'- 4800': SLTST: 90% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, FREE BENT,
INTGR POR, NO STN, 5% MIN FLOR,
NO O FLOR, NO CUT, NO RNG

4800'- 4900': SLTST: 90% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, FREE BENT,
INTGR POR, NO STN, 5% MIN FLOR,
NO O FLOR, NO CUT, NO RNG



WOB 29.8K
PP 4129
RPM 77
SPM 78/78

ROP (Ft/Hr) 2000
Gamma (API) 300

MD 5081 TVD 5041.47
INC 0.7 AZ 234.41
VS 383.76

4950

5000

5050

5100

SUSSEX (4900' MD- 5000' MD)

SHANNON (5000' MD- 5100' MD)

4900'- 5000': SLTST: 95% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, FREE BENT,
INTGR POR, NO STN, 5% MIN FLOR,
NO O FLOR, NO CUT, NO RNG

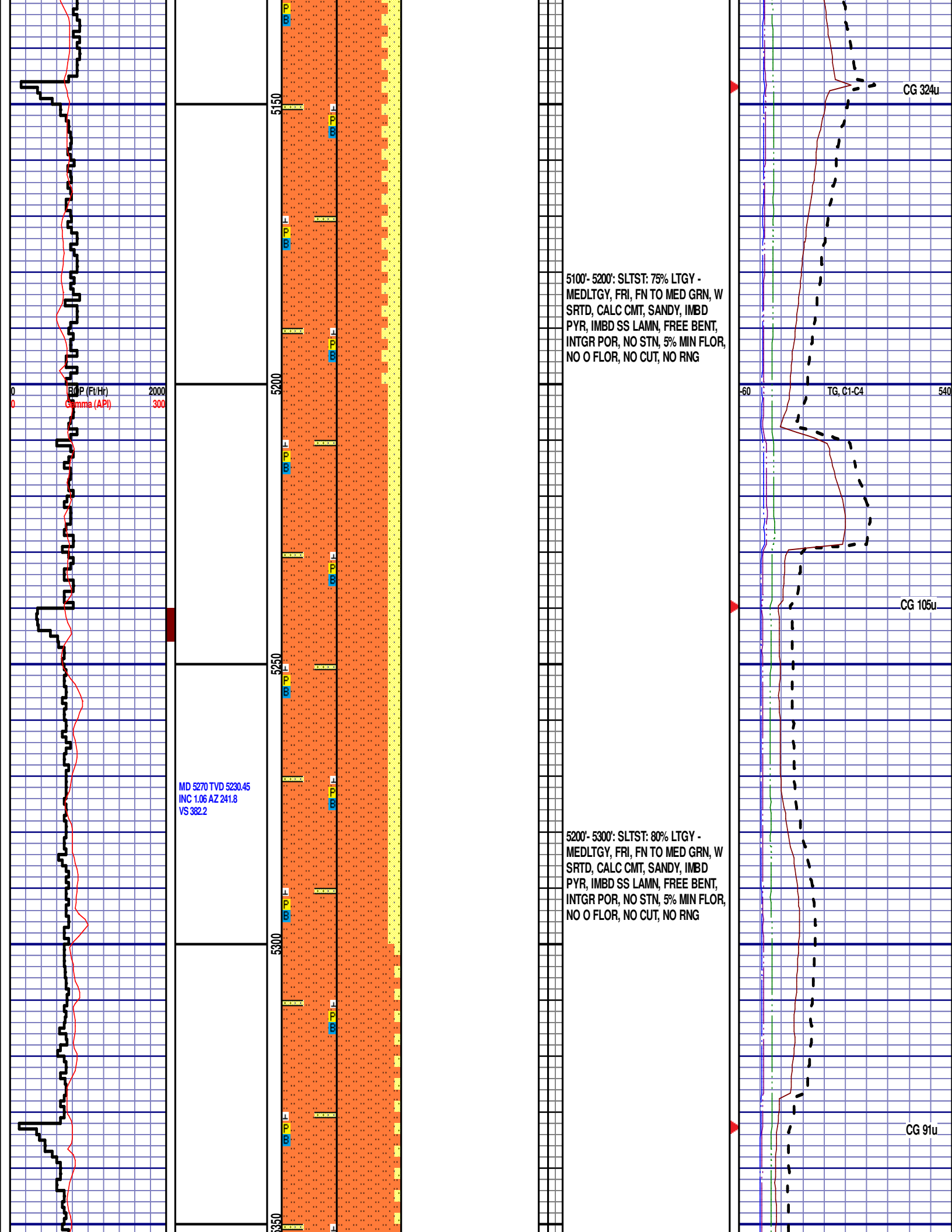
SHANNON
5050' MD 5011' TVD

5000'- 5100': SLTST: 95% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, FREE BENT,
INTGR POR, NO STN, 5% MIN FLOR,
NO O FLOR, NO CUT, NO RNG

CG 99u

TG, C1-C4

CG 449u



5100'- 5200': SLTST: 75% LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, SANDY, IMBD PYR, IMBD SS LAMN, FREE BENT, INTGR POR, NO STN, 5% MIN FLOR, NO O FLOR, NO CUT, NO RNG

5200'- 5300': SLTST: 80% LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, SANDY, IMBD PYR, IMBD SS LAMN, FREE BENT, INTGR POR, NO STN, 5% MIN FLOR, NO O FLOR, NO CUT, NO RNG

MD 5270 TVD 5230.45
INC 1.06 AZ 241.8
VS 382.2

CG 324u

TG, C1-C4

CG 105u

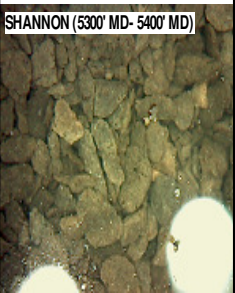
CG 91u

MD 5365 TVD 5325.43
INC 0.88 AZ 254.88
VS 381.57

MD 5460 TVD 5420.42
INC 0.7 AZ 253.81
VS 381.19

MD 5554 TVD 5514.42
INC 0.7 AZ 257.87
VS 380.88

SHANNON (5300' MD- 5400' MD)

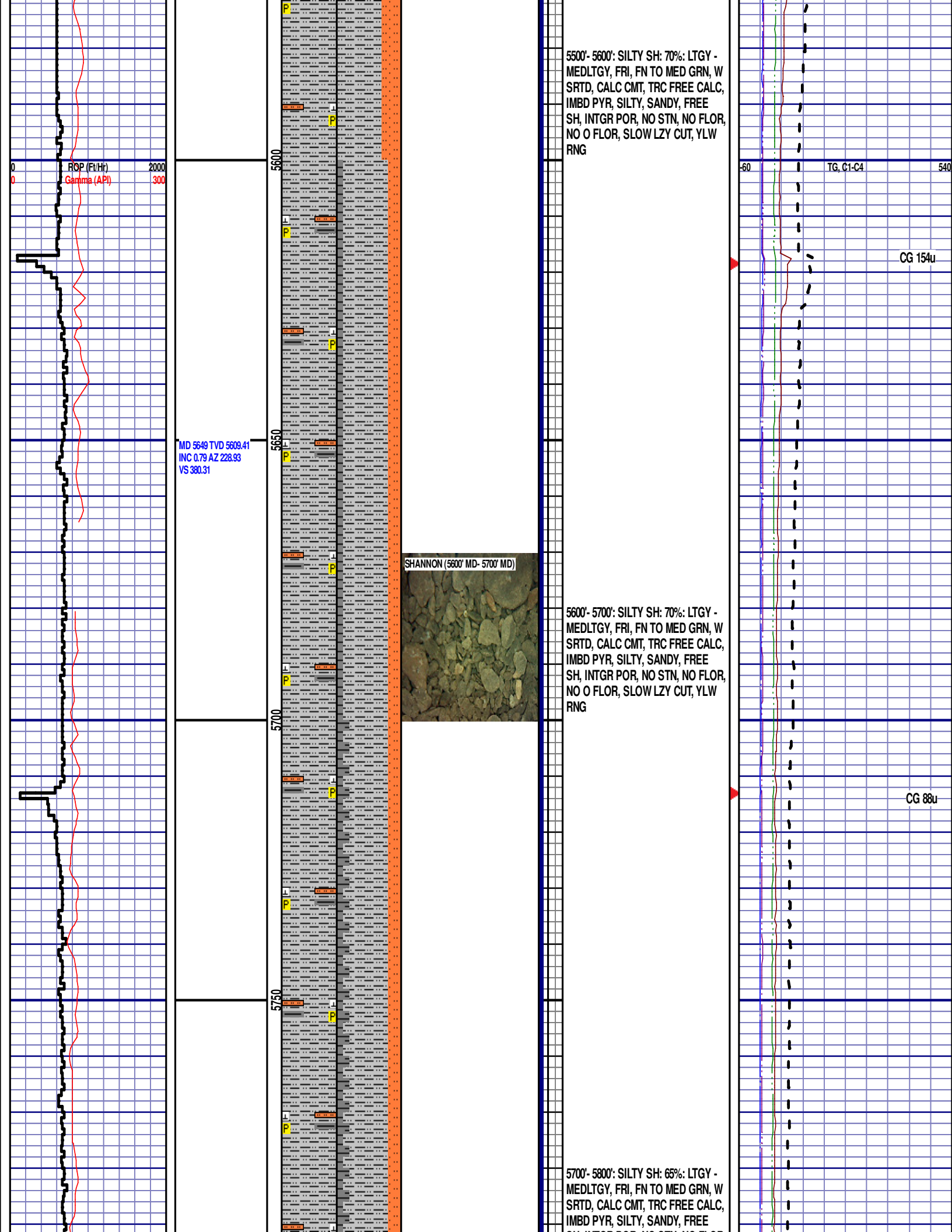


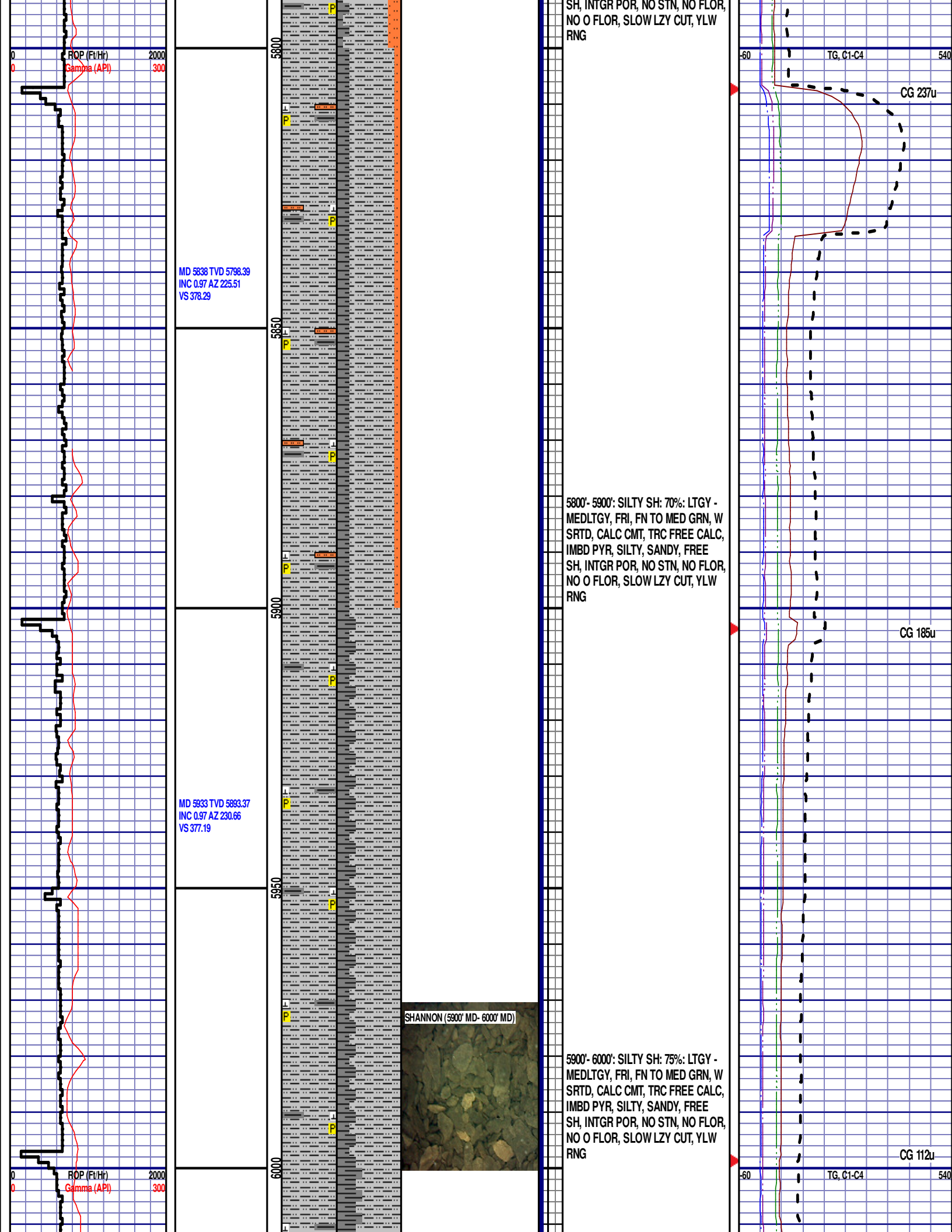
5300'- 5400': SLTST: 95% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, FREE BENT,
INTGR POR, NO STN, 5% MIN FLOR,
NO O FLOR, NO CUT, NO RNG

5400'- 5500': SILTY SH: 60%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, TRC FREE CALC,
IMBD PYR, SILTY, SANDY, FREE
SH, INTGR POR, NO STN, NO FLOR,
NO O FLOR, SLOW LZY CUT, YLW
RNG

CG 229u

CG 163u





MD 6028 TVD 5988.36
INC 0.53 AZ 218.99
VS 376.32

MD 6123 TVD 6083.36
INC 0.62 AZ 205.25
VS 375.5

MD 6217 TVD 6177.35
INC 0.7 AZ 199.16
VS 374.49

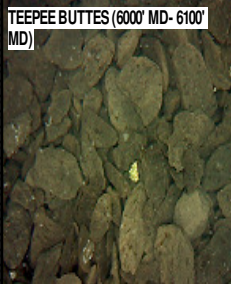
6050

6100

6150

6200

TEEPEE BUTTES (6000' MD- 6100'
MD)



TEEPEE BUTTES

6088' MD 6048' TVD

6000'- 6100': SILTY SH: 65%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, TRC FREE CALC,
IMBD PYR, SILTY, SANDY, FREE
SH, INTGR POR, NO STN, NO FLOR,
NO O FLOR, SLOW LZY CUT, YLW
RNG

6100'- 6200': SILTY SH: 70%: LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, TRC FREE CALC,
IMBD PYR, SILTY, SANDY, FREE
SH, INTGR POR, NO STN, NO FLOR,
NO O FLOR, SLOW LZY CUT, YLW
RNG

CG 111u

CG 313u

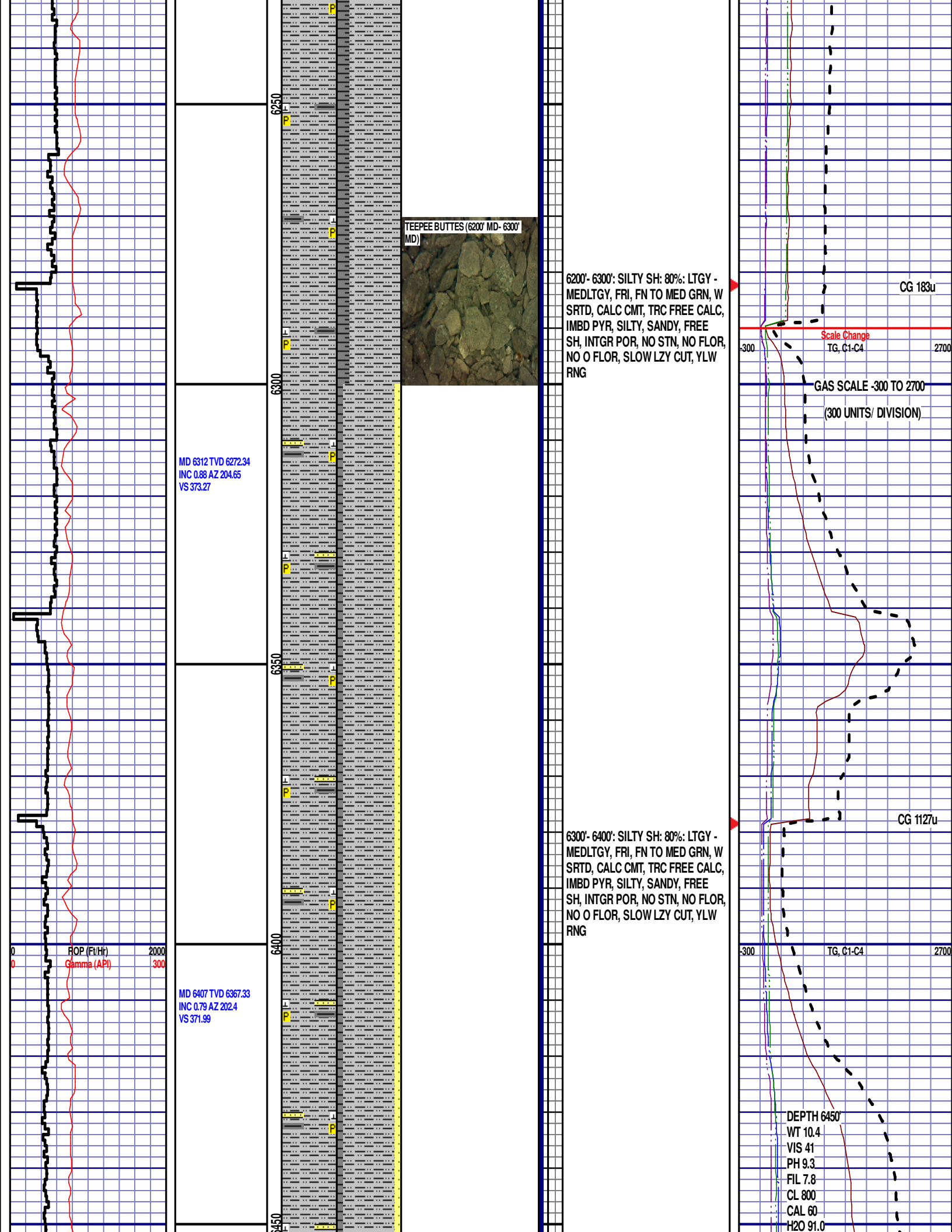
ROP (Ft/Hr)
Gamma (API)

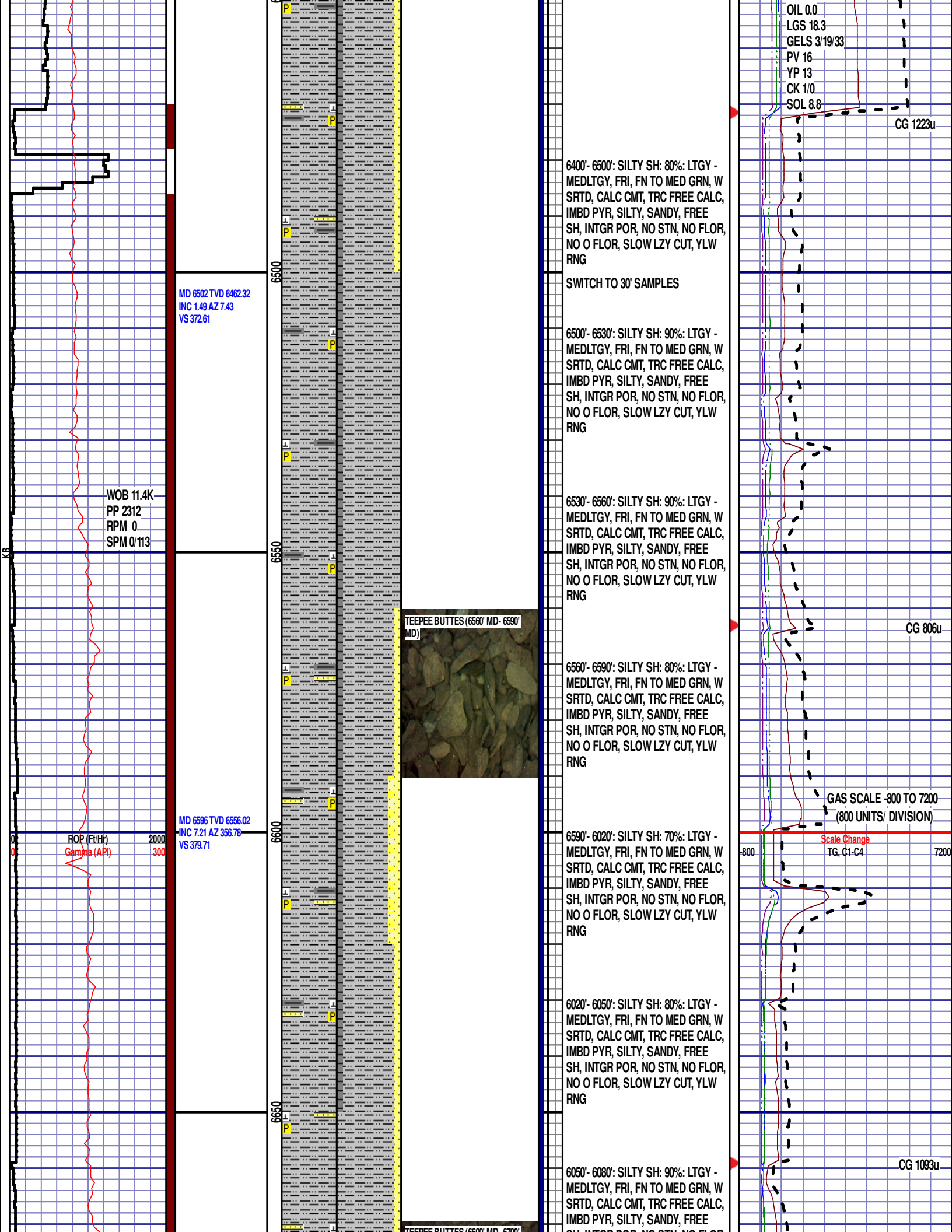
2000
300

-60

TG, C1, C4

540





WOB 5.1K
PP 2580
RPM 0
SPM 0/113

MD 6691 TVD 6649.37
INC 13.81 AZ 1.05
VS 397.01

MD 6785 TVD 6739.46
INC 19.26 AZ 7.04
VS 423.67

ROP (Ft/Hr)
Gamma (API)

2000
300

WOB 4.2K
PP 2324
RPM 0
SPM 0/113

12:01 AM
11/26/2014
4348
FT/24HRS
DAY 03

MD 6880 TVD 6826.58
INC 27.52 AZ 5.38
VS 461.22

6700

6750

6800

6850

YEEPEE BUTTES (6600 MD - 6700 MD)

SHARON SPRINGS (6770' MD - 6800' MD)

NIOBRARA A MARL (6800' MD - 6830' MD)

NIOBRARA B CHALK (6830' MD - 6860' MD)

6080'- 6710': SILTY SH: 90%: LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, TRC FREE CALC, IMBD PYR, TRC FREE BENT, SILTY, SANDY, FREE SH, INTGR POR, NO STN, NO FLOR, NO O FLOR, SLOW LZV CUT, YLW RNG

6710'- 6740': SILTY SH: 80%: LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, TRC FREE CALC, IMBD PYR, TRC FREE BENT, SILTY, SANDY, FREE SH, INTGR POR, NO STN, NO FLOR, NO O FLOR, SLOW LZV CUT, YLW RNG

6740'- 6770': SILTY SH: 60%: LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, TRC FREE CALC, IMBD PYR, FREE BENT, SILTY, SANDY, FREE SH, INTGR POR, NO STN, NO FLOR, NO O FLOR, SLOW LZV CUT, YLW RNG

SHARON SPRINGS

6772' MD 6727' TVD

6770'- 6800': SILTY SH: 80%: LTGY - MEDLTGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, TRC FREE CALC, IMBD PYR, FREE BENT, SILTY, SANDY, FREE SH, INTGR POR, NO STN, 5% FLOR, NO O FLOR, SLOW LZV CUT, YLW RNG

NIOBRARA A MARL

6801' MD 6755' TVD

6800'-6830': MRL: 70% (CaCO₃ 40%) MEDDRKGY - GYSHBLK, SOFT TO BRITTLE, FREE CALC, SCAT PYRC LAMN, IMBD CALC, FREE BENT, 5% MIN FLOR, SLOW LZV CUT, YLW RING

TOOH @ 12:05 AM ON 11/26/14 @ 6848' MD DUE TO MUD MOTOR FAILURE. TIH @ 9:15 AM ON 11/26/2014. RESUMED DRILLING @ 3:15 PM ON 11/26/2014 W/ BIT #3, 8.75", SMITH SD1611 MPX, (S/N) JJ6824 IN @ 6848' MD.

NIOBRARA B CHALK

6835' MD 6785' TVD

6830'-6860': CHK: 70% (CaCO₃ 53%) LTGY - MEDGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, FREE BENT, 30% FREE MARL, MOD GYSHBLK STN, 5% MIN FLOR, IMMED WHT STRM CUT, YLW RING

6860'-6890': CHK: 80% (CaCO₃ 51%) LTGY - MEDGY, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CALC, SCAT FREE PYR, TRC FREE BENT, 20% FREE MARL, MOD GYSHBLK STN, TRC MIN FLOR, IMMED WHT STRM CUT, YLW RING

CG 1638u

TG, C1-C4

7200

DEPTH 6848'

WT 10.80

VIS 42

PH 9.3

FIL 7.8

CL 900

CAL 40

H2O 89.2

OIL 0.0

LGS 23.93

GELS 4/13/20

TG 1272u

CHANGE IN
PIPE TALLY

PV 15

YP 11

CK 1/0

SOL 10.6

