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Customer Information

Operator: Noble Energy Inc
1625 Broadway
Suite 2200
Denver, Colorado 80202

Geologist: Renee Clackler
Noble Energy Inc.

Mud Logging Details

Logger: Daniel King &
Kaitlyn Bertram

Log Interval: 2500' MD to 6860' MD

Start Date: November 8, 2014

Release Date: November 16, 2014

Well Information

Well Name: Oscar Y10-72HN

Location: 10,3-2N-64W
2380' FSL, 823' FEL

County: Weld
State: Colorado

Drilling Rig: H&P 277

Total Depth: 14445' MD

TD Date: November 16, 2014

Formation: Niobrara B

KB Elevation: 4952'

GR Elevation: 4928'

API Number: 05-123-38046-0000

ROCK TYPES

Anhy
Bent
Cht
Clyst
Coal
Congl
Dol

Gyp
Igne
Lmst
Meta
Mrlst
Salt
Shale

Shcol
Chalk
Slst
Ss
Till
gw
lmywash

ogw
olmywash
oshly gw
shly gw
sdygw
hvyrcbsh
nosmpl

Lsdetrit
sltst
sdy sh

Logger On Shift	ROP (Ft/Hr) Gamma (API)	Drill Depth v. Time	Survey Data	Depth	Lithology	Lithology Percentages	Sample Photographs	Core	Porosity	Geological Description	TG (1-8) C1 (units) C2 (units) C3 (units) C4 (units)	Total Gas, C1-C4	
	ROP (Ft/Hr) Gamma (API)	2000 300		24						NOBLE ENERGY INC OSCAR Y10-72HN 10,3-2N-64W 2380' FSL, 823' FEL WELD CO., CO H&P 277 LOGGERS: DANIEL KING KAITLYN BERTRAM CALLED OUT BY COMPANY MAN ON 11/8/2014 @ 8:30 AM COMMENCED LOGGING @ 11:30 PM ON 11/8/2014 @ 2500' MD W/BIT #2,	-125	TG, C1-C4	1125
										CONNECTIONS ARE MARKED WITH RED TRIANGLES			
										GAS SCALE: -125 TO 1125 125 UNITS/DIVISION			
										DRILLING ON WATER BASED MUD			

8.75", SMITH SDI519 HPX, (S/N)
JJ9530 IN @ 1156' MD

PIERRE
BEFORE LOGGING DEPTH

DEPTH 1156'
WT 8.90
VIS 33
PH 8.9
FIL 7.6
CL 1600
CAL 80
H2O 97.4
OIL 0.1
LGS 1.81
GELS 1/2/3
PV 4
YP 2
CK 2/0
SOL 2.2

CG 10u

TG, C1-C4

CG 25u

CG 26u

WOB 15.7K
PP 3058
RPM 76
SPM 75/75

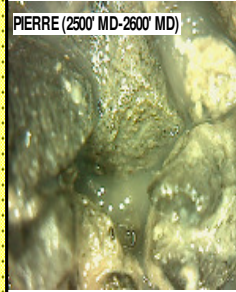
12:01 AM
11/9/2014
20 FT/24HRS
DAY 02

MD 2545 TVD 2542.25
JNC 6.64 AZ 15.76
VS 44.76

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

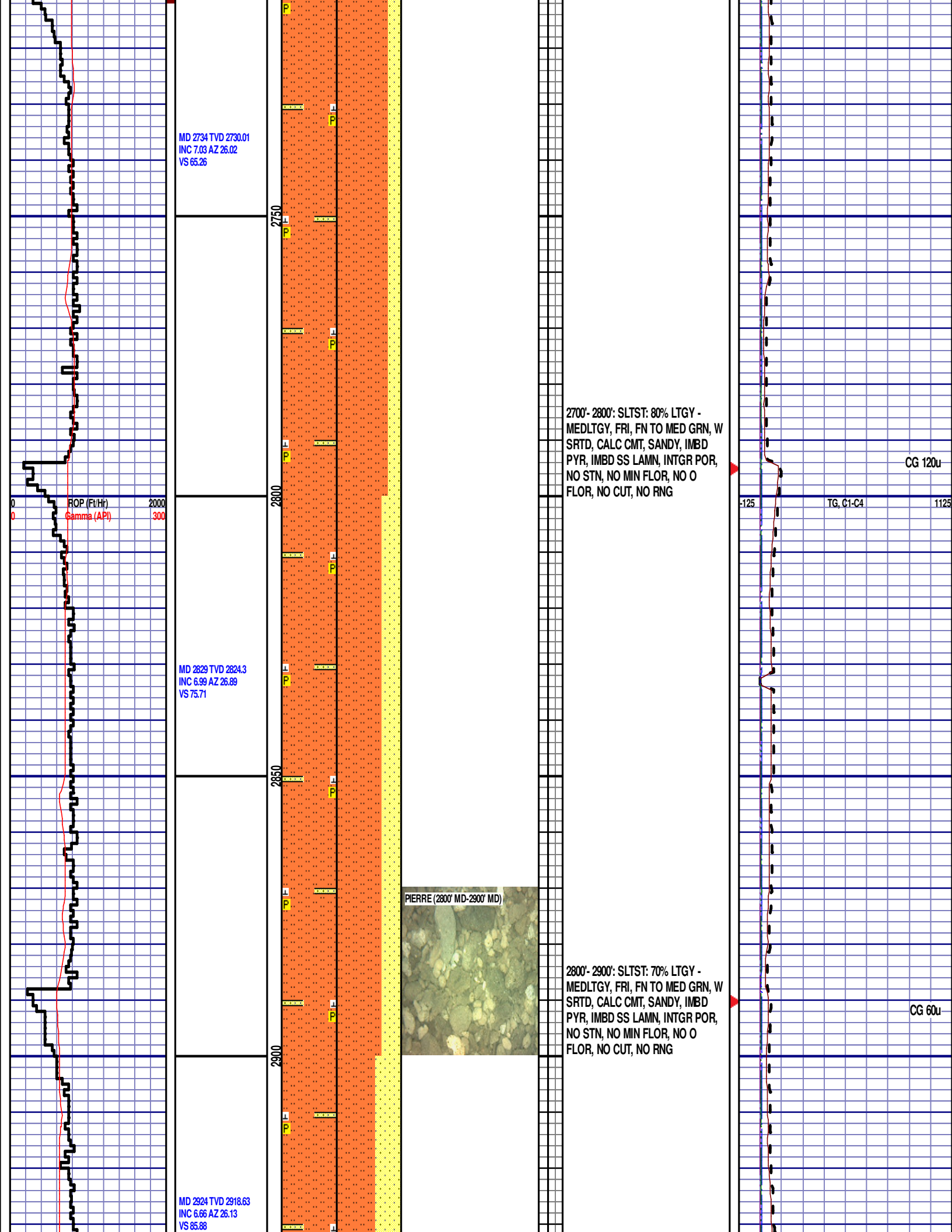
MD 2639 TVD 2635.65
JNC 6.3 AZ 16.28
VS 54.98

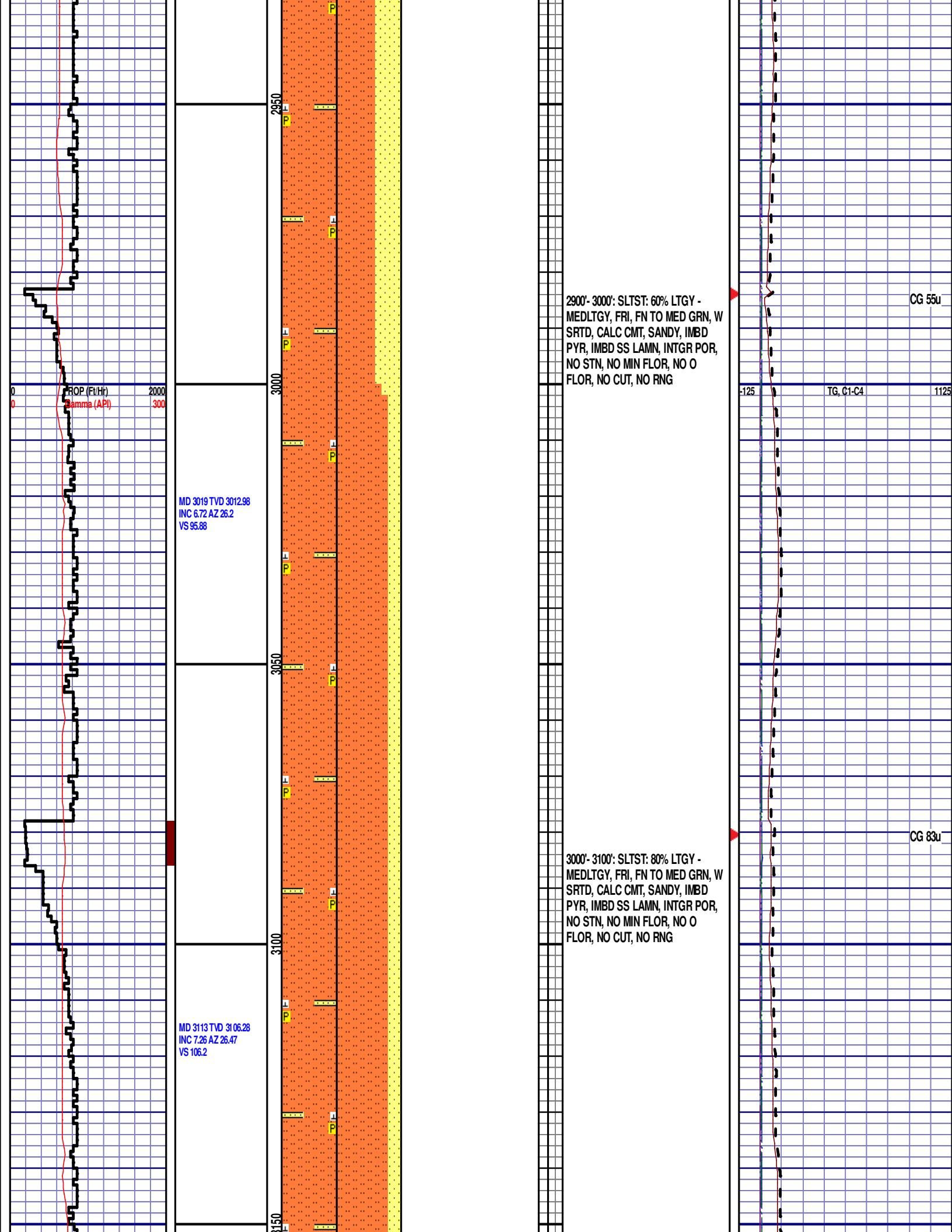
PIERRE (2500' MD-2600' MD)

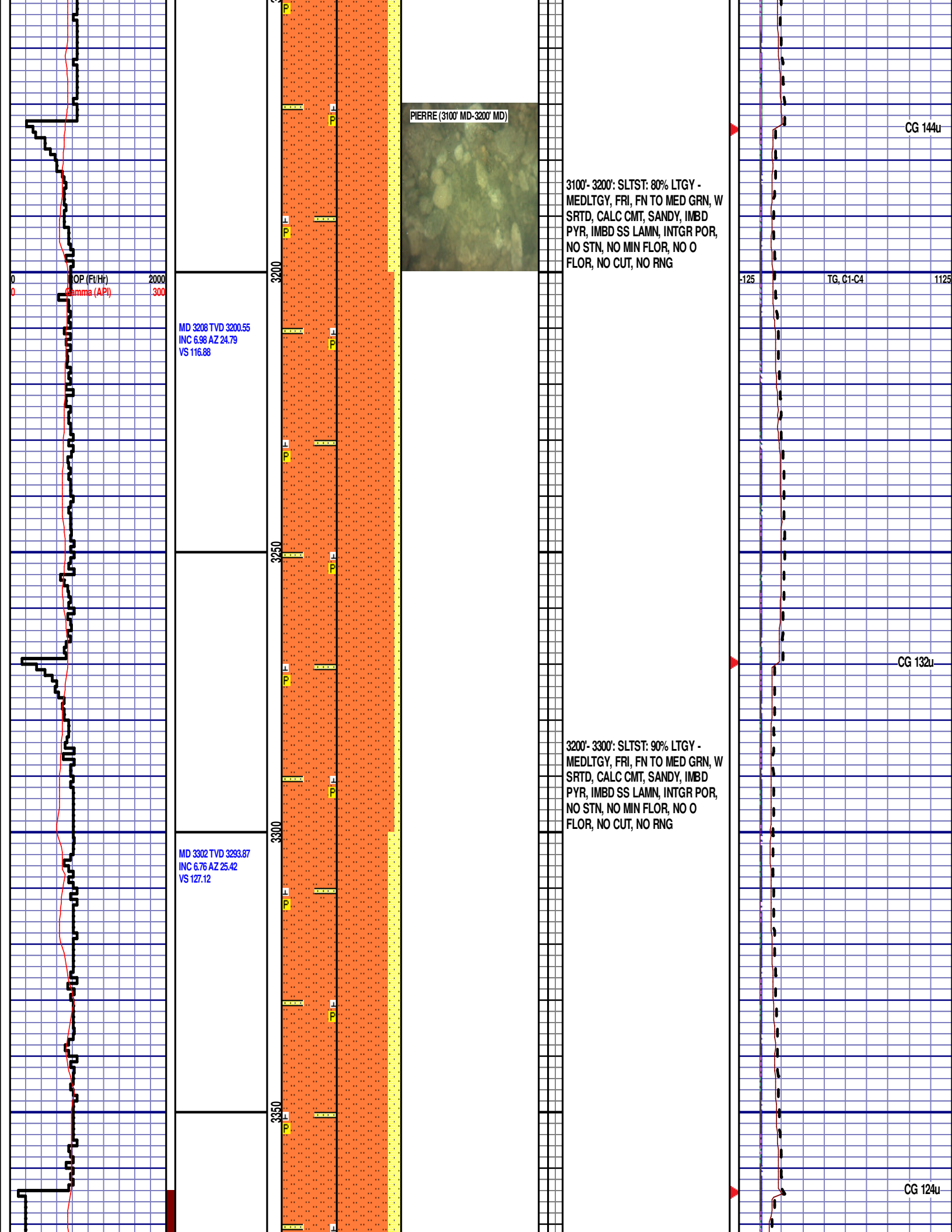


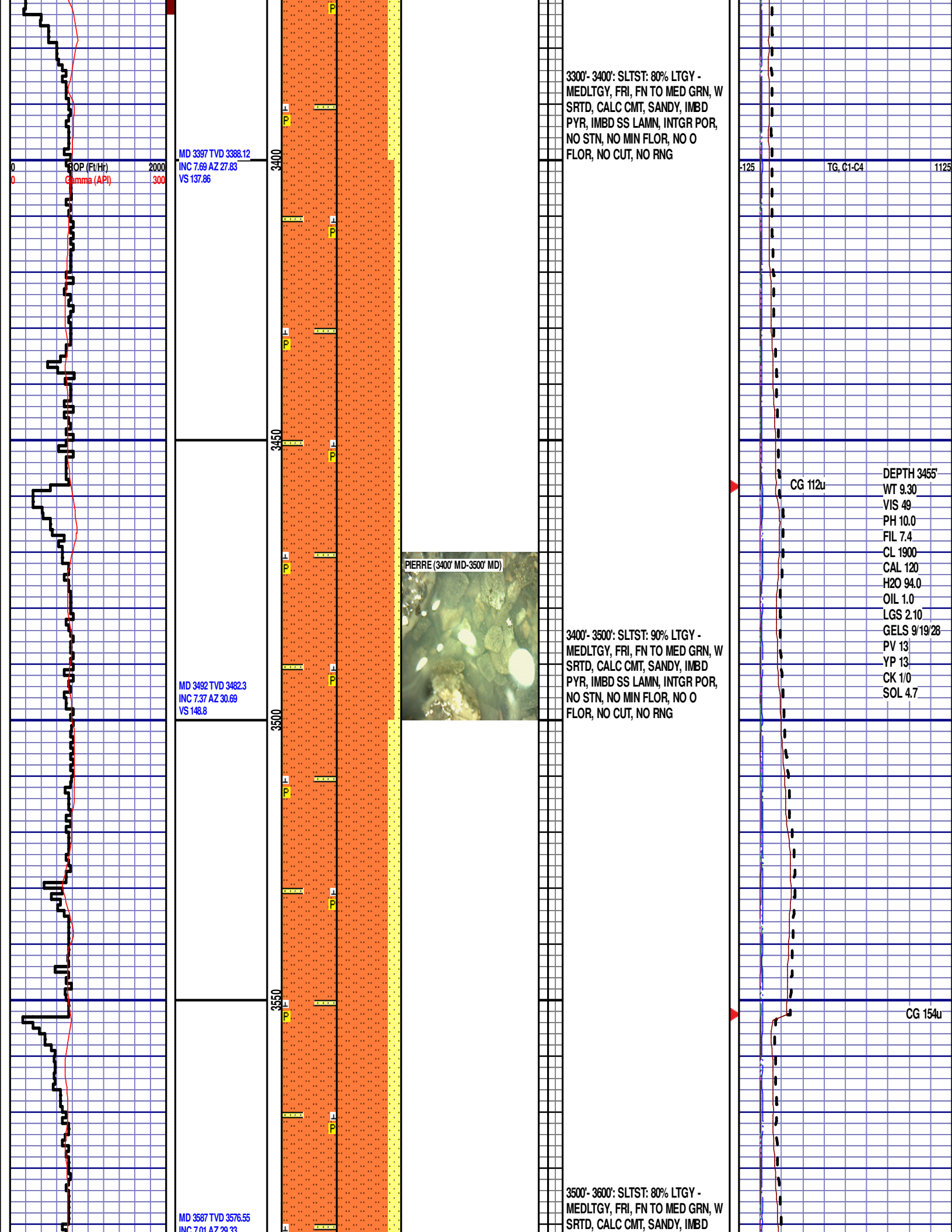
2500'- 2600': SLTST: 90% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

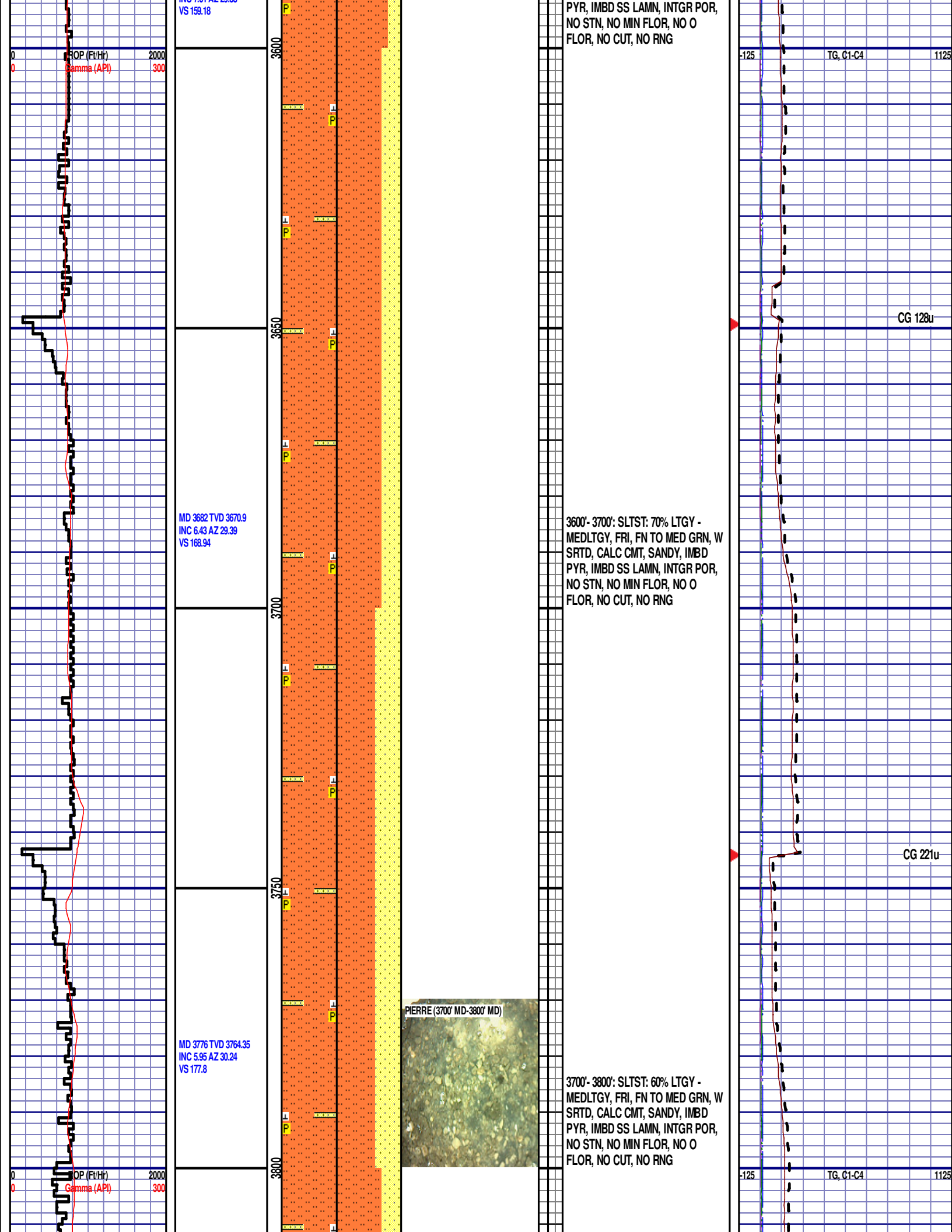
2600'- 2700': SLTST: 90% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD SS LAMN, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

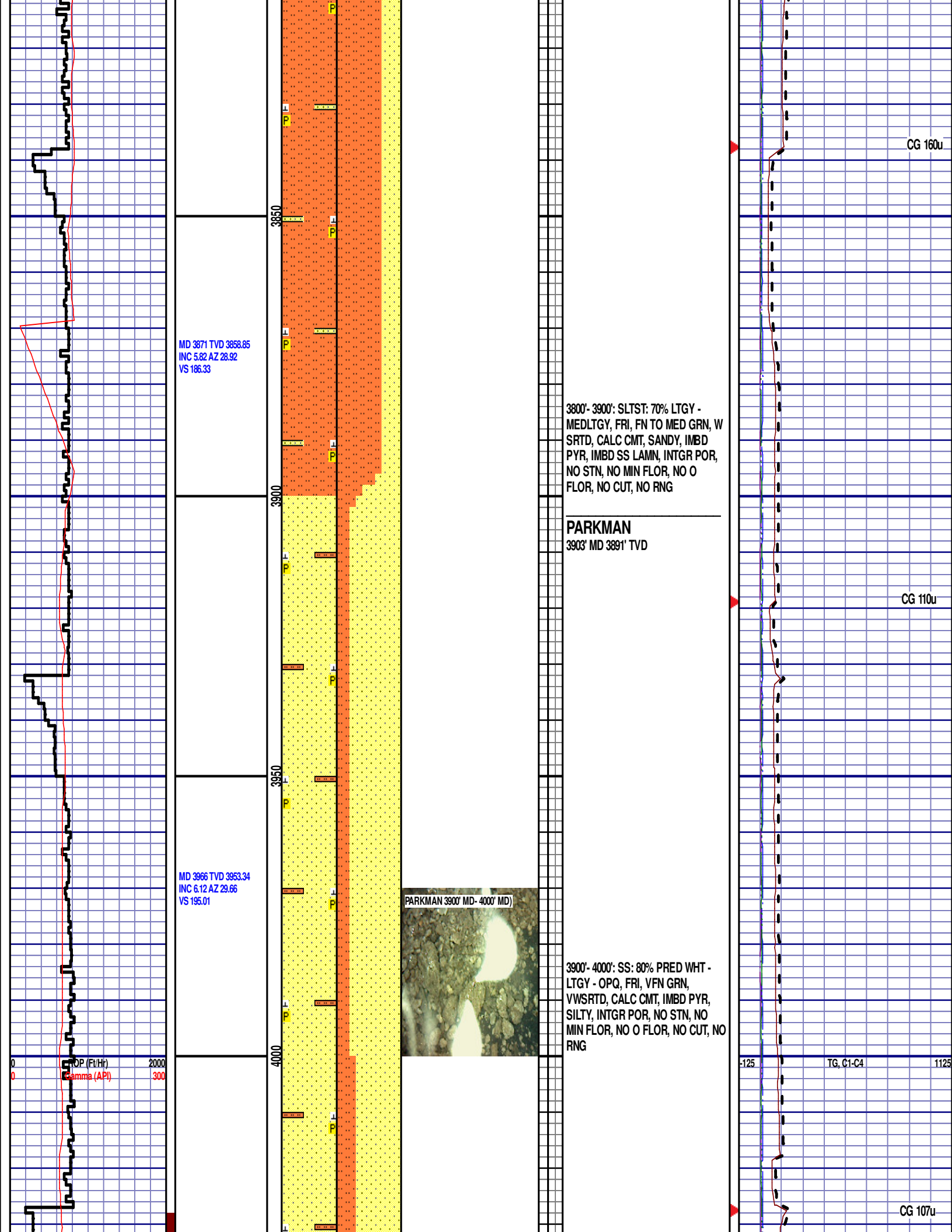


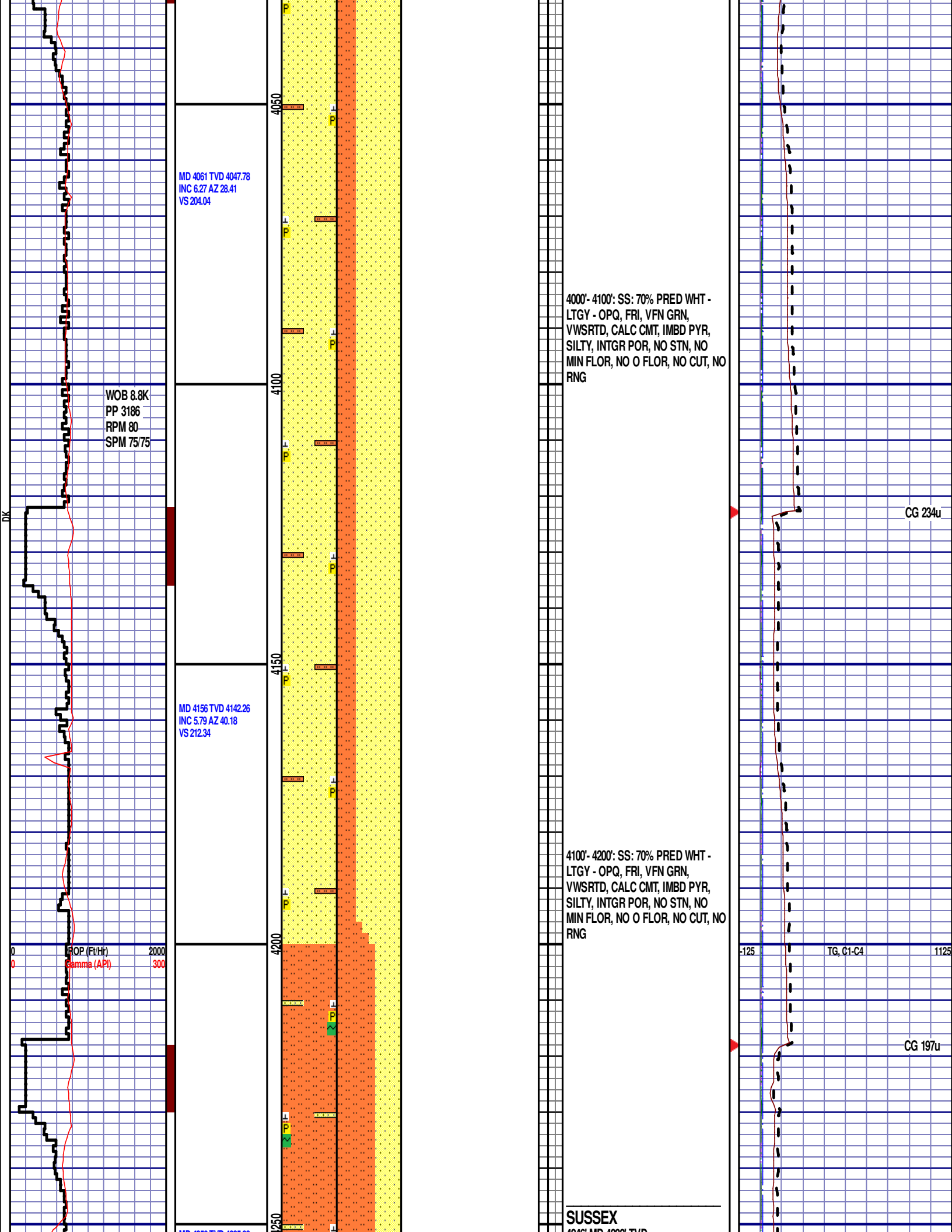










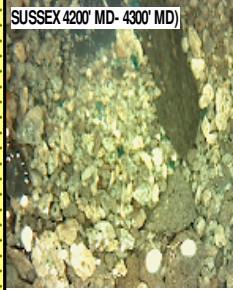


MD 4250 TVD 4235.88
INC 4.54 AZ 43.43
VS 218.75

MD 4345 TVD 4330.65
JNC 3.36 AZ 53.47
VS 223.2

MD 4439 TVD 4424.53
INC 2.51 AZ 34.12
VS 226.59

SUSSEX 4200' MD- 4300' MD)



4200'- 4300': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD GLAUC, IMBD SS LAMN,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

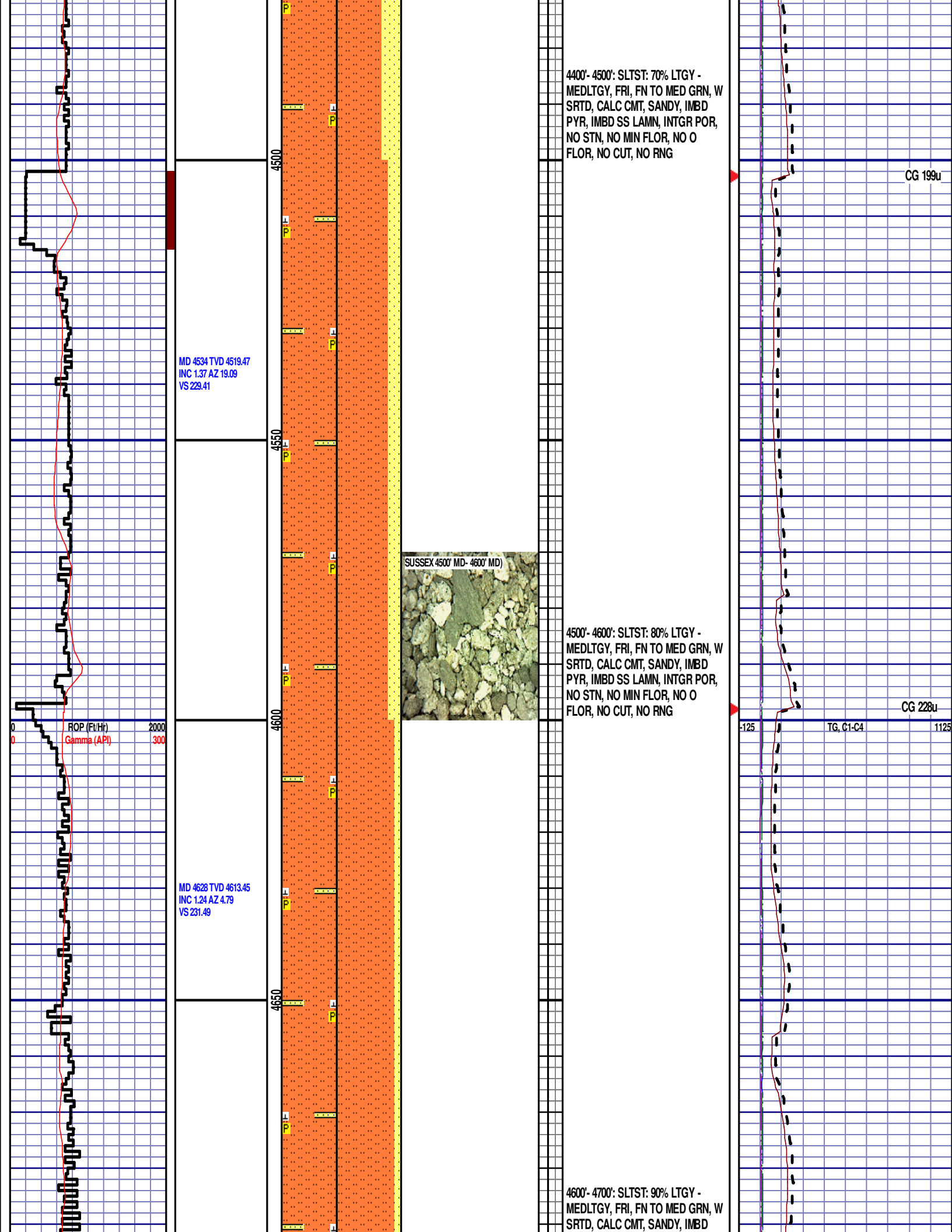
4300'- 4400': SLTST: 60% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD GLAUC, IMBD SS LAMN,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

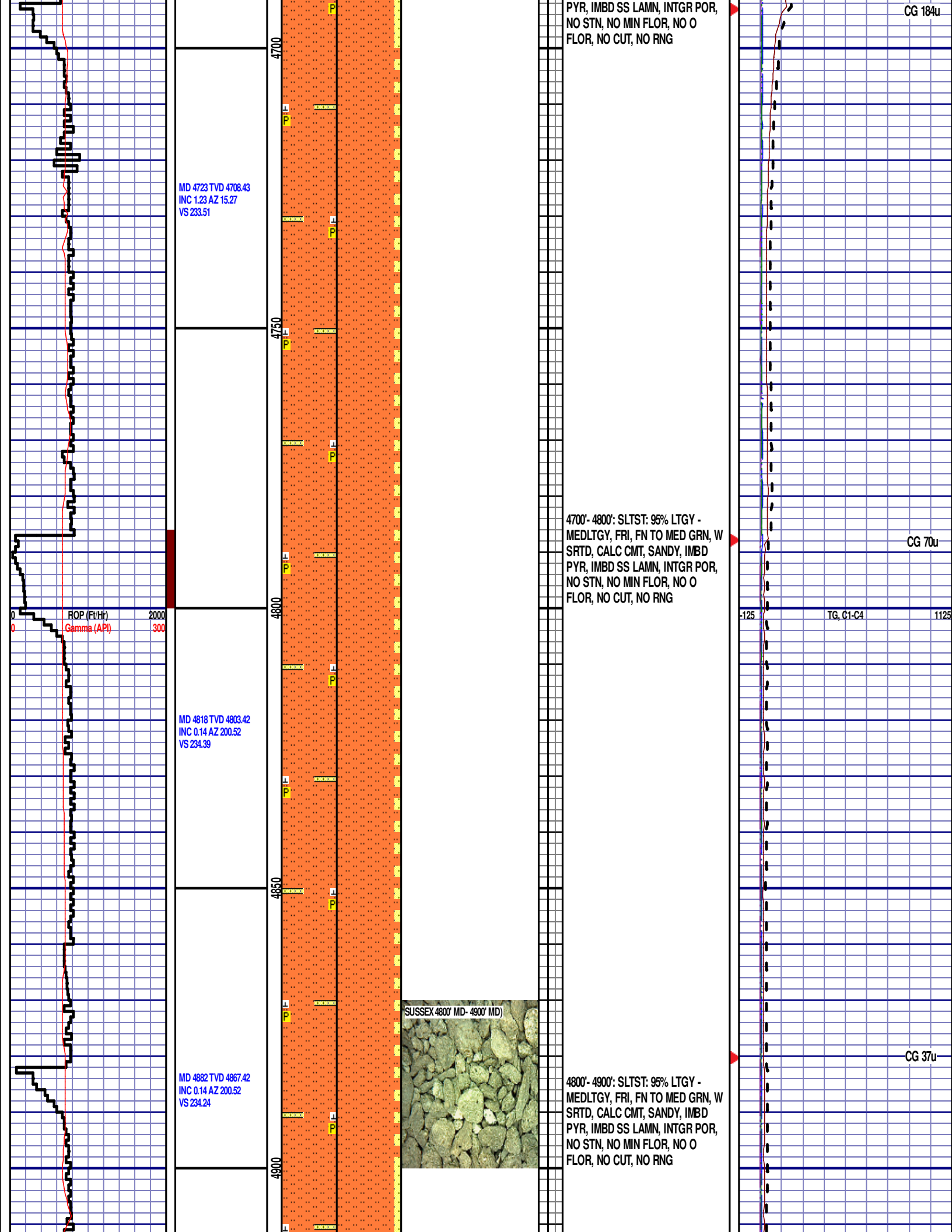
CG 159u

CG 172u

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

-125 TG, C1-C4 1125





MD 4812 TVD 4897.42
INC 0.33 AZ 179.79
VS 234.12

MD 5007 TVD 4992.41
INC 0.73 AZ 198.55
VS 233.28

MD 5102 TVD 5087.4
INC 0.91 AZ 216.32
VS 232.09

4950

5000

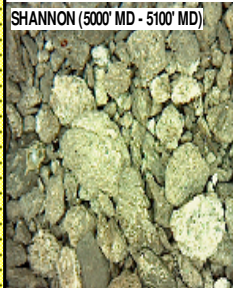
5050

5100

4900'- 5000': 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

SHANNON
5054' MD 5039' TVD

SHANNON (5000' MD - 5100' MD)

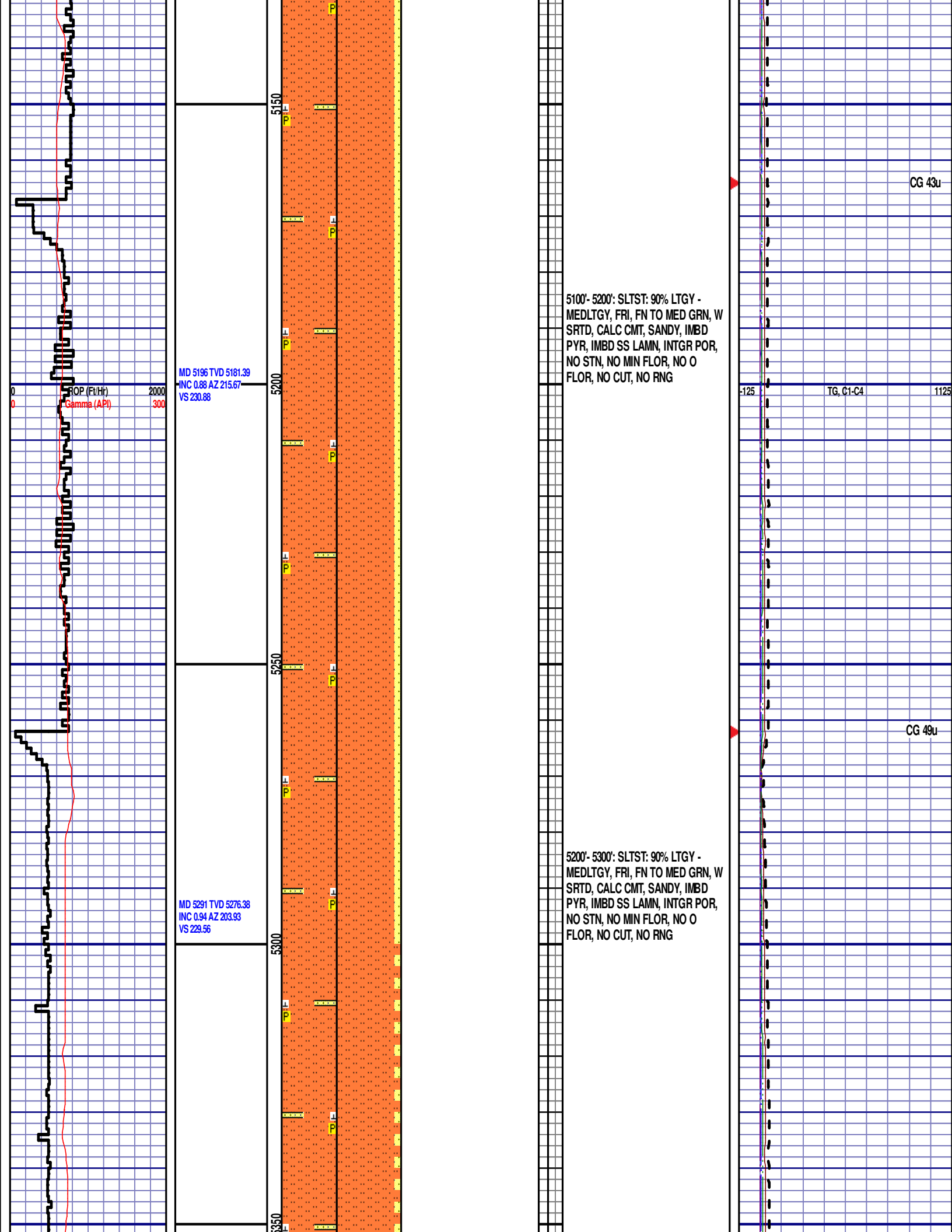


5000'- 5100': SLTST: 80% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD
PYR, IMBD GLAUC, IMBD SS LAMN,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

CG 35u

TG, C1-C4

CG 39u



WOB 0.8K
PP 2041
RPM 76
SPM 0/113

MD 5386 TVD 5371.37
INC 1 AZ 199
VS 228.06

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

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, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

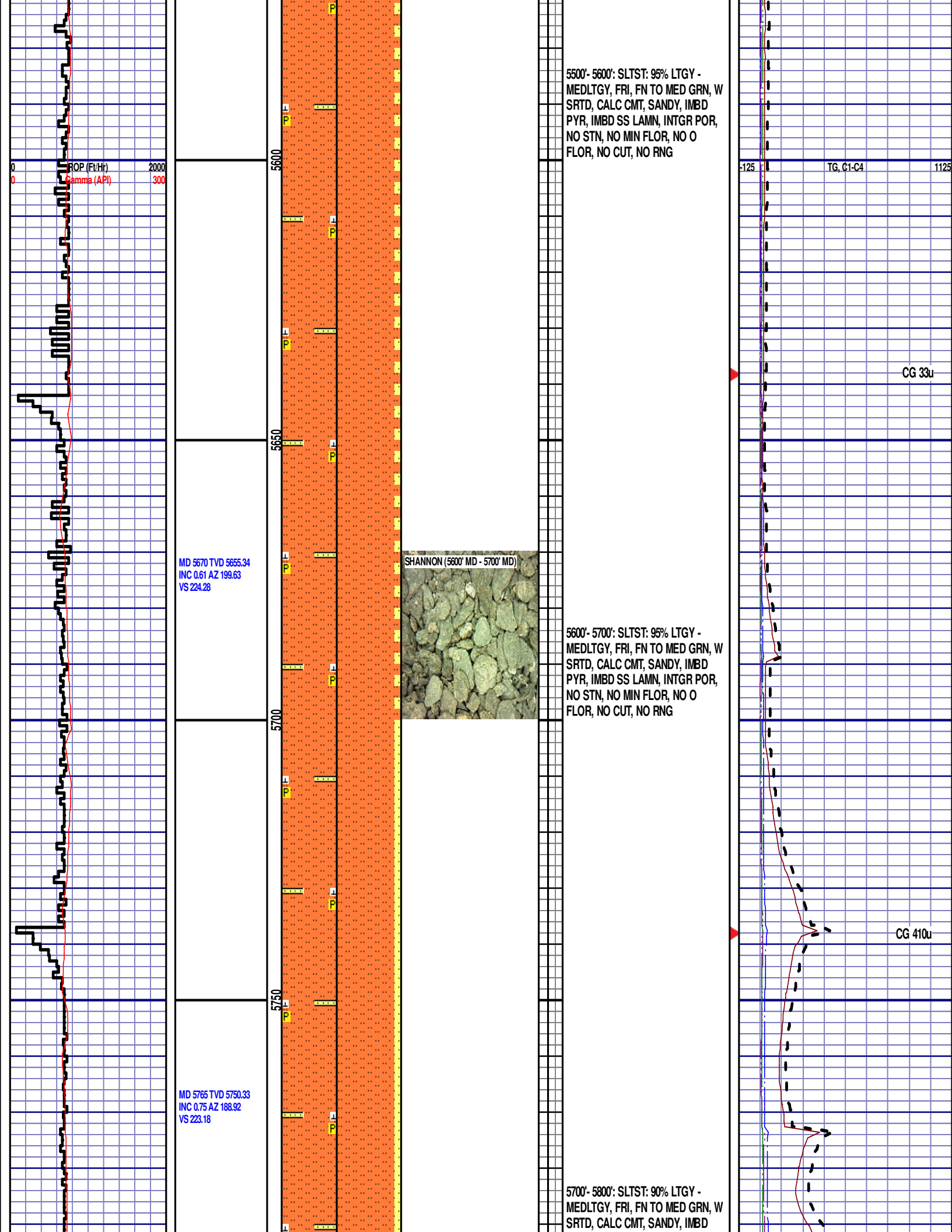
-125 TG, C1-C4 1125

CG 62u

MD 5481 TVD 5466.36
INC 0.83 AZ 177.36
VS 226.59

5400'- 5500': 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 58u



5500'- 5600': SLTST: 95% 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

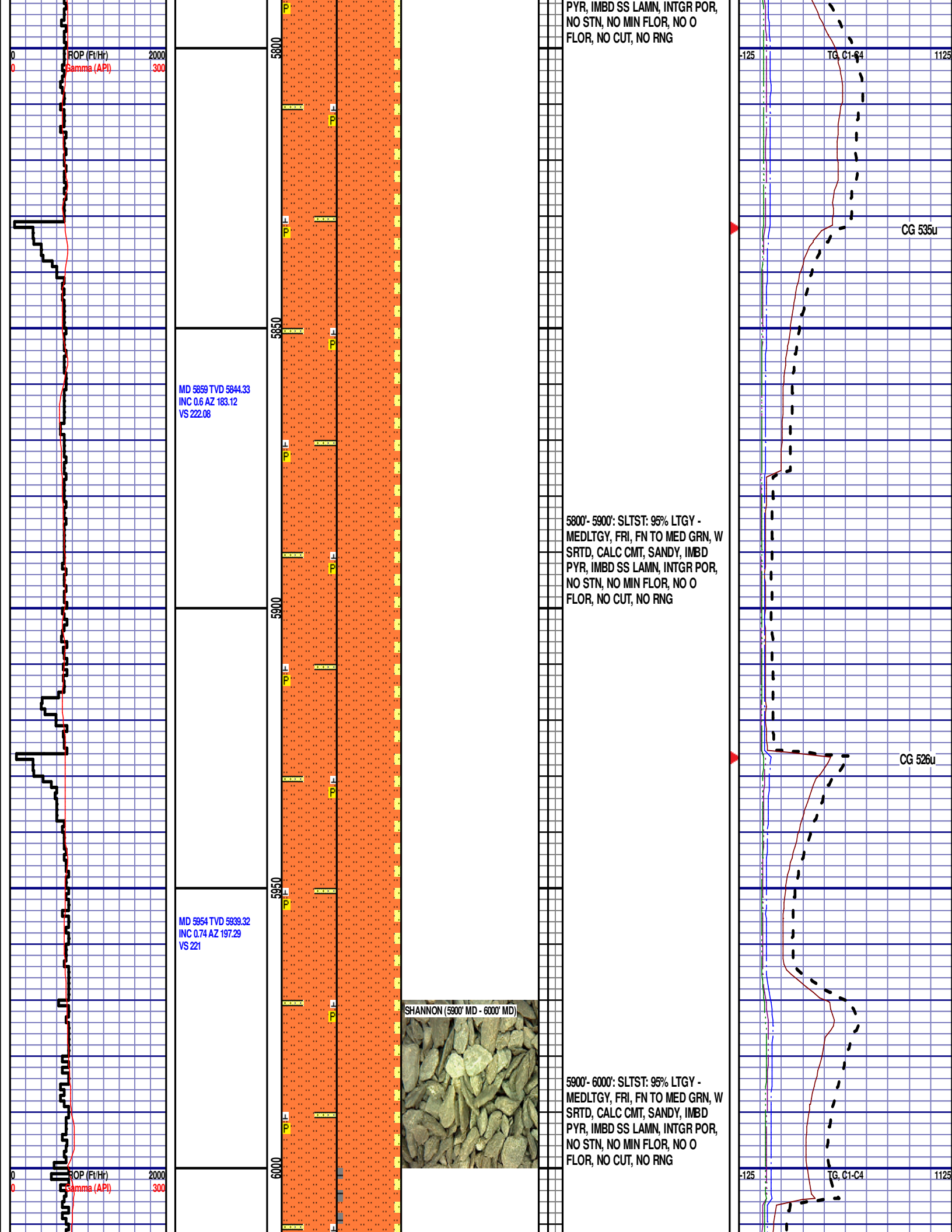
MD 5670 TVD 5655.34
INC 0.61 AZ 199.63
VS 224.28

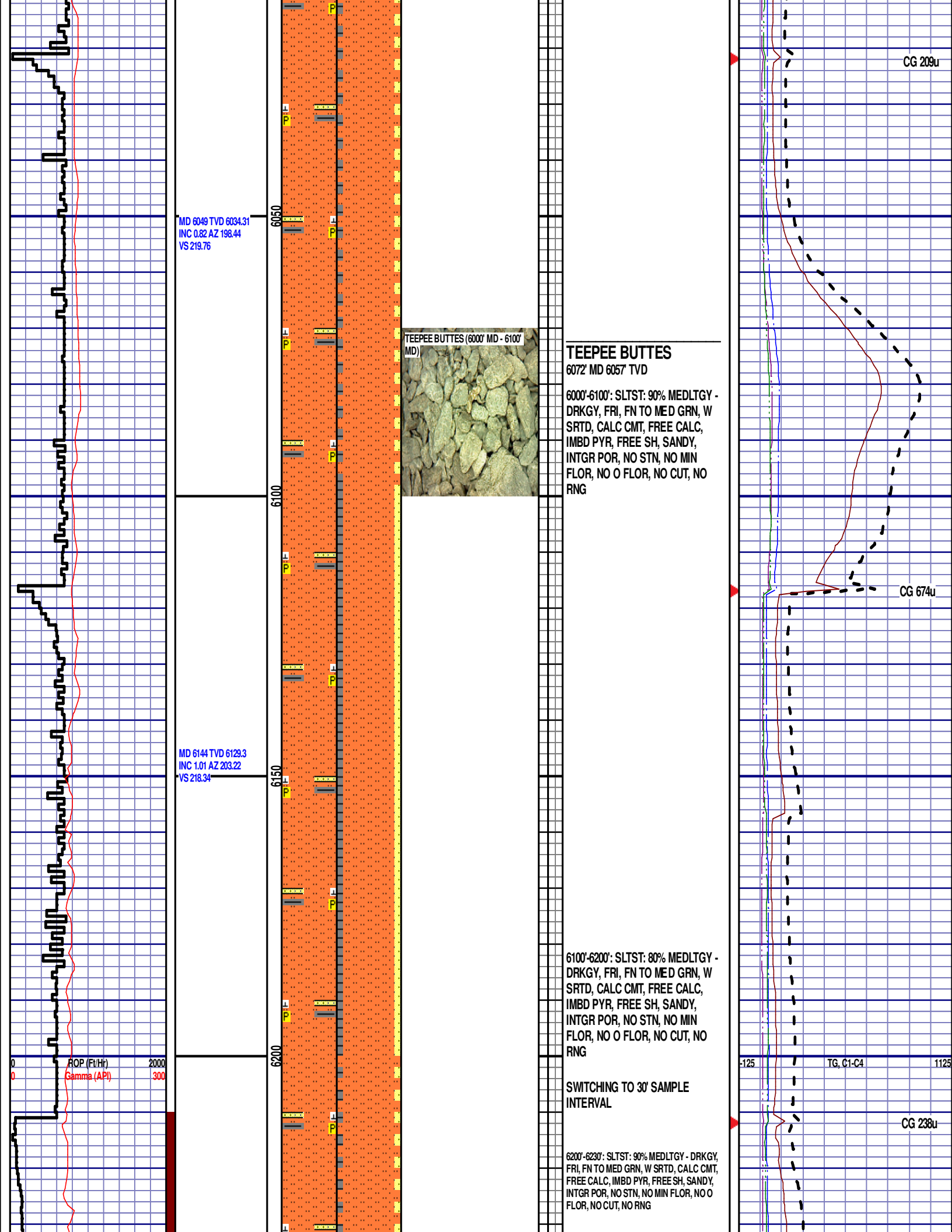
SHANNON (5600' MD - 5700' MD)

5600'- 5700': SLTST: 95% 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

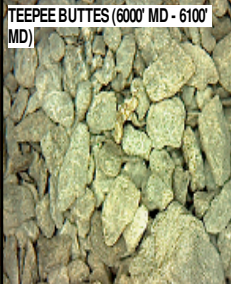
MD 5765 TVD 5750.33
INC 0.75 AZ 188.92
VS 223.18

5700'- 5800': SLTST: 90% LTGY -
MEDLTGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, SANDY, IMBD





MD 6049 TVD 6034.31
INC 0.82 AZ 198.44
VS 219.76



TEEPEE BUTTES

6072' MD 6057' TVD

6000'-6100': SLTST: 90% MEDLTGY - DRKGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, FREE CALC, IMBD PYR, FREE SH, SANDY, INTGR POR, NO STN, NO MIN FLOR, NO O FLOR, NO CUT, NO RNG

MD 6144 TVD 6129.3
INC 1.01 AZ 203.22
VS 218.34

6100'-6200': SLTST: 80% MEDLTGY - DRKGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, FREE CALC, IMBD PYR, FREE SH, SANDY, INTGR POR, NO STN, NO MIN FLOR, NO O FLOR, NO CUT, NO RNG

SWITCHING TO 30' SAMPLE INTERVAL

6200'-6230': SLTST: 90% MEDLTGY - DRKGY, FRI, FN TO MED GRN, W SRTD, CALC CMT, FREE CALC, IMBD PYR, FREE SH, SANDY, INTGR POR, NO STN, NO MIN FLOR, NO O FLOR, NO CUT, NO RNG

CG 209u

CG 674u

CG 238u

TG, C1-C4

MD 6238 TVD 6223.2
INC 4.96 AZ 348.47
VS 221.55

6230'-6260': SLTST: 90% MEDLTGY -
DRKGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, SANDY,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

6260'-6290': SLTST: 85% MEDLTGY -
DRKGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, SANDY,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

6290'-6320': SLTST: 80% MEDLTGY -
DRKGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, SANDY,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

TEEPEE BUTTES (6320' MD - 6350'
MD)



6320'-6350': SLTST: 85% MEDLTGY -
DRKGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, SANDY,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

6350'-6380': SLTST: 80% MEDLTGY -
DRKGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, SANDY,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

6380'-6410': SLTST: 80% MEDLTGY -
DRKGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, SANDY,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

6410'-6440': SLTST: 80% MEDLTGY -
DRKGY, FRI, FN TO MED GRN, W
SRTD, CALC CMT, FREE CALC,
IMBD PYR, FREE SH, SANDY,
INTGR POR, NO STN, NO MIN
FLOR, NO O FLOR, NO CUT, NO
RNG

MD 6333 TVD 6316.75
INC 14.35 AZ 348.13
VS 237.13

MD 6428 TVD 6407.26
INC 20.81 AZ 352.9
VS 266.41

ROP (Ft/Hr)
Gamma (API)

2000
300

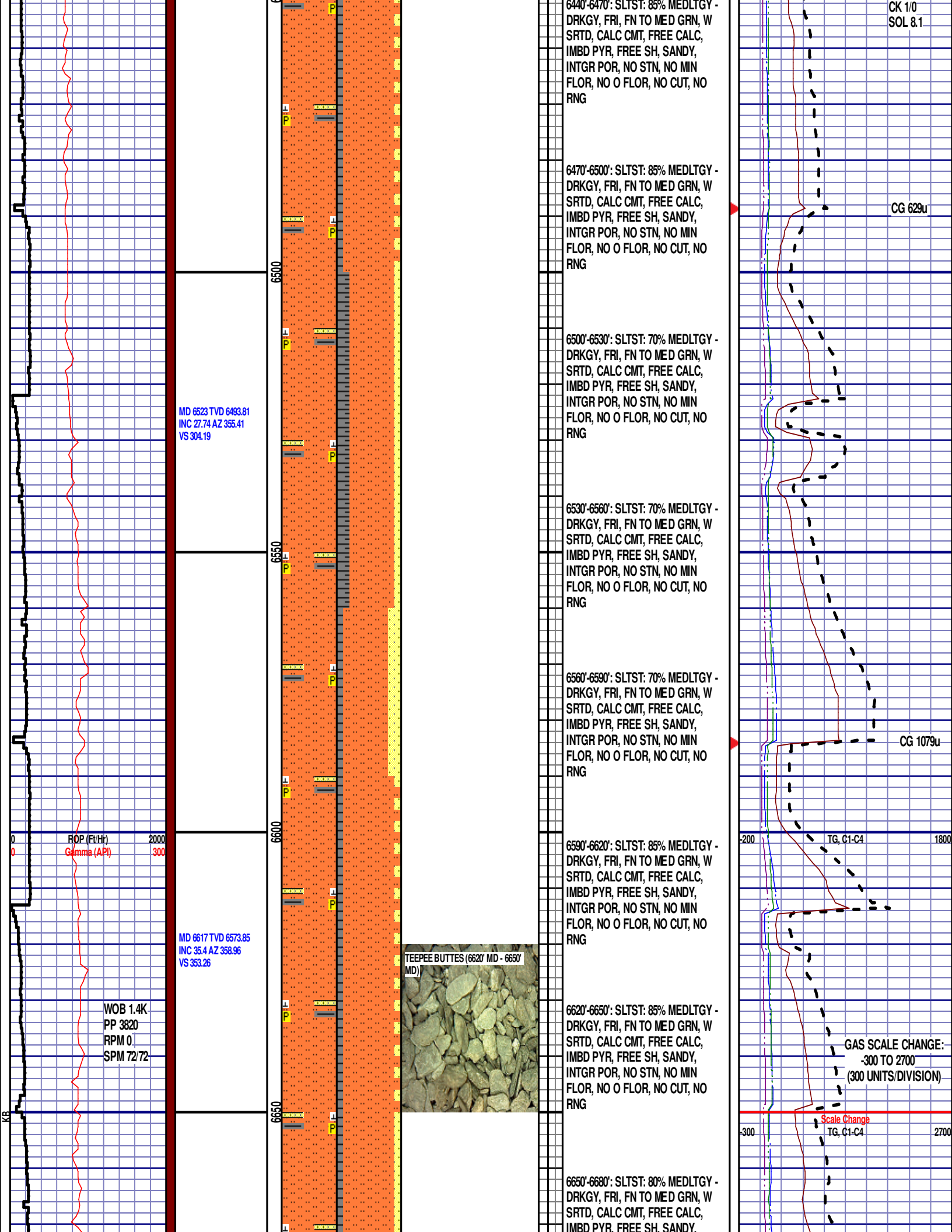
CG 619u

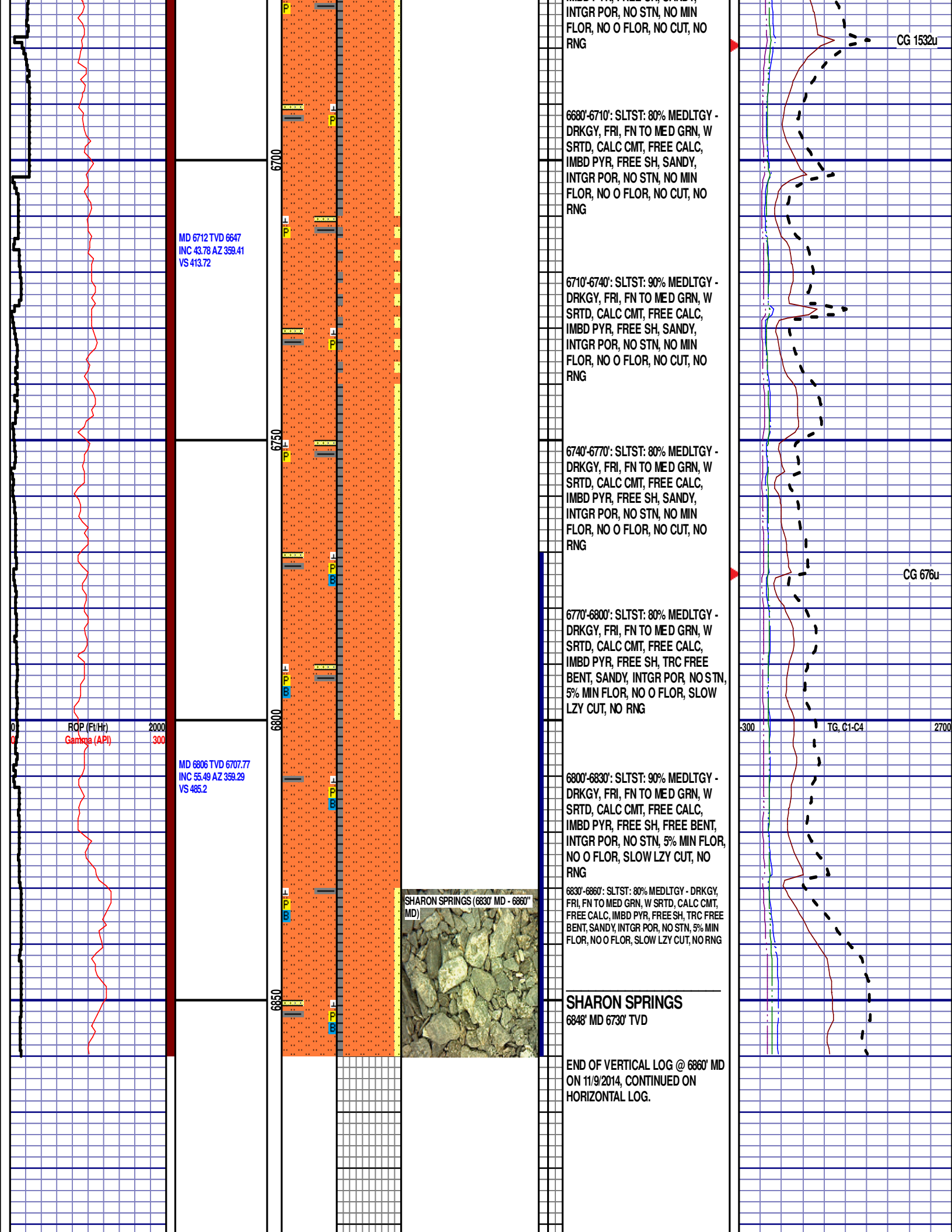
Scale Change
TG, C1-C4

GAS SCALE CHANGE:
-200 TO 1800
(200 UNITS/DIVISION)

CG 619u

DEPTH 6417'
WT 10.00
VIS 46
PH 9.7
FIL 6.8
CL 2100
CAL 140
H2O 90.6
OIL 1.0
LGS 33.87
GELS 5/19/0
PV 13
YP 13





[illegible]