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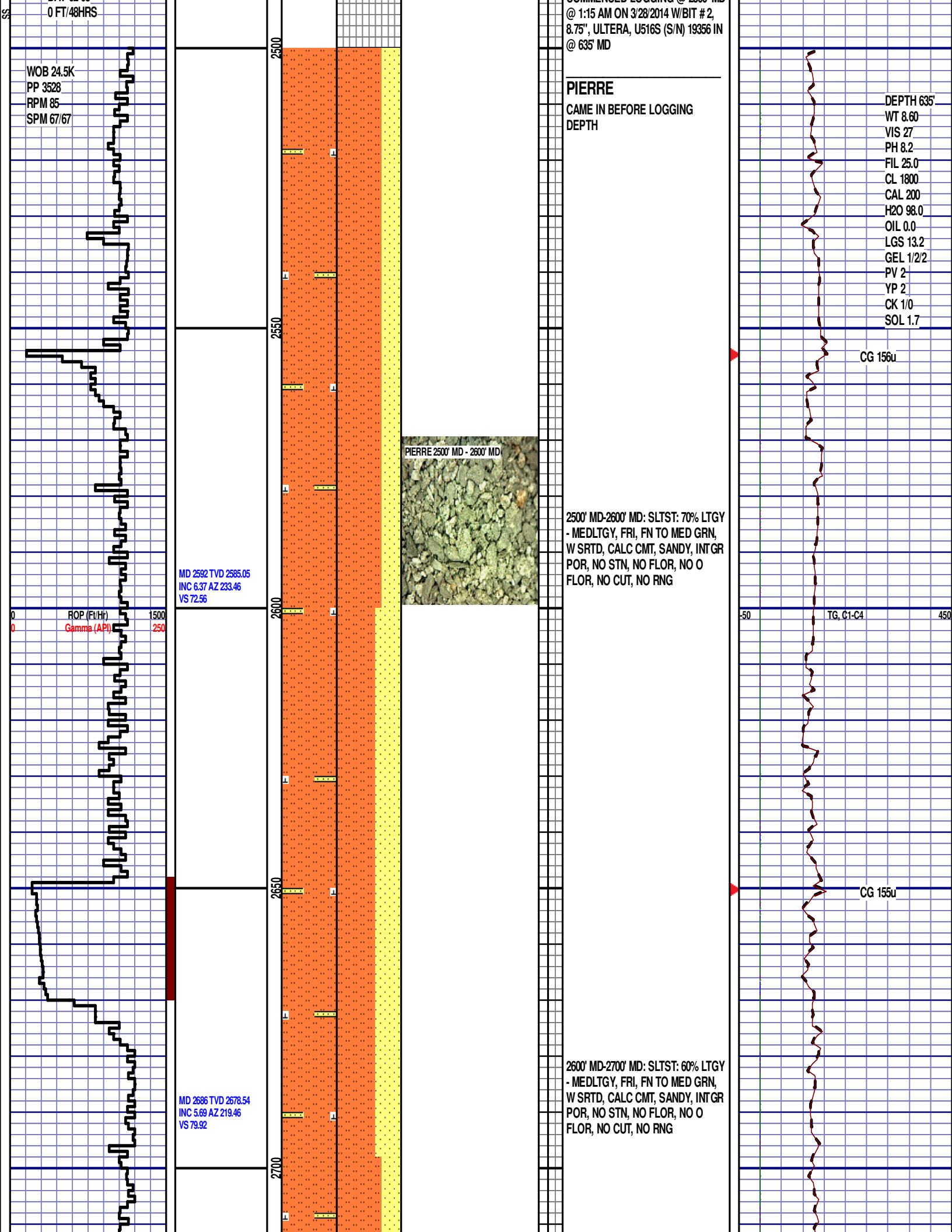
WWW.HZMUD.COM/25

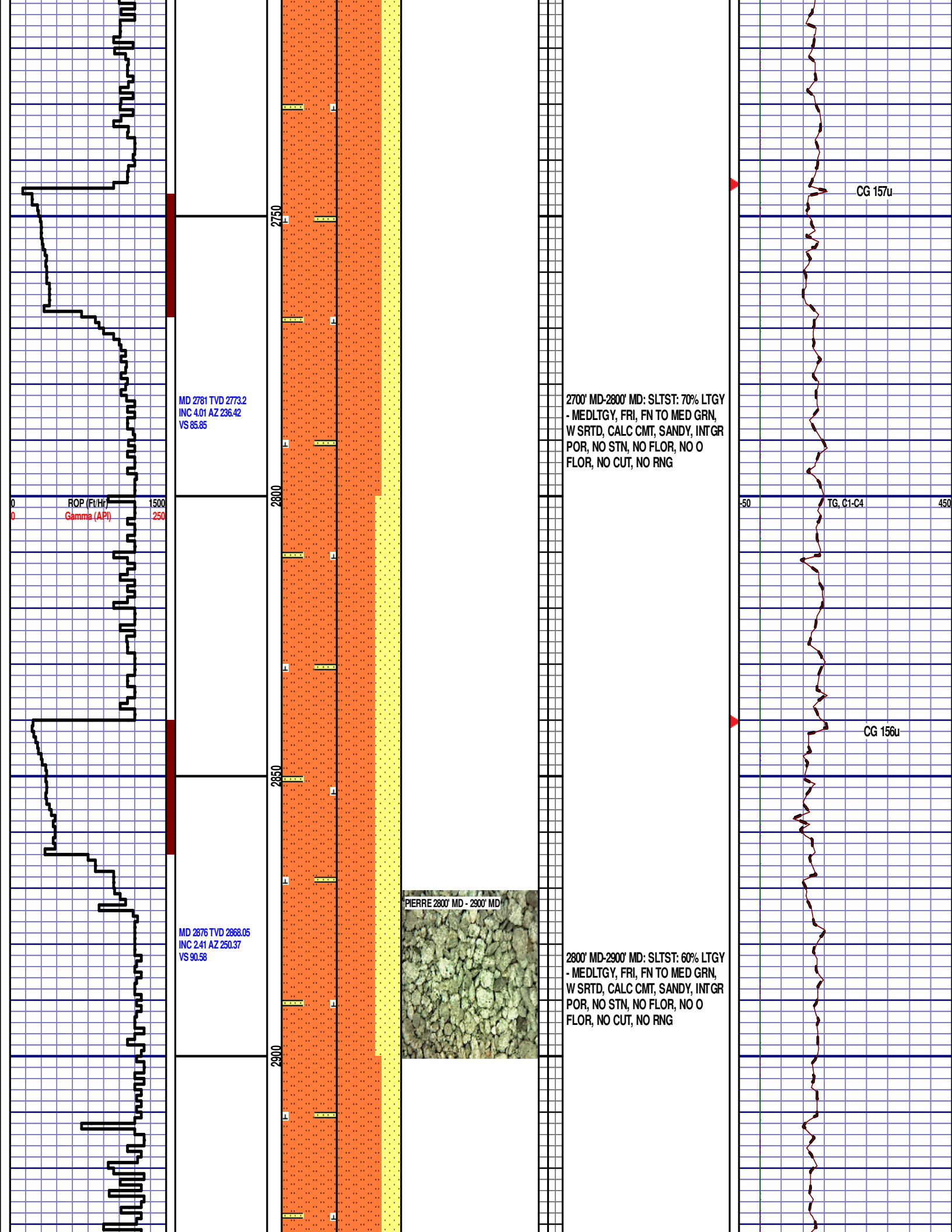
Customer Information	Well Information
<p>Operator: Noble Energy Inc 1625 Broadway Suite 2200 Denver, Colorado 80202</p> <p>Geologist: Holly Duncan Noble Energy Inc.</p>	<p>Well Name: Wells Ranch State AE31-69HNC</p> <p>Location: 29-T6N-R62W 155' FSL, 65' FWL</p> <p>County: Weld State: Colorado</p>
Mud Logging Details	
<p>Logger: Tom Wacholz & Sam Stelzer</p> <p>Log Interval: 2500' MD to 6580' MD</p> <p>Start Date: March 26, 2014</p> <p>Release Date: April 11, 2014</p>	<p>Drilling Rig: H&P 343</p> <p>Total Depth: 15344' MD</p> <p>TD Date: April 6, 2014</p> <p>Formation: Niobrara C Chalk</p> <p>KB Elevation: 4769'</p> <p>GR Elevation: 4745'</p> <p>API Number: 05-123-38687-0000</p>

ROCK TYPES

shale Anhy Bent Brec Cht Clyst Coal	Congl Dol Gyp Igne Lmst Meta Mrlist	Salt Shale Shcol Shgy Sltst Ss Till	gw lmywash ogw olmywash oshly gw shly gw sdygw	hvycrbsh nosmpl Lsdetrst sltst sdy sh
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ROP (Ft/Hr) Gamma (API)	Drill Depth v. Time	Survey Data	Depth	Lithology	Lithology Percentages	Sample Photographs	Porosity	Geological Description	TG (1-8) C1 (units) C2 (units) C3 (units) C4 (units)	Total Gas, C1-C4
12:01AM 3/27-28/2014 DAY 02-03	ROP SCALE: 0 TO 1500 GAMMA SCALE: 0 TO 250 ORIGINAL DATA AS RECEIVED		24					NOBLE ENERGY INC WELLS RANCH STATE AE31-69HNC 29-T6N-R62W 155' FSL, 65' FWL WELD CO., CO H&P 343 LOGGERS: TOM WACHOLZ STELZER CALLED OUT BY COMPANY MAN ON 3/26/2014 COMMENCED LOGGING @ 2500' MD		





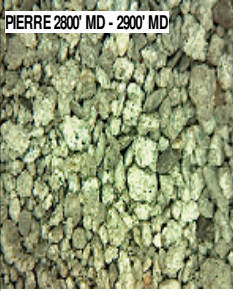
MD 2781 TVD 2773.2
INC 4.01 AZ 236.42
VS 85.85

ROP (Ft/Hr)
Gamma (API)

1500
250

MD 2876 TVD 2868.05
INC 2.41 AZ 250.37
VS 90.58

PIERRE 2800' MD - 2900' MD



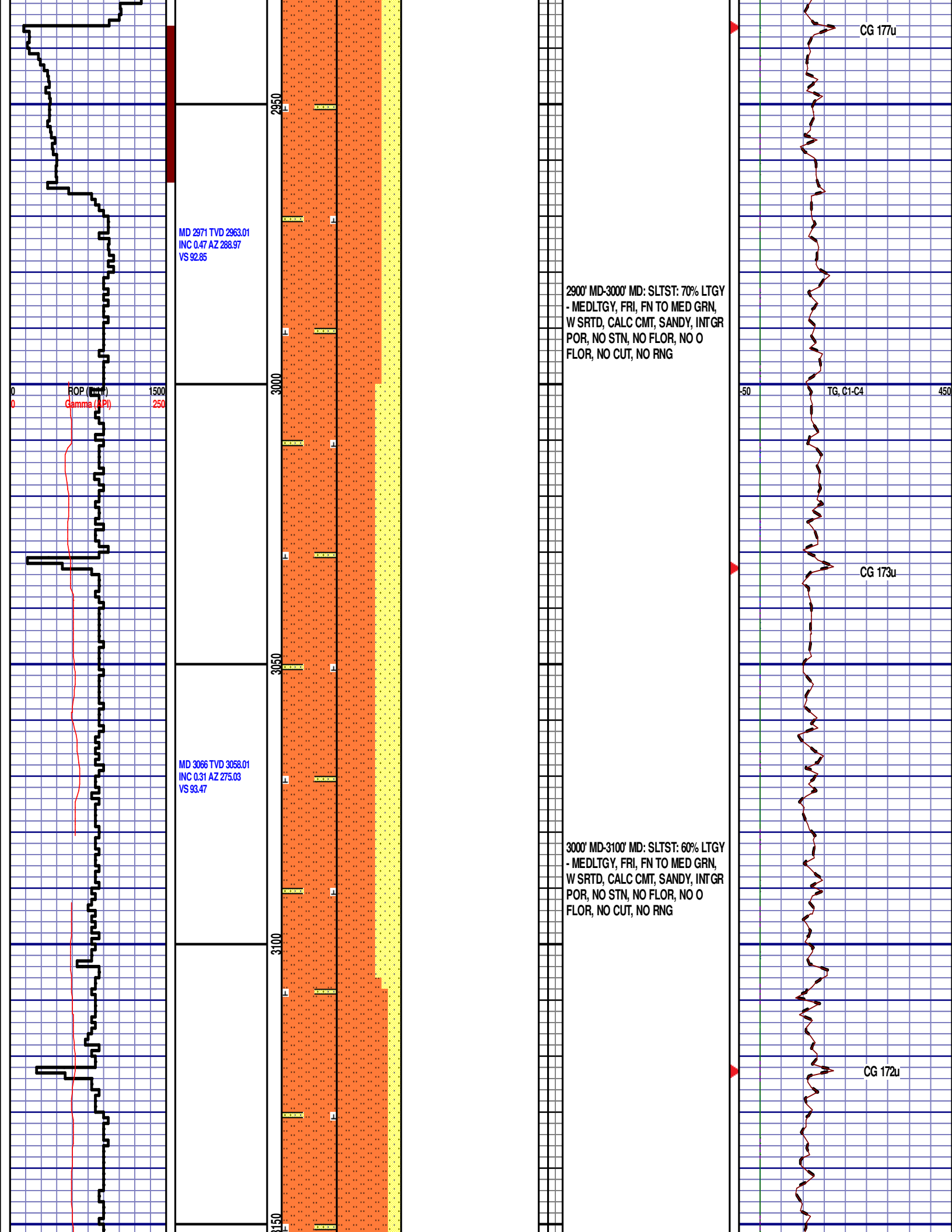
2700' MD-2800' MD: SLTST: 70% LTGY
- MEDLTGY, FRI, FN TO MED GRN,
W SRD, CALC CMT, SANDY, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG

2800' MD-2900' MD: SLTST: 60% LTGY
- MEDLTGY, FRI, FN TO MED GRN,
W SRD, CALC CMT, SANDY, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG

CG 157u

TG, C1-C4

CG 156u



MD 3160 TVD 3152.01
INC 0.22 AZ 346.29
VS 93.76

MD 3255 TVD 3247.01
INC 0.33 AZ 94.55
VS 93.52

MD 3350 TVD 3342.01
INC 0.62 AZ 286.43
VS 93.74

PIERRE 3100' MD - 3200' MD



3100' MD-3200' MD: 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

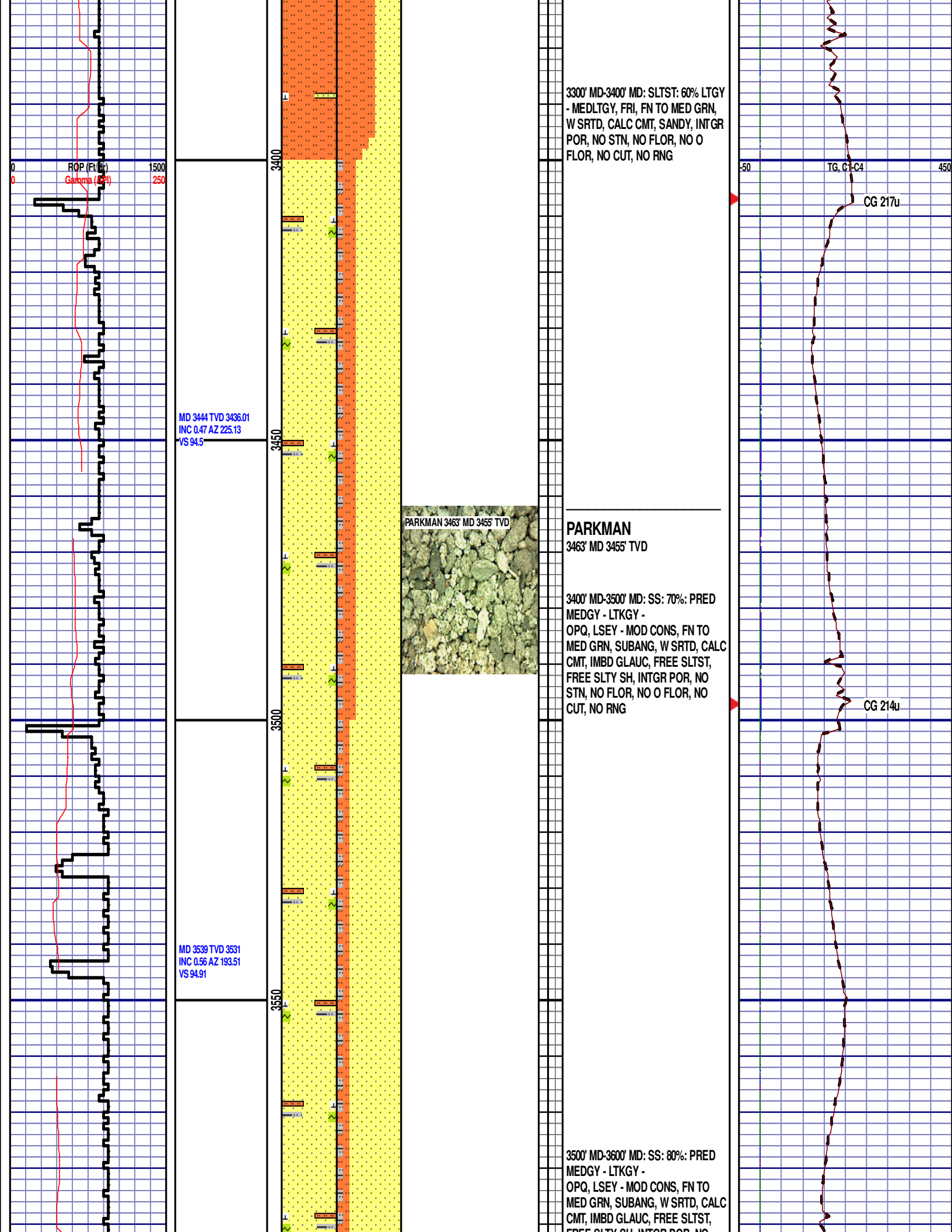
3200' MD-3300' MD: SLTST: 80% LTGY
- MEDLTGY, FRI, FN TO MED GRN,
W SRTD, CALC CMT, SANDY, INTGR
POR, NO STN, NO FLOR, NO O
FLOR, NO CUT, NO RNG

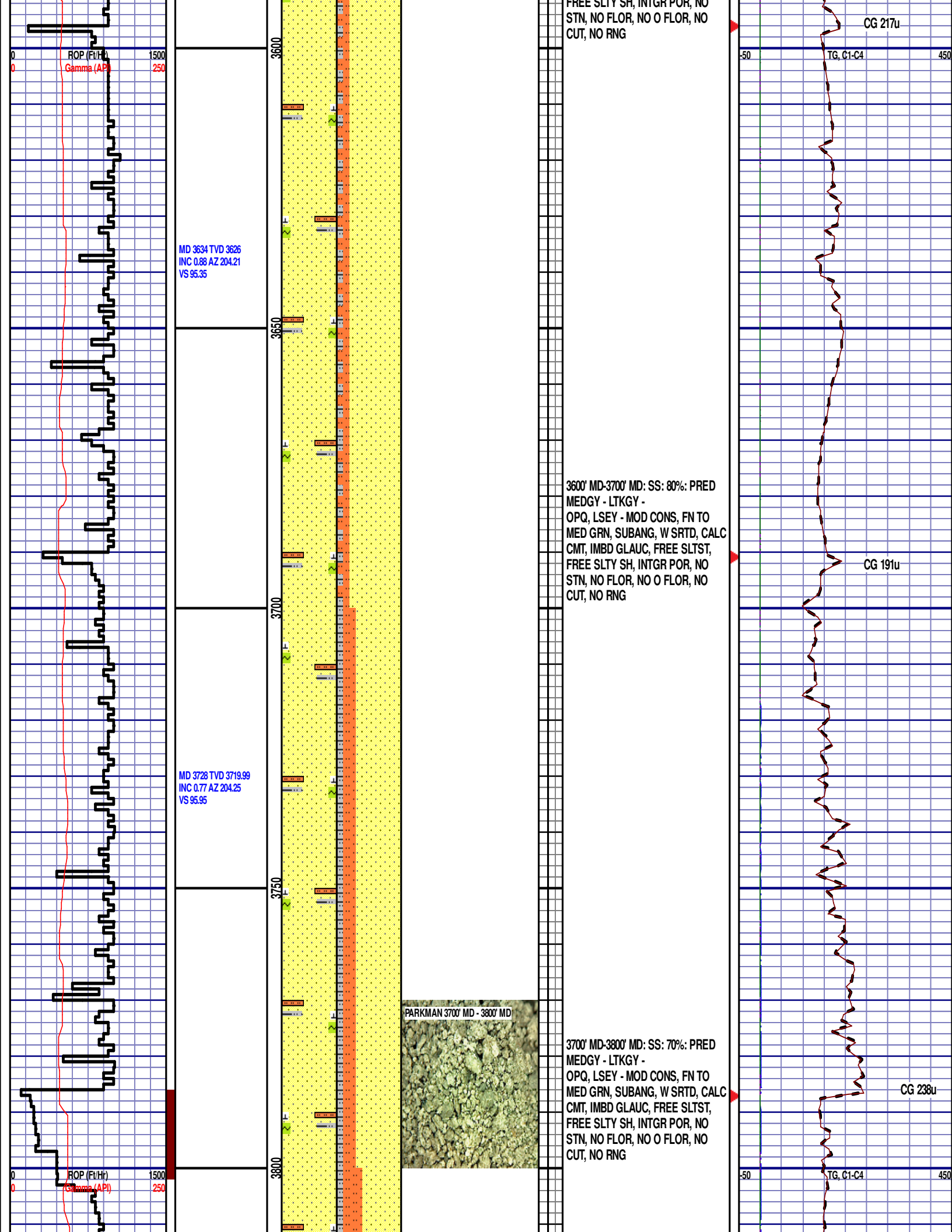
DEPTH 3151'
WT 8.70
VIS 30
PH 9.8
FIL 24.0
CL 1700
CAL 40
H2O 97.3
OIL 0.0
LGS 19.2
GEL 4/11/13
PV 4
YP 4
CK 1/0
SOL 2.4

CG, C1-C4

CG 178u

CG 206u





MD 3823 TVD 3814.98
INC 0.62 AZ 248.92
VS 96.71

MD 3918 TVD 3909.97
INC 0.72 AZ 235.34
VS 97.7

MD 4013 TVD 4004.97
INC 0.23 AZ 213.05
VS 98.31

3850
3900
3950
4000

3800' MD-3900' MD: SS: 60%: PRED
MEDGY - LTKGY -
OPQ, LSEY - MOD CONS, FN TO
MED GRN, SUBANG, W SRTD, CALC
CMT, IMBD GLAUC, FREE SLTST,
FREE SLTY SH, INTGR POR, NO
STN, NO FLOR, NO O FLOR, NO
CUT, NO RNG

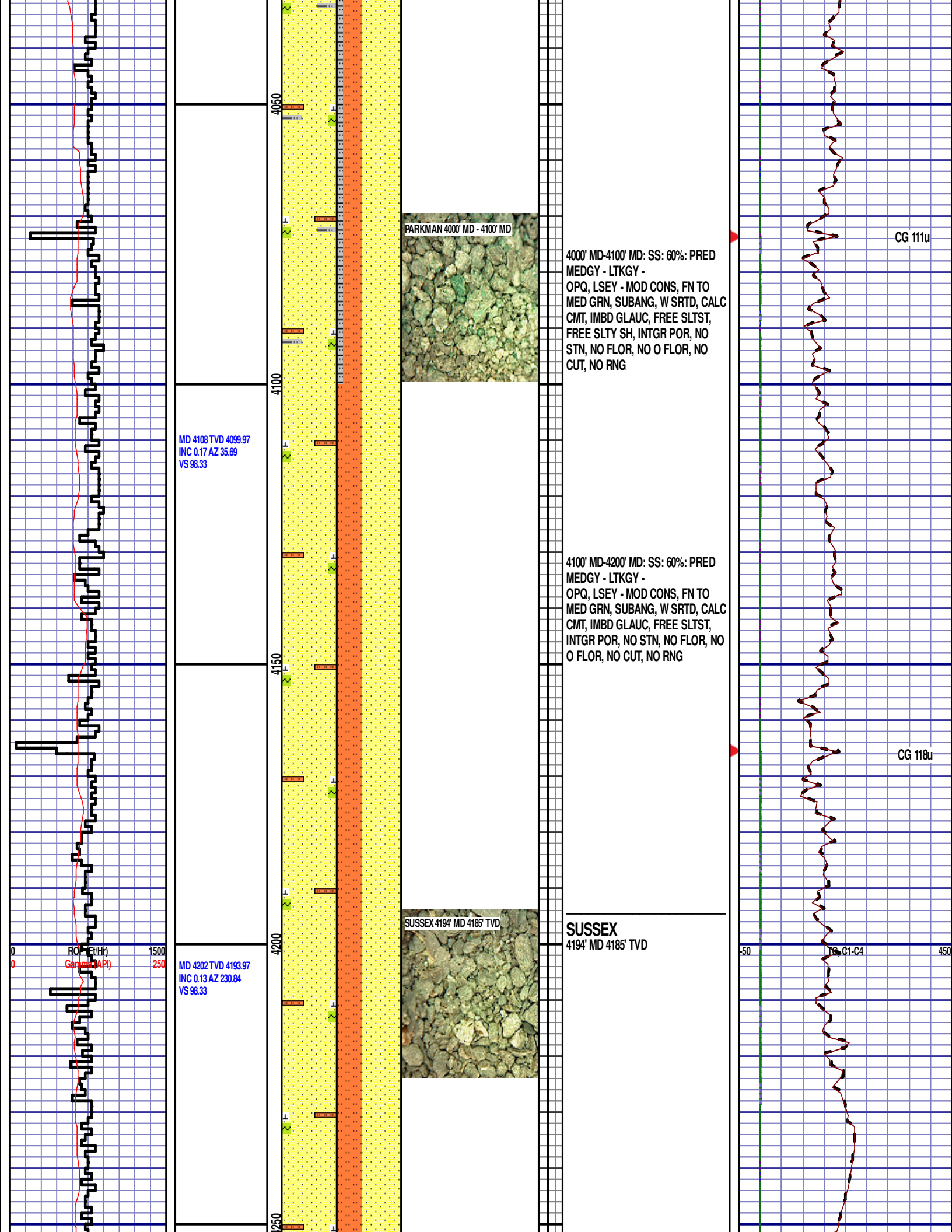
3900' MD-4000' MD: SS: 60%: PRED
MEDGY - LTKGY -
OPQ, LSEY - MOD CONS, FN TO
MED GRN, SUBANG, W SRTD, CALC
CMT, IMBD GLAUC, FREE SLTST,
FREE SLTY SH, INTGR POR, NO
STN, NO FLOR, NO O FLOR, NO
CUT, NO RNG

CG 200u

CG 102u

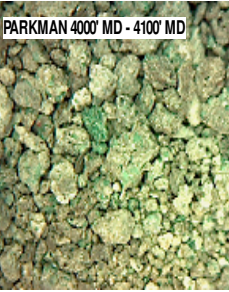
ROP (Ft/Hr)
Gamma (API)

WTG, C1-C4



MD 4108 TVD 4099.97
INC 0.17 AZ 35.69
VS 98.33

MD 4202 TVD 4193.97
INC 0.13 AZ 230.84
VS 98.33



4000' MD-4100' MD: SS: 60%: PRED
MEDGY - LTKGY -
OPQ, LSEY - MOD CONS, FN TO
MED GRN, SUBANG, W SRTD, CALC
CMT, IMBD GLAUC, FREE SLTST,
FREE SLTY SH, INTGR POR, NO
STN, NO FLOR, NO O FLOR, NO
CUT, NO RNG

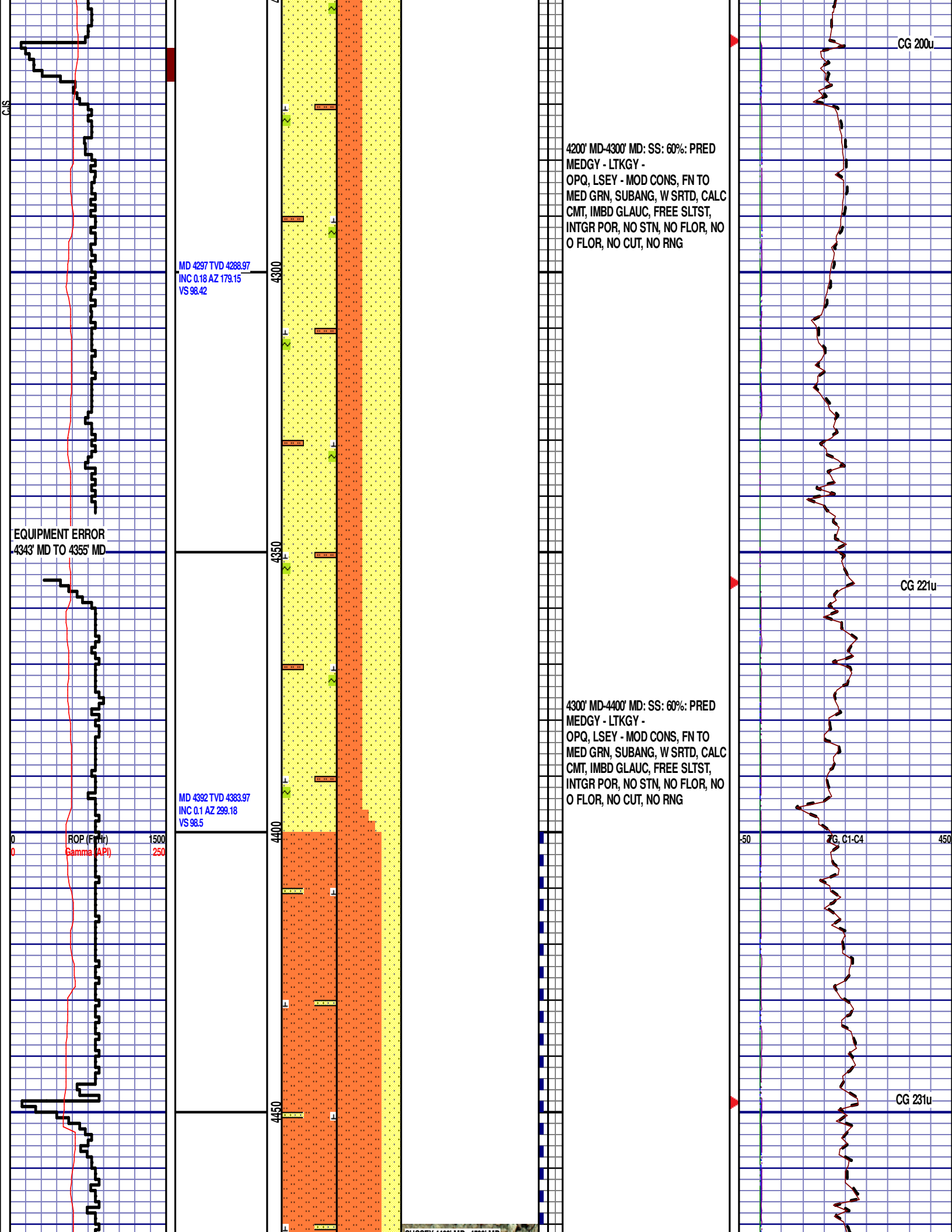
4100' MD-4200' MD: SS: 60%: PRED
MEDGY - LTKGY -
OPQ, LSEY - MOD CONS, FN TO
MED GRN, SUBANG, W SRTD, CALC
CMT, IMBD GLAUC, FREE SLTST,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, NO CUT, NO RNG

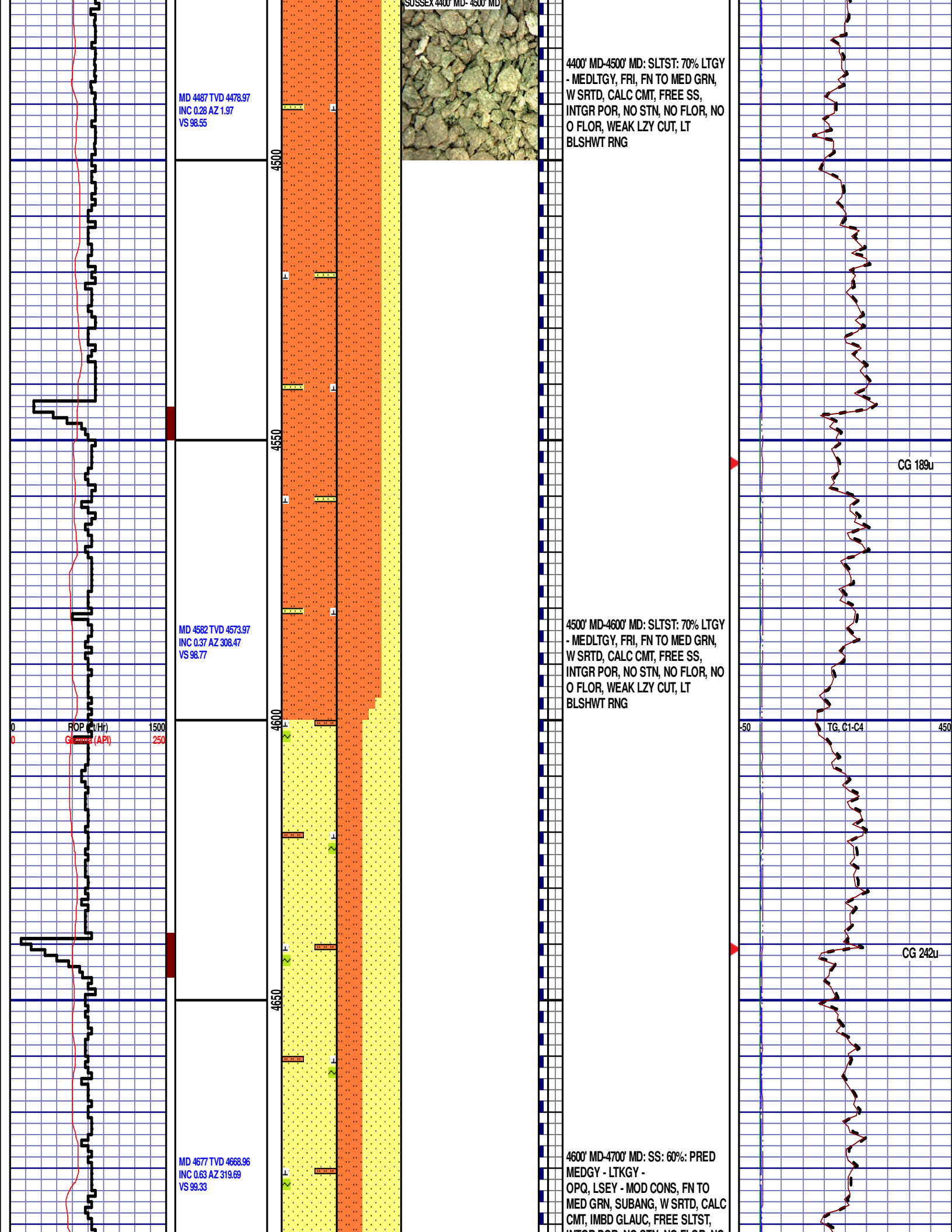
SUSSEX
4194' MD 4185' TVD

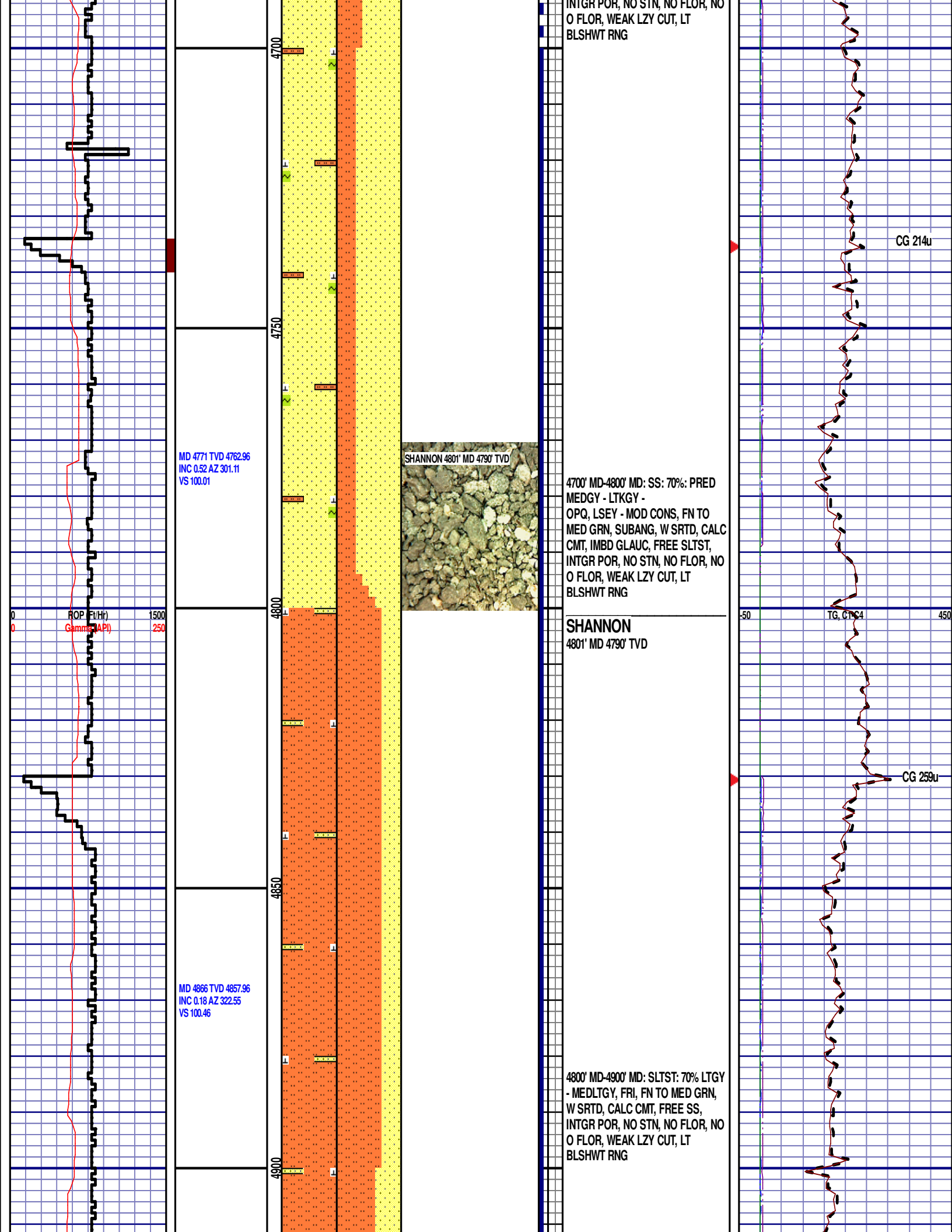
CG 111u

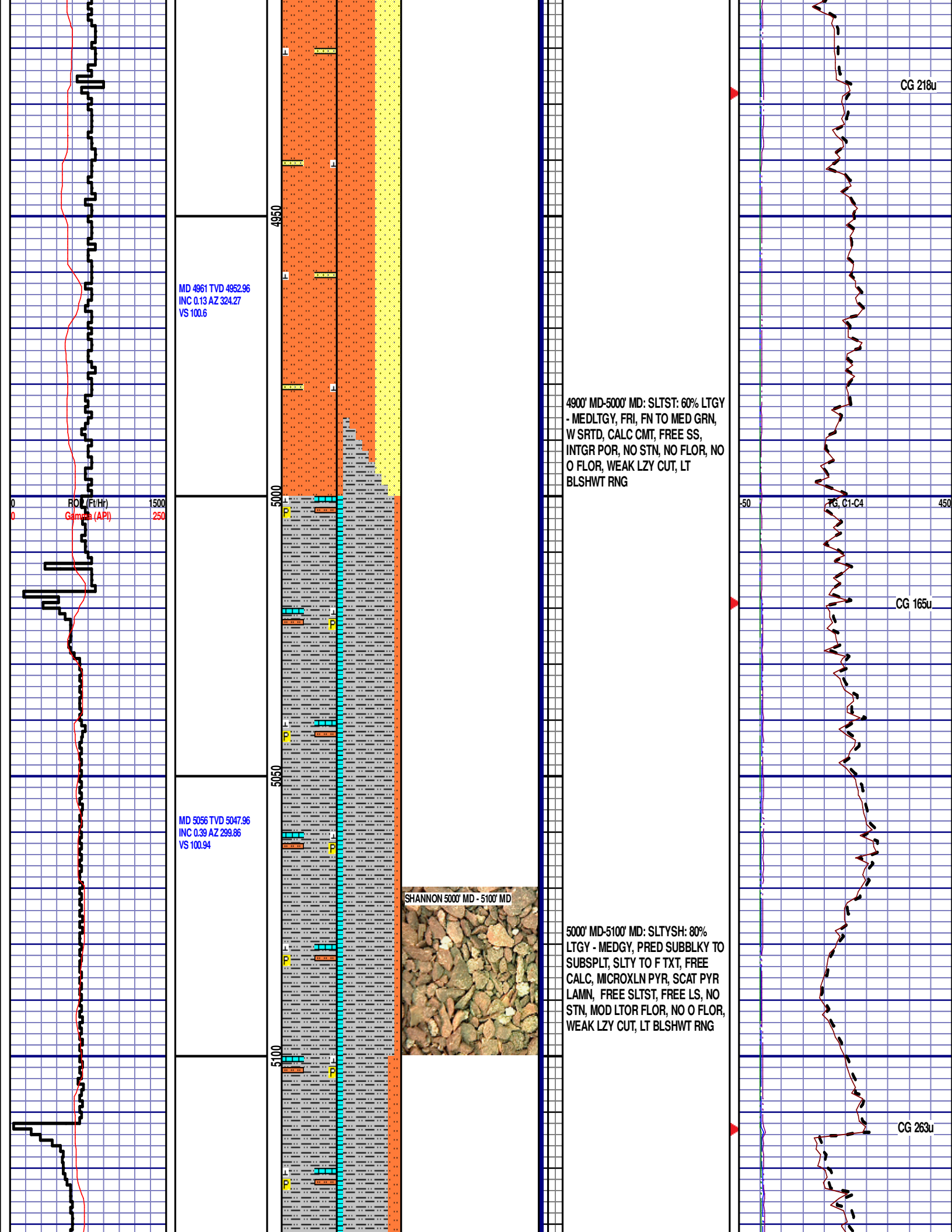
CG 118u

16, C1-C4









MD 4961 TVD 4952.96
INC 0.13 AZ 324.27
VS 100.6

4900' MD-5000' MD: SLTST: 60% LTGY
- MEDLTGY, FRI, FN TO MED GRN,
W SRTD, CALC CMT, FREE SS,
INTGR POR, NO STN, NO FLOR, NO
O FLOR, WEAK LZY CUT, LT
BLSHWT RNG

MD 5056 TVD 5047.96
INC 0.39 AZ 299.86
VS 100.94

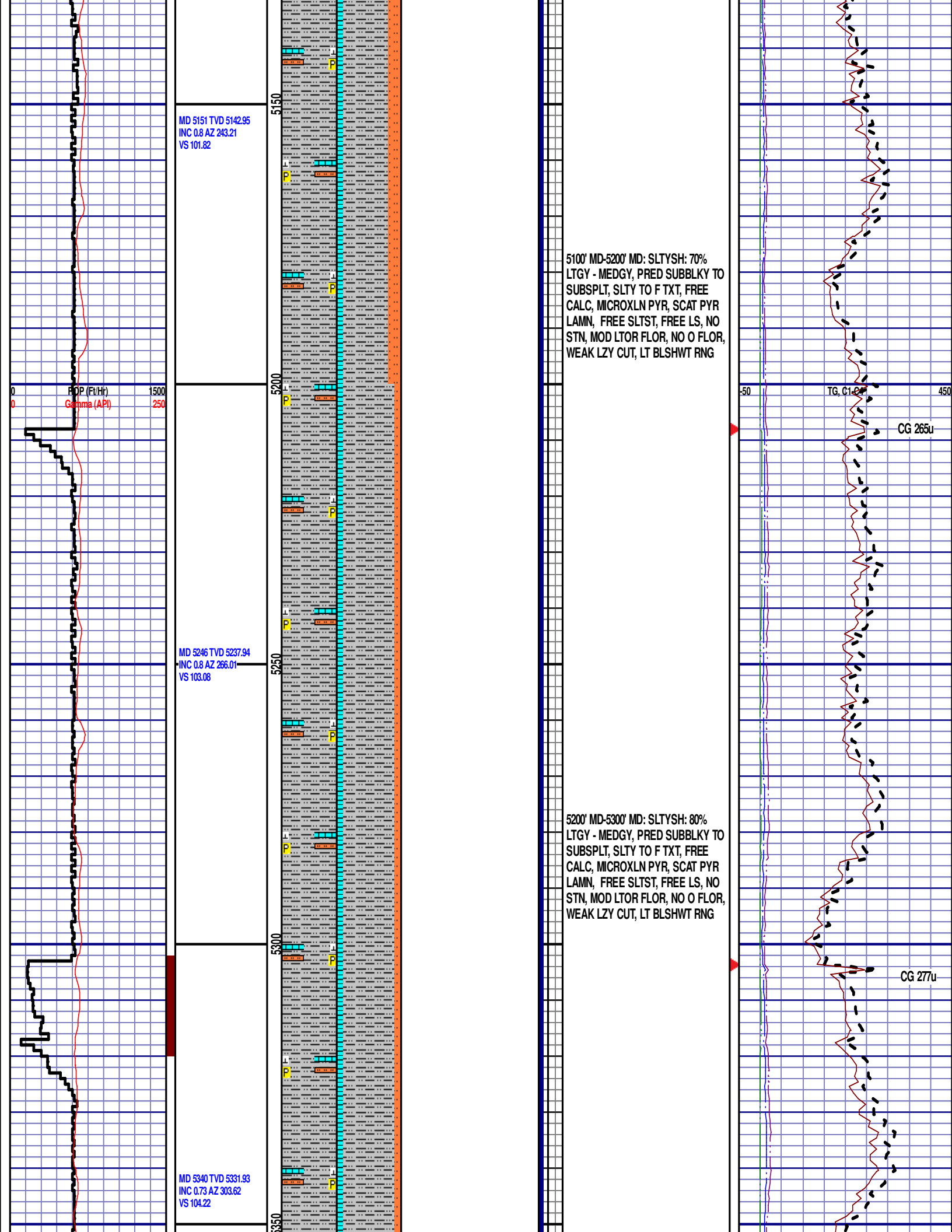
SHANNON 5000' MD - 5100' MD

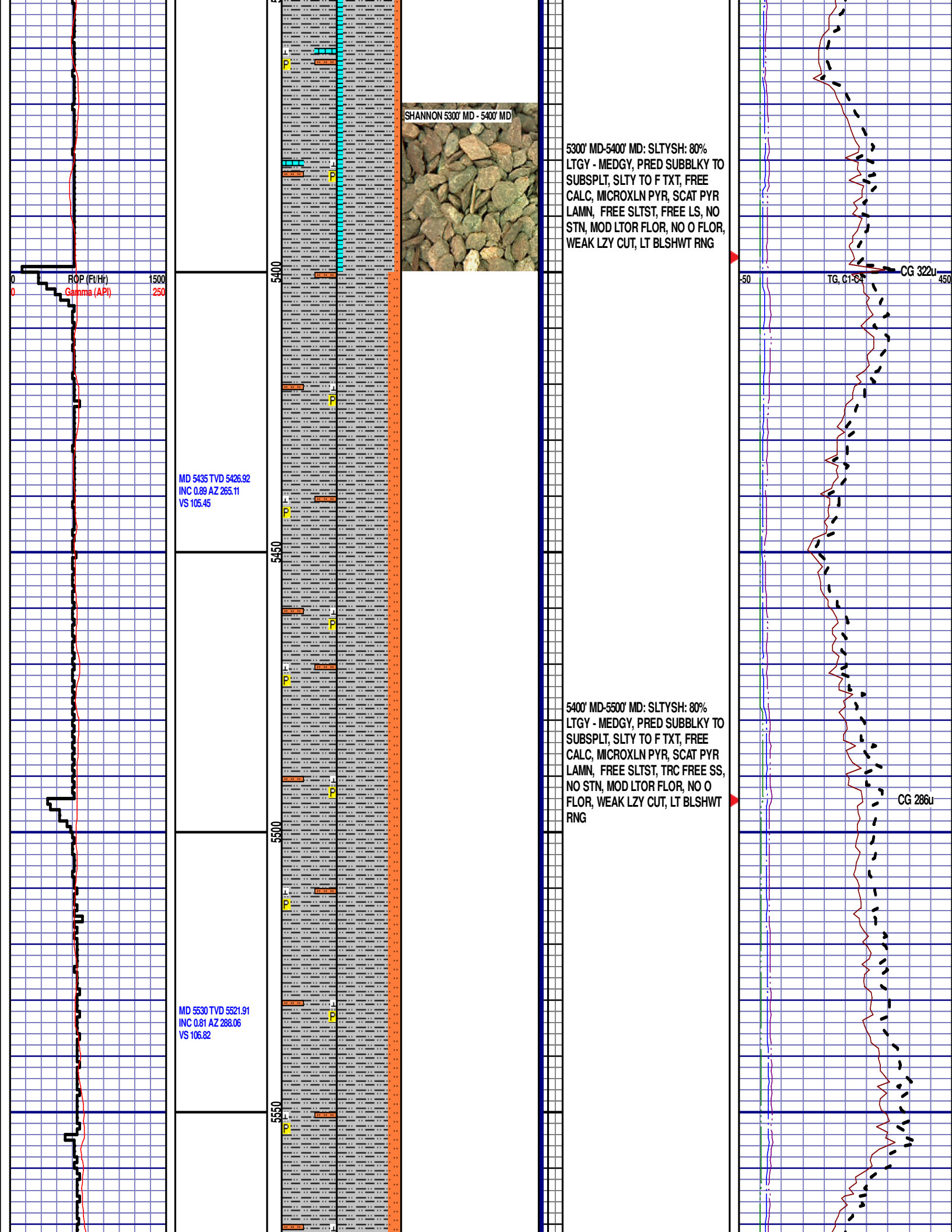
5000' MD-5100' MD: SLTYSH: 80%
LTGY - MEDGY, PRED SUBBLKY TO
SUBSPLT, SLTY TO F TXT, FREE
CALC, MICROXLN PYR, SCAT PYR
LAMN, FREE SLTST, FREE LS, NO
STN, MOD LTOR FLOR, NO O FLOR,
WEAK LZY CUT, LT BLSHWT RNG

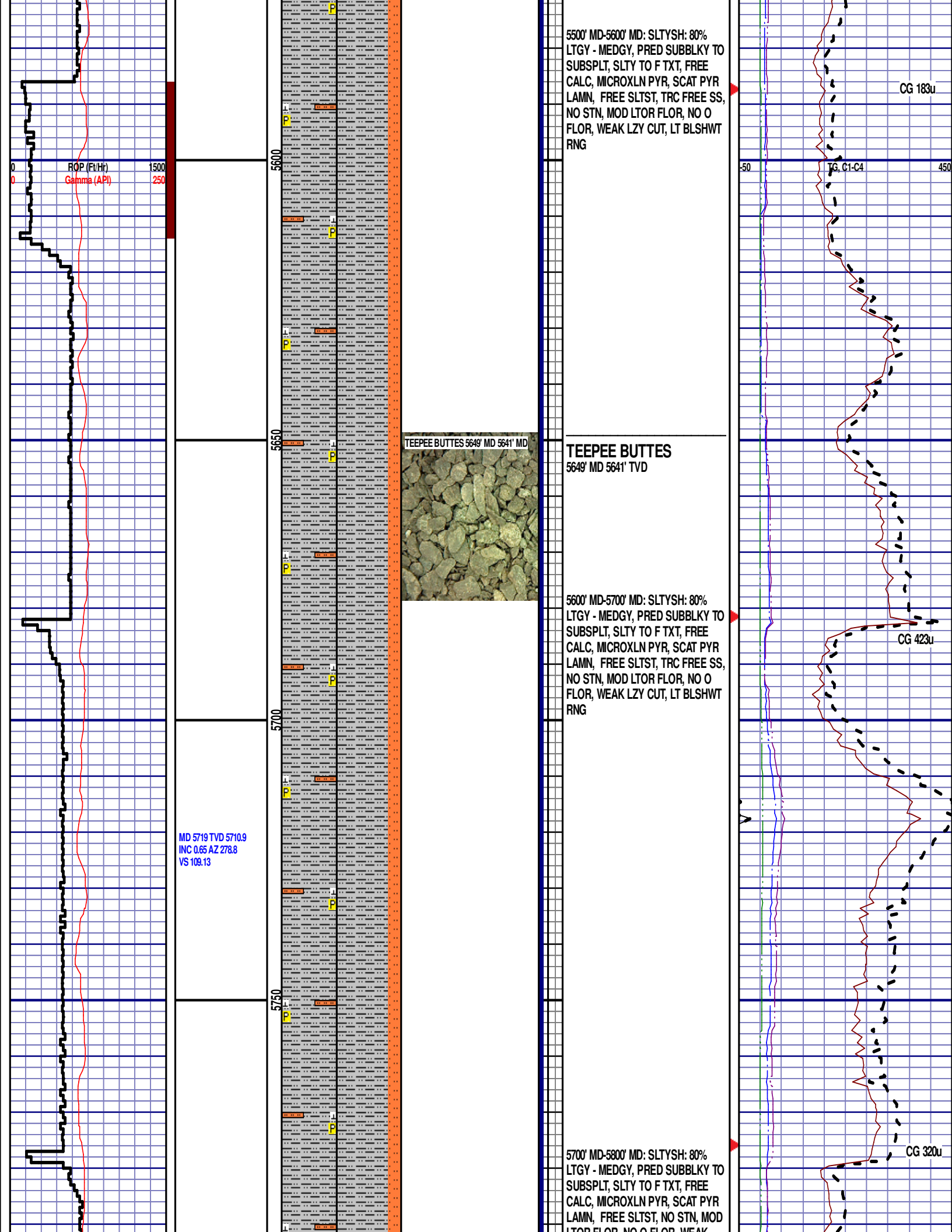
CG 218u

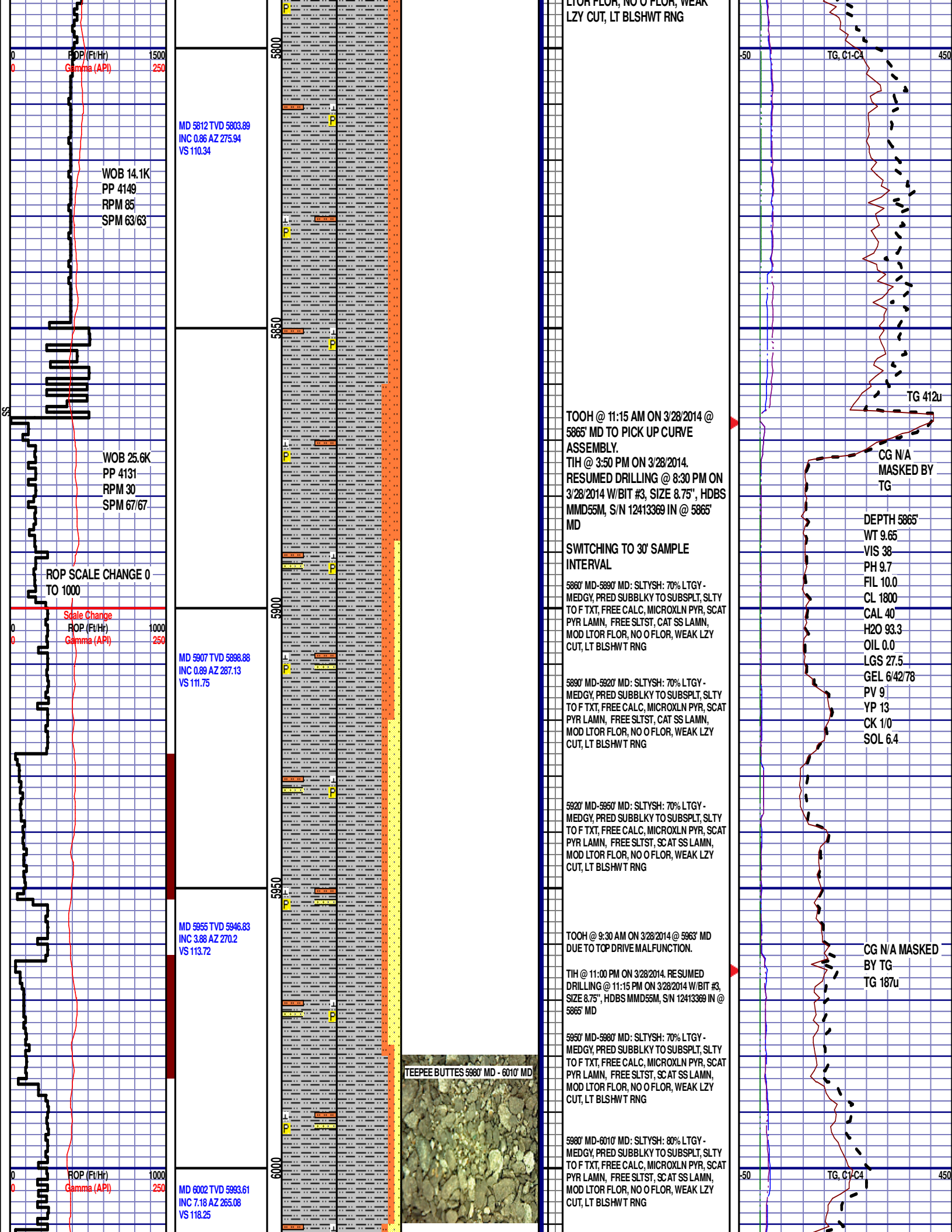
CG 165u

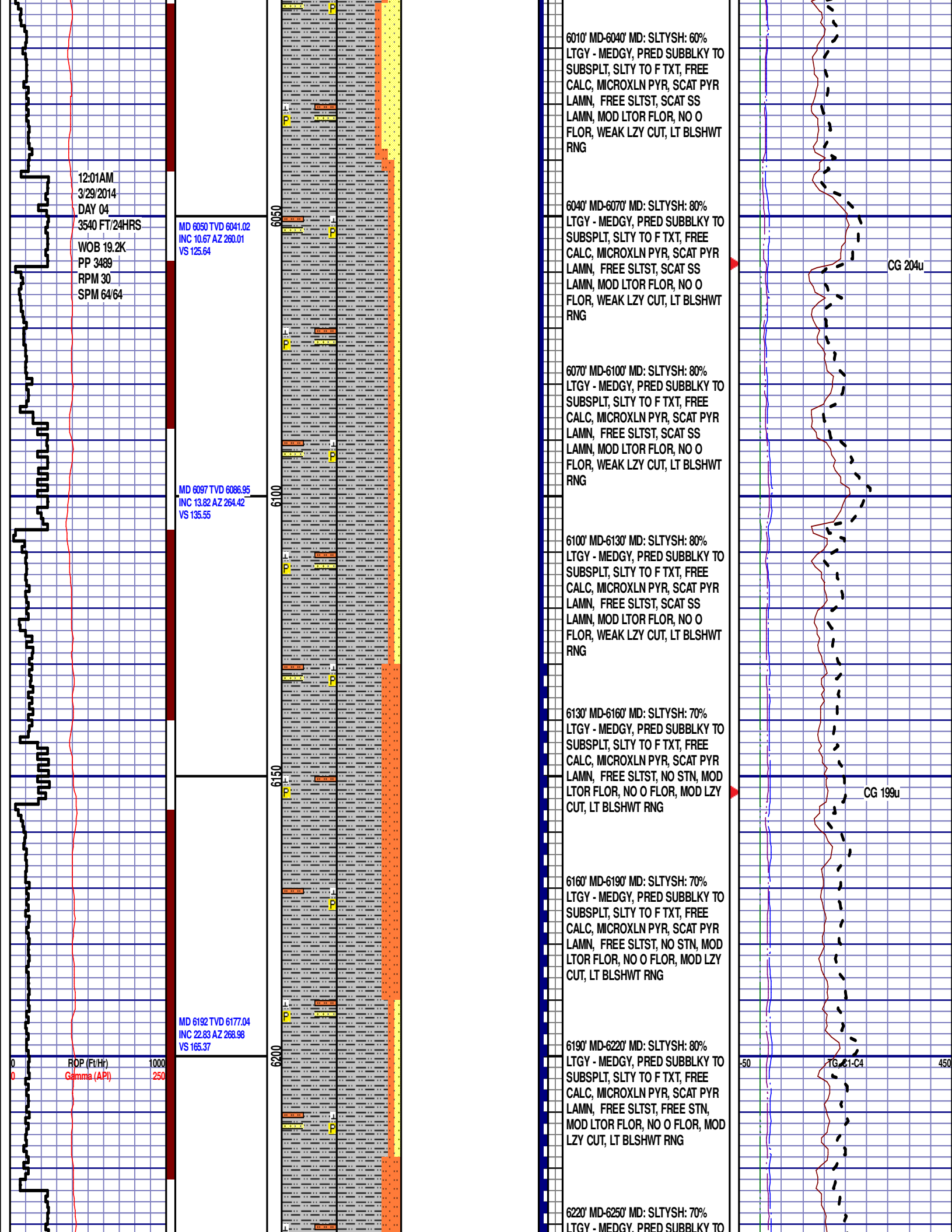
CG 263u

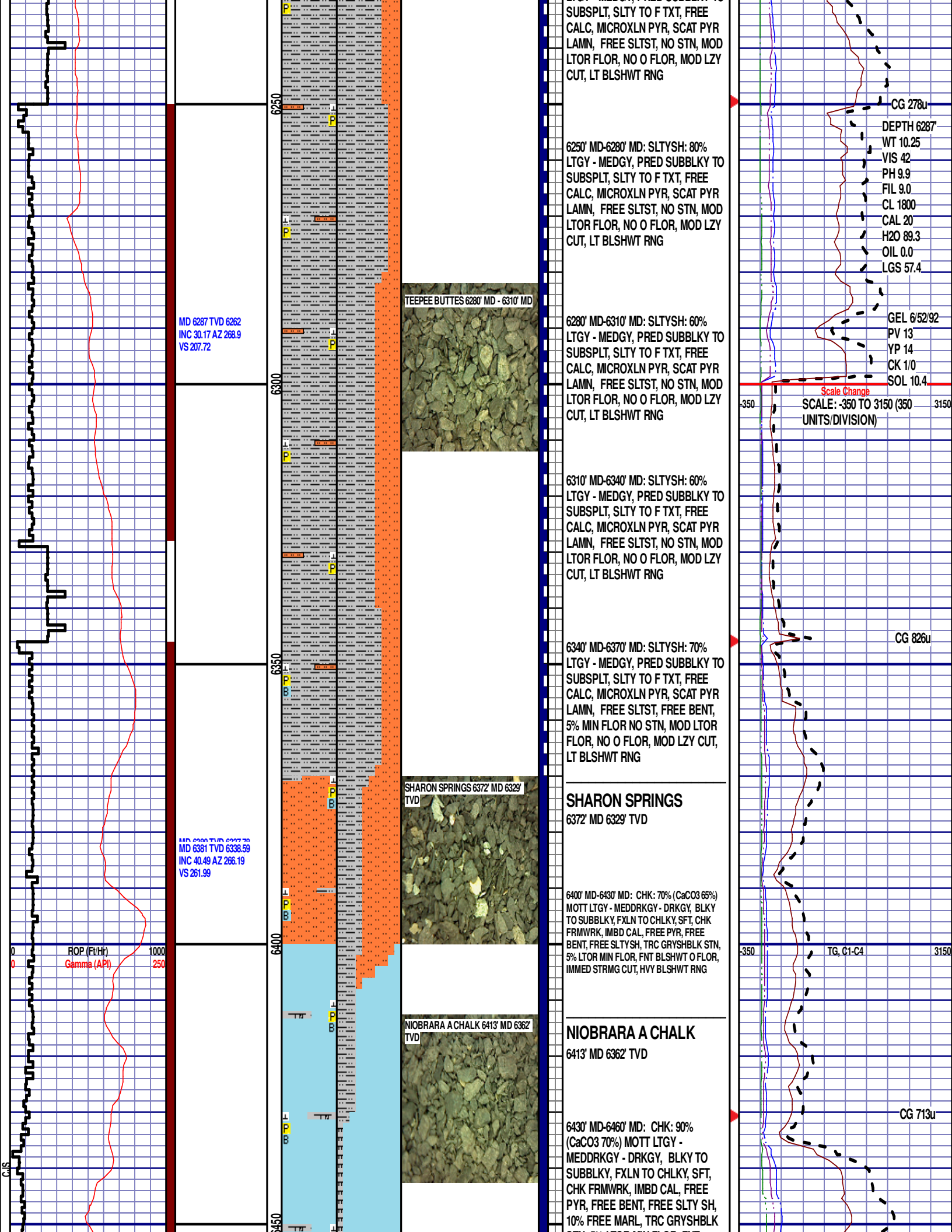


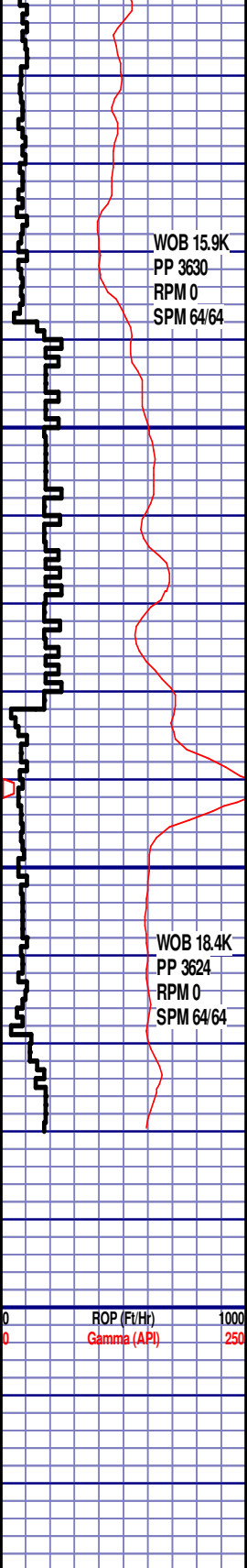










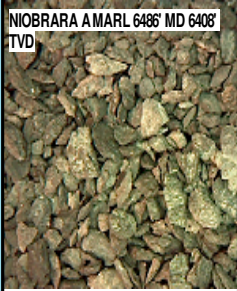
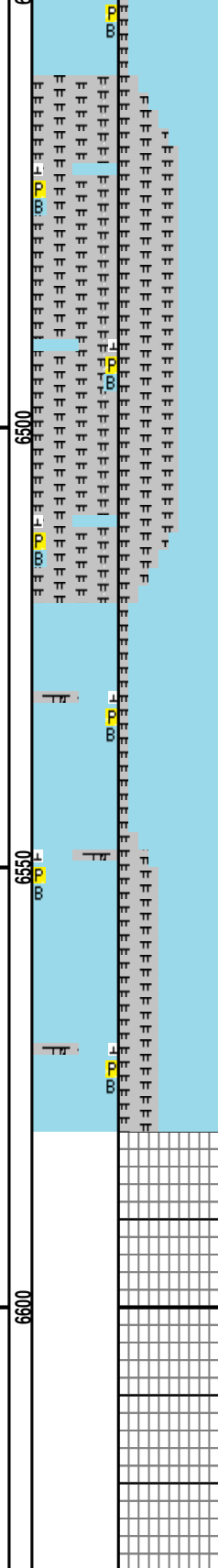


WOB 15.9K
PP 3630
RPM 0
SPM 64/64

MD 6476 TVD 6402.21
INC 55.14 AZ 265.07
VS 332.12

WOB 18.4K
PP 3624
RPM 0
SPM 64/64

MD 6571 TVD 6451.86
INC 61.81 AZ 266.84
VS 412.99



STN, 5% LTOR MIN FLOR, FNT
BLSHWT O FLOR, IMMED STRMG
CUT, HVY BLSHWT RNG

6460' MD-6490' MD: MRL: 60% (CaCO3 40%)
MEDDRKGY - DRKGY, BLKY TO SJ BB LKY,
FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD
CAL, FREE PYR, FREE BENT, 40% CHK, NO
STN, 5% LTOR MIN FLOR, FNT BLSHWT O
FLOR, IMMED STRMG CUT, HVY BLSHWT
RNG

NIORRARA A MARL
6486' MD 6408' TVD

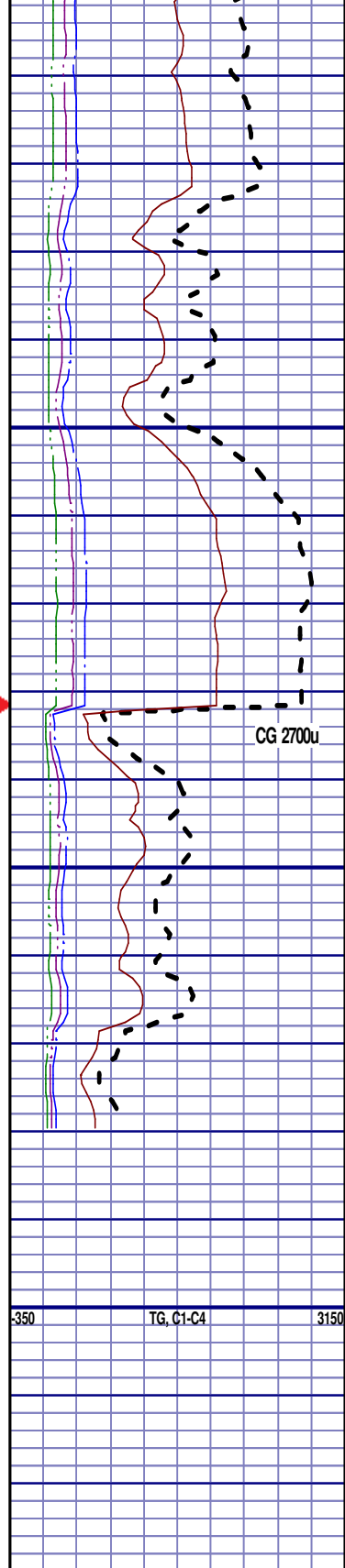
6490' MD-6520' MD: MRL: 60% (CaCO3 40%)
MEDDRKGY - DRKGY, BLKY TO SJ BB LKY,
FXLN TO CHLKY, SFT, CHK FRMWRK, IMBD
CAL, FREE PYR, FREE BENT, 40% CHK, NO
STN, 5% LTOR MIN FLOR, FNT BLSHWT O
FLOR, IMMED STRMG CUT, HVY BLSHWT
RNG

6520' MD-6550' MD: CHK: 90% (CaCO3 70%)
MOTT LTGY - MEDDRKGY - DRKGY, BLKY
TO SUBBLKY, FXLN TO CHLKY, SFT, CHK
FRMWRK, IMBD CAL, FREE PYR, FREE
BENT, 10% FREE MRL, TRC GRYSHBLK STN,
5% LTOR MIN FLOR, FNT BLSHWT O FLOR,
IMMED STRMG CUT, HVY BLSHWT RNG

NIORRARA B CHALK
6548' MD 6441' TVD

6550' MD-6580' MD: CHK: 60% (CaCO3 70%)
MOTT LTGY - MEDDRKGY - DRKGY, BLKY
TO SUBBLKY, FXLN TO CHLKY, SFT, CHK
FRMWRK, IMBD CAL, FREE PYR, FREE
BENT, 40% FREE MRL, TRC GRYSHBLK STN,
5% LTOR MIN FLOR, FNT BLSHWT O FLOR,
IMMED STRMG CUT, HVY BLSHWT RNG

END OF VERTICAL LOG @ 6580' MD
ON 3/29/2014, CONTINUED ON
HORIZONTAL LOG



CG 2700u

350 TG, C1-C4 3150