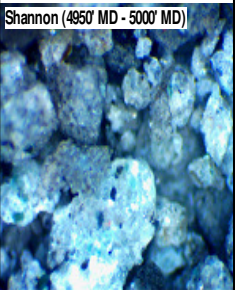
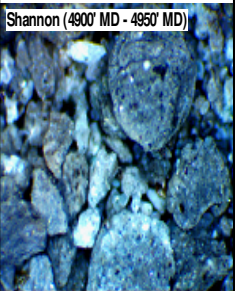


SHANNON

4936' MD 4870' TVD

4900'- 4950': SS: 70% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SILTY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG



4950'- 5000': SS: 75% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SILTY, INTGR POR,
NO STN, NO MIN FLOR, NO O
FLOR, NO CUT, NO RNG

5000'- 5100': SS: 75% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
IMBD GLAUC, SILTY, INTGR POR,
NO STN, TRC MIN FLOR, NO O
FLOR, NO CUT, NO RNG

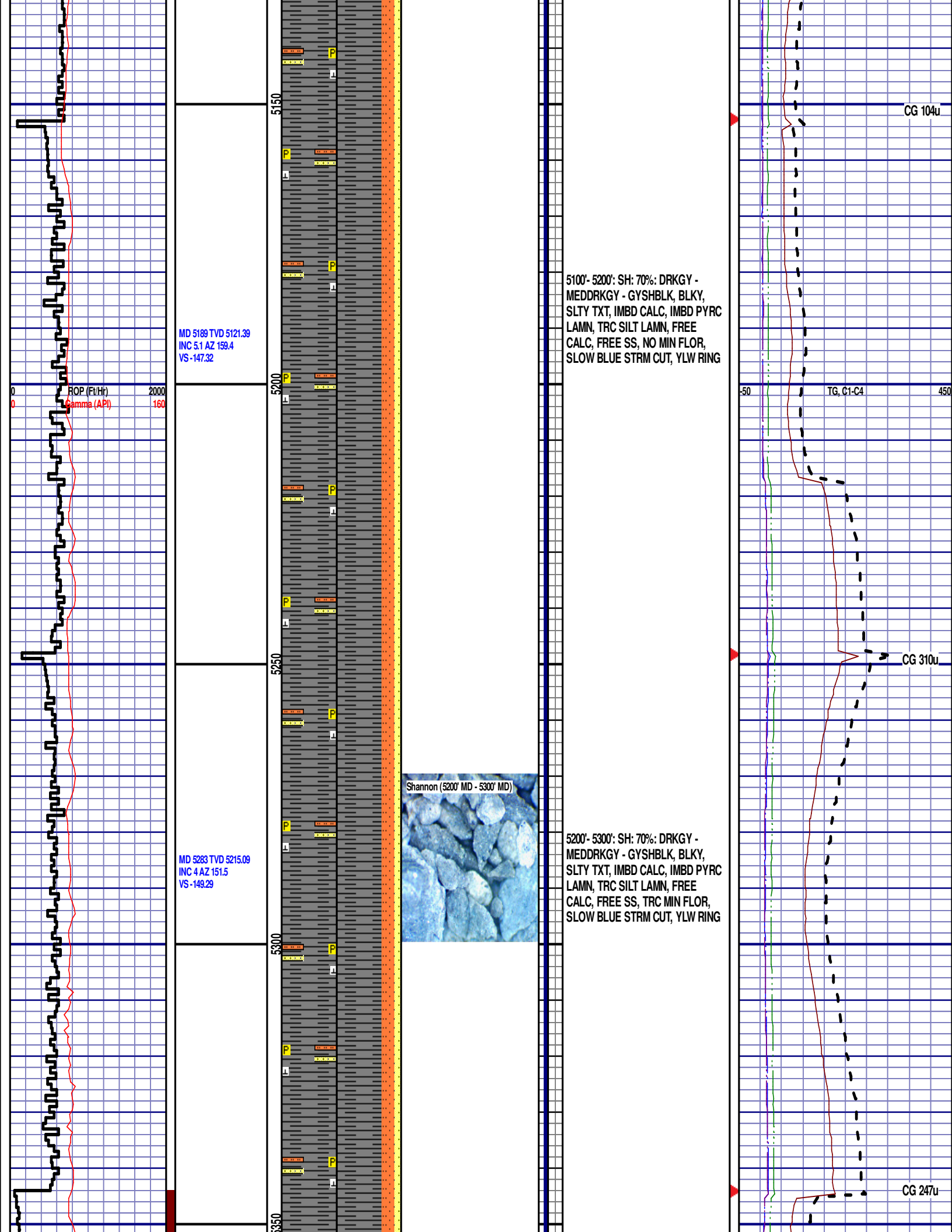
MD 4999 TVD 4932.58
INC 7.7 AZ 162
VS -143.66

MD 5094 TVD 5026.87
INC 6.3 AZ 161.3
VS -145.57

CG 99u

TG, C1-C4

CG 98u



MD 5378 TVD 5309.81
INC 4.8 AZ 153.9
VS -151.59

ROP (Ft/Hr) 2000
Gamma (API) 160

MD 5473 TVD 5404.54
INC 3.9 AZ 151.3
VS -153.84

12:01 AM 1/5/2014
FT/24 HRS 4599
DAY 04

WOB 14K
PP 3100
RPM 71
SPM 65/64

MD 5568 TVD 5499.35

5300'- 5400': SH: 70%: DRKGY -
MEDDRKGY - GYSHBLK, BLKY,
SLTY TXT, IMBD CALC, IMBD PYRC
LAMN, TRC SILT LAMN, FREE
CALC, FREE SS, NO MIN FLOR,
SLOW BLUE STRM CUT, YLW RING

5400'- 5500': SH: 70%: DRKGY -
MEDDRKGY - GYSHBLK, BLKY,
SLTY TXT, IMBD CALC, IMBD PYRC
LAMN, TRC SILT LAMN, FREE
CALC, NO MIN FLOR, SLOW BLUE
STRM CUT, YLW RING

Shannon (5500' MD - 5600' MD)

-50 TG, C1-C4 450

CG 243u

-150 Scale Change TG, C1-C4 1350

GAS SCALE: -150 TO 1350
150 UNITS/DIVISION

CG 473u

INC 3.3 AZ 152.3
VS -155.82

ROP (Ft/Hr)
Gamma (API)

2000
160

MD 5662 TVD 5593.21
INC 3 AZ 149.9
VS -157.59

MD 5757 TVD 5688.11
INC 2.3 AZ 153.1
VS -159.08

5600

5650

5700

5750



5500'- 5600': SH: 70%: DRKGY -
MEDDRKGY - GYSHBLK, BLKY,
SLTY TXT, IMBD CALC, IMBD PYRC
LAMN, TRC SILT LAMN, FREE
CALC, NO MIN FLOR, SLOW BLUE
STRM CUT, YLW RING

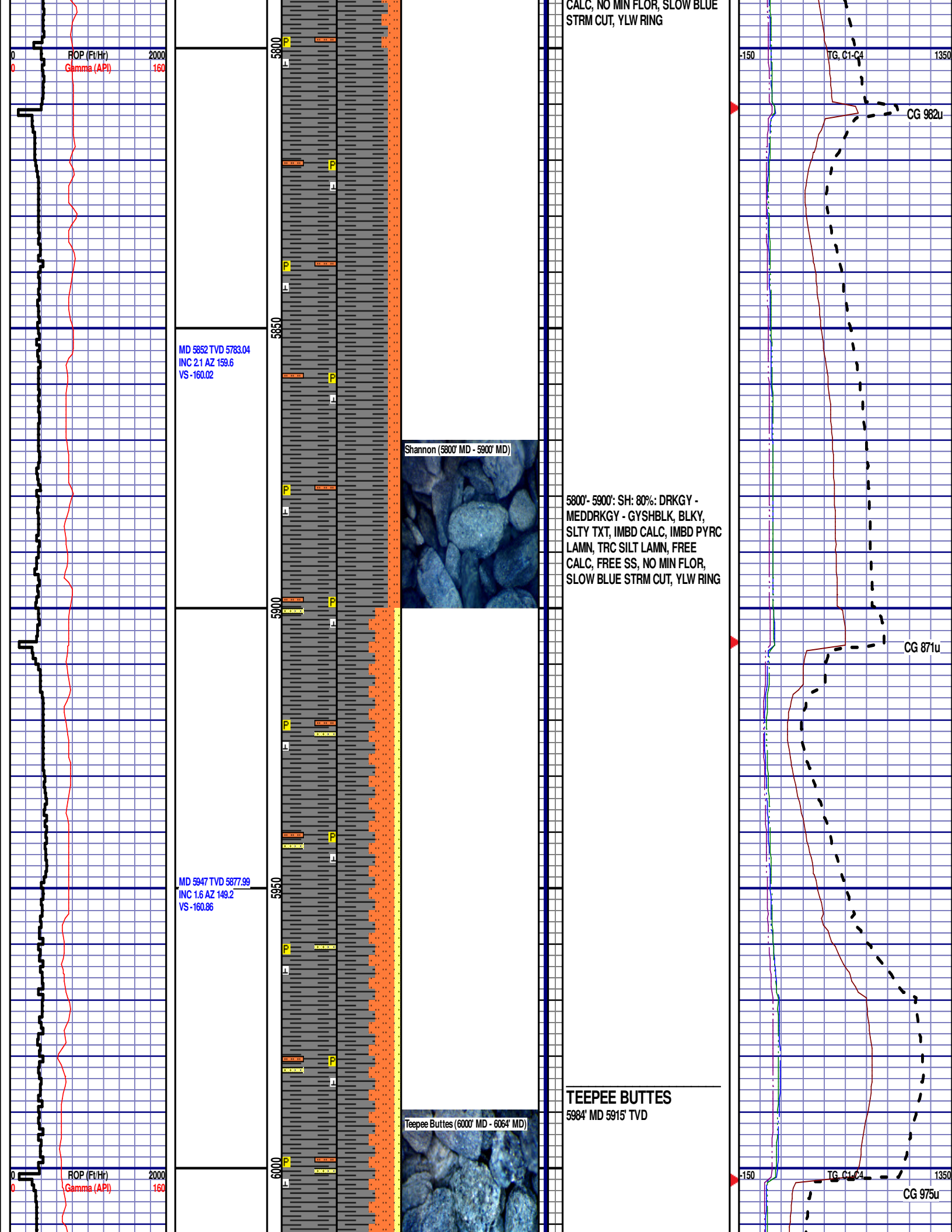
5600'- 5700': SH: 75%: DRKGY -
MEDDRKGY - GYSHBLK, BLKY,
SLTY TXT, IMBD CALC, IMBD PYRC
LAMN, TRC SILT LAMN, FREE
CALC, NO MIN FLOR, SLOW BLUE
STRM CUT, YLW RING

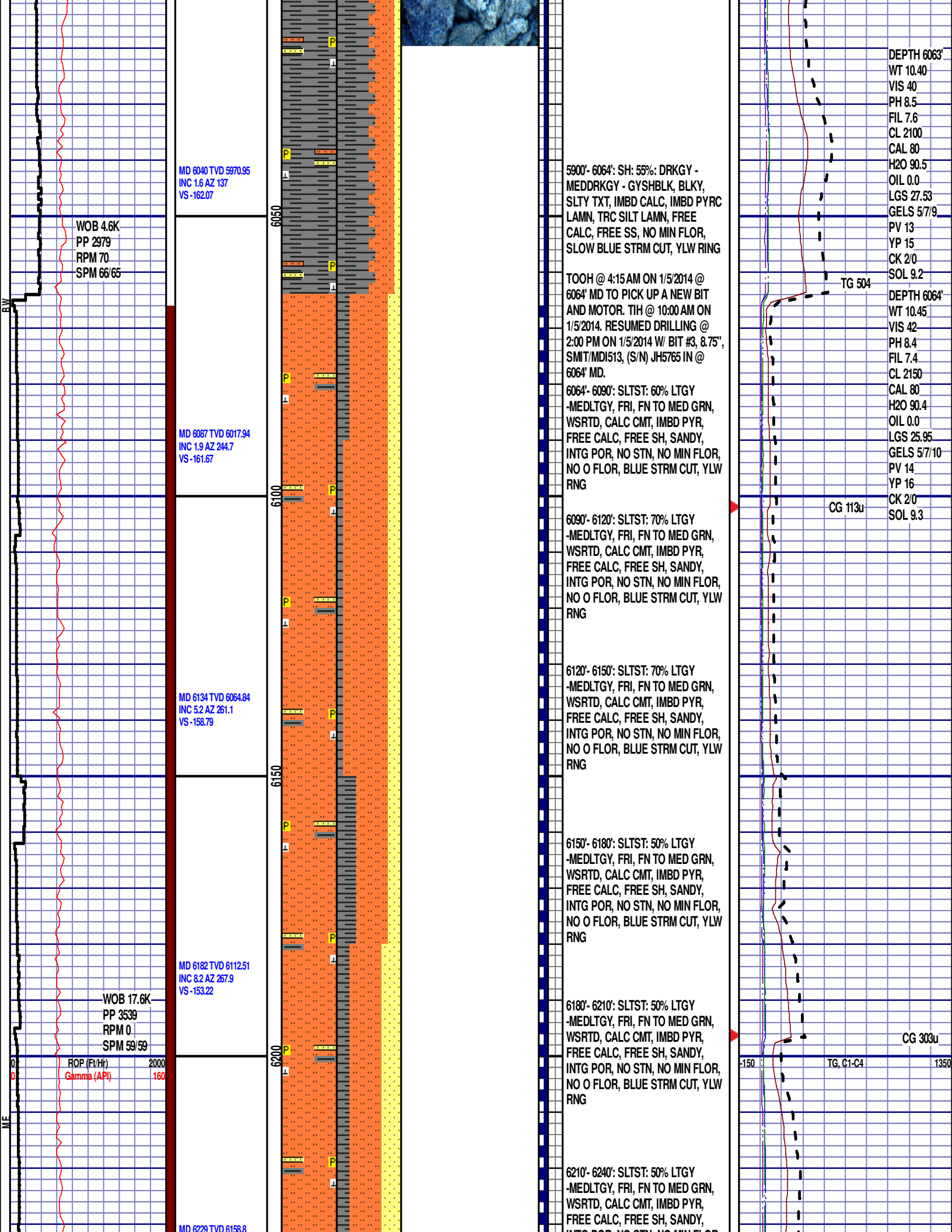
5700'- 5800': SH: 75%: DRKGY -
MEDDRKGY - GYSHBLK, BLKY,
SLTY TXT, IMBD CALC, IMBD PYRC
LAMN, TRC SILT LAMN, FREE

-150 TG, C1-C4 1350

CG 460u

CG 502u





INC 11.8 AZ 281
VS -145.39

MD 6324 TVD 6250.05
INC 20.1 AZ 283.1
VS -121.06

MD 6418 TVD 6335.21
INC 29.7 AZ 276.4
VS -83.48

ROP (Ft/Hr)
Gamma (API)

2000
160

6250

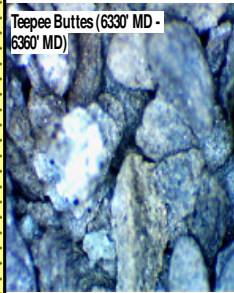
6300

6350

6400

6450

Teepee Buttes (6330' MD -
6360' MD)



6240'- 6270': SLTST: 60% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
FREE CALC, FREE SH, SANDY,
INTG POR, NO STN, NO MIN FLOR,
NO O FLOR, BLUE STRM CUT, YLW
RNG

6270'- 6300': SLTST: 60% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
FREE CALC, FREE SH, SANDY,
INTG POR, NO STN, NO MIN FLOR,
NO O FLOR, BLUE STRM CUT, YLW
RNG

6300'- 6330': SLTST: 60% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
FREE CALC, FREE SH, SANDY,
INTG POR, NO STN, NO MIN FLOR,
NO O FLOR, BLUE STRM CUT, YLW
RNG

6330'- 6360': SLTST: 70% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
FREE CALC, FREE SH, SANDY,
INTG POR, NO STN, NO MIN FLOR,
NO O FLOR, BLUE STRM CUT, YLW
RNG

6360'- 6390': SLTST: 65% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
FREE CALC, FREE SH, SANDY,
INTG POR, NO STN, NO MIN FLOR,
NO O FLOR, BLUE STRM CUT, YLW
RNG

6390'- 6420': SLTST: 60% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
FREE CALC, FREE SH, SANDY,
INTG POR, NO STN, NO MIN FLOR,
NO O FLOR, BLUE STRM CUT, YLW
RNG

6420'- 6450': SLTST: 50% LTGY
-MEDLTGY, FRI, FN TO MED GRN,
WSRTD, CALC CMT, IMBD PYR,
FREE CALC, FREE SH, SANDY,
INTG POR, NO STN, NO MIN FLOR,
NO O FLOR, BLUE STRM CUT, YLW
RNG

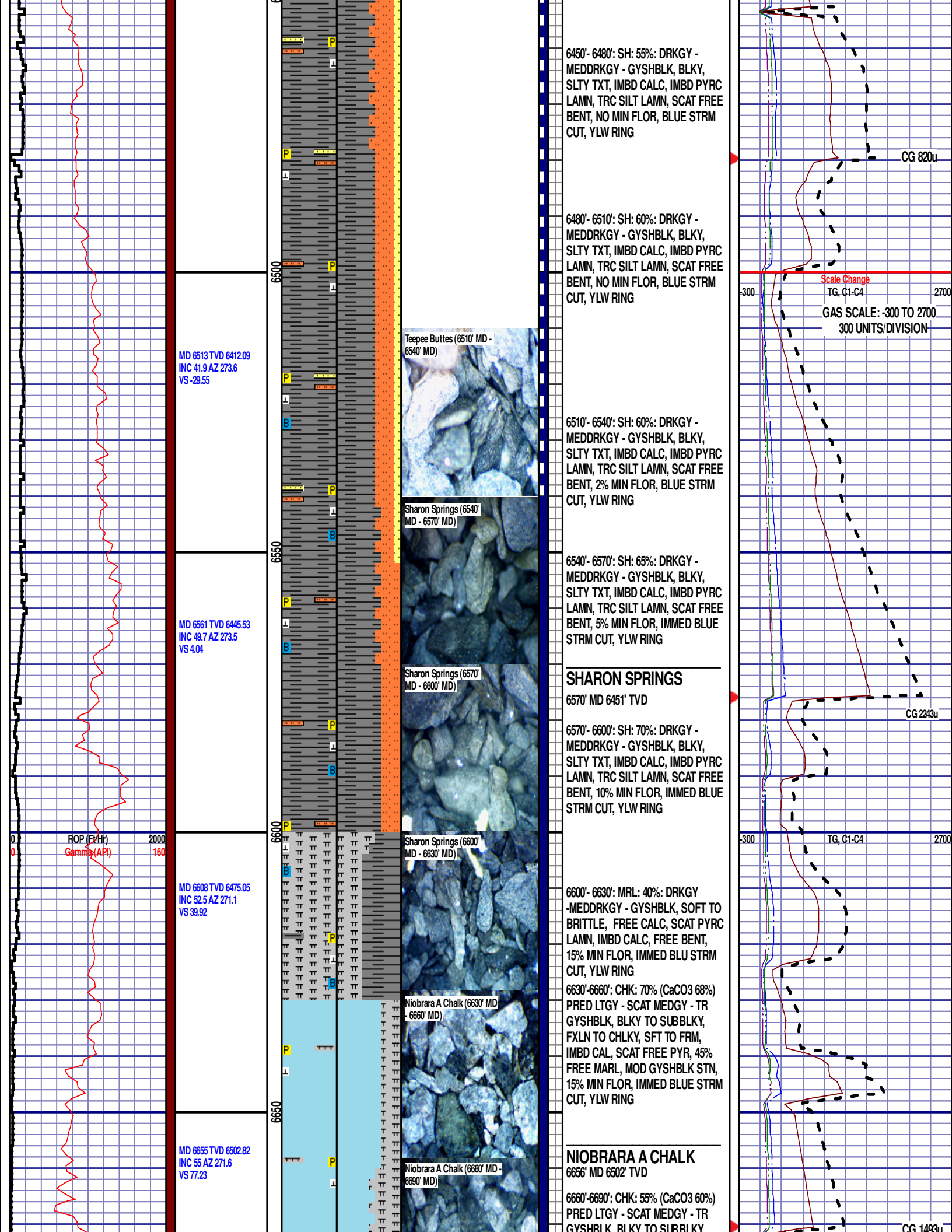
CG 356u

CG 372u

-150

TG, C1-C4

1350



6450'- 6480': SH: 55%: DRKGY - MEDDRKGY - GYSHBLK, BLKY, SLTY TXT, IMBD CALC, IMBD PYRC LAMN, TRC SILT LAMN, SCAT FREE BENT, NO MIN FLOR, BLUE STRM CUT, YLW RING

6480'- 6510': SH: 60%: DRKGY - MEDDRKGY - GYSHBLK, BLKY, SLTY TXT, IMBD CALC, IMBD PYRC LAMN, TRC SILT LAMN, SCAT FREE BENT, NO MIN FLOR, BLUE STRM CUT, YLW RING

6510'- 6540': SH: 60%: DRKGY - MEDDRKGY - GYSHBLK, BLKY, SLTY TXT, IMBD CALC, IMBD PYRC LAMN, TRC SILT LAMN, SCAT FREE BENT, 2% MIN FLOR, BLUE STRM CUT, YLW RING

6540'- 6570': SH: 65%: DRKGY - MEDDRKGY - GYSHBLK, BLKY, SLTY TXT, IMBD CALC, IMBD PYRC LAMN, TRC SILT LAMN, SCAT FREE BENT, 5% MIN FLOR, IMMED BLUE STRM CUT, YLW RING

SHARON SPRINGS

6570' MD 6451' TVD

6570'- 6600': SH: 70%: DRKGY - MEDDRKGY - GYSHBLK, BLKY, SLTY TXT, IMBD CALC, IMBD PYRC LAMN, TRC SILT LAMN, SCAT FREE BENT, 10% MIN FLOR, IMMED BLUE STRM CUT, YLW RING

6600'- 6630': MRL: 40%: DRKGY - MEDDRKGY - GYSHBLK, SOFT TO BRITTLE, FREE CALC, SCAT PYRC LAMN, IMBD CALC, FREE BENT, 15% MIN FLOR, IMMED BLU STRM CUT, YLW RING

6630'-6660': CHK: 70% (CaCO3 68%) PRED LTGY - SCAT MEDGY - TR GYSHBLK, BLKY TO SUBBLKY, FXLN TO CHLKY, SFT TO FRM, IMBD CAL, SCAT FREE PYR, 45% FREE MARL, MOD GYSHBLK STN, 15% MIN FLOR, IMMED BLUE STRM CUT, YLW RING

NIORRARA A CHALK

6656' MD 6502' TVD

6660'-6690': CHK: 55% (CaCO3 60%) PRED LTGY - SCAT MEDGY - TR GYSHBLK, BLKY TO SUBBLKY

MD 6703 TVD 6528.66
INC 59.8 AZ 268.9
VS 117.16

12:01 AM 1/6/2014
FT/24 HRS 2162
DAY 05

WOB 81.3K
PP 3789
RPM 20
SPM 63/63

6700

6750

00

Niobrara A Marl (6690' MD
- 6720' MD)

GYSHBLK, DARK GYSHBLK,
FXLN TO CHLKY, SFT TO FRM,
IMBD CAL, SCAT FREE PYR, 45%
FREE MARL, MOD GYSHBLK STN,
15% MIN FLOR, IMMED BLUE STRM
CUT, YLW RING

6690'-6720': MRL: 70% (CaCO₃ 45%)
DRKGY -MEDDRKGY - GYSHBLK,
SOFT TO BRITTLE, FREE CALC,
SCAT PYRC LAMN, IMBD CALC,
FREE BENT, 30% FREE CHK, PRED
LTGY - SCAT MEDGY, 15% MIN
FLOR, IMMED BLUE STRM CUT,
YLW RING

NIOBRARA A MARL

6718' MD 6529' TVD

6720'-6750': MRL: 70% (CaCO₃ 50%)
DRKGY -MEDDRKGY - GYSHBLK,
SOFT TO BRITTLE, FREE CALC,
SCAT PYRC LAMN, IMBD CALC,
FREE BENT, 30% FREE CHK, PRED
LTGY - SCAT MEDGY, 15% MIN
FLOR, IMMED BLUE STRM CUT,
YLW RING

END OF VERTICAL LOG @ 6750' MD
ON 1/6/2014, CONTINUED ON
HORIZONTAL LOG.