

LITHOLOGY STRIP LOG
WellSight Systems
Scale 1:240 (5"=100') Metric

Well Name: MGM - Shell East MacKay I-78

Location: Unit I, Section 78, Grid 64 50 125 30

Licence Number: 1202

Spud Date: Jan 17, 2013

Surface Coordinates: Lat 64 deg, 47', 42.1"; Long 125 deg, 43' 19.1"

Region: NWT mainland

Drilling Completed: Feb 15, 2013

Bottom Hole Coordinates Lat 64 deg, 47', 42.1"; Long 125 deg, 43' 19.1"

Ground Elevation (m): 155

Logged Interval (m): 0

Formation: Canol, Blue Fish

Type of Drilling Fluid: Gel chem

K.B. Elevation (m): 161.2

To: TD

Total Depth (m): 2001

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OPERATOR

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GEOLOGIST

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Company: RPS

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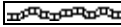
Cores

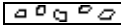
DSTs

Comments

ROCK TYPES

 Anhy

 Bent

 Brec

 Cht

 Clyst

 Coal

 Congl

 Dol

 Gyp

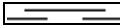
 Igne

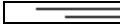
 Lmst

 Meta

 Mrlst

 Salt

 Shale

 Shcol

 Shgy

 Sltst

 Ss

 Till

ACCESSORIES

MINERAL

 Anhy

 Arggrn

 Arg

 Bent

 Bit

 Brecfrag

 Calc

 Carb

 Chtdk

 Chtlt

 Dol

 Feldspar

 Ferrpel

 Ferr

 Glau

 Gyp

 Hvymin

 Kaol

 Marl

 Minxl

 Nodule

 Phos

 Pyr

 Salt

 Sandy

 Silt

 Sil

 Sulphur

 Tuff

FOSSIL

 Algae

 Amph

 Belm

 Bioclst

 Brach

 Bryozoa

 Cephal

 Coral

 Crin

 Echin

 Fish

 Foram

 Fossil

 Gastro

 Oolite

 Ostra

 Pelec

 Pellet

 Pisolite

 Plant

 Strom

STRINGER

 Anhy

 Arg

 Bent

 Coal

 Dol

 Gyp

 Ls

 Mrst

 Sltstrg

 Ssstrg

TEXTURE

 Boundst

 Chalky

 Cryxln

 Earthy

 Finexln

 Grainst

 Lithogr

 Microxln

 Mudst

 Packst

 Wackest

OTHER SYMBOLS

POROSITY

 Earthy

 Fenest

 Fracture

 Inter

 Moldic

 Organic

 Pinpoint

 Vuggy

SORTING

 Well

 Moderate

 Poor

ROUNDING

 Rounded

 Subrnd

 Subang

 Angular

OIL SHOW

 Even

 Spotted

 Ques

 Dead

INTERVAL

 Core

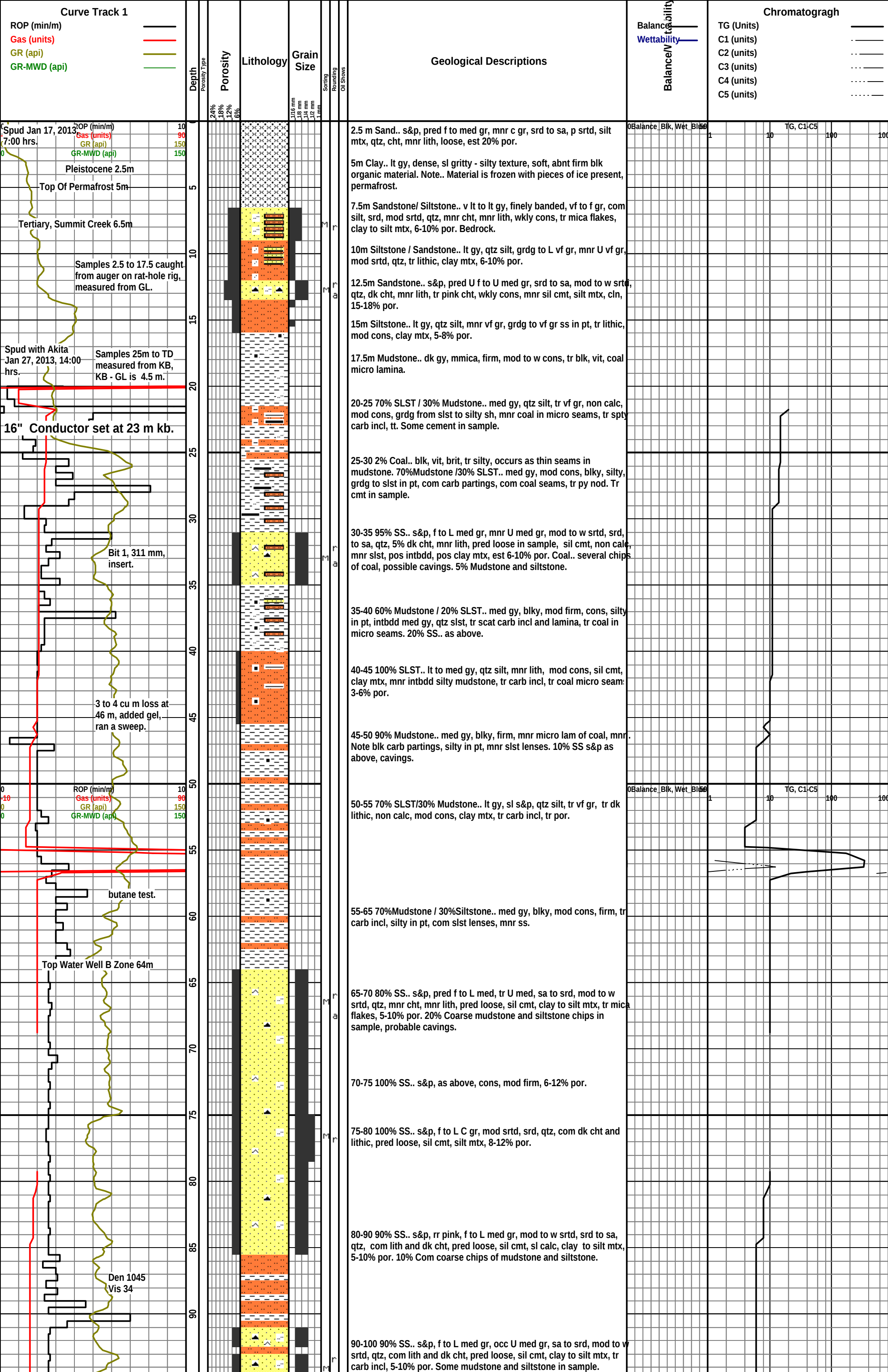
 Dst

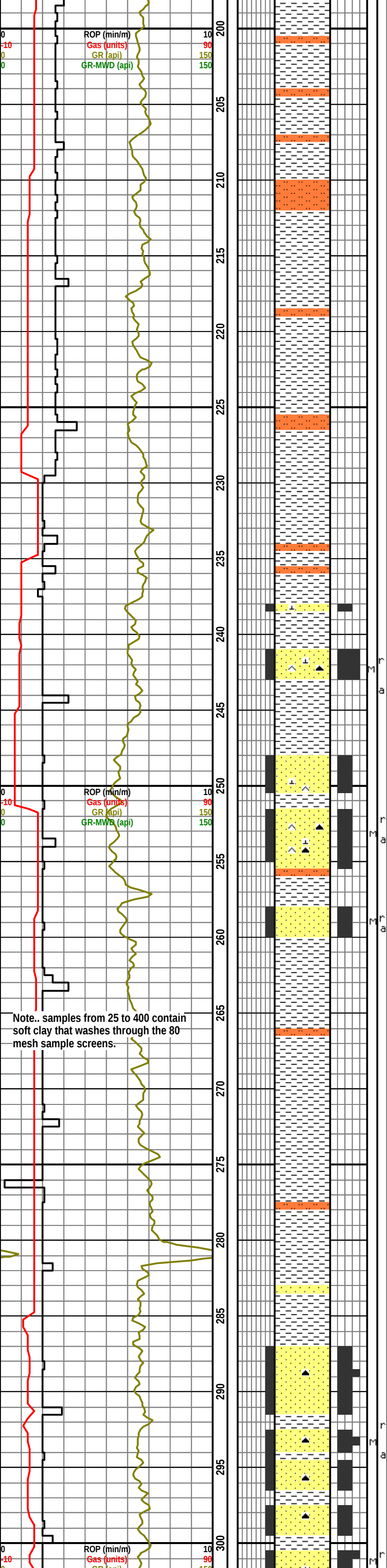
EVENT

 Isotube

 Rft

 Sidewall





200-210 70% Mudstone.. med to dk gy, sl mmica, firm. 30% SLST.. med gy, sl s&p, as above.

210-220 50% Mudstone.. med gy, rounded chips, firm, sl brit. 50% SLST.. med gy, firm, brit, clay mtx, tr por. Mixed lithologies and sawdust, from a hole sweep.

220-230 75% Mudstone.. med gy, firm, blk, sl mmica. 25% SLST.. med gy, mod cons, qtz, mn lith, clay mtx, tr to 3% por. Higher vis mud producing some clay balls.

230-240 75% Mudstone.. med gy, blk, firm. 25% SLST.. med gy, qtz silt, firm, blk, tr por. Tr ss.

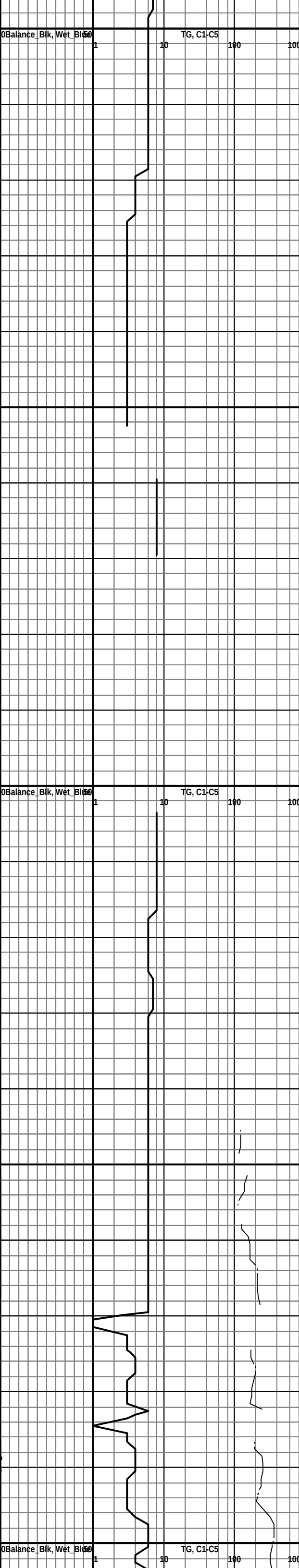
240-250 70% SS.. s&p, f to L med gr, mod to w srtd, srd to sa, qtz, com dk cht, tr py, pred loose, sil cmt, mod calc, est 6-12% por. 30% mudstone.

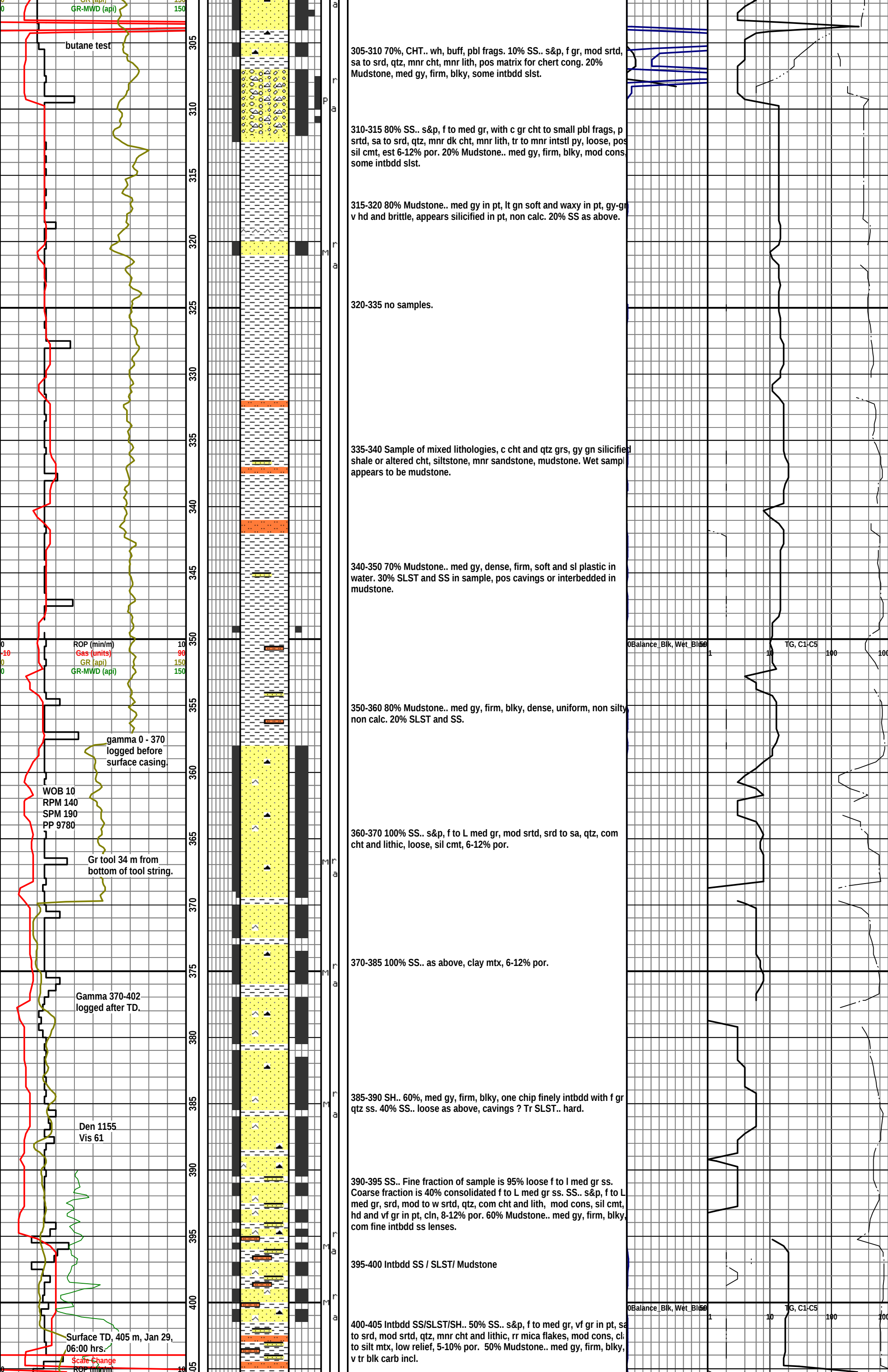
250-260 70% Mudstone.. med gy, dense, firm. Chips are rounded and covered in loose 30% sand as above.

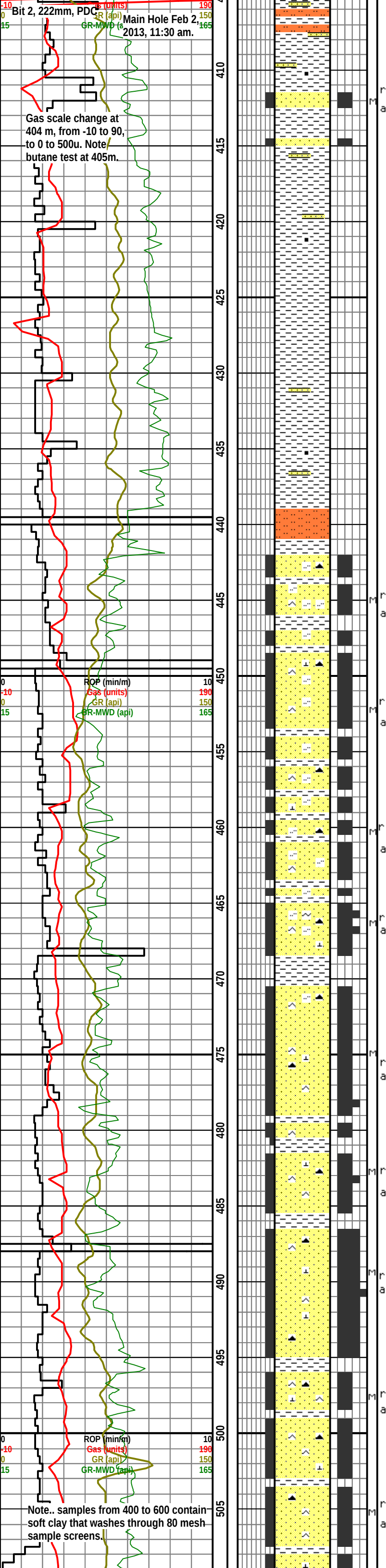
260-270 100% Mudstone.. med gy, dense, firm, Mnr slst.

270-285 80% Mudstone.. med gy, firm, dense, blk. 20% silt and sand loose in sample, cavings ?

285-305 90% SS.. s&p, f to L med gr, occ c gr cht, mod srtd, srd to sa, qtz, com dk cht, mn lith, loose, probable sil cmt, rr pr, est 6-12% por. 10% Mnr mudstone. Tr white clay chips in 300m sample.







405-410 80% Mudstone.. med gy, firm, mod cons, sl silty in pt, v tr carb incl, sl mmica, some slst lenses, . 20% SS.. s&p, f to med fr, occ c gr, mod srtd, sa to srd, qtz, mnr cht and lithic, loose, sil cmt, clay to silt mtx, non calc to v sl calc, 6-12% por. Cement in sample.

410-420 Gray mush at shaker, very little lithic material. 80% Mudstone.. med gy, blk, mod firm, sl mmica, sl silty. 20% SS.. s&p, to med gr, sa to srd, mod srtd, qtz, mnr cht and lithic, loose in sample, est 6-12% por.

420-430 Gray mush at shaker, very little lithic material. 90% Mudstone.. med gy, firm, blk, sl mmica, v tr carb incl. 10%SS.. s&p, to med, loose grains.

430-440 Gray mush at shaker, minor lithic material. 50% SLST.. med gy, firm, mod cons, qtz silt, clay mtx, sl to mod calc, grdg to silty mudstone in pt, some intbdd vf gr ss, tt to tr por. 50% Mudstone.. med gy, firm, blk, silty in pt, v tr carb incl, sl mmica.

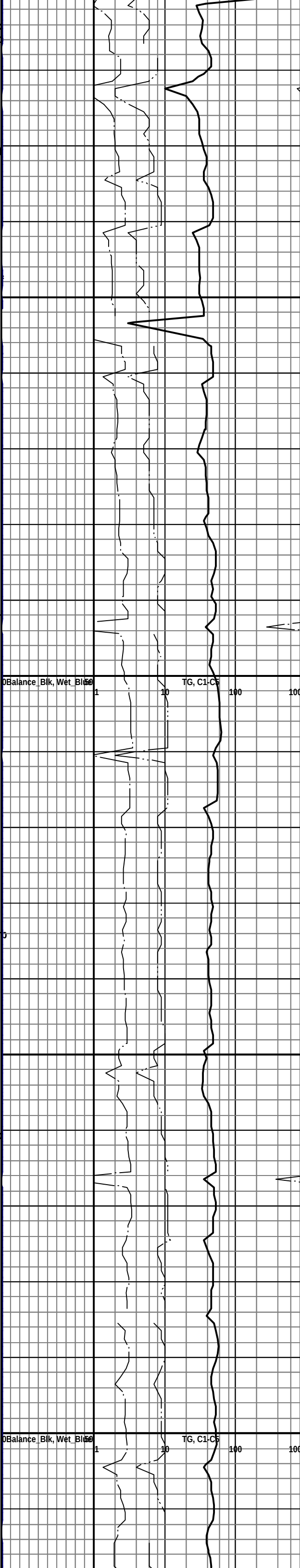
440-450 Gray mush at shaker, moderate lithic content: 50% SS.. s&p to med gr, mod srtd, srd to sa, qtz, mnr cht, mnr lith, pred loose, sil cmt, sl calc, clay to silt mtx, mnr vf gr lenses, 6 to 12% por. 50% Mudstone, med gy, firm, silty in pt, some intbdd arg slst, sl mmica, tr py.

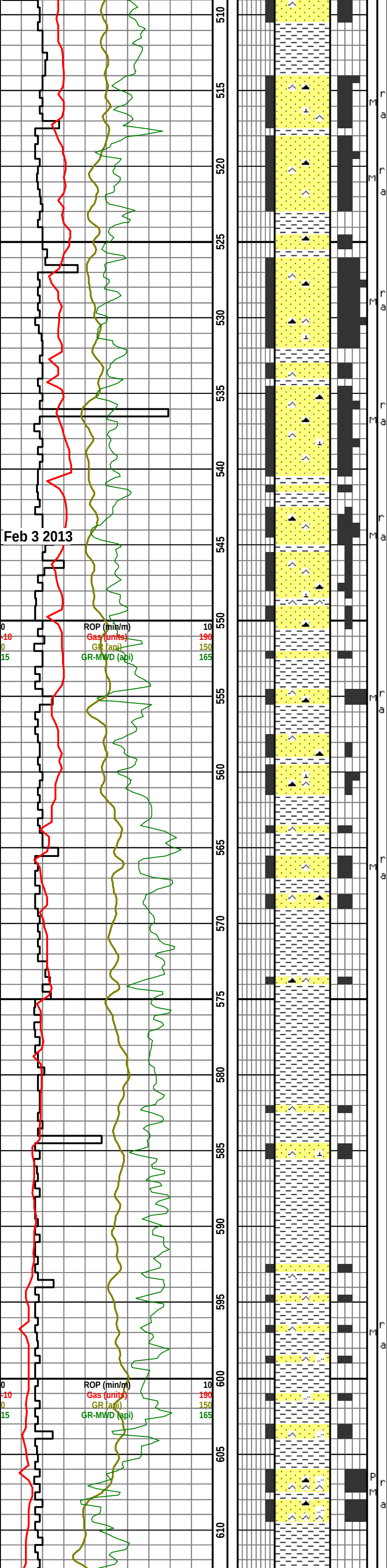
450-460 Shaker material mix of thick gray mud and soft chips. 60% SS.. s&p, f to med gr, sa to srd, mod srtd, qtz, mnr to com gy to blk cht, mnr lith, loose in pt, sil cmt, sl calc, silt mtx, 6 to 12% por. 40% Mudstone.. med gy, firm, blk, silty in pt, tr carb incl, sl mmica.

460-470 80% SS.. s&p, f to med gr, occ c gr, mod srtd, sa to srd, qtz, com cht, mnr lith, rr glauc, pred loose, sil cmt, sl calc, sil mtx, 6-12% por. 20% Mudstone.. med gy, blk, firm, silty, some intbdd slst, tr carb incl.

470-490 90% SS.. s&p, pred med gr, f gr in pt, tr c gr, mod srtd, srd to sa, qtz, mnr to com cht, mnr lith, pred loose, fri, sil cmt, v sl calc, cla to silt mtx, 8-12% por. 10% Mudstone.. med gy, firm, silty in pt.

490-510 70% SS.. s&p, f to med gr, srd to sa, qtz, mnr cht, mnr lith, mod cons, fri, sil cmt, mod calc, clay mtx, 5-8% por. 30% Mudstone.. med gy, blk, firm, silty in pt, some slst lenses.





510-520 80% SS.. s&p, f to m gr, mnrd c gr, mod srtd, srd to sa, qtz, com gy to blk cht, mnrd lith, loose, fri, silt mtx, est 6 to 12% por. 20% Mudstone.. med gy, firm, blk, silty in pt.

520-530 70% SS.. s&p, f to c gr, mod srtd, srd to sa, qtz, com cht, mn lith, rr glauc, pred loose, sil cmt, clay to silt mtx, v sl calc, 5-10% por. 30% Mudstone, pred med gy, firm, silty in pt, tr gy - gn, mnr lt gy - br with floating f to c sand grains.

530-540 as above, occ cht pbl frag.

540-550 90% SS.. s&p, pred med gr, c gr in pt, mnr v c gr to granule, mnr f gr, mod srted, srt, qtz, com gy to blk cht, mnr lith, loose, sil cmt sl calc in pt, clay to silt mtx, est 6-12% por. 10% Mudstone.. med gy, blk, firm, sl mmica: Some lt brn silicified mudstone to arg cht, hd, brittle, mnr floating qtz and cht grs,

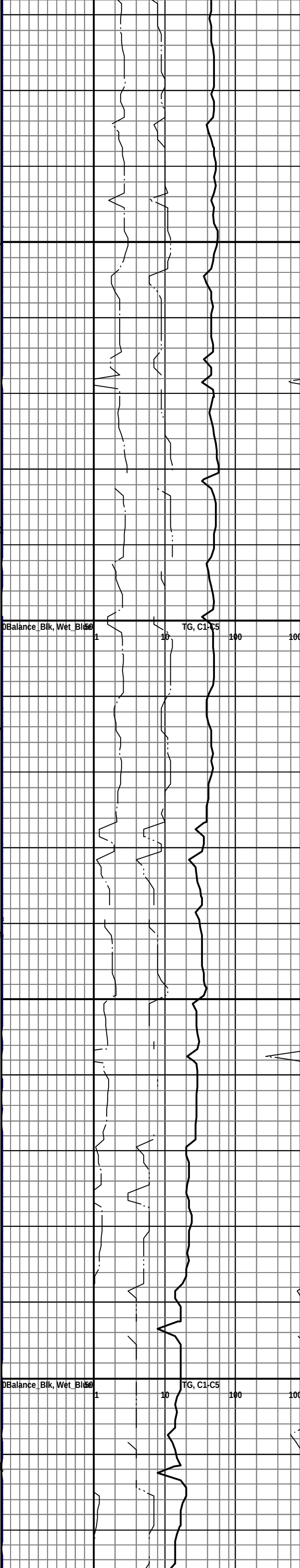
550-560 80% SS.. s&p, med to c gr, some v c grs, mod srtd, srd, qtz, com cht, mnr lith, pred loose, sil cmt, mod cons, sl to mod calc, clay to silt mtx, rr py, 5-10% por. 20% Mudstone.. med gy, blk, form, silty in pt, sl mmica.

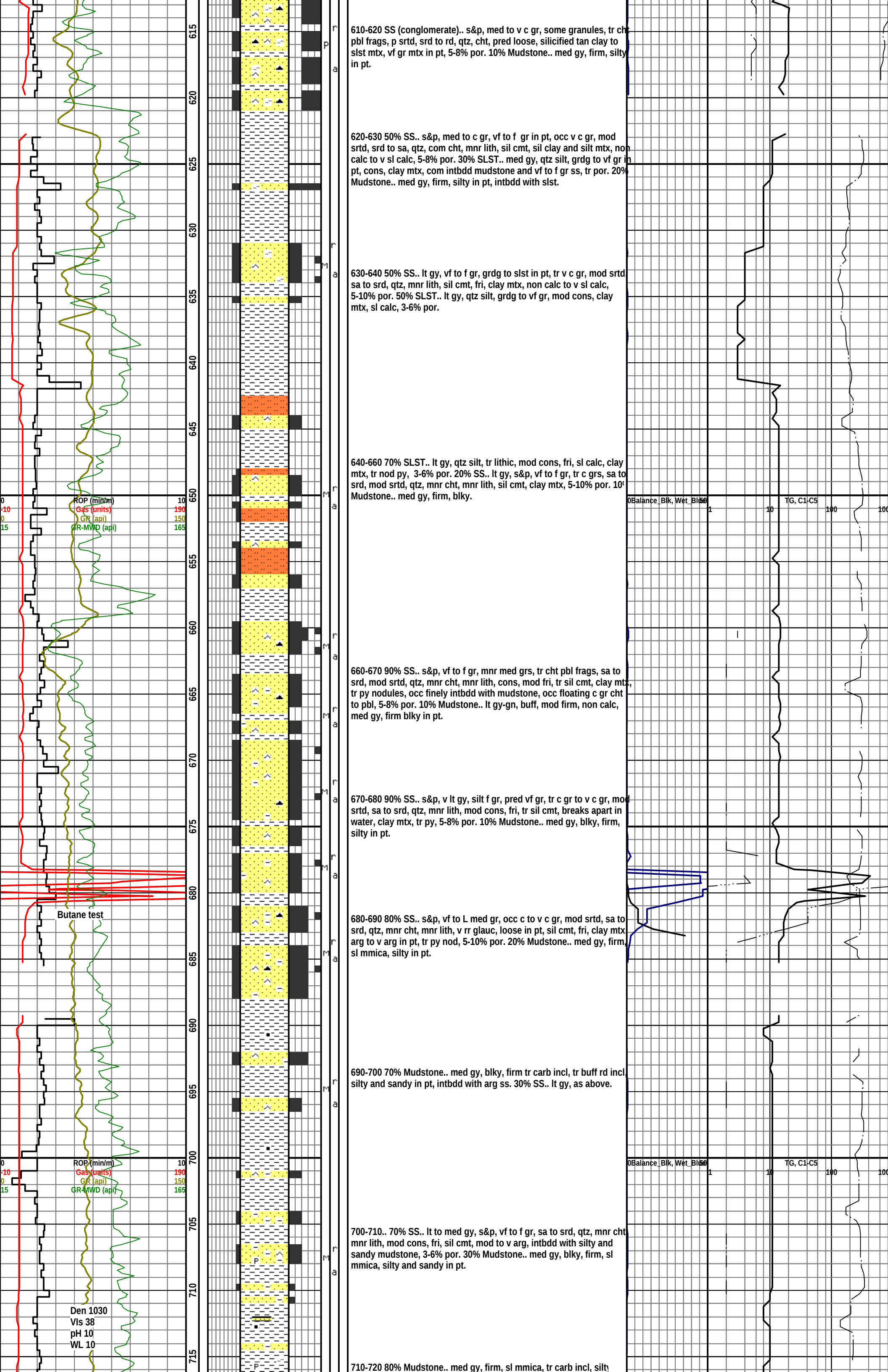
560-580 70% Mudstone.. med gy, blk, firm, sl mica. 30% SS.. s&p, to med gr, mod srted, srt to sa, qtz, mnr cht, mnr lith, loose, est 6-12% por.

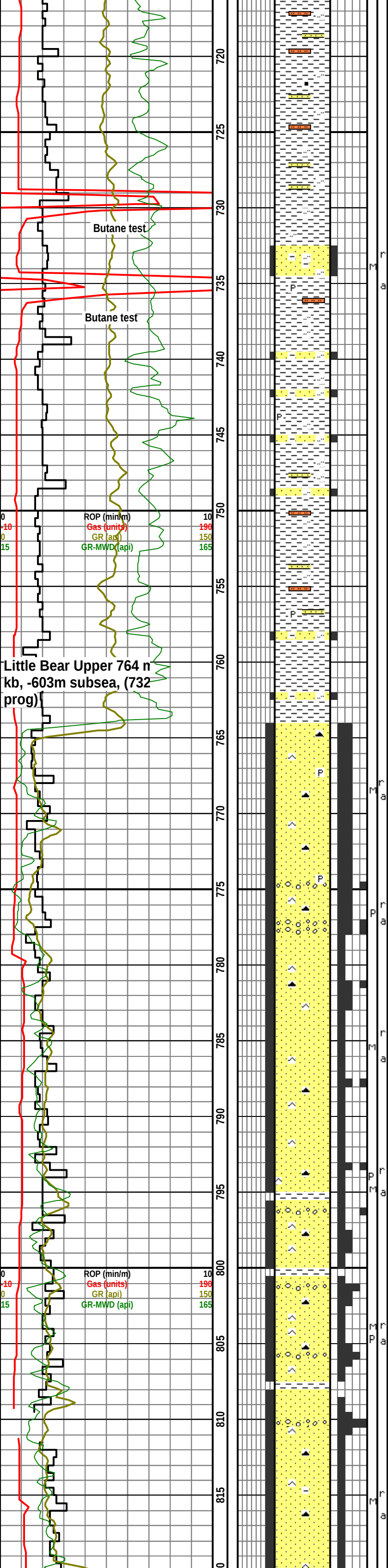
580-590 90% Mudstone.. med gy, firm, sl mmica, mnr silty lenses. 10 SS.. as above.

590-600 100% Mudstone.. med gy, firm, silty in pt, mnr arg slst beds, tr vf to f gr ss lenses.

600-610 90% SS.. s&p, med to v c gr, occ granule frag, p to mod srd
srd to sa, qtz, com to abnt gray to blk cht, mnr lith, loose, tr lt brn to
tan silicified clay as matrix in ss, mnr tan silt mtx, no flor on tan silt,
silt mtx, 5-8% por. 10% Mudstone.







grdg to arg slst. 30% SS.. as above

720-730 100% Mudstone.. med gy, blk, firm, silty, grdg to and intbdd with arg slst, some intbdd arg ss, tr py nod.

730-740 50% SS.. lt to med gy, vf gr, grdg to silt, sa to srd, qtz, mn lithic, mod cons, sil cmt, mod to v arg, 3-6% por. 50% Mudstone.. med gy, firm, blk, tr carb incl, silty and sandy lenses and beds, tr nod py

740-750 70% Mudstone.. med gy, firm, silty, grdg to and intbdd with arg slst, tr carb incl. 50% SS.. lt to med gy, vf gr, silty, qtz, mn lith, sa to srd, mod srtd, mod cons, sil cmt, arg to v arg, 3-6% por.

750-764 80% Mudstone.. med gy, firm, blk, tr carb incl, silty in pt, com intbdd arg slst and arg ss, tr py nodules. 20% SS.. lt to med gy, pred vf gr, mn f gr, sa to srd, mod srtd, qtz, mn lithic, mod cons, sil cmt, arg to v arg, 3-8% por.

765-770 95% SS.. s&p, f to med gr, mod srtd, srd to sa, qtz, com cht, mn lith, pred loose, sil cmt, clay mtx, 8-12% por, tr intsl py. 5% Mudstone.. med gy, firm, silty.

770-775 SS.. as above, tr cht pbl frags.

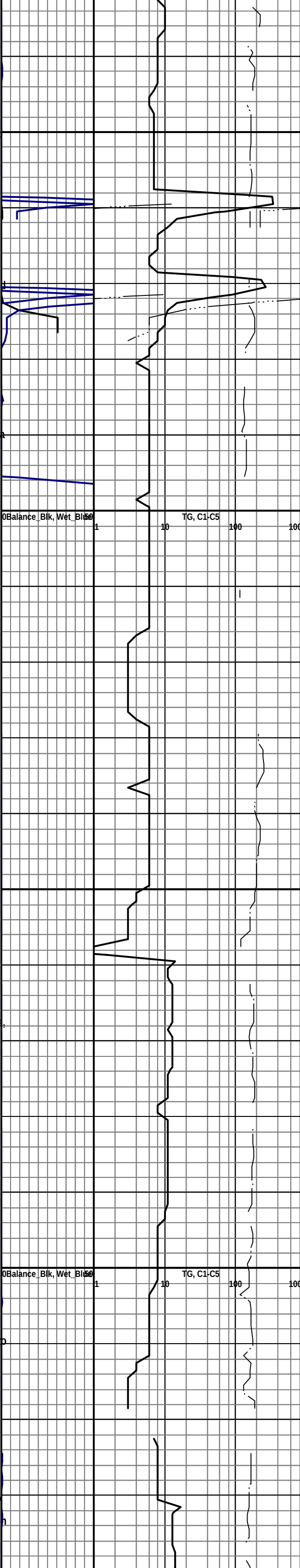
775-780 SS (Conglomerate).. f to v c gr, some larger frags from granules to small pbls, srd to sa, p srtd, qtz, abnt vari col cht, pred loose, fri, sil cmt, mod cons, tr intsl py, 6-12% por.

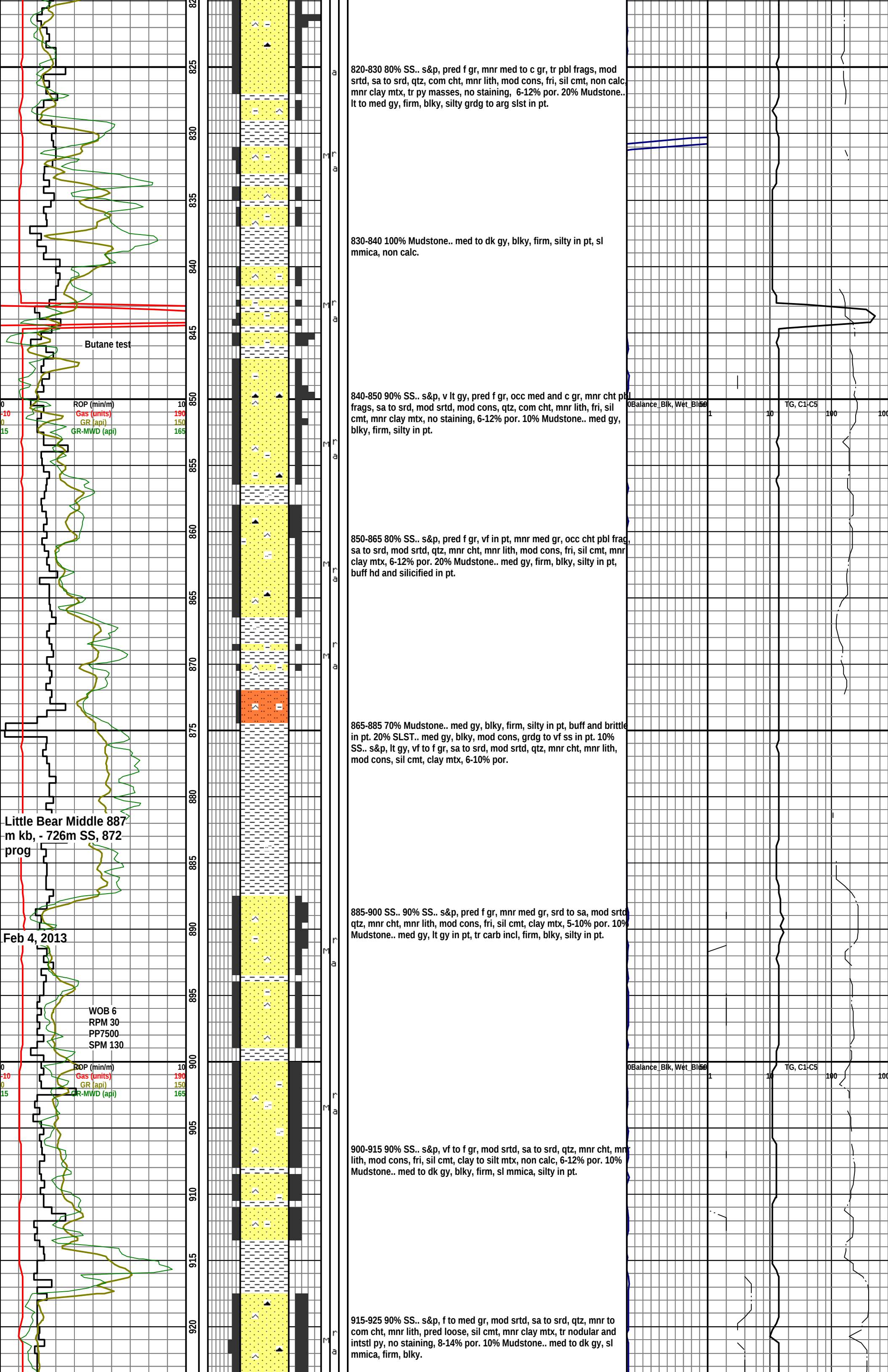
780-790 95% SS.. s&p, pred f gr, mn med gr, mod to w srtd, srd to sa, qtz, mn lith, mn cht, pred loose, sil cmt, mn clay mtx, tr intsl py, 8-14% por. 5% Mudstone.. med gy, firm.

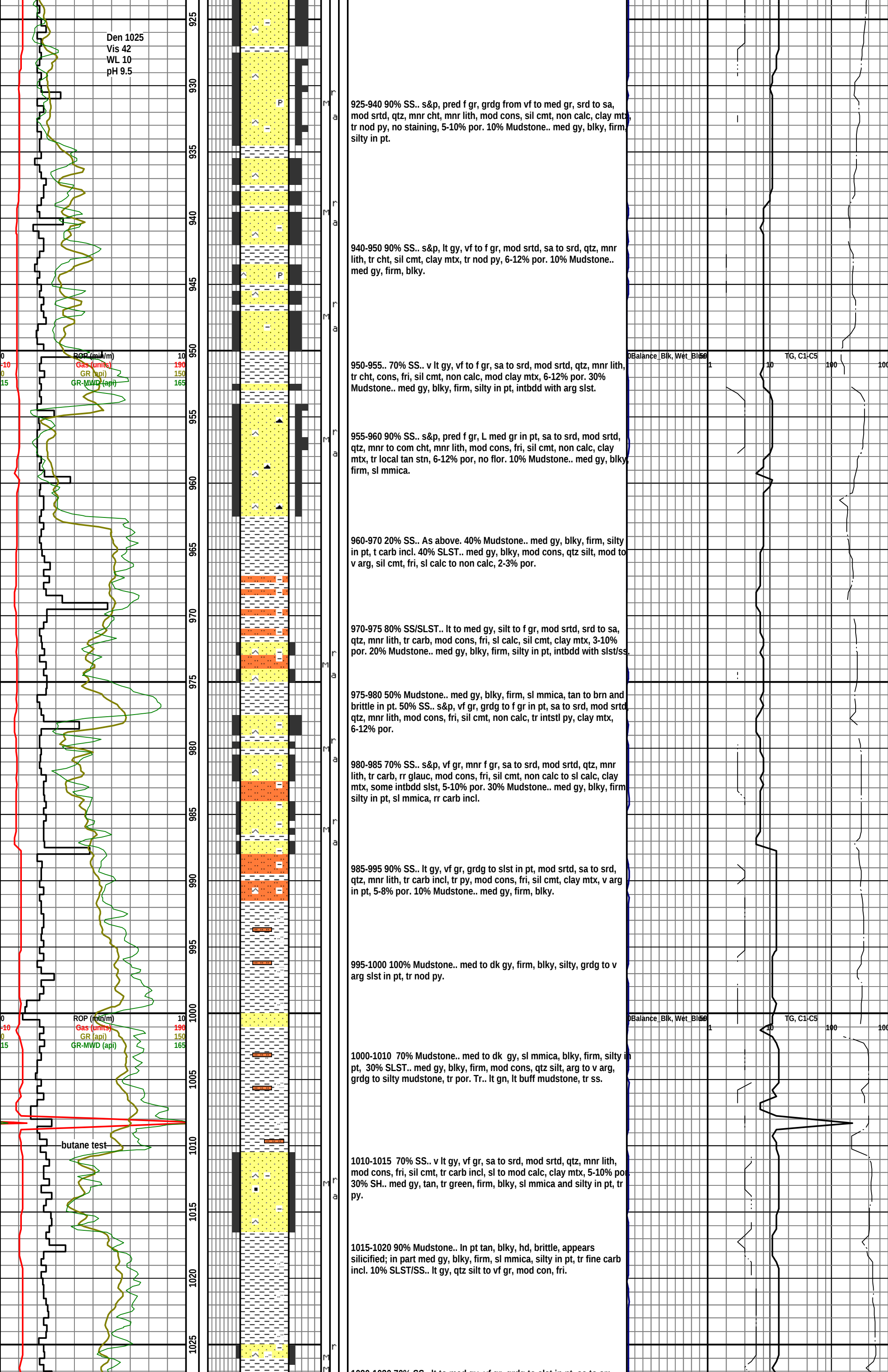
790-800 SS (Conglomerate).. v lt gy, s&p, pred f gr, mn med gr, numerous v c gr to small pbl chert frags floating, srd to sa, p to mod srtd, qtz, mn lithic, mod cons, sil cmt, mn clay mtx, 8-14% por.

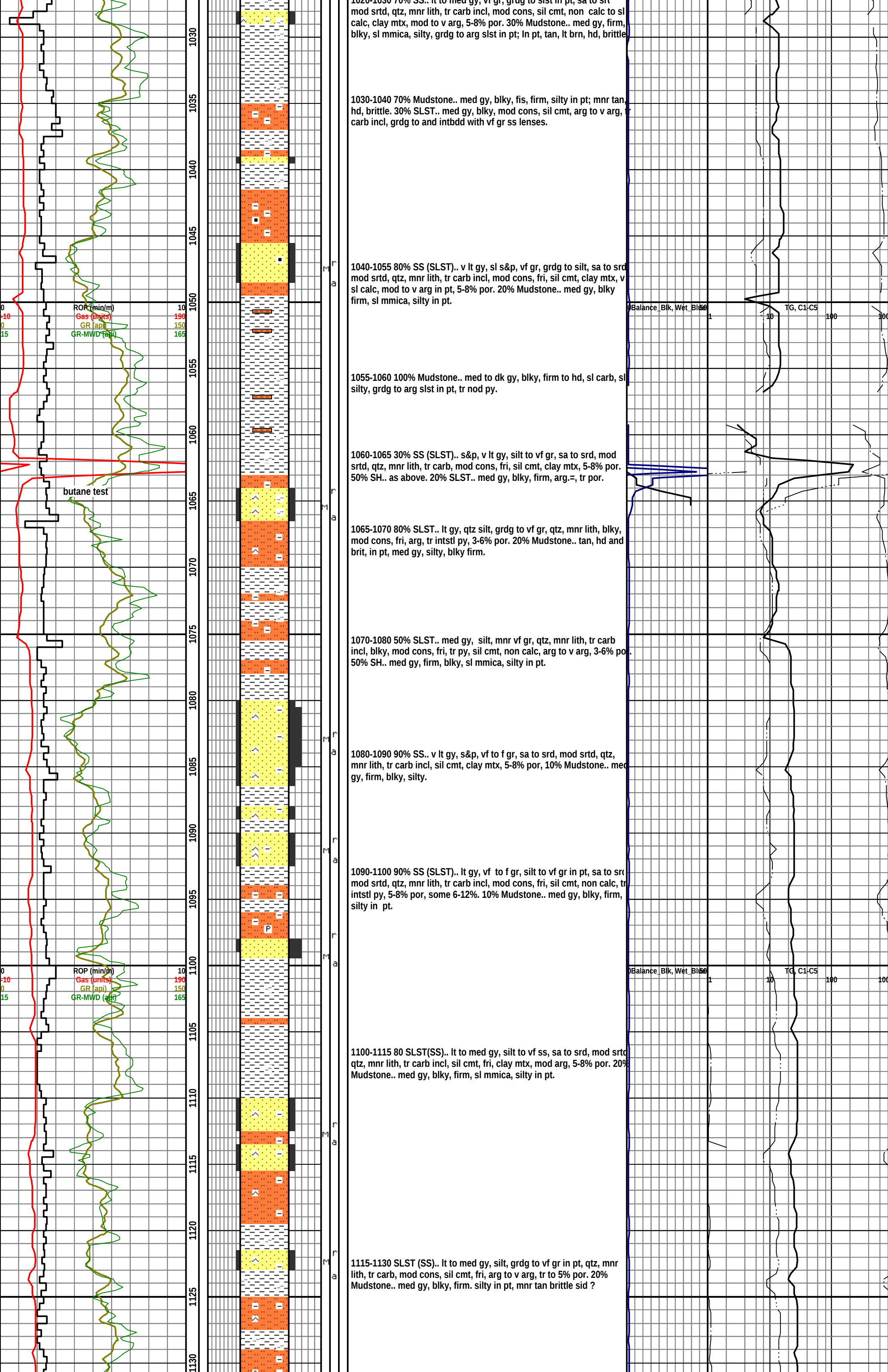
800-810 95% SS (Conglomerate).. s&p, pred f gr, tr med to c gr, com vari coloured chert granule to pbl frags, p to mod srtd, sa to srd, qtz, com cht, mn lith, mod cons, fri, mn clay mtx, c gr and pbls appear to float in f gr ss, mn intbdd arg slst, 6-12% por, no staining. 5% SLST. med, blk, firm, v arg, grdg to mudstone.

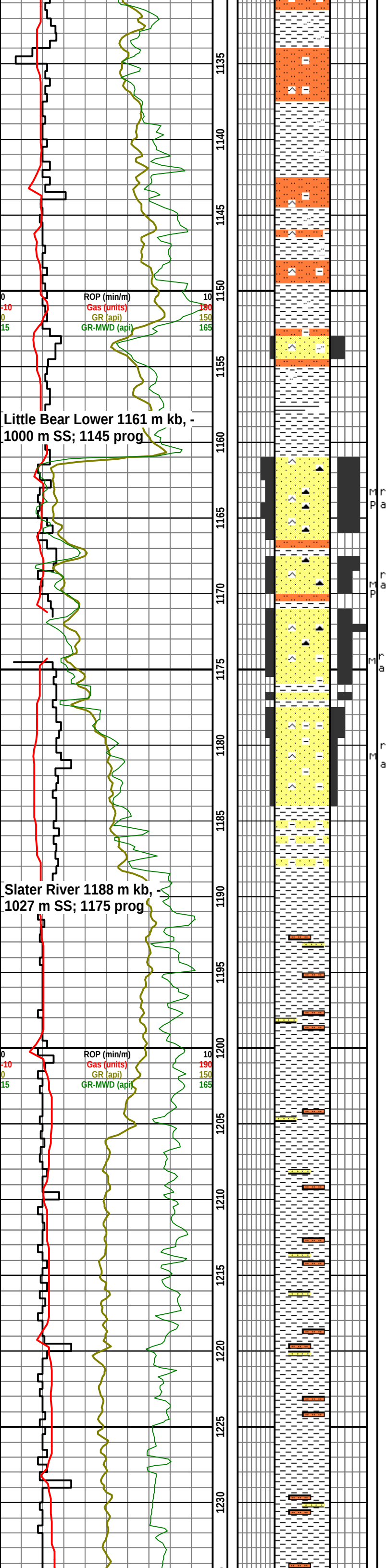
810-820 90% SS.. s&p, pred f gr, occ med to c gr, mn granule to pbl frags, sa to srd, mod to w srtd, qtz, mn lithic, mn cht, mod cons, fri, non calc, sil cmt, mn clay mtx, no staining, 6-12% por. 5% Mudstone.. med gy, blk, firm, silty in pt. 5% Mudstone.. buff, tan, firm, blk, hd in pt, pos silicified.











1130-1140 80% SLST.. med gy, blk, mod cons, qtz, mn lith, tr carb, sil cmt, non calc, arg to v arg, tr to 3% por. 20% Mudstone.. med gy, firm, blk, silty in pt.

1140-1150 70% Mudstone.. med gy, firm, blk, sl mica, silty, grdg to arg slst in pt. 30% SLST.. med gy, mod cons, qtz, mn lith, sil cmt, arg to v arg, tr to 3% por.

1150-1160 60% SLST.. med gy, blk, mod cons, qtz, mn lith, sil cmt, arg to v arg, tr to 3% por. 30% Mudstone.. med gy, blk, firm, silty. 10% SS.. s&p, vf to f gr, sa to srd, mod srtd, qtz, mn lith, tr carb incl. mod cons, fri, sil cmt, clay to silt mtx, 5-8% por.

1160-1170 80% SS.. s&p, f to c gr, p to mod srtd, sa to srd, qtz, com cht, mn lith, mod cons, sil cmt, sl calc, clay mtx, tr intsl py, tr spty gold colour in f grs and sil cmt, 8-14% por, no flor. 20% Mudstone as above.

1170-1175 90% SS.. s&p, pred f to med gr, c gr in pt, occ v c gr, tr cht pbl frags, sa to srd, p to mod srtd, qtz, com cht, mn lith, mod cons, fri, sil cmt, clay mtx, non calc to v sl calc, tr intsl py, 6-12% por. 10% Mudstone.. med gy, blk, firm, silty, mn tan sid nod ?.

1175-1180 80% SS.. s&p, pred f gr, vf mtx, mn med grs, sa to srd, mod srtd, qtz, com cht, mn lith, mod con, sil cmt, non calc, clay to silt mtx, tr intsl py, some more arg ss beds, 6-12% por. 20% Mudstone.. med gy, blk, firm, silty, mn tan brit sid nod ?.

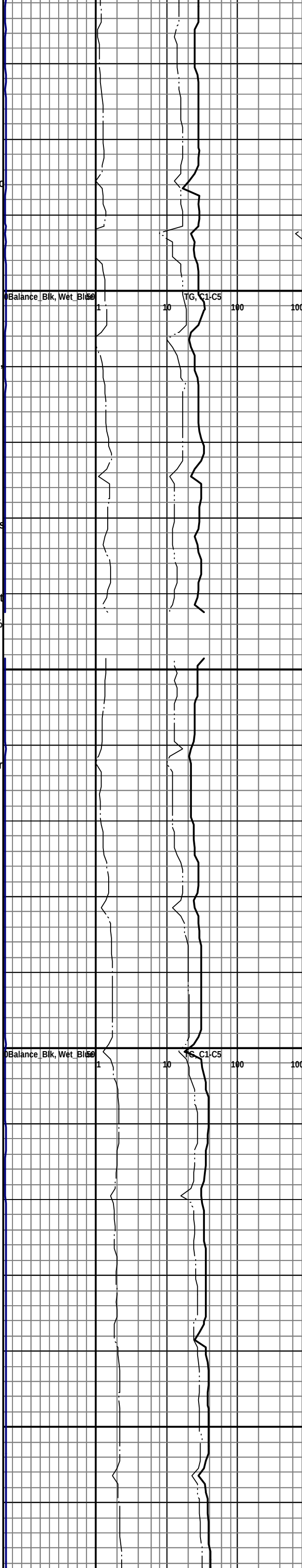
1180-1185 80% SS.. lt gy, s&p, vf to f gr, sa to srd, mod srtd, qtz, mn to com cht, mn lith, mod cons, sil cmt, clay to silt mtx, arg to v arg, 5-8% por. 20% Mudstone.. med gy, blk, firm, silty in pt.

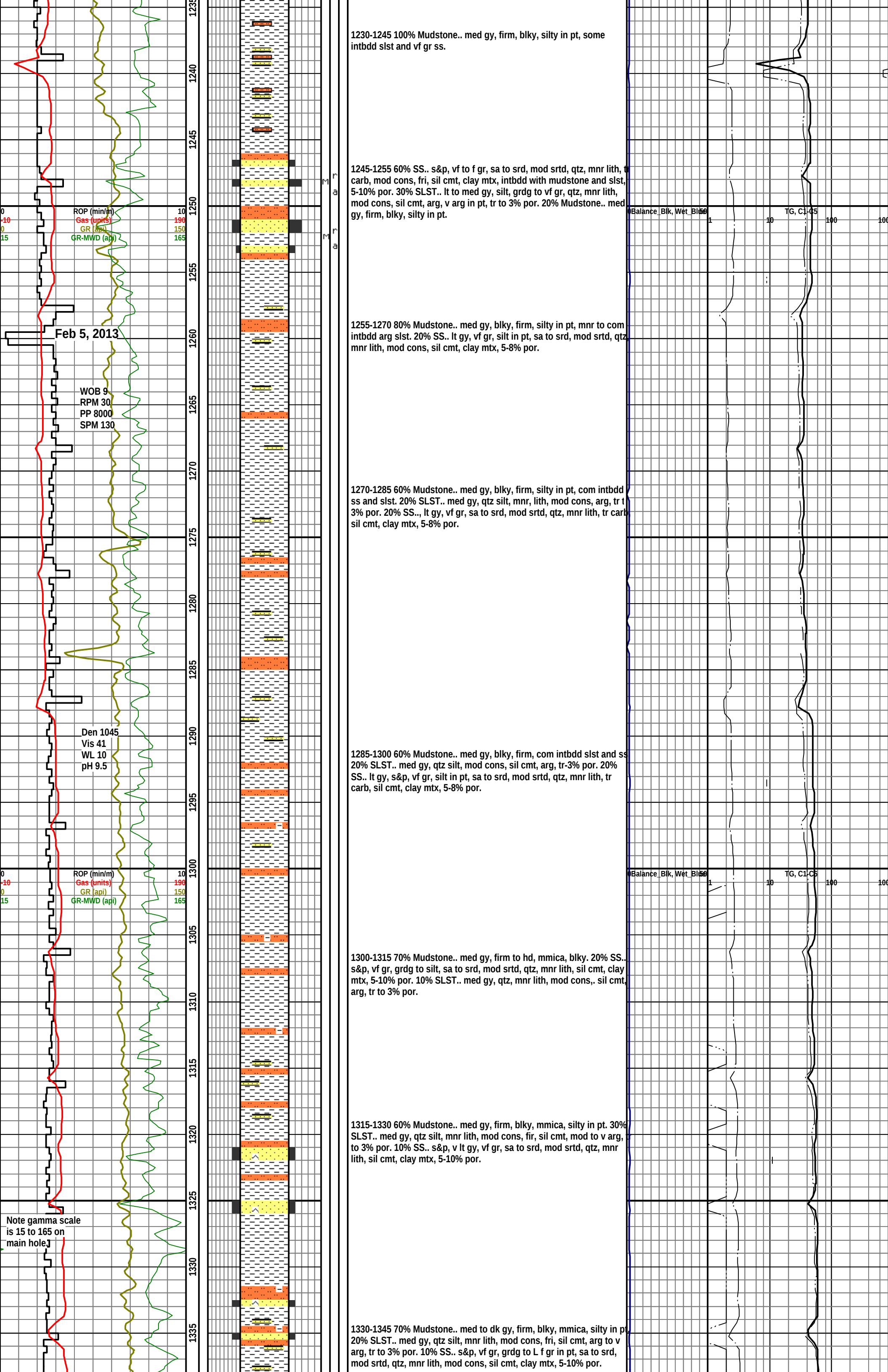
1185-1190 80% Mudstone.. med gy, blk, firm, silty in pt. 20% SS.. lt gy, as above.

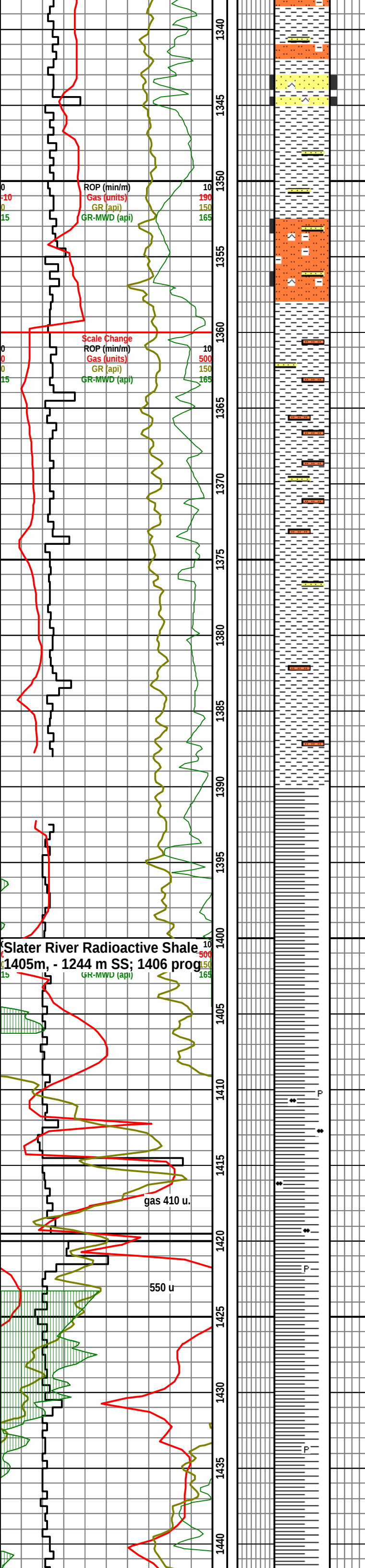
1190-1200 100% Mudstone.. med gy, grdg to dk gy, firm, blk, sl mica, sl silty, mn intbdd slst lenses, occ ss lens.

1200-1215 100% Mudstone.. med gy, blk, firm, sl mica, silty in pt, mn intbdd slst and vf gr ss.

1215-1230 100% Mudstone.. med gy, blk, firm, silty in pt, sl mica, mn intbdd arg slst and vf gr ss, tr nod py.







1345-1360 80% Mudstone - Shale.. med to dk gy, firm, sl fis, mmica, blk, silty in pt, mnr intbdd slst and vf gr ss. 10% SLST.. lt to med gy qtz silt, mod cons, sil cmt, arg to v arg, tr to 3% por. 10% SS.. s&p, vf gr, sa to srd, mod srtd, qtz, mnr lith, mod cons, sil cmt, clay mtx, 5-10% por.

1360-1375 90% Mudstone - Shale.. dk gy, blk, sl fis, firm, mmica, silty in pt, some intbdd slst, tr med gy - brn silicified siderite ?. 10%SS.. v lt gy, s&p, vf gr, silt in pt, qtz, mnr lith, tr carb incl, sil cmt, clay mtx, 5-10% por.

1375-1390 100% Mudstone - Shale.. dk gy, mmica, firm, blk, plty in pt, sl fis, silty in pt, mnr to com thin intbdd slst and ss, tr py.

1390-1400 100% SH.. dk gy, mmica, sl fis, plty, firm, mnr intbdd slst and ss, mnr gy-brn brittle sid ?.

1400-1405 100% SH.. dk to v dk gy, hd, sl brittle, plty, sl fis, mmica, tr py mod, rr ss, 3-5% tan to lt gy-brn silicified siderite ?, pos silicified sh.

1405-1410 SH.. dk to v dk gy, mmica, plty, sl fis, hd, sl brittle, tr slst, tr scat py cubes, 5% gy-brn hd brittle, silicified, sid ?

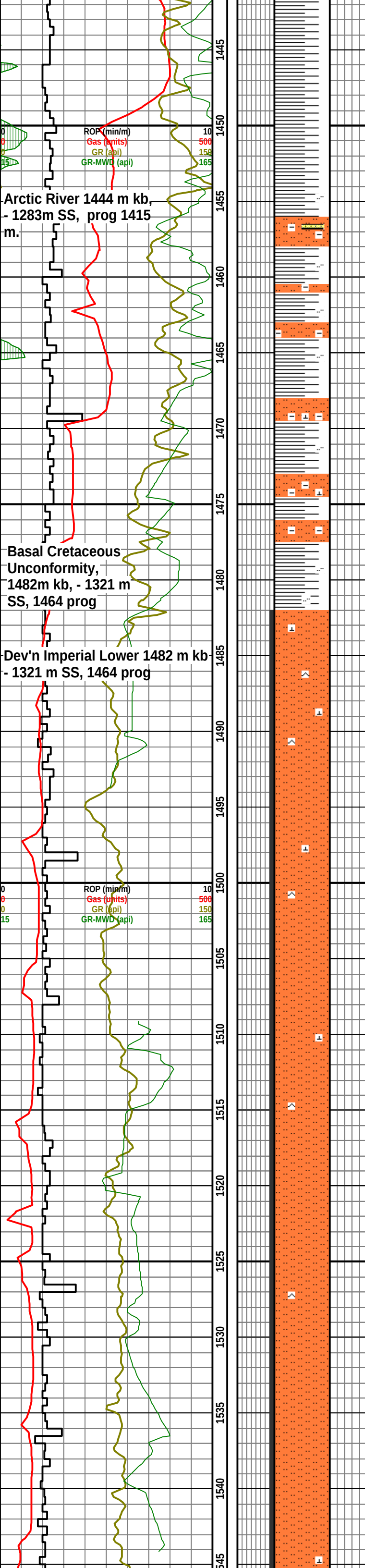
1410-1415 SH.. dk to v dk gy, hd, brittle, plty, sub fis, tr wh phosphate specs, tr py, tr to 2% hd brittles sid ?. 5% Clay.. buff, v lt gy, silty in pt, sandy in pt, local vf py xls, pos phosphatic.

1415-1420 SH.. dk to v dk gy, plty, firm to hd, sl fis, mmica, mnr scat wh phosphatic specs, tr nod py, tr to mnr buff to gy-blue clay, pos phosphatic, rr c calcite xls.

1420-1430 SH.. dk to v dk gy, plty, firm to hd, mmica, mnr scat wh phosphatic specs, tr py seams, tr ss, rr fos frags.

1430-1440 SH.. dk gy, plty, firm to hd, mmica, v tr wh phosphatic specs, tr micro lenses of slst, rr blue-gy clay, rr sid nodule, tr py.





1440-1450 SH.. dk to v dk gy, plty to blk, sl fis, mmica, sl silty and sandy, rr fos frags, mod firm, tr slst, tr py.

1450-1465 80% SLST.. med gy, qtz silt, vf gr ss in pt, mnr lith, mod
cons, arg to v arg, intbdd with silty sh, tr por. 20% SH.. dk gy, plty to
blky, firm, silty. 20% SH.. dk gy as above.

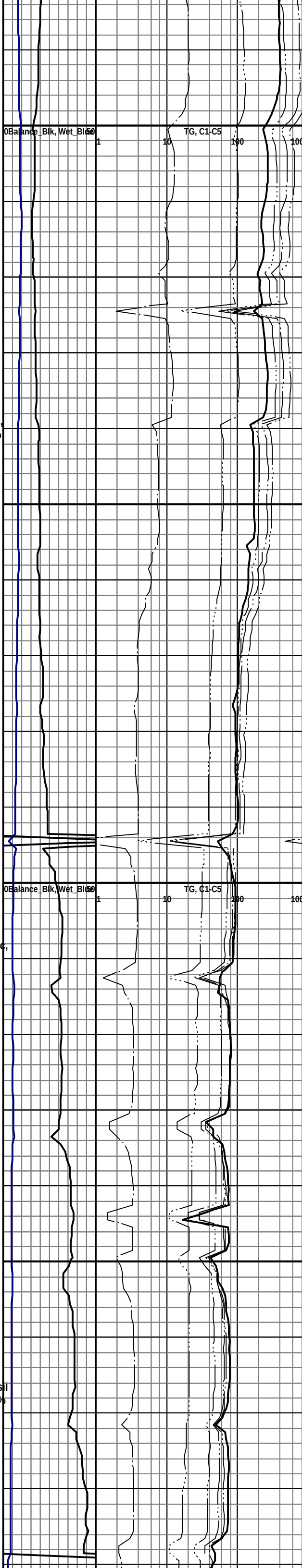
1465-1480 80% SLST.. med gy, qtz silt, mnv vf gr, mnv lith, mod cons.
sil and calc cmt, fri, mod arg, tr carb incl, grdg to vf gr ss in pt, tr-3%
por. 20% SH.. med gy, blk, firm, sl mmica, silty in pt.

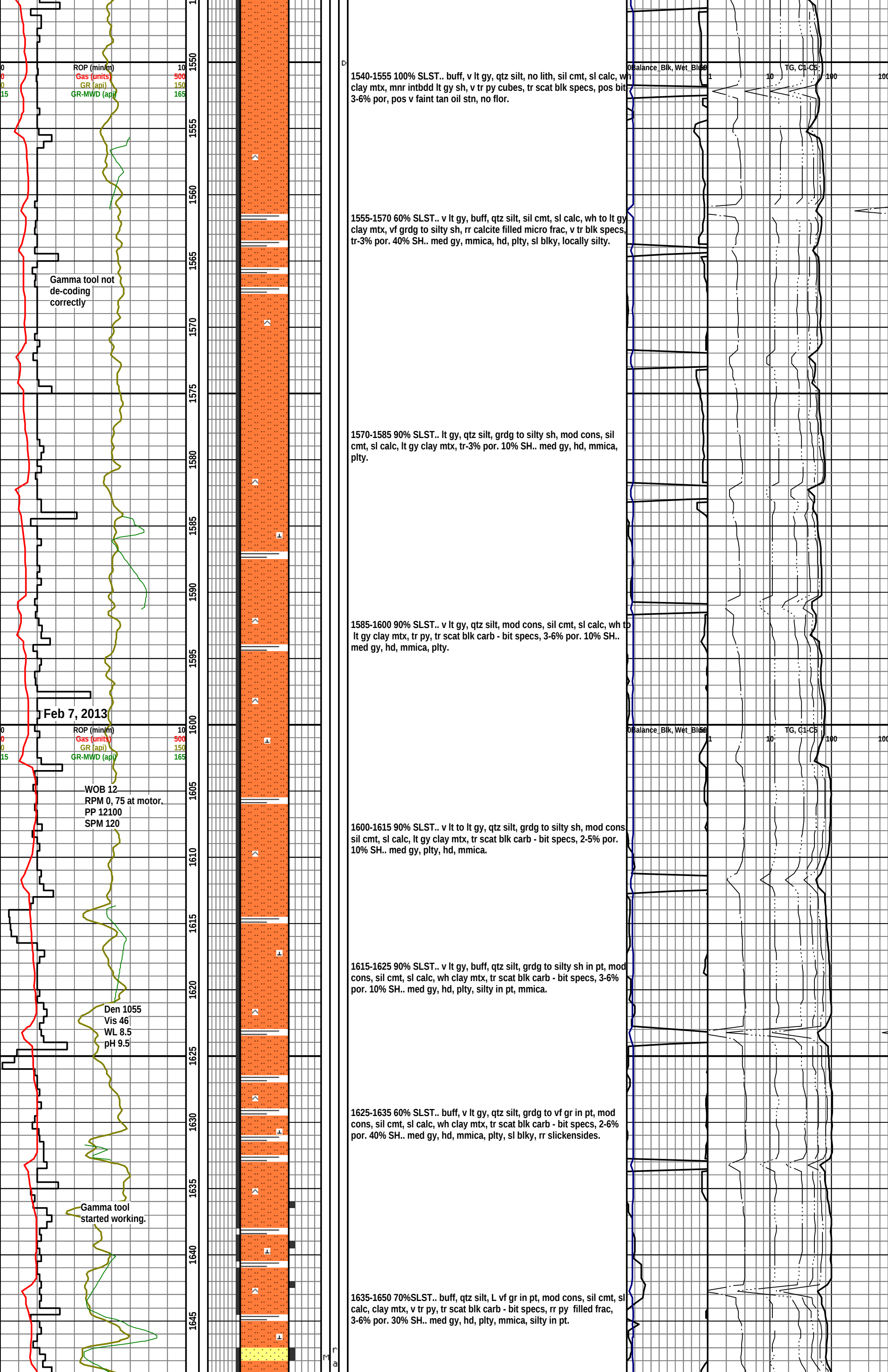
1480-1495 100% SLST.. buff, silt, grdg to L vf gr, qtz, tr lithic, mod
cons, sil cmt, sl calc, tr vf carb incl, clean, clay mtx, 3-6% por.

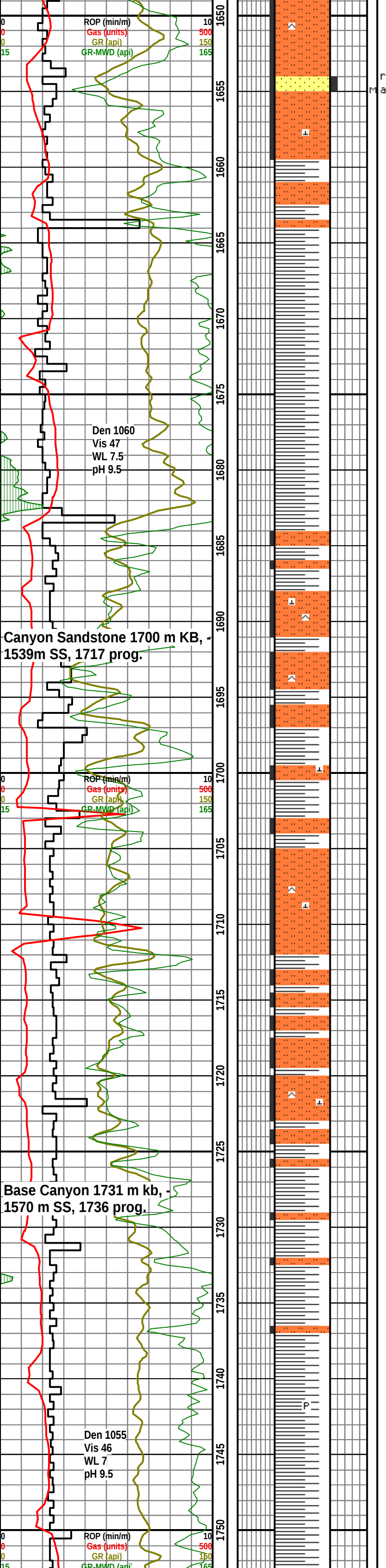
1495-1510 100% SLST.. buff, silt, qtz, tr lith, mod cons, sil cmt, sl calc,
wh clay mtx, mn r lt gy firm shale beds, v tr py, 3-6% por.

1510-1525 100% SLST.. buff, v lt gy, qtz silt, v tr lithic, mod cons, sil
cmt, sl calc, wh clay mtx, mnr intbdd lt gy sh, tr local py cubes, v tr
blk carb ? specs, pos bit, 3-6% por.

1525-1540 100% SLST.. v lt gy to lt gy, qtz silt, tr vf carb / bit specs, sl
cmt, mod cons, sl calc, wh clay mtx, mntr intbdd lt to med gy sh, 2-5%
por.







1650-1660 60% SH.. med gy, plty, hd, mmica, silty in pt. 40% SLST.. L gy, qtz silt, L vf gr ss in pt, grdg to silty sh, mod cons, sil cmt, sl calc, clay mtz, tr py, tr-3% por.

1660-1670 90% SH.. dk gy, plty, fis, firm, mmica, rr fos frag. 10% SLST.. buff, qtz, silt, mod cons, tr py.

1670-1680 100% SH. dk gy, plty, fis, firm to hd, mmica, sl waxy lustre

1680-1690 50% SH.. med gy, plty, fis, firm, mmica, rr py filled micro frac. 50% SLST.. buff qtz silt, mod cons, sil cmt, clay mtz, sl calc, tr scat carb - bit specs, 3-6% por.

1695-1700 50% SH.. med gy, plty, firm to hd, sl mmica, sl fis. 50% SLST.. buff, silt to vf gr, mod cons, sil cmt, sl calc, clay mtz, tr scat blk bit-carb incl, 3-6% por.

1700-1715 90% SLST.. buff, qtz silt, mod cons, sil cmt, clay mtz, tr vf py, tr spty blk carb - bit specs, 3-8% por. 10% SH.. med to dk gy, firm mmica, plty.

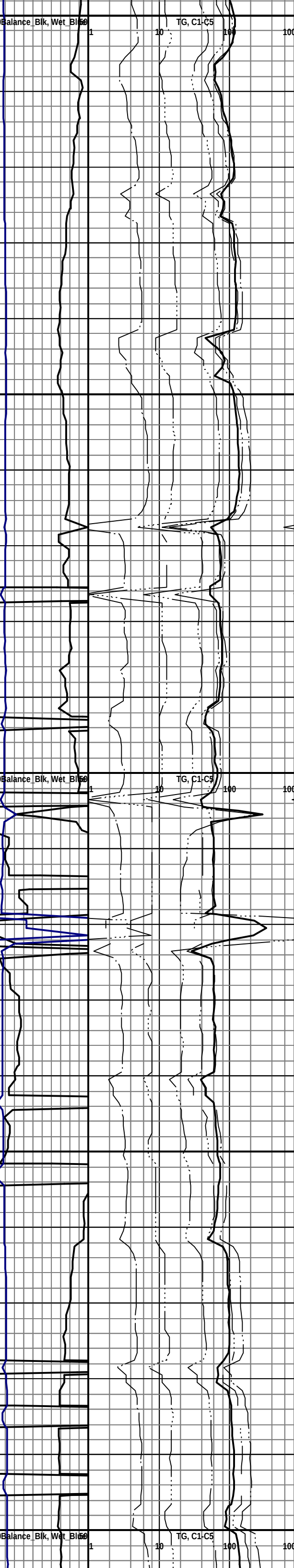
1715-1725 90% SLST.. buff, qtz silt, mod cons, sil cmt, sl calc, wh clay mtz, tr scat blk carb - scat, 3-6% por. 10% SH.. med gy, firm, mmica, plty.

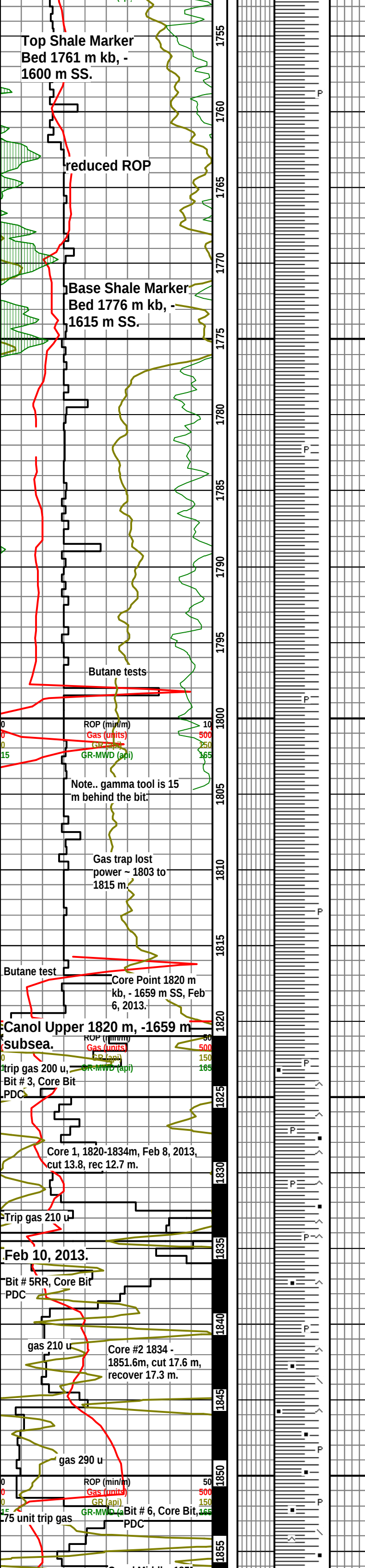
1725-1730 50 % SLST.. buff, qtz, mod cons, sil cmt, sl calc, clay mtz, 3-6% por. 50% SH.. med gy, mmica, plty, hd.

1730-1740 90% SH.. dk gy, mmica, firm to hd, plty, sl fis.

1740-1750 100% SH.. dk gy, plty, firm, mmica, dis py, sl fis.

1750-1755 100% SH.. dk gy, gy-brn in pt, tr calcite filled micro-frac.





1755-1760 100% SH.. dk gy-brn, tr calcite filled micro-frac.

1760-1765 100%SH.. dk gy-brn, plty, fis, rr cc filled micro frac, firm, v tr py.

1765-1770 100% SH.. dk gy-brn, plty, firm, fis, mmica, tr py.

1770-1775 100% SH.. dk gy, plty, firm, mmica, tr py.

1775-1780 100% SH.. dk gy, plty, fis, firm, tr py, tr gy - brn sh.

1780-1790 100% SH.. dk gy, plty, fis, tr py, sl waxy lustre, firm.

1790-1800 100% SH.. dk gy, plty, fis, firm, sl waxy, v tr py,

1800-1810 100% SH.. med to dk gy, plty, fis, firm, sl waxy lustre.

1810-1820 100% SH.. med to dk gy, fis, plty, sl waxy lustre, firm. tr c calcite.

1820-1825 100% SH.. dk to v dk gy, plty, fis, firm, tr py in vf xln masses, sl carb, siliceous.

1825-1830 100% SH.. v dk gy, sl gy-brn, plty, fis, firm, sl carb, tr py, siliceous, no flor.

1830-1833 SH.. v dk gy, sl gy-brn, firm, fis, plty, sl brittle, tr to mnr py, sl carb, siliceous, no stain or flor.

1833-1835 SH.. v dk gy, firm, plty, fis, tr py, sl carb, siliceous, sl mmica, no stain or flor.

1835-1840 SH.. v dk gy, sl gy brn, plty, firm, fis, sl mmica, sl brittle, sl carb, siliceous, rr calcite, rr wh specs pos phosphatic, tr siltstone, no stain or flor.

1840-1845 SH.. v dk gy, gy brn in pt, brittle, siliceous, sl carb, plty, fis, sl mmica, tr py, no stain, mnv v wk dull brn flor.

1845-1851 SH.. v dk gy, locally gy brn, firm, brittle, sl mmica, siliceous, sl carb, locally mod carb, rr wh specs - possibly phosphatic, tr py pos infilling frac, rr calcite, tr pyritic slst, no stain, mnv v wk dull brn flor.

1851-1855 SH.. v dk gy, locally gy - brn, plty, hd, siliceous, carbonaceous, tr blk bit along chip margin, crumbly in pt, no vis strn, dull med brn flor, mnv yel flor, bri wh strmg milky cut, pale yel ring cut. 50% Cavings of shale in sample.

