



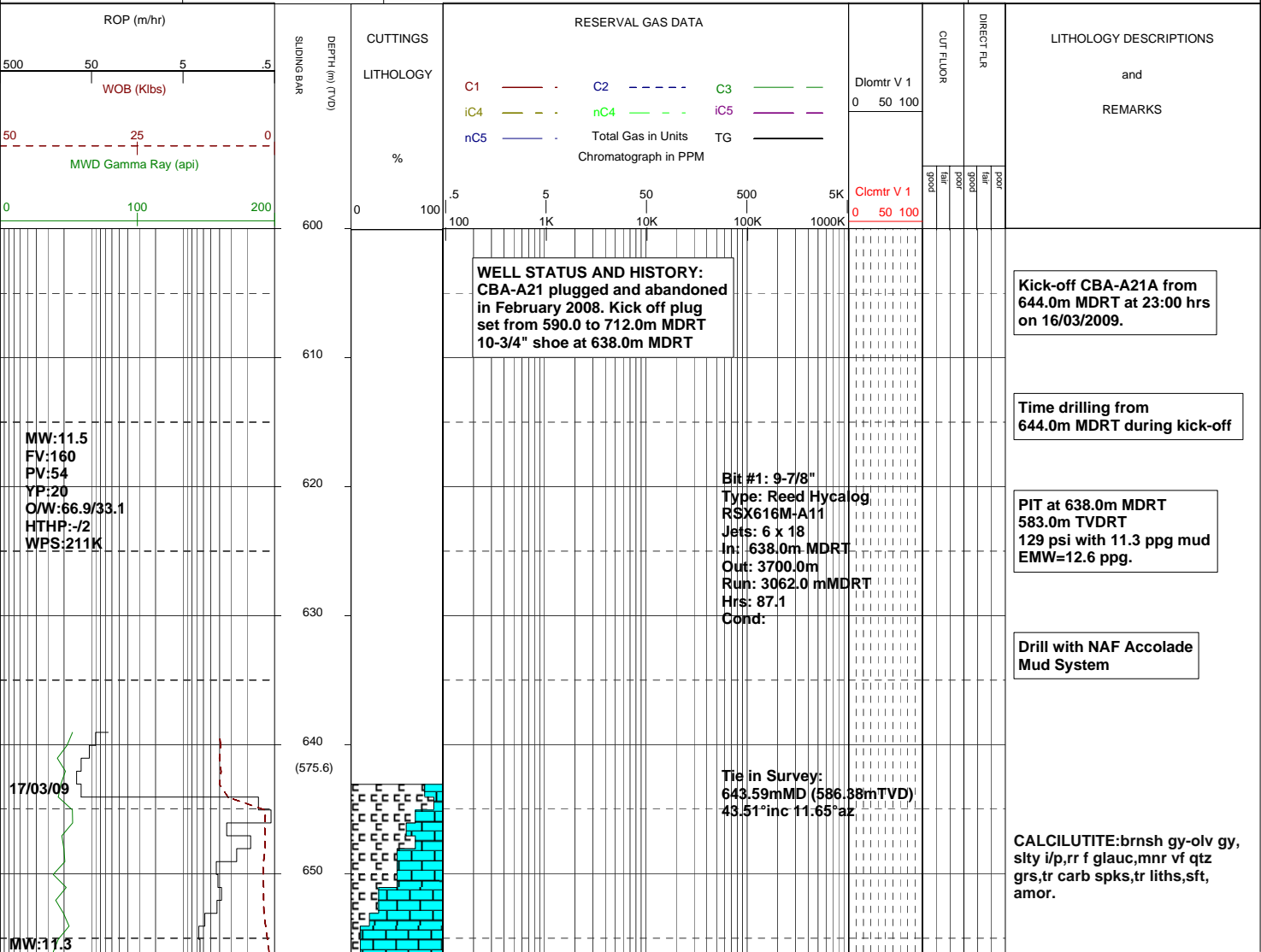
MASTERLOG

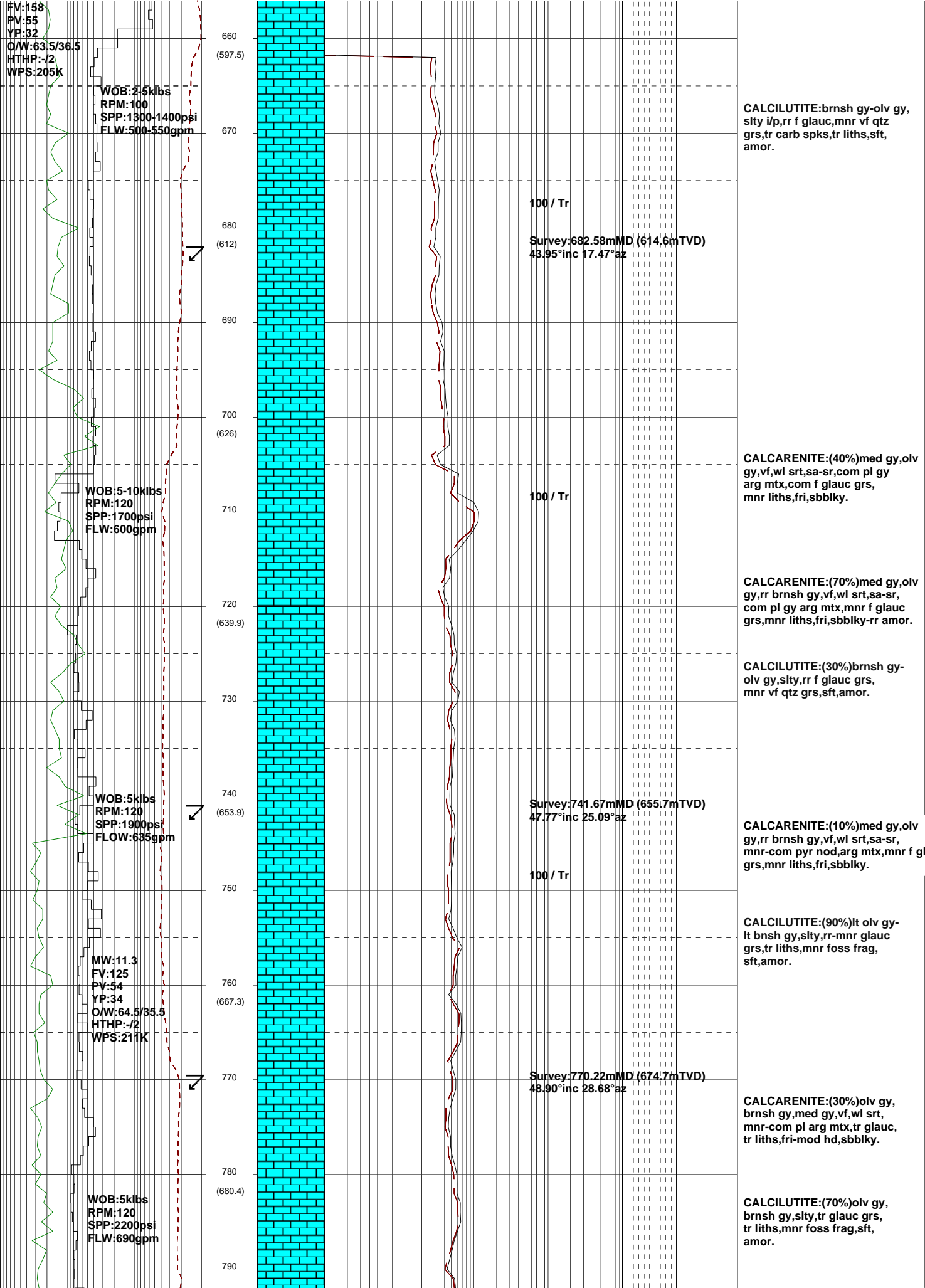
Cobia A21A



GENERAL	SURFACE POSITION	HOLE / CASING INFO	DATE / DEPTH	ENGINEERS
Country : AUSTRALIA	Longitude :148°18'33.005" E	9-7/8" Hole to	Kick off Date: 16/03/2009	Mark Smith
Permit : VIC / L5	Latitude : 38°26'57.568" S		Total Depth Date:	Phil Rady
Field : COBIA	MGA Co-ord X :614238.880 mE	10-3/4" Surface Csg at 638.0m MDRT	Total Depth:	Colin Chadwick
Basin : GIPPSLAND	MGA Co-ord Y : 5743517.940 mN		True Vertical Depth:	Adam Sullivan
Well Type :DEVELOPMENT	RT to MSL : 41.0 m	7" Production Csg at	Log Scale : 1/ 500	Kepa O'Reilly
Rig Name : Nabors 175	RT to Sea Bed : 120.0 m			

ABBREVIATIONS		LITHOLOGY LEGEND				ENGINEERING LEGEND	
MW	Mud Weight	WOB	Weight on Bit (klbs)	Claystone	Marl	Bryozoa	Glauconite
FV	Funnel Viscosity	RPM	Rotations Per Min	Siltstone	Limestone	Radiolariae	Pyrite
PV	Plastic Viscosity	FLW	Flow Rate (gpm)	Fine sandstone	Dolomite	Echinoids	
YP	Yield Point	SPP	Pump Pressure (psi)	Shale	Coal-lignite	Foraminiferae	
OW	Oil/Water Ratio	RR	Re-Run Bit	Conglomerate	Volcanic cinder, tuf	Cement	
WPS	Aq. Phase Salinity	TG	Trip Gas				
HPHT	Fluid Loss	CG	Connection Gas				
Cl	Chlorides	BG	Background Gas				
Incl	Inclination	DGP	Drilled Gas Peak				
Az	Azimuth	MM	Mud Motor				





FV:158
PV:55
YP:32
O/W:63.5/36.5
HTHP:-/2
WPS:205K

WOB:2.5klbs
RPM:100
SPP:1300-1400psi
FLW:500-550gpm

660
(597.5)

CALCILUTITE:brnsh gy-olv gy,
silty i/p,rr f glauc,mnr vf qtz
grs,tr carb spks,tr liths,sft,
amor.

100 / Tr

Survey:682.58mMD (614.6mTVD)
43.95°inc 17.47°az

680
(612)

690
(626)

CALCARENITE:(40%)med gy,olv
gy,vf,wl srt,sa-sr,com pl gy
arg mtx,com f glauc grs,
mnr liths,fri,sbblky.

100 / Tr

WOB:5-10klbs
RPM:120
SPP:1700psi
FLW:600gpm

710

CALCARENITE:(70%)med gy,olv
gy,rr brnsh gy,vf,wl srt,sa-sr,
com pl gy arg mtx,mnr f glauc
grs,mnr liths,fri,sbblky-rr amor.

720
(639.9)

CALCILUTITE:(30%)brnsh gy-
olv gy,silty,rr f glauc grs,
mnr vf qtz grs,sft,amor.

730

WOB:5klbs
RPM:120
SPP:1900psi
FLOW:635gpm

740
(653.9)

Survey:741.67mMD (655.7mTVD)
47.77°inc 25.09°az

CALCARENITE:(10%)med gy,olv
gy,rr brnsh gy,vf,wl srt,sa-sr,
mnr-com pyr nod,arg mtx,mnr f g
grs,mnr liths,fri,sbblky.

100 / Tr

750

CALCILUTITE:(90%)lt olv gy-
lt bnsh gy,silty,rr-mnr glauc
grs,tr liths,mnr foss frag,
sft,amor.

MW:11.3
FV:125
PV:54
YP:34
O/W:64.5/35.5
HTHP:-/2
WPS:211K

760
(667.3)

Survey:770.22mMD (674.7mTVD)
48.90°inc 28.68°az

CALCARENITE:(30%)olv gy,
brnsh gy,med gy,vf,wl srt,
mnr-com pl arg mtx,tr glauc,
tr liths,fri-mod hd,sbblky.

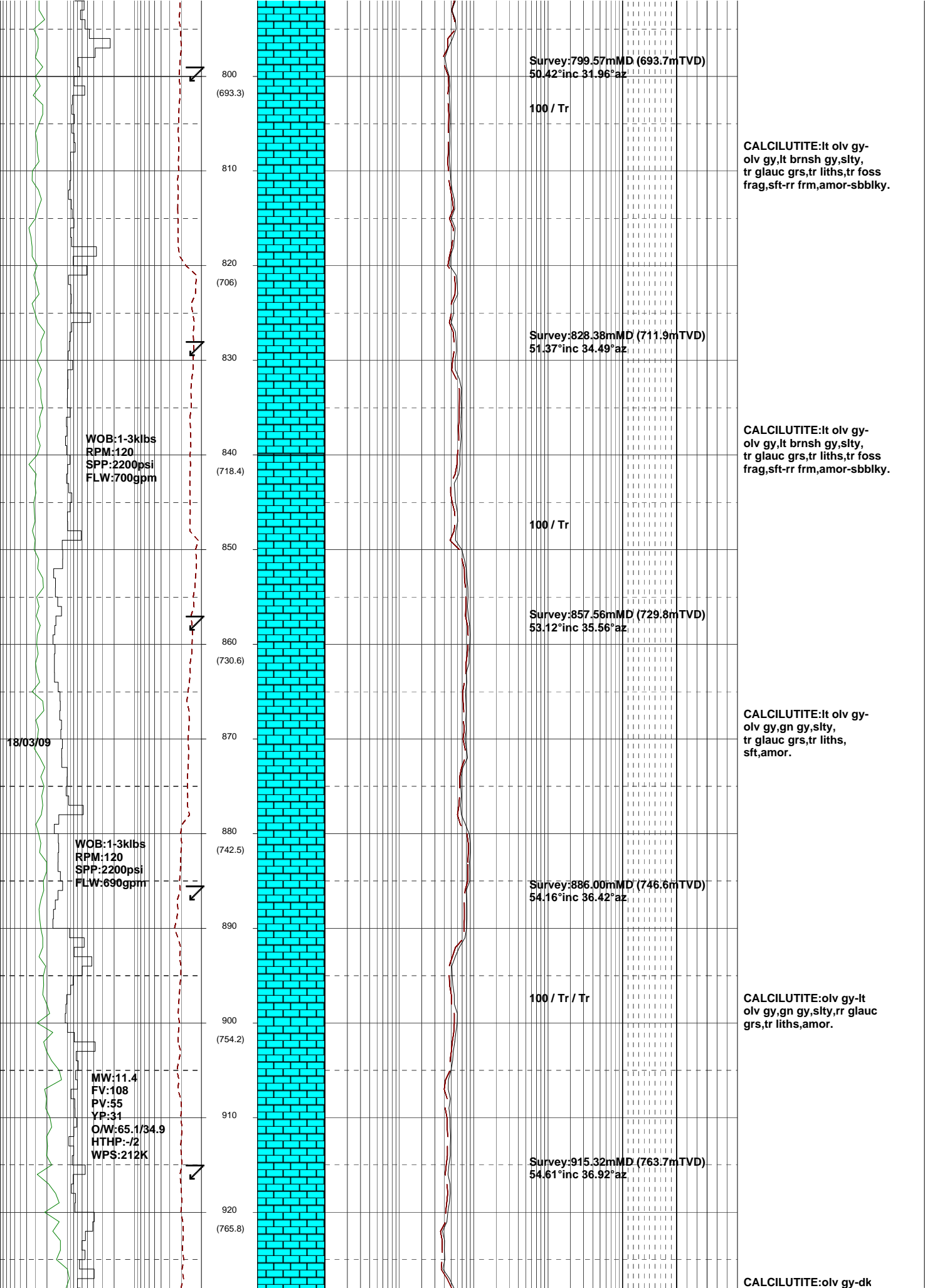
770

780
(680.4)

WOB:5klbs
RPM:120
SPP:2200psi
FLW:690gpm

CALCILUTITE:(70%)olv gy,
brnsh gy,silty,tr glauc grs,
tr liths,mnr foss frag,sft,
amor.

790



Survey:799.57mMD (693.7mTVD)
50.42°inc 31.96°az

100 / Tr

CALCILUTITE:lt olv gy-
olv gy,lt brnsh gy,slty,
tr glauc grs,tr liths,tr foss
frag,sft-rr frm,amor-sbblky.



800
(693.3)

810

820
(706)

830

Survey:828.38mMD (711.9mTVD)
51.37°inc 34.49°az

100 / Tr

CALCILUTITE:lt olv gy-
olv gy,lt brnsh gy,slty,
tr glauc grs,tr liths,tr foss
frag,sft-rr frm,amor-sbblky.

840
(718.4)

850

Survey:857.56mMD (729.8mTVD)
53.12°inc 35.56°az

CALCILUTITE:lt olv gy-
olv gy,gn gy,slty,
tr glauc grs,tr liths,
sft,amor.

860
(730.6)

870

18/03/09

WOB:1-3klbs
RPM:120
SPP:2200psi
FLW:700gpm

WOB:1-3klbs
RPM:120
SPP:2200psi
FLW:690gpm

880
(742.5)

890

Survey:886.00mMD (746.6mTVD)
54.16°inc 36.42°az

100 / Tr / Tr

CALCILUTITE:olv gy-lt
olv gy,gn gy,slty,rr glauc
grs,tr liths,amor.

900
(754.2)

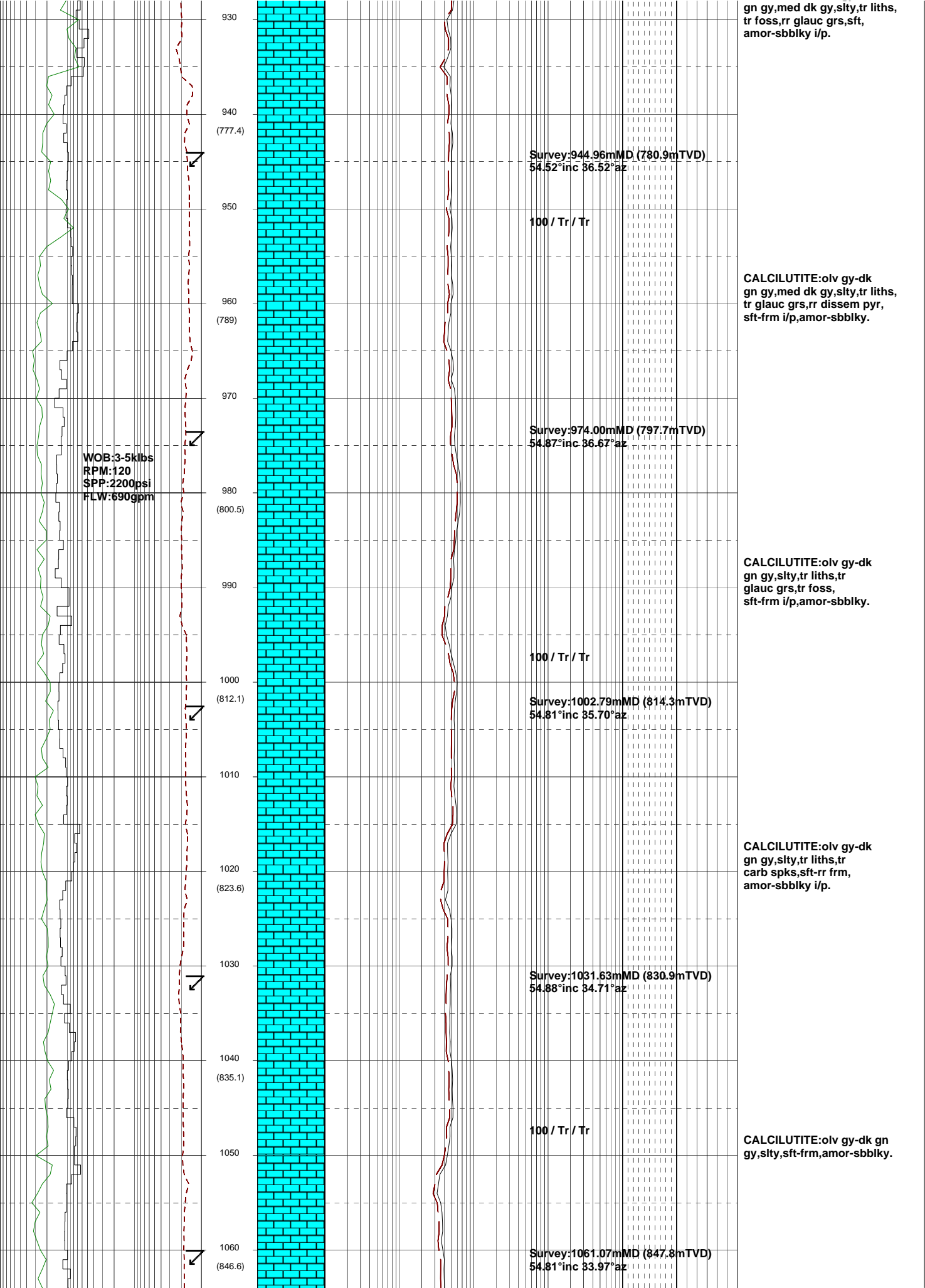
910

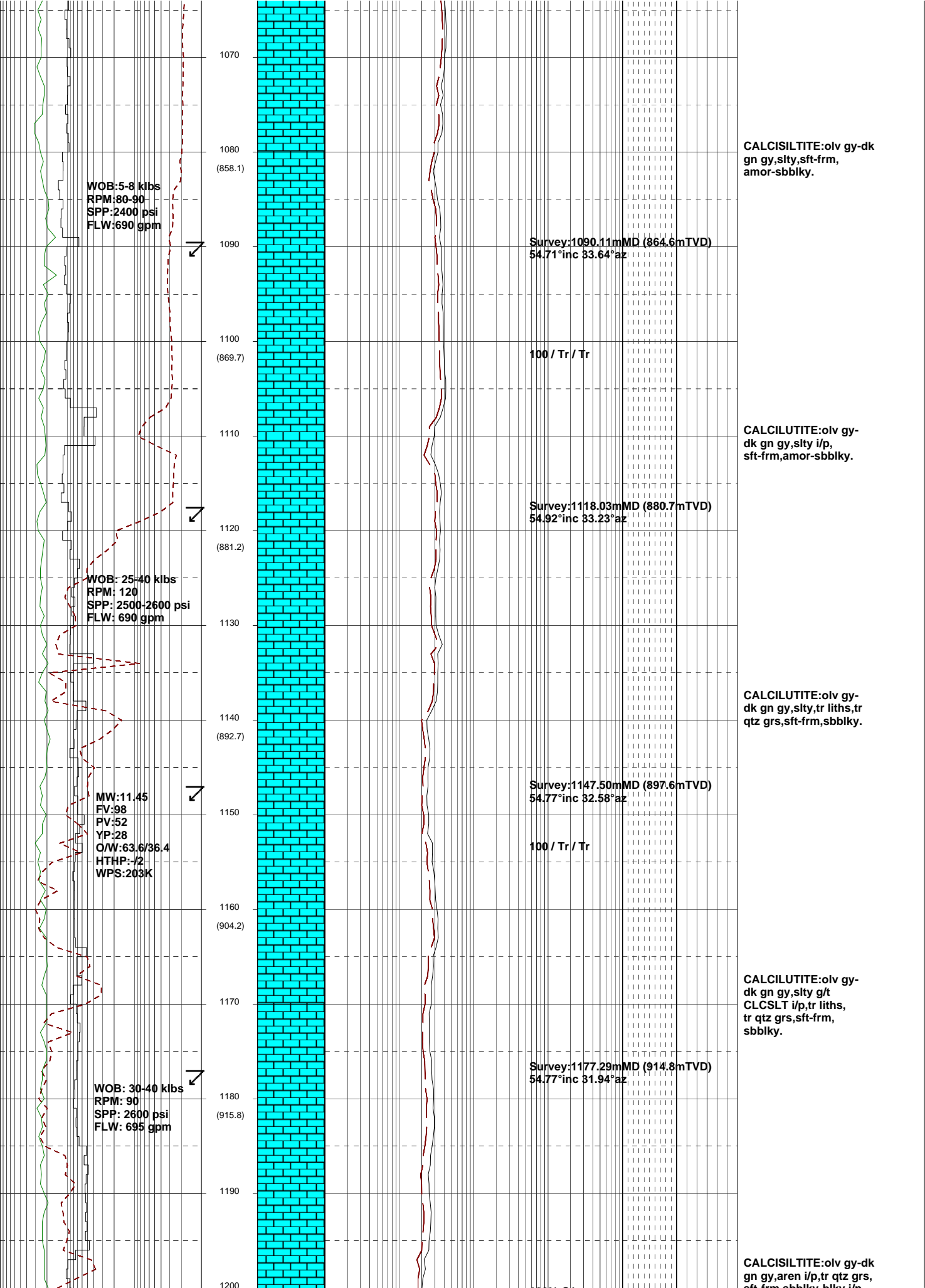
MW:11.4
FV:108
PV:55
YP:31
O/W:65.1/34.9
HTHP:-/2
WPS:212K

Survey:915.32mMD (763.7mTVD)
54.61°inc 36.92°az

920
(765.8)

CALCILUTITE:olv gy-dk





1070
1080
(858.1)
1090
1100
(869.7)
1110
1120
(881.2)
1130
1140
(892.7)
1150
1160
(904.2)
1170
1180
(915.8)
1190
1200

WOB: 5-8 klbs
RPM: 80-90
SPP: 2400 psi
FLW: 690 gpm

WOB: 25-40 klbs
RPM: 120
SPP: 2500-2600 psi
FLW: 690 gpm

MW: 11.45
FV: 98
PV: 52
YP: 28
O/W: 63.6/36.4
HTHP: -12
WPS: 203K

WOB: 30-40 klbs
RPM: 90
SPP: 2600 psi
FLW: 695 gpm

Survey: 1090.11mMD (864.6mTVD)
54.71°inc 33.64°az

100 / Tr / Tr

Survey: 1118.03mMD (880.7mTVD)
54.92°inc 33.23°az

Survey: 1147.50mMD (897.6mTVD)
54.77°inc 32.58°az

100 / Tr / Tr

Survey: 1177.29mMD (914.8mTVD)
54.77°inc 31.94°az

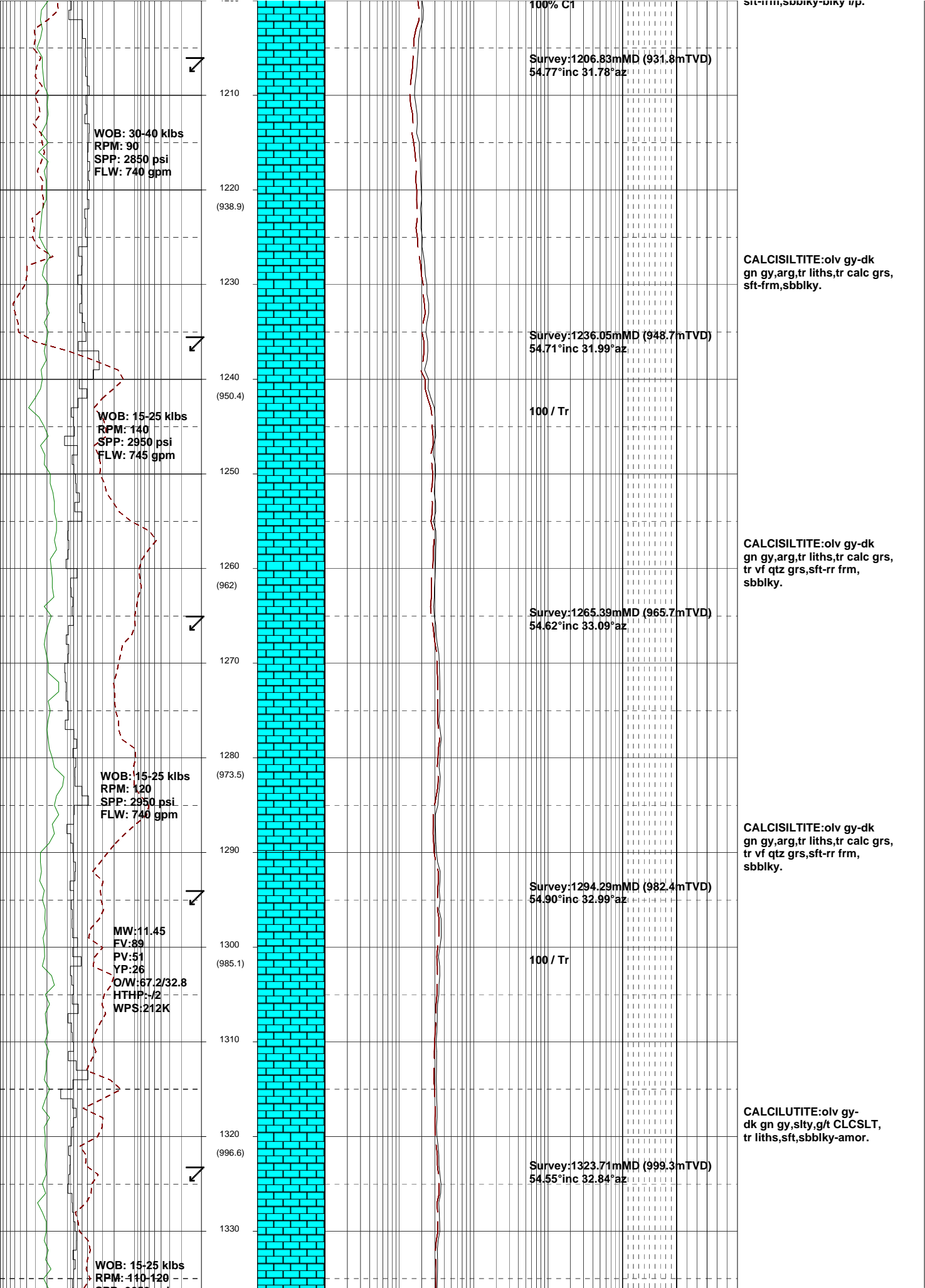
CALCISILTITE: olv gy-dk
gn gy, slty, sft frm,
amor-sbbkly.

CALCILUTITE: olv gy-
dk gn gy, slty i/p,
sft frm, amor-sbbkly.

CALCILUTITE: olv gy-
dk gn gy, slty, tr liths, tr
qtz grs, sft frm, sbbkly.

CALCILUTITE: olv gy-
dk gn gy, slty g/t
CLCSLT i/p, tr liths,
tr qtz grs, sft frm,
sbbkly.

CALCISILTITE: olv gy-dk
gn gy, aren i/p, tr qtz grs,
sft frm, sbbkly, sbbkly



100% C1
 Survey:1206.83mMD (931.8mTVD)
 54.77°inc 31.78°az

WOB: 30-40 klbs
 RPM: 90
 SPP: 2850 psi
 FLW: 740 gpm

1210

1220

(938.9)

1230

CALCISILTITE:olv gy-dk
 gn gy,arg,tr liths,tr calc grs,
 sft-frm,sbbkly.

Survey:1236.05mMD (948.7mTVD)
 54.71°inc 31.99°az

1240

(950.4)

100 / Tr

WOB: 15-25 klbs
 RPM: 140
 SPP: 2950 psi
 FLW: 745 gpm

1250

CALCISILTITE:olv gy-dk
 gn gy,arg,tr liths,tr calc grs,
 tr vf qtz grs,sft-rr frm,
 sbbkly.

Survey:1265.39mMD (965.7mTVD)
 54.62°inc 33.09°az

1260

(962)

WOB: 15-25 klbs
 RPM: 120
 SPP: 2950 psi
 FLW: 740 gpm

1270

(973.5)

CALCISILTITE:olv gy-dk
 gn gy,arg,tr liths,tr calc grs,
 tr vf qtz grs,sft-rr frm,
 sbbkly.

Survey:1294.29mMD (982.4mTVD)
 54.90°inc 32.99°az

1280

(985.1)

100 / Tr

MW:11.45
 FV:89
 PV:51
 YP:26
 O/W:67.2/32.8
 HTHP:1/2
 WPS:212K

1290

CALCILUTITE:olv gy-dk
 gn gy,sity,g/t CLCSLT,
 tr liths,sft,sbbkly-amor.

Survey:1323.71mMD (999.3mTVD)
 54.55°inc 32.84°az

1300

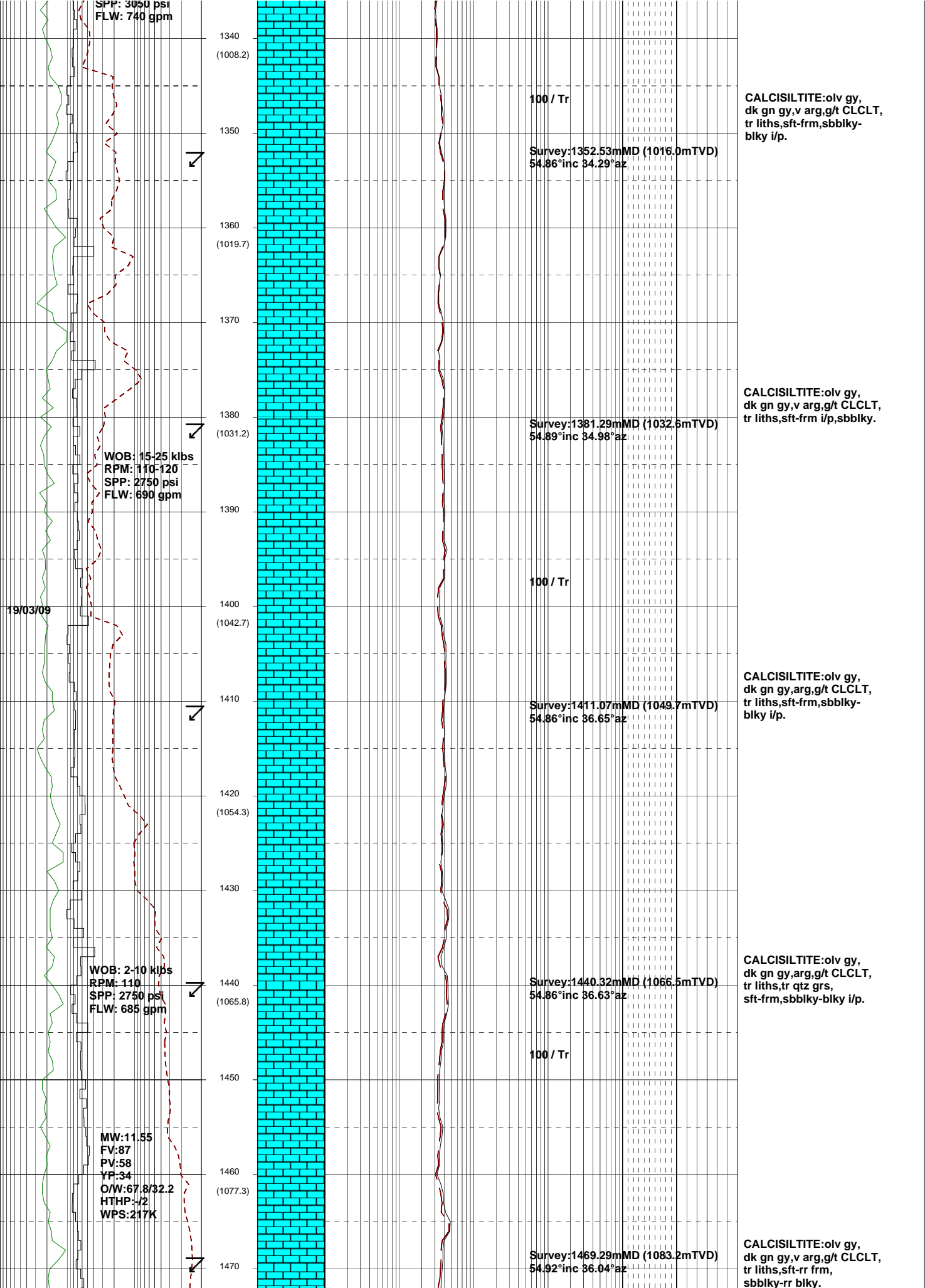
(996.6)

1310

1320

1330

WOB: 15-25 klbs
 RPM: 110-120



SPP: 3050 psi
FLW: 740 gpm

1340
(1008.2)

100 / Tr

CALCISILTITE:olv gy,
dk gn gy,v arg,g/t CLCLT,
tr liths,sft-frm,sbbkly-
blky i/p.



Survey:1352.53mMD (1016.0mTVD)
54.86°inc 34.29°az

1350
(1019.7)

1360
(1019.7)

1370
(1019.7)

1380
(1031.2)

Survey:1381.29mMD (1032.6mTVD)
54.89°inc 34.98°az

CALCISILTITE:olv gy,
dk gn gy,v arg,g/t CLCLT,
tr liths,sft-frm i/p,sbbkly.

WOB: 15-25 klbs
RPM: 110-120
SPP: 2750 psi
FLW: 690 gpm

1390
(1031.2)

100 / Tr

19/03/09

1400
(1042.7)

CALCISILTITE:olv gy,
dk gn gy,arg,g/t CLCLT,
tr liths,sft-frm,sbbkly-
blky i/p.

Survey:1411.07mMD (1049.7mTVD)
54.86°inc 36.65°az

1410
(1054.3)

1420
(1054.3)

1430
(1054.3)

CALCISILTITE:olv gy,
dk gn gy,arg,g/t CLCLT,
tr liths,tr qtz grs,
sft-frm,sbbkly-blky i/p.

WOB: 2-10 klbs
RPM: 110
SPP: 2750 psi
FLW: 685 gpm

Survey:1440.32mMD (1066.5mTVD)
54.86°inc 36.63°az

1440
(1065.8)

100 / Tr

MW:11.55
FV:87
PV:58
YP:34
O/W:67.8/32.2
HTHP:-/2
WPS:217K

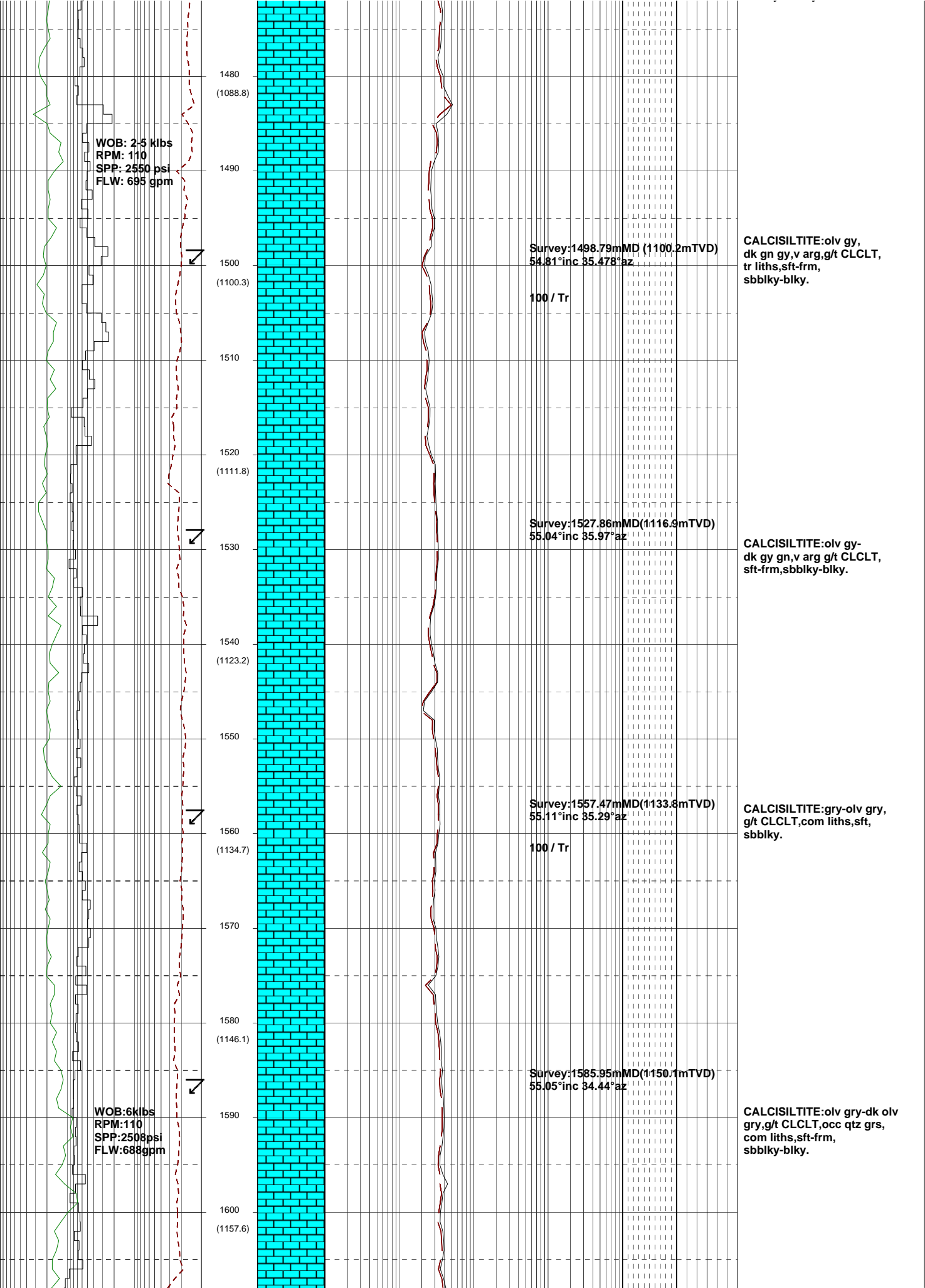
1450
(1065.8)

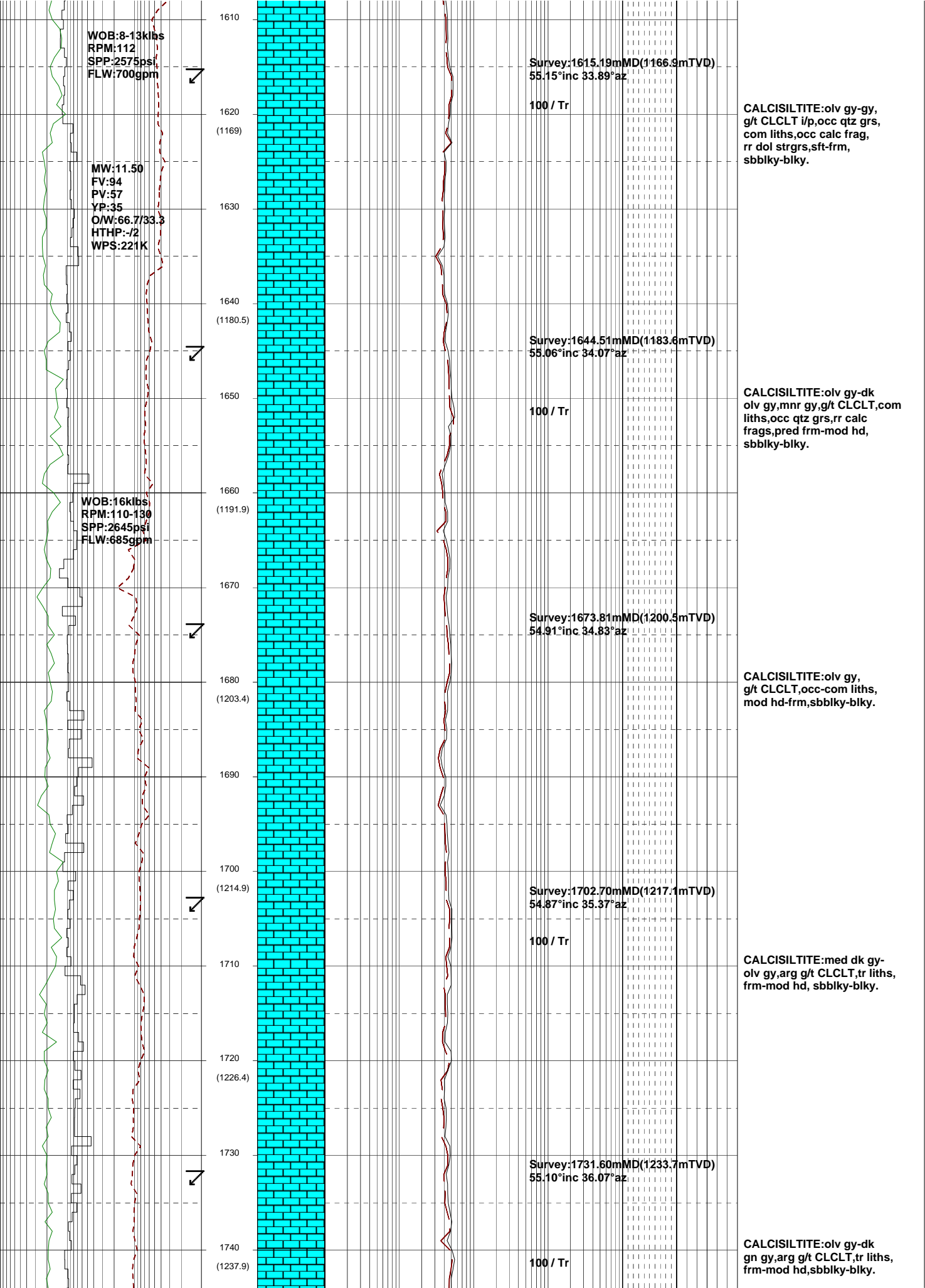
1460
(1077.3)

CALCISILTITE:olv gy,
dk gn gy,v arg,g/t CLCLT,
tr liths,sft-rr frm,
sbbkly-rr blky.

Survey:1469.29mMD (1083.2mTVD)
54.92°inc 36.04°az

1470
(1077.3)





WOB:15klbs
RPM:142
SPP:2670psi
FLW:695gpm

MW:11.50
FV:98
PV:60
YP:31
OW:67.9/32
HTHP:-/2
WPS:223K

WOB:15klbs
RPM:110
SPP:2800psi
FLW:695gpm

1750

1760
(1249.3)

1770

1780
(1260.8)

1790

1800
(1272.3)

1810

1820
(1283.8)

1830

1840
(1295.2)

1850

1860
(1306.7)

1870

1880

Survey:1761.06mMD(1250.5mTVD)
55.03°inc 35.07°az

Survey:1790.17mMD(1267.2mTVD)
55.00°inc 34.56°az

Survey:1819.04mMD(1283.8mTVD)
54.91°inc 34.40°az

Survey:1847.13mMD(1299.2mTVD)
54.99°inc 34.25°az

Survey:1876.76mMD(1316.9mTVD)
54.88°inc 34.36°az

100 / Tr

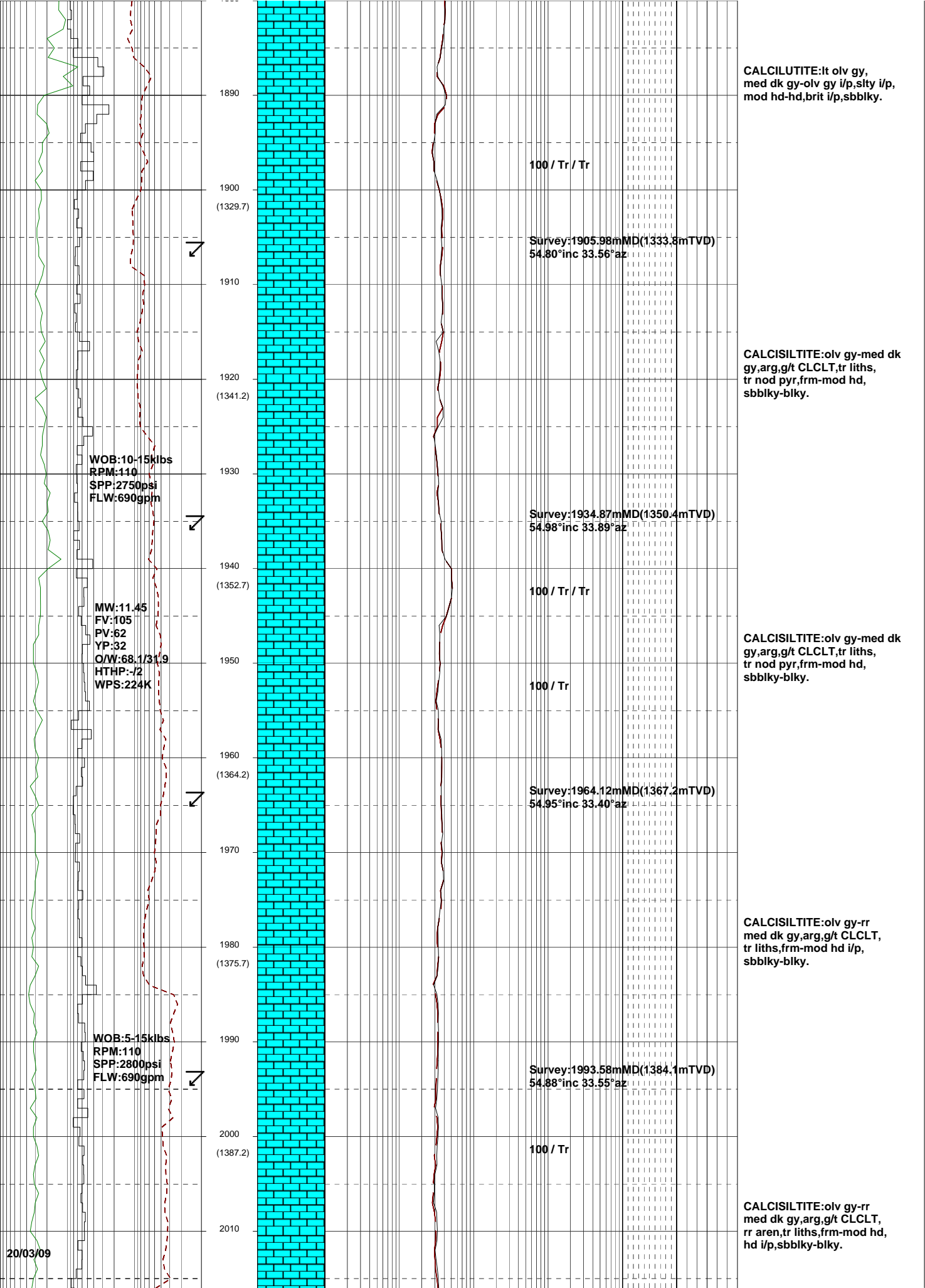
100 / Tr

CALCILUTITE:med dk gy-
olv gy,tr liths,
frm-mod hd,sbblky-blky.

CALCISILTITE:med dk gy-
olv gy,occ qtz grns,frm-
mod hd,sbblky-blky.

CALCISILTITE:med dk gy-
olv gy,tr liths,
occ qtz grs,frm-mod hd-
sft i/p,sbblky-blky.

CALCISILTITE:med dk gy-
olv gy,tr liths,frm-mod
hd i/p,sbblky-blky.



CALCILUTITE:lt olv gy, med dk gy-olv gy i/p,sity i/p, mod hd-hd,brit i/p,sbbiky.

100 / Tr / Tr

Survey:1905.98mMD(1333.8mTVD)
54.80°inc 33.56°az

CALCISILTITE:olv gy-med dk gy,arg,g/t CLCLT,tr liths, tr nod pyr,frm-mod hd, sbbiky-blky.

Survey:1934.87mMD(1350.4mTVD)
54.98°inc 33.89°az

100 / Tr / Tr

CALCISILTITE:olv gy-med dk gy,arg,g/t CLCLT,tr liths, tr nod pyr,frm-mod hd, sbbiky-blky.

100 / Tr

Survey:1964.12mMD(1367.2mTVD)
54.95°inc 33.40°az

CALCISILTITE:olv gy-rr med dk gy,arg,g/t CLCLT, tr liths,frm-mod hd i/p, sbbiky-blky.

Survey:1993.58mMD(1384.1mTVD)
54.88°inc 33.55°az

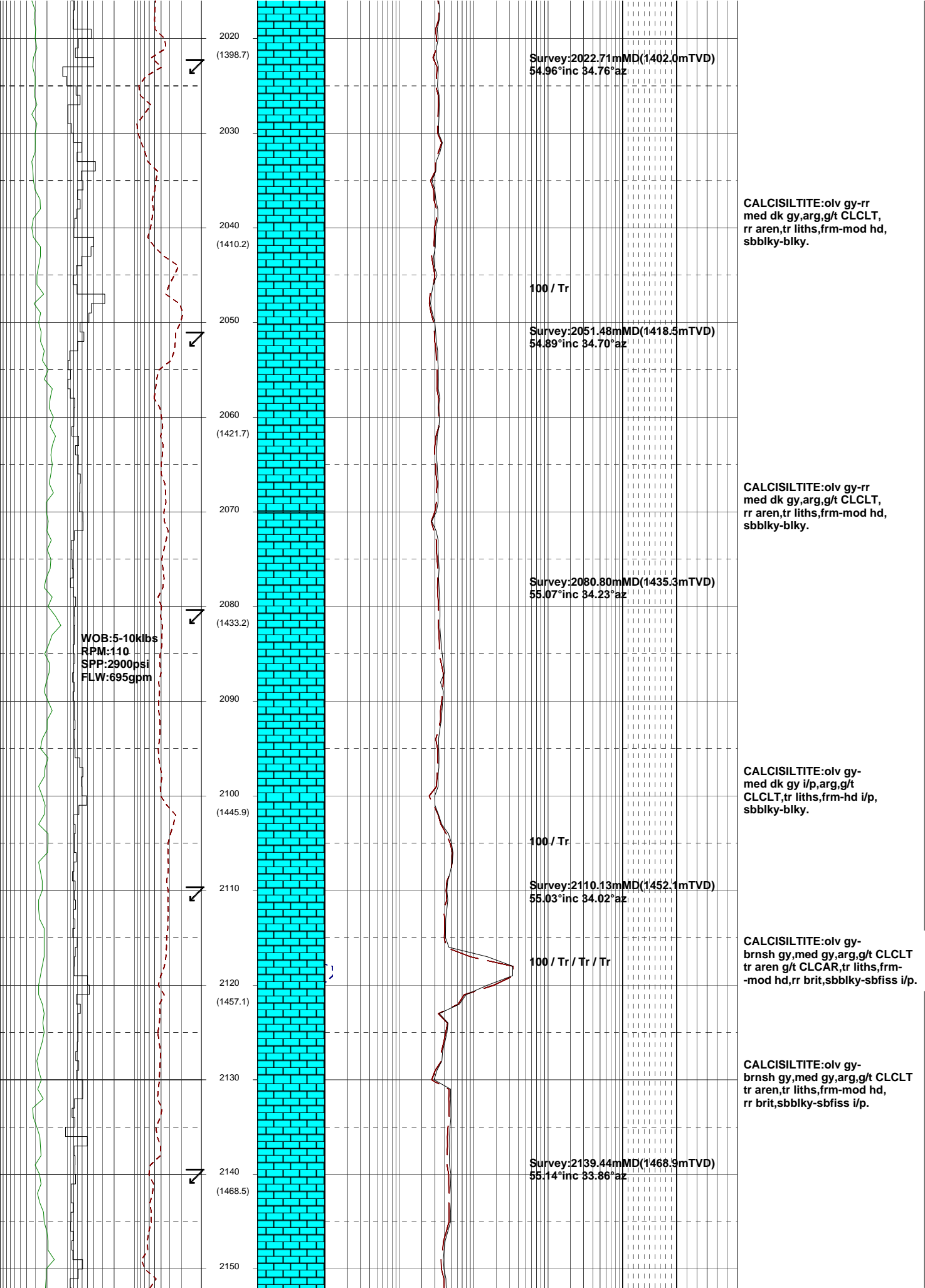
100 / Tr

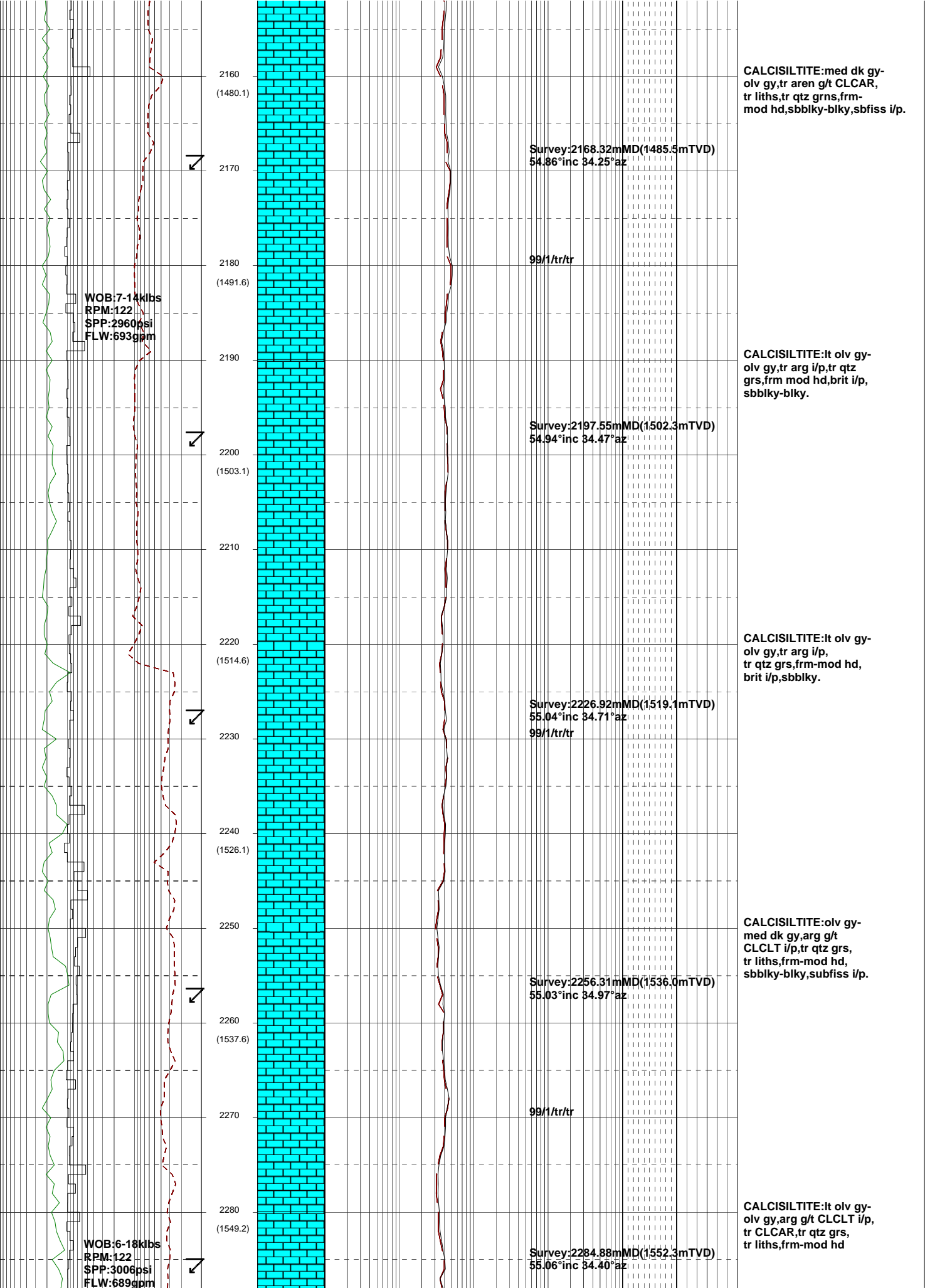
CALCISILTITE:olv gy-rr med dk gy,arg,g/t CLCLT, rr aren,tr liths,frm-mod hd, hd i/p,sbbiky-blky.

WOB:10-15klbs
RPM:110
SPP:2750psi
FLW:690gpm

MW:11.45
FV:105
PV:62
YP:32
O/W:68.1/31.9
HTHP:-/2
WPS:224K

WOB:5-15klbs
RPM:110
SPP:2800psi
FLW:690gpm





CALCISILTITE: med dk gy-
olv gy, tr aren g/t CLCAR,
tr liths, tr qtz grns, frm-
mod hd, sbbiky-blky, sbfiss i/p.

Survey: 2168.32m MD (1485.5m TVD)
54.86° inc 34.25° az

99/1/tr/tr

CALCISILTITE: lt olv gy-
olv gy, tr arg i/p, tr qtz
grs, frm mod hd, brit i/p,
sbbiky-blky.

Survey: 2197.55m MD (1502.3m TVD)
54.94° inc 34.47° az

CALCISILTITE: lt olv gy-
olv gy, tr arg i/p,
tr qtz grs, frm-mod hd,
brit i/p, sbbiky.

Survey: 2226.92m MD (1519.1m TVD)
55.04° inc 34.71° az

99/1/tr/tr

CALCISILTITE: olv gy-
med dk gy, arg g/t
CLCLT i/p, tr qtz grs,
tr liths, frm-mod hd,
sbbiky-blky, subfiss i/p.

Survey: 2256.31m MD (1536.0m TVD)
55.03° inc 34.97° az

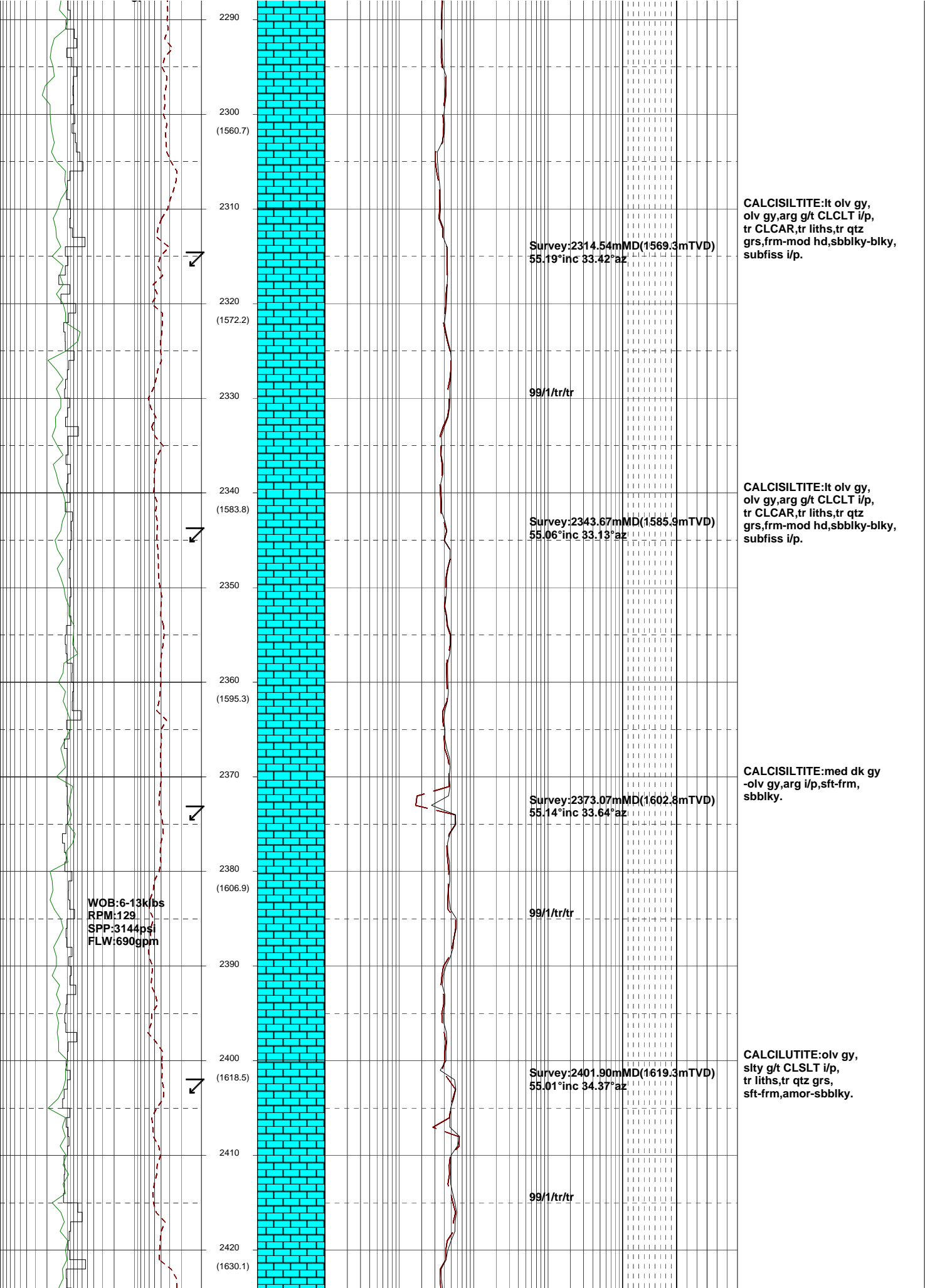
99/1/tr/tr

CALCISILTITE: lt olv gy-
olv gy, arg g/t CLCLT i/p,
tr CLCAR, tr qtz grs,
tr liths, frm-mod hd

Survey: 2284.88m MD (1552.3m TVD)
55.06° inc 34.40° az

WOB: 7-14 klbs
RPM: 122
SPP: 2960 psi
FLW: 693 gpm

WOB: 6-18 klbs
RPM: 122
SPP: 3006 psi
FLW: 689 gpm



2290
 2300 (1560.7)
 2310
 2320 (1572.2)
 2330
 2340 (1583.8)
 2350
 2360 (1595.3)
 2370
 2380 (1606.9)
 2390
 2400 (1618.5)
 2410
 2420 (1630.1)

WOB:6-13k/bs
 RPM:129
 SPP:3144psi
 FLW:690gpm

Survey:2314.54mMD(1569.3mTVD)
 55.19°inc 33.42°az

99/1/tr/tr

Survey:2343.67mMD(1585.9mTVD)
 55.06°inc 33.13°az

Survey:2373.07mMD(1602.8mTVD)
 55.14°inc 33.64°az

99/1/tr/tr

Survey:2401.90mMD(1619.3mTVD)
 55.01°inc 34.37°az

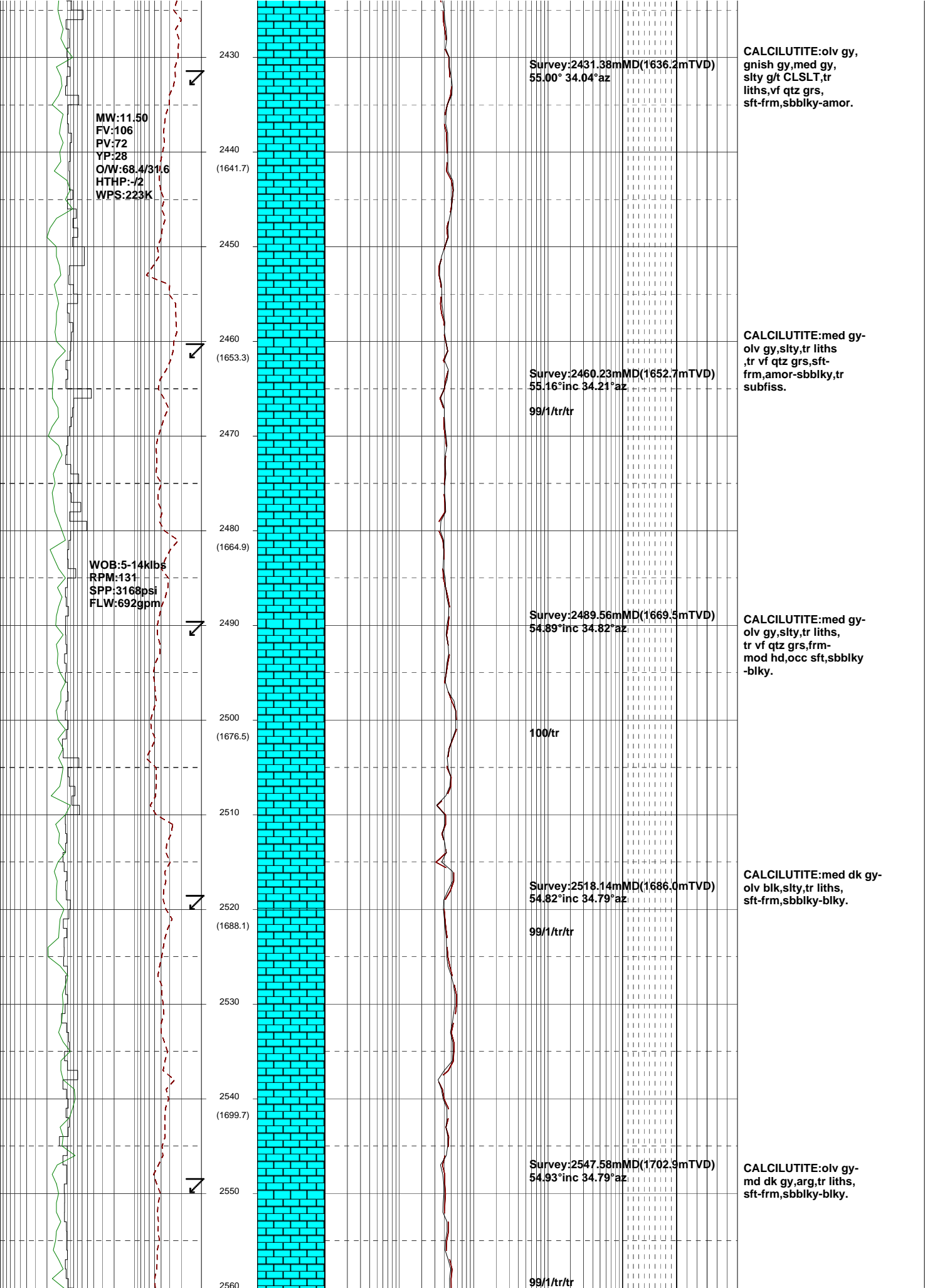
99/1/tr/tr

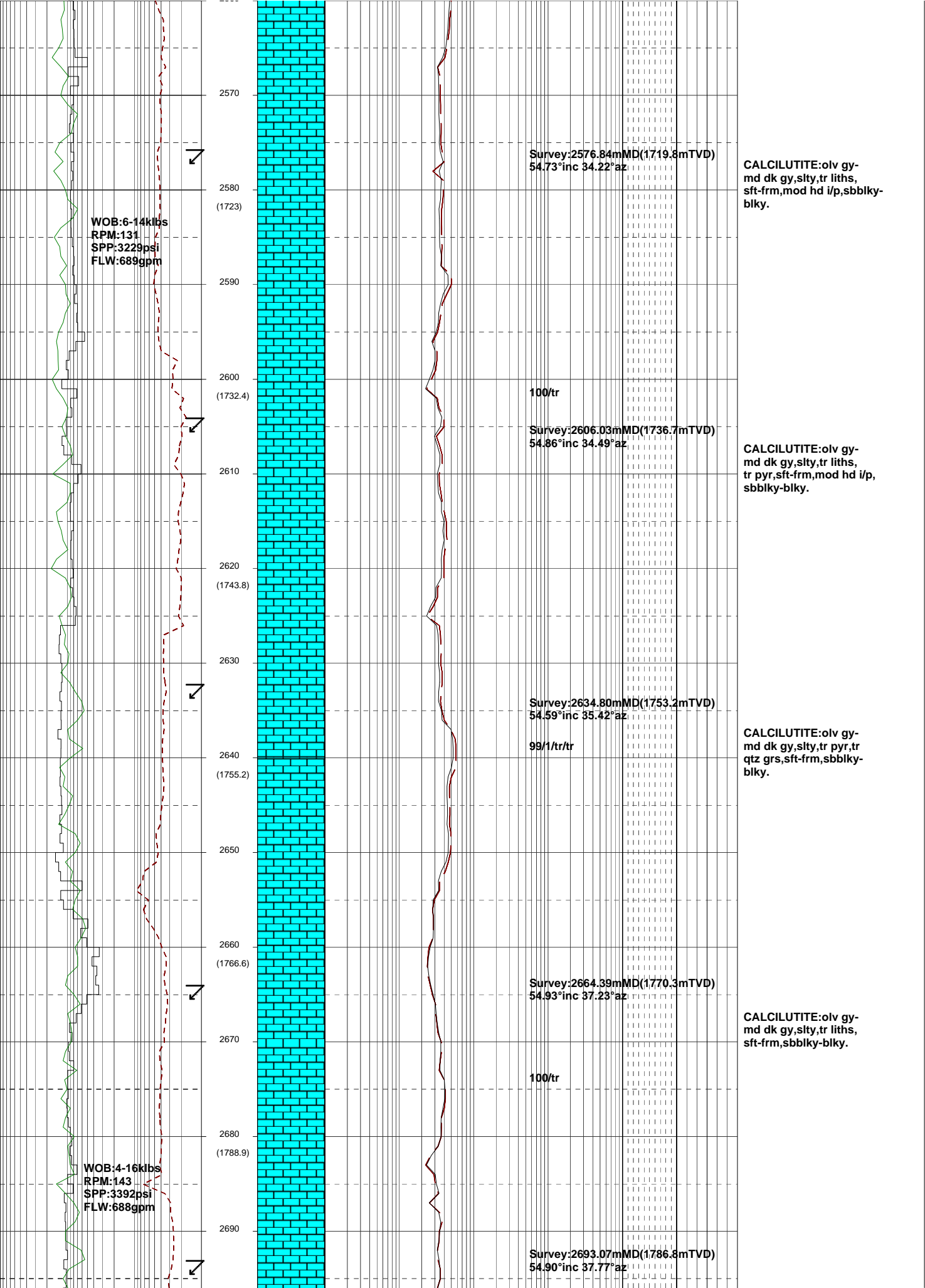
CALCISILTITE:lt olv gy,
 olv gy,arg g/t CLCLT i/p,
 tr CLCAR,tr liths,tr qtz
 grs,frm-mod hd,sbbiky-blky,
 subfiss i/p.

CALCISILTITE:lt olv gy,
 olv gy,arg g/t CLCLT i/p,
 tr CLCAR,tr liths,tr qtz
 grs,frm-mod hd,sbbiky-blky,
 subfiss i/p.

CALCISILTITE:med dk gy
 -olv gy,arg i/p,sft-frm,
 sbbiky.

CALCILUTITE:olv gy,
 sity g/t CLSLT i/p,
 tr liths,tr qtz grs,
 sft-frm,amor-sbbiky.





WOB:6-14klbs
RPM:131
SPP:3229psi
FLW:689gpm

WOB:4-16klbs
RPM:143
SPP:3392psi
FLW:688gpm

Survey:2576.84mMD(1719.8mTVD)
54.73°inc 34.22°az

100/tr

Survey:2606.03mMD(1736.7mTVD)
54.86°inc 34.49°az

Survey:2634.80mMD(1753.2mTVD)
54.59°inc 35.42°az

99/1/tr/tr

Survey:2664.39mMD(1770.3mTVD)
54.93°inc 37.23°az

100/tr

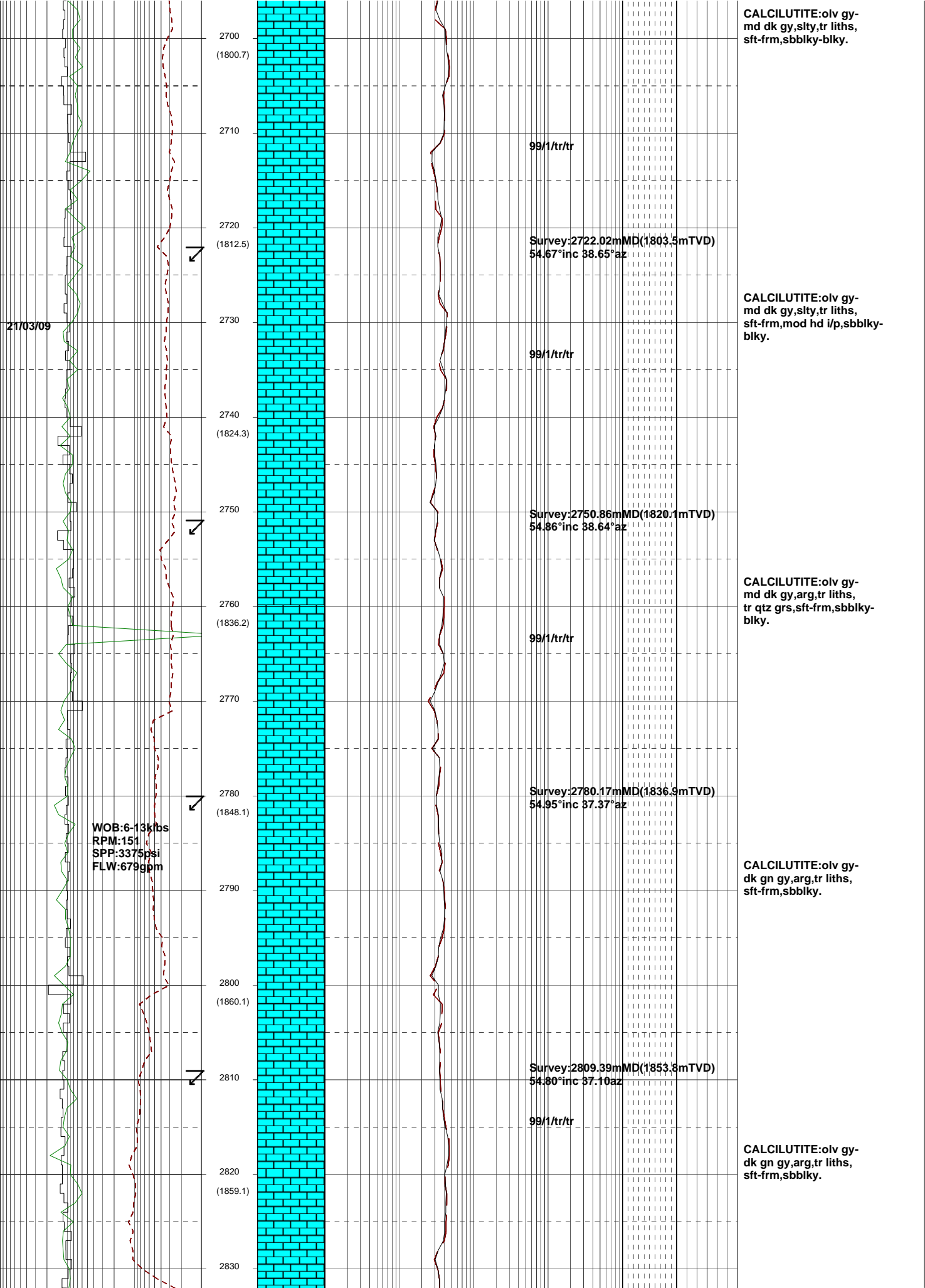
Survey:2693.07mMD(1786.8mTVD)
54.90°inc 37.77°az

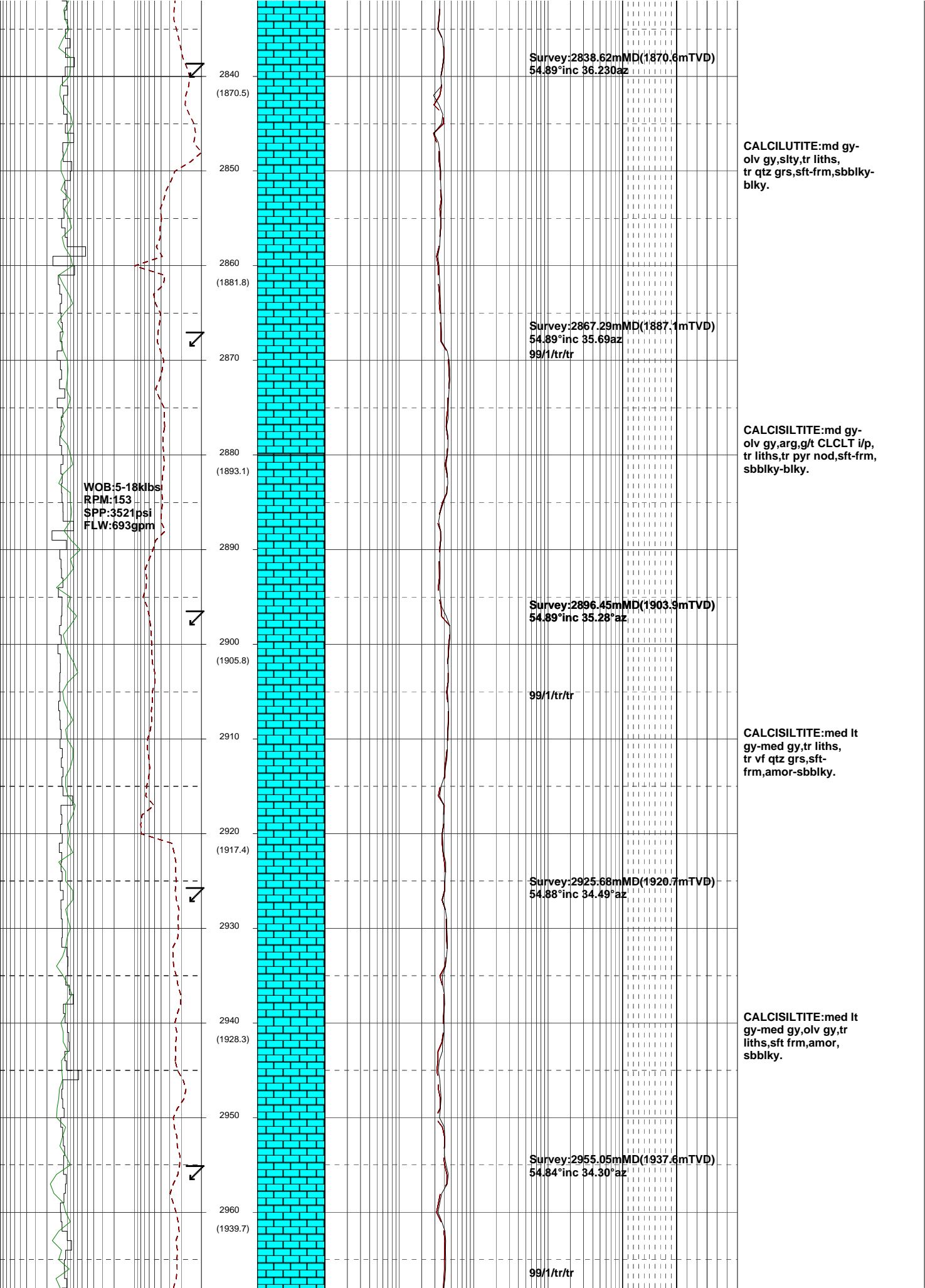
CALCILUTITE:ol v gy-md dk gy, slty, tr liths, sft frm, mod hd i/p, sbbkly-blky.

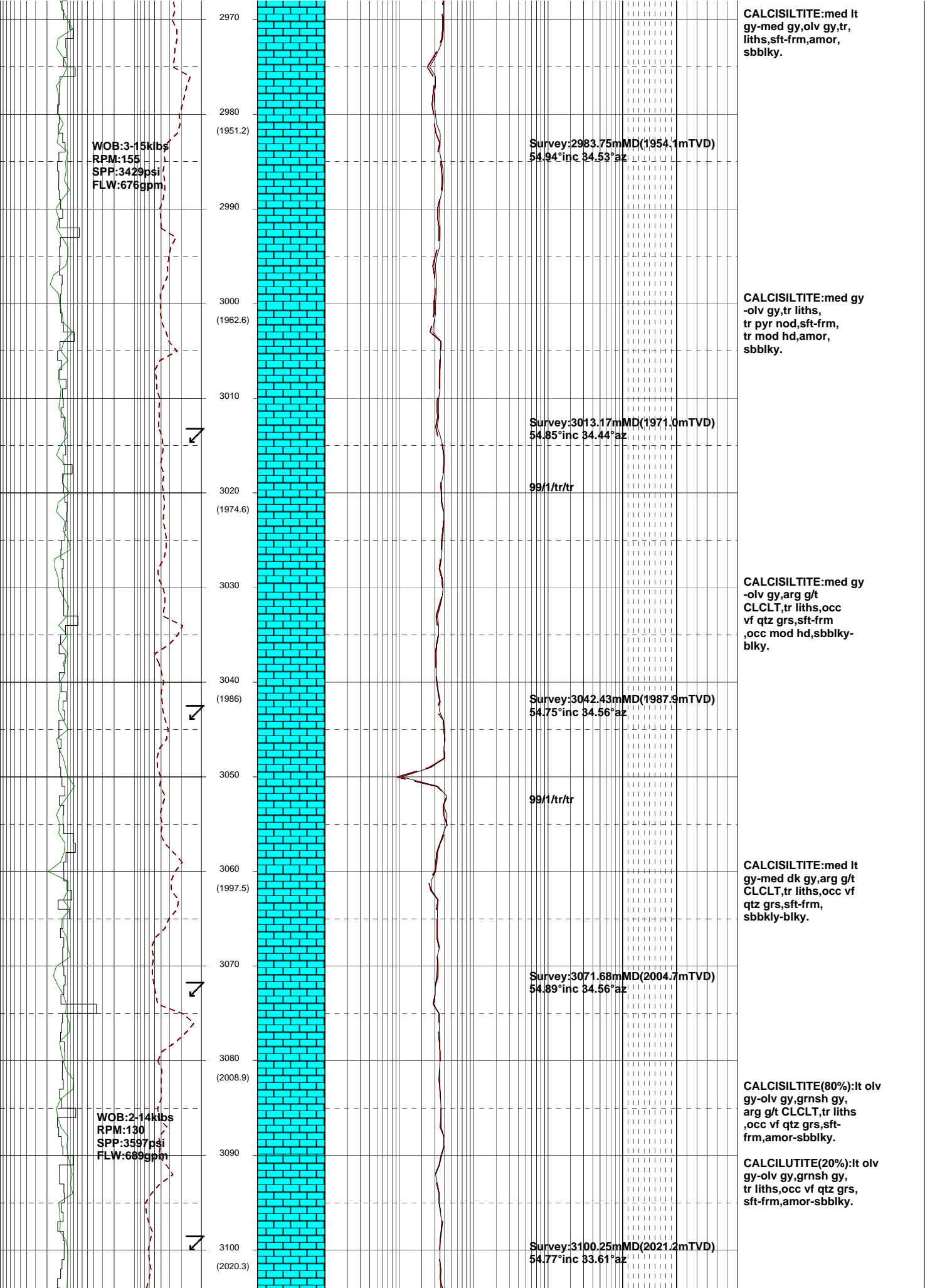
CALCILUTITE:ol v gy-md dk gy, slty, tr liths, tr pyr, sft frm, mod hd i/p, sbbkly-blky.

CALCILUTITE:ol v gy-md dk gy, slty, tr pyr, tr qtz grs, sft frm, sbbkly-blky.

CALCILUTITE:ol v gy-md dk gy, slty, tr liths, sft frm, sbbkly-blky.







WOB:3-15kibs
 RPM:155
 SPP:3429psi
 FLW:676gpm

Survey:2983.75mMD(1954.1mTVD)
 54.94°inc 34.53°az

CALCISILTITE:med lt
 gy-med gy,olv gy,tr,
 liths,sft frm,amor,
 sbbiky.

2970
 (1951.2)

2990

3000
 (1962.6)

3010

3020
 (1974.6)

3030

3040
 (1986)

3050

3060
 (1997.5)

3070

3080
 (2008.9)

3090

3100
 (2020.3)

Survey:3013.17mMD(1971.0mTVD)
 54.85°inc 34.44°az

CALCISILTITE:med gy
 -olv gy,tr liths,
 tr pyr nod,sft frm,
 tr mod hd,amor,
 sbbiky.

99/1tr/tr

CALCISILTITE:med gy
 -olv gy,arg g/t
 CLCLT,tr liths,occ
 vf qtz grs,sft frm
 ,occ mod hd,sbbiky-
 biky.

Survey:3042.43mMD(1987.9mTVD)
 54.75°inc 34.56°az

99/1tr/tr

CALCISILTITE:med lt
 gy-med dk gy,arg g/t
 CLCLT,tr liths,occ vf
 qtz grs,sft frm,
 sbbiky-biky.

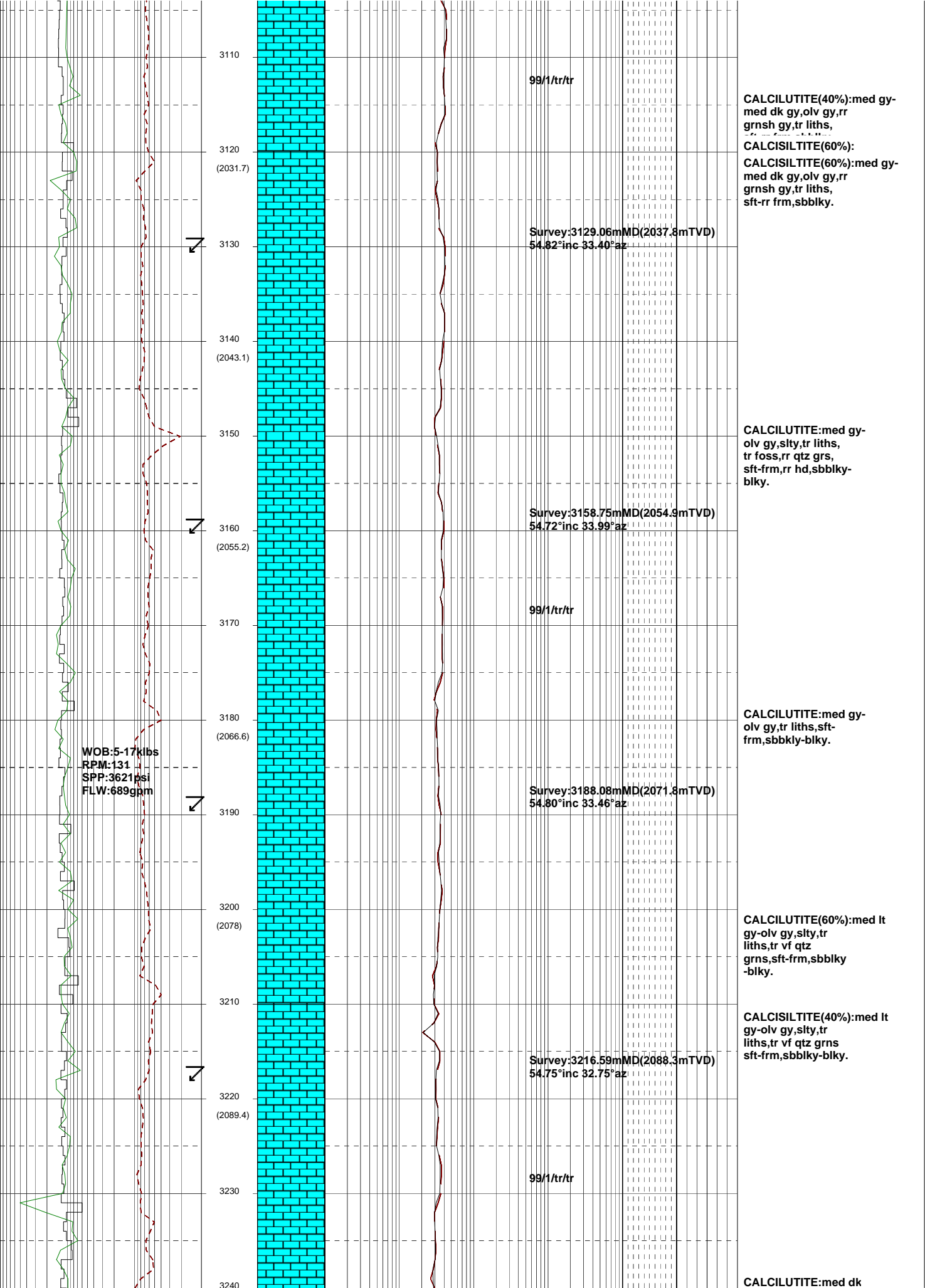
Survey:3071.68mMD(2004.7mTVD)
 54.89°inc 34.56°az

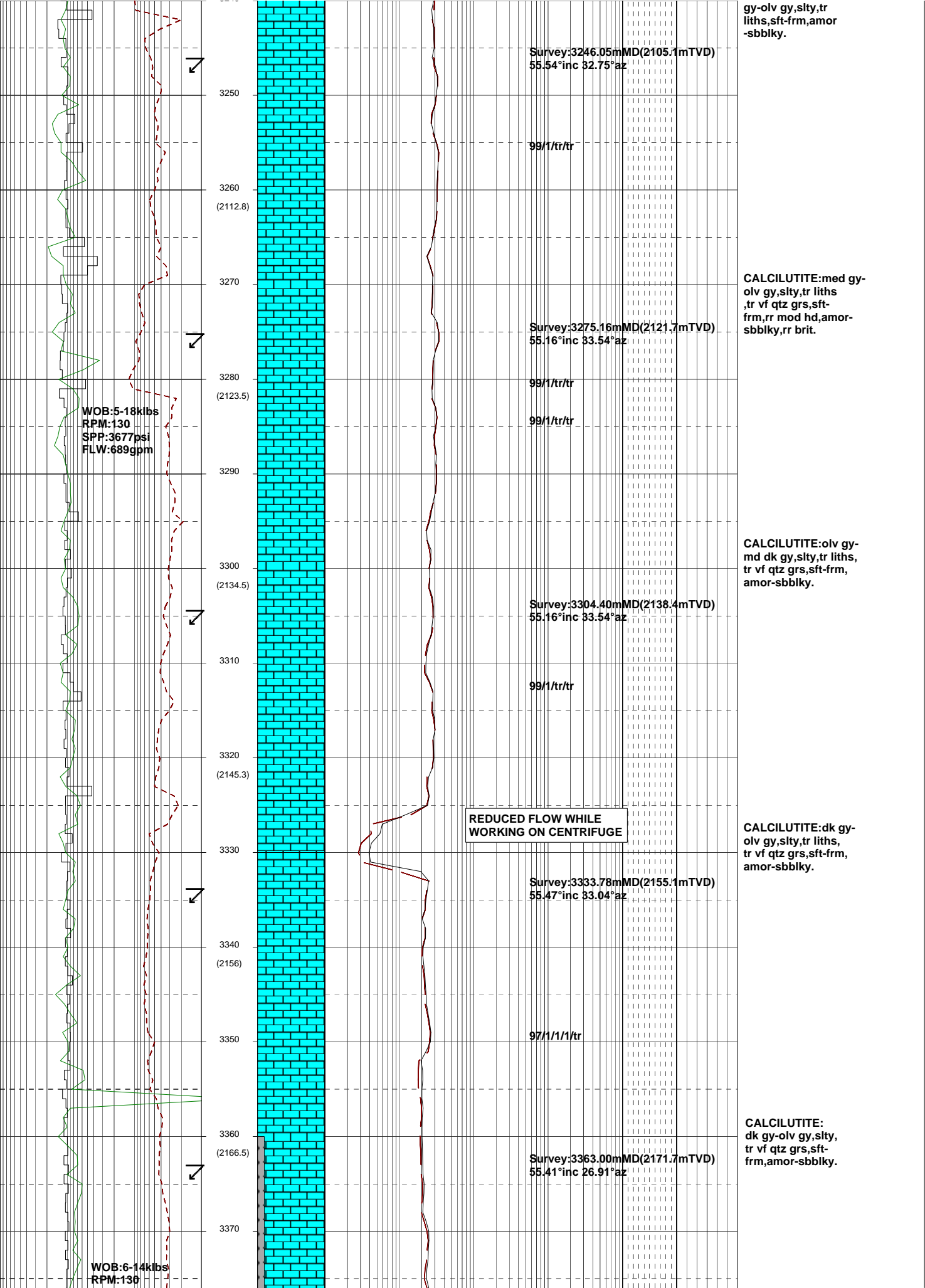
CALCISILTITE(80%):lt olv
 gy-olv gy,grnsh gy,
 arg g/t CLCLT,tr liths
 ,occ vf qtz grs,sft
 frm,amor-sbbiky.

WOB:2-14kibs
 RPM:130
 SPP:3597psi
 FLW:689gpm

Survey:3100.25mMD(2021.2mTVD)
 54.77°inc 33.61°az

CALCILUTITE(20%):lt olv
 gy-olv gy,grnsh gy,
 tr liths,occ vf qtz grs,
 sft frm,amor-sbbiky.





gy-olv gy,silty,tr
liths,sft frm,amor
-sbbiky.

Survey:3246.05mMD(2105.1mTVD)
55.54°inc 32.75°az

99/1/tr/tr

3250

3260
(2112.8)

3270

Survey:3275.16mMD(2121.7mTVD)
55.16°inc 33.54°az

99/1/tr/tr

CALCILUTITE:med gy-
olv gy,silty,tr liths
,tr vf qtz grs,sft-
frm,rr mod hd,amor-
sbbiky,rr brit.

3280
(2123.5)

WOB:5-18klbs
RPM:130
SPP:3677psi
FLW:689gpm

3290

99/1/tr/tr

3300
(2134.5)

CALCILUTITE:olv gy-
md dk gy,silty,tr liths,
tr vf qtz grs,sft-frm,
amor-sbbiky.

Survey:3304.40mMD(2138.4mTVD)
55.16°inc 33.54°az

99/1/tr/tr

3320
(2145.3)

REDUCED FLOW WHILE
WORKING ON CENTRIFUGE

CALCILUTITE:dk gy-
olv gy,silty,tr liths,
tr vf qtz grs,sft-frm,
amor-sbbiky.

3330

Survey:3333.78mMD(2155.1mTVD)
55.47°inc 33.04°az

3340
(2156)

97/1/1/1/tr

3360
(2166.5)

CALCILUTITE:
dk gy-olv gy,silty,
tr vf qtz grs,sft-
frm,amor-sbbiky.

Survey:3363.00mMD(2171.7mTVD)
55.41°inc 26.91°az

3370

WOB:6-14klbs
RPM:130

SPP:3641psi
FLW:681gpm

3380
(2176.9)

REDUCED FLOW WHILE
WORKING ON CENTRIFUGE

CALCAREOUS CLAYSTONE:med
med dk gy,olv gy,tr liths, sft,
sbbiky,rr amor.

LAKES ENTRANCE Fm.
3390.0mMDRT,2185.9mTVDRT,
-2144.9mTVDSS.

Survey:3392.41mMD(2188.4mTVD)
55.39°inc 22.35°az

3390

3400
(2192.1)

MW:11.5
FV:124
PV:72
YP:33
Q/W:54.5/23.5
HTHP:-/3
WPS:236k

CALCAREOUS CLAYSTONE:
mod gy-mod dk gy,olv
gy,tr liths,sft,sbbiky,
rr amor,mod-com calc.

Survey:3421.69mMD(2205.0mTVD)
55.30°inc 20.48°az

3420
(2203.5)

97/1/1/1/tr

3430

3440
(2214.9)

CALCAREOUS CLAYSTONE:
mod gy-mod dk gy,olv
gy,tr liths,sft,sbbiky,
rr amor,mod-com calc.

Survey:3450.87mMD(2221.6mTVD)
55.26°inc 19.16°az

3450

3460
(2226.3)

96/1/1/1/1

CALCAREOUS CLAYSTONE:
mod gy-mod dk gy,olv
gy,tr liths,sft,sbbiky,
rr amor,mod-com calc.

Survey:3480.02mMD(2238.3mTVD)
54.98°inc 15.26°az

3480
(2237.7)

WOB:8-17kbs
RPM:130
SPP:3674psi
FLW:673gpm

CALCAREOUS CLAYSTONE:med
gy-med dk gy,olv gy,tr liths, sft-
tr frm,sbbiky.

3490

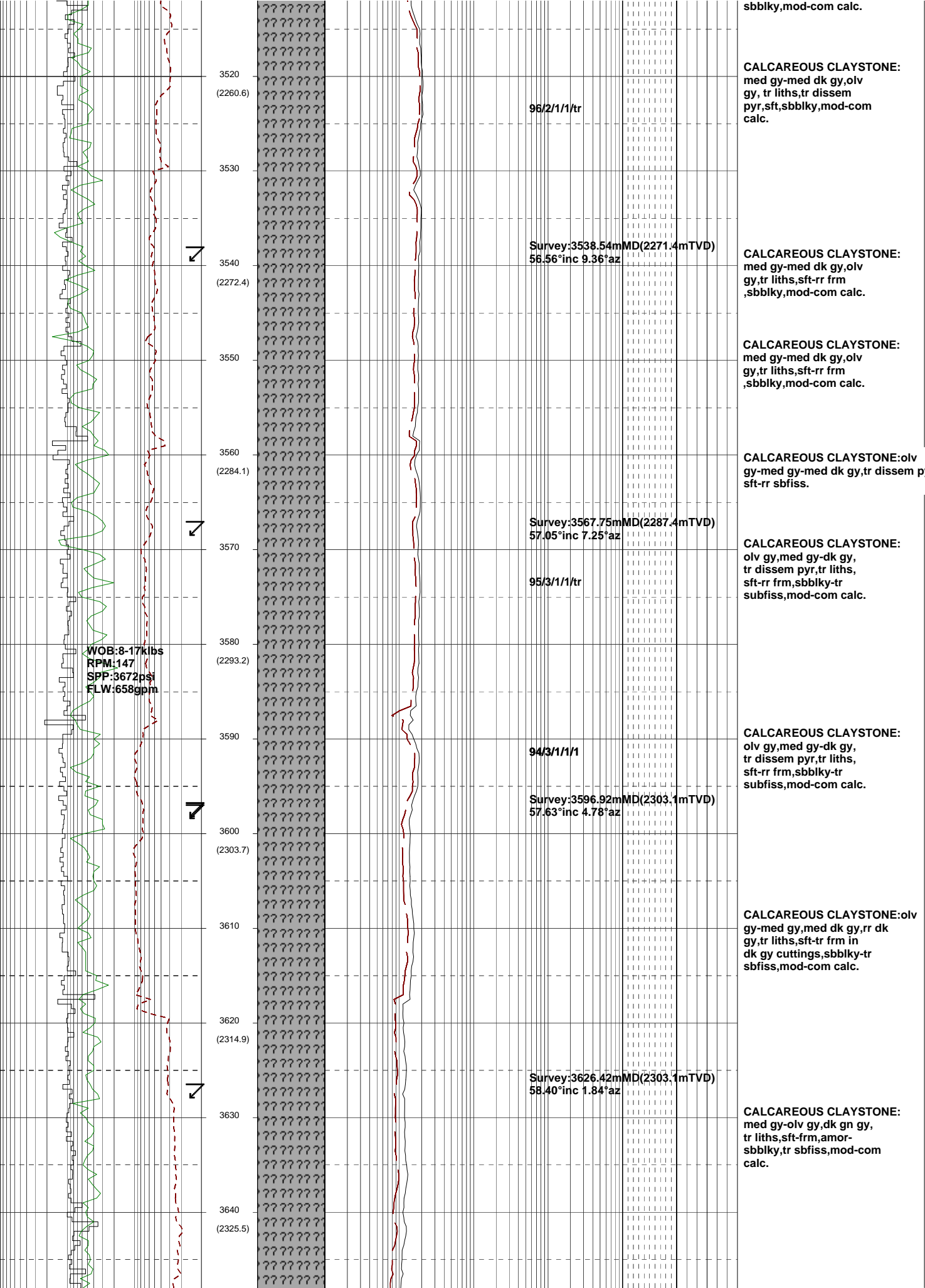
3500
(2249.2)

Survey:3509.47mMD(2255.1mTVD)
56.56°inc 12.76°az

CALCAREOUS CLAYSTONE:
med gy-med dk gy,olv
gy,tr liths,sft-tr frm,

3510

22/03/09



sbbiky,mod-com calc.

CALCAREOUS CLAYSTONE:
 med gy-med dk gy,olv
 gy, tr liths,tr dissem
 pyr,sft,sbbiky,mod-com
 calc.

96/2/1/1/tr

Survey:3538.54m MD(2271.4mTVD)
 56.56°inc 9.36°az

CALCAREOUS CLAYSTONE:
 med gy-med dk gy,olv
 gy,tr liths,sft-rr frm
 ,sbbiky,mod-com calc.

CALCAREOUS CLAYSTONE:
 med gy-med dk gy,olv
 gy,tr liths,sft-rr frm
 ,sbbiky,mod-com calc.

CALCAREOUS CLAYSTONE:olv
 gy-med gy-med dk gy,tr dissem p
 sft-rr sbfiss.

Survey:3567.75m MD(2287.4mTVD)
 57.05°inc 7.25°az

CALCAREOUS CLAYSTONE:
 olv gy,med gy-dk gy,
 tr dissem pyr,tr liths,
 sft-rr frm,sbbiky-tr
 subfiss,mod-com calc.

95/3/1/1/tr

CALCAREOUS CLAYSTONE:
 olv gy,med gy-dk gy,
 tr dissem pyr,tr liths,
 sft-rr frm,sbbiky-tr
 subfiss,mod-com calc.

94/3/1/1/1

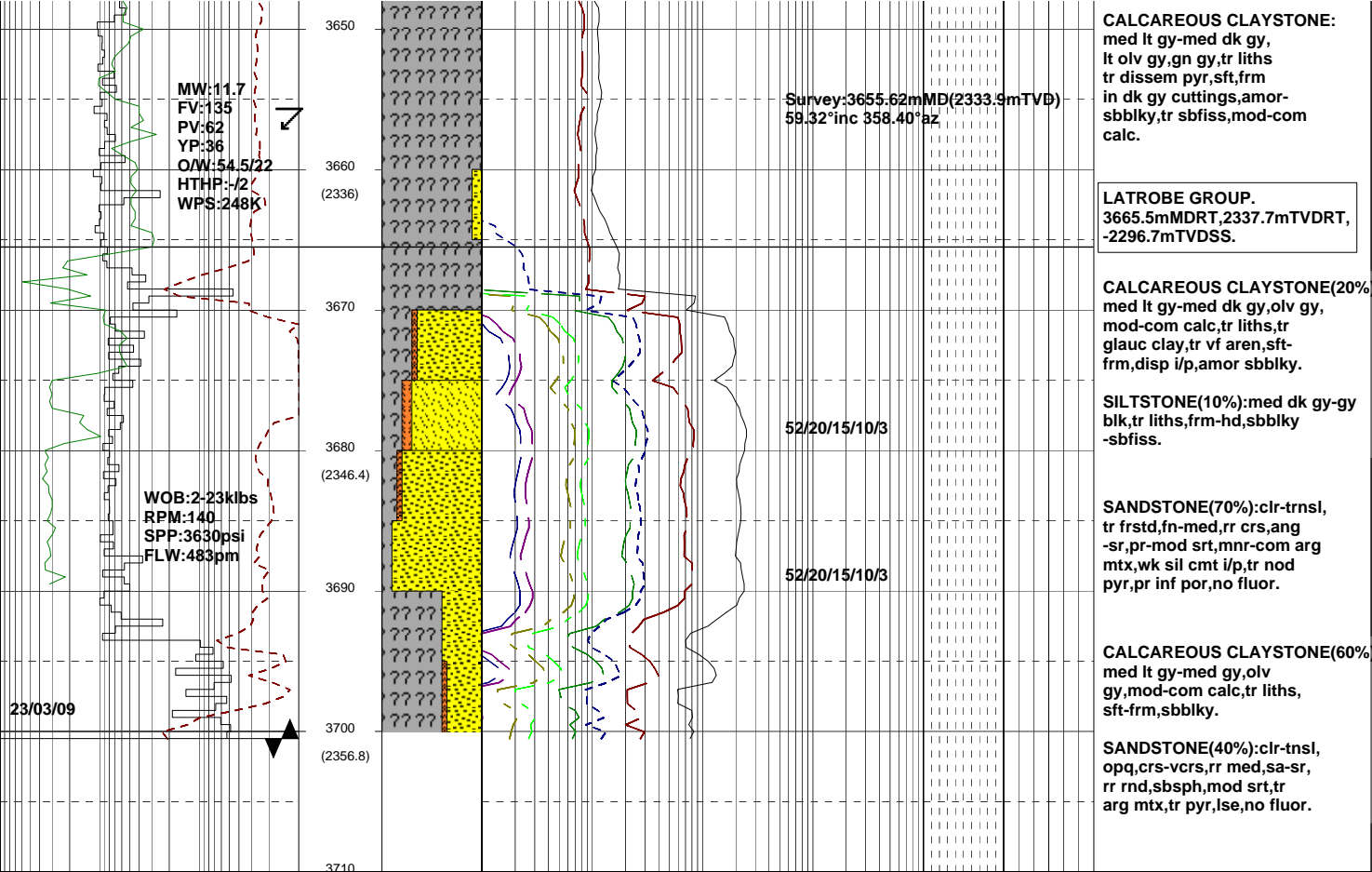
Survey:3596.92m MD(2303.1mTVD)
 57.63°inc 4.78°az

CALCAREOUS CLAYSTONE:olv
 gy-med gy,med dk gy,rr dk
 gy,tr liths,sft-tr frm in
 dk gy cuttings,sbbiky-tr
 sbfiss,mod-com calc.

Survey:3626.42m MD(2303.1mTVD)
 58.40°inc 1.84°az

CALCAREOUS CLAYSTONE:
 med gy-olv gy,dk gn gy,
 tr liths,sft-frm,amor-
 sbbiky,tr sbfiss,mod-com
 calc.

WOB:8-17klbs
 RPM:147
 SPP:3672psi
 FLW:658gpm



CALCAREOUS CLAYSTONE:
 med lt gy-med dk gy,
 lt olv gy,gn gy,tr liths
 tr disse pyr,sft,frm
 in dk gy cuttings,amor-
 sbblky,tr sbfiss,mod-com
 calc.

LATROBE GROUP.
 3665.5mMDRT,2337.7mTVDRT,
 -2296.7mTVDSS.

CALCAREOUS CLAYSTONE(20%)
 med lt gy-med dk gy,olv gy,
 mod-com calc,tr liths,tr
 glauc clay,tr vf aren,sft-
 frm,disp i/p,amor sbblky.

SILTSTONE(10%):med dk gy-gy
 blk,tr liths,frm-hd,sbblky
 -sbfiss.

SANDSTONE(70%):clr-trnsl,
 tr frstd,fn-med,rr crs,ang
 -sr,pr-mod srt,mnr-com arg
 mtx,wk sil cmt i/p,tr nod
 pyr,pr inf por,no fluor.

CALCAREOUS CLAYSTONE(60%)
 med lt gy-med gy,olv
 gy,mod-com calc,tr liths,
 sft-frm,sbblky.

SANDSTONE(40%):clr-tnsl,
 opq,crs-vcrs,rr med,sa-sr,
 rr rnd,sbsph,mod srt,tr
 arg mtx,tr pyr,lse,no fluor.