



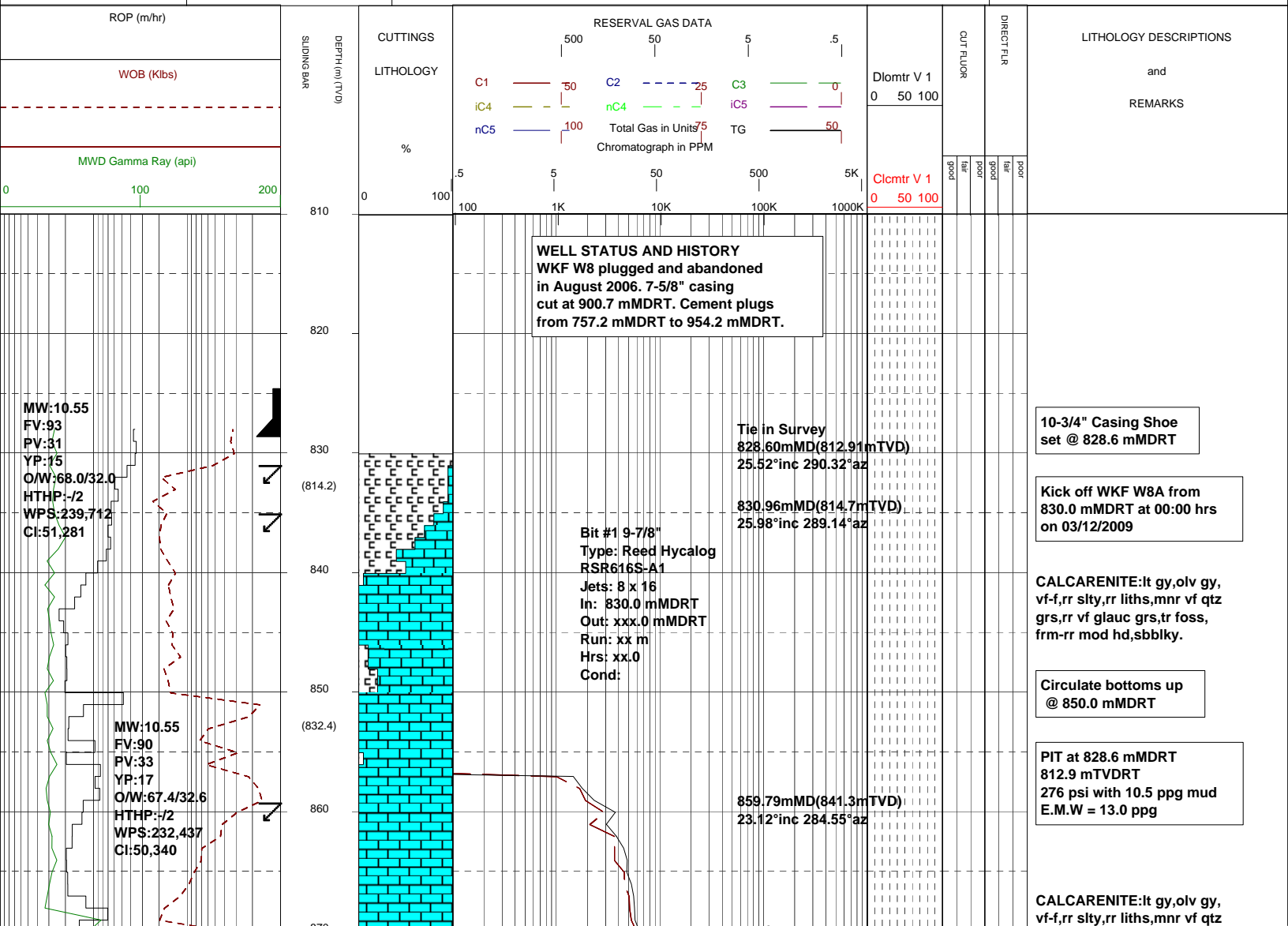
# MASTERLOG

## WKF W8A



GENERAL	SURFACE POSITION	HOLE / CASING INFO	DATE / DEPTH	ENGINEERS
Country : AUSTRALIA	Longitude :148°6'19.940" E	10-3/4" Surface Csg at 828.60 mMDRT	Kick off Date: 02/12/2009  Log Scale : 1/ 500	Gareth Munro Phil Rady Dan Dennis  Kefa O'Reilly Adam Sullivan
Permit : VIC / L5	Latitude : 38°35'34.711" S			
Field : West Kingfish	MGA Co-ord X :596277.93 mE			
Basin : GIPPSLAND	MGA Co-ord Y : 5727810.37 mN			
Well Type :DEVELOPMENT	RT to MSL : 41.0 m			
Rig Name : Nabors 175	RT to Sea Bed : 120.0 m			

ABBREVIATIONS	LITHOLOGY LEGEND	ENGINEERING LEGEND
MW Mud Weight FV Funnel Viscosity PV Plastic Viscosity YP Yield Point O/W Oil/Water Ratio WPS Aq. Phase Salinity HPHT Fluid Loss Cl Chlorides Incl Inclination Az Azimuth WOB Weight on Bit (klbs) RPM Rotations Per Min FLW Flow Rate (gpm) SPP Pump Pressure (psi) RR Re-Run Bit TG Trip Gas CG Connection Gas BG Background Gas DGP Drilled Gas Peak MM Mud Motor	Claystone Siltstone Sandstone Shale Conglomerate Marl Limestone Dolomite Coal-lignite Volcanics Bryozoa Radiolariae Echinoids Foraminiferae Cement Glauconite Pyrite	Casing shoe Casing top Survey RFT Sidewall core Core Mud gain Mud loss



grs,rr vf glauc grs,tr foss,  
frm-rr mod hd,sbbiky.

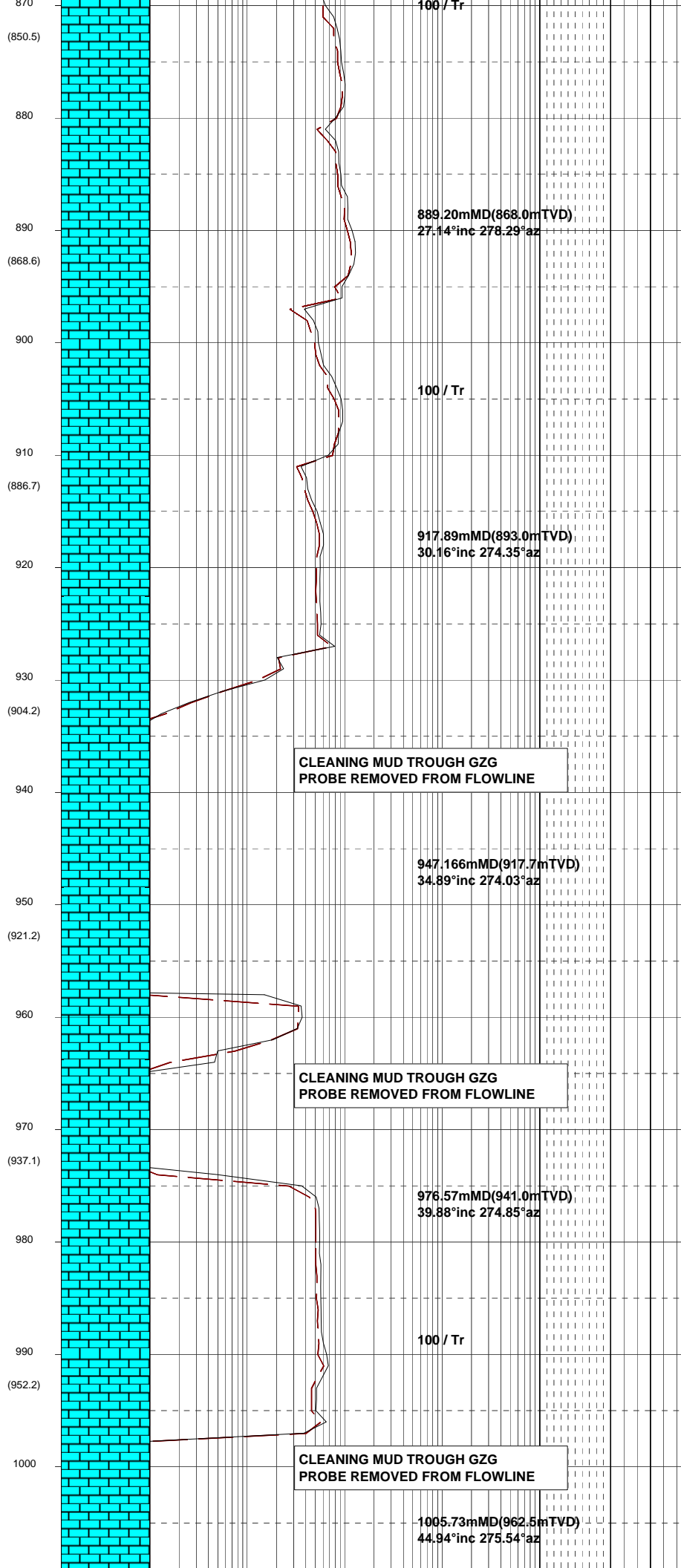
Drill with NAF Accolade  
Mud System

CALCARENITE:med gy-  
olv gy,slty,tr liths,tr vf qtz  
grs,tr vf calc grs,tr carb  
spks,sft-frm,sbbiky.

CALCARENITE:med gy-  
olv gy,slty,tr liths,tr vf qtz  
grs,tr vf calc grs,tr carb  
spks,sft-frm,sbbiky.

CALCARENITE:med gy-  
olv gy,vf-f,wl srt,slty,com  
lt gy arg mtx,tr liths,tr vf  
qtz grs,tr vf calc grs,tr carb  
spks,sft-frm,sbbiky.

CALCARENITE:med gy-  
olv gy,vf-f,wl srt,slty,com  
lt gy arg mtx,tr liths,tr vf  
qtz grs,tr vf calc grs,tr carb  
spks,sft-frm,sbbiky.



WOB:8-17klbs  
RPM:80-120  
SPP:1730psi  
FLW:670gpm

MW:10.55  
FV:92  
PV:35  
YP:20  
O/W:67.4/32.6  
HTHP:-/2  
WPS:236,749  
CI:51,450

WOB:8-10klbs  
RPM:55-90  
SPP:1090-1140psi  
FLW:514gpm

CLEANING MUD TROUGH GZG  
PROBE REMOVED FROM FLOWLINE

CLEANING MUD TROUGH GZG  
PROBE REMOVED FROM FLOWLINE

CLEANING MUD TROUGH GZG  
PROBE REMOVED FROM FLOWLINE

889.20mMD(668.0mTVD)  
27.14°inc 278.29°az

100 / Tr

917.89mMD(893.0mTVD)  
30.16°inc 274.35°az

947.166mMD(917.7mTVD)  
34.89°inc 274.03°az

976.57mMD(941.0mTVD)  
39.88°inc 274.85°az

100 / Tr

1005.73mMD(962.5mTVD)  
44.94°inc 275.54°az

(850.5)

880

890

(868.6)

900

910

(886.7)

920

930

(904.2)

940

950

(921.2)

960

970

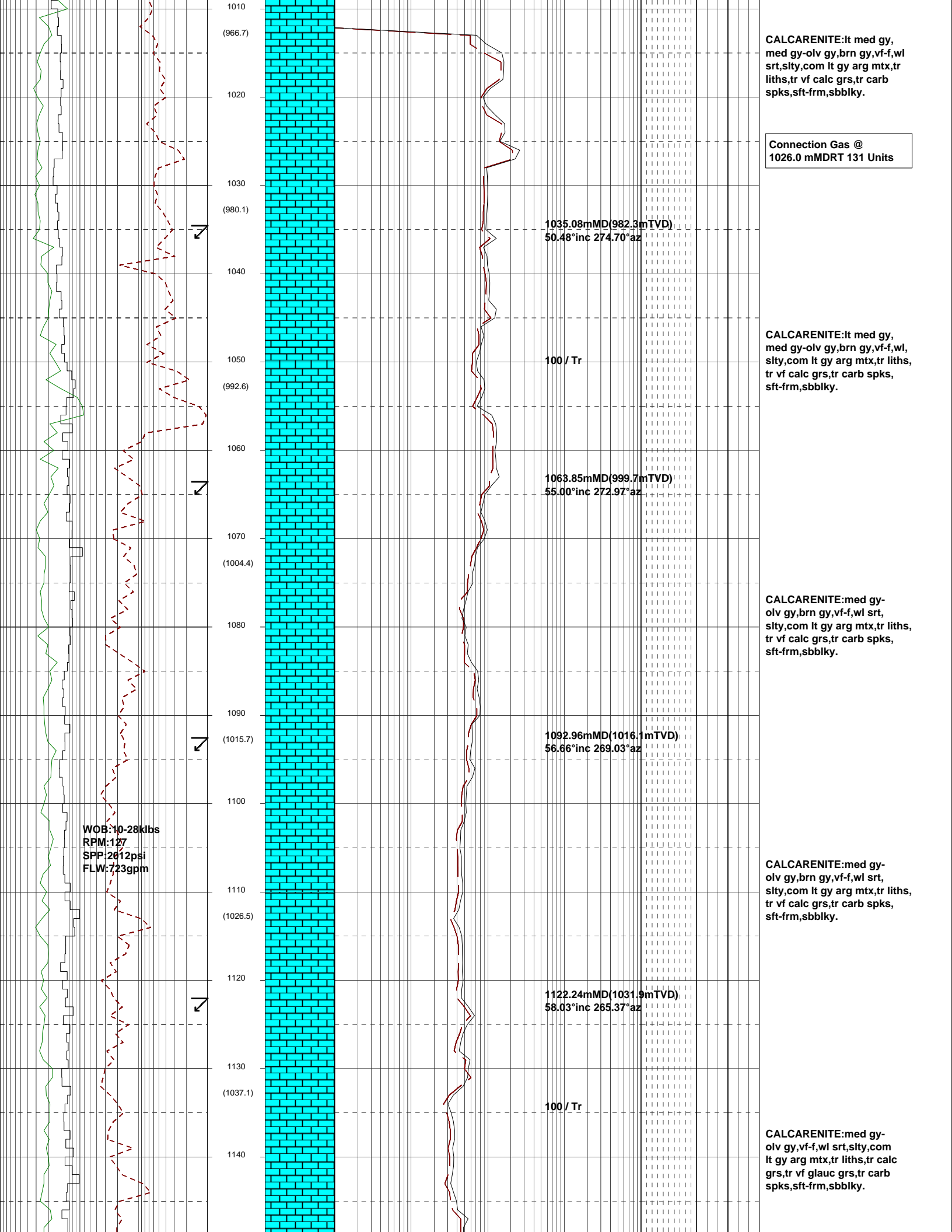
(937.1)

980

990

(952.2)

1000



**CALCARENITE:**lt med gy, med gy-olv gy,brn gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr vf calc grs,tr carb spks,sft-frm,sbblky.

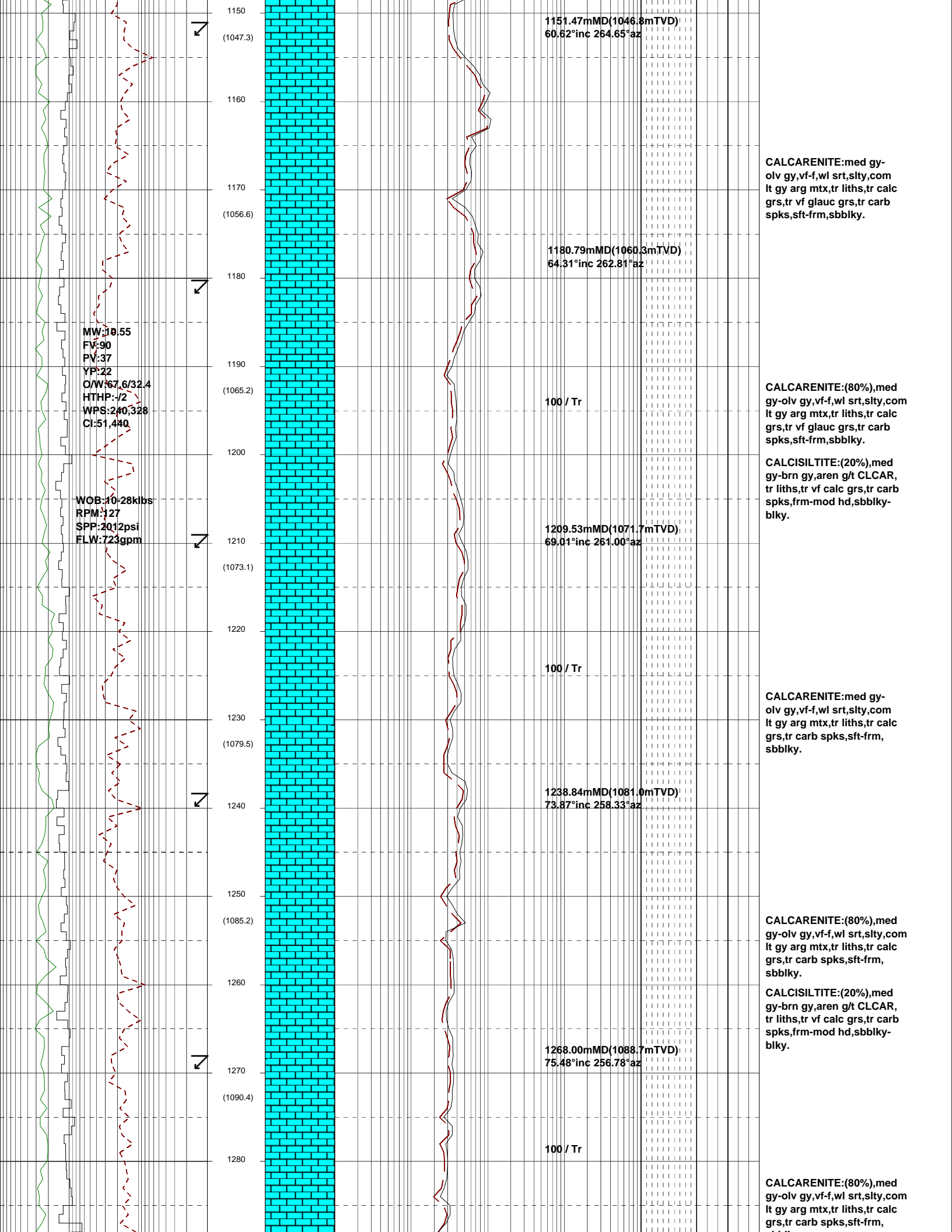
**Connection Gas @ 1026.0 mMDRT 131 Units**

**CALCARENITE:**lt med gy, med gy-olv gy,brn gy,vf-f,wl, slty,com lt gy arg mtx,tr liths, tr vf calc grs,tr carb spks, sft-frm,sbblky.

**CALCARENITE:**med gy-olv gy,brn gy,vf-f,wl srt, slty,com lt gy arg mtx,tr liths, tr vf calc grs,tr carb spks, sft-frm,sbblky.

**CALCARENITE:**med gy-olv gy,brn gy,vf-f,wl srt, slty,com lt gy arg mtx,tr liths, tr vf calc grs,tr carb spks, sft-frm,sbblky.

**CALCARENITE:**med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr vf glauc grs,tr carb spks,sft-frm,sbblky.



1150  
(1047.3)  
1160  
1170  
(1056.6)  
1180  
1190  
(1065.2)  
1200  
1210  
(1073.1)  
1220  
1230  
(1079.5)  
1240  
1250  
(1085.2)  
1260  
1270  
(1090.4)  
1280

1151.47mMD(1046.8mTVD)  
60.62°inc 264.65°az

1180.79mMD(1060.3mTVD)  
64.31°inc 262.81°az

100 / Tr

1209.53mMD(1071.7mTVD)  
69.01°inc 261.00°az

100 / Tr

1238.84mMD(1081.0mTVD)  
73.87°inc 258.33°az

1268.00mMD(1088.7mTVD)  
75.48°inc 256.78°az

100 / Tr

MW:10.55  
FV:90  
PV:37  
YP:22  
O/W:67.6/32.4  
HTHP:1/2  
WPS:240,328  
CI:51,440

WOB:1028kbs  
RPM:127  
SPP:2012psi  
FLW:723gpm

**CALCARENITE:**med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr vf glauc grs,tr carb spks,sft frm,sbbiky.

**CALCARENITE:(80%),**med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr vf glauc grs,tr carb spks,sft frm,sbbiky.

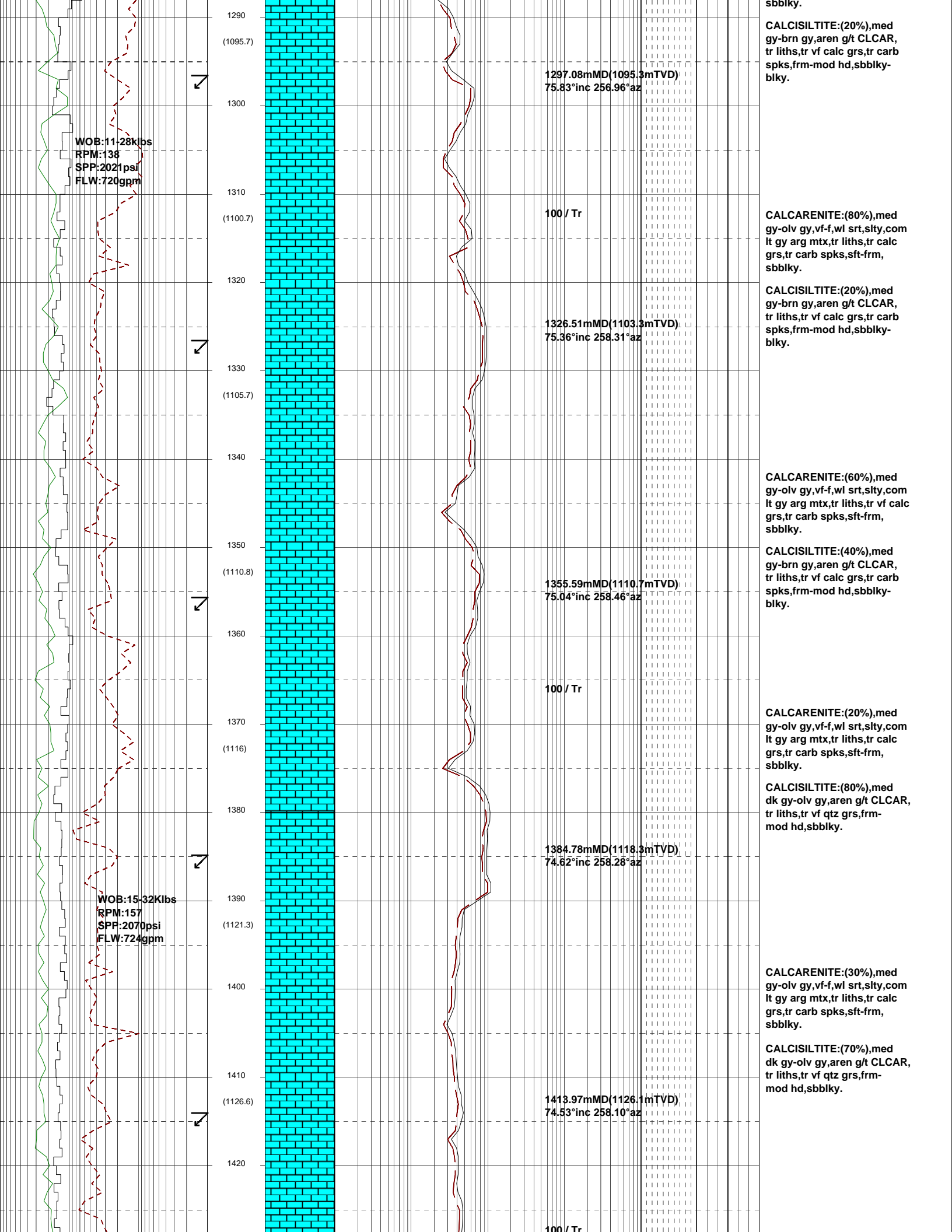
**CALCISILTITE:(20%),**med gy-brn gy,aren g/t CLCAR, tr liths,tr vf calc grs,tr carb spks,frm-mod hd,sbbiky-biky.

**CALCARENITE:**med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr carb spks,sft frm,sbbiky.

**CALCARENITE:(80%),**med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr carb spks,sft frm,sbbiky.

**CALCISILTITE:(20%),**med gy-brn gy,aren g/t CLCAR, tr liths,tr vf calc grs,tr carb spks,frm-mod hd,sbbiky-biky.

**CALCARENITE:(80%),**med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr carb spks,sft frm,



CALCISILTITE:(20%),med gy-brn gy,aren g/t CLCAR, tr liths,tr vf calc grs,tr carb spks,frm-mod hd,sbblky-blky.

1297.08mMD(1095.3mTVD)  
75.83°inc 256.96°az

WOB:11-28kIbs  
RPM:138  
SPP:2021psi  
FLW:720gpm

100 / Tr

CALCARENITE:(80%),med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr carb spks,sft-frm, sbblky.

1326.51mMD(1103.3mTVD)  
75.36°inc 258.31°az

CALCISILTITE:(20%),med gy-brn gy,aren g/t CLCAR, tr liths,tr vf calc grs,tr carb spks,frm-mod hd,sbblky-blky.

CALCARENITE:(60%),med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr vf calc grs,tr carb spks,sft-frm, sbblky.

1355.59mMD(1110.7mTVD)  
75.04°inc 258.46°az

CALCISILTITE:(40%),med gy-brn gy,aren g/t CLCAR, tr liths,tr vf calc grs,tr carb spks,frm-mod hd,sbblky-blky.

100 / Tr

CALCARENITE:(20%),med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr carb spks,sft-frm, sbblky.

CALCISILTITE:(80%),med dk gy-olv gy,aren g/t CLCAR, tr liths,tr vf qtz grs,frm-mod hd,sbblky.

1384.78mMD(1118.3mTVD)  
74.62°inc 258.28°az

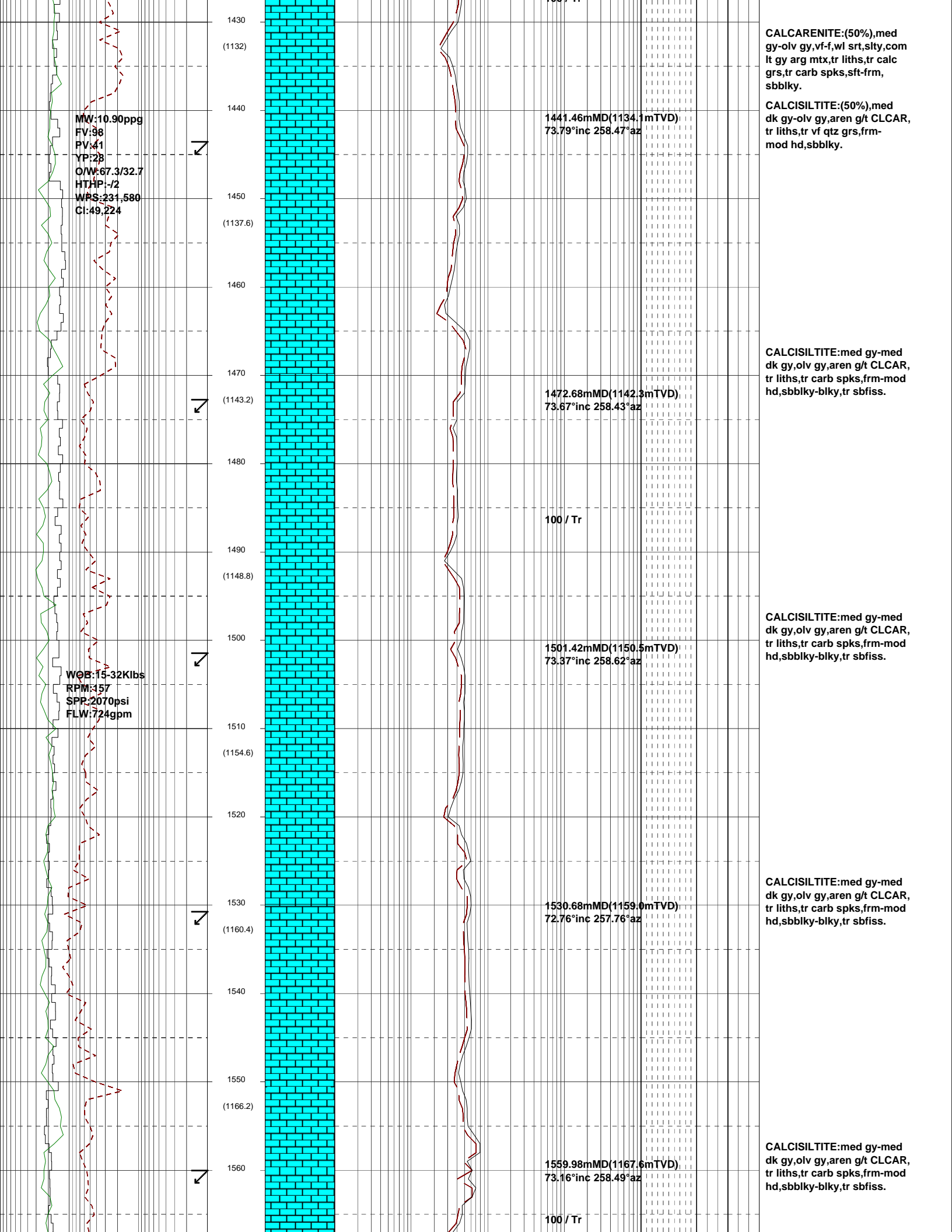
WOB:15-32Klbs  
RPM:157  
SPP:2070psi  
FLW:724gpm

CALCARENITE:(30%),med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr carb spks,sft-frm, sbblky.

CALCISILTITE:(70%),med dk gy-olv gy,aren g/t CLCAR, tr liths,tr vf qtz grs,frm-mod hd,sbblky.

1413.97mMD(1126.1mTVD)  
74.53°inc 258.10°az

100 / Tr



**CALCARENITE:(50%),med gy-olv gy,vf-f,wl srt,slty,com lt gy arg mtx,tr liths,tr calc grs,tr carb spks,sft frm, sbbiky.**

**CALCISILTITE:(50%),med dk gy-olv gy,aren g/t CLCAR, tr liths,tr vf qtz grs,frm-mod hd,sbbiky.**

**CALCISILTITE:med gy-med dk gy,olv gy,aren g/t CLCAR, tr liths,tr carb spks,frm-mod hd,sbbiky-blky,tr sbfiss.**

**CALCISILTITE:med gy-med dk gy,olv gy,aren g/t CLCAR, tr liths,tr carb spks,frm-mod hd,sbbiky-blky,tr sbfiss.**

**CALCISILTITE:med gy-med dk gy,olv gy,aren g/t CLCAR, tr liths,tr carb spks,frm-mod hd,sbbiky-blky,tr sbfiss.**

**CALCISILTITE:med gy-med dk gy,olv gy,aren g/t CLCAR, tr liths,tr carb spks,frm-mod hd,sbbiky-blky,tr sbfiss.**

MW:10.90ppg  
FV:98  
PV:41  
YP:28  
O/W:67.3/32.7  
HTHP:-/2  
WPS:231,580  
CI:49,224

WOB:15-32Klbs  
RPM:157  
SPP:2070psi  
FLW:724gpm

1441.46mMD(1134.1mTVD)  
73.79°inc 258.47°az

1472.68mMD(1142.3mTVD)  
73.67°inc 258.43°az

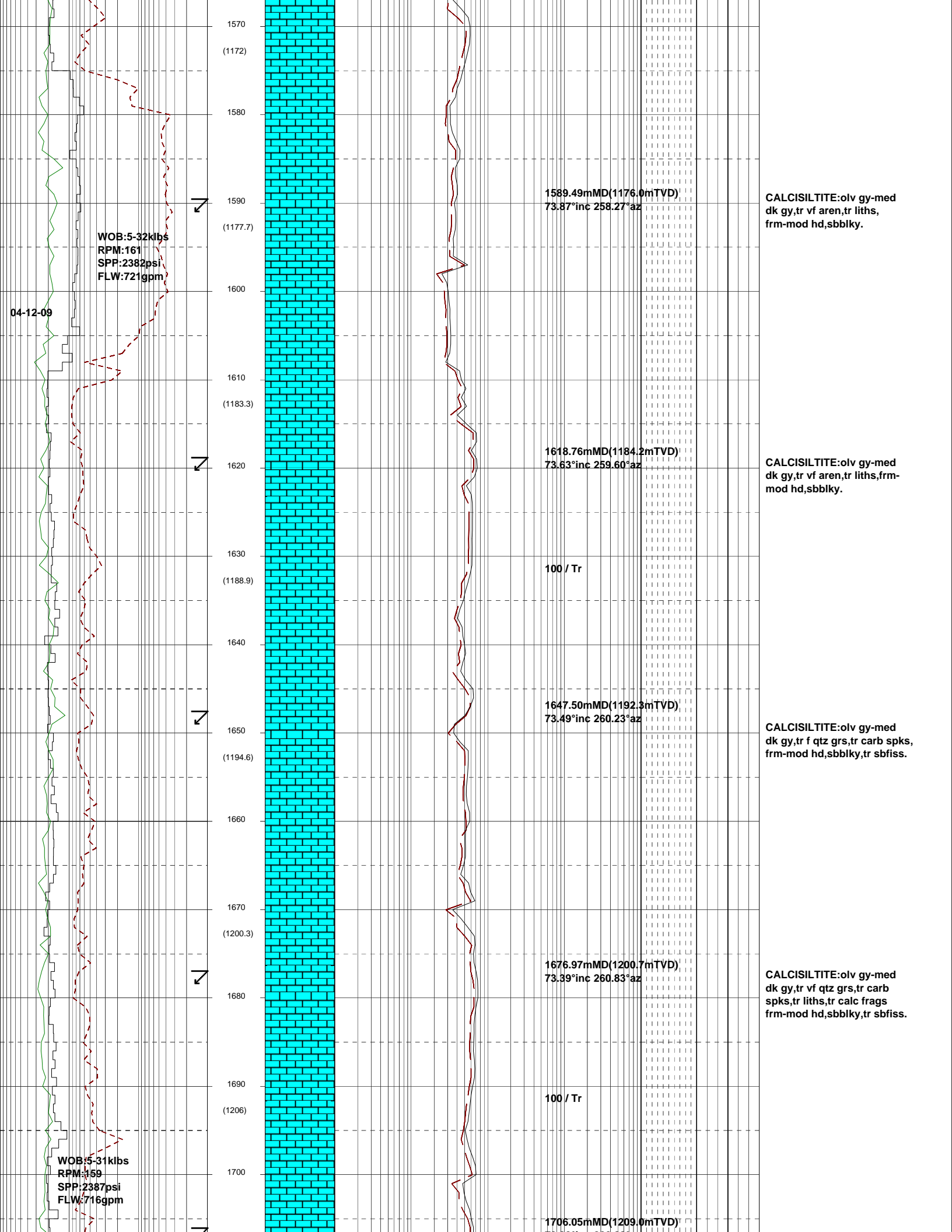
100 / Tr

1501.42mMD(1150.5mTVD)  
73.37°inc 258.62°az

1530.68mMD(1159.0mTVD)  
72.76°inc 257.76°az

1559.98mMD(1167.6mTVD)  
73.16°inc 258.49°az

100 / Tr



WOB: 5-32 klbs  
RPM: 161  
SPP: 2382 psi  
FLW: 721 gpm

04-12-09

WOB: 5-31 klbs  
RPM: 159  
SPP: 2387 psi  
FLW: 716 gpm

1570  
(1172)  
1580  
1590  
(1177.7)  
1600  
1610  
(1183.3)  
1620  
1630  
(1188.9)  
1640  
1650  
(1194.6)  
1660  
1670  
(1200.3)  
1680  
1690  
(1206)  
1700

1589.49mMD(1176.0mTVD)  
73.87°inc 258.27°az

1618.76mMD(1184.2mTVD)  
73.63°inc 259.60°az

100 / Tr

1647.50mMD(1192.3mTVD)  
73.49°inc 260.23°az

1676.97mMD(1200.7mTVD)  
73.39°inc 260.83°az

100 / Tr

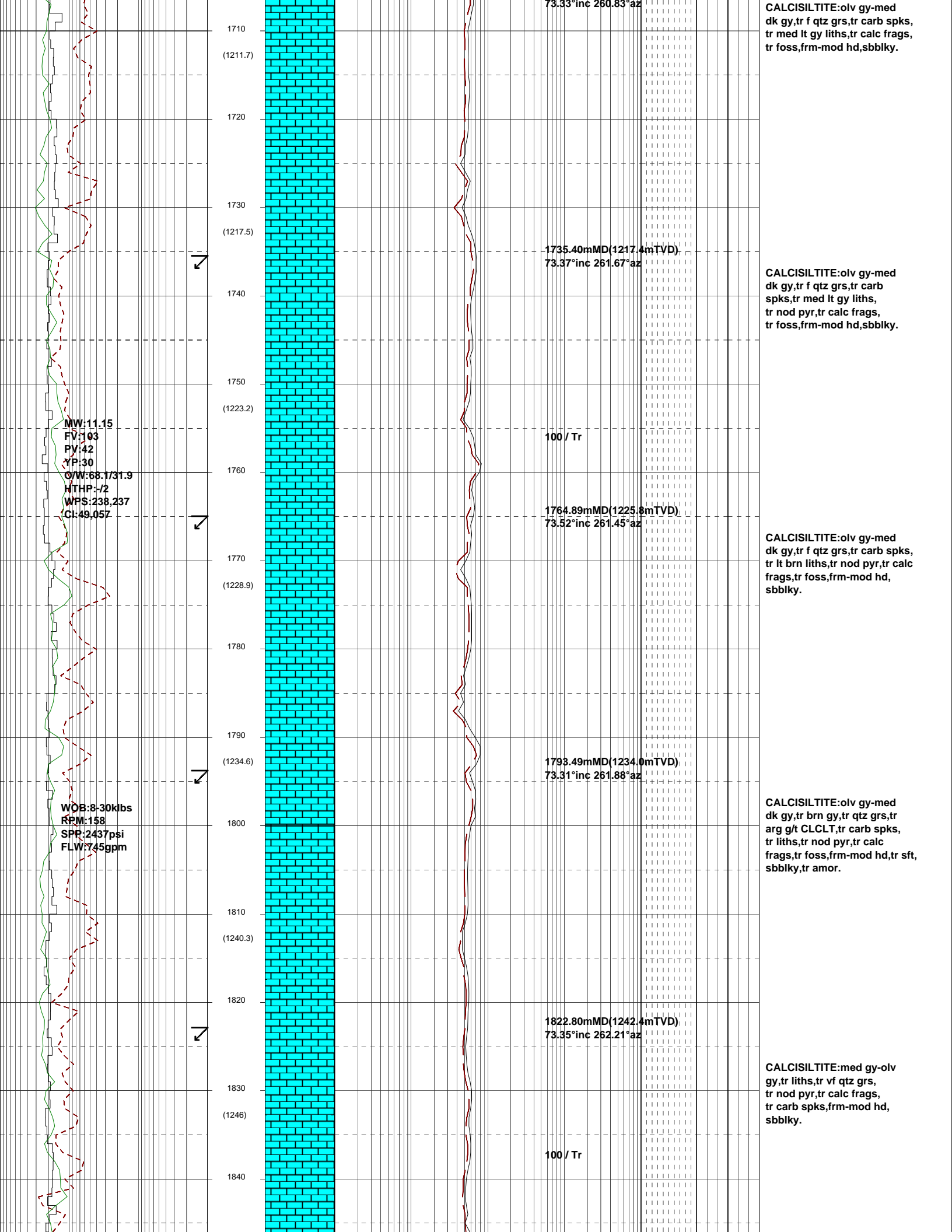
1706.05mMD(1209.0mTVD)

CALCISILTITE: olv gy-med  
dk gy, tr vf aren, tr liths,  
frm-mod hd, sbbly.

CALCISILTITE: olv gy-med  
dk gy, tr vf aren, tr liths, frm-  
mod hd, sbbly.

CALCISILTITE: olv gy-med  
dk gy, tr f qtz grs, tr carb spks,  
frm-mod hd, sbbly, tr sbfiss.

CALCISILTITE: olv gy-med  
dk gy, tr vf qtz grs, tr carb  
spks, tr liths, tr calc frags  
frm-mod hd, sbbly, tr sbfiss.



1710  
(1211.7)  
1720  
1730  
(1217.5)  
1740  
1750  
(1223.2)  
1760  
1770  
(1228.9)  
1780  
1790  
(1234.6)  
1800  
1810  
(1240.3)  
1820  
1830  
(1246)  
1840

MW:11.15  
FV:103  
PV:42  
YP:30  
O/W:68.1/31.9  
HTHP:-/2  
WPS:238,237  
CI:49,057

WOB:8-30klbs  
RPM:158  
SPP:2437psi  
FLW:745gpm

73.33°inc 260.83°az

1735.40mMD(1217.4mTVD),  
73.37°inc 261.67°az

100 / Tr

1764.89mMD(1225.8mTVD),  
73.52°inc 261.45°az

1793.49mMD(1234.0mTVD),  
73.31°inc 261.88°az

1822.80mMD(1242.4mTVD),  
73.35°inc 262.21°az

100 / Tr

CALCISILTITE:olv gy-med  
dk gy,tr f qtz grs,tr carb spks,  
tr med lt gy liths,tr calc frags,  
tr foss,frm-mod hd,sbblky.

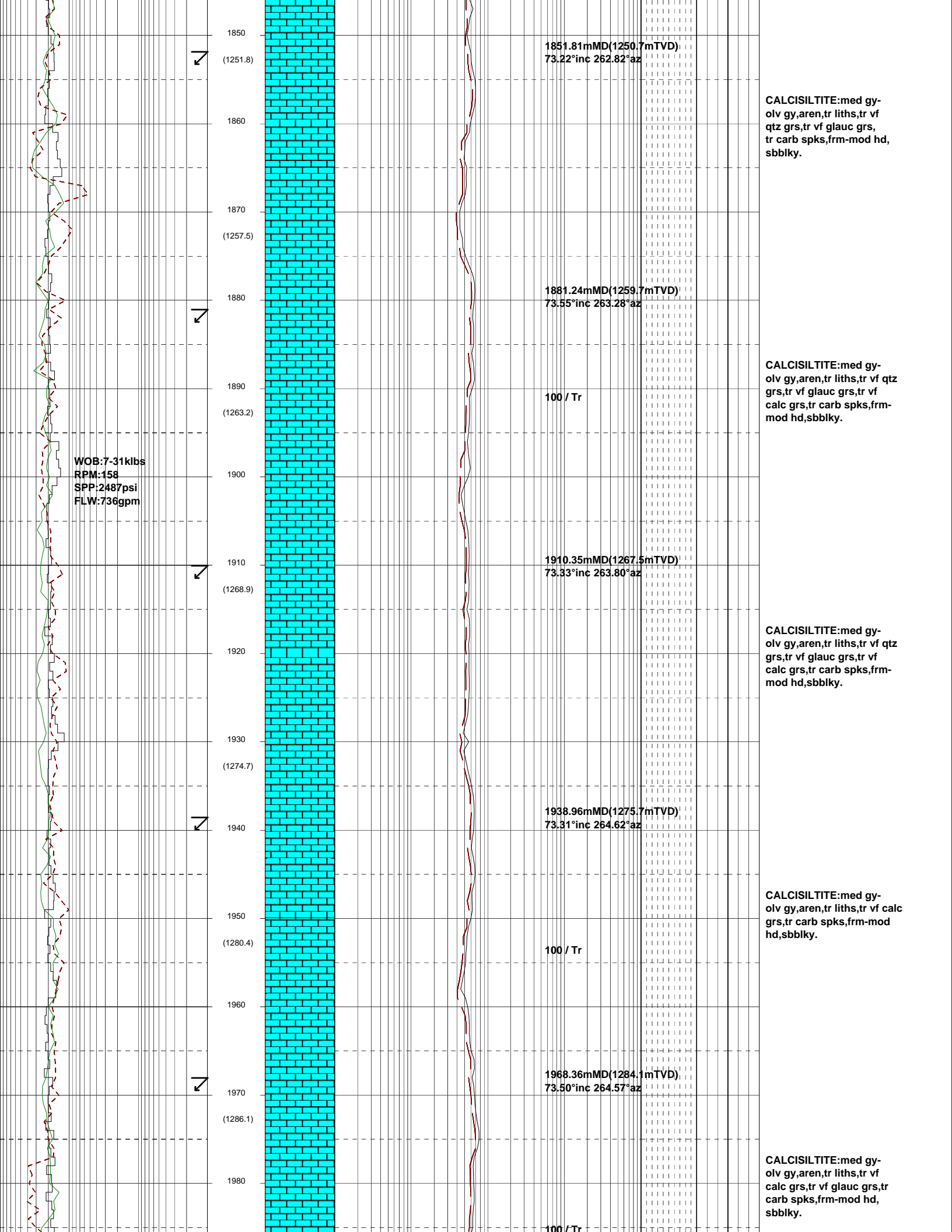
CALCISILTITE:olv gy-med  
dk gy,tr f qtz grs,tr carb  
spks,tr med lt gy liths,  
tr nod pyr,tr calc frags,  
tr foss,frm-mod hd,sbblky.

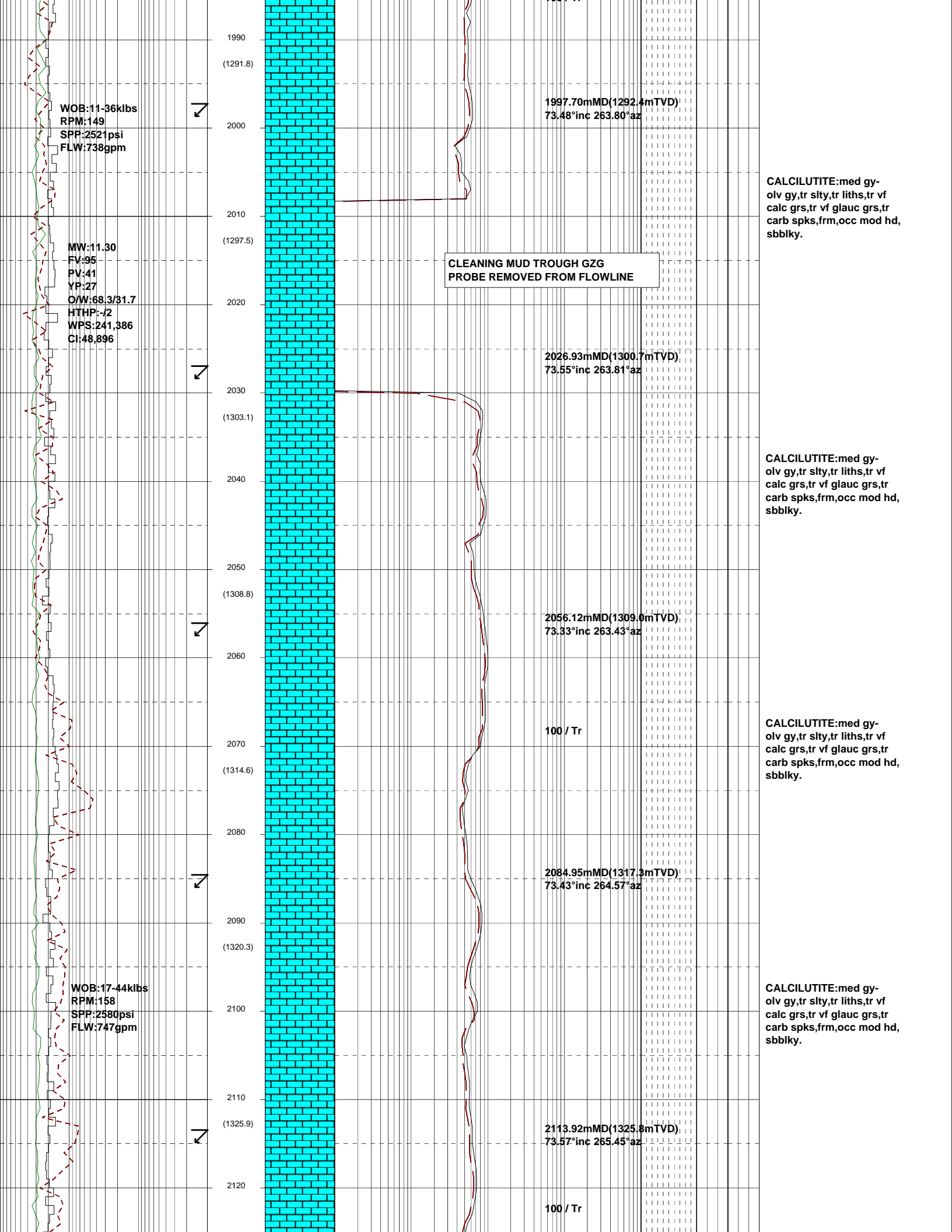
CALCISILTITE:olv gy-med  
dk gy,tr f qtz grs,tr carb spks,  
tr lt brn liths,tr nod pyr,tr calc  
frags,tr foss,frm-mod hd,  
sbblky.

CALCISILTITE:olv gy-med  
dk gy,tr brn gy,tr qtz grs,tr  
arg g/t CLCLT,tr carb spks,  
tr liths,tr nod pyr,tr calc  
frags,tr foss,frm-mod hd,tr sft,  
sbblky,tr amor.

CALCISILTITE:med gy-olv  
gy,tr liths,tr vf qtz grs,  
tr nod pyr,tr calc frags,  
tr carb spks,frm-mod hd,  
sbblky.







WOB:11-36klbs  
RPM:149  
SPP:2521psi  
FLW:738gpm

MW:11.30  
FV:95  
PV:41  
YP:27  
O/W:68.3/31.7  
HTHP:-J2  
WPS:241,386  
CI:48,896

WOB:17-44klbs  
RPM:158  
SPP:2380psi  
FLW:747gpm

1997.70mMD(1292.4mTVD)  
73.48°inc 263.80°az

CLEANING MUD TROUGH GZG  
PROBE REMOVED FROM FLOWLINE

2026.93mMD(1300.7mTVD)  
73.55°inc 263.81°az

2056.12mMD(1309.0mTVD)  
73.33°inc 263.43°az

100 / Tr

2084.95mMD(1317.3mTVD)  
73.43°inc 264.57°az

2113.92mMD(1325.8mTVD)  
73.57°inc 265.45°az

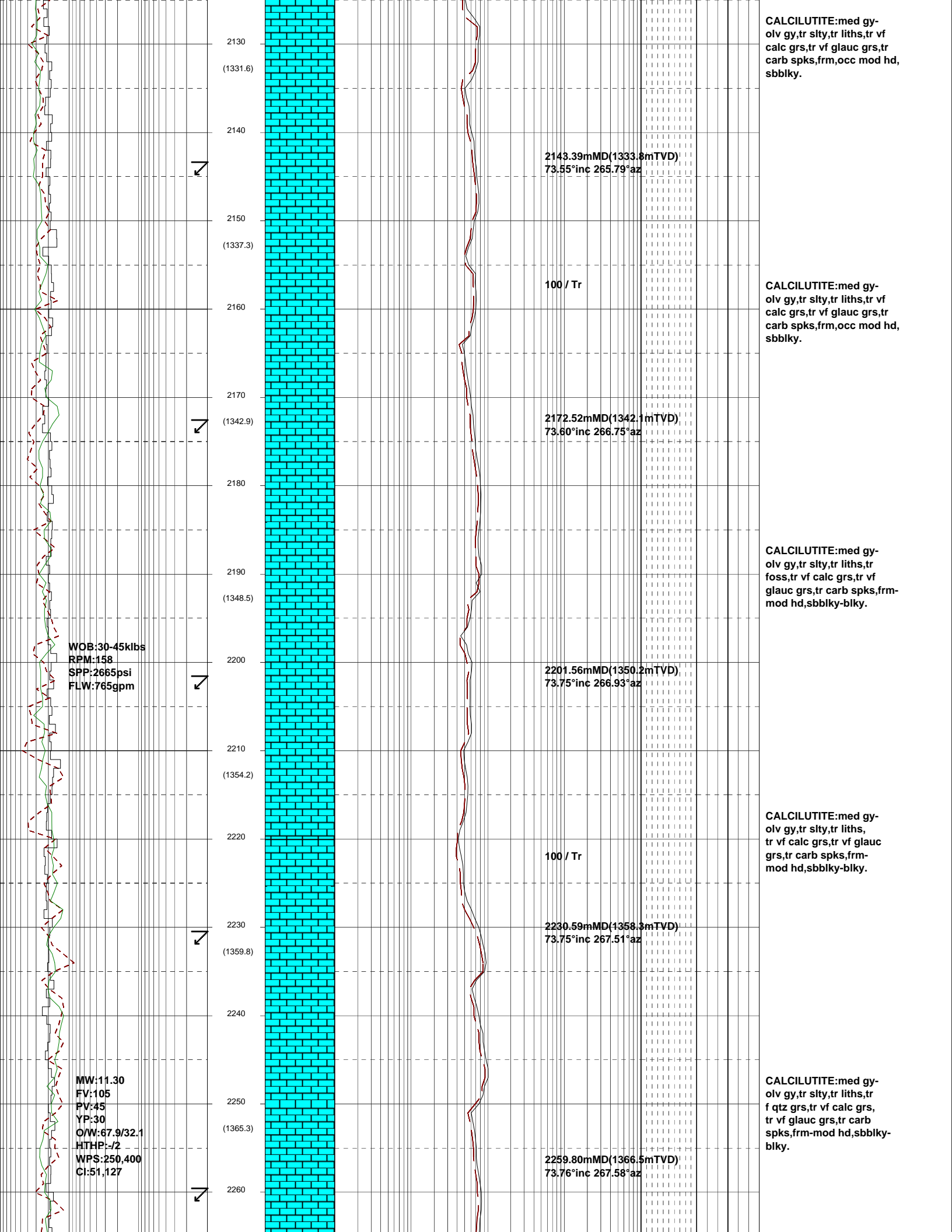
100 / Tr

CALCILUTITE: med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr vf glauc grs, tr carb spks, frm, occ mod hd, sbbiky.

CALCILUTITE: med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr vf glauc grs, tr carb spks, frm, occ mod hd, sbbiky.

CALCILUTITE: med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr vf glauc grs, tr carb spks, frm, occ mod hd, sbbiky.

CALCILUTITE: med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr vf glauc grs, tr carb spks, frm, occ mod hd, sbbiky.



2270  
(1370.9)  
2280  
2290  
(1376.5)  
2300  
2310  
(1382.1)  
2320  
2330  
(1387.7)  
2340  
2350  
(1393.3)  
2360  
2370  
(1398.9)  
2380  
2390  
(1404.5)  
2400

100 / Tr  
2289.04mMD(1374.7mTVD)  
73.81°inc 267.64°az  
100 / Tr  
2318.30mMD(1382.8mTVD)  
73.88°inc 267.20°az  
2347.57mMD(1391.0mTVD)  
73.61°inc 265.69°az  
100 / Tr  
2376.33mMD(1399.1mTVD)  
73.72°inc 266.07°az

WOB:32-45klbs  
RPM:158  
SPP:2882psi  
FLW:755gpm

WOB:22-44klbs  
RPM:158  
SPP:2580psi  
FLW:747gpm

CALCILUTITE:med gy-olv gy,tr slty,tr liths,tr f qtz grs,tr vf calc grs, tr vf glauc grs,tr carb spks,frm-mod hd,sbblky-blky.

Base High Velocity Channel  
2304.0mMDRT 1378.4mTVDRT  
(-1336.73mTVDSS)

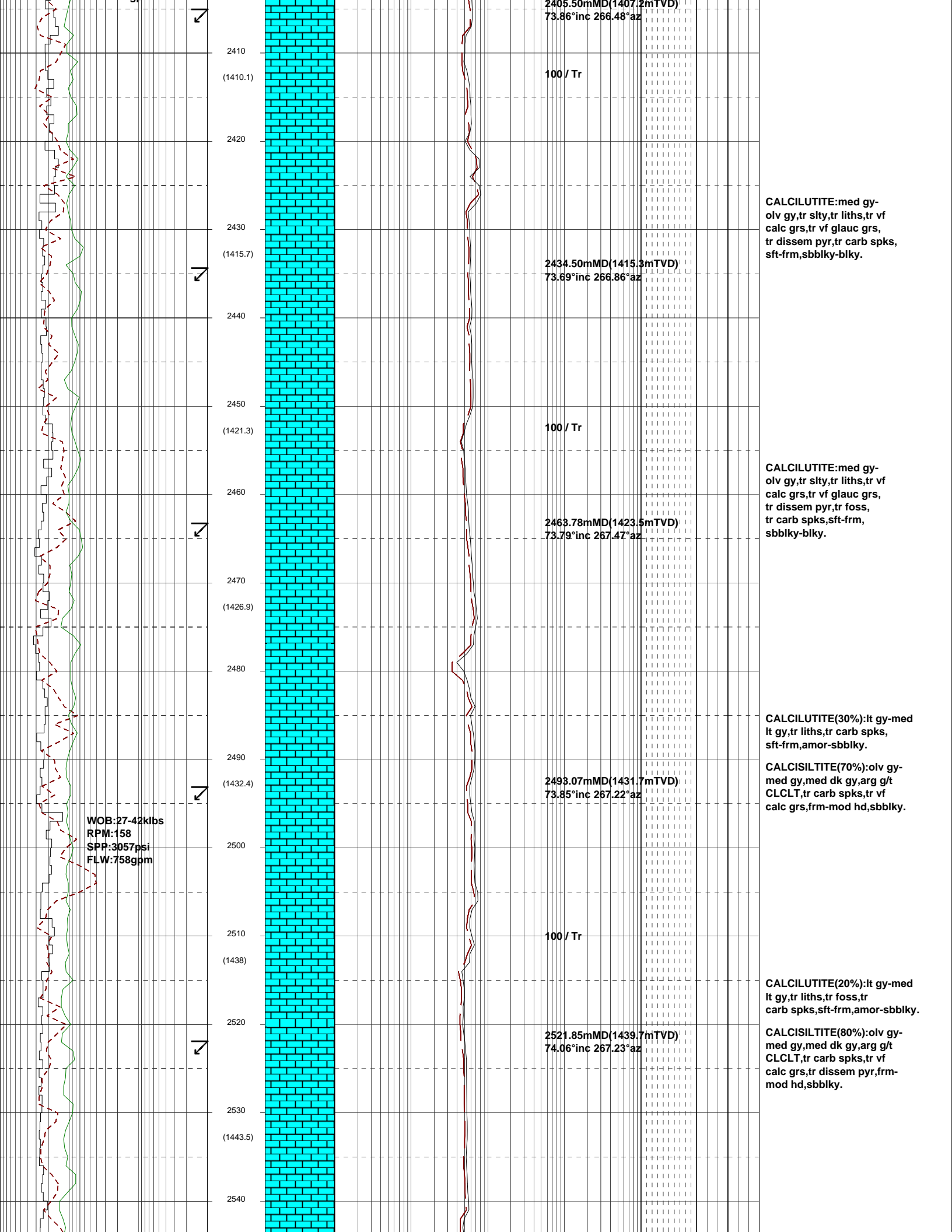
CALCILUTITE:med gy-olv gy,tr slty,tr liths,tr vf calc grs,tr vf glauc grs, tr carb spks,frm-mod hd, sbblky-blky.

CALCILUTITE(80%):med gy-olv gy,tr slty,tr liths,tr vf calc grs,tr vf glauc grs, tr dissem pyr,tr carb spks, frm-mod hd,sbblky-blky.

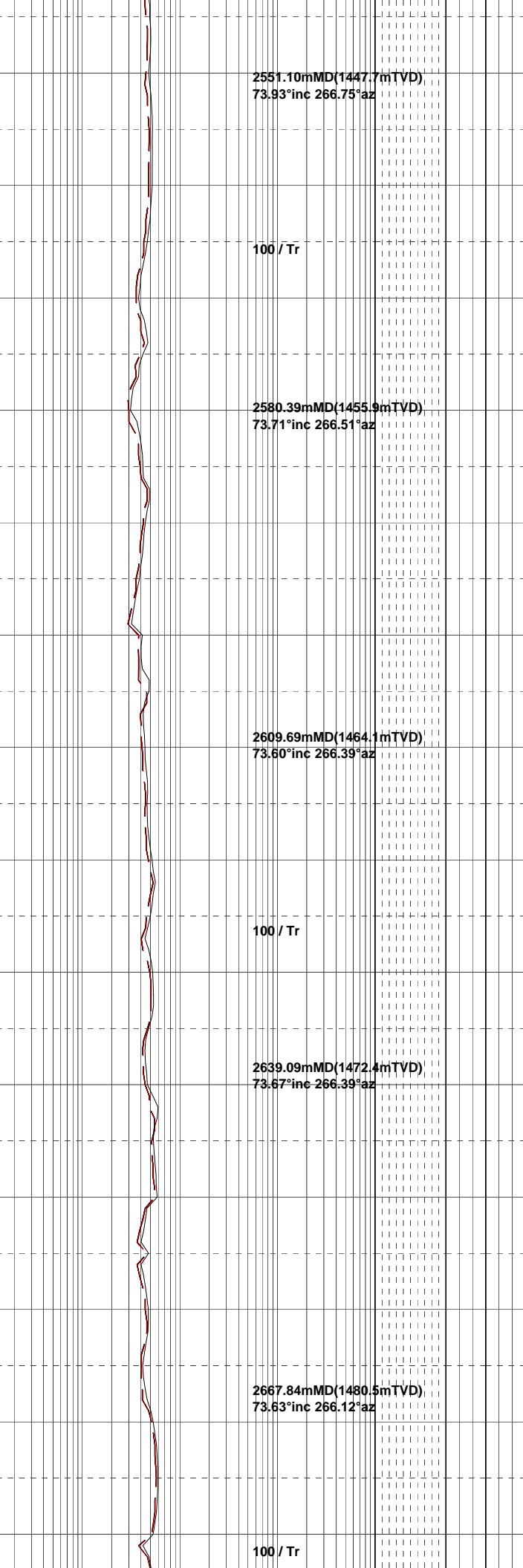
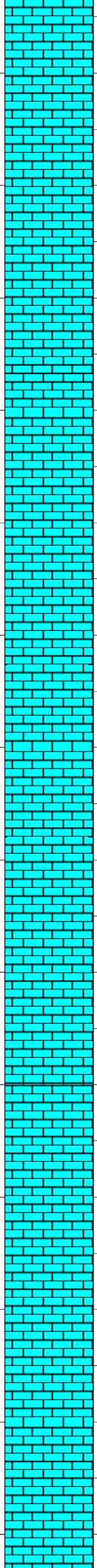
CALCISILTITE(20%): med gy-olv gy,brn gy,aren, tr liths,tr vf calc grs, tr vf glauc grs,frm,sbblky.

CALCILUTITE:med gy-olv gy,tr slty,tr liths,tr vf calc grs,tr vf glauc grs, tr dissem pyr,tr carb spks, sft-frm,sbblky-blky.

CALCILUTITE:med gy-olv gy,tr slty,tr liths,tr vf calc grs,tr vf glauc grs, tr dissem pyr,tr carb spks, sft-frm,sbblky-blky.



2550  
(1449)  
2560  
2570  
(1454.6)  
2580  
2590  
(1460.2)  
2600  
2610  
(1465.9)  
2620  
2630  
(1471.4)  
2640  
2650  
(1477.1)  
2660  
2670  
(1482.8)  
2680



WOB:23-39klbs  
RPM:158  
SPP:3054psi  
FLW:749gpm

MW:11.80  
FV:111  
PV:59  
YP:37  
O/W:68.8/31.3  
HTHP:-/2  
WPS:230,599  
CI:44,524

2551.10mMD(1447.7mTVD),  
73.93°inc 266.75°az

100 / Tr

2580.39mMD(1455.9mTVD),  
73.71°inc 266.51°az

2609.69mMD(1464.1mTVD),  
73.60°inc 266.39°az

100 / Tr

2639.09mMD(1472.4mTVD),  
73.67°inc 266.39°az

2667.84mMD(1480.5mTVD),  
73.63°inc 266.12°az

100 / Tr

CALCILUTITE(60%):lt gy-med  
lt gy,tr liths,tr carb spks,  
sft frm,amor-sbbkly.

CALCISILTITE(40%):olv gy-  
med gy,med dk gy,arg g/t  
CLCLT,tr carb spks,tr vf  
calc grs,frm-mod hd,sbbkly.

CALCISILTITE(30%):olv gy-  
med gy,tr liths,tr carb spks,  
tr calc frags,frm,tr mod hd,  
sbbkly.

CALCILUTITE(70%):lt gy-  
med lt gy,tr vf aren,tr carb  
spks,tr calc frags,sft-frm,  
amor.

CALCISILTITE(20%):olv gy-  
med gy,arg,rr carb spks,tr  
liths,tr calc frags,dm frm,  
sbbkly-mnr blkly.

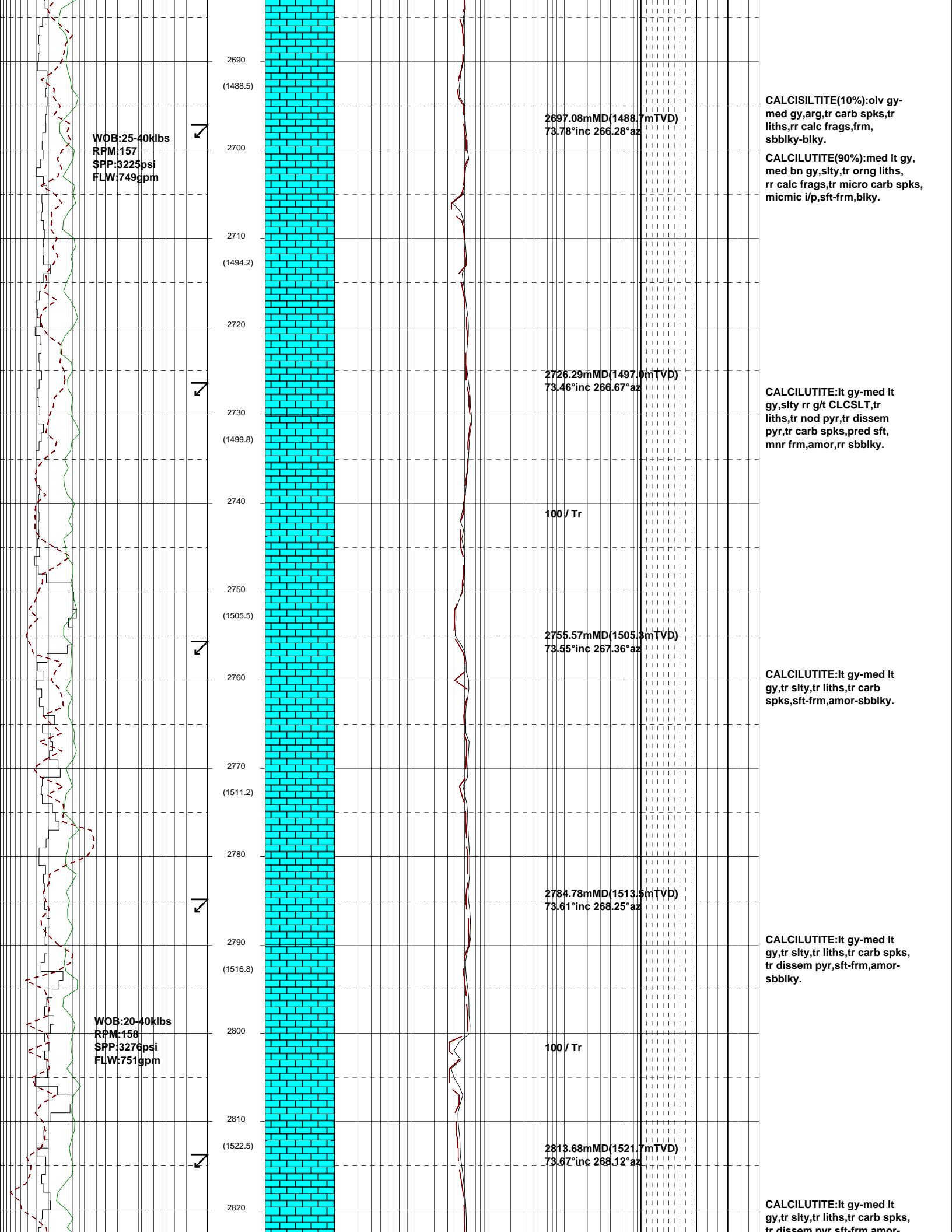
CALCILUTITE(80%):med lt gy,  
lt gy,slty i/p,tr carb spks,tr  
vf calc frags,tr-loc mica flks,  
pred sft,mnr frm,amor-blky.

CALCISILTITE(20%):olv gy-  
med gy,arg,rr carb spks,tr  
liths,tr calc frags,dm frm,  
sbbkly-mnr blkly.

CALCILUTITE(80%):med lt gy,  
lt gy,slty i/p,rr carb spks,tr  
calc frags,sft-frm,amor-blky.

CALCISILTITE(10%):olv gy-  
med gy,arg,tr carb spks,tr  
liths,rr calc frags,frm,  
sbbkly-blky.

CALCILUTITE(90%):med lt gy,  
med bn gy,slty,tr orgn liths,  
rr calc frags,tr micro carb spks,  
micmic i/p,sft-frm,blkly.



WOB:25-40klbs  
RPM:157  
SPP:3225psi  
FLW:749gpm

2690  
(1488.5)  
2700  
2710  
(1494.2)  
2720  
2730  
(1499.8)  
2740  
2750  
(1505.5)  
2760  
2770  
(1511.2)  
2780  
2790  
(1516.8)  
2800  
2810  
(1522.5)  
2820

2697.08mMD(1488.7mTVD)  
73.78°inc 266.28°az

2726.29mMD(1497.0mTVD)  
73.46°inc 266.67°az

2755.57mMD(1505.3mTVD)  
73.55°inc 267.36°az

2784.78mMD(1513.5mTVD)  
73.61°inc 268.25°az

2813.68mMD(1521.7mTVD)  
73.67°inc 268.12°az

100 / Tr

100 / Tr

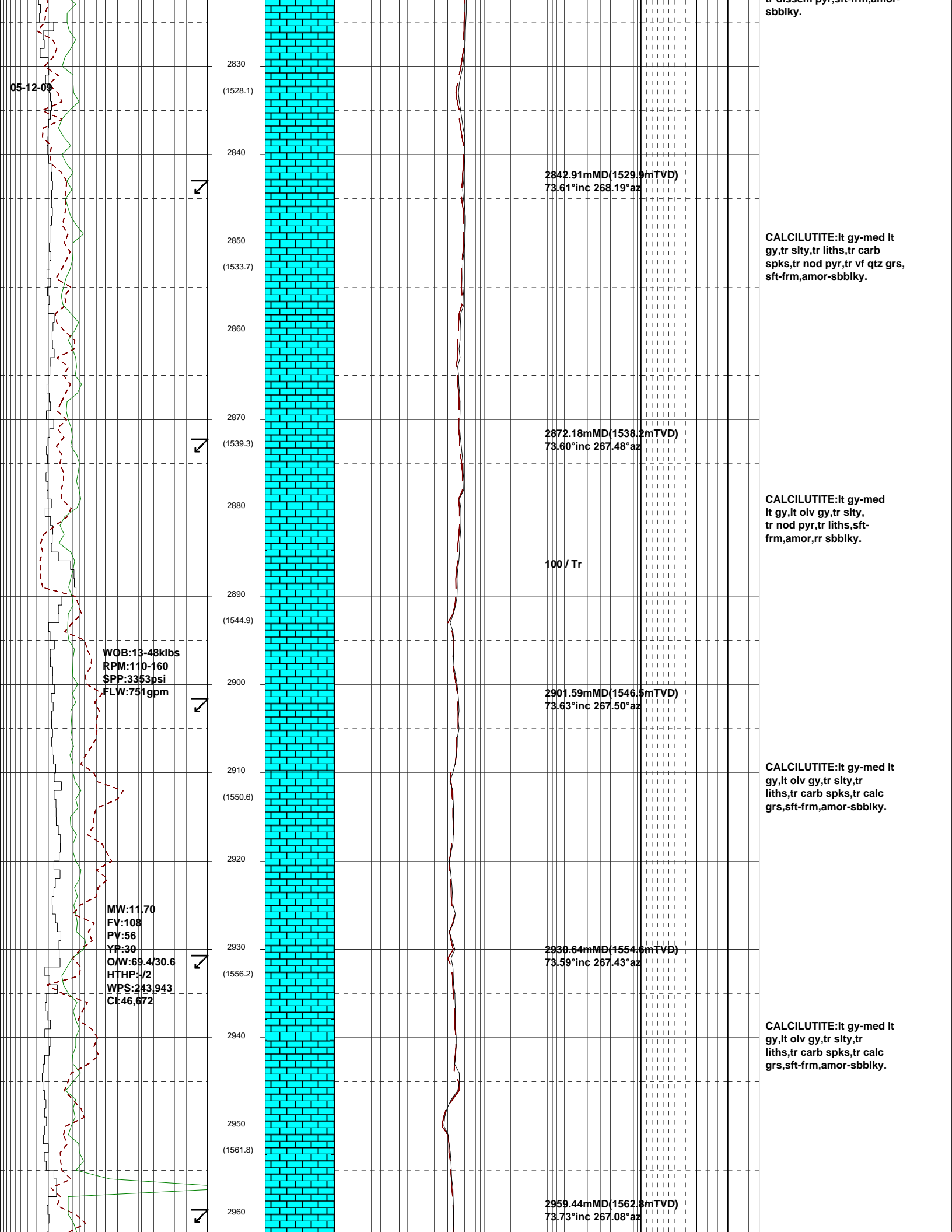
CALCISILTITE(10%):olv gy-med gy,arg,tr carb spks,tr liths,rr calc frags,frm, sbbiky-blky.  
CALCILUTITE(90%):med lt gy, med bn gy,slty,tr orgn liths, rr calc frags,tr micro carb spks, micmic i/p,sft-frm,blky.

CALCILUTITE:lt gy-med lt gy,slty rr g/t CLCSLT,tr liths,tr nod pyr,tr dissem pyr,tr carb spks,pred sft, mnr frm,amor,rr sbbiky.

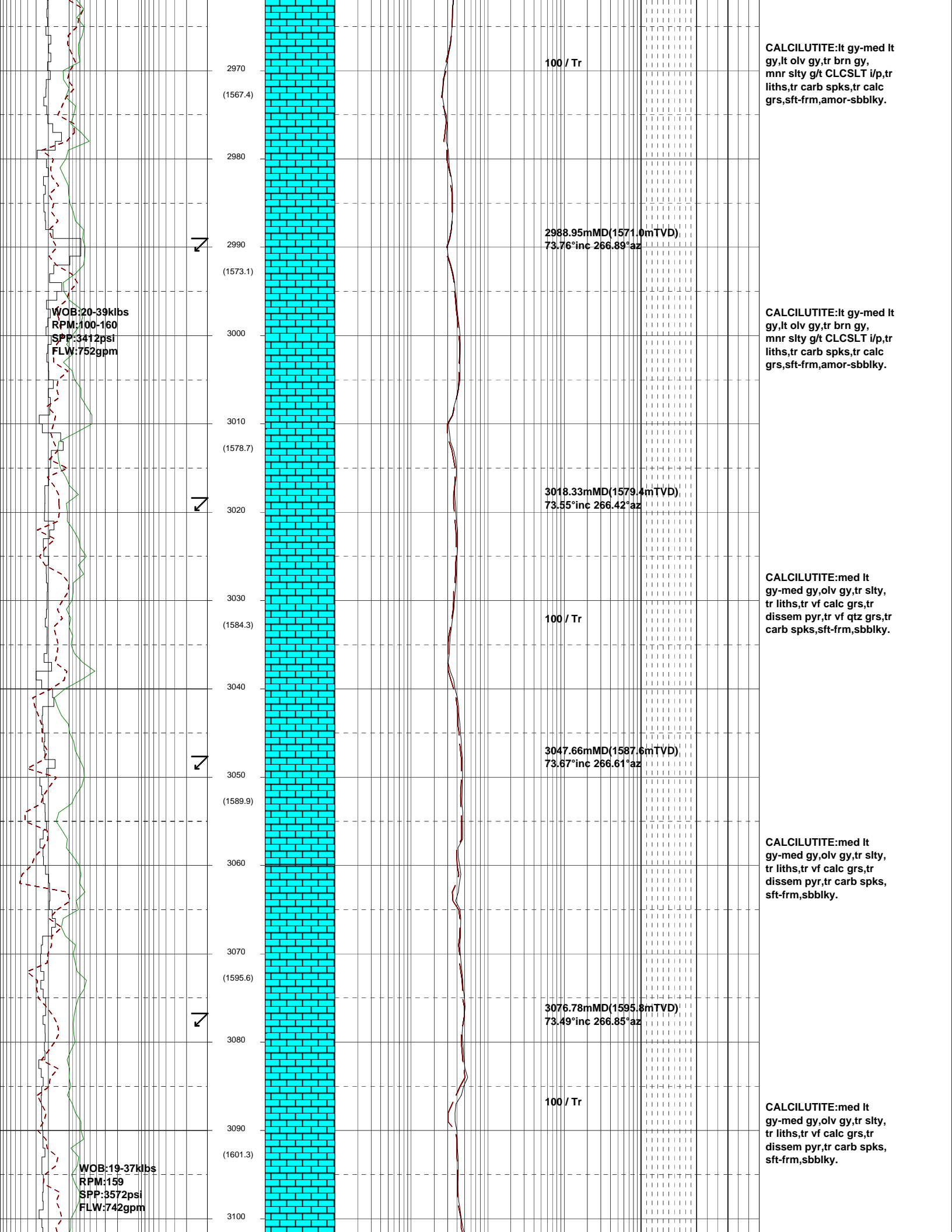
CALCILUTITE:lt gy-med lt gy,tr slty,tr liths,tr carb spks,sft-frm,amor-sbbiky.

CALCILUTITE:lt gy-med lt gy,tr slty,tr liths,tr carb spks, tr dissem pyr,sft-frm,amor-sbbiky.

CALCILUTITE:lt gy-med lt gy,tr slty,tr liths,tr carb spks, tr dissem pyr sft-frm amor-







2970  
(1567.4)

100 / Tr

CALCILUTITE:lt gy-med lt gy,lt olv gy,tr brn gy, mnr slty g/t CLCSLT i/p,tr liths,tr carb spks,tr calc grs,sft frm,amor-sbblky.

2980

2990  
(1573.1)

2988.95mMD(1571.0mTVD)  
73.76°inc 266.89°az

CALCILUTITE:lt gy-med lt gy,lt olv gy,tr brn gy, mnr slty g/t CLCSLT i/p,tr liths,tr carb spks,tr calc grs,sft frm,amor-sbblky.

3000

3010  
(1578.7)

3018.33mMD(1579.4mTVD)  
73.55°inc 266.42°az

CALCILUTITE:med lt gy-med gy,olv gy,tr slty, tr liths,tr vf calc grs,tr disse pyr,tr vf qtz grs,tr carb spks,sft frm,sbblky.

3030  
(1584.3)

100 / Tr

3040

3050  
(1589.9)

3047.66mMD(1587.6mTVD)  
73.67°inc 266.61°az

CALCILUTITE:med lt gy-med gy,olv gy,tr slty, tr liths,tr vf calc grs,tr disse pyr,tr carb spks, sft frm,sbblky.

3060

3070  
(1595.6)

3076.78mMD(1595.8mTVD)  
73.49°inc 266.85°az

CALCILUTITE:med lt gy-med gy,olv gy,tr slty, tr liths,tr vf calc grs,tr disse pyr,tr carb spks, sft frm,sbblky.

3080

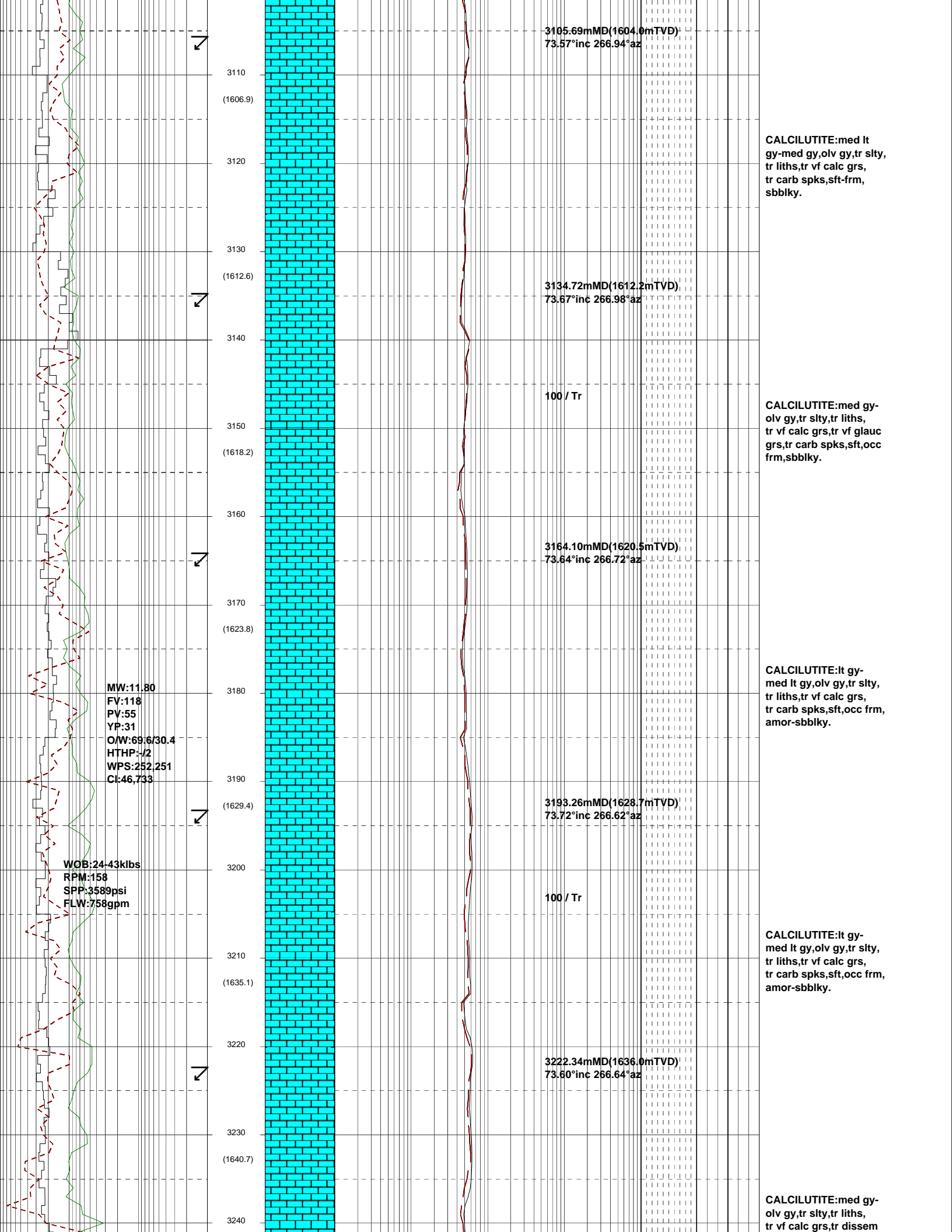
3090  
(1601.3)

100 / Tr

3100

WOB:20-39kibs  
RPM:100-160  
SPP:3412psi  
FLW:752gpm

WOB:19-37kibs  
RPM:159  
SPP:3572psi  
FLW:742gpm



3110  
(1606.9)

3105.69mMD(1604.0mTVD)  
73.57°inc 266.94°az

CALCILUTITE:med lt gy-med gy,olv gy,tr slty, tr liths,tr vf calc grs, tr carb spks,sft frm, sbbly.

3140  
(1612.6)

3134.72mMD(1612.2mTVD)  
73.67°inc 266.98°az

CALCILUTITE:med gy-olv gy,tr slty,tr liths, tr vf calc grs,tr vf glauc grs,tr carb spks,sft,occ frm,sbbly.

3160  
(1618.2)

100 / Tr

CALCILUTITE:lt gy-med lt gy,olv gy,tr slty, tr liths,tr vf calc grs, tr carb spks,sft,occ frm, amor-sbbly.

3180  
(1623.8)

3164.10mMD(1620.5mTVD)  
73.64°inc 266.72°az

MW:11.80  
FV:118  
PV:55  
YP:31  
O/W:69.6/30.4  
HTHP:-/2  
WPS:252,251  
CI:46,733

3200  
(1629.4)

3193.26mMD(1628.7mTVD)  
73.72°inc 266.62°az

CALCILUTITE:lt gy-med lt gy,olv gy,tr slty, tr liths,tr vf calc grs, tr carb spks,sft,occ frm, amor-sbbly.

3220  
(1635.1)

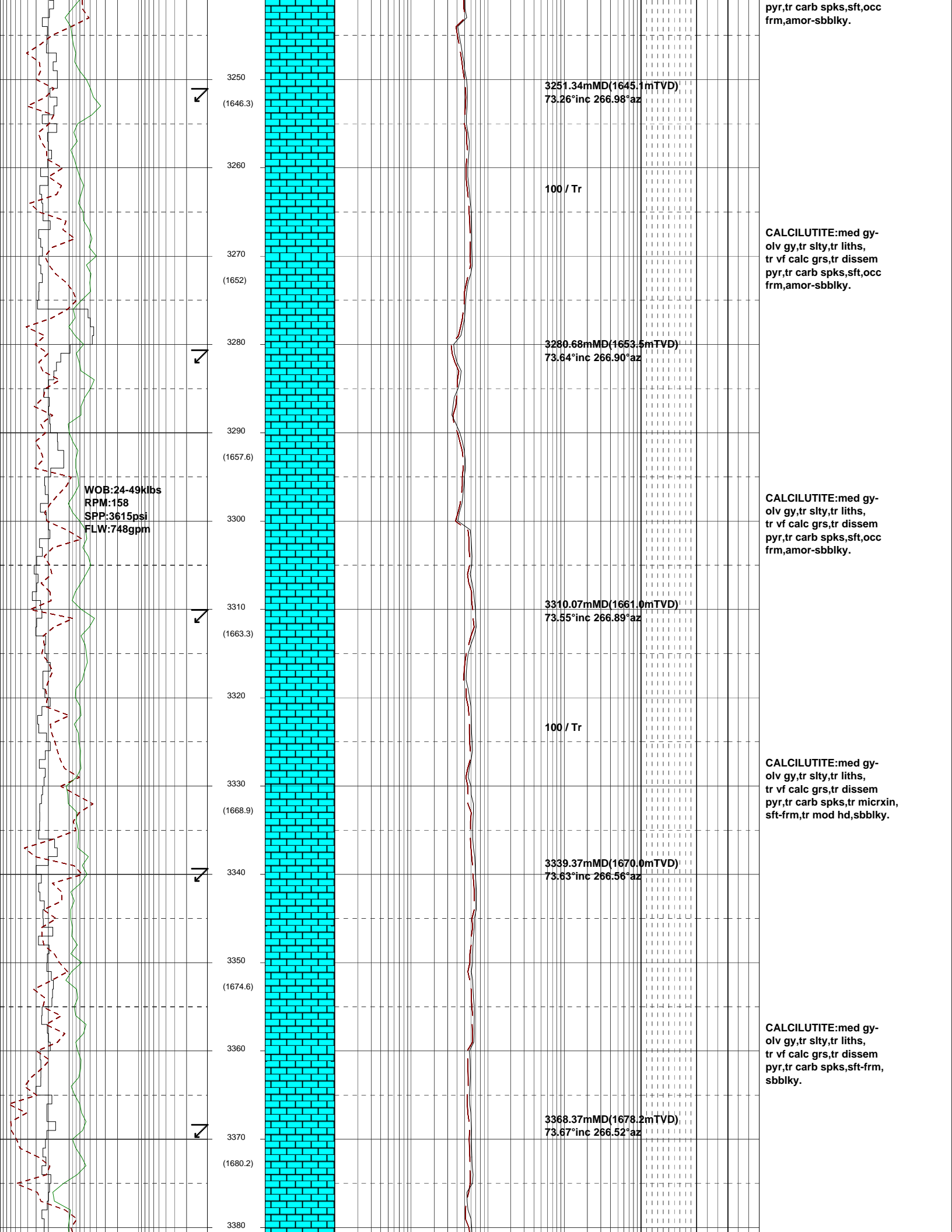
100 / Tr

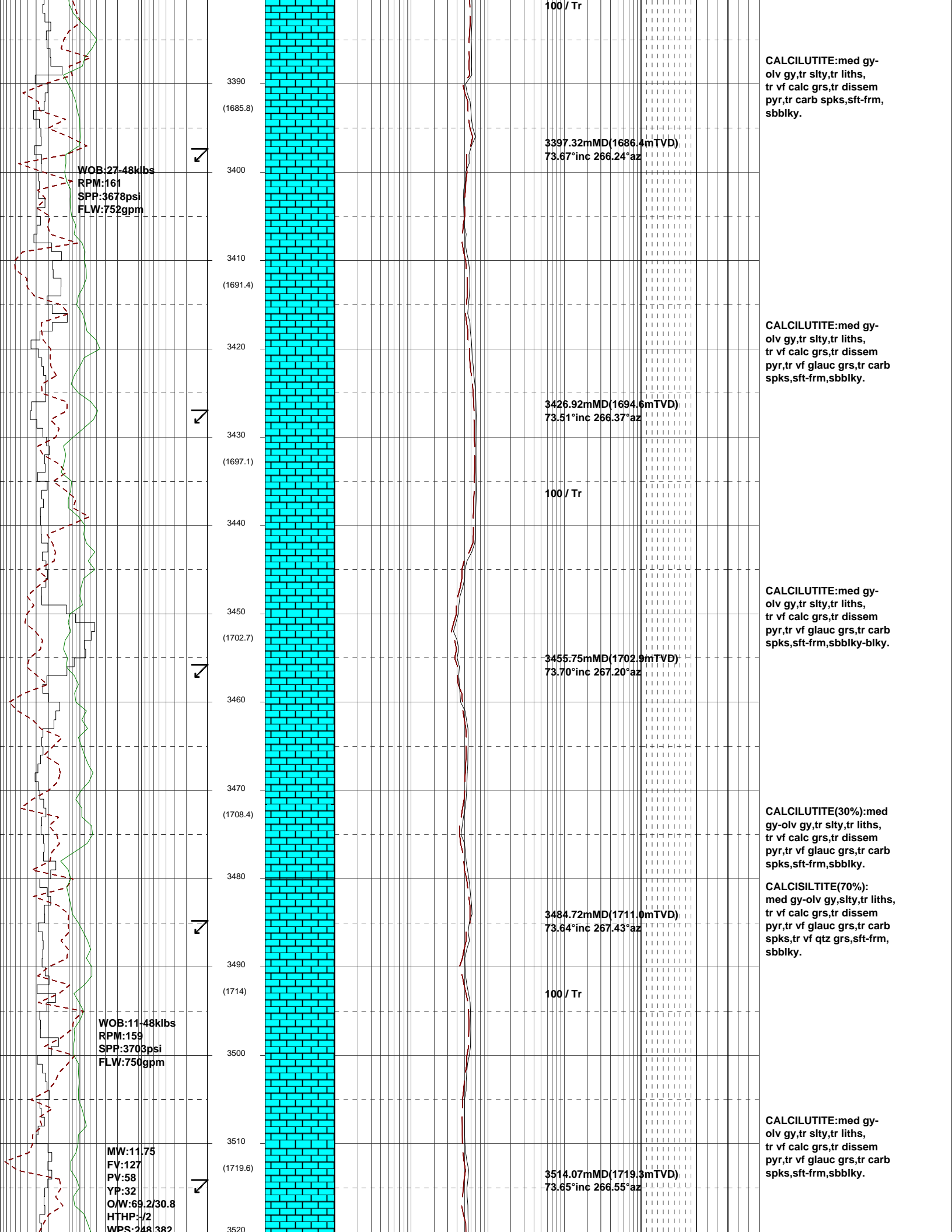
WOB:24-43klbs  
RPM:158  
SPP:3589psi  
FLW:758gpm

3240  
(1640.7)

3222.34mMD(1636.0mTVD)  
73.60°inc 266.64°az

CALCILUTITE:med gy-olv gy,tr slty,tr liths, tr vf calc grs,tr dissem





CALCILUTITE: med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr disseminated pyr, tr carb spks, sft-frm, sbbkly.

CALCILUTITE: med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr disseminated pyr, tr vf glauc grs, tr carb spks, sft-frm, sbbkly.

CALCILUTITE: med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr disseminated pyr, tr vf glauc grs, tr carb spks, sft-frm, sbbkly-blky.

CALCILUTITE(30%): med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr disseminated pyr, tr vf glauc grs, tr carb spks, sft-frm, sbbkly.

CALCISILTITE(70%): med gy-olv gy, slty, tr liths, tr vf calc grs, tr disseminated pyr, tr vf glauc grs, tr carb spks, tr vf qtz grs, sft-frm, sbbkly.

CALCILUTITE: med gy-olv gy, tr slty, tr liths, tr vf calc grs, tr disseminated pyr, tr vf glauc grs, tr carb spks, sft-frm, sbbkly.

WOB: 27-48 klbs  
RPM: 161  
SPP: 3678 psi  
FLW: 752 gpm

WOB: 11-48 klbs  
RPM: 159  
SPP: 3703 psi  
FLW: 750 gpm

MW: 11.75  
FV: 127  
PV: 58  
YP: 32  
O/W: 69.2/30.8  
HTHP: -/2  
WPS: 248, 382

CI:47,707

3530  
(1725.3)

3540

3550  
(1730.9)

3560

3570  
(1736.6)

3580

3590  
(1742.2)

3600

3610  
(1748.2)

3620

3630  
(1754.6)

3640

3650  
(1761.1)

WOB:17-49klbs  
RPM:159  
SPP:3777psi  
FLW:757gpm

3542.99mMD(1727.4mTVD)  
73.52°inc 266.96°az

100 / Tr

3572.32mMD(1735.7mTVD)  
73.70°inc 266.89°az

3601.57mMD(1743.9mTVD)  
73.67°inc 266.80°az

100 / Tr

3630.88mMD(1752.9mTVD)  
73.61°inc 266.94°az

3660.38mMD(1760.9mTVD)

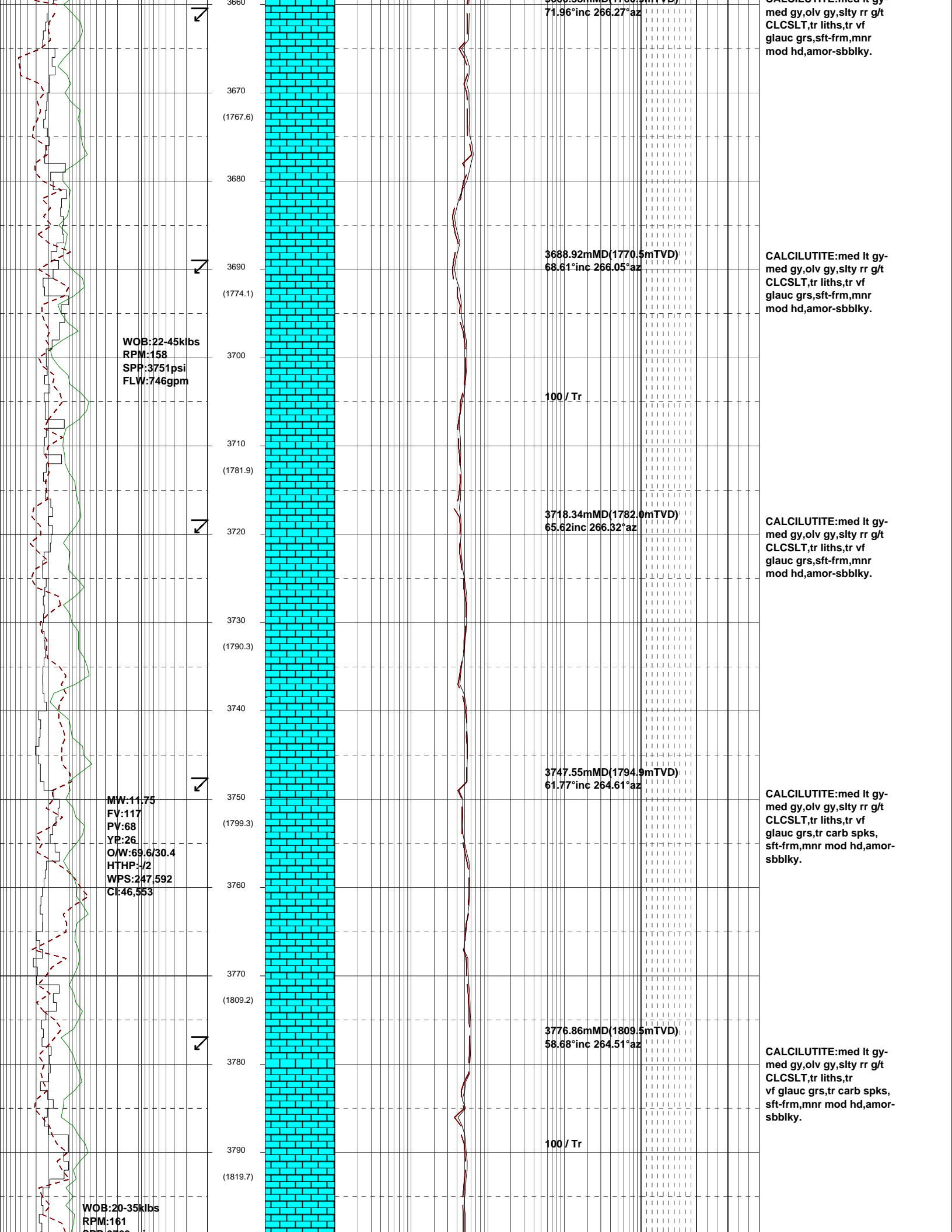
CALCILUTITE:med gy-  
olv gy,tr slty,tr liths,  
tr vf calc grs,tr dissem  
pyr,tr vf glauc grs,tr carb  
spks,sft frm,sbbiky.

CALCILUTITE:med gy-  
olv gy,tr slty,tr liths,  
tr vf calc grs,tr dissem  
pyr,tr nod pyr,tr vf glauc  
grs,tr carb spks,sft frm,  
sbbiky.

CALCILUTITE:med lt gy-  
med gy,lt olv gy,slty,  
tr liths,tr vf calc grs,  
sft frm,amor-sbbiky.

CALCILUTITE:med lt gy-  
med gy,lt olv gy,tr lt  
grn gy,slty,tr liths,tr  
vf calc grs,sft frm,amor  
-sbbiky.

CALCILUTITE:med lt gy-



3660

3670

(1767.6)

3680

3690

(1774.1)

3700

3710

(1781.9)

3720

3730

(1790.3)

3740

3750

(1799.3)

3760

3770

(1809.2)

3780

3790

(1819.7)

WOB:22-45kbs  
RPM:158  
SPP:3751psi  
FLW:746gpm

MW:11.75  
FV:117  
PV:68  
YP:26  
OW:69.6/30.4  
HTHP:-/2  
WPS:247,592  
CI:46,553

WOB:20-35kbs  
RPM:161  
SPP:3750psi  
FLW:746gpm

3662.33mMD(1769.9mTVD)  
71.96°inc 266.27°az

3688.92mMD(1770.5mTVD)  
68.61°inc 266.05°az

100 / Tr

3718.34mMD(1782.0mTVD)  
65.62°inc 266.32°az

3747.55mMD(1794.9mTVD)  
61.77°inc 264.61°az

3776.86mMD(1809.5mTVD)  
58.68°inc 264.51°az

100 / Tr

CALCILUTITE:med lt gy  
med gy,olv gy,sity rr g/t  
CLCSLT,tr liths,tr vf  
glauc grs,sft frm,mnr  
mod hd,amor-sbblky.

CALCILUTITE:med lt gy  
med gy,olv gy,sity rr g/t  
CLCSLT,tr liths,tr vf  
glauc grs,sft frm,mnr  
mod hd,amor-sbblky.

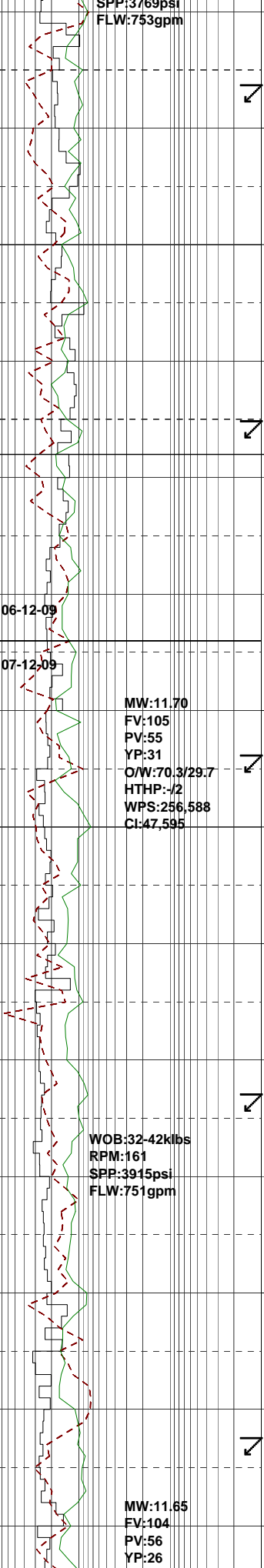
CALCILUTITE:med lt gy  
med gy,olv gy,sity rr g/t  
CLCSLT,tr liths,tr vf  
glauc grs,sft frm,mnr  
mod hd,amor-sbblky.

CALCILUTITE:med lt gy  
med gy,olv gy,sity rr g/t  
CLCSLT,tr liths,tr vf  
glauc grs,tr carb spks,  
sft frm,mnr mod hd,amor-  
sbblky.

CALCILUTITE:med lt gy  
med gy,olv gy,sity rr g/t  
CLCSLT,tr liths,tr  
vf glauc grs,tr carb spks,  
sft frm,mnr mod hd,amor-  
sbblky.

SPP:3769psi  
FLW:753gpm

3800  
3810 (1830.6)  
3820  
3830 (1842.1)  
3840  
3850 (1854)  
3860  
3870 (1866.3)  
3880  
3890 (1879.1)  
3900  
3910 (1892.4)  
3920  
3930 (1906)



06-12-09

07-12-09

MW:11.70  
FV:105  
PV:55  
YP:31  
OW:70.3/29.7  
HTHP:-/2  
WPS:256,588  
CI:47,595

WOB:32-42klbs  
RPM:161  
SPP:3915psi  
FLW:751gpm

MW:11.65  
FV:104  
PV:56  
YP:26  
OW:69.6/30.4  
HTHP:-/2  
WPS:257,021  
CI:48,797

3806.26mMD(1825.4mTVD)  
55.95°inc 264.70°az

3835.10mMD(1841.9mTVD)  
54.03°inc 264.43°az

3863.82mMD(1859.8mTVD)  
51.70°inc 265.48°az

3892.98mMD(1877.8mTVD)  
48.93°inc 265.84°az

3922.46mMD(1897.6mTVD)  
46.81°inc 266.44°az

100 / tr

100 / tr

CALCILUTITE:med gy-  
med lt gy,lt olv gy,silty rr  
g/t CLCSLT,tr liths,sft-  
frm,tr mod hd,sbbiky-blky,  
mnr amor.

Mid Miocene Marker  
3838.0mMDRT 1843.9mTVDRT  
(-1802.16mTVDSS)

CALCILUTITE:med gy-  
med lt gy,lt olv gy,silty rr  
g/t CLCSLT,tr liths,sft-  
frm,tr mod hd,sbbiky-blky,  
mnr amor.

Pull back to 10.75" casing  
shoe for maintenance on TDS.

CALCILUTITE(80%):lt gy-  
med lt gy,silty,tr liths,tr  
carb spks,tr dissem pyr,  
sft-frm,amor.

CALCAREOUS CLAYSTONE  
(20%):med dk gy-olv gy,mod  
calc,tr liths,tr carb spks,tr  
dissem pyr,sft-frm,amor.

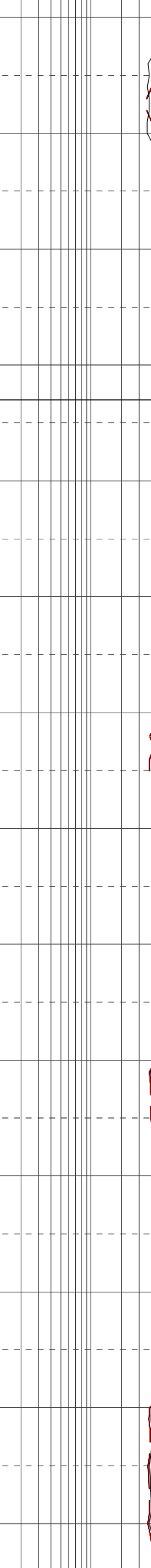
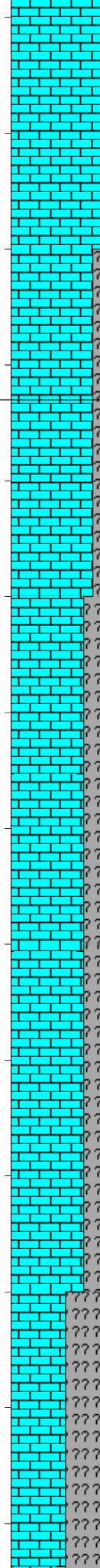
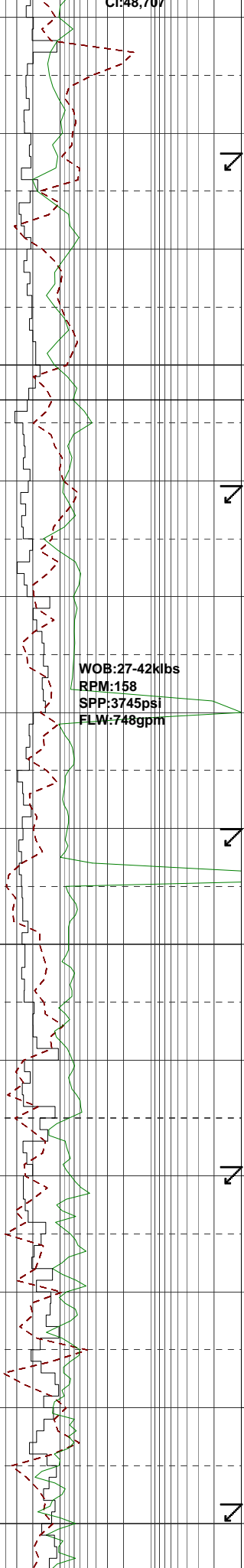
CALCILUTITE(90%):lt gy-  
med lt gy,silty,tr liths,tr  
carb spks,tr dissem pyr,  
sft-frm,amor.

CALCAREOUS CLAYSTONE  
(10%):med dk gy-olv gy,mod  
calc,tr liths,tr carb spks,tr  
dissem pyr,sft-frm,amor.

CALCILUTITE:lt gy-  
med lt gy,silty,tr liths,tr  
carb spks,tr dissem pyr,  
sft-frm,amor.

C:48,707

3940  
3950 (1919.9)  
3960  
3970 (1934.3)  
3980  
3990 (1948.9)  
4000  
4010 (1963.7)  
4020  
4030 (1979)  
4040  
4050 (1988.5)  
4060  
4070 (2004)



3951.78mMD(1918.1mTVD)  
44.71°inc 267.48°az

100 / tr

3980.46mMD(1938.8mTVD)  
43.05°inc 267.58°az

4010.01mMD(1960.6mTVD)  
41.60°inc 269.28°az

4039.18mMD(1982.8mTVD)  
38.98°inc 268.52°az

4068.34mMD(2006.1mTVD)  
34.92°inc 268.30°az

CALCILUTITE:(90%),lt gy-med lt gy,silty,tr liths,tr carb spks,tr dissem pyr,sft-frm,amor.

Lakes Entrance Frm:  
3973.0mMDRT 1933.6mTVDRT  
(-1891.9mTVDSS)

CALCILUTITE:(90%),lt gy-med lt gy,silty,tr liths,tr carb spks,tr vf glauc grs,sft-frm,amor.

CALCAREOUS CLAYSTONE:  
(10%),med dk gy-olv gy,mod calc,tr liths,tr carb spks,tr dissem pyr,sft-frm,amor.

CALCILUTITE:(80%),med lt gy-med gy,silty,lt olv gy, tr liths,tr carb spks,tr vf glauc grs,sft-frm,amor.

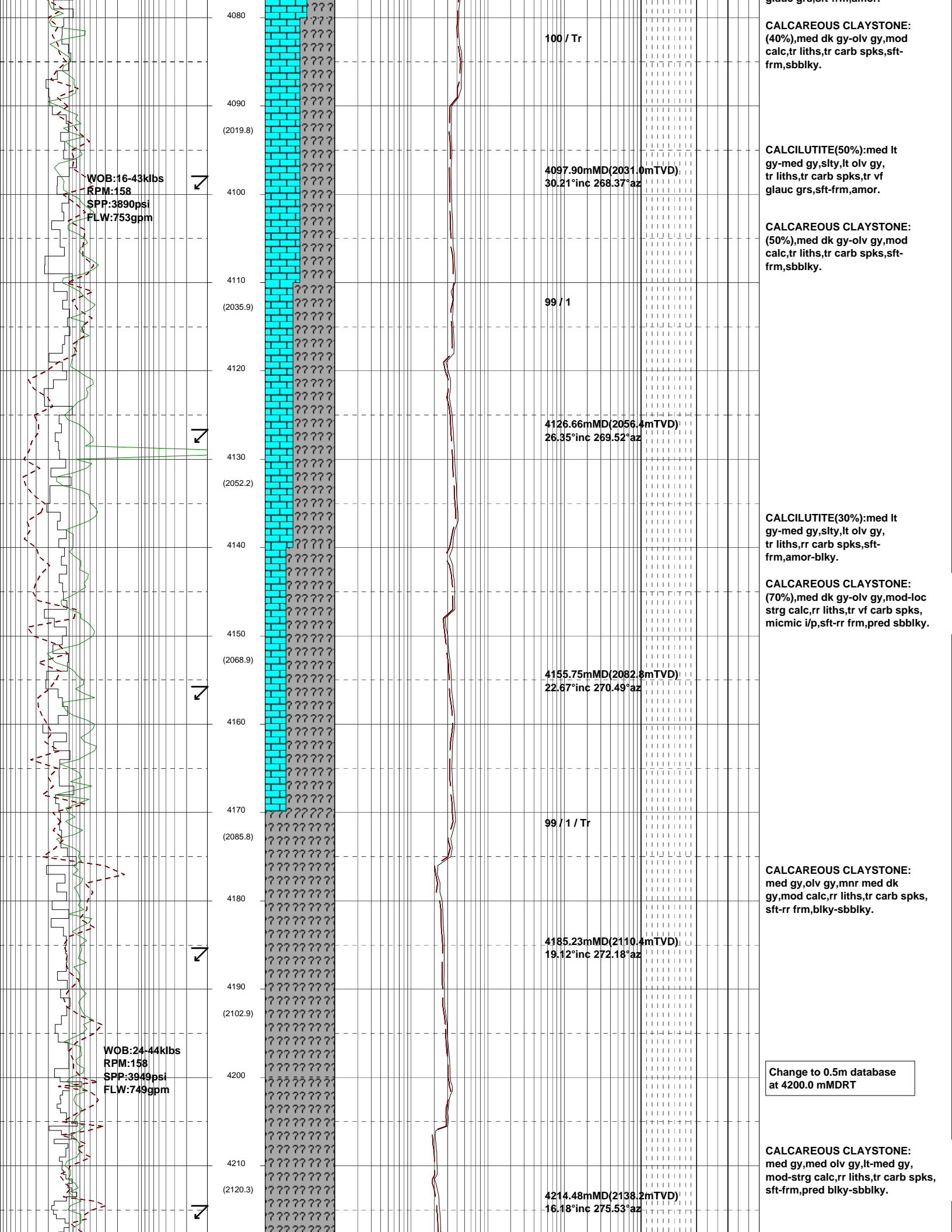
CALCAREOUS CLAYSTONE:  
(20%),med dk gy-olv gy,mod calc,tr liths,tr carb spks,sft-frm,sbblky.

CALCILUTITE:(80%),med lt gy-med gy,silty,lt olv gy, tr liths,tr carb spks,tr vf glauc grs,sft-frm,amor.

CALCAREOUS CLAYSTONE:  
(20%),med dk gy-olv gy,mod calc,tr liths,tr carb spks,sft-frm,sbblky.

CALCILUTITE(60%):med lt gy-med gy,silty,lt olv gy, tr liths,tr carb spks,tr vf glauc grs sft-frm amor





4080  
(2019.8)  
4100  
4110  
(2035.9)  
4120  
4130  
(2052.2)  
4140  
4150  
(2068.9)  
4160  
4170  
(2085.8)  
4180  
4190  
(2102.9)  
4200  
4210  
(2120.3)

100 / Tr

4097.90mMD(2031.0mTVD)  
30.21°inc 268.37°az

99 / 1

4126.66mMD(2056.4mTVD)  
26.35°inc 269.52°az

4155.75mMD(2082.8mTVD)  
22.67°inc 270.49°az

99 / 1 / Tr

4185.23mMD(2110.4mTVD)  
19.12°inc 272.18°az

4214.48mMD(2138.2mTVD)  
16.18°inc 275.53°az

CALCAREOUS CLAYSTONE:  
(40%),med dk gy-olv gy,mod  
calc,tr liths,tr carb spks,sft-  
frm,sbbkly.

CALCILUTITE(50%):med lt  
gy-med gy,silty,lt olv gy,  
tr liths,tr carb spks,tr vf  
glauc grs,sft-frm,amor.

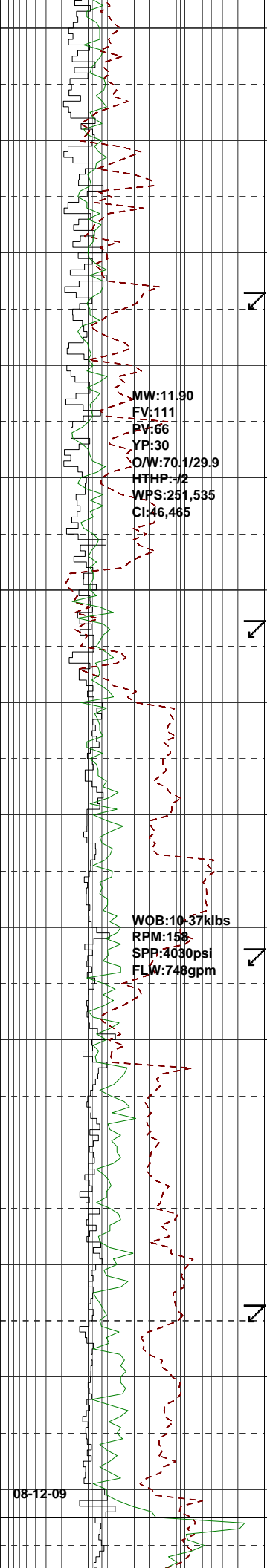
CALCAREOUS CLAYSTONE:  
(50%),med dk gy-olv gy,mod  
calc,tr liths,tr carb spks,sft-  
frm,sbbkly.

CALCILUTITE(30%):med lt  
gy-med gy,silty,lt olv gy,  
tr liths,rr carb spks,sft-  
frm,amor-blky.

CALCAREOUS CLAYSTONE:  
(70%),med dk gy-olv gy,mod-loc  
strg calc,rr liths,tr vf carb spks,  
micmic i/p,sft-rr frm,pred sbbkly.

CALCAREOUS CLAYSTONE:  
med gy,olv gy,mnr med dk  
gy,mod calc,rr liths,tr carb spks,  
sft-rr frm,blky-sbbkly.

CALCAREOUS CLAYSTONE:  
med gy,med olv gy,lt-med gy,  
mod-strg calc,rr liths,tr carb spks,  
sft-frm,pred blky-sbbkly.



**MW:11.90**  
**FV:111**  
**PV:66**  
**YP:30**  
**OW:70.1/29.9**  
**HTHP:-/2**  
**WPS:251,535**  
**Cl:46,465**

**WOB:10-37klbs**  
**RPM:158**  
**SPP:4030psi**  
**FLW:748gpm**

4220  
 4230 (2137.8)  
 4240  
 4250 (2155.7)  
 4260  
 4270 (2173.7)  
 4280  
 4290 (2191.9)  
 4300  
 4310 (2210.3)  
 4320  
 4330 (2251.8)  
 4340  
 4350 (2271.8)

99 / 1 / Tr

4243.55mMD(2166.4mTVD)  
 13.07°inc 277.46°az

4272.69mMD(2194.9mTVD)  
 9.99°inc 279.23°az

98 / 1 / 1 / Tr

4301.99mMD(2223.9mTVD)  
 7.70°inc 280.09°az

97 / 2 / 1 / Tr

4331.56mMD(2253.2mTVD)  
 4.89°inc 282.09°az

96 / 2 / 1 / 1

**CALCAREOUS CLAYSTONE:**  
 med gy,med olv gy,lt-med gy,  
 mod-strg calc,sly i/p,rr liths,  
 tr carb spks,tr vf qtz grs,sft-frm,  
 sbbiky-blky.

**CALCAREOUS CLAYSTONE:**  
 med gy,lt med gy,olv gy,mod  
 mod calc,sly i/p,rr carb spks,  
 rr-mnr liths,tr dissem pyr,sft-  
 frm,blky-sbbiky.

Control drill below 50 m/hr  
 from 4275.0 mMDRT.

**CALCAREOUS CLAYSTONE:**  
 med gy,med olv gy,med brn gy,  
 wk calc,sly,rr carb spks,rr-  
 mnr liths,tr dissem pyr,frm-  
 mod hd,sbbiky,sbfiss i/p.

**CALCAREOUS CLAYSTONE:**  
 med olv gy,lt med gy,mod-  
 strg calc,sly,rr dissem pyr,  
 tr nod pyr,tr carb spks,rr-mnr  
 liths,rr qtz grs,sft-frm,sbbiky.

**CALCAREOUS CLAYSTONE:**  
 med olv gy,lt med gy,mod-  
 strg calc,sly,rr-mnr dissem  
 pyr,tr nod pyr,tr carb spks,  
 sft-frm,sbbiky.

Latrobe Group:  
 4352.5mMDRT 2274.17mTVDRT  
 (-2232.5mTVDSS)

4360  
4370 (2291.7)  
4380  
4390 (2311.7)  
4400  
4410 (2331.7)  
4420  
4430 (2351.6)  
4440  
4450 (2371.4)  
4460  
4470 (2391.1)  
4480  
4490 (2410.7)

WOB:12-39klbs  
RPM:90-160  
SPP:2850psi  
FLW:606gpm

4360.64mMD(2282.3mTVD)  
0.47°inc 86.47°az  
  
89 / 5 / 3 / 3 / Tr  
  
62 / 13 / 13 / 9 / 3  
  
4390.02mMD(2311.7mTVD)  
0.14°inc 129.02°az  
79.8 Units.  
  
58 / 14 / 15 / 10 / 3  
  
57 / 15 / 15 / 10 / 3  
  
4418.71mMD(2340.4mTVD)  
0.00°inc 13.91°az  
  
59 / 13 / 15 / 10 / 3  
  
59 / 13 / 14 / 11 / 3  
  
4448.17mMD(2369.8mTVD)  
0.08°inc 147.61°az  
  
61 / 12 / 14 / 16 / 3

SILTSTONE:dk gy, tr dk gnsh blk,mottled i/p,wk calc,arg g/t CLYST i/p,mnr aren,tr-mnr glauc,tr-rr carb mat,sft-tr frm, sbbkly.

CALCAREOUS CLAYSTONE: olv gy,mod calc,tr slty,tr liths,tr vf disse py, sft amor-sbbkly.

SILTSTONE:dk gy, tr dk gnsh blk,mottled i/p,wk calc,arg g/t CLYST i/p,mnr aren,tr-mnr glauc,tr-rr carb mat,sft-tr frm, sbbkly.

SANDSTONE:trnspl-trnsi,med-v crs,sa-sr,sbsph,mod srt,lse, tr liths,tr glauc,fr-gd inf por, no fluor.

SANDSTONE:trnspl-trnsi,med-v crs,tr f,ang-sr,sbsph,pr-mod srt,lse,tr liths,tr glauc,fr-gd inf,no fluor.

SILTSTONE:dk gy, tr dk gnsh blk,mottled i/p,wk calc,arg g/t CLYST i/p,mnr aren,tr-mnr glauc,tr-rr carb mat,sft-tr frm, sbbkly.

SANDSTONE:lt gy-lt olv gy, trnsi-trnspl,med-crs,sa-sr,sbsph, mod-wl srt,rr-mnr lt gy arg mtx, tr-rr mod strg sil cmt,tr liths,tr pyr, tr glauc,frm-mod hd aggs,pr-mnr fr inf & vis por,no fluor.

COAL:blk,sbvit,ang,hd,tr pyr, vf laminated i/p.

SANDSTONE:lt gy-lt olv gy, trnsi-trnspl,med-crs,sa-sr,sbsph, mod-wl srt,rr-mnr lt gy arg mtx, tr-rr mod strg sil cmt,tr liths,tr pyr, tr glauc,frm-mod hd aggs,pr-mnr fr inf & vis por,fluor.

**FLUOR:(4420m-4435mMDRT)  
Tr,pl-mod brt yel wh-yel gn, pnpnt fluor,no vis oil stain, no vis cut,v slw blooming pl yel cut fluor,fst c/c,thn pl blu wh flm res,poor fluor.**

SILTSTONE:med gy-med dk gy, olv gy,aren i/p,tr carb spks, tr carb lam,tr-rr nod pyr,rr glauc,tr-rr micmic,sft-frm, sbbkly.

COAL:blk,sbvit,ang,frm-mod hd, brittle i/p,tr pyr,vf laminated i/p.

SANDSTONE:lt gy-lt olv gy, trnsi-trnspl,f-vcrs,ang-sr,sbelon-sbsph,pr srt,lt gy arg mtx, tr sil cmt,tr-rr liths,tr pyr, mod hd aggs,pr-mnr fr-gd inf por,no fluor.

SILTSTONE:med gy-med dk gy, olv gy,aren i/p,tr carb spks, tr carb lam,tr-rr nod pyr,rr glauc,tr-rr micmic,sft-frm, sbbkly.

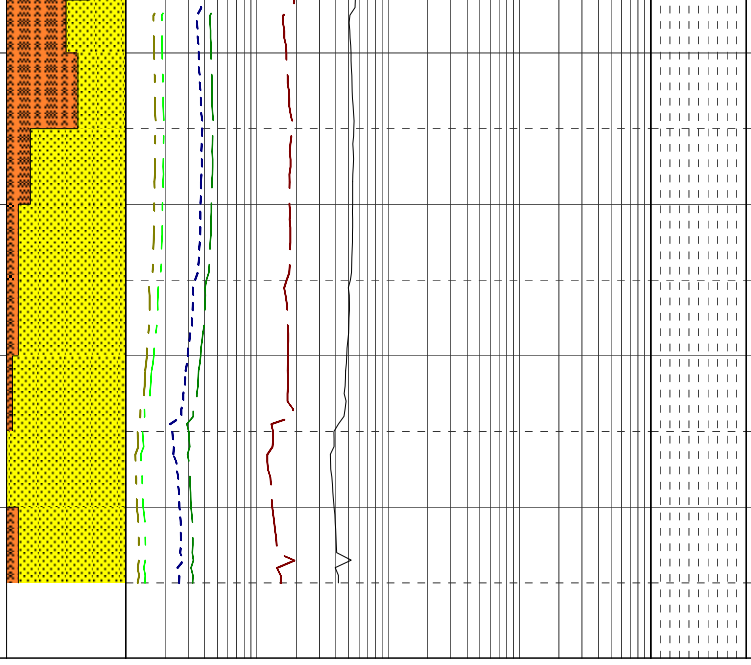
COAL:blk,sbvit,ang,frm-mod hd, brittle i/p,tr pyr,vf laminated i/p.

SILTSTONE:med gy-med dk gy, brn gy-olv gy,aren,tr carb spks, tr nod pyr,rr glauc,rr micmic, tr liths,sft-frm,sbbkly-amor.

SANDSTONE:lt gy-med lt gy, trnsi,f-crs,sa-sr,sbelon-sbsph,mod srt,lse,com fri, lt gy arg mtx,tr liths,tr pyr,

WOB:12.39klbs  
RPM:90.160  
SPP:2730psi  
FLW:606gpm

4500  
4510  
(2431.6)  
4520  
4530  
(2451.6)  
4540



mod hd aggs,pr-fr inf por,  
no fluor.

SILTSTONE:med gy-med dk gy,  
brn gy-olv gy,aren,tr carb spks,  
tr nod pyr,tr glauc,tr micmic,  
tr liths,sft-frn,sbblky-amor.

SANDSTONE:lt gy-med lt gy,  
trnsi,f-vcrs,sa-sr,sbelon-  
sbsph,pr srt,lse,com fri,  
lt gy arg mtx,tr liths,tr pyr,  
mod hd aggs,fr inf por,  
no fluor.

SANDSTONE:lt olv gy,  
f-vcrs,sa-sr,sbsph,mod-pr srt,  
lse,com fri,tr liths,tr pyr,  
fr-tr inf por,no fluor.

SANDSTONE:lt olv gy,  
f-vcrs,sa-sr,sbsph,mod srt,  
lse,com fri,tr liths,tr pyr,  
fr-gd inf por,no fluor.