

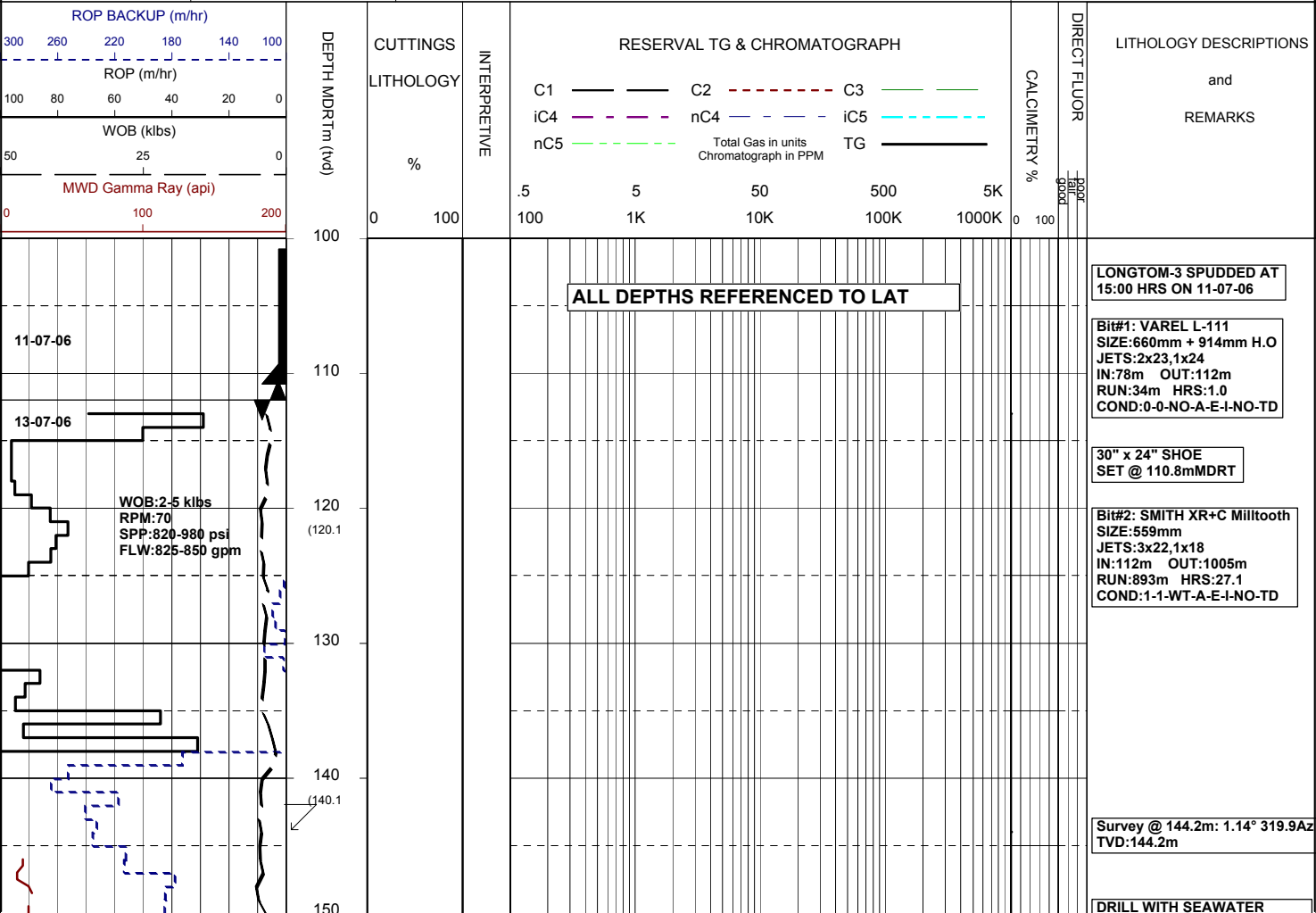


# MASTERLOG LONGTOM-3

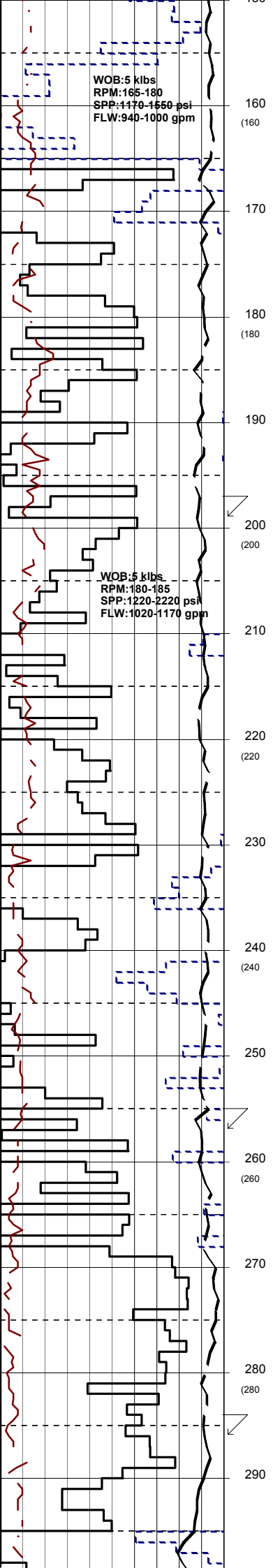


GENERAL	POSITION	HOLE / CASING INFO	DATE / DEPTH	ENGINEERS
Country : AUSTRALIA	Latitude : 38°05'34.774"S	914mm(36") hole to: 112.0m	Spud Date : 11-07-2006	T. N. KYAW
Permit : VIC/P54	Longitude : 148°18'41.479"E	559mm(22") hole to: 1005m	Total Depth Date : XX-09-2006	F. MAKHAD
Field : LONGTOM	UTM Co-ord X (m E): 615005	241mm(9 1/2") hole to: m	Total Depth (mMDRT): m	A. DUNN
Basin : GIPPSLAND	UTM Co-ord Y (m N): 5783055	762mm(30") Cond. to: 110.8m	True Vertical Depth (mTVDSS): m	D. ADDERLEY
Well Type : APPRAISAL	RT to MSL (m): 21.5	406mm(16") Csg. to: 995.3m	Log Scale : 1/ 500	
Rig: OCEAN PATRIOT	RT to Sea Bed (m): 78.2		Final Status : ?	

ABBREVIATIONS		LITHOLOGY LEGEND				ENGINEERING LEGEND	
MW Mud Weight	WOB Weight on Bit (klbs)	Claystone	Marl	Lithic Fragment	Cement	Shoe	DOLOMITE
FV Funnel Viscosity	RPM Rotations Per Min	Siltstone	Clay, Limestone	Foraminifera	Glaucanite	Deviation survey	RFT
PV Plastic Viscosity	FLW Flow Rate (gpm)	Shale	Limestone	Fossils	Pyrite	DST	FIT
YP Yield Point	SPP Pump Pressure (psi)	Fine SST	Dolomite	Bryozoa	Iron Minerals	TEST Test	Mud loss
Gel Gel Strength	RR Re-Run Bit	Medium SST	Coal	Sponges	Mica	Sidewall Core	Mud gain
WL Water Loss	TG Trip Gas	Coarse SST	Arg. SST	Brachiopoda	Carb Fragments	Core	
KCl Potassium Chloride	CG Connection Gas						
Cl Chlorides	BG Background Gas						
Incl Inclination	DGP Drilled Gas Peak						
Az Azimuth	MM Mud Motor						



AND HI-VIS SWEEPS  
RETURNS TO THE SEAFLOOR.

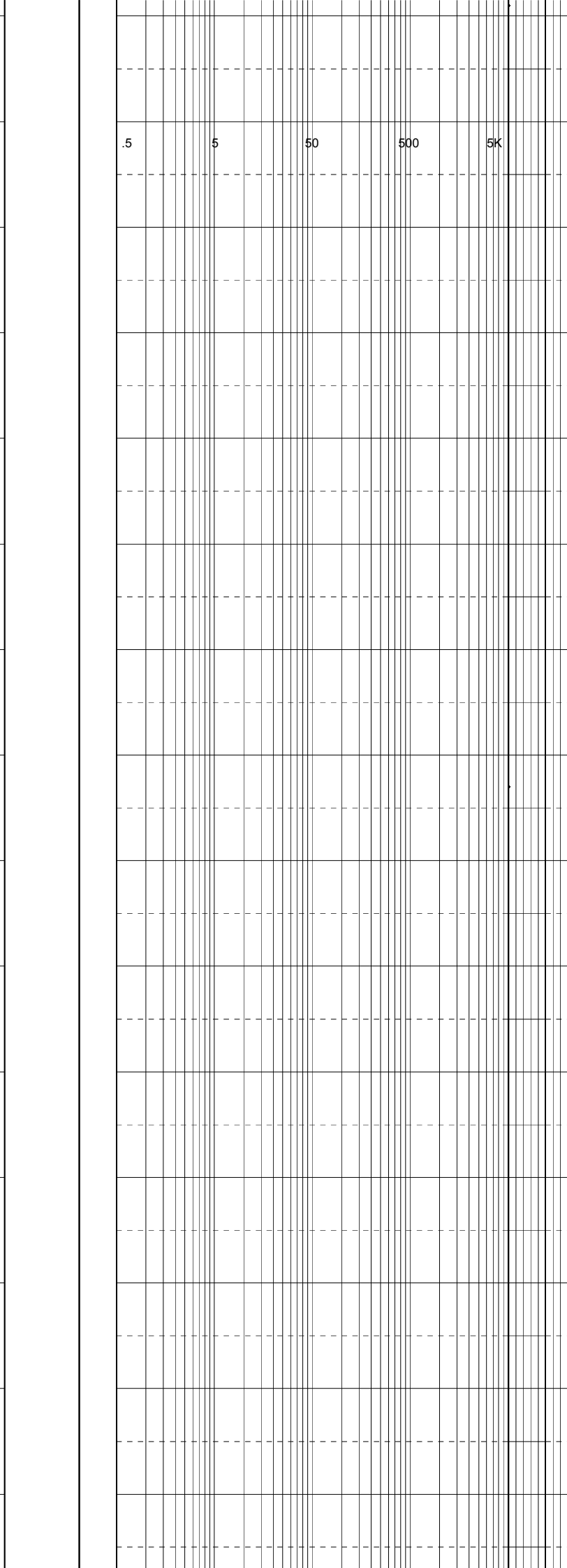
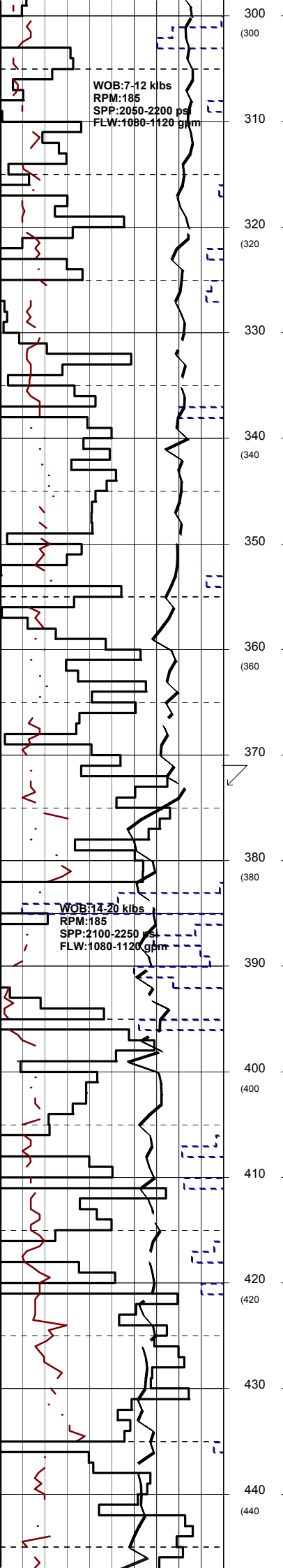


Survey @ 199.1m: 1.01° 317.8Az  
TVD: 199.1m

DRILL WITH SEAWATER  
AND HI-VIS SWEEPS  
RETURNS TO THE SEAFLOOR.

Survey @ 256.9m: 1.02° 314.1Az  
TVD: 256.9m

Survey @ 285.5m: 0.77° 322.6Az  
TVD: 285.5m



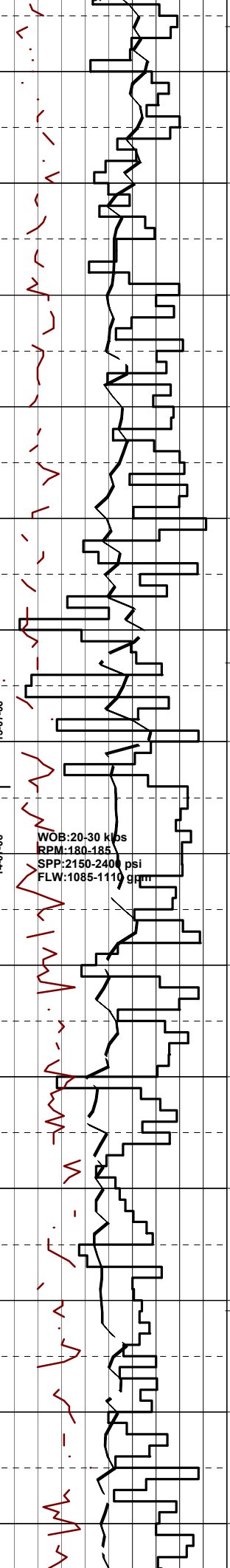
**DRILL WITH SEAWATER  
AND HI-VIS SWEEPS  
RETURNS TO THE SEAFLOOR.**

**Survey @ 373.3m: 0.37° 298.4Az  
TVD: 373.3m**

**DRILL WITH SEAWATER  
AND HI-VIS SWEEPS  
RETURNS TO THE SEAFLOOR.**

WOB:17-25 klbs  
RPM:180-185  
SPP:2150-2350 psi  
FLW:1085-1110 gpm

450  
460 (460)  
470  
480 (480)  
490  
500 (500)  
510  
520 (520)  
530  
540 (540)  
550  
560 (560)  
570  
580 (580)  
590



.5 5 50 500 5K

Survey @ 457.6m: 0.63° 340.7Az  
TVD:457.6m

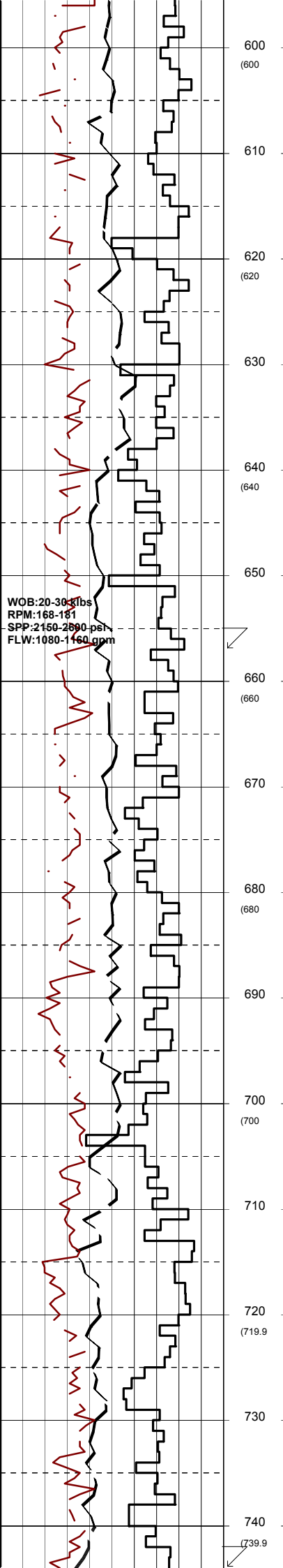
Survey @ 514.7m: 0.25° 238.8Az  
TVD:514.6m

DRILL WITH SEAWATER  
AND HI-VIS SWEEPS  
RETURNS TO THE SEAFLOOR.

Survey @ 573.4m: 0.44° 72.2Az  
TVD:573.3m

13-07-06

14-07-06



600  
(600)

610

620  
(620)

630

640  
(640)

650

660  
(660)

670

680  
(680)

690

700  
(700)

710

720  
(719.9)

730

740  
(739.9)

.5      5      50      500      5K

**DRILL WITH SEAWATER  
 AND HI-VIS SWEEPS  
 RETURNS TO THE SEAFLOOR.**

Survey @ 657.5m: 0.63° 5.6Az  
 TVD: 657.4m

Survey @ 744.2m: 1.18° 5.2Az

TVD:744.1m

DRILL WITH SEAWATER  
AND HI-VIS SWEEPS  
RETURNS TO THE SEAFLOOR.

.5      5      50      500      5K

WOB:22-33 klbs  
RPM:157-182  
SPP:2350-2580 psi  
FLW:1120-1145 gpm

750  
760  
(759.9)  
770  
780  
(779.9)  
790  
800  
(799.9)  
810  
820  
(819.9)  
830  
840  
(839.9)  
850  
860  
(859.9)  
870  
880  
(879.9)  
890

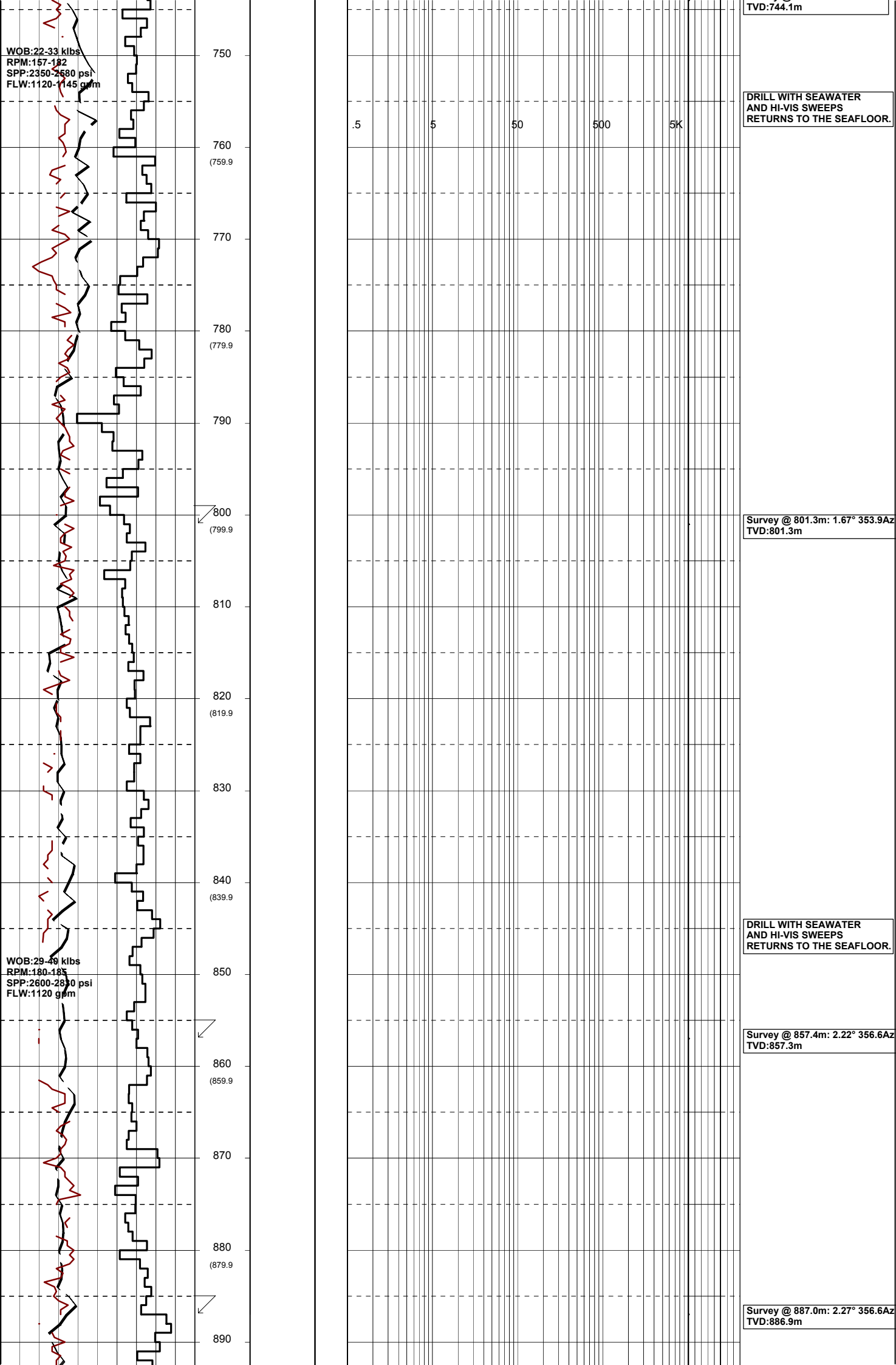
Survey @ 801.3m: 1.67° 353.9Az  
TVD:801.3m

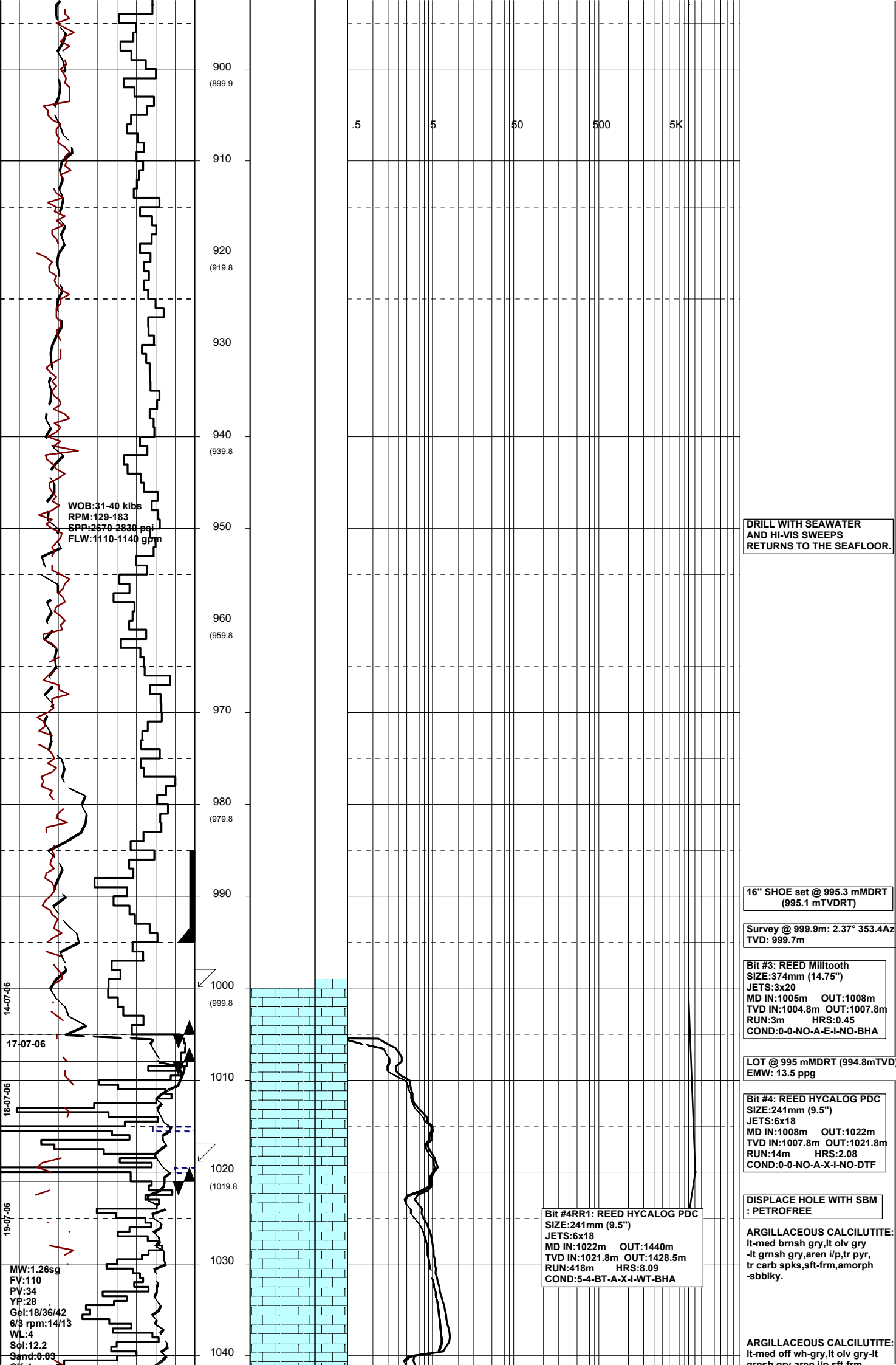
DRILL WITH SEAWATER  
AND HI-VIS SWEEPS  
RETURNS TO THE SEAFLOOR.

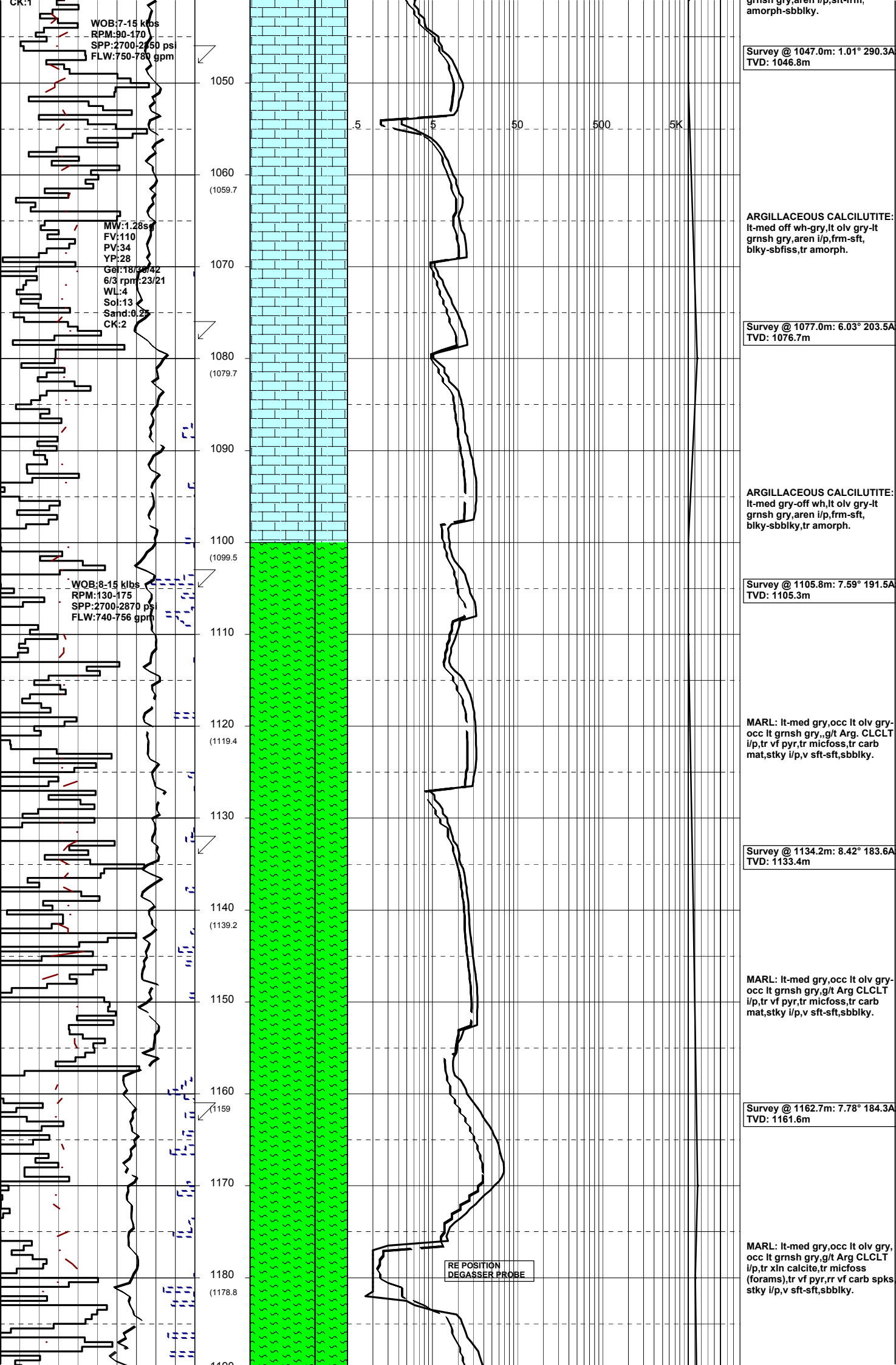
Survey @ 857.4m: 2.22° 356.6Az  
TVD:857.3m

Survey @ 887.0m: 2.27° 356.6Az  
TVD:886.9m

WOB:29-48 klbs  
RPM:180-185  
SPP:2600-2830 psi  
FLW:1120 gpm







WOB:7-15 klbs  
 RPM:90-170  
 SPP:2700-2850 psi  
 FLW:750-780 gpm

MW:1.285  
 FV:110  
 PV:34  
 YP:28  
 Gel:18/30/42  
 6/3 rpm:23/21  
 WL:4  
 Sol:13  
 Sand:0.25  
 CK:2

WOB:8-15 klbs  
 RPM:130-175  
 SPP:2700-2870 psi  
 FLW:740-756 gpm

Survey @ 1047.0m: 1.01° 290.3A  
 TVD: 1046.8m

ARGILLACEOUS CALCILUTITE:  
 lt-med off wh-gry,lt olv gry-lt  
 grnsh gry,aren i/p,frm-sft,  
 blk-ysbflky,tr amorph.

Survey @ 1077.0m: 6.03° 203.5A  
 TVD: 1076.7m

ARGILLACEOUS CALCILUTITE:  
 lt-med gry-off wh,lt olv gry-lt  
 grnsh gry,aren i/p,frm-sft,  
 blk-ysbflky,tr amorph.

Survey @ 1105.8m: 7.59° 191.5A  
 TVD: 1105.3m

MARL: lt-med gry,occ lt olv gry-  
 occ lt grnsh gry,,g/t Arg. CLCLT  
 i/p,tr vf pyr,tr micfoss,tr carb  
 mat,stk i/p,v sft-sft,sbflky.

Survey @ 1134.2m: 8.42° 183.6A  
 TVD: 1133.4m

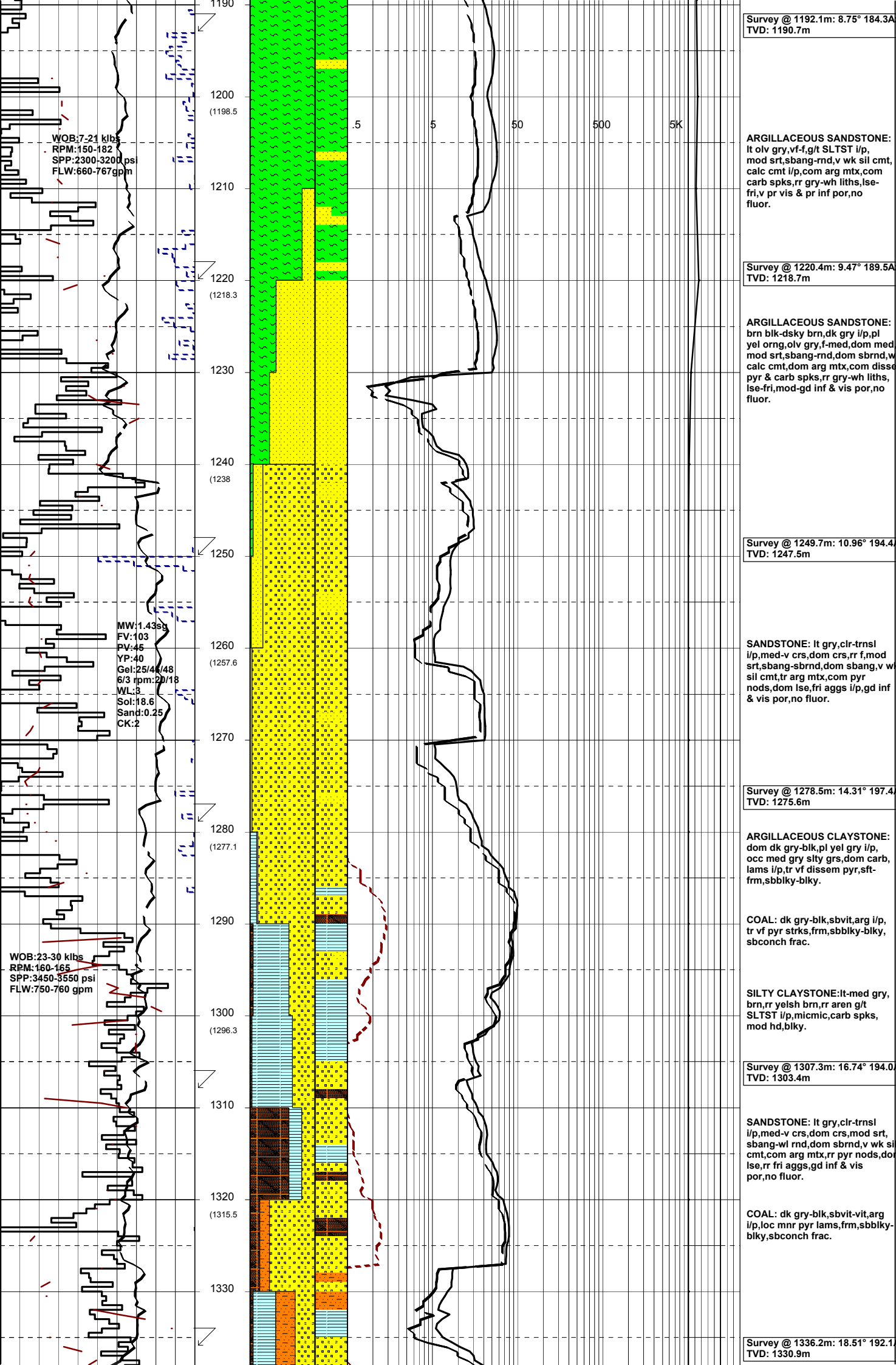
MARL: lt-med gry,occ lt olv gry-  
 occ lt grnsh gry,g/t Arg CLCLT  
 i/p,tr vf pyr,tr micfoss,tr carb  
 mat,stk i/p,v sft-sft,sbflky.

Survey @ 1162.7m: 7.78° 184.3A  
 TVD: 1161.6m

MARL: lt-med gry,occ lt olv gry,  
 occ lt grnsh gry,g/t Arg CLCLT  
 i/p,tr xln calcite,tr micfoss  
 (forams),tr vf pyr,rr vf carb spks  
 stky i/p,v sft-sft,sbflky.

RE POSITION  
 DEGASSER PROBE





Survey @ 1192.1m: 8.75° 184.3A  
TVD: 1190.7m

ARGILLACEOUS SANDSTONE: It olv gry,vf-f,g/t SLTST i/p, mod srt,sbang-rnd,v wk sil cmt, calc cmt i/p,com arg mtx,com carb spks,rr gry-wh liths,lse-fri,v pr vis & pr inf por,no fluor.

Survey @ 1220.4m: 9.47° 189.5A  
TVD: 1218.7m

ARGILLACEOUS SANDSTONE: brn blk-dsky brn,dk gry i/p,pl yel orn,olv gry,f-med,dom med mod srt,sbang-rnd,dom sbrnd,w calc cmt,dom arg mtx,com disse pyr & carb spks,rr gry-wh liths,lse-fri,mod-gd inf & vis por,no fluor.

Survey @ 1249.7m: 10.96° 194.4  
TVD: 1247.5m

SANDSTONE: It gry,clr-trnsl i/p,med-v crs,dom crs,rr f,mod srt,sbang-sbrnd,dom sbang,v wk sil cmt,tr arg mtx,com pyr nods,dom lse,fri aggs i/p,gd inf & vis por,no fluor.

Survey @ 1278.5m: 14.31° 197.4  
TVD: 1275.6m

ARGILLACEOUS CLAYSTONE: dom dk gry-blk,pl yel gry i/p, occ med gry stly grs,dom carb, lams i/p,tr vf disse pyr,stf-fm,sbbiky-blky.

COAL: dk gry-blk,svbit,arg i/p, tr vf pyr strks,frm,sbbiky-blky, sbconch frac.

SILTY CLAYSTONE:lt-med gry, brn,rr yelsh brn,rr aren g/t SLTST i/p,micmic,carb spks, mod hd,blky.

Survey @ 1307.3m: 16.74° 194.0  
TVD: 1303.4m

SANDSTONE: It gry,clr-trnsl i/p,med-v crs,dom crs,mod srt, sbang-w rnd,dom sbrnd,v wk sil cmt,com arg mtx,rr pyr nods,dot lse,rr fri aggs,gd inf & vis por,no fluor.

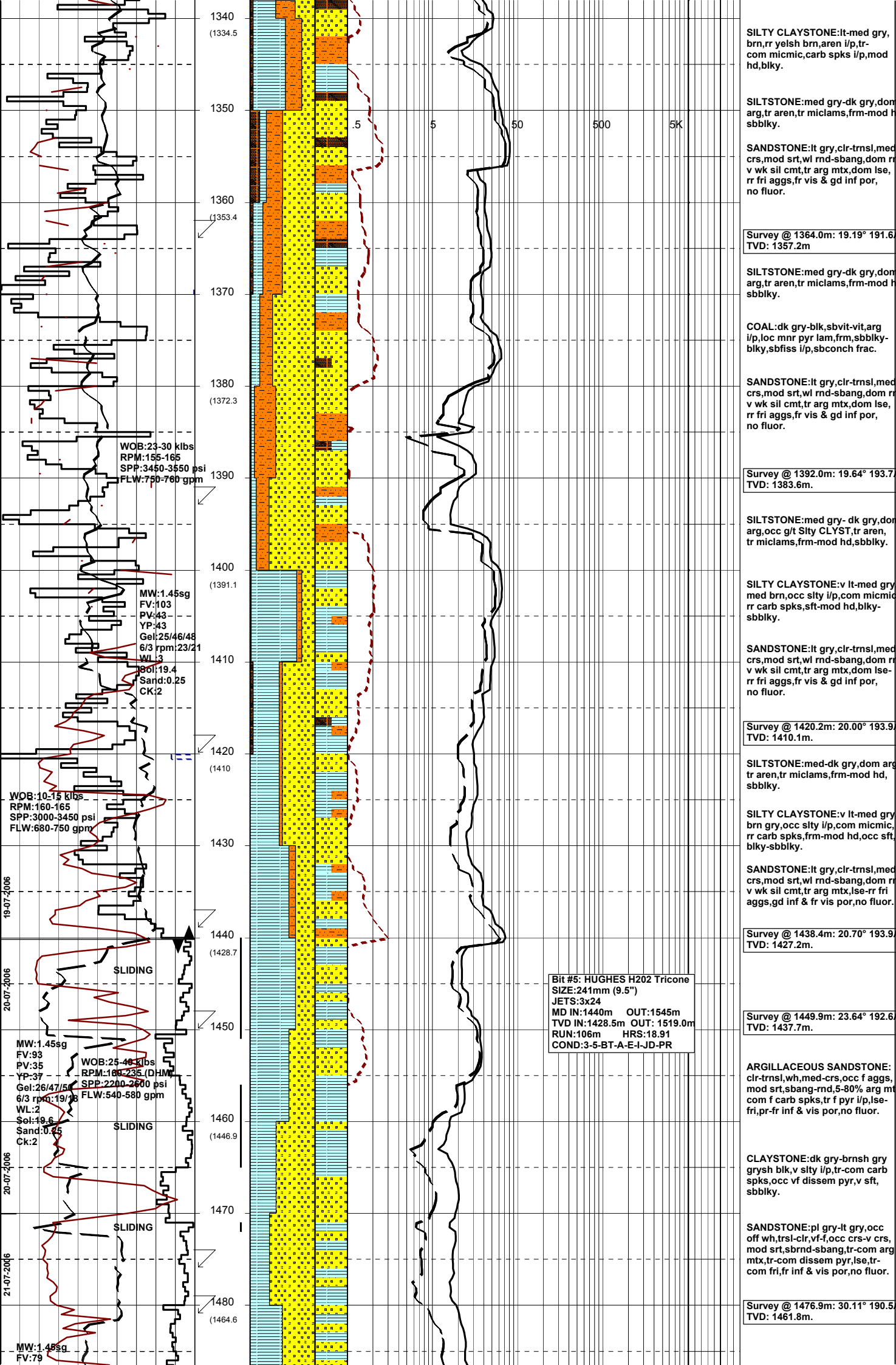
COAL: dk gry-blk,svbit-vit,arg i/p,loc mnr pyr lams,frm,sbbiky-blky,sbconch frac.

Survey @ 1336.2m: 18.51° 192.1  
TVD: 1330.9m

WOB:7-21 klbs  
RPM:150-182  
SPP:2300-3200 psi  
FLW:660-767 gpm

MW:1.43ss  
FV:103  
PV:45  
YP:40  
Gel:25/44/48  
6/3 rpm:20/18  
WL:3  
Sol:18.6  
Sand:0.25  
CK:2

WOB:23-30 klbs  
RPM:160-165  
SPP:3450-3550 psi  
FLW:750-760 gpm



**SILTY CLAYSTONE:**lt-med gry, brn,rr yelsh brn,aren i/p,tr-com micmic,carb spks i/p,mod hd,blky.

**SILTSTONE:**med gry-dk gry,dom arg,tr aren,tr miclams,frm-mod h sbbiky.

**SANDSTONE:**lt gry,clr-trnsl,med crs,mod srt,wl rnd-sbang,dom r v wk sil cmt,tr arg mtx,dom lse, rr fri aggs,fr vis & gd inf por, no fluor.

Survey @ 1364.0m: 19.19° 191.6°  
TVD: 1357.2m

**SILTSTONE:**med gry-dk gry,dom arg,tr aren,tr miclams,frm-mod h sbbiky.

**COAL:**dk gry-blk,sbvit-vit,arg i/p,loc mnr pyr lam,frm,sbbiky-blky,sbfiss i/p,sbconch frac.

**SANDSTONE:**lt gry,clr-trnsl,med crs,mod srt,wl rnd-sbang,dom r v wk sil cmt,tr arg mtx,dom lse, rr fri aggs,fr vis & gd inf por, no fluor.

Survey @ 1392.0m: 19.64° 193.7°  
TVD: 1383.6m.

**SILTSTONE:**med gry- dk gry,dom arg,occ g/t Sily CLYST,tr aren, tr miclams,frm-mod hd,sbbiky.

**SILTY CLAYSTONE:**v lt-med gry, med brn,occ slty i/p,com micmic, rr carb spks,sft-mod hd,blky-sbbiky.

**SANDSTONE:**lt gry,clr-trnsl,med crs,mod srt,wl rnd-sbang,dom r v wk sil cmt,tr arg mtx,dom lse-rr fri aggs,fr vis & gd inf por, no fluor.

Survey @ 1420.2m: 20.00° 193.9°  
TVD: 1410.1m.

**SILTSTONE:**med-dk gry,dom arg tr aren,tr miclams,frm-mod hd, sbbiky.

**SILTY CLAYSTONE:**v lt-med gry, brn gry,occ slty i/p,com micmic, rr carb spks,frm-mod hd,occ sft, blky-sbbiky.

**SANDSTONE:**lt gry,clr-trnsl,med crs,mod srt,wl rnd-sbang,dom r v wk sil cmt,tr arg mtx,lse-rr fri aggs,gd inf & fr vis por,no fluor.

Survey @ 1438.4m: 20.70° 193.9°  
TVD: 1427.2m.

Survey @ 1449.9m: 23.64° 192.6°  
TVD: 1437.7m.

**ARGILLACEOUS SANDSTONE:** clr-trnsl,wh,med-crs,occ f aggs, mod srt,sbang-rnd,5-80% arg mt, com f carb spks,tr f pyr i/p,lse-fri,pr-fr inf & vis por,no fluor.

**CLAYSTONE:**dk gry-brnsh gry grysh blk,v stly i/p,tr-com carb spks,occ vf dissem pyr,v sft, sbbiky.

**SANDSTONE:**pl gry-lt gry,occ off wh,trsl-clr,vf-f,occ crs-v crs, mod srt,sbrnd-sbang,tr-com arg mtx,tr-com dissem pyr,lse,tr-com fri,fr inf & vis por,no fluor.

Survey @ 1476.9m: 30.11° 190.5°  
TVD: 1461.8m.

WOB:23-30 klbs  
RPM:155-165  
SPP:3450-3550 psi  
FLW:750-760 gpm

MW:1.45sg  
FV:103  
PV:43  
YP:43  
Gel:25/46/48  
6/3 rpm:23/21  
WL:3  
Sol:19.4  
Sand:0.25  
CK:2

WOB:10-15 klbs  
RPM:160-165  
SPP:3000-3450 psi  
FLW:680-750 gpm

MW:1.45sg  
FV:93  
PV:35  
YP:37  
Gel:26/47/50  
6/3 rpm:19/18  
WL:2  
Sol:19.6  
Sand:0.25  
CK:2

WOB:25-40 klbs  
RPM:160-235 (DHM)  
SPP:2200-2600 psi  
FLW:540-580 gpm

Bit #5: HUGHES H202 Tricone  
SIZE:241mm (9.5")  
JETS:3x24  
MD IN:1440m OUT:1545m  
TVD IN:1428.5m OUT: 1519.0m  
RUN:106m HRS:18.91  
COND:3-5-BT-A-E-I-JD-PR

SLIDING

SLIDING

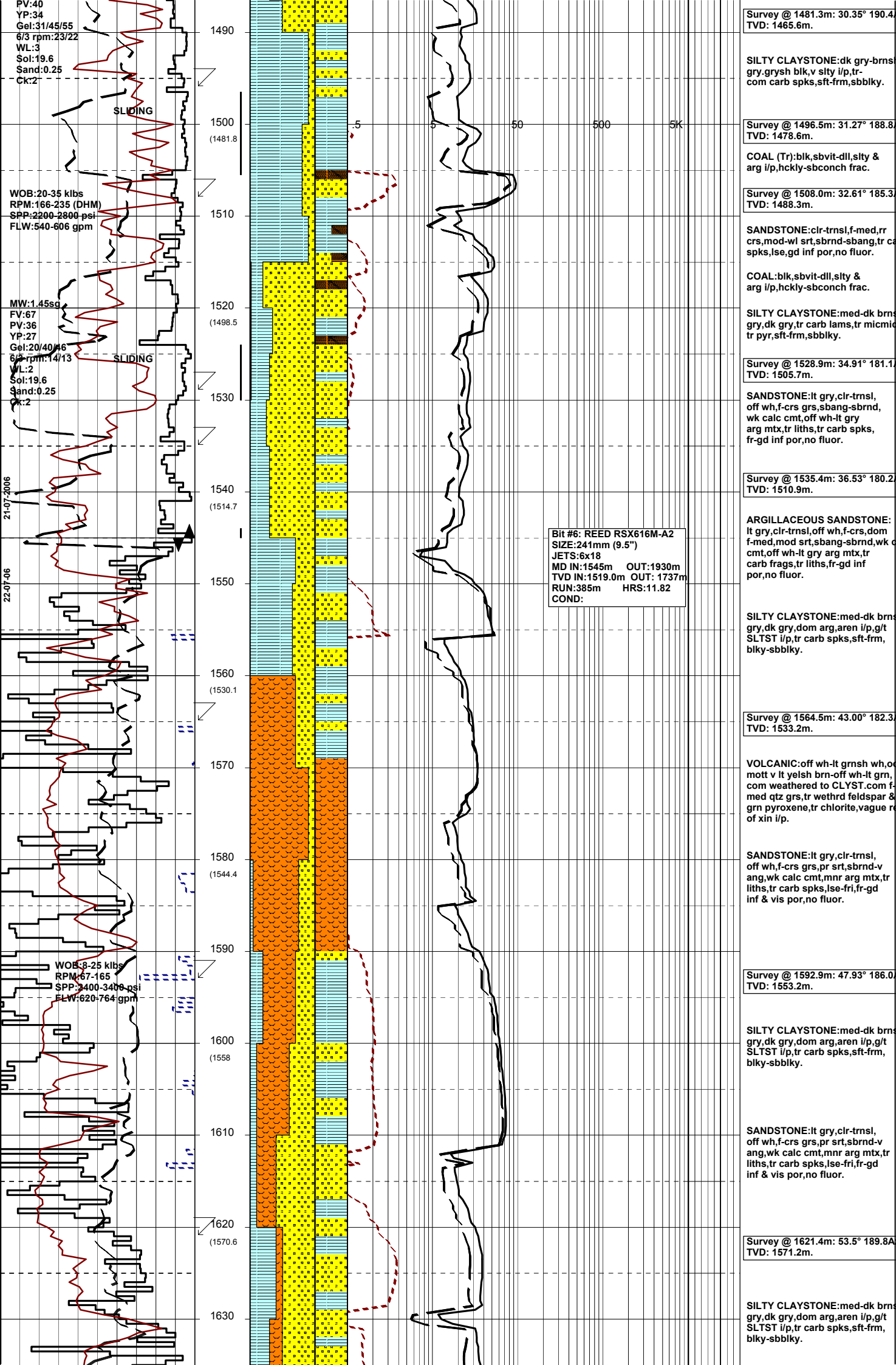
SLIDING

19-07-2006

20-07-2006

20-07-2006

21-07-2006



PV:40  
 YP:34  
 Gel:31/45/55  
 6/3 rpm:23/22  
 WL:3  
 Sol:19.6  
 Sand:0.25  
 Ck:2

**WOB:20-35 klbs**  
 RPM:166-235 (DHM)  
 SPP:2200-2800 psi  
 FLW:540-606 gpm

**MW:1.45sc**  
 FV:67  
 PV:36  
 YP:27  
 Gel:20/40/46  
 6/3 rpm:14/13  
 WL:2  
 Sol:19.6  
 Sand:0.25  
 Ck:2

21-07-2006

22-07-06

**WOB:8-25 klbs**  
 RPM:67-165  
 SPP:2400-3400 psi  
 FLW:620-764 gpm

**Bit #6: REED RSX616M-A2**  
 SIZE:241mm (9.5")  
 JETS:6x18  
 MD IN:1545m OUT:1930m  
 TVD IN:1519.0m OUT: 1737m  
 RUN:385m HRS:11.82  
 COND:

**Survey @ 1481.3m: 30.35° 190.4**  
 TVD: 1465.6m.

**SILTY CLAYSTONE:**dk gry-brnsl gry, grysh blk, v slty i/p, tr-com carb spks, sft-frm, sbbkly.

**Survey @ 1496.5m: 31.27° 188.8**  
 TVD: 1478.6m.

**COAL (Tr):**blk, sbvit-dll, slty & arg i/p, hckly-sbconch frac.

**Survey @ 1508.0m: 32.61° 185.3**  
 TVD: 1488.3m.

**SANDSTONE:**clr-trnsl, f-med, rrr crs, mod-wl srt, sbrnd-sbang, tr carb spks, lse, gd inf por, no fluor.

**COAL:**blk, sbvit-dll, slty & arg i/p, hckly-sbconch frac.

**SILTY CLAYSTONE:**med-dk brnsl gry, dk gry, tr carb lams, tr micml tr pyr, sft-frm, sbbkly.

**Survey @ 1528.9m: 34.91° 181.1**  
 TVD: 1505.7m.

**SANDSTONE:**lt gry, clr-trnsl, off wh, f-crs grs, sbang-sbrnd, wk calc cmt, off wh-lt gry arg mtx, tr carb spks, fr-gd inf por, no fluor.

**Survey @ 1535.4m: 36.53° 180.2**  
 TVD: 1510.9m.

**ARGILLACEOUS SANDSTONE:**lt gry, clr-trnsl, off wh, f-crs, dom f-med, mod srt, sbang-sbrnd, wk cmt, off wh-lt gry arg mtx, tr carb frags, tr liths, fr-gd inf por, no fluor.

**SILTY CLAYSTONE:**med-dk brnsl gry, dk gry, dom arg, aren i/p, g/t SLTST i/p, tr carb spks, sft-frm, blkly-sbbkly.

**Survey @ 1564.5m: 43.00° 182.3**  
 TVD: 1533.2m.

**VOLCANIC:**off wh-lt grnsh wh, o mott v lt yelsh brn-off wh-lt grn, com weathered to CLYST.com f-med qtz grs, tr wethrd feldspar & grn pyroxene, tr chlorite, vague r of xin i/p.

**SANDSTONE:**lt gry, clr-trnsl, off wh, f-crs grs, pr srt, sbrnd-v ang, wk calc cmt, mnr arg mtx, tr liths, tr carb spks, lse-fri, fr-gd inf & vis por, no fluor.

**Survey @ 1592.9m: 47.93° 186.0**  
 TVD: 1553.2m.

**SILTY CLAYSTONE:**med-dk brnsl gry, dk gry, dom arg, aren i/p, g/t SLTST i/p, tr carb spks, sft-frm, blkly-sbbkly.

**SANDSTONE:**lt gry, clr-trnsl, off wh, f-crs grs, pr srt, sbrnd-v ang, wk calc cmt, mnr arg mtx, tr liths, tr carb spks, lse-fri, fr-gd inf & vis por, no fluor.

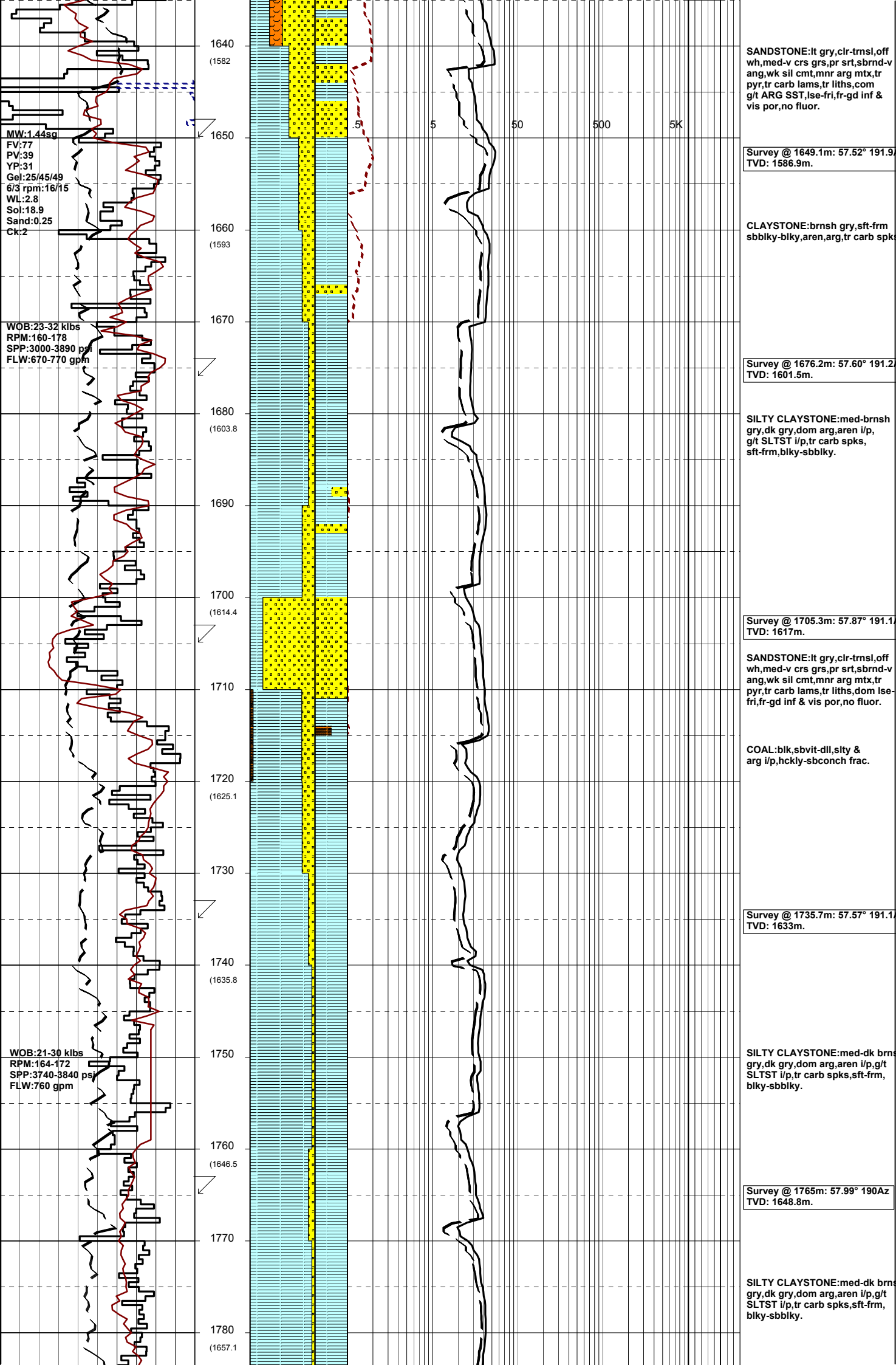
**Survey @ 1621.4m: 53.5° 189.8A**  
 TVD: 1571.2m.

**SILTY CLAYSTONE:**med-dk brnsl gry, dk gry, dom arg, aren i/p, g/t SLTST i/p, tr carb spks, sft-frm, blkly-sbbkly.

**SANDSTONE:**lt gry, clr-trnsl, off wh, f-crs grs, pr srt, sbrnd-v ang, wk calc cmt, mnr arg mtx, tr liths, tr carb spks, lse-fri, fr-gd inf & vis por, no fluor.

**Survey @ 1621.4m: 53.5° 189.8A**  
 TVD: 1571.2m.

**SILTY CLAYSTONE:**med-dk brnsl gry, dk gry, dom arg, aren i/p, g/t SLTST i/p, tr carb spks, sft-frm, blkly-sbbkly.



MW:1.44sg  
 FV:77  
 PV:39  
 YP:31  
 Gel:25/45/49  
 6/3 rpm:16/15  
 WL:2.8  
 Sol:18.9  
 Sand:0.25  
 Ck:2

WOB:23-32 klbs  
 RPM:160-178  
 SPP:3000-3890 psi  
 FLW:670-770 gpm

WOB:21-30 klbs  
 RPM:164-172  
 SPP:3740-3840 psi  
 FLW:760 gpm

**SANDSTONE:**lt gry,clr-trnsl,off wh,med-v crs grs,pr srt,sbrnd-v ang,wk sil cmt,mnr arg mtb,tr pyr,tr carb lams,tr liths,com g/t ARG SST,lse-fri,fr-gd inf & vis por,no fluor.

Survey @ 1649.1m: 57.52° 191.9  
 TVD: 1586.9m.

**CLAYSTONE:**brnsh gry,sft frm sbbiky-blky,aren,arg,tr carb spks

Survey @ 1676.2m: 57.60° 191.2  
 TVD: 1601.5m.

**SILTY CLAYSTONE:**med-brnsh gry,dk gry,dom arg,aren i/p, g/t SLTST i/p,tr carb spks, sft frm,blky-sbbiky.

Survey @ 1705.3m: 57.87° 191.1  
 TVD: 1617m.

**SANDSTONE:**lt gry,clr-trnsl,off wh,med-v crs grs,pr srt,sbrnd-v ang,wk sil cmt,mnr arg mtb,tr pyr,tr carb lams,tr liths,dom lse-fri,fr-gd inf & vis por,no fluor.

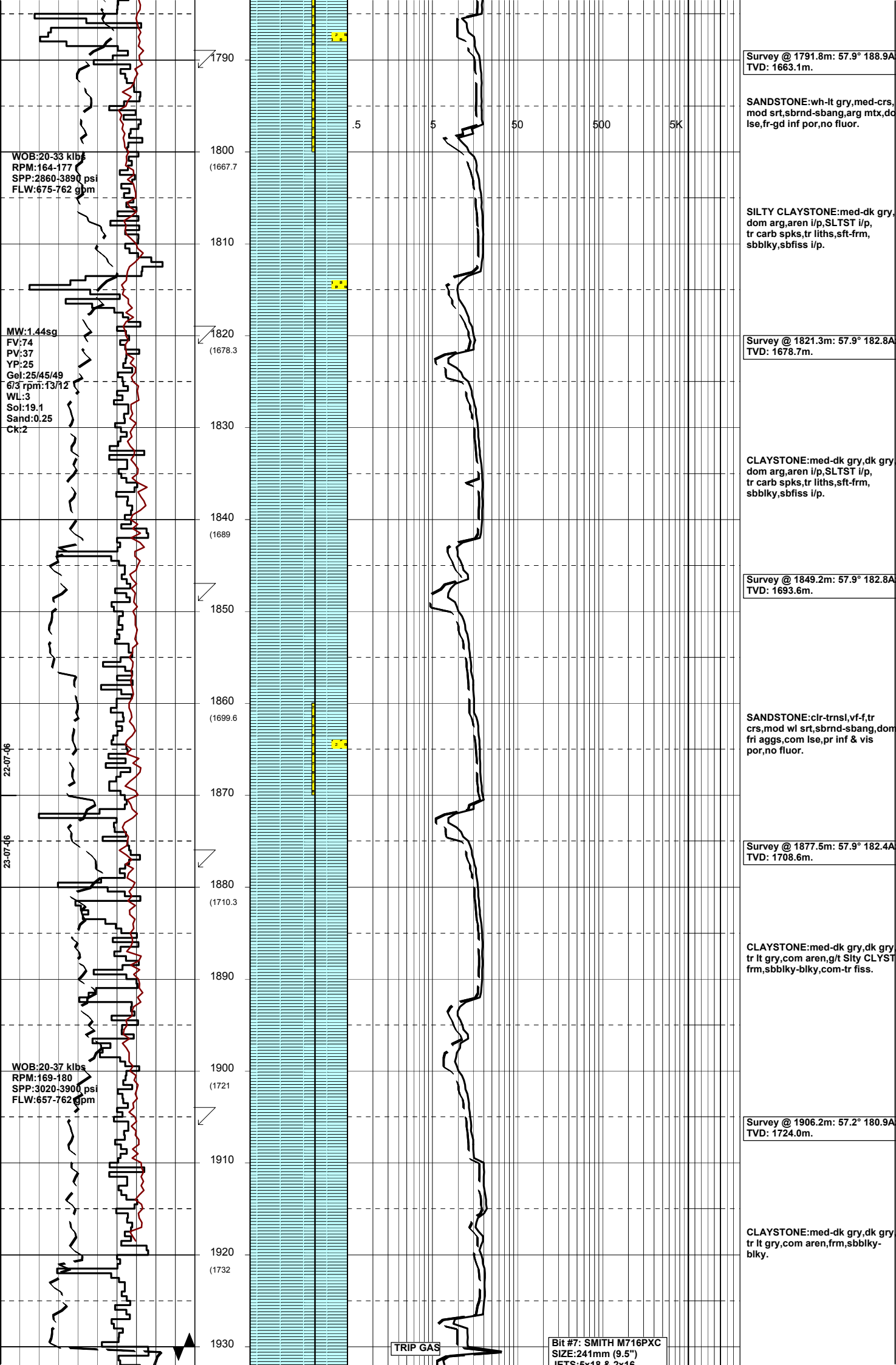
**COAL:**blk,sbvt-dll,silty & arg i/p,hckly-sbconch frac.

Survey @ 1735.7m: 57.57° 191.1  
 TVD: 1633m.

**SILTY CLAYSTONE:**med-dk brnsh gry,dk gry,dom arg,aren i/p,g/t SLTST i/p,tr carb spks,sft frm, blky-sbbiky.

Survey @ 1765m: 57.99° 190Az  
 TVD: 1648.8m.

**SILTY CLAYSTONE:**med-dk brnsh gry,dk gry,dom arg,aren i/p,g/t SLTST i/p,tr carb spks,sft frm, blky-sbbiky.



WOB:20-33 klbs  
 RPM:164-177  
 SPP:2860-3890 psi  
 FLW:675-762 gpm

MW:1.44sg  
 FV:74  
 PV:37  
 YP:25  
 Gel:25/45/49  
 6/3 rpm:13/12  
 WL:3  
 Sol:19.1  
 Sand:0.25  
 Ck:2

22-07-46

23-07-46

WOB:20-37 klbs  
 RPM:169-180  
 SPP:3020-3900 psi  
 FLW:657-762 gpm

Survey @ 1791.8m: 57.9° 188.9A  
 TVD: 1663.1m.

SANDSTONE:wh-lt gry,med-crs,  
 mod srt,sbrnd-sbang,arg mtx,dc  
 lse,fr-gd inf por,no fluor.

SILTY CLAYSTONE:med-dk gry,  
 dom arg,aren i/p,SLTST i/p,  
 tr carb spks,tr liths,sft-frm,  
 sbblky,sbfiss i/p.

Survey @ 1821.3m: 57.9° 182.8A  
 TVD: 1678.7m.

CLAYSTONE:med-dk gry,dk gry  
 dom arg,aren i/p,SLTST i/p,  
 tr carb spks,tr liths,sft-frm,  
 sbblky,sbfiss i/p.

Survey @ 1849.2m: 57.9° 182.8A  
 TVD: 1693.6m.

SANDSTONE:clr-trnsl,vf-f,tr  
 crs,mod wl srt,sbrnd-sbang,dom  
 fri aggs,com lse,pr inf & vis  
 por,no fluor.

Survey @ 1877.5m: 57.9° 182.4A  
 TVD: 1708.6m.

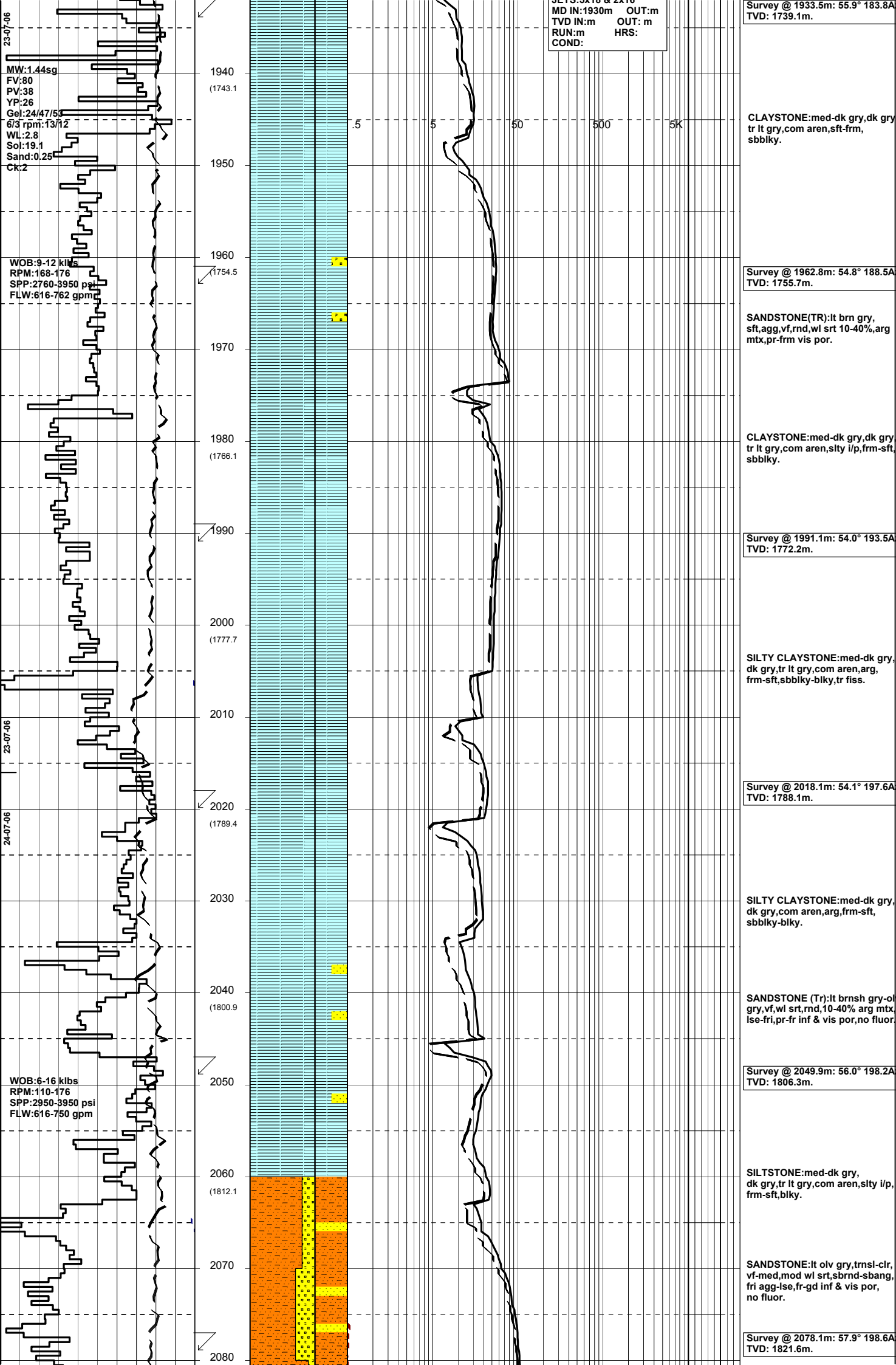
CLAYSTONE:med-dk gry,dk gry  
 tr lt gry,com aren,g/t Silty CLYST  
 frm,sbblky-blky,com-tr fiss.

Survey @ 1906.2m: 57.2° 180.9A  
 TVD: 1724.0m.

CLAYSTONE:med-dk gry,dk gry  
 tr lt gry,com aren,frm,sbblky-  
 blky.

TRIP GAS

Bit #7: SMITH M716PXC  
 SIZE:241mm (9.5")  
 IETS:5v18 & 2x16



23-07-06

MW: 1.44 sg  
FV: 80  
PV: 38  
YP: 26  
Gel: 24/47/53  
6/3 rpm: 13/12  
WL: 2.8  
Sol: 19.1  
Sand: 0.25  
Ck: 2

1940  
(1743.1)

1950

23-07-06

WOB: 9-12 klbs  
RPM: 168-176  
SPP: 2760-3950 psi  
FLW: 616-762 gpm

1960  
(1754.5)

1970

1980  
(1766.1)

1990

2000  
(1777.7)

23-07-06

2010

24-07-06

2020  
(1789.4)

2030

2040  
(1800.9)

WOB: 6-16 klbs  
RPM: 110-176  
SPP: 2950-3950 psi  
FLW: 616-750 gpm

2050

2060  
(1812.1)

2070

2080

JUL 3, 2016 10:22 AM  
MD IN: 1930m OUT: m  
TVD IN: m OUT: m  
RUN: m HRS:  
COND:

Survey @ 1933.5m: 55.9° 183.8A  
TVD: 1739.1m.

CLAYSTONE: med-dk gry, dk gry, tr lt gry, com aren, sft frm, sbbiky.

Survey @ 1962.8m: 54.8° 188.5A  
TVD: 1755.7m.

SANDSTONE (TR): lt brn gry, sft, agg, vf, rnd, wl srt 10-40% arg mtx, pr frm vis por.

CLAYSTONE: med-dk gry, dk gry, tr lt gry, com aren, slty i/p, frm sft, sbbiky.

Survey @ 1991.1m: 54.0° 193.5A  
TVD: 1772.2m.

SILTY CLAYSTONE: med-dk gry, dk gry, tr lt gry, com aren, arg, frm sft, sbbiky-blky, tr fiss.

Survey @ 2018.1m: 54.1° 197.6A  
TVD: 1788.1m.

SILTY CLAYSTONE: med-dk gry, dk gry, com aren, arg, frm sft, sbbiky-blky.

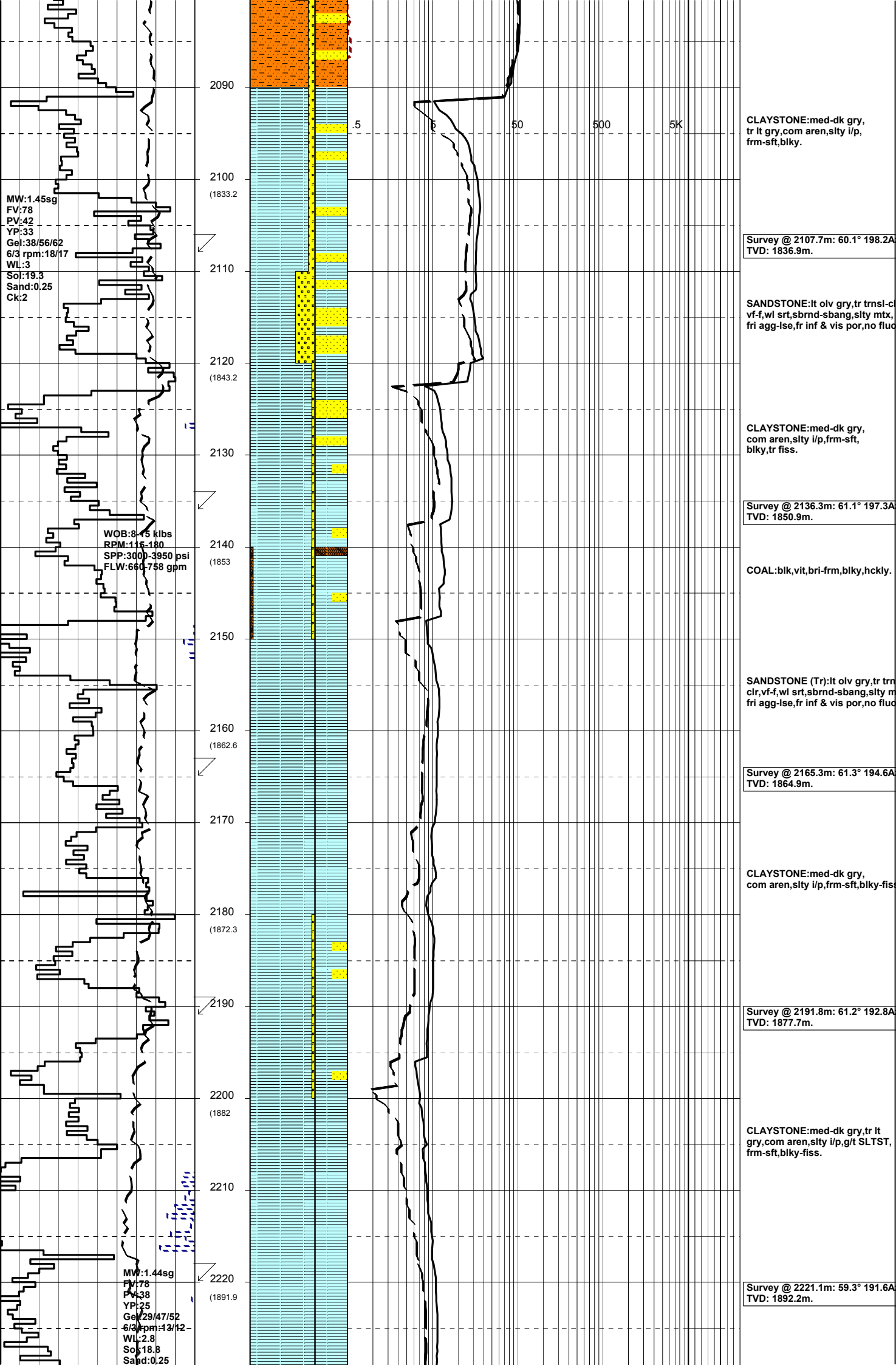
SANDSTONE (TR): lt brnsh gry-ol gry, vf, wl srt, rnd, 10-40% arg mtx, lse-fri, pr-fr inf & vis por, no fluor.

Survey @ 2049.9m: 56.0° 198.2A  
TVD: 1806.3m.

SILTSTONE: med-dk gry, dk gry, tr lt gry, com aren, slty i/p, frm sft, blky.

SANDSTONE: lt olv gry, trnsi-clr, vf-med, mod wl srt, sbrnd-sbang, fri agg-lse, fr-gd inf & vis por, no fluor.

Survey @ 2078.1m: 57.9° 198.6A  
TVD: 1821.6m.



2090

2100  
(1833.2)

2110

2120  
(1843.2)

2130

2140  
(1853)

2150

2160  
(1862.6)

2170

2180  
(1872.3)

2190

2200  
(1882)

2210

2220  
(1891.9)

CLAYSTONE: med-dk gry, tr lt gry, com aren, slty i/p, frm-sft, blkly.

Survey @ 2107.7m: 60.1° 198.2A  
TVD: 1836.9m.

SANDSTONE: lt olv gry, tr trnsi-clr, vf-f, wl srt, sbrnd-sbang, slty mtx, fri agg-lse, fr inf & vis por, no fluid

CLAYSTONE: med-dk gry, com aren, slty i/p, frm-sft, blkly, tr fiss.

Survey @ 2136.3m: 61.1° 197.3A  
TVD: 1850.9m.

COAL: blk, vit, bri-frm, blkly, hckly.

SANDSTONE (Tr): lt olv gry, tr trnsi-clr, vf-f, wl srt, sbrnd-sbang, slty mtx, fri agg-lse, fr inf & vis por, no fluid

Survey @ 2165.3m: 61.3° 194.6A  
TVD: 1864.9m.

CLAYSTONE: med-dk gry, com aren, slty i/p, frm-sft, blkly-fiss.

Survey @ 2191.8m: 61.2° 192.8A  
TVD: 1877.7m.

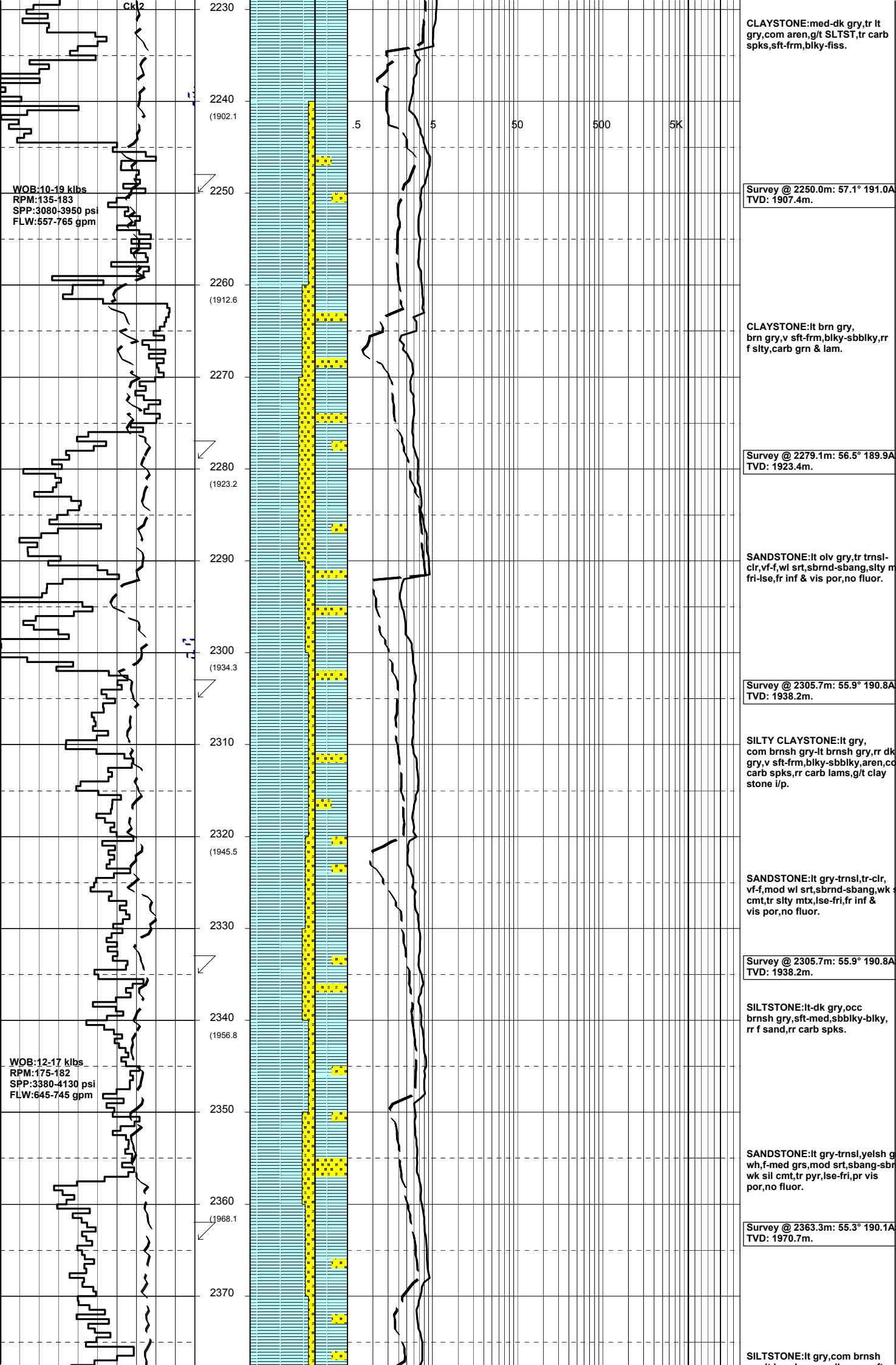
CLAYSTONE: med-dk gry, tr lt gry, com aren, slty i/p, g/t SLTST, frm-sft, blkly-fiss.

Survey @ 2221.1m: 59.3° 191.6A  
TVD: 1892.2m.

MW: 1.45sg  
FV: 78  
PV: 42  
YP: 33  
Gel: 38/56/62  
6/3 rpm: 18/17  
WL: 3  
Sol: 19.3  
Sand: 0.25  
Ck: 2

WOB: 8.45 klbs  
RPM: 115-180  
SPP: 3000-3950 psi  
FLW: 660-758 gpm

MW: 1.44sg  
FV: 78  
PV: 38  
YP: 25  
Gel: 29/47/52  
6/3 rpm: 13/12  
WL: 2.8  
Sol: 18.8  
Sand: 0.25



WOB:10-19 klbs  
 RPM:135-183  
 SPP:3080-3950 psi  
 FLW:557-765 gpm

WOB:12-17 klbs  
 RPM:175-182  
 SPP:3380-4130 psi  
 FLW:645-745 gpm

CLAYSTONE:med-dk gry,tr lt gry,com aren,g/t SLTST,tr carb spks,sft frm,blky-fiss.

Survey @ 2250.0m: 57.1° 191.0A  
 TVD: 1907.4m.

CLAYSTONE:lt brn gry, brn gry,v sft frm,blky-sbbkly,rr f stly,carb grn & lam.

Survey @ 2279.1m: 56.5° 189.9A  
 TVD: 1923.4m.

SANDSTONE:lt olv gry,tr trnsi-clr,vf-f,wl srt,sbrnd-sbang,sity m fri-lse,fr inf & vis por,no fluor.

Survey @ 2305.7m: 55.9° 190.8A  
 TVD: 1938.2m.

SILTY CLAYSTONE:lt gry, com brnsh gry-lt brnsh gry,rr dk gry,v sft frm,blky-sbbkly,aren,cd carb spks,rr carb lams,g/t clay stone i/p.

SANDSTONE:lt gry-trnsl,tr-clr,vf-f,mod wl srt,sbrnd-sbang,wk cmt,tr slty mtx,lse-fri,fr inf & vis por,no fluor.

Survey @ 2305.7m: 55.9° 190.8A  
 TVD: 1938.2m.

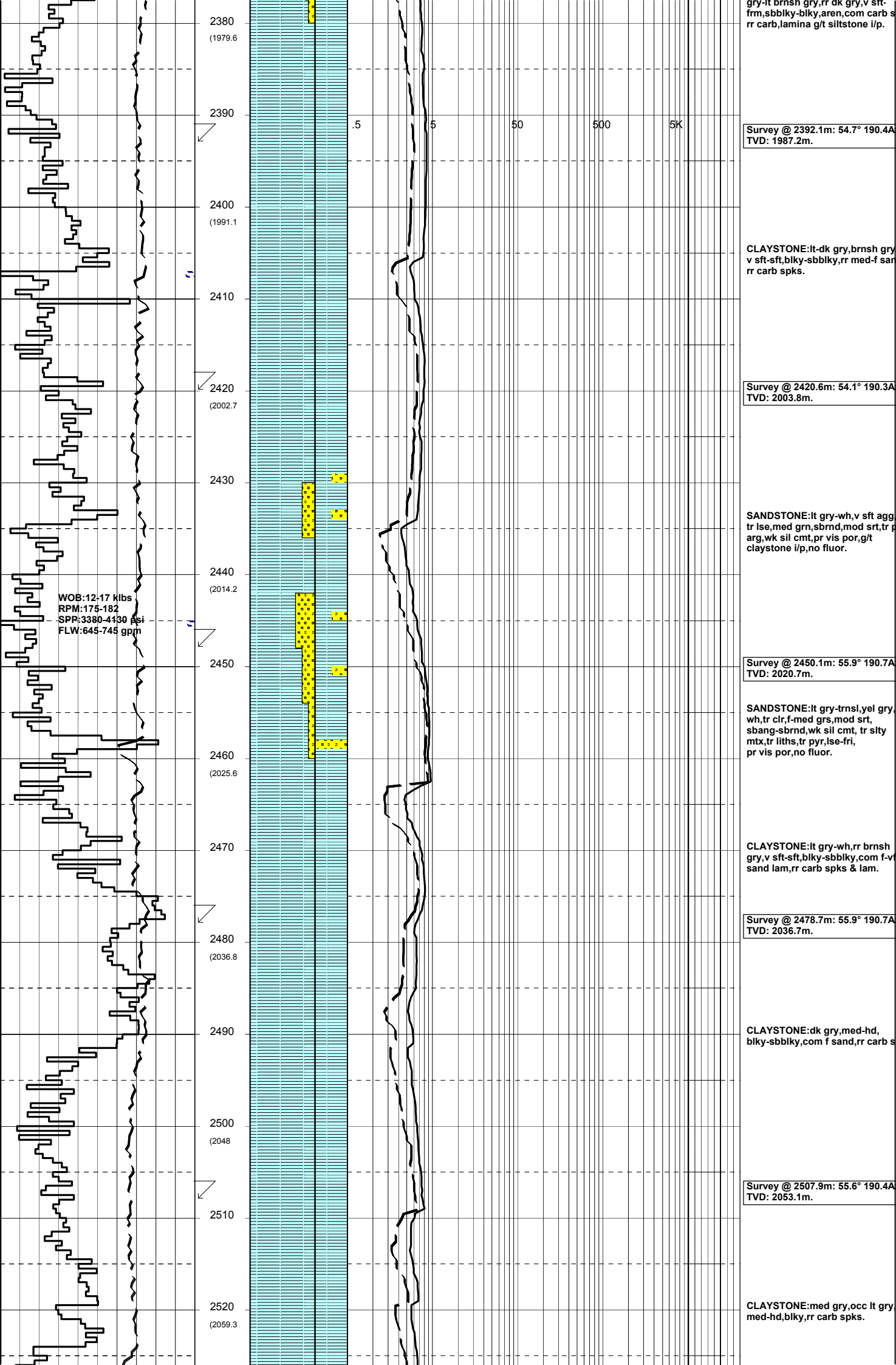
SILTSTONE:lt-dk gry,occ brnsh gry,sft-med,sbbkly-blky,rr f sand,rr carb spks.

SANDSTONE:lt gry-trnsl,yelsh g wh,f-med grs,mod srt,sbang-sbr wk sil cmt,tr pyr,lse-fri,pr vis por,no fluor.

Survey @ 2363.3m: 55.3° 190.1A  
 TVD: 1970.7m.

SILTSTONE:lt gry,com brnsh





2380  
(1979.6)

2390  
(1991.1)

2400  
(1991.1)

2410  
(1991.1)

2420  
(2002.7)

2430  
(2002.7)

2440  
(2014.2)

2450  
(2014.2)

2460  
(2025.6)

2470  
(2025.6)

2480  
(2036.8)

2490  
(2036.8)

2500  
(2048)

2510  
(2048)

2520  
(2059.3)

.5 5 50 500 5K

Survey @ 2392.1m: 54.7° 190.4A  
TVD: 1987.2m.

CLAYSTONE:lt-dk gry,brnsh gry  
v sft-sft,blky-sbblky,rr med-f sand  
rr carb spks.

Survey @ 2420.6m: 54.1° 190.3A  
TVD: 2003.8m.

SANDSTONE:lt gry-wh,v sft agg  
tr lse,med gm,sbrnd,mod srt,rr  
arg,wk sil cmt,pr vis por,g/t  
claystone i/p,no fluor.

Survey @ 2450.1m: 55.9° 190.7A  
TVD: 2020.7m.

SANDSTONE:lt gry-trnsl,yel gry  
wh,tr clr,f-med grs,mod srt,  
sbang-sbrnd,wk sil cmt, tr slty  
mtx,tr liths,tr pyr,lse-fri,  
pr vis por,no fluor.

CLAYSTONE:lt gry-wh,rr brnsh  
gry,v sft-sft,blky-sbblky,com f-v  
sand lam,rr carb spks & lam.

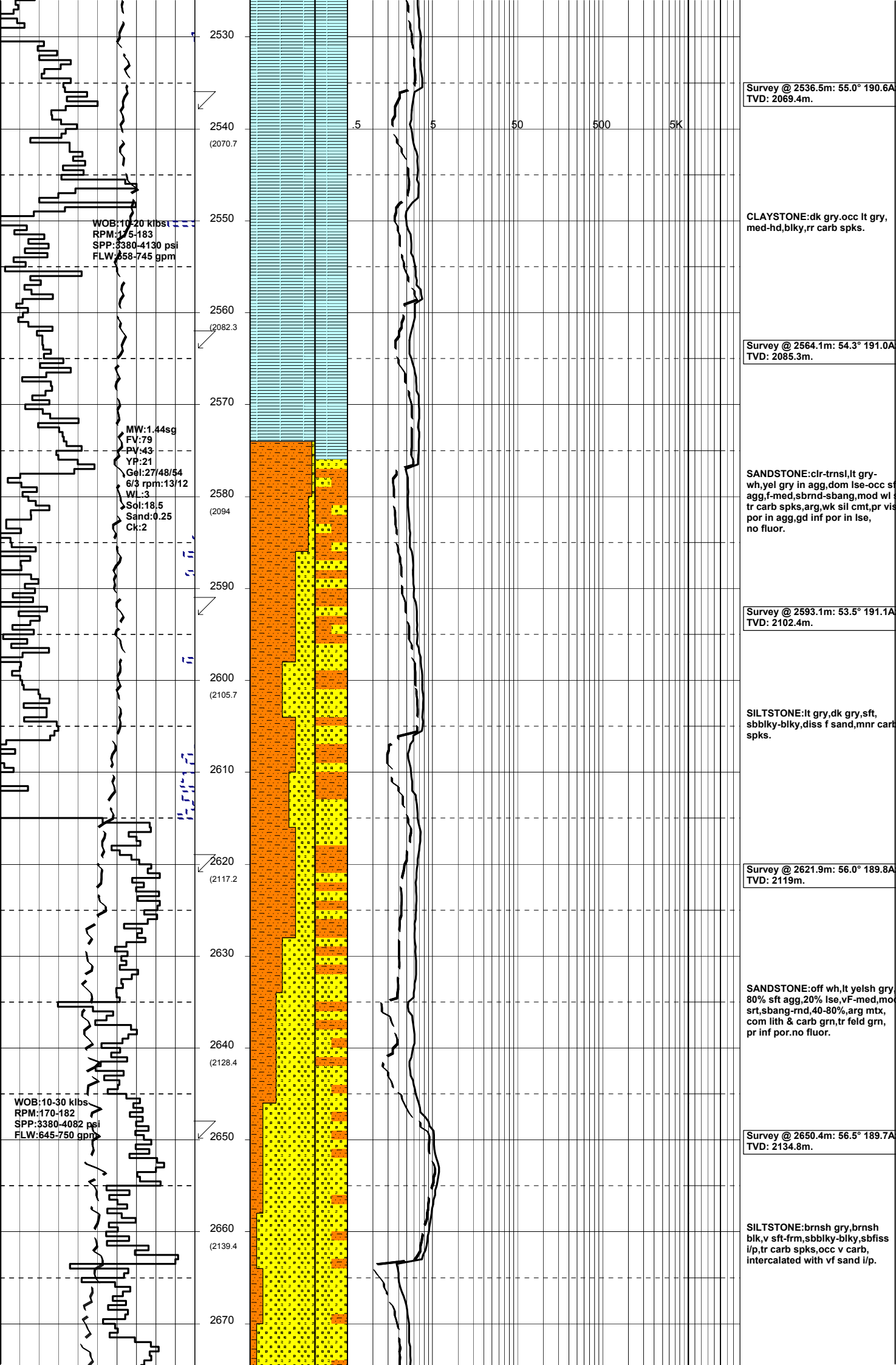
Survey @ 2478.7m: 55.9° 190.7A  
TVD: 2036.7m.

CLAYSTONE:dk gry,med-hd,  
blky-sbblky,com f sand,rr carb s

Survey @ 2507.9m: 55.6° 190.4A  
TVD: 2053.1m.

CLAYSTONE:med gry,occ lt gry  
med-hd,blky,rr carb spks.

WOB:12-17 klbs  
RPM:175-182  
SPP:3380-4130 psi  
FLW:645-745 gpm



Survey @ 2536.5m: 55.0° 190.6A  
TVD: 2069.4m.

2530

2540  
(2070.7)

.5 5 50 500 5K

CLAYSTONE:dk gry,occ lt gry,  
med-hd,blky,rr carb spks.

WOB:10-20 klbs  
RPM:115-183  
SPP:3380-4130 psi  
FLW:658-745 gpm

2550

2560  
(2082.3)

Survey @ 2564.1m: 54.3° 191.0A  
TVD: 2085.3m.

MW:1.44sg  
FV:79  
PV:43  
YP:21  
Gel:27/48/54  
6/3 rpm:13/12  
WL:3  
Sol:18.5  
Sand:0.25  
Ck:2

2570

2580  
(2094)

SANDSTONE:clr-trnsl,lt gry-  
wh,yel gry in agg,dm lse-occ st  
agg,f-med,sbrnd-sbang,mod wl  
tr carb spks,arg,wk sil cmt,pr vis  
por in agg,gd inf por in lse,  
no fluor.

2590

2600  
(2105.7)

Survey @ 2593.1m: 53.5° 191.1A  
TVD: 2102.4m.

SILTSTONE:lt gry,dk gry,sft,  
sbbiky-blky,diss f sand,mnr carb  
spks.

2610

2620  
(2117.2)

Survey @ 2621.9m: 56.0° 189.8A  
TVD: 2119m.

SANDSTONE:off wh,lt yelsh gry  
80% sft agg,20% lse,vF-med,mo  
srt,sbang-rnd,40-80%,arg mtx,  
com lith & carb grn,tr feld grn,  
pr inf por.no fluor.

2630

2640  
(2128.4)

Survey @ 2650.4m: 56.5° 189.7A  
TVD: 2134.8m.

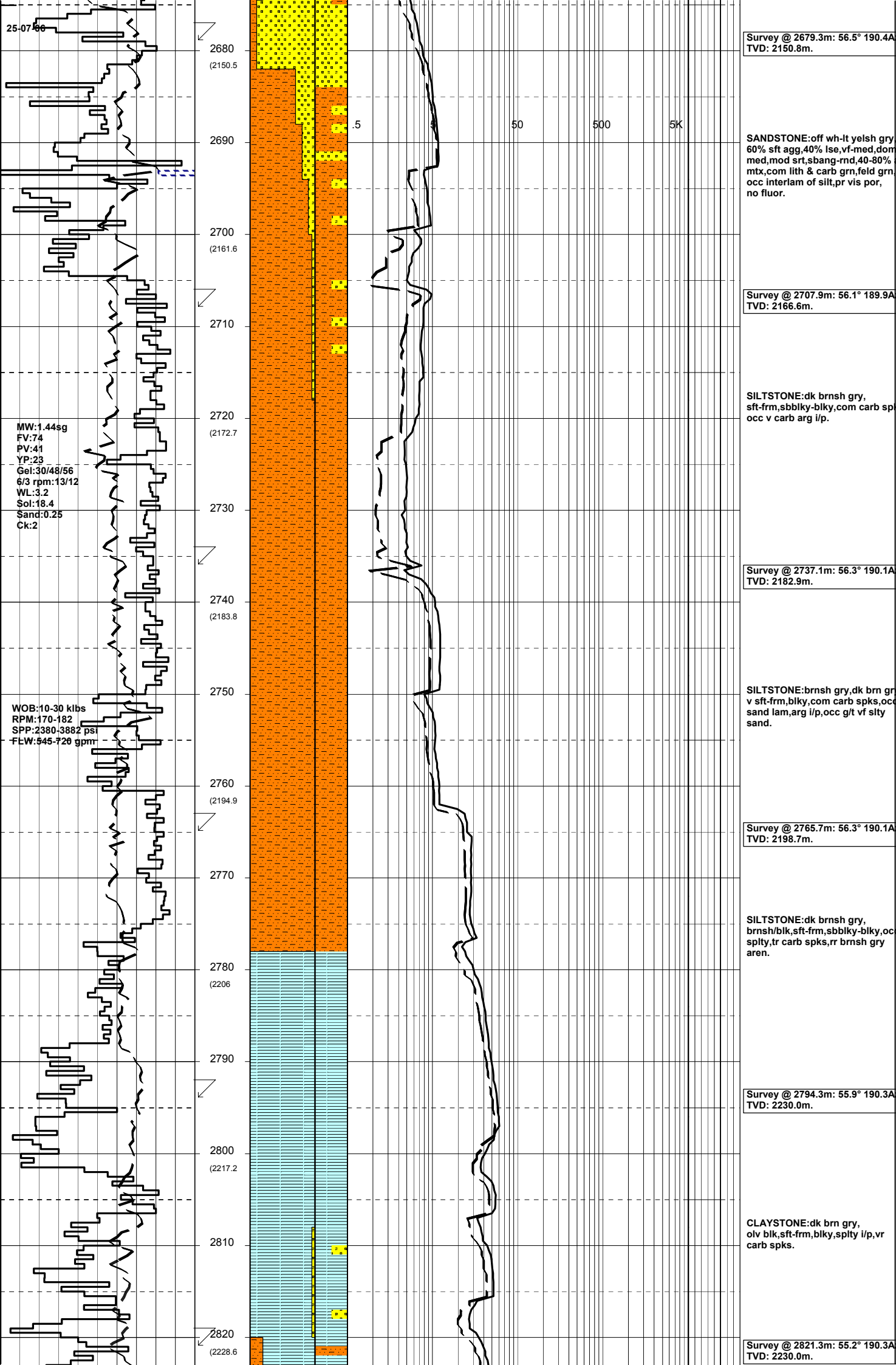
WOB:10-30 klbs  
RPM:170-182  
SPP:3380-4082 psi  
FLW:645-750 gpm

2650

2660  
(2139.4)

SILTSTONE:brnsh gry,brnsh  
blk,v sft frm,sbbiky-blky,sbfiss  
i/p,tr carb spks,occ v carb,  
intercalated with vf sand i/p.

2670



Survey @ 2679.3m: 56.5° 190.4A  
TVD: 2150.8m.

SANDSTONE:off wh-lt yelsh gry  
60% sft agg,40% lse,vf-med,dm  
med,mod srt,sbang-rnd,40-80%  
mtx,com lith & carb grn,feld 80%  
occ interlam of silt,pr vis por,  
no fluor.

Survey @ 2707.9m: 56.1° 189.9A  
TVD: 2166.6m.

SILTSTONE:dk brnsh gry,  
sft-frm,sbblky-blky,com carb sp  
occ v carb arg i/p.

Survey @ 2737.1m: 56.3° 190.1A  
TVD: 2182.9m.

SILTSTONE:brnsh gry,dk brn gr  
v sft-frm,blky,com carb spks,occ  
sand lam,arg i/p,occ g/t vf stly  
sand.

Survey @ 2765.7m: 56.3° 190.1A  
TVD: 2198.7m.

SILTSTONE:dk brnsh gry,  
brnsh/blk,sft-frm,sbblky-blky,oc  
splty,tr carb spks,rr brnsh gry  
aren.

Survey @ 2794.3m: 55.9° 190.3A  
TVD: 2230.0m.

CLAYSTONE:dk brn gry,  
olv blk,sft-frm,blky,splty i/p,pr  
carb spks.

Survey @ 2821.3m: 55.2° 190.3A  
TVD: 2230.0m.

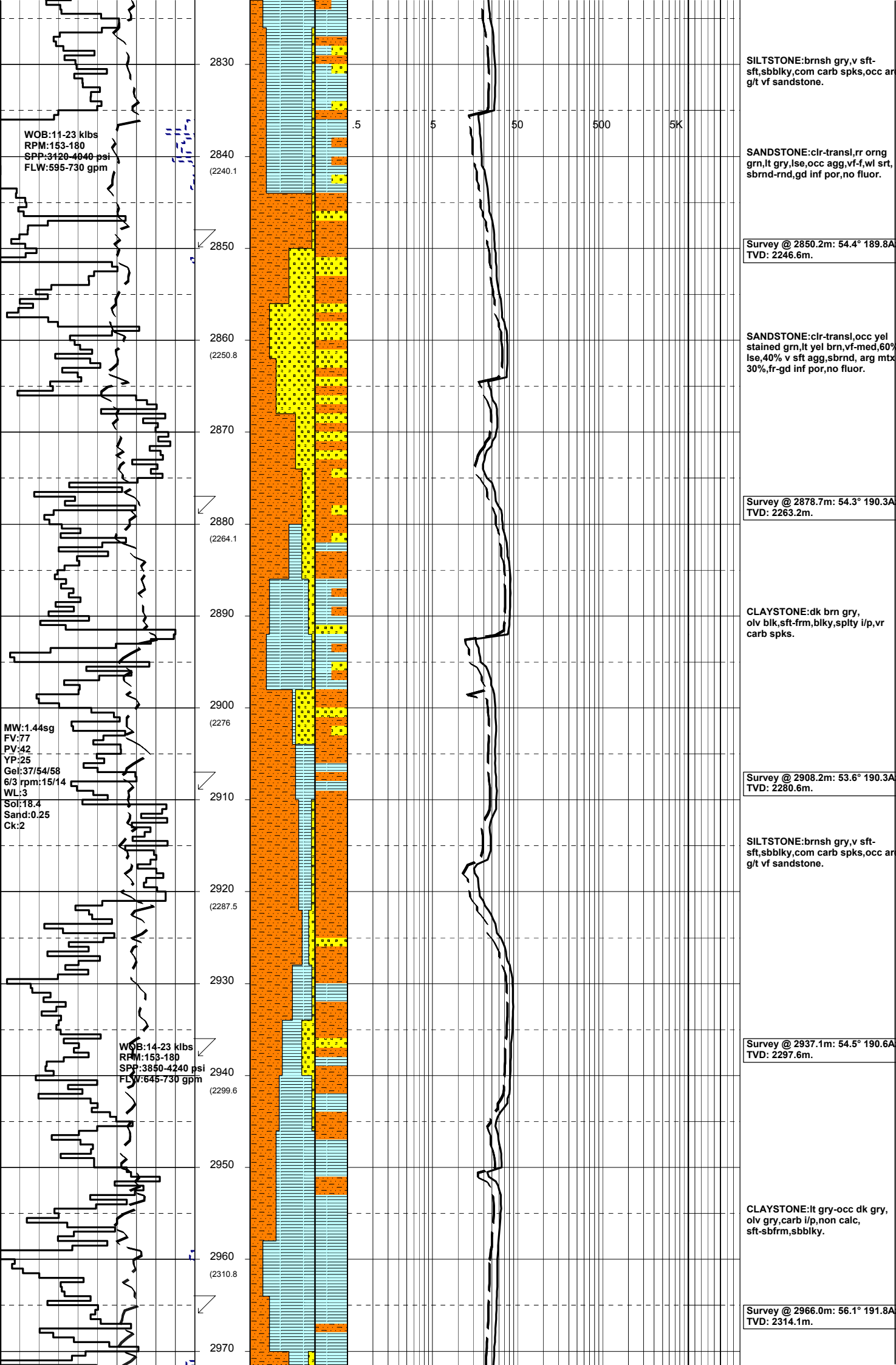
25-07-66

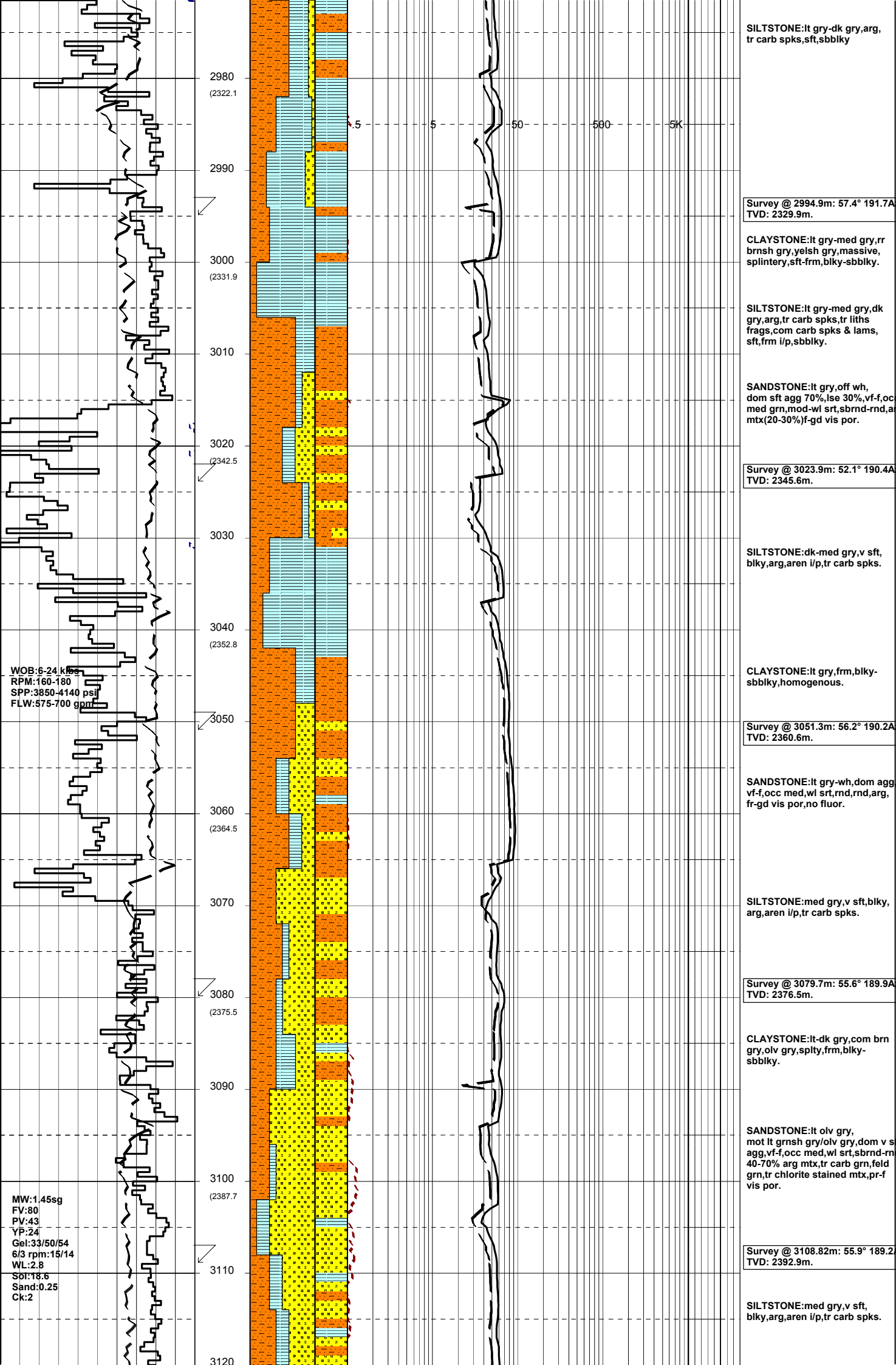
MW:1.44sg  
FV:74  
PV:41  
YP:23  
Gel:30/48/56  
6/3 rpm:13/12  
WL:3.2  
Sol:18.4  
Sand:0.25  
Ck:2

WOB:10-30 klbs  
RPM:170-182  
SPP:2380-3882 psi  
FLW:545-720 gpm

.5      50      500      5K

2680 (2150.5)  
2690  
2700 (2161.6)  
2710  
2720 (2172.7)  
2730  
2740 (2183.8)  
2750  
2760 (2194.9)  
2770  
2780 (2206)  
2790  
2800 (2217.2)  
2810  
2820 (2228.6)





SILTSTONE:lt gry-dk gry,arg, tr carb spks,sft,sbbiky

2980  
(2322.1)

5 5 50 500 5K

Survey @ 2994.9m: 57.4° 191.7A  
TVD: 2329.9m.

CLAYSTONE:lt gry-med gry,rr brnsh gry,yelsh gry,massive, splintery,sft frm,blky-sbbiky.

2990

3000  
(2331.9)

SILTSTONE:lt gry-med gry,dk gry,arg, tr carb spks, tr liths frags, com carb spks & lams, sft, frm i/p, sbbiky.

3010

SANDSTONE:lt gry, off wh, dom sft agg 70%, lse 30%, vf-f, occ med grn, mod-wl srt, sbrnd-rnd, a mtz(20-30%)f-gd vis por.

3020  
(2342.5)

Survey @ 3023.9m: 52.1° 190.4A  
TVD: 2345.6m.

SILTSTONE:dk-med gry,v sft, blky,arg,aren i/p, tr carb spks.

3030

3040  
(2352.8)

CLAYSTONE:lt gry, frm, blky-sbbiky, homogenous.

WOB:6-24 kPa  
RPM:160-180  
SPP:3850-4140 psi  
FLW:575-700 gpm

3050

Survey @ 3051.3m: 56.2° 190.2A  
TVD: 2360.6m.

SANDSTONE:lt gry-wh, dom agg vf-f, occ med, wl srt, rnd, rnd, arg, fr-gd vis por, no fluor.

3060  
(2364.5)

SILTSTONE:med gry,v sft, blky, arg,aren i/p, tr carb spks.

3070

3080  
(2375.5)

Survey @ 3079.7m: 55.6° 189.9A  
TVD: 2376.5m.

CLAYSTONE:lt-dk gry, com brn gry, olv gry, spity, frm, blky-sbbiky.

3090

SANDSTONE:lt olv gry, mot lt grnsh gry/olv gry, dom s agg, vf-f, occ med, wl srt, sbrnd-rnd 40-70% arg mtz, tr carb grn, feld grn, tr chlorite stained mtz, pr-f vis por.

3100  
(2387.7)

MW:1.45sg  
FV:80  
PV:43  
YP:24  
Gel:33/50/54  
6/3 rpm:15/14  
WL:2.8  
Sd:18.6  
Sand:0.25  
Ck:2

3110

Survey @ 3108.82m: 55.9° 189.2  
TVD: 2392.9m.

SILTSTONE:med gry,v sft, blky,arg,aren i/p, tr carb spks.

3120

