



Company : Beach Petroleum Ltd

Well : Fermat-1

Interval : 955.00 - 2314.93 meters

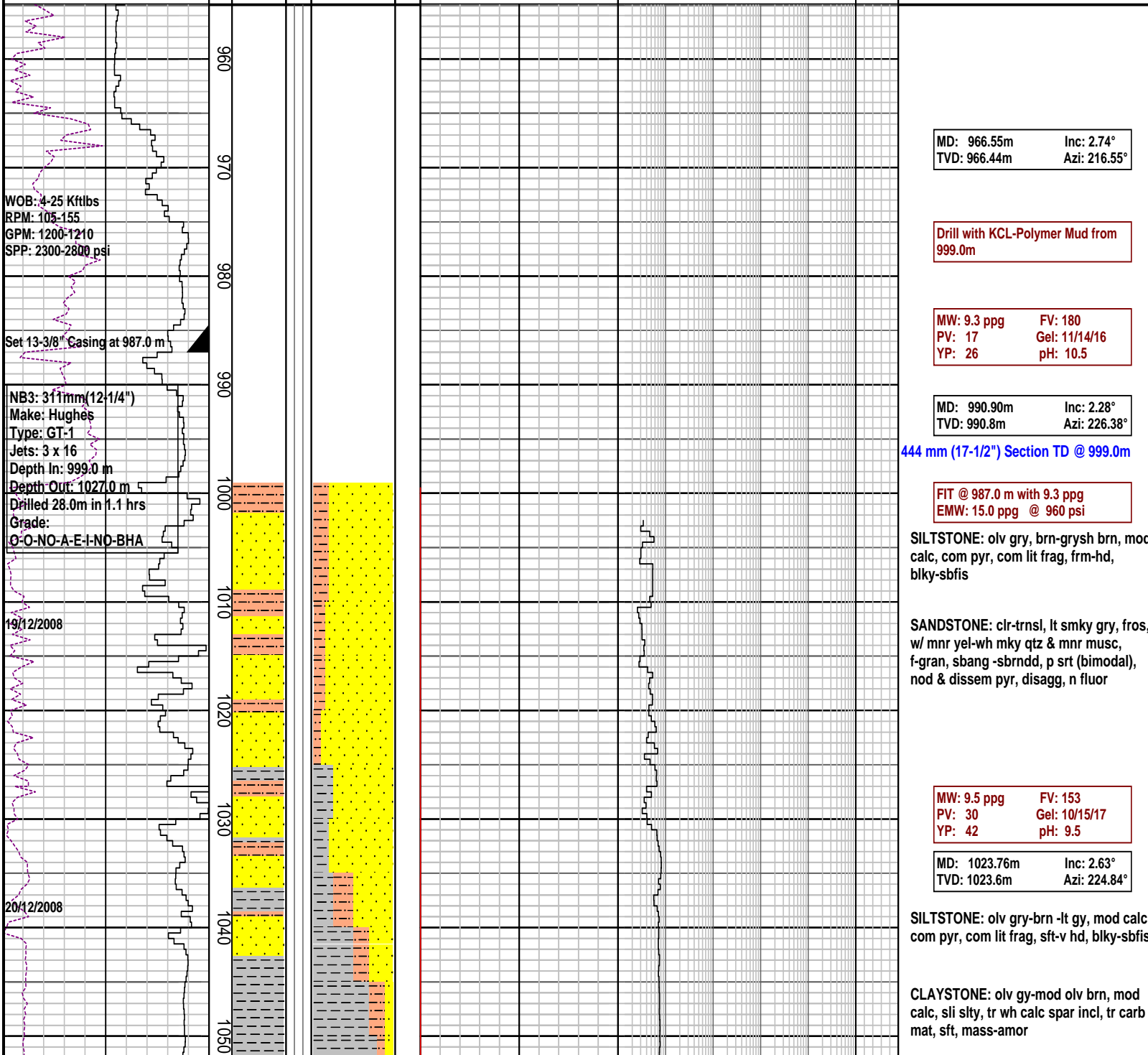
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INTEQ

### FORMATION EVALUATION LOG

DRILLING PARAM		MD meters	Oil Show P F G	LITHOLOGY %	CORE	TOTAL GAS	CHROMATOGRAPH	Calcmetry	Lithology Description
ROP (m/hr)						Total Gas (unit)	Methane ppm		
200	160	1:500				10   20   30   40   50	1 100000		
WEIGHT ON BIT (klbf)						1 100000			
10	20						1 100000		
							1 100000		
							1 100000		
							1 100000		
							1 100000		
							1 100000		



MD: 966.55m Inc: 2.74°  
 TVD: 966.44m Azi: 216.55°

Drill with KCL-Polymer Mud from 999.0m

MW: 9.3 ppg FV: 180  
 PV: 17 Gel: 11/14/16  
 YP: 26 pH: 10.5

MD: 990.90m Inc: 2.28°  
 TVD: 990.8m Azi: 226.38°

444 mm (17-1/2") Section TD @ 999.0m

FIT @ 987.0 m with 9.3 ppg  
 EMW: 15.0 ppg @ 960 psi

SILTSTONE: olv gry, brn-grysh brn, mod calc, com pyr, com lit frag, frm-hd, blk-sbfis

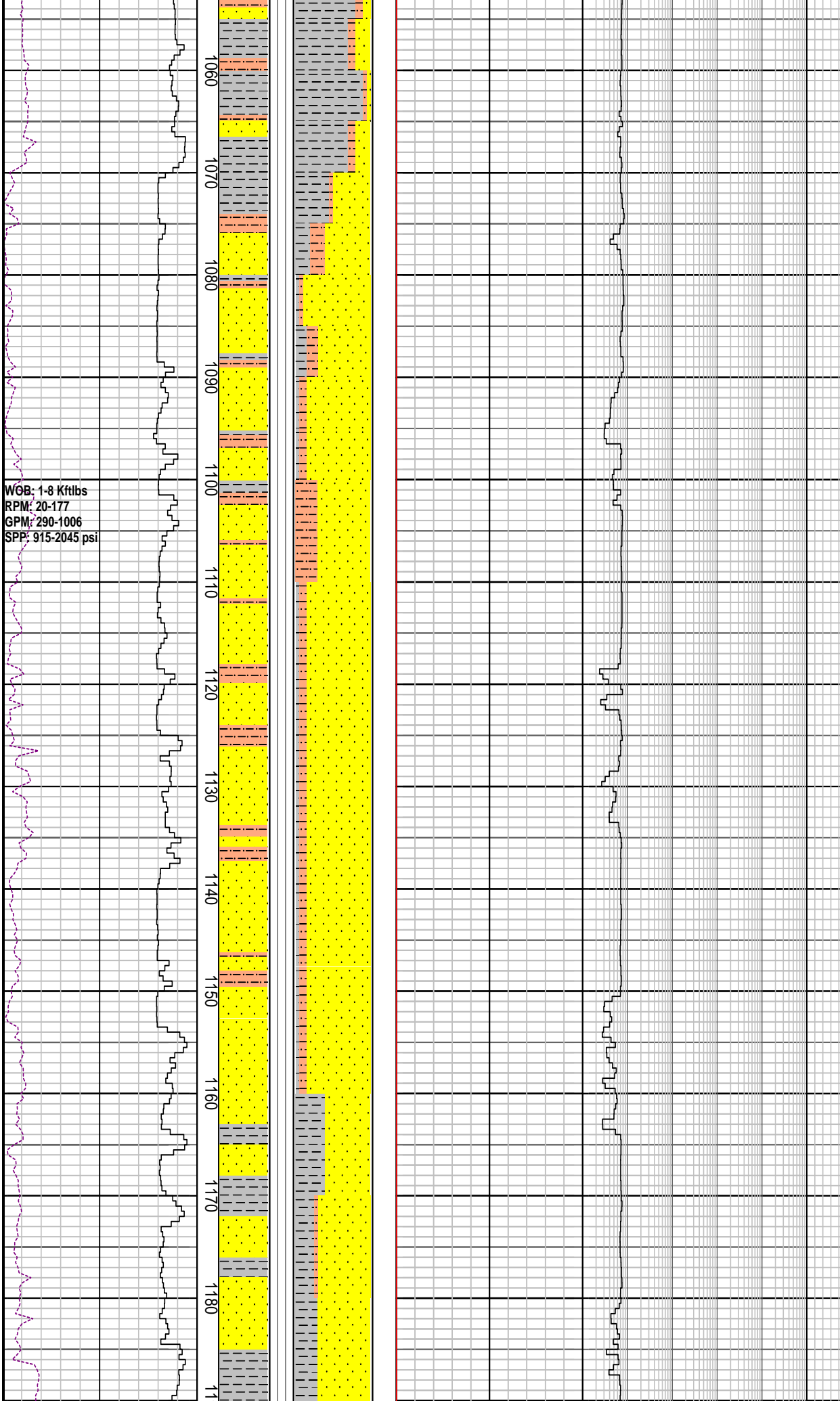
SANDSTONE: clr-trnsl, lt smky gry, fros, w/ mnr yel-wh mky qtz & mnr musc, f-gran, sbang-sbrndd, p srt (bimodal), nod & dissem pyr, disagg, n fluor

MW: 9.5 ppg FV: 153  
 PV: 30 Gel: 10/15/17  
 YP: 42 pH: 9.5

MD: 1023.76m Inc: 2.63°  
 TVD: 1023.6m Azi: 224.84°

SILTSTONE: olv gry-brn-lt gy, mod calc, com pyr, com lit frag, sft-v hd, blk-sbfis

CLAYSTONE: olv gy-mod olv brn, mod calc, sli slty, tr wh calc spar incl, tr carb mat, sft, mass-amor



WOB: 1-8 Kftlbs  
 RPM: 20-177  
 GPM: 290-1006  
 SPP: 915-2045 psi

MD: 1053.62m Inc: 2.63°  
 TVD: 1053.4m Azi: 224.67°

SANDSTONE: cir-transl, lt smky gry, fros, w/ mod abd fspr, f-v crs, sbang-sbrndd, p srt (binodal), nod & dissem pyr, tr musc, disagg w/ mnr pyr cmt f-m sd agg, n fluor

MD: 1083.09m Inc: 2.60°  
 TVD: 1082.9m Azi: 225.86°

SANDSTONE: cir-transl, lt smky gry, fros, w/ mod abd fspr, f-v crs, sbang-sbrndd, p srt (binodal), nod & dissem pyr, tr musc, disagg w/ mnr pyr cmt f-m sd agg, n fluor

SILTSTONE: dk gry-olv gry, sli calc I.P, loc v arg grd slty Clst I.P, sli aren, micr mic, tr carb spks, tr lit frag

MD: 1112.27m Inc: 2.75°  
 TVD: 1112.0m Azi: 224.69°

MD: 1141.27m Inc: 2.61°  
 TVD: 1141.4m Azi: 223.95°

CLAYSTONE: dk gry-brn blk, mod slty, sli calc I.P. com carb/c frag, micr mic, tr musc, sft-plas, mass-blky I.P.

MD: 1171.39m Inc: 2.66°  
 TVD: 1171.1m Azi: 223.80°

SANDSTONE: cir-trnsl, fros, smky gy, f-m gr, mnr crs, tr v crs, sbang-sbrndd, p-mod srt, arg mtrx I.P. dissem & nod pyr, mnr carb mat, tr Fe stn qtz, fri-pred disagg, p-fr por, n f

WOB: 1-14 Kftlbs  
RPM: 94-177  
GPM: 801-961  
SPP: 1249-1877 psi

WOB: 2-17 Kftlbs  
RPM: 80-130  
GPM: 801-903  
SPP: 1358-1724 psi

1200  
1210  
1220  
1230  
1240  
1250  
1260  
1270  
1280  
1290  
1300  
1310  
1320  
1330

MD: 1200.78m Inc: 2.64°  
TVD: 1200.4m Azi: 223.80°

CLAYSTONE: m-dk gy, mod slty, sli calc  
I.P. com pyr, mnr carb spks, sft-plas,  
mass-blky I.P.

MD: 1230.79m Inc: 2.72°  
TVD: 1230.4m Azi: 225.15°

SANDSTONE: clr-trnsl, fros, smky gy,  
f-m gr, mnr crs, tr v crs, sbang-sbrndd,  
p-mod srt, arg mtrx I.P. dissem & nod  
pyr, mnr carb mat, tr Fe stn qtz, fri-pred  
disagg, fr por, n flu

MW: 9.65 ppg FV: 74  
PV: 23 Gel: 9/14/15  
YP: 27 pH: 8.5

COAL: blk, sbbit, dll-sbvit lstr, plty fract,  
brit, blk-pty I.P

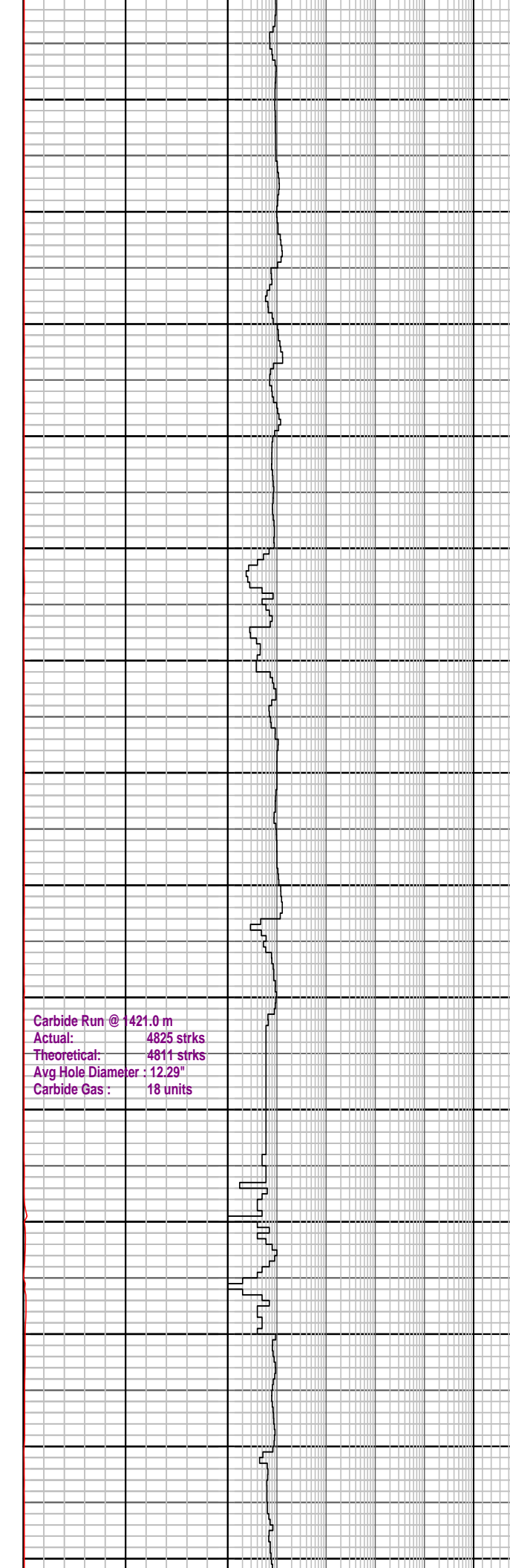
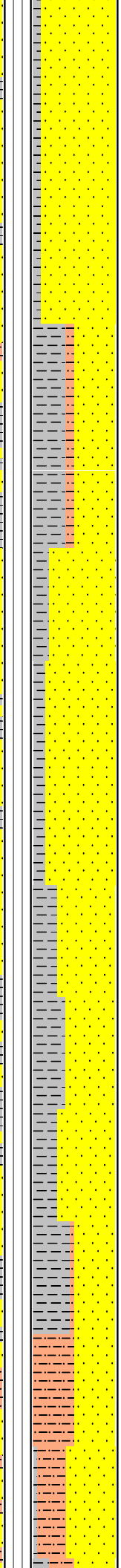
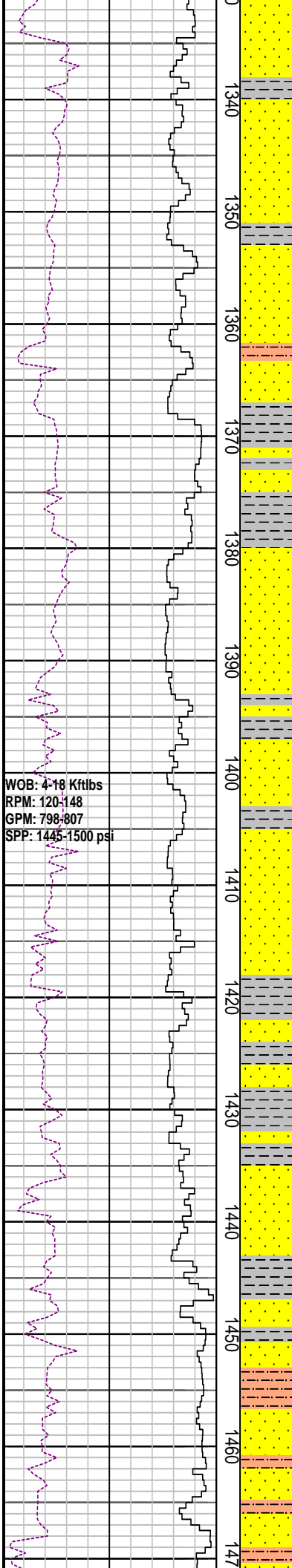
CLAYSTONE: m-dk gy, mod slty, sli calc  
I.P. com pyr, mnr carb spks, sft-plas,  
mass-blky I.P

MD: 1288.88m Inc: 2.77°  
TVD: 1288.4m Azi: 225.56°

SANDSTONE: clr-trnsl, fros, smky gy,  
m-crs gr, sbang-sbrndd, mod srt, arg  
mtrx I.P. dissem pyr cmt & nod pyr, com  
carb mat, micr mic, tr Fe stn qtz, p por, n  
fluor

MD: 1318.86m Inc: 2.69°  
TVD: 1318.4m Azi: 226.89°

CLAYSTONE: dk gy-brn blk, mod slty  
grd to Arg Sltst I.P, mnr carb mat & carb  
micr lam, sft-plas, mass-amor



**SANDSTONE:** qtz, clr-trnsl, fros, smky gy, m-crs gr, ang-sbrnidd, rddd I.P. mod srt, slty arg mtrx I.P, dissemin pyr cmt & nod pyr, tr carb mat, micr mic, tr fspr, p por, n fluor

**CLAYSTONE:** dk gy-brn blk, sli slty, mnr carb mat & carb micr lam, sft-plas, mass-amor

**SILTSTONE:** dk gy-brn gy, mod calc, loc v arg grd slty Clst I.P, micr mic, tr carb spks, tr lit frag, sft, blk

**SANDSTONE:** qtz, clr-trnsl, fros, smky gy, m-crs gr, sbang-sbrnidd, rddd I.P. mod srt, slty arg mtrx I.P, tr nod pyr, tr musc, tr carb mat, micr mic, tr fspr, p por, n fluor

**CLAYSTONE:** dk gy-brn gy, sli slty, gd to Slst, mnr carb mat & carb micr lam, sft-plas, mass-amor

MD: 1407.48m	Inc: 2.91°
TVD: 1406.9m	Azi: 229.04°

Carbide Run @ 1421.0 m  
 Actual: 4825 strks  
 Theoretical: 4811 strks  
 Avg Hole Diameter : 12.29"  
 Carbide Gas : 18 units

**CLAYSTONE:** dk gy-dk brn gy, mod-v slty arg mtrx, gd to Slst I.P. mnr carb mat & carb micr lam, sft-plas, mass-amor

MD: 1436.37m	Inc: 2.94°
TVD: 1435.7m	Azi: 228.54°

MW: 9.6 ppg	FV: 76
PV: 12	Gel: 9/14/17
YP: 49	pH: 9.5

**SILTSTONE:** dk gy-brn gy, mod calc, loc arg mtrx, grd slty Clst I.P, micr mic, tr carb spks, tr lit frag, sft, blk

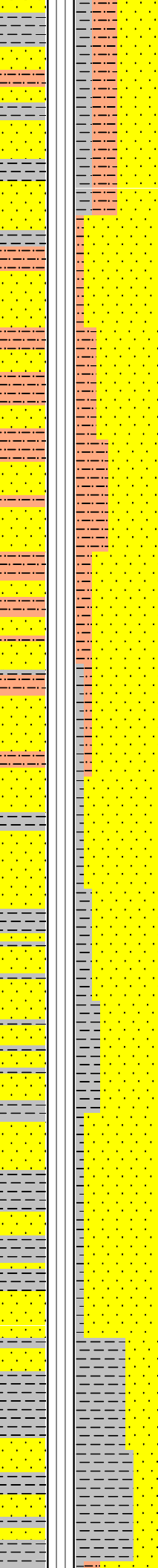
MD: 1465.90m	Inc: 3.02°
TVD: 1465.2m	Azi: 227.97°

21/12/2008

WOB: 1-18 Kftlbs  
RPM: 98-148  
GPM: 800-925  
SPP: 1470-1950 psi

WOB: 9-26 Kftlbs  
RPM: 117-170  
GPM: 803-1008  
SPP: 1437-2267 psi

0  
1480  
1490  
1500  
1510  
1520  
1530  
1540  
1550  
1560  
1570  
1580  
1590  
1600  
1610



CLAYSTONE: dk gy- brn gy, mod calc, slty arg mtrx, gd to Slst I.P. mnr carb mat & carb micr lam, sft-plas, mass-amor

SANDSTONE: qtz, clr-trnsl, smky gy, f-crs gr, ang-sbrnnd, rndd I.P. mod srt, slty arg mtrx I.P, tr musc, tr carb mat, micr mic, p por, n fluor

MD: 1495.44m Inc: 3.02°  
TVD: 1494.2m Azi: 227.27°

SILTSTONE: dk gy- lt brn gy, mod calc, loc arg mtrx, micr mic, tr carb spks, tr lit frag, sft, blkly

SANDSTONE: qtz, clr-trnsl, lt gy, v f-f gr, ang-sbrnnd, mod srt, slty arg mtrx I.P, tr carb mat, micr mic, p por, n fluor

MD: 1525.13m Inc: 3.06°  
TVD: 1524.4m Azi: 228.31°

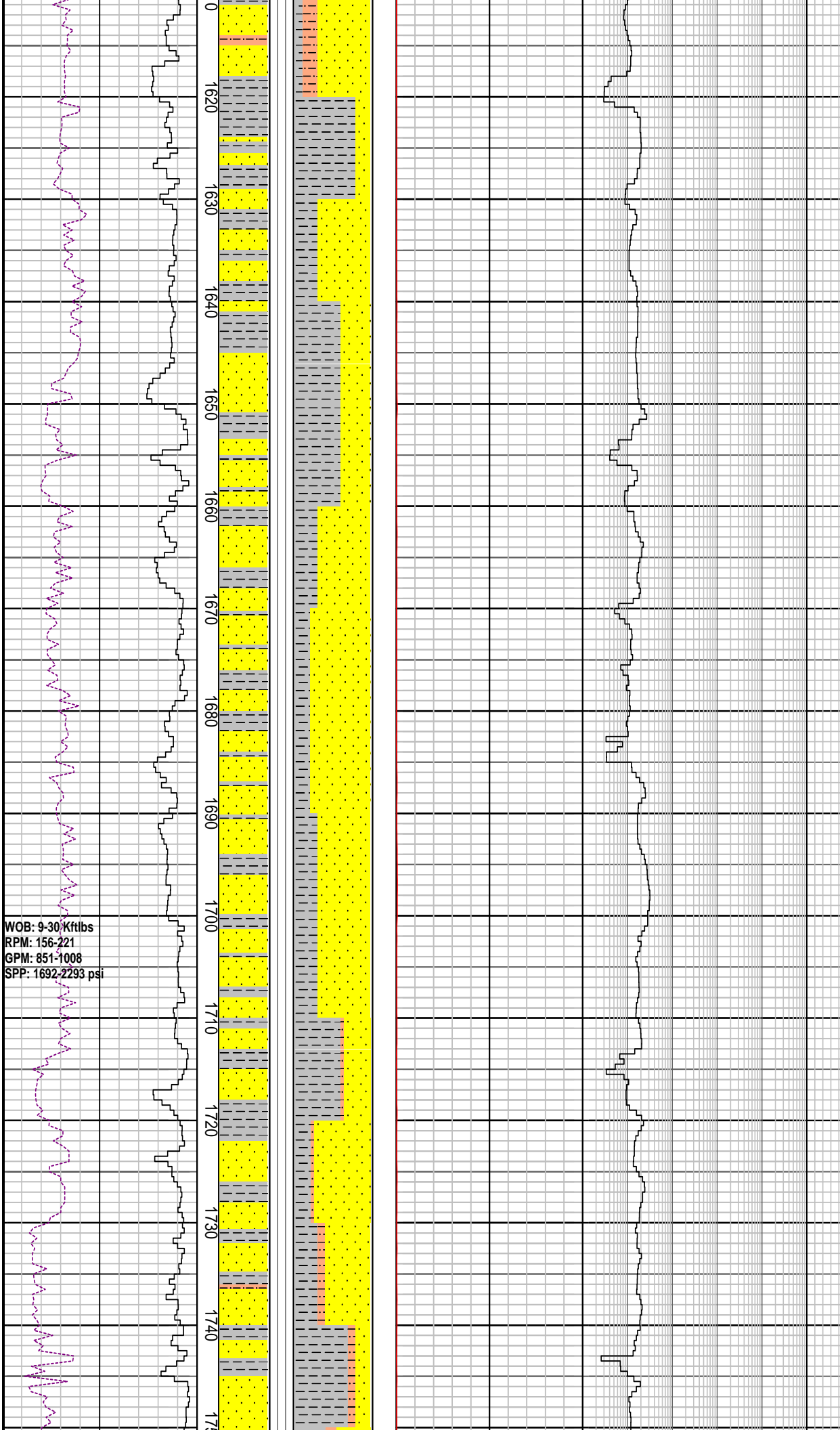
SANDSTONE: qtz, clr-trnsl, fros, f-m gr, mnr v crs, sbang-sbrnnd, mod srt, wk calc cmt I.P, tr nod pyr, tr glau, com carb/c frag, occ crs mlky flt, occ rd lit frag, disagg, fr por,

MD: 1554.71m Inc: 3.12°  
TVD: 1553.9m Azi: 227.55°

CLAYSTONE: brnsh gy-olv gry, yel gy I.P, loc v slty grd to Arg Stlst I.P, sli aren I.P, tr lit frag, com carb mat, micr mic, sft-plas, mass-blky

MD: 1584.40m Inc: 3.16°  
TVD: 1583.6m Azi: 227.33°

SANDSTONE: qtz, clr-trnsl, fros, f-m gr, mnr v crs, sbang-sbrnnd, mod srt, loc mod stg dolcalc cmt, tr nod pyr, com carb mat, tr crs mlky flt, tr lit frag, disagg, fr por, n fluor



SILTSTONE: pl yel brn, mod sil, mor arg, tr carb frag, tr lit frag, tr musc, sli chlor, hd, blkly

MD: 1614.18m Inc: 3.15°  
 TVD: 1613.3m Azi: 227.26°

CLAYSTONE: m dk gy-dk gy, v slty grd to Arg Sitst I.P, sli aren I.P, tr lit frag, mnr carb mat, micr mic, sft-plas, mass-blky

MD: 1643.45m Inc: 3.22°  
 TVD: 1642.5m Azi: 227.15°

SANDSTONE: qtz, clr-trnsl, fros, f-m gr, mnr v crs, sbang-sbrndd, mod srt, loc stg dol/sil cmt, tr nod pyr, com carb mat, mnr crs mlky flt, mod hd agg, disagg, v p-fr por, n fluor

CLAYSTONE: m dk gy-dk gy, slty, sli aren I.P, tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

WOB: 9-30 Kftlbs  
 RPM: 156-221  
 GPM: 851-1008  
 SPP: 1692-2293 psi

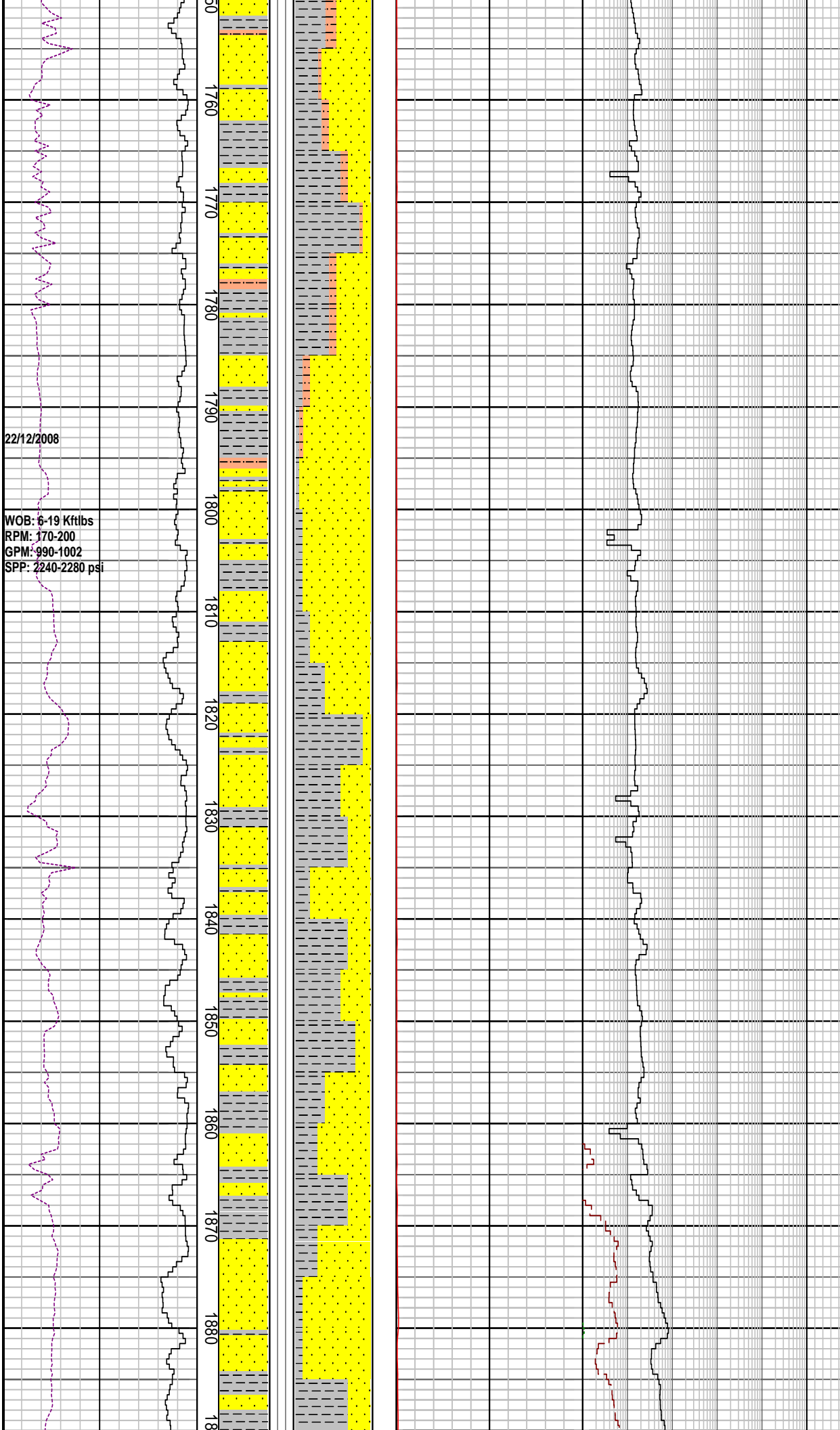
MW: 9.6 ppg FV: 69  
 PV: 21 Gel: 10/14/16  
 YP: 35 pH: 9.0

SANDSTONE: qtz, clr-trnsl, fros, f-m gr, mnr v crs, sbang-sbrndd, mod srt, loc stg dolcalc cmt, tr nod pyr, com carb mat, mnr crs mlky flt, tr lit frag, disagg, fr por, n fluor

MD: 1732.53m Inc: 3.23°  
 TVD: 1731.5m Azi: 229.06°

MW: 9.65 ppg FV: 76  
 PV: 21 Gel: 10/14/17  
 YP: 34 pH: 9.0

SANDSTONE: qtz, clr-trnsl, fros, v f-m, sbang-sbrndd, mod-wl srt, loc dolcalc cmt, occ pyr cmt, tr m nod pyr, tr m mlk



22/12/2008  
 WOB: 6-19 Kftlbs  
 RPM: 170-200  
 GPM: 990-1002  
 SPP: 2240-2280 psi

MD: 1761.71m Inc: 3.31°  
 TVD: 1760.6m Azi: 229.32°

CLAYSTONE: m dk gy-dk gy, slty, sli aren I.P, tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

MD: 1791.33m Inc: 3.27°  
 TVD: 1790.2m Azi: 229.40°

SANDSTONE: qtz, clr-trnsl, fros, v f-m, sbang-sbrndd, mod-wl srt, loc dolcalc cmt, occ pyr cmt, tr m nod pyr, tr m mlky qtz fit, mnr hd dol cmt f agg, v p-fr por, n fluor

MD: 1820.98m Inc: 3.35°  
 TVD: 1819.8m Azi: 229.44°

CLAYSTONE: m dk gy-dk gy, slty, sli aren I.P, tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

CLAYSTONE: m dk gy-olv blk, slty grd to Arg Slst I.P, tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

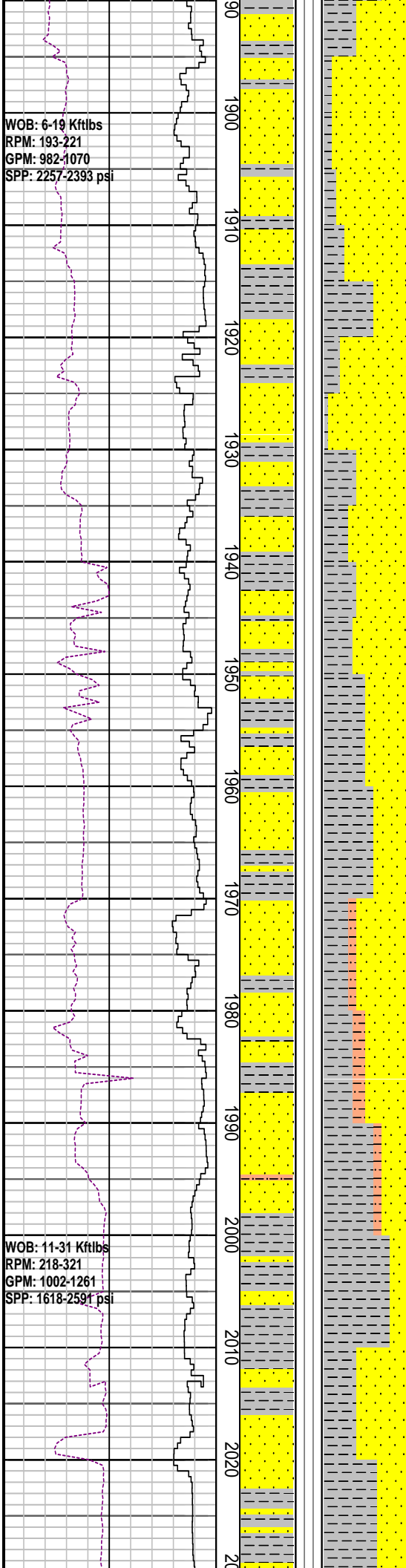
SANDSTONE: qtz, clr-trnsl, f-m gr, sbrndd-rndd, wl srt, loc dolcalc cmt, tr nod pyr, mnr kao, tr m mlky qtz fit, disagg p-fr por, n fluor

MD: 1880.19m Inc: 3.46°  
 TVD: 1878.9m Azi: 227.97°

qtz fit, mnr hd dol cmt f agg, v p-fr por, n fluor

WOB: 6-19 Kftlbs  
 RPM: 193-221  
 GPM: 982-1070  
 SPP: 2257-2393 psi

WOB: 11-31 Kftlbs  
 RPM: 218-321  
 GPM: 1002-1261  
 SPP: 1618-2591 psi



Carbide Run @ 982.0 m  
 Actual: 6500 strks  
 Theoretical: 6445 strks  
 Avg Hole Diameter : 12.35"  
 Carbide Gas : 30 units

CLAYSTONE: m dk gy-olv blk, slty grd to Arg Sltst I.P, tr lit frag, tr carb mat, micr mic, sft-plas, mass-blky

SANDSTONE: qtz, clr-trnsl, v f-f gr, com m gr, sbang-sbrndd, wl srt, loc dolcalc cmt, tr sil cmt, tr nod pyr, tr carb mat, tr Fe stn, tr f mlky qtz flt, disagg, p por, n fluor

MW: 9.7 ppg      FV: 52  
 PV: 15            Gel: 11/16/19  
 YP: 34            pH: 8.8

MD: 1939.47m      Inc: 3.51°  
 TVD: 1938.0m     Azi: 227.37°

CLAYSTONE: m dk gy-olv blk, slty grd to Arg Sltst, sli calc, mnr carb spk, micr mic, sft-plas, mass-blky

SANDSTONE: qtz, clr-trnsl, v f-m gr, mnr crs gr, sbang-sbrndd, wl srt, loc dolcalc cmt, tr stg sil cmt, tr nod & dissem pyr, com carb mat, tr Fe stn, tr f mlky qtz flt, disagg, p-f

CLAYSTONE: m dk gy- brn gy, slty grd to Arg Sltst, sli calc, mnr carb spk, micr mic, sft-plas, mass-blky

SANDSTONE: qtz, clr-trnsl, v f-m, ang-sbrndd f gr, mod-wl srt, loc dolcalc/sil cmt, tr stg sil cmt, tr nod & dissem pyr, com carb mat, p-f por, n fluor

MD: 2028.16m      Inc: 3.39°



TVD: 2026.6m Azi: 229.51°

CLAYSTONE: m dk gy- brn gy, slty grd to Arg Sltst, sli calc, mnr carb spk, micr mic, sft-plas, mass-blky

MD: 2057.35m Inc: 3.37°  
TVD: 2055.7m Azi: 231.70°

SANDSTONE: qtz, clr-trnsl, v f-m, sbang-sbrndd, mod-wl srt, loc dolcalc/sil cmt, tr stg sil cmt, tr nod & dissep pyr, com carb mat, tr Fe stn, p-f por, n fluor

MD: 2086.92m Inc: 3.34°  
TVD: 2085.2m Azi: 227.82°

MW: 9.7 ppg FV: 53  
PV: 13 Gel: 11/17/20  
YP: 38 pH: 9.0

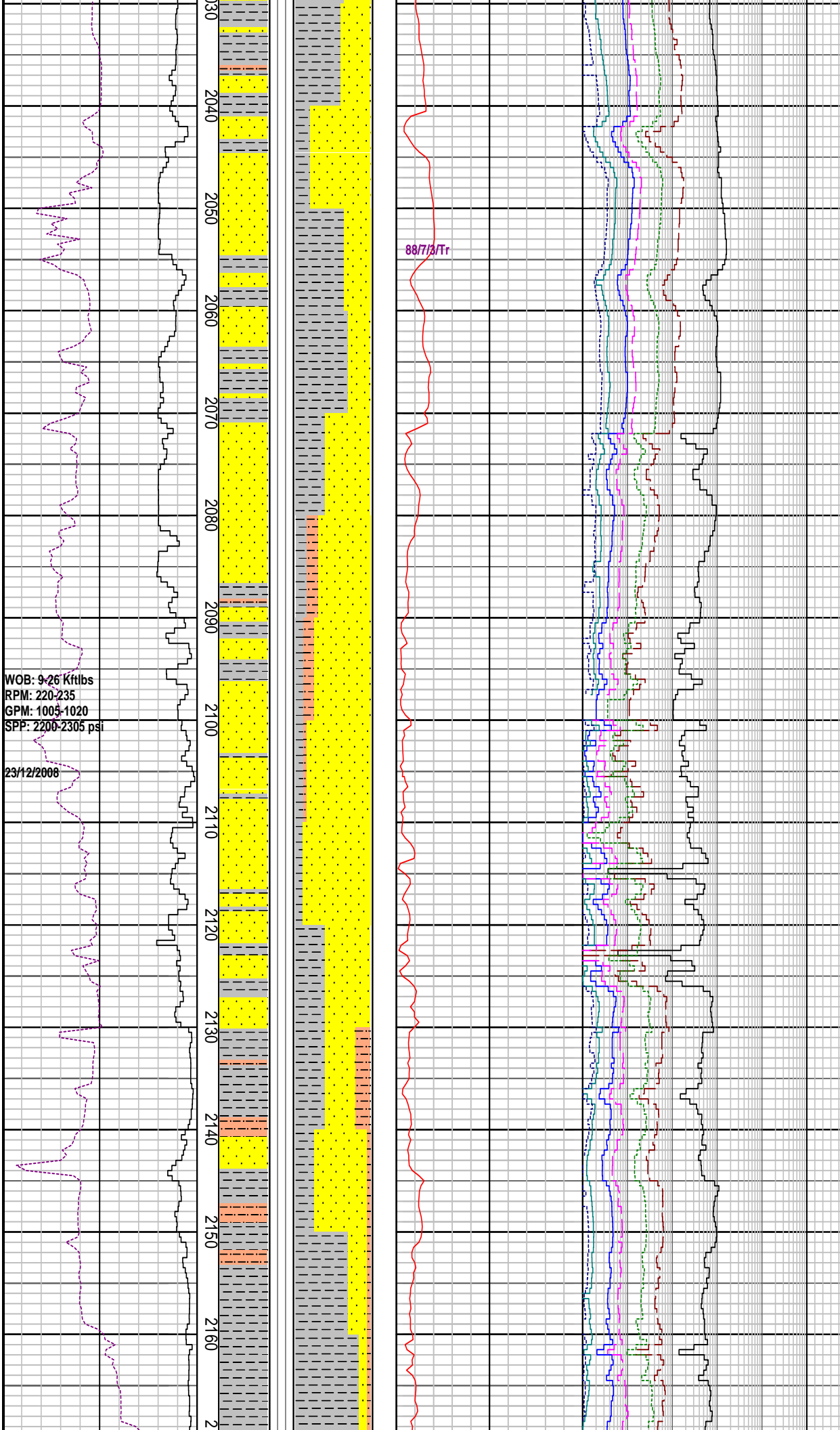
SANDSTONE: qtz, dull gy-lt yel brn, clr-trnsl, v f-m crs, sbang-sbrndd, v wl srt, loc dolcalc/sil cmt, tr stg sil cmt, tr nod & dissep pyr, com carb mat, tr Fe stn, p-f por, n fluo

MD: 2116.75m Inc: 3.44°  
TVD: 2115.0m Azi: 227.04°

SANDSTONE: qtz, trnsp-trnsl, v f-m, sbang-sbrndd, v wl srt, loc dolcalc/sil cmt, tr nod & dissep pyr, com carb mat, tr Fe stn, p-f por, n fluo

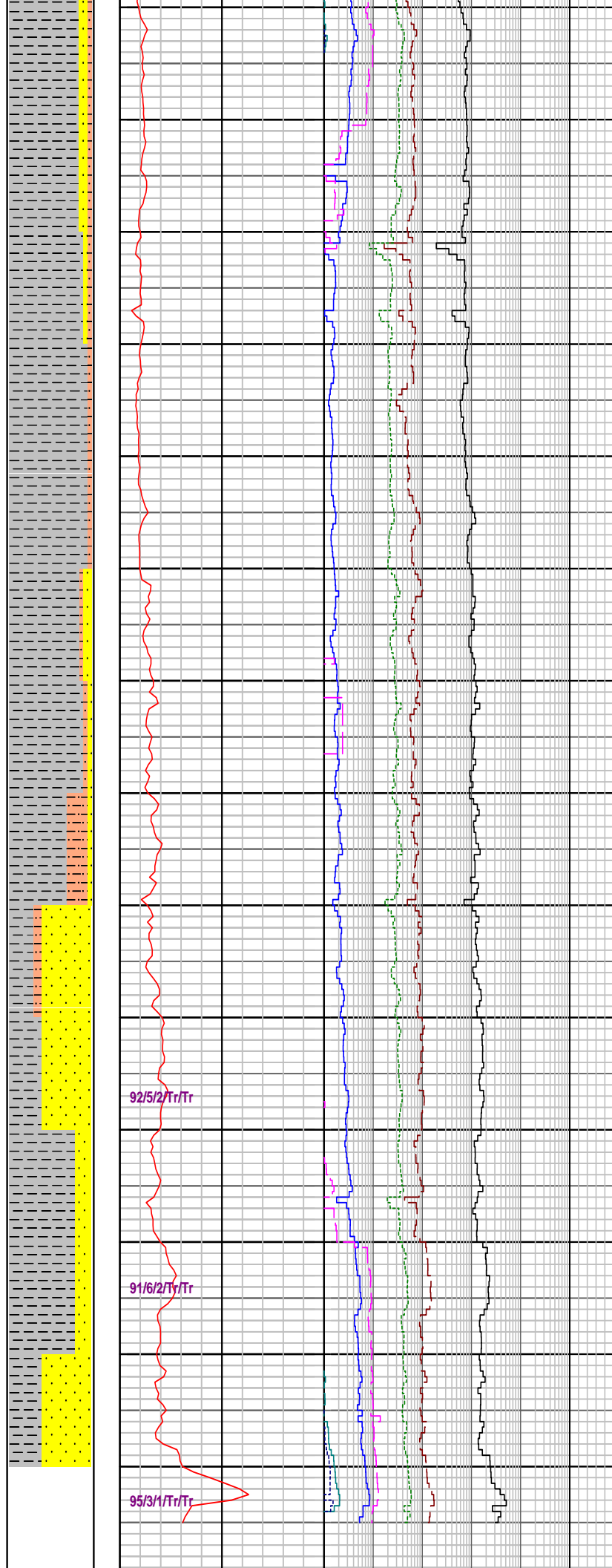
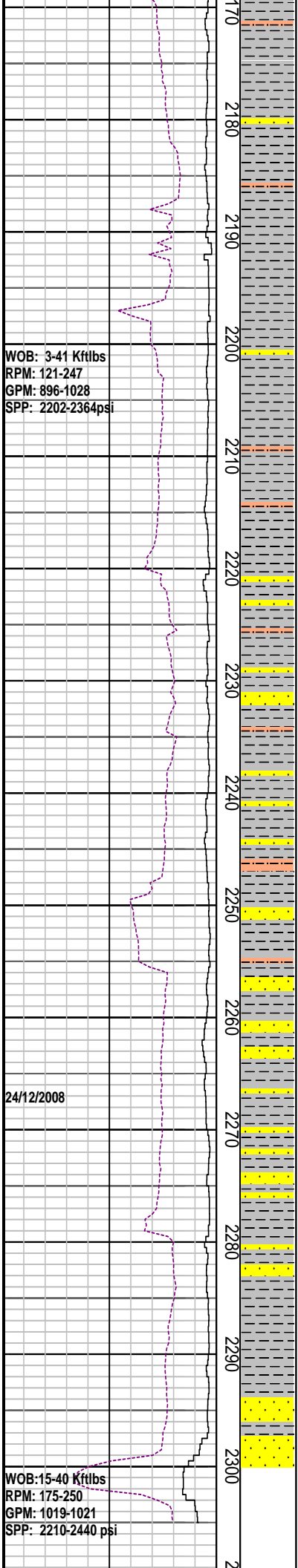
MD: 2146.4m Inc: 3.29°  
TVD: 2144.6m Azi: 227.47°

SILTSTONE: dk gy-blk, v hd, sbblky-blky, splin, occ elong, fis I.P. non calc



WOB: 9-26 Kftlbs  
RPM: 220-235  
GPM: 1005-1020  
SPP: 2200-2305 psi

23/12/2008



MD: 2175.52m Inc: 3.42°  
TVD: 2173.2m Azi: 228.06

CLAYSTONE: m dk gy-lt gy, sity grd to Arg Sltst, sli calc, mnr carb spk, micr mic, sft-plas, mass-blky

SILTSTONE: dk gy-blk, v hd, sbblky-blky, splin, occ elong, fis I.P. non calc

MW: 9.7 ppg FV: 49  
PV: 14 Gel: 12/10/21  
YP: 31 pH: 9.0

MD: 2235.0m Inc: 3.46°  
TVD: 2233.0m Azi: 227.38°

CLAYSTONE: dk gy- m dk gy, sft- m hd, ang-sbrndd, wl srt, sity grd to Arg Sltst, sli calc, mnr carb spk, micr mic, mass-blky

MW: 9.7 ppg FV: 49  
PV: 14 Gel: 11/17/20  
YP: 34 pH: 9.0

SANDSTONE: smky qtz, trnsp-trnsl, v f gr, ang-sbrndd, v wl srt, loc dolcalc/sil cmt, tr nod & dissem pyr, com carb mat, p-f por, n fluor

MD: 2264.44m Inc: 3.46°  
TVD: 2262.0m Azi: 227.56°

SANDSTONE: smky qtz, trnsp-trnsl, v f gr, sbang-sbrndd, p-wl srt, loc dolcalc/sil cmt, tr nod & dissem pyr, com carb spks, p-f por, n fluor

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# FORMATION EVALUATION LOG

DRILLING PARAM		MD meters 1:500	Oil Show P F G	LITHOLOGY %	CORE	TOTAL GAS	CHROMATOGRAPH	Calimetry	Lithology Description
ROP (m/hr)	WEIGHT ON BIT (klbf)					Total Gas (unit)	Methane ppm		
200	160	120	80	40		10   20   30   40   50	1 Methane ppm 100000		
							1 Ethane ppm 100000		
							1 Propane ppm 100000		
							1 iso-Butane ppm 100000		
							1 n-Butane ppm 100000		
							1 iso-Pentane ppm 100000		
							1 n-Pentane ppm 100000		