





WOB: 30-35 klbs  
 RPM: 65  
 SPP: 2700-2790 psi  
 FLW: 557-573 gpm

WOB: 30-35 klbs  
 RPM: 65  
 SPP: 2650-2700 psi  
 FLW: 547-563 gpm

CALCAREOUS CLAYSTONE: it-med gry, grnsh gry, lt brn, occ dk brn, com glauc grs, tr, liths, tr foss frags, tr pyr, sft-mod hd, sbbkly.

CALCAREOUS SILTSTONE: med gry, mod brn/gry, tr liths, mod hd-frn, occ hd, sbbkly.

SURVEY @ 2111.10m: 15.99° 111.66°

CALCAREOUS CLAYSTONE: it-med gry, grnsh gry, lt brn, occ dk brn, com glauc grs, tr, liths, tr foss frags, tr pyr, sft-mod hd, sbbkly.

SAMPLE CONTAMINATED WITH BARACARB

LATROBE COARSE CLASTICS: 2124.5mMD (-1167mSS)

CONTROLLED DRILLING FROM 2126m

SANDSTONE: trnsl, lt gry, dom med-v crs, occ vf aggs, pr srt, sbang-ang, tr mod strg sil cmt, mnr off wh arg mt, tr pyr, tr glauc, tr foss frags, com lse clr qtz, mod hd-occ hd aggs, pr v por, fr-gd inf por, tr 5% fluor.

2129-2133m: Tr-5% dll brn/yel ptchy fluor, tr pl yel c/c, thk r/r.  
 2133-2139m: Tr-rr fluor as above.

SANDSTONE: clr-trnsl, lt gry, med-v crs, pr srt, sbang-ang, tr wk sil cmt, tr glauc, tr pyr, gen lse & cln, fr-gd inf por, tr fluor.

SURVEY @ 2139.98m: 13.98° 108.53°

SAMPLE CONTAMINATED WITH BARACARB MUD ADDITIVE

NO CO2  
 NO H2S

SANDSTONE: clr-trnsl, med-v crs, dom med-crs, pr srt, sbang, tr pyr, tr glauc, gen lse & cln, gd inf por, no fluor.

SANDSTONE: clr-trnsl, med-crs, mod pr srt, sbang, tr-loc com pyr, gen lse & cln, gd inf por, tr fluor.

2148-2151m: Tr dll yel ptchy fluor, tr pl yel c/c, thk flm.

2110

2120

2130

2140

2150

99/1

99/1

99/1

WOB: 21-25 klbs  
RPM: 65  
SPF: 2600-2700 psi  
FLW: 540-560 gpm

MW: 10.45  
FV: 60  
PV: 26  
YP: 38  
Gels: 9/13/19  
WL: 5.4  
CK: 1  
Sol: 8.6  
pH: 9.50  
Cl: 38k

WOB: 25-28 klbs  
RPM: 65  
SPF: 2600-2700 psi  
FLW: 540-560 gpm

2160  
2170  
2180  
2190  
2200  
2210

100 % C1

100 % C1

1 10 100 1K 100 1K 10K

96 / 4

96 / 4

97 / 3

96 / 4

96 / 4

97 / 3

97 / 3

SANDSTONE:clr-trnsl,med-crs, mod pr srt,sbang,tr-loc com pyr,gen lse & cln,gd inf por.

SURVEY @ 2168.79m: 9.86° 104.21°

NO CO2  
NO H2S

SANDSTONE:clr-trnsl,off wh,lt gry,mnr brn,f-crs,pr srt,sbang-sbrnd i/p,tr-loc com dol cmt,tr pyr,gen lse, com hd aggs,pr vis por,gd inf por, com min fluor only.

CLAYSTONE:lt gry/gry,med brn/gry, rr micro carb spks & off wh liths,frm sbbkly.

SANDSTONE:clr-trnsl,frstd i/p,f-v crs,v pr srt,sbrnd-sbang,com ang, lse,fr-gd inf por,no fluor.

Rmf: 0.15 ohm @ 75°F

SURVEY @ 2197.64m: 6.92° 99.24°

LATROBE N. ASPERUS:  
2196mMD (-1238mSS)

COAL:dk brn,v dk brn-blk,dll,mnr sbvit i/p,sity,frm-mod hd i/p,sbfiss-sbbkly,hckly-avn i/p.

SILTSTONE:med brn,brn/gry,arg,wk calc,tr aren,com off wh liths,occ carb spks,mnr micmic,frm,sbbkly.

SANDSTONE:clr-trnsl,frstd,f-med, com v crs,mod pr srt,occ pyr,lse,fr-gd inf por,no fluor.

CLAYSTONE:lt-med gry/grn,lt-med gry/brn,mnr glauc & off wh liths,frm, sbbkly-sbfiss.

SANDSTONE:clr-trnsl,lt gry,frstd, f-crs,occ v crs,pr srt,sbang-sbrnd, occ ang,occ mod strg sil & mnr mod wk calc cmt i/p,rr lt gry arg mtx i/p, pred lse,mnr mod hd aggs,pr-v pr vis por,fr-gd inf por,no fluor.

COAL:dk brn,v dk brn-blk,dll-ea, sity,frm,sbbkly-sbfiss i/p,hckly-avn i/p.

SANDSTONE:clr-trnsl,frstd,lt gry-trnsl,f-crs,occ v crs,pr srt,com mod strg sil cmt,rr off wh arg mtx i/p,mnr liths,occ nod pyr,pred lse,mnr mod hd-fri aggs,pr-v pr vis por,fr-gd inf por,no fluor.

WOB: 27-32 klbs  
RPM: 70  
SPP: 2670-2720 psi  
FLW: 540 gpm

WOB: 29-34 klbs  
RPM: 70  
SPP: 2670-2720 psi  
FLW: 540 gpm

2220  
95 / 5 / Tr  
2230  
96 / 4 / Tr  
2240  
96 / 4 / Tr  
2250  
96 / 4 / Tr  
2260  
92 / 8 / Tr  
2270  
89 / 9 / 1 / 1

1 10 100 1K 100 1K 10K

NO CO2  
NO H2S  
NO CO2  
NO H2S

SILTSTONE: med brn, gry/brn, arg, wk calc, aren, com off wh liths, com carb spks i/p, frm-mod hd, sbbly-sbfiss.

SURVEY @ 2226.47m: 3.33° 92.87°

CLAYSTONE: lt-med gry, lt gry/grn, mnr glauc, tr micmic, frm-mod hd, sbbly-sbfiss.

COAL: v dk brn-blk i/p, dll-ea, stly, grd to carb SLTST i/p, frm, sbbly-sbfiss, hckly-evn.

SANDSTONE: clr-trnsl, frstd i/p, f-crs, sbang-ang, occ sbrnd, tr carb spks, lse, fr-gd inf por, no fluor.

SILTSTONE: med brn, tn, arg, aren i/p, wk calc, occ carb spks & micrlams, occ offwh liths, micmic i/p, frm-mod hd, sbbly-sbfiss.

CLAYSTONE: lt gry, lt gry/grn, mnr glauc, tr off wh liths, frm, sbbly.

SANDSTONE: clr-trnsl, f-med, mod wl srt, sbang-sbrnd, tr pyr, lse, fr-gd inf por, no fluor.

CARB SILTSTONE: dk brn, arg, carb, grd to COAL i/p, rr off wh liths, frm, sbbly-sbfiss i/p.

SANDSTONE: clr-trnsl, frstd, f-med, occ crs, mod pr srt, sbang-sbrnd, tr pyr, lse, fr-gd inf por, no fluor.

CLAYSTONE: lt-med gry, mnr carb spks & off wh liths, frm, sbbly-sbfiss

SURVEY @ 2255.27m: 1.11° 90.43°

COAL: dk brn, v dk brn-blk, dll-ea, stly, frm, sbbly-sbfiss i/p, hckly-evn i/p.

CARB SILTSTONE: dk-v dk brn, arg, carb, grd to COAL i/p, tr off wh liths, frm, sbfiss-sbbly.

SANDSTONE: clr-trnsl, wh, off wh, occ lt brn, crse-fn, dom med, mod srt, sbang-sbrnd, tr pyr, gen lse, pr vis por, gd inf por, min flour only.

SANDSTONE: clr-trnsl, mod std, f-med, occ crs, mod pr srt, sbang-sbrnd, tr pyr, lse, fr-gd inf por, min flour only.

WOB: 29-34 klbs  
RPM: 70  
SPF: 2670-2720 psi  
FLW: 540 gpm

2280

2290

2300

2310

2320

84 / 11 / 3 / 2

86 / 9 / 2 / 3

83 / 10 / 4 / 3

SANDSTONE:clr-trnsl,wh,off wh,  
occ lt brn,crse-fn,dom med,mod  
srt,sbang-sbrnd,tr pyr,gen lse,  
pr vis por,gd inf por,min  
four only.

SURVEY @ 2284.1m: 0.92° 88.16°T

SANDSTONE:clr-trnsl,off wh,f-  
crs,com med,pr srt,sbang-sbrnd,  
tr pyr,tr foss frag,gen lse,  
pr vis por,gd inf por,min four  
only.

CALCAREOUS SILTSTONE:lt gry,lt  
brn,aren i/p,tr glauc,tr pyr,  
sft-mod hd,sbbiky.

NO CO2  
NO H2S

SANDSTONE:clr,trnsl,f-crs,com  
med,v pr-mod srt,sbang-sbrnd,  
tr pyr,tr foss frag,tr glauc,  
lse,pr vis por,gd inf por,min  
four only.

CALCAREOUS SILTSTONE:lt brn-  
dk brn,lt gy,aren i/p,tr glauc,  
sft-mod hd,occ hd,sbbiky.

SANDSTONE:clr-trnsl,off wh i/p,  
pred med-crs,occ f & v crs grns,  
sbang-sbrnd,tr pyr,tr lt brn liths,  
pred cln & lse,occ fri aggs,fr-gd  
inf por,no fluor.

1 10 100 1K 100 1K 10K

