



**RATE OF PENETRATION**  
metres/hour

500 50 5 .5

**DEPTH (m)**  
3580  
3584  
3588  
3592  
3596  
3600  
3604  
3608  
3612  
3616  
3620  
3624  
3628  
3632  
3636  
3640  
3644  
3648  
3652  
3656  
3660  
3664  
3668  
3672  
3676  
3680  
3684  
3688  
3692  
3696  
3700  
3704  
3708  
3712  
3716  
3720  
3724  
3728  
3732  
3736  
3740  
3744  
3748  
3752  
3756  
3760  
3764  
3768  
3772  
3776  
3780  
3784  
3788  
3792  
3796  
3800  
3804  
3808  
3812  
3816  
3820

**CUTTINGS LITHOLOGY**  
%

0 100 .01 5 10 50 100 500 1000

**TOTAL GAS & CHROMATOGRAPH DATA**

C1 --- C2 --- C3 ---  
iC4 --- iC5 --- TG ---  
nC5 ---

Total Gas in Units Chromatograph Percent

5000 10000 20000 30000 40000 50000 60000 70000 80000 90000 100000

**DIRECT FLUOR**

0 100

**LITHOLOGICAL DESCRIPTIONS and REMARKS**  
Depth From (m): 3580 To: 3820  
Scale 1: 200  
**BLACKBACK A-2**

gry, calc, sft-fm, mod hard i/p  
sbbiky-amorph.

CLAYSTONE: lt gry, lt-med gry,  
mod calc, tr glauc, v sft-fm,  
sbbiky-amorph.

SILTSTONE: dk brn, brn/blk, brn/  
gry, v arg g/t arg SLTST, tr-loc  
com pell glauc, micmic, tr v f  
qtz, sft-stcky, mass.

SANDSTONE: clr-trnsl, frstd, f-  
pred med-crs, ang-sa, pr srt,  
cln, tr nod pyr, dissagg, v gd  
por, no fluor.

SANDSTONE: clr-trnsl, pred med,  
occ crs, sa-ang, occ sr, pr srt,  
com crs mlky qtz, dssagg, tr  
pyr, gd por, no fluor.

SANDSTONE: clr-trnsl, frstd,  
med-crs, occ v crs, ang-sa, pr-  
mod srt, cln, tr nod pyr, com  
glauc, occ limt stnd qtz,  
dissagg, gd pr.

FLUOR: 3688m-3721m  
tr-10%, dull-mod brt, ptchy-pnpt  
yel/gn fluor, fnt wk inst cut,  
nil-tr rr.

SILTSTONE: brnsh/gry, brnsh blk,  
arg, tr micmic, abd glauc, tr  
liths, v sft-fm i/p, pred amor,  
mass.

SANDSTONE: clr-trnsl, frstd, med-  
crs, ang-sr, pr srt, str sil cmt  
i/p, tr pyr cmt, loc com kao  
incl, com glauc, com v crs mlky  
qtz, tr Fe stnd qtz, disagg, occ  
hd aggs, pr-fr por, fluor.

FLUOR: 3721m-3740m  
10-20%, brt pl yel sol fluor, fst  
strming cut, mod thick rr.

CLAYSTONE: dk gry, brn gry, sli  
sity, micmic, homo, frm, mod hd,  
biky-pity.

RUN E-LOGS: PEX(AIT)-HNGS  
Loggers depth: 3766m

SANDSTONE: clr-trnsl, frstd, med-  
crs, ang-sa, mod srt, tr sil  
cmt, com kaol mtx/incl, com v  
crs mlky qtz, tr-com glauc,  
dissagg, fr-gd por, no fluor.

SANDSTONE: clr-trnsl, frstd, med-  
crs, sr-ang, mod pr srt, tr mod  
sil cmt, com-abd kaol mtx/incl,  
com v crs mlky qtz, tr-com  
glauc, dissagg, fr-gd por, no  
fluor.

WOB: 17 kilb  
RPM: 150  
SPP: 4304 psi  
Flow: 739 gpm

47.68° incl  
204.71° az

47.58° incl  
204.82° az

47.58° incl  
204.90° az

48.88° incl  
204.95° az

50.28° incl  
204.75° az

49.88° incl  
204.69° az

46.93° incl  
204.62° az

49.10° incl  
204.34° az

48.80° incl  
204.34° az

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Bit #6, 12 1/2" SEC, ERA13D  
Jets: 1x20, 3x28  
In: 3724 m  
Out: 3764 m  
Run: 43 m  
Hrs: 16.8  
3-3-WT-A-E-  
1-4-BT-1LT-PR

WOB: 37 kilb  
RPM: 100  
SPP: 4178 psi  
FLOW: 784 gpm

Bit #5RR, 12 1/2" GEODIAM, M42A  
Jets: 1x20  
In: 3775 m  
Out: 3775 m  
Run: 11 m  
Hrs: 5.7  
3-4-WT-A-X-  
1-NO-PR

Bit #7, 12 1/2" SEC, SS33SG  
Jets: 3x28, 1x18  
In: 3814 m  
Out: 3814 m  
Run: 36 m  
Hrs: 6.5  
2-6-WT-A-2  
1-1/2-BT-PR

TD 3811 m MDRT, 2909.08 m TVDRT  
reached at 16:30 hrs 12 May 1999

9 5/8" CASING SHOE at 3804.5 m

Circ gas 21 units  
Trip gas 344 units

Circ gas 40 units  
Trip gas 1225 units

Circ gas 35 units  
Trip gas 717 units

CONN. @ 3608 m  
TORQ = 14000 ft\*lbs  
S/O = 235 kilbs  
P/U = 345 kilbs

Controlled drilling  
20 m/hr from 3662 m

Circ gas 21 units  
Trip gas 344 units

CONN. @ 3754 m  
TORQ = 14000 ft\*lbs  
S/O = 245 kilbs  
P/U = 355 kilbs

Circ gas 40 units  
Trip gas 1225 units

Circ gas 35 units  
Trip gas 717 units

9 5/8" CASING SHOE at 3804.5 m

TD 3811 m MDRT, 2909.08 m TVDRT  
reached at 16:30 hrs 12 May 1999

9 5/8" CASING SHOE at 3804.5 m

DEPT. INT. RES. & ENV.  
PEO14242