LAKES OIL

FORMATION EVALUATION LOG
WELL : YORK-1

Geoservices logging

DEPT. NAT. RES & ENV
PE908261

COMPANY	LAKES OIL N.L.
RIG	SIDES DRILLING #16
AREA	GIPPSLAND BASIN
STATE/COUNTRY	VICTORIA / AUSTRALIA
LOCATION	(SURVEYED) 38° 34' 57.6" S 146° 51' 36.6" E
ELEVATION	2m (KB-GL)
ALTITUDE	12m (GL-MSL)
DEPTH REF	KELLY BUSHINGS (14.0m)

SPUD DATE	01-03-2002
TD DATE	14-03-2002
TD DRILLER	1200m
TD WIRELINE	1196m
LOGGED FROM	SPUD
LOGGED TO	1200m
STATUS	PLUGGED & ABANDONED

WELL CONFIGURATION

BIT SIZE	HOLE DEPTH	CASING SIZE	CASING DEPTH
12.25" (311mm)	441m	9.625" (244.5mm)	433m
8.5" (216mm)	1200m	7.0" (178mm)	903m

LOGGING ENGINEERS

DAVID ADDERLEY
STEVEN OADES

SCALE 1/ 500

SYMBOLS

- NEW BIT RUN
- NEW CORE BIT RUN
- CASING SHOE
- LINER HANGER
- ◀ Recovered SIDEWALL CORES
- ◁ Not Recovered
- CORED INTERVAL
- DST INTERVAL

FLUORESCENCE
- NO SHOW
- WEAK SHOW
- FAIR SHOW
- GOOD SHOW

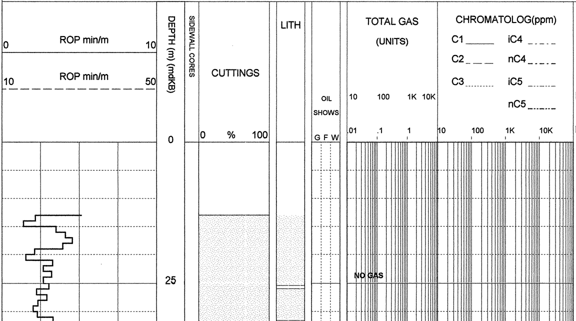
ABBREVIATIONS

NB	NEW BIT	DS	DIRECTIONAL SURVEY
NCB	NEW CORE BIT	WT	WIPER TRIP
RRB	RE-RUN BIT	POOH	PULL OUT OF HOLE
CS	CASING SHOE	RIH	RUN IN HOLE
SWC	SIDE WALL CORE	AZI	AZIMUTH
EL	ELECTRIC LOG	INC	INCLINATION
WOB	WEIGHT ON BIT	LCM	LOST CIRCULATION MATERIAL
RPM	REVS PER MINUTE	DC	DEPTH CORRECTION
SPP	STAND PIPE PRESSURE	DST	DRILL STEM TEST
SPM	STROKES/MINUTE	RMG	REAMING
CR	CIRCULATED RETURNS	ML	MUD LOSSES
PR	POOR RETURNS	FR	FLOW RATE
NR	NO RETURNS	FC	FLOW CHECK
TG	TRIP GAS	BR	BIT RUN
CG	CONNECTION GAS	SG	SWAB GAS
WTG	WIPER TRIP GAS	U	UNITS OF GAS
LOT	LEAK OFF TEST	WOW	WAIT ON WEATHER

MUD DATA

MW	MUD WEIGHT	lb/gal
MW	MUD GRADIENT	psi/kft
V	VISCOSITY	s/qt
PV	PLASTIC VISCOSITY	Cp
YP	YIELD POINT	
Gel	GEL STRENGTH	lb/cf2
pH	ACIDITY	
F	FILTRATE	cm3/30
Ck	CAKE THICKNESS	in/32
S	SALINITY	kg/m3
SD	SAND CONTENT	%
O	OIL CONTENT	%
WL	WATER LOSS	cm3/30
Sol	SOLIDS CONTENT	%
Cl	CHLORIDES	
pF	FILTRATE ALKALINITY	%
GYP	GYPSUM CONTENT	lb/bbl

CLAYSTONE	MEDIUM SST	LIMESTONE	GYPSUM	TUFF	Fe FERRUGINOUS	CALCAREOUS	G GLAUCONITE	MICROFOSSILS
SILTSTONE	FINE SANDSTONE	DOLOMITIC LMST	HALITE	VOLCANIC ROCK	FORAMINIFERA	DOLOMITIC	M MICACEOUS	FOSSILS
CONGLOMERATE	VF SANDSTONE	DOLOMITE	CEMENT	IGNEOUS ROCK	BRYOZOA	CARBONACEOUS	PYRITE	CONCRETIONS
COARSE SST	BRECCIA	COAL	CALCARENITE	METAMORPHICS	F FELDSPAR	CHERTY	BROKEN FOSSILS	S SIDERITE



BIT TRIPS

CASING SHOES

CORED INTERVALS

DST INTERVALS

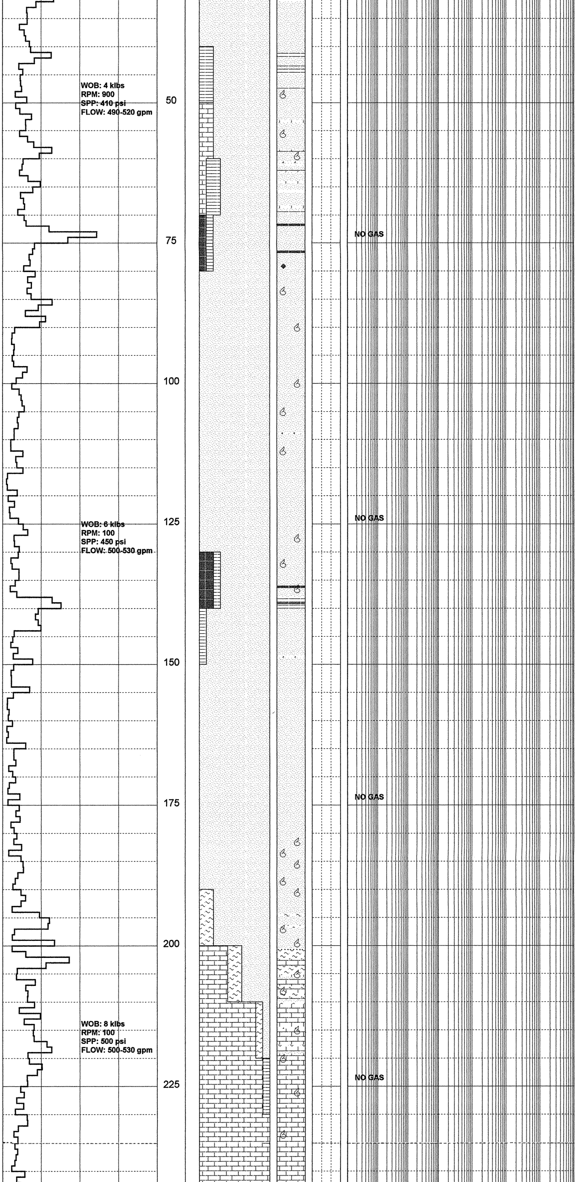
GEOLOGICAL DESCRIPTIONS

COMMENTS

YORK-1 SPUDDED @
00:00 HRS ON 01-03-2002

BIT #1: Varel ETR1G
SIZE: 12.25"(311mm) JETS: 3x20
IN: SPUD OUT: 441m
RUN: 441m HRS: 27
GRADE: 2-2-I

SANDSTONE:off wh,pl yel-org bn, clr-trnsl i/p,f-pred med-crs,pr srt,rnd-occ sr,rr wk sil cmt,occ arg mtx,lse,v gd inf & vis por, no fluor.



CLAYSTONE:med-dk bn gy,occ liths occ calc,disp,amorph.

LIMESTONE:olv gy,com qtz incl, com foss incl,mod hd-hd,pr vis por.

SANDSTONE:clr-trnsl,occ pl yel Fe stng,f-v crs,tr granular,sa-pred sr-rnd,mod-pr srt,lse,some w/ hard calcite cmt,abdt foss frags-bivalve,foram,gastropod, occ liths,fr inf por,no fluor.

CLAYSTONE:med gy,sft,amorph,disp sll calc,com LMST & qtz incl.

COAL:dk bn-blk,dull,lig,sft-frm, com pyr.

SST:clr,off wh,pl yel,med-crs, dom med,pr srt,abdt foss frags, tr gy cly mtx,lse,gd inf por, abdt foss frags.

SANDSTONE:clr,off wh,med-v crs, occ gran,sbang-sbrnd,pr srt, tr dissem & nod pyr,rr carb frags,rr cly mtx,com foss frags,v gd inf & vis por, no fluor.

SANDSTONE:clr,wh,med-crs, sbang-sbrnd,pr srt,tr dissem pyr,rr carb spks,tr-com foss frags,rr cly mtx,uncons,cln, v gd vis por,no fluor.

COAL:blk,v dk bn,ea-sbvit.

CLAYSTONE:gy-rd bn,sft,disp, amorph,com lignite frags.

SANDSTONE:clr,yel,wh,f-med, sbang-sbrnd,tr pyr cmt,dom lse, rr cly mtx,tr foss frags, gd vis por,no fluor.

SANDSTONE:clr,wh,yel,med-v crs, mod srt,sbang-sbrnd,tr marl mtx,abdt bioclastic frags, bivalves,bryzoa,corals,coquina, echinoids,gd por,no fluor.

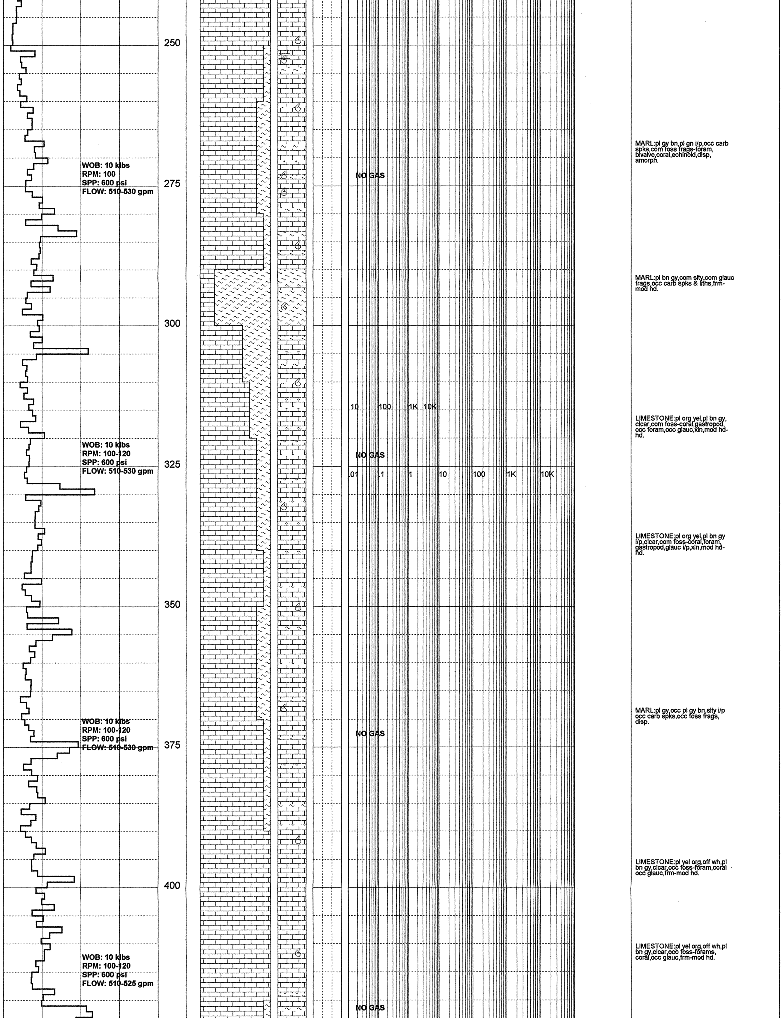
SANDSTONE:clr,wh,yel,med-v crs, occ gran-pebb,pr srt,sbang-rnd abdt-2 % foss frags,abdt bivalves,bryzoa,corals,dom lse, v gd vis por,no fluor.

MARL:lt gy,lt gy bn,sbblky,abdt foss incl,tr qtz, disp.

LIMESTONE:lt bn-yel bn, calcarenite,micro-cryptro xln, com foss frags-bivalves, gastropods,bryz,crin,tr carb mat,mod hd.

LIMESTONE:clcar,lt bn,yel bn, microxln i/p,com foss frags, bivalves,gastropods,bryzoa, crinoids,com vf glauc,tr carb spks,mod hd,mnr cly mtx.

LIMESTONE:clcar,v pl org-org wh, spar,com foss-bivalve,echinoid, foram,gastropod,coral,xln,mod hd hd.



WOB: 10 klbs
RPM: 100
SPP: 600 psi
FLOW: 510-530 gpm

MARL:pl gy bn,pl gn i/p,occ carb spks,com foss frags-foram, bivalve,coral,echinoid,disp, amorph.

MARL:pl bn gy,com slty,com glauc frags,occ carb spks & liths,frm-mod hd.

LIMESTONE:pl org yel,pl bn gy, clcar,com foss-coral,gastropod, occ foram,occ glauc,xln,mod hd-hd.

WOB: 10 klbs
RPM: 100-120
SPP: 600 psi
FLOW: 510-530 gpm

LIMESTONE:pl org yel,pl bn gy i/p,clcar,com foss-coral,foram, gastropod,glauc i/p,xln,mod hd-hd.

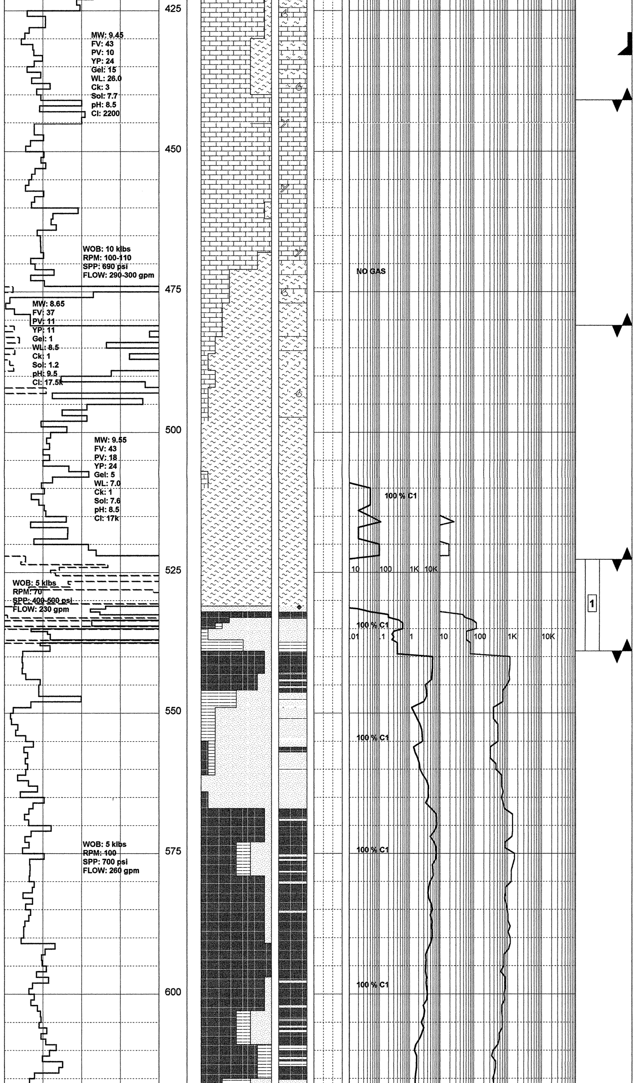
MARL:pl gy,occ pl gy bn,slty i/p occ carb spks,occ foss frags, disp.

WOB: 10 klbs
RPM: 100-120
SPP: 600 psi
FLOW: 510-530 gpm

LIMESTONE:pl yel org,off wh,pl bn gy,clcar,occ foss-foram,coral occ glauc,frm-mod hd.

LIMESTONE:pl yel org,off wh,pl bn gy,clcar,occ foss-forams, coral,occ glauc,frm-mod hd.

WOB: 10 klbs
RPM: 100-120
SPP: 600 psi
FLOW: 510-525 gpm



MARL:pl gy,occ pl gy bn,slty i/p,occ carb spks,occ foss frags,sft,disp.

9.625"(244.5mm) CASING
SHOE SET @ 433m

BIT #2: Varel L114
SIZE: 8.5"(216mm) JETS: 12,13,14
IN: 441m OUT: 481m
RUN: 40m HRS: 3
GRADE: 1-1-I

L.O.T. @ 446m: EMW = 11.0ppg

LIMESTONE:clcar,wh,v lt gy, lt grnish gy,microxln,occ g\t Marl,tr foss frags,tr bryz,tr coral,tr glauc.

SHALE:(tr)v dk bn,hd,sbfiss-brit sil,tr micmic,dull yel fluor,no cut,no res.
MARL:med-dk bn,frm-mod hd,sbblky com med-v crs qtz incl.

LIMESTONE:clcar,v lt gy-wh,sft-frm,tr glauc,tr-occ bry frags,tr qtz incl,occ micrxln,g/t MARL i/p.

MARL:bn-gy bn,sft-frm,sbblky-amorph,tr glauc & foss frags.

WIPER TRIP TO SURFACE @ 481

BIT #2RR: Varel L114
SIZE: 8.5"(216mm) JETS: 12,13,14
IN: 481m OUT: 522.7m
RUN: 41.7m HRS: 5.5
GRADE: 2-2-I

MARL:bn-gy bn,sft-frm,amorph,mnr LMST frags,tr glauc.

LIMESTONE:v lt gy-lt bn,micrxln, clcar i/p,frm-mod hd,tr glauc,tr foss frags.

MARL:lt grnish gy-grnish gy tr nod pyr,tr pell rnd glauc, tr foss frags,disp,sbblky.

MARL:gen a/a,tr crs glauc grns, tr nod pyr.

CORE BIT #1: Chris CD93
SIZE: 8.5"(216mm)
IN: 522.7m OUT: 539.2m
RUN: 16.5m HRS: 6.5
GRADE: 5% WORN

CORE #1: 522.7m-539.2m
CUT: 16.5m
RECOVERED: 10.77m (65.3%)

SANDSTONE:(529.9m-531.8m)gn,f-med,occ crs,sr-rnd,cal cmt,mod srt,calc-cly mtx,bec v pyr cly mtx w/ depth,abdt glauc,com pyr, frm,v pr vis por,no fluor.

BIT #2RR2: Varel L114
SIZE: 8.5"(216mm) JETS: 12,13,14
IN: 539.2m OUT: 883m
RUN: 343.8m HRS: 7.5
GRADE: 5-2-2

COAL:med-dk bn,blk i/p,ea,occ dull,v sft-occ disp,sbfiss,occ amorph,unevn,com slty.

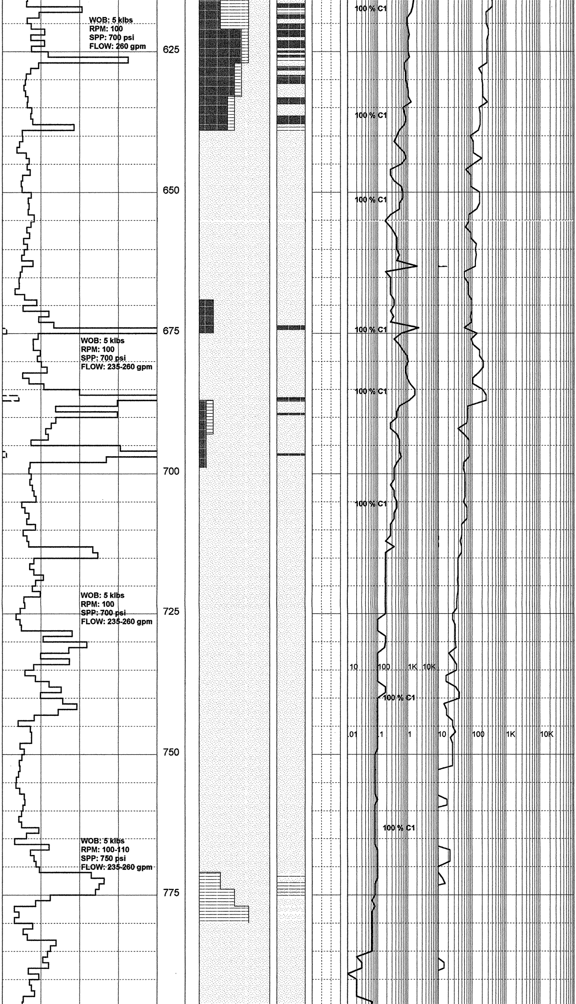
SANDSTONE:off wh-pl yel,clr-trnsl i/p,crs-v crs,mod wl srt, sr-occ rnd,wh sil cmt,nil vis mtx,lse,unconsol,gd inf por,no fluor.

COAL:lt-dk bn,occ blk,ea-dull,v sft-occ frm,com disp,sbfiss, amorph,unevn,slty.

SANDSTONE:off wh-pl yel,crs-v crs,mod wl srt,sr-rnd,v wk-nil sil cmt,nil vis mtx,lse,unconsol gd inf por,no fluor.

COAL:pl-dk bn,ea,v sft-occ frm i/p,occ disp,sbfiss,unevn,com slty.

CLAYSTONE:med-dk bn,com carb,sft disp,amorph,tr COAL spks.



SANDSTONE:pl bn,med-v crs,ang-sr mod pr srt,occ broken grns,lse, gd vis por,no fluor.

COAL:dk bn-blk,dl-ea,lig,sbblky-sbfiss,g/t CARB CLYST i/p.

SANDSTONE:pl bn,clr-trnsl qtz,f-gran,occ pebbles,sa-sr,occ ang grns,pr srt,tr lt bn arg mtx,lse v gd vis por,no fluor.

SANDSTONE:lt bn,clr-trnsl qtz,f-v crs,pred crs-v crs,occ gran, ang-sr,pr srt,occ bn & wh arg mtx,lse,v gd vis por,no fluor.

CARBIDE LAG CHECK @ 671m
HOLE IS IN GAUGE.

COAL:blk,bn blk,frm-sft,sbblky-sbfiss,ea-dull.

SANDSTONE:lt bn,f-v crs,gran i/p ang-sr,pr srt,occ bn & wh arg mtx,lse,gd inf por,no fluor.

SANDSTONE:qtz,clr-trnsl, crs-v crs,gran i/p,ang-sbrnd, mod srt,dom uncons,tr wh-lt bn arg mtx,v gd vis por,v gd inf por,no fluor.

SANDSTONE:qtz,clr-trnsl, crs-v crs,gran i/p,ang-sbrnd, mod srt,dom uncons,tr wh-lt bn arg mtx,v gd vis por,v gd inf por,no fluor.

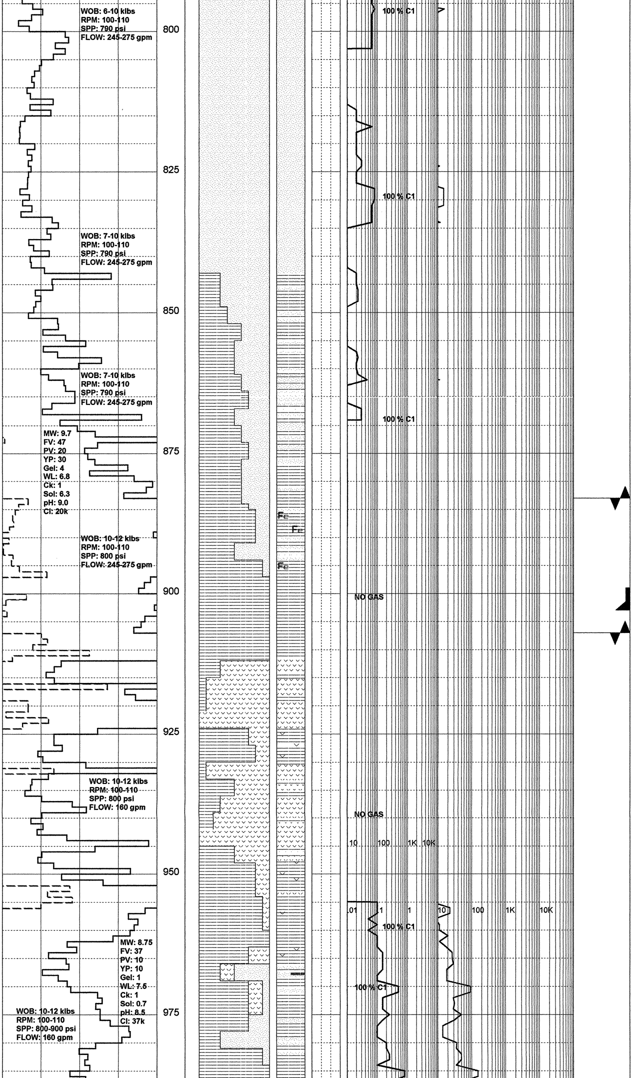
SANDSTONE:qtz,clr-trnsl, crs-v crs,gran i/p,ang-sbrnd, mod srt,dom lse,nil-rr wh arg mtx,v gd vis por,v gd inf por, no fluor.

SANDSTONE:qtz,clr-trnsl, crs-v crs,gran i/p,ang-sbrnd, mod srt,dom lse,nil-rr wh, arg mtx,v gd vis por,v gd inf por, no fluor.

SANDSTONE:qtz,clr-trnsl,dom crs-vcrs,occ gran,ang-sbrnd, mod srt,dom lse,tr v lt gy arg disp mtx,tr carb spks,v gd vis por,v gd inf por,no fluor.

CLAYSTONE:v lt gy,off wh-lt bn, sft,amorph,disp.

SANDSTONE:qtz,clr-trnsl,dom crs-v crs,occ gran,mod srt, ang-sbrnd,dom lse,tr v lt gy arg mtx,tr carb spks,v gd por, no fluor.



SANDSTONE:qtz,clr-trnsl,dom crs-v crs,occ gran,mod srt, ang-sbrnd,dom lse,tr v lt gy arg mtx,tr carb spks,v gd por, no fluor.

SANDSTONE:qtz,clr-trnsl,dom crs-v crs,occ gran,mod srt, ang-sbrnd,dom lse,tr v lt gy arg mtx,tr carb spks,v gd por, no fluor.

SANDSTONE:qtz,clr-trnsl,dom crs-v crs,occ gran,mod srt, ang-sbrnd,dom lse,tr v lt gy arg mtx,tr carb spks,v gd por, no fluor.

CLAYSTONE:v lt gy-v lt bn,off wh,sft,amorph,disp.

CLAYSTONE:v lt gy-v lt bn,tr off wh kaol,sft,amorph,disp.

SANDSTONE:qtz,clr-trnsl,med-v crs,occ gran,ang-sbrnd,pr-mod srt,tr nod pyr,tr liths,dom uncons,tr v lt gy,arg mtx,tr carb spks,gd por,no fluor.

LOGS RUN:
1) DLL-MSFL-SP-GR-BHC-CAL

BIT #3: Varel L114
SIZE: 8.5"(216mm) JETS: 14,14,12
IN: 883m OUT: 907m
RUN: 24m HRS: 7.5
GRADE: 2-1-I

CLAYSTONE:(886m-894m) rd/bn,lt-med gy,oxidised, weathered basalt,stky i/p, amorph,disp.

SANDSTONE:qtz,clr-trnsl, med-v crs,dom crs,occ gran, ang-sbrnd,mod srt,tr pyr, tr liths,dom uncons,tr arg mtx, fr-gd por,no fluor.

CLAYSTONE:rd/bn,lt-med gy, oxidised,weathered basalt, sft,stky,amorph.

7.0"(178mm) CASING SHOE
SET @ 903m

BIT #4: Varel ETD14
SIZE: 8.5"(216mm) JETS: 9,9,9
IN: 907m OUT: 1117.9m
RUN: 210.9m HRS: 31.5
GRADE: 1-2-I

L.O.T. @ 911m: EMW = 11.2 ppg

BASALT:grnish blk,olivine,tr red,purp,yel,altered kaol,frm.

BASALT:grnish blk,olivine,tr rd,com altered kaol,frm.

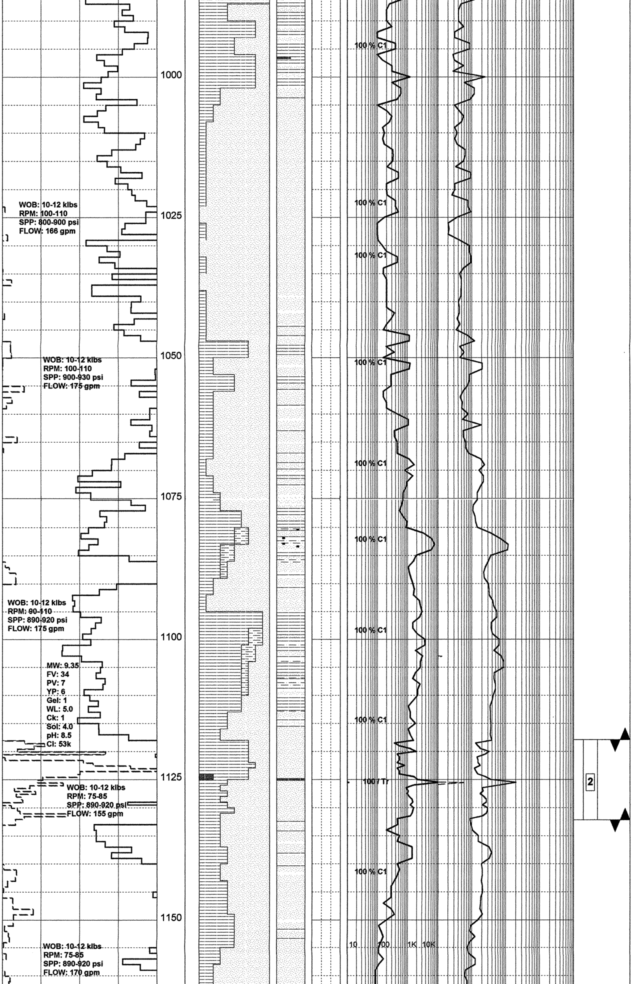
BASALT:dk gy gn,dk gy blk,xln-aphanatic,olivene,phenocrysts, occ xln calcite,highly weathered to CLYST i/p,mod hd.

CLAYSTONE:rd bn-org bn,purp,sft, amorph,disp.

SANDSTONE:wh-mott gn bn,f-med,sa sr,mod srt,wk sil cmt i/p,abdt feld & volc liths-gn,gy,bn,blk, com-abdt wh-pl gn mtx,g/t CLYST i/p,fri-frm,pr vis por,no fluor

SAMPLES BELOW 967m
CONTAMINATED WITH
20%-50% RED/BROWN
CLAY/WEATHERED BASALT
CAVINGS

SANDSTONE:off wh-lt gy,vf-med,sa sr,mod srt,frm calc cmt i/p,com off wh arg mtx,mtx supt i/p,g/t CLYST,com volc liths,occ calc frags,tr COAL frags,frm,v pr vis por,no fluor.



CLAYSTONE:lt gy-lt gy bn,sft, occ frm,sbblky.

SANDSTONE:off wh-lt gy,vf-med, sa-sr,mod srt,frm calc cmt i/p, abdt off wh arg mtx,dom mtx supt,v pr vis por,no fluor.

CLAYSTONE:lt gy-lt gy bn,sft, occ frm,sbblky.

SANDSTONE:off wh-lt gy,f-med, sa-sr,frm,calc cmt i/p,abdt off wh arg mtx,dom mtx supt, grds to Clyst,tr blk volc liths,v pr vis & inf por, no fluor.

SANDSTONE:off wh-lt gy,f-med, mod srt,sa-sr,frm calc cmt i/p, abdt off wh arg mtx,dom mtx supt,grds to Clyst,tr blk volc liths,v pr vis & inf por, no fluor.

SANDSTONE:off wh-lt gy,f-med, mod srt,sa-sr,frm calc cmt i/p, abdt off wh arg mtx,dom mtx supt,grds to Clyst,tr blk volc liths,v pr vis & inf por, no fluor.

CLAYSTONE:med dk gy-gy bn,sft, occ frm, sbblky.

**SAMPLES BELOW 967m
CONTAMINATED WITH
20%-50% RED/BROWN
CLAY/WEATHERED
BASALT CAVINGS**

SANDSTONE:lt-med gy,vf-med, sa-sr,frm,calc cmt i/p,abdt wh arg mtx,com liths,alt fld, pr vis por, no fluor.

SILTSTONE:lt gy,vf aren,frm,g/t SST.

CARBONACEOUS SHALE g/t COAL (traces to 2%),blk,britt, sbvit.

SANDSTONE:lt-med gy,f-med,sa-sr, mod srt,v cal cmt i/p,tr-occ arg mtx,occ volc liths,gn & gy,mod hd,com lse,pr-occ fr vis por,no fluor.

CLAYSTONE:med gy,sft-frm,sbblky, occ vf qtz,tr carb spks.

SANDSTONE:lt-med gy,vf-med,sa-sr mod srt,frm calc cmt,tr loc arg mtx,com fels & gn & gy liths,tr carb spks,frm,v pr-pr vis por.

SANDSTONE:(1117.90m-1122.82m); lt-med gy,vf-med,sa-sr,mod srt, frm calc cmt,com calcite incl, tr fels,tr carb spks,pr por,no fluor.

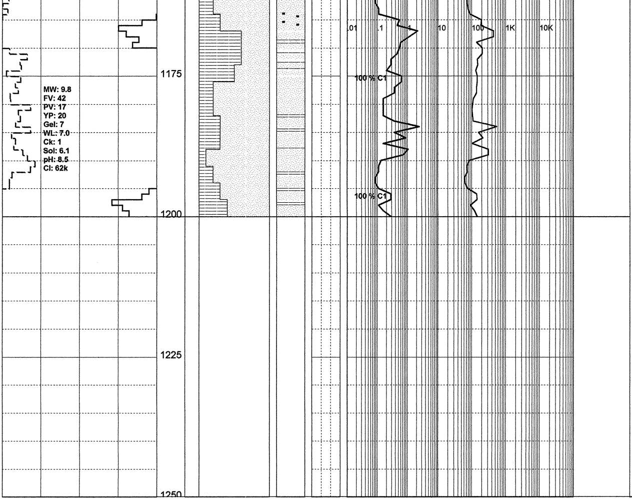
**CORE BIT #2: Corepro CP83
SIZE: 8.5"(216mm)
IN: 1117.9m OUT: 1132.2m
RUN: 14.3m HRS: 5.5**

**CORE #2: 1117.9m-1132.2m
CUT: 14.3m
RECOVERED: 4.92m (34.4%)**

**BIT #4RR: Varel ETD14
SIZE: 8.5"(216mm) JETS: 9,9,9
IN: 1132.2m OUT: 1200m
RUN: 67.8m HRS: 14
GRADE: 2-4-I**

SANDSTONE:lt-med gy,vf-med, sa-sr,mod wl srt,sil cmt i/p, loc gy/gn art mtx,tr fel,tr carb spks,pr-v pr por,no fluor.

SANDSTONE:lt-med gy,vf-med, sa-sr,mod wl srt,mod strg sil cmt i/p,loc gy/gn arg mtx,tr fel,com calcite frags,tr carb mat,pr-v pr vis por,no fluor.



CLAYSTONE:lt gy,occ blk carb shale g/t COAL i/p.

SANDSTONE:lt-med gy,vf-med, sa-sr,mod wl srt,mod strg sil cmt i/p,loc gy/gn arg mtx,tr fel,com calcite frags,tr carb mat,pr-v pr vis por,no fluor.

SANDSTONE:lt-med gy,vf-med, sa-sr,mod wl srt,mod strg sil cmt i/p,loc gy/gn arg mtx,tr fel,com calcite frags,tr carb mat,v pr vis por,no fluor.

YORK-1 REACHED TD @
20:30 HRS ON 14-03-2002

DRILLERS TD: 1200m
LOGGERS TD: 1196m

LOGS RUN:
1) DLL-MSFL-GR-SP-PDS-CNL
-PEF-BHC-CAL

PLUGGED & ABANDONED
ON 14-03-2002