

AYRFORD 1

WELL HYDROCARBON LOG

Company Name Line 1	ESSENTIAL PETROLEUM RESOURCES LTD
Well Name	AYRFORD 1
Field	Gas Exploration
Township	Port Campbell
Country	Australia
State	Victoria
County or Rig name	ADS Rig 6
Field Location	Heytesbury 3D survey lines 10506 / 2557
Permanent Datum	MSL
Elevation of PD	.00 M
Elevation of KB	74.00 M
Elevation Ground lv	70.00 M
Elevation Log Zero	74.00 M
Log measured from	KB
Drill measured from	KB
Well class	Gas Exploration
Basin	Otway
Tenement/Concession	PEP 168
Geographic datum	GDA 94
Spud Date	4/04/2008
Date plotted	18-04-2008
Time plotted	07:31:58

PETROLOG SOFTWARE Revision 9.50

CROCKER

DATA PROCESSING

LITHOLOGIES



Shales



Clay



Silty LS



Marl



SandStone



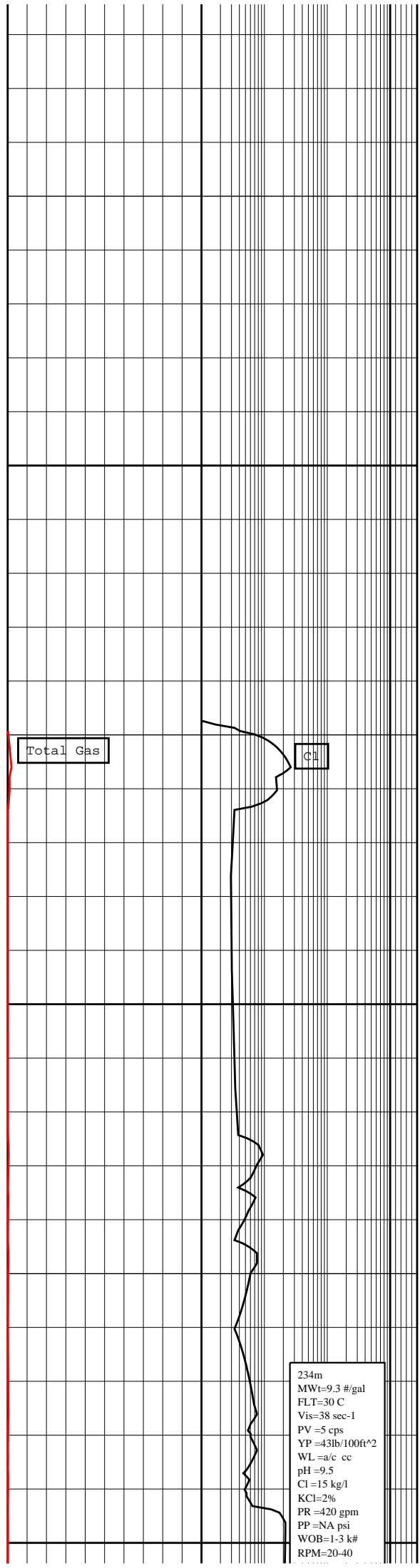
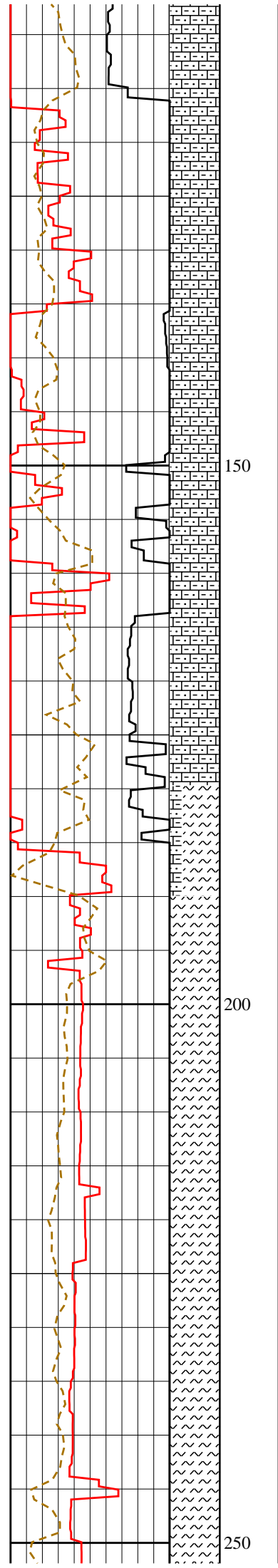
Silt/Siltstone



Claystone

SYMBOL LEGEND

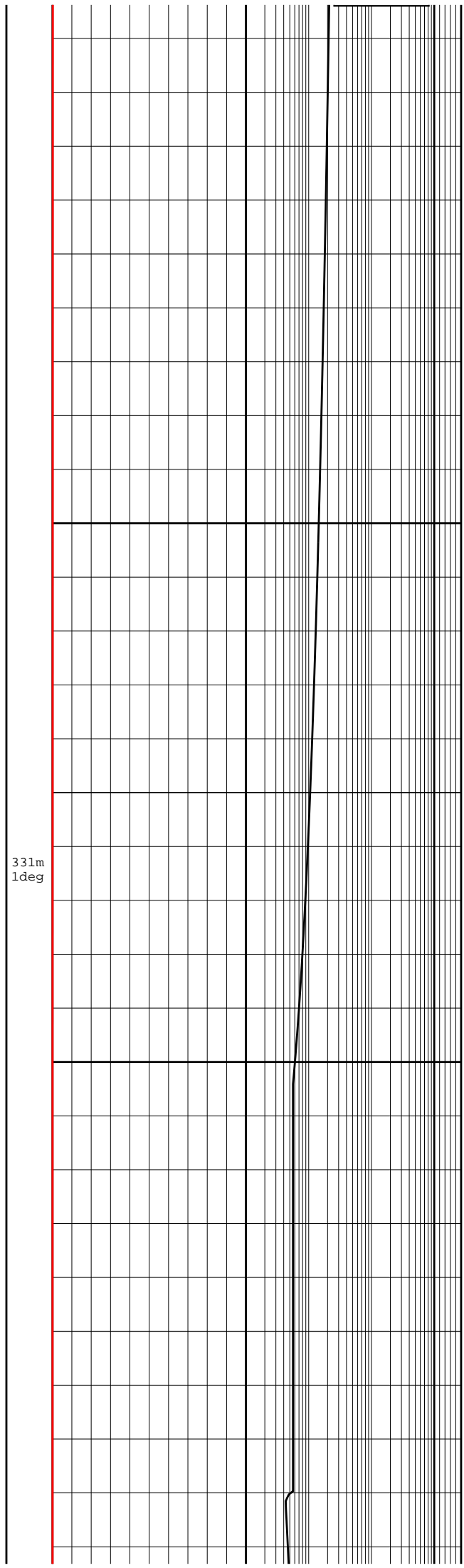
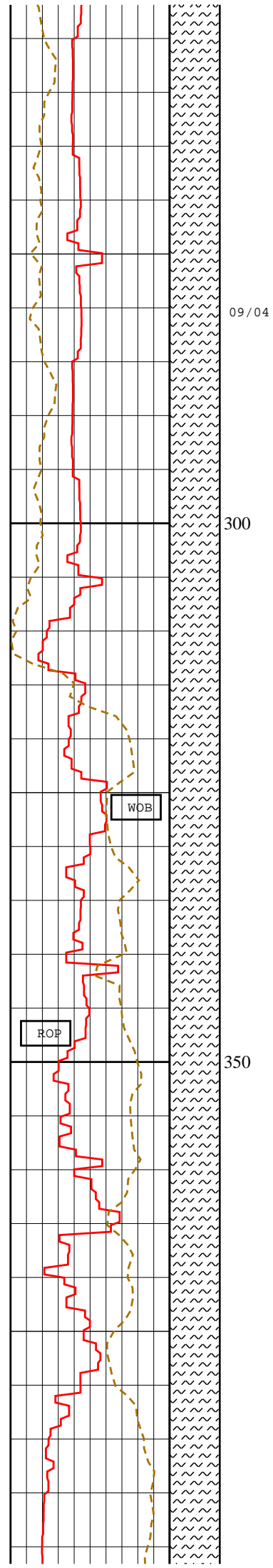
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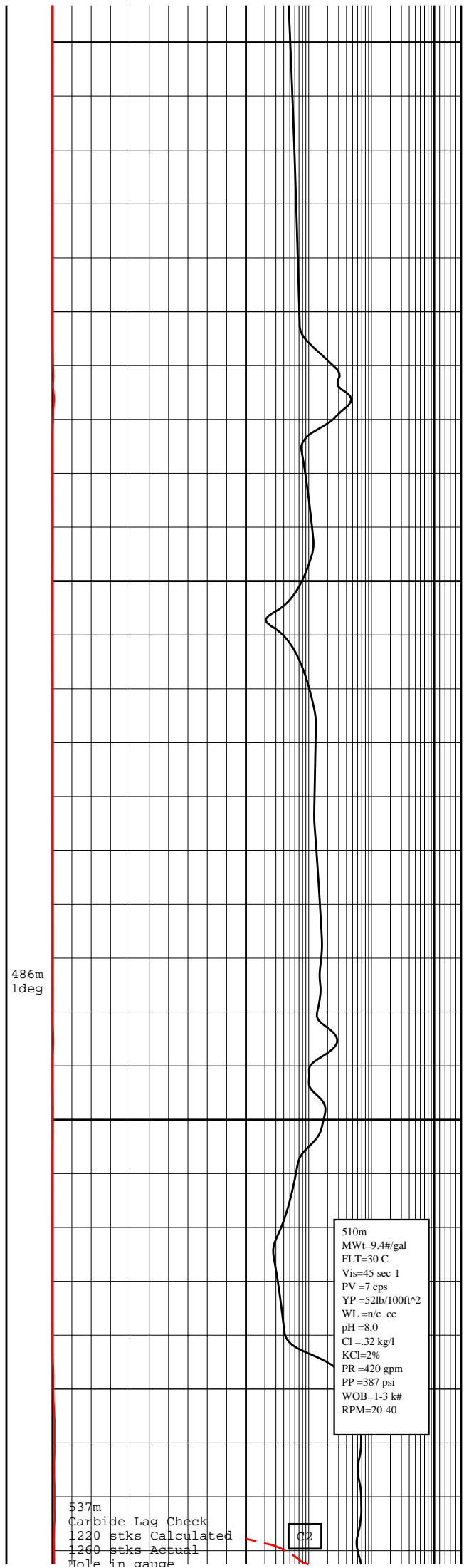
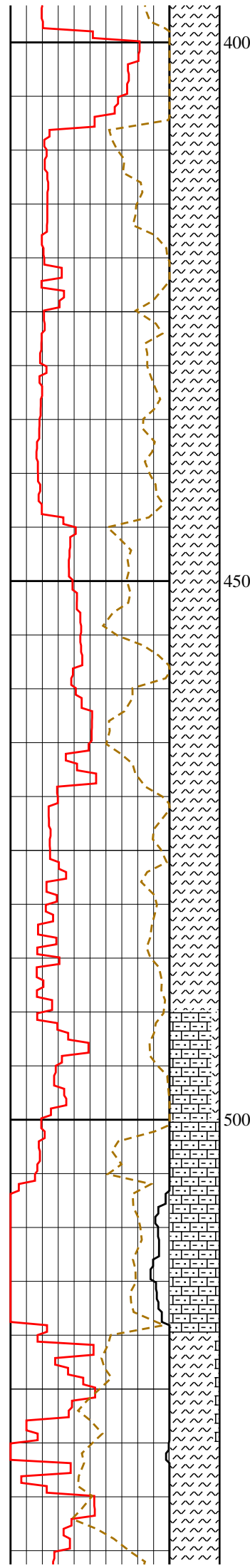
fragments, occasional trace glauconite, occasional stringers of cleaner calcarenite as above (40-100m)

180 - 285m
MARL
light to medium grey, predominantly light grey, part with very fine white speckles, soft sticky amorphous, occasional blocky, trace pyrite, trace glauconite, stringers of coarse grain, yellow brown, traces of yellow brown calcide.

234m
MWt=9.3 #/gal
FLT=30 C
Vis=38 sec-1
PV =5 cps
YP =43lb/100ft^2
WL =a/c cc
pH =9.5
Cl =15 kg/l
KCl=2%
PR =420 gpm
PP =NA psi
WOB=1-3 k#
RPM=20-40



285 - 490m
MARL:
light to medium grey, predominantly light grey,
frequently silty, abundant fossil remnants, (bryzoan
fragments, echinoid spines, forams), occasional pyrite ,
occasional bright yellow and dull yellow brown mineral
fluorescence, no hydrocarbon shows



486m
1deg

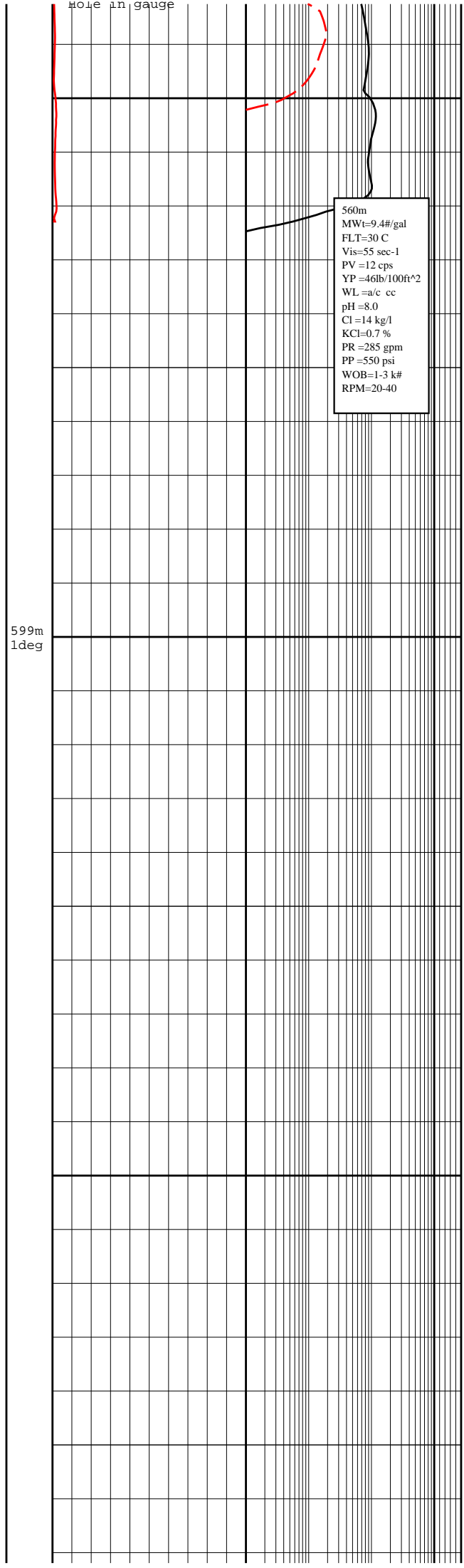
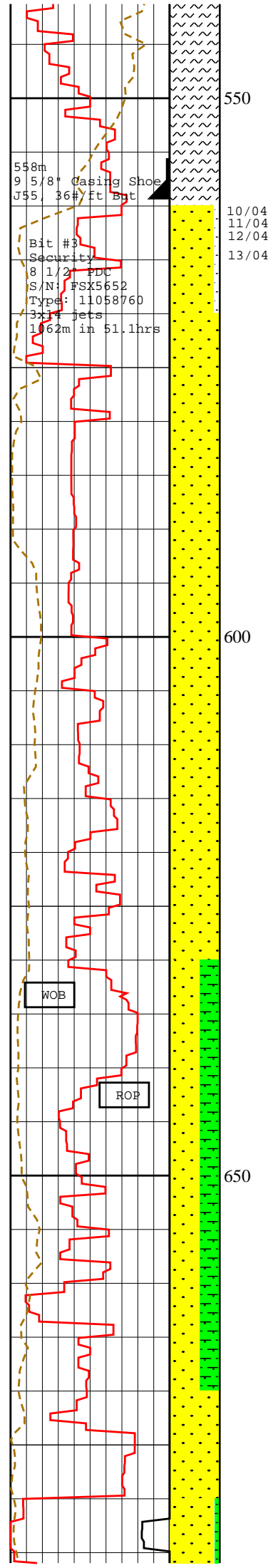
510m
MWt=9.4#/gal
FLT=30 C
Vis=45 sec-1
PV =7 cps
YP =52lb/100ft^2
WL =n/c cc
pH =8.0
Cl =.32 kg/l
KCl=2%
PR =420 gpm
PP =387 psi
WOB=1-3 k#
RPM=20-40

537m
Carbide Lag Check
1220 stks Calculated
1260 stks Actual
Hole in gauge

C2

490 - 520m
CALCARENITE:
yellow brown, fine to coarse weathered grains, abundant calc fossil fragments, abundant quartz crystals (frequently smooth round coarse to medium grain brown quartz, frequently grains with crystal form) of volcanogenic origin, common amber, light calc cement, brittle, excellent inter granular porosity, common bright yellow mineral fluorescence from calc fragments, common brown to dull yellow fluoescence from amber grains, no hydrocarbon shows.

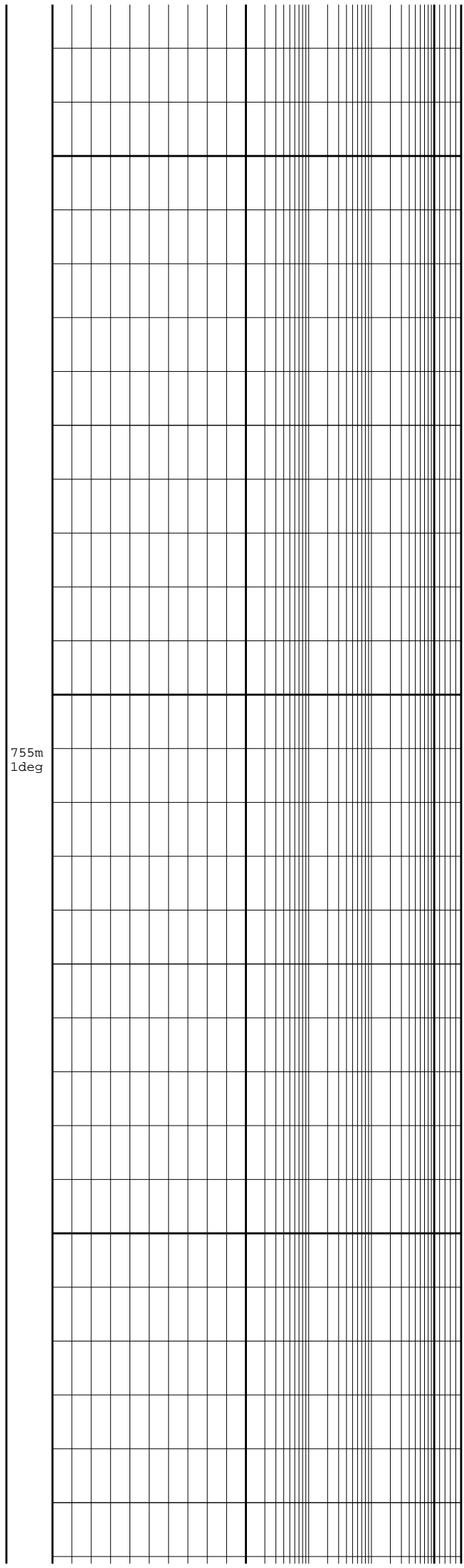
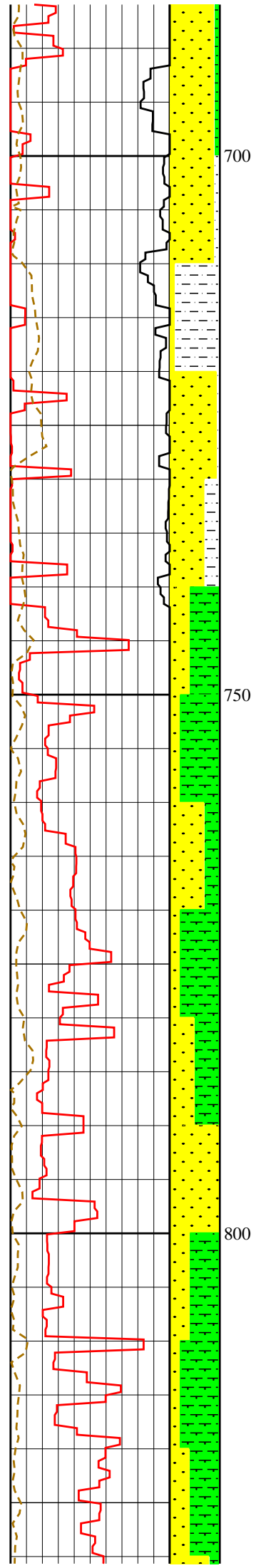
520 - 560m
MARL:
medium to occasioanlly dark grey greyish brown, very finely sandy, speckled with very fine sand and fossil fragments, and fine glauconite and carbonaceous material, trace very fine quartz grains, blocky, soft , friable, common coarse fossil material including ?fish teeth

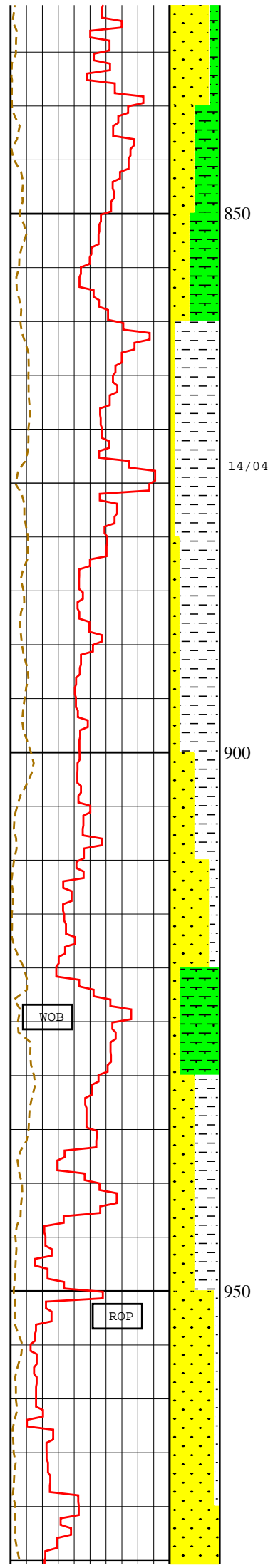


560 - 564m
SANDSTONE:
clear to translucent, moderate to dark greyish yellow, yellow, fine to very coarse predominantly medium, poorly sorted, subangular, loose, slight calcareous cement adhering to grains, trace reworked pyrite, trace fossil frags, trace lithics (volcanics and chert), inferred porosity very good.
SILTSTONE:
light grey speckled green, very finley sandy, soft, trace glauconite.

564 - 650m
SANDSTONE:
Clear/translucent to medium dark greyish yellow, to yellow. Very coarse to fine, pred med. Poorly sorted, sa. Occ very well rounded grains. Predom loose. Slight calc or ferruginous cement adhering to grains. Trace reworked pyrite nodules, pyritised chamosite and fossil material, and lithic grains.
SILTSTONE:
Light greyish green, speckled, very finely sandy, soft, trace glauconite.

650 - 860m
SANDSTONE:
clear to very light grey, pred coarse to very coarse grained, loose quartz grains, stained moderate yellowish brown (limonitic clay), polished with a pearly lustre, commonly pitted, common composite quartz grains (reworked quartzite) sr-well rounded, very well sorted . And 2. Medium grey to brownish grey, vf-fn grained, silty, calcareous cement ip, trace pyrite and rounded glauconite pellets.
SILTSTONE:
Brownish grey, sandy ip, soft, carbonaceous matter ip.





832m
MWt=8.7#/gal
FLT=32 C
Vis=41 sec-1
PV =12 cps
YP =18lb/100ft^2
WL =9 cc
pH =8.5
Cl=15 kg/l
KCl=2.3 %
PR =381 gpm
PP =595 psi
WOB=1.3 k#
RPM=20-40

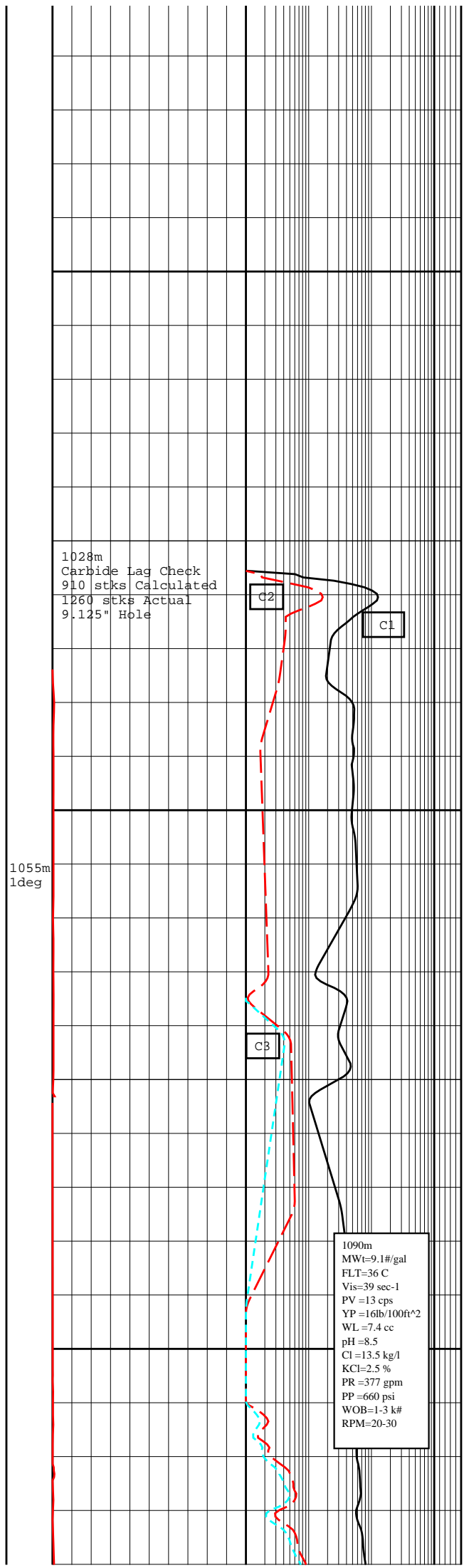
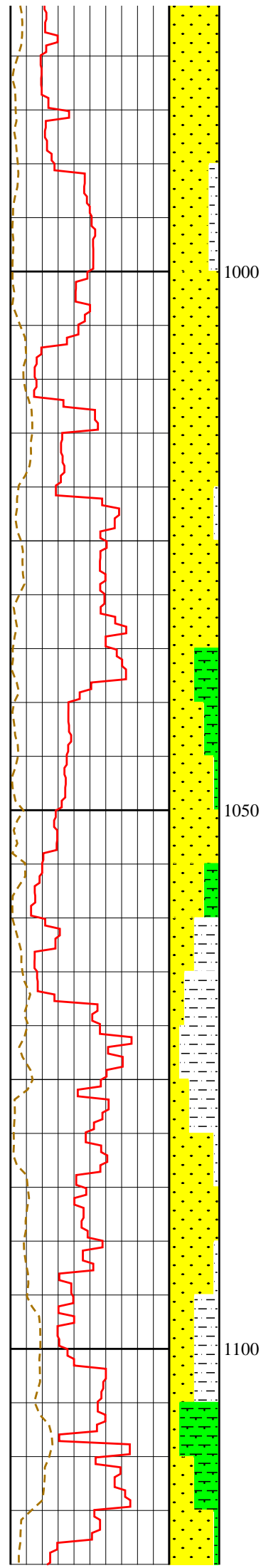
860 - 873m
MUDSTONE:
brownish grey to dark greenish grey, firm, very
glauconitic, sandy in part, common floating sand grains
in silty glauconitic matrix, common chamosite pisolites,
glauc clay and pyrite cement. Trace fossil fragments.
SANDSTONE:
clear very coarse grained angular to subrounded,
polycrystalline composite quartz grains with glauconitic
clay matrix adhering. Trace mica.

873 - 905m
SILTSTONE: dark greenish to brownish grey, dark
greyish red, very glauconitic in part, soft to firm minor
pyrite, occasional unsupported medium to very coarse
quartz grains. SANDSTONE: as loose grains, clear
translucent, medium to very coarse, subangular to
subrounded.

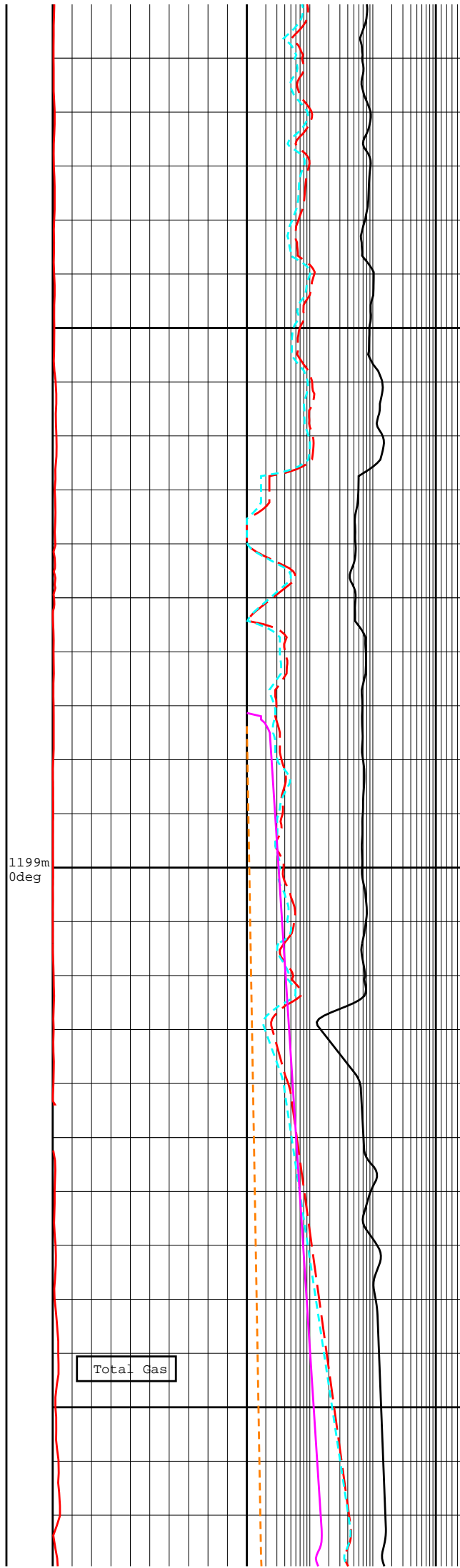
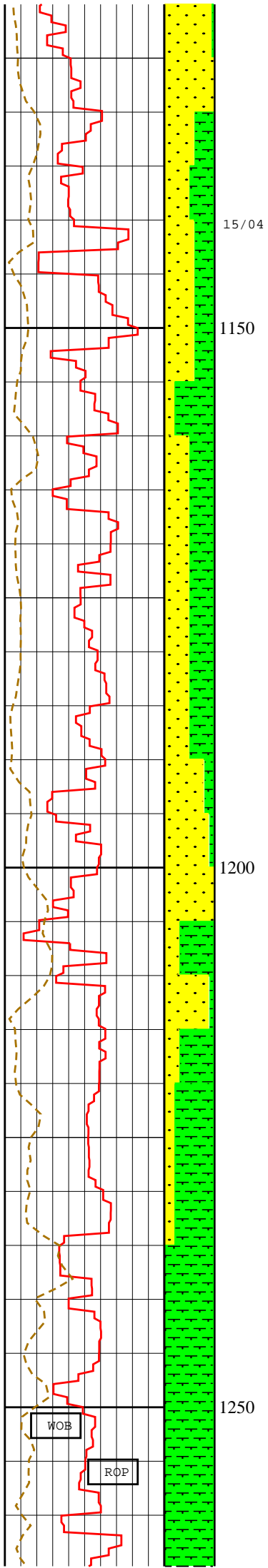
905 - 921m
SANDSTONE: predominantly loose quartz grains,
clear to occasionally orange-brown stained, coarse to
very coarse, angular to subrounded, reworked
polycrystalline grains, common glauconite, clay matrix
adhereing to grains.
SILTSTONE: dark greenish grey, brownish grey,
slightly calcareous, sandy, rounded glauconite pisolites
grading to very fine sandstone mottled orange brown w/
limonite stain.

921 - 932m
CLAYSTONE: dark brownish grey to greenish grey,
dispersive. SANDSTONE (20%) as loose grains
washing out. Quartz with fe stain, fine to coarse
grained, trace red chert lithics.
932 - 970m
SANDSTONE: Disaggregated quartz grains, clear,
translucent to opaque and milky, yellowish brown stain
on some grains, rare lithics (orange brown and pale
green chert fragments), vc, broken pebble and granule
fragments, ang (broken fragments) to sr. Minor 2.
White aggregates, fn grained, well sorted, firm, trace
pyrite cement.

970 - 1140m
SANDSTONE: Disaggregated quartz grains, clear,
translucent, some opaque and milky, c-vc, angular



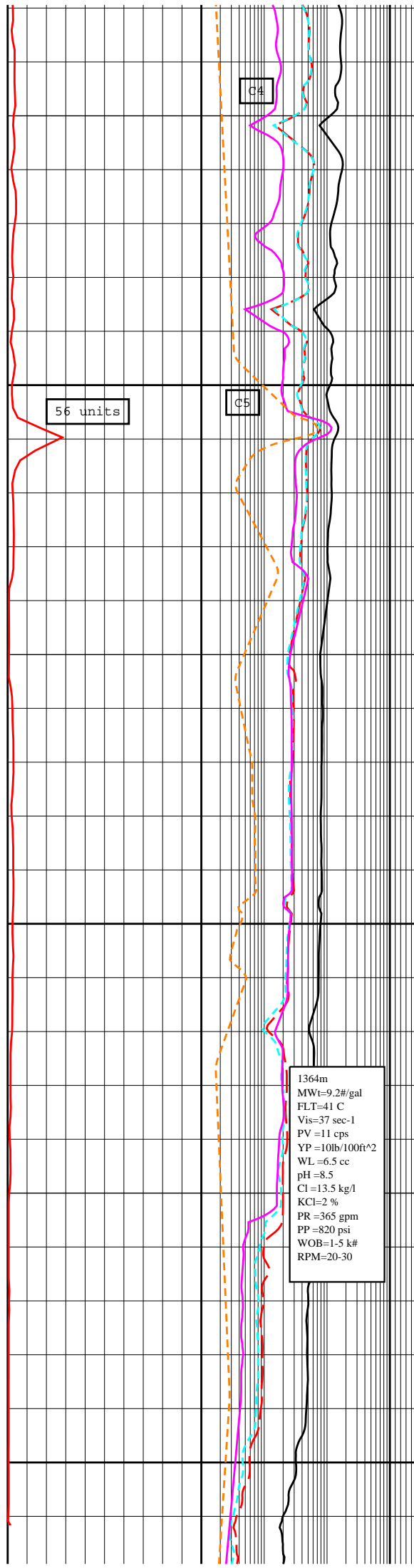
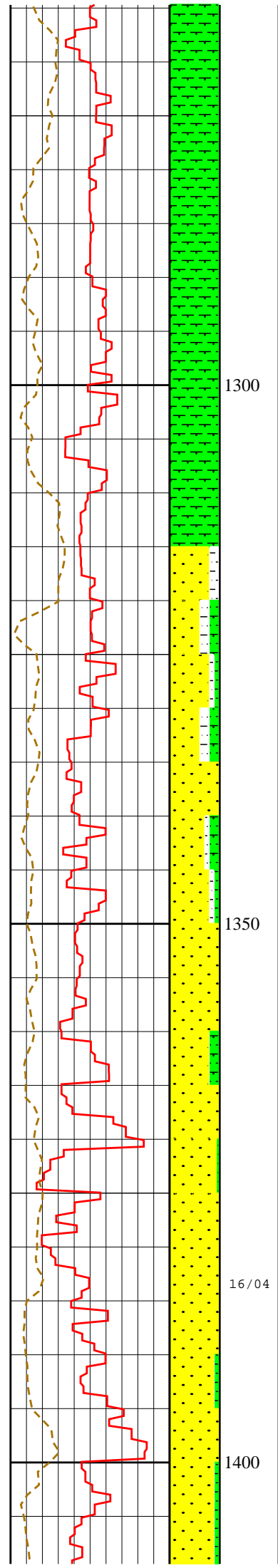
(broken) -sr, common broken fragments of rounded quartz granules, predominantly loose with silica cement adhering.
COAL: traces,black, pyritic ip.
CLAYSTONE: Light brownish grey, soft, dispersive, slightly sticky ip, with vf sand, grades to argillaceous sandstone with abundant light grey clay matrix, siliceous.



1140 - 1217m
SANDSTONE: Predom 1. Disaggregated qtz grains, clear, translucent, m-vc, predom vc, generally broken and angular, some smaller grains sub-rounded. Minor 2. Light grey, quartzose, vf-fn, carb flecks, clay matrix, generally soft, hard pyrite cement ip.
CLAYSTONE: White, light grey, light brownish grey, very pale orange, with abundant very fine quartz sand ip, soft, amorphous, carbonaceous flecks in part.

1217 - 1255m
CLAYSTONE: Light grey, med grey, light brownish grey, soft-firm, amorphous-blocky, common carb flecks and wisps, very silty and sandy (vf quartz) ip, trace glauconitic pisolites and clay ip.
SANDSTONE: Predom 1. disagg quartz grains, clear and translucent to opaque, c-vc, sa-r, commonly fractured and broken. Minor 2. Very light grey aggregates, quartzose, fn-m, well sorted, firm to hard, silica cemented, pyrite cement ip. Rare amber grains.

1255 - 1304m
CLAYSTONE: Grey, brownish grey, soft, generally amorphous, rarely blocky, dispersive, with carbonaceous flecks and wisps, gt sandy claystone.
SILTSTONE: brownish grey, soft to firm, blocky. Trace coalified wood frags. Rare amber grains (bright



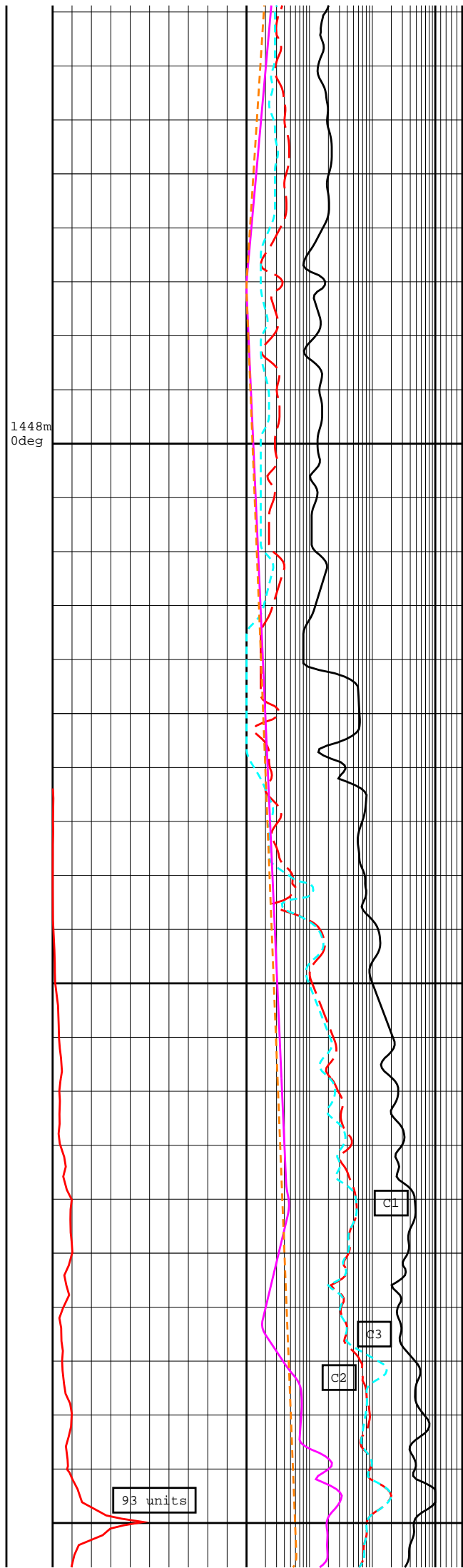
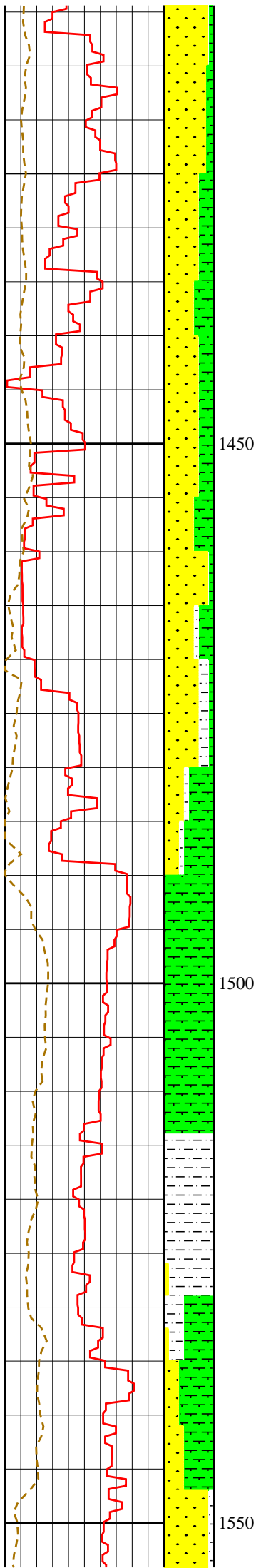
Trace coalined wood frags. Rare amber grains (origin yellow fluorescence).
SANDSTONE: a/a

1304 - 1315m
CLAYSTONE: a/a. Trace dark greenish grey glauconitic clay. Trace pyrite. Trace chert

1315 - 1383m
SANDSTONE: disag quartz grains, translucent to opaque, light greenish grey, also pale orange brown below 1345m, m-c,occ vc, sa-sr, trace greenish grey glauconitic clay clinging to grains ip.
SILTSTONE: Light grey, light brownish grey, greyish brown, soft-firm, blocky, carbonaceous flecks ip, trace glauconitic pisolites, trace pyrite cement.
CLAYSTONE (0-20%): White, brownish grey, greenish grey, soft, amorphous, sandy and silty in part.

1364m
MWt=9.2#/gal
FLT=41 C
Vis=37 sec-1
PV =11 cps
YP =10lb/100ft^2
WL =6.5 cc
pH =8.5
Cl =13.5 kg/l
KCl=2 %
PR =365 gpm
PP =820 psi
WOB=1-5 k#
RPM=20-30

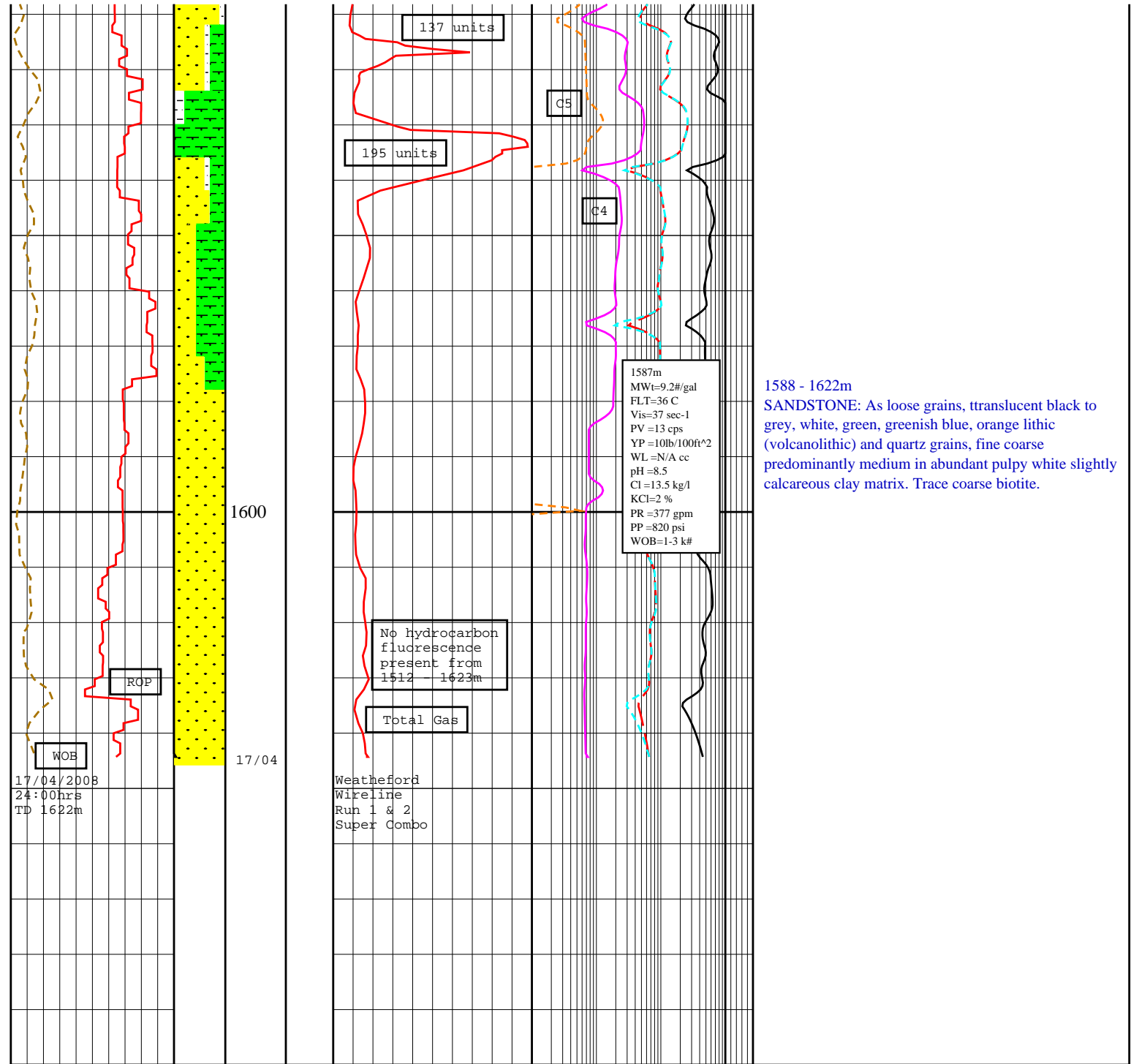
1383 - 1480m
SANDSTONE: Disagg qtz grains, translucent to opaque, pale orange brown and pale greenish grey, m-c, occ vc, generally sa-r except where larger grains are broken, trace polycrystalline quartz grains, trace to 15% greenish grey glauconitic clay matrix. Trace pyrite cement.
CLAYSTONE: Light grey to greenish grey, mottled greyish yellow, trace glauconite, soft, dispersive in drilling mud.
MUDSTONE: Medium yellowish brown with abundant glauconite pellets, partially cemented, soft to firm.



1480 - 1499m
CLAYSTONE: Brownish grey with common dark greyish green glauconite pisolites, soft, amorphous, gt
SILTSTONE: med grey, greyish brown, minor dark yellowish orange, firm to hard, blocky, calcareous, siliceous ip, with glauconitic pisolites ip.
SANDSTONE: a/a. Also trace light brown and dark yellowish orange, limonite cemented, vfn grained quartzose sandstone, firm, blocky. Trace pyrite. Trace fossil frags.

1499 - 1526m
CLAYSTONE: Brownish grey, speckled with dark greyish green glauconitic pisolites (f-m grain size, occ coarse), soft to firm, blocky, silty.grades to
SILTSTONE: Med dark grey, greenish grey, minor greyish red, firm - mod hard, blocky, in part speckled with greyish green glauconitic pisolites, sandy (qtz m-c grained) .
CLAYSTONE: dark yellowish orange, soft, amorphous. Trace loose quartz sand a/a with silty matix adhering to grains ip.

1525 - 1588m
SANDSTONE: White, light brownish grey, vf-f grained, soft to firm, with abundant vfn quartzose silt matrix, abundant soft white clay matrix ip, common carbonaceous flecks and wisps, minor glauconitic pisolites ip. Disaggregated quartz grains, clear, translucent to opaque, c-vc, generally broken and angular (conglomerate?) clean with minor clay matrix, vis porosty good no shows.
CLAYSTONE: Light brownish grey, white, soft, amorphous, vfn quartzose sand, dark greyish green glauconitic pisolites ip.



Drill Parameters			LITHO	DEPTH	Symbol	Total Gas		Component Gas			HS	REMARKS
ROP						Gas		C1				
50.0	(M/H)	0.0				0.0	(U) 200.0	0.0001	(%)	1.0		
ROP								C2				
100.0	(M/H)	50.0						0.0001	(%)	1.0		
Bit Wt								C3				
0.0	(k.lb)	20.0						0.0001	(%)	1.0		
								C4				
								0.0001	(%)	1.0		
								C5				
								0.0001	(%)	1.0		

LOG DESCRIPTION

ROP	Rate of Penetration (m/hr)
ROP	Rate of Penetration (m/hr)
Bit Wt	Weight on Bit (klbs)
Gas	50 Units = 1% Methane in Air
C1	% Methane

C1	% methane
C2	% Ethane
C3	% Propane
C4	% (i-Butane + n-Butane)/2
C5	% Pentanes