ENCLOSURE 2

COMPANY	PACIFIC OIL & GAS
RIG	ROCKDRIL RIG 20
WELL	HACKING 1
FIELD	WILDCAT
COUNTRY	NORTHERN TERRITORY, AUSTRALIA
CO-ORDINATES	22° 49' 33.5"S 137° 0' 0"E

DEPTH LOGGED FROM 82.5m TO 1233.95m
DATE LOGGED FROM 15/8/88 TO 15/9/88
ELEVATION G.L. 264m (PRELIM) R.T. 266.2m

GEARHART PTY. LTD.
Geodata Services
AUSTRALIA
No. AH1500100 Telephone: (08) 46 6592 Telex: AA87137

LOGGING ENGINEERS
1 S WILLIAMSON
2
3
4

CHROMATOGRAPH SHIMADZU F.I.D.
TOTAL GAS RECORDER " "
H_2S RECORDER GENERAL MONITORS 2170

INSTRUMENTS CHECKED DAILY
24 HRS. LOGGING SERVICE
SCALE 1:500

LITHOLOGY

SANDSTONE, LIMESTONE, CALCARENITE, CALCISILTITE, SILTSTONE, DOLOMITE, DOLARENITE, DOLOSILTITE, CLAYSTONE, DOLOMITIC, CALCITIC, DOLOLUTITE, BRECCIATED, FLAT PEBBLE CONGLOMERATE, GRANITE, CALCILUTITE

ALGAL, STROMATOLITE, Hy HYALITHID, FAULTED, PYRITE, OOIDS/PELOIDAL, STYLOLITES, GRAINSTONE, VUGS, CHANNEL, PINHOLE

ABBREVIATIONS

NB	New bit	PP	Pump pressure	POH	Pull out of hole
NCB	New core bit	SPM	Strokes per minute	RIH	Run in hole
	Coring	CR	Circulated returns	WOW	Wait on weather
CS	Casing shoe	PR	Poor returns	LAT	Logged after trip
SWC	Sidewall cores	NR	No returns	LCM	Lost circulation material
EL	Electric log	TG	Trip gas	DC	Depth connection
RRB	Rerun bit	CG	Connection gas	DST	Drill stem test
WOB	Weight on bit	DS	Directional survey		
RPM	Revolutions per minute	WT	Wiper trip		

MUD TYPE Variable details specified in drilling rate column

POROSITY (Visible or inferred from texture)

MUD DATA

W	Weight lb/gal	CK	Cake thickness	32nd inch
MG	Mud gradient psi/1000 ft	S	Salinity	gm/ltr Cl
V	Funnel viscosity sec/qt	SD	Sand content	% by volume
PV	Plastic viscosity Cps	O	Oil content	% by volume
YP	Yield point lbs/100 ft	WL	Water loss	% by volume
GEL	Gel strength lbs/100 ft	SOL	Solids content	% by volume
pH		pf	Alkalinity of filtrate	
F	Filtrate API ml/30 minutes	GYP	Gypsum total/dissolved	

MATRIX POROSITY: slightly porous < 10%; porous 10-30%; Mixed porosity > 10%
VUGULAR POROSITY: Isolated vugs < 10%; Isolated vugs > 10%; Visibly interconnected vugs < 10%

CASING AND HOLE DATA

BIT SIZE	HOLE DEPTH	CASING SIZE	CASING SHOE
8.5"	87.5m	7"	85.9m
6"	251m	5"	249.63m
4.33"	1233.95m T.D.		

DRILLING & CORING DATA	DRILLING RATE & DATA (MINS/M, M/HR)	CUTTINGS LITHOLOGY %	VISUAL POROSITY / DEPTH (m)	INTERPRETIVE FORMATION LOG	DITCH GAS CHROMATOGRAPHIC ANALYSIS (Total gas, Methane C1, Ethane C2 - 2, Propane C3 - 3, Butanes C4 - 4, Pentane C5 - 5)	CUTTINGS GAS (Units)	OIL UV & TRICL Cut (Weak, Fair, Good)	LITHOLOGY DESCRIPTION MUD DATA & REMARKS

GROUND-LEVEL - 3.5m
AEOLIAN SAND:red,very fine.

3.5m - 30m
ARGILLACEOUS SANDSTONE:heavily Limonitic at surface,bec mottled/pallid toward base, quartzose,fn-crse gr,sbang, pr srt.

30m - 48m
LIMONITIC CLAY:brownish/yell, sandy,aquaclastic-aquaturgic, crmbly.

48m - 71m
LIMESTONE RUBBLE ZONE:
LIMESTONE:lt gy-gy/yell,abun limonitic CLAY as for 30m - 48m.

71m - 87.5m
WEATHERED LIMESTONE:yell/gy, massive,v finely recrystallised,brittle.

87.5m - 110m
LIMESTONE:lt gy,opaque,trns-l,med-fn xln,occ crsely xln,blky-tab,brit,hd.
DOLOMITE:wh,crm,blky,fn xln grading to DOLARENITE,sli sndy txtr incr w/ depth.
CALCARENITE:crm-v lt brn,vf gr,blky-sph,sli clayey,grd to CALCISILTITE,fri.

110m - 140m
CALCISILTITE:lt gy,sli disp, powdery,v calc ,massive,sli aren,grd to finer CALCILUTITE.
LIMESTONE:lt gy,lt gy/crm, calcarenitic i/p,massive, blky,frm-fri,also fn xln,hd, tr CLAY,SILT.
CALCARENITE:lt gy,occ lt gy /wh,blky,frm-fri,grding i/p to SST,brit.
DOLOMITE:med gy,dk gy,blky, med xln,hd,minor DOLARENITE
LIMESTONE:lt med gy,lt gy/ v pa olive/gn,blky,mxln-xln, brit,hd,tr chamositic,bk ? marlisation.

110m - 180m
LIMESTONE:lt-med gy,occ med gy/lt olive-gn,occ buff/lt brn,blky-tab,fine-med xln, brit,minor arg LST, grding to CALCILUTITE.
CALCILUTITE:arg mtx of lt b-rn CLAY;aquaclastic,mass, grding upward to CALCISILTITE.
DOLOMITE:med-dk gy,blky,frm-hd,fine-med xln,sli DOLARENITIC.
CALCILUTITE:lt gy,massive, blky,frm-crmbly,v calc.
CALCARENITE:dk gy,fn-vfg, fri,sli hd calc cmt,tight, grd to CALCISILTITE.
LIMESTONE:med gy,lt gy,blky, occ sph,occ plty,frm-brit, arg & fnly xln LST,tr wh calcite xls.

180m - 220m
CALCISILTITE:lt gy-med gy, grding to CALCARENITE i/p. lt brn,blky-tab,a/a.
LIMESTONE:med gy,occ lt tan /brn,blky-tabular,vf-med xl-n,brit,frm,hd,minor arg LST.
DOLOMITE:dk gy,dk brn,blky, hd,occ DOLARENITIC.
LIMESTONE:dk gy,occ lt gy/ wh,(tr Calcite),blky,tab, bec incr recrystallised, gritty;grding to CALCARENITE;gy/brn colour change.

220m - 240m
CALCILUTITE:lt brn,lt gy/crm,massive,sli aquaclastic CLAY content,v arg.
LIMESTONE:dk brn/gy,blky,tabular,med-fn xln,tr bk ?marlisation.

240m - 269m
CALCISILTITE:med-lt brn,blky,fri,tr CALCARENITE.
DOLOMITE:dk gy,dk gy/brn, blky,hd,med crse xln.
LIMESTONE:thinly bedded DOLOMITIC LIMESTONE;silty/ clayey,grades to rare calcareous MUDSTONE;light to medium grained (lutitic), thin (Decimeter scale)planar bedding;10 - 15° irreg. dip.

269m - 298.5m
SANDSTONE:wh-dk gy,fn-med gr,sil ogrowths,pred DOLOMITIC cmt,interbedded on meter scale w/ fn-crse gr intraclastic DOLOMITE,DOLOLUTITE sli carb. & arg.com remnant por in SST occupies 1-2m intervals;incomplete dep of silica,w/ bk carb,?Bituminous intervals.

298.5m - 301m
DOLOMITE(DOLOLUTITE):lt gy-lt gy/brn,bioturbated,occ faecal pellets,recrystallised,tr intercrystalline por.

301m - 307m
DOLOLUTITE:1-2m beds interbedded w/ intraclastic DOLORUDITE.recrystallised fine grained matrix w/ occ intercrystalline porosity,common vugs & solution porosity,por rarely interconnected,DOLOLUTITE;lt gy-lt gy/brn,massive to ripple lam,fining upwards,argillaceous.

307m - 372m
DOLOLUTITE:a/a,occ ½m inter beds of intra(?pel) sparrite,w/ calcite cmt.lt-med brn near top of interval,thin zone of major recrystallisation & stylolite formation,good solution porosity. fining upwards ripple-bedding common,occ siliclastic lag deposits on dep surfaces;365m - 368m:DOLOMITE xl Mush?,cemented by Calcite, heavy trace Bituminous residue;total interval to .5m, interbedded in recryst.DOLOLUTITE.

372m-373.4m
DOLORUDITE:1-5cm rubble clasts of DOLOLUTITE;lt-med gy, rr algal coatings on clasts, large 1-2cm solution channels,Tr Bituminous residue. Dolomite crystals lining channels.

373.4m - 425m
DOLOLUTITE:interbedded with DOLARENITE:lt-med gy to gy/ brn,pred ripple laminated w/ small upward fining cycles, arg. i/p,
DOLARENITE;incr. & bec dom. at base of interval.intraclastic;fn-rr crse gr,cmtd by Calcite;occ grades to CALCARENITE,occ large stromatolites from 399m to base of interval,occ zones of dist. bedding;intraformational breccia,w/com large 1-5cm,non connected calcite-lined vugs

414.8m - 415.2m
Heavy Oil Show,in intraclastic DOLARENITE;pore spaces bleeding heavy oil;yellow-yell/brn fluo,strong yell/wh streaming cut,heavy brown residual ring;fair pinhole solution por.

[illegible] BEDDED INTRACLASTIC CALCARENITE:pa pink to pnk/ orange,fining downwards to CALCILUTITE;non crystallised

426.5m - 436m
DOLARENITE:lt-med gy,chaotic bedding,bioturbated,occ Calcite filled vugs.

436m - 448.6m
Chaotically bedded DOLOLUTITE & DOLARENITE,lt-dk gy,lt-dk gy,pred DOLARENITE,gd por @439.8m-440.8m,fair-tr por throughout interval,tr Calcite i/p,1m zone of Stromatolite dev,fn,undulat.parrel lams in wh-pa gy,DOLOLUTITE.

448.6m - 475.3m
Thin bedded DOLARENITE/DOLOLUTITE,lt-med gy,pred arg, ripple-bedded w/lt gy calc. DOLARENITE,occ disturb.bioturb.zones w/ large calcite cavs.pr-fair intergran por, rr stringers of pnk CALCARENITE.

475.3m - 493m
DOLOSTONE:med gy/brn,pred vfn-crse intraclas.DOLARENITE fr-good por,minor Bitumin residue,large stromatolites, (1m),Bitumin in trapped DOLARENITE,calcite cmt bec prevalent toward base of int.

493m - 546m
Thinly interbedded calcareous DOLARENITE & DOLOLUTITE, DOLARENITE incr. w/ depth, lt gy w/ incr cementation, replacement w/ Calcite,pr intercrystalline por where cement absent,pred intraclastic,rr,fn Ooids,pred vf-m gr,well srt,DOLOLUTITE;lt-m gy to gy/brn,arg,small fining upwards cycles;occ .5-2m zones of bioturbation,occ 1-2m zones of CALCIRUDITE; intraclastic,pores spaces w/ Calcite & Bitumin res,thin zones of solution por;1-5cm cavities,occ disintegration of core;high energy Facies occupy 20% of interval,rr large stromatolites,dips decreasing from 30-45° to 10-15° over interval.

546m - 617m
Thinly bedded DOLARENITE;med gy/brn-lt gy,dom cmt by Calcite,grades to CALCARENITE interbedded w/DOLOLUTITE;lt-dk gy,arg i/p,occ 1-2m zones of intraclastic DOL/CALCIRUDITE,pred cmt by CALCITE,thin zones of good solution por w/ Bitumin res occ 1-4cm sft CLAY partings Dips approx 10°,high energy Facies occupy 20- 30% of section,coarsening upwards in 1-2m cycles,por not grain-size related.
Multiple Oil Shows 505.5m - 5[illegible]m:variable traces of

10-15° over interval.

596m - 617m
Thinly bedded DOLARENITE;m gy/brn-lt gy,dom cmt by Calcite,grades to CALCARENITE interbedded w/DOLOLUTITE lt-dk gy,arg i/p,occ 1-2m zones of intraclastic DOLCALCIRUDITE,pred cmt by CALCITE,thin zones of good solution por w/ Bitumin res, occ 1-4cm sft CLAY partings Dips approx 10°,high energy Facies occupy 20- 30% of section,coarsening upwards in 1-2m cycles,por not grain size related.
Multiple Oil Shows 595.5m - 617.75m:variable traces of bleeding oil;yell/brn oil fr intergranular por. in crse gr.intraclastic CALCARENITE also largely pinhole por. in crse gr,intraclastic DOLARENITE;intraclastic por. Calcite-filled,poor-fair shows.

617m - 683m
Thinly interbedded calcareous DOLARENITE:lt gy-yell/brn,DOLOLUTITE:lt-dk gy,wavy irreg.bedding;fining upwards over 1-10cm intervals interbedded lith. alternate w/ intraclast grainstone (CALCARENITE-CALCIRUDITE), occurring in 1-2m intervals occas.coarsening upwards. por.pred filled w/ Calcite. fn.intergranular pore space preserved and reveal bleeding Oil.large solution cavities occur sporad. thru high-energy Facies & rarely show Oil traces.High-energy Facies 30% of section;rr large Domal Stromatolites w/ Bitumin residues.Dips 5-10°
Multiple Oil Shows:611.2m-668.0m :dull yell flu/brn bleeding Oil,from v.argill. sl.sndy fri LST,trace intergranular & solution por in Intrclast DOLOSTONE,CALCIRUDITE & CALCARENITE.Tr ring residue.poor-fair show -s,pred poor.

683m - 695m
DOLOLUTITE & fine DOLARENITES;thinly interbedded,lt-m gy,.5-2m intervals of intraclast GRAINSTONE;lt gy mottled w/ tr Bitumin stain.por. Calcite filled,rr 1-2cm soln vugs.n/s,dips sub-horizontal to 5°.

695m - 697.8m
Intraclastic CALCARENITE;crse gr,v lt gy,tr pinhole por at top of interval w/ bleeding Oil,incr recryst.w/ depth,grades to dense stylolitic Cryst. LST.

697.8m - 698m.
Fault zone;disturbed & brecciated,thinly lam low-energy Facies,v low ang.5-10° striations,transverse to dip;(strike-slip),n/s.

698m - 710.6m.
Thinly lam CALCARENITE/CALCILUTITE,thin-1m intraclast GRAINSTONE,coarsening upwards OIL SHOW at 707.7-707.8m bleeding Oil,dll yell fluo Tr ring residue.Disturbed Boudinaged algal laminae in fn gr lime mud @ 703m.

710.6m - 721.3m
Intraclast GRAINSTONE bec mass,rexlised w/ depth,pred tight,tr soln cavities,some pores filled w/ Rhodochrosite bec qtz sndy i/p.

721.3m - 728m
Massive recryst.LIMESTONE; sndy,v lt gy,cycles comm.w/ minor disturbed slumped CALCILUTITE,grading downward to less stylolitic LST, w/ incr rnded,qtz grns;m-crse gr sd;grd to calc SST i/p,tr Rhodochrosite pore-filling. Dip 10-15°

728m - 752.8m
Sandy CALCARENITE;wh-v lt gy m-crse qtz sndy in 1-2m crse upward cycs,heav.recryst.

752.8m - 759m
CALCARENITE:lt-med gy,peloidal i/p,incr bioclastic/bioturbated w/ depth,Tr foss ? Calithid.

759m - 766.2m
Intraclastic & Peloidal CALCARENITE:med gy/brn,vf-m g, bioturb.tr shelly foss frags,com.stylolites,occ coarsening upward sequences.

766.2m - 771.9m
CALCARENITE:a/a,thinly interbedded w/ CALCILUTITE;dk gy,gy/brn,disturbed & Boudinage bedding,sharp upper contact showing sli.movt. along bedding plane.Dips 5°

771.9m - 778m.
Fault zone;numerous slick surfaces oriented parallel to bedding movt. from down dip to updip;highly fract. CALCARENITE;soln.por in fracts.Fault gouge & Breccia.

778m - 785m
Thinly interbedded CALCARENITE/CALCILUTITE;Fault zone between 780.2m - 782m.Dips 5°,30-40° within Fault rotated section.

785m - 797.6m
Peloidal/Intraclastic CALCARENITE;med gy/brn,fn-med gr,irreg lam w/ dk gy Dolomitic CALCILUTITE,com Boudinage.Thrust Fault:789.4-790.2m

797.6m - 807.2
a/a:CALCARENITE;90% section intensely Boudinaged,minor bioturbation & soln cavities

807.2m - 827m
a/a:darker CALCILUTITE bec less distinct;lt gy,from CALCARENITE;Boudinage,bioturbation variable;Granule-sized CALCARENITE @ 809.4m ,rnded intraclst & Peloids

827m -859m
CALCARENITE:med gy/brn, thinly interbedded w/ dk gy dolomitic CALCILUTITE.Boudinage irreg,minor bioturb. Dips 0-5°

859m - 862m
Sandy LIMESTONE:lt gy,vf (wispy laminated,bioturb,vf qtz grns,grd to Calc.SST.

862m - 892m
CALCARENITE interbedded w/ DOL/CALCILUTITE;pronoun.colour-banding,ripple bedded, sed.Boudinage & load casts. Dip sub-horizontal.

892m - 899m
Wavy bedded,vf CALCARENITE & DOL/CALCILUTITE;prom.lt-dk colour-banding:lt-dk gy,occ sed.Boudinage & feeding trails.

899m - 905.9m
Sandy LIMESTONE:med gy-gy/brn,faint wispy-banded bedding,?bioturb.grades to vf g Calc.SST,minor Fault brecciated zone @903.7m

905.9m - 915.65m
Thinly ripple-bedded CALCARENITE & dk CALCILUTITE;occ Pyrite in base of coarsening upward cycles,minor Boudinage.

915.65m - 956m
lt-dk banded,ripple-bedded CALCILUTITE:light bands grade occ to vf g CALCARENITE ,lith.bec incr.fnly lam(mm scale),sed.Boudinage less com.occ zones of massive stylolitic recryst.CALCARENITE,937.0m-937.6m,952.6m-952.8m,lower interval Bitumen stained,w/ petrolif.smell when fract.Bitumen zone 937.3m - 937.5m

956m - 984m
Wispy laminated LIMESTONE: med-dk gy/brn,vf g,planar to wavy bedding on mm scale,rr pyrite nods,mild petrolif. smell when fractured.

984m - 995m
LIMESTONE:a/a,cm scale banding,petrolif.odour,Fault zone ;high angle fract.@989m. 993m:10cm Peloid GRAINSTONE ,crse Calcite cmt.

995m - 1029m
Interbedded and wispy,planar LIMESTONE,com lams on mm scale;70% light CALCILUTITE, 30% dk(organic rich) LST, Dip sub-horiz,vert stylolites,nil vis por.

1029m - 1040.88m
Thickly laminated to thinly bedded CALCILUTITE:70% lt gy ,30% dk gy,com planar lams but w/ minor sed.Boudinage, pyritic along carb.rich layers,grds to vf CALCARENITE.

1040.58m - 1049.50m
Wispy,lamin.(mm scale) CALCILUTITE,ripple lams,nil vis intxln por,rr pyrite blebs, bec vf g CALCARENITE.

1049.50m - 1051.50m
Wispy lam CALCILUTITE:irreg lenses(1-2cm thick)of v lt gy CALCILUTITE,v rr pyr.in sb vertical stylolites.

1051.50m - 1055.60m
Thickly lam. to thinly bedded CALCILUTITE;cm scale banding of light(60%) & dk(40%) LST,rr sed.Boudinage,lams planar-sli wavy,occ stylol. grades to vf g CALCARENITE.

1055.60m - 1058.07m
Wispy lam CALCILUTITE;lt CALCILUT.lenses/lams.occ vert stylolites.

1058.07m - 1068m
CALCILUTITE;lt gy,w/20% dk CALCILUT.com fn lams & com calcite-filled fracts.mnr Boudinages & stylolites.

1068m - 1105m
Wispy lam CALCILUTITE;med dk gy-dk gy,occ grding to v org.rich CALCILUT. below 1086.60mwavy ripple lams,faint hydrocarb odour,loc bec pyritic;finel dissem.rr sed Boudinage,Calcite-filled fracts.occ grades to lt CALCARENITE,bec thinly interlamin.(cm scale),rr Ooltic CALCARENITE,@1104.03m-1104.6m,erosional top/bottom contact 3-5mm PELOIDS/GRAINSTONE,beds dipping below 5°.

1105m - 1146m
Wispy lam med dk gy CALCILUTITE,planar-undulat.bedding on mm scale,occ Bottryoidal pyr,mod petrolif.odour no vis por,lt-dk gy banded &sed Boudinage Facies,minor Calcite veins;sheared by updip movt,on minor bedding-plane Fault s @1128.4m

1146m - 1182m
LIMESTONE:med-dk gy,carbonaceous,abun vf-sbmicro.carb flakes,vf lam,wispy,planar bedding,organic matter content varies on meter scale, prod.colour variation w/ sharp non-erosional boundaries,near base of interval, bedding distorted around lge intraformational clasts 5-10cm,clasts are matrix-supported.

1182m - 1209.8m
LIMESTONE:med-v dk gy,massive to vf lam,planar,occ pyr blebs,mod Bituminous odour.

1209.8 - 1218m
DOLOMITE:fn-med intraclastic GRAINSTONE;lt gy,pervasively fract.por highly variable,from gd,intergranular por to poor,occ.soln.pinhole,minor bri-dull yell.fluo & bleeding v mnr,heavy,stky Oil from occ pore spaces, majority of good por.is without Oil shows,upper boundary of interval is faulted parallel to bedding,approx [illegible]cm of carb.Fault Gouge

1218m - 1220.8m
DOLOMITE:lt gy to gy/brn,pred fn gr intraclast GRAIN- [illegible] occ dk gy algal lams occ thin zones of trapped Stromatolites,pred tight,Tr -vf fenestrate por.Tr pyr.

1220.8m - 1221.9m
PROTEROZOIC:PALEOSOL./BASEMENT WASH:abun v. ang,fn-very coarse qtz & rr Feldspar gr,supported by silty Dolomitic mtx,v lt gy - off wh.

1221.9m - 1233.95m
GRANITE:feldspar,quartz,biotite,coarsely xln,subtle irreg high ang fabric,occ Feldspar megacrysts;feldspars are off-wh to v pa yell /gn,Biotite is v dk gy/brn. Upper contact is brecciated /Epidotised,minor high ang fracts. & shear zones.

DRILLING AND CORING DATA | DRILLING RATE | % LITHOLOGY | 1:500 (m) | DITCH GAS & CHROM ANALYSIS | OIL

No. AC1500100

WELL__________

PAGE__________

CRA Pacific Oil & Gas Pty Limited

Pet NTcw 538