

Open File Envelope

NUMBER 1801

PEL 5 AND PEL 6, PATCHAWARRA CENTRAL BLOCK

EROMANGA AND COOPER BASINS

FLY LAKE 2

TEST REPORTS

Submitted by

**Delhi Petroleum Pty Ltd and Santos Ltd
1991**

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MINES AND ENERGY
SOUTH AUSTRALIA



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ENVELOPE 1801

TENEMENT: PEL 5 and PEL 6, Patchawarra Central Block; Eromanga and Cooper Basins, South Australia

TENEMENT HOLDER: Delhi Petroleum Pty Ltd (operator before August 1987), Santos Ltd (operator after July 1987), Bridge Oil Development Pty Ltd, Reef Oil NL, Basin Oil NL, Vamgas Ltd, Sagasco Resources Ltd, Bridge Oil Ltd

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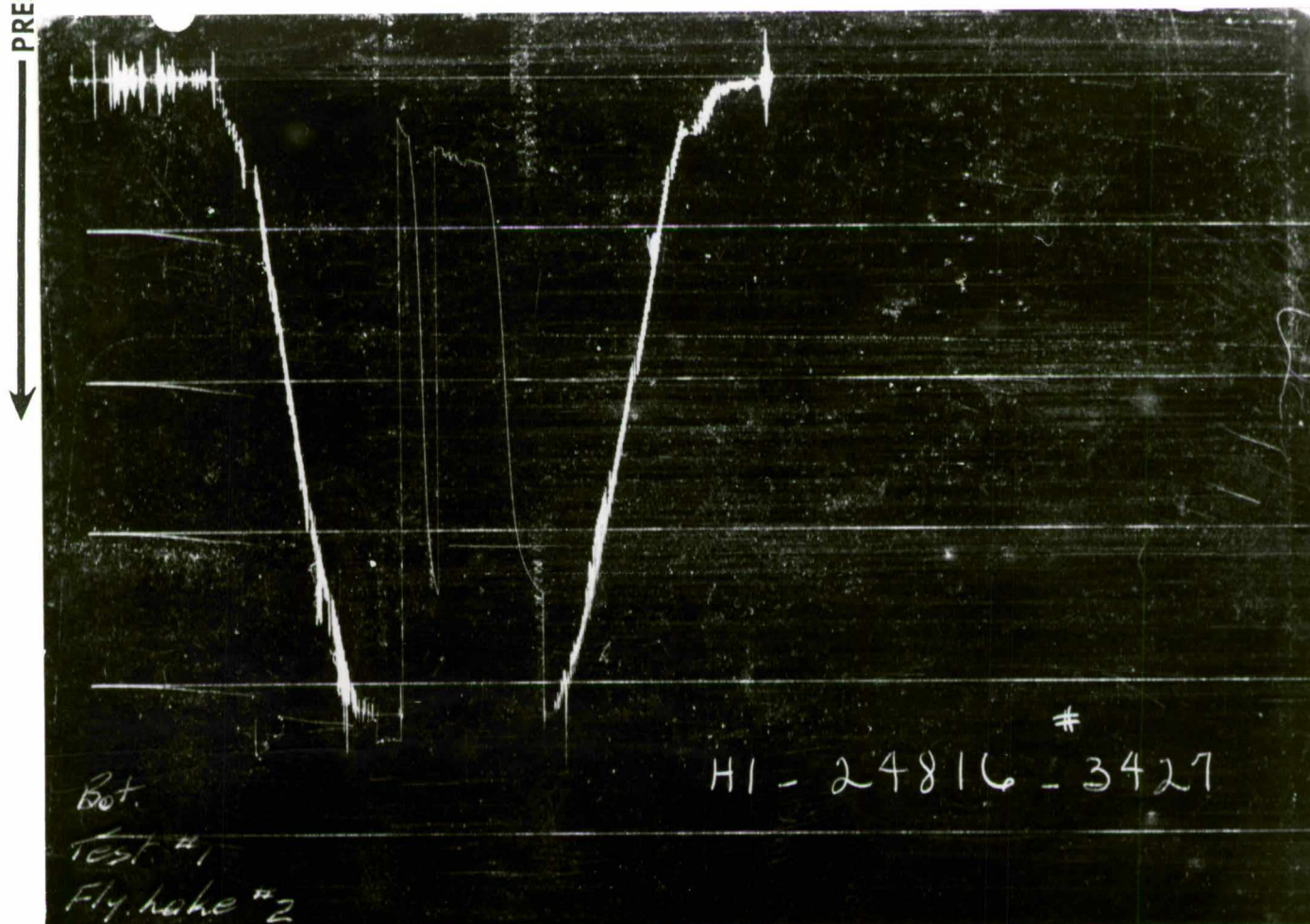
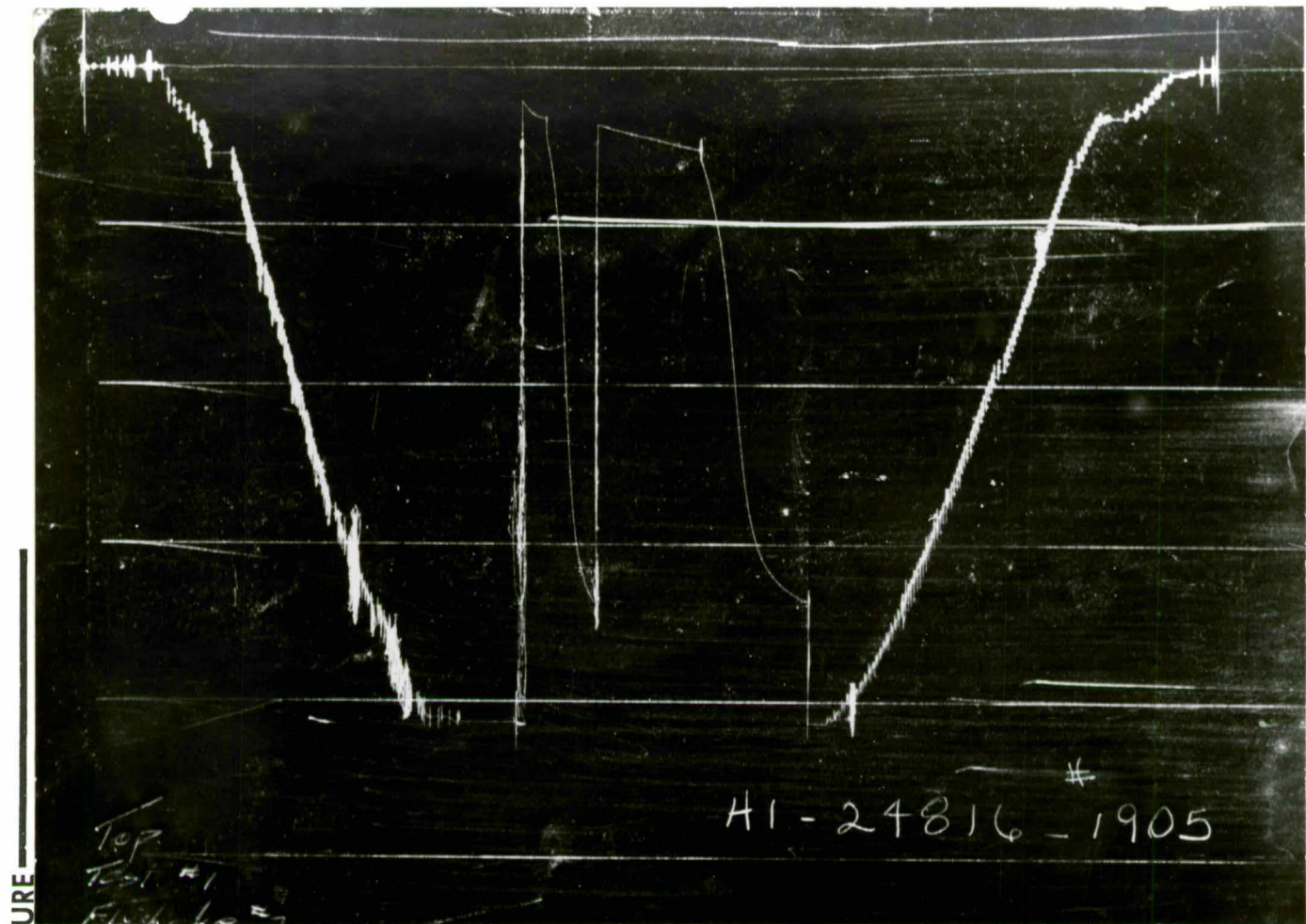
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Turpin, R., 1986. Fly Lake 2 Lower. Blind box run to clear tubing, and production test plus flowing pressure gradient survey. (Expertest Pty Ltd field report for Santos Ltd, dated 18-20 April 1986).	1801 R 24 Pgs 186-196
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Stevens, C., 1986. Electronic bottomhole pressure / bottomhole temperature (BHP/BHT) survey, Fly Lake 2 Lower (includes flowing pressure gradient determination plus reservoir pressure build-up @ 9380'). (Expertest Pty Ltd final report for Santos Ltd, dated 19-23 July 1986).	1801 R 27 Pgs 207-241
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Buddle, W., Tassone, F. and Dunthorn, H., 1986. Fly Lake 2 Lower. Well test (field) data sheets (surface separator data). (Nine tests conducted by Santos Ltd Production Engineering Dept between 8/5/86 and 23/8/86 to measure production fluid flow gas-oil ratio and water cut).	1801 R 34 Pgs 265-273
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Each Horizontal Line Equal to 1000 p.s.i.

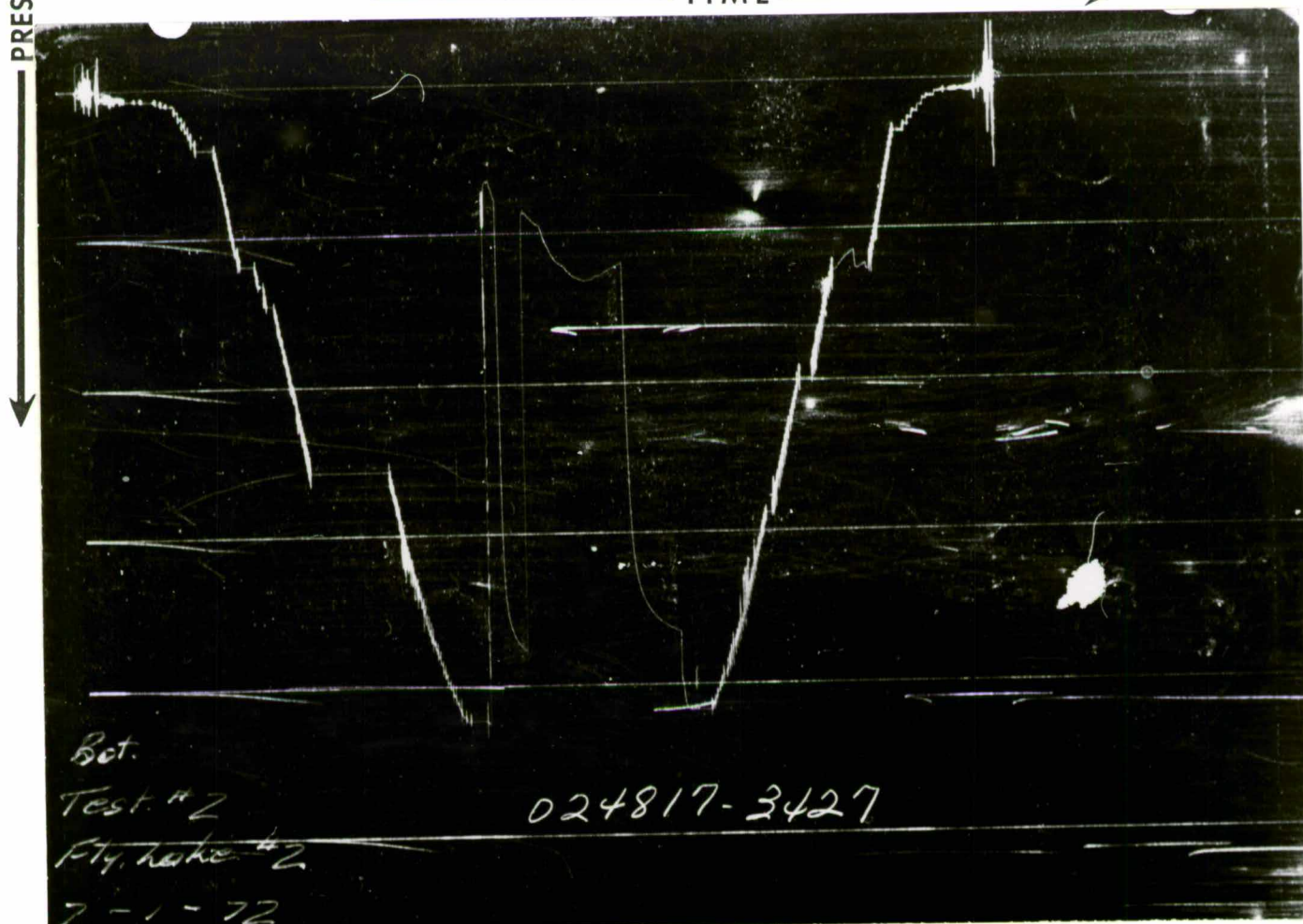
FLUID SAMPLE DATA				Date 1-4-72		Ticket Number HI - 24816	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ ° F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
				Tester BORAIN		Witness COVEY	
				Drilling Contractor OCEAN DRILLING AND EXPLORATION RIG #			
EQUIPMENT & HOLE DATA 9 NM S							
				Formation Tested Gidgealpa			
				Elevation 114' Ft.			
				Net Productive Interval _____ Ft.			
				All Depths Measured From Kelly Bushing			
				Total Depth 8745' Ft.			
				Main Hole/Casing Size 8 1/2"			
				Drill Collar Length 607.82' I.D. 2 13/16"			
				Drill Pipe Length 7991.76' I.D. 4.276"			
				Packer Depth(s) 8633.61' - 8641.73' Ft.			
				Depth Tester Valve 8617.73' Ft.			
Recovery Water _____ @ _____ ° F. _____ ppm		RESISTIVITY _____		CHLORIDE CONTENT _____			
Recovery Mud _____ @ _____ ° F. _____ ppm							
Recovery Mud Filtrate _____ @ _____ ° F. _____ ppm							
Mud Pit Sample _____ @ _____ ° F. _____ ppm							
Mud Pit Sample Filtrate 937/ Cu. Ft. _____ ppm							
Mud Weight _____							
TYPE NONE		AMOUNT NONE		Depth Back Pres. Valve NONE		Surface Choke 1/4" - 3/16" Bottom Choke 3/4"	
Cushion _____							
Recovered 450'		Feet of drilling mud				Med. From Tester Valve	
Recovered 540'		Feet of gas cut mud					
Recovered 180'		Feet of gas cut water					
Recovered _____		Feet of _____					
Recovered _____		Feet of _____					
Remarks SEE PRODUCTION TEST DATA SHEET...							
TEMPERATURE		Gauge No. 1905 Depth: 8621.86' Ft.		Gauge No. 3427 Depth: 8741' Ft.		Gauge No. _____ Depth: _____ Ft.	
		12 Hour Clock		24 Hour Clock		TIME	
Est. _____ ° F.		Blanked Off NO		Blanked Off YES		Tool _____	
						Opened 2:42 P.M.	
Actual 206 ° F.		Pressures		Pressures		Tool _____	
						Closed 5:29 P.M.	
		Field	Office	Field	Office	Field	Office
Initial Hydrostatic		4131	4131	4192	4202	Reported	Computed
						Minutes	Minutes
First Period	Flow Initial	210	220	270	278		
	Flow Final	320	320	380	385	15	15
	Closed in	3359	3361	3413	3423	30	28
Second Period	Flow Initial	363	367	460	455		
	Flow Final	508	519	570	597	60	61
	Closed in	3350	3350	3400	3413	62	63
Third Period	Flow Initial						
	Flow Final						
	Closed in						
Final Hydrostatic		4131	4131	4182	4202		

Gauge No. 1905			Depth 8621.86'			Clock No. 6743			12 hour	Ticket No. HI-24816					
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	220	.000		320	.000	367	.000		519					
1	.0192	254	.0214		636	.0685	392	.0483		836					
2	.0384	285	.0428		939	.1370	421	.0966		1321					
3	.0576	306	.0642		1526	.2055	443	.1449		2137					
4	.0768	316	.0856		2267	.2740	471	.1932		2781					
5	.096	320	.1070		2804	.3425	497	.2415		3064					
6			.1284		3075	.418	519**	.2898		3193					
7			.1498		3212			.3381		3270					
8			.1712		3304			.3864		3323					
9			.1926		3359			.435		3350					
10			.200		3361*										
11															
12															
13															
14															
15															

Gauge No.		3427		Depth		8741'		Clock No.		7239		hour		24	
0	.000	278	.000		385	.000	455	.000		597					
1	.0104	285	.0103		602	.0338	467	.0237		843					
2	.0208	335	.0206		828	.0676	532	.0474		1252					
3	.0312	362	.0309		1276	.1014	552	.0711		2074					
4	.0416	385	.0412		1993	.1352	543	.0948		2775					
5	.052	385	.0515		2730	.1690	562	.1185		3095					
6			.0618		3065	.206	597**	.1422		3239					
7			.0721		3237			.1659		3323					
8			.0824		3339			.1896		3380					
9			.0927		3408			.213		3413					
10			.096		3423*										
11															
12															
13															
14															
15															
Reading Interval		3	3		10		7								Minutes

REMARKS: * INTERVAL = 1 MINUTE. ** INTERVAL = 11 MINUTES.

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	.49"	.25"	.99	
Water Cushion Valve				
Drill Pipe	5"	4.276"	7991.76'	
Drill Collars	6½"	2 13/16"	607.82'	
CROSS-OVER SUB			.64'	
Handling Sub & Choke Assembly	5.87"	2.58"	2.67'	
Dual CIP Valve	5"	.87"	4.00'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	3/4"	5.01'	8617.73'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	2.25"	4.13'	8621.86'
Hydraulic Jar	5"	1"	3.27'	
VR Safety Joint	5"	1"	2.31'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.13'	8633.61'
Distributor	5"	1.68"	1.99'	
Packer Assembly	7 3/4"	1.75"	6.13'	8641.73'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint	5"	1.5"	3.99'	
Side Wall Anchor				
CROSS-OVER SUB	.51"	.17	.64	
Drill Collars	6½"	2 13/16"	58.84'	
CROSS-OVER SUB	.48"	.19"	.75	
Flush Joint Anchor	5"	2.37"	35.00'	
Blanked-Off B.T. Running Case	5"	2.44"	4.05'	8741'



Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA				Date 1-7-72		Ticket Number 024817	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
				Tester MR. BORAIN		Witness MR. COVEY	
				Drilling Contractor O.D. & E.		IC S	
EQUIPMENT & HOLE DATA							
				Formation Tested Gidgealpa			
				Elevation 114' Ft.			
				Net Productive Interval 27' Ft.			
				All Depths Measured From Kelly Bushing			
				Total Depth 8916' Ft.			
				Main Hole/Casing Size 8 1/2"			
				Drill Collar Length 581.40' I.D. 2 13/16"			
				Drill Pipe Length 8148.40' I.D. 4.276"			
				Packer Depth(s) 8769.13' - 8777.29' Ft.			
				Depth Tester Valve 8762.69' Ft.			
TYPE		AMOUNT		Depth Back		Surface	
Cushion		-		Ft. Pres. Valve		- Choke	
						1/4" - 7/16" Bottom Choke 3/4"	
Recovered		180		Feet of Gas cut condensate & water			
Recovered		450		Feet of Gas cut salty water			
Recovered		7600		Feet of Drilling mud			
Recovered				Feet of			
Recovered				Feet of			
Remarks SEE PRODUCTION TEST DATA SHEET							
TEMPERATURE		Gauge No. 1905		Gauge No. 3427		Gauge No.	
		Depth: 8766.82' Ft.		Depth: 8912' Ft.		Depth: _____ Ft.	
		12 Hour Clock		24 Hour Clock		Hour Clock	
Est. °F.		Blanked Off NO		Blanked Off YES		Blanked Off	
Actual 238 °F.		Pressures		Pressures		Pressures	
		Field	Office	Field	Office	Field	Office
Initial Hydrostatic		4150	4145	4222	4222		
First Period	Flow Initial	572	806	647	873		
	Flow Final	720	718	760	773		
	Closed in	3710	3718	3756	3766		
Second Period	Flow Initial	761	769	843	852		
	Flow Final	1123	1133	1179	1187		
	Closed in	3615	3621	3646	3649		
Third Period	Flow Initial						
	Flow Final						
	Closed in						
Final Hydrostatic		4118	4110	4168	4160		

Legal Location
Sec. - Twp. - Rng.FLY LAKE
Lease Name2
Well No.2
Test No.8777.29' - 8916'
Tested Interval

Field Area

COOPER BASIN

County

State

SOUTH AUSTRALIA

DELHI INTERNATIONAL OIL CORPORATION;
SANTOS LIMITED, VANDERBILT N.L., BRIDGE OIL N.L.

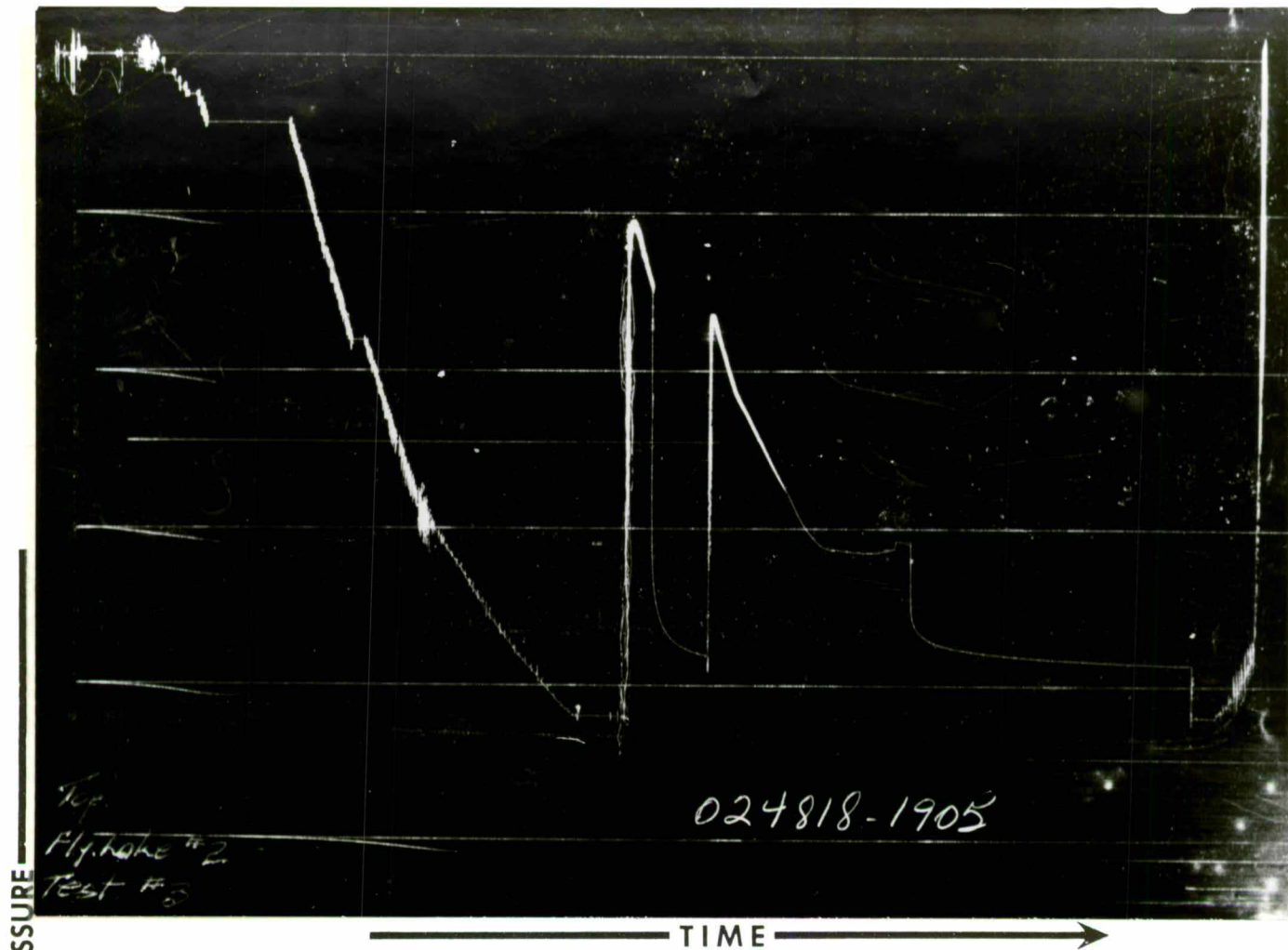
Gauge No. 1905			Depth 8766.82'			Clock No. 6743			12 hour	Ticket No. 024817					
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	806	.000		718	.000	769	.000		1133					
1	.0202	579	.0201		2930	.1405	867	.0543		3006					
2	.0404	574	.0402		3359	.2810	1112	.1085		3319					
3	.0606	611	.0603		3494	.4215	1232	.1628		3433					
4	.0808	665	.0804		3567	.5620	1252	.2170		3498					
5	.1010	718	.1005		3613	.7026	1185	.2713		3543					
6			.1206		3647	.8220	1133**	.3255		3576					
7			.1407		3669			.3798		3602					
8			.1608		3688			.4340		3621					
9			.1809		3701										
10			.2080		3718*										
11															
12															
13															
14															
15															

Gauge No. 3427			Depth 8912'			Clock No. 7239			24 hour						
0	.000	873	.000		773	.000	852	.000		1187					
1	.0104	667	.0102		2871	.0684	938	.0273		3000					
2	.0208	650	.0204		3358	.1367	1169	.0545		3338					
3	.0312	673	.0306		3510	.2051	1276	.0818		3462					
4	.0416	727	.0408		3601	.2735	1300	.1090		3530					
5	.0520	773	.0510		3653	.3419	1240	.1363		3575					
6			.0612		3688	.4000	1187**	.1635		3608					
7			.0714		3713			.1908		3633					
8			.0816		3731			.2180		3649					
9			.0918		3748										
10			.1050		3766*										
11															
12															
13															
14															
15															
Reading Interval 3			3			20			8			Minutes			

REMARKS: *Last interval equal to 4 minutes **Last interval equal to 17 minutes

SPECIAL PRESSURE DATA

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6.12"	3.00"	.99'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8148.40'	
Drill Collars	-	2 13/16"	581.40'	
	X OVER SUB		.64'	
Handling Sub & Choke Assembly	5.87"	2.58"	2.67'	
Dual CIP Valve	5"	.87"	4.00'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5.01'	8762.69'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	2.25"	4.13'	8766.82'
Hydraulic Jar				
VR Safety Joint	5"	1.00"	2.31'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.13'	8769.13'
Distributor	5"	1.68"	1.99'	
Packer Assembly	7 3/4"	1.75"	6.17'	8777.29'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint	5"	1.50"	3.99'	
	X OVER SUB		.64'	
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	6 1/2"	2 13/16"	85.28'	
	X OVER SUB		.75'	
Flush Joint Anchor	5"	2.37"	44.00'	
Blanked-Off B.T. Running Case	5"	2.44"	4.05'	8912'



Each Horizontal Line Equal to 1000 p.s.i.

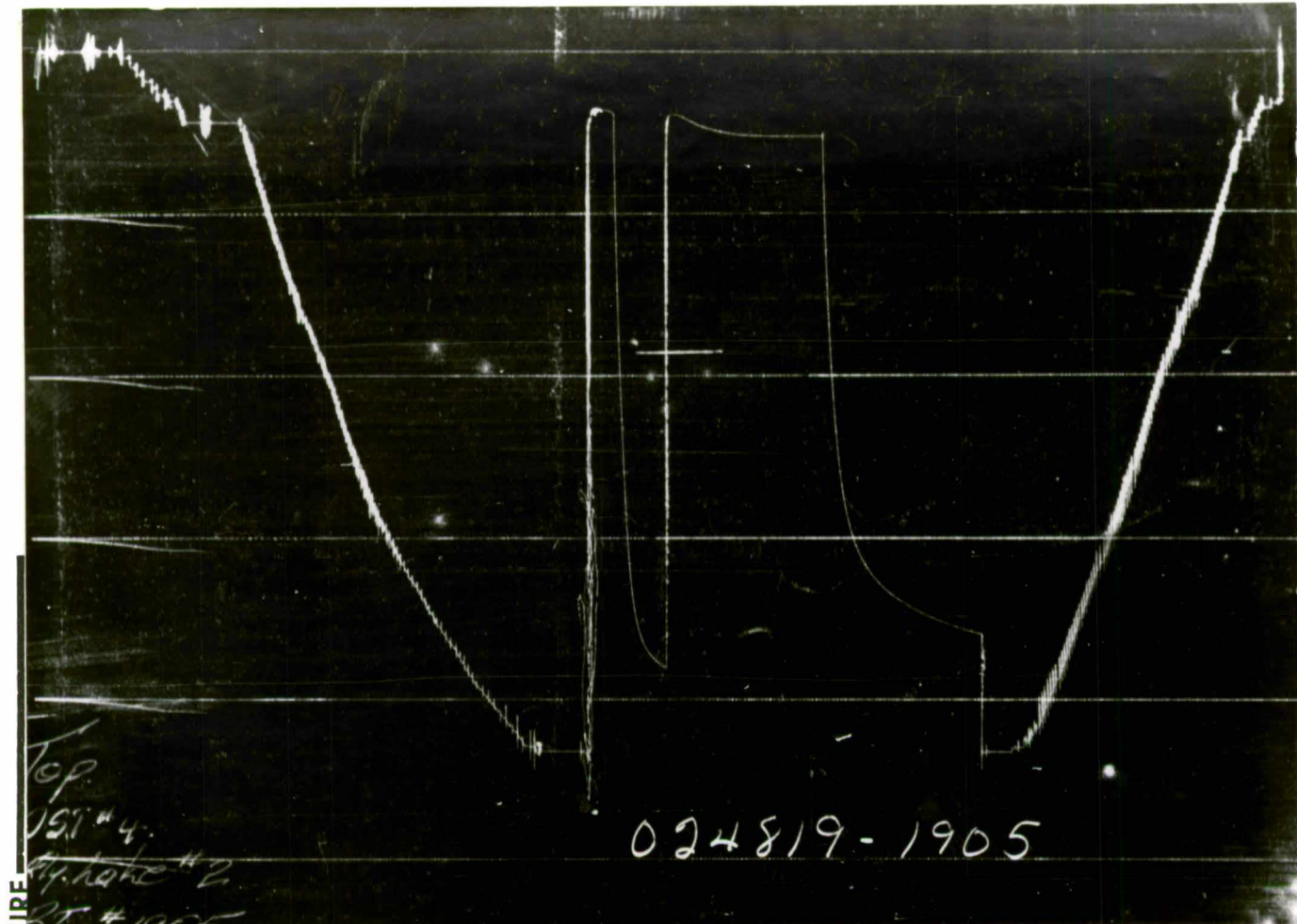
FLUID SAMPLE DATA				Date 1-9-72		Ticket Number 024818	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
				Tester MR. BORAIN		Witness MR. COVEY	
				Drilling Contractor O.D. & E.		IC S	
EQUIPMENT & HOLE DATA							
				Formation Tested Gidgealpa			
				Elevation 114' Ft.			
				Net Productive Interval 40' Ft.			
				All Depths Measured From Kelly Bushing			
				Total Depth 9073' Ft.			
				Main Hole/Casing Size 8 1/2"			
				Drill Collar Length 522.13' I.D. 2 13/16"			
				Drill Pipe Length 8400' I.D. 4.276"			
				Packer Depth(s) 8941.74' - 8949.86' Ft.			
				Depth Tester Valve 8929.13' Ft.			
TYPE		AMOUNT		Depth Back		Surface	
Cushion	850'	WATER		Ft.	Pres. Valve -	Choke 1/4" - 7/16"	Bottom Choke 3/4"
Recovered 7800				Feet of Gas cut water			
Recovered				Feet of			
Recovered				Feet of			
Recovered				Feet of			
Recovered				Feet of			
Remarks SEE PRODUCTION TEST DATA SHEET.							
TEMPERATURE		Gauge No. 1905		Gauge No. 3427		Gauge No.	
Depth:		8933.26' Ft.		Depth:		9070' Ft.	
		12 Hour Clock				24 Hour Clock	
Est. 170 °F.		Blanked Off NO		Blanked Off YES		Blanked Off	
Actual °F.		Pressures		Pressures		Pressures	
		Field	Office	Field	Office	Field	Office
Initial Hydrostatic		4204	4193	4262	4262		
First Period Flow	Initial	1040	1304	1291	1562		
	Final	1474	1452	1667	1658		
	Closed in	3796	3801	3862	3849		
Second Period Flow	Initial	1644	1650	1753	1745		
	Final	3072	3078	3145	3145		
	Closed in	3850	3846	3875	3880		
Third Period Flow	Initial						
	Final						
	Closed in						
Final Hydrostatic		4179	4187	4245	4242		

Gauge No. 1905			Depth 8933.26'			Clock No. 6743			12 hour	Ticket No. 024818					
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	1304	.000		1452	.000	1650	.000		3078					
1	.0196	1064	.0206		3439	.1388	2232	.0138		3578					
2	.0392	1115	.0412		3573	.2776	2658	.0276		3627					
3	.0588	1225	.0618		3643	.4164	3037	.0414		3654					
4	.0784	1335	.0824		3688	.5553	3128	.0552		3672					
5	.0980	1452	.1030		3717	.6941	3131	.0690		3688					
6			.1236		3739	.8190	3078**	.0828		3702					
7			.1442		3756			.0966		3712					
8			.1648		3769			.1104		3720					
9			.1854		3780			.1242		3728					
10			.2060		3790			.1380		3734					
11			.2340		3801*			.3449		3782					
12								.5519		3811					
13								.7588		3826					
14								.9657		3838					
15								1.1520		3846					

Gauge No. 3427			Depth 9070'			Clock No. 7239			24 hour						
0	.000	1562	.000		1658	.000	1745	.000		3145					
1	.010	1295	.0102		3485	.0678	2333	.0068		3633					
2	.020	1333	.0204		3623	.1356	2728	.0136		3678					
3	.030	1425	.0306		3693	.2034	3097	.0203		3703					
4	.040	1555	.0408		3739	.2711	3191	.0271		3723					
5	.050	1658	.0510		3769	.3389	3199	.0339		3739					
6			.0612		3791	.4000	3145**	.0407		3754					
7			.0714		3807			.0474		3764					
8			.0816		3821			.0542		3772					
9			.0918		3831			.0610		3779					
10			.1020		3841			.0678		3786					
11			.1160		3849*			.1695		3832					
12								.2711		3854					
13								.3728		3867					
14								.4745		3875					
15								.5660		3880					
Reading Interval 3			3			20			***			Minutes			

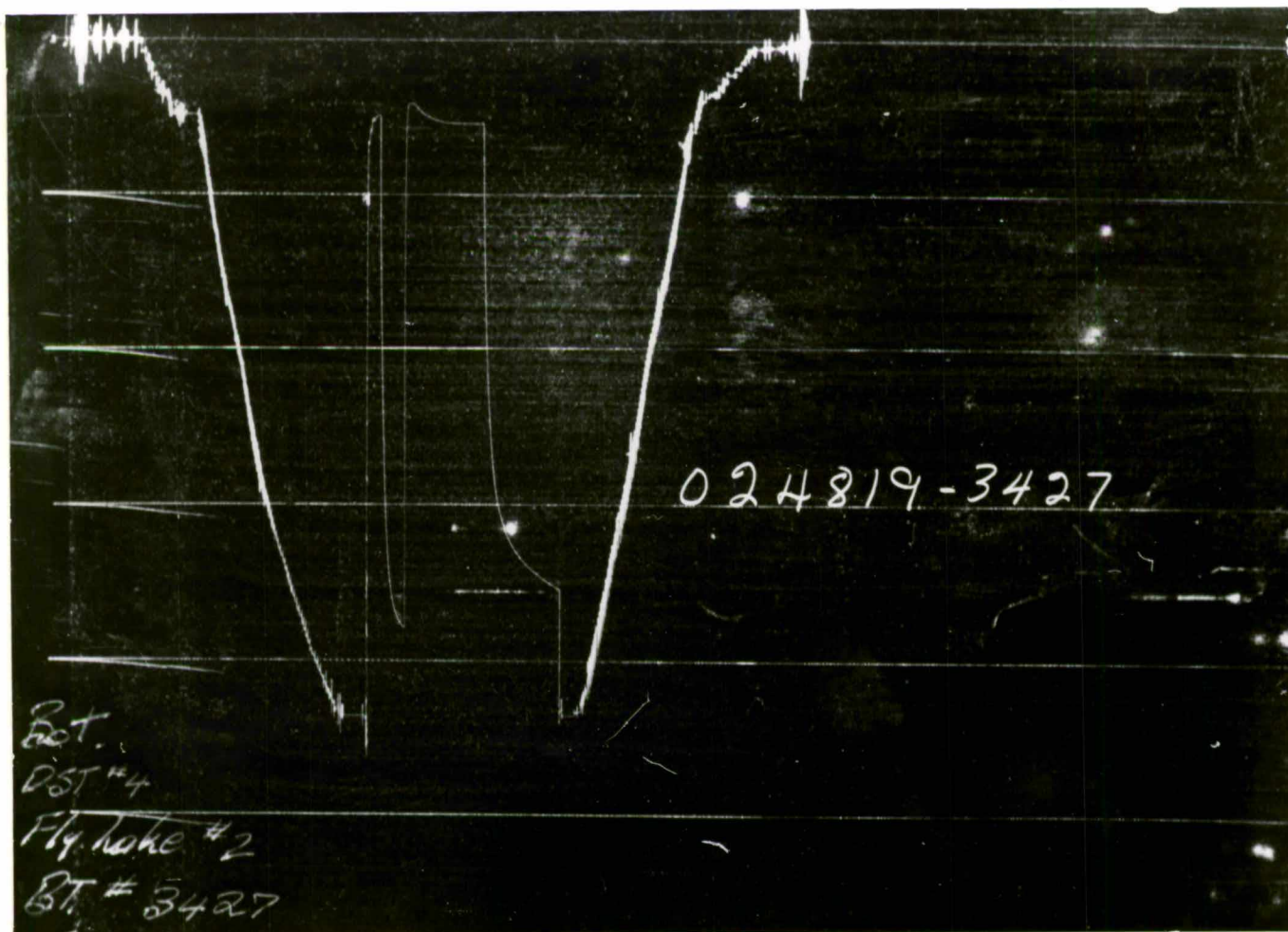
REMARKS: *Last interval equal to 4 minutes **Last interval equal to 18 minutes ***First 10 intervals equal to 2 minutes each; next 4 intervals equal to 30 minutes and last interval equal to 27 minutes.

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6.12"	3.00"	.99'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8400'	
Drill Collars	6 1/2"	2 13/16"	522.13'	
			.64' X OVER SUBS	
Handling Sub & Choke Assembly	5.87"	2.58"	2.67'	
Dual CIP Valve	5"	.87"	4.00'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5.01'	8929.13'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	2.25"	4.13'	8933.26'
Hydraulic Jar				
VR Safety Joint	5"	1.00"	2.31'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.17'	8941.74'
Distributor	5"	1.68"	1.99'	
Packer Assembly	7 3/4"	1.75"	6.13'	8949.86'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint	5"	1.50"	3.99'	
			.64' X OVER SUB	
Side Wall Anchor				
Drill Collars	6 1/2"	2 13/16"	85.71'	
			.75' X OVER SUB	
Flush Joint Anchor	5"	2.37"	28.00'	
Blanked-Off B.T. Running Case	5"	2.44"	4.05'	9070'



PRESSURE

TIME



Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA				Date 1-11-72		Ticket Number 024819	
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
Recovery: Cu. Ft. Gas _____				Tester MR. BORAIN		Witness MR. COVEY	
cc. Oil _____				Drilling Contractor O.D. & E RIG# 9 DR S			
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested Gidgealpa			
Tot. Liquid cc. _____				Elevation 114' Ft.			
Gravity _____ ° API @ _____ °F.				Net Productive Interval - Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				All Depths Measured From Kelly Bushing			
RESISTIVITY _____ CHLORIDE CONTENT _____				Total Depth 9260' Ft.			
Recovery Water _____ @ _____ °F. _____ ppm				Main Hole/Casing Size 8 1/2"			
Recovery Mud _____ @ _____ °F. _____ ppm				Drill Collar Length 611.00' I.D. 2 13/16"			
Recovery Mud Filtrate _____ @ _____ °F. _____ ppm				Drill Pipe Length 8524.04' I.D. 4.276"			
Mud Pit Sample _____ @ _____ °F. _____ ppm				Packer Depth(s) 9194.38' Ft.			
Mud Pit Sample Filtrate _____ @ _____ °F. _____ ppm				Depth Tester Valve 9181.82' Ft.			
Mud Weight 9.3 vis 43 cp							
TYPE		AMOUNT		Depth Back		Surface	
Cushion		950' Water		Ft. Pres. Valve		Choke	
Recovered		950		Feet of water cushion			
Recovered		180		Feet of gas cut water			
Recovered		100		Feet of gas cut mud			
Recovered				Feet of			
Recovered				Feet of			
Remarks SEE PRODUCTION TEST DATA SHEET							
TEMPERATURE		Gauge No. 1905		Gauge No. 3427		Gauge No.	
Depth:		9185.95' Ft.		Depth: 9256' Ft.		Depth: _____ Ft.	
Est. _____ °F.		12 Hour Clock		24 Hour Clock		Hour Clock	
Blanked Off No		Blanked Off Yes		Blanked Off		Tool A.M.	
Actual 238 °F.		Pressures		Pressures		Opened 7:15 P.M.	
		Field Office		Field Office		Tool A.M.	
		4329 4334		4355 4360		Closed 11:00 A.M.	
Initial Hydrostatic		356 487		- 660		Reported Minutes	
Flow Initial		385 388		493 495		Computed Minutes	
Flow Final		3790 3807		3786 3797		15 15	
Closed in		392 290		410 418		30 30	
Flow Initial		527 529		540 543		90 90	
Flow Final		3589 3596		3540 3551		90 90	
Closed in							
Flow Initial							
Flow Final							
Closed in							
Final Hydrostatic		4326 4334		4352 4360			

Gauge No.			1905		Depth		9185.95'		Clock No.		6743		12 hour		Ticket No.		024819			
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure							
	Time Defl. .000''	PSIG Temp. Corr.	Time Defl. .000''	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000''	PSIG Temp. Corr.	Time Defl. .000''	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000''	PSIG Temp. Corr.	Time Defl. .000''	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000''	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.		
0	.000	487	.000		388	.000	290	.000		529										
1	.021	372	.0200		1949	.1033	437	.0620		2553										
2	.042	364	.0400		2749	.2066	495	.1240		3037										
3	.063	367	.0600		3231	.3099	524	.1860		3219										
4	.084	371	.0800		3482	.4132	529	.2480		3323										
5	.105	388	.1000		3611	.5165	529	.3100		3391										
6			.1200		3685	.6200	529	.3720		3449										
7			.1400		3729			.4340		3502										
8			.1600		3763			.4960		3540										
9			.1800		3787			.5580		3572										
10			.2000		3807			.6200		3596										
11																				
12																				
13																				
14																				
15																				

Gauge No. 3427															Depth		9256'		Clock No. 7239-24			hour		
0	.000	660	.000		495	.000	418	.000		543														
1	.0094	582	.0099		1903	.0507	452	.0303		2580														
2	.0188	508	.0198		2760	.1014	510	.0606		3037														
3	.0282	503	.0297		3236	.1521	535	.0909		3217														
4	.0376	488	.0396		3482	.2028	542	.1212		3288														
5	.0470	495	.0495		3605	.2535	543	.1515		3357														
6			.0594		3679	.3040	543	.1818		3410														
7			.0693		3729			.2121		3453														
8			.0792		3761			.2424		3490														
9			.0891		3786			.2727		3520														
10			.0990		3797			.3030		3551														
11																								
12																								
13																								
14																								
15																								
Reading Interval 3			3			15		9						Minutes										

REMARKS:

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6.12"	3.00"	.99"	
Water Cushion Valve				
Drill Pipe	.5"	4.276"	8534.04'	
Drill Collars		2 13/16"	611.00'	
	X over sub		.64"	
Handling Sub & Choke Assembly	5.87"	2.58"	2.67'	
Dual CIP Valve	5"	.87"	4.00'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	4.01'	9181.82'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	2.25"	4.13'	9185.95'
Hydraulic Jar				
VR Safety Joint	5"	1.00"	2.31'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.13'	9194.39'
Distributor				
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint	5"	1.50"	3.99'	
	X over sub		.64"	
Side Wall Anchor				
Drill Collars	6 1/2"	2 13/16"	30.18'	
	X over sub		.75"	
Flush Joint Anchor	5"	2.37"	26.00'	
Blanked-Off B.T. Running Case	5"	2.44"	4.05'	9256'

PRESSURE

TIME

Top.
Test #5
Fly hook #2
BT # 1905

024820-1905

Bot.
Test #5
Fly hook #2
BT # 3427

024820-3427

Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA				Date		Ticket Number	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl.				1-14-72		024820	
Kind of Job Tester Drilling Contractor				OPEN HOLE MR. BORAIN O.D. AND E.		Halliburton District Witness RIG #9 BC	
				MOOMBA		MR. COVEY	
EQUIPMENT & HOLE DATA							
Formation Tested Elevation Net Productive Interval All Depths Measured From Total Depth Main Hole/Casing Size Drill Collar Length Drill Pipe Length Packer Depth(s) Depth Tester Valve				Gidgealpa 114' _____ Ft. _____ Ft. Kelly Bushing 9408' 8 1/2" 551.22' I.D. 2 13/16" 8645.29' I.D. 4.276" 9242.99' - 9251.11' 9230.38'			
Recovery Water _____ @ _____ °F. _____ ppm Recovery Mud _____ @ _____ °F. _____ ppm Recovery Mud Filtrate _____ @ _____ °F. _____ ppm Mud Pit Sample _____ @ _____ °F. _____ ppm Mud Pit Sample Filtrate _____ @ _____ °F. _____ ppm Mud Weight _____ 9.3 vis _____ 42 cp				RESISTIVITY CHLORIDE CONTENT			
TYPE AMOUNT Cushion 1000 Water		Depth Back Pres. Valve		Surface Choke		Bottom Choke	
				1/2" - 7/16"		3/4"	
Recovered		Feet of		Meo. From Tester Valve			
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks Engaged stylus on bottom recorder at 8:00. Engaged stylus on top recorder at 8:48. On bottom at 1:55 Tool opened at 1:57. Failed to get packer seat. Tried to seat packer again at 2:03. Lost annulus. Picked up and came out of hole.							
TEMPERATURE		Gauge No. 1905		Gauge No. 3427		Gauge No.	
Depth:		9234.51' Ft.		9404' Ft.		Ft.	
12 Hour Clock		24 Hour Clock		Hour Clock		TIME	
Est. °F.		Blanked Off NO		Blanked Off YES		Blanked Off	
Actual °F.		Pressures		Pressures		Pressures	
		Field Office		Field Office		Field Office	
Initial Hydrostatic		-		4339		-	
First Period Flow Initial							
Final		MISRUN....		MISRUN....			
Closed in							
Second Period Flow Initial							
Final							
Closed in							
Third Period Flow Initial							
Final							
Closed in							
Final Hydrostatic		-		4339		-	
				4430			

Legal Location
Sec. - Twp. - Rng.FLY LAKE
Lease Name2
Well No.5
Test No.9251.11' - 9408'
Tested IntervalSANTOS, LTD, VAMCAS NL
Lease Owner/Company
DEIHI INTERNATIONAL OIL CORPORATION
OIL NL.

Field Area

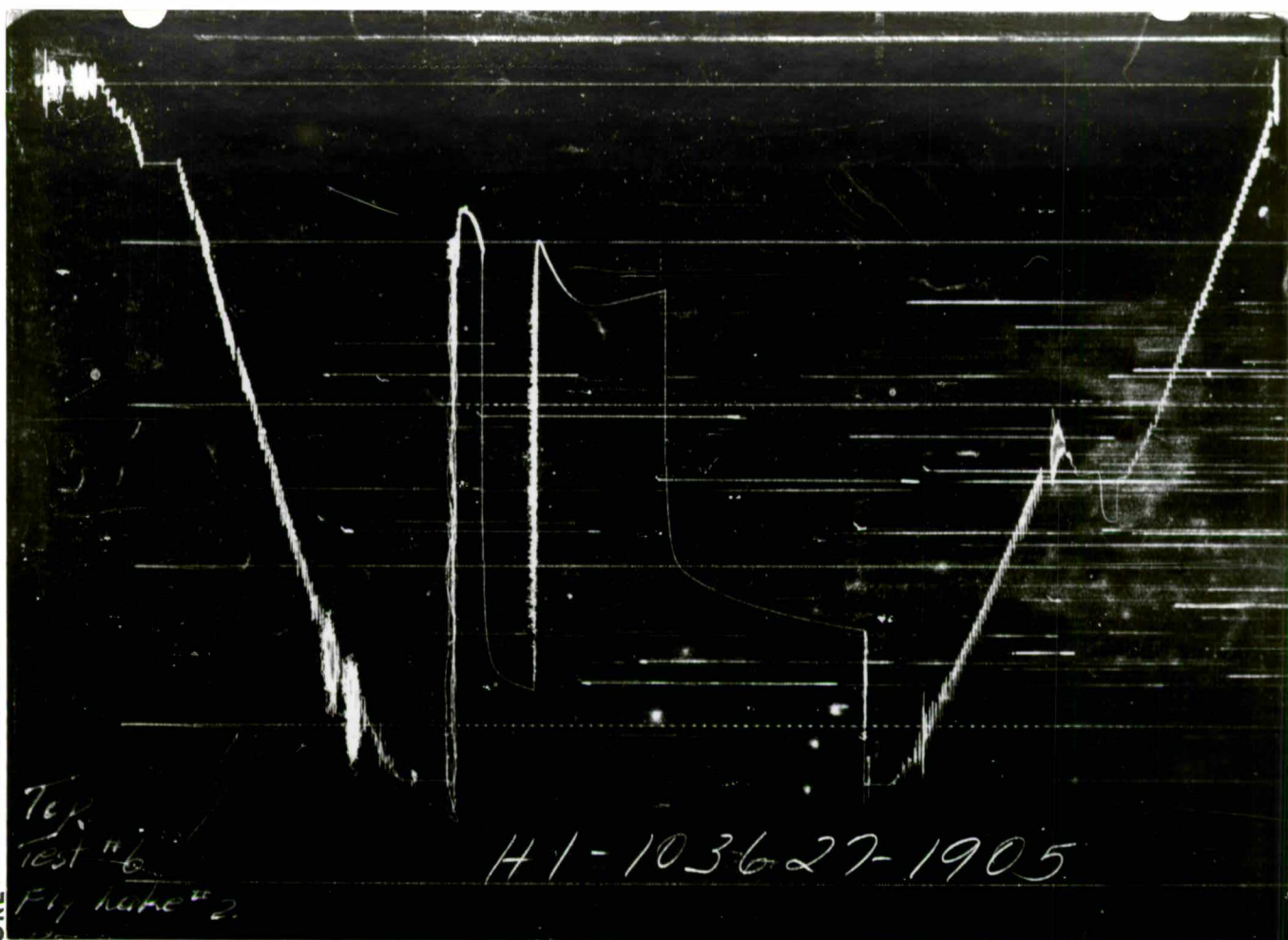
COOPER BASIN

County

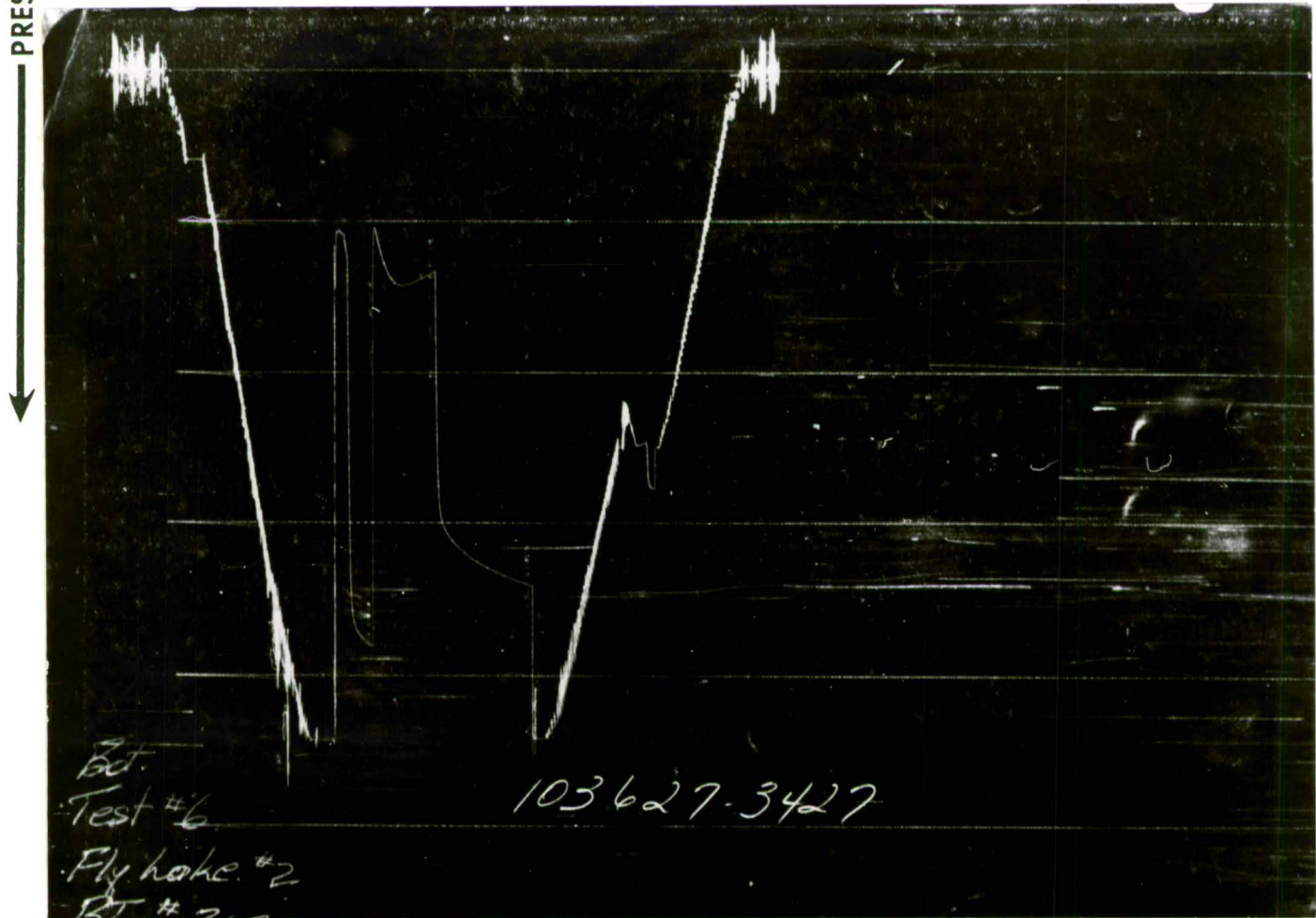
State SOUTH AUSTRALIA

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6.12"	3"	.99'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8645.29'	
Drill Collars	6½"	2 13/16"	60'	
	CROSS OVER SUB		.64'	
Handling Sub & Choke Assembly	5.87"	2.58"	2.67'	
Dual CIP Valve	5"	.87"	4'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5.01'	9230.38'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	2.25"	4.13'	9234.51'
Hydraulic Jar				
VR Safety Joint	5"	1"	2.31'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.17'	9242.99'
Distributor	5"	1.68"	1.99'	
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly	7 3/4"	1.75"	6.13'	9251.11'
Anchor Pipe Safety Joint	5"	1.50"	3.99'	
	Cross Over Sub		.64'	
Side Wall Anchor				
Drill Collars	6½"	2 13/16"	115.46'	
	Cross Over Sub		.75'	
Flush Joint Anchor	5"	2.37"	32'	
Blanked-Off B.T. Running Case	5"	2.44"	4.05'	9404'

PRESSURE
↓



TIME
→



Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA				Date 1-15-72		Ticket Number 103627	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
				Tester B.V. BORAIN		Witness C. COVEY	
				Drilling Contractor O D & E		RIG # 9	
EQUIPMENT & HOLE DATA							
				Formation Tested Gidgealpa			
				Elevation 114' Ft.			
				Net Productive Interval - Ft.			
				All Depths Measured From Kelly bushing			
				Total Depth 9408' Ft.			
				Main Hole/Casing Size 8 1/2"			
				Drill Collar Length 579.07 b. 2 13/16"			
				Drill Pipe Length 8679.46 4.276"			
				Packer Depth(s) 9270.96' Ft.			
				Depth Tester Valve 9258.39' Ft.			
		RESISTIVITY	CHLORIDE CONTENT				
Recovery Water	_____ @ _____ °F.	_____ ppm					
Recovery Mud	_____ @ _____ °F.						
Recovery Mud Filtrate	_____ @ _____ °F.	_____ ppm					
Mud Pit Sample	_____ @ _____ °F.						
Mud Pit Sample Filtrate	_____ @ _____ °F.	_____ ppm					
Mud Weight	9.1 vis	43 cp					
Cushion	TYPE water	AMOUNT 1000	Ft.	Depth Back Pres. Valve	Surface Choke 1/4-7/16"	Bottom Choke 3/4"	
Recovered	90	Feet of	gas cut mud below reversing sub				
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks							
SEE PRODUCTION TEST DATA SHEET							
TEMPERATURE		Gauge No. 1905	Gauge No. 3427	Gauge No.	TIME		
Depth: 9262.52 Ft.		Depth: 9404 Ft.	Depth: _____ Ft.				
Calc. 170 °F.		12 Hour Clock	24 Hour Clock	Hour Clock		Tool A.M.	
Est. 170 °F.		Blanked Off no	Blanked Off yes	Blanked Off		Opened 6:21 P.M.	
Actual °F.		Pressures		Pressures		Tool A.M.	
		Pressures		Pressures		Closed 10:17 P.M.	
	Field	Office	Field	Office	Field	Office	Reported Minutes
Initial Hydrostatic	4332	4353	4435	4433			Computed Minutes
First Period	Flow Initial	771	998	1070	1159		
	Flow Final	1024	1045	1232	1235		
	Closed in	3767	3785	3809	3813	15	15
Second Period	Flow Initial	976	1003	1043	1053		
	Flow Final	1273	1300	1305	1495	31	30
	Closed in	3385	3399	3410	3416	75	75
Third Period	Flow Initial						
	Flow Final					115	116
	Closed in						
Final Hydrostatic	4332	4353	4415	4433			

Legal Location
Sec. - Twp. - Rng.Lease Name
FLY LAKEWell No.
2Test No.
6Tested Interval
9270.96-9408'Field Area
COOPER BASIN

County

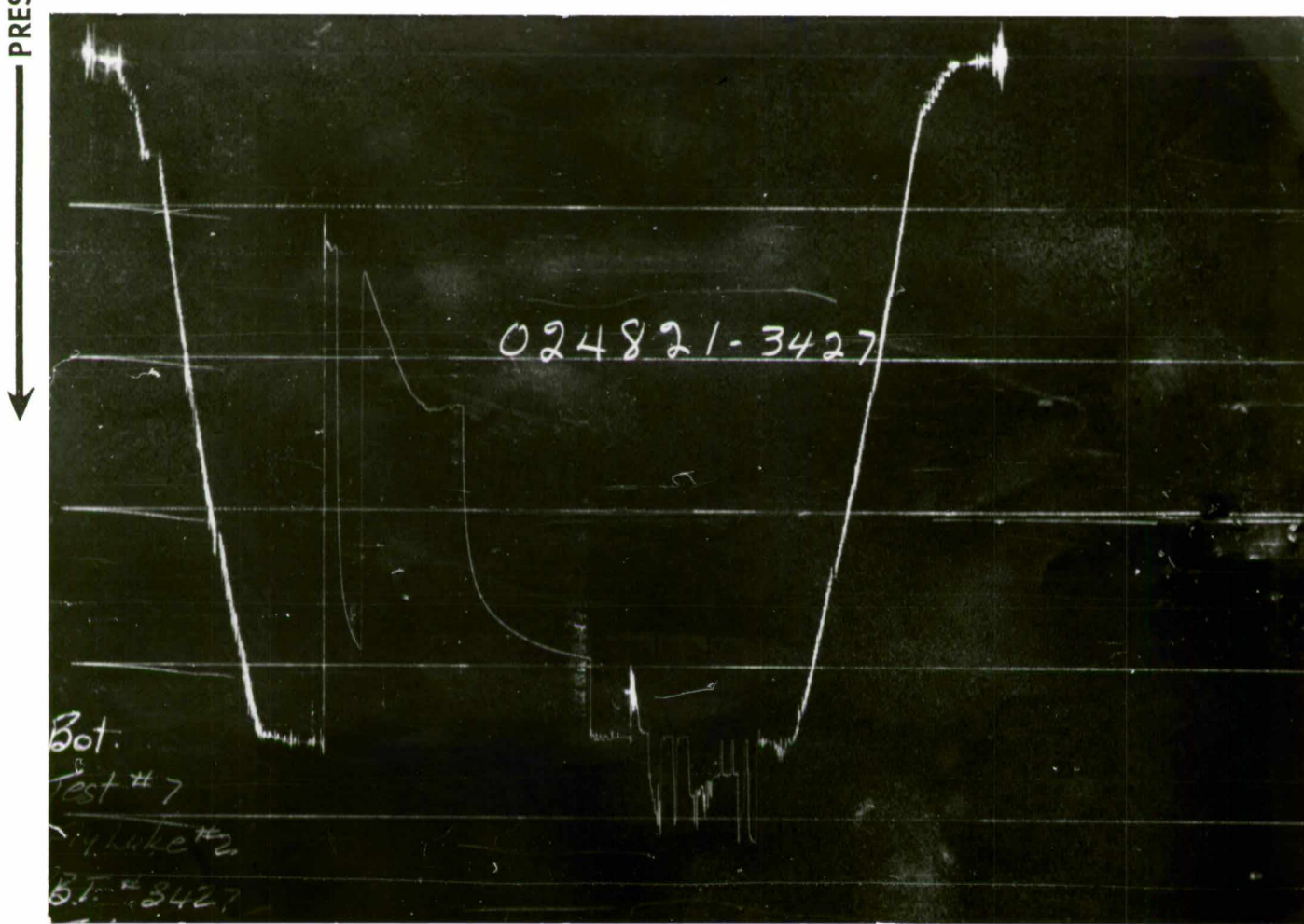
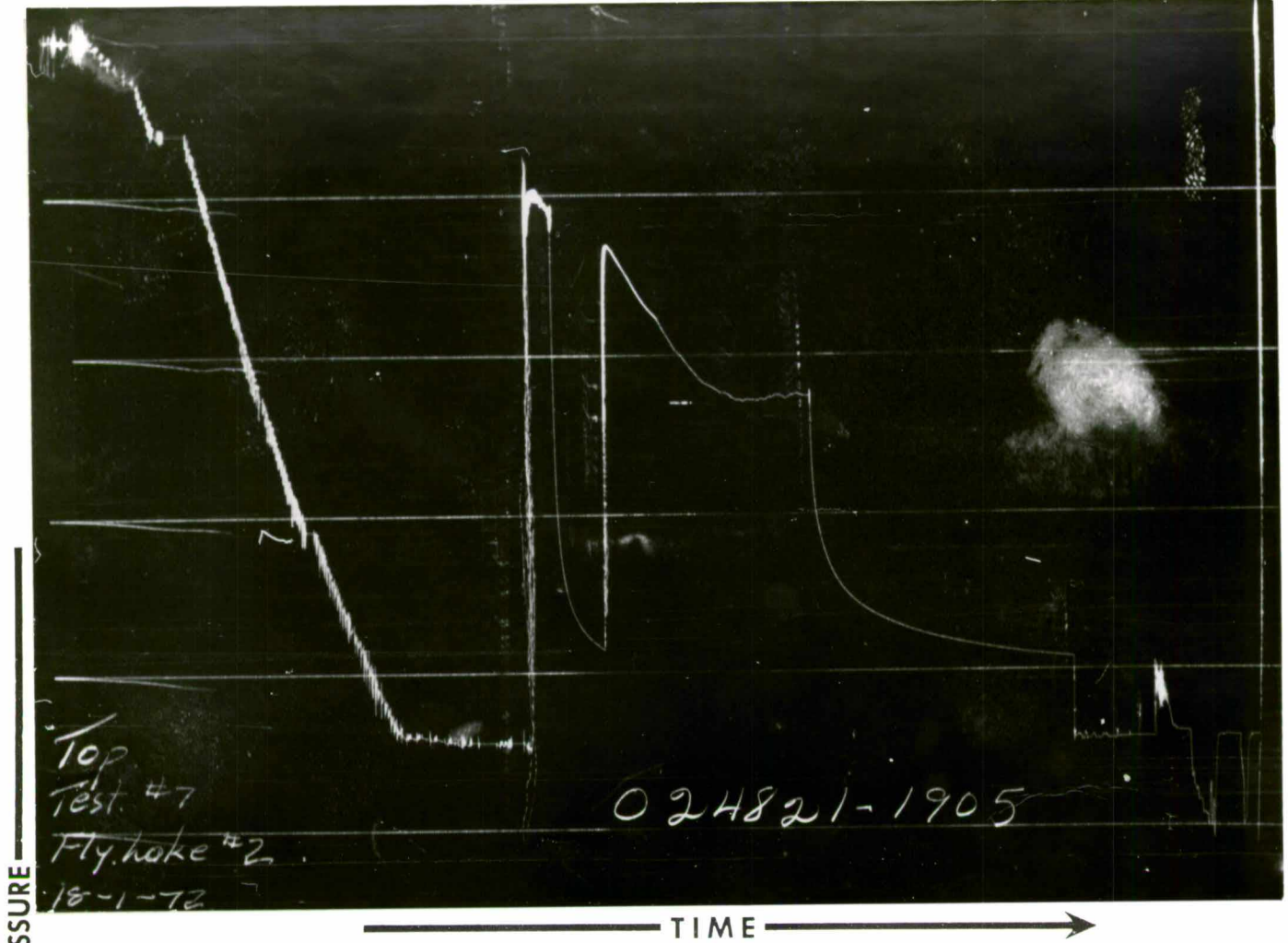
 DELHI INTERNATIONAL OIL CORPORATION
 SANTOS, LIMITED, VAMGAS N.L., BRIDGE OIL N.L.
 Lease Owner/Company Name
State
SOUTH AUSTRALIA

Gauge No. 1905			Depth 9262.52'			Clock No. 6743			12 hour	Ticket No. 103627					
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	998	.000		1045	.000	1003	.000		1300					
1	.0202	803	.0199		3529	.1046	1249	.0541		3003					
2	.0404	816	.0398		3637	.2092	1393	.1082		3080					
3	.0606	845	.0597		3680	.3138	1382	.1624		3131					
4	.0808	918	.0796		3706	.4184	1342	.2164		3171					
5	.1010	1045	.0995		3725	.5230	1300	.2705		3206					
6			.1194		3743			.3246		3235					
7			.1393		3754			.3787		3263					
8			.1592		3765			.4328		3286					
9			.1691		3776			.4869		3308					
10			.1890		3785			.5410		3329					
11								.5951		3348					
12								.6492		3364					
13								.7033		3379					
14								.7574		3393					
15								.7850*		3399					

Gauge No. 3427			Depth 9408'		Clock No. 7239			24 hour							
0	.000	1159	.000		1235	.000	1053	.000		1495					
1	.0104	1078	.010		3321	.050	1293	.0269		2990					
2	.0208	1073	.020		3614	.100	1419	.0538		3090					
3	.0312	1089	.030		3687	.150	1412	.0807		3144					
4	.0416	1142	.040		3724	.200	1371	.1076		3186					
5	.0520	1235	.050		3747	.250	1495	.1345		3222					
6			.060		3766			.1614		3254					
7			.070		3779			.1883		3281					
8			.080		3794			.2152		3306					
9			.090		3803			.2421		3326					
10			.100		3813			.2690		3346					
11								.2959		3365					
12								.3228		3381					
13								.3497		3398					
14								.3766		3411					
15								.3900*		3416					
Reading Interval		2			3			15			8	Minutes			

REMARKS: *Last interval is equal to 4 minutes.

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6.12"	3"	.99'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8679.44'	
Drill Collars	6 1/2"	2 13/16"	579.07'	
X over sub			.64'	
Handling Sub & Choke Assembly	5.87"	2.56"	2.67'	
Dual CIP Valve	5"	.87"	4.00'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5.01'	9258.39'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	2.25"	4.13'	9262.52
Hydraulic Jar				
VR Safety Joint	5"	1"	2.31'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.13'	9270.96
Distributor				
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint	5"	1.50"	3.99'	
X over sub			.64'	
Side Wall Anchor				
Drill Collars	6 1/2"	2 13/16"	87.61'	
X over sub			.75'	
Flush Joint Anchor	5"	2.37"	40'	
Blanked-Off B.T. Running Case	5"	2.44"	4.05'	9404'



Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA				Date 1-18-72		Ticket Number 024821	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____ Gravity _____ ° API @ _____ ° F. Gas/Oil Ratio _____ cu. ft./bbl.				Kind of Job OPEN HOLE		Halliburton District MOOMBA	
				Tester MR. BORAIN		Witness MR. COVEY	
				Drilling Contractor OD&E		RIG #9 DR S	
EQUIPMENT & HOLE DATA							
				Formation Tested Gidgealpa			
				Elevation 114' Ft.			
				Net Productive Interval _____ Ft.			
				All Depths Measured From Kelly Bushing			
				Total Depth 9597' Ft.			
				Main Hole/Casing Size 5 1/2"			
				Drill Collar Length 610.43' I.D. 2 13/16"			
				Drill Pipe Length 8835.00' I.D. 4.276"			
				Packer Depth(s) 9474.82' Ft.			
				Depth Tester Valve 9462.31' Ft.			
TYPE		AMOUNT		Depth Back		Surface	
Cushion		1200' Water		Ft. Pres. Valve		1/4-7/16" Choke	
						Bottom 3/4"	
Recovered 90 Feet of formation water (below reversing sub.)							
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Remarks SEE PRODUCTION TEST DATA SHEET							
Q = QUESTIONABLE.							
TEMPERATURE		Gauge No. 1905		Gauge No. 3427		Gauge No. _____	
Depth: _____		Depth: 9466.42' Ft.		Depth: 9593' Ft.		Depth: _____ Ft.	
Est. _____ ° F.		Hour Clock 12		Hour Clock 24		Hour Clock _____	
Actual 234 - 254 ° F.		Blanked Off NO		Blanked Off YES		Blanked Off _____	
		Pressures		Pressures		Pressures	
	Field	Office	Field	Office	Field	Office	
First Period	Initial Hydrostatic	4441	4452	4501	4518		
	Flow Initial	963	784 Q	1219	1050		
	Flow Final	1113	1118	1238	1278		
Second Period	Closed in	3853	3860	3879	3904		
	Flow Initial	1308	1315	1417	1425		
	Flow Final	2257	2264	2308	2324		
Third Period	Closed in	3917	3924	3942	3953		
	Flow Initial						
	Flow Final						
Final Hydrostatic		4422	4438	4461	4473		

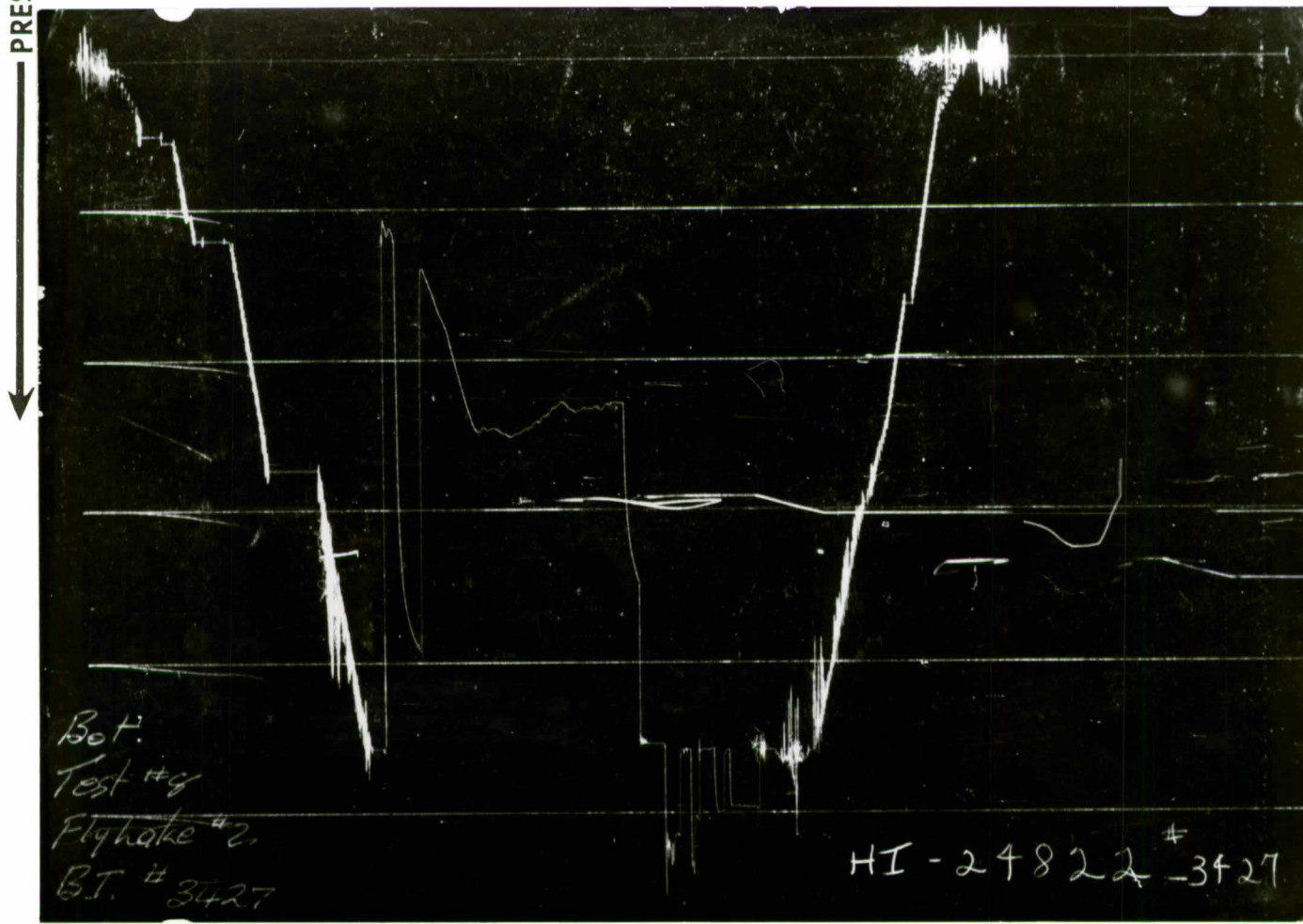
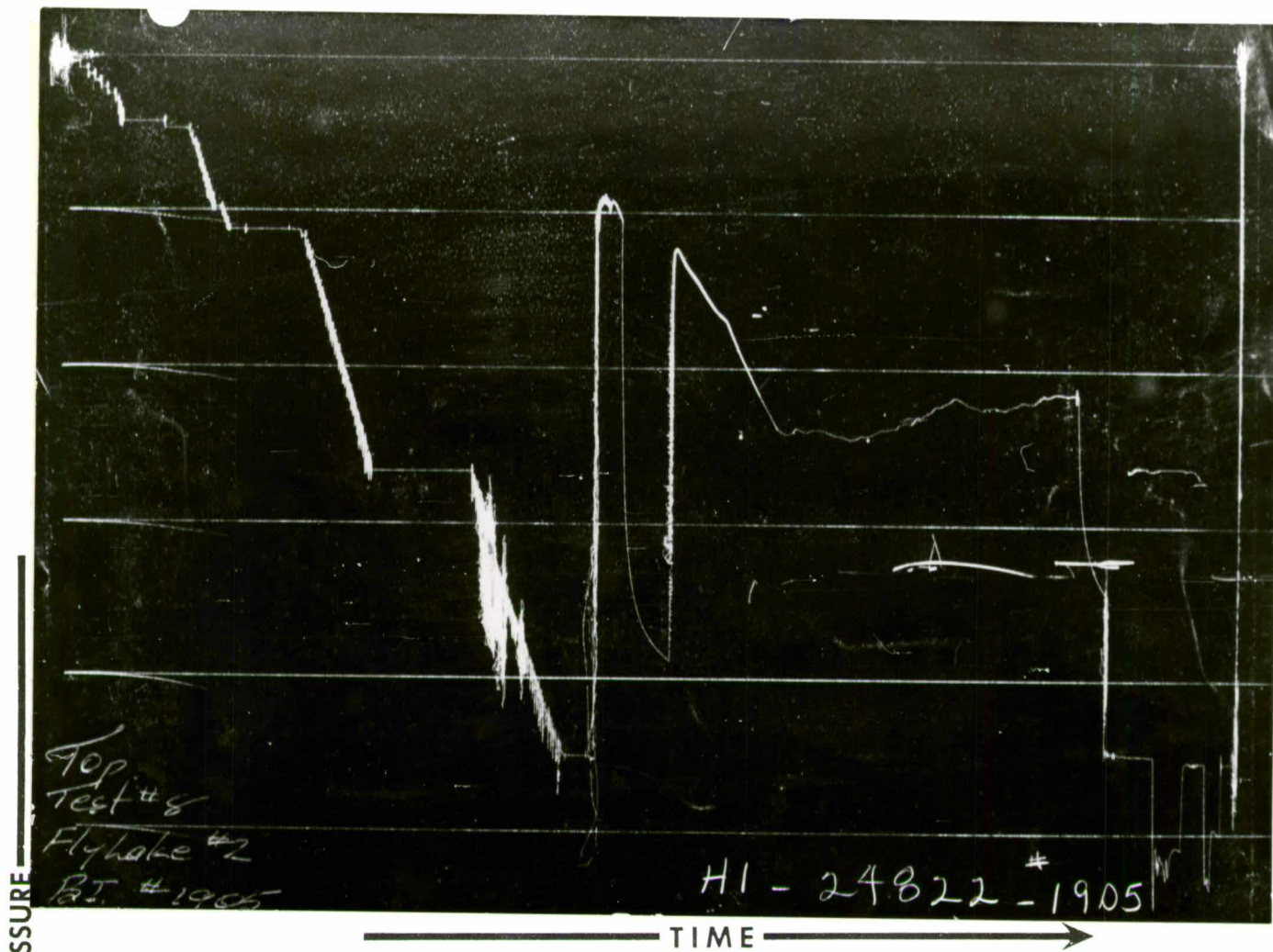
Gauge No. 1905					Depth 9466.42'			Clock No. 6743			12 hour		Ticket No. 024821		
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	784	.000		1118	.000	1315	.000		2264					
1	.103	1118	.0199		3086	.1388	1607	.1167		3446					
2			.0398		3398	.2776	1925	.2334		3623					
3			.0597		3553	.4164	2184	.3501		3713					
4	PLUGGING		.0796		3643	.5552	2288	.4668		3774					
5			.0995		3705	.6940	2254	.5835		3818					
6			.1194		3752	.8330	2264	.7002		3854					
7			.1393		3785			.8169		3882					
8			.1592		3817			.9336		3904					
9			.1791		3841			1.050		3924					
10			.1990		3860										
11															
12															
13															
14															
15															

Gauge No. 3427			Depth 9593'			Clock No. 7239			24 hour						
0	.000	1050	.000		1278	.000		1425	.000		2324				
1	.047	1278	.0100		3089	.0673		1708	.0568		3488				
2			.0200		3430	.1346		2002	.1136		3663				
3	PLUGGING		.0300		3591	.2019		2246	.1704		3752				
4			.0400		3679	.2692		2346	.2272		3812				
5			.0500		3743	.3365		2319	.2840		3855				
6			.0600		3792	.4040		2324	.3408		3887				
7			.0700		3832				.3976		3914				
8			.0800		3860				.4544		3932				
9			.0900		3885				.5110		3953				
10			.1000		3904										
11															
12															
13															
14															
15															

Reading Interval 3 20 17 Minutes

REMARKS:

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6.12"	3.00"	1.00'	
Water Cushion Valve				
Drill Pipe	5"	4.276"	8835'	
Drill Collars	6½"	2 13/16"	610.43'	
	X over sub		.65"	
Handling Sub & Choke Assembly	5.87"	2.56"	2.65'	
Dual CIP Valve	5"	.87"	3.90'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5.00'	9462.31'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	2.25"	4.11'	9466; .42'
Hydraulic Jar				
VR Safety Joint	5"	1"	2.25'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.15'	9474.82'
	X over sub		.64"	
Distributor				
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	6½"	2 13/16"	85.71'	
	X over sub		.78"	
Flush Joint Anchor	5"	2.37"	31.00'	
Blanked-Off B.T. Running Case	5"	2.44"	4.05'	9593'



Each Horizontal Line Equal to 1000 p.s.i.

Gauge No. 1905			Depth 9462.42'			Clock No. 6743			12 hour	Ticket No. HI-24822					
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			SECOND CLOSED IN PRESSURE CONTINUED		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log } \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	1029	.000		1045	.000	1363	.000		2150	.112	3415			
1	.0216	929	.0207		2986	.2793	1879	.007		2687	.119	3431			
2	.0432	918	.0414		3334	.5586	2390	.014		2856					
3	.0648	929	.0621		3513	.8379	2396	.021		2955					
4	.0864	960	.0828		3621	1.1172	2214	.028		3034					
5	.108	1045	.1035		3694	1.3965	2225	.035		3094					
6			.1242		3748	1.6760	2150	.042		3150					
7			.1449		3791			.049		3195					
8			.1656		3826			.056		3230					
9			.1863		3855			.063		3260					
10			.200		3873*			.070		3292					
11								.077		3324					
12								.084		3343					
13								.091		3366					
14								.098		3382					
15								.105		3399					

Gauge No.		3427		Depth		9593'		Clock No.		7239		hour		24	
0	.000	1164	.000		1214	.000	1464	.000		2286	.0528	3453			
1	.0106	1093	.0100		3079	.136	1975	.0033		2720	.056	3472			
2	.0212	1162	.0200		3401	.272	2463	.0066		2900					
3	.0318	1124	.0300		3573	.408	2475	.0099		3022					
4	.0424	1146	.0400		3679	.544	2311	.0132		3084					
5	.053	1214	.0500		3751	.680	2319	.0165		3139					
6			.0600		3804	.816	2286	.0198		3194					
7			.0700		3847			.0231		3237					
8			.0800		3879			.0264		3273					
9			.0900		3907			.0297		3301					
10			.097		3922*			.0330		3331					
11								.0363		3356					
12								.0396		3376					
13								.0429		3400					
14								.0462		3420					
15								.0495		3436					
Reading Interval 3			3			40						1		Minute	

REMARKS: * INTERVAL = 2 MINUTES.

DRILL STEM TEST # 8

FLY LAKE # 2
TICKET NUMBER # 24822

1-19-72

INITIAL FLOW - 1/2" CHOKE

2:15 PM	98°	0 PSI	
2:18 PM	98°	0 PSI	
2:21 PM	98°	25 PSI	
2:24	98°	30 PSI	
2:27	98°	100 PSI	--- GAS TO THE SURFACE IN 11 MINUTES...
2:30	100°	130 PSI	

FINAL FLOW - 7/16" CHOKE

3:00 PM	103°	125 PSI	6:35 PM	117°	640
3:05	104°	150	6:40	116°	600
3:10	105°	170	6:45	117°	600
3:15	105°	180	7:00	117°	630
3:20	106°	200			
3:25	106°	210			
3:30	106°	200			
3:35	106°	220			
3:40	106°	270			
3:45	106°	295			
3:50	106°	325			
3:55	106°	370			
4:00	106°	400			
4:05	106°	440			
4:10	110°	475			
4:15	111°	420			
4:20	113°	475			
4:25	114°	430			
4:30	114°	440			
4:35	115°	480			
4:40	117°	540			
4:45	118°	580			
4:50	118°	620			
4:55	115°	625			
5:00	115°	650			
5:05	115°	630			
5:10	115°	675			
5:15	114°	650			
5:20	115°	-			
5:25	115°	630			
5:30	115°	630			
5:35	114°	600			
5:40	114°	580			
5:45	115°	500			
5:55	115°	490			
6:00	117°	550			
6:05	118°	600			
6:10	117°	600			
6:15	118°	620			
6:20	118°	650			
6:25	118°	620			
6:30	118°	608			
6:35	117°	640			

RECOVERED 1160 IMPERIAL GALLONS
OVER 60 MINUTE PERIOD THROUGH
SEPARATOR...

----Water cushion to the surface...

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	6.12"			
Water Cushion Valve				
Drill Pipe	5"	4.276"	8866.25'	
Drill Collars	6½"	2 13/16"	580.77'	
CROSS-OVER			.65'	
Handling Sub & Choke Assembly	5.87"	2.56"	2.65'	
Dual CIP Valve	5"	.87"	3.90'	
Dual CIP Sampler				
Hydro-Spring Tester	5"	.75"	5.00'	9458.31'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	2.25"	4.11'	9462.42'
Hydraulic Jar				
VR Safety Joint	5"	1"	2.25'	
Pressure Equalizing Crossover				
Packer Assembly	7 3/4"	1.75"	6.15'	9470.82'
CROSS-OVER			.64'	
Distributor				
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	6½"	2 13/16"	85.71'	
CROSS-OVER			.78'	
Flush Joint Anchor	5"	2.37"	35.00'	
Blanked-Off B.T. Running Case	5"	2.44"	4.05'	9593'

100839-4341

FLY LAKE #2

H1-100839

28-4-72

TIME

100839-4340

FLY LAKE #2

H1-100839

28-4-72

Each Horizontal Line Equal to 1000 p.s.i.

Legal Location
Sec. - Twp. - Rng.

Lease Name

Field
Area

COOPER BASIN

County

State SOUTH AUSTRALIA

FLUID SAMPLE DATA				Date 4-28-72 Ticket Number 100839			
Sampler Pressure _____ P.S.I.G. at Surface				Kind of Job HOOK WALL Halliburton District MOOMBA			
Recovery: Cu. Ft. Gas _____				Tester MR. COTTON Witness MR. MC KENNEY			
cc. Oil _____				Drilling Contractor O.D. & E. RIG #8 IC			
cc. Water _____				EQUIPMENT & HOLE DATA			
cc. Mud _____				Formation Tested Gidgealpa			
Tot. Liquid cc. _____				Elevation 114.8' Ft.			
Gravity _____ ° API @ _____ °F.				Net Productive Interval 4' Ft.			
Gas/Oil Ratio _____ cu. ft./bbl.				All Depths Measured From Kelly Bushing			
RESISTIVITY _____ CHLORIDE CONTENT _____				Total Depth 9598' Ft.			
Recovery Water _____ @ _____ °F. _____ ppm				Main Hole/Casing Size 7"			
Recovery Mud _____ @ _____ °F. _____ ppm				Drill Collar Length _____ I.D. _____			
Recovery Mud Filtrate _____ @ _____ °F. _____ ppm				Drill Pipe Length 9500' I.D. 2.441"			
Mud Pit Sample _____ @ _____ °F. _____ ppm				Packer Depth(s) 9515' Ft.			
Mud Pit Sample Filtrate _____ @ _____ °F. _____ ppm				Depth Tester Valve 9505' Ft.			
Mud Weight 9.3 BRINE vis _____ cp							
TYPE		AMOUNT		Depth Back		Surface	
Cushion		-		Ft. Pres. Valve		Choke 28/64" Bottom Choke -	
Recovered		2400 Feet of		8.3#/gallon fresh water			
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Recovered		Feet of					
Remarks Opened tool for 356 minute flow with a strong blow decreasing to mild blow in 5 minutes and well dead at 1:31 (10 minutes). Closed tool and came off bottom.							
TEMPERATURE		Gauge No. 4341		Gauge No. 4340		Gauge No.	
Depth: 9510' Ft.		Depth: 9532' Ft.		Depth: _____ Ft.		TIME	
Est. 275 °F.		72 Hour Clock		72 Hour Clock		Tool A.M.	
Blanked Off ???		Blanked Off ???		Blanked Off		Opened 1:21 P.M.	
Actual °F.		Pressures		Pressures		Tool A.M.	
		Pressures		Pressures		Closed 6:17 P.M.	
		Field Office		Field Office		Reported Computed	
Initial Hydrostatic		4464 4475		4491 4493		Minutes Minutes	
First Period Flow Initial		108 84		57 93			
Flow Final		1122		1143		356	
Closed in							
Second Period Flow Initial							
Flow Final							
Closed in							
Third Period Flow Initial							
Flow Final							
Closed in							
Final Hydrostatic		4464 4467		4491 4482			



	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	3.75"	1.75"	2.80'	
Water Cushion Valve				
Drill Pipe	2 7/8" TUB. °	2.441"	9500'	
Drill Collars				
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler				
Hydro-Spring Tester	3.90"	.62"	5.63'	9505'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	3.75"		5.00'	9510'
Hydraulic Jar				
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly	5.75"	2.55"	3.45'	9515'
XXXXXX 2 7/8" EUE x 2 3/8" IF SUB	.28'	.15'	.70'	
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	3.75"	1.75"	10.00'	
Blanked-Off B.T. Running Case	3.75"	2.50"	4.15'	9532'

↑ PRESSURE ↓

TIME →

25139-4341

HI-25139-4340

Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA				Date		Ticket Number	
Sampler Pressure _____ P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud _____ Tot. Liquid cc. _____				1-5-72		HI - 25139	
Kind of Job HOOK WALL Tester JOHNSON Drilling Contractor O D E RIG # 8				Halliburton District MOOMBA Witness MC KINNEY NM S			
EQUIPMENT & HOLE DATA							
Formation Tested Gidgealpa Elevation 114.81' Ft. Net Productive Interval 6' Ft. All Depths Measured From Kelly Bushing Total Depth 9675' Ft. Main Hole/Casing Size 7" Drill Collar Length _____ I.D. _____ Drill Pipe Length ? I.D. 2.441" Packer Depth(s) 9520' Ft. Depth Tester Valve 9509' Ft.							
RESISTIVITY _____ CHLORIDE CONTENT _____ Recovery Water _____ @ _____ °F. _____ ppm Recovery Mud _____ @ _____ °F. _____ Recovery Mud Filtrate _____ @ _____ °F. _____ ppm Mud Pit Sample _____ @ _____ °F. _____ Mud Pit Sample Filtrate _____ @ _____ °F. _____ ppm Mud Weight 9.3 BRINE vis _____ - cp							
TYPE NONE AMOUNT Cushion _____ Ft.		Depth Back Pres. Valve NONE		Surface Choke 7/16"		Bottom Choke NONE	
Recovered 600' Feet of oil						Meo. From Tester Valve	
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Recovered _____ Feet of _____							
Remarks Tool opened @ 1705 4-30-72 with a strong blow. Flowed to the burning pit till 0500 1-5-72 - then put through separator till the tool was closed at 0922 and off bottom at 1110 1-5-72.. No closed in pressure was recorded..							
TEMPERATURE Gauge No. 4341 Depth: 9515' Ft.		Gauge No. 4340 Depth: 9534' Ft.		Gauge No. _____ Depth: _____ Ft.		TIME	
Est. _____ °F.		Blanked Off NO		Blanked Off YES		Tool _____ A.M. Opened 1705 P.M.	
Actual 275°F.		Pressures		Pressures		Tool _____ A.M. Closed 0922 P.M.	
		Field	Office	Field	Office	Field	Office
Initial Hydrostatic		-	4415	-	4419		
First Period	Flow Initial	-	723	-	740		
	Flow Final	-	1649	-	1644		
Closed in						977	977
Second Period	Flow Initial						
	Flow Final						
Closed in							
Third Period	Flow Initial						
	Flow Final						
Closed in							
Final Hydrostatic		-	4381	-	4385		

Legal Location Sec. - Twp. - Rng. _____
 Lease Name _____
 Well No. **2**
 Test No. **(2)**
 Field Area **COOPER BASIN**
 Tested Interval **9520' - 9675'**
 County _____
 State **SOUTH AUSTRALIA**
 DELHI-INTERNATIONAL PETROLEUM CORPORATION
 SANTOS, LIMITED
 OIL, N.L.

Casing perfs. <u>9549' - 9555'</u>		Bottom choke <u>.62"</u>		Surf. temp _____ °F		Ticket No. <u>HI - 25139</u>	
Gas gravity _____		Oil gravity _____		GOR _____			
Spec. gravity _____		Chlorides _____ ppm		Res. _____ @ _____ °F			
Date <u>4-30-72</u>							
Time	a.m. p.m.	Choke Size	Surface Pressure psi	Gas Rate MCF	Liquid Rate BPD	Remarks	
			Stylus # 4341 - engaged				
			Stylus # 4340 - engaged				
1705						Tool opened with a good blow	
1708			80#			Strong blow-put on choke	
1710			100				
1715			150				
1720			175				
1725			275				
1730			325				
1735			360				
1740			425				
1745			430				
1750			450				
1755			475				
1800			475				
1815			475				
1830			525				
1845			500				
1900			475				
1915			500				
1930			525				
1945			450				
2000			525				
2030			450				
2045			500				
2100			525				
2130			500				

Gauge No. 4341			Depth 9515'		Clock No. 7767			72 hour	Ticket No. 25139						
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	723													
1	.1408	1750													
2	.2816	1726													
3	.4224	1707													
4	.5632	1693													
5	.7040	1682													
6	.8448	1666													
7	.9856	1660													
8	1.1264	1649													
9	1.1460	1649*													
10															
11															
12															
13															
14															
15															

Gauge No.			4340			Depth			9534'			Clock No.			7763			hour			72		
0	.000	740																					
1	.1345	1751																					
2	.2690	1720																					
3	.4035	1700																					
4	.5380	1689																					
5	.6725	1675																					
6	.8070	1664																					
7	.9415	1655																					
8	1.0760	1644																					
9	1.0950	1644*																					
10																							
11																							
12																							
13																							
14																							
15																							
Reading Interval 120																					Minutes		

REMARKS: * INTERVAL = 17 MINUTES.

	O. D.	I. D.	LENGTH	DEPTH
Reversing Sub	3.75"	1.75"	2.80'	
Water Cushion Valve				9443.57'
Drill Pipe EUE TUBING	2.875"	2.441"		
Drill Collars				
Handling Sub & Choke Assembly				
Dual CIP Valve				
Dual CIP Sampler				
Hydro-Spring Tester	3.90"	.62"	5.63'	9509.37'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	3.75"		5.00'	9515'
Hydraulic Jar				
VR Safety Joint				
Pressure Equalizing Crossover				
Packer Assembly R.T.T.S.	5.75"	2.55"	3.45'	9520'
SUB - 2 7/8" EUE PIN x 2 3/8" IF PIN	.28"	.15"	.20'	
Packer Assembly				
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	3.75"	1.75"	10.00'	
Blanked-Off B.T. Running Case	3.75"	2.50"	4.15'	9534.15'

FLY LAKE NO. 2PRODUCTION TEST & PRESSURE SURVEY

LOCATION: Latitude $27^{\circ} 37' 24''$ S
Longitude $139^{\circ} 58' 50''$ E

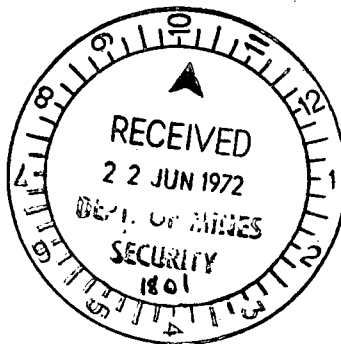
PBTD: 9570'

PERFORATIONS: 9549' - 9555'

CASING: 7" O.D. Mixed strengths & grade

TUBING: 2-7/8" O.D. 6.5#/ft. J-55

APRIL 1972



PRODUCTIVITY TEST SUMMARY

DATE	TIME	PRESSURE PSIA		H.P. SEPARATOR DATA			L.P. SEPARATOR DATA			GAS FLOW RATE (MCFD)	OIL FLOW RATE (Bbls/D)	G.O.R. CF/Bbl.			
		WELLHEAD	DATUM(9516')	PF (PSIA)	HW (INS)	TEMP (°F)	PF (PSIA)	HW (INS)	TEMP (°F)						
8/5/72	1700	Well opened to flow at various rates for clean-up.													
9/5	1700	Well shut-in and allowed to stabilize.													
11/5	1300	1526	4016.57	Well opened to flow for production test. (12/64" choke. Orifice sizes, 1" H.P.Sep, 0.375" L.P.											
	1400	992	3955.67	Commenced liquid measurements.											
	1600	940	2955.67	215	18	66	63	31.5	76	273.6	251.3	1089			
	1900	931	2923.35	210	18	57	62	29	67	272.4	249.5	1092			
	2300	923	2913.25	205	18	51	65	21.5	60	271.2	256.2	1058			
	Choke reduced to 10.5/64"								AVERAGES :				272.5	252.3	1080
	12/5	0300	936	2956.35	205	16	51	63	21	56	254.4	249.5	1020		
0800		935	2953.88	205	18	53	63	21	58	271.2	249.5	1087			
1200		934	2956.35	205	18.5	68	60	23.5	72	271.7	242.6	1120			
1600		936	2953.88	215	18	64	61	25	74	273.6	235.6	1161			
2000		933	2952.03	205	18	52	61	22	60	271.2	233.8	1160			
Completed liquid measurements. No water produced during test. (H ₂ S = 34 ppm)								AVERAGES :				268.4	242.2	1108	
2100		Choke reduced to 9/64													
2115		"	"	"	8/64										
2130		"	"	"	7/64										
2145		"	"	"	6/64										
2200	"	"	"	4/64											
2230	"	"	"	2/64											
2300	Well shut-in to record build-up pressures.														

PRESSURE BUILD-UP SURVEY

053

AMERADA ELEMENT #31825

RANGE 0 - 5000 PSI

DATE	TIME	PRESSURE @ 9516' (PSIA)	SURFACE PRESSURE (PSIA)
12/5/72	2300	Well shut-in	
	2400	3744.35	1313
13/5/72	0100	3794.05	1340
	0200	3823.45	1361
	0300	3841.25	1382
	0400	3855.25	1407
	0500	3865.45	1422
	0600	3873.15	1444
	0700	3882.05	1452
	0800	3889.75	
	0900	3893.55	
	1000	3898.65	
	1100	3902.55	
	1200	3907.65	
	1300	3911.85	
	1400	3915.25	
	1500	3919.55	
	1600	3922.05	
	1700	3925.45	
	1800	3926.75	
	1900	3931.85	
	2000	3934.45	
	2100	3936.95	
	2200	3940.75	
	2300	3943.35	
	2400	3947.15	
14/5/72	0100	3950.95	
	0200	3956.05	
	0300	3959.95	
	0400	3961.65	
	0500	3962.45	
	0600	3964.95	
	0700	3967.55	
	0800	3968.85	1536
	0900	3971.35	1537
Off bottom	0930	3972.65	

DELHI INTERNATIONAL OIL CORPORATION

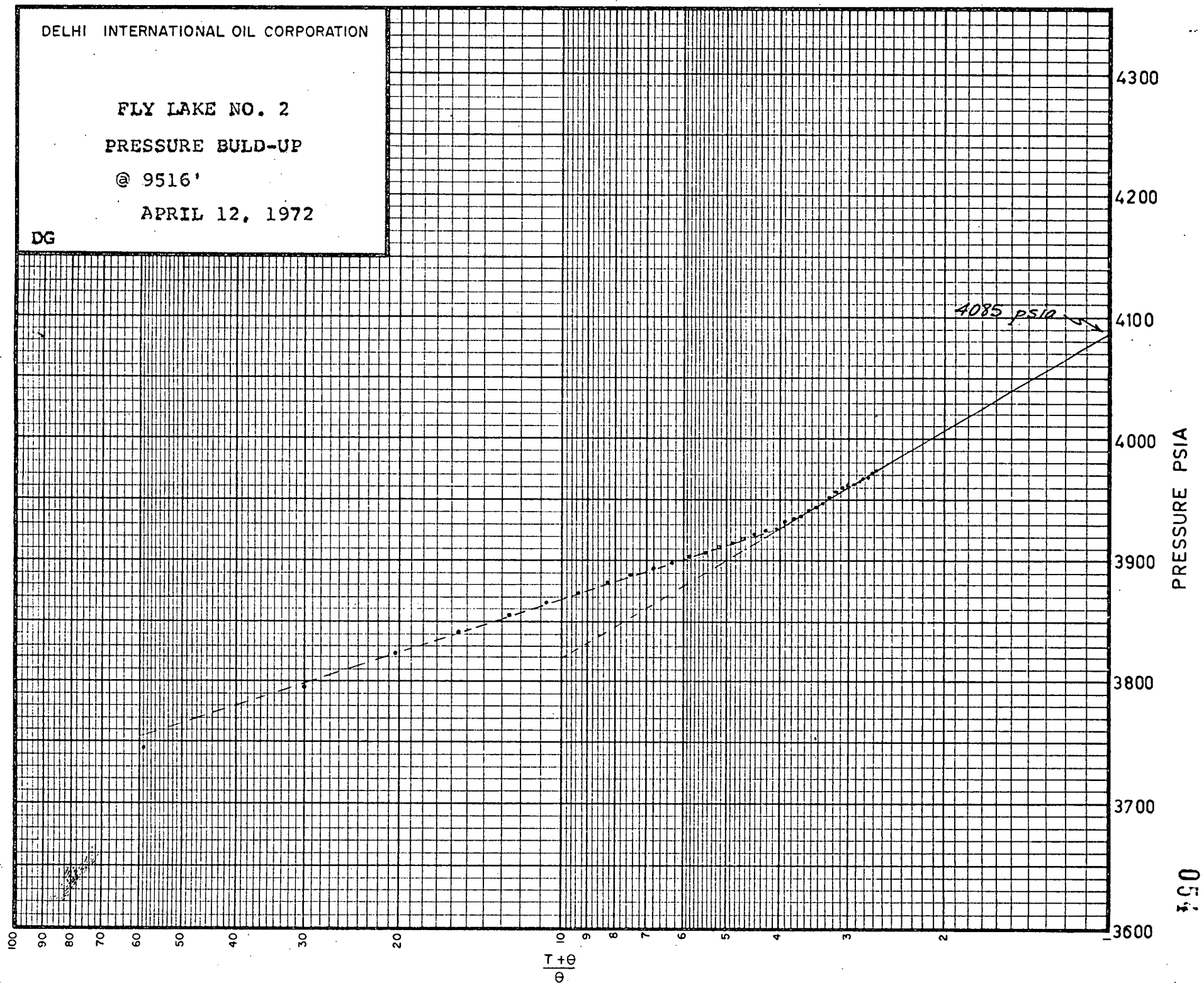
FLY LAKE NO. 2

PRESSURE BUILD-UP

@ 9516'

APRIL 12, 1972

DG



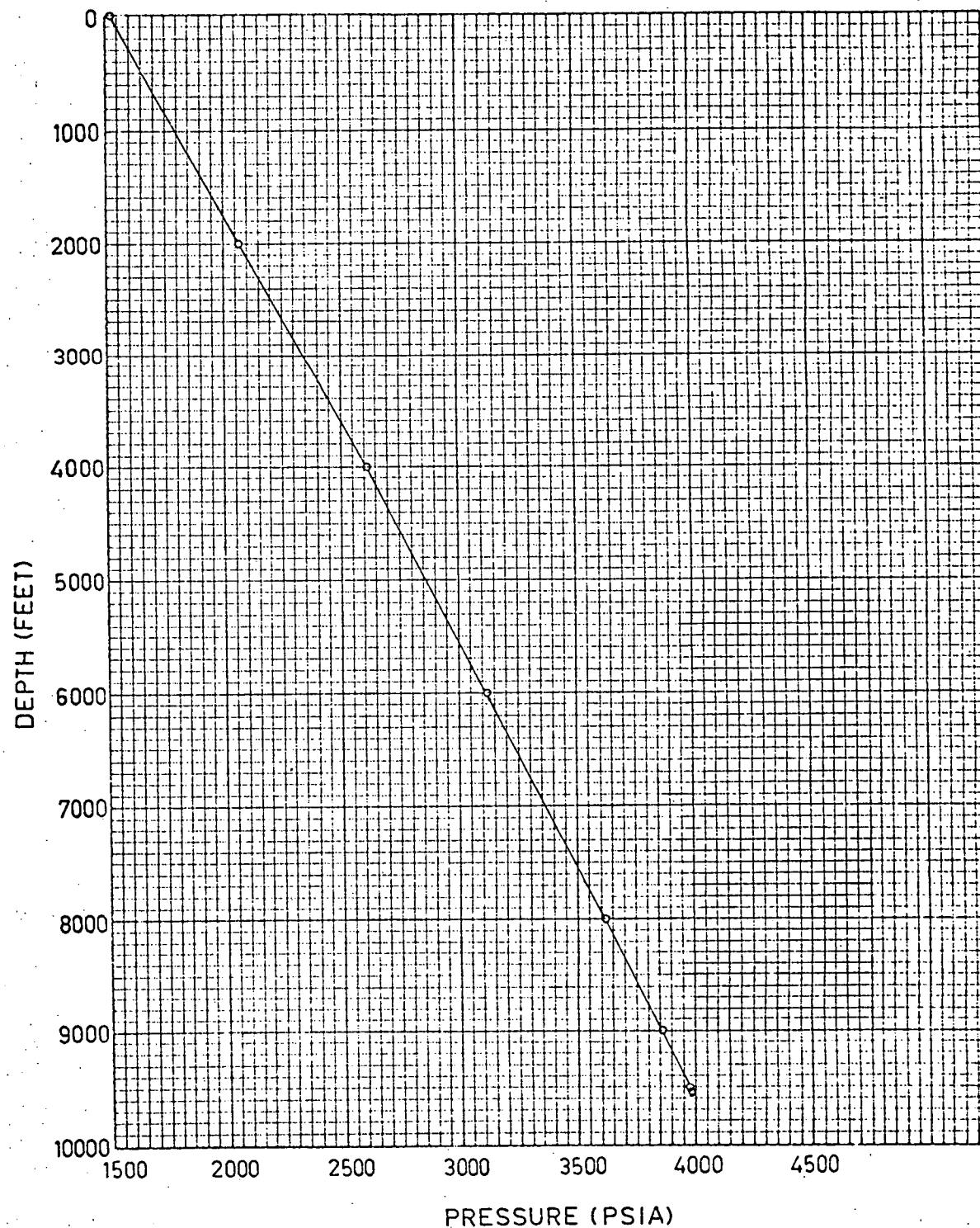
STATIC PRESSURE GRADIENT

WELL FLY LAKE NO. 2

DATE 14/5/72

GAUGE N° 31825 RANGE 0 - 5000psi

<u>DEPTH</u>	<u>PRESSURE</u> <u>PSIA</u>	<u>GRADIENT</u> <u>PSIA/FT</u>
0	1523.05	-
2000	2064.25	.2706
4000	2608.65	.2722
6000	3119.35	.2553
8000	3616.75	.2487
9000	3859.15	.2424
9500	3981.55	.2448
9520	3987.95	.3200
9540	3993.05	.2550
9560	3998.15	.2550





amdel

The Australian Mineral Development Laboratories

Flemington Street, Frewville, South Australia 5063
Phone 79 1662, telex AA82520

Please address all correspondence to the Director
In reply quote: AN3/51/0 - 5436/72

7 June 1972

Mr H.J. Hannah
Production Manager
Delhi International Oil Corporation
Box 1837P GPO
ADELAIDE SA 5001

REPORT AN5436/72

YOUR REFERENCE: Purchase Order A 17372
IDENTIFICATION: As listed
DATE RECEIVED: 18/5/72

Enquiries quoting AN5436/72 to Officer in Charge please.

Analysis by: H.W.J. Sears and G.R. Holden

Officer in Charge, Analytical Section: A.B. Timms

A. B. Timms
for F.R. Hartley
Director
R.C. 06/63

jw



AN5436/72

2.

Gas and oil samples from Fly Lake No.2

Order No. A 17372

ITEM 1 Low pressure gas samples

Well tested:	Fly Lake 2, PD 56
Date tested:	12/5/72, 1130 hrs.
Type of test:	-
Type of sample:	Gas
Source of sample:	L.P. Separator
Field sampling conditions:	Press. 45 psig, temp. 71°F
Reference:	Order A 17372

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	0.35
Carbon dioxide	26.3
Methane	24.4
Ethane	20.7
Propane	18.0
i Butane	3.20
n Butane	4.40
i Pentane	0.88
n Pentane	0.83
Hexanes	0.415
Heptanes	0.345
Octanes and higher hydrocarbons	0.180
Calculated Gas Density (relative air = 1)	1.254



AN5436/72

3.

Well tested:	Fly Lake 2, PD 60
Date tested:	12/5/72, 1200 hrs.
Type of test:	-
Type of sample:	Gas
Source of sample:	L.P. Separator
Field sampling conditions:	Press. 45 psig, temp. 72°F
Reference:	Order A 17372

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	0.35
Carbon dioxide	26.4
Methane	25.6
Ethane	20.3
Propane	17.7
i Butane	2.96
n Butane	4.06
i Pentane	0.800
n Pentane	0.750
Hexanes	0.380
Heptanes	0.350
Octanes and higher hydrocarbons	0.350
Calculated Gas Density (relative air = 1)	1.245



AN5436/72

4.

ITEM 2 High pressure gas samples

Well tested:	Fly Lake No.2, PD 62
Date tested:	12/5/72, 1130 hrs.
Type of test:	-
Type of sample:	Gas
Source of sample:	H.P. Separator
Field sampling conditions:	Press. 195 psig, temp. 68°F
Reference:	Order A 17372

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	2.20
Carbon dioxide	25.4
Methane	49.0
Ethane	12.0
Propane	7.53
i Butane	1.22
n Butane	1.68
i Pentane	0.345
n Pentane	0.320
Hexanes	0.150
Heptanes	0.119
Octanes and higher hydrocarbons	0.036
Calculated Gas Density (relative air = 1)	1.003

REMARKS: Sample contained air 0.73 %. Results of analysis calculated on an air free basis.



AN5436/72

5.

Well tested:	Fly Lake 2, PD 64
Date tested:	12/5/72, 1200 hrs.
Type of test:	-
Type of sample:	Gas
Source of sample:	H.P. Separator
Field sampling conditions:	Press. 195 psig, temp. 68°F

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	2.31
Carbon dioxide	25.3
Methane	49.0
Ethane	11.95
Propane	7.50
i Butane	1.30
n Butane	1.65
i Pentane	0.354
n Pentane	0.333
Hexanes	0.154
Heptanes	0.105
Octanes and higher hydrocarbons	0.045
Calculated Gas Density (relative air = 1)	1.002



061

AN5436/72

6.

ITEM 3 Low Pressure Separator Liquids

The samples were released to air pressure and temperature by displacement with saturated brine to yield oil and gas. The volumes and composition of end phase was determined and the analytical results recombined mathematically to give a calculated composition of the sample as received.

ITEM 3A Sample PD 55

Sampled 12/5/72, 1250 hrs.
Pressure 46 psig, temp. 73°F

Sample yielded gas and oil in the ratio of 8 litres of gas from 34l mls (259 gm) of oil at 768 mm (≈ 30.24 ") and 19°C ($\approx 66.2^\circ\text{F}$).

Composition of Gas

Oxygen	<0.02 % mol vol
Nitrogen	0.10
Carbon dioxide	8.84
Methane	3.56
Ethane	18.0
Propane	37.1
i Butane	9.35
n Butane	14.5
i Pentane	3.30
n Pentane	3.05
Hexanes	1.38
Heptanes	0.56
Octanes and higher hydrocarbons	0.26
Calculated Gas Density (relative air = 1)	1.614



AN5436/72

7.

Calculated composition of combined gas and liquid
fractions as received

Nitrogen	<0.002 % by weight
Carbon dioxide	0.468
Methane	0.069
Ethane	0.650
Propane	3.05
Butanes	5.90
Pentanes	6.51
Hexanes	6.04
Benzene	0.14
Heptanes	7.85
Toluene	1.24
Octanes	10.75
Xylenes plus ethyl benzene	2.54
Nonanes	6.65
C ₉ aromatics	1.67
Decanes plus C ₁₀ aromatics	6.15
Undecanes plus aromatics	4.27
Dodecanes plus aromatics	3.45
Tridecanes plus aromatics	3.46
Tetradecanes plus aromatics	2.67
Pentadecanes plus aromatics	1.66
Hexadecanes plus aromatics	1.01
Heptadecanes plus aromatics	1.27
Octadecanes plus aromatics	22.52

Density of C₁₈+ fraction = 0.85 at 19°C



AN5436/72

8.

ITEM 3B Sample PD 66

Sampled 12/5/72, 1230 hrs.
Pressure 46 psig, temp. 73°F

Sample yielded gas and oil in the ratio of 8 litres
of gas from 353 mls (266 gm) of oil at 768 mm (≈ 30.24 ")
pressure and 19°C ($\approx 66.2^\circ\text{F}$).

Composition of Gas

Oxygen plus argon	<0.02 % mol vol
Nitrogen	<0.02
Carbon dioxide	8.85
Methane	3.40
Ethane	17.5
Propane	36.3
i Butane	9.05
n Butane	14.7
i Pentane	3.70
n Pentane	3.60
Hexanes	1.80
Heptanes	0.73
Octanes and higher hydrocarbons	0.37

Calculated Gas Density (relative air = 1)	1.640
--	-------



AN5436/72

9.

Calculated composition of combined gas plus liquid
fractions as received

Nitrogen	<0.002 % by wieght
Carbon dioxide	0.468
Methane	0.065
Ethane	0.62
Propane	3.00
Butanes	5.67
Pentanes	6.38
Hexanes	6.04
Benzene	0.20
Heptanes	8.05
Toluene	1.25
Octanes	10.86
Xylenes plus ethyl benzene	2.62
Nonanes	6.64
C ₉ aromatics	1.72
Decanes plus C ₁₀ aromatics	6.12
Undecanes plus aromatics	4.38
Dodecanes plus aromatics	3.59
Tridecanes plus aromatics	3.58
Tetradecanes plus aromatics	2.74
Pentadecanes plus aromatics	1.53
Hexadecanes plus aromatics	0.96
Heptadecanes plus aromatics	1.20
Octadecanes and higher hydrocarbons	22.32

Density of C₁₈+ fraction = 0.85 at 19°C



AN5436/72

10.

ITEM 4 Stocktank oil

Specific Gravity	60/60°	0.760.
A.P.I. Gravity		54.6

A.S.T.M. Distillation

Initial boiling point	31°C
10 % recovery	74
20	99
30	120
40	145
50	178
60	227
70	278
74	300

Viscosity	1.131 centistokes per second at 100°F
Pour Point	1°C
Flash Point	2°C
Aniline Point	64.7°C
Sulphur	0.11 % by weight

Weight of distillate	56.5 gm
Weight of residue	15.5 gm
Loss	3.7 gm
Recovery	95.1 %

Specific Gravity of residual fraction = 0.85 at 19°C

FLY LAKE NO. 2AFTER FRACPRODUCTION TEST AND PRESSURE SURVEYS

Location: Latitude 27° 37' 24" S
Longitude 139° 58' 50" E

PBTD: 9574'

Perforated
Interval: 9532-9562'

Casing Size: 7" OD Mixed Strengths and
Grades

Tubing Size: 2-7/8" OD 6.5#/ft J55

Length of
Flow String: 9519.61'

STATIC BOTTOM HOLE PRESSURE @ 9504'

PRE TEST = 3955 psig (Stabilized)
AFTER TEST = 3919 psig (Extrapolated)

TOTAL VOLUMES PRODUCED DURING TEST (APPROX)

OIL = 2356 Bbls.
GAS = 2.821 MMCF.

JUNE - JULY 1972



FLY LAKE NO. 2 PRODUCTION TEST SUMMARY

Date	Time	Pressure PSIG		Wellhead Temp. °F	HP Separator Data			LP Separator Data			Gas Prod. (MCFD)			Oil Flow Rate Bbls/D	GOR CF/Bbl
		Wellhead	Datum (9504')		PF (PSIG)	HW (INS)	Temp. °F	PF (PSIG)	HW (INS)	Temp. °F	HP	LP	Total		
Flowed well 50 hours to clean-up.				Shut-in 72 hours prior to test.											
June 21	1115	1540	3955	Commenced flow test (choke size 8/64". Orifice sizes, 0.500" HP, 0.375" LP separators)											
	1215	957	3244	Choke set to 9/64"											
	1300	1014	3201	Choke set to 11/64"											
	1400	930	2963	82	205	160	63	36	46	68	240	34	274	235.5	1163
	1500	880	2902	Choke set to 10/64"											
	1700	827	2870	81	200	108	55	38	43	62	197	34	231	213.0	1084
	1700			Choke set to 8/64"											
	2100	915	3172	78	200	72	43	32	24	50	158	24	182	169.7	1072
June 22	0300	892	3068	78	200	64	38	31	22	35	150	23	173	151.7	1140
	0700	880	3064	72	200	70	35	30	28	40	161	25	186	140.2	1327
	0900	875	3059	Choke set to 7/64"											
	1500	894	3105	79	180	70	56	34	12	60	154	17	171	146.5	1167
	1900	888	3102	77	180	64	43	36	11.5	51	149	17	166	149.3	1112
	2400	889	3097	78	180	64	39	38	11	45	149	17	166	152.2	1091
June 23	0800	887	3088	77	180	64	36	36	13	43	149	18	167	154.9	1078
	1000	887	3088	Flow alternated through 30/64" and 7/64" chokes for 4 hour periods over a total of 24 hours											
June 24	0600	N/A	1274	Choke re-set to 7/64"											
	1500	N/A	3039	93	108	120	65	50	11	64	194	19	213	202.9	1050
	1900	954	3044	90	180	104	50	48	11	58	182	18	200	187.4	1067
	2300	924	3035	89	185	104	48	50	12	54	182	20	202	202.9	996
June 25	0800	912	3030	88	190	100	48	50	12	56	181	20	201	202.9	991
	1000	914	3030	Flow alternated through 32/64" and 5/64" chokes for 4 hour periods over a total of 24 hours											
June 26	1000	932	2850	Choke set to 11/64"											
	1300	794	2551	96	350	146	72	64	90	77	290	60	350	293.0	1194
	1700	794	2549	95	345	128	65	64	95	70	269	62	331	304.4	1087
	2000	776	2550	99	345	124	63	68	75	64	264	56	320	309.8	1033
	2300	765	2531	98	345	124	58	64	80	60	264	57	321	299.0	1074
June 27	0800	781	2527	96	325	138	50	68	76	58	269	56	325	304.4	1068
	1000	770	N/A	Flow alternated through 32/64" and 3/64" chokes for 4 hour periods over a total of 24 hours											
June 28	1000	764	2457	Choke re-set to 11/64" Orifice sizes changed to 0.75" HP and 0.50" LP separators											
	1600	659	2116	98	185	120	68	40	25	72	432	42	474	353.6	1340
	1800	657	2128	97	200	104	60	42	28	66	420	45	465	368.2	1263
	2000	669	2131	97	200	120	56	40	25	60	454	42	496	382.8	1296
	2200	660	2122	102	210	120	56	44	25	62	461	43	504	368.2	1369
	2400	650	2125	102	210	100	55	42	22	58	422	40	462	353.6	1307
June 29	0700	649	2125	99	205	110	47	28	25	56	437	37	474	368.2	1287
	1000	639	2098	Choke reversed											
	1300	792	2475	95	200	60	64	44	17	67	319	35	354	294.8	1201
	1500	780	2480	93	200	66	61	42	19	66	336	37	373	294.8	1265
	1700	812	2500	95	205	64	55	38	18	63	334	35	369	294.8	1252
	2100	807	2503	95	200	68	45	34	40	52	341	50	391	294.8	1326
June 30	0700	785	*N/A	94	205	68	45	34	20	45	342	35	377	294.8	1279
	1300	807		96	200	66	62	40	20	67	341	37	398	294.8	1350
	1300	Shut-in to record build-up pressures													

* Recorder failure

FLY LAKE #2 PRESSURE BUILD-UP OBSERVATIONS

Recorder Depth 9530'

Amerada Element #6556

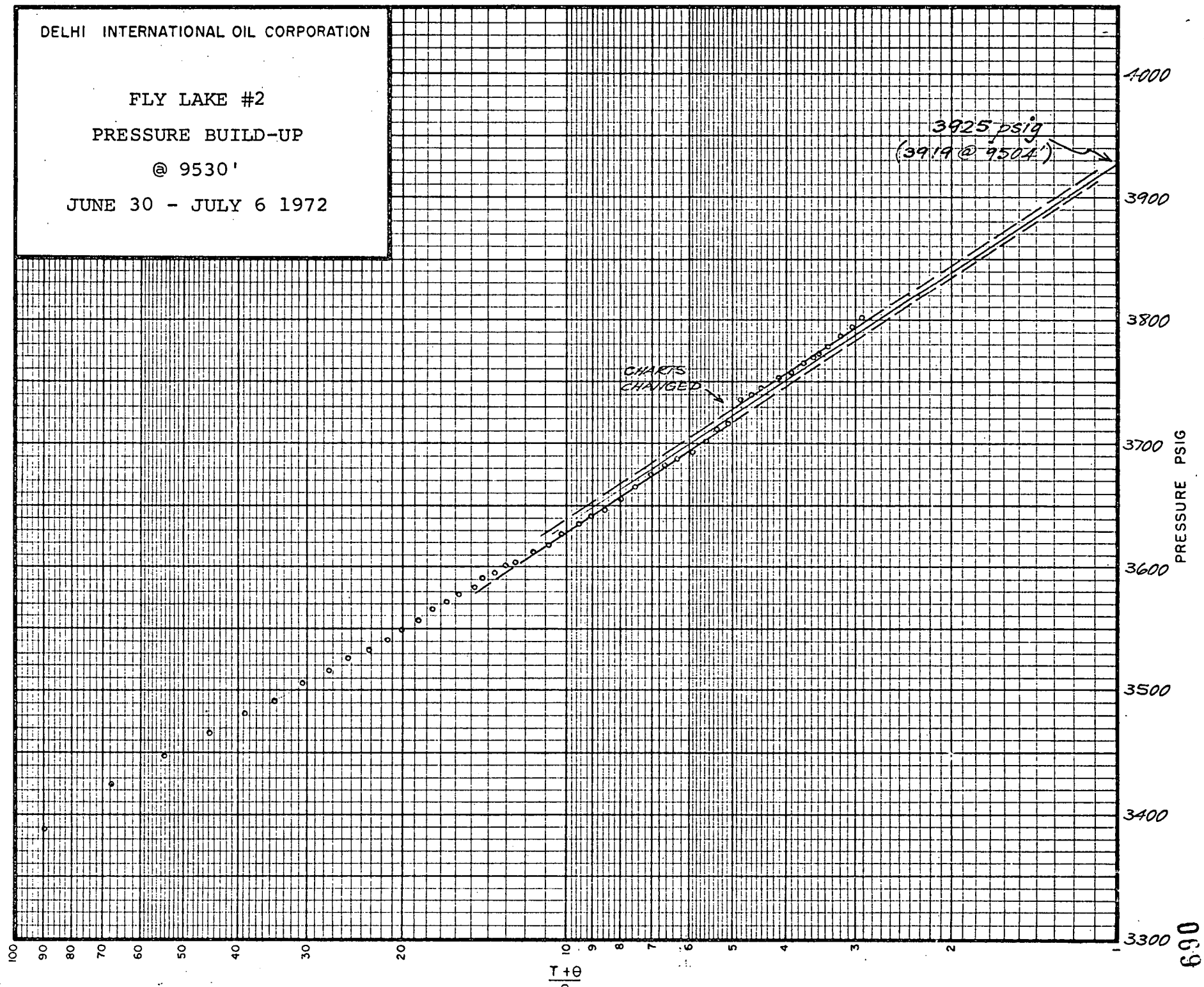
(Lubricator D/wt. pressure = 778 psig, Amerada = 764 psig)

Date	Time	Pressure (psig)	Date	Time	Pressure (psig)	Date	Time	Pressure (psig)
June 30	1300	2523.8		1100	3677.7	July 4	0700	3757.3
	1400	3144.9		1200	3682.7		0800	3758.5
	1500	3349.3		1300	3682.7		0900	3758.5
	1600	3389.1		1400	3687.7		1000	3759.8
	1700	3423.9		1500	3687.7		1100	3759.8
	1800	3448.9		1600	3690.2		1200	3762.3
	1900	3466.2		1700	3690.2		1300	3762.3
	2000	3481.2		1800	3692.6		1400	3763.5
	2100	3491.2		1900	3692.6		1500	3763.5
	2200	3506.1		2000	3697.6		1600	3764.7
	2300	3516.1		2100	3697.6		1700	3765.9
	2400	3526.0		2200	3702.6		1800	3767.2
July 1	0100	3533.5		2300	3702.6		1900	3767.2
	0200	3540.9		2400	3707.6		2000	3767.2
	0300	3548.4	July 3	0100	3707.6		2100	3769.7
	0400	3558.3		0200	3707.6		2200	3769.7
	0500	3565.8		0300	3712.5		2300	3772.2
	0600	3570.8		0400	3712.5	July 5	2400	3772.2
	0700	3578.3		0500	3712.5		0100	3774.7
	0800	3583.2		0600	3717.5		0200	3774.7
	0900	3590.7		0700	3717.5		0300	3775.9
	1000	3595.7	Recorders withdrawn and rerun for chart renewal. (Lubricator D/wt. pressure = 1460 psig, Amerada gauge = 1470 psig)				0400	3777.2
	1100	3600.7	July 3	1100	3737.4		0500	3777.2
	1200	3603.2		1200	3737.4		0600	3779.7
	1300	3608.1		1300	3737.4		0700	3780.9
	1400	3613.1		1400	3739.9		0800	3780.9
	1500	3618.0		1500	3739.9		0900	3780.9
	1600	3618.0		1600	3739.9		1000	3782.1
	1700	3623.0		1700	3742.4		1100	3784.6
	1800	3628.0		1800	3742.4		1200	3784.6
	1900	3630.5		1900	3744.9		1300	3787.1
	2000	3635.0		2000	3744.9		1400	3787.1
	2100	3637.9		2100	3747.3		1500	3788.4
	2200	3642.9		2200	3747.3		1600	3789.6
	2300	3642.9		2300	3749.8		1700	3789.6
July 2	2400	3647.9		2400	3749.8		1800	3789.6
	0100	3647.9		0100	3749.8		1900	3790.9
	0200	3652.9		0200	3752.3		2000	3790.9
	0300	3655.3		0300	3754.8		2100	3792.1
	0400	3660.3	July 4	0400	3756.1		2200	3792.1
	0500	3660.3		0500	3757.3		2300	3794.6
	0600	3665.3		0600	3757.3		2400	3794.6
	0700	3670.3				July 6	0100	3797.1
	0800	3670.3					0200	3799.5
	0900	3675.2					0300	3799.5
	1000	3677.7					0400	3800.7
							0500	3802.0
							0600	3803.3
							0700	3804.6
							0705	Recorders withdrawn.
								End of pressure observations.

DELHI INTERNATIONAL OIL CORPORATION

FLY LAKE #2
PRESSURE BUILD-UP
@ 9530'

JUNE 30 - JULY 6 1972



1972 OCT 4 AM 9:23

~~673-115-11~~
D.G.



amdel

The Australian Mineral Development Laboratories

Flemington Street, Frewville, South Australia 5063
Phone 79 1662, telex AA82520

Please address all correspondence to the Director
In reply quote: AN3/51/0 - 1315/73

070

NATA CERTIFICATE

PART I

3rd October, 1972.

Mr. H.J. Hannah
Manager
Production Division
Delhi International Oil Corporation
GPO Box 1837P
ADELAIDE SA 5001

PART REPORT AN1315/73

YOUR REFERENCE:	Purchase Order No. A18384
IDENTIFICATION:	As listed
DATE RECEIVED:	20/9/72

Enquiries quoting AN1315/73 to Officer in Charge please.

Analysis by: H.W. Sears and A.H. Jorgensen

Officer in Charge, Analytical Section: A.B. Timms

A.B. Timms

for F.R. Hartley
Director

FRH 63

amw



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Well tested: Fly Lake No. 2 PD 52

Date tested: 29/6/72 - 0.925 hrs

Type of test:

Type of sample: Gas

Source of sample: HP separator

Field sampling conditions: Press 205 psi : temp. 53°F

Reference: Purchase Order A18384

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	2.45
Hydrogen	-
Helium	-
Carbon dioxide	26.0
Methane	49.2
Ethane	11.3
Propane	6.97
i Butane	1.12
n Butane	1.72
i Pentane	0.40
n Pentane	0.392
Hexanes	0.224
Heptanes	0.146
Octanes and higher hydrocarbons	0.078

Calculated Gas Density (relative air = 1)	1.006
--	-------

REMARKS:



Well tested: Fly Lake No. 2 PD 58

Date tested: 29/6/72 - 1000 hrs

Type of test:

Type of sample: Gas

Source of sample: HP separator

Field sampling conditions: Press 200 psi : temp. 57°F

Reference: Purchase Order A18384

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	2.73
Hydrogen	-
Helium	-
Carbon dioxide	26.4
Methane	48.9
Ethane	11.4
Propane	6.74
i Butane	0.99
n Butane	1.64
i Pentane	0.382
n Pentane	0.386
Hexanes	0.238
Heptanes	0.124
Octanes and higher hydrocarbons	0.070
Calculated Gas Density (relative air = 1)	1.005

REMARKS:



Well tested: Fly Lake No. 2 PD 72
Date tested: 29/6/72 - 1000 hrs
Type of test:
Type of sample: Gas
Source of sample: LP separator
Field sampling conditions: Press 48 psi : temp. 61°F
Reference: Purchase Order A18384

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	0.32
Hydrogen	-
Helium	-
Carbon dioxide	25.9
Methane	23.8
Ethane	19.9
Propane	19.2
i Butane	3.08
n Butane	4.51
i Pentane	1.10
n Pentane	1.07
Hexanes	0.62
Heptanes	0.31
Octanes and higher hydrocarbons	0.19
Calculated Gas Density (relative air = 1)	1.27

REMARKS:



Well tested: Fly Lake No. 2 PD 53

Date tested: 29/6/72 - 0.925 hrs

Type of test:

Type of sample: Gas

Source of sample: LP separator

Field sampling conditions: Press 34 psi : temp. 61°F

Reference: Purchase Order A18384

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	0.26
Hydrogen	-
Helium	-
Carbon dioxide	25.5
Methane	21.9
Ethane	20.4
Propane	19.9
i Butane	3.38
n Butane	5.16
i Pentane	1.15
n Pentane	1.13
Hexanes	0.63
Heptanes	0.52
Octanes and higher hydrocarbons	0.17

Calculated Gas Density
(relative air = 1) 1.300

REMARKS:



Well tested: Fly Lake No. 2
 Date tested: 30/6/72
 Type of test:
 Type of sample: Condensate
 Source of sample: Stock Tank
 Field sampling conditions
 Reference: Purchase Order A18384

RESULTS OF ANALYSIS

Kinematic Viscosity	1.215	centistokes/second at 37.8°C (100°F)
Specific Gravity at 15.6°C (60°F)	0.774	
A.P.I. Gravity at 15.6°C (60°F)	51.3	

A.S.T.M. Distillation

Initial Boiling Point	30	°C
10% recovery	72	
20	99	
30	122	
40	146	
50	181	
60	225	
70	268	
80 77.2	300	
80		

Weight distillate	58.5	grams
Weight residue	16.7	grams
Loss	2.1	grams
Recovery	97.3	%
Residue after distillation		
Specific Gravity at 15.6°C (60°F)	0.82	
Pour Point	0	°C
Flash Point	2	°C
Aniline Point	65	°C
Sulphur (X.R.F.)	to follow	% by weight

**amdel****The Australian Mineral Development Laboratories**

Flemington Street, Frewville, South Australia 5063
Phone 79 1662, telex AA82520

Please address all correspondence to the Director
In reply quote: AN3/51/0 - 1315/73

NATA CERTIFICATE**PART REPORT II**

4th October, 1972.

Mr. H.J. Hannah
Manager
Production Division
Delhi International Oil Corporation
GPO Box 1837P
ADELAIDE SA 5000

REPORT AN1315/73

YOUR REFERENCE:	Order No. A18384
IDENTIFICATION:	As listed
DATE RECEIVED:	20/9/72

Enquiries quoting AN1315/73 to Officer in Charge please.

Analysis by: R.L. Bruce

Officer in Charge, Analytical Section: A.B. Timms

A. B. Timms
for F.R. Hartley
Director
1.5.446

amw



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The Australian Mineral Development Laboratories

Flemington Street, Frewville, South Australia 5063
Phone 79 1662, telex AA82520

Please address all correspondence to the Director
In reply quote: AN3/51/0 - 1315/73

NATA CERTIFICATE

REPORT COMPLETE

6th October, 1972.

Mr. H.J. Hannah
Manager
Production Division
Delhi International Oil Corporation
GPO Box 1837P
ADELAIDE SA 5001

REPORT AN1315/73

YOUR REFERENCE:

Purchase Order No. A18384

IDENTIFICATION:

As listed

DATE RECEIVED:

20/9/72

ANALYSIS

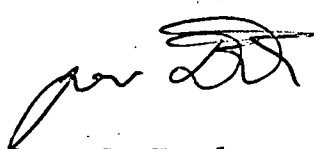
% by Weight

Sample Mark	Sulphur
	S
Fly Lake No. 2	0.034

Enquiries quoting AN1315/73 to Officer in Charge please.

Analysis by: G.R. Holden

Officer in Charge, Analytical Section: A.B. Timms


for F.R. Hartley
Director

amw



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PRODUCTIVITY TEST & PRESSURE SURVEYSFEBRUARY 16 - MARCH 12, 1973

LOCATION: Latitude $27^{\circ} 37' 24''$ S
Longitude $139^{\circ} 58' 50''$ E

P.B.T.D: 9574'

PERFORATED INTERVAL: 9532' - 9562'

CASING SIZE: 7" O.D. MIXED GRADES

TUBING SIZE: 2 7/8" O.D. 6.5 #/FT J55

LENGTH OF FLOWSTRING: 9519.61'

BOTTOM HOLE PRESSURE @ 9500'

PRE TEST: 4108.7 PSIG (Stabilized)

AFTER TEST: 3981.2 PSIG (EXTRAPOLATED)

TOTAL EFFLUENTS PRODUCED DURING TEST (APPROX)

OIL	=	2847 Bbls
GAS	=	2840 MCF



FLY LAKE #2STATIC PRESSURE & TEMPERATURE GRADIENTSFEBRUARY 16. 1973

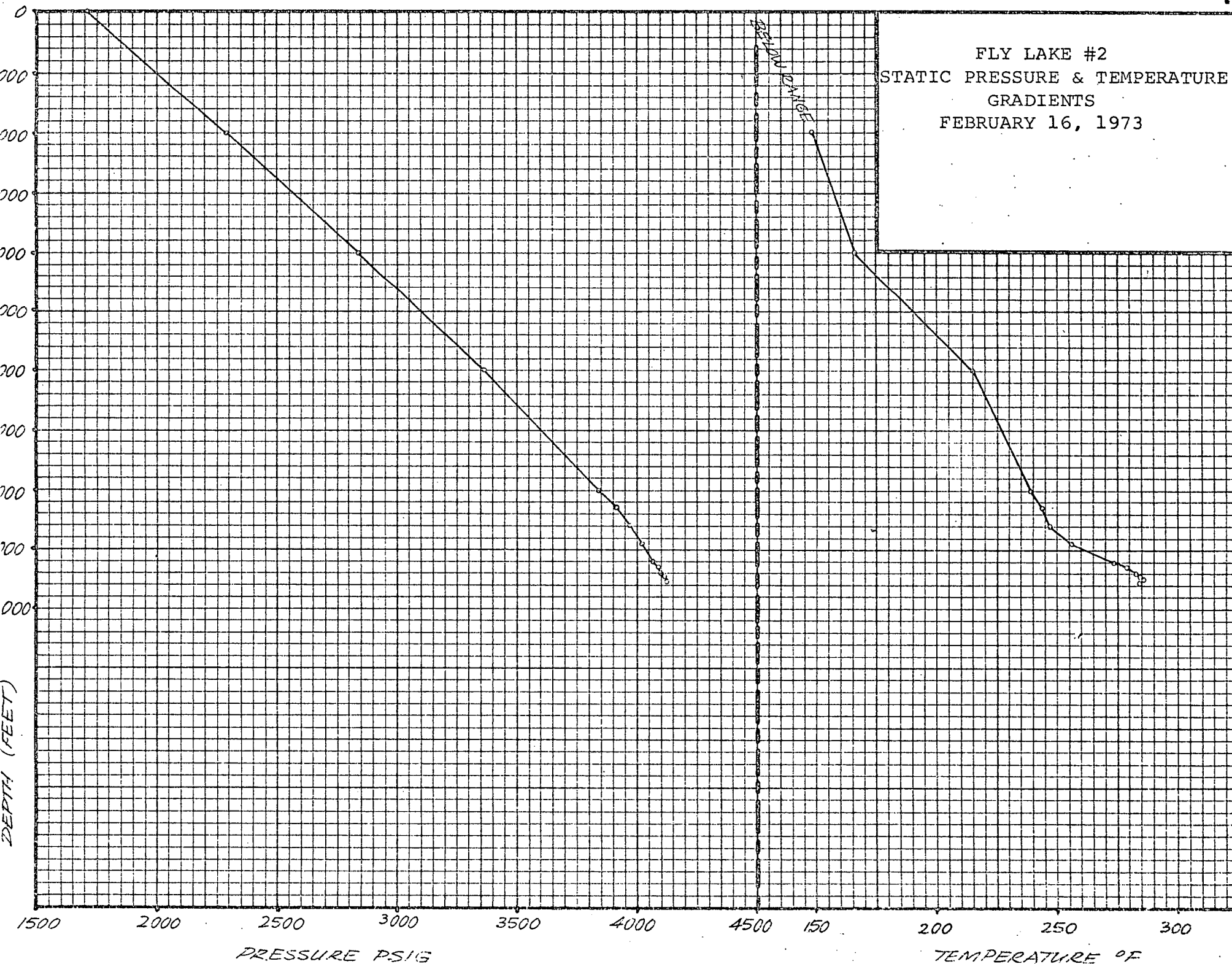
PRESSURE ELEMENT # 32350
RANGE 0-5000 psi

TEMPERATURE ELEMENT # 28115
RANGE 150 - 350 °F

<u>DEPTH'</u>	<u>PRESSURE</u> <u>PSIG</u>	<u>GRADIENT</u> <u>PSI/FT</u>	<u>TEMP</u> ° <u>F</u>
0	*1703.2	-	BELOW RANGE
2000	2285.6	.2912	152.7
4000	2842.8	.2786	165.3
6000	3362.9	.2600	214.6
8000	3840.6	.2388	239.6
8300	3908.5	.2263	243.1
8600	3963.2	.1823	246.6
8900	4016.3	.1770	255.8
9200	4066.3	.1666	273.5
9300	4081.0	.1470	279.5
9400	4096.4	.1540	282.7
9450	4103.3	.1380	284.5
9500	4108.7	.1080	285.2
9547	4122.3	.2894	284.0

*LUBRICATOR DEADWEIGHT PRESSURE = 1706 PSI

FLY LAKE #2
 STATIC PRESSURE & TEMPERATURE
 GRADIENTS
 FEBRUARY 16, 1973



EXTENDED FLOW TEST FLY LAKE #2

PRESSURE PSIG				WELLHEAD TEMP	CHOKE SIZE	H.P. SEPARATOR DATA				L.P. SEPARATOR DATA				CALCULATED GAS FLOW (MCFD)			Hc	G.O.R.		
DATE	TIME	WELL HEAD	DATUM (9500')	° F	(64th's")	Pf (PSIA)	Hw (INS)	TEMP ° F	ORIFICE (INS)	Pf (PSIA)	Hw (INS)	TEMP ° F	ORIFICE (INS)	H.P.	L.P.	TOTAL	Bbls/D	CF/Bbl.		
FEB																				
1973																				
16	2200	1709	4108.7	COMMENCED FLOW																
17	0800	930	2596.7	NA	10	305	110	68	0.75	69	55	81	0.50	493	65	558	} 564	961		
	1600	891	2506.8	106	8	305	96	72	"	71	55	95	"	461	66	527				
	2400	870	2475.4	103	7	305	80	70	"	70	54	82	"	420	65	485				
18	0800	860	2471.4	103	6	305	72	68	"	69	49	80	"	399	62	461	462	1050		
	1600	865	2452.3	103	5	305	66	80	"	69	47	101	"	382	60	442	369	1249		
	2400	831	2471.4	102	4	300	120	70	0.50	73	66	85	"	225	73	298	289	1529		
19	0800	910	2483.6	104	2	307	124	69	"	63	46	80	"	233	57	290	319	934		
	1600	917	2489.0	107	5	310	122	87	"	73	45	100	"	231	61	292	344	843		
	2400	917	2516.3	102	6	302	108	70	"	61	44	85	"	215	55	270	284	1028		
20	0800	918	2536.8	104	6	305	104	67	"	61	43	78	"	212	54	266	309	874		
	1600	924	2558.6	106	5.5	308	107	95	"	61	43	96	"	216	54	270	334	796		
	2400	918	2609.0	101	5.5	300	94	65	"	63	42	76	"	216	54	270	285	947		
21	0800	915	2697.5	104	5.5	304	95	68	"	59	41	75	"	200	54	254	281	904		
	1600	950	2839.2	106	6	305	84	87	"	67	34	103	"	203	52	255	301	847		
	2400	943	2861.0	102	5.5	300	74	70	"	57	38	82	"	191	50	241	279	864		
22	0800	942	2861.0	103	5.5	305	74	74	"	57	38	82	"	178	49	227	241	942		
	1600	940	2858.3	107	5.5	305	82	86	"	57	38	102	"	179	49	228	259	850		
	2400	938	2852.9	102	5.5	298	74	83	"	57	38	82	"	188	49	237	251	944		
23	0800	937	2848.7	104	5.5	305	75	84	"	57	38	78	"	177	49	226	246	919		
	1600	937	2844.7	107	5.5	305	84	101	"	57	38	106	"	180	49	229	266	861		
	2400	934	2839.7	102	5.5	298	76	84	"	58	38	106	"	191	50	241	254	949		
24	0800	932	2832.4	102	5.5	304	76	83	"	57	38	84	"	179	49	228	244	934		
	1600	922	2825.6	107	5.5	308	83	98	"	57	37	79	"	181	48	229	266	861		
	2400	928	2816.0	102	5.5	301	74	86	"	57	38	104	"	191	49	240	244	984		
25	0800	925	2814.7	102	5.5	305	75	83	"	57	38	86	"	178	49	227	255	890		
	1600	926	2812.0	107	5.5	305	83	100	"	56	37	79	"	180	48	228	259	880		
	2400	923	2805.1	102	5.5	302	75	85	"	57	37	106	"	190	49	239	239	1000		
26	0800	921	2802.4	104	5.5	305	74	83	"	57	37	86	"	180	49	229	238	962		
	1600	923	2829.7	106	5.5	307	77	96	"	56	37	76	"	179	48	227	254	894		
										59	35	102	"	183	48	231	241	958		
WELL SHUT-IN FOR PRESSURE BUILD-UP OBSERVATIONS																				

WELL SHUT-IN FOR PRESSURE BUILD-UP OBSERVATIONS

NOTE: SMALL QUANTITIES OF WATER PRODUCED DURING THE FIRST THREE DAYS (PROBABLY FRAC WATER)

FLY LAKE #2RESERVOIR PRESSURE BUILD-UP SURVEY @ 9540'FEBRUARY 26 - MARCH 12, 1973

<u>DATE</u>	<u>TIME</u>	<u>PRESSURE</u> <u>PSIG</u>	<u>SHUT-IN</u> <u>TIME</u> <u>HOURS</u>	<u>t + θ</u> <u>θ</u>
FEB 26	1600	2829.7	0	WELL SHUT-IN
	1700	3346.0	1	235.00
	1800	3474.1	2	118.00
	1900	3525.7	3	79.00
	2000	3551.7	4	59.50
	2100	3567.6	5	47.80
	2200	3583.1	6	40.00
	2300	3595.3	7	34.43
	2400	3604.9	8	30.25
	0100	3614.4	9	27.00
FEB 27	0200	3625.3	10	24.40
	0300	3632.2	11	22.27
	0400	3639.2	12	20.50
	0500	3645.9	13	19.00
	0600	3652.0	14	17.71
	0700	3656.7	15	16.60
	0800	3663.5	16	15.62
	0900	3668.9	17	14.76
	1000	3673.0	18	14.00
	1100	3677.1	19	13.31
	1200	3680.4	20	12.70
	1300	3685.2	21	12.14
	1400	3689.4	22	11.64
	1500	3692.1	23	11.17
	1600	3695.3	24	10.75
	1700	3704.3	25	10.36
	1800	3706.5	26	10.00
	1900	3711.2	27	9.67
	2000	3712.5	28	9.36
	2100	3716.6	29	9.07
FEB 28	2200	3719.3	30	8.80
	2300	3723.4	31	8.55
	2400	3726.1	32	8.31
	0100	3728.8	33	8.09
	0200	3733.0	34	7.88
	0300	3734.9	35	7.69
	0400	3738.4	36	7.50
	0500	3739.7	37	7.32
	0600	3743.3	38	7.16
	0700	3746.6	39	7.00
	0800	3747.9	40	6.85
	1000	3753.4	42	6.57

<u>DATE</u>	<u>TIME</u>	<u>PRESSURE</u> <u>PSIG</u>	<u>SHUT-IN</u> <u>TIME</u> <u>HOURS</u>	<u>t + θ</u> <u>θ</u>
	1200	3757.5	44	6.32
	1400	3760.7	46	6.09
	1600	3764.3	48	5.87
	1800	3768.4	50	5.68
	2200	3775.2	54	5.33
MAR 1	0200	3781.2	58	5.03
	0600	3787.5	62	4.77
	1000	3792.9	66	4.55
	1400	3797.0	70	4.34
	1800	3802.4	74	4.16
	2200	3806.5	78	4.00
MAR 2	0200	3810.6	82	3.85
	0600	3816.0	86	3.72
	1000	3820.2	90	3.60
	1400	3824.2	94	3.49
	1800	3827.5	98	3.39
	2200	3832.4	102	3.29
MAR 3	0200	3837.3	106	3.21
		CLOCK EXPIRED.	BOMBS WITHDRAWN & RERUN	
	1610	3853.9	120.17	2.95
	2000	3855.2	124	2.89
	2400	3857.7	128	2.83
MAR 4	0400	3860.3	132	2.77
	0800	3862.9	136	2.72
	1200	3866.0	140	2.67
	1600	3868.1	144	2.62
	2000	3870.7	148	2.58
	2400	3872.0	152	2.54
MAR 5	0400	3875.3	156	2.50
	0800	3877.1	160	2.46
	1200	3879.7	164	2.43
	1600	3881.3	168	2.39
	2000	3883.6	172	2.36
	2400	3884.9	176	2.33
MAR 6	0400	3887.5	180	2.30
	0800	3891.3	184	2.27
	1200	3892.6	188	2.24
	1600	3893.9	192	2.22
	2000	3896.5	196	2.19
	2400	3898.6	200	2.17
MAR 7	0400	3900.7	204	2.15
	0800	3903.0	208	2.12
	1200	3906.3	212	2.10
	1600	3908.1	216	2.08
	2000	3910.2	220	2.06
	2400	3912.0	224	2.04

<u>DATE</u>	<u>TIME</u>	<u>PRESSURE</u> <u>PSIG</u>	<u>SHUT-IN</u> <u>TIME</u> <u>HOURS</u>	<u>t + θ</u> <u>θ</u>
MAR 8	0400	3915.0	228	2.03
	0800	3918.5	232	2.01
	1200	3921.1	236	1.99
		CLOCK EXPIRED.	BOMBS WITHDRAWN & RERUN	
	1730	3911.4	241.5	1.97
	2000	3912.8	244	1.96
	2400	3912.8	248	1.94
MAR 9	0400	3914.1	252	1.93
	0800	3915.5	256	1.91
	1200	3915.5	260	1.90
	1600	3916.3	264	1.89
	2000	3916.3	268	1.87
	2400	3917.2	272	1.86
MAR 10	0400	3918.3	276	1.85
	0800	3919.6	280	1.84
	1200	3920.2	284	1.82
	1600	3921.0	288	1.81
	2000	3921.0	292	1.80
	2400	3921.5	296	1.79
MAR 11	0400	3922.9	300	1.78
	0800	3923.7	304	1.77
	1200	3924.5	308	1.76
	1600	3925.0	312	1.75
	2000	3925.9	316	1.74
	2400	3926.4	320	1.73
MAR 12	0400	3927.8	324	1.72
	0735	3928.6	327.6	1.71

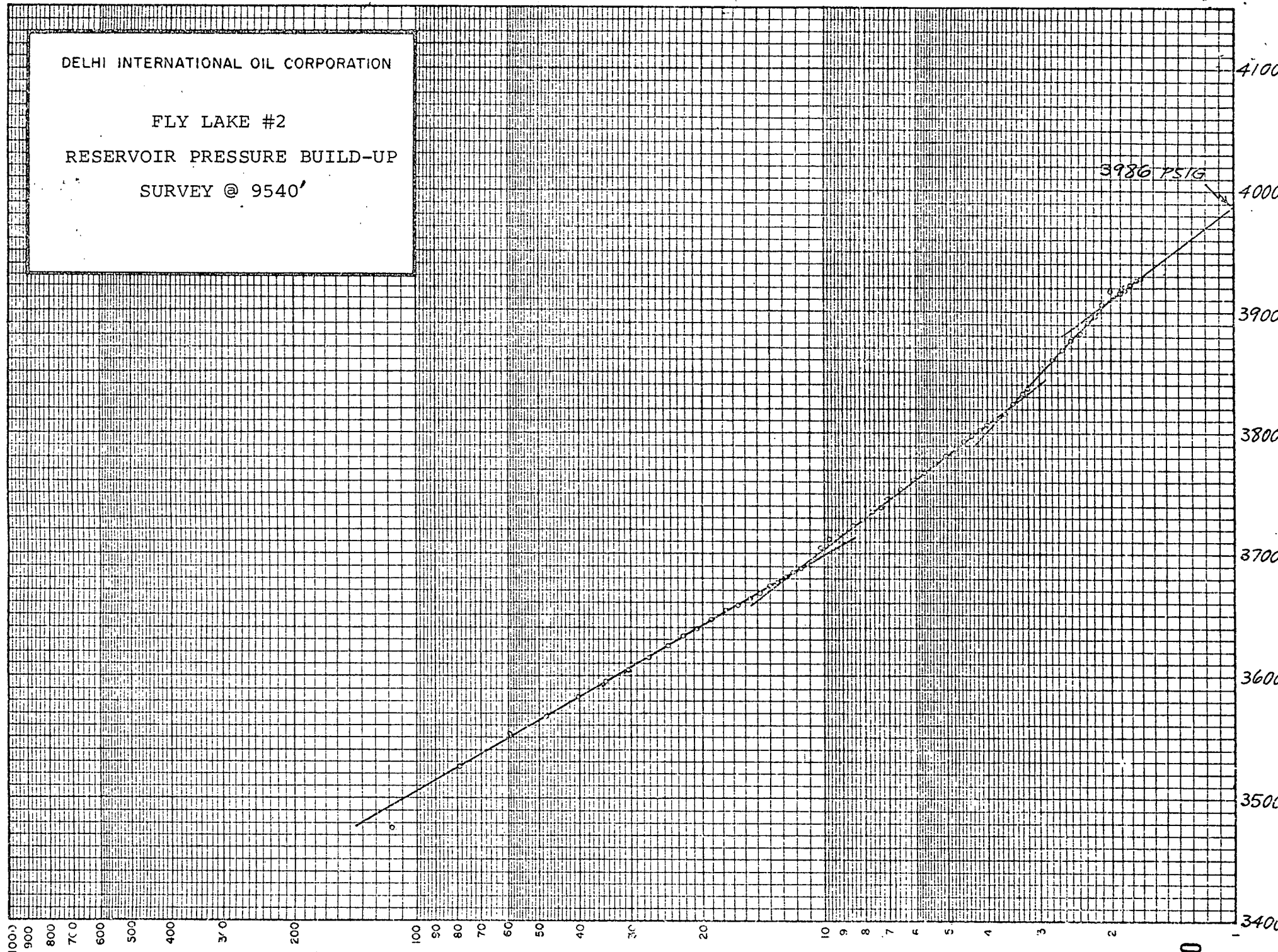
DELHI INTERNATIONAL OIL CORPORATION

FLY LAKE #2

RESERVOIR PRESSURE BUILD-UP

SURVEY @ 9540'

PRESSURE PSI

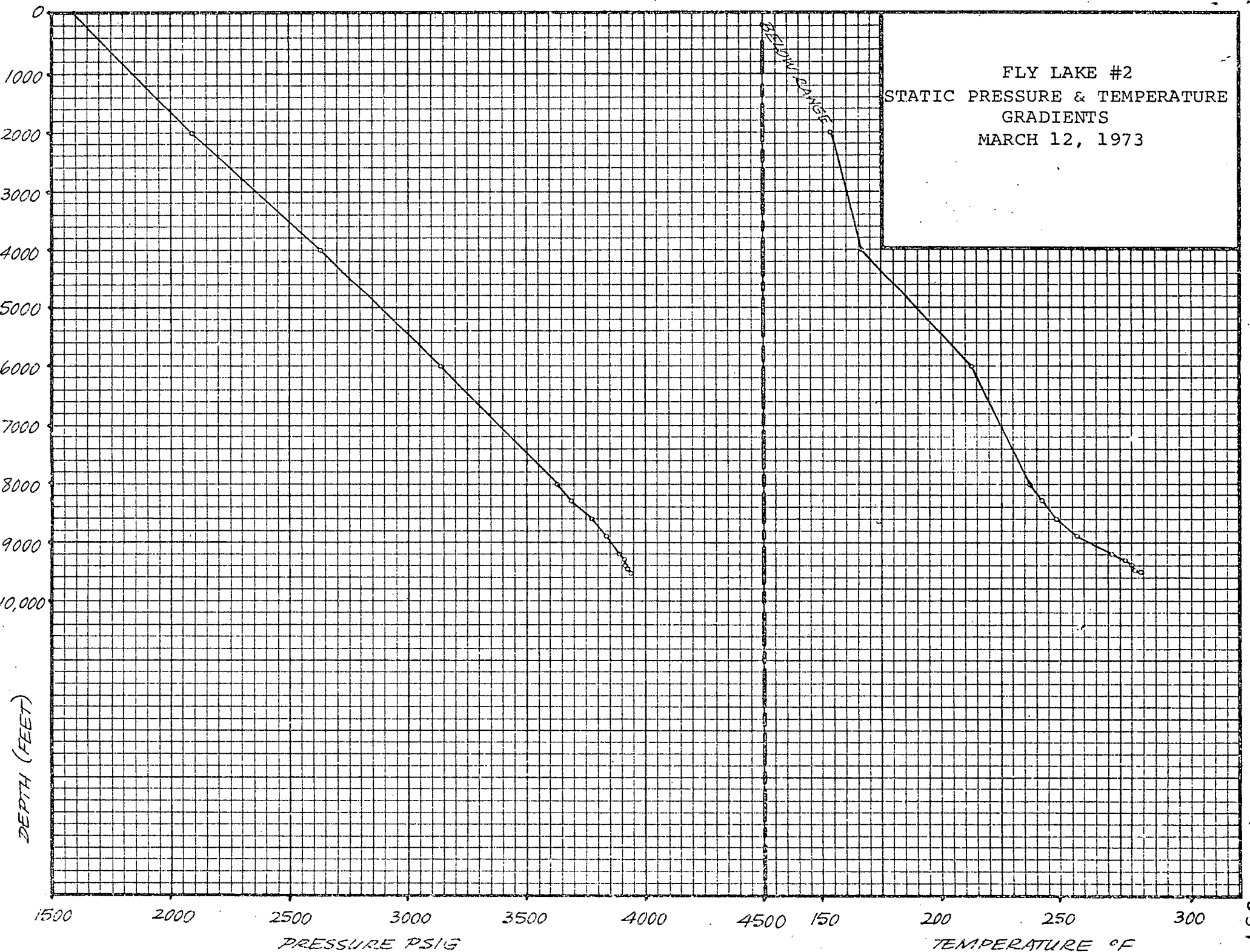


FLY LAKE #2STATIC PRESSURE & TEMPERATURE GRADIENTSMARCH 12, 1973PRESSURE ELEMENT # 32350
RANGE 0-5000 psiTEMPERATURE ELEMENT # 31840
RANGE 150-400 °F

<u>DEPTH</u>	<u>PRESSURE</u> <u>PSIG</u>	<u>GRADIENT</u> <u>PSI/FT</u>	<u>TEMP</u> °F
0	*1598.9		BELOW RANGE
2000	2079.0	.2400	152.9
4000	2625.3	.2731	165.7
6000	3139.0	.2568	212.1
8000	3628.6	.2448	236.9
8300	3691.0	.2080	241.9
8600	3770.6	.2653	247.8
8900	3836.5	.2197	256.7
9200	3892.9	.1880	271.8
9300	3903.8	.1090	277.4
9400	3914.1	.1030	280.0
9450	3922.1	.1600	281.8
9500	3928.1	.1200	284.0
9547	3934.6	.1383	284.3

*LUBRICATOR DEADWEIGHT PRESSURE = 1599 psi

FLY LAKE #2
STATIC PRESSURE & TEMPERATURE
GRADIENTS
MARCH 12, 1973



1973 APR 30 AM 10:25

088



amdel

The Australian Mineral Development Laboratories

Flemington Street, Frewville, South Australia 5063
Phone 79 1662, telex AA82520

Please address all correspondence to the Director
In reply quote: AN3/51/0 - 3994/73

REPORT COMPLETE

NATA CERTIFICATE

27 April 1973

The Production Manager
Delhi International Oil Corporation
GPO Box 2364
ADELAIDE SA 5001

REPORT AN 3994/73

YOUR REFERENCE:	Requisition No. A34204
LOCATION:	Fly Lake No. 2
MATERIAL:	Oil and water
IDENTIFICATION:	As listed
DATE RECEIVED:	19/3/73

Enquiries quoting AN 3994/73 to Officer in Charge please

Officer in Charge, Analytical Section: A.B. Timms

for F.R. Hartley
Director

pkm



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 esmadel

Well tested:	Fly Lake 2
Date tested:	26/2/73
Type of test:	-
Type of sample:	Oil
Source of sample:	Stock tank
Field sampling conditions	-
Reference:	Requisition No. A34204

RESULTS OF ANALYSIS

Kinematic Viscosity	1.481	centistokes/second at 37.8°C (100°F)
Specific Gravity at 15.6°C (60°F)	0.791	
A.P.I. Gravity at 15.6°C (60°F)	47.4	

A.S.T.M. Distillation

Initial Boiling Point	57°	°C
10% recovery	97	
20	118	
30	139	
40	162	
50	192	
60	234	
70	272	
XX 78.0	300	
XX		

Weight distillate	59.2	grams
Weight residue	19.1	grams
Loss	0.46	grams
Recovery	99.4	%
Residue after distillation		
Specific Gravity at 15.6°C (60°F)	0.82	
Pour Point	- 2	°C
Flash Point	3	°C
Aniline Point	64	°C
Sulphur (X.R.F.)	0032	% by weight



WATER ANALYSIS REPORT

SAMPLE NO.

JOB NO. 3994/73

CHEMICAL COMPOSITION

		Milligrams per litre mg/l	Milliequivalents per litre me/l
Cations			
Calcium	(Ca)	113	5.6
Magnesium	(Mg)	43	3.5
Sodium	(Na)	3850	167.5
Potassium	(K)	192	4.9
Iron	(Fe)	38	1.4
Anions			
Carbonate	(CO ₃)		
Bicarbonate	(HCO ₃)	1280	21.0
Sulphate	(SO ₄)	5	0.1
Chloride	(Cl)	5700	160.7
Fluoride	(F)		
Nitrate	(NO ₃)		
Phosphate	(PO ₄)		

TOTALS and BALANCE

Cations me/l Anion me/l
 182.9 181.8
 diff Δ 1.1 sum Σ 364.7 % ($\frac{\Delta \times 100}{\Sigma}$) 0.3

DERIVED AND OTHER DATA

Conductivity (E.C.) μS/cm at 25°C 171000

Milligrams
per litre
mg/l

Total Dissolved Solids:

a. Based on E.C.

b. Calculated (HCO₃=CO₃) 10.5%

c. Residue on evaporation at 180°C

Total Hardness as CaCO₃ 52.5Carbonate Hardness as CaCO₃ 52.5Non-carbonate Hardness as CaCO₃ 5Total Alkalinity as CaCO₃ 102.5Free Carbon Dioxide (CO₂)

Suspended Solids

Silica (SiO₂)

Boron (B)

Units

Reaction-pH 6.9

Turbidity (Jackson)

Colour (Hazen)

Sodium Absorption Ratio

SODIUM/TOTAL CATION RATIO 91.6

Name Hundred Supply ELY LAKE 2
 Section Depth Hole STOCK TANK
 Address Hole No Date Collected 26.2.73
 Water Cut Sample Collected by R.P.
 Water Level Date Received

REMARKS:



amdel

The Australian Mineral Development Laboratories

Flemington Street, Frewville, South Australia 5063
Phone 79 1662, telex AA82520

1973 APR 12 AM 9:21

091

Please address all correspondence to the Director
In reply quote: AN3/51/0 - 3994/73

PART REPORT 1

NATA CERTIFICATE

11 April 1973

The Production Manager
Delhi International Oil Corporation
GPO Box 2364
ADELAIDE SA 5001

REPORT AN 3994/73

YOUR REFERENCE:	Requisition No. A 34204
MATERIAL:	Gas and Oil
IDENTIFICATION:	As listed - ex Fly Lake No. 2
DATE RECEIVED:	19/3/73

Enquiries quoting AN 3994/73 to Officer in Charge please

Officer in Charge, Analytical Section: A.B. Timms

for F.R. Hartley
Director

plm



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AN 3994/73

092

2.

Well tested:	Fly Lake No 2 PD 63
Date tested:	26/2/73 1335 hours
Type of test:	
Type of sample:	Low Pressure Gas
Source of sample:	Low Pressure Separator
Field sampling conditions:	Press. 44 psi Temp. 102°F
Reference:	Requisition A 34204

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	0.33
Hydrogen	-
Helium	-
Carbon dioxide	24.5
Methane	22.0
Ethane	19.0
Propane	21.5
i Butane	3.70
n Butane	5.52
i Pentane	1.23
n Pentane	1.13
Hexanes	0.55
Heptanes	0.375
Octanes and higher hydrocarbons	0.165

Calculated Gas Density
(relative air = 1)

1.303

REMARKS:



Canada

AN 3994/73

3.

Well tested:	Fly Lake No 2 PD 69
Date tested:	26/2/73 1415 hours
Type of test:	-
Type of sample:	Low Pressure Gas
Source of sample:	Low Pressure Separator
Field sampling conditions:	Press. 44 psi Temp. 102°F
Reference:	Requisition A34204

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02% mol vol
Nitrogen	0.29
Hydrogen	-
Helium	-
Carbon dioxide	24.4
Methane	21.5
Ethane	18.7
Propane	21.5
i Butane	3.86
n Butane	5.76
i Pentane	1.38
n Pentane	1.30
Hexanes	0.64
Heptanes	0.46
Octanes and higher hydrocarbons	0.21

Calculated Gas Density (relative air = 1)	1.318
--	-------

REMARKS:



AN 3994/73

094

4.

Well tested:	Fly Lake No 2 PD 72
Date tested:	26/2/73 1336 hours
Type of test:	-
Type of sample:	High Pressure Gas
Source of sample:	High Pressure Separator
Field sampling conditions:	Press 293 Psi Temp. 99°F
Reference:	Requisition A34204

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	2.27
Hydrogen	-
Helium	-
Carbon dioxide	27.0
Methane	47.8
Ethane	11.5
Propane	7.90
i Butane	1.125
n Butane	1.660
i Pentane	0.265
n Pentane	0.242
Hexanes	0.128
Heptanes	0.067
Octanes and higher hydrocarbons	0.043
Calculated Gas Density (relative air = 1)	1.015

REMARKS:



AN 3994/73

5.

Well tested:	Fly Lake No 2	PD 73
Date tested:	26/2/73	1415 hours
Type of test:	-	
Type of sample:	High Pressure Gas	
Source of sample:	High Pressure Separator	
Field sampling conditions:	Press. 293 psi	Temp. 99°F
Reference:	Requisition A 34204	

RESULTS OF ANALYSIS

Oxygen plus argon	<0.02 % mol vol
Nitrogen	2.36
Hydrogen	-
Helium	-
Carbon dioxide	26.7
Methane	47.9
Ethane	11.3
Propane	7.78
i Butane	1.134
n Butane	1.710
i Pentane	0.375
n Pentane	0.356
Hexanes	0.203
Heptanes	0.122
Octanes and higher hydrocarbons	0.060
Calculated Gas Density (relative air = 1)	1.020

REMARKS:



AN 3994/73

096

6.

Well tested: Fly Lake No 2 PD 71
Date tested: 26/2/73 1425 hours
Type of test: -
Type of sample: Low Pressure Separator Oil
Source of sample: Low Pressure Separator
Field sampling conditions: Pressure 48 psi Temp. 102°F
Reference: Requisition A3420

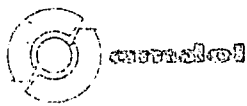
RESULTS OF ANALYSIS

The sample was released to air pressure and temperature by displacement with saturated brine solution to yield gas and liquid. The relative volume of each was measured, both fractions were then analysed chromatographically and the results combined mathematically to give an analysis of the sample as submitted.

The sample yielded oil and gas in the ratio of 370 millilitres oil and 7.0 litres of gas at 20 °C and 768 mm pressure.

Flash Gas Analysis

Nitrogen	<0.02	% mol vol
Carbon dioxide	6.80	
Methane	4.0	
Ethane	17.14	
Propane	39.1	
i Butane	9.00	
n Butane	14.2	
i Pentane	3.56	
n Pentane	3.41	
Hexanes	1.62	
Heptanes	0.65	
Octanes and higher hydrocarbons	0.52	



097

7.

Calculated Composition of Sample as Received

		% by Weight
Nitrogen	<0.02	
Carbon dioxide	0.29	
Methane	0.06	
Ethane	0.50	
Propane	2.68	
Butanes	5.36	
Pentanes	6.31	
Hexanes	5.85	
Benzene	<0.01	
Heptanes	7.55	
Toluene	1.35	
Octanes	10.20	
Xylenes plus ethyl benzene	2.32	
Nonanes	6.26	
C ₉ aromatics	1.60	
Decanes plus C ₁₀ aromatics	5.47	
Undecanes plus aromatics	4.23	
Dodecanes plus aromatics	3.65	
Tridecanes plus aromatics	3.72	
Tetradecanes plus aromatics	3.40	
Pentadecanes plus aromatics	2.98	
Hexadecanes plus aromatics	2.07	
Heptadecanes and higher hydrocarbons	24.15	

Specific Gravity of C₁₇ + (from A.S.T.M. Distillation)

=

to follow

REMARKS:



Well tested: Fly Lake No 2 PD 82
Date tested: 26/2/73 1436 hours
Type of test: -
Type of sample: Low Pressure Separator Oil
Source of sample: Low Pressure Separator
Field sampling conditions: Press. 48 psi Temp. 102°F
Reference: Requisition A34204

RESULTS OF ANALYSIS

The sample was released to air pressure and temperature by displacement with saturated brine solution to yield gas and liquid. The relative volume of each was measured, both fractions were then analysed chromatographically and the results combined mathematically to give an analysis of the sample as submitted.

The sample yielded oil and gas in the ratio of 240 millilitres oil and 4.5 litres of gas at 20 °C and 768 mm pressure.

Flash Gas Analysis

		% mol vol
Nitrogen	<0.02	
Carbon dioxide	8.40	
Methane	4.14	
Ethane	18.4	
Propane	40.1	
i Butane	8.15	
n Butane	12.8	
i Pentane	3.05	
n Pentane	2.70	
Hexanes	1.31	
Heptanes	0.55	
Octanes and higher hydrocarbons	0.40	

Calculated Composition of Sample as Received

Nitrogen	<0.01	% by Weight
Carbon dioxide	0.36	
Methane	0.06	
Ethane	0.54	
Propane	2.68	
Butanes	5.12	
Pentanes	5.97	
Hexanes	5.57	
Benzene	<0.01	
Heptanes	7.38	
Toluene	1.49	
Octanes	10.0	
Xylenes plus ethyl benzene	2.47	
Nonanes	6.21	
C ₉ aromatics	1.66	
Decanes plus C ₁₀ aromatics	5.63	
Undecanes plus aromatics	4.30	
Dodecanes plus aromatics	3.85	
Tridecanes plus aromatics	3.77	
Tetradecanes plus aromatics	3.40	
Pentadecanes plus aromatics	2.78	
Hexadecanes plus aromatics	1.86	
Heptadecanes and higher hydrocarbons	24.90	

Specific Gravity of C₁₇ + (from A.S.T.M. Distillation)

=

to follow

REMARKS:

Hydralac 2
Env. 1807

100
(4)

SPECIAL CORE ANALYSIS STUDY
FOR
DELHI PETROLEUM PTY. LTD
FORMATION; TIRRAWARRA SANDSTONE

123

Branch = 1.
Curial = 1.
Pace = 1.
S. 1. 1.
S. 1. 1.
S. 1. 1.

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Special Core Analysis

CORE

98 1-2

CORE LABORATORIES

Special Core Analysis



Delhi Petroleum Pty Ltd
33 King William Street
Adelaide
South Australia 5000

Attention: Mr. O W Nugent

Subject : Special Core Analysis

Wells : Beanbush no.1, Curalle no.1,
Packsaddle no.2,
Gidgealpa no.16, Flylake no.2,
Tirrawarra no.9.

Your ref: EXPL 500-06-SC

Gentlemen,

In a letter dated September 18, 1980 from Mr. O W Nugent of Delhi Petroleum to our Dennis Sisely, and in a subsequent telex from Mr. Mark Locke of Delhi to our Mr. Sisely, Core Laboratories were requested to perform various electrical resistivity measurements on samples from the subject wells.

Fourteen samples were despatched from our Perth laboratory to our Singapore laboratory in preparation for this study. These samples are described with respect to depth and lithology on pages 1 and 2 of this report.

Formation Resistivity Factor and Resistivity Index (pages 3 through 24)

All samples had been cleaned prior to analysis in Perth. Their cleanliness was verified by checking with ultra-violet light (to detect oil) and methanol (to detect salt). The samples were then dried in an oven maintained at 40-45% relative humidity.

After measurements of air permeability and helium porosity the samples were evacuated and pressure saturated with simulated formation brines pertaining to their individual wells thus:-

<u>Well Number</u>	<u>Approx. Concentration of Brine</u> <u>mg/l</u>
Beanbush no. 1	3,000
Curalle no. 1	3,000
Packsaddle no. 2	6,500
Gidgealpa no. 16	18,000
Flylake no. 2	32,000
Tirrawarra no. 9	32,000

Cont'd....

Delhi Petroleum Pty Ltd
Wells: Beanbush no.1, Curalle no.1,
Packsaddle no.2, Gidgealpa no.16,
Flylake no.2, Tirrawarra no.9.
March, 1981

Page Two

Full brine analyses were provided by Delhi for all wells except Beanbush no.1 and Curalle no.1. Thus the salt content of the simulated brines for these two wells comprised 80% sodium chloride and 20% calcium chloride.

Electrical resistivities of the brine-saturated samples and their saturant brines were measured at room conditions until the results stabilised, indicating ionic equilibrium within the core samples. Formation resistivity factors were calculated and the results are presented in tabular form on pages 3 through 8 and in graphical form on page 9. The resultant plot yields an average value of 1.78 for "m" the cementation exponent and a value of unity for "a" the intercept.

The samples were then placed in porous plate cells and humidified air introduced at increasing incremental pressures up to 200 psi. Brine saturations were determined gravimetrically. The electrical resistivities of the partially saturated plugs were measured. Resistivity index values were calculated and the results are presented in tabular form on pages 3 through 8 and in graphical form on pages 10 through 24. The resultant plots yield values of the saturation exponent "n" ranging from 1.75 to 1.95 and the composite plot for all wells gives an average "n" value of 1.89.

Formation Resistivity Factor as a Function of Overburden Pressure
(pages 25 through 29)

Following resistivity index measurements all samples were leached in methanol and humidity dried before resaturating with their respective simulated formation brines.

The samples were then mounted in a hydraulic core-holder and their electrical resistivities measured at effective overburden pressures of 200 psi, 1800 psi and 3600 psi while maintaining an internal pore pressure of 200 psi.

The results of these measurements are presented in tabular form on pages 25 and 26 and in graphical form on pages 27 through 29. The resultant plots yield a value of unity for "a" the intercept and values for the cementation factor "m" of 1.85 at 200 psi, 1.89 at 1800 psi and 1.90 at 3600 psi.

Cont'd....

Delhi Petroleum Pty Ltd
Wells: Beanbush no.1, Curalle no.1,
Packsaddle no.2, Gidgealpa no.16,
Flylake no.2, Tirrawarra no.9.
March, 1981

Page Three

It has been a pleasure to conduct this study for Delhi Petroleum Pty Ltd, should you have any questions or require further information please do not hesitate to contact us.

Yours faithfully
CORE LABORATORIES INTERNATIONAL LTD



TONY KENNAIRD
Laboratory Manager
Special Core Analysis

Enc

TK/sb

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Tabular	25
Graphical	27

CORE LABORATORIES
Petroleum Reservoir Engineering

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File SKSCAL 81007

COMPANY: DELHI INTERNATIONAL OIL CO FORMATION: TIRRAWARRA SANDSTONE
WELL : COUNTRY : AUSTRALIA
FIELD:

IDENTIFICATION AND DESCRIPTION OF SAMPLES

Sample Number	Depth, Feet	Lithological Description
<u>Beanbush No.1</u>		
12	8733' 4"	SST: lt gy/brn, fg, w std, v w cmted, subang-sub rdd.
14	8735' 2"	SST: v lt gy/brn, vc-cg w/f-vfg mtx, mod std, vuggy appearance.
<u>Curalle No.1</u>		
28	3327' 0"	SST: lt gy/brn, m-fg, w std, v w cmted, subang-sub rdd, tr carb.
34	3334' 0"	SST: lt gy/brn, m-fg, w std, v w cmted, subang-sub rdd, carb/arg streaks.
<u>Packsaddle No.2</u>		
4	8587' 3"	SST: lt gy, fg, w std, v w cmted, subang-sub rdd, sl carb.
6	8598' 2"	AA
<u>Gidgealpa No.16</u>		
27	7259' 4"	SST: lt gy/brn, mg, w std, w cmted, subang-sub rdd sl carb.
30	7262' 0"	AA

IDENTIFICATION AND DESCRIPTION OF SAMPLES

<u>Sample Number</u>	<u>Depth, Feet</u>	<u>Lithological Description</u>
32	7264' 1"	AA
<u>Flylake No. 2</u>		
1	9552' 4"	SST: gy, fg, w std, v w cmted, subang-sub rdd, sl carb.
2	9566' 5"	AA
<u>Tirrawarra No. 9</u>		
7	9635' 4"	SST: gy, fg, w std, v w cmted, subang-sub rdd, tr carb.
8	9657' 7"	SST: lt gy/brn, fg, w std, v w cmted, subang-sub rdd, tr carb.
10	9684' 5"	AA

FORMATION FACTOR AND RESISTIVITY INDEX DATA

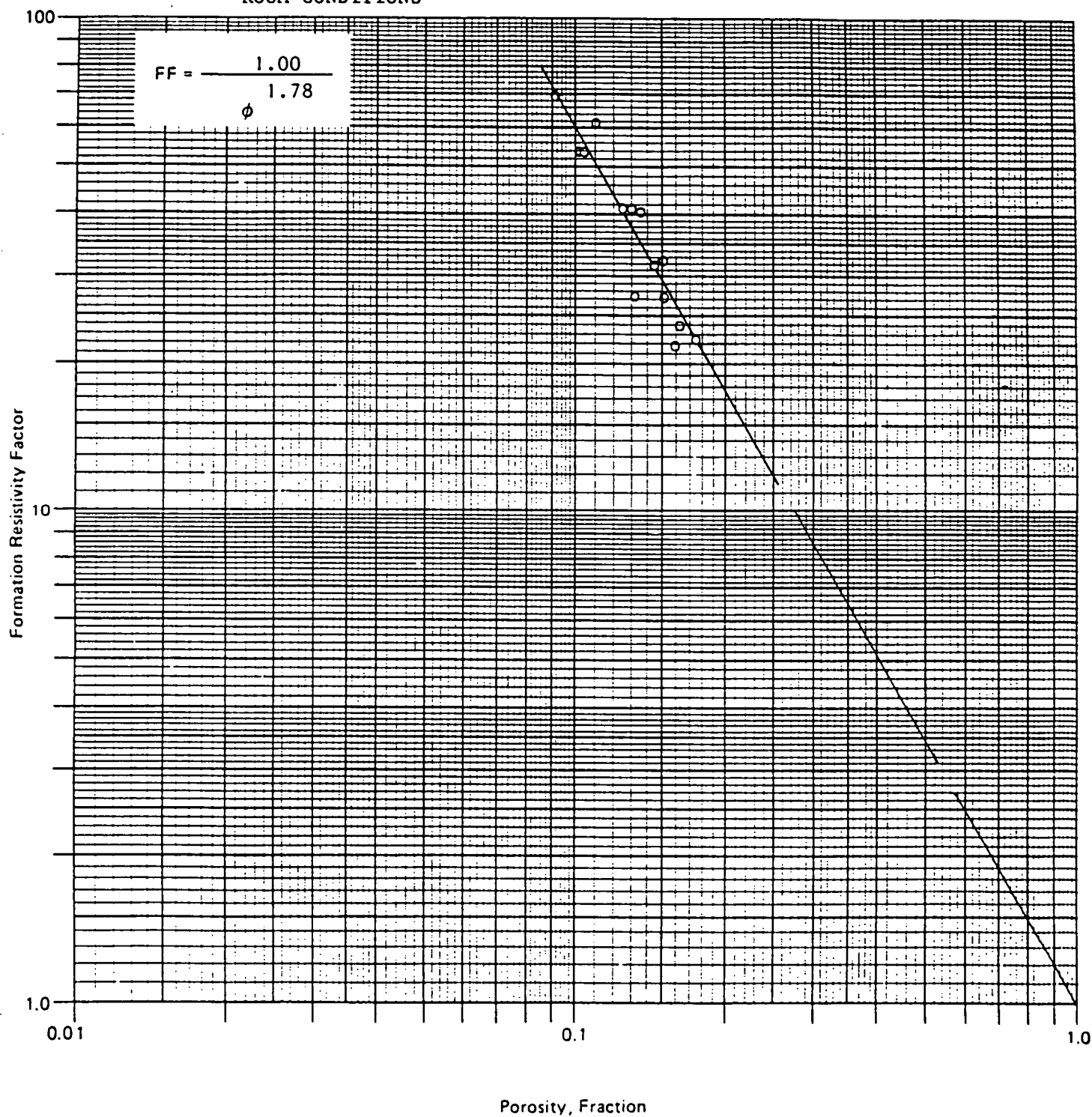
FLYLAKE NO. 2

Resistivity of Saturating Brine, Ohm-Metres: 0.257 @ 60°F

Sample Number	Air Permeability, Millidarcys	Porosity, Per Cent	Formation Factor	Brine Saturation Per Cent Pore Space	Resistivity Index
2	6.2	11.3	53.5	100	1.00
				93.8	1.13
				88.4	1.27
				63.8	2.37
				51.1	3.65
1	2.7	9.1	68.9	100	1.00
				93.0	1.15
				87.8	1.28
				70.4	1.95
				63.9	2.35

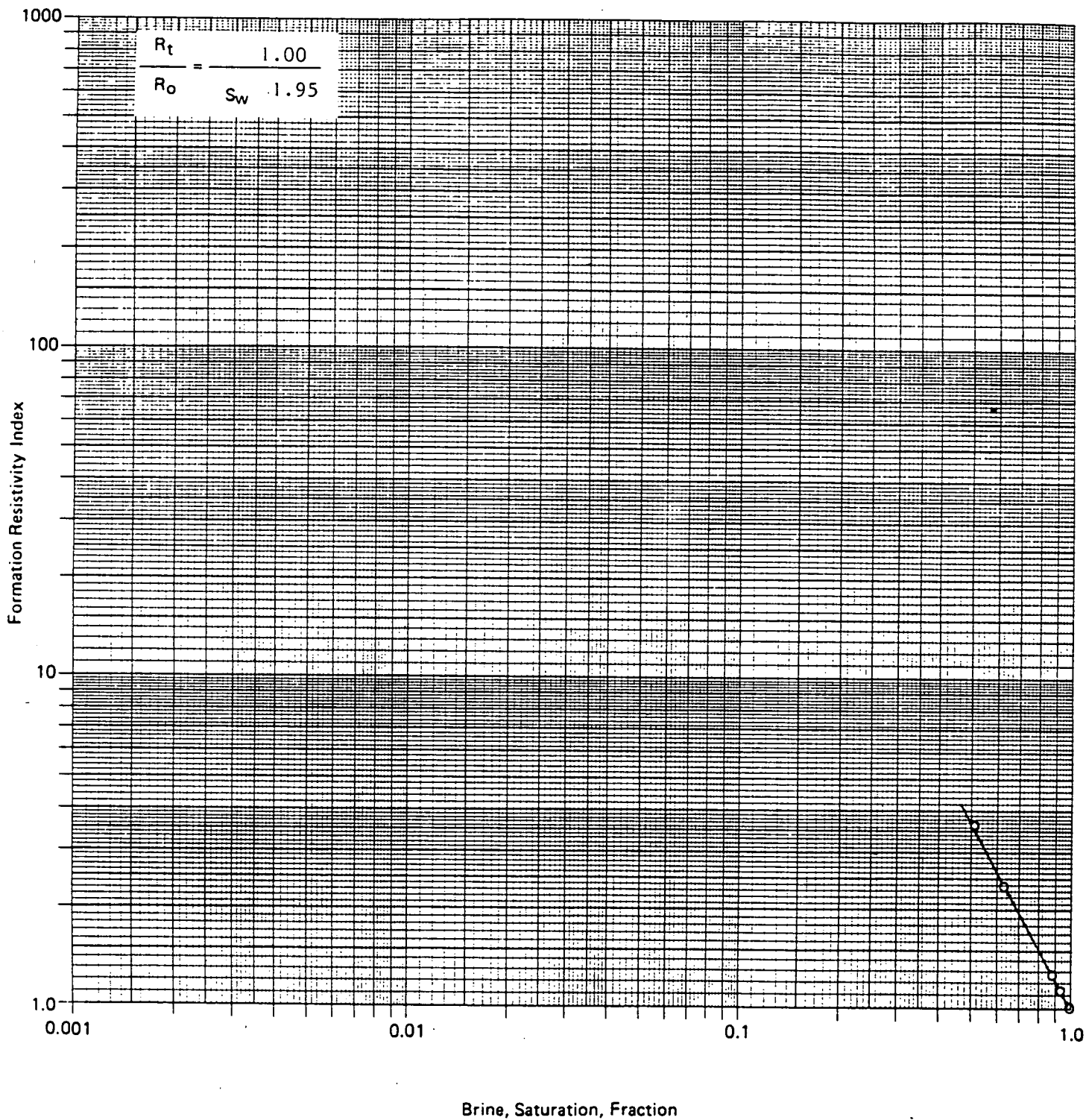
Company DELHI INTERNATIONAL OIL CO Formation TIRRAWARRA SANDSTONE
Well COMPOSITE - no y bore Country AUSTRALIA
Field Went Kulla Delta 11

ROOM CONDITIONS



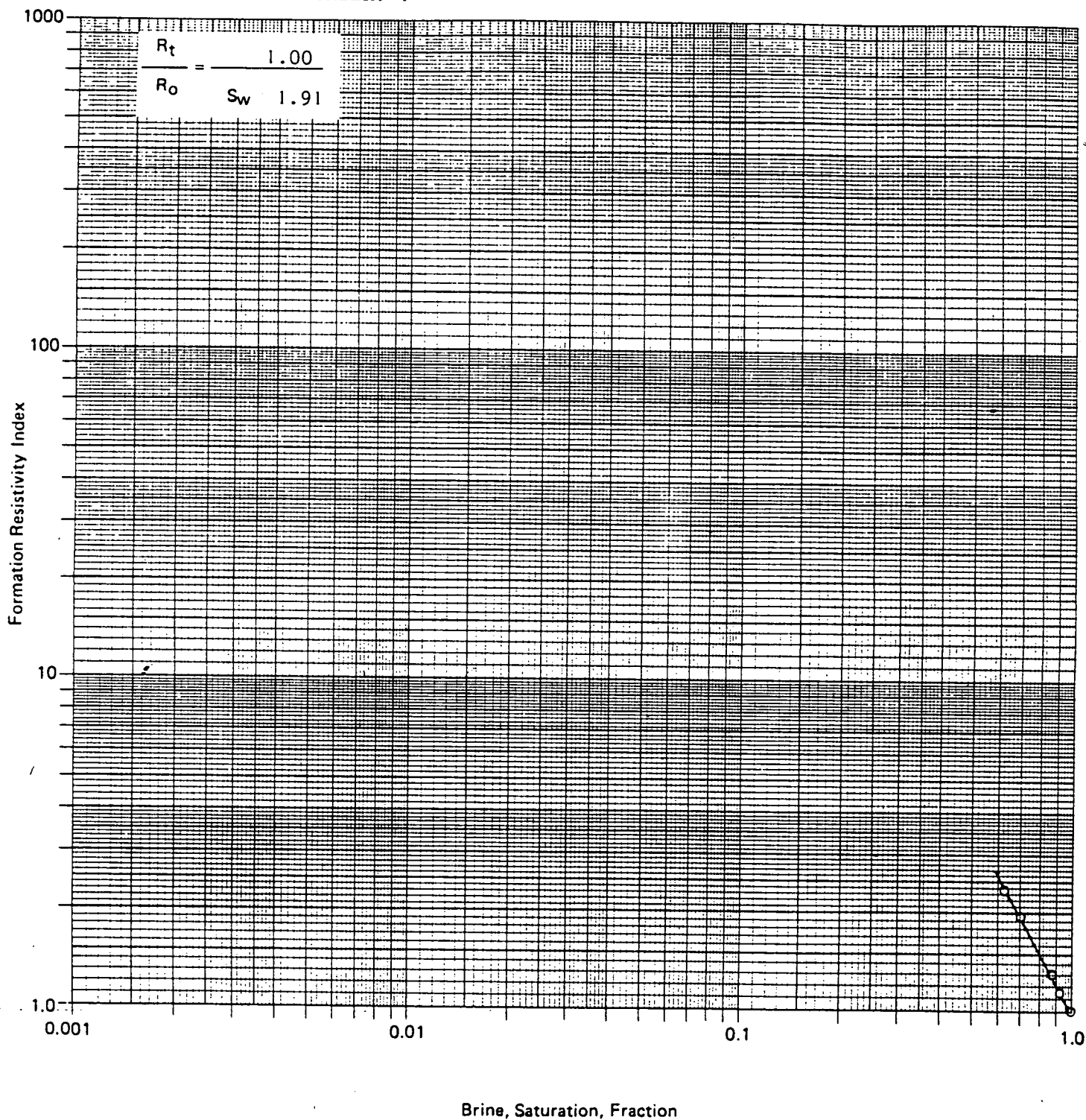
Company DELHI INTERNATIONAL OIL CO Formation TIRRAWARRA SANDSTONE
Well FLYLAKE 2 Country AUSTRALIA
Field _____

SAMPLE NUMBER: 2



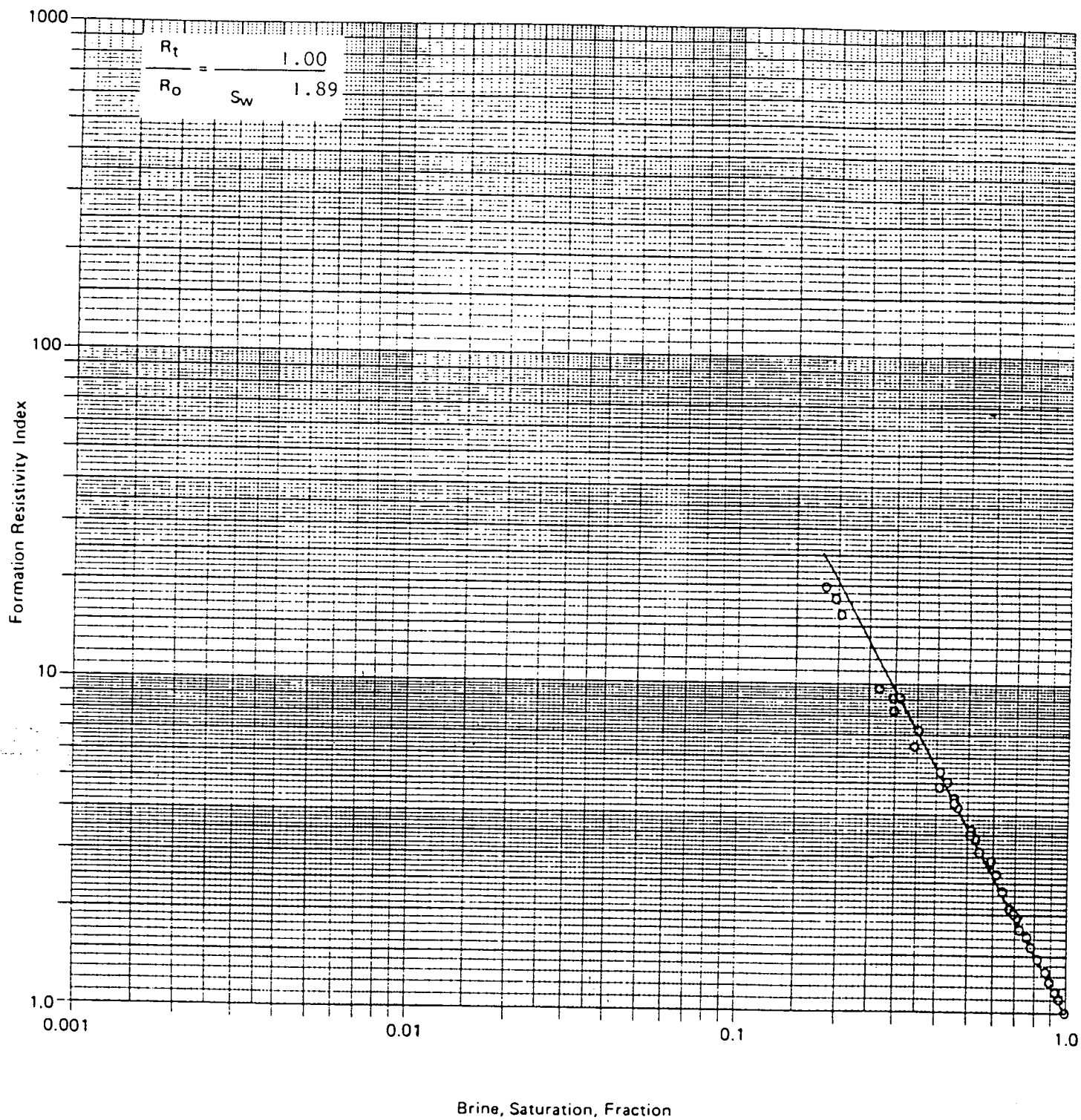
Company DELHI INTERNATIONAL OIL CO Formation TIRRAWARRA SANDSTONE
Well FLYLAKE 2 Country AUSTRALIA
Field _____

SAMPLE NUMBER: 1



Company DELHI INTERNATIONAL OIL COFormation TERRAWARRA SANDSTONEWell COMPOSITECountry AUSTRALIA

Field _____



FORMATION RESISTIVITY FACTOR AS A FUNCTION OF OVERBURDEN PRESSURE

Internal Pore Pressure for Formation Resistivity Factor, PSI: 200

Resistivities of Saturant Brine, Ohm-Metres @ 60°F: Beanbush No.1 2.24
Curalle No.1 2.24
Packsaddle No.2 1.41
Gidgealpa No.16 0.482
Flylake No.2 0.257
Tirrawarra No.9 0.257

EFFECTIVE OVERBURDEN PRESSURE, PSI

Sample umber	0		200		1800		3600	
	Porosity Per Cent	Formation Factor	Porosity Per Cent	Formation Factor	Porosity Per Cent	Formation Factor	Porosity Per Cent	Formation Factor
<u>Beanbush No.1</u>								
12	15.9	21.7	15.8	26.9	15.5	29.1	15.3	29.7
14	13.2	27.3	13.1	30.8	12.4	35.4	12.2	38.0
<u>Curalle No.1</u>								
28	15.1	32.4	15.0	37.3	14.6	41.1	14.5	42.7
34	14.5	31.6	14.4	33.9	14.0	38.8	13.9	41.0
<u>Packsaddle No.2</u>								
4	12.5	40.5	12.4	48.2	12.2	59.4	12.0	65.9
6	11.0	61.3	10.9	75.1	10.7	80.9	10.6	87.6
<u>Gidgealpa No.16</u>								
32	17.5	22.3	17.2	26.9	16.7	30.0	16.4	31.1
30	16.3	23.7	16.1	28.2	15.5	31.5	15.2	33.0
27	15.1	27.1	14.9	33.9	14.3	38.6	14.0	40.8
<u>Flylake No.2</u>								
2	11.4	53.5	11.3	62.7	11.0	69.4	10.9	74.7
1	9.1	68.9	9.0	84.0	8.8	96.5	8.7	103

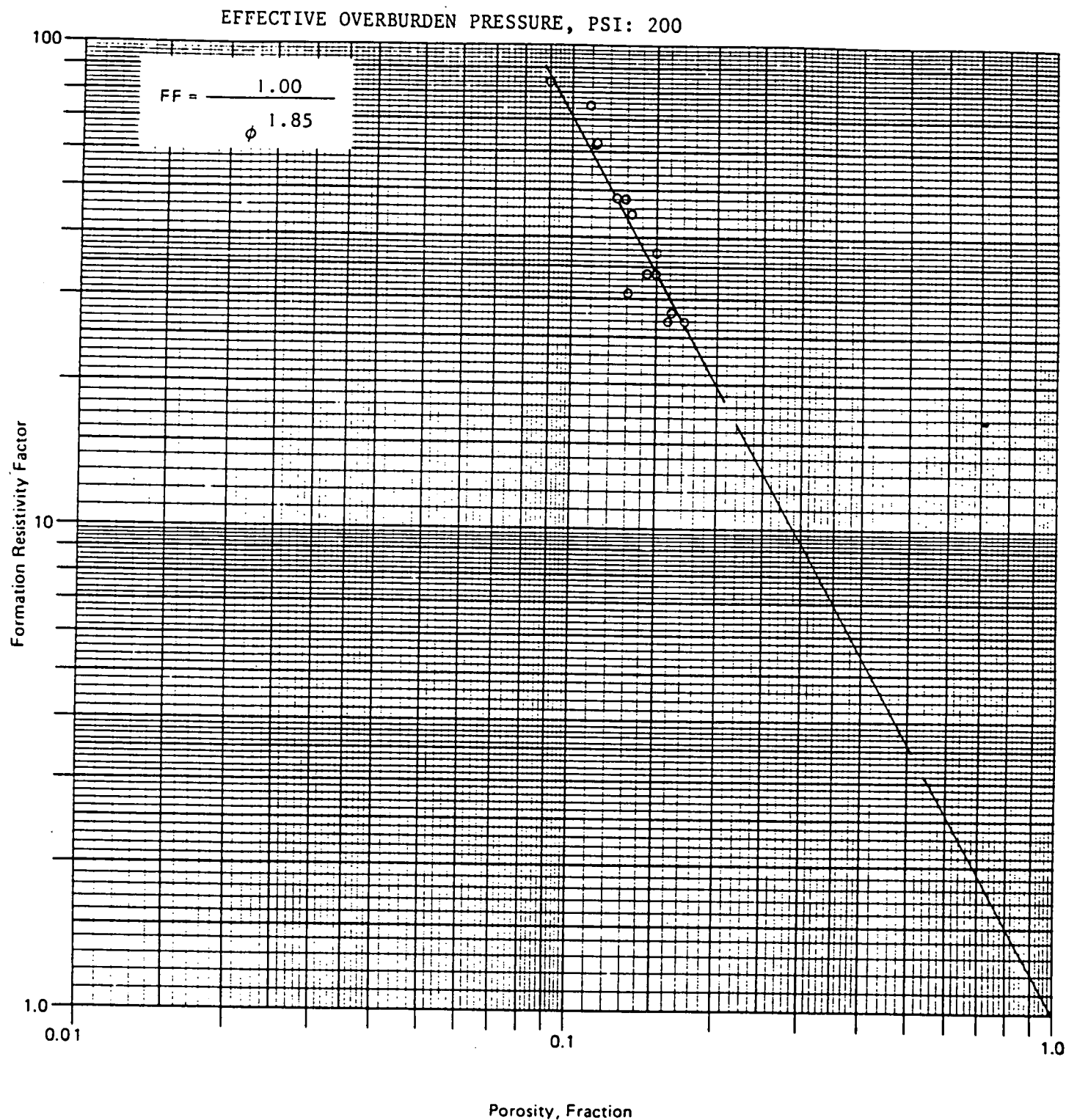
CORE LABORATORIES
Petroleum Reservoir Engineering

Page 26 of 29
File SNSCAL 81007

Sample Number	EFFECTIVE OVERBURDEN PRESSURE, PSI							
	0		200		1800		3600	
	Porosity Per Cent	Formation Factor	Porosity Per Cent	Formation Factor	Porosity Per Cent	Formation Factor	Porosity Per Cent	Formation Factor
<u>Tirrawarra No.9</u>								
10	13.6	40.4	13.4	44.6	13.1	49.5	12.9	53.1
7	13.0	41.0	12.9	48.0	12.6	53.4	12.5	56.8
8	11.2	53.7	11.1	62.3	10.8	71.8	10.7	74.7

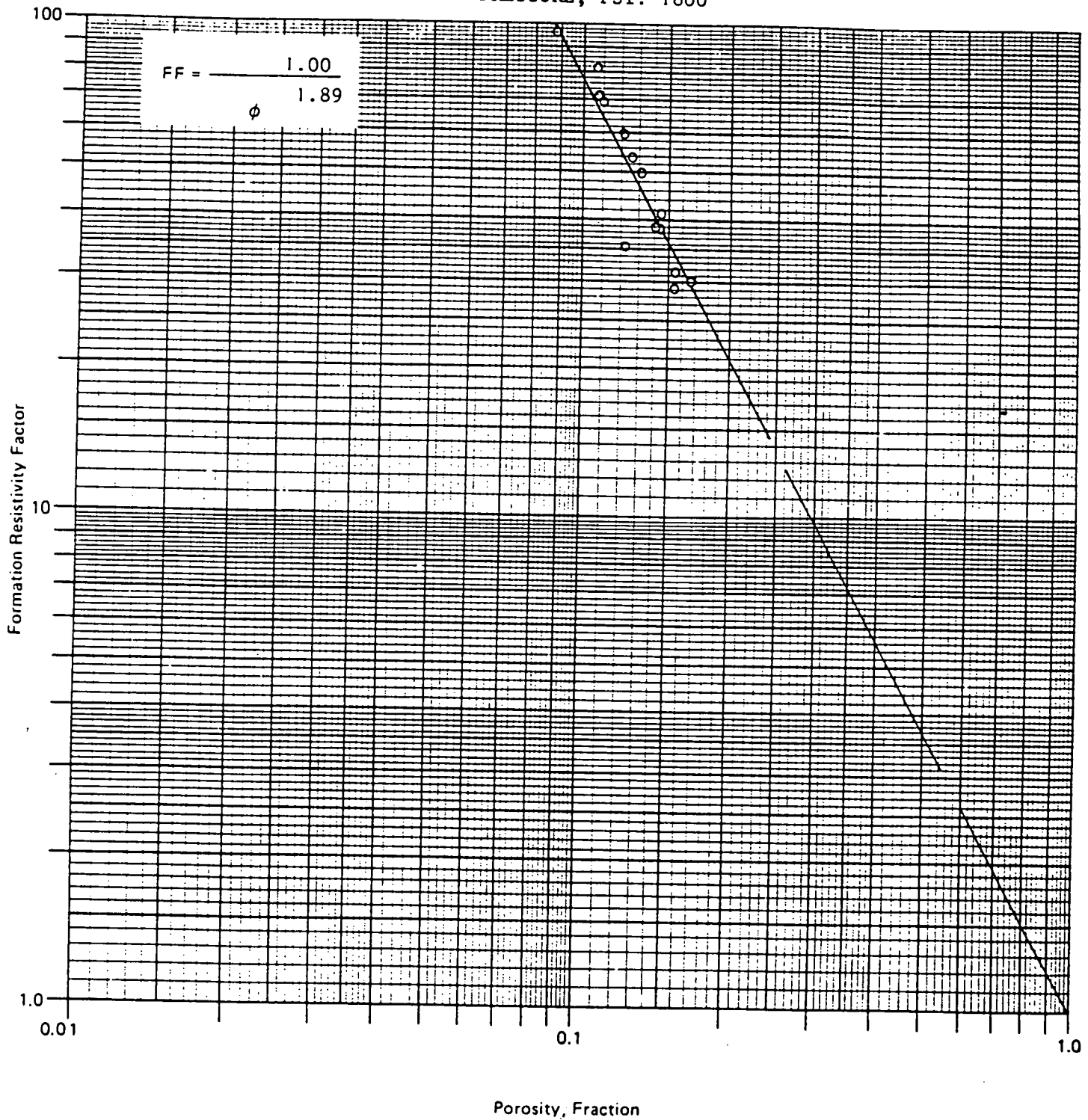
These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgement of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

Company: DELHI INTERNATIONAL OIL CO Formation: TIRRAWARRA SANDSTONE
Well: COMPOSITE Country: AUSTRALIA
Field: _____



Company DELHI INTERNATIONAL OIL CO Formation TIRRAWARRA SANDSTONE
Well COMPOSITE Country AUSTRALIA
Field _____

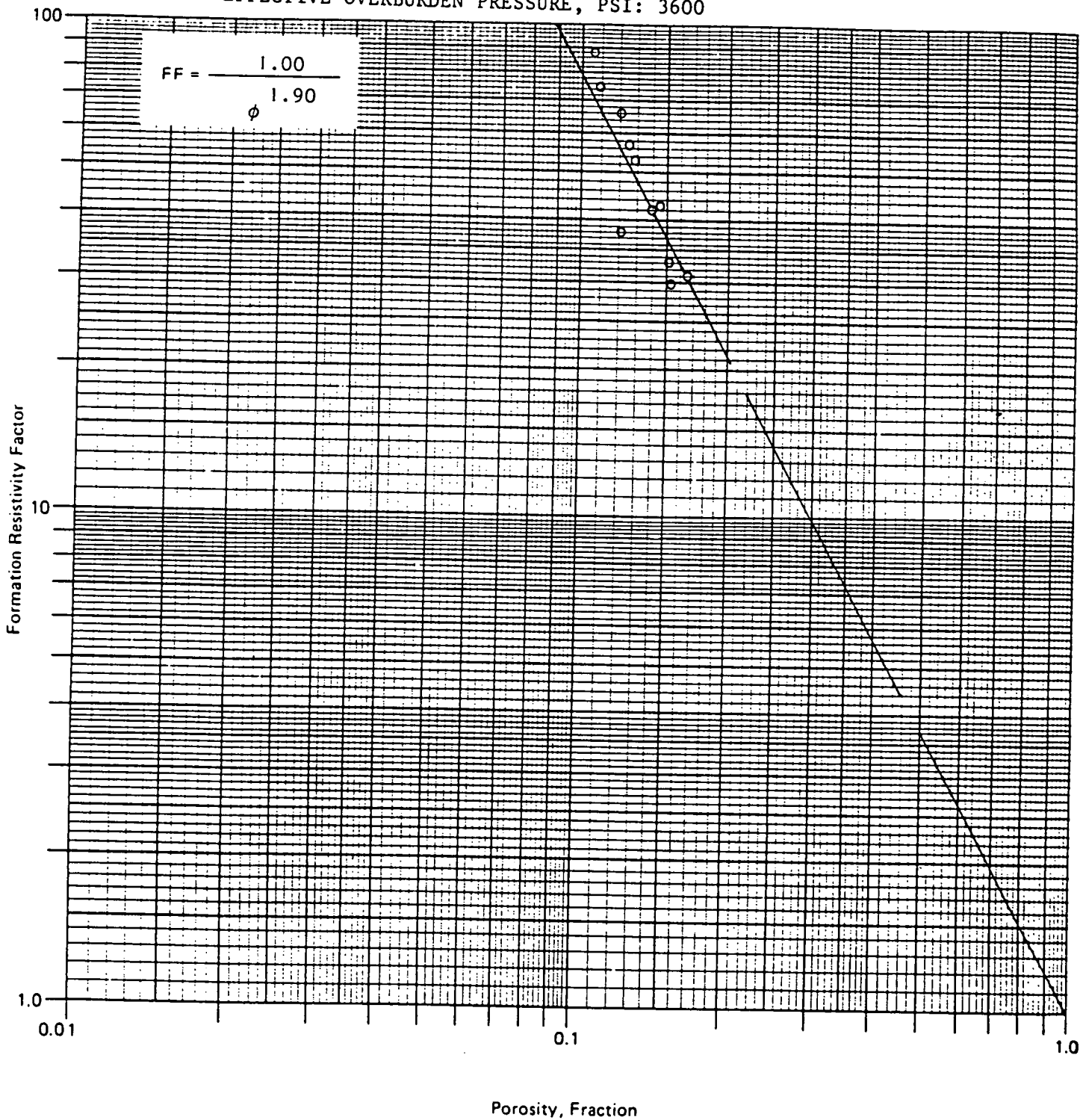
EFFECTIVE OVERBURDEN PRESSURE, PSI: 1800



Company DELHI INTERNATIONAL OIL COFormation TIRRAWARRA SANDSTONEWell COMPOSITECountry AUSTRALIA

Field _____

EFFECTIVE OVERBURDEN PRESSURE, PSI: 3600



FLY LAKE # 2
PRE AND POST FRACTURE TESTING
INTERPRETATION AND REPORT

Report No: PEO 006/83 WP 0036G
Prepared By: D.A. Thornton
Date: August 1983.

WP 0036G

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- 1) Testing Programme
- 2) Type Analysis
- 3) Results

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- 1) Frac Programme
- 2) Testing Programme
- 3) Buildup Analysis
- 4) Results

CONCLUSIONS

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- 2) Pre Fracture Data Summary
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- 2) Delta P vs $t^{1/2}$ Plot
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- A. Summary of Production Test
- B. Well Test Data Sheets
- C. Static Pressure Gradients
- D. Static Temperature Gradients
- E. Summary of Production Test (Pre Frac)
- F. Static Pressure Gradient (Pre Frac)
- G. Static Temperature Survey (Pre Frac)
- H. Well Test Data Sheets (Pre Frac)
- I. Frac Summary
- J. Wellhead Drawing
- K. Downhole Drawing.

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INTRODUCTION.

Fly Lake #2 is a dually completed well in the Patchawarra gas Formation and the Tirrawarra Sandstone oil zone.

The Tirrawarra Sandstone was fracture stimulated in June 1972 and subsequently underwent a post frac test to establish the existing well parameters at that time. A second fracture stimulation was carried out on the same sandstone in August 1982 and subsequently underwent a Post Frac Test to establish the current well parameters. The recent fracture treatment was evaluated by comparing the test results from the 1982 and 1983 Pre and Post Frac Tests respectively.

This report presents the results and interpretation from the recent testing programme together with the results from the 1982 testing programme.

PRE FRAC TEST.Testing Programme.

Following a short clean up flow, the well was shut in. A static gradient (temperature and pressure) was run, the results of which are appended. The fluid gradient was 0.384 psi/ft. from P.B.T.D. to 9200', indicating a slightly gas cut water and 0.261 psi/ft. from 9200' to surface, indicating an oil filled wellbore.

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The well was subsequently opened on an 8/64" choke. The well was flowed for 116.25 hours at which time it was shut in and the buildup recorded for 96 hours.

Surface and bottomhole pressure data were recorded throughout the test and are contained in the appendix along with the gas and liquid flow rates.

Type Analysis.

The buildup was analysed, using a Horner Plot (figure 7) only.

The Horner Plot indicated an extrapolated reservoir pressure of 4000 psig. A kh of 47 md-ft. was calculated. A skin factor of -2.8 was calculated from the Horner Plot.

Results.

Table 5 summarises the results of the pre frac test. The results indicate a D.R. of 0.56 (skin of -2.8) and a corresponding P.I. of 0.319 BPD/psi. It may be concluded that the 1972 frac job was successful in removing damage and increasing the productivity of the well.

POST FRAC TEST.

Frac Programme.

Fly Lake #2 was fraced for the second time in August 1982. The total volume of treatment fluid pumped was 72,000 U.S. gallons. Five proppant stages were employed in the treatment, at 1, 2, 3 and 4 ppg 20/40 sand with a final stage of 4 ppg 12/20 sintered bauxite. Total proppant used was 40,000 lbs. Cumulative pumping time was 172 minutes and the average pump rate was 15 bbl/min. A complete detailed summary of the frac job has been appended.

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Testing Programme.

Following a clean up flow in which the frac fluid was flowed back to surface until the B S & W was less than 15%, the well was shut in. A static temperature and pressure survey was run, the results of which are appended. The fluid gradient was 0.255 psi/ft from P.B.T.D. to surface, indicating an oil filled wellbore with the same gradient as that observed in the Pre Frac Test. The temperature survey indicated a maximum B.H.T. of 279°F.

The well was subsequently opened on a 20/64" choke and subsequently cut back to 16/64" due to produced water then flowed for 93 hours at which time it was shut in and the buildup monitored for 93 hours.

Surface and bottomhole pressures were recorded throughout the test and are contained in the appendix along with the gas and liquid flow rates.

Buildup Analysis.

The pressure buildup data were analysed using a Horner Plot (figure 1), Delta P vs $t^{1/2}$ Plots (figures 2 & 3), Delta P vs log t Plot (figure 4) and a Gringarten type curve (figures 5 & 6).

Both the Horner Plot and the Gringarten type curve gave compatible results. The flow capacities were within 12% of each other.

The skin calculated from the Horner analysis was -2.8.

The corrected flow time was 135 hours which differs by some 31% from the observed flowtime of 93 hours, indicating a poor test. The corrected flowtime was calculated by dividing the total cumulative production by the final flow rate.

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Figures 2 and 3 are plots of Delta P vs $t^{1/2}$ with figure 3 showing the initial points of figure 2 on an enlarged scale. Formation linear flow (and/or wellbore effects) was detected by a straight line on this plot and was seen to prevail for the first 25 minutes. Figure 4 is a plot of Delta P vs log t and a straight line here indicates the pseudo-radial portion of the buildup. The straight line commenced at approximately 1200 minutes thus defining a transition period of 1175 minutes. The duration of the formation linear flow is compatible with other wells with similar kh.

NB:

As a fracture extending from the wellbore is interconnected to that wellbore by a high permeability passage, then formation linear flow is encompassed within wellbore effects.

The relatively low permeability is reflected in the time to stabilisation which was calculated at approximately 48 days for a drainage radius of 2000' (based on well spacing). The drainage area observed in this test was 11.5 acres, corresponding to a drainage radius of 400'.

Figure 5 is a plot of log Delta P vs log t and was matched onto a Gringarten type curve (Figure 6). The match suggested that the well was vertically fractured with the ratio of X_e/X_f greater than 20.

The kh of 51 md-ft compared favourable with the value of 45 md-ft calculated from the Horner Buildup.

RESULTS.

Table 5 summarises the results of the post frac production testing and lists the pre frac test evaluation results for comparison. The pre frac test analysis was derived from data measured during September 1982, using current values of formation and fluid data (Table 1).

This permitted a direct comparison to be made between the pre and post frac parameters, allowing the actual change in well characteristics to be evaluated.

The extrapolated pressure from the post frac test was 4015 psia, some 15 psi higher than that observed in 1982. This is undoubtedly due to bomb calibration error as the reference depth for the 1982 test was the same as that for the 1983 test.

The flow capacity measured in 1983 was 45 md-ft which was approximately 4% less than that observed in the 1982 test. The similar flow capacities may be attributed to the fact that 'h' (net pay) was not increased during this frac. This may readily be explained by the fact that no vertical permeability barriers occur within the gross sand, i.e., the post and pre frac tests sampled the same reservoir and no isolated pockets have been brought into production as a result of the fracture stimulation treatments.

The pre and post frac skins were identical (-2.8) with the damage ratio increasing from 0.56 to 0.61, indicating no real change from the initial stimulated condition of the well. The PI prior to fracturing was 0.319 BPD/psi with stimulation, if stimulation is removed then the PI would have been 0.210 BPD/psi. The productivity after fracturing was 0.157 BPD/psi which indicates a productivity decrease of 2.03 folds.

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CONCLUSION.

The most significant parameter in the evaluation of fracture stimulations is the change in P.I. In this case the decrease was 2.03 fold, indicating an unsuccessful stimulation treatment. Due to the erratic nature of the post frac test the final flow rate which was used to calculate P.I. was much less than the average for the test and as a result the post frac P.I. is possibly pessimistic.

If however, an average oil flow rate was used together with the water production to calculate a total P.I. for the well, the result would indicate a P.I. of 0.313 BPD/psi. This would suggest that the well productivity has been relatively unchanged and is now flowing significant amount of water from a treated underlying water zone.

Considering the productivity index of 0.157 BPD/psi drawdown alone, the maximum possible initial flowrate from this well would be 174 BPD whilst still maintaining the sandface pressure above the bubble point of the reservoir. However, as the stabilised productivity index will probably be less than the above figure, initial production from this well should be limited to something less than 174 BPD.

RECOMMENDATION.

Reiterating comments of previous reports of this type, it is suggested that fracture stimulations be seriously considered in fields which either have formation of very low permeability or contain hydrocarbon liquids with a high bubble point, as such treatments can be shown to be economically advantageous. Both of the above factors are generally evident within the Tirrawarra Formation of the Fly Lake Field, and fracture stimulations have been successfully applied to many oil wells in the Patchawarra Central Fields.

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As a result of these fracture treatments the productivity indices have been increased by an average fold-factor in excess of 4, which will allow these wells to be produced at satisfactory rates without bottomhole pressures falling below the bubble point.

It is recommended that the practice of running production tests prior to, as well as following the fracture stimulation, in order to be able to completely evaluate the treatment, should be continued.

TABLES

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TABLE 1FLY LAKE #2RESERVOIR AND FLUID DATA SUMMARY

<u>ITEM</u>	<u>VALUE</u>	<u>UNIT</u>	<u>SOURCE</u>
Porosity (ϕ)	10.9	percent	Geological Data Sheets
Net Pay (h)	24	feet	Interpreted from Logs
Net Sand	36	feet	Geological Data Sheets
Water saturation (S_w)	22.1	percent	Geological Data Sheets
Oil saturation (S_o)	77.9	percent	Geological Data Sheets
Water Compressibility (C_w)	3×10^{-6}	(psi) $^{-1}$	Correlation Chart (Frick)
Rock Compressibility (C_p)	5×10^{-6}	(psi) $^{-1}$	F/L #1 PVT analysis
Oil Compressibility (C_o)	60×10^{-6}	(psi) $^{-1}$	F/L #1 PVT analysis
Total Compressibility (C_t)	49×10^{-6}	(psi) $^{-1}$	Calculated
Oil Viscosity (μ)	0.11	cp	Fly Lake #1 PVT analysis
Formation Volume Factor (B_o)	2.55	RB/STB	Fly Lake #1 PVT analysis
Wellbore radius (r_w)	0.354	feet	Bit Size

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TABLE 2
FLY LAKE #2

PRE FRACTURE DATA SUMMARY

(September 1982)

<u>ITEM</u>	<u>VALUE</u>	<u>UNIT</u>	<u>SOURCE</u>
Average Flow Rate (q) (5.5/64" choke)	73	BPD	Data Sheets
Final Flow Rate (qn)	69	BPD	Data Sheets
Final Flowing Pressure (Pwf)	3784	PSIA	Data Sheets
Flow Time (t)	116.25	HOURS	Data Sheets
Corrected Flow Time (tc)	112	HOURS	Calculated
<u>Horner Plot</u>			
Extrapolated Pressure (P*)	4000	PSIA	
Horner Slope (m)	70	PSI/Cycle	
1 Hour Shutin Pressure (Plhr)	3893	PSIA	
Skin (S)	-2.8	-	
Pressure due to Skin (Δp_{skin})	-170	PSI	
Permeability (k)	1.3	MD	
Flow Efficiency (J_a/J_i)	1.78	-	
Damage Ratio (D.R.)	0.56	-	
Productivity Index (P.I.)	0.319	BPD/PSI	

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TABLE 3FLY LAKE #2POST-FRACTURE DATA SUMMARY

<u>ITEM</u>	<u>VALUE</u>	<u>UNIT</u>	<u>SOURCE</u>
Average Flow Rate (q)	173	BPD	Data Sheets
Final Flow Rate (qn)	106	BPD	Last Recorded Flow Rate
Final Flowing Pressure (Pwf)	3360	PSIA	Data Sheets
Flow time (t)	93	HOURS	Data Sheets
Corrected Flow Time (tc)	135	HOURS	Calculated

Horner Plot

Extrapolated Pressure (p*)	4015	PSIA
Horner Slope (m)	177	PSI/cycle
1 Hour Shutin Pressure (Plhr)	3667	PSIA

Gringarten Type Curve

(P _D) _m	1.0	
(ΔP) _m	135	PSI
(t _{Dxf}) _m	100	
(Δt) _m	11.0	HOURS

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TABLE 4FLY LAKE #1EQUATION SUMMARYCommon

$$P_s = \frac{m s}{1.151}$$

Equations

$$1.151$$

$$D.R. = \frac{p^* - p_{wf}}{p^* - p_{wf} - \Delta p_s}$$

$$P.I. = \frac{q_n}{p^* - p_{wf}}$$

Drawdown

$$kh = \frac{162.6 q B}{m}$$

$$S = 1.151 \left(\frac{P_i - P_{1hr}}{m} \right) \log \left(\frac{k}{\phi \mu C_t r w^2} \right) + 3.228$$

$$\phi h A = \frac{0.23395 q B}{C_t m^*}$$

$$C_A = 5.45 \frac{m}{m^*} \exp \left[-2.303 \left(\frac{P_{1hr} - P_{int}}{m} \right) \right]$$

Horner Plot

$$kh = \frac{162.6 q B}{m}$$

$$S = 1.151 \left(\frac{p_{ws1} - p_{wf}}{m} - \log \frac{K}{\phi \mu C_t r w^2} + 3.228 \right)$$

TABLE 4 CONT:

Odeh-Jones Plot $kh = \frac{162.6 \ qn \ Bo}{m}$

$$S = 1.151 \left(\frac{Pws}{m} - p_{wf} - \log \frac{k}{\phi \mu C_t r_w^2} + 3.228 \right)$$

Gringarten et al Type Curve

$$kh = \frac{141.2 \ q \ \mu \ Bo \ (\Delta P)_m}{(\Delta P)_m}$$

General Equations $r_d = 0.029 \sqrt{\frac{kt}{\phi \mu C_t}}$

$$ts = \frac{1200 \ \phi \mu C_t r_e^2}{k}$$

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TABLE 5FLY LAKE #2TEST EVALUATION RESULTS

<u>Quantity</u>	<u>PRE-FRAC</u>	<u>POST-FRAC</u>	
		<u>Horner</u>	<u>Gringarten</u>
Extrapolated Pressure	4000 psia	4015 psi	
Effective Flow Capacity	47 md ft	45 md ft	51 md ft
Permeability	1.3 md	1.2 md	1.4 md
Skin	-2.8	-2.8	
Pressure Drop due to skin	-170 psia	-430 psia	
Damage Ratio	0.56	0.61	
Productivity Index	0.319 BPD/psi	0.157 BPD/psi	
Flow Efficiency	1.78	1.64	

FIGURES

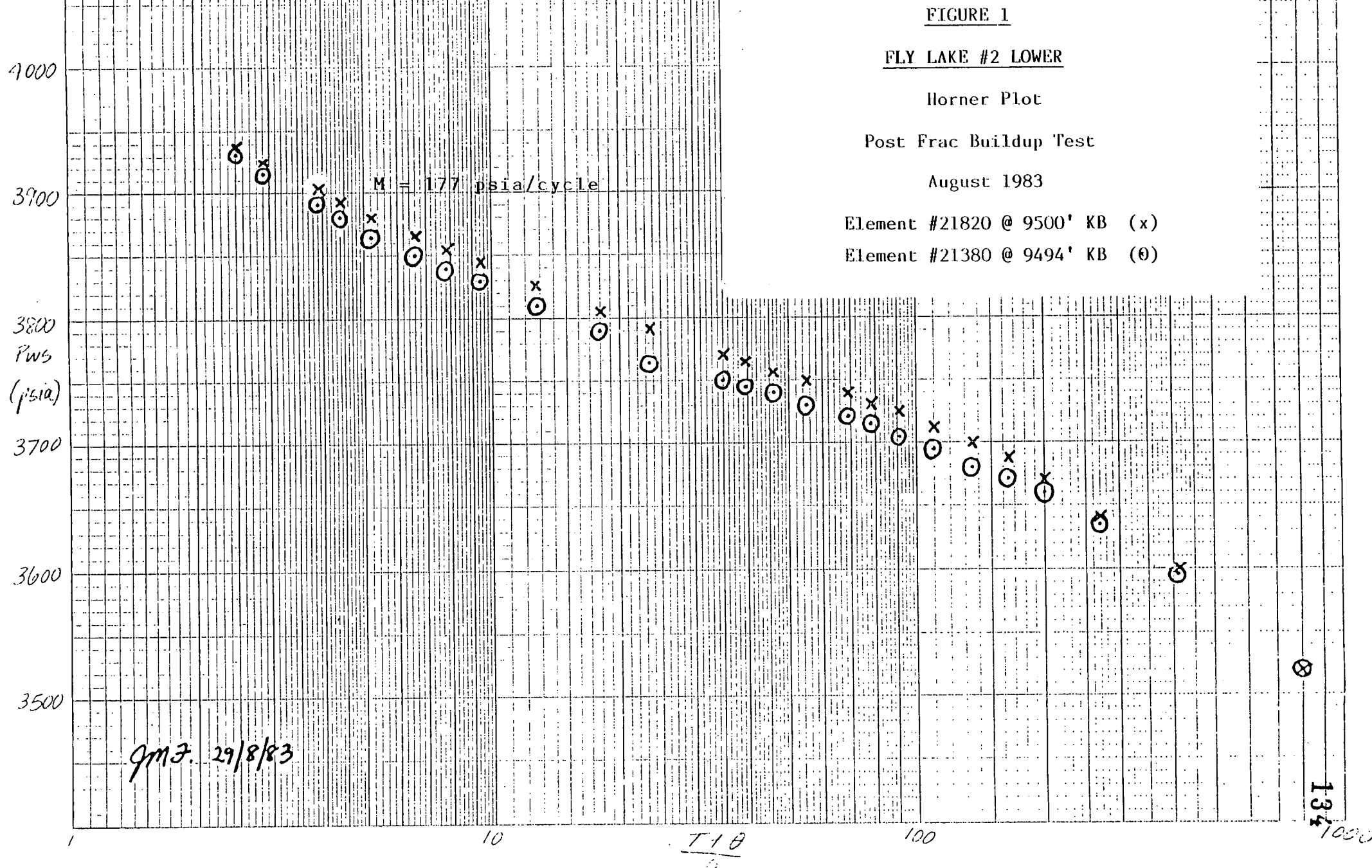


FIGURE 2

FLY LAKE #2 LOWER

Delta P vs $t^{\frac{1}{2}}$

Post Frac Buildup Test

August 1983

Element #21820 @ 9500'KB

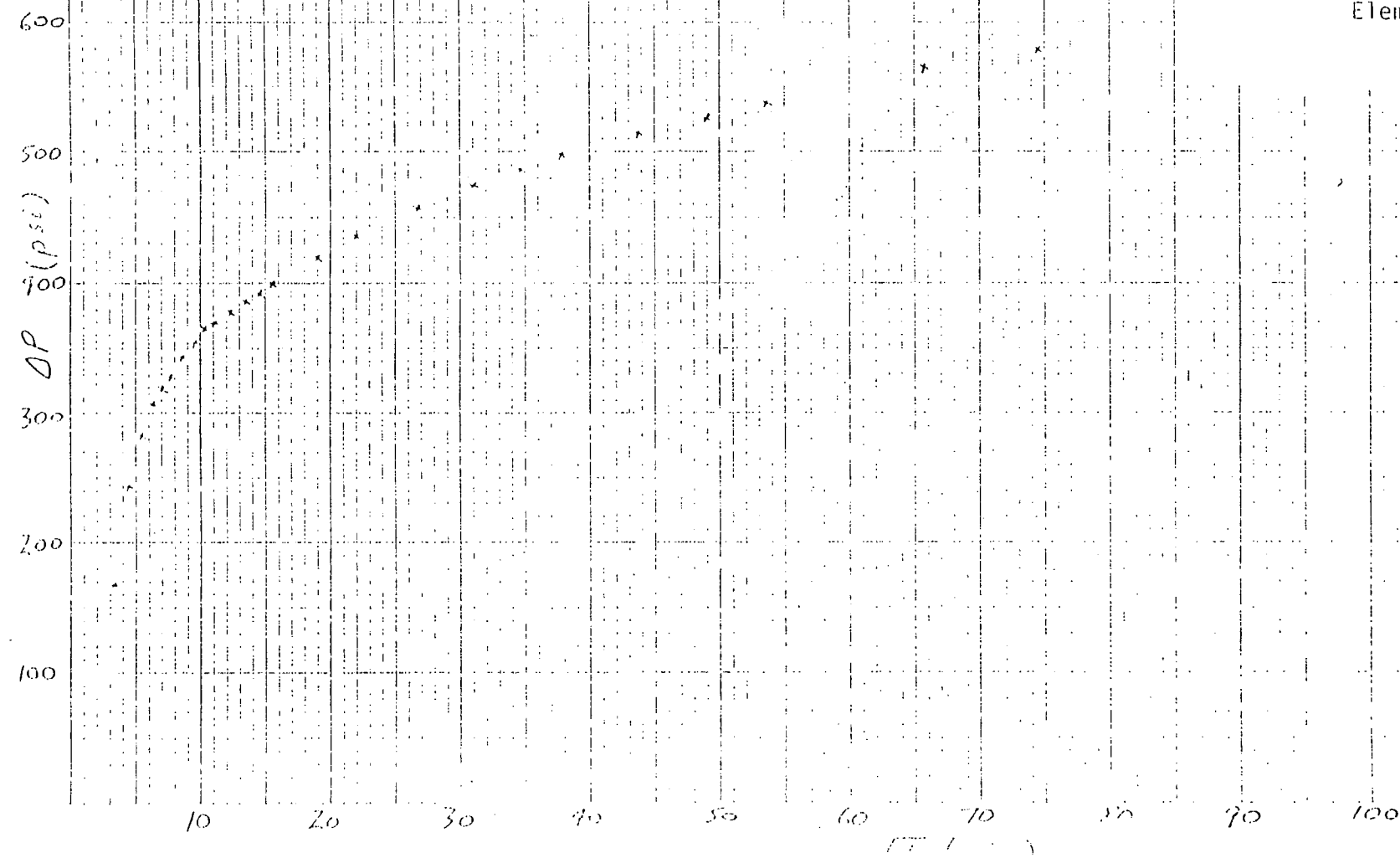


FIGURE 3

FLY LAKE #2 LOWER

Delta P vs $t^{\frac{1}{2}}$ (Enlarged Scale)

August 1983

Element #21820 @ 9500'KB

600
500
400
300
200
100

1 2 3 4 5 6 7 8 9 10

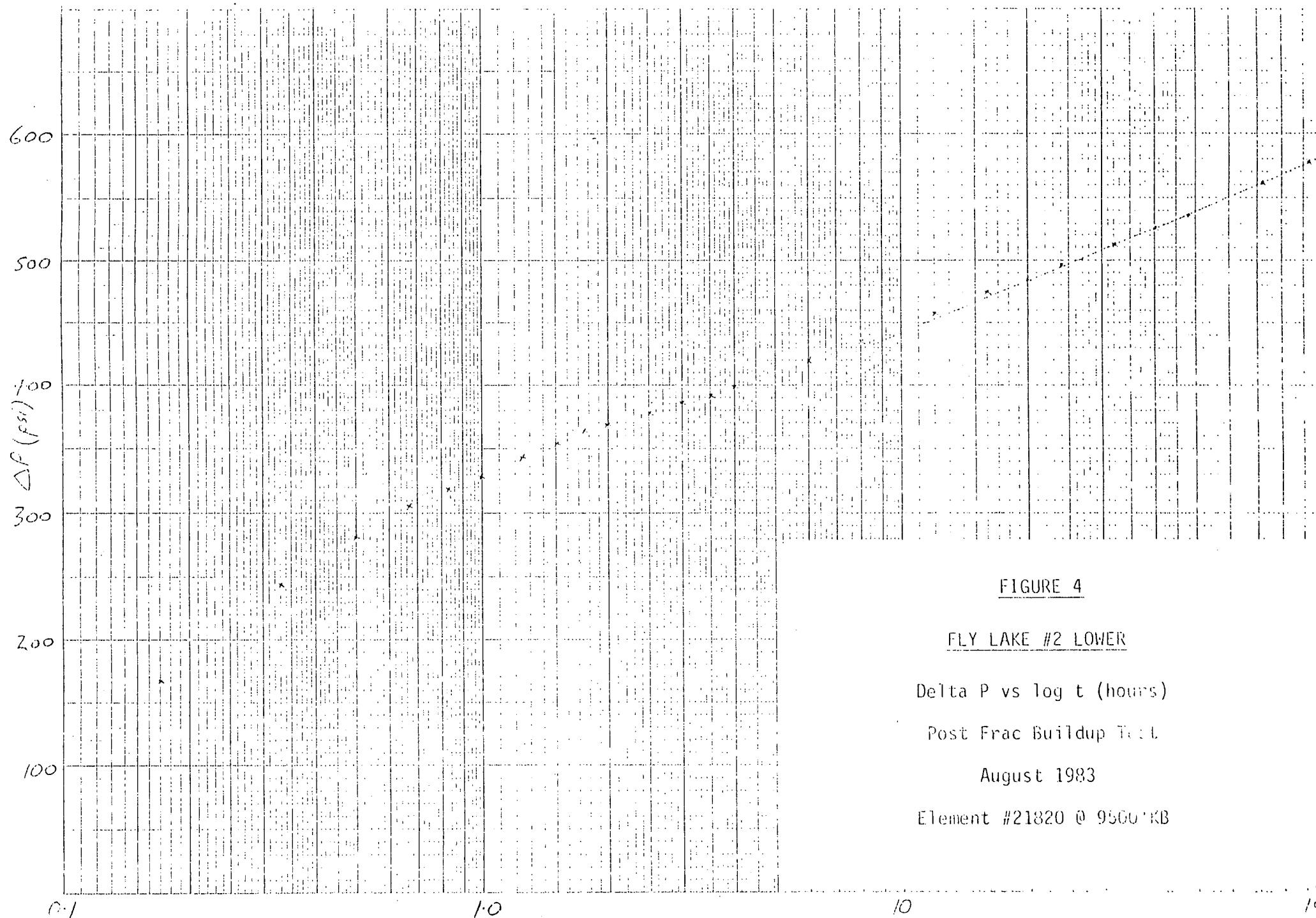


FIGURE 4

FLY LAKE #2 LOWER

Delta P vs log t (hours)

Post Frac Buildup Test

August 1983

Element #21820 @ 9500' KB

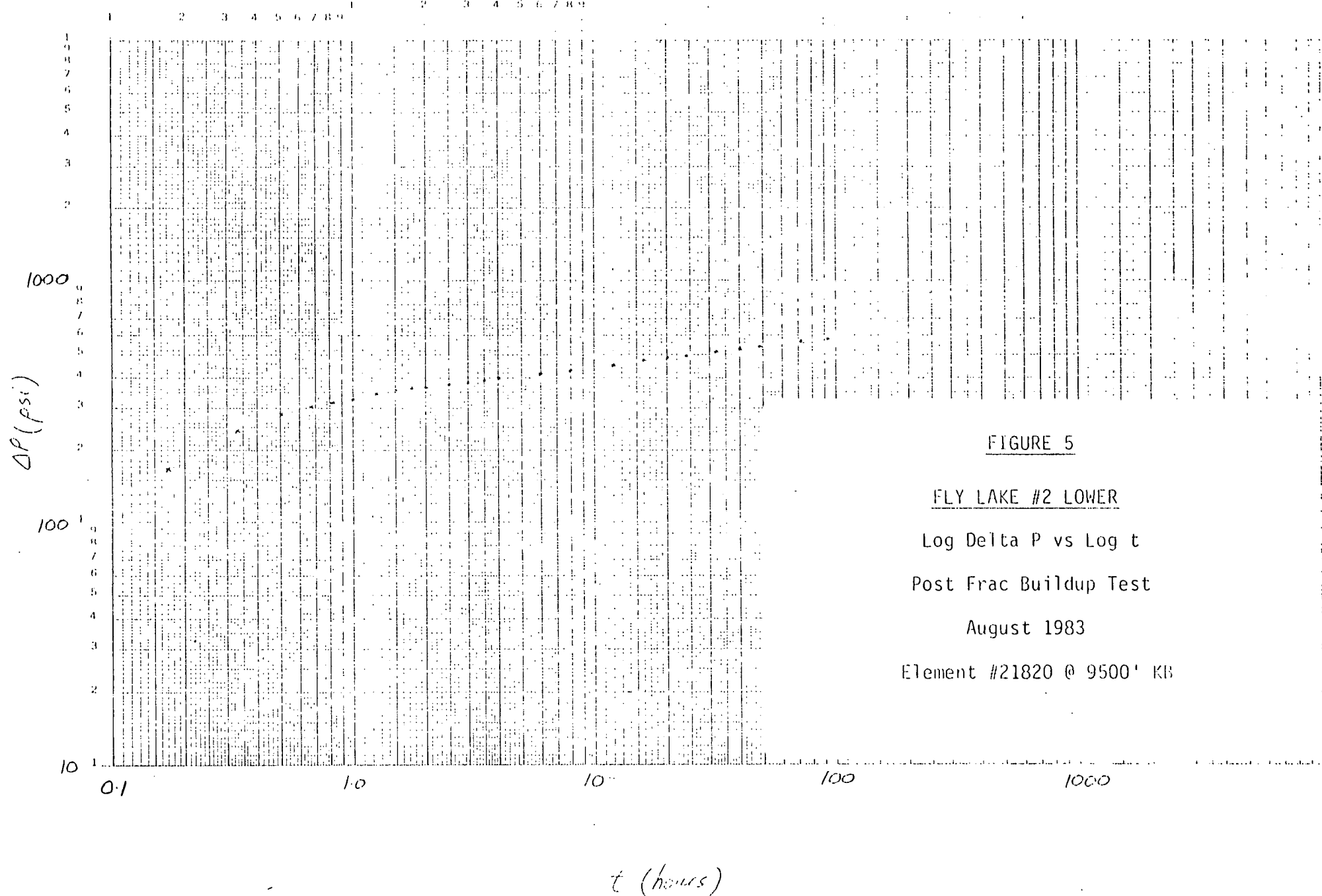


FIGURE 5

FLY LAKE #2 LOWER

Log Delta P vs Log t

Post Frac Buildup Test

August 1983

Element #21820 @ 9500' KB

ENLARGED VERSION OF A FIGURE IN ADVANCED WELL TEST ANALYSIS BY ROBERT C. EARLOUGH, JR.
MONOGRAPH SERIES, SOCIETY OF PETROLEUM ENGINEERS OF AIME, DALLAS (1976) VOL. 5

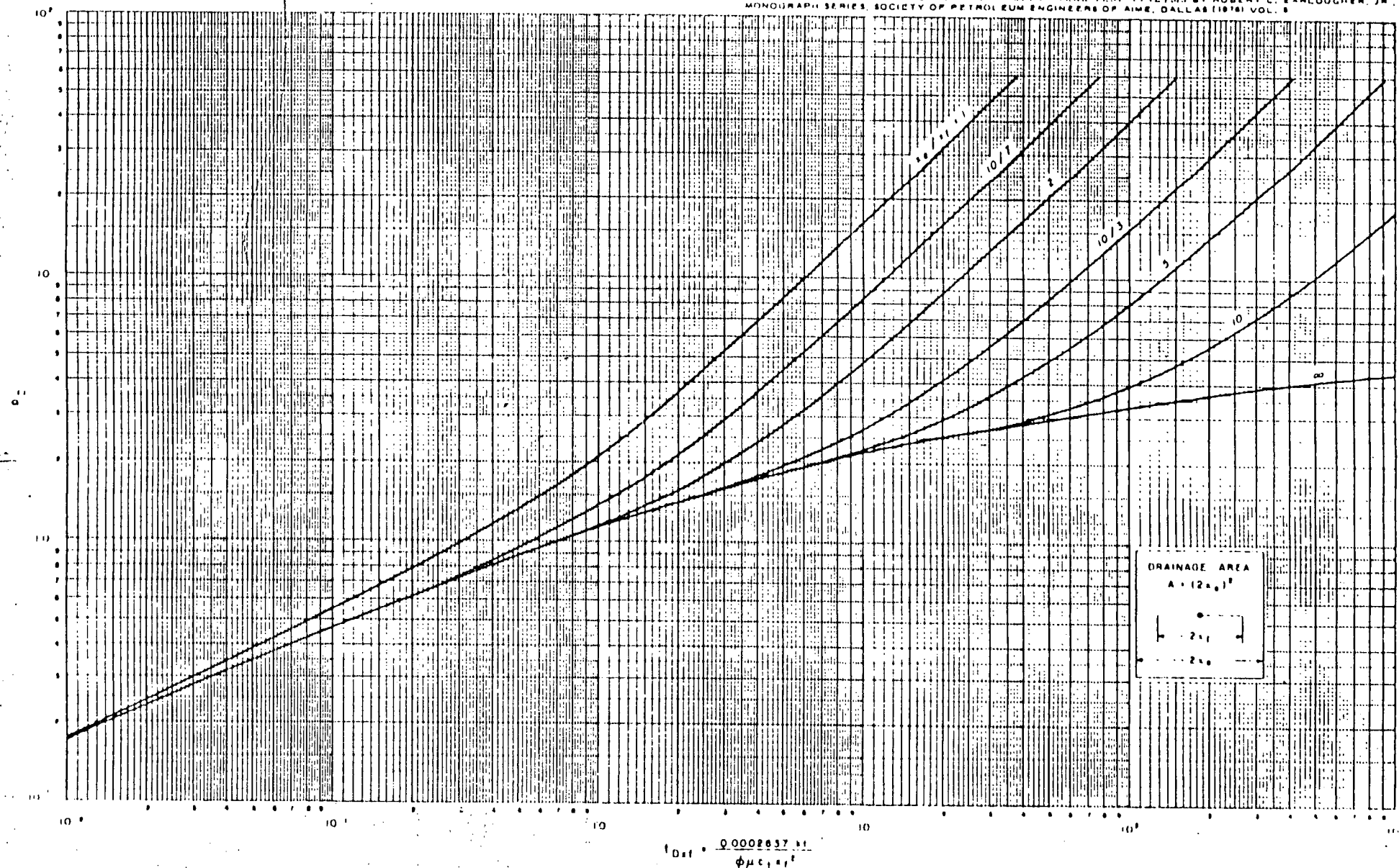
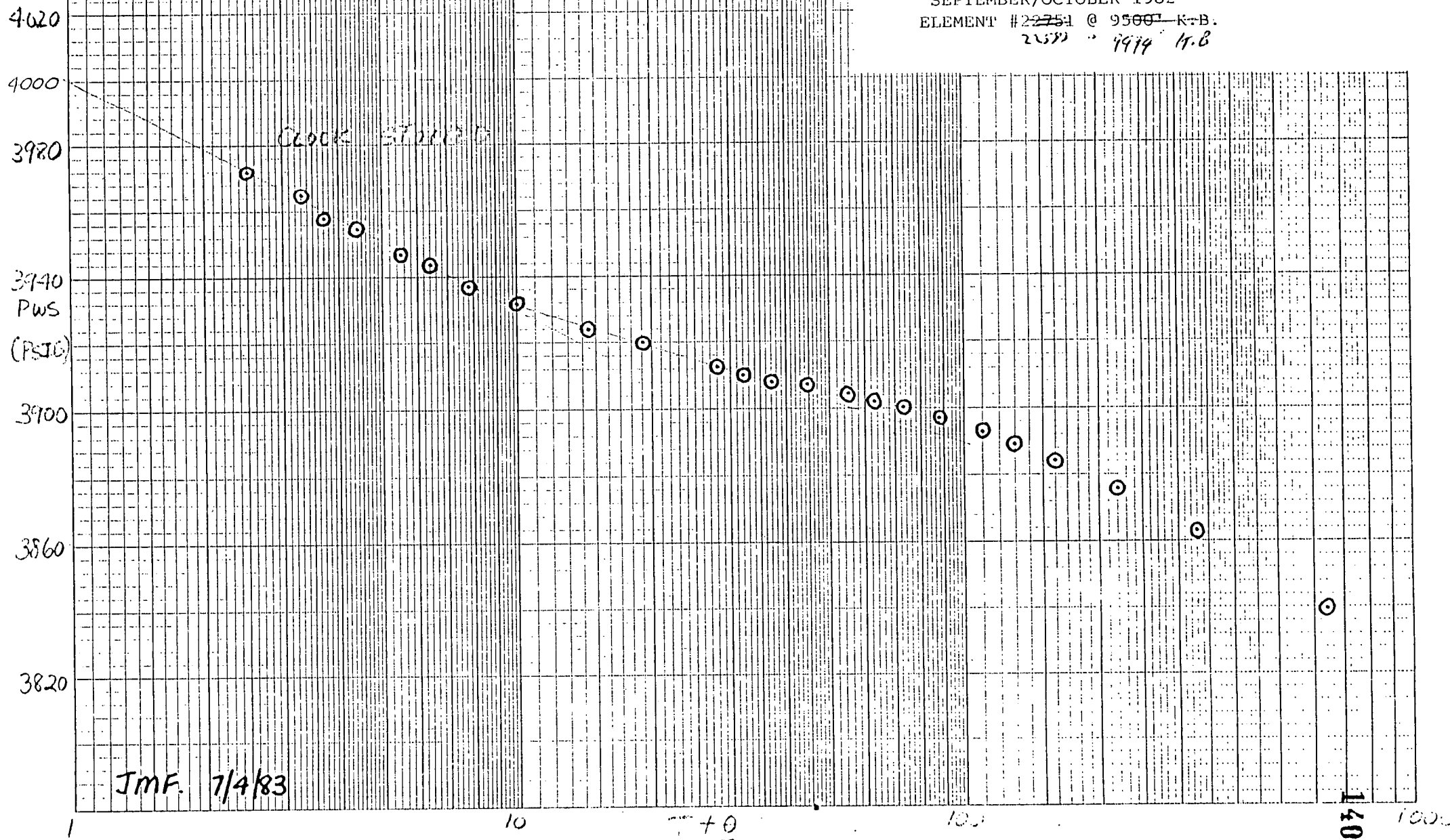


Figure C.18. Dimensionless Pressure for Vertically Fractured Well in the Center of a Closed Square, No Wellbore Storage, Infinite Conductivity Fracture.
 After Gringarten, Alain C., Ramey, Henry J., Jr., and Raghavan, R.: "Pressure Analysis for Fractured Wells," paper SPE 4051, presented at SPE-AIME 47th Annual Fall Meeting, San Antonio, Oct. 8-11, 1972, and Gringarten, Alain C., Ramey, Henry J., Jr., and Raghavan, R.: "Unsteady-State Pressure Distributions Created by a Well with a Single Infinite-Conductivity Vertical Fracture," Soc. Pet. Eng. J. (Aug., 1973) 277-286.

FIGURE 7
 FLY LAKE #2 LOWER
 HORNER PLOT
 PRE FRAC BUILDUP TEST
 SEPTEMBER/OCTOBER 1982
 ELEMENT #22751 @ 9500' K+B.
 2589 * 9979 11.8



APPENDIX

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FLY LAKE #2 LOWERSUMMARY OF POST FRAC PRODUCTION TESTAugust 6th - 16th, 1983STATIC RESERVOIR PRESSURE

Static gradient survey ran - 6/8/83 (mid point perforations = 9549'KB)

Element #21820 at 9549'KB = 4029 psig) Average gradient =

Element #21380 at 9549'KB = 4028 psig) = 0.2555 psig/ft

Max. bottom hole temperature = 162°F

WELL CONDITIONING

6/8/83 to 8/8/83

6/8/83: Shut in.

7/8/83: Well opened on 12/64" choke @ 1400 hrs, choke changed to 8/64" @
2400 hrs.

8/8/83: Well shut in @ 0523 hrs

Well opened on 20/64" choke @ 1100 hrs

F.W.H.P. = 818 psig

FLOW TEST

8/8/83 - 12/8/83

8/8/83: Well turned through L.P. Separator on 20/64" choke @ 1600 hrs.

F.W.H.P. = 945 psig

L.P. Separator pressure = 54 psig.

Gas flow rate = 0.49 MMCF/D)

Oil production = 252 BPD) G O.R. = 1944 SCF/BBL

Water production = 42 BPD

BS & W = 19% water

9/8/83: Cut back choke to 16/64" @ 1400 hrs.
F.W.H.P. = 1007 psig
L.P. Separator pressure = 50 psig.
Gas flow rate = 0.23 MMCF/D)
Oil production = 128 BPD) & O.R. = 1797 SCF/BBL
Water production = 23 BPD
BS & W = 13% water

BUILDUP

12/8/83 to 16/8/83

12/8/83: Shut well in @ 1300 hrs for 92.65 hours.

Element #22380 at 9494'KB after 92.65 hrs = 3917 psig

Element #21820 at 9500'KB after 92.65 hrs = 3922 psig

Max. bottom hole temperature = 279°F

WELL NAME: ELY LAKE #2 LOWER

TYPE OF TEST ~~ACT~~ FRACTIONAL WELL CONDITIONING

DATE: AUGUST 6TH - 6TH/1983

TESTED BY: GRMBA/M. Gray

METER RUN: HP = 2.900"

LP = 1.939"

DATE	TIME	WELLHEAD DATA			SUBSURFACE DATA			H.P. SEPARATOR DATA					L.P. SEPARATOR DATA					OIL PROD BBL	CUM OIL BBL	GOR SCF/BBL	H ₂ O PROD BPD	PSAW %	REMARKS
		CHOKED SIZE INS	ANNT. PSIG	IBC. PSIG	TEMP OF	ELW	ELB	ELW	P.F. PSIG	H.W. INS	TEMP OF	ORIF. SIZE INS	GAS FLOW RATE MMCFD	P.F. PSIG	H.W. INS	TEMP OF	ORIF. SIZE INS	GAS FLOW RATE MMCFD					
6/8	1647			1607																			S.I.T.P.L.
7/8	1400	12/64																					Open well.
	1600	12/64	0	1359	84				232	64	68	0.75	0.36	23	133	77	0.5	108	214	17.8	2056	NIL	100% H ₂ O
	1800	12/64	0	1184	77				217	51	55	0.75	0.32	20	25	57	0.5	103	181	32.8	1934	NIL	30% H ₂ O
	1908	"				SHUT IN L.P. SIDE OF SEPARATOR - INSUFFICIENT GAS SUPPLY.																	
	2000	12/64	0	1169	77				203	180	55	0.75	0.58						151	45.3	3841	16	26% H ₂ O
	2400	8/64	0	1130	75				174	26	51	0.5	0.09						107	63	841	35	14% H ₂ O
8/8	0400	8/64	0	1226	66				174	34	42	0.5	0.10						36	69	2778	31	22% H ₂ O
	0523	8/64																					Shut well in.
	1100	20/64																					Opened well for clean up flow.
	1215	20/64		670																			100% H ₂ O
	1315	20/64		846																			14% H ₂ O
	1415	20/64		867																			11% H ₂ O
	1515	20/64		889																			30% H ₂ O

WELL NAME: FLY LAKE #2 LOWER

TYPE OF TEST: 257 BEAC FLOW TEST

DATE: AUGUST 5TH - 12TH 1983

TESTED BY: GRMA/H. Bray

METER RUN: HP = 2.900"

LP = 1.939"

DATE	TIME	WELLHEAD DATA				SURFACE DATA			H.P. SEPARATOR DATA					L.P. SEPARATOR DATA					OIL PROD BPD	LUM OIL BBL/S	GGR SCF/PBL	H ₂ O PROD BPD	PCSW % (water)	OIL TRAY GAPI	REMARKS
		CHOKED SIZE IN	ACFT. PSIG	IBC. PSIG	TEMP OF	LINE	EL#	EL#	P.L. PSIG	T.L.W. IN	TEMP OF	DATE	GAS FLOW RATE	P.L. PSIG	T.L.W. IN	TEMP OF	DATE	GAS FLOW RATE							
8/8	1600	20/64																							Open well.
	1800	20/64	0	962	87									56	49	61	1.25	0.50	331	27.6	1511	30	20		
	2000	20/64	0	958	86									58	43	59	1.25	0.48	269	50	1784	55	32		
	2200	20/64	0	952	86									55	47	56	1.25	0.49	131	71.8	3740	27	14		
9/8	0200	20/64	0	938	84									52	47	51	1.25	0.49	265	116	1849	51	17		Cut back choke.
	0600	20/64	0	926	82									53	47	50	1.25	0.49	258	158.9	1899	55	15		
	1000	20/64	0	933	91									48	53	62	1.25	0.49	256	201.6	1914	34	13		
	1400	16/64	0	1087	91									46	133	75	0.75	0.27	127	222.7	2126	15	7		
10/8	1800	16/64	0	1021	80									49	77	53	0.75	0.20	111	241.1	1802	15	4		
	2200	16/64	0	1025	77									52	60	50	0.75	0.18	111	259.5	1622	4	2		
	0600	16/64	0	1009	73									58	47	42	0.75	0.17	100	291.8	1700	23	19		
	1400	16/64	0	1006	86									42	77	75	0.75	0.18				59	16		
11/8	2200	16/64	0	1007	75									46	51	48	0.75	0.16	95	350.9	1684	8	15		
	0600	16/64	0	1018	71									53	47	42	0.75	0.16	91	380.4	1758	16	11		
	1400	16/64	0	871	90									41	95	75	1.0	0.31	159	420.2	1950	28	35		
	2200	16/64	0	994	80									49	77	50	1.0	0.37	182	482.9	2033	28	8		
12/8	0600	16/64	0	1028	77									50	45	44	1.0	0.29	174	557.5	1667	32	14		

WELL NAME: FLY LAKE #2 LOWER
 TESTED BY: GREGG/M. Bray
 METER RUN: HP: = 2.900"
 LP: = 1.939"

TYPE OF TEST: 2-1/2" HPAC BUILT-UP TEST

DATE: AUGUST 12TH - 16TH/1983

WELLHEAD DATA						PRESSURES (PSIG)			TEMP. SEPARATOR DATA				L.P. SEPARATOR DATA				GAS PRODUCTION				OIL PRODUCTION				WATER PRODUCTION				REMARKS
DATE	TIME	SHUT IN TIME (hrs)	ANN. PSIG	LOG. PSIG	TEMP OF	EL#	EL#	EL#	P.F. PSIG	H.W. INS H ₂ O	TEMP OF	ORIF SIZE INS	GAS FLOW RATE MMCFD	P.F. PSIG	H.W. INS H ₂ O	TEMP OF	ORIF SIZE INS	GAS FLOW RATE MMCFD	OIL PROD BPD	COM OIL BBL	GOR SCF/BBL	H ₂ O PROD BPD	BS&W % (water)	OIL GRAV API					
						21380 @ 9494' KB	21820 @ 9500' KB																						
12/8	0924			1012		1003	1028																						Hang in lubricator.
	1024																												E.L.H.
	1100					3338	3360																						Hang bonds.
	1300	0	0	1009	89	3238	3360							42	51	73	1.0	0.27	106	597	2547	52	15					Shut well in.	
	1310	0.17				3506	3503																						
	1320	0.33				3580	3583																						
	1330	0.5				3619	3626																						
	1340	0.67				3644	3655																						
	1350	0.83				3657	3672																						
	1400	1				3667	3684																						
	1415	1.25				3681	3698																						Bo. bottom. Hole Temp.
	1430	1.5				3691	3710																						- 279°F.
	1445	1.75				3701	3717																						
	1500	2				3707	3723																						
	1530	2.5				3716	3734																						
	1600	3				3724	3742																						
	1630	3.5				3729	3749																						
	1700	4				3737	3756																						
	1900	6				3758	3777																						
	2100	8				3773	3792																						
12/8	0100	12				3795	3812																						
	0500	16				3812	3830																						
	0900	20				3823	3840																						
	1300	24				3835	3852																						
	1700	32				3850	3866																						
14/8	0500	40				3864	3878																						
	1300	48				3874	3890																						
15/8	1300	72				3899	3909																						
16/8	0939	92.65				3917	3922																						Off bottom.
	1024			1537		1563	1556																						Hang in lubricator.

STATIC TEMPERATURE
GRADIENT

WELL FLY LAKE #2 LOWER

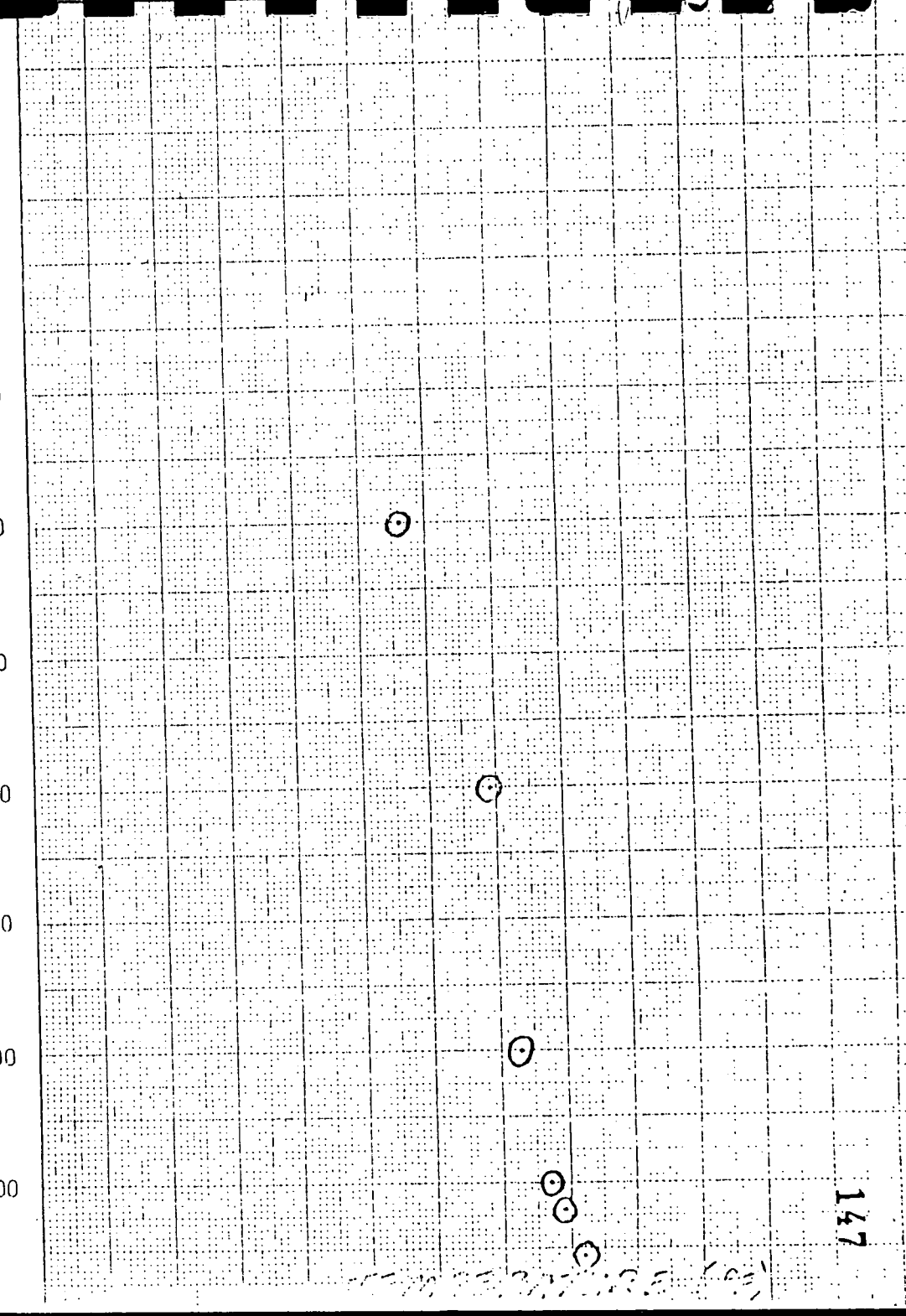
TEST DATE 6/8/83 (1509-1657 HRS)

ELEMENT # 21776 (BOTTOM)

DEPTH (FEET)	TEMP. (°F)	GRADIENT (°/FT)	DEPTH (METRES)	TEMP. (°C)	GRADIENT (°/1M)
LUB.	—	—	LUB.	—	—
2010	—	—	610	—	—
4000	136	—	1219	57.8	—
6000	149	0.007	1829	65.0	0.012
8000	153	0.002	2438	67.2	0.004
9000	157	0.004	2743	69.5	0.008
9200	159	0.010	2804	70.6	0.018
9549	162	0.009	2911	72.2	0.015
LUB.	—	—	LUB.	—	—

DEPTH (FEET)

1000
2000
3000
4000
5000
6000
7000
8000
9000



DMJ 29/8/83

STATIC PRESSURE

GRADIENT

WELL FLY LAKE #2 LOWER

TEST DATE 6/8/83 (1509-1657 HRS)

ELEMENT # 21380 (MIDDLE)

DEPTH (FEET)	PRESS. (PSIG)	GRADIENT (PSIG/FT)	DEPTH (METRES)	PRESS. (KPA)	GRADIENT (KPA/M)
LUB.	1612	—	LUB.	11117	—
2000	2112	0.2497	610	14566	5.6455
4000	2422	0.1550	1219	16703	3.5063
6000	3183	0.3805	1829	21952	8.6073
8000	3682	0.2994	2478	25393	5.6447
9000	3922	0.2401	2743	27048	5.4313
9200	3961	0.1982	2804	27317	4.4835
9549	4028	0.1918	2911	27779	4.3287
LUB.	1635	—	LUB.	11276	—

LUB. IN DWT = 1600 psig / OUT = 1607 psig

1 psig / ft = 22.021 kPa / m

JMF. 25/8/83

1000

2000

3000

4000

5000

6000

7000

8000

9000

DEPTH (FEET)

M = 0.2560 psig / ft.

STATIC PRESSURE

GRADIENT

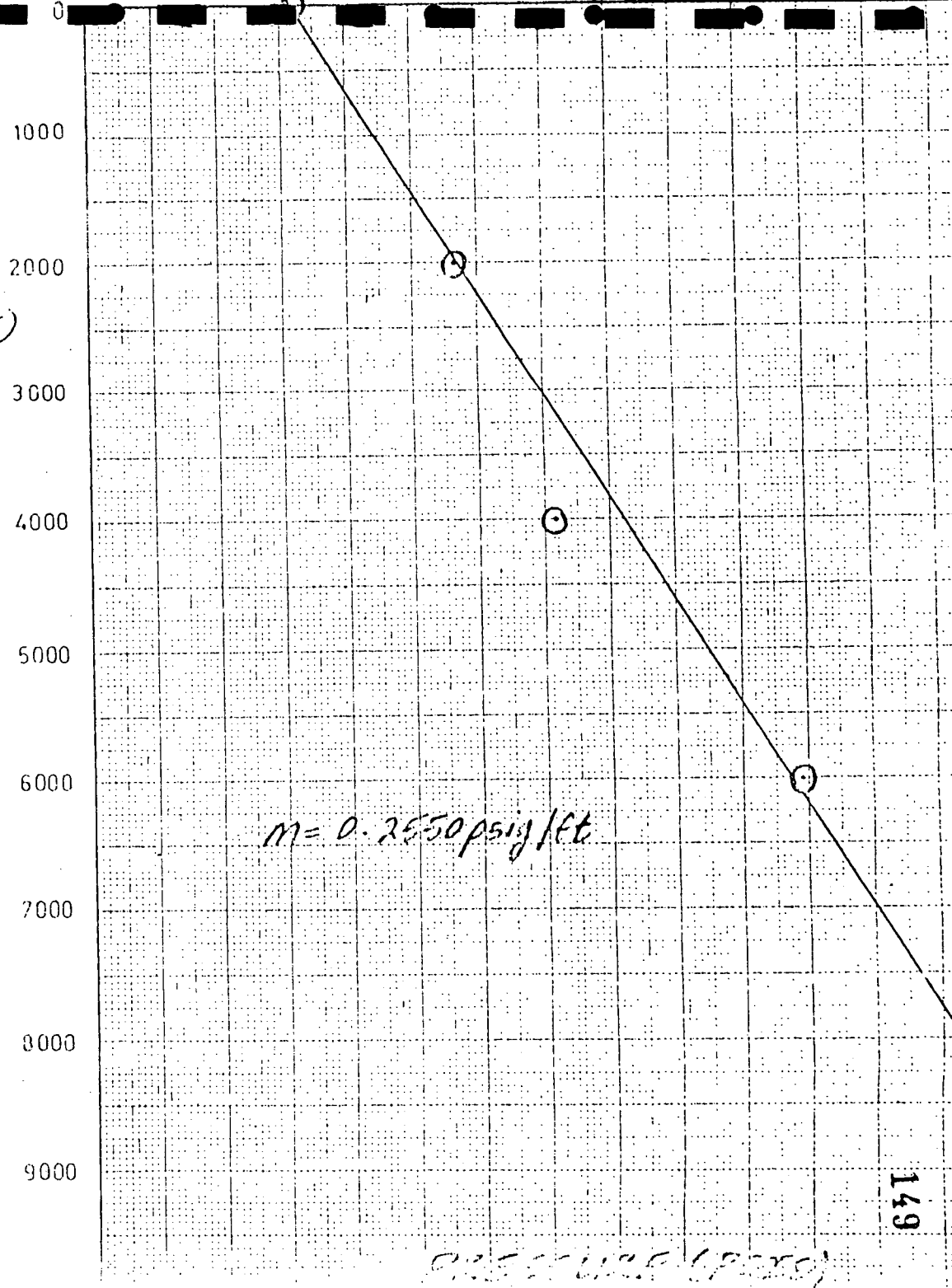
WELL FLY LAKE #2 LOWER

TEST DATE 6/8/83 (1509-1657 HRS)

ELEMENT # 21820 (TOP)

DEPTH (FEET)	PRESS. (PSIG)	GRADIENT (PSIG/FT)	DEPTH (METRES)	PRESS. (KPA)	GRADIENT (KPA/M)
LUB.	1624	—	LUB.	11234	—
2000	2128	0.2495	610	14676	5.6439
4000	2434	0.1530	1219	10780	3.4610
6000	3184	0.3750	1829	21959	8.4829
8000	3677	0.2465	2438	25359	5.5761
10000	3919	0.2420	2743	27028	5.4743
9200	3965	0.2300	2804	27345	5.2028
9549	4029	0.1834	2911	27786	4.1487
LUB.	1632	—	LUB.	11255	—

LUB. IN DIUT. = 1600 psig / OUT = 1607 psig
 1 psig/ft = 22.624 kPa/m.



JMJ: 25/8/83

WP 0036G

FLY LAKE #2 LOWERSUMMARY OF PRE FRAC PRODUCTION TESTSeptember 26th - October 10th 1982STATIC RESERVOIR PRESSURE

Static gradient 26/9/82 (mid point perforations = 9549'KB)
Element #22583 at 9549'KB = 3975 psig) Average gradient
Element #22751 at 9549'KB = 3982 psig) = 0.2622 psig/ft
Max. bottom hole temperature = 285°F

FLOW TEST

26/9/81 - 1/10/82

26/9/82 Opened well at 1717 hrs on 8/64" choke.
F.W.H.P. = 1069 psig
Separator pressure = 77 psig.
Gas flow rate = 0.09 MMCF/D
Oil production = 73 bbls/day
Water production = 22 bbls/day

Shut well in at 1517 hrs.

BUILDUP 1/10/82 to 5/10/82 (buildup period = 96.22 hrs)

Element #22583 at 9494'KB after 48 hrs = 3959 psig
Element #22751 at 9500'KB after 72 hrs = 3973 psig
Max. bottom hole temperature = 258°F

WELL NAME: FLY LAKE #2 LOWER
 TESTED BY: GIM & A.A. MICHELL
 METER RUN: 4.026"

TYPE OF TEST: F-15 - FRAC FLOW TEST
 SPECIFIC GRAVITY: H.P. SEP / L.P. SEP
 PC: T.C:

DATE: 26/9/82 - 1/10/82
 TAKEN FROM

TIRRAWARRA FORMATION

DATE	TIME	CHOK. SIZE INS	WELL HEAD DATA			SUBSURFACE DATA			H.P. SEPARATOR DATA					L.P. SEPARATOR DATA					OIL PROD B/D	OIL SIZE B/D	OIL GRAV (API)	REMARKS
			ANN. PSIG	THG. PSIG	TEMP OF	EL#	EL#	EL#	P.P. PSIG	H.W. INS H ₂ O	TEMP OF	ORIF SIZE INS	GAS FLOW RATE M.CFD	P.P. PSIG	H.W. INS H ₂ O	TEMP OF	ORIF SIZE INS	GAS FLOW RATE M.CFD				
26/9	1717	8/64										1.0										Commenced flowing well
	1728																					Separator on bypass
																						Turn through separator
	1900	8/64	0	1150	79				80	5	66	1.0	.12									Levels up dumping to tank
	2100		0	1107	79				90	5	57		.13						121	10.06		
	2300	8/64	0	1030	75				93	3	59	1.0	.15						81	16.77		
27/9	0100		0	975	75				90	4	57		.11						101	25.15		
	0500	8/64	0	1091	73				98	3	51	1.0	.1						81	38.57		
	0900		0	1091	80				65	4	71		.09						50	46.95		
	1300	8/64	0	1090	84				62	5	78	1.0	.1						60	57.02	30	
	1700		0	1075	80				66	3	75		.08						70	68.76	10	Water cut not showing correct
	2100	8/64	0	1082	79				72	4	55	1.0	.09						70	80.50	10	on tank tape, use water finding
28/9	0100		0	1074	79				93	2	48		.07						81	93.91	10	paste.
	0500	8/64	0	1056	75				88	2	48	1.0	.07						60	103.97		
	0900		0	1065	84				68	3	77		.08						70	115.71		
	1300	8/64	0	1055	84				66	4	82	1.0	.09						10	117.39	70	Drained off 12" of water
	1700		0	1058	81				70	4	82		.09						70	129.13		
	2100	8/64	0	1052	77				92	2	54	1.0	.07						70	140.87		
29/9	0100		0	1059	77				109	1	48		.06						81	154.29		
	0500	8/64	0	1070	73				60	3	52	1.0	.08						81	167.70		
	0900		0	1072	78				54	4	69		.08						50	176.09		
	1300	8/64	0	1067	80				60	4	71	1.0	.09						91	191.18		
	1700		0	1078	77				60	4	68		.09						70	202.92		
	2100	8/64	0	1082	75				94	2	52	1.0	.08						70	214.66		
30/9	0100		0	1081	73				103	1	48		.06						81	228.08		
	0500	8/64	0	1075	71				92	2	44	1.0	.07						70	239.82		
	0900		0	1071	77				80	2	62		.07						81	253.23		Drained 13" of water from tank.

This amount of water had accumulated over a 42 hours period. Producing 12.45 BBLS/D

WELL NAME: FLY LAKE #2 LOWER
 TESTED BY: GRM & A/A. MICHELL
 METER RUN: 4.026"

TYPE OF TEST: P/P - FRC FLOW TEST AND BUILDUP
 SPECIFIC GRAVITY: H.P. SEP / L.P. SEP
 PC: T.C:

DATE: FLOW TEST: 26/9/82 - 1/10/82
 BUILDUP: 1/10/82 - 5/10/82

TIRRAWAKKA FORMATION

DATE	TIME	CHORE SIZE INS	WELLHEAD DATA			SUBSURFACE DATA			H.P. SEPARATOR DATA					L.P. SEPARATOR DATA					OIL PROD BPD	FORM OIL BRLS	H ₂ O PROD BPD	BS&W %	OIL GRAV (API)	REMARKS
			ANN. PSIG	TBC. PSIG	TEMP OF	ELL# 22583 @ 9494' KB	ELL# 22751 @ 9500' KB	ELL#	P.F. PSIG	H.W. INS H ₂ O	TEMP OF	ORIF SIZE INS	GAS FLOW RATE M ³ /CFD	P.F. PSIG	H.W. INS H ₂ O	TEMP OF	ORIF SIZE INS	GAS FLOW RATE M ³ /CFD						
30/9	1300	8/64	0	1078	82				66	3	71	1.0	.08						70	241.50	12			
	1700	8/64	0	1062	78				73	4	68	1.0	.09						60	251.06	15			Drained 3" of water from tank.
	2100	8/64	0	1063	75				80	3	50	1.0	.08						81	264.47				Produced over 4 hour period.
1/10	0100	8/64	0	1064	73				86	3	45	1.0	.09						60	274.53				
	0500	8/64	0	1058	72				90	2	41	1.0	.07						81	287.94				
	0900	8/64	0	1056	80				85	33	68	1.0	.12						81	301.35				
	1300	8/64	0	1064	84				84	3	80	1.0	.08						81	314.76				
				1062		1064	1060																	Hang in lubricator
	1317	SHUT IN TIME (hrs)				3781	3784																	Hang bombs at 9500'
	1517	0	0	1060	82	3781	3784		80	3	82	1.0	.08						69	321.46	15			Shut well in. Drained off 9"
	1527	0.17	0	1104	77	3837	3839																	of water which has accumulated
	1537	0.33	0	1126	78	3860	3863																	over 22 hours 17 minutes.
	1547	0.5	0	1138	78	3873	3876																	
	1557	0.67	0	1149	80	3880	3884																	
	1607	0.83	0	1157	80	3886	3889																	
	1617	1	0	1164	80	3890	3893																	
	1632	1.25	0	1174		3893	3897																	
	1647	1.5	0	1181		3898	3901																	
	1702	1.75	0	1187		3900	3902																	
	1717	2	0	1192		3901	3905																	
	1747	2.5	0	1202		3903	3907																	
	1817	3	0	1209		3906	3908																	
	1847	3.5	0	1216		3908	3910																	
	1917	4	0	1222		3911	3913																	
	2117	6	0	1239		3916	3920																	
	2317	8	0	1247		3921	3924																	
2/10	0317	12	0	1254		3929	3932																	

WELL NAME: FLY LAKE #2 LOWER
 TESTED BY: GRM & A/A. MICHELL
 METER RUN: 4.026"

TYPE OF TEST: FRACTURE BUILDUP
 SPECIFIC GRAVITY: H.P. SEP / L.P. SEP
 PC: T.C:

DATE: 1/10/82 - 5/10/82

TAKEN FROM:

TIRRAMARRA FORMATION

DATE	TIME	SHOT IN TIME (hrs)	WELLHEAD DATA			SURFACE DATA			H.P. SEPARATOR DATA				L.P. SEPARATOR DATA				OIL PROD BPD	GUM OIL BBL	GOR SCF/ BBL	H ₂ O PROD BPD	BS&W %	OIL GRAV (API)	REMARKS
			ANN. PSIG	TBG. PSIG	TEMP OF	EL# 22583 @ 9494'	EL# 22751 @ 9500'	EL#	P.T. PSIG	H.W. INS H ₂ O	TEMP OF	ORIF SIZE INS	GAS FLOW RATE MMCFD	P.T. PSIG	H.W. INS H ₂ O	TEMP OF	ORIF SIZE INS	GAS FLOW RATE MMCFD					
2/10	0717	16	0	1260		3934	3937																
	1117	20	0	1266		3939	3944																
	1517	24	0	1270		3944	3947																
	2317	32	0	1275		3949	3955																
3/10	0717	40	0	1282		3954	3958																
	1517	48	0	1290		3959	3963																
4/10	1517	72	0	1309			3973																
5/10	1517	96	0	1307		clocks																	
	1530	96.22				stopped																	Off bottom
				1329		1339	1343																Hang in lubricator
																							Max. bottom hole
																							Temp. = 258°F

GRADIENT

WELL FLY LAKE #2 LOWER

TEST DATE 26-9-82 (1132-1624 Hrs)

ELEMENT NO: 16355 (TOP BOMB)

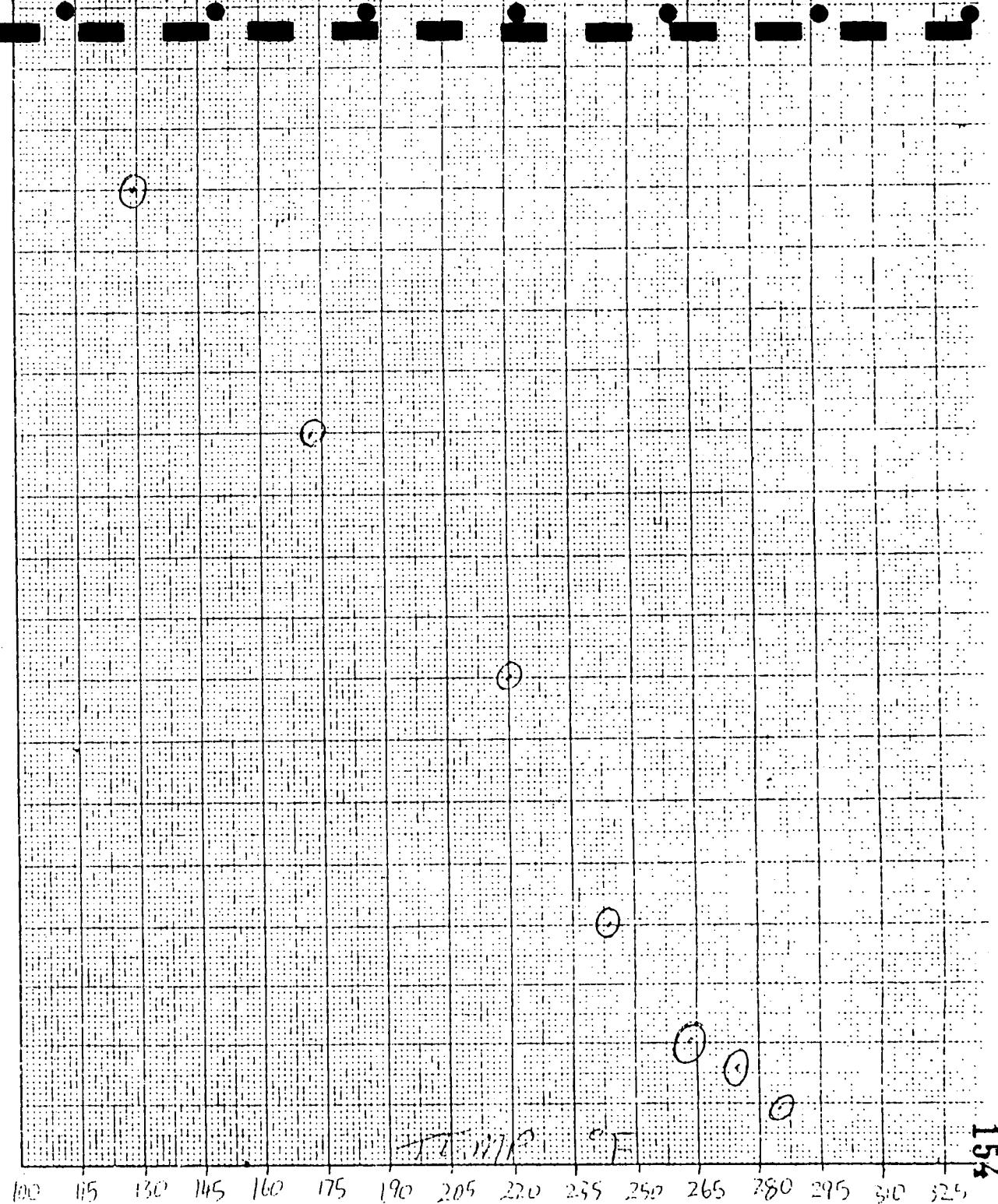
EMPT %	GRADIENT % 1 FT	DEPTH (METRES)	TEMP °C	GRADIENT % 1 M
—	—	Lube	—	—
129	0.0645	604.6	53.9	0.0884
173	0.0220	1219.2	78.3	0.0400
220	0.0235	1828.8	104.4	0.0428
244	0.0120	2438.4	117.8	0.0220
263	0.0190	2743.2	128.3	0.0345
275	0.0600	2804.2	135.0	0.1098
285	0.2865	2910.5	140.6	0.0527
—	—	Lube	—	—

Lube In DWT = 1466 PSIG

Lube Out = 1463 PSIG

DEPTH (FEET)

1000
2000
3000
4000
5000
6000
7000
8000
9000
10000



STATIC PRESSURE

GRADIENT

WELL FLY LAKE #2 (LOWER)

TEST DATE 26-9-82 (1432-1624 HRS)

ELEMENT NO: 22751 (MID. BOMB)

PRESS (PSIG)	GRADIENT (PSIG/FT)	DEPTH (METRES)	PRESS (KPA)	GRADIENT (KPA/M)
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471.7	—	Lube	10147.4	—
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130.9	0.2296	609.6	13313.6	5.1938
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487.4	0.2783	1219.2	17150.1	6.2954
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003.8	0.2582	1828.8	20711.2	5.8407
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498.4	0.2473	2438.4	24121.5	5.5942
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770.1	0.2717	2743.2	25994.8	6.1461
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846.7	0.3830	2804.2	26523.0	8.6638
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981.5	0.3863	2910.5	27452.4	8.7385
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487.4	—	Lube	10255.6	—
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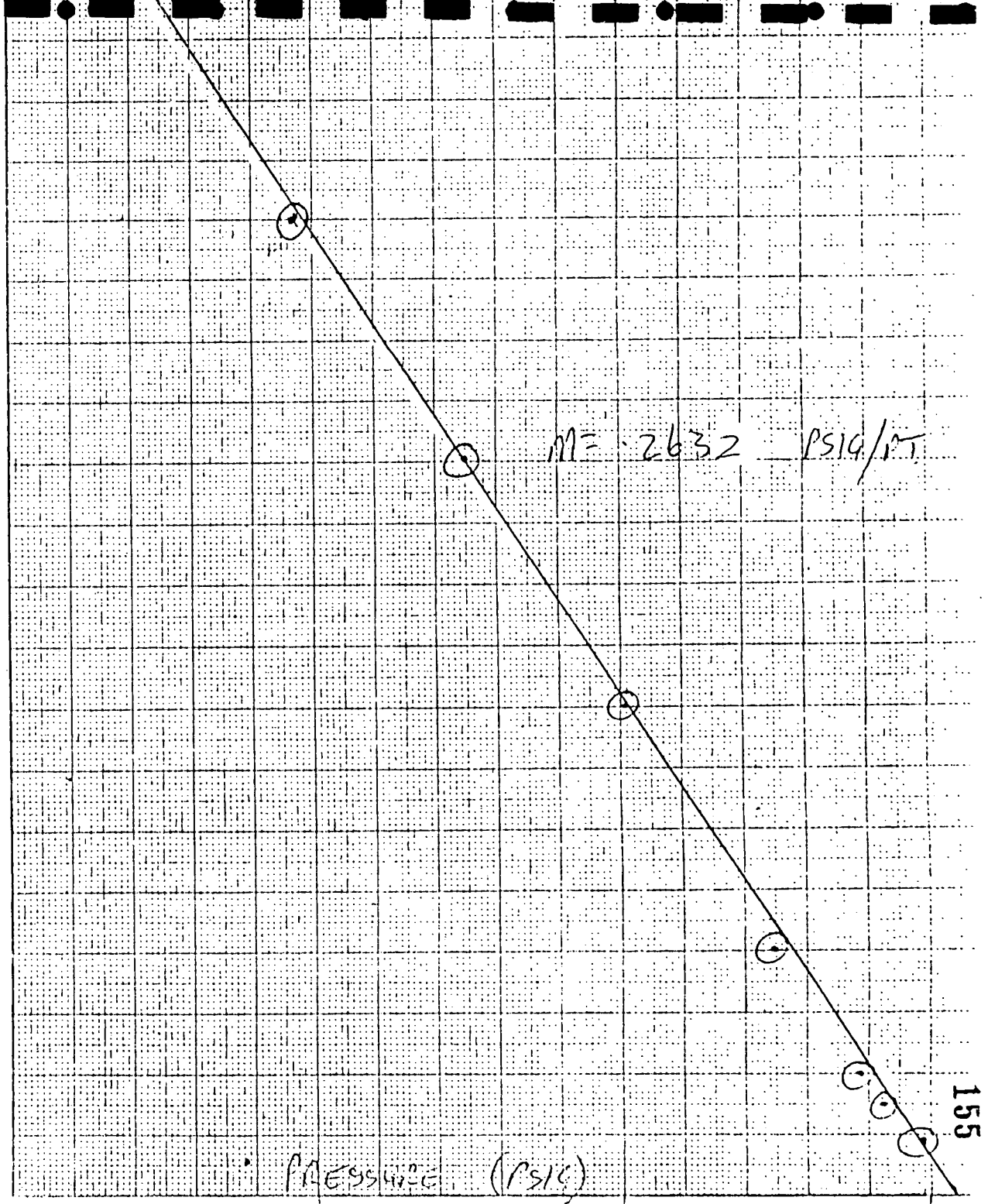
IN DWT. = 1466 psig / OUT = 1463 psig

1 psig/ft = 22.621 KPa/m.

1/3/83

DEPTH (FEET)

1000
2000
3000
4000
5000
6000
7000
8000
9000
10000



PRE - FRAC

STATIC PRESSURE
GRADIENT

WELL FLY LAKE #2 (LOWER)

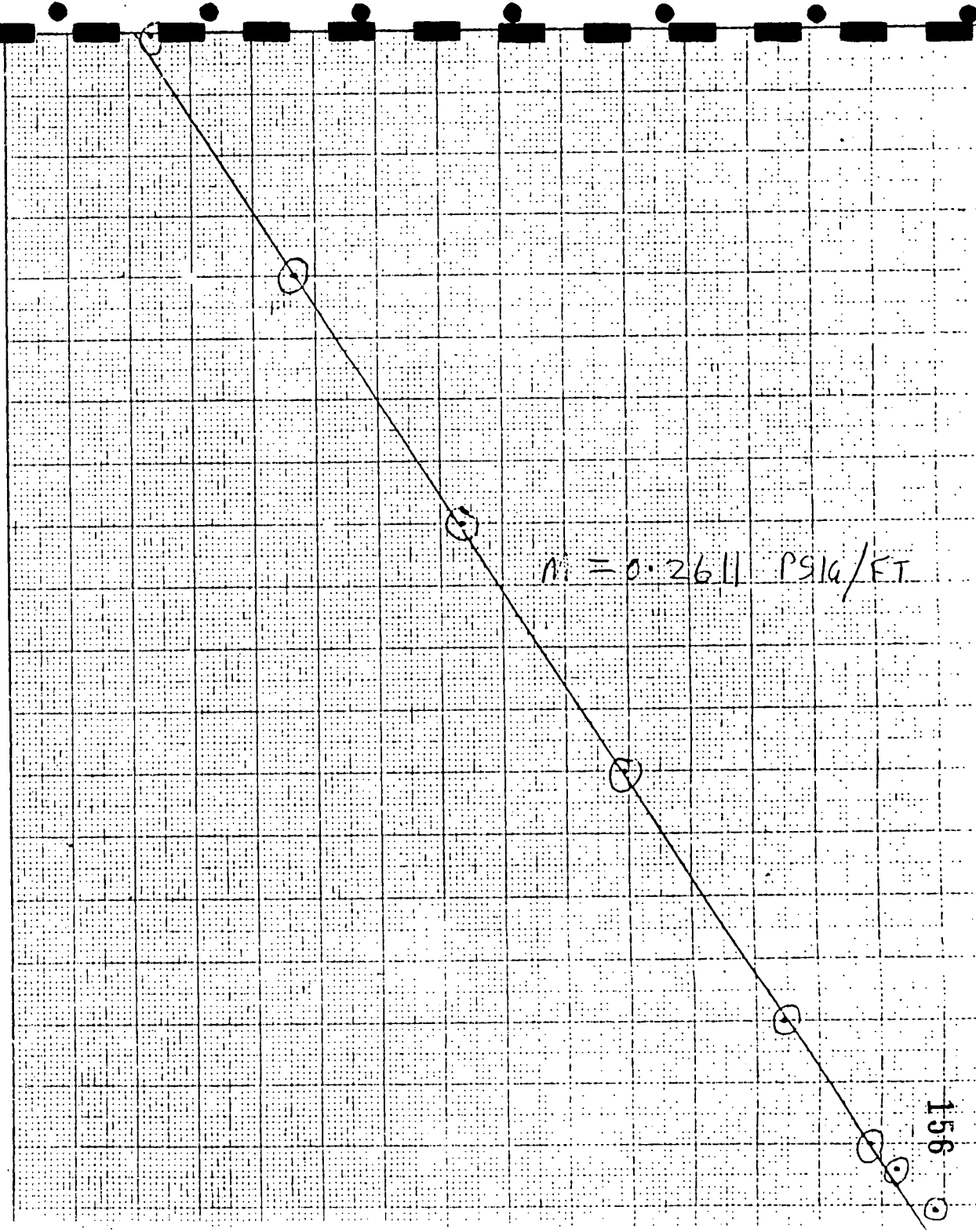
TEST DATE 26.9.82 (1432-1624 hrs)

ELEMENT NO: 22583 (TOP BOMB)

PRESS (PSIG)	GRADIENT (PSIG/FT)	DEPTH (METRES)	PRESS (KPA)	GRADIENT (KPA/M)
63.8	—	Lube	10092.9	—
22.3	0.2293	609.6	13254.3	5.1870
477.6	0.2777	1219.2	17083.1	6.2819
992.4	0.2574	1828.8	20632.6	5.8226
492.3	0.2500	2438.4	24079.4	5.6553
769.4	0.2731	2743.2	25962.4	6.1778
844.5	0.3955	2804.2	26507.9	8.9466
974.6	0.3728	2910.5	27404.9	8.4331
476.5	—	Lube	10180.5	—

DEPTH (FEET)

0
1000
2000
3000
4000
5000
6000
7000
8000
9000



IN DWT = 1466 psig / OUT = 1463 psig

1 psig / ft = 22.621 KPa / m.

156

FLY LAKE # 2
SUMMARY OF STAGE VOLUMES

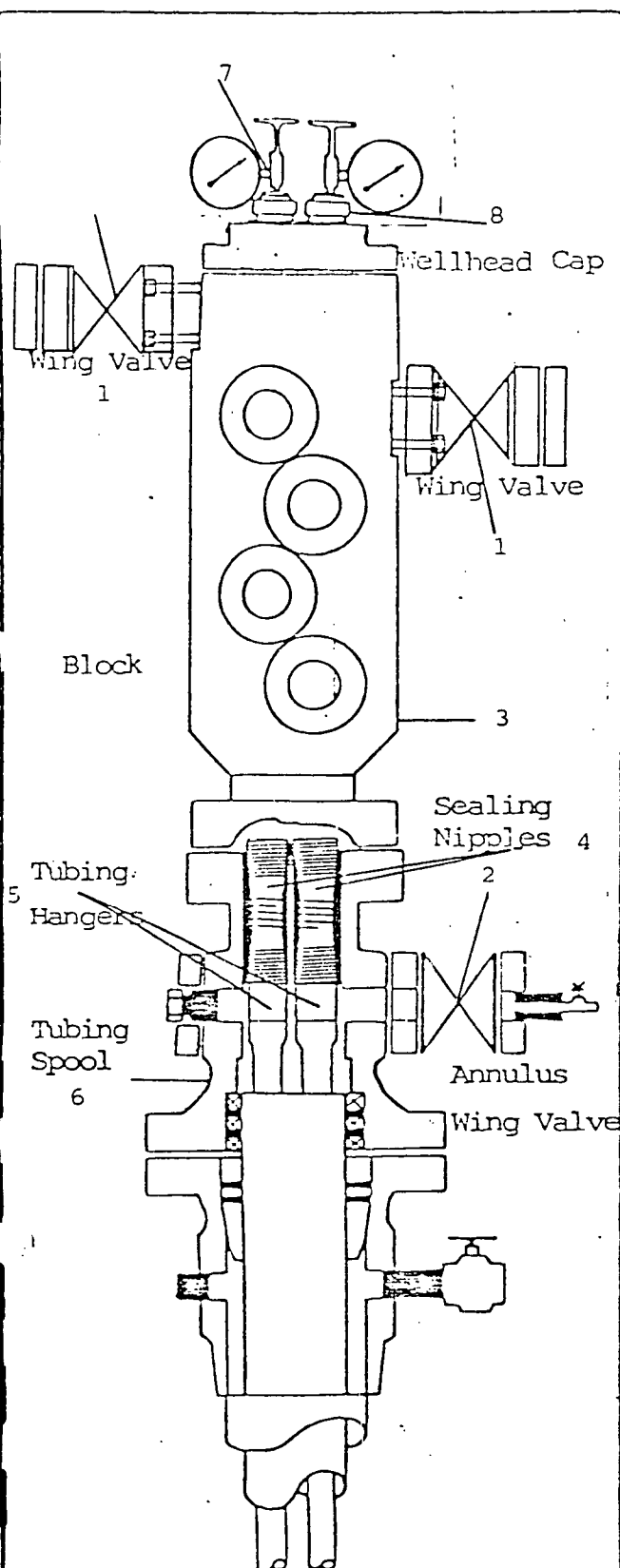
STAGE	ITEMS	MAX RATE	TIME	CUMULATIVE	MAX PRESS.	GEL VOL.	TOTAL	FLUID	PROPPANT	PROPPANT	PROPPANT
		B.P.M.	MIN.	TIME	PSI	USG	USG	DENSITY	TYPE	CONC.	QUANTITY
				MIN.				LB/GAL			LLS
0	Preflush: pressure test lines	5	10	10	9000		2000	8.45			
1	Injectivity test	15	15	50	9000		2000	8.45			
2	Prepad	15	10	60	9000		6000	8.45			
3	Pad Versagel	15	40	100	9000	25000	25000	8.34			
4	Proppant Versagel	15	12	112	9000	7000	7319	9.05	20-40 sand	1	7000
5	Proppant Versagel	15	12	124	9000	7000	7638	9.55	20-40 sand	2	14000
6	Proppant Versagel	15	13	137	9000	7000	7957	10.10	20-40 sand	3	21000
7	Proppant Versagel	15	13	150	9000	7000	8277	10.58	20-40 sand	4	28000
8	Proppant Versagel	15	13	163	9000		7000	10.00	12-20 super prop	4	28000
9	Flush to M.P.P.	15	4	167	9000		2436				
TOTALS				278		60000	76557				



PETROLEUM ENGINEERING DEPARTMENT - WORKOVERS

DUAL WELLHEAD AS INSTALLED

WELL: FLY LAKE #2



Item No.	DESCRIPTION
1	2-2" Cameron 3000 Gate Valves
2	1-2" McEvoy 3000 Gate Valves
3	Cameron Block Tree c/w dual type 'F' 2½" 3000 Gate Valves & dual type 'F' 2" 3000 Gate Valves
4	1-2½" 'S' Nominal Seal Neck with 2-7/8 CS Hydril Box up. 1-2" 'S' Nominal Seal Neck with 2-3/8 CS Hydril Box up.
5	1 - DC-B hanger assembly c/w 2-7/8 ABDSS box down. 1 - DC-B hanger assembly c/w 2-3/8 ABDSS box down.
6	10" x 6" 3000 Cameron 'DC-B' tubing spool. c/w Type 'X' Secondary Seal.
7	2½" Nominal Union Blanking Plug.
8	2" Nominal Union Blanking Plug.

REMARKS:

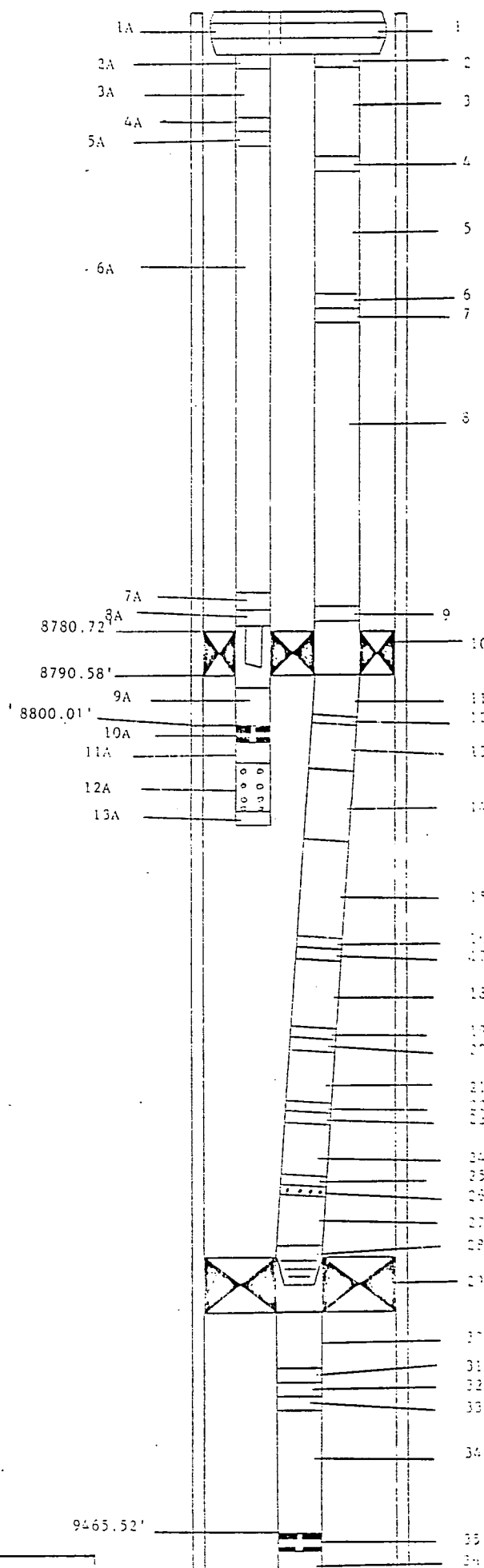
DATE:

DRAWN BY:

FLY LAKE #2

DUAL OIL/GAS

1. 2-7/8" Cameron EC3 hanger segment C/W 2-7/8" CS Hydril box up and 2-7/8" ABDSS box down.
 2. 2-7/8" ABDSS pin x pin.
 3. 1 jct., 2-7/8" 6.5#/ft. J55 ABDSS tubing.
 4. 1 - 4' x 2-7/8" 6.5#/ft. J55 ABDSS pup.
 5. 6 jts., 2-7/8" 6.5#/ft. ABDSS tubing.
 6. Otis 2-7/8" 6.5#/ft. 11FN255 Flow Nipple.
 7. Otis 2-7/8" 11X38 SSSV nipple.
 8. 272 joints 2-7/8" 6.5#/ft. J55 ABDSS tubing.
 9. 2-7/8" ABDSS box x 2-3/8" EUE pin.
 10. 7" Baker A-5 Dual packer size 47C2.
 11. 10' x 2-3/8" 4.7#/ft. J55 EUE pup.
 12. 2-3/8" x 2-7/8" EUE crossover.
 13. 2 jts., 2-7/8" 6.5#/ft. J55 EUE tubing.
 14. 4 - 10' x 2-7/8" EUE blast joints.
 15. 8 jts., 2-7/8" 6.5#/ft. J55 EUE tubing.
 16. 8' x 2-7/8" 6.5#/ft. J55 EUE pup.
 17. 8' x 2-7/8" 6.5#/ft. J55 EUE pup.
 18. 8' - 10' x 2-7/8" EUE blast joints.
 19. 6' x 2-7/8" 6.5#/ft. J55 EUE pup.
 20. 10' x 2-7/8" 6.5#/ft. J55 EUE pup.
 21. 3' - 10' x 2-7/8" EUE blast joints.
 22. 10' x 2-7/8" 6.5#/ft. J55 EUE pup.
 23. 10' x 2-7/8" 6.5#/ft. J55 EUE pup.
 24. 3 jts., 2-7/8" 6.5#/ft. J55 EUE tubing.
 25. 2-7/8" x 2-3/8" EUE crossover.
 26. 2-3/8" Otis 121X01 sliding sleeve (closed)
 27. 1 jct., 2-3/8" 4.7#/ft. J55 EUE tubing.
 28. Baker 'C' locator seal unit size 31-32.
 29. 7" Baker model DB size 84-32 C/W 4 1/2" LT & C box down.
 30. 4 1/2" LT & C millout extension.
 31. Crossover 4 1/2" LT & C box x 3 1/2" EUE pin.
 32. Swage 3 1/2" EUE x 2-7/8" EUE.
 33. Swage 2-7/8" EUE x 2-3/8" EUE.
 34. 6' x 2-3/8" 4.7#/ft. J55 EUE pup joint.
 35. 2-3/8" Otis 'N' landing nipple 11N12 (No-Go = 1.35).
 36. Swage 2-3/8" EUE x 2-7/8" EUE.
-
- 1A. 2-3/8" Cameron DC3 hanger segment C/W 2-3/8" CS Hydril box up and 2-3/8" ABDSS box down.
 - 2A. 2-3/8" ABDSS pin x pin.
 - 3A. 1 jct., 2-3/8" 4.7#/ft. J55 ABDSS tubing.
 - 4A. 1 - 4' x 2-3/8" 4.7#/ft. J55 ABDSS pup joint.
 - 5A. 1 - 2' x 2-3/8" 4.7#/ft. J55 ABDSS pup joint.
 - 6A. 279 joints 2-3/8" 4.7#/ft. J55 ABDSS tubing.
 - 7A. 2-3/8" ABDSS box x 2-3/8" EUE pin crossover.
 - 8A. Baker 'S' snap latch seal assembly.
 - 9A. 4' x 2-3/8" 4.7#/ft. J55 EUE pup joint.
 - 10A. 2-3/8" Otis 11X1 landing nipple (Mid I.D. = 1.875").
 - 11A. 2-3/8" Otis shear sub.
 - 12A. 6' x 2-3/8" 4.7#/ft. J55 EUE pup joint perforated with 24 - 1/2" holes.
 - 13A. 2-3/8" collar with bar across.



PERFORATIONS

Tirrawarra: 9532' - 9549')
 9549' - 9555') 4 shots/ft.
 9555' - 9565')
 Patchawarra: 8876' - 8896' 9184' - 9197')
 9210' - 9241' 9276' - 9286') 4 shots/ft.

DRAWN BY	M. NIESINGER
DATE DRAWN	22/10/82

P.B.T.D. 9570'XB

160

Well: FLY LAKE ¹⁷² LOWER Date: 8-1-84

Pressure with D.W.T. IN 816 OUT 927

Time Pressured.....1930..... Time Depressed.....09:36.....

Time Run in Hole 20:20 Time off Bottom 08:27

Bomb No. 2 Data

Element No. and Range	60750 x 5000	60751 x 5000
Recorder No.	61275 x 15-TLS	61276 x 15-TLS
Clock and Lead Screw Data	C 8567 x 24HR	25548 x 24HR
Engage Stylus	Date: 8.1.84 Time: 19.41	Date: 8.1.84 Time: 19.41
Disengage	Date: 9.1.84 Time: 0943	Date: 9.1.84 Time: 09.43

Remarks:.....

Well-Head Data for Final Build-up

[illegible]



WIRELINE REPORT

WELL: FLY LAKE # 2 LOWER

DATE: 19 + 20 . 1.85.

PROGRAM:

PURPOSE OF WORK: FLOWING GRADIENT

REPORT OF WORK PERFORMED: RIGGED UP T.D @ 9589.
 RAN FLOWING GRADIENT SURVEY TO 9548' BONDS LETS
 ON BOTTOM OVERNIGHT, 20.1.85 PULLED BONDS
 CHARTS O.K. RIGGED DOWN.

S. Morrell
 OPERATOR'S SIGNATURE

WORK PERFORMED BY: S. MORRELL OF EXPORTERS.

WELL DATA:

Tubing Size: 2 7/8 FWHP: SIWHP:

Sub Surface S.V./Landing Nipple @ S.S.D. @:

"X" Nipple @ (N) "XN" Nipple @ 9465 other

Min I.D. 1.85 " @ 9465 Packer @

Perforated Interval: 9532 — 9565.

Forward to: Petroleum Engineering — Adelaide
 Production Department — Moomba



**** FLY LAKE 2 LOWER ****
FLOWING PRESSURE GRADIENT

TEST DATE: 19-1-85

TOP PRESSURE ELEMENT 21372/4050				BOTTOM PRESSURE ELEMENT 21374/4075		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.3270	659.3	----	0.3300	660.4	----
1000	0.3820	770.2	0.1109	0.3850	772.0	0.1116
2000	0.4450	897.4	0.1272	0.4500	904.0	0.1321
3000	0.5600	1129.9	0.2325	0.5640	1136.1	0.2321
4000	0.6930	1399.2	0.2694	0.6960	1405.6	0.2694
5000	0.8090	1634.6	0.2354	0.8120	1642.9	0.2374
6000	0.9420	1904.9	0.2704	0.9430	1911.7	0.2687
7000	1.0640	2153.4	0.2485	1.0630	2158.4	0.2468
8000	1.1760	2381.8	0.2285	1.1750	2389.2	0.2308
9000	1.3170	2670.0	0.2881	1.3150	2678.4	0.2892
9548	1.4140	2868.5	0.3623	1.4070	2868.8	0.3475
LUB	0.3250	655.3	----	0.3230	646.2	----

N.B. BELOW BUBBLE POINT
 ROW

GENERAL REMARKS:

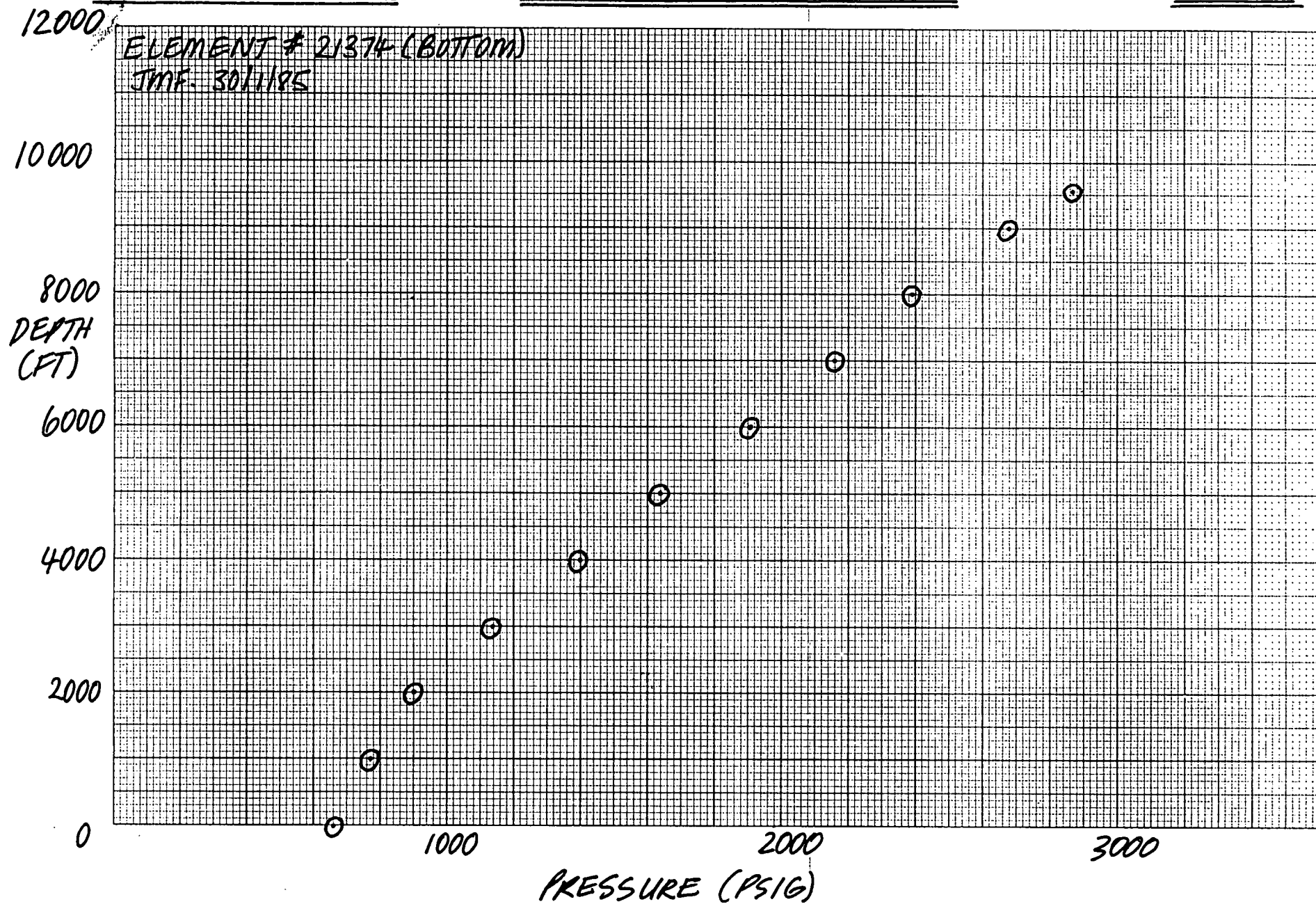
DWT IN: 0
 DWT OUT: 0
 MAX BHT: 284 F

ELEMENT 21372/4050 CALIBRATED 23/12/84
 ELEMENT 21374/4075 CALIBRATED 23/12/84

FLY LAKE # 2 LOWER

FLOWING PRESSURE GRADIENT

19/1/85





CLIENT SANTOS Flowing ~~STATIC~~ GRADIENT SURVEY
WELL FLY LAKE 2 OPERATOR M MCKENZIE

DATE 24-5-84

[illegible]

GENERAL REMARKS:





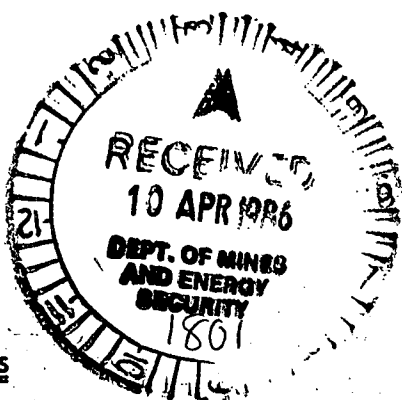
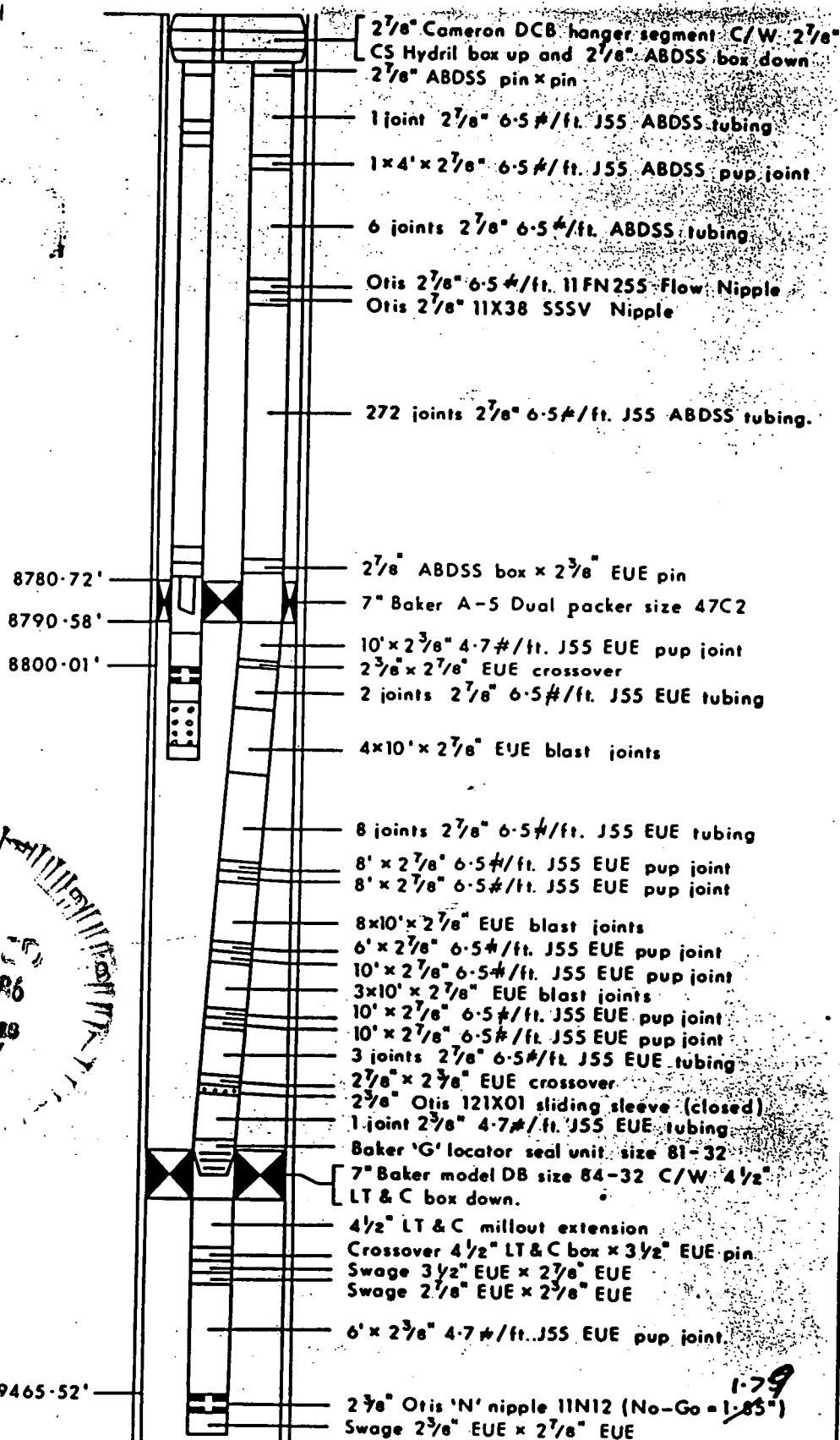
DOWNHOLE INSTALLATION

Page 2 of 2

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Well: Fly Lake - 2

K.B to top of tubinghead spool



PERFORATIONS

Tirrawarra

9532' - 9549' } 4 shots/ft.
9549' - 9555'
9555' - 9565'

Patchawarra

8876' - 8896' } 4 shots/ft.
9184' - 9197'
9210' - 9241'
9276' - 9286'

9465-52'

P.B.T.D. 9570' K.B.

PROPOSED RE/COMPLETION

RE/COMPLETION AS RUN

NOT TO SCALE

DESIGNED

M. Niesingh./D.R.Hahn.

DRAFTED

N. Mullane

DATE

2nd July 1984



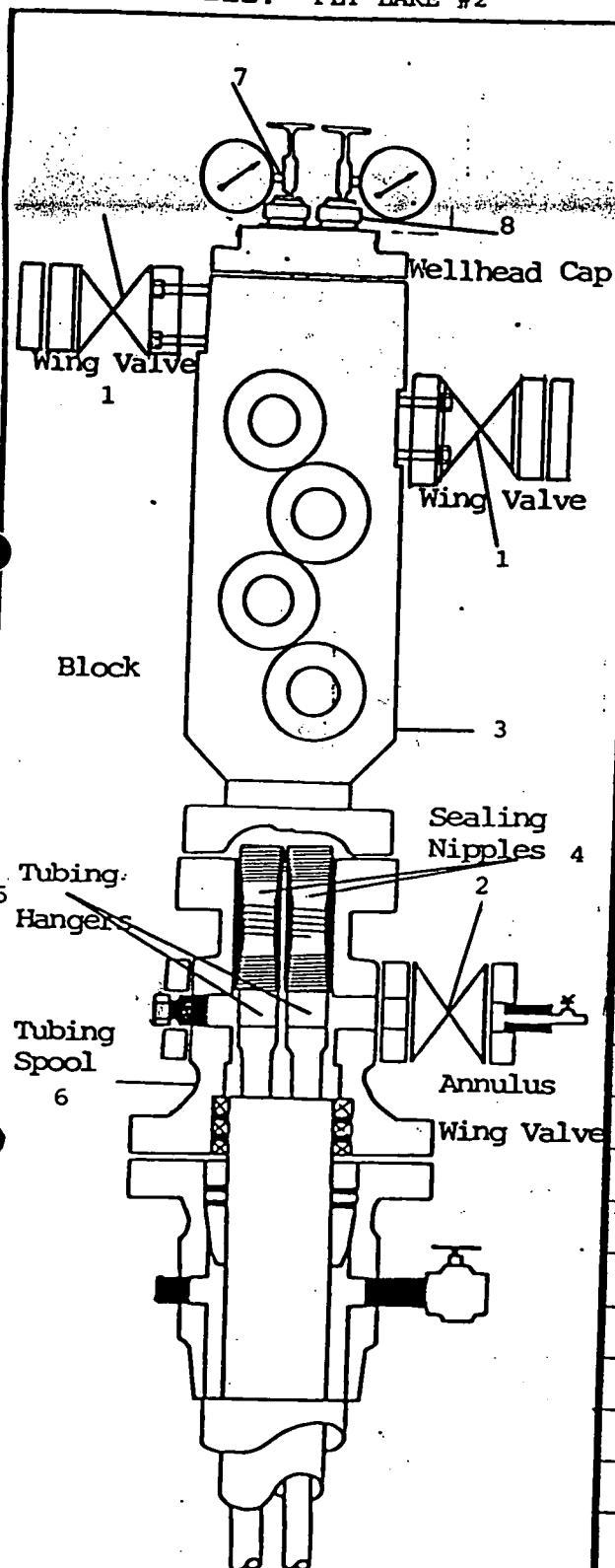
SANTOS LIMITED

PETROLEUM ENGINEERING DEPARTMENT - WORKOVERS

168

DUAL WELLHEAD AS INSTALLED

WELL: FLY LAKE #2

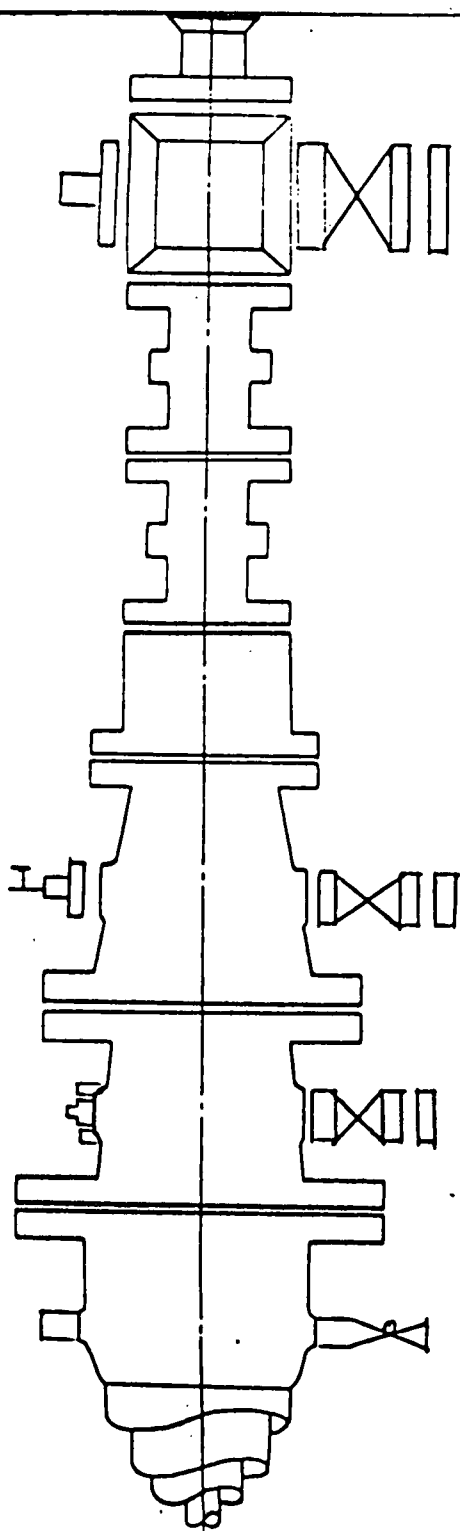


Item No.	DESCRIPTION
1	2-2" Cameron 3000 Gate Valves
2	1-2" McEvoy 3000 Gate Valves
3	Cameron Block Tree c/w dual type 'F' 2½" 3000 Gate Valves & dual type 'F' 2" 3000 Gate Valves
4	1-2½" 'S' Nominal Seal Neck with 2-7/8 CS Hydril Box up. 1-2" 'S' Nominal Seal Neck with 2-3/8 CS Hydril Box up.
5	1 - DC-B hanger assembly c/w 2-7/8 ABDSS box down. 1 - DC-B hanger assembly c/w 2-3/8 ABDSS box down.
6	10" x 6" 3000 Cameron 'DC-B' tubing spool. c/w Type 'X' Secondary Seal.
7	2½" Nominal Union Blanking Plug.
8	2" Nominal Union Blanding Plug.

REMARKS:

DATE:

DRAWN BY:



WELL INSTALLATION REPORT		
TREE CAP etc.	CAMERON 2-9/16" R27 3000# c/w 2-7/8" EUE LIFTING THREADS	
FLOW TEE etc.	CAMERON 2-9/16" x 2-9/16" x 2-9/16" x 2-1/16" 3000#	
	R27	R27 R27 R24
MASTER VALVE etc.	CAMERON 2-9/16" 3000# R27 TYPE F	
MASTER VALVE etc.	CAMERON 2-9/16" 3000# R27 TYPE F	
SPOOL etc.	2-9/16" R27 x 7-1/16" R45 3000#	HB-A assembly
TUBING HEAD etc.	CAMERON TYPE F TUBING HEAD SPOOL	Tubing hanger FBB 6" : 2-
	7-1/16" R45 x 11" R53 3000#	'X' Bushing
		Bit pilot
	Outlet 2-1/16" R24 COMPANION FLANGE c/w BULL PLUG &	NEEDLE VALVE
	Outlet 2-1/16" R24 3000# CAMERON WING VALVE c/w COMPANION FLANGE 2" NPT	
CASING SPOOL etc.	FMC OCT 11" R53 x 12" R57 3000#	Casing hanger
	Outlet 2-1/16" R24 CAMERON VALVE c/w 2" NPT COMPANION FLANGE	
	Outlet VR PLUG & 2" R24 COMPANION FLANGE	
BRADEN HEAD etc.	13-3/8" x 12" R57 3000# SCREW ON BRADENHEAD	Casing hanger
	Outlet 2" NPT BULL PLUG	
	Outlet 2" NPT NIPPLE c/w BALL VALVE	
CASING	Surface	13-3/8" 48# H40 ST&C to 552' KB
	Intermed.	9-5/8" 36# J55 LT&C to 5894'
	Production	7" 23, 26# J55 & N80 to 9943'
TUBING		2-7/8" 100 # 52 # 05051



WIRELINE REPORT

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WELL: FLY LAKE 2 LOWER

DATE: 12-10-84

PROGRAM: Flowing Gradient

PURPOSE OF WORK: Dummy Run to ensure parts clear

REPORT OF WORK PERFORMED: Rig up

Run 1.75" blind box to 9437' K.B.
Unable to pass through 278 X-over P.O.H.Run 1.5" blank toolstring to 9477' K.B.
and sit down. Unable to jar through P.O.H.

OPERATOR'S SIGNATURE

WORK PERFORMED BY: C. MORRELL OF EXPERTEST.

WELL DATA:

Tubing Size: 278 FWHP: 723 PSI SIWHP: N/A

Sub Surface S.V./Landing Nipple @ — S.S.D. @: 9438'

"X" Nipple @ — "N"/"XN" Nipple @ 9465' other —

Min I.D. 1-851 " @ 9465' XN Packer @ 8780 and 9447

Perforated Interval: 9532-9565 M.P.P @ 9548'

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba

en 1801



**** fly lake #2 ****

FLOWING PRESSURE GRADIENT

TEST DATE: 14/10/84

DEPTH (FT.)	TOP PRESSURE ELEMENT 21379/4825 P			BOTTOM PRESSURE ELEMENT 21821/4750 P		
	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.2950	727.9	----	0.3080	721.4	----
1000	0.3510	867.0	0.1391	0.3670	862.0	0.1407
2000	0.4010	991.0	0.1241	0.4220	993.2	0.1312
3000	0.4830	1194.2	0.2032	0.5020	1184.2	0.1910
4000	0.5380	1330.3	0.1361	0.5600	1322.8	0.1386
5000	0.6130	1515.8	0.1855	0.6370	1507.1	0.1842
6000	0.6960	1720.9	0.2051	0.7240	1715.6	0.2085
7000	0.7720	1908.5	0.1876	0.8030	1905.2	0.1896
8000	0.8720	2155.3	0.2468	0.9050	2150.5	0.2453
9000	0.9490	2345.2	0.1900	0.9850	2343.3	0.1928
9470	0.9970	2463.7	0.2520	1.0360	2466.4	0.2619
LUB	0.2980	735.3	----	0.3120	730.9	----

Element 21379/4825 P calibrated 8/9/84.

Element 21821/4750 P calibrated 8/9/84

ERFS BLOCKED. DUMMY RUN TO 9477' KB. WELL APPEARED TO BE SLUGGING SO READINGS ARE
VERAGE READING OVER LENGTH OF STOP. M.R TEMP 285 F

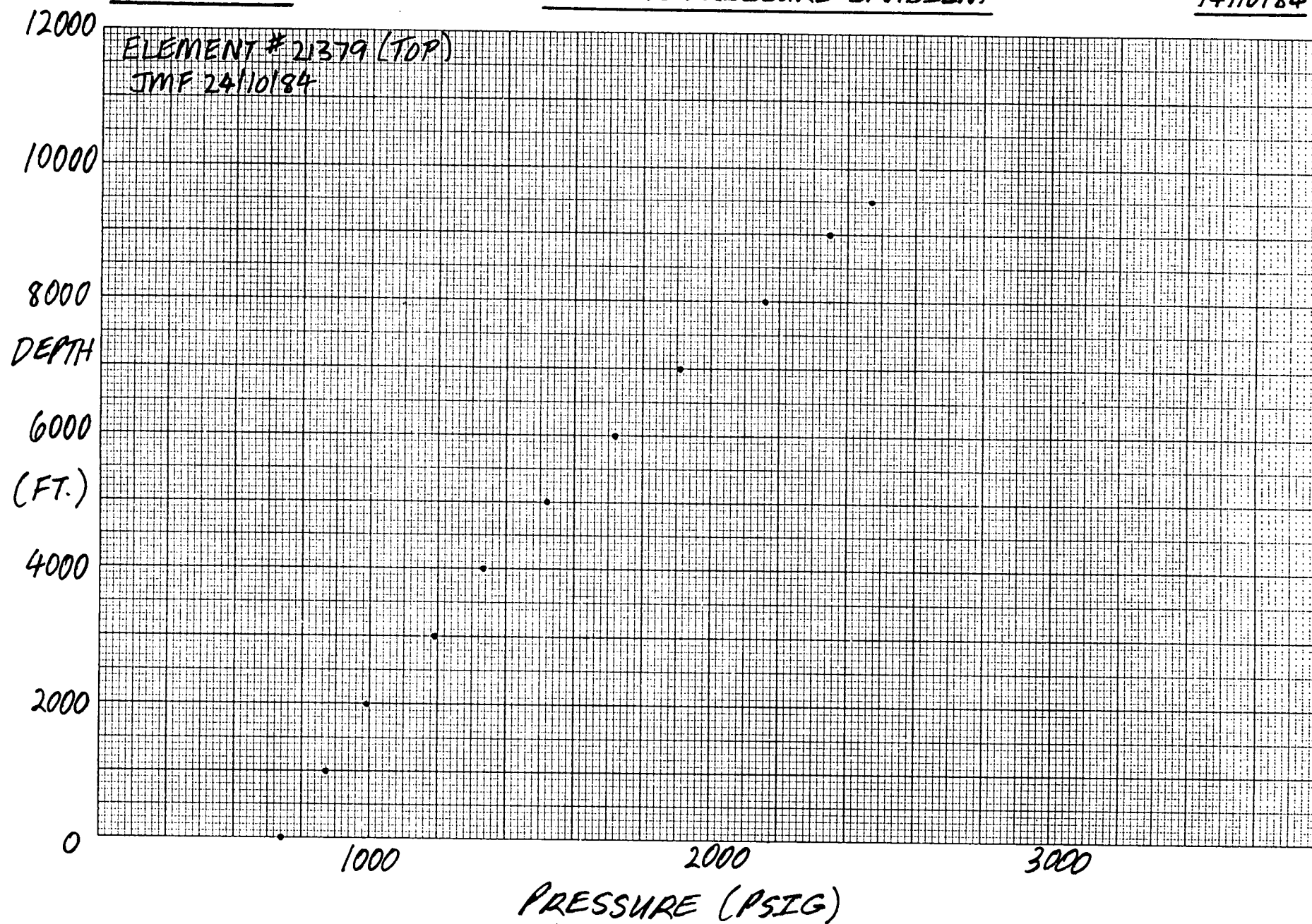
LUBRICATOR PRESSURE SUMMARY

<u>TYPE OF MEASUREMENT</u>	<u>ON ENTRY</u>	<u>ON EXIT</u>
Deadweight Tester	723	731
Element 21379/4825 P	727.9	735.3
Element 21821/4750 P	721.4	730.9

FLY LAKE #2

FLOWING PRESSURE GRADIENT

14/10/84





WIRELINE REPORT

PAGE ONE

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WELL: FLY LAKE #2 LOWER

DATE: 4th APRIL 1985

PROGRAM: PATCHAWARRA CENTRAL BOTTOM HOLE PRESSURE SURVEYS (FLOWING)

PURPOSE OF WORK: TO ENSURE THAT THE GOOD WELLS ARE PRODUCING ABOVE 3100 PSIG

REPORT OF WORK PERFORMED:

3/4/85 ARRIVE ON LOCATION

RIG UP 082 STAINLESS WIRE LINE UNIT AND LUBRICATOR

RUN IN HOLE WITH 1.75" BLIND BOX AND TAG @ 9475' KB

FAIL TO GET ANY DEEPER ON REPEATED ATTEMPTS SO PRESUME THAT THE PERFORATIONS ARE COVERED

PULL OUT OF HOLE AND REPORT TO SANTOS/EXPERTEST

4/4/85 ARRIVE ON LOCATION AND PREPARE TO RUN GRADIENT
RUN IN HOLE WITH TANDUM 5000 PSI PRESSURE ELEMENTS TO A
MAXIMUM DEPTH OF 9000' KB - DEEPEST PROGRAMED STOP POSSIBLE
PULL OUT OF HOLE BOTH CHARTS GOOD
REPORT TO EXPERTEST OFFICE MOOMBA

CONTINUED PAGE TWO

OPERATOR'S SIGNATURE

WORK PERFORMED BY: OF

WELL DATA:

Tubing Size: 2 7/8" FWHP: 680 psi SIWHP:

Sub Surface S.V./Landing Nipple @ S.S.D. @: DEPTH UNAVAILABLE

"X" Nipple @ DEPTH UNAVAILABLE "N"/"N" Nipple @ DEPTH UNAVAILABLE other DEPTH UNAVAILABLE

Min I.D. 1.85" DEPTH UNAVAILABLE Packer @ DEPTH UNAVAILABLE

Perforated Interval: TIRRAWARRA FORMATION 9532' - 9565'

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba



WIRELINE REPORT

PAGE TWO

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WELL: FLY LAKE # 2 LOWER

DATE: 4th APRIL 1985

PROGRAM: PATCHAWARRA CENTRAL FLOWING BOTTOM HOLE PRESSURE SURVEYS

PURPOSE OF WORK: TO ENSURE THAT THE GOOD WELLS ARE PRODUCING ABOVE 3100 PSIG

CONTINUED FROM PAGE ONE

REPORT OF WORK PERFORMED:

4/4/85 RUN IN HOLE WITH 1.5" BLIND BOX TO ENSURE THAT MAXIMUM DEPTH HAS BEEN REACHED, TAG BOTTOM @ 9566' KB REPORT TO MOOMBA
PULL OUT OF HOLE AND PREPARE TO RUN GRADIENT

RUN IN HOLE WITH TANDUM 5000 PSI PRESSURE ELEMENTS TO A MAXIMUM DEPTH OF 9548' KB (MPP) AS PER PROGRAM

PULL OUT OF HOLE BOTH CHARTS GOOD

RIG DOWN 082 STAINLESS WIRELINE UNIT AND LUBRICATOR
MOVE TO NEXT LOCATION

OPERATOR'S SIGNATURE

WORK PERFORMED BY: T. CHAPMAN / G. BAIN OF EXPERTEST

WELL DATA:

Tubing Size: FWHP: SIWHP:

Sub Surface S.V./Landing Nipple @ S.S.D. @:

"X" Nipple @ "N"/"XN" Nipple @ other

Min I.D. @ Packer @

Perforated Interval:

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba



**** FLY LAKE 2 LOWER ****
FLOWING PRESSURE GRADIENT

TEST DATE: 4.4.1985

TOP PRESSURE ELEMENT 59211/5000				BOTTOM PRESSURE ELEMENT 60322/5000		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.2600	670.9	----	0.2660	681.9	----
1000	0.3120	805.6	0.1347	0.3180	814.9	0.1330
2000	0.3850	994.3	0.1887	0.3910	1001.5	0.1866
3000	0.4420	1141.3	0.1470	0.4470	1144.5	0.1430
4000	0.5050	1303.5	0.1622	0.5110	1307.9	0.1634
5000	0.5680	1465.5	0.1620	0.5750	1471.3	0.1634
6000	0.6440	1660.7	0.1951	0.6510	1665.3	0.1940
7000	0.7250	1868.4	0.2077	0.7320	1872.2	0.2069
8000	0.8100	2086.1	0.2177	0.8170	2089.4	0.2172
9000	0.9130	2349.7	0.2636	0.9190	2350.4	0.2610
9548	0.9670	2487.7	0.2520	0.9720	2486.2	0.2477
LUB	0.2650	683.9	----	0.2660	681.9	----

GENERAL REMARKS:

DWT IN: 684
DWT OUT: 680
MAX BHT: 286 F

ELEMENT 59211/5000 CALIBRATED 14/3/85
ELEMENT 60322/5000 CALIBRATED 14/3/85

FLY LAKE #2 LOWER

FLOWING PRESSURE GRADIENT

4/4/85

12000

ELEMENT # 60322 (BOTTOM)

JMF 26/4/85

10000

8000
DEPTH
(FT)

6000

4000

2000

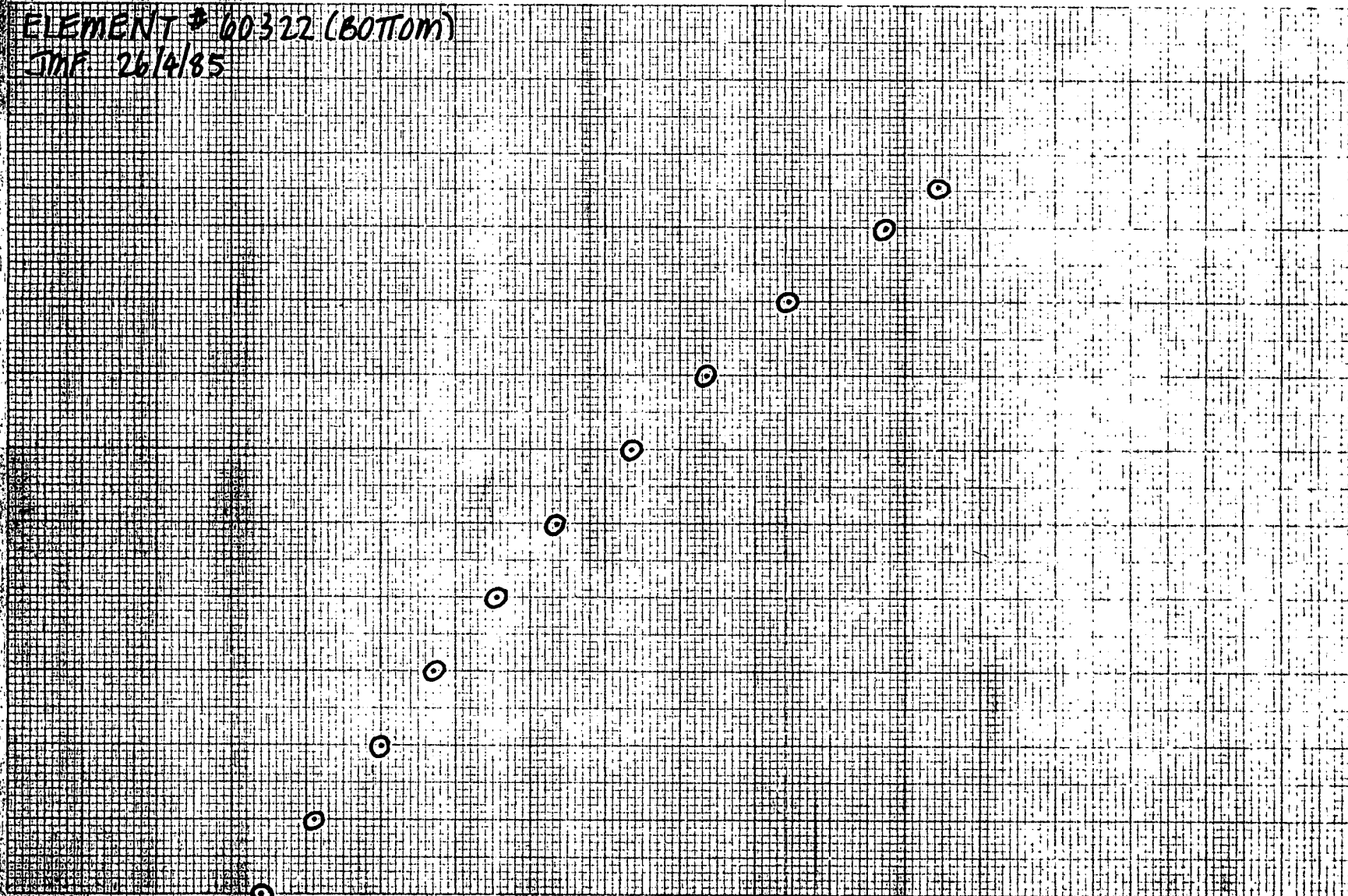
0

1000

2000

3000

PRESSURE (PSIG)





WELL TEST DATA SHEET

WELL: FLYLAKE #2 LOWER OPERATOR: R. R. WILLIAMS
DATE (Start Test): 3-4-85 METER RUN ID: 97 18 / 102-20 mm
TEST SEPARATOR: FLYLAKE ORIFICE PLATE: 19.05 mm
TEST LINE: N/A FLOW COMPUTER CONSTANT: N/A
TO START TEST: TIME PIG LAUNCHED: N/A TIME RECEIVED: N/A
TO END TEST: TIME PIG LAUNCHED: N/A TIME RECEIVED: N/A

TIME	WELLHEAD			SATELLITE DATA							
	FTP kPa	CHOKE SIZE 64ths	SEP OIL TEMP °C	LIQUIDS			GAS				
				N.O.A.		TOTALIZED WATER m³	STATIC PRESS kPa	DIFF PRESS kPa	TEMP °C	INDICATED FLOW RATE m³ x 10⁻³	TOTALIZED FLOW m³ x 10⁻³
				NET OIL m³	NET WATER m³						
1520	SWAB VALVE	32	-	0	0	0	4830	3.0	34	3.4	85
1755	SWAB VALVE	32	-	20.39	0.01	0.00	4830	1.0	28	4.4	85
1720	-	32	-	32.55	0.01	N/A	4700	1.25	34	4.4	85
(A)	TOTALS			(B) OIL	(C)	(D)	(E)		(F) GAS		
26	(final minus initial)			32.35	0.01	0	- TOTAL WATER		0.01		

COMMENTS: FLOWING GRADIENT TEST STARTED @ 1520 hrs ON 3-4-85

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

CALCULATIONS

SUMMARY

(1) STOCK TANK OIL

SANTOS EXPLORATION DATA BASE

WATER ANALYSIS

WELL: FLY LAKE

2

LAB: AMDEL

TEST: PROD

DATE: 04/07/1985

SAMPLE:

DEPTH: FT (KB)

FT (SUBSEA)

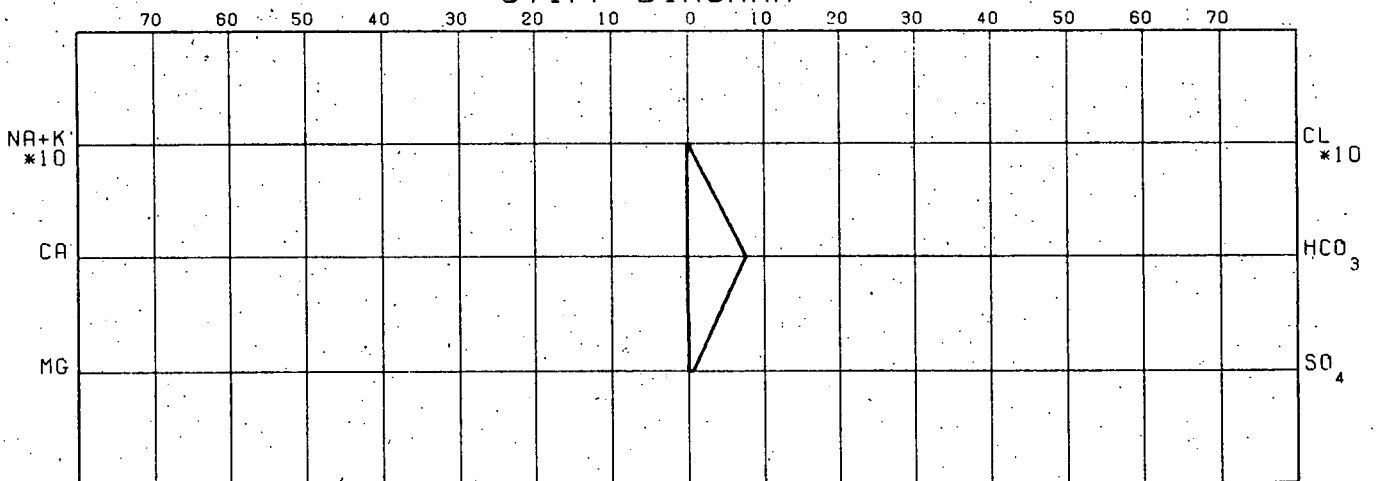
FORMATION:

COMMENT: UPPER; IMBALANCE DUE TO PRESENCE OF IRON & AMMONIA (NESSLER REAGENT SPOT TEST)

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	10.0	0.4	CHLORIDE	4.6	0.1
POTASSIUM	0.5	0.0	BICARBONATE	465.0	7.6
CALCIUM	1.1	0.1	CARBONATE		
MAGNESIUM	0.2	0.0	SULPHATE	30.0	0.6
IRON			NITRATE	4.0	0.1
			HYDROXIDE		
TOTAL CATIONS	11.8	0.5	TOTAL ANIONS	503.6	8.4

ION BALANCE: -88.4 %
 TOTAL DISSOLVED SOLIDS: 279.0 MG/L
 MEASURED RESISTIVITY: 14,300 OHM-M AT TEMP 77. F 25. C
 SODIUM TO TOTAL CATION RATIO: 83.8 %
 PH: 6.0
 SODIUM CHLORIDE EQUIVALENT:
 EQUIVALENT RW AT 75 F:

STIFF DIAGRAM



Received 29/7/86

1801

SANTOS EXPLORATION DATA BASE

WATER ANALYSIS

WELL: FLY LAKE

2

LAB: AMDEL

TEST: PROD

DATE: 09/01/1986

SAMPLE:

DEPTH:

FT. (KB)

FT. (SUBSEA)

FORMATION:

COMMENT: UPPER: IMBALANCE DUE TO PRESENCE OF AMMONIA (NESSLER REAGENT SPOT TEST)

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	2120.0	92.2	CHLORIDE	3650.0	102.8
POTASSIUM	36.0	0.9	BICARBONATE	969.0	15.9
CALCIUM	60.0	3.0	CARBONATE	16.4	0.5
MAGNESIUM	20.0	1.6	SULPHATE	12.0	0.3
IRON			NITRATE	4.0	0.1
			HYDROXIDE		
TOTAL CATIONS	2236.0	97.7	TOTAL ANIONS	4651.4	119.6

ION BALANCE: -10.0 %

TOTAL DISSOLVED SOLIDS: 6400.0 MG/L

MEASURED RESISTIVITY: 0.909 OHM-M AT TEMP 77. F 25. C

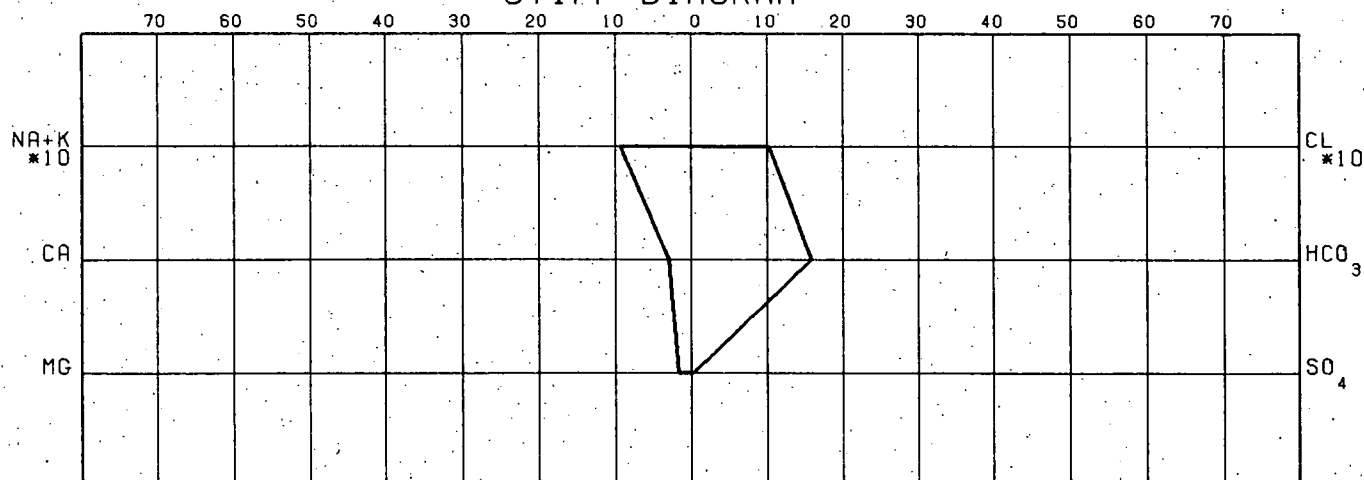
SODIUM TO TOTAL CATION RATIO: 94.3 %

PH: 8.4

SODIUM CHLORIDE EQUIVALENT:

EQUIVALENT RW AT 75 F:

STIFF DIAGRAM





WIRELINE REPORT

WELL: FLY LAKE "2L"

DATE: 25/1/86

PROGRAM: BLIND BOX RUN

PURPOSE OF WORK: TO CHECK TUBING FOR OBSTRUCTIONS AND TAG PRTD.

REPORT OF WORK PERFORMED:

RIG IN WIRELINE UNIT AND TOOL STRING.
1.020 HRS - R.I.H. WITH 1.75" BLIND BOX.
1.115 HRS - CAN'T GET PAST "N" NIPPLE AT 9465' PULL OUT
OF HOLE AND BREAK OUT BLIND BOX.
1.145 HRS - R.I.H. WITH 1.5" STEM.
1.225 HRS - PRTD AT 9569'
1.230 HRS - P.O.H. AND RIG OUT TOOL STRING.

Pitman

OPERATOR'S SIGNATURE

WORK PERFORMED BY: D. POITRAS / A. GRINDLAY OF EXPERTEST

WELL DATA:

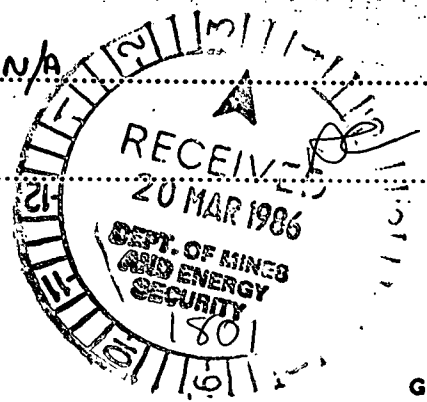
Tubing Size: 2 7/8" FWHP: — SIWHP: 929 PSI

Sub Surface S.V./Landing Nipple @ N/A S.S.D. @ N/A

"X" Nipple @ — "N"/"XN" Nipple @ 9465.52' other

Min I.D. 1.791" @ 9465.52' Packer @ N/A

Perforated Interval: 9532' - 9565' TIRRAWARRA

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba



**** FLY LAKE 2L ****

FLOWING PRESSURE GRADIENT

TEST DATE: 26/1/85

TOP PRESSURE ELEMENT 29322/3950				BOTTOM PRESSURE ELEMENT 22308/4100		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.1850	363.6	—	0.1830	380.9	—
1000	0.2210	435.7	0.0721	0.2095	436.8	0.0559
2000	0.2660	525.8	0.0901	0.2510	524.2	0.0874
3000	0.3210	636.0	0.1102	0.2925	611.6	0.0873
4000	0.3810	756.2	0.1202	0.3630	759.6	0.1481
5000	0.4465	887.5	0.1313	0.4260	891.7	0.1321
6000	0.5175	1029.8	0.1423	0.4940	1034.1	0.1423
7000	0.5940	1183.2	0.1534	0.5700	1192.9	0.1589
8000	0.6710	1337.7	0.1544	0.6435	1346.3	0.1534
9000	0.7650	1526.2	0.1886	0.7320	1530.9	0.1845
9549	0.8200	1636.6	0.2010	0.7860	1643.4	0.2049
9565	0.8230	1642.6	0.3763	0.7880	1647.6	0.2604
LUB	0.1960	385.6	—	0.1860	387.2	—

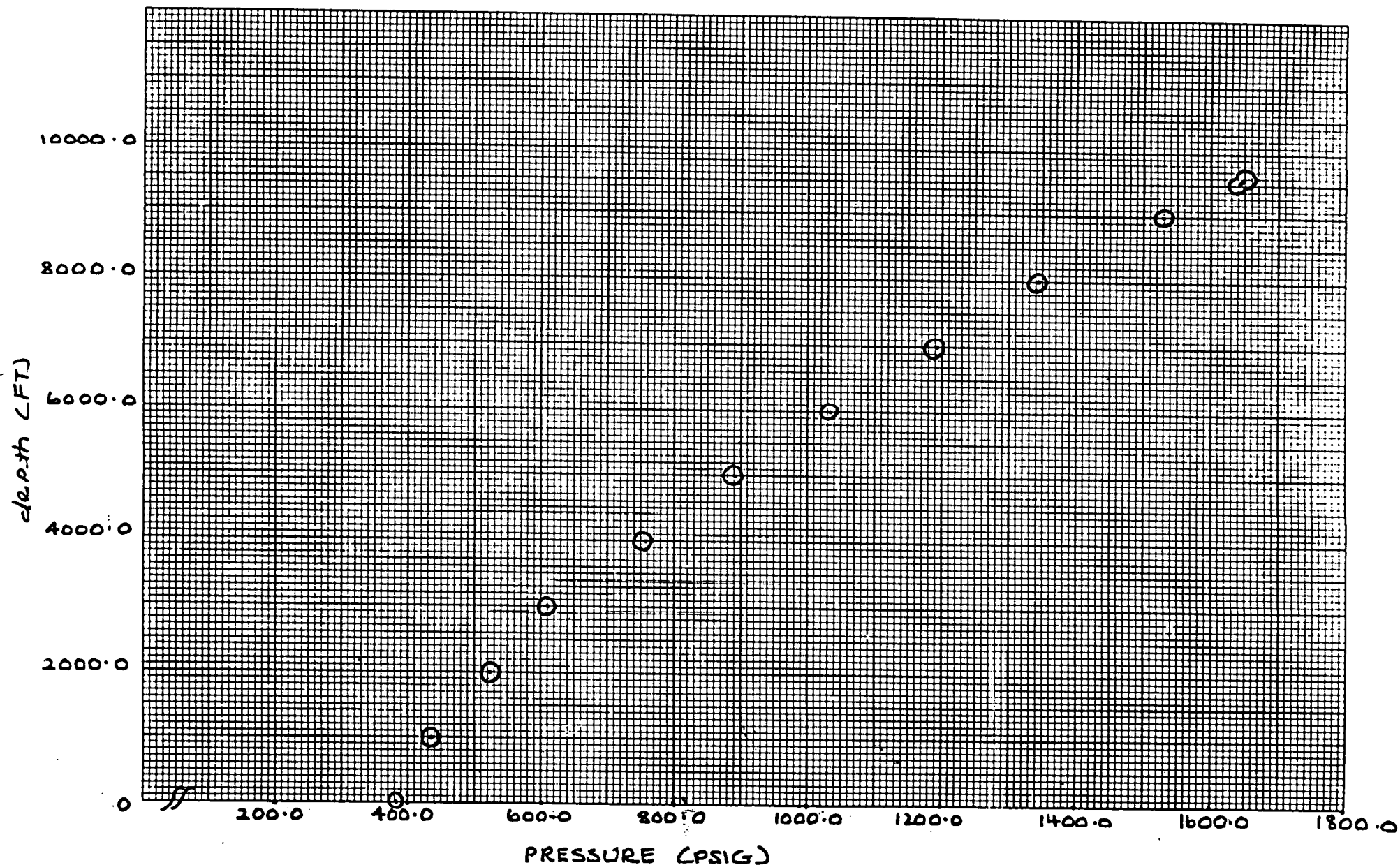
GENERAL REMARKS:

CHOKE SIZE - 18/64, GAS RATE - .362 MMSCF/D
OIL RATE - 201.6 BBL/D, WATER RATE - 30.24 BBL/D

DWT IN: 382
DWT OUT: 385
MAX BHT: 282 F

ELEMENT 29322/3950 CALIBRATED 9.1.85
ELEMENT 22308/4100 CALIBRATED 9.1.85

FLY LAKE # 2L - FLOWING PRESSURE GRADIENT - 26/1/86
ELEMENT # 22308/4100 (BOT)



FLY LAKE NO. 2 LOWERSUMMARY OF PRODUCTION TEST25TH - 26TH JANUARY, 1986FLOW TEST

25th - 26th January

25th January Opened well on 10/64" choke @ 1305 hours
 Increased choke to 13/64" @ 1330 hours
 Increased choke to 15/64" @ 1402 hours
 Increased choke to 18/64" @ 1420 hours
 Increased choke to 20/64" @ 1515 hours
 Increased choke to 22/64" @ 1535 hours
 Well Shut in @ 1550 hours
 Well BOL @ 1555 hours @ 22/64" choke
 Increased choke to 24/64" @ 1605 hours
 Cut choke to 20/64" @ 1805 hours
 Cut choke to 18/64" @ 1915 hours
 Flowed well on 18/64" choke for 19.75 hours

F.T.H.P.	=	374 psig
Separator pressure	=	83 psig
Gas flow rate	=	0.354 MMSCF/D) GOR = 1652 SCF/BBL
Oil production	=	214.32 BPD
Water production	=	37.23 BPD

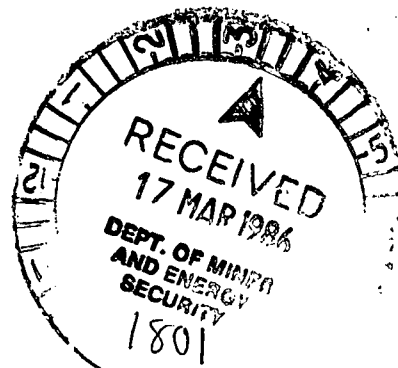
FLOWING RESERVOIR PRESSURE

Mid point of Perforations = 9549'KB

26th January Ran flowing gradient

Element #29322 @ 9549'KB = 1637 psig
 Element #22308 @ 9549'KB = 1643 psig
 Maximum flowing BHT = 282°F

WP:0926G (78)
 LA/LH
 11/2/1986



SANIOS LTD
OIL WELL TEST RESULTS

WELL NAME: FLY LAKE #2 LOWER

TYPE OF TEST PRODUCTION TEST

DATE: 25TH JANUARY, 1986

TESTED BY: D. POITRAS

METER RUN: 2.9"

DATE	TIME	WELLHEAD DATA			SUBSURFACE DATA		H.P. SEPARATOR DATA			L P. SEPARATOR DATA			FLUID PRODUCTION			REMARKS
		ANN. PSIG	TBG. PSIG	TEMP OF	EL#	EL#	P.F. PSIG	TEMP OF	GAS FLOW RATE MMSCFD	P.F. PSIG	TEMP OF	GAS FLOW RATE MMSCFD	OIL PROD. BPD	GOR SCF/ BBL	H ₂ O PROD BPD	
25/1	1030						Run In hole for Blind Box Run									
	1300	0	929				Pressure up to Choke									
	1305	0	929				Open well through separator to 10/64" choke									
	1315	0	770													
	1330	0	674				Open choke to 13/64"									
	1400	0	520	97			87	111	0.234							
	1402						Open choke to 15/64"									
	1420	0	550	97			Open choke to 18/64"									
	1430	0	575	100			Well slugging fluid									
	1445	0	540	100												
	1500	0	510	102			87	106	0.448				160.99	2783	20.12	
	1515	0	485	102			Open choke to 20/64"									
	1535	0	470	102			Open choke to 22/64"									
	1550						Shut well in to change O.P.									
	1555						Re-open well to 22/64" choke									
	1600	0	465	102												
	1605						Open choke to 24/64" choke									
	1700	0	392	111			149	112	0.676				342.11	1976	120.74	
	1800	0	345	1110												
	1805						Cut choke to 20/64"									

SANIOS LTD
OIL WELL TEST RESULTS

WELL NAME: FLY LAKE # 2 LOWER

TYPE OF TEST PRODUCTION TEST

DATE: 25th - 26th January, 1986

TESTED BY: D. POITRAS

METER RUN: 2.9"

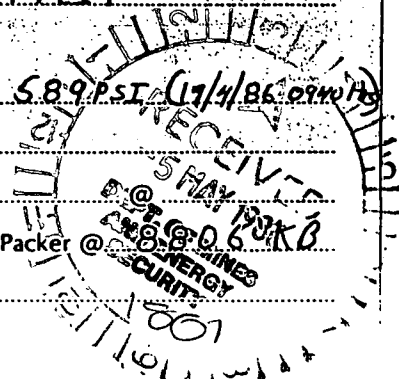
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WIRELINE REPORTCLIENT Santos Ltd WELL Fly Lake #2 LowerDATE April 18/86PROGRAMME Production Test Patchawarra Central FieldPURPOSE OF WORK To Ensure Tubing Is Clear.REPORT OF WORK PERFORMED R.I.H. With 5' Weight Bar Spang Jars
& 1.75" Blind Box Hit Obstruction At 9441' KB P.O.O.H.1300 Hrs R.I.H. With 1.5" Dewaxing Knife1320 Hrs Unable To pass Through 8806' KB (Approx. Depth of
Packer & Crossover) Due To length of Tool String1335 Hrs P.O.O.H.1350 Hrs R.I.H. With 1.5" Tool String1415 Hrs Hit Obstruction At 9447' KB Jar Through & Pull
Up To 9410' KB To Ensure Obstruction Is Clear1430 Hrs Hit Obstruction At 9472' KB Jar Through
& Tag P.B.T.D At 9561' KB1500 Hrs Pull Up To 9420' & Run In Hole To 9500' KB
To Ensure Obstruction Is Cleared Repeat
& Pull Out Of Hole.1525 Hrs Tool String In LubricatorRoy Turpin
Operator's SignatureWORKED PERFORMED BY R. Turpin OF Expertest

WELL DATA:

Tubing Size 2 7/8 & 2 3/8 FWHP 476 PSI SIWHP 589 PSI (17/4/86 0900 Hrs)

Subsurface S.V./Landing Nipple @ _____ S.S.D. @ _____

'X' Nipple @ _____ 'N'/'XN' Nipple @ 9465' KB Other _____Min. I.D. 1.79" @ 9465' Packer @ _____Perforated Interval: 9532' - 9565' KB



**** FLY LAKE 2L ****

FLOWING PRESSURE GRADIENT

TEST DATE: 20.04.86

DEPTH (FT.)	TOP PRESSURE ELEMENT 27616/5700			BOTTOM PRESSURE ELEMENT 27617/5615		
	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.1640	482.2	----	0.1650	476.6	----
1000	0.2040	597.5	0.1153	0.2040	590.0	0.1134
2000	0.2500	729.9	0.1324	0.2500	723.4	0.1335
3000	0.2980	867.8	0.1380	0.2980	862.5	0.1390
4000	0.3630	1054.4	0.1866	0.3620	1047.5	0.1850
5000	0.4190	1215.0	0.1606	0.4200	1214.9	0.1674
6000	0.4900	1418.5	0.2035	0.4900	1416.8	0.2019
7000	0.5700	1647.6	0.2291	0.5690	1644.5	0.2277
8000	0.6490	1873.9	0.2263	0.6480	1872.1	0.2276
8500	0.6900	1991.3	0.2349	0.6900	1993.1	0.2420
9000	0.7310	2108.7	0.2349	0.7280	2102.6	0.2190
9549	0.7770	2240.6	0.2401	0.7760	2240.9	0.2520
LUB	0.1660	487.9	----	0.1650	476.6	----

GENERAL REMARKS:

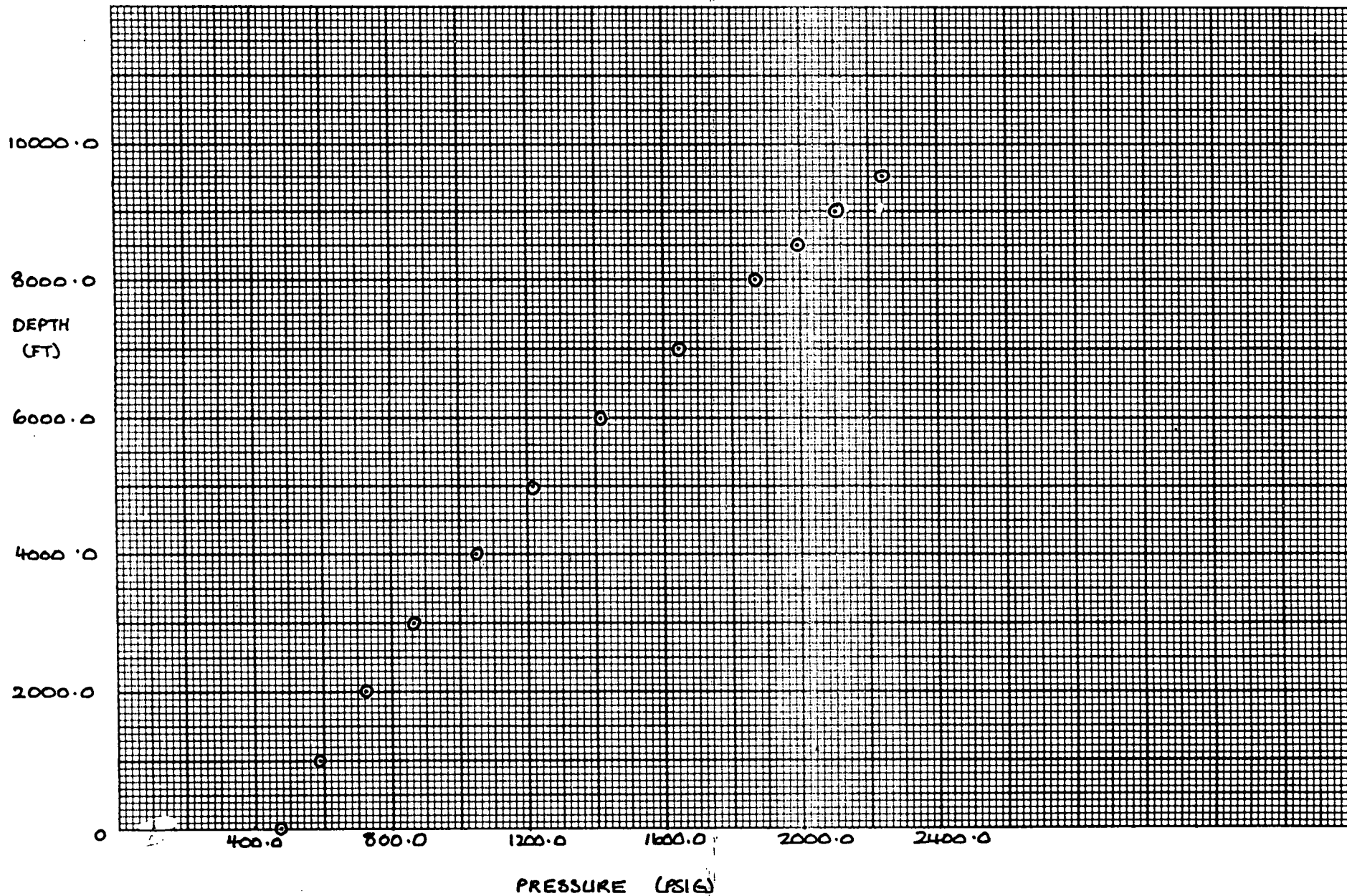
LOW RATES GAS=.143 MMSCF/D OIL=110.70 BBLS/D WATER = 10.08 BBLS/D
 I.O.R.=1291 A.P.I.= 52.4 CHOKE= 24/64 MAX.BHT=282F

DWT IN: 483
 DWT OUT: 480
 MAX BHT: 282F

ELEMENT 27616/5700 CALIBRATED 14.3.86
 ELEMENT 27617/5615 CALIBRATED 14.3.86

FLY LAKE # 2L - FLOWING PRESSURE GRADIENT - 20/4/86

ELEMENT # 27617/5700 (TOP)



WELL NAME: Fly Lake # 2 Lower.

STATIC GRADIENT SURVEY

DATE: 20/4/86

BOMB No. 1 DATA

ELEMENT No. 27616 / 5700 ELEMENT RANGE: 5700 PSI
RECORDER No. 14629 CLOCK DATA: 25510.43 Hrs
ENGAGE SYLUS: 1512 Hrs. DISENGAGE: 1725 Hrs.

BOMB No. 2 DATA

ELEMENT No. 27617... ELEMENT RANGE: 5615'
RECORDER No. 13029... CLOCK DATA: 2551113 Hrs
ENGAGE STYLUS: 1512 Hrs/DISENGAGE: 1725 Hrs.

LUBRICATOR DATA

PRESSURE WITH D.W.T.: 48.3 PSI
TIME PRESSURED: 15.25 Hrs.
TIME DEPRESSURED: 17.15 Hrs.

[illegible]

General Comments:

WELL FLY Lake # 2 Lower

OPERATOR R. Turpin



SANTOS LTD

WELL TEST DATA SHEET

DATE April 17/86

PAGE No. 1

DATE TIME	WELLHEAD					H.P. SEPARATOR					L.P. SEPARATOR					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBLSD	G.O.R. SCF/BBL	REMARKS	
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. =					L.P. METER RUN I.D. =									
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D					
			April 17/86 Production Test Patchowarra Central Field																	
0830	0	464	Well Flowing To Line. Line Pressure 450 PSI Confirmed By Production																	
0840			Operator Shut Well. Rig Wellhead Equipment For Test																	
0930	0	589	Pressure Test Lines																	
1000	0	589	Open Well To Flow 64/64 Choke Start Test .500" Orifice Plate																	
1100	0	400	Cut Choke To 12/64 .500																	
1135	0	420	Well Slugging. Increase Choke To 28/64																	
1200	0	450	89	28/64	0%	305	12	89	.500							.080	30.12	2656		
1250	0	530	91	Increase Choke To 64/64																
1310			Increase Back Pressure To Line Pressure																	
1400	0	514	91	64/64	Trace	420	9	90	.500							.080	90.60	883		
1600	0	540	88	64/64	0%	405	10	88	.500							.084	70.32	2789		
1800	0	504	82	64/64	0%	400	10	82	.500							.085	90.60	938		
2200	0	500	84	64/64		395	12	72	.500							.094	60.37	1557		
			April 18/86																	
0200	0	531	82	64/64	0%	385	20	70	.500							.119	50.34	2956		
0545			Back Pressure Valve Freezing. Go On Manual Valve																	
0600	0	471	68		N/A	355	16	59	.500							.104	50.28	2068		
0625			Adjust Back Pressure Valve.																	
1000	0	473	86	64/64	0%	404	16	82	.500							.110	60.36	2188		

G006

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WELL FLY Lake # 2 Lower

OPERATOR R. Turpin



SANTOS LTD

WELL TEST DATA SHEET

DATE Apr. 18/86

PAGE No. 2

DATE TIME	WELLHEAD					H.P. SEPARATOR					L.P. SEPARATOR					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBLSD	G.O.R. SCF/BBL	REMARKS	
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. =					L.P. METER RUN I.D. =									
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D					
			April 18/86 Production Test Patchawarra Central Field.																	
1400	0	468	86	6 1/4	0%	388	9	90	.500							.080	65.08	1446		
1800	0	557	83	"	0%	410	12	88	"							.093	45.30	2310		
2120				Change Orifice Plate To .375"																
2200	0	492	82	6 1/4	0%	395	34	68	.375							.089	65.40	1474		
2345	0	462		Well Slugging Fluid.																
0015				Change Orifice Plate To 1.250"																
0100				Change Orifice Plate To .500"																
0145				Change Orifice Plate To .750"																
0200	0	405	93	6 1/4	0%	400	22	82	.750							.284	347.16	1026		
0600	0	415	84	"	0%	405	8	61	.750							.178	160.98	1286		
0805				Decrease Back Pressure																
1000	0	355	102	6 1/4	0%	350	50	99	.750							.388	193.26	2667		
1400	0	385	102	"	"	370	35	102	.750							.321	241.51	1772		
1500	0	378	102	"	"	360	20	102	"							.242	120.72	2005		
1500				Cut Choke To 3 1/2 64. Put Well On By Pass																
1700	0	390		Cut Choke To 2 1/4 64																
2000	0	450		Trim Flow Through Separator Restart Test .500" Orifice Plate.																
2200	0	490	84	2 1/4	155	68	79	.500								.135	140.84	1219		
2400	0	476	84	2 1/4	170	60	79	.500								.132	110.72	1192		

G006

OPERATOR R. Turpin



SANTOS LTD

WELL TEST DATA SHEET

DATE April 20/86

PAGE No. 3

[illegible]

GOO6

CLIENT ... Santas LtD ...WELL Fly Lake #2 Lower

TELEPHONE (08) 354 0488 TELEFAX 087 183

Date April 17/86 Page No. 1Operator R. Turpin
 Orifice Fitting Type Agriels
 Gas Flow Recorder Type Ex. 6000
 Date of Last Calibration 16/3/86

 Orifice Fitting Size 2.900
 Pressure Range 0-30 MPA
 Differential Range 0-50 KPA

 Gas Specific Gravity 0.9490
 Perforated Interval 95.32-95.65
 Formation Tested Patchawarra

 Base Conditions = 14.73psi @ 60°F
☒ Flange Taps ☐ Pipe Taps

TIME DATA		Choke Size 64ths Inch	METER RUN DATA				$\sqrt{P_f \times H_w}$	$C' = F_u \times F_b \times F_g \times F_{tf} \times F_{pv} \times Y_2$							Flow Rate $Q = C' \times \sqrt{P_f \times H_w}$	
Date Time	Elapsed Time Hours		(Pf) Press P.S.I.A.	Diff (Hw) Inches Water	Temp. °F	Plate Size Inches		Fu	Fb	Fg	Ftf	Fpv	Y2	C'		
			April 17/86 Production Test Patchawarra Central Field													
1000			Open Well To Flow $64/64$ Choke .500" Orifice Plate.													
1100			Cut Choke To $19/64$													
1135			Increase Choke To $28/64$													
1200	2	$28/64$	320	12	82	.500	61.97	24	50.313	1.026	.9795	1.06	1.0000	1286.32	.080	
1250			Increase Choke To $64/64$													
1400	4	$64/64$	435	9	90	.500	62.57	24	50.313	1.026	.9723	1.068	1.0000	1286.50	.080	
1600	6	$64/64$	420	10	88	"	64.81	"	"	"	.9741	1.075	1.0000	1297.33	.084	
1800	8	$64/64$	415	10	82	"	64.42	"	"	"	.9795	1.084	1.0000	1315.44	.085	
2200	12	$64/64$	410	12	72	.500	70.14	24	50.313	1.026	.9887	1.094	1.0000	1340.05	.094	
			April 18/86													
0200	16	$64/64$	400	20	70	.500	89.44	24	50.313	1.026	.9905	1.085	1.0000	1331.44	.119	
0600	20	$64/64$	375	16	59	.500	77.46	24	50.313	1.026	1.0010	1.085	1.0000	1345.56	.104	
1000	24	$64/64$	419	16	82	.500	81.88	24	50.313	1.026	.9795	1.085	1.0000	1344.21	.110	
1400	28	$64/64$	403	9	90	.500	60.22	24	50.313	1.026	.9723	1.075	1.0000	1294.93	.080	
1800	32	$64/64$	425	12	88	.500	71.41	24	50.313	1.026	.9741	1.085	1.0000	1309.40	.093	
2120			Change Orifice Plate To .375"													
2200	36	$64/64$	410	34	68	.500	118.07	24	28.382	1.026	.9924	1.094	1.0000	758.76	.089	
			April 19/86													
0015			Change Orifice Plate To 1.250"													

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CLIENT ..S.antas...Ltd.....

WELL .F.ty..Lake #.2..Lower.



TELEPHONE 008 354 0488 TELEX AAB7183

Date April 19/86.. Page No.2.....

OperatorR..Turpin.....

 Orifice Fitting Type ..Orifice
 Gas Flow Recorder Type ..Fox box
 Date of Last Calibration ..16/3/86

 Orifice Fitting Size ..2.900"
 Pressure Range ..0-20 MPa
 Differential Range ..0-50 KPa

 Gas Specific Gravity ..9490
 Perforated Interval ..9532-9566
 Formation Tested ..Tiraparra

 Base Conditions = 14.73psi @60°F
☒ Flange Taps ☐ Pipe Taps

TIME DATA		Choke Size 64ths Inch	METER RUN DATA				$\sqrt{Pf \times Hw}$	$C' = Fu \times Fb \times Fg \times Ftf \times Fpv \times Y2$							Flow Rate $Q = C' \times \sqrt{Pf \times Hw}$	
Date Time	Elapsed Time Hours		(Pf) Press P.S.I.A.	Diff (Hw) Inches Water	Temp. °F	Plate Size Inches		Fu	Fb	Fg	Ftf	Fpv	Y2	C'		
			April 19/86 Production Test Patchawara Central Field													
0100			Change Orifice Plate To .500"													
0145			Change Orifice Plate To .750"													
0200	40	64/64	415	22	82	.750	95.55	24	113.70	1.026	.9795	1.085	1.0000	2957.45	.284	
0600	44	64/64	420	8	61	.750	57.96	24	113.70	1.026	.9990	1.10	1.0000	3076.64	.178	
1000	48	64/64	365	50	99	.750	135.04	24	113.70	1.026	.9645	1.062	1.0007	2869.79	.388	
1400	52	64/64	385	35	102	.750	116.08	24	113.70	1.026	.9619	1.067	1.0000	2763.10	.321	
1500	53	64/64	385	20	102	.750	87.75	24	113.70	1.026	.9619	1.067	1.0000	2763.10	.242	
1500			Put Well On By Pass. Cut Choke To 32/64													
2000			Restart Test 24/64 Choke .500" Plate													
2200	55	24/64	170	68	84	.500	107.52	24	50.313	1.026	.9822	1.027	1.0027	1253.08	.135	
2400	57	24/64	185	60	79	.500	105.36	24	50.313	1.026	.9822	1.034	1.0020	1260.74	.132	
			April 20/86													
0200	59	24/64	185	50	77	.500	96.18	24	50.313	1.026	.9840	1.034	1.0013	1262.17	.121	
0600	63	"	180	48	68	"	92.95	"	"	"	.9924	1.03	1.0013	1268.02	.117	
1000	67	"	155	80	82	"	111.35	"	"	"	.9795	1.03	1.0033	1254.04	.140	
1400	71	"	150	88	84	"	114.89	"	"	"	.9777	1.03	1.0033	1248.09	.143	
1800	75	24/64	190	70	82	.500	115.32	24	50.313	1.026	.9795	1.045	1.0020	1238.45	.142	

E11

WELL <u>Fly Lake #2 Lower</u>		 SANTOS LTD FLUID PRODUCTION SHEET					DATE <u>April 17/86</u> PAGE No. <u>1</u> OPERATOR <u>R. Turpin</u>				
TANK— CAPACITY <u>356 BBLs</u> SCALE 1" = 1.677 BBLs											

DATE TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP INS	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM. PROD. BBLs	OIL CONDENSATE GRAVITY °API60°F	TANK DIP INS	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM. PROD. BBLs	SALINITY PPM	
		April 17/86 Production Test Patchawarra Central Field.										
0900		3					0					Tare Dip.
1000		Open Well To Flow Through Separator. Start Test.										
1200	2	4.5	2.51	30.12	2.51	50.6	0	0	0	0		
1400	4	9	7.55	90.60	10.06	51.6	0	0	0	0		
1600	6	10.5	2.51	30.12	12.57	50.7	2	3.35	40.20	3.35		
1800	8	15	7.55	90.60	20.12	52.2	2	0	0	3.35		
2200	12	21	10.06	60.37	30.18	53.7	2	0	0	3.35		
		April 18/86										
0200	16	25	6.71	40.26	36.89	53.7	3	1.68	10.08	5.03		
0600	20	30	8.38	50.28	45.27	N/A	3	0	0	5.03		
1000	24	35	8.38	50.28	53.65	52	4	1.68	10.08	6.71		
1400	28	40.5	9.22	55.32	62.87	53.2	5	1.68	10.08	8.39		
1800	32	44.5	6.71	40.26	69.58	52.4	5.5	.84	5.04	9.23		
2200	36	50.5	10.06	60.36	79.64	53.7	6	.84	5.04	10.07		
		April 18/86										
0200	40	78	46.12	276.72	125.76	52.4	13	11.74	70.44	21.81		
0600	44	91.75	23.06	138.36	148.82	53.6	15.25	3.77	22.62	25.58		
1000	48	116	40.67	244.00	173.07	50.1	20	7.96	47.76	33.54		
1400	52	135	31.86	191.18	203.26	52.2	26	10.06	60.37	43.60		

*O/6927

5031

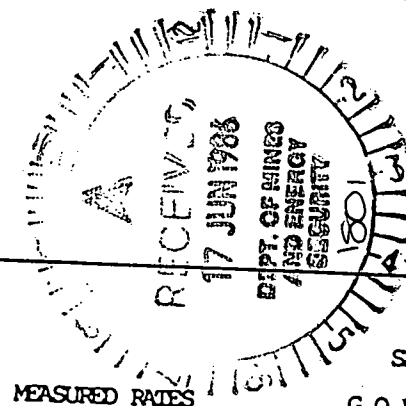
WELL <u>Fly Lake #2 Lower</u>		 SANTOS LTD FLUID PRODUCTION SHEET					DATE <u>April 19/86</u>	
TANK— CAPACITY <u>356 BBLs</u> SCALE <u>1" = 1.677 BBLs</u>							PAGE No. <u>2</u>	
							OPERATOR <u>R. Tuccin</u>	

DATE TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP INS	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM.PROD. BBLs	OIL CONDENSATE GRAVITY "API60F"	TANK DIP INS	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM.PROD. BBLs	SALINITY PPM	
		April 19/86 Production Test Patchawarra Central Field.										
1500	53	138	5.03	120.72	208.29	53.4	26	0	0	43.60		
1500		Cut Choke To 32/64. Put Well On By Pass To Pit										
2000		Restart Test. Trim Flow Through Separator 24/64 Choke										
2000		138					26					Tare Dip.
2200	55	143.5	9.22	110.72	217.51	52	27.5	2.51	30.12	46.11		
2400	57	149	9.22	110.72	226.73	53.4	27.5	0	0	46.11		
		April 20/86										
0200	59	156	11.74	140.88	238.47	52.6	28	.84	10.08	46.95		
0200		Switch Tanks										
0200	7	8.25					3					Tare Dip.
0600	63	20.50	20.54	123.24	259.01	51.3	5	3.35	20.10	50.30		
1000	67	32	19.28	115.68	278.29	51.8	7	3.35	20.10	53.65		
1400	71	43	18.45	110.70	269.74	52.4	8	1.68	10.08	55.33		
1800	75	50.5	12.58	75.48	309.32	51.6	11	5.03	30.18	60.36		
		Shut Well End of Test										

★O/6927

5031

PATCHAWARRA CENTRAL PRODUCTION TESTING
SUMMARY OF RESULTS



WELL	DATE	CHOKE SIZE	F B H P		SEPARATOR CONDITIONS		MEASURED RATES			SEPARATED G.O.R. SCF/BBL	
			PRESSURE psig	DEPTH 'KB	PRESSURE psig	TEMP °F	OIL BPD	GAS MMSCFD	WATER BPD	MEASURED	THEORETICAL
Moorari #6	8 - 10/4/86	30/64"	1310	9709	478	107	124.769	0.6719	44.273	5385	1970
Woolkina #1	12 - 14/4/86	12/64"	2526	9854	372	84	82.517	0.1476	0.842	1789	2030
Fly Lake #2L	18 - 20/4/86	24/64"	2241	9549	159	93	110.225	0.1282	18.295	1163	2380
Brolga #2L	20 - 22/4/86	8/64"	3065	9547	91	79	54.685	0.1500	7.437	2743	2470
Tirrawarra #9L	23/4- 1/5/86	34/64"	750	9663	32	106	123.965	0.5803	42.890	4681	N/A
Tirrawarra #16L	16 - 22/4/86	20/64"	1226	9690	91	79	122.533	0.2876	18.335	2347	2470
Fly Lake #6L	24/4- 4/5/86	18/64"	2036	9400	113	112	197.611	0.4250	103.259	2151	2630
Tirrawarra #4L	4 - 6/5/86	64/64"	1046	9716	324	120	364.244	0.9964	47.291	2736	2270
Tirrawarra #17	6 - 8/5/86	11/64"	2176	9698	96	67	40.248	0.1036	5.418	2574	2390
Tirrawarra #31	13 - 19/5/86	8/64"	3146	9670	319	84	65.688	0.1160	Nil	1766	2090

NOTE: Theoretical G.O.R. for Tirrawarra, Fly Lake, Brolga & Woolkina wells is calculated from the paper "Production with FBHP's below the Bubble Point Pressure in Tirrawarra Oil Field" written by Chris Tucker 8/11/85.
Theoretical G.O.R. for Moorari wells is calculated from a similar paper written by Chris Simm.

WP:2472G(27)

LA/jfs



WIRELINE REPORT

CLIENT SANTOS WELL FLY LAKE 2 Lower DATE 15/7/86
 PROGRAMME PATCHAWARRA CENTRAL FIELD PRODUCTION.
 PURPOSE OF WORK TO CLEAR TUBING OF ANY
OBSTRUCTION
 REPORT OF WORK PERFORMED 1300 HRS R.I.H WITH
5" STEM, SAG'S 1.75" BLIND BOX. LOCATE OBSTRUCTION
AT 9422 KB. BEAT THROUGH TO 9448 KB. P.O.H
1500 R.I.H WITH 5" STEM, SAG'S 3" STEM. RUN DOWN TO
9438 LOCATE OBSTRUCTION BEAT UP, DOWN COULD NOT
RUN THROUGH P.O.H. DE. PRESSURE. 1600 HRS.
WIN RUN CLEARING TOOLS ON 10/7/85.



WORKED PERFORMED BY A. Gillies OF EXPERTEST
 WELL DATA:
 Tubing Size 2 1/4 FWHP SIWHP
 Subsurface S.V./Landing Nipple @ S.S.D. @
 'X' Nipple @ 'N'/'XN' Nipple @ Other @
 Min. I.D. 1.95" @ 9465.52 Packer @
 Perforated Interval: 9532 - 9565
 DEPTH'S NOT INDICATED ON DOWNHOLE
 DIAGRAM

WELL: <i>FLY LAKE #21</i>						SANTOS LTD.										DATE: <i>17/12/86</i>				
TYPE OF TEST: <i>PRODUCTION TEST</i>						WELL TEST DATA SHEET										PAGE No: <i>2 ONE</i>				
DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS					
	CASING PSI	TUBING PSI	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS. H ₂ O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP INS.	TANK PROD BBLs	API GRAVITY @60 °F	TANK DIP INS.	TANK PROD BBLs	GAS FLOW RATE MMSCFD	OIL FLOW RATE BBLs/ DAY	WATER FLOW RATE BBLs/ DAY	TOTAL LIQUID FLOW RATE BBLs/ DAY	G.O.R. SCF/BBL	
<i>17/12/86</i>	<i>PATNAMARA CENTRAL FIELD PRODUCTION TESTING PROGRAMME</i>																			
<i>0725</i>	<i>PRESSURE TEST SEPARATOR & LINES</i>																			
<i>0745</i>	<i>Ø</i>	<i>905</i>	<i>-</i>	<i>1 1/4</i>																
	<i>OPEN WELL ON BYPASS OF SEPARATOR TO FLARE</i>																			
<i>0800</i>	<i>Ø</i>	<i>433</i>	<i>84</i>	<i>"</i>																
<i>0815</i>	<i>Ø</i>	<i>437</i>	<i>84</i>	<i>"</i>																
<i>0830</i>	<i>Ø</i>	<i>448</i>	<i>93</i>	<i>"</i>																
	<i>REPAIRS TO INSTRUMENT LINE ON SEPARATOR.</i>																			
<i>0900</i>	<i>Ø</i>	<i>459</i>	<i>95</i>	<i>"</i>																
	<i>TRIM FLOW THROUGH SEPARATOR</i>																			
<i>0930</i>	<i>Ø</i>	<i>456</i>	<i>95</i>	<i>"</i>																
<i>1000</i>	<i>Ø</i>	<i>459</i>	<i>95</i>	<i>"</i>		<i>150</i>	<i>60</i>	<i>64</i>	<i>.750</i>	<i>2</i>	<i>-</i>		<i>3</i>	<i>-</i>	<i>.275</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>TANK* TARE</i>	
<i>1200</i>	<i>Ø</i>	<i>460</i>	<i>96</i>	<i>"</i>		<i>205</i>	<i>45</i>	<i>69</i>	<i>"</i>	<i>2</i>	<i>-</i>		<i>3</i>	<i>-</i>	<i>.278</i>	<i>-</i>	<i>-</i>	<i>-</i>		
<i>1400</i>	<i>Ø</i>	<i>460</i>	<i>95</i>	<i>"</i>		<i>212</i>	<i>40</i>	<i>69</i>	<i>"</i>	<i>5</i>	<i>5.031</i>	<i>-</i>	<i>3.5</i>	<i>.838</i>	<i>.266</i>	<i>60.37</i>	<i>10.05</i>	<i>70.42</i>	<i>4406</i>	
<i>1600</i>	<i>Ø</i>	<i>458</i>	<i>95</i>	<i>"</i>		<i>215</i>	<i>40</i>	<i>73</i>	<i>"</i>	<i>6</i>	<i>-</i>		<i>4</i>	<i>.838</i>	<i>.267</i>	<i>-</i>	<i>10.05</i>	<i>10.05</i>	<i>-</i>	
<i>2000</i>	<i>Ø</i>	<i>448</i>	<i>93</i>	<i>"</i>		<i>210</i>	<i>40</i>	<i>79</i>	<i>"</i>	<i>6</i>	<i>1.677</i>	<i>-</i>	<i>4.5</i>	<i>.838</i>	<i>.265</i>	<i>10.06</i>	<i>5.028</i>	<i>15.09</i>	<i>26336</i>	
<i>2400</i>	<i>Ø</i>	<i>443</i>	<i>92</i>	<i>"</i>		<i>210</i>	<i>30</i>	<i>64</i>	<i>"</i>	<i>9</i>	<i>5.031</i>		<i>4.5</i>	<i>-</i>	<i>.231</i>	<i>30.18%</i>	<i>-</i>	<i>30.18%</i>	<i>7652</i>	
<i>2400</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>		<i>CHANGE TO .625 ORIFICE PLATE & REDUCE SEPARATOR PSIG</i>														
<i>18/12/86</i>																				
<i>0400</i>	<i>Ø</i>	<i>439</i>	<i>89</i>	<i>"</i>		<i>150</i>	<i>80</i>	<i>64</i>	<i>"</i>	<i>13.5</i>	<i>7.516</i>	<i>-</i>	<i>5</i>	<i>.838</i>	<i>.220</i>	<i>45.27</i>	<i>5.028</i>	<i>50.29</i>	<i>4859</i>	
<i>0800</i>	<i>Ø</i>	<i>439</i>	<i>89</i>	<i>"</i>		<i>180</i>	<i>80</i>	<i>68</i>	<i>"</i>	<i>19.5</i>	<i>10.062</i>	<i>-</i>	<i>5</i>	<i>-</i>	<i>.240</i>	<i>60.312</i>	<i>-</i>	<i>60.312</i>	<i>3975</i>	
<i>1200</i>	<i>Ø</i>	<i>448</i>	<i>95</i>	<i>"</i>		<i>185</i>	<i>80</i>	<i>71</i>	<i>"</i>	<i>25</i>	<i>9.224</i>	<i>-</i>	<i>5.25</i>	<i>.419</i>	<i>.243</i>	<i>55.344</i>	<i>2.516</i>	<i>57.858</i>	<i>4391</i>	
<i>1600</i>	<i>Ø</i>	<i>446</i>	<i>93</i>	<i>"</i>		<i>160</i>	<i>70</i>	<i>71</i>	<i>"</i>	<i>31.5</i>	<i>10.901</i>	<i>-</i>	<i>5.5</i>	<i>.419</i>	<i>.211</i>	<i>65.403</i>	<i>2.516</i>	<i>67.919</i>	<i>3226</i>	

OPERATOR: *Russell Camarero*

TYPE OF TEST: PROD TEST



SANTOS LTD.

WELL TEST DATA SHEET

DATE: 19/7/86

PAGE No: 2 (Two).....

[illegible]

OPERATOR.....

WELL: *FLY LAKE #2 LOWER*
 OPERATOR: *R. CAMPBELL*



SANTOS LTD
 WELL TEST DATA
 METRIC SUMMARY SHEET

DATE: *17/7/86*
 PAGE No: *1 (one)*

DATE TIME	WELLHEAD						FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M3/D	MMSCF/D	Mm3/D	G.O.R. CU/FT BBL	G.O.R. M3/M3
0745	0	0	905	6239	-	-								
1000	0	0	459	3164	95	35					.275	7.747		
1200	0	0	460	3171	95	35					.278	7.832		
1400	0	0	460	3171	95	35	60.37	9.598	10.05	1.597	.266	7.494	4406	
2000	0	0	448	3088	95	33.8	10.06	1.599	5.028	.799	.265	7.466	26336	
2400 <i>13/7/86</i>	0	0	443	3054	91	32.7	30.186	4.799			.231	6.508	7652	
0400	0	0	439	3026	89	31.6	45.27	7.197	5.028	.799	.220	6.198	4859	
0800	0	0	439	3026	89	31.6	60.382	9.598	-		.240	6.761	3975	
1200	0	0	448	3088	95	35	55.344	8.799	2.516	.400	.243	6.846	4391	
1600	0	0	446	3075	93	33.8	65.403	10.398	2.516	.400	.211	5.944	3226	
2000	0	0	445	3068	95	35	50.31	7.998	5.028	.799	.223	6.282	4432	
2400	0	0	444	3061	89	31.6	70.43	11.197	5.028	.799	.225	6.339	3194	

CONVERSION FACTORS:

• BBL'S. x 0.15899 = M³

• MMSCF x 28.174 = 10³ M³

• CU/FT PER BBL x 0.1773 = M³/M³

• PSI x 6.895 = KPA

• °C x 9 ÷ 5 + 32 = °F

WELL: FLY LAKE # Lower
 OPERATOR: R. CAMPBELL



SANTOS LTD
 WELL TEST DATA
 METRIC SUMMARY SHEET

DATE: 19/7/86
 PAGE No: Two 2

DATE TIME	WELLHEAD						FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M3/D	MMSCF/D	Mm3/D	G.O.R. CU/FT BBL	G.O.R. M3/M3
19/7/86 0400	0	0	443	3054	89	31.6	60.37	9.998	5.02	.799	.230	6.480	3809	
0800	0	0	443	3054	89	31.6	62.89	9.998	10.06	1.597	.233		3705	
1200	0	0	443	3054	91	32.7	70.43	11.197	10.06	1.597	.234		3322	
1600	0	0	444	3061	91	32.7	50.31	7.998	5.02	.799	.194		3856	
2000	0	0	449	3095	91	32.7	17.6	2.798	-		.191		10852	
2100	0	0	449	3095	89	31.6	30.19	4.799	20.11	3.197	.192		6559	

CONVERSION FACTORS:

• BBL'S x 0.15899 = M³

• MMSCF x 28.174 = 10³ M³

• CU/FT PER BBL x 0.1773 = M³/M³

• PSI x 6.895 = KPA

• °C x 9 ÷ 5 + 32 = °F

WELL FLY LAKE 2L

TANK - CAPACITY 356 BBLs
#02 SCALE 1" $\Rightarrow$ 1.677 BBLs

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 17/7/86

PAGE No. 1 (ONE)

OPERATOR RUSSELL CAMPBELL

DATE TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP INS	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM.PROD. BBLs	OIL CONDENSATE GRAVITY "API60F"	TANK DIP INS	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM.PROD. BBLs	SALINITY PPM	
17/7/86	PATCHAWARRA	CENTRA	FIELD	Production	Testing	PROGRAMME						
1000	0	2	-	-	-		3	-	-	-		TANK #02 TARE DIP.
1200	2	2	-	-	-		3	-	-	-		
1400	4	5	5.031	60.372	5.031		3.5	.838	10.056	.838		
1600	6	5	NIL	NIL	5.031		4	.838	10.056	1.676		
2000	10	6	1.677	10.062	6.708		4.5	.838	5.028	2.514		
2400	14	9	5.031	30.186	11.739		4.5	NIL	NIL	2.514		
18/7/86												
0400	18	13.5	7.546	45.279	19.285		5.0	.838	5.028	3.352		
0800	22	19.5	10.062	60.372	29.347		5	NIL	NIL	3.352		
1200	26	25	9.224	55.344	38.571		5.25	.419	2.516	3.739		
1600	30	31.5	10.901	65.403	49.472		5.5	.419	2.516	4.158		
2000	34	36.5	8.385	50.31	57.857		6	.838	5.028	4.996		
2400	38	43.5	11.739	70.434	69.596		6.5	.838	5.028	5.834		
19/7/86												
0400	42	49.5	10.062	60.372	79.658		7	.838	5.028	6.672		
0800	46	55.75	10.481	62.887	90.139		8	1.677	10.062	8.349		
1200	50	62.75	11.739	70.434	101.878		9	1.677	10.062	10.026		
1600	54	67.75	8.385	50.310	110.263		9.5	.838	5.028	10.864		
2000	58	69.5	2.935	17.609	113.198		9.5	-	-	10.864		

CLIENT SANTAS LTD.WELL FLY LAKE #2Date 17-7-86 Page No. 1 (ONE)Operator RUSSELL CAMPBELLOrifice Fitting Type DANIELS S&W
Gas Flow Recorder Type FOMBORD
Date of Last Calibration 10/6/86Orifice Fitting Size 3.068
Pressure Range 0-1500 PSI
Differential Range 0-200 INGas Specific Gravity 1.0535
Perforated Interval 0.992
Formation Tested 0.992Base Conditions = 14.73psi @ 60°F
☒ Flange Taps ☐ Pipe Taps

TIME DATA		Choke Size 64ths Inch	METER RUN DATA				$\sqrt{P_f \times H_w}$	$C' = F_u \times F_b \times F_g \times F_{tf} \times F_{pv} \times Y_2$							Flow Rate $Q = C' \times \sqrt{P_f \times H_w}$
Date Time	Elapsed Time Hours		(Pf) Press P.S.I.A.	Diff (Hw) Inches Water	Temp. °F	Plate Size Inches		F _u	F _b	F _g	F _{tf}	F _{pv}	Y ₂	C'	
17/7/86	PATCHAWARRA CENTRAL FIELD PRODUCTION TESTING PROGRAMME 1.0040														
1000	2 ⁰	12/64	164.73	60	64	.750	99.4173	24	113.56	.9943	.9962	1.0440	1.0024	2768.2408	.275
1200	4 ²	"	219.73	45	69	"	99.4377	"	"	"	.9915	1.0594	1.0014	2792.7661	.278
1400	6 ⁴	"	226.73	40	69	"	95.2323	"	"	"	.9915	1.0617	1.0012	2798.2290	.266
1600	8 ⁶	"	229.73	40	73	"	95.8603	"	"	"	.9877	1.0609	1.0012	2785.5410	.267
2000	12 ¹⁰	"	224.73	40	69	"	94.8114	"	"	"	.9915	1.0610	1.0012	2796.5387	.265
2400	16 ¹⁴	"	224.73	30	64	"	82.1091	"	"	"	.9962	1.0633	1.0009	2815.0528	.231
18/7/86															
0400	20 ¹⁸	"	164.73	80	64	.625	114.7972	"	78.625	"	.9962	1.0440	1.0032	1918.2431	.220
0800	24 ²²	"	194.73	80	68	"	124.8135	"	"	"	.9924	1.0519	1.0027	1924.4152	.240
1200	28 ²⁶	"	199.73	80	71	"	126.4057	"	"	"	.9896	1.0523	1.0027	1919.6440	.243
1600	32 ³⁰	"	174.73	70	71	"	110.5943	"	"	"	.9896	1.0449	1.0027	1906.0200	.211
2000	36 ³⁴	"	169.73	80	66	"	116.5264	"	"	"	.9943	1.0449	1.0031	1916.0609	.223
2400	40 ³⁸	"	179.73	75	60	"	116.1023	"	"	"	1.0000	1.0500	1.0028	1935.8121	.225
19/7/86															
0400	44 ⁴²	"	189.73	75	64	"	119.2885	"	"	"	.9962	1.0518	1.0026	1931.3534	.230
0800	48 ⁴⁶	"	194.73	75	68	"	120.8501	"	"	"	.9924	1.0519	1.0026	1924.0860	.233
1200	52 ⁵⁰	"	199.75	75	73	"	122.3918	"	"	"	.9877	1.0516	1.0025	1914.3973	.234
1600	56 ⁵⁴	"	214.73	50	71	"	101.1756	"	"	"	.9896	1.0539	1.0016	1920.4415	.194
2000	60 ⁵⁸	"	164.73	60	62	"	99.4173	"	"	"	.9981	1.0446	1.0024	1921.4802	.191

CLIENT SANTOS LTD.

WELL....FLY LAKE #2L.....



Date 19/7/86 Page No. 2 (Two)

Operator RUSSEL CAMPBELL

Orifice Fitting Type . . . DANIELS RNR
Gas Flow Recorder Type . . . FOXBORO
Date of Last Calibration . . . 10/6/86

Orifice Fitting Size . . . 3.068
Pressure Range . . . 0-1500 PSI
Differential Range . . . 0-200 H₂O

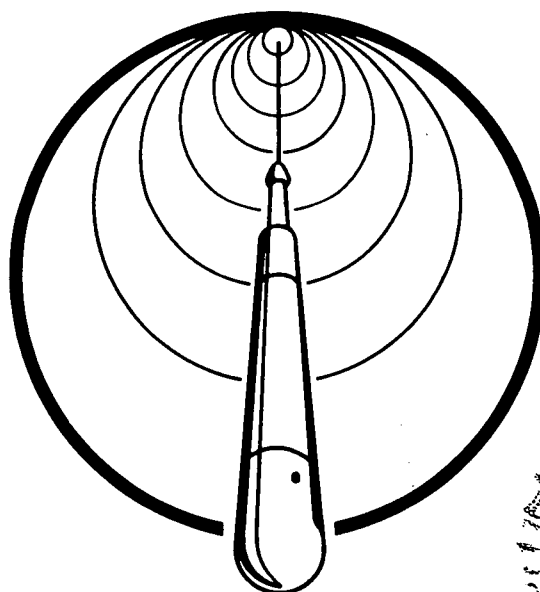
Gas Specific Gravity. ~~1.0535~~ 0.992
Perforated Interval.
Formation Tested

Base Conditions = 14.73psi @ 60°F
☒ Flange Taps ☐ Pipe Taps

[illegible]

EXPERTEST

ELECTRIC WIRELINE
SERVICE



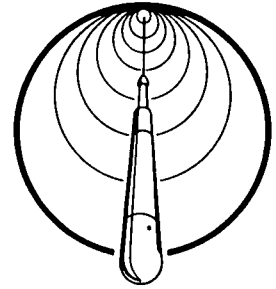
Electronic BHP/BHT Survey

Customer: SANTOS
 Location: FLY LAKE #2L
 Formation: TIRRAWARRA
 Date: 19th to 23rd JULY 1986

EXPERTEST

ELECTRIC WIRELINE SERVICES

208



CUSTOMER: SANTOS LTD
LOCATION: FLY LAKE # 2 LOWER
FORMATION: TIRRAWARRA
DATE: 19th JULY 1986

TIME	DESCRIPTION OF EVENTS
	AFTER RUNNING A 1.75" BLIND BOX AND A 1.85" GAUGE RING. IT WAS FOUND THAT NEITHER TOOL
	COULD PASS BEYOND 9438'KB DUE TO AN OBSTRUCTION IN THE TUBING. IT WAS THEN DECIDED TO
	GO AHEAD AND START THE PRODUCTION TEST AS PER PROGRAMME UNTIL A STABLE FLOW RATE WAS
	REACHED
19/07/88	
1000	RIG UP ELECTRIC LINE AND FUNCTION TEST SRO EQUIPMENT
1200	OPEN WELL TO LUBRICATOR AND PRESSURE TEST
1210	START SURVEY WITH A 15 MINUTE LUBRICATOR STOP
1225	RUN IN HOLE FOR FLOWING GRADIENT SURVEY
1238	1st STOP AT 1000'
1248	RUN IN HOLE
1252	2nd STOP AT 2000'
1302	RUN IN HOLE
1309	3rd STOP AT 3000'
1319	RUN IN HOLE
1325	4th STOP AT 4000'
1335	RUN IN HOLE
1342	5th STOP AT 5000'
1352	RUN IN HOLE
1357	6th STOP AT 6000'
1407	RUN IN HOLE
1413	7th STOP AT 7000'
1423	RUN IN HOLE
1429	8th STOP AT 8000'
1439	RUN IN HOLE
1443	9th STOP AT 8500'
1453	RUN IN HOLE
1457	10th STOP AT 9000'
1507	RUN IN HOLE
1511	11th STOP AT 9400'

ELECTRIC WIRELINE SERVICES

CUSTOMER: SANTOS
LOCATION: FLY LAKE #2L
FORMATION: TIRRAWARRA
DATE: 19th to 23rd JULY 1986

[illegible]

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: GRAD'T

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	12:10:00	9.017	440.17	0.00	68.33		START SURVEY
19/07/86	12:11:00	9.034	441.57	1.40	68.35		LUBRICATOR STOP
19/07/86	12:12:00	9.050	443.32	1.75	68.38		
19/07/86	12:13:00	9.067	444.71	1.38	68.57		DELTA P FROM
19/07/86	12:14:00	9.084	444.70	-.00	68.58		PREVIOUS READING
19/07/86	12:15:00	9.100	443.65	-1.05	68.58		
19/07/86	12:16:00	9.117	444.35	.70	68.59		DELTA T FROM START
19/07/86	12:17:00	9.134	444.70	.35	68.58		OF SURVEY
19/07/86	12:18:00	9.150	442.95	-1.75	68.58		
19/07/86	12:19:00	9.167	444.71	1.75	68.56		1 MIN SAMPLE RATE
19/07/86	12:20:00	9.184	444.70	-.00	68.58		
19/07/86	12:21:00	9.200	445.40	.70	68.63		
19/07/86	12:22:00	9.217	445.04	-.36	68.71		
19/07/86	12:23:00	9.234	444.69	-.36	68.77		
19/07/86	12:24:00	9.250	443.28	-1.40	68.80		
19/07/86	12:25:00	9.267	443.28	-.00	68.81	443	CSG = 0 PSI
19/07/86	12:36:00	9.450	537.74	94.46	122.10		R I H FOR FLOW GRAD
19/07/86	12:37:00	9.467	542.06	4.32	123.36		1st STOP @ 1000'
19/07/86	12:38:00	9.484	535.40	-6.66	123.36		
19/07/86	12:39:00	9.500	533.65	-1.75	123.38		
19/07/86	12:40:00	9.517	533.65	-.00	123.34		
19/07/86	12:41:00	9.534	539.26	5.61	123.37		
19/07/86	12:42:00	9.550	537.16	-2.10	123.39		
19/07/86	12:43:00	9.567	544.18	7.02	123.45		
19/07/86	12:44:00	9.584	558.26	14.08	123.97		
19/07/86	12:45:00	9.600	560.01	1.75	123.92		
19/07/86	12:46:00	9.617	555.77	-4.24	123.58		GRADIENT = 0.1125
19/07/86	12:52:00	9.717	671.17	115.40	144.84		RUN IN HOLE
19/07/86	12:53:00	9.734	666.69	-4.48	145.75		2nd STOP @ 2000'
19/07/86	12:54:00	9.750	662.87	-3.82	146.25		
19/07/86	12:55:00	9.767	654.12	-8.75	146.78		
19/07/86	12:56:00	9.784	652.09	-2.03	147.49		
19/07/86	12:57:00	9.800	654.55	2.47	147.48		
19/07/86	12:58:00	9.817	656.32	1.76	147.51		
19/07/86	12:59:00	9.834	657.70	1.38	147.28		
19/07/86	13:00:00	9.850	654.49	-3.21	146.92	445	CSG = 0 PSI
19/07/86	13:01:00	9.867	651.30	-3.19	146.78		
19/07/86	13:02:00	9.884	652.71	1.41	146.75		
19/07/86	13:03:00	9.900	652.00	-.70	146.77		GRADIENT = 0.0692
19/07/86	13:09:00	10.000	795.53	143.53	165.93		RUN IN HOLE
19/07/86	13:10:00	10.017	795.38	-.15	167.29		3rd STOP @ 3000'
19/07/86	13:11:00	10.034	796.14	.77	167.66		
19/07/86	13:12:00	10.050	801.84	5.69	167.77		
19/07/86	13:13:00	10.067	804.35	2.52	167.97		
19/07/86	13:14:00	10.084	803.66	-.69	168.08		
19/07/86	13:15:00	10.100	804.02	.36	168.09		
19/07/86	13:16:00	10.117	806.51	2.50	168.19		
19/07/86	13:17:00	10.134	806.18	-.34	168.30		
19/07/86	13:18:00	10.150	807.60	1.43	168.35		
19/07/86	13:19:00	10.167	811.17	3.56	168.44		GRADIENT = 0.1862

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: GRAD'T

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	13:25:00	10.267	951.80	140.63	187.21		RUN IN HOLE
19/07/86	13:26:00	10.284	945.74	-6.05	188.91		4th STOP @ 4000'
19/07/86	13:27:00	10.300	934.69	-11.06	189.00		
19/07/86	13:28:00	10.317	927.17	-7.52	188.91		
19/07/86	13:29:00	10.334	923.94	-3.22	188.86		
19/07/86	13:30:00	10.350	921.08	-2.86	188.84		
19/07/86	13:31:00	10.367	918.30	-2.78	189.16		
19/07/86	13:32:00	10.384	913.68	-4.62	189.24		
19/07/86	13:33:00	10.400	910.86	-2.83	189.37		
19/07/86	13:34:00	10.417	905.11	-5.74	189.20		
19/07/86	13:35:00	10.434	907.25	2.13	189.18		
19/07/86	13:36:00	10.450	905.45	-1.79	189.13		GRADIENT = 0.0943
19/07/86	13:42:00	10.550	1081.57	176.12	205.46		RUN IN HOLE
19/07/86	13:43:00	10.567	1085.08	3.51	206.29		5th STOP @ 5000'
19/07/86	13:44:00	10.584	1082.65	-2.43	206.55		
19/07/86	13:45:00	10.600	1076.92	-5.73	206.62		
19/07/86	13:46:00	10.617	1066.12	-10.80	206.61		
19/07/86	13:47:00	10.634	1060.05	-6.07	206.72		
19/07/86	13:48:00	10.650	1057.63	-2.42	207.02		
19/07/86	13:49:00	10.667	1048.62	-9.01	206.95		
19/07/86	13:50:00	10.684	1041.77	-6.85	206.88		
19/07/86	13:51:00	10.700	1041.05	-0.72	206.87		GRADIENT = 0.1389
19/07/86	13:57:00	10.800	1244.43	203.38	217.56		RUN IN HOLE
19/07/86	13:58:00	10.817	1240.49	-3.94	218.52		6th STOP @ 6000'
19/07/86	13:59:00	10.834	1245.04	4.55	218.96		
19/07/86	14:00:00	10.850	1252.43	7.39	219.26	444	CSG = 0 PSI
19/07/86	14:01:00	10.867	1257.54	5.11	219.31		
19/07/86	14:02:00	10.884	1259.01	1.47	219.34		
19/07/86	14:03:00	10.900	1254.64	-4.37	219.31		
19/07/86	14:04:00	10.917	1241.87	-12.77	219.17		
19/07/86	14:05:00	10.934	1243.03	1.16	219.34		
19/07/86	14:06:00	10.950	1241.65	-1.38	219.50		
19/07/86	14:07:00	10.967	1238.38	-3.26	219.51		GRADIENT = 0.1941
19/07/86	14:13:00	11.067	1405.97	167.59	230.89		RUN IN HOLE
19/07/86	14:14:00	11.084	1406.60	.63	231.36		7th STOP @ 7000'
19/07/86	14:15:00	11.100	1408.70	2.09	231.82		
19/07/86	14:16:00	11.117	1412.15	3.46	232.10		
19/07/86	14:17:00	11.134	1412.15	-0.00	232.09		
19/07/86	14:18:00	11.150	1417.63	5.48	232.06		
19/07/86	14:19:00	11.167	1421.68	4.05	232.09		
19/07/86	14:20:00	11.184	1426.81	5.14	232.10		
19/07/86	14:21:00	11.200	1429.36	2.55	232.07		
19/07/86	14:22:00	11.217	1432.25	2.89	231.99		
19/07/86	14:23:00	11.234	1433.73	1.48	232.02		GRADIENT = 0.1954
19/07/86	14:29:00	11.334	1664.83	231.10	246.36		RUN IN HOLE
19/07/86	14:30:00	11.350	1656.63	-8.20	247.27		8th STOP @ 8000'
19/07/86	14:31:00	11.367	1637.96	-18.67	247.58		
19/07/86	14:32:00	11.384	1612.17	-25.79	247.78		
19/07/86	14:33:00	11.400	1598.22	-13.95	247.93		
19/07/86	14:34:00	11.417	1592.04	-6.18	248.07		
19/07/86	14:35:00	11.434	1582.51	-9.54	248.17		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86 GAUGE 1 S/N: 63041
LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP GAUGE 2 S/N: 0
FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565' GAUGE DEPTH: GRAD'T
OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	14:36:00	11.450	1585.51	3.01	248.23		
19/07/86	14:37:00	11.467	1587.01	1.49	248.25		
19/07/86	14:38:00	11.484	1593.99	6.98	248.19		
19/07/86	14:39:00	11.500	1593.60	- .39	248.16		GRADIENT = 0.1599
19/07/86	14:43:00	11.567	1718.40	124.80	257.18		RUN IN HOLE
19/07/86	14:44:00	11.584	1721.12	2.72	257.68		9th STOP @ 8500'
19/07/86	14:45:00	11.600	1720.62	- .49	257.94		
19/07/86	14:46:00	11.617	1714.66	-5.97	257.94		
19/07/86	14:47:00	11.634	1719.03	4.38	257.84		
19/07/86	14:48:00	11.650	1725.84	6.81	257.95		
19/07/86	14:49:00	11.667	1722.61	-3.24	258.07		
19/07/86	14:50:00	11.684	1710.65	-11.96	258.03		
19/07/86	14:51:00	11.700	1684.15	-26.50	258.33		
19/07/86	14:52:00	11.717	1664.57	-19.57	258.07		
19/07/86	14:53:00	11.734	1665.68	1.11	258.06		GRADIENT = 0.1442
19/07/86	14:57:00	11.800	1767.61	101.93	266.53		RUN IN HOLE
19/07/86	14:58:00	11.817	1757.71	-9.90	267.03		10th STOP @ 9000'
19/07/86	14:59:00	11.834	1750.22	-7.49	267.33		
19/07/86	15:00:00	11.850	1744.51	-5.71	267.24	444	CSG = 0 PSI
19/07/86	15:01:00	11.867	1745.64	1.13	267.25		
19/07/86	15:02:00	11.884	1749.44	3.80	267.31		
19/07/86	15:03:00	11.900	1753.23	3.79	267.36		
19/07/86	15:04:00	11.917	1753.20	- .03	267.33		
19/07/86	15:05:00	11.934	1757.00	3.79	267.38		
19/07/86	15:06:00	11.950	1757.02	.03	267.41		
19/07/86	15:07:00	11.967	1761.17	4.15	267.44		GRADIENT = 0.1910
19/07/86	15:11:00	12.034	1863.70	102.53	270.57		RUN IN HOLE
19/07/86	15:12:00	12.050	1864.45	.75	270.57		ON BOTTOM
19/07/86	15:13:00	12.067	1865.82	1.37	270.77		HANG @ 9400'KB
19/07/86	15:14:00	12.084	1861.33	-4.48	270.79		RECORD F.B.H.P.
19/07/86	15:15:00	12.100	1854.16	-7.17	270.75		
19/07/86	15:16:00	12.117	1846.20	-7.96	270.69		
19/07/86	15:17:00	12.134	1843.91	-2.29	270.65		
19/07/86	15:18:00	12.150	1838.24	-5.67	270.62		
19/07/86	15:19:00	12.167	1834.46	-3.78	270.59		
19/07/86	15:20:00	12.184	1823.90	-10.56	270.54		
19/07/86	15:21:00	12.200	1817.83	-6.06	270.48		
19/07/86	15:22:00	12.217	1817.81	- .02	270.46		
19/07/86	15:23:00	12.234	1822.73	4.92	270.50		
19/07/86	15:24:00	12.250	1829.53	6.80	270.55		
19/07/86	15:25:00	12.267	1832.95	3.42	270.59		
19/07/86	15:26:00	12.284	1838.61	5.66	270.62		
19/07/86	15:27:00	12.300	1840.91	2.29	270.65		
19/07/86	15:28:00	12.317	1845.45	4.55	270.69		
19/07/86	15:29:00	12.334	1853.01	7.56	270.74		
19/07/86	15:30:00	12.350	1853.43	.42	270.77		
19/07/86	15:31:00	12.367	1855.69	2.26	270.77		
19/07/86	15:32:00	12.384	1852.70	-2.99	270.79		
19/07/86	15:33:00	12.400	1839.10	-13.60	270.71		
19/07/86	15:34:00	12.417	1830.88	-8.22	270.74		
19/07/86	15:35:00	12.434	1819.44	-11.44	270.57		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9400'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	15:36:00	3.533	1808.87	0.00	270.50		
19/07/86	15:37:00	3.550	1806.19	-2.69	270.45		
19/07/86	15:38:00	3.567	1795.29	-10.90	270.41		
19/07/86	15:39:00	3.583	1787.00	-8.29	270.36		
19/07/86	15:44:00	3.667	1776.21	-10.78	270.41		
19/07/86	15:45:00	3.683	1776.62	.41	270.44		
19/07/86	15:46:00	3.700	1783.03	6.41	270.48		
19/07/86	15:47:00	3.717	1787.59	4.56	270.54		
19/07/86	15:48:00	3.733	1788.40	.81	270.59		
19/07/86	15:49:00	3.750	1788.07	-.33	270.63		
19/07/86	15:50:00	3.767	1785.83	-2.24	270.63		
19/07/86	15:51:00	3.783	1776.44	-9.39	270.60		
19/07/86	15:52:00	3.800	1767.77	-8.67	270.53		
19/07/86	15:53:00	3.817	1768.12	.35	270.52		
19/07/86	15:54:00	3.833	1770.02	1.90	270.54		
19/07/86	15:55:00	3.850	1755.03	-14.99	270.50		
19/07/86	15:56:00	3.867	1748.60	-6.42	270.43		
19/07/86	15:57:00	3.883	1745.61	-3.00	270.42		
19/07/86	15:58:00	3.900	1738.48	-7.12	270.39		
19/07/86	15:59:00	3.917	1731.71	-6.78	270.34		
19/07/86	16:00:00	3.933	1730.21	-1.50	270.33	444	CSG = 0 PSI
19/07/86	16:01:00	3.950	1729.48	-.72	270.35		
19/07/86	16:02:00	3.967	1735.87	6.38	270.39		
19/07/86	16:03:00	3.983	1742.27	6.41	270.44		
19/07/86	16:04:00	4.000	1749.45	7.17	270.51		
19/07/86	16:05:00	4.017	1751.39	1.94	270.57		
19/07/86	16:06:00	4.033	1755.53	4.14	270.60		
19/07/86	16:07:00	4.050	1757.44	1.91	270.64		
19/07/86	16:08:00	4.067	1755.56	-1.88	270.63		
19/07/86	16:09:00	4.083	1759.68	4.12	270.64		
19/07/86	16:10:00	4.100	1764.58	4.89	270.67		
19/07/86	16:11:00	4.117	1764.59	.02	270.69		
19/07/86	16:12:00	4.133	1762.69	-1.90	270.66		
19/07/86	16:13:00	4.150	1754.80	-7.89	270.62		
19/07/86	16:14:00	4.167	1747.65	-7.16	270.57		
19/07/86	16:15:00	4.183	1739.36	-8.29	270.50		
19/07/86	16:16:00	4.200	1737.07	-2.29	270.46		
19/07/86	16:17:00	4.217	1736.32	-.76	270.45		
19/07/86	16:18:00	4.233	1732.19	-4.13	270.43		
19/07/86	16:19:00	4.250	1728.43	-3.76	270.40		
19/07/86	16:20:00	4.267	1732.15	3.72	270.39		
19/07/86	16:21:00	4.283	1739.29	7.14	270.44		
19/07/86	16:22:00	4.300	1744.57	5.29	270.49		
19/07/86	16:23:00	4.317	1748.36	3.79	270.54		
19/07/86	16:24:00	4.333	1751.37	3.01	270.56		
19/07/86	16:25:00	4.350	1743.92	-7.46	270.57		
19/07/86	16:26:00	4.367	1725.86	-18.05	270.44		
19/07/86	16:27:00	4.383	1716.45	-9.41	270.36		
19/07/86	16:28:00	4.400	1706.72	-9.73	270.31		
19/07/86	16:29:00	4.417	1693.24	-13.48	270.24		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9400'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	16:30:00	4.433	1677.88	-15.36	270.15		
19/07/86	16:31:00	4.450	1672.24	-5.65	270.09		
19/07/86	16:32:00	4.467	1677.84	5.61	270.12		
19/07/86	16:33:00	4.483	1684.62	6.78	270.19		
19/07/86	16:34:00	4.500	1689.54	4.91	270.26		
19/07/86	16:35:00	4.517	1684.74	-4.79	270.29		
19/07/86	16:36:00	4.533	1682.16	-2.58	270.31		
19/07/86	16:37:00	4.550	1676.58	-5.58	270.31		
19/07/86	16:38:00	4.567	1661.29	-15.29	270.26		
19/07/86	16:39:00	4.583	1653.06	-8.23	270.21		
19/07/86	16:40:00	4.600	1655.68	2.62	270.22		
19/07/86	16:41:00	4.617	1659.83	4.15	270.28		
19/07/86	16:42:00	4.633	1658.00	-1.83	270.30		
19/07/86	16:43:00	4.650	1652.05	-5.95	270.29		
19/07/86	16:44:00	4.667	1653.53	1.48	270.29		
19/07/86	16:45:00	4.683	1660.24	6.71	270.31		
19/07/86	16:46:00	4.700	1656.57	-3.67	270.35		
19/07/86	16:47:00	4.717	1652.07	-4.51	270.30		
19/07/86	16:48:00	4.733	1646.11	-5.95	270.29		
19/07/86	16:49:00	4.750	1650.92	4.81	270.28		
19/07/86	16:50:00	4.767	1656.16	5.24	270.32		
19/07/86	16:51:00	4.783	1664.45	8.29	270.42		
19/07/86	16:52:00	4.800	1672.30	7.85	270.46		
19/07/86	16:53:00	4.817	1674.96	2.66	270.51		
19/07/86	16:54:00	4.833	1675.69	.73	270.50		
19/07/86	16:55:00	4.850	1676.45	.76	270.51		
19/07/86	16:56:00	4.867	1677.21	.76	270.53		
19/07/86	16:57:00	4.883	1668.95	-8.26	270.45		
19/07/86	16:58:00	4.900	1663.69	-5.26	270.41		
19/07/86	16:59:00	4.917	1661.03	-2.67	270.35		
19/07/86	17:00:00	4.933	1659.89	-1.14	270.33	450	CSG = 0 PSI
19/07/86	17:01:00	4.950	1652.80	-7.09	270.30		
19/07/86	17:02:00	4.967	1649.77	-3.04	270.24		
19/07/86	17:03:00	4.983	1652.73	2.97	270.24		
19/07/86	17:04:00	5.000	1654.60	1.87	270.25		
19/07/86	17:05:00	5.017	1652.77	-1.84	270.27		
19/07/86	17:06:00	5.033	1643.77	-9.00	270.19		
19/07/86	17:07:00	5.050	1638.51	-5.26	270.14		
19/07/86	17:08:00	5.067	1629.19	-9.32	270.09		
19/07/86	17:09:00	5.083	1617.65	-11.53	270.05		
19/07/86	17:10:00	5.100	1604.23	-13.42	269.98		
19/07/86	17:11:00	5.117	1591.58	-12.65	269.92		
19/07/86	17:12:00	5.133	1586.76	-4.82	269.90		
19/07/86	17:13:00	5.150	1590.12	3.36	269.93		
19/07/86	17:14:00	5.167	1593.12	3.00	269.97		
19/07/86	17:15:00	5.183	1598.37	5.25	270.02		
19/07/86	17:16:00	5.200	1604.38	6.01	270.10		
19/07/86	17:17:00	5.217	1595.85	-8.52	270.09		
19/07/86	17:18:00	5.233	1583.24	-12.62	270.05		
19/07/86	17:19:00	5.250	1566.87	-16.36	269.96		
19/07/86	17:20:00	5.267	1564.62	-2.25	269.93		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9400'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	17:21:00	5.283	1565.76	1.14	269.96		
19/07/86	17:22:00	5.300	1567.64	1.88	269.98		
19/07/86	17:23:00	5.317	1574.34	6.70	270.03		
19/07/86	17:24:00	5.333	1581.05	6.72	270.08		
19/07/86	17:25:00	5.350	1589.28	8.22	270.16		
19/07/86	17:26:00	5.367	1596.00	6.73	270.21		
19/07/86	17:27:00	5.383	1598.64	2.63	270.25		
19/07/86	17:28:00	5.400	1593.83	-4.81	270.25		
19/07/86	17:29:00	5.417	1587.09	-6.74	270.18		
19/07/86	17:30:00	5.433	1587.06	-.03	270.16		
19/07/86	17:31:00	5.450	1587.79	.73	270.15		
19/07/86	17:32:00	5.467	1595.96	8.17	270.18		
19/07/86	17:33:00	5.483	1599.68	3.73	270.20		
19/07/86	17:34:00	5.500	1601.92	2.24	270.21		
19/07/86	17:35:00	5.517	1604.88	2.96	270.21		
19/07/86	17:36:00	5.533	1603.00	-1.88	270.18		
19/07/86	17:37:00	5.550	1610.37	7.38	270.16		
19/07/86	17:38:00	5.567	1611.15	.78	270.19	445	CSG = 0 PSI
19/07/86	17:39:00	5.583	1602.55	-8.60	270.12		
19/07/86	17:40:00	5.600	1596.93	-5.62	270.06		
19/07/86	17:41:00	5.617	1593.88	-3.05	269.99		DECREASE IN FBHP DUE TO GAUGE RESTRICTING FLOW PULL OUT OF HOLE 9380' HANG DEPTH
19/07/86	17:42:00	5.633	1594.65	.76	270.01		
19/07/86	17:43:00	5.650	1597.64	2.99	270.03		
19/07/86	17:44:00	5.667	1599.13	1.49	270.04		
19/07/86	17:50:00	5.767	1560.02	0.00	269.79		
19/07/86	17:51:00	5.783	1559.28	-.75	269.78		
19/07/86	17:52:00	5.800	1560.02	.74	269.79		
19/07/86	17:53:00	5.817	1562.26	2.24	269.81		
19/07/86	17:54:00	5.833	1563.40	1.14	269.83		
19/07/86	17:55:00	5.850	1557.13	-6.27	269.84		
19/07/86	17:56:00	5.867	1547.47	-9.66	269.78		
19/07/86	17:57:00	5.883	1547.82	.35	269.77		
19/07/86	17:58:00	5.900	1547.49	-.32	269.81		
19/07/86	17:59:00	5.917	1539.72	-7.77	269.79		
19/07/86	18:00:00	5.933	1538.20	-1.52	269.75	449	CSG = 0 PSI
19/07/86	18:01:00	5.950	1545.27	7.07	269.80		
19/07/86	18:02:00	5.967	1555.68	10.41	269.86		
19/07/86	18:03:00	5.983	1565.00	9.32	269.94		
19/07/86	18:04:00	6.000	1568.76	3.75	269.99		
19/07/86	18:05:00	6.017	1565.05	-3.70	269.99		
19/07/86	18:06:00	6.033	1567.61	2.56	269.96		
19/07/86	18:07:00	6.050	1571.35	3.73	270.00		
19/07/86	18:08:00	6.067	1568.78	-2.56	270.02		
19/07/86	18:09:00	6.083	1560.57	-8.21	269.94		
19/07/86	18:10:00	6.100	1563.49	2.91	269.91		
19/07/86	18:11:00	6.117	1570.91	7.43	269.94		
19/07/86	18:12:00	6.133	1580.22	9.30	270.00		
19/07/86	18:13:00	6.150	1585.44	5.23	270.04		
19/07/86	18:14:00	6.167	1579.11	-6.33	270.00		
19/07/86	18:15:00	6.183	1579.43	.32	269.96		
19/07/86	18:16:00	6.200	1586.83	7.40	269.96		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	18:17:00	6.217	1594.24	7.42	269.98		
19/07/86	18:18:00	6.233	1599.12	4.88	270.04		
19/07/86	18:19:00	6.250	1602.50	3.38	270.08		
19/07/86	18:20:00	6.267	1598.41	-4.09	270.06		
19/07/86	18:21:00	6.283	1590.14	-8.27	269.95		
19/07/86	18:22:00	6.300	1590.11	-.03	269.92		
19/07/86	18:23:00	6.317	1594.24	4.13	269.98		
19/07/86	18:24:00	6.333	1599.40	5.16	269.96		
19/07/86	18:25:00	6.350	1601.26	1.86	269.97		
19/07/86	18:26:00	6.367	1598.27	-2.99	269.94		
19/07/86	18:27:00	6.383	1591.92	-6.35	269.89		
19/07/86	18:28:00	6.400	1590.39	-1.53	269.84		
19/07/86	18:29:00	6.417	1595.57	5.18	269.85		
19/07/86	18:30:00	6.433	1598.56	2.99	269.87		
19/07/86	18:31:00	6.450	1601.90	3.34	269.88		
19/07/86	18:32:00	6.467	1603.02	1.12	269.89		
19/07/86	18:33:00	6.483	1611.94	8.92	269.92		
19/07/86	18:34:00	6.500	1617.90	5.96	269.95		
19/07/86	18:35:00	6.517	1624.27	6.37	270.01		
19/07/86	18:36:00	6.533	1626.14	1.87	270.02		
19/07/86	18:37:00	6.550	1617.91	-8.23	269.96		
19/07/86	18:38:00	6.567	1607.84	-10.07	269.89		
19/07/86	18:39:00	6.583	1602.22	-5.62	269.84		
19/07/86	18:40:00	6.600	1595.11	-7.11	269.77		
19/07/86	18:41:00	6.617	1595.45	.34	269.75		
19/07/86	18:42:00	6.633	1599.17	3.72	269.76		
19/07/86	18:43:00	6.650	1602.14	2.97	269.77		
19/07/86	18:44:00	6.667	1609.60	7.46	269.81		
19/07/86	18:45:00	6.683	1615.54	5.94	269.83		
19/07/86	18:46:00	6.700	1622.69	7.15	269.92		
19/07/86	18:47:00	6.717	1632.01	9.32	269.97		
19/07/86	18:48:00	6.733	1639.50	7.49	270.03		
19/07/86	18:49:00	6.750	1644.73	5.24	270.07		
19/07/86	18:50:00	6.767	1648.08	3.35	270.07		
19/07/86	18:51:00	6.783	1639.91	-8.17	270.06		
19/07/86	18:52:00	6.800	1630.91	-8.99	269.98		
19/07/86	18:53:00	6.817	1627.88	-3.03	269.93		
19/07/86	18:54:00	6.833	1630.82	2.94	269.91		
19/07/86	18:55:00	6.850	1637.90	7.08	269.93		
19/07/86	18:56:00	6.867	1644.25	6.36	269.98		
19/07/86	18:57:00	6.883	1653.19	8.94	270.00		
19/07/86	18:58:00	6.900	1660.29	7.10	270.04		
19/07/86	18:59:00	6.917	1669.99	9.70	270.08		
19/07/86	19:00:00	6.933	1678.20	8.21	270.11	450	CSG = 0 PSI
19/07/86	19:01:00	6.950	1680.83	2.62	270.13		
19/07/86	19:02:00	6.967	1678.21	-2.61	270.12		
19/07/86	19:03:00	6.983	1663.25	-14.97	270.03		
19/07/86	19:04:00	7.000	1655.33	-7.92	269.93		
19/07/86	19:05:00	7.017	1658.64	3.31	269.90		
19/07/86	19:06:00	7.033	1664.61	5.97	269.92		
19/07/86	19:07:00	7.050	1665.00	.39	269.94		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	19:08:00	7.067	1653.76	-11.24	269.86		
19/07/86	19:09:00	7.083	1651.83	-1.93	269.80		
19/07/86	19:10:00	7.100	1653.32	1.48	269.79		
19/07/86	19:11:00	7.117	1658.92	5.60	269.82		
19/07/86	19:12:00	7.133	1667.15	8.23	269.87		
19/07/86	19:13:00	7.150	1674.27	7.12	269.92		
19/07/86	19:14:00	7.167	1670.55	-3.72	269.92		
19/07/86	19:15:00	7.183	1664.95	-5.60	269.90		
19/07/86	19:16:00	7.200	1658.21	-6.74	269.85		
19/07/86	19:17:00	7.217	1644.77	-13.45	269.78		
19/07/86	19:18:00	7.233	1640.98	-3.78	269.72		
19/07/86	19:19:00	7.250	1645.08	4.10	269.73		
19/07/86	19:20:00	7.267	1651.08	6.00	269.78		
19/07/86	19:21:00	7.283	1657.44	6.37	269.83		
19/07/86	19:22:00	7.300	1657.47	.02	269.85		
19/07/86	19:23:00	7.317	1652.99	-4.48	269.83		
19/07/86	19:24:00	7.333	1649.64	-3.35	269.82		
19/07/86	19:25:00	7.350	1649.61	-.03	269.80		
19/07/86	19:26:00	7.367	1651.11	1.50	269.81		
19/07/86	19:27:00	7.383	1657.47	6.36	269.85		
19/07/86	19:28:00	7.400	1663.09	5.63	269.90		
19/07/86	19:29:00	7.417	1671.71	8.62	269.96		
19/07/86	19:30:00	7.433	1680.31	8.60	270.00		
19/07/86	19:31:00	7.450	1681.83	1.52	270.03		
19/07/86	19:32:00	7.467	1672.89	-8.94	270.02		
19/07/86	19:33:00	7.483	1672.46	-.43	269.97		
19/07/86	19:34:00	7.500	1678.78	6.31	269.96		
19/07/86	19:35:00	7.517	1687.40	8.62	270.02		
19/07/86	19:36:00	7.533	1693.40	6.00	270.07		
19/07/86	19:37:00	7.550	1699.76	6.35	270.09		
19/07/86	19:38:00	7.567	1706.48	6.73	270.11		
19/07/86	19:39:00	7.583	1708.01	1.53	270.15		
19/07/86	19:40:00	7.600	1702.75	-5.26	270.11		
19/07/86	19:41:00	7.617	1688.87	-13.88	270.01		
19/07/86	19:42:00	7.633	1674.60	-14.28	269.89		
19/07/86	19:43:00	7.650	1666.32	-8.28	269.80		
19/07/86	19:44:00	7.667	1667.04	.72	269.78		
19/07/86	19:45:00	7.683	1671.88	4.84	269.79		
19/07/86	19:46:00	7.700	1677.48	5.60	269.81		
19/07/86	19:47:00	7.717	1679.35	1.87	269.82		
19/07/86	19:48:00	7.733	1680.10	.75	269.83		
19/07/86	19:49:00	7.750	1683.47	3.37	269.85		
19/07/86	19:50:00	7.767	1689.51	6.04	269.92		
19/07/86	19:51:00	7.783	1698.10	8.59	269.95		
19/07/86	19:52:00	7.800	1703.37	5.27	270.00		
19/07/86	19:53:00	7.817	1706.02	2.65	270.04		
19/07/86	19:54:00	7.833	1707.90	1.88	270.05		
19/07/86	19:55:00	7.850	1698.58	-9.32	270.04		
19/07/86	19:56:00	7.867	1690.64	-7.94	269.94		
19/07/86	19:57:00	7.883	1688.01	-2.63	269.91		
19/07/86	19:58:00	7.900	1691.02	3.01	269.94		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS: FLOW ON 12/64ths CHOKE

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	19:59:00	7.917	1695.48	4.46	269.94		
19/07/86	20:00:00	7.933	1700.35	4.87	269.96	449	CSG = 0 PSI
19/07/86	20:01:00	7.950	1707.47	7.12	270.00		
19/07/86	20:02:00	7.967	1710.85	3.39	270.03		
19/07/86	20:03:00	7.983	1717.58	6.73	270.05		
19/07/86	20:04:00	8.000	1714.25	-3.33	270.07		
19/07/86	20:05:00	8.017	1704.47	-9.78	269.99		
19/07/86	20:06:00	8.033	1697.33	-7.14	269.93		
19/07/86	20:07:00	8.050	1699.15	1.82	269.90		
19/07/86	20:08:00	8.067	1701.03	1.88	269.91		
19/07/86	20:09:00	8.083	1694.71	-6.32	269.91		
19/07/86	20:10:00	8.100	1683.10	-11.60	269.85		
19/07/86	20:11:00	8.117	1681.92	-1.18	269.80		
19/07/86	20:12:00	8.133	1688.62	6.70	269.80		
19/07/86	20:13:00	8.150	1695.37	6.75	269.85		
19/07/86	20:14:00	8.167	1696.16	.79	269.89		
19/07/86	20:15:00	8.183	1698.42	2.26	269.91		
19/07/86	20:16:00	8.200	1701.04	2.61	269.92		
19/07/86	20:17:00	8.217	1702.91	1.88	269.93		
19/07/86	20:18:00	8.233	1705.94	3.03	269.97		
19/07/86	20:19:00	8.250	1712.69	6.75	270.01		
19/07/86	20:20:00	8.267	1716.83	4.14	270.05		
19/07/86	20:21:00	8.283	1713.49	-3.34	270.06		
19/07/86	20:22:00	8.300	1710.84	-2.65	270.02		
19/07/86	20:23:00	8.317	1716.43	5.59	270.03		
19/07/86	20:24:00	8.333	1723.92	7.49	270.06		
19/07/86	20:25:00	8.350	1728.44	4.52	270.10		
19/07/86	20:26:00	8.367	1731.44	3.00	270.11		
19/07/86	20:27:00	8.383	1736.67	5.23	270.12		
19/07/86	20:28:00	8.400	1743.42	6.75	270.15		
19/07/86	20:29:00	8.417	1749.80	6.39	270.18		
19/07/86	20:30:00	8.433	1753.19	3.39	270.21		
19/07/86	20:31:00	8.450	1754.32	1.13	270.21		
19/07/86	20:32:00	8.467	1750.17	-4.14	270.18		
19/07/86	20:33:00	8.483	1742.25	-7.92	270.11		
19/07/86	20:34:00	8.500	1735.45	-6.80	270.04		
19/07/86	20:35:00	8.517	1730.91	-4.54	269.98		
19/07/86	20:36:00	8.533	1728.64	-2.26	269.95		
19/07/86	20:37:00	8.550	1733.87	5.22	269.96		
19/07/86	20:38:00	8.567	1737.24	3.37	269.97		
19/07/86	20:39:00	8.583	1732.74	-4.49	269.96		
19/07/86	20:40:00	8.600	1720.37	-12.38	269.89		
19/07/86	20:41:00	8.617	1718.82	-1.55	269.84		
19/07/86	20:42:00	8.633	1724.07	5.25	269.87		
19/07/86	20:43:00	8.650	1730.44	6.38	269.90		
19/07/86	20:44:00	8.667	1738.34	7.90	269.95		
19/07/86	20:45:00	8.683	1747.00	8.66	270.02		
19/07/86	20:46:00	8.700	1754.15	7.15	270.07		
19/07/86	20:47:00	8.717	1757.55	3.40	270.11		
19/07/86	20:48:00	8.733	1765.43	7.88	270.14		
19/07/86	20:49:00	8.750	1771.49	6.06	270.21		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	20:50:00	8.767	1777.12	0.00	270.23		
19/07/86	20:51:00	8.783	1780.51	3.39	270.25		
19/07/86	20:52:00	8.800	1781.65	1.14	270.27		
19/07/86	20:53:00	8.817	1776.77	-4.88	270.25		
19/07/86	20:54:00	8.833	1767.34	-9.43	270.18		
19/07/86	20:55:00	8.850	1759.80	-7.54	270.12		DEPTH=9380'KB
19/07/86	20:56:00	8.867	1759.77	-.04	270.09		
19/07/86	20:57:00	8.883	1761.25	1.48	270.08		
19/07/86	20:58:00	8.900	1763.47	2.22	270.06	449	CSG = 0 PSI
19/07/86	20:59:00	8.917	1768.71	5.24	270.07		GRADIENT = 0.0198
19/07/86	21:00:00	0.000	1768.71	.00	270.09		SHUT IN WELL FOR
19/07/86	21:00:10	.003	1771.80	3.09	270.09		BUILD UP
19/07/86	21:00:20	.006	1771.94	3.23	270.09		
19/07/86	21:00:30	.008	1772.36	3.65	270.09		DELTA P FROM
19/07/86	21:00:40	.011	1772.36	3.65	270.10		SHUT IN
19/07/86	21:00:50	.014	1774.15	5.44	270.10		
19/07/86	21:01:00	.017	1775.62	6.91	270.10		DELTA T FROM
19/07/86	21:01:10	.019	1777.54	8.83	270.10		SHUT IN
19/07/86	21:01:20	.022	1777.54	8.83	270.12		
19/07/86	21:01:30	.025	1782.53	13.82	270.12		10 SEC SAMPLE RATE
19/07/86	21:01:40	.028	1784.65	15.94	270.12		
19/07/86	21:02:00	.033	1792.53	23.82	270.12		
19/07/86	21:02:20	.039	1792.53	23.82	270.20		
19/07/86	21:02:30	.042	1798.28	29.57	270.20		
19/07/86	21:02:40	.044	1800.31	31.60	270.20		
19/07/86	21:02:50	.047	1802.79	34.08	270.20		
19/07/86	21:03:00	.050	1802.79	34.08	270.26		
19/07/86	21:03:10	.053	1808.11	39.40	270.26		
19/07/86	21:03:20	.056	1810.39	41.68	270.26		
19/07/86	21:03:30	.058	1812.56	43.85	270.26		
19/07/86	21:03:40	.061	1812.56	43.85	270.31		
19/07/86	21:03:50	.064	1818.38	49.67	270.31		
19/07/86	21:04:00	.067	1820.63	51.92	270.31		
19/07/86	21:04:10	.069	1823.10	54.39	270.31		
19/07/86	21:04:20	.072	1823.10	54.39	270.36		
19/07/86	21:04:30	.075	1828.64	59.93	270.36		
19/07/86	21:04:40	.078	1830.23	61.52	270.36		
19/07/86	21:06:00	.100	1840.78	72.07	270.36		30 SEC SAMPLE RATE
19/07/86	21:06:30	.108	1858.71	90.00	270.48		
19/07/86	21:07:00	.117	1864.06	95.35	270.56		
19/07/86	21:07:30	.125	1872.82	104.11	270.65		
19/07/86	21:08:00	.133	1876.65	107.94	270.71		
19/07/86	21:08:30	.142	1884.64	115.93	270.79		
19/07/86	21:09:00	.150	1891.13	122.42	270.87		
19/07/86	21:09:30	.158	1902.68	133.97	270.78		
19/07/86	21:10:00	.167	1905.31	136.60	270.77	514	CSG = 0 PSI
19/07/86	21:10:30	.175	1911.72	143.01	270.79		
19/07/86	21:11:00	.183	1915.51	146.80	270.80		
19/07/86	21:11:30	.192	1919.28	150.57	270.81		
19/07/86	21:12:00	.200	1924.58	155.87	270.82		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	21:12:30	.208	1931.38	162.67	270.84		
19/07/86	21:13:00	.217	1935.56	166.85	270.86		
19/07/86	21:13:30	.225	1941.97	173.26	270.87		
19/07/86	21:14:00	.233	1948.41	179.70	270.89		
19/07/86	21:14:30	.242	1952.59	183.88	270.91		
19/07/86	21:15:00	.250	1958.27	189.56	270.93		
19/07/86	21:15:30	.258	1963.94	195.23	270.93		
19/07/86	21:16:00	.267	1967.75	199.04	270.96		
19/07/86	21:16:30	.275	1974.56	205.85	270.96		
19/07/86	21:17:00	.283	1978.34	209.63	270.97		
19/07/86	21:17:30	.292	1982.88	214.17	270.98		
19/07/86	21:18:00	.300	1989.33	220.62	270.99		
19/07/86	21:18:30	.308	1992.72	224.01	270.98		
19/07/86	21:19:00	.317	1997.68	228.97	271.02		
19/07/86	21:19:30	.325	2003.75	235.04	271.03		
19/07/86	21:20:00	.333	2007.91	239.20	271.02	565	CSG = 0 PSI
19/07/86	21:20:30	.342	2012.46	243.75	271.03		
19/07/86	21:21:00	.350	2016.25	247.54	271.03		
19/07/86	21:21:30	.358	2021.16	252.45	271.02		
19/07/86	21:22:00	.367	2026.46	257.75	271.02		
19/07/86	21:22:30	.375	2029.47	260.76	271.00		
19/07/86	21:23:00	.383	2033.30	264.59	271.03		
19/07/86	21:23:30	.392	2038.21	269.50	271.02		
19/07/86	21:24:00	.400	2042.69	273.98	270.96		
19/07/86	21:24:30	.408	2047.63	278.92	270.97		
19/07/86	21:25:00	.417	2051.10	282.39	271.01		
19/07/86	21:25:30	.425	2055.33	286.62	271.06		
19/07/86	21:26:00	.433	2058.79	290.08	271.10		
19/07/86	21:26:30	.442	2061.32	292.61	270.99		
19/07/86	21:27:00	.450	2065.52	296.81	271.02		
19/07/86	21:27:30	.458	2070.14	301.43	271.06		
19/07/86	21:28:00	.467	2073.99	305.28	271.11		
19/07/86	21:28:30	.475	2077.46	308.75	271.15		
19/07/86	21:29:00	.483	2080.17	311.46	271.19		
19/07/86	21:29:30	.492	2084.40	315.69	271.23		
19/07/86	21:30:00	.500	2087.87	319.16	271.27	599	CSG = 0 PSI
19/07/86	21:31:00	.517	2095.19	326.48	271.34		
19/07/86	21:32:00	.533	2101.76	333.05	271.42		1 MIN SAMPLE RATE
19/07/86	21:33:00	.550	2106.79	338.08	271.49		
19/07/86	21:34:00	.567	2112.37	343.66	271.39		
19/07/86	21:35:00	.583	2119.56	350.85	271.36		
19/07/86	21:36:00	.600	2126.00	357.29	271.33		
19/07/86	21:37:00	.617	2130.18	361.47	271.32		
19/07/86	21:38:00	.633	2135.13	366.42	271.32		
19/07/86	21:39:00	.650	2142.36	373.65	271.31		
19/07/86	21:40:00	.667	2148.07	379.36	271.30	630	CSG = 0 PSI
19/07/86	21:41:00	.683	2151.50	382.79	271.29		
19/07/86	21:42:00	.700	2157.21	388.50	271.29		
19/07/86	21:43:00	.717	2163.34	394.63	271.30		
19/07/86	21:44:00	.733	2168.28	399.57	271.28		
19/07/86	21:45:00	.750	2171.73	403.02	271.30		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	21:46:00	.767	2177.83	409.12	271.29		
19/07/86	21:47:00	.783	2181.68	412.97	271.32		
19/07/86	21:48:00	.800	2187.79	419.08	271.31		
19/07/86	21:49:00	.817	2190.84	422.13	271.31		
19/07/86	21:50:00	.833	2195.05	426.34	271.31	655	CSG = 0 PSI
19/07/86	21:51:00	.850	2201.17	432.46	271.31		
19/07/86	21:52:00	.867	2206.14	437.43	271.31		
19/07/86	21:53:00	.883	2209.58	440.87	271.31		
19/07/86	21:54:00	.900	2213.79	445.08	271.30		
19/07/86	21:55:00	.917	2217.64	448.93	271.32		
19/07/86	21:56:00	.933	2222.61	453.90	271.32		
19/07/86	21:57:00	.950	2226.06	457.35	271.32		
19/07/86	21:58:00	.967	2231.04	462.33	271.33		
19/07/86	21:59:00	.983	2235.66	466.95	271.34		
19/07/86	22:00:00	1.000	2239.49	470.78	271.34	679	CSG = 0 PSI
19/07/86	22:01:00	1.017	2242.93	474.22	271.34		
19/07/86	22:02:00	1.033	2246.77	478.06	271.33		
19/07/86	22:03:00	1.050	2250.97	482.26	271.33		
19/07/86	22:04:00	1.067	2255.56	486.85	271.31		
19/07/86	22:05:00	1.083	2258.97	490.26	271.28		
19/07/86	22:06:00	1.100	2262.10	493.39	271.33		
19/07/86	22:07:00	1.117	2267.14	498.43	271.37		
19/07/86	22:08:00	1.133	2270.26	501.55	271.41		
19/07/86	22:09:00	1.150	2273.66	504.95	271.37		
19/07/86	22:10:00	1.167	2277.48	508.77	271.35		
19/07/86	22:11:00	1.183	2281.72	513.01	271.36		
19/07/86	22:12:00	1.200	2284.80	516.09	271.37		
19/07/86	22:13:00	1.217	2287.88	519.17	271.37		
19/07/86	22:14:00	1.233	2291.33	522.62	271.37		
19/07/86	22:15:00	1.250	2295.55	526.84	271.36	707	CSG = 0 PSI
19/07/86	22:16:00	1.267	2298.62	529.91	271.36		
19/07/86	22:17:00	1.283	2301.29	532.58	271.34		
19/07/86	22:18:00	1.300	2303.98	535.27	271.34		
19/07/86	22:19:00	1.317	2307.82	539.11	271.34		
19/07/86	22:20:00	1.333	2308.98	540.27	271.34		
19/07/86	22:21:00	1.350	2312.05	543.34	271.34		
19/07/86	22:22:00	1.367	2315.13	546.42	271.33		
19/07/86	22:23:00	1.383	2319.75	551.04	271.34		
19/07/86	22:24:00	1.400	2322.04	553.33	271.33		
19/07/86	22:25:00	1.417	2323.98	555.27	271.33		
19/07/86	22:26:00	1.433	2326.31	557.60	271.35		
19/07/86	22:27:00	1.450	2329.76	561.05	271.34		
19/07/86	22:28:00	1.467	2333.61	564.90	271.34		
19/07/86	22:29:00	1.483	2335.15	566.44	271.34		
19/07/86	22:30:00	1.500	2339.00	570.29	271.34	732	CSG = 0 PSI
19/07/86	22:31:00	1.517	2340.54	571.83	271.34		
19/07/86	22:32:00	1.533	2342.84	574.13	271.33		
19/07/86	22:33:00	1.550	2345.54	576.83	271.33		
19/07/86	22:34:00	1.567	2349.38	580.67	271.32		
19/07/86	22:35:00	1.583	2351.71	583.00	271.33		
19/07/86	22:36:00	1.600	2354.00	585.29	271.32		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 19/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
19/07/86	22:37:00	1.617	2355.16	586.45	271.32		
19/07/86	22:38:00	1.633	2359.39	590.68	271.31		
19/07/86	22:39:00	1.650	2360.93	592.22	271.31		
19/07/86	22:40:00	1.667	2363.62	594.91	271.30		
19/07/86	22:41:00	1.683	2364.77	596.06	271.30		
19/07/86	22:42:00	1.700	2366.31	597.60	271.29		
19/07/86	22:43:00	1.717	2369.39	600.68	271.28		
19/07/86	22:44:00	1.733	2370.96	602.25	271.31		
19/07/86	22:45:00	1.750	2372.87	604.16	271.29	755	CSG = 0 PSI
19/07/86	22:46:00	1.767	2376.33	607.62	271.28		
19/07/86	22:47:00	1.783	2377.10	608.39	271.28		
19/07/86	22:48:00	1.800	2380.95	612.24	271.28		
19/07/86	22:49:00	1.817	2382.11	613.40	271.27		
19/07/86	22:50:00	1.833	2384.03	615.32	271.27		
19/07/86	22:51:00	1.850	2385.59	616.88	271.28		
19/07/86	22:52:00	1.867	2387.12	618.41	271.27		
19/07/86	22:53:00	1.883	2390.21	621.50	271.26		
19/07/86	22:54:00	1.900	2391.36	622.65	271.26		
19/07/86	22:55:00	1.917	2394.44	625.73	271.26		
19/07/86	22:56:00	1.933	2395.98	627.27	271.25		
19/07/86	22:57:00	1.950	2397.51	628.80	271.24		
19/07/86	22:58:00	1.967	2400.57	631.86	271.21		
19/07/86	22:59:00	1.983	2400.54	631.83	271.19		
19/07/86	23:00:00	2.000	2402.50	633.79	271.21	775	CSG = 0 PSI
19/07/86	23:05:00	2.083	2413.35	644.64	271.23		
19/07/86	23:10:00	2.167	2420.66	651.95	271.20		5 MIN SAMPLE RATE
19/07/86	23:15:00	2.250	2428.36	659.65	271.17		
19/07/86	23:20:00	2.333	2435.70	666.99	271.16		
19/07/86	23:25:00	2.417	2444.23	675.52	271.17		
19/07/86	23:30:00	2.500	2450.79	682.08	271.14	810	CSG = 0 PSI
19/07/86	23:35:00	2.583	2457.72	689.01	271.12		
19/07/86	23:40:00	2.667	2462.73	694.02	271.09		
19/07/86	23:45:00	2.750	2468.14	699.43	271.08		
19/07/86	23:50:00	2.833	2474.68	705.97	271.04		
19/07/86	23:55:00	2.917	2479.03	710.32	271.10		
20/07/86	00:00:00	3.000	2484.42	715.71	271.07	837	CSG = 0 PSI
20/07/86	00:05:00	3.083	2489.84	721.13	271.06		
20/07/86	00:10:00	3.167	2494.47	725.76	271.03		
20/07/86	00:15:00	3.250	2499.91	731.20	271.04		
20/07/86	00:20:00	3.333	2502.61	733.90	271.02		
20/07/86	00:25:00	3.417	2506.86	738.15	271.01		
20/07/86	00:30:00	3.500	2511.92	743.21	271.01	860	CSG = 0 PSI
20/07/86	00:35:00	3.583	2515.01	746.30	270.99		
20/07/86	00:40:00	3.667	2518.87	750.16	270.98		
20/07/86	00:45:00	3.750	2522.34	753.63	270.95		
20/07/86	00:50:00	3.833	2526.67	757.96	270.99		
20/07/86	00:55:00	3.917	2529.35	760.64	270.96		
20/07/86	01:00:00	4.000	2532.83	764.12	270.94	882	CSG = 0 PSI
20/07/86	01:05:00	4.083	2536.32	767.61	270.93		
20/07/86	01:10:00	4.167	2541.37	772.66	270.92		
20/07/86	01:15:00	4.250	2543.30	774.59	270.92		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 20/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
20/07/86	01:20:00	4.333	2546.41	777.70	270.91		
20/07/86	01:25:00	4.417	2548.74	780.03	270.91		
20/07/86	01:30:00	4.500	2553.41	784.70	270.90		
20/07/86	01:35:00	4.583	2556.50	787.79	270.88		
20/07/86	01:40:00	4.667	2558.10	789.39	270.92		
20/07/86	01:45:00	4.750	2560.45	791.74	270.93		
20/07/86	01:50:00	4.833	2563.94	795.23	270.91		
20/07/86	01:55:00	4.917	2568.22	799.51	270.91		
20/07/86	02:00:00	5.000	2570.94	802.23	270.90		
20/07/86	02:05:00	5.083	2573.67	804.96	270.90		
20/07/86	02:10:00	5.167	2574.44	805.73	270.90		
20/07/86	02:15:00	5.250	2576.77	808.06	270.89		
20/07/86	02:20:00	5.333	2580.67	811.96	270.89		
20/07/86	02:25:00	5.417	2582.59	813.88	270.86		
20/07/86	02:30:00	5.500	2584.97	816.26	270.89		
20/07/86	02:35:00	5.583	2586.95	818.24	270.92		
20/07/86	02:40:00	5.667	2590.07	821.36	270.92		
20/07/86	02:45:00	5.750	2592.01	823.30	270.91		
20/07/86	02:50:00	5.833	2595.92	827.21	270.92		
20/07/86	02:55:00	5.917	2597.49	828.78	270.92		
20/07/86	03:00:00	6.000	2598.26	829.55	270.92		
20/07/86	03:05:00	6.083	2601.00	832.29	270.92		
20/07/86	03:10:00	6.167	2602.56	833.85	270.92		
20/07/86	03:15:00	6.250	2605.30	836.59	270.93		
20/07/86	03:20:00	6.333	2608.79	840.08	270.91		
20/07/86	03:25:00	6.417	2610.37	841.66	270.92		
20/07/86	03:30:00	6.500	2612.36	843.65	270.95		
20/07/86	03:35:00	6.583	2613.16	844.45	270.96		
20/07/86	03:40:00	6.667	2615.87	847.16	270.95		
20/07/86	03:45:00	6.750	2619.00	850.29	270.95		
20/07/86	03:50:00	6.833	2619.78	851.07	270.95		
20/07/86	03:55:00	6.917	2620.95	852.24	270.95		
20/07/86	04:00:00	7.000	2622.51	853.80	270.95		
20/07/86	04:05:00	7.083	2624.86	856.15	270.95		
20/07/86	04:10:00	7.167	2628.37	859.66	270.94		
20/07/86	04:15:00	7.250	2628.75	860.04	270.94		
20/07/86	04:20:00	7.333	2629.56	860.85	270.96		
20/07/86	04:25:00	7.417	2632.72	864.01	270.98		
20/07/86	04:30:00	7.500	2634.28	865.57	270.98		
20/07/86	04:35:00	7.583	2635.05	866.34	270.97		
20/07/86	04:40:00	7.667	2637.78	869.07	270.96		
20/07/86	04:45:00	7.750	2638.94	870.23	270.95		
20/07/86	04:50:00	7.833	2641.28	872.57	270.95		
20/07/86	04:55:00	7.917	2642.04	873.33	270.93		
20/07/86	05:00:00	8.000	2645.18	876.47	270.94	995	CSG = 0 PSI
20/07/86	05:10:00	8.167	2645.59	876.88	270.95		
20/07/86	05:20:00	8.333	2649.49	880.78	270.94		
20/07/86	05:30:00	8.500	2651.82	883.11	270.93		
20/07/86	05:40:00	8.667	2653.39	884.68	270.93		
20/07/86	05:50:00	8.833	2657.71	889.00	270.94		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 20/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
20/07/86	06:00:00	9.000	2660.04	891.33	270.93		
20/07/86	06:10:00	9.167	2661.59	892.88	270.92		
20/07/86	06:20:00	9.333	2663.17	894.46	270.92		
20/07/86	06:30:00	9.500	2666.69	897.98	270.92		
20/07/86	06:40:00	9.667	2669.03	900.32	270.92		
20/07/86	06:50:00	9.833	2669.79	901.08	270.90		
20/07/86	07:00:00	10.000	2671.39	902.68	270.92		
20/07/86	07:10:00	10.167	2674.13	905.42	270.92		
20/07/86	07:20:00	10.333	2677.25	908.54	270.91		
20/07/86	07:30:00	10.500	2678.42	909.71	270.90		
20/07/86	07:40:00	10.667	2681.18	912.47	270.92		
20/07/86	07:50:00	10.833	2680.77	912.06	270.90		
20/07/86	08:00:00	11.000	2684.28	915.57	270.89		
20/07/86	08:10:00	11.167	2685.87	917.16	270.91		
20/07/86	08:20:00	11.333	2687.03	918.32	270.89		
20/07/86	08:30:00	11.500	2689.00	920.29	270.90		
20/07/86	08:40:00	11.667	2690.18	921.47	270.90		
20/07/86	08:50:00	11.833	2692.91	924.20	270.89		
20/07/86	09:00:00	12.000	2693.29	924.58	270.88	1060	CSG = 0 PSI
20/07/86	09:10:00	12.167	2694.87	926.16	270.89		
20/07/86	09:20:00	12.333	2696.43	927.72	270.89		
20/07/86	09:30:00	12.500	2698.00	929.29	270.88		
20/07/86	09:40:00	12.667	2699.57	930.86	270.89		
20/07/86	09:50:00	12.833	2701.13	932.42	270.88		
20/07/86	10:00:00	13.000	2701.92	933.21	270.89		
20/07/86	10:10:00	13.167	2703.54	934.83	270.93		
20/07/86	10:20:00	13.333	2706.72	938.01	270.95		
20/07/86	10:30:00	13.500	2711.04	942.33	270.96		
20/07/86	10:40:00	13.667	2711.04	942.33	270.96		
20/07/86	10:50:00	13.833	2713.40	944.69	270.96		
20/07/86	11:00:00	14.000	2715.62	946.91	270.96		
20/07/86	11:10:00	14.167	2716.16	947.45	270.97		
20/07/86	11:20:00	14.333	2717.33	948.62	270.97		
20/07/86	11:30:00	14.500	2719.70	950.99	270.97		
20/07/86	11:40:00	14.667	2720.48	951.77	270.97		
20/07/86	11:50:00	14.833	2723.23	954.52	270.98		
20/07/86	12:00:00	15.000	2723.63	954.92	270.98		
20/07/86	12:10:00	15.167	2724.81	956.10	270.98		
20/07/86	12:20:00	15.333	2727.56	958.85	270.98		
20/07/86	12:30:00	15.500	2726.77	958.06	270.98		
20/07/86	12:40:00	15.667	2728.74	960.03	270.98		
20/07/86	12:50:00	15.833	2730.70	961.99	270.98		
20/07/86	13:00:00	16.000	2729.92	961.21	270.98	1077	CSG = 0 PSI
20/07/86	13:10:00	16.167	2731.49	962.78	270.98		
20/07/86	13:20:00	16.333	2733.46	964.75	270.98		
20/07/86	13:30:00	16.500	2733.45	964.74	270.98		
20/07/86	13:40:00	16.667	2733.85	965.14	270.99		
20/07/86	13:50:00	16.833	2736.61	967.90	270.99		
20/07/86	14:00:00	17.000	2736.22	967.51	270.99		
20/07/86	14:10:00	17.167	2738.98	970.27	270.99		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 20/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
20/07/86	14:20:00	17.333	2739.76	971.05	271.00		
20/07/86	14:30:00	17.500	2740.15	971.44	270.99		
20/07/86	14:40:00	17.667	2741.73	973.02	271.00		
20/07/86	14:50:00	17.833	2741.72	973.01	270.99		
20/07/86	15:00:00	18.000	2741.33	972.62	270.99		
20/07/86	15:10:00	18.167	2744.07	975.36	270.99		
20/07/86	15:20:00	18.333	2744.08	975.37	270.99		
20/07/86	15:30:00	18.500	2744.08	975.37	270.99		
20/07/86	15:40:00	18.667	2746.83	978.12	270.99		
20/07/86	15:50:00	18.833	2745.65	976.94	270.99		
20/07/86	16:00:00	19.000	2746.82	978.11	270.98		
20/07/86	16:10:00	19.167	2748.40	979.69	270.98		
20/07/86	16:20:00	19.333	2749.18	980.47	270.98		
20/07/86	16:30:00	19.500	2748.78	980.07	270.98		
20/07/86	16:40:00	19.667	2750.35	981.64	270.97		
20/07/86	16:50:00	19.833	2750.74	982.03	270.97		
20/07/86	17:00:00	20.000	2751.91	983.20	270.97	1085	CSG = 0 PSI
20/07/86	17:10:00	20.167	2753.07	984.36	270.95		
20/07/86	17:20:00	20.333	2753.06	984.35	270.94		
20/07/86	17:30:00	20.500	2755.78	987.07	270.91		
20/07/86	17:40:00	20.667	2756.06	987.35	270.83		
20/07/86	17:50:00	20.833	2756.79	988.08	270.79		
20/07/86	18:00:00	21.000	2755.90	987.19	270.71		
20/07/86	20:42:00	23.881	2768.53	999.82	271.04		DATA LOST BETWEEN
20/07/86	20:43:00	23.898	2768.94	1000.23	271.05		1800 HRS TO 2040 HRS
20/07/86	20:44:00	23.915	2767.74	999.03	271.04		DUE TO POWER FAILURE
20/07/86	20:45:00	23.931	2769.28	1000.57	271.01		
20/07/86	20:46:00	23.948	2768.86	1000.15	270.99		
20/07/86	20:47:00	23.965	2768.06	999.35	270.98		
20/07/86	20:48:00	23.981	2768.07	999.36	270.99		
20/07/86	20:49:00	23.998	2769.61	1000.90	270.96		
20/07/86	20:50:00	23.833	2769.25	1000.54	270.99		
20/07/86	21:00:00	24.000	2769.80	1001.09	270.81	1090	CSG = 0 PSI
20/07/86	21:10:00	24.166	2770.59	1001.88	270.81		
20/07/86	21:20:00	24.333	2770.21	1001.50	270.81		
20/07/86	21:30:00	24.500	2771.40	1002.69	270.82		
20/07/86	21:40:00	24.666	2771.01	1002.30	270.83		
20/07/86	21:50:00	24.833	2771.41	1002.70	270.83		
20/07/86	22:00:00	25.000	2772.60	1003.89	270.84		
20/07/86	22:10:00	25.166	2773.40	1004.69	270.85		
20/07/86	22:20:00	25.333	2774.19	1005.48	270.85		
20/07/86	22:30:00	25.500	2773.81	1005.10	270.86		
20/07/86	22:40:00	25.666	2774.20	1005.49	270.86		
20/07/86	22:50:00	25.833	2774.59	1005.88	270.86		
20/07/86	23:00:00	26.000	2774.98	1006.27	270.85		
20/07/86	23:10:00	26.166	2773.80	1005.09	270.85		
20/07/86	23:20:00	26.333	2772.61	1003.90	270.85		
20/07/86	23:30:00	26.500	2773.40	1004.69	270.84		
20/07/86	23:40:00	26.666	2773.39	1004.68	270.84		
20/07/86	23:50:00	26.833	2772.21	1003.50	270.84		
21/07/86	00:00:00	27.000	2771.81	1003.10	270.84		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 21/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
21/07/86	00:10:00	27.166	2772.21	1003.50	270.84	1095	CSG = 0 PSI
21/07/86	00:20:00	27.333	2772.60	1003.89	270.84		
21/07/86	00:30:00	27.500	2772.99	1004.28	270.84		
21/07/86	00:40:00	27.666	2772.60	1003.89	270.84		
21/07/86	00:50:00	27.833	2771.82	1003.11	270.84		
21/07/86	01:00:00	28.000	2773.00	1004.29	270.84		
21/07/86	01:10:00	28.166	2772.61	1003.90	270.84		
21/07/86	01:20:00	28.333	2774.19	1005.48	270.85		
21/07/86	01:30:00	28.500	2773.79	1005.08	270.85		
21/07/86	01:40:00	28.666	2773.40	1004.69	270.85		
21/07/86	01:50:00	28.833	2773.80	1005.09	270.85		
21/07/86	02:00:00	29.000	2773.01	1004.30	270.85		
21/07/86	02:10:00	29.166	2774.19	1005.48	270.85		
21/07/86	02:20:00	29.333	2774.19	1005.48	270.85		
21/07/86	02:30:00	29.500	2774.19	1005.48	270.85		
21/07/86	02:40:00	29.666	2774.98	1006.27	270.85		
21/07/86	02:50:00	29.833	2774.60	1005.89	270.86		
21/07/86	03:00:00	30.000	2775.78	1007.07	270.86		
21/07/86	03:10:00	30.166	2776.18	1007.47	270.87		
21/07/86	03:20:00	30.333	2775.01	1006.30	270.87		
21/07/86	03:30:00	30.500	2776.98	1008.27	270.88		
21/07/86	03:40:00	30.666	2777.78	1009.07	270.88		
21/07/86	03:50:00	30.833	2777.00	1008.29	270.89		
21/07/86	04:00:00	31.000	2778.58	1009.87	270.89		
21/07/86	04:10:00	31.166	2778.98	1010.27	270.90		
21/07/86	04:20:00	31.333	2778.59	1009.88	270.90		
21/07/86	04:30:00	31.500	2778.20	1009.49	270.90		
21/07/86	04:40:00	31.666	2777.81	1009.10	270.91		
21/07/86	04:50:00	31.833	2780.57	1011.86	270.91	1102	CSG = 0 PSI
21/07/86	05:00:00	32.000	2780.58	1011.87	270.92		
21/07/86	05:10:00	32.166	2779.01	1010.30	270.92		
21/07/86	05:20:00	32.333	2779.80	1011.09	270.92		
21/07/86	05:30:00	32.500	2779.80	1011.09	270.93		
21/07/86	05:40:00	32.666	2780.20	1011.49	270.93		
21/07/86	05:50:00	32.833	2781.78	1013.07	270.94		
21/07/86	06:00:00	33.000	2780.61	1011.90	270.94		
21/07/86	06:10:00	33.166	2782.19	1013.48	270.95		
21/07/86	06:20:00	33.333	2783.77	1015.06	270.95		
21/07/86	06:30:00	33.500	2783.78	1015.07	270.96		
21/07/86	06:40:00	33.666	2783.00	1014.29	270.96		
21/07/86	06:50:00	33.833	2784.58	1015.87	270.97		
21/07/86	07:00:00	34.000	2784.59	1015.88	270.97		
21/07/86	07:10:00	34.166	2784.60	1015.89	270.98		
21/07/86	07:20:00	34.333	2786.58	1017.87	270.99		
21/07/86	07:30:00	34.500	2785.40	1016.69	270.99		
21/07/86	07:40:00	34.666	2786.98	1018.27	271.00		
21/07/86	07:50:00	34.833	2788.57	1019.86	271.00		
21/07/86	08:00:00	35.000	2788.58	1019.87	271.01		
21/07/86	08:10:00	35.166	2787.80	1019.09	271.01		
21/07/86	08:20:00	35.333	2788.59	1019.88	271.02		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 21/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
21/07/86	08:30:00	35.500	2790.18	1021.47	271.03	1120	CSG = 0 PSI
21/07/86	08:40:00	35.666	2790.58	1021.87	271.03		
21/07/86	08:50:00	35.833	2791.37	1022.66	271.04		
21/07/86	09:00:00	36.000	2790.59	1021.88	271.05		
21/07/86	09:10:00	36.166	2792.57	1023.86	271.05		
21/07/86	09:20:00	36.333	2793.37	1024.66	271.06		
21/07/86	09:30:00	36.500	2793.38	1024.67	271.07		
21/07/86	09:40:00	36.666	2794.57	1025.86	271.08		
21/07/86	09:50:00	36.833	2794.19	1025.48	271.08		
21/07/86	10:00:00	37.000	2796.57	1027.86	271.09		
21/07/86	10:10:00	37.166	2796.98	1028.27	271.10		
21/07/86	10:20:00	37.333	2798.57	1029.86	271.12		
21/07/86	10:30:00	37.500	2799.37	1030.66	271.13		
21/07/86	10:40:00	37.666	2799.40	1030.69	271.15		
21/07/86	10:50:00	37.833	2801.78	1033.07	271.16		
21/07/86	11:00:00	38.000	2802.98	1034.27	271.18		
21/07/86	11:10:00	38.166	2805.36	1036.65	271.19		
21/07/86	11:20:00	38.333	2805.77	1037.06	271.20		
21/07/86	11:30:00	38.500	2806.97	1038.26	271.21		
21/07/86	11:40:00	38.666	2807.38	1038.67	271.22		
21/07/86	11:50:00	38.833	2808.97	1040.26	271.23		
21/07/86	12:00:00	39.000	2808.19	1039.48	271.24	1125	CSG = 0 PSI
21/07/86	12:10:00	39.166	2808.20	1039.49	271.25		
21/07/86	12:20:00	39.333	2809.39	1040.68	271.25		
21/07/86	12:30:00	39.500	2811.37	1042.66	271.26		
21/07/86	12:40:00	39.666	2811.78	1043.07	271.27		
21/07/86	12:50:00	39.833	2811.79	1043.08	271.28		
21/07/86	13:00:00	40.000	2811.80	1043.09	271.28		
21/07/86	13:10:00	40.166	2814.17	1045.46	271.29		
21/07/86	13:20:00	40.333	2813.39	1044.68	271.29		
21/07/86	13:30:00	40.500	2814.58	1045.87	271.30		
21/07/86	13:40:00	40.666	2814.19	1045.48	271.30		
21/07/86	13:50:00	40.833	2814.20	1045.49	271.31		
21/07/86	14:00:00	40.999	2816.57	1047.86	271.31		
21/07/86	14:10:00	41.166	2816.18	1047.47	271.33		
21/07/86	14:20:00	41.333	2816.58	1047.87	271.33		
21/07/86	14:30:00	41.499	2816.59	1047.88	271.33		
21/07/86	14:40:00	41.667	2817.17	1048.46	271.33		
21/07/86	14:50:00	41.833	2817.18	1048.47	271.33		
21/07/86	15:00:00	42.000	2817.55	1048.84	271.34		
21/07/86	15:10:00	42.167	2817.40	1048.69	271.34		
21/07/86	15:20:00	42.334	2819.51	1050.80	271.45		
21/07/86	15:30:00	42.500	2818.59	1049.88	271.35		
21/07/86	15:40:00	42.667	2819.43	1050.72	273.45		
21/07/86	15:50:00	42.834	2820.58	1051.87	271.36		
21/07/86	16:00:00	43.000	2820.98	1052.27	271.37		
21/07/86	16:10:00	43.167	2820.98	1052.27	271.37		
21/07/86	16:20:00	43.334	2822.17	1053.46	271.37		
21/07/86	16:30:00	43.500	2820.60	1051.89	271.38		
21/07/86	16:40:00	43.667	2822.58	1053.87	271.38		
21/07/86	16:50:00	43.834	2821.40	1052.69	271.39		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 21/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
21/07/86	17:00:00	44.000	2822.59	1053.88	271.39	1125	CSG = 0 PSI
21/07/86	17:10:00	44.167	2822.20	1053.49	271.40		
21/07/86	17:20:00	44.334	2823.00	1054.29	271.40		
21/07/86	17:30:00	44.500	2823.79	1055.08	271.40		
21/07/86	17:40:00	44.667	2824.19	1055.48	271.41		
21/07/86	17:50:00	44.834	2824.59	1055.88	271.41		
21/07/86	18:00:00	45.000	2825.38	1056.67	271.41		
21/07/86	18:10:00	45.167	2823.81	1055.10	271.42		
21/07/86	18:20:00	45.334	2824.60	1055.89	271.42		
21/07/86	18:30:00	45.500	2825.80	1057.09	271.43		
21/07/86	18:40:00	45.667	2825.41	1056.70	271.43		
21/07/86	18:50:00	45.834	2826.20	1057.49	271.44		
21/07/86	19:00:00	46.000	2827.79	1059.08	271.44		
21/07/86	19:10:00	46.167	2827.00	1058.29	271.45		
21/07/86	19:20:00	46.334	2828.59	1059.88	271.45		
21/07/86	19:30:00	46.500	2827.41	1058.70	271.46		
21/07/86	19:40:00	46.667	2828.20	1059.49	271.46		
21/07/86	19:50:00	46.834	2829.39	1060.68	271.46		
21/07/86	20:00:00	47.000	2829.40	1060.69	271.47		
21/07/86	20:10:00	47.167	2830.19	1061.48	271.47		
21/07/86	20:20:00	47.334	2830.20	1061.49	271.47		
21/07/86	20:30:00	47.500	2830.99	1062.28	271.48		
21/07/86	20:40:00	47.667	2830.21	1061.50	271.48		
21/07/86	20:50:00	47.834	2831.40	1062.69	271.49		
21/07/86	21:00:00	48.000	2831.80	1063.09	271.49	1125	CSG = 0 PSI
21/07/86	21:10:00	48.167	2831.80	1063.09	271.49		
21/07/86	21:20:00	48.334	2831.02	1062.31	271.50		
21/07/86	21:30:00	48.500	2833.00	1064.29	271.50		
21/07/86	21:40:00	48.667	2833.00	1064.29	271.50		
21/07/86	21:50:00	48.834	2834.19	1065.48	271.51		
21/07/86	22:00:00	49.000	2834.20	1065.49	271.51		
21/07/86	22:10:00	49.167	2833.02	1064.31	271.52		
21/07/86	22:20:00	49.334	2833.02	1064.31	271.52		
21/07/86	22:30:00	49.500	2834.60	1065.89	271.52		
21/07/86	22:40:00	49.667	2835.00	1066.29	271.53		
21/07/86	22:50:00	49.834	2834.22	1065.51	271.53		
21/07/86	23:00:00	50.000	2836.20	1067.49	271.53		
21/07/86	23:10:00	50.167	2835.01	1066.30	271.53		
21/07/86	23:20:00	50.334	2835.02	1066.31	271.54		
21/07/86	23:30:00	50.500	2837.00	1068.29	271.54		
21/07/86	23:40:00	50.667	2835.42	1066.71	271.54		
21/07/86	23:50:00	50.834	2837.40	1068.69	271.55		
22/07/86	00:00:00	51.000	2837.01	1068.30	271.55		CSG = 0 PSI
22/07/86	00:10:00	51.167	2838.20	1069.49	271.55		
22/07/86	00:20:00	51.334	2837.81	1069.10	271.56		
22/07/86	00:30:00	51.500	2837.42	1068.71	271.56		
22/07/86	00:40:00	51.667	2839.00	1070.29	271.56		
22/07/86	00:50:00	51.834	2837.82	1069.11	271.56		
22/07/86	01:00:00	52.000	2839.40	1070.69	271.57	1125	
22/07/86	01:10:00	52.167	2839.41	1070.70	271.57		
22/07/86	01:20:00	52.334	2838.23	1069.52	271.57		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 22/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
22/07/86	01:30:00	52.500	2840.21	1071.50	271.58		
22/07/86	01:40:00	52.667	2838.63	1069.92	271.58		
22/07/86	01:50:00	52.834	2840.61	1071.90	271.58		
22/07/86	02:00:00	53.000	2839.43	1070.72	271.59		
22/07/86	02:10:00	53.167	2841.41	1072.70	271.59		
22/07/86	02:20:00	53.334	2841.41	1072.70	271.59		
22/07/86	02:30:00	53.500	2840.23	1071.52	271.60		
22/07/86	02:40:00	53.667	2842.21	1073.50	271.60		
22/07/86	02:50:00	53.834	2840.63	1071.92	271.60		
22/07/86	03:00:00	54.000	2841.82	1073.11	271.60		
22/07/86	03:10:00	54.167	2842.22	1073.51	271.61		
22/07/86	03:20:00	54.334	2841.43	1072.72	271.61		
22/07/86	03:30:00	54.500	2843.41	1074.70	271.61		
22/07/86	03:40:00	54.667	2842.23	1073.52	271.62		
22/07/86	03:50:00	54.834	2843.81	1075.10	271.62		
22/07/86	04:00:00	55.000	2843.42	1074.71	271.62		
22/07/86	04:10:00	55.167	2844.61	1075.90	271.62		
22/07/86	04:20:00	55.334	2844.21	1075.50	271.62		
22/07/86	04:30:00	55.500	2844.11	1075.40	271.54		
22/07/86	04:40:00	55.667	2845.34	1076.63	271.58		
22/07/86	04:50:00	55.834	2844.40	1075.69	271.47		
22/07/86	05:00:00	56.000	2843.95	1075.24	271.42	1127	CSG = 0 PSI
22/07/86	05:10:00	56.167	2843.99	1075.28	271.45		
22/07/86	05:20:00	56.334	2845.92	1077.21	271.42		
22/07/86	05:30:00	56.500	2846.32	1077.61	271.42		
22/07/86	05:40:00	56.667	2845.11	1076.40	271.40		
22/07/86	05:50:00	56.834	2846.69	1077.98	271.40		
22/07/86	06:00:00	57.000	2845.13	1076.42	271.42		
22/07/86	06:10:00	57.167	2846.33	1077.62	271.43		
22/07/86	06:20:00	57.334	2847.47	1078.76	271.39		
22/07/86	06:30:00	57.500	2846.66	1077.95	271.38		
22/07/86	06:40:00	57.667	2847.86	1079.15	271.39		
22/07/86	06:50:00	57.834	2847.06	1078.35	271.38		
22/07/86	07:00:00	58.000	2848.24	1079.53	271.38		
22/07/86	7:10:00	58.142	2848.63	1079.92	271.38		
22/07/86	7:20:00	58.309	2847.05	1078.34	271.37		
22/07/86	7:30:00	58.475	2847.83	1079.12	271.37		
22/07/86	7:40:00	58.642	2847.83	1079.12	271.37		
22/07/86	7:50:00	58.809	2847.83	1079.12	271.37		
22/07/86	8:00:00	58.975	2849.40	1080.69	271.36		
22/07/86	8:10:00	59.140	2848.54	1079.83	271.38		
22/07/86	8:20:00	59.307	2848.52	1079.81	271.36		
22/07/86	8:30:00	59.474	2848.25	1079.54	271.38		
22/07/86	8:40:00	59.640	2850.22	1081.51	271.38		
22/07/86	8:50:00	59.807	2849.03	1080.32	271.38		
22/07/86	9:00:00	59.974	2848.60	1079.89	271.35	1125	CSG = 0 PSI
22/07/86	9:10:00	60.140	2845.92	1077.21	271.11		
22/07/86	9:20:00	60.307	2837.85	1069.14	270.68		
22/07/86	9:30:00	60.474	2833.68	1064.97	270.50		
22/07/86	9:40:00	60.640	2828.92	1060.21	270.49		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 22/07/86
 LOCATION : FLY LAKE #2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
22/07/86	9:50:00	60.807	2827.37	1058.66	270.51		
22/07/86	10:00:00	60.974	2825.43	1056.72	270.54		
22/07/86	10:10:00	61.140	2822.67	1053.96	270.54		
22/07/86	10:20:00	61.307	2822.60	1053.89	270.49		
22/07/86	10:30:00	61.474	2821.02	1052.31	270.48		
22/07/86	10:40:00	61.640	2820.39	1051.68	270.30		
22/07/86	10:50:00	61.807	2818.82	1050.11	270.31		
22/07/86	11:00:00	61.974	2816.47	1047.76	270.32		
22/07/86	11:10:00	62.140	2817.27	1048.56	270.33		
22/07/86	11:20:00	62.307	2814.50	1045.79	270.32		
22/07/86	11:30:00	62.474	2814.50	1045.79	270.32		
22/07/86	11:40:00	62.640	2815.27	1046.56	270.31		
22/07/86	11:50:00	62.807	2813.27	1044.56	270.29		
22/07/86	12:00:00	62.974	2815.23	1046.52	270.28		
22/07/86	12:10:00	63.140	2814.41	1045.70	270.25		
22/07/86	12:20:00	63.307	2812.81	1044.10	270.23		
22/07/86	12:30:00	63.474	2814.76	1046.05	270.21		
22/07/86	12:40:00	63.640	2813.55	1044.84	270.20		
22/07/86	12:50:00	63.807	2812.73	1044.02	270.17		
22/07/86	13:00:00	63.974	2814.69	1045.98	270.17	1117	CSG = 0 PSI
22/07/86	13:10:00	64.140	2814.29	1045.58	270.16		
22/07/86	13:20:00	64.307	2813.90	1045.19	270.16		
22/07/86	13:30:00	64.474	2814.68	1045.97	270.15		
22/07/86	13:40:00	64.640	2814.27	1045.56	270.15		
22/07/86	13:50:00	64.807	2813.88	1045.17	270.14		
22/07/86	14:00:00	64.974	2814.26	1045.55	270.14		
22/07/86	14:10:00	65.140	2813.09	1044.38	270.15		
22/07/86	14:20:00	65.307	2813.49	1044.78	270.15		
22/07/86	14:30:00	65.474	2815.46	1046.75	270.15		
22/07/86	14:40:00	65.640	2813.49	1044.78	270.15		
22/07/86	14:50:00	65.807	2813.89	1045.18	270.15		
22/07/86	15:00:00	65.974	2815.48	1046.77	270.17		
22/07/86	15:10:00	66.140	2814.31	1045.60	270.18		
22/07/86	15:20:00	66.307	2815.90	1047.19	270.18		
22/07/86	15:30:00	66.474	2817.09	1048.38	270.19		
22/07/86	15:40:00	66.640	2815.14	1046.43	270.20		
22/07/86	15:50:00	66.807	2817.13	1048.42	270.22		
22/07/86	16:00:00	66.974	2815.55	1046.84	270.22		
22/07/86	16:10:00	67.140	2816.35	1047.64	270.23		DECREASE IN B.H.P
22/07/86	16:20:00	67.307	2816.75	1048.04	270.23		PULL GAUGES FROM
22/07/86	16:30:00	67.474	2817.54	1048.83	270.23		HOLE TO CHECK
22/07/86	16:40:00	67.640	2816.90	1048.19	270.35		
22/07/86	16:50:00	67.807	2816.39	1047.68	270.26		
22/07/86	17:00:00	67.974	2817.19	1048.48	270.27	1125	CSG = 0 PSI
22/07/86	17:10:00	68.140	2817.19	1048.48	270.27		PULL OUT OF HOLE
22/07/86	17:40:00	68.640	1096.22	0.00	83.69		AT SURFACE
22/07/86	17:45:00	68.724	1103.11	6.89	78.42		
22/07/86	17:50:00	68.807	1104.72	1.61	76.47		
22/07/86	17:55:00	68.890	1106.98	2.26	75.51	1110	CSG = 0 PSI
22/07/86	23:01:00	73.990	2835.86	1067.15	270.67		RUN IN HOLE AT 22:15

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 22/07/86
 LOCATION : FLY LAKE #2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
22/07/86	23:02:00	74.007	2836.27	1067.56	270.68		ON BOTTOM AT 23:01 HANG OFF AT 9380'
22/07/86	23:03:00	74.024	2836.28	1067.57	270.69		
22/07/86	23:04:00	74.040	2837.09	1068.38	270.70		
22/07/86	23:05:00	74.057	2836.31	1067.60	270.71		
22/07/86	23:06:00	74.074	2836.32	1067.61	270.72		
22/07/86	23:07:00	74.090	2836.72	1068.01	270.72		
22/07/86	23:08:00	74.107	2836.72	1068.01	270.72		
22/07/86	23:09:00	74.124	2836.72	1068.01	270.72		
22/07/86	23:10:00	74.140	2835.94	1067.23	270.73		
22/07/86	23:20:00	74.307	2836.76	1068.05	270.75		
22/07/86	23:30:00	74.474	2837.58	1068.87	270.78		
22/07/86	23:40:00	74.640	2836.40	1067.69	270.78		
22/07/86	23:50:00	74.807	2837.59	1068.88	270.78		
23/07/86	00:00:00	74.974	2837.21	1068.50	270.79		
23/07/86	00:10:00	75.140	2837.62	1068.91	270.81		
23/07/86	00:20:00	75.307	2838.42	1069.71	270.81		
23/07/86	00:30:00	75.474	2837.39	1068.68	270.93		
23/07/86	00:40:00	75.640	2837.74	1069.03	270.90		
23/07/86	00:50:00	75.807	2838.18	1069.47	270.94		
23/07/86	01:00:00	75.974	2837.39	1068.68	270.93	1131	CSG = 0 PSI
23/07/86	01:10:00	76.140	2838.45	1069.74	270.84		
23/07/86	01:20:00	76.307	2838.46	1069.75	270.84		
23/07/86	01:30:00	76.474	2838.47	1069.76	271.06		
23/07/86	01:40:00	76.640	2838.48	1069.77	270.86		
23/07/86	01:50:00	76.807	2839.27	1070.56	270.86		
23/07/86	02:00:00	76.974	2838.50	1069.79	270.87		
23/07/86	02:10:00	77.140	2840.26	1071.55	270.88		
23/07/86	02:20:00	77.307	2838.51	1069.80	270.88		
23/07/86	02:30:00	77.474	2839.54	1070.83	271.06		
23/07/86	02:40:00	77.640	2839.70	1070.99	270.89		
23/07/86	02:50:00	77.807	2839.32	1070.61	270.90		
23/07/86	03:00:00	77.974	2840.24	1071.53	271.00		
23/07/86	03:10:00	78.140	2840.13	1071.42	270.91		
23/07/86	03:20:00	78.307	2839.35	1070.64	270.92		
23/07/86	03:30:00	78.474	2841.33	1072.62	270.93		
23/07/86	03:40:00	78.640	2840.16	1071.45	270.94		
23/07/86	03:50:00	78.807	2840.27	1071.56	271.02		
23/07/86	04:00:00	78.974	2840.97	1072.26	270.95		
23/07/86	04:10:00	79.140	2840.59	1071.88	270.96		
23/07/86	04:20:00	79.307	2842.01	1073.30	271.14		
23/07/86	04:30:00	79.474	2842.19	1073.48	270.98		
23/07/86	04:40:00	79.640	2841.93	1073.22	271.08		
23/07/86	04:50:00	79.807	2843.11	1074.40	271.08		
23/07/86	05:00:00	79.974	2841.42	1072.71	271.00	1131	CSG = 0 PSI
23/07/86	05:10:00	80.140	2842.62	1073.91	271.00		
23/07/86	05:20:00	80.307	2843.01	1074.30	271.00		
23/07/86	05:30:00	80.474	2842.19	1073.48	270.98		
23/07/86	05:40:00	80.640	2843.29	1074.58	270.91		
23/07/86	05:50:00	80.807	2843.55	1074.84	270.81		
23/07/86	06:00:00	80.974	2841.54	1072.83	270.78		

EXPERTEST PTY. LTD.

CUSTOMER : SANTOS LTD DATE: 23/07/86
 LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP
 FORMATION: TIRRAWARRA PERFORATIONS: 9532'-9565'
 OPERATOR : COLIN STEVENS COMMENTS:

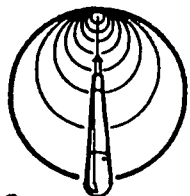
GAUGE 1 S/N: 63041
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 9380'KB

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
23/07/86	06:10:00	81.140	2842.73	1074.02	270.79		
23/07/86	06:20:00	81.307	2841.95	1073.24	270.79		
23/07/86	06:30:00	81.474	2841.97	1073.26	270.81		
23/07/86	06:40:00	81.640	2842.80	1074.09	270.84		
23/07/86	06:50:00	81.807	2842.42	1073.71	270.85		
23/07/86	07:00:00	81.974	2842.45	1073.74	270.87		
23/07/86	07:10:00	82.140	2843.25	1074.54	270.88		
23/07/86	07:20:00	82.307	2842.47	1073.76	270.89		
23/07/86	07:30:00	82.474	2843.28	1074.57	270.91		
23/07/86	07:40:00	82.640	2843.29	1074.58	270.92		
23/07/86	07:50:00	82.807	2842.91	1074.20	270.92		
23/07/86	08:00:00	82.974	2843.71	1075.00	270.93		
23/07/86	08:10:00	83.140	2844.12	1075.41	270.94		
23/07/86	08:20:00	83.307	2843.73	1075.02	270.95		
23/07/86	08:30:00	83.474	2844.14	1075.43	270.96		
23/07/86	08:40:00	83.640	2844.53	1075.82	270.96		
23/07/86	08:50:00	83.807	2844.54	1075.83	270.97		
23/07/86	09:00:00	83.974	2844.95	1076.24	270.97	1131	CSG = 0 PSI
23/07/86	09:10:00	84.140	2845.36	1076.65	270.98		
23/07/86	09:20:00	84.307	2845.74	1077.03	270.97		
23/07/86	09:30:00	84.474	2846.13	1077.42	270.97		
23/07/86	09:40:00	84.640	2845.33	1076.62	270.96		
23/07/86	09:50:00	84.807	2843.75	1075.04	270.97		
23/07/86	10:00:00	84.974	2845.33	1076.62	270.96		
23/07/86	10:10:00	85.140	2846.11	1077.40	270.96		
23/07/86	10:20:00	85.307	2846.92	1078.21	270.97		
23/07/86	10:30:00	85.474	2846.52	1077.81	270.97		
23/07/86	10:40:00	85.640	2846.13	1077.42	270.97		
23/07/86	10:50:00	85.807	2846.93	1078.22	270.98		
23/07/86	11:00:00	85.974	2847.48	1078.77	271.40		
23/07/86	11:10:00	86.140	2846.95	1078.24	270.99		
23/07/86	11:20:00	86.307	2848.14	1079.43	271.00		
23/07/86	11:30:00	86.474	2847.36	1078.65	271.01		
23/07/86	11:40:00	86.640	2847.76	1079.05	271.01		
23/07/86	11:50:00	86.807	2848.56	1079.85	271.01	1133	CSG = 0 PSI
23/07/86	12:00:00	86.974	2847.38	1078.67	271.02		PULL OUT OF HOLE
23/07/86	13:00:00	87.974	1122.13	0.00	62.20	1130	IN LUBRICATOR
23/07/86	13:01:00	87.990	1123.68	1.55	61.65		CSG = 0 PSI
23/07/86	13:02:00	88.007	1122.97	-.71	61.54		DELTA P FROM
23/07/86	13:03:00	88.024	1123.45	.48	60.86		PREVIOUS READING
23/07/86	13:04:00	88.040	1123.18	-.27	60.35		
23/07/86	13:05:00	88.057	1123.66	.48	59.69		
23/07/86	13:06:00	88.074	1124.12	.46	59.19		
23/07/86	13:07:00	88.090	1123.50	-.61	58.59		
23/07/86	13:08:00	88.107	1123.62	.11	58.00		
23/07/86	13:09:00	88.124	1124.10	.48	57.43		
23/07/86	13:10:00	88.140	1124.23	.14	56.75		
23/07/86	13:11:00	88.157	1124.68	.45	56.33		
23/07/86	13:12:00	88.174	1124.32	-.36	56.33		
23/07/86	13:13:00	88.190	1124.76	.44	55.95		13:15 BLEED DOWN

EXPERTEST PTY. LTD.

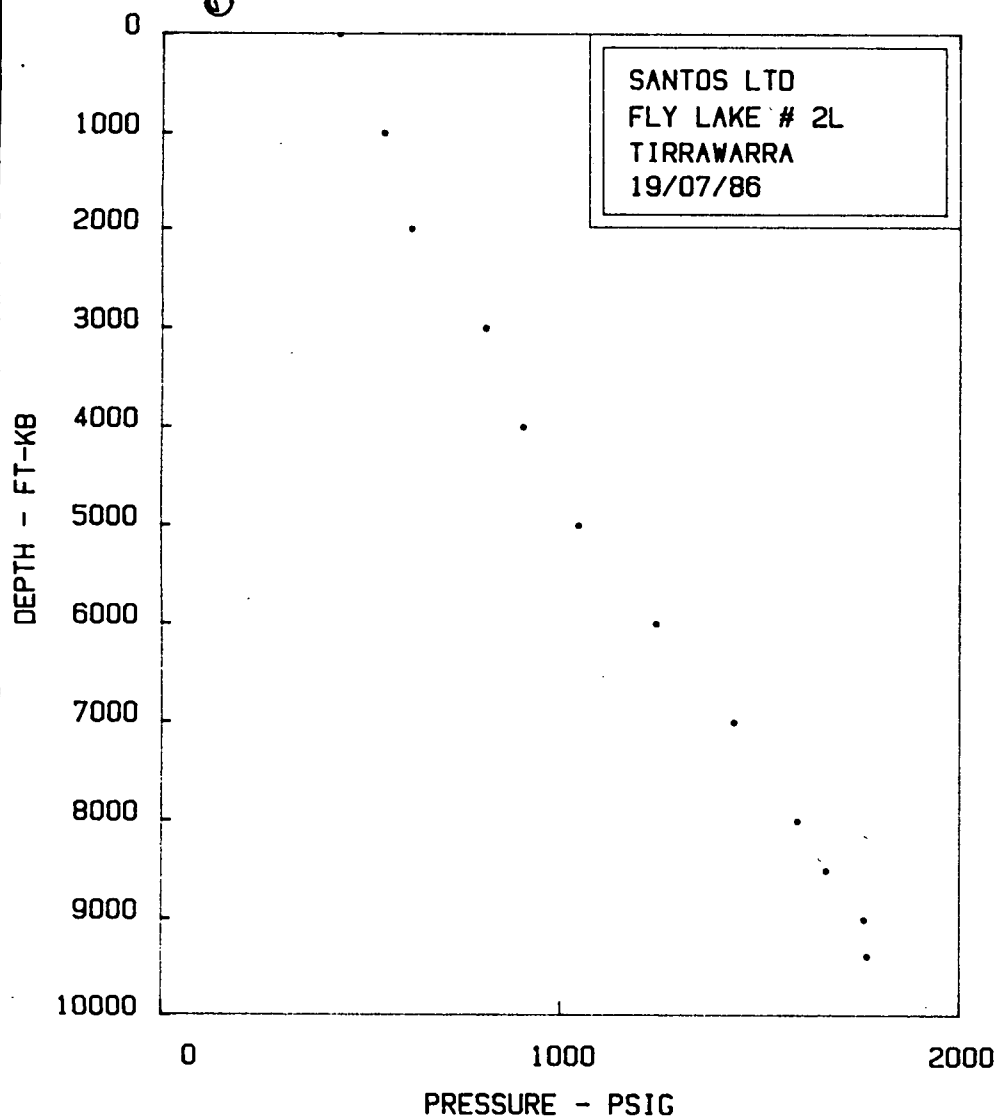
CUSTOMER : SANTOS LTD DATE: 23/07/86 GAUGE 1 S/N: 63041
LOCATION : FLY LAKE # 2L TEST: FLOW/BUILD UP GAUGE 2 S/N: 0
FORMATION: TIRRAWARRA PERFORATIONS: 953Z'-9565' GAUGE DEPTH: 9380'KB
OPERATOR : COLIN STEVENS COMMENTS:

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
23/07/86	13:14:00	88.207	1125.18	0.00	55.71		LUBRICATOR
23/07/86	13:15:00	88.224	1125.24	.06	55.42		END OF SURVEY



EXPERTEST PTY LTD - ELECTRIC WIRELINE SERVICE

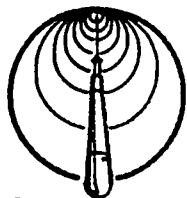
FLOWING GRADIENT SURVEY



STOP	TIME	DEPTH ('KB)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
1	1225	LUB.	443.28	----
2	1246	1000	555.77	0.1125
3	1303	2000	625.00	0.0692
4	1319	3000	811.17	0.1862
5	1336	4000	905.45	0.0943
6	1352	5000	1044.31	0.1389
7	1407	6000	1238.38	0.1941
8	1423	7000	1433.73	0.1954
9	1439	8000	1593.60	0.1599
10	1453	8500	1665.68	0.1442
11	1507	9000	1761.17	0.1910
12	2059	9380	1768.71	0.0198

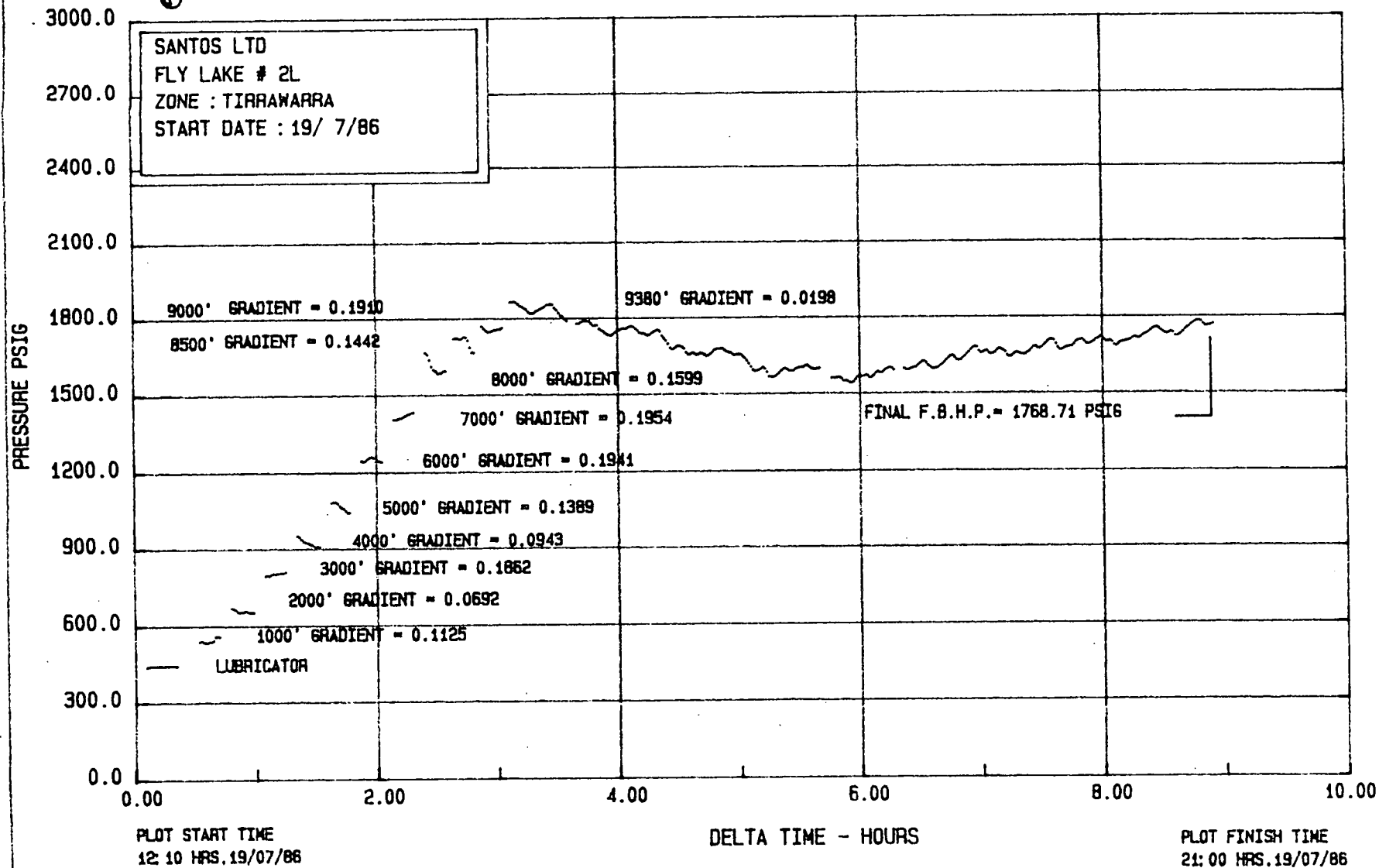
WELL FLOWING ON 12/64ths CHOKE

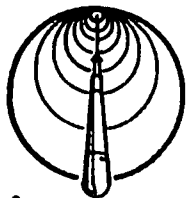
DWT IN : 443 PSI
EPG IN : 443 PSI
CSG IN : 0 PSI



EXPERTEST PTY LTD - ELECTRIC WIRELINE SERVICE

LINEAR PLOT

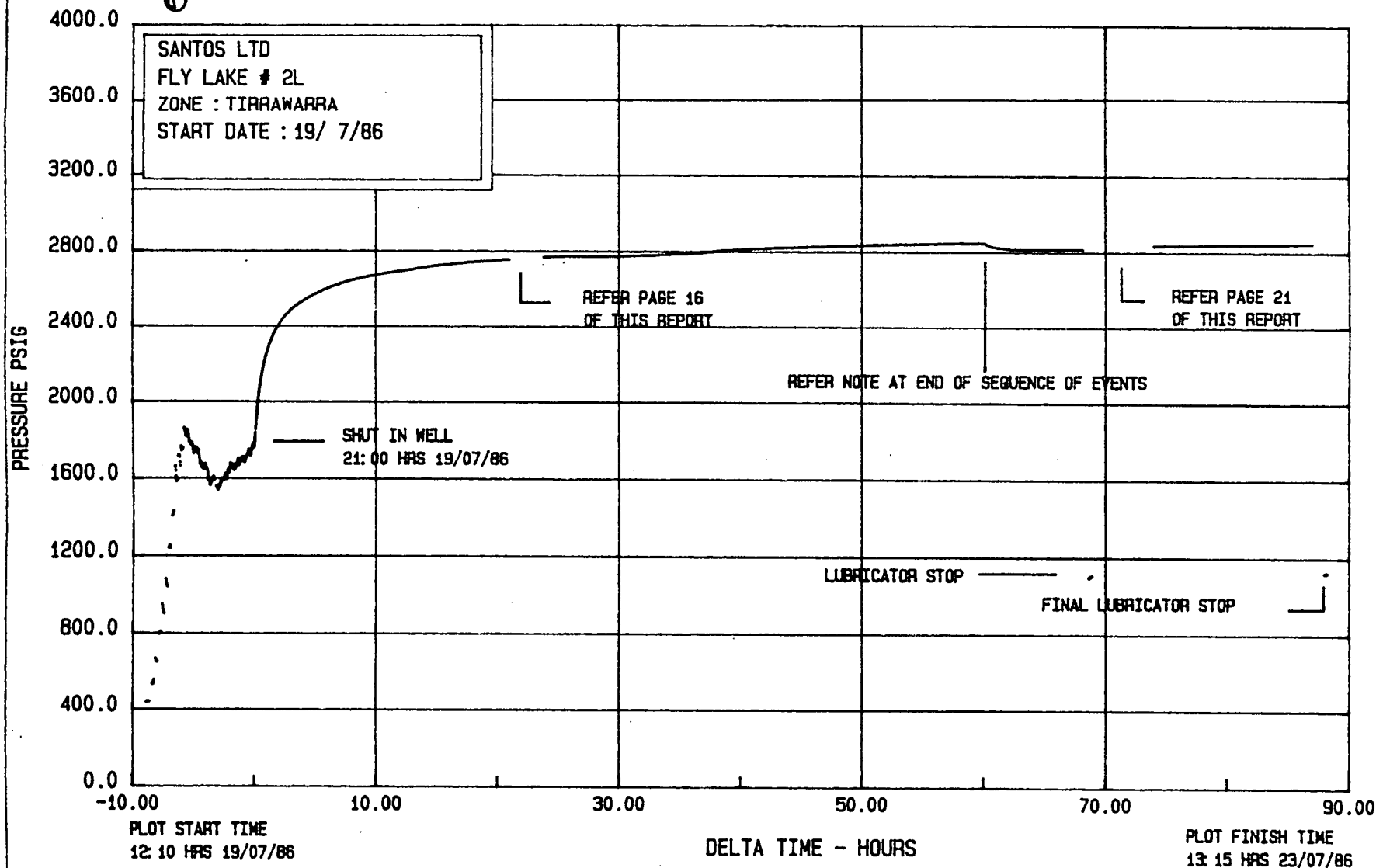


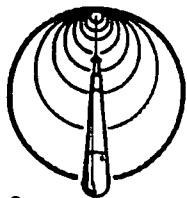


EXPERTEST PTY LTD - ELECTRIC WIRELINE SERVICE

LINEAR PLOT

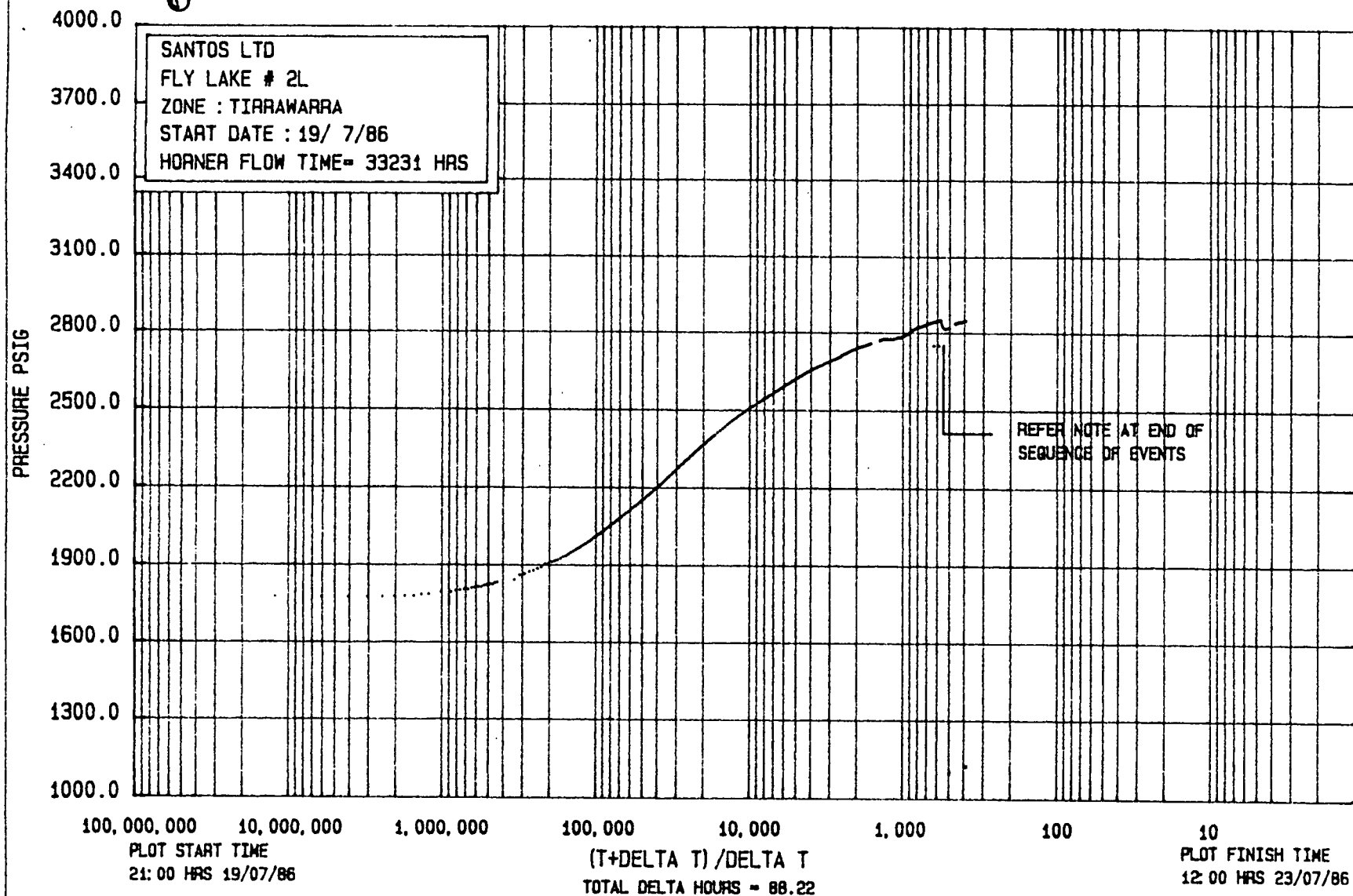
SANTOS LTD
FLY LAKE # 2L
ZONE : TIRRAWARRA
START DATE : 19/ 7/86

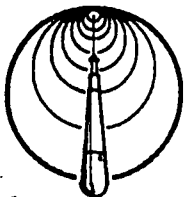




EXPERTEST PTY LTD - ELECTRIC WIRELINE SERVICE

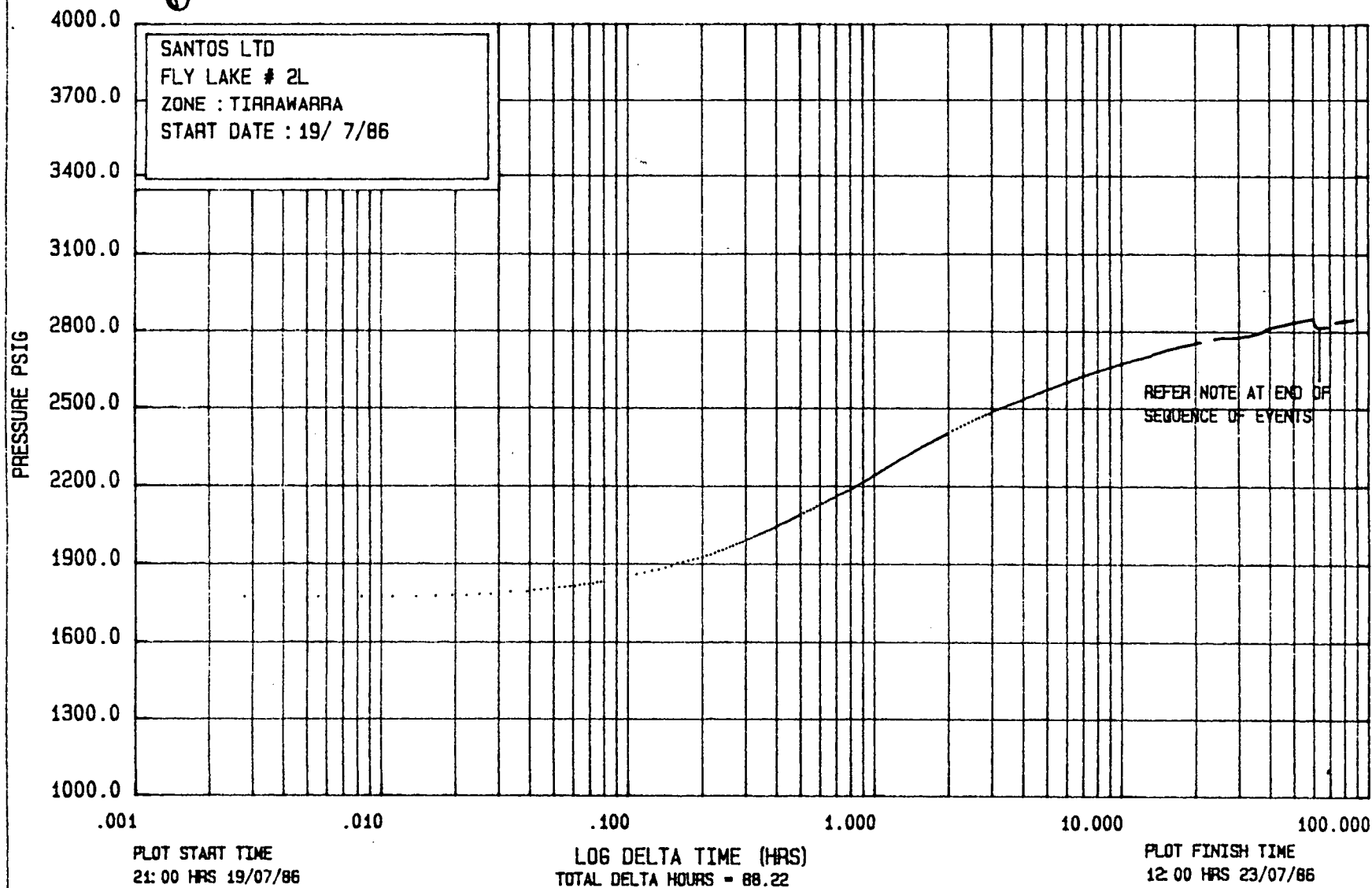
HORNER PLOT

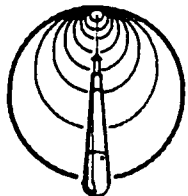




EXPERTEST PTY LTD - ELECTRIC WIRELINE SERVICE

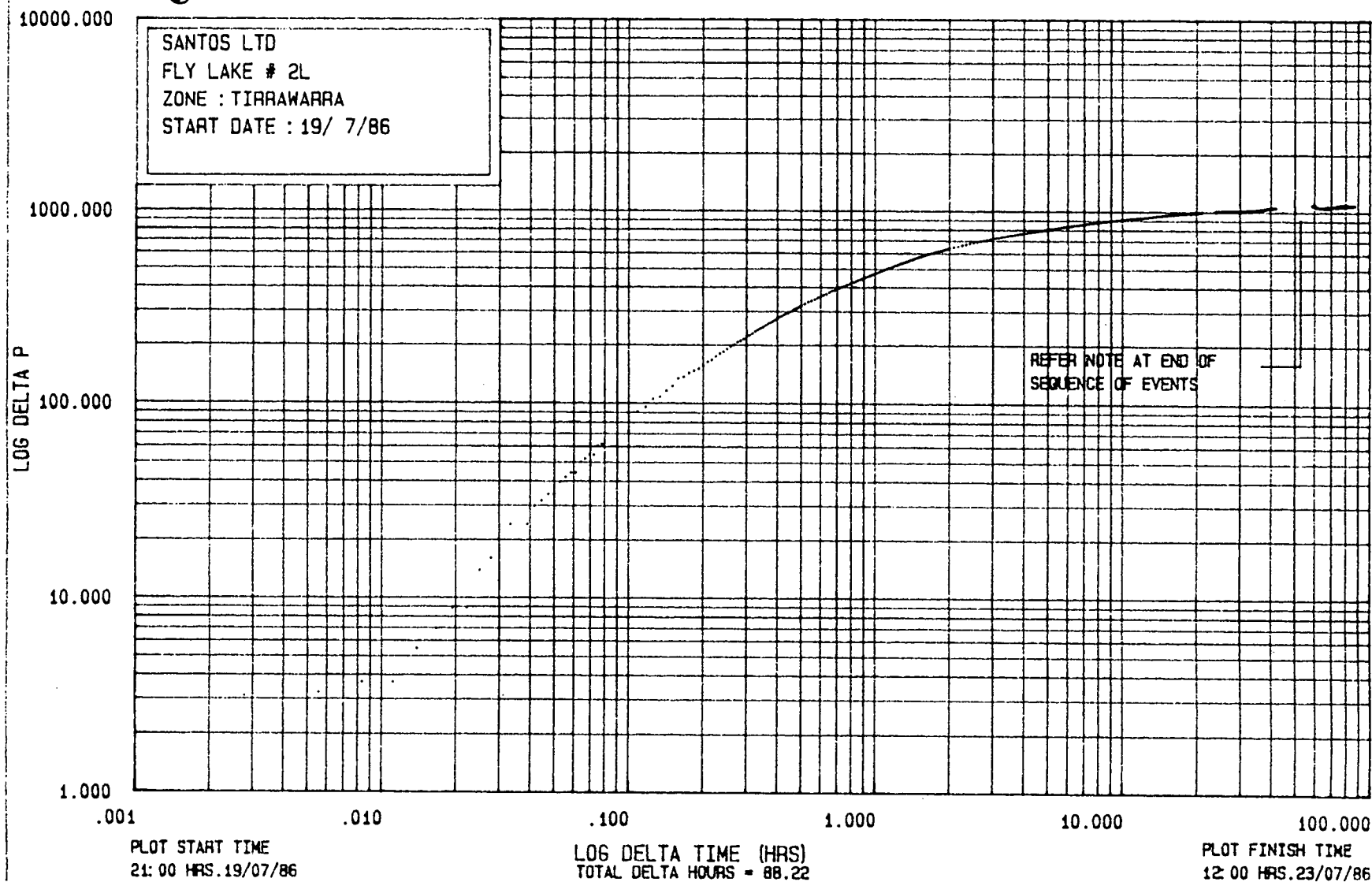
SEMI-LOG PLOT





EXPERTEST PTY LTD - ELECTRIC WIRELINE SERVICE

LOG-LOG PLOT



CLIENT Santos WELL Fly Lake #2L
 OPERATOR C. Stevens DATE 19 - 23 July 1986
 SURVEY Build up
 TOP BOMB REC. No. CLOCK DATA
 MID BOMB REC. No. CLOCK DATA
 BTM BOMB 46103 x 4800 PSI REC. No. 14633 x 15 TLS CLOCK DATA 29117 x 180 HR
 ENG. STYLUS 19/7/86 @ 10:00 DISENGAGE STYLUS 22/7/86 @ 20:30
 DWT IN 443 PSI DWTOUT 1110 PSI MBHT 271°F

Date	Time	Cum. Time	Depth	Top Def.	Top PSI	Mid Def.	Mid PSI	Bot Def.	Bot PSI	Remarks
19/7	21:00	0.0	9380'					.7105	1770	SWI
	21:30							.882	2049	
	22:00	1.0						.887	2211	
	22:30							.929	2317	
	23:00	2.0						.958	2389	
	23:30							.979	2442	
20/7	00:00	3.0						.994	2481	
	01:00	4.0						1.0145	2531	
	05:00	8.0						1.060	2645	
	09:00	12.0						1.082	2700	
	13:00	16.0						1.0963	2736	
	17:00	20.0						1.105	2758	
21/7	05:00	32.0						1.116	2785	
	17:00	44.0						1.132	2826	
22/7	05:00	56.0						1.141	2848	
	17:00	68.0						1.130	2821	P.O.H. to check Amerada & EPG. See following for Rerun
NOTE: FLOWING GRADIENT PORTION UNREADABLE.										



138 RICHMOND ROAD MARLESTON SA 5033

POSTAL ADDRESS: PO BOX 354 COWANDILLA 503

CLIENT SANTOS	WELL fly lake #2L
OPERATOR C. STEVENS	DATE 19 - 23 JULY 1986
SURVEY B.H.P. BUILD UP - Continued	
TOP BOMB	REC. No. CLOCK DATA
MID BOMB	REC. No. CLOCK DATA
BTM BOMB 46103 x 4800 PSI	REC. No. 14633 x 15 TLS CLOCK DATA 28648 x 96 HRS
ENG. STYLUS 22/7/86 @ 20:45	DISENGAGE STYLUS 23/7/86 @ 16:20
DWT IN 1130	DWTOUT 1130 MBHT 2710F

E2



WIRELINE REPORT

WELL: FLY LAKE #24DATE: 7/4/87PROGRAM: FLY LAKE & BROOKA B.H.P.PURPOSE OF WORK: B/D. Run & Static Gradient.

REPORT OF WORK PERFORMED:

09:00 ARRIVE ON LOCATION. RIS IN SWAB
VALVE & .082 S/S W/LINE UNIT.

10:30 R.I.H. WITH 1.75" B/D TO TAG P.B.T.O
@ '8829 K.B.

11:05 P.O.H.

11:30 TOOLSTRINGS TO SURFACE. DEPRESSURE LUB.

11:33 RIS IN 2 PRESSURE ELEMENTS AND
PERFORM STATIC GRADIENT A.P.P.

13:30 CHARTS O/K. RIS OUT

14:00 HAND WELL BACK TO PRODUCTION.

OPERATOR'S SIGNATURE

WORK PERFORMED BY: I. KURASIAK / L. RILEY OF EXPERTEST

WELL DATA:

Tubing Size: 2 3/8" FWHP: N/A SIWHP: 1763 psi

Sub Surface S.V./Landing Nipple @ _____ S.S.D. @: _____

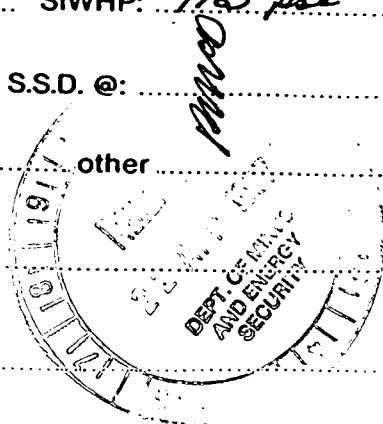
"X" Nipple @ _____ "N"/"XN" Nipple @ _____ other _____

Min I.D. _____ " @ _____ Packer @ _____

Perforated Interval: _____

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba

1801





**** FLY LAKE#2U ****

STATIC PRESSURE GRADIENT

TEST DATE: 7/4/87

TOP PRESSURE ELEMENT 22418/4000				BOTTOM PRESSURE ELEMENT 22308/4100		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.8900	1768.5	----	0.8470	1762.8	----
1000	0.9410	1871.1	0.1025	0.8970	1866.5	0.1036
2000	0.9920	1973.7	0.1027	0.9460	1968.0	0.1015
3000	1.0450	2080.5	0.1068	0.9970	2073.6	0.1057
4000	1.1600	2312.8	0.2322	1.1100	2307.7	0.2340
5000	1.2700	2535.5	0.2227	1.2190	2533.4	0.2257
6000	1.3750	2748.6	0.2131	1.3200	2742.6	0.2092
7000	1.4720	2945.9	0.1973	1.4160	2941.5	0.1989
8000	1.5620	3129.2	0.1833	1.5050	3125.9	0.1844
8400	1.6030	3212.9	0.2090	1.5450	3208.7	0.2071
8804	1.6470	3302.6	0.2223	1.5870	3295.7	0.2153
LUB	0.8980	1784.6	----	0.8570	1783.6	----

GENERAL REMARKS:

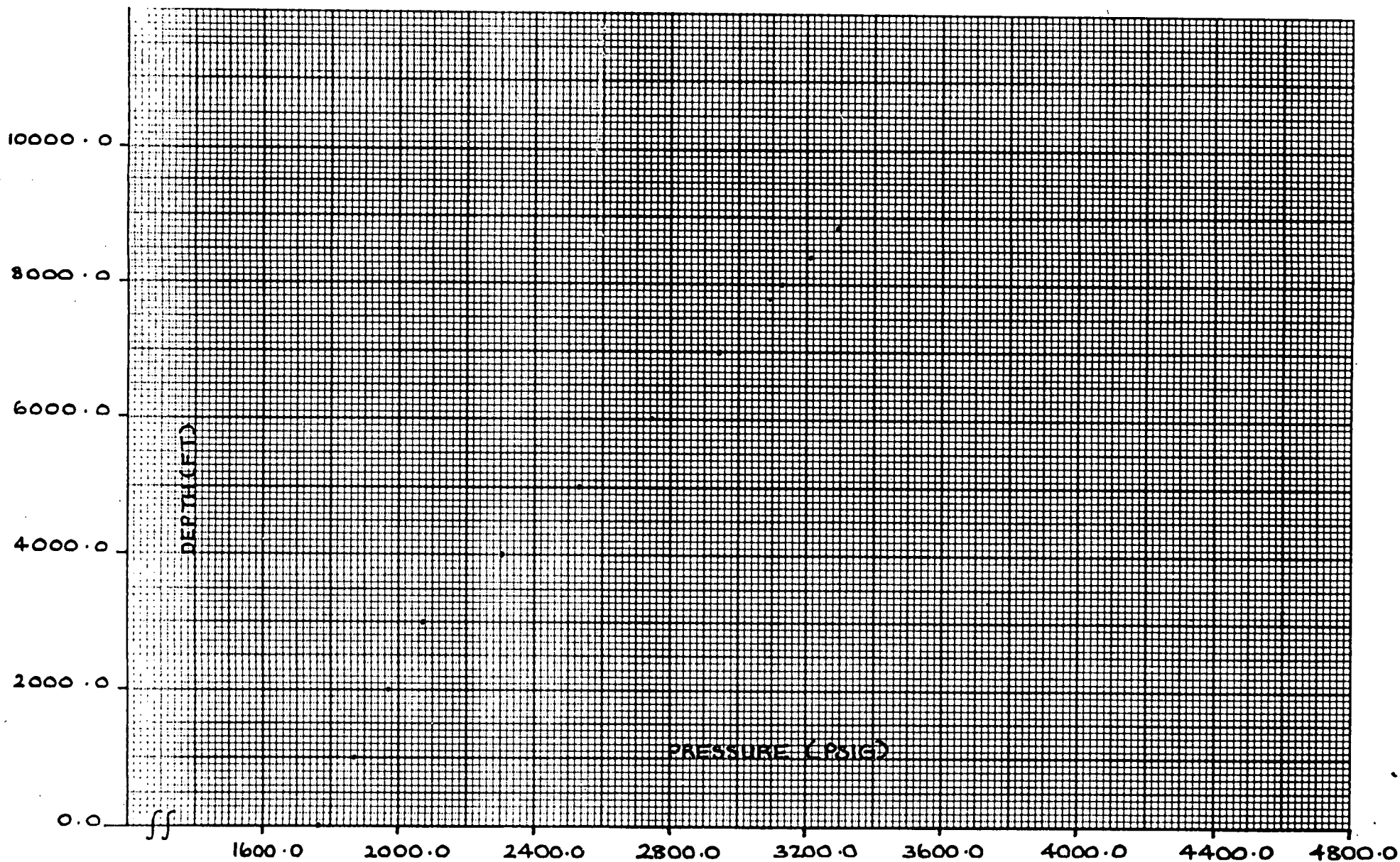
O/K

DWT IN: 1763
DWT OUT: 1763
MAX BHT: 290F

ELEMENT 22418/4000 CALIBRATED 24.3.87
ELEMENT 22308/4100 CALIBRATED 24.3.87

FLY LAKE # 2 UPPER — STATIC PRESSURE GRADIENT — 7/4/87

ELEMENT # 22308/4100 (BOT)



WELL NAME: FLY LAKE #24

STATIC GRADIENT SURVEY

DATE: 7/4/87

BOMB No. 1 DATA

ELEMENT No. 22418 ELEMENT RANGE: 4000
RECORDER No. 14926 CLOCK DATA: 2323x 3 hrs
ENGAGE STYLUS: 11:33 DISENGAGE: 1328

BOMB No. 2 DATA

ELEMENT No: 22308 ELEMENT RANGE: 4100
RECORDER No: 54652 CLOCK DATA: 2530x360
ENGAGE SYLUS: 11:33 DISENGAGE: 1328

LUBRICATOR DATA

PRESSURE WITH D.W.T.: 17:63 psi.
TIME PRESSURED: 11:40
TIME DEPRESSURED: 13:23

[illegible]

General Comments:



WIRELINE REPORT

246

WELL: Fly lake #2 Lower.

DATE: 29.04.87

PROGRAM: Static Gradient Survey

PURPOSE OF WORK: Well Evaluation.

REPORT OF WORK PERFORMED: 29th April 1987.

07:50 on location & commenced rig up.
08:45 Test BOPs and equipment.
08:50 R/H with a 1.75" Blind box.
09:11 stopped at 9422' KB as per program.
POH
09:23 Depressure the lubricator & rigged
for the gradient survey.
09:55 R/H with elements
11:14 POH with the elements last stop was 9400' KB.
11:57 Depressure the lubricator & rigged down
equipment and secured the well.

Operator's Signature
Gordon R. Peterson

WORK PERFORMED BY: G. Peterson & R. Campbell OF Expertest.

WELL DATA:

Tubing Size: 2 7/8" FWHP: SIWHP: 163 psi

Sub Surface S.V./Landing Nipple @ S.S.D. @: Yes ?

"X" Nipple @ "N" Nipple @ Yes ? other

Min I.D. 1.85" @ Packer @ 8780' Top ? Bottom

Perforated Interval: 9532' - 9565' Tirrawarra.

Forward to: Petroleum Engineering - Adelaide
Production Department - Moomba

1801

MWD
25-5



**** FLY LAKE #2 LOWER ****
STATIC PRESSURE GRADIENT

TEST DATE: 29.04.87

TOP PRESSURE ELEMENT 28541/5000				BOTTOM PRESSURE ELEMENT 28903/5200		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.0585	149.7	----	0.0615	153.8	----
1000	0.0610	156.5	0.0069	0.0645	161.7	0.0078
2000	0.1300	345.6	0.1891	0.1370	350.6	0.1890
3000	0.2455	661.6	0.3160	0.2585	667.3	0.3166
4000	0.3665	992.4	0.3307	0.3865	1000.8	0.3336
5000	0.5235	1421.3	0.4289	0.5505	1428.4	0.4276
6000	0.6790	1846.1	0.4248	0.7130	1852.5	0.4241
7000	0.8330	2267.0	0.4209	0.8730	2270.6	0.4181
8000	0.9850	2682.6	0.4156	1.0305	2682.8	0.4122
9000	1.1350	3092.7	0.4101	1.1850	3087.7	0.4049
9400	1.1935	3252.6	0.3998	1.2480	3252.9	0.4131
LUB	0.0600	153.8	----	0.0625	156.4	----

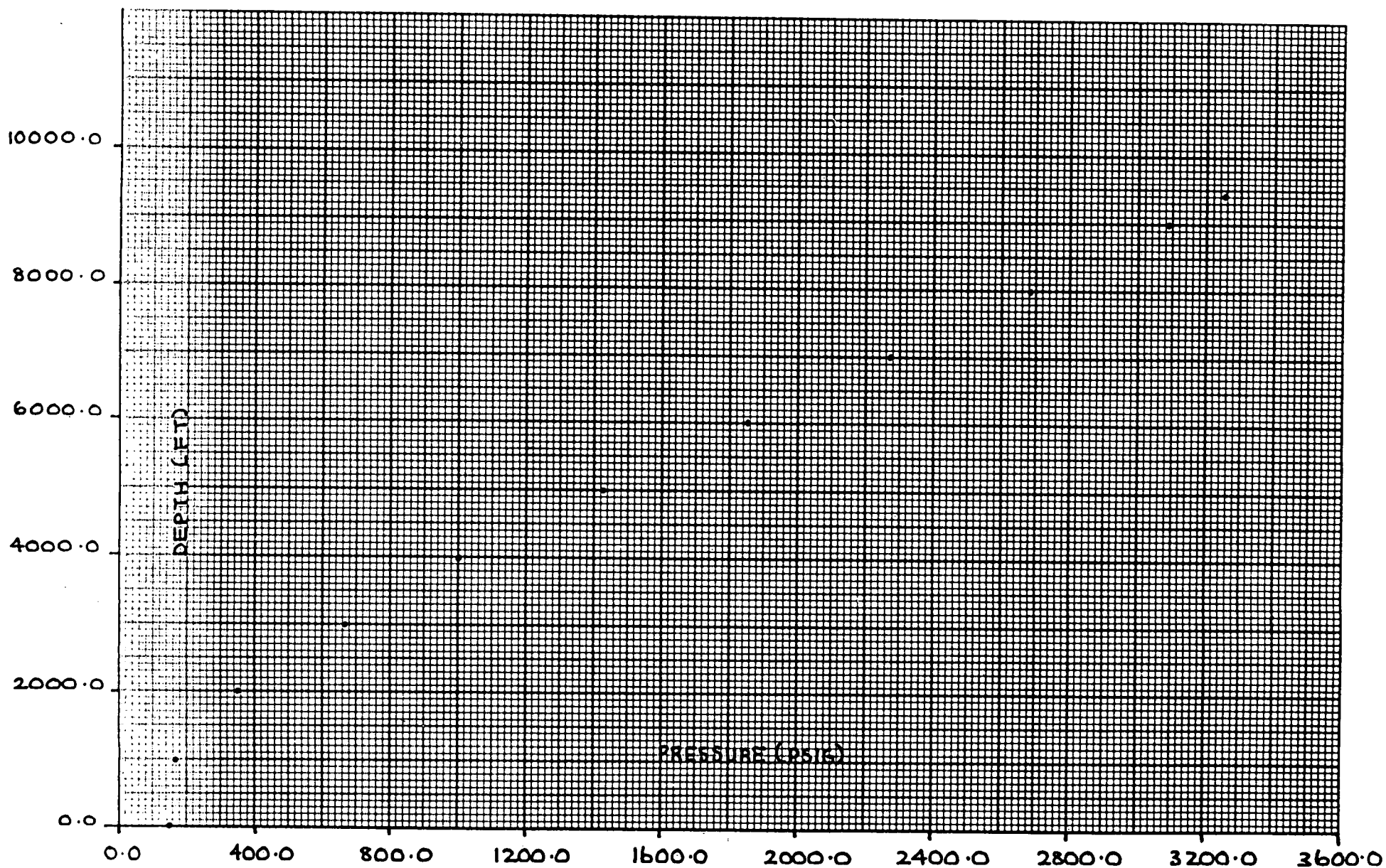
GENERAL REMARKS:

DWT IN: 162
 DWT OUT: 161
 MAX BHT: REF TEMP ELEMENT

ELEMENT 28541/5000 CALIBRATED 2.12.86
 ELEMENT 28903/5200 CALIBRATED 2.12.86

FLY LAKE # 2 LOWER — STATIC PRESSURE GRADIENT — 29/4/87

ELEMENT # 28903/5200 (BOT)





OPERATOR G. Petersen

DATE 29.04.87

GENERAL REMARKS: Temp Element :- 22945 184°- 439°F Recorder 14621 x 15725
3HR clock No 2530.

245



WIRELINE REPORT

250

WELL: FLY LAKE # 2 UPPER

DATE: 5-12-87

PROGRAM: RUN STATIC GRADIENT

PURPOSE OF WORK:

REPORT OF WORK PERFORMED:

12:00 RIGGED UP.
12:20 R.H. 1.75 BLIND BOX TO 8824' (WLD) TAGED BOTTOM ROOM.
13:19 RAN STATIC GRADIENT AS PER PROGRAM WITH STOPS @ 1000'
2000', 3000', 4000', 5000', 6000', 7000', 8000',
8400' 8804' ROOM.
15:35 BOTH CHARTS OK. RIGGED DOWN.

Keil D.
OPERATOR'S SIGNATURE

WORK PERFORMED BY: K. DAVE & S. GULBRANDSEN OF EXPERTEST

WELL DATA:

Tubing Size: FWHP: — SIWHP: 1923 PSI

Sub Surface S.V./Landing Nipple @ S.S.D. @:

"X" Nipple @ "N"/"XN" Nipple @ other

Min I.D. " @ Packer @

Perforated Interval:

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba

8/2/88
ENV. 1807



**** FLY LAKE #2 UPPER ****
STATIC PRESSURE GRADIENT

TEST DATE: 5.12.87

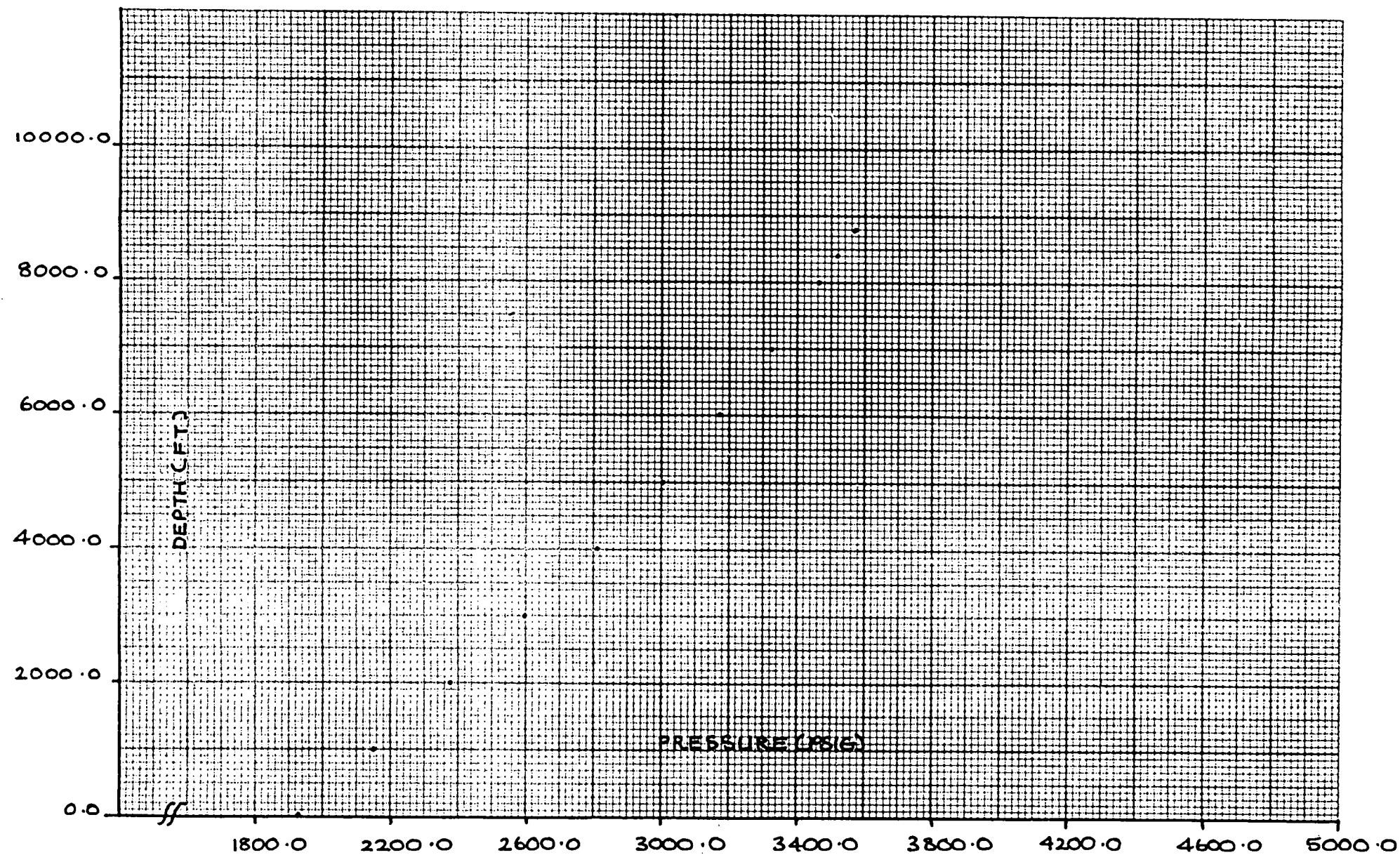
TOP PRESSURE ELEMENT 27616/5700				BOTTOM PRESSURE ELEMENT 27617/5675		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.6680	1933.3	----	0.6670	1929.9	----
1000	0.7461	2157.1	0.2238	0.7450	2154.0	0.2241
2000	0.8240	2380.3	0.2232	0.8230	2378.1	0.2241
3000	0.9020	2603.7	0.2235	0.9000	2599.4	0.2213
4000	0.9750	2812.9	0.2092	0.9740	2812.1	0.2127
5000	1.0430	3007.8	0.1949	1.0405	3003.3	0.1912
6000	1.1015	3175.6	0.1677	1.0995	3172.9	0.1697
7000	1.1540	3326.2	0.1506	1.1520	3324.0	0.1510
8000	1.2030	3466.8	0.1406	1.2005	3463.5	0.1395
8400	1.2215	3519.8	0.1327	1.2195	3518.2	0.1367
8804	1.2385	3568.6	0.1208	1.2370	3568.6	0.1247
LUB	0.6740	1950.5	----	0.6767	1957.7	----

GENERAL REMARKS:

DWT IN: 1915
DWT OUT: 1923
MAX BHT: 258 F

ELEMENT 27616/5700 CALIBRATED 30.10.87
ELEMENT 27617/5675 CALIBRATED 30.10.87

FLY LAKE # 2 UPPER - STATIC PRESSURE GRADIENT - 5/12/87
ELEMENT # 27617/5675 (BOT)





WIRELINE REPORT

253

WELL: FLY LAKE *2UPPER

DATE: 12TH JANUARY 1988.

PROGRAM:

PURPOSE OF WORK: STATIC GRADIENT.

REPORT OF WORK PERFORMED:

12TH JANUARY 1988.

09:15 - ARRIVE LOCATION AND RIG UP W/LINE UNIT AND ASSOCIATED EQUIPMENT - PRESSURE TEST EQUIPMENT - O.K. PREPARE TO RUN B.H.P. GAUGES.

FOR BUND BOX RUN PLEASE SEE LAST WIRELINE REPORT.

10:38 - R.I.H. WITH B.H.P. GAUGES FOR STATIC GRADIENT SURVEY AS PER PROGRAM.

12:13 - P.O.O.H. FROM BOTTOM STOP @ 8800' KB.

12:28 - ARRIVE LUBRICATOR.

12:43 - DEPRESS LUBRICATOR RIG DOWN - LEAVE WELL SHUT IN.

[Signature]
OPERATOR'S SIGNATURE

WORK PERFORMED BY: G. GIANCASSO / M. SAUNDERS OF ENERTEC.

WELL DATA:

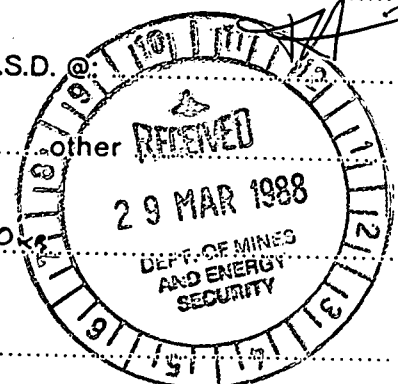
Tubing Size: 2 7/8" FWHP: S/I SIWHP: 2160 PSI

Sub Surface S.V./Landing Nipple @ S.S.D. @

"X" Nipple @ 8800' KB "N"/"XN" Nipple @

Min I.D. 1.875" @ 8800' KB Packer @ 8780' KB

Perforated Interval: 8876' - 9286' KB PATCHAWARRA.



Forward to: Petroleum Engineering — Adelaide.
Production Department — Moomba



**** FLY LAKE #2 UPPER. ****
STATIC PRESSURE GRADIENT

TEST DATE: 12.1.88.

TOP PRESSURE ELEMENT 61622/5000				BOTTOM PRESSURE ELEMENT 15452/5700		
DEPTH (FT.)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)	DEFLECTION (INCHES)	PRESSURE (PSIG)	GRADIENT (PSI/FT)
LUB	0.8590	2186.0	----	0.7545	2170.0	----
1000	0.9460	2409.1	0.2231	0.8330	2395.4	0.2254
2000	1.0255	2613.0	0.2040	0.9040	2599.5	0.2040
3000	1.0960	2794.0	0.1809	0.9660	2777.8	0.1783
4000	1.1605	2959.5	0.1655	1.0230	2941.8	0.1641
5000	1.2200	3112.0	0.1526	1.0755	3093.0	0.1512
6000	1.2755	3254.2	0.1422	1.1250	3235.7	0.1427
7000	1.3295	3392.3	0.1381	1.1715	3369.8	0.1341
8000	1.3850	3534.0	0.1417	1.2160	3498.1	0.1284
8400	1.4090	3595.2	0.1529	1.2320	3544.3	0.1154
8804	1.4578	3719.3	0.3073	1.2478	3589.9	0.1129
LUB	0.8905	2266.7	----	0.7580	2180.1	----

GENERAL REMARKS:

DWT IN: 2160

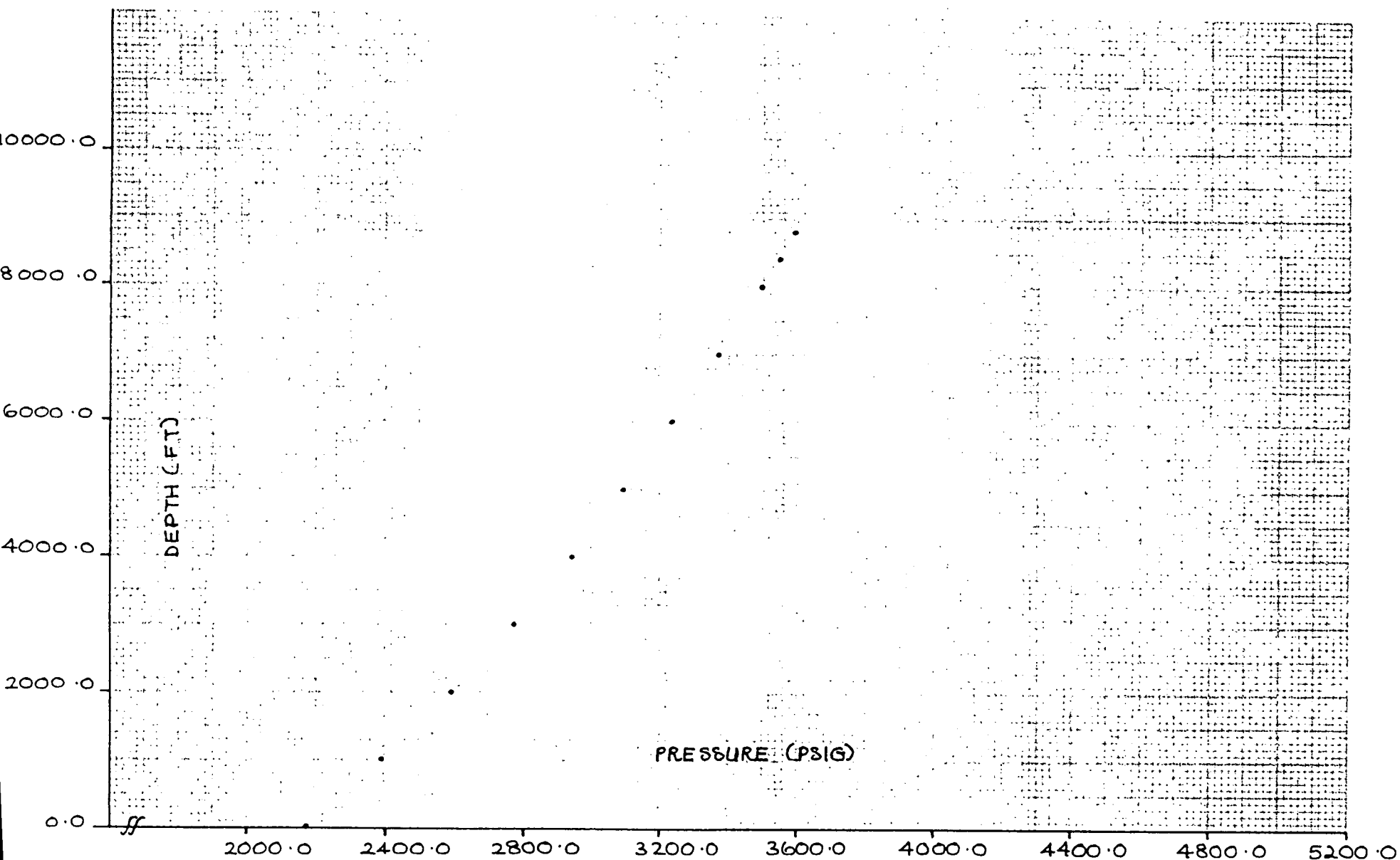
ELEMENT 61622/5000 CALIBRATED 3.12.87

DWT OUT: 2160

ELEMENT 15452/5700 CALIBRATED 3.12.87.

MAX BHT: N/A THERMOMETER BROKEN DOWNHOLE.

FLY LAKE # 2 UPPER - STATIC PRESSURE GRADIENT - 12/1/88
ELEMENT # 15452/5700 (BOT)



256

WELL NAME:

FLY LAKE #2 UPPER

STATIC GRADIENT SURVEY

DATE: 12TH JANUARY 1988.

BOMB No. 1 DATA

ELEMENT No. 61622 ELEMENT RANGE: 5000 PSI
 RECORDER No. 30928 CLOCK DATA: 25511 x 3hr 157LS
 ENGAGE STYLUS: 10.18 DISENGAGE: 12.50

BOMB No. 2 DATA

ELEMENT No. 15452 ELEMENT RANGE: 5700 PSI
 RECORDER No. 61002 157LS CLOCK DATA: 25509 x 3hr
 ENGAGE STYLUS: 10.18 DISENGAGE: 12.50

LUBRICATOR DATA

PRESSURE WITH D.W.T.: IN 2160 PSI OUT 2160 PSI
 TIME PRESSURED: 10.23
 TIME DEPRESSURED: 12.43

DATE	TIME	DEPTH	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
12 TH JANUARY 1988										
	10.23	LUB	.859	2186.0		LUB	.7545	2170.0		15 MINUTES
	10.38	R.I.H				R.I.H				
	10.43	1000	.946	2409.1	.2231	1000	.833	2395.4	.2254	5 MINUTES
	10.51	2000	1.0255	2613.0	.2040	2000	.904	2599.5	.2040	" "
	10.59	3000	1.096	2794.0	.1809	3000	.966	2777.8	.1783	" "
	11.09	4000	1.1605	2959.5	.1655	4000	1.023	2941.8	.1641	" "
	11.17	5000	1.220	3112.0	.1526	5000	1.0755	3093.0	.1512	" "
	11.25	6000	1.2755	3254.2	.1422	6000	1.125	3235.7	.1427	" "
	11.34	7000	1.3295	3392.3	.1381	7000	1.1715	3369.8	.1341	" "
	11.43	8000	1.385	3534.0	.1417	8000	1.216	3498.1	.1284	" "
	11.51	8400	1.409	3595.2	.1529	8400	1.232	3544.3	.1154	" "
	11.58	8804	1.4578	3719.3	.3073	8804	1.2478	3589.9	.1129	15 MINUTES
	12.13	P.O.A.H.				P.O.O.H.				
	12.28	LUB	.8905	2266.7		LUB	.758	2180.1		15 MINUTES

General Comments: M.B.H.T. - N/A - THERMOMETER BROKEN DOWNHOLE.

PLEASE NOTE - RESULTS OF TOP ELEMENT SUSPECT DUE TO FAULT IN BELLOWS/BOURDON TUBE.

SEQUENCE OF EVENTS

CUSTOMER : Santos Ltd.

PERFORATIONS:

PAGE: \ OF \

WELL NAME: Fly Lake #2 U

FORMATION : Tirrawarra

DATE: 11.9.91

TEST TYPE : Static Gradient Survey

OPR : D. Deiparine

[illegible]

**EXPERTEST**

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWANDILLA 5033

PH. (08) 354 0488 TELEX AAC7183

FAX (08) 43 7408.

138 RICHMOND ROAD MARLESTON
SOUTH AUSTRALIA 5033

Tested Wednesday, 11th September 1991.

CLIENT	LOCATION	FORMATION
Santos Ltd.	Fly Lake # 2 U	Tirrawarra

STATIC PRESSURE GRADIENT REPORT

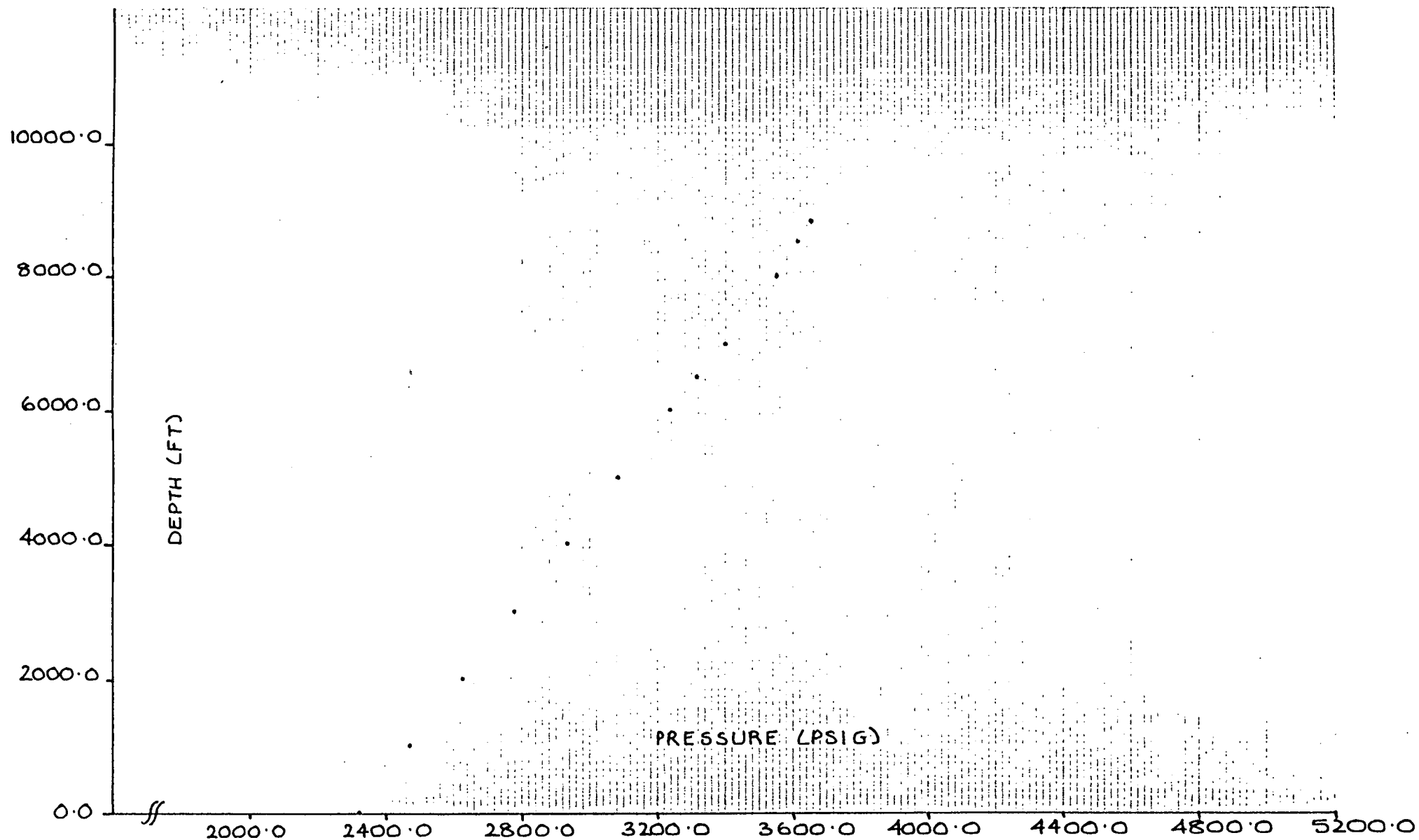
PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	21821	4750	4/ 6/91
Bottom	21379	4825	4/ 6/91

WELL DATA	
PARAMETER	VALUE
DWT In	2326 PSIG
DWT Out	2322 PSIG
Max BHT	256 F

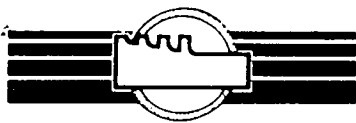
TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT. KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.9290	2332.0	----	0.9430	2321.2	----
1000	0.9870	2477.9	0.148	1.0040	2472.1	0.151
2000	1.0490	2634.1	0.156	1.0670	2628.2	0.156
3000	1.1090	2785.3	0.151	1.1280	2779.4	0.151
4000	1.1680	2934.0	0.149	1.1900	2933.3	0.154
5000	1.2290	3088.0	0.154	1.2500	3082.4	0.149
6000	1.2890	3239.6	0.152	1.3130	3239.0	0.157
6500	1.3200	3317.9	0.157	1.3450	3318.6	0.159
7000	1.3510	3396.3	0.157	1.3780	3400.7	0.164
8000	1.4100	3545.6	0.149	1.4380	3550.0	0.149
8500	1.4370	3614.0	0.137	1.4650	3617.2	0.134
8800	1.4510	3649.4	0.118	1.4810	3657.0	0.133
LUB.	0.9310	2337.0	----	0.9500	2338.5	----

GENERAL REMARKS

FLY LAKE # 2 U — STATIC PRESSURE GRADIENT — 11/9/91
ELEMENT # 21379/4825 (BOT)



EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : Santos Ltd.

PERFORATIONS:

PAGE: 1 OF 1

WELL NAME: Fly Lake # 2 U

FORMATION : Tirrawarra

DATE: 11.9.91

TEST TYPE : Static Gradient Survey

OPR : D. Deiparine

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

TIME
(HOURS)TUBING
PRESSURE
(KPA)ANNULUS
PRESSURE
(KPA)

ELEMENT SERIAL NO.

21821

21379

DATE

11.9.91

ELEMENT RANGE

4750

4825

PRESSURE LUBRICATOR

1349

16038

5964

RECORDING SECTION SERIAL NO.

14619

59288

RUN IN HOLE

1404

DATE OF CALIBRATION:

4/6/91

4/6/91

ON DEPTH AT

8800

FT/M

1504

CLOCK SERIAL NO.

2509

2431

DATE

11.9.91

CLOCK RANGE

3HRS

3HRS

PULL OUT OF HOLE

1519

LEAD SCREW TYPE

S/P

S/P

AT SURFACE

1533

16016

DEPRESSURE LUBRICATOR

1548

5964

ENGAGE STYLUS DATE 11.9.91 TIME

1343

1343

MAXIMUM BHT AT 8800 FT/M = 256 °F/C

DISENGAGE STYLUS DATE 11.9.91 TIME

1544

1544

N.B. ALL DEPTHS ARE MEASURED FROM K.B.

DATE

TIME

REMARKS

CUSTOMER :	Santos Ltd.	PERFORATIONS:	PAGE: 1 OF 1
WELL NAME:	Fly Lake # 2 L	FORMATION : Patchawarra	DATE: 11.9.91
TEST TYPE :	Static Gradient Survey		OPR : D. Deiparine

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**EXPERTEST**

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWANDILLA 5033

PH. (08) 354 0488 TELEX AA87183

FAX (08) 43 7408

138 RICHMOND ROAD MARLESTON
SOUTH AUSTRALIA 5033

Tested Wednesday, 11th September 1991.

CLIENT	LOCATION	FORMATION
Santos Ltd.	Fly Lake # 2 L	Patchawarra

STATIC PRESSURE GRADIENT REPORT

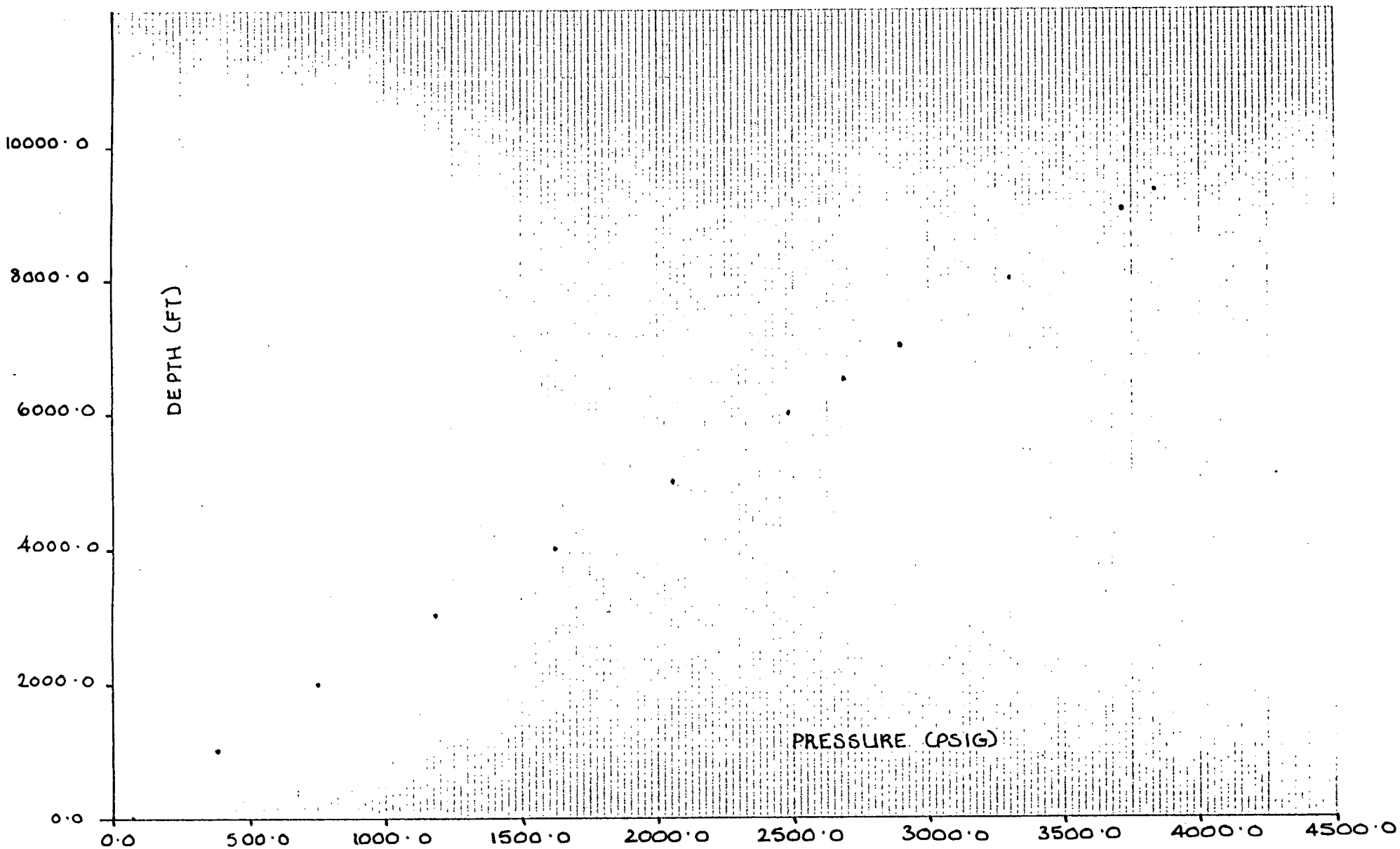
PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	21821	4750	4/ 6/91
Bottom	21379	4825	4/ 6/91

WELL DATA	
PARAMETER	VALUE
DWT In	79 PSIG
DWT Out	75 PSIG
Max BHT	304 F

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.0300	73.4	---	0.0280	59.5	---
1000	0.1550	388.1	0.315	0.1580	383.2	0.324
2000	0.2990	750.0	0.362	0.3040	744.7	0.362
3000	0.4750	1191.8	0.442	0.4830	1186.4	0.442
4000	0.6470	1623.5	0.432	0.6590	1620.1	0.434
5000	0.8200	2058.0	0.435	0.8340	2051.8	0.432
6000	0.9890	2483.0	0.425	1.0080	2482.0	0.430
6500	1.0710	2689.5	0.413	1.0930	2692.6	0.421
7000	1.1530	2896.2	0.413	1.1770	2901.0	0.417
8000	1.3130	3300.2	0.404	1.3430	3313.6	0.413
9000	1.4780	3717.8	0.418	1.5130	3736.7	0.423
9300	1.5250	3836.9	0.397	1.5600	3853.7	0.390
LUB.	0.0280	68.3	---	0.0310	67.0	---

GENERAL REMARKS

FLY LAKE # 2 L — STATIC PRESSURE GRADIENT — 11/9/91
ELEMENT # 21821/4750 (TOP)



BHP/BHT GAUGE RUN DATA

CUSTOMER : Santos Ltd.

PERFORATIONS:

PAGE: 1 OF 1

WELL NAME: Fly Lake # 2 L

FORMATION : Patchawarra

DATE: 11.9.91

TEST TYPE : Static Gradient Survey

OPR : D. Deiparine

GAUGE DATA		UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE	RUN DATA	TIME (HOURS)	TUBING PRESSURE (¹ / ₂ KPA	ANNULUS PRESSURE (¹ / ₂ KPA
ELEMENT SERIAL NO.		21821	21379		DATE : 11.9.91			
ELEMENT RANGE		4750	4825		PRESSURE LUBRICATOR :	1128	595	5964
RECORDING SECTION SERIAL NO.		14619	59288		RUN IN HOLE :	1133		
DATE OF CALIBRATION:		4/6/91	4/6/91		ON DEPTH AT : 9300 FT/M	1247	545	
CLOCK SERIAL NO.		2509	2431		DATE : 11.9.91	1302		
CLOCK RANGE		3 HRS	3 HRS		PULL OUT OF HOLE :	1320		
LEAD SCREW TYPE		S/P	S/P		AT SURFACE :	1320	49.6	
					DEPRESSURE LUBRICATOR :	1335		5964
ENGAGE STYLUS	DATE 11.9.91	TIME 1124	1124		MAXIMUM BHT AT 9300 FT/M = 304 °F/D			
DISENGAGE STYLUS	DATE 11.9.91	TIME 1327	1327		N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

[illegible]



WELL TEST DATA SHEET

265

WELL: FLY LAKE # 2L

OPERATOR: WAYNE BUDDUE

DATE (Start Test): 8-5-86

METER RUN I.D.: 97.18 / ~~102.28~~ mm

TEST SEPARATOR: 200 A.F.

ORIFICE PLATE: 12.70 mm

TEST LINE: N/A

FLOW COMPUTER CONSTANT: 7770

TO START TEST: TIME PIG LAUNCHED: N/A

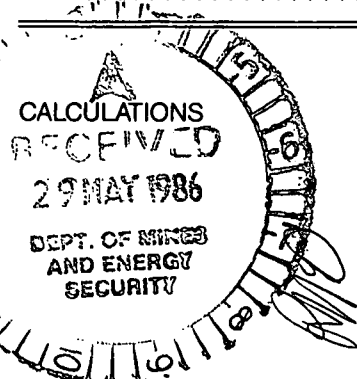
TIME RECEIVED: N/A

TO END TEST: TIME PIG LAUNCHED: N/A

TIME RECEIVED: N/A

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
1430	3200	16	N/A	0	0	0	3300	7.0	30	N/A	N/A
0951	3400	16	N/A	16.16	0	1.55	3200	5.0	26	N/A	N/A
1430	3400	16	N/A	19.87	0	1.92	3200	4.0	30	N/A	N/A
1046	3400	16	N/A	37.57	0	3.67	3150	4.25	16	N/A	N/A
1430	3400	16	N/A	40.77	0	4.05	3200	4.0	26.5	N/A	N/A
(A) 4.8 hrs	TOTALS (final minus initial)			(B) OIL 40.77	(C) 0	(D) + 4.05 = TOTAL WATER	(E) 4.05			(F) GAS	

COMMENTS:



PRODUCTION ENGINEERING DEPARTMENT USE ONLY

SUMMARY

 Temp 25.7
 stat 3210
 diff 4.9
 Ext 2542

(1) STOCK TANK OIL

15.87 m³/d

(2) GAS RATE 3.30 x 10³ m³/d

(3) G.O.R. 207.87 m³/m³

(4) WATER RATE 2.02 m³/d

(5) WATER CUT 11.3

 WHITE: Original to: ADELAIDE PRODUCTION ENGINEERING
 YELLOW: 1st Copy to: MOOMBA PRODUCTION DEPARTMENT
 OLD GOLD: 2nd Copy to: FIELD SATELLITE OFFICE
 PINK: 3rd Copy to: MOOMBA PETROLEUM ENGINEERING



WELL TEST DATA SHEET

266

WELL: FLY LAKE # 2L

OPERATOR: WAYNE BUDOLE

DATE (Start Test): 4/6/86

METER RUN I.D.: 97.18 / ~~100.00~~ mm

TEST SEPARATOR: 200 AF

ORIFICE PLATE: 12.7 mm

TEST LINE: N/A

FLOW COMPUTER CONSTANT: 0.7770

TO START TEST: TIME PIG LAUNCHED: N/A

TIME RECEIVED: N/A

TO END TEST: TIME PIG LAUNCHED: N/A

TIME RECEIVED: N/A

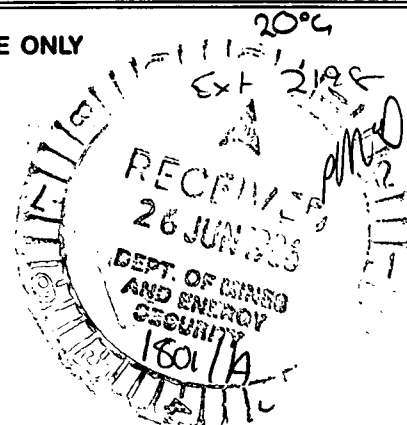
TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
1435	3400	16	N/A	0	0	0	3200	6.25	22	N/A	N/A
0650	3500	16	N/A	0.61	0.01	1.47	3300	15	12	N/A	N/A
1435	3300	16	N/A	0.78	0.02	2.19	3150	2.25	23	N/A	N/A
0744	3400	16	N/A	14.66	0.09	4.19	3000	3.75	12	N/A	N/A
1435	3300	16	N/A	23.19	0.09	5.58	3100	5.0	30	N/A	N/A
(A)	TOTALS			(B) OIL	(C)	(D)	(E) 2 8 3				(F) GAS
48 hrs.	(final minus initial)			23.19	0.09	5.58	= TOTAL WATER 5.67				

COMMENTS: Test went ok

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

CALCULATIONS

SUMMARY



(1) STOCK TANK OIL

8.97 m³/d



WELL TEST DATA SHEET

267

WELL: Fly Lake #2^{low}

OPERATOR: Justin Morley

DATE (Start Test): 27.6.86

METER RUN I.D.: 97.18/102.26 mm

TEST SEPARATOR: 200 AF

ORIFICE PLATE: 12.7 mm

TEST LINE: N/A

FLOW COMPUTER CONSTANT: 0.7770

TO START TEST: TIME PIG LAUNCHED: N/A

TIME RECEIVED: N/A

TO END TEST: TIME PIG LAUNCHED: N/A

TIME RECEIVED: N/A

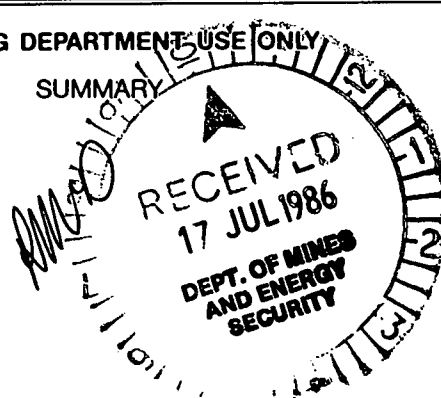
TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
1430	3300	16/64	N/A	0.00	0.00	0.00	3150	7.5	12.5	N/A	N/A
1627	3400	16/64	N/A	0.23	0.00	0.03	3200	5.0	12	N/A	N/A
0702	3300	16/64	N/A	4.92	0.00	0.48	3175	2.5	6	N/A	N/A
1430	3250	16/64	N/A	7.84	0.00	0.68	3200	1.5	26	N/A	N/A
(A)	TOTALS			(B) OIL	(C)	(D)	(E)		(F) GAS		
24hrs	(final minus initial)			12.99	0.00	1.19	= TOTAL WATER		1.19	N/A	

COMMENTS: Separator running all O.K.

CALCULATIONS

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

SUMMARY

Temp: 15°C
Diff: 4 kPa
Stat: 3180
Ext: 471

(1) STOCK TANK OIL

9.96 m³/d



WELL TEST DATA SHEET

268

WELL: FLY LAKE #2

OPERATOR: WAYNE BUDDLE

DATE (Start Test): 11-7-86

METER RUN I.D.: 97.18 / ~~107.26~~ mm

TEST SEPARATOR: 200 AF

ORIFICE PLATE: 12.70 mm

TEST LINE: N/A

FLOW COMPUTER CONSTANT: 0.7770

TO START TEST: TIME PIG LAUNCHED: 1352 hrs

TIME RECEIVED: 1403 hrs

TO END TEST: TIME PIG LAUNCHED:

TIME RECEIVED:

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
1445	4700	16	N/A	0	0	0	3000	7.5	17	N/A	N/A
0807	4100	16	N/A	5.14	0	1.09	3100	1.25	9.2	N/A	N/A
1445	4100	16	N/A	11.41	0	3.22	3700	4.0	24	N/A	N/A
0800	3200	16	N/A	17.71	.09	4.24	2900	3.5	4	N/A	N/A
1445	4200	16	N/A	28.46	.09	6.12	2950	4.5	26	N/A	N/A
(A) 4.8	TOTALS (final minus initial)		(B) OIL 28.46	(C) .09	(D) + 6.12	(E) = TOTAL WATER				6.21	(F) GAS

COMMENTS: Downstream Andco valve found hydrated at 0745 hrs on separator gas outlet on 13-7-86.

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

CALCULATIONS

SUMMARY



(1) STOCK TANK OIL

11.0 m³/d



WELL TEST DATA SHEET-

269

WELL: FLY LAKE #2

OPERATOR: WAYNE BIDDLE

DATE (Start Test): 13-7-86

METER RUN I.D.: 97.18 / ~~100.00~~ mm

TEST SEPARATOR: 200 AF

ORIFICE PLATE: 12.70 mm

TEST LINE: N/A

FLOW COMPUTER CONSTANT: 0.7770

TO START TEST: TIME PIG LAUNCHED: N/A

TIME RECEIVED: N/A

TO END TEST: TIME PIG LAUNCHED: N/A

TIME RECEIVED: N/A

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
1445	4200	16	N/A	0	0	0	2950	16.25	26	N/A	N/A
0745	4000	16	N/A	13.56	0	1.78	2950	2.5	12.5	N/A	N/A
1445	3800	16	N/A	25.12	0	3.92	3175	4.5	27	N/A	N/A
(A) 24	TOTALS (final minus initial)			(B) OIL 25.12	(C) 0	(D) + 3.92	(E) = TOTAL WATER 3.92			(F) GAS N/A	

COMMENTS:

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

CALCULATIONS

SUMMARY



(1) STOCK TANK OIL

19.47 m³/d



WELL TEST DATA SHEET

270

WELL: FLY LAKE #2

OPERATOR: WAYNE BUDDLE

DATE (Start Test): 30-7-86

METER RUN I.D.: 97.18 / ~~100.00~~ mm

TEST SEPARATOR: 200 AF

ORIFICE PLATE: 15.875 mm

TEST LINE: N/A

FLOW COMPUTER CONSTANT: 0.7770

TO START TEST: TIME PIG LAUNCHED: N/A

TIME RECEIVED: N/A

TO END TEST: TIME PIG LAUNCHED: N/A

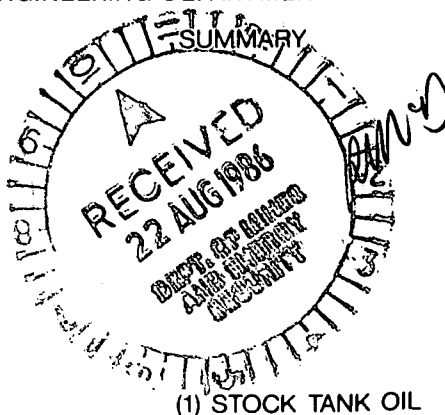
TIME RECEIVED: N/A

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
1245	3200	16	N/A	0.0	0.0	0.0	3000	10.5	22	N/A	N/A
0700	3300	16	N/A	26.96	0.0	2.87	2900	5.6	20	N/A	N/A
1245	3300	16	N/A	35.55	0.0	3.75	3000	1.75	23	N/A	N/A
0749	3400	16	N/A	62.30	0.0	6.62	2900	7.5	19	N/A	N/A
1245	3400	16	N/A	69.16	0.0	7.40	3000	10.75	28	N/A	N/A
(A)	TOTALS			(B) OIL	(C)	(D)	(E)				(F) GAS
48	(final minus initial)			69.16	0.0	7.40	= TOTAL WATER				N/A

COMMENTS:

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

CALCULATIONS



ETA 1956

22°C

7.2 D/A

1801

(1) STOCK TANK OIL

27.0

m³/d

17 62 m³/d



WELL TEST DATA SHEET

272

WELL: Fly L #2OPERATOR: FTASSONEDATE (Start Test): 14 8 86METER RUN I.D.: 97.18 / 102.26 mmTEST SEPARATOR: FLY LAKE AFORIFICE PLATE: 15.875 mmTEST LINE: -FLOW COMPUTER CONSTANT: 0.7770TO START TEST: TIME PIG LAUNCHED: - TIME RECEIVED: -TO END TEST: TIME PIG LAUNCHED: - TIME RECEIVED: -

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
0926	3600	18	18	0	0	0	3800	3.25	15	-	-
1240	3600	18	23	3.89	0	41	3800	2.5	20	-	-
1500	3600	18	25	7.04	0	75	3800	3.75	22	-	-
0826	3600	18	17	26.73	0	290	3800	2.5	14	-	-
0806	3600	18	18	52.13	0	570	3800	2.5	15	-	-
0926	3600	18	20	54.69	0	595	3800	2.5	17	-	-
(A) 46	TOTALS			(B) OIL	(C)	(D)	(E)	(F) GAS			
	(final minus initial)			54.69	0	+	595 = TOTAL WATER	595	-		

COMMENTS:

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

1808

CALCULATIONS

SUMMARY

(1) STOCK TANK OIL

2142

m³/d



WELL TEST DATA SHEET

273

WELL: FLY LAKE #2 Lower

OPERATOR: Hugh Dunthorn

DATE (Start Test): 23-8-86

METER RUN I.D.: 97.18 / ~~102.28~~ mm

TEST SEPARATOR: FLY LAKE

ORIFICE PLATE: 12.7 mm

TEST LINE:

FLOW COMPUTER CONSTANT:

TO START TEST: TIME PIG LAUNCHED: TIME RECEIVED:

TO END TEST: TIME PIG LAUNCHED: TIME RECEIVED:

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
1230	3200	18	NA	0	0	0	2900	0.5	17.5		
0730	2900	18	NA	4.05	0	0.07	2900	0	7		
0350	2900	18	NA	4.05	0	0.07	2900	0	7		
(A)	TOTALS			(B) OIL	(C)	(D)	(E)				(F) GAS
25hrs 20mins	(final minus initial)			4.05	0	0.07	= TOTAL WATER				0.07

COMMENTS: Test Extended due to workload. Well found not flowing on morning of 24-8-86.

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

CALCULATIONS

SUMMARY



(1) STOCK TANK OIL

2.99

m³/d

CSIRO

MINERALS RESEARCH LABORATORIES

DIVISION OF MINERALOGY

A PETROGRAPHIC INVESTIGATION OF COALS AND OTHER

SEDIMENTS FROM THE GIDGEALPA GROUP,

FLY LAKE NO.2 WELL, COOPER BASIN

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AUSTRALIA

OCTOBER, 1974

INTRODUCTION

The petrography of coals and interseam sediments from Fly Lake No.1 well has been reported in Restricted Investigation Report 652R.

As with Fly Lake No.1, samples of both coal and interseam sediments of the Gidgealpa Group from Fly Lake No.2 well in the Cooper Basin have been supplied by Delhi Oil Company.

The Permian sediments are believed to be the source rocks for the hydrocarbons found in the area. The coal and other sediments were studied to determine (a) the depositional environment in Permian times, (b) the possible source rocks; and (c) the type of organic material in the potential source rocks which could have given rise to the hydrocarbons.

ANALYSES

Thirteen samples of coal were prepared as grain mounts and thin sections were made of sixteen solid cores of sediments. Maceral and microlithotype analyses were carried out on the coals, and the thin sections were examined with particular interest in the amount and type of carbonaceous matter they contain.

The organic matter in the sediments has been described as transparent or opaque. Transparent material is usually exinite-type and/or vitrinite-type if the section is thin enough. Opaque material is inertinite-type and/or vitrinite-type if the section is fairly thick. As diagenesis proceeds vitrinite becomes more opaque in thin section.

In an attempt to postulate the Permian environment, a Markov chain analysis has been carried out on the sequence of sediments - shale, siltstone, sandstone and coal - shown in the well log of Fly Lake No.2. It has been assumed that the lithologies recorded

in the well log are accurate.

A Markov chain analysis of a succession of sediments is a statistical attempt to determine whether or not the sediments show a preferred sequence of occurrence. That is, it shows the extent to which a particular lithology is determined by the immediately previous lithology and whether this occurs more often than would be expected due to random deposition.

If a particular type of sedimentary sequence occurs, it may be indicative of a particular type of environment. For example, sequences showing fining upwards are cited as forming in fluvial environments, while those showing coarsening upwards may have formed in deltaic environments.

Sediments from the Gidgealpa Group in Fly Lake No.1 well show a dominant depositional pattern of oscillations between shale and sandstone, and a secondary pattern of siltstone and shale fining upwards between coals. A fluviatile environment of very low energy and extremely stable, slow and areally uniform subsidence is postulated for these sediments.

RESULTS

Results of the petrographic analyses are shown in Tables 1 and 2 and Figures 1 and 2. Where adjacent samples were very close together, average compositional figures have also been given. The results of thin section examination are summarized in Table 3. The organic carbon content of these samples was also determined chemically on a weight basis (Table 3). As microscopic estimations of carbonaceous content are made on a volume basis, the microscopic results should be about twice those determined by a chemical technique on a weight basis.

The Markov chain analysis gives a first preference sequence of oscillations between shale and siltstone. Second preferences give a fining upwards sequence of sandstone, siltstone and shale between coals.

The results were tested by the Chi Squared method, and it was found that the probability that the sequences are due to chance is less than 1%.

DISCUSSION

The cores of coal taken may not represent the whole deposit at each depth. However, most results are sufficiently similar to suggest that coals from Fly Lake No.2 are generally vitrinite-rich (>50% vitrinite). In this respect they are similar to coals from Tinga Tingana No.1 well (Restricted Investigation Report 620R). The one exception found is the coal from 2900 - 2904 m, which is vitrinite-poor, and similar to coals from Fly Lake No.1 well. Maceral compositions of coals from Fly Lake No.1 and Fly Lake No.2 are compared in Fig. 1.

In Fig.2 the microlithotype compositions of coals from the two wells are compared. Coal from 2684 m in No.1 is similar to the Fly Lake No.2 coals: coal from 2900 - 2904 m from No.2 is similar to Fly Lake No.1 coals. Apart from these two, the coals are very dissimilar.

A high vitrinite content such as that of the Fly Lake No.2 coals may be present either as vitrite-plus-clarite or as intermediates. In fact, the coals generally have very high contents of intermediates, similar to coals of the Greta Coal Measures of the Sydney Basin (Fig.2).

In the Fly Lake area the Middle and Upper Members of the Gidgealpa Group are very thin - about 30 m and 15 m respectively. The Lower Member (or Patchawarra Member plus Tirrawarra Sandstone) is well developed, about 275 m in Fly Lake No.1 and 245 m in Fly Lake No.2. The rate of subsidence in the two areas must have been very similar, so that difference in coal type in the two wells cannot be attributed to difference in subsidence rates.

The fluvial environment indicated for the No.2 area from the results of Markov chain analysis is essentially similar to that

in Fly Lake No.1. The shale/siltstone oscillations may represent the main channel deposits of a meandering river system, whilst the fining upwards sequences between coals represents episodes of flooding on to adjacent peat swamps.

The two wells are only about 3.5 Km apart, so the difference in coal type probably represents different environments within the same swamp. Coals from Fly Lake No.2 formed in more deeply water-covered central swamp areas, with predominantly larger trees and shrubs. The coals from Fly Lake No.1 accumulated in shallower water around the margins, where plants were smaller and where there was also more exposure to oxidation before burial. The two types of coal produced would have been facies equivalents. Occasionally, the whole swamp must have been drier overall to give more vitrinite-poor coal over wide areas (Fig.3- A), or to have been wetter overall to give more vitrinite-rich coals over the same wide areas (Fig.3- B).

Summarizing, the coals from Fly Lake No.1 and Fly Lake No.2 represent shallower water and deeper water facies of a peat swamp respectively. There are more individual coals recorded in the log of Fly Lake No.2 (33) than in Fly Lake No.1 (18) presumably because of differences in possibly topographic and other conditions leading to the formation of swamps.

The organic matter in the sediments is predominantly opaque, but more of the material in Fly Lake No.2 is transparent than in the Fly Lake No.1 interseam sediments. The carbonaceous mudstone from 2843 m, with approximately 30% organic matter, half or more of which is transparent, is theoretically a very good potential source rock.

The dispersed organic matter, estimated by volume, generally shows the same trends as are given by the chemical determinations of organic carbon by weight. However the worst discrepancy is with the mudstone from 2843 m, which has been analysed as only ~6% organic carbon. The carbonaceous material from this sample is to be investigated further, as it may prove to be hydrogen-rich.

None of the samples from Fly Lake No.1 appeared to be good potential source rocks: at least one from Fly Lake No.2 has

potential. The reason for this difference could simply be the widely spaced sampling depths of the sediments. However, it may be that the slightly different depositional environments have influenced the type of organic matter. Many more cores of inter-seam sediments need to be studied to determine this.

CONCLUSIONS

1. The coals from the Gidgealpa Group in Fly Lake No.2 well have high (>50%) vitrinite contents.
2. Markov chain analysis of the sediments shows the primary sedimentation pattern to be one of shale/siltstone oscillations. The secondary pattern is one of sandstone, siltstone and shale fining upwards between coals.
3. A fluvial environment more suited to the formation of peat swamps than that of Fly Lake No.1 is postulated.
4. Organic matter in the interseam sediments is predominantly opaque, but has a slightly greater content of transparent material than in Fly Lake No.1. A carbonaceous mudstone from 2843 m is theoretically a very good potential source rock.

000280

TABLE 1

Coals from the Gidgealpa Group, Fly Lake No.2*(ash free)*

MACERAL COMPOSITION

Depth (m)	Vitrinite	Exinite	Micrinite	Semi- fusinite	Fusinite	Minerals
2688	69 (75)	4 (4)	5 (21)	14	tr	8
2696	50 (51)	11 (11)	17 (39)	20	1	1
2701	*66 (96)	tr	2 (4)	1	-	31
2748	69 (71)	3 (3)	8 (29)	17	2	1
2806	44 (56)	1 (1)	6 (47)	27	4	18
2831	*30	1	5	10	1	53
2835	34 } 46 (57)	4 } 3 (4)	31 } 15 (40)	25 } 15	3 } 2	3 } 19
2840	75	5	8	8	3	1
2890	47 } 48 (50)	5 } 3 (3)	20 } 18 (47)	21 } 25	3 } 2	4 } 4
2892	49	2	15	28	2	4
2900	14 } 12 (17)	2 } 2 (3)	43 } 30 (80)	35 } 25	1 } 1	5 } 30
2904	*11	2	16	15	2	54
2918	47 (55)	1 (1)	16 (44)	19	2	15

* very high minerals content

TABLE 2

Coals from the Gidgealpa Group, Fly Lake No.2

MICROLITHOTYPE COMPOSITION

Depth (m)	Vitrite	Clarite	Inter- mediates	Durite	Fusite	Shaly Coal	Minerals
2688	61	8	16	-	8	tr	7
2696	23	2	60	2	13	-	tr
2701	*55	2	1	-	tr	10	32
2748	52	1	33	tr	12	2	tr
2806	39	1	14	2	23	5	16
2831	*18	1	15	1	10	7	48
2835	23	5	32	21	19	tr	tr
2840	48	16	29	tr	7	tr	tr
2890	26	10	42	4	14	3	1
2892	27	2	42	7	20	1	1
2900	3	-	47	18	28	3	1
2904	*2	-	33	2	5	tr	58
2918	23	4	47	1	14	8	3

* very high minerals content

TABLE 3

Description of Sediments from Fly Lake No.2 Well, Cooper Basin

Depth (m)	Lithology	% Organic matter*	% Organic carbon†	Description	Type
2682	Carbonaceous siltstone	10	6.65	Stringers, fragments	O: 90 T: 10
2691	Laminated carbonaceous/non-carbonaceous shale	5	4.32	Stringers, fragments (fine - 100 microns)	O: 70 T: 30
2694	Sandstone, carbonaceous lenses	<1	0.17	Macroscopic streaks	?
2704	Siltstone	2	0.85	Fragments, rootlets?	O: 95 T: 5
2709	Sandstone, carbonaceous lenses	<1	0.48	Macroscopic streaks	O: 95 T: 5
2711	Sandstone, carbonaceous lenses	<1	0.97	Macroscopic streaks	?
2713	Carbonaceous siltstone	5	1.21	Fragments	O: 90 T: 10
2750	Sandstone, carbonaceous lenses	<1	0.47	Macroscopic streaks	?
2761	Carbonaceous siltstone	2-3	1.24	Fragments, stringers	O: 95 T: 5
2804	Carbonaceous lithic sandstone	5	10.03	Macroscopic streaks	O: 95 T: 5
2813	Sandstone carbonaceous lenses	<1	0.33	Macroscopic streaks	O: 95 T: 5
2827	Carbonaceous siltstone	20	25.98	Stringers	O: 95 T: 5
2843	Carbonaceous mudstone	30	6.08	Fragments →200μ	O: 50 T: 50
2865	Sandstone carbonaceous lenses	<1	0.87	Microscopic streaks	?
2890	Carbonaceous shale	10	2.43	Fragments <50μ, stringers →mm	O: 95 T: 5
2909	Sandstone carbonaceous lenses	3	3.18	Stringers macroscopic	O: 95 T: 5

* by microscopy

† by chemical analysis

000283

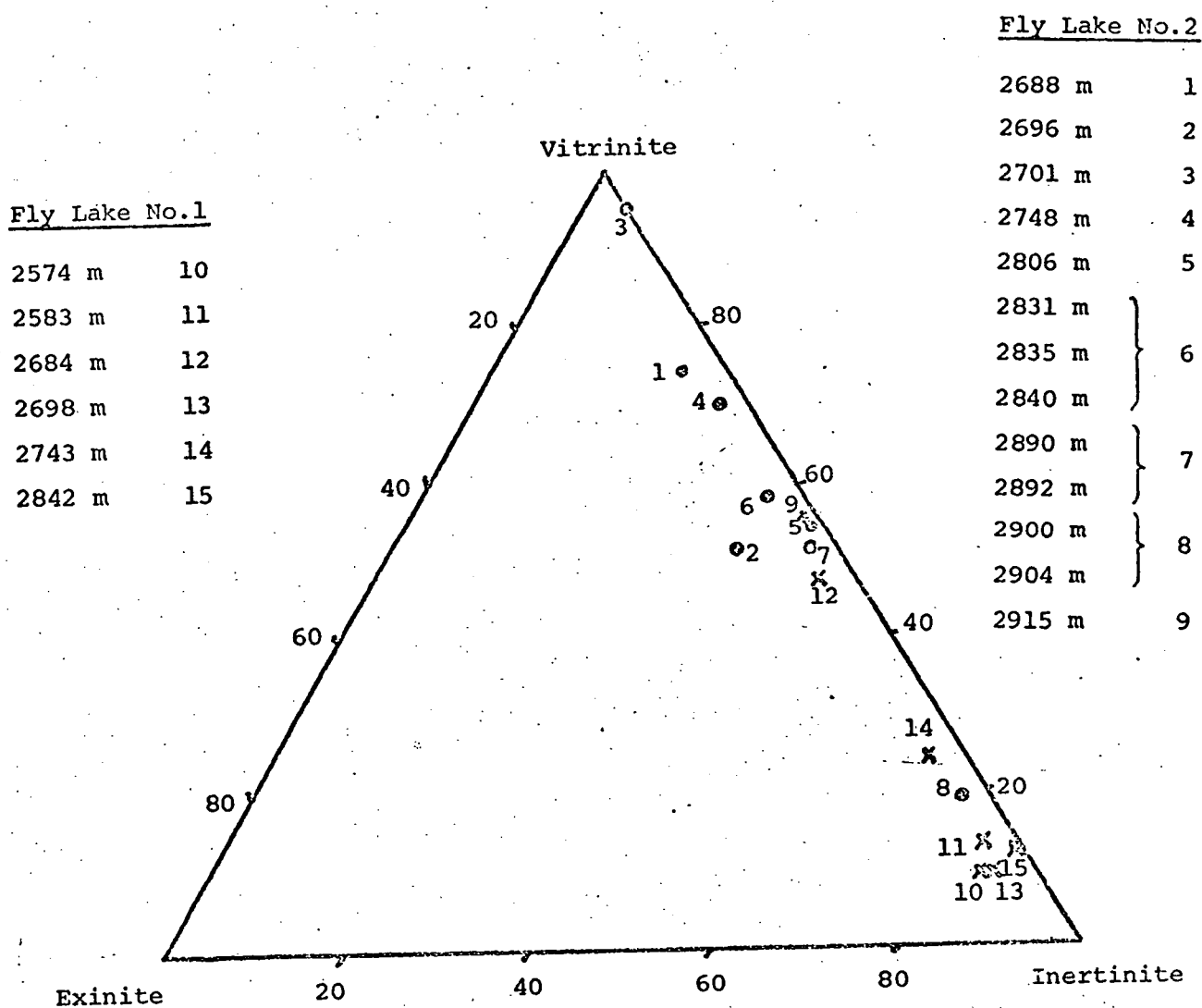


FIGURE 1. Maceral composition of coals from the Cooper Basin

Fly Lake No.1

2574 m	10
2583 m	11
2684 m	12
2698 m	13
2743 m	14
2842 m	15

Fly Lake No.2

2688 m	1
2696 m	2
2701 m	3
2748 m	4
2806 m	5
2831 m	6
2835 m	
2840 m	
2890 m	7
2892 m	
2900 m	8
2904 m	
2918 m	9

Greta Coal Measures

Brougham Upper	16
Brougham Lower	17
Grasstrees Upper	18
Grasstrees Lower	19
Thiess	20
Puxtrees	21
Balmoral	22
Greta	23
Hebden	24

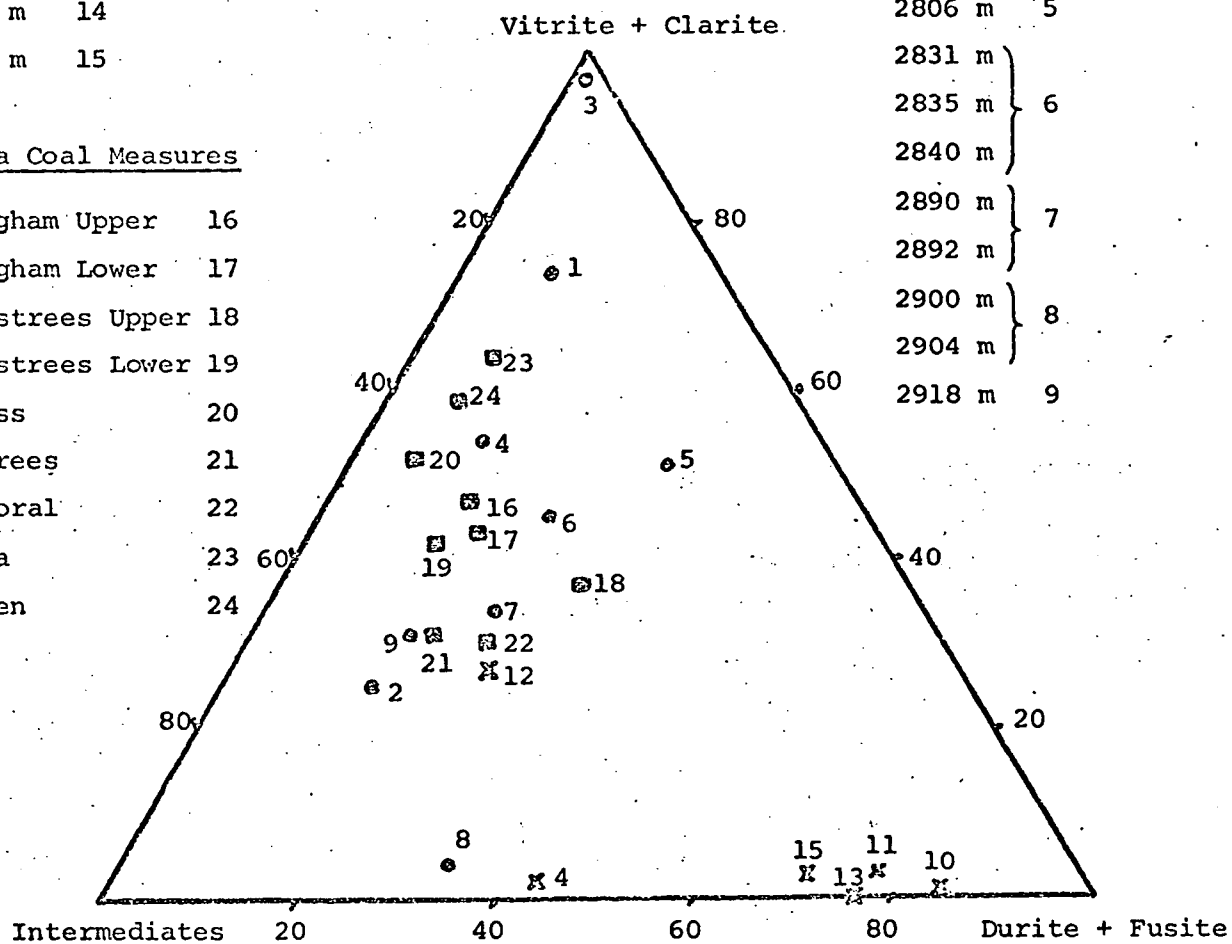
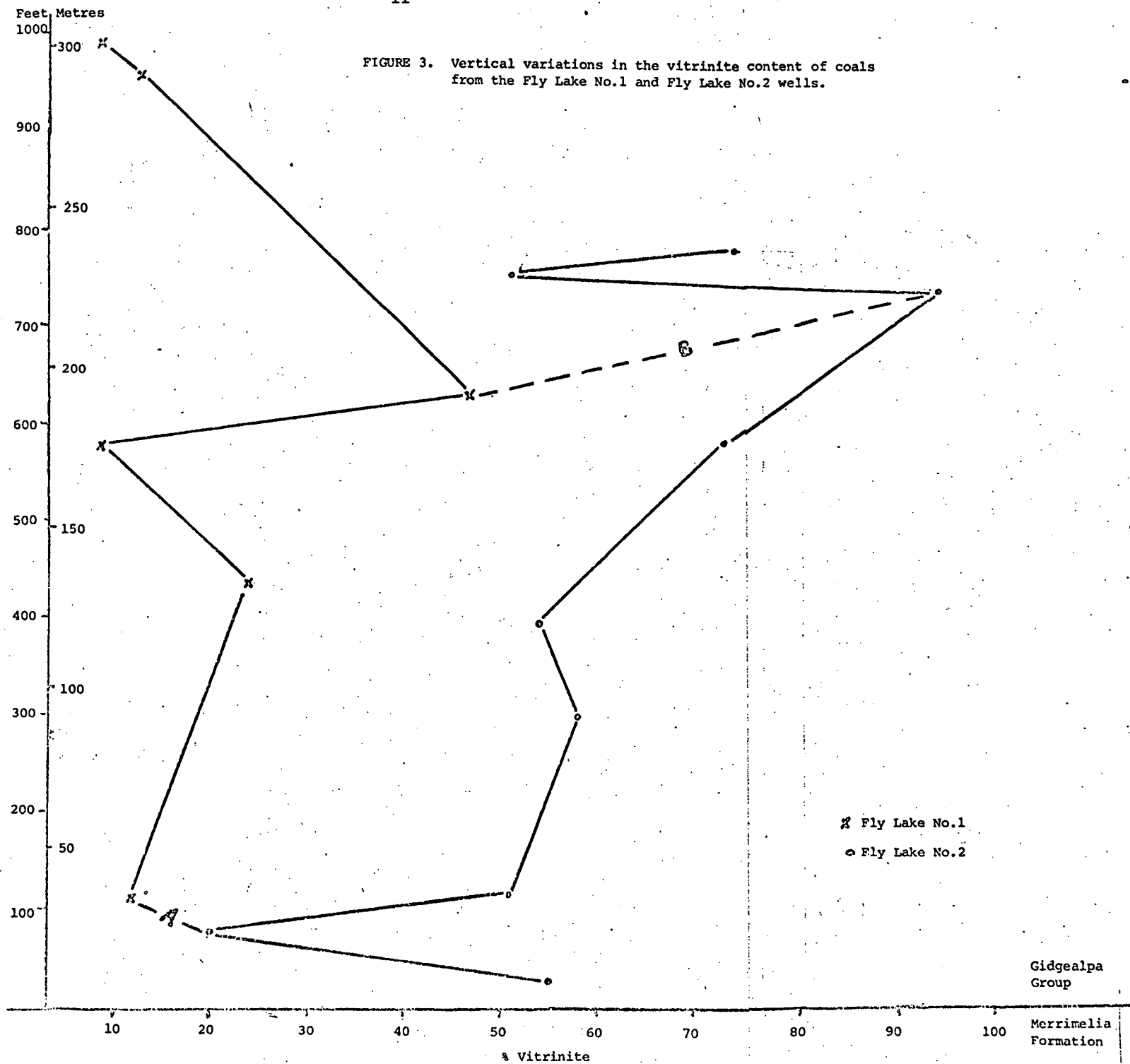


FIGURE 2. Microlithotype composition of coals from the Cooper Basin



000285

000286

APPENDIX

2682 m Dark grey carbonaceous siltstone, conchoidal fracture, with paler, non-carbonaceous lenses.

The groundmass consists of fine ($\sim 50\mu$) angular quartz grains, some feldspar, a little mica and interstitial clay, plus stringers of organic material.

The organic material occurs in layers where it forms about 25% of the rock. It occurs in long stringers, wrapped around grains and as fragments; almost all of it is opaque, with perhaps 10% transparent material, orange-brown to brown.

The pale areas of the rock contain only a few fragments of carbonaceous material.

The layers are a few hundred microns to several millimetres in width. Overall the organic content is probably about 10%.

2691 m Laminated carbonaceous/non-carbonaceous shale.

The laminations are a few hundred microns to millimetres wide. Organic material forms up to 20% of the dark layers, and is virtually absent from the pale layers.

The organic matter occurs as fine stringers, up to 100μ long, and fine fragments, down to a few microns in size. It is mostly opaque, but there is about 30% transparent material. The overall organic content is about 5%.

2694 m Sandstone with macroscopic streaks of carbonaceous material.

The grains are mostly quartz with some rock fragments and carbonate

grains and are welded together, with no cement. There is no organic matter visible in the thin section, only in hand specimen.

2704 m Micaceous siltstone, sub-conchoidal fracture.

There is about 2% carbonaceous matter scattered through the rock, not layered. There are very long continuous streaks which may be rootlets and fragments from a few microns to 300 μ . Most of the fragments are opaque with a few brown transparent ones.

2709 m Sandstone with macroscopic lenses of carbonaceous material.

The grains are mostly quartz with a few fine-grained rock fragments and are welded together with no cement. Stringers of carbonaceous material are squeezed along grain boundaries, from very fine wisps to ones macroscopically visible. They are generally opaque. The total organic content is <1%.

2711 m Sandstone with carbonaceous lenses.

The grains are quartz and rock fragments, with some carbonate and argillaceous cement. There is very little dispersed organic material in the thin section, just a few wisps around grains.

2713 m Carbonaceous siltstone

The carbonaceous matter is scattered randomly through the rock with no obvious bedding planes. It occurs mostly as opaque fragments from a few to about 200 μ in size, and forms approximately 5% of the rock. About 10% of the dispersed organic matter is transparent, orange to brown in colour.

000288

2750 m Sandstone with carbonaceous lenses.

The grains are quartz with some rock fragments and carbonate cement. There is very little microscopic dispersed carbonaceous material, a few opaque and transparent fragments.

2761 m Carbonaceous siltstone with fossil leaves.

The carbonaceous material is not so randomly scattered as in the siltstone above, but shows some lining up of the particles. There is 2-3% organic matter, as fragments and stringers, mostly opaque but about 5% transparent.

2804 m Very carbonaceous lithic sandstone.

About half of the detrital grains are rock fragments, and these and quartz grains are cemented with argillaceous - micaceous cement, plus masses of carbonate in some places. The organic matter is macroscopically visible in stringers up to a few millimetres wide and a centimetre or so long. These are generally opaque but often transparent on edges, so may be vitrinite-type material. They occur wrapped around and between clastic grains and form about 5% of the rock.

2813 m Sandstone with carbonaceous lenses.

This is also a fairly lithic sandstone, with argillaceous cement. There is little dispersed organic matter, but macroscopic stringers, mostly opaque, occur through the rock, forming about 1% of it.

2827 m Carbonaceous siltstone.

Some areas are approximately 60% coal, others 30%, the remainder being mostly quartz grains and a little clay. The coaly matter

is predominantly opaque, although transparent around the edges, so may be vitrinitic. Some areas of the rock contain only a few percent of organic matter, so overall the content is probably about 20%.

2843 m Black carbonaceous mudstone with a conchoidal fracture.

There is no layering of the organic material: fragments are dispersed homogeneously through the matrix, from a micron to approximately 200 μ in size, forming 30% or more of the rock. Most of the larger fragments are opaque, generally vitrinite with some inertinite. The abundant finer material is generally transparent, fragmentary or amorphous, with transparent material > opaque material. The rock contains a few well preserved, brown, spores, and theoretically should be an excellent potential source rock.

2865 m Sandstone with carbonaceous lenses.

This is a fairly fine-grained sandstone, with 10-20% argillaceous cement, and some carbonate. The dispersed organic matter is sparse, mostly opaque with a few transparent fragments (<100 μ) and stringers.

2890 m Carbonaceous shale, abundant fossil leaves.

This is a well bedded rock, with layered very fine organic matter, generally <50 μ , and forming about 10% of the rock, with fairly frequent, very long thin bands of carbonaceous matter, which are probably the fossil leaves. Most of the material is opaque: some stringers and fragments are transparent, but probably only 5%.

2909 m Sandstone with carbonaceous lenses.

Quartz grains and rock fragments in argillaceous cement. These are abundant stringers of carbonaceous material around and between the clastic grains. Most is opaque and macroscopically visible, possibly 3% of the rock.



WELL TEST DATA SHEET

Ew 1801

000290

WELL: FLY LAKE # 2L

OPERATOR: C. BRUNN

DATE (Start Test): 1-4-86

METER RUN I.D.: 97.18 / 102.26 mm

TEST SEPARATOR: FLY LAKE

ORIFICE PLATE: 12.7 mm

TEST LINE:

FLOW COMPUTER CONSTANT:

TO START TEST: TIME PIG LAUNCHED: NA

TIME RECEIVED: NA

TO END TEST: TIME PIG LAUNCHED: NA

TIME RECEIVED: NA

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
0900	3300	64	-	0	0	0	3200	2.25	27		
2-4-86											
0700	3350	64	-	18.38	0.47	2.23	3150	4.0	24		
0900	3350	64	-	19.87	0.47	2.23	3150	1.75	28		
(A)	TOTALS			(B) OIL	(C)	(D)	(E)			(F) GAS	
24	(final minus initial)			19.87	0.47	2.23	= TOTAL WATER			2.70	

COMMENTS: NO PROBLEMS OCCURED DURING 24 HR PRODUCTION TEST

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

CALCULATIONS

SUMMARY

Temp: 26

Stat: 3167

Diff: 2.67

Ext: 993

STF = 0.780

(1) STOCK TANK OIL

.....15.50..... m³/d

(2) GAS RATE ...2.58..... x 10³ m³/d

(3) G.O.R.166.32..... m³/m³

(4) WATER RATE ...2.70..... m³/d

(5) WATER CUT14.8..... %

RECEIVED

16 MAY 1986

DEPT. OF MINES

AND ENERGY

SOUTH AUSTRALIA

WHITE: Original to: ADELAIDE PRODUCTION ENGINEERING

YELLOW: 1st Copy to: MOOMBA PRODUCTION DEPARTMENT

OLD GOLD: 2nd Copy to: FIELD SATELLITE OFFICE

PINK: 3rd Copy to: MOOMBA PETROLEUM ENGINEERING

WELL TEST DATA SHEET

000291

WELL: FLY LAKE # 2L OPERATOR: T. SMART
DATE (Start Test): 11. APRIL 1986 METER RUN I.D.: 97.18 / 102.26 mm
TEST SEPARATOR: 200 AF FLY LAKE ORIFICE PLATE: (0.500") 12.7 mm
TEST LINE: N/A FLOW COMPUTER CONSTANT: 7770
TO START TEST: TIME PIG LAUNCHED: N/A TIME RECEIVED: N/A
TO END TEST: TIME PIG LAUNCHED: N/A TIME RECEIVED: N/A

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				N O A		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
0900	3100	64	N/A	0	0	0	3200	0.75	24		
1334	3100	64	N/A	5.14	0.02	0.44	3400	3.25	33		
1547	3200	64	N/A	7.17	0.02	0.61	3200	2.50	34		
0900	3400	64	N/A	26.84	0.02	0	3300	2.25	21		
1507	3400	64	N/A	35.04	0.02	0	3400	4.25	31		
0900	3200	64	N/A	57.25	0.02	0	3100	2.50	23		
(A)	TOTALS			(B) OIL	(C)	(D)	(E)		(F) GAS		
48	(final minus initial)			57.25	0.02	N/A	= TOTAL WATER		N/A		

COMMENTS: DANIEL 2403 WATER TOTALIZER (FG1201 AF) FAILED TO RETAIN MEMORY & TOTALIZE AFTER 15.47 HRS ON 12.4.86

PRODUCTION ENGINEERING DEPARTMENT USE ONLY
CALCULATIONS SUMMARY
Temp: 24
Stat: 3270
Diff: 2.58
Extension: 2043
STF = 0.774

- (1) STOCK TANK OIL
22.17 m³/d
- (2) GAS RATE 2.66 x 10³ m³/d
- (3) G.O.R. 119.99 m³/m³
- (4) WATER RATE N/A m³/d
- (5) WATER CUT N/A %

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WELL TEST DATA SHEET

000292



WELL: F. Lyfah
DATE (Start Test): 28-4-86
TEST SEPARATOR: F. Lyfah
TEST LINE: F/1+2

OPERATOR: M.A.W.
METER RUN I.D.: 97.18/102.26 mm
ORIFICE PLATE: 19.05 mm
FLOW COMPUTER CONSTANT:

TO START TEST: TIME PIG LAUNCHED: TIME RECEIVED:
TO END TEST: TIME PIG LAUNCHED: TIME RECEIVED:

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
0715	3400	16		0	0	0	3100	0.25	15.		
1030	3400	16		3.70	0	3.74	3200	2.5	22.		
1500	3400	16		8.41	0	12.15	3200	2.5	26.		
0715	3300	16		27.94	0	28.5	3000	2.0	14		
(A)	TOTALS			(B) OIL	(C)	(D)	(E)		(F) GAS		
24	(final minus initial)			27.94	0	28.5	= TOTAL WATER		2.85		

COMMENTS:

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

CALCULATIONS SUMMARY

- (1) STOCK TANK OIL m³/d
- (2) GAS RATE x 10³ m³/d
- (3) G.O.R. m³/m³
- (4) WATER RATE m³/d
- (5) WATER CUT %

WHITE: Original to: ADELAIDE PRODUCTION ENGINEERING
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WELL TEST DATA SHEET

000293

WELL: 2

DATE (Start Test): 28-4-86

TEST SEPARATOR: F. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

TEST LINE: F. 1. 2.

TO START TEST: TIME PIG LAUNCHED:

TO END TEST: TIME PIG LAUNCHED:

OPERATOR: M. A. W. and

METER RUN I.D.: 97.18 / 102.26 mm

ORIFICE PLATE: 19.05 mm

FLOW COMPUTER CONSTANT:

TIME RECEIVED:

TIME RECEIVED:

TIME	WELLHEAD		SATELLITE DATA								
	FTP kPa	CHOKE SIZE 64ths	SEP. OIL TEMP °C	LIQUIDS			GAS				
				NOA		TOTALIZED WATER m³	STATIC PRESS. kPa	DIFF. PRESS. kPa	TEMP. °C	INDICATED FLOW RATE m³ x 10³/d	TOTALIZED FLOW m³ x 10³
				NET OIL m³	NET WATER m³						
0715	3300	16		27.94	0	2.85	3000	2.0	14		
1530	3300	16		38.11	0	3.84	3100	2.5	23		
2115	3300	16		56.43	0	5.65	3000	2.0	12		
(A) 48	TOTALS			(B) OIL	(C)	(D)	(E)			(F) GAS	
	(final minus initial)			56.43	0	2.8	= TOTAL WATER			5.65	
				28.49						2.8	

COMMENTS: No problems with test.

CALCULATIONS

SUMMARY

PRODUCTION ENGINEERING DEPARTMENT USE ONLY

Temp : 18

Stat : 3100

Diff : 2.0

Extension : 1410

STF = 0.773.

- (1) STOCK TANK OIL

21.82 m³/d

(2) GAS RATE 4.18 x 10³ m³/d

(3) G.O.R. 191.49 m³/m³

(4) WATER RATE 2.83 m³/d

(5) WATER CUT 11.5 %

SANTOS LIMITED
A.C.N. 007 550 923

Page 1

BRIEF PALYNOLOGICAL REPORT

WELL: FLY LAKE 2

J.M. BENSON
DATE:20 June 1994

REPORT No. 1994/31

SAMPLE	DEPTH (LOGGERS)	AGE	STRATIGRAPHY		REMARKS
			BIOSTRATIGRAPHICAL UNIT	INFERRED STRATIGRAPHICAL LIMIT	
FHC8	9542'	E. PERMIAN	(PP1.2.2-PP2.1) ?PP2.1	LOWER PATCHAWARRA FM., UPPER TIRRAWARRA SST.	Poor preservation, low yield, low diversity. Sparse assemblage. Few monosaccate pollen. Fragmented miospores frequent. Rare cheilocardiod spores. <u>M. tentula</u> , <u>G. cf.</u> <u>confluens</u> , <u>V. "ponticulus"</u> present.
FHC8	9572'	E. PERMIAN	PP1.2.2	UPPER TIRRAWARRA SST.	Poor preservation, low yield, moderate diversity. Frequent bisaccate pollen. Apiculate spores prominent. Few cheilocardiod spores (notably <u>M. tentula</u>). <u>G. confluens</u> present.
FHC8	9575'	L. CARB. - E. PERM.	PP1:2	LOWER PATCHAWARRA FM., TIRRAWARRA SST., MERRIMELIA FM.	Fair preservation, low yield, low diversity. Bisaccate pollen common. Few monosaccates. Apiculate spores frequent (notably <u>V.</u> <u>aspratilis</u> .) Rare cheilocardiod spores. <u>M.</u> <u>tentula</u> present.
FHC8	9578' 6"	L. CARB. - E. PERM.	(PP1.2.1-PP1.2.2) ?PP1.2.2	TIRRAWARRA SST., MERRIMELIA FM.	Fair preservation, moderate yield, moderate diversity. Abundant monosaccate pollen. Striate bisaccates prominent. Few cheilocardiod spores. Rare apiculate spores. <u>M. tentula</u> , <u>G. cf.</u> <u>confluens</u> present.
FHC9	9614'	L. CARB. - E. PERM.	INDET.,	LOWER PATCHAWARRA FM., TIRRAWARRA SST., MERRIMELIA FM.	Poor preservation, very low yield. Sparse assemblage. Abundant monosaccate pollen. Cryptogam spores rare. Long-ranging miospores only.

000294

SANTOS LIMITED
A.C.N. 007 550 923

Page 2

BRIEF PALYNOLOGICAL REPORT

WELL: FLY LAKE 2

J.M. BENSON
DATE: 20 June 1994

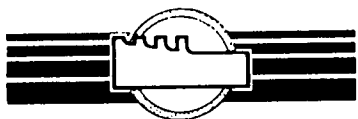
REPORT No. 1994/31

SAMPLE	DEPTH (LOGGERS)	AGE	STRATIGRAPHY		REMARKS
			BIOSTRATIGRAPHICAL UNIT	INFERRED STRATIGRAPHICAL LIMIT	
FHC9	9625'	L. CARB. - E. PERM.	PP1.2	LOWER PATCHAWARRA FM., TIRRAWARRA SST., MERRIMELIA FM.	Fair preservation, low yield, low diversity. Abundant monosaccate pollen (notably <u>Plicatipollenites</u> spp.). Very rare cheilocardiod spores. <u>M. tentula</u> present.
					J.M. Benson

000295

E.1801

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' KB

PAGE: 1 OF 2

WELL NAME: FLY LAKE # 2 UPPER

FORMATION : PATCHALWARRA

DATE: 1/7/94

TEST TYPE : L.E.T

OPR : N. DOVER.

DATE/TIME	DESCRIPTION OF EVENTS
1/7/94	
09:15	A.O.L. HOLD SAFETY MEETING.
09:30	S.W.1 SPOT TEST EQUIPMENT. COMMENCE RIGGING IN TO FLOW TO ATMOSPHERE.
11:30	PRESSURE TEST LINES TO FULL S.I.T.H.P. TEST FAILED.
11:35	RE TEST ALL O.K.
12:10	SEPARATOR ON BYPASS ON A 16/64 TH CHOKE. FLOW TO ATMOSPHERE.
12:16	FLUID TO SURFACE.
12:20	INCREASE CHOKE TO 34/64 TH
12:25	DECREASE CHOKE TO 24/64 TH
12:50	DECREASE CHOKE TO 10/64 TH
13:00	DECREASE CHOKE TO 6/64 TH .
13:10	S.W.1
14:15	OPEN WELL ON A 6/64 TH CHOKE.
14:27	FLUID TO SURFACE.
14:30	INCREASE CHOKE TO 10/64 TH
15:15	DECREASE CHOKE TO 6/64 TH . HOLDING APPROXIMATE LINE PRESSURE OF 2200 KPa.
15:30	TRIM FLOW THROUGH SEPARATOR.
16:15	INSUFFICIENT GAS RATE TO PRESSURE UP SEPARATOR. SEPARATOR ON BYPASS. CONTACT MOOREA.
16:50	INCREASE CHOKE TO 11/64 TH
17:00	INCREASE CHOKE TO 12/64 TH .
17:15	INCREASE CHOKE TO 14/64 TH
17:45	TRIM FLOW THROUGH SEPARATOR.
18:00	COMMENCE TEST .500" ORIFACE PLATE IN SERVICE.

LET TO FLARE

CHOKE: 14/64TH

FTHP: 775 kPa

Qg: 2.245 E3 m³/dQc: 0.120 m³/dQw: 1.562 m³/d

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' KB

PAGE: 2 OF 2.

WELL NAME: FLY LAKE # 2 UPPER

FORMATION : PATCHAWARRA

DATE: 2/7/94

TEST TYPE : L. E. T

OPR : N. DOVER

DATE/TIME

DESCRIPTION OF EVENTS

2/7/94

06:00

CONTINUE TO MONITOR ALL RATES.

3/7/94

08:50

OBTAIN 1 X 500 CC H.P. GAS SAMPLE SPE 029 & 1 X 500 CC L.P. H₂O SAMPLE

09:50

OBTAIN 1 X 500 CC HP GAS SAMPLE SPE 266 & 1 X 500 CC L.P. H₂O SAMPLE.

10:00

SEPARATOR ON BYPASS S.W.1 RIG OUT TEST EQUIPMENT.

11:00

DEPART LOCATION

11:30

HAND WELL OVER TO PRODUCTION (OPERATOR TOM POMPEUSE)

EXPERTEST PTY. LTD.



FIELD READINGS

CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' KB.

PAGE: 1 OF 3

WELL NAME: FLY LAKE #2 UPPER.

FORMATION : PATCHAWARRA

DATE: 1/7/94

TEST TYPE : L.E.T

OPR : N. DOVER.

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION			
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPA)	ANNULUS PRESSURE (PSI/KPA)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE 64 TH	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF. PRESS. (IN WC)	GAS TEMP (°F/°C)	TOTAL LIQUID (IN/GM)	OIL (IN/GM)	OIL API GRAVITY @ 60°F	WATER (IN/GM)
1/7/94														
09:15														
09:30		320	14											
11:30		774	"											
11:35		784	"											
12:10		830	"		16									
12:15		466	"		"									
12:16					"									
12:20		454	14		34									
12:25		278	14		24									
12:50		11	"		10									
13:00		33	"		6									
13:10		75	"											
13:30		207	"											
14:00		340	"											
14:15		413	"		6									
14:27														
14:30		398	"	25	10									
14:45		570	"	27	"									
15:00		438	"	29	"									
15:15		323	"	29	6									

FIELD READINGS

CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' KB

PAGE: 2 OF 3

WELL NAME: FLY LAKE #2 UPPER

FORMATION : PATCHAWARRA

DATE: 1/7/94

TEST TYPE : L.E.T

OPR : W. DOVER

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION			
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE 64 TH	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF PRESS. (IN WC)	GAS TEMP (°F/°C)	TOTAL LIQUID (IN/CM)	OIL (IN/CM)	OIL API GRAVITY @ 60°F	WATER (IN/CM)
1/7/94														
15:30		301	14	27	6	TRIM FLOW THROUGH SEPARATOR.								
16:15		220	14	24	6	SEPARATOR ON BYPASS INSUFFICIENT GAS RATE TO PRESSURE UP SEPARATOR. CONTACT MOOMBA.								
16:50		318	14	24	11	INCREASE CHOKE TO 11/64 TH								
17:00		220	14	26	12	INCREASE CHOKE TO 12/64 TH								
17:15		230	14	26	14	INCREASE CHOKE TO 14/64 TH								
17:30		202	14	27	"									
17:45		140	14	27	"	TRIM FLOW THROUGH SEPARATOR.								
18:00	0	138	14	27	"	COMMENCE TEST .500" ORIFICE PLATE IN SERVICE.								
20:00	2	112	12	23	"		.500	73	66	13	9	4.25		4.75
22:00	4	101	12	21	"		"	71	55	10	9.75	4.75		5
2/7/94														
06:00	12	120	11	20	"		.500	79	52	7	12	4.75		7.25
08:00	14	122	13	23	"		"	70	43	16	12.5	4.75		7.75
10:00	16	116	13	26	"		"	59	60	23	13	4.75		8.25
12:00	18	117	13	27	"		"	62	53	25	13.5	5		8.5
14:00	20	110	13	28	"		"	51	68	26	14.25	5		9.25
16:00	22	115	13	26	"		"	52	68	24	14.75	5		9.75
18:00	24	115	13	24	"		"	43	72	16	15.25	5		10.25
3/7/94														
06:00	36	105	12	21	14		.500	55	58	8	17.5	5		12.5

FIELD READINGS

CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' 143

PAGE: 3 OF 3

WELL NAME: FLY LAKE #2 UPPER

FORMATION : PATCHAWARRA

DATE: 3/7/94

TEST TYPE : L.E.T

OPR : N. DOVER

[illegible]



CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' KB.

PAGE: 1 OF 3

WELL NAME: FLY LAKE #2 UPPER

FORMATION : PATCHAWARRA

DATE: 1/7/94

TEST TYPE : L.E.T

OPR : N. DOVER

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (/KPa)	ANNULUS PRESSURE (/KPa)	WELLHEAD TEMP (/°C)	CHOKE SIZE 64 TH	PRESSURE (/KPa)	TEMP (/°C)	GAS m ³ 10 ³ /D	OIL m ³ /D	WATER m ³ /D	GAS m ³ 10 ³	OIL m ³	WATER m ³		
1/7/94															
09:15						P.O.L. HOLD SAFETY MEETING									
09:30		2206	97			S.W.I. SPOT TEST EQUIPMENT. COMMENCE RIGGING IN TO FLOW TO ATMOSPHERE.									
11:30		5337	97.			PRESSURE TEST LINES TO S.I.T.H.P. TEST FAILED									
11:35		5406	97			RE TEST ALL OK.									
12:10		5723	97		16	SEPARATOR ON BYPASS ON A 16/64 TH CHOKE. FLOW TO ATMOSPHERE.									
12:15		3213	97		"										
12:16					"	FLUID TO SURFACE.									
12:20		3130	97	25	34	INCREASE CHOKE TO 34/64 TH									
12:25		1917.	97	"	24	DECREASE CHOKE TO 24/64 TH									
12:50		76	97	"	10	DECREASE CHOKE TO 10/64 TH									
13:00		228	97	"	6	DECREASE CHOKE TO 6/64 TH									
13:10		517	97	"		S.W.I.									
13:30		1427	97												
14:00		2344	97												
14:15		2848	97		6	OPEN WELL ON A 6/64 TH CHOKE.									
14:27						FLUID TO SURFACE.									
14:30		2744	97	25	10	INCREASE CHOKE TO 10/64 TH									
14:45		3930	97	27	"										
15:00		3020	97	29	"										
15:15		2227	97	29	6	DECREASE CHOKE TO 6/64 TH									

CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' KB

PAGE: 2 OF 3

WELL NAME: FLY LAKE #2 UPPER

FORMATION : PATCHAWARRA

DATE: 1/7/94

TEST TYPE : L.E.T

OPR : N. DOVER.

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE 64 TH	PRESSURE (PSI/KPa)	TEMP (°F/°C)	GAS MMSCFD m ³ /10 ³ /D	OIL BPD m ³ /D	WATER BPD m ³ /D	GAS MMSCF m ³ /10 ³	OIL BBLS m ³	WATER BBLS m ³	L.G.R m ³ /10 ⁶ m ³	
1/7/94															
15:30		2075	97	27	6	TRIM FLOW THROUGH SEPARATOR.									
16:15		1516	97	24	"	SEPARATOR ON CHARGE. INSUFFICIENT GAS RATE TO PRESSURE UP SEPARATOR. CONTACT MOOMBA.									
16:50		2193	97	24	11	INCREASE CHOKE TO 11/64 TH									
17:00		1517	97	26	12	INCREASE CHOKE TO 12/64 TH									
17:15		1586	97	26	14	INCREASE CHOKE TO 14/64 TH									
17:30		1393	97	27	"										
17:45		965	97	27	"	TRIM FLOW THROUGH SEPARATOR.									
18:00	0	952	97	27	"	COMMENCE TEST. 500" ORIFACE PLATE IN SERVICE.									
20:00	2	772	83	23	"	503	13	2.622	Ø	3.204	.219	Ø	.267	1222.	
22:00	4	696	83	21	"	490	10	2.377	1.608	.804	.417	.134	.334	1015	
2/7/94															
06:00	12.	827	76	20	14	545	7	2.434	Ø	1.803	1.228	.134	.935	741.	
08:00	14	841	90	23	"	483	16	2.061	Ø	1.608	1.4	.134	1.069	780.	
10:00	16	800	90	26	"	407	23	2.241	Ø	1.608	1.587	.134	1.203	718	
12:00	18	807	90	27	"	427	25	2.14	.804	.804	1.765	.201	1.27	751.	
14:00	20	758	90	28	"	352	26	2.239	Ø	2.4	1.952.	.201	1.47	1072.	
16:00	22.	793	90	26	"	359	24	2.265	Ø	1.608	2.141	.201	1.604	710	
18:00	24	793	90	24	"	296	16	2.199	Ø	1.608	2.324	.201	1.736	731.	
3/7/94															
00:00	36	724	83	21	14	379	8	2.205	Ø	1.202	3.427	.201	2.339	545	

000302

CUSTOMER : SANTOS LTD	PERFORATIONS: 8876' - 9286' KB	PAGE: 3 OF 3
WELL NAME: FLY LAKE # 2 UPPER	FORMATION : PATCHAWARRA	DATE: 3/7/94
TEST TYPE : L.I.T		OPR : N. DOVER

[illegible]

000303

CUSTOMER : SANTOS LTD

TEST TYPE : L.F.T

FORMATION : PATCHAWARRA

DATE: 1/7/94

OPR : N. DOVER.

ORIFICE METER TYPE: DANIELS 5NR

STATIC PRESSURE RANGE : 0 -1500

PSIG

GAS SPECIFIC GRAVITY (SG) = 1.0535

METER RUN SIZE : 3.068

DIFFERENTIAL PRESS. RANGE: 0 - 200

IN W

$$FG \sqrt{(I/SG)} = 9.7428$$

SEPARATOR NO : 459

STANDARD CONDITIONS : 14.73 PSI @ 60°F

C₂
$$(FU \times FG)$$
$$= 23.3827$$
[illegible]

700304

PAGE: 1 OF 1

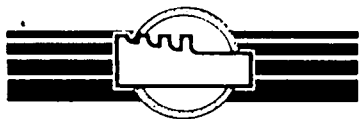
DATE: 1/7/94

OPR : N. DOVER.

OIL API GRAVITY = @ 60°F

SCALE #2 = bbls/in - m³/cm

000305



SAMPLING DATA

CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' KB.

PAGE: 1 OF 2

WELL NAME: FLY LAKE # 2 UPPER.

FORMATION : PATCHAWARRA

DATE: 3/7/94

TEST TYPE : L.E.T

OPR : N. DOUER.

SAMPLE # 1

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH		OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)
08:50	SPE 029	500	H.P GAS	10	EVACUATED		—	—		SEPARATOR GAS METER RUN.		400	23	102	18
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE 64 TH	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @ 60°F	GAS MMSCFD m ³ 10 ³ /D	OIL BPD m ³ /D	WATER BPD m ³ /D	L.G.R. m ³ /10 ⁶ m ³	PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	
690	24	14	—	400	23	1.017	1.0535	—	2.13	Ø	1.608	755			

REMARKS:

SAMPLE # 1

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH		OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)
08:50	# 1	500	L.P H ₂ O	5	—		—	—		SEPARATOR H ₂ O DUMP LINE		400	23	102.	18
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE 64™	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	L.G.R m³/10⁶m³	PRESSURE	TEMPERATURE	
														(PSI/KPa)	(°F/°C)
690	24	14	—	400	23	1.017	1.0535	—	2.13	Ø	1.608	755			

REMARKS:

SAMPLE

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT			SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D		PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	

REMARKS:

EXPERTEST PTY. LTD.



SAMPLING DATA

CUSTOMER : SANTOS LTD

PERFORATIONS: 8876' - 9286' ICR.

PAGE: 2 OF 2

WELL NAME: FLY LAKE #2 UPPER

FORMATION : PATCHAWARRA

DATE: 3/7/94

TEST TYPE : L.E.T

OPR : N. DOVER

SAMPLE # 2

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
09:50	SPE 266	500	H.P GAS	10	EVALUATED	—	—		SEPARATOR GAS METER RUN		310	25	102	18	
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	L.G.R m³/10⁶m³	PRESSURE (PSI/KPa)	TEMPERATURE (°F/°C)	
690	27	14	—	310	25	1.0135	1.0535	—	2.2	Ø	1.608	731			

REMARKS:

SAMPLE # 2

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
09:50	# 2	500	L.P H ₂ O	5	—	—	—		SEPARATOR H ₂ O DUMP LINE		310	25	102	18	
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m ³ 10 ³ /D	OIL BPD m ³ /D	WATER BPD m ³ /D	L.G.R m ³ /10 ⁶ m ³	PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	
690	27	14	—	310	25	1.0135	1.0535	—	2.2	Ø	1.608	731.			

REMARKS:

SAMPLE

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT			SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D		PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	

REMARKS:

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