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NUMBER 7288/2

PEL 5 AND PEL 6, TOOLACHEE BLOCK

EROMANGA BASIN AND COOPER BASIN

DILCHEE 2

TEST REPORTS

Submitted by

Santos Ltd
1995

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MINES and ENERGY
RESOURCES SOUTH
AUSTRALIA



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ENVELOPE 7288/2

TENEMENT: PELs 5 and 6, Toolachee Block; Eromanga and Cooper Basins

TENEMENT HOLDER: Santos Ltd (operator), Delhi Petroleum Pty Ltd, Vamgas Ltd and Sagasco Resources Ltd

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REPORTS:	King, G. and Weaver, T., 1993. Operator's summary and field testing contractor's results of the two-rate gas production test, 20.5 hour reservoir pressure buildup and static wellbore pressure gradient surveys of the perforated Toolachee and Daralingie Formations gas reservoirs commingled producing intervals 7130-7366 and 7404-7414 feet depth KB [the Upper producing zone], conducted over the period 18-24/5/93 (Oilserv Australia Ltd).	MESA NO. 7288/2 R 1 Pgs 3-19
	King, G. and Weaver, T., 1993. Operator's summary and field testing contractor's results of the two-rate gas production test, 70.5 hour reservoir pressure buildup and static wellbore pressure gradient surveys of the perforated Patchawarra Formation gas reservoir producing interval 8128-8761 feet depth KB [the Lower producing zone], conducted over the period 25/5-1/6/93 (Oilserv Australia Ltd).	7288/2 R 2 Pgs 20-39
	Hull, B., 1993. Field maintenance contractor's results of the static wellbore pressure gradient survey of the above Upper producing zone, conducted on 27/10/93 (Expertest Pty Ltd).	7288/2 R 3 Pgs 40-44
	Hull, B., 1993. Field maintenance contractor's results of the static wellbore pressure gradient survey of the above Lower producing zone, conducted on 28/10/93 (Expertest Pty Ltd).	7288/2 R 4 Pgs 45-49
	Coker, G., 1994. Operator's interpretation [and summarized testing contractor's results] of the 2-rate gas production test and associated pressure surveys of the Patchawarra producing zone, performed during May 1993 (Santos Ltd Petroleum Engineering Department report no. PEDSA: 002/94, January 1994).	7288/2 R 5 Pgs 50-56
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Taylor, S., 1994. Field maintenance contractor's results of the flowing bottomhole pressure, 96 hour reservoir pressure buildup and static wellbore pressure gradient surveys of the Upper producing zone, conducted over the period 4-10/11/94 (Expertest Pty Ltd).

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McAllister, D.J., 1995. Field maintenance contractor's results of the flowing bottomhole pressure, 96 hour reservoir pressure buildup and static wellbore pressure gradient surveys of the Lower producing zone, conducted over the period 13-18/2/95 (Expertest Pty Ltd).

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DILCHEE #2 UPPERSUMMARY OF 2-RATE FLOW AND BUILDUP SURVEY18th May to 24th May 1993Rate #1

19/05/93: Opened well on 14/64" choke bypassing separator @ 1700 hrs.
 Slowly decreased choke to 12/64" @ 1745 hrs.
 Monitored flow for 47 hours on 12/64" choke from 1800 hrs.

F.T.H.P. (Final)	=	16272	kPa
Separator Pressure (Final)	=	2724	kPa
Separator Temperature (Final)	=	43	°C
Gas Flow Rate	=	47.025	E3M ³ /d
Condensate Flow Rate	=	10.071	m ³ /d
Water Flow Rate	=	0.631	m ³ /d

NOTE: E-Line not run on 1st Rate.

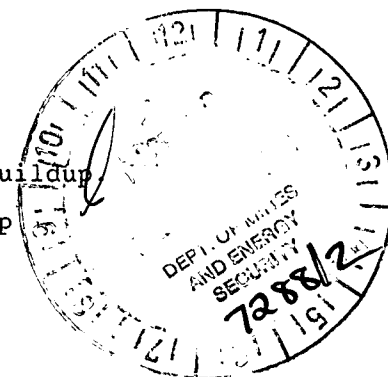
Rate #2

21/05/93: Choke slowly increased to 18/64" @ 1710 hrs for second rate.
 Flow monitored for 44 hours on 18/64" choke from 1800 hrs.

F.T.H.P. (Final)	=	15376	kPa
Separator Pressure (Final)	=	2689	kPa
Separator Temperature (Final)	=	53	°C
Gas Flow Rate	=	104.320	E3M ³ /d
Condensate Flow Rate	=	18.761	m ³ /d
Water Flow Rate	=	1.658	m ³ /d
F.B.H.P. @ 7053' KB (Final)	=	2897	psig
F.B.H.T. @ 7053' KB (Final)	=	279	°F

Buildup Survey

23/05/93: Shut well in @ 1400 hrs for 20.5 hours of buildup
 Pressure @ 7053' KB after 20.5 hours buildup
 = 2984 psig (20573 kPa)
 SIBHT @ 7053' KB = 275°F (135°C)



Static Gradient Survey

Mid Point of Perforations = 7272' KB

24/05/93: Ran in hole @ 1118 hrs to conduct static gradient.

<u>Depth</u> <u>('KB)</u>	<u>Pressure</u> <u>(kPag)</u>	<u>Pressure</u> <u>(psig)</u>
7000	20551	2981
6500	20264	2939
6000	19978	2897
5500	19688	2855
5000	19402	2814
4000	18840	2732
3000	18298	2654
2000	17753	2575
1000	17204	2495
Lubricator	16649	2415

Comments

Gas Flow Rates have been corrected using specific gravity from gas samples taken during test.

OILSERV AUSTRALIA LTD : TEST RESULTS

CLIENT: SANTOS LTD	PERFORATIONS: 7130'- 7146', 7223'- 7233', 7251'- 7277', 7326'- 7346', 7352'- 7366'	PAGE: 1
WELL NAME: DILCHEE #2 UPPER	DARALINGIE: 7404'- 7414'.	DATE: 18 / 05 / 93
TEST TYPE: TWO RATE AND BUILD UP.	FORMATION: TOOLACHEE/DARALINGIE	OPR: G.KING

TIME		WELLHEAD DATA				SEPARATOR DATA		FLOW RATES			CUMULATIVE PRODUCTION			
DATE	FLOW OR SHUT IN TIME (hours)	WELLHEAD PRESS kPa	ANNULUS PRESS kPa	W/HEAD TEMP ° C	CHOKE SIZE	SEPARATOR PRESS kPa	TEMP ° C	GAS m³ 10³ /d	OIL m³ /d	WATER m³ /d	GAS m³ 10³	OIL m³	WATER m³	L.G.R. m³ /10⁶ m³
18/05		Santos fitters remove production spool for test rig up. (relief valve set at 10 mPa)												
1000		Rig up W/line for drift run.												
1100		Spot camp and test equipment.												
1300		Pressure test lubricator, B.O.P. and stuffing box to S.I.W.H.P = 16548 kPa.												
1320		Test good. Bleed down anulus (20685 kPa).												
1330		Pressure up lubricator.												
1335		R.I.H. C/W rope socket, 5' weight bar, knuckle joint, 5' weight bar, knuckle joint, spang jars												
1336		and 1.750" gauge cutter.												
1440		Tag 7080'kb, no obstructions.												
1445		P.O.O.H.												
1530		In lubricator, bleed down.												
1800		Stand down for the evening.												
19/05		Continue to rig up test equipment, G.King to Moomba to calibrate Amerada's.												
0600		G.King on location.												
1300		Remove 1 X 2 7/8" joint from Dilchee #1 flare line for use on Dilchee #2 flare.												
1400		Pressure test H.P. lines to S.I.W.H.P. = 16548 kPa.												
1620		Test good.												
1640		Slowly open well to flare on 14/64" adj choke. Fluid at surface.												
1700	0.00	Trim flow through the separator.												
1715	0.25	Install 1.250" orifice plate and decrease choke to 12/64" adj.												
1745	0.75													
1800	1.00	16065	0	80	12	2689	30	50.591	--	--	2.108	--	--	--
2200	5.00	16155	0	87	12	2620	35	48.605	11.700	0.300	10.209	1.950	0.050	247
20/05														
0200	9.00	16196	20	88	12	2585	36	47.689	11.10	0.300	18.157	3.800	0.100	239
0600	13.00	16203	34	90	12	2585	38	47.472	10.80	0.300	26.069	5.600	0.150	234
0800	15.00	16231	41	90	12	2517	38	46.335	11.46	0.300	29.903	6.555	0.175	254
1000	17.00	16238	62	90	12	2689	37	49.066	11.46	0.300	34.019	7.510	0.200	240

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: DILCHEE #2 UPPER

PAGE:

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DATE: 20 / 05 / 93

TIME		WELLHEAD DATA				SEPARATOR DATA		FLOW RATES			CUMULATIVE PRODUCTION			
DATE	FLOW OR SHUT IN TIME (hours)	WELLHEAD PRESS kPa	ANNULUS PRESS kPa	W/HEAD TEMP °C	CHOKE SIZE /64"	SEPARATOR PRESS kPa	TEMP °C	GAS m³ 10³ /d	OIL m³ /d	WATER m³ /d	GAS m³ 10³	OIL m³	WATER m³	L.G.R. m³ / 10⁶ m³
20/05														
1200	19	16231	62	90	12	2689	39	46.957	10.92	0.600	37.932	8.42	0.250	247
1200	Rig up ameradas.													
1300	Rig ameradas into tool string & stab on lubricator.													
1320	Ameradas at atmosphere.													
1400	21	16245	69	90	12	2586	38	47.701	8.16	1.800	41.907	9.10	0.400	209
1420	Pressure up lubricator.													
1520	Depressure lubricator.													
1600	23	16252	83	88	12	2586	41	47.833	10.20	1.200	45.893	9.95	0.500	238
1620	Pressure up lubricator & R.I.H.													
1700	Gauges at hang depth - 7040' kb.													
1800	25	16265	69	89	12	2689	40	45.389	8.10	0.000	49.675	10.70	0.500	178
2200	29	16265	69	84	12	2655	39	45.176	9.30	0.900	57.204	12.25	0.650	226
21/05														
0200	33	16258	69	83	12	2655	39	44.681	9.75	0.900	64.658	13.87	0.800	238
0600	37	16258	69	83	12	2689	39	44.994	9.00	0.900	72.156	15.37	0.950	220
0800	39	16279	90	84	12	2689	39	44.994	10.56	1.800	75.910	16.26	1.100	275
0900	40	16272	90	84	12	2689	38	45.096	10.92	0.600	77.789	16.71	1.125	255
0900	Collect 1st set of P.V.T. samples: Condensate # SPE-268, Gas # EC-9466.													
1000	41	16272	97	83	12	2689	38	45.096	10.68	0.600	79.668	17.16	1.150	250
1000	Collect 2nd set of P.V.T. samples: Condensate # SPE-078, Gas # ED-5579. Done													
1100	42	16279	103	83	12	2689	39	45.244	8.40	1.200	81.553	17.51	1.200	212
1100	Collect 3rd set of P.V.T. samples: Condensate # PDE-186, Gas # EC-9453.													
1200	43	16272	97	82	12	2689	40	45.141	9.48	0.600	83.434	17.90	1.225	223
1400	45	16279	97	83	12	2689	42	44.939	9.60	0.600	87.179	18.70	1.275	227
1600	47	16272	97	85	12	2724	42	45.498	8.40	0.600	90.971	19.40	1.325	198
1700	48	16272	103	85	12	2724	43	45.396	9.00	1.800	92.863	19.78	1.400	238
1700	Install 1.750" orifice plate & adjust choke to 16/64 ths for second rate.													
1710	Increase choke further to 18/64 ths.													
1800	49	15252	117	87	18	2827	51	102.974	17.76	2.640	97.154	20.52	1.510	198
2200	53	15258	152	88	18	2724	50	103.305	16.50	2.400	114.371	23.26	1.910	183

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: DILCHEE #2U

PAGE: 3

DATE: 22 / 05 / 93

TIME		WELLHEAD DATA				SEPARATOR DATA		FLOW RATES			CUMULATIVE PRODUCTION			
DATE	FLOW OR SHUT IN TIME (hours)	WELLHEAD PRESS kPa	ANNULUS PRESS kPa	W/HEAD TEMP °C	CHOKE SIZE /64"	SEPARATOR PRESS kPa	TEMP °C	GAS m³ 10³ /d	OIL m³ /d	WATER m³ /d	GAS m³ 10³	OIL m³	WATER m³	L.G.R. m³ /10⁶ m³
22/05														
0200	57	15238	152	87	18	2827	50	103.636	17.550	2.400	131.644	26.190	2.310	192
0600	61	15245	152	87	18	2758	50	101.839	21.600	0.900	148.617	29.790	2.460	221
0800	63	15238	159	87	18	2758	50	101.839	12.120	1.200	157.104	30.800	2.560	131
1000	65	15252	165	87	18	2689	51	102.391	23.760	1.200	165.637	32.780	2.660	244
1200	67	15266	165	88	18	2724	52	103.293	21.840	0.000	174.245	34.600	2.660	211
1400	69	15272	165	89	18	2689	52	103.014	16.080	4.320	182.830	35.940	3.020	198
1600	71	15293	172	89	18	2724	52	103.714	17.880	2.400	191.473	37.430	3.220	196
1600	P.O.O.H. with ameradas.													
1640	In lubricator.													
1710	Depressure lubricator.													
1800	73	15321	172	89	18	2724	52	102.871	18.600	1.080	200.041	38.980	3.310	191
1810	Pressure up lubricator.													
1910	Depressure lubricator & hang gauges overnight.													
2200	77	15321	172	89	18	2758	52	103.562	18.660	1.800	217.301	42.090	3.610	198
23/05														
0200	81	15321	172	89	18	2758	52	103.562	18.900	1.500	234.561	45.240	3.860	197
0600	85	15321	172	88	18	2792	52	103.389	19.500	1.200	251.792	48.490	4.060	200
0600	Rig down slick-line & change over to E/line.													
0800	87	15328	186	88	18	2758	53	103.345	21.000	1.200	260.404	49.240	4.160	215
1000	89	15334	214	88	18	2792	53	103.603	17.040	1.920	269.038	50.660	4.320	183
1000	Stab on lubricator.													
1035	Pressure up lubricator.													
1105	Depressure lubricator.													
1135	Pressure up lubricator & R.I.H. with E/line.													
1200	91	15286	207	88	18	2758	52	102.706	20.520	1.800	277.597	52.370	4.470	217
1253	Gauges @ 6970' - conduct CCL correlation - gauges became stuck during CCL run.													
1400	93	15376	228	89	18	2689	53	100.053	18.480	0.960	285.935	53.910	4.550	199
1400	Shut in well at wing valve to attempt to free stuck E/line gauges.													
1415		16713	207	70	S/I									
1430		16720	193	58	"									
1445		16727	165	42	"									

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: DILCHEE #2 UPPER

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DATE: 23 / 05 / 93

TIME		WELLHEAD DATA				SEPARATOR DATA		FLOW RATES			CUMULATIVE PRODUCTION			
DATE	FLOW OR SHUT IN TIME (hours)	WELLHEAD PRESS kPa	ANNULUS PRESS kPa	W/HEAD TEMP °C	CHOKE SIZE /64"	SEPARATOR PRESS kPa	TEMP °C	GAS m³ 10³/d	OIL m³/d	WATER m³/d	GAS m³ 10³	OIL m³	WATER m³	L.G.R. m³ /10⁶ m³
23/05														
1500	S/I 1	16734	145	32	S/I									
1500	Informed by Moomba P.E. to begin build up period which was already being monitored.													
1515		16734	145	31	"									
1530		16734	138	29	"									
1545		16734	131	28	"									
1600	2	16713	124	28	"									
1615		16713	124	27	"									
1630		16713	124	26	"									
1645		16707	124	25	"									
1700	2	16707	124	24	"									
1715		16707	124	23	"									
1730		16700	124	22	"									
1745		16707	124	21	"									
1800	4	16700	124	20	"									
2200	8	16693	110	15	"									
24/05														
0200	12	16686	69	15	"									
0600	16	16686	69	15	"									
1000	20	16686	69	22	"									
1030	P.O.O.H, conduct static gradient. Rig down E/line and secure W/head. End of test.													

800000

OILSERV AUSTRALIA LTD : GAS FLOW CALCULATIONS

CLIENT: SANTOS LTD	PERFORATIONS: 7130'- 7146', 7223'- 7233', 7251'- 7277', 7326'- 7346', 7352'- 7366'	PAGE: 1
WELL NAME: DILCHEE #2 UPPER	DARALINGIE: 7404'- 7414'.	DATE: 19 / 05 / 93
TEST TYPE: TWO RATE AND BUILD UP.	FORMATION: TOOLACHEE/DARALINGIE	OPR: G.KING

ORIFICE MTR TYPE: DANIELS				STATIC PRESSURE RANGE: 0 - 1500 psig				GAS SPECIFIC GRAVITY (SG) = 0.864								
METRE RUN SIZE: 3.826				DIFFERENTIAL PRESS RANGE: 0 - 200 in/hw				FG = $\sqrt{(1/SG)}$ = 1.0758								
SEPARATOR No: TS-02-04				STANDARD CONDITIONS: 14.73 psi @ 60°F				CO ₂ % = 13 %								
DATE TIME	FLOW TIME (hr)	CHOKE SIZE /64"	STATIC PRESS (psia)	DIFF PRESS in/hw	GAS FLOW TEMP (°C)	ORIF PLATE SIZE (in)	$\sqrt{(P_F \times H_W)}$	$C_1 = F_B \times F_{TF} \times F_{PV} \times Y_2$				TOTAL GAS PROD (m ³ 10 ³)	C (C ₁ x C ₂)	GAS FLOW RATE $Q = \sqrt{(P_F \times H_W)} \times C$		
								F _B	F _{TF}	F _{PV}	Y ₂			MMSCFD	m ³ 10 ³ / d	
19/05																
1700	0.0	Slowly open well to flare on 14/64" adj choke. Fluid at surface.														
1715	0.3	Trim flow through the separator.														
1745	0.7	Install 1.250" orifice plate and decrease choke to 12/64" adj.														
1800	1.0	12	405	109	30	1.250	210.0371	318.0314	0.9759	1.0650	1.0018	2.108	356.2217	1.796	50.591	
2200	5.0	12	395	106	35	1.250	204.5517	318.0314	0.9680	1.0592	1.0018	10.209	351.4104	1.725	48.605	
20/05																
0200	9.0	12	390	104	36	1.250	201.3254	318.0314	0.9664	1.0576	1.0018	18.157	350.3130	1.693	47.689	
0600	13.0	12	390	104	38	1.250	201.3254	318.0314	0.9633	1.0562	1.0018	26.069	348.7234	1.685	47.472	
0800	15.0	12	380	102	38	1.250	196.8056	318.0314	0.9633	1.0546	1.0018	29.930	348.1843	1.645	46.335	
1000	17.0	12	405	106	37	1.250	207.1265	318.0314	0.9648	1.0594	1.0017	34.019	350.3397	1.742	49.066	
1200	19.0	12	405	98	39	1.250	199.1571	318.0314	0.9617	1.0580	1.0016	37.932	348.6926	1.667	46.957	
1400	21.0	12	390	105	38	1.250	202.2910	318.0314	0.9633	1.0562	1.0018	41.907	348.7293	1.693	47.701	
1600	23.0	12	390	107	41	1.250	204.2085	318.0314	0.9587	1.0542	1.0018	45.893	346.4119	1.698	47.833	
1800	25.0	12	405	92	40	1.250	192.9641	318.0314	0.9602	1.0573	1.0015	49.675	347.8694	1.611	45.389	
2200	29.0	12	400	92	39	1.250	191.7685	318.0314	0.9617	1.0572	1.0015	57.204	348.3944	1.603	45.176	
21/05																
0200	33.0	12	400	90	39	1.250	189.6726	318.0314	0.9617	1.0572	1.0015	64.658	348.3830	1.586	44.681	
0600	37.0	12	405	90	39	1.250	190.8552	318.0314	0.9617	1.0580	1.0015	72.156	348.6474	1.597	44.994	
0800	39.0	12	405	90	39	1.250	190.8552	318.0314	0.9617	1.0580	1.0015	75.910	348.6474	1.597	44.994	
0900	40.0	12	405	90	38	1.250	190.8552	318.0314	0.9633	1.0587	1.0015	77.789	349.4442	1.601	45.096	
1000	41.0	12	405	90	38	1.250	190.8552	318.0314	0.9633	1.0587	1.0015	79.668	349.4442	1.601	45.096	
1100	42.0	12	405	91	39	1.250	191.9126	318.0314	0.9617	1.0580	1.0015	81.553	348.6530	1.606	45.249	
1200	43.0	12	405	91	40	1.250	191.9126	318.0314	0.9602	1.0573	1.0015	83.434	347.8637	1.602	45.149	
1400	45.0	12	405	91	42	1.250	191.9126	318.0314	0.9571	1.0559	1.0015	87.179	346.3074	1.595	44.939	

OILSERV AUSTRALIA LTD : GAS FLOW CALCULATIONS

CONTINUATION SHEET

WELL NAME: DILCHEE #2 UPPER

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DATE: 21 / 05 / 93

ORIFICE MTR TYPE: DANIELS	STATIC PRESSURE RANGE: 0 - 1500 psig	GAS SPECIFIC GRAVITY (SG) = 0.864
METRE RUN SIZE: 3.826	DIFFERENTIAL PRESS RANGE: 0 - 200 in/hw	FG = $\sqrt{(1/SG)}$ = 1.0758
SEPARATOR No: TS-02-04	STANDARD CONDITIONS: 14.73 psi @ 60°F	CO ₂ % = 13%

DATE TIME	FLOW TIME (hr)	CHOKE SIZE /64"	STATIC PRESS (psia)	DIFF PRESS in/hw	GAS FLOW TEMP (°C)	ORIF PLATE SIZE (in)	√(P _F x H _w)	C ₁ = F _B x F _{T F} x F _{P V} x Y ₂				TOTAL GAS PROD (m ³ 10 ³)	C (C ₁ x C ₂)	GAS FLOW RATE Q = √(P _F x H _w) x C	
								F _B	F _{T F}	F _{P V}	Y ₂			mmscfd	m ³ 10 ³ / d
21/05															
1600	47	12	410	92	42	1.250	194.1524	318.0314	0.9571	1.0567	1.0015	90.971	346.5654	1.615	45.498
1700	48	12	410	92	43	1.250	194.1524	318.0314	0.9556	1.0560	1.0015	92.863	345.7939	1.611	45.396
1700	Install 1.750" orifice plate & adjust choke to 16/64 ths for second rate.													1.646	46.378
1710	Increase choke further to 18/64 ths.														
1800	49	18	425	117	51	1.750	222.9202	637.8335	0.9438	1.0531	1.0017	97.154	683.1533	3.655	102.974
2200	53	18	410	122	50	1.750	223.5779	637.8335	0.9452	1.0516	1.0019	114.371	683.3309	3.667	103.305
22/05															
0200	57	18	425	118	50	1.750	223.8708	637.8335	0.9452	1.0537	1.0017	131.644	684.6255	3.678	103.636
0600	61	18	415	117	50	1.750	220.2803	637.8335	0.9452	1.0523	1.0018	148.617	683.7226	3.615	101.839
0800	63	18	415	117	50	1.750	220.2803	637.8335	0.9452	1.0523	1.0018	157.104	683.7226	3.615	101.839
1000	65	18	405	122	51	1.750	222.2095	637.8335	0.9438	1.0503	1.0019	165.637	681.4554	3.634	102.391
1200	67	18	410	123	52	1.750	224.4923	637.8335	0.9423	1.0504	1.0019	174.245	680.4716	3.666	103.293
1400	69	18	405	124	52	1.750	224.0235	637.8335	0.9423	1.0497	1.0019	182.830	680.0545	3.656	103.014
1600	71	18	410	124	52	1.750	225.4030	637.8335	0.9423	1.0504	1.0019	191.473	680.4820	3.681	103.714
1800	73	18	410	122	52	1.750	223.5779	637.8335	0.9423	1.0504	1.0019	200.041	680.4612	3.651	102.871
2200	77	18	415	122	52	1.750	224.9379	637.8335	0.9423	1.0511	1.0018	217.301	680.8905	3.676	103.562
23/05															
0200	81	18	415	122	52	1.750	224.9379	637.8335	0.9423	1.0511	1.0018	234.561	680.8905	3.676	103.562
0600	85	18	420	120	52	1.750	224.4273	637.8335	0.9423	1.0518	1.0018	251.792	681.3012	3.670	103.389
0800	87	18	415	122	53	1.750	224.9379	637.8335	0.9409	1.0505	1.0018	260.404	679.4672	3.668	103.345
1000	89	18	420	121	53	1.750	225.3604	637.8335	0.9409	1.0512	1.0018	269.038	679.8813	3.677	103.603
1200	91	18	415	120	52	1.750	223.0865	637.8335	0.9423	1.0511	1.0018	277.597	680.8700	3.645	102.706
1400	93	18	405	117	53	1.750	217.6084	637.8335	0.9423	1.0497	1.0018	285.935	679.9810	3.551	100.053
1400	Shut in well at wing valve & attempt to free stuck E/line gauges.														
	END OF FLOW PERIOD.														
	* NOTE : SAMPLED SG = 0.8465														
									</						

∴ CORRECT FG = $\sqrt{1/0.8465} = 1.0908$ (NOT 1.0758)
too rich use @ 8.24

00010

OILSERV AUSTRALIA LTD : LIQUID PRODUCTION

CLIENT: SANTOS LTD.

PERFORATIONS: 7130'- 7146', 7223'- 7233',
7251'- 7277', 7326'- 7346', 7352'- 7366',
DARALINGIE: 7404'- 7414'.

PAGE: 1

WELL NAME: DILCHEE #2 UPPER

DATE: 19 / 05 / 93

TEST TYPE: TWO RATE AND BUILD UP.

FORMATION: TOOLACHEE/DARALINGIE

OPR: G.KING

TANK #1 = A
NUMBER #2 = B

TANK #1 = 7.850 m³
CAPACITY #2 = 7.850 m³

TANK #1 = CALIBRATED LITRES
SCALE #2 = CALIBRATED LITRES

OIL API GRAVITY @ 60°F
= 59.8

DATE	FLOW TIME	TANK USED	TOTAL TANK DIP (litres)	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP (litres)	TANK PRODUCTION (m ³)	FLOW RATE (m ³ /d)	CUMULATIVE PRODUCTION (m ³)	TOTAL TANK DIP (litres)	TANK PRODUCTION (m ³)	FLOW RATE (m ³ /d)	CUMULATIVE PRODUCTION (m ³)
19/05											
1700	0										
1800	1	1	Slowly open well to flare on 14/64" adj choke. Fluid at surface.								
1800	1	1	Begin fluid production to test tank								
2200	5	1	2000	1950	1.950	11.700	1.950	50	0.050	0.300	0.050
20/05											
0200	9	1	3900	3800	1.850	11.100	3.800	100	0.050	0.300	0.100
0600	13	1	5750	5600 (5+6)	1.800	10.800	5.600	150 (15)	0.050	0.300	0.150
0600	13	2	Change to tank #2								
0800	15	2	980	955	0.955	11.460	6.555	25	0.025	0.300	0.175
1000	17	2	1960	1910	0.955	11.460	7.510	50	0.025	0.300	0.200
1200	19	2	2920	2820	0.910	10.920	8.420	100	0.050	0.600	0.250
1400	21	2	3750	3550	0.680	8.160	9.100	200	0.150	1.800	0.400
1600	23	2	4700	4400	0.850	10.200	9.950	300	0.100	1.200	0.500
1800	25	2	5375	5075 (4+12)	0.675	8.100	10.700	300 (275)	0.000	0.000	0.500
1800	25	1	Change to tank #1								
2200	29	1	1900	1750	1.550	9.300	12.250	150	0.150	0.900	0.650
21/05											
0200	33	1	3675	3375	1.625	9.750	13.875	300	0.150	0.900	0.800
0600	37	1	5325	4875 (3+125)	1.500	9.000	15.375	450 (3)	0.150	0.900	0.950
0600	37	2	Change to tank #2								
0800	39	2	1230	1080	0.880	10.560	16.255	150	0.150	1.800	1.100
0900	40	2	1710	1535	0.455	10.920	16.710	175	0.025	0.600	1.125
1000	41	2	2180	1980	0.445	10.680	17.155	200	0.025	0.600	1.150
1100	42	2	2580	2330	0.350	8.400	17.505	250	0.050	1.200	1.200
1200	43	2	3000	2725	0.395	9.480	17.900	275	0.025	0.600	1.225
1400	45	2	3850	3525	0.800	9.600	18.700	325	0.050	0.600	1.275

OILSERV AUSTRALIA LTD : LIQUID PRODUCTION

CONTINUATION SHEET

WELL NAME: DILCHEE #2 UPPER

PAGE: 2

DATE: 21 / 05 / 93

DATE	FLOW TIME	TANK USED	TOTAL TANK DIP	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP	TANK PRODUCTION	FLOW RATE	CUMULATIVE PRODUCTION	TOTAL TANK DIP	TANK PRODUCTION	FLOW RATE	CUMULATIVE PRODUCTION
	(hours)	(number)	(litres)	(litres)	(m ³)	(m ³ /d)	(m ³)	(litres)	(m ³)	(m ³ /d)	(m ³)
21/05											
1600	47	2	4600	4225	0.700	8.400	19.400	375	0.050	0.600	1.325
1700	48	2	5050	4600 (3.52)	0.375	9.000	19.775	450 (-3)	0.075	1.800	1.400
1700	Install 1.750" orifice plate & adjust choke to 16/64 ths for second rate.										
1710	Increase choke further to 18/64 ths. RATE 1 Qd: 10.071 m ³ /d Qw: 0.631 m ³ /d										
1800	49	2	5900	5340	0.740	17.760	20.515	560	0.110	2.640	1.510
1800	Change to tank #1.		50	50				0			
2200	53	1	3200	2800	2.750	16.500	23.265	400	0.400	2.400	1.910
22/05											
0200	57	1	6525	5725 (5.675)	2.925	17.550	26.190	800 (-8)	0.400	2.400	2.310
0200	Change to tank #2.		200	50				150			
0600	61	2	3950	3650	3.600	21.600	29.790	300	0.150	0.900	2.460
0800	63	2	5060	4660	1.010	12.120	30.800	400	0.100	1.200	2.560
1000	65	2	7140	6640 (6.57)	1.980	23.760	32.780	500 (0.35)	0.100	1.200	2.660
1000	Change to tank #1		200	200				0			
1200	67	1	2020	2020	1.820	21.840	34.600	0	0.000	0.000	2.660
1400	69	1	3720	3360	1.340	16.080	35.940	360	0.360	4.320	3.020
1600	71	1	5410	4850	1.490	17.880	37.430	560 (0.65)	0.200	2.400	3.220
1800	73	1	7050	6400 (6.2)	1.550	18.600	38.980	650	0.090	1.080	3.310
1800	Change to tank #2.		240	240				0			
2200	77	2	3650	3350	3.110	18.660	42.090	300	0.300	1.800	3.610
23/05											
0200	81	2	7050	6500 (6.26)	3.150	18.900	45.240	550 (0.55)	0.250	1.500	3.860
0200	Change to tank #1.		200	50				150			
0600	85	1	3650	3300	3.250	19.500	48.490	350	0.200	1.200	4.060
0800	87	1	5500	5050	1.750	21.000	49.240	450	0.100	1.200	4.160
1000	89	1	7080	6470 (6.42)	1.420	17.040	50.660	610 (0.46)	0.160	1.920	4.320
1000	Change to tank #2.		220	120				100			
1200	91	2	2080	1830	1.710	20.520	52.370	250	0.150	1.800	4.470
1400	93	2	3700	3370 (3.25)	1.540	18.480	53.910	330 (0.23)	0.080	0.960	4.550
1400	Shut in well at wing valve to attempt to free stuck E/line gauges.										
44 HAS TOTAL			RATE 2 Qd: 18.761 m ³ /d			Qw: 1.658 m ³ /d					

000012

OPERATIONS LOG

CLIENT : SANTOS LTD.
WELL NAME : DILCHEE #2 UPPER

FIELD : DILCHEE
DATE : 18/05/93

DATE	TIME	ACTIVITY
18/05/93	1335	PRESSURE UP LUBRICATOR
	1336	R.I.H C/W ROPE SOCKET, 5' WEIGHT BAR , KNUCKLE JOINT 5' WEIGHT BAR , KNUCKLE JOINT , SPANG JARS AND 1.750 GAUGE CUTTER.
	1450	TAG 7080' K.B NO OBSTRUCTIONS.
	1455	P.O.O.H
	1530	IN LUBRICATOR.
	1532	DEPRESSURE LUBRICATOR.
23/05/93	0600	RIG DOWNS/LINE.
	0710	CHANGE OUT SLICKLINE B.O.P. SEALS FOR E/LINE AND ASSEMBLE TOOL STRING CABLE HEAD , C.C.L , EPG-520 KNUCKLE JOINT , 5' WEIGHT BAR , KNUCKLE JOINT , 5' WEIGHT BAR , KNUCKLE JOINT , AMERADA.
	1010	STAB LUBRICATOR.
	1013	POWER UP SRO.
	1035	PRESSURE UP LUBRICATOR.
	1105	DEPRESSURE LUBRICATOR.
	1135	PRESSURE UP LUBRICATOR R.I.H.
	1253	START C.C.L CORRELATION.
	1305	TOOL STRING STUCK AT 7053' K.B. ATTEMPT TO FREE TOOL STRING BY WORKING CABLE.
	1345	INSTRUCTED BY SANTOS TO SHUT WELL IN AT 1400 AND MONITOR BUILD UP.
24/05/93	1037	END BUILD UP.
	1100	ATTEMPT TO P.O.O.H. TOOL FREE AFTER TWO ATTEMPTS
	1110	P.O.O.H TO 7000' KB
	1115	HANG AT 7000' KB .083
	1125	P.O.O.H
	1130	HANG AT 6500' KB .082
	1145	P.O.O.H
	1154	HANG AT 6000' KB .084
	1209	P.O.O.H
	1219	HANG AT 5500' KB .084
	1234	P.O.O.H
	1244	HANG AT 5000' KB .084
	1259	P.O.O.H
	1314	HANG AT 4000' KB .082
	1329	P.O.O.H
	1343	HANG AT 3000' KB .078
	1358	P.O.O.H
	1409	HANG AT 2000' KB .079
	1424	P.O.O.H
	1438	HANG AT 1000' KB .082
	1453	P.O.O.H
	1524	HANG IN LUBRICATOR DEPRESSURISE.
	1558	PRESSURE UP LUBRICATOR.
	1630	DEPRESSURE LUBRICATOR.
	1705	RIG DOWN END TEST.

Plot starting date: 5/23/93
time: 10: 8: 24

Gauge S/N

Company: OILSERV AUSTRALIA LTD

Client: SANTOS LTD.

Well name: DILCHEE

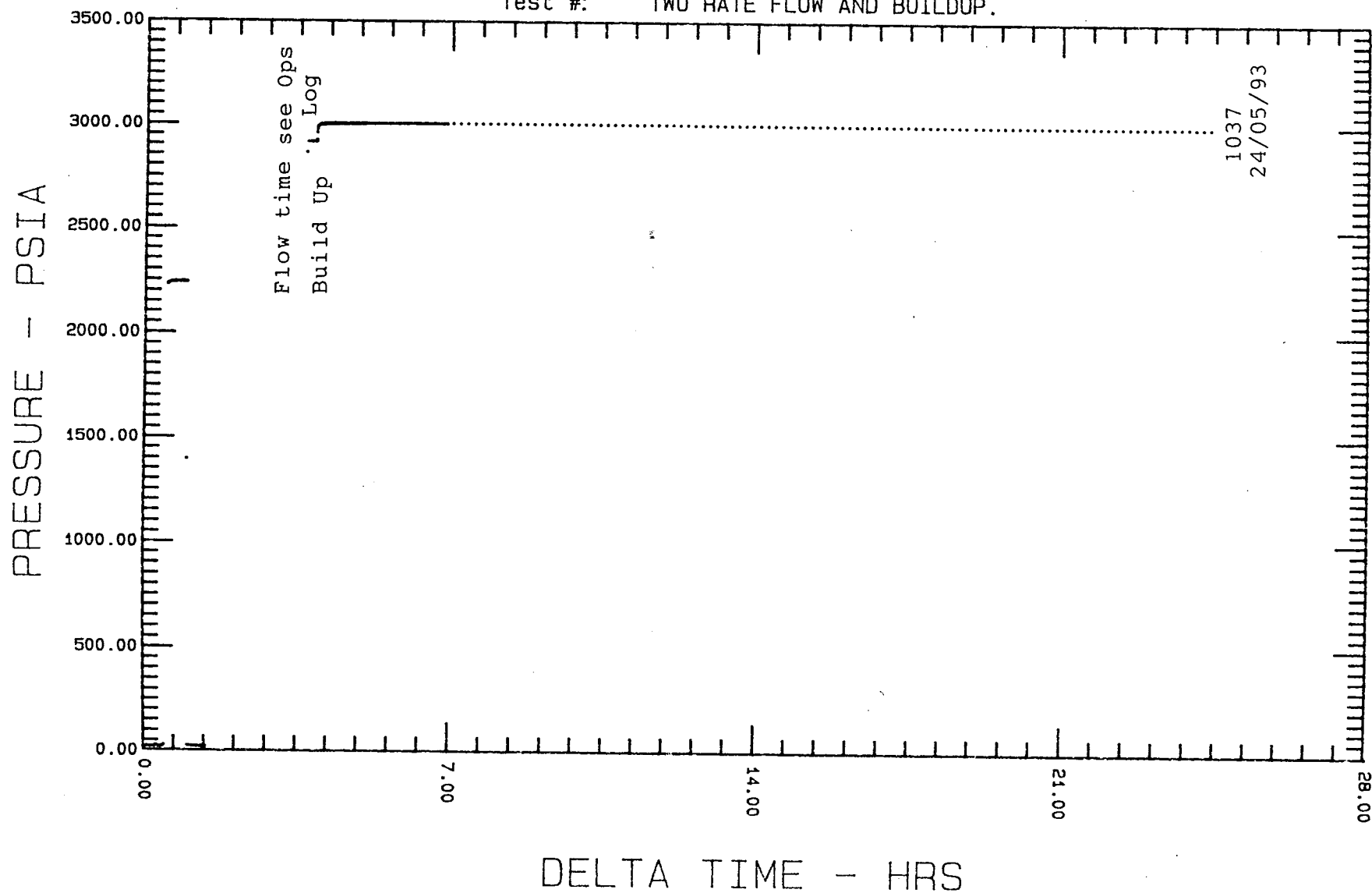
Well #: 2

Test #: TWO RATE FLOW AND BUILDUP.

Location: COOPER BASIN.

Operator: T.WEAVER

Comments: LUBRICATOR , FLOW , BUILD UP



000014

Plot starting date: 5/23/93

time: 14: 0:59

Company: OILSERV AUSTRALIA LTD

Client: SANTOS LTD.

Location: COOPER BASIN.

Gauge S/N

Well name: DILCHEE

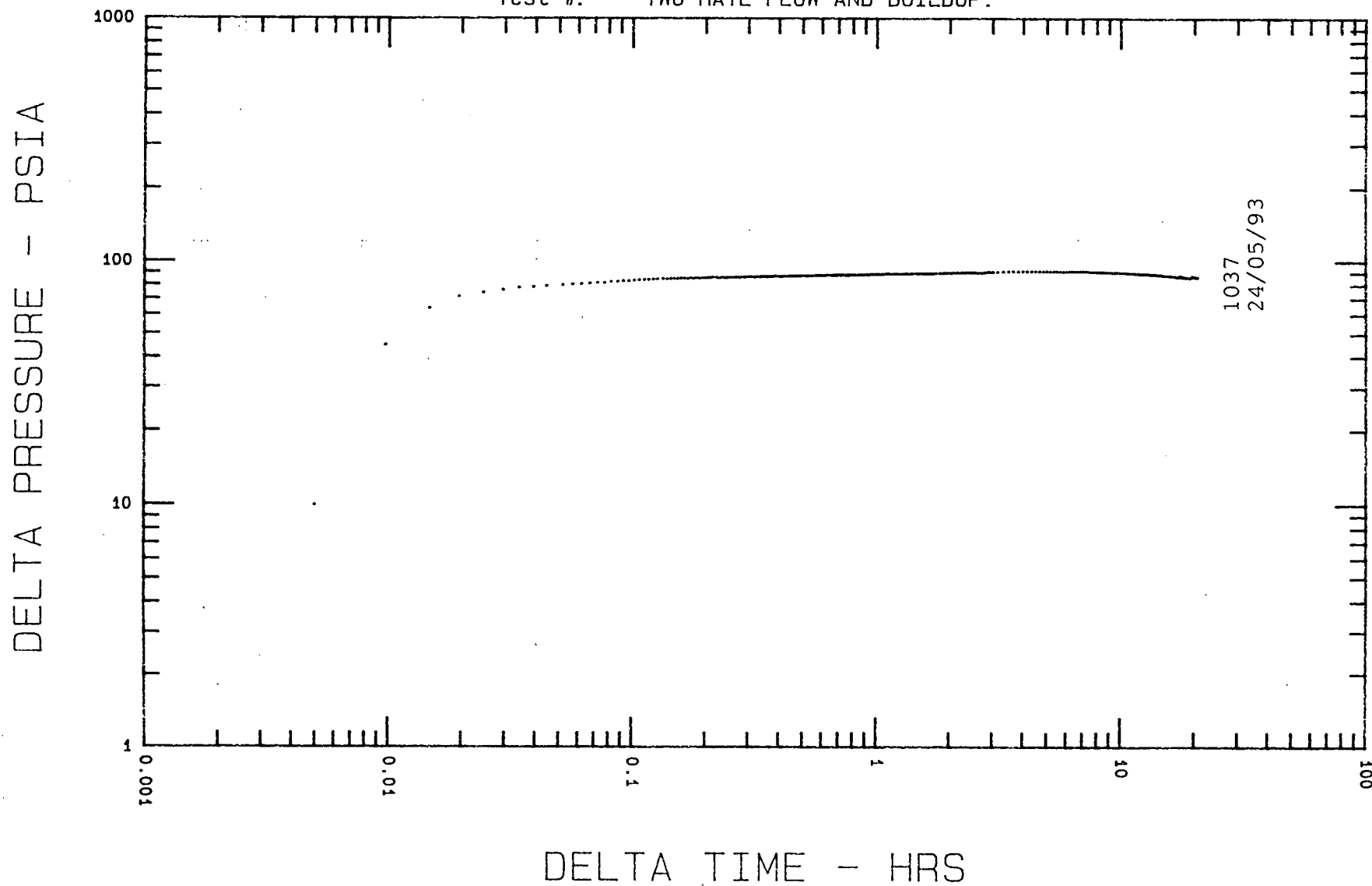
Operator: T.WEAVER

Reference pressure: 2912.160 PSIA

Well #: 2

Comments: BUILD UP

Test #: TWO RATE FLOW AND BUILDUP.



000015

Plot starting date: 5/23/93

time: 14: 0: 59

Gauge S/N

Flow time: 93.000 HRS

Company: OILSERV AUSTRALIA LTD

Client: SANTOS LTD.

Well name: DILCHEE

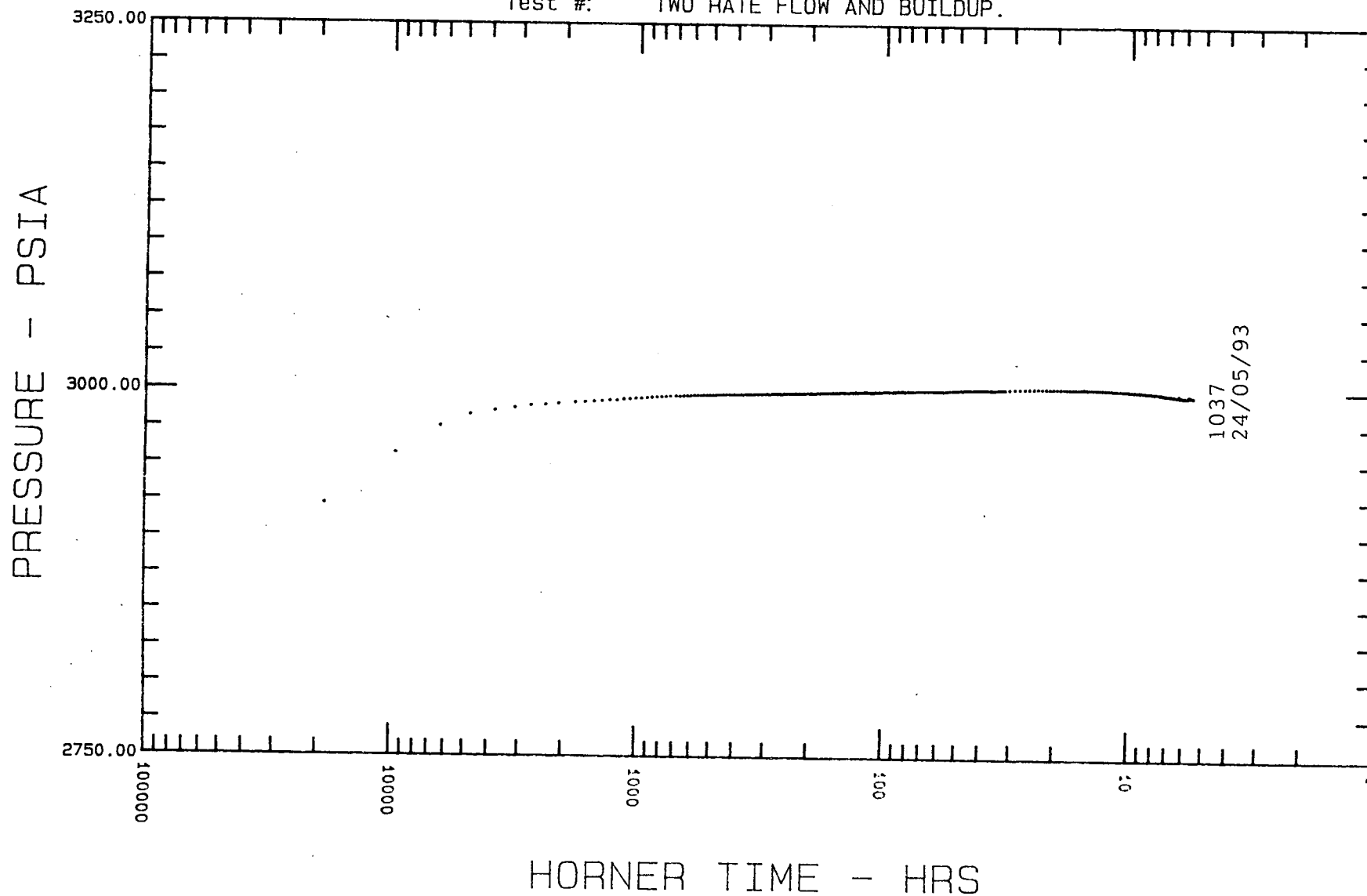
Well #: 2

Test #: TWO RATE FLOW AND BUILDUP.

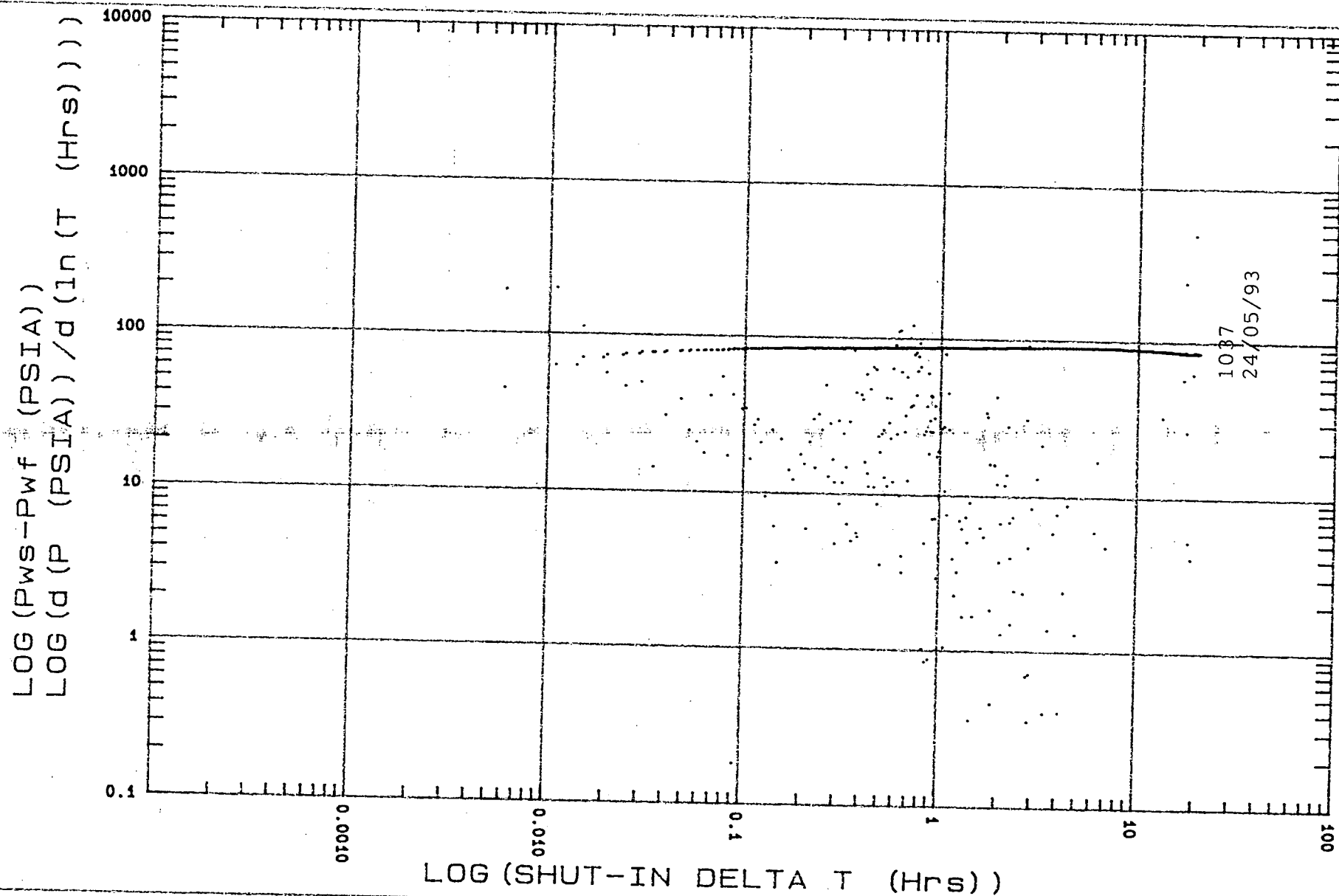
Location: COOPER BASIN.

Operator: T.WEAVER

Comments: BUILD UP



000016



OILSERV AUSTRALIA LTD. - PRESSURE BUILDUP & DERIVATIVE Pwf=2912.16 PSIA
 CLIENT:
 WELL: DILCHEE #2 TEST: BUILD UP SURVEY
 DATA START: 24-05-1993 00: 00: 14

000017

Plot starting date: 5/24/93
time: 11:18:57

Gauge S/N

Company: OILSERV AUSTRALIA LTD

Client: SANTOS LTD.

Well name: DILCHEE

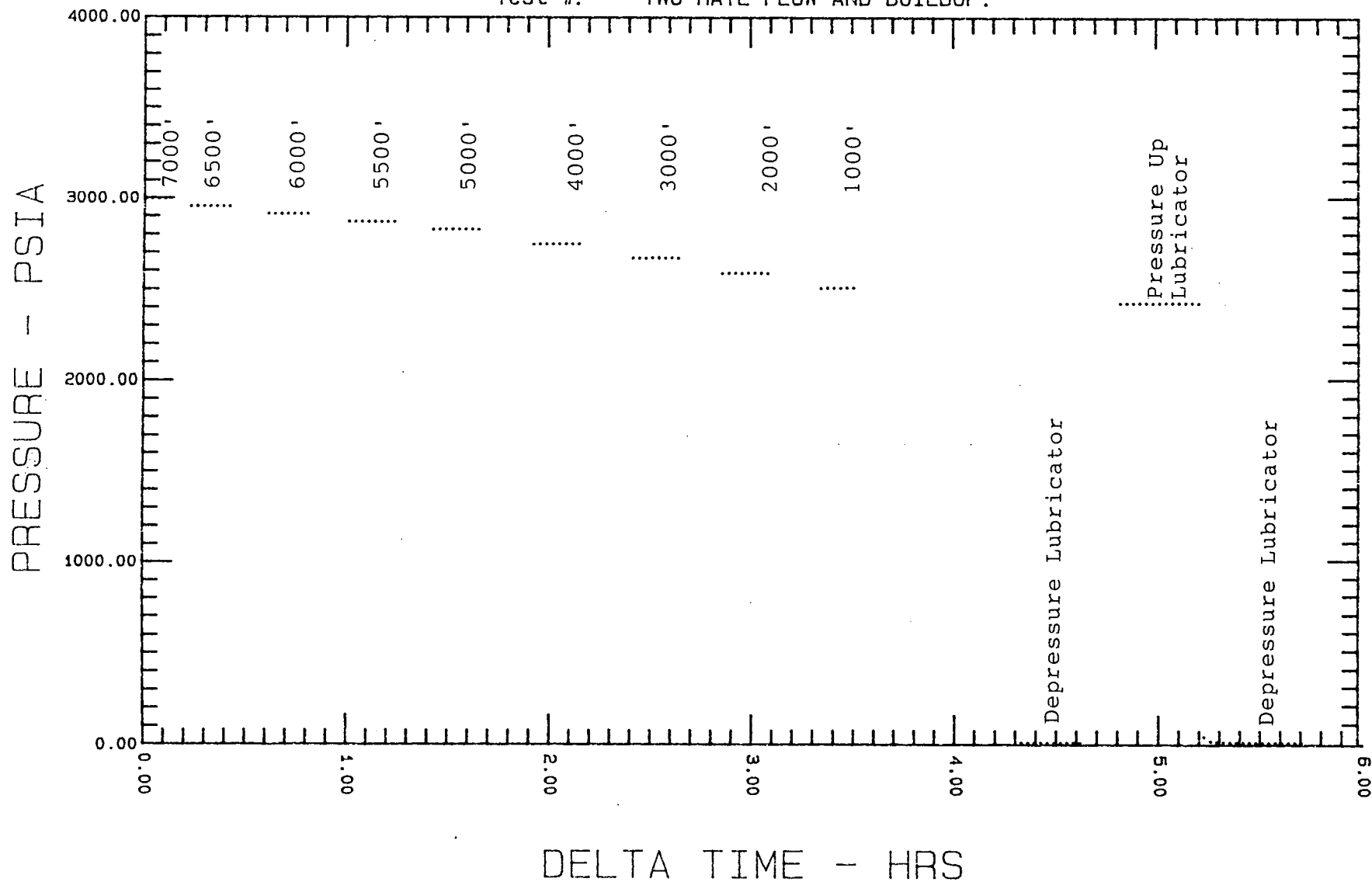
Well #: 2

Test #: TWO RATE FLOW AND BUILDUP.

Location: COOPER BASIN.

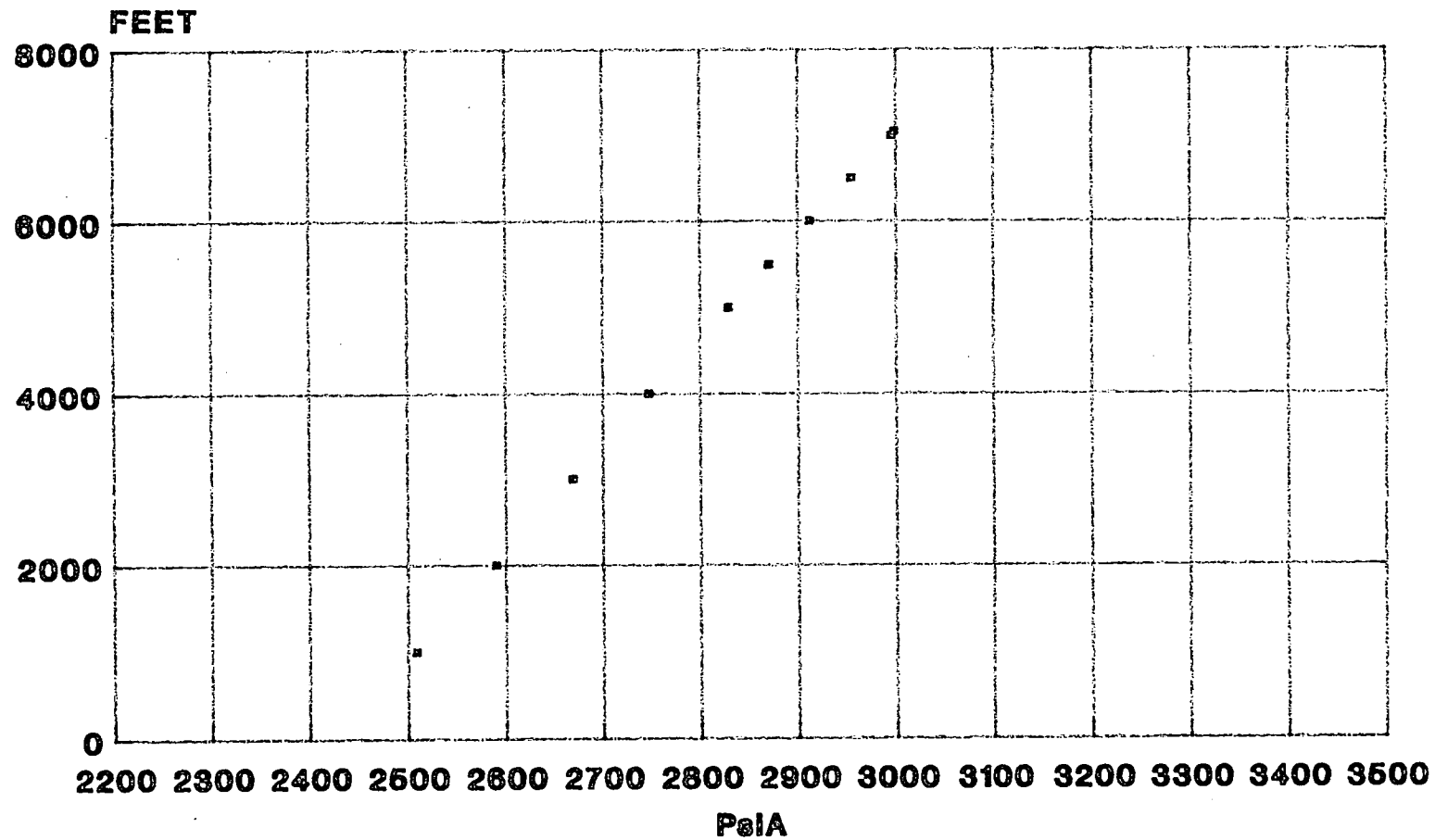
Operator: T.WEAVER

Comments: STATIC GRADIENT



000013

**OILSERV AUSTRALIA LTD
STATIC GRADIENT SURVEY
CLIENT : SANTOS LTD**



**WELL : DILCHEE #2 UPPER
DATE : 24/05/93
OPERATOR : T. WEAVER**

000019

SUMMARY OF 2-RATE FLOW AND BUILDUP SURVEY26th May to 1st June 1993Rate #1

26/05/93: Opened well on 17/64" choke by-passing separator @ 0930 hrs.
 Slowly decreased choke to 14/64" @ 1114 hrs.
 Monitored flow for 44 hours on 14/64" choke from 1200 hrs.

F.T.H.P. (Final)	=	17803	kPa
Separator Pressure (Final)	=	3240	kPa
Separator Temperature (Final)	=	41	°C
Gas Flow Rate	=	94.400	E3M ³ /d
Condensate Flow Rate	=	0.753	m ³ /d
Water Flow Rate	=	1.833	m ³ /d
F.B.H.P. @ 8100' KB (Final)	=	3176	psig
F.B.H.T. @ 8100' KB (Final)	=	287	°F

Rate #2

28/05/93: Choke slowly increased to 22/64" @ 0800 hrs for second rate.
 Flow monitored for 24 hours on 22/64" choke from 1000 hrs.

F.T.H.P. (Final)	=	15576	kPa
Separator Pressure (Final)	=	4758	kPa
Separator Temperature (Final)	=	60	°C
Gas Flow Rate	=	185.370	E3M ³ /d
Condensate Flow Rate	=	1.044	m ³ /d
Water Flow Rate	=	3.948	m ³ /d
F.B.H.P. @ 8100' KB (Final)	=	2916	psig
F.B.H.T. @ 8100' KB (Final)	=	286	°F

Buildup Survey

29/05/93: Shut well in @ 1000 hrs for 70.5 hours of buildup.
 Pressure @ 8100' KB after 70.5 hours buildup
 = 3383 psig (23329 kPa)
 SIBHT @ 8100' KB = 287°F (142°C)



Static Gradient Survey

Mid Point of Perforations = 8445' KB

01/06/93: Ran in hole @ 0900 hrs to conduct static gradient.

<u>Depth</u> <u>('KB)</u>	<u>Pressure</u> <u>(kPag)</u>	<u>Pressure</u> <u>(psig)</u>
8478	24042	3487
8100	23323	3383
8000	23273	3375
7500	23029	3340
7000	22766	3302
6500	22508	3264
6000	22261	3229
5500	22011	3192
5000	21767	3157
4000	21282	3087
3000	20794	3016
2000	20307	2945
1000	19795	2871
Lubricator	19277	2796

Comments

Gas flow rates have been corrected using the specific gravity from the gas samples taken during the test.

OILSERV AUSTRALIA LTD : TEST RESULTS

CLIENT: SANTOS LTD.	PERFORATIONS: (81-3), (82-1), (82-8), (83-3) (84-0), (85-0), (85-3), (86-0), (86-7), (87-1) (88-9).	PAGE: 1
WELL NAME: DILCHEE #2L		DATE: 26 / 05 / 93
TEST TYPE: 2 RATE & BUILD UP.	FORMATION: PATCHAWARRA.	OPR: G.KING.

TIME		WELLHEAD DATA				SEPARATOR DATA		FLOW RATES			CUMULATIVE PRODUCTION			
DATE	FLOW OR SHUT IN TIME (hours)	WELLHEAD PRESS kPa	ANNULUS PRESS kPa	W/HEAD TEMP ° C	CHOKE SIZE 64ths	SEPARATOR PRESS kPa	TEMP ° C	GAS m³ 10³ /d	OIL m³ /d	WATER m³ /d	GAS m³ 10³	OIL m³	WATER m³	L.G.R. m³ /10⁶ m³
25/05														
0600	Rig out of upper zone & into lower zone.													
1400	Callibrate ameradas for temperature .													
1800	Stand crew down for the evening.													
26/05														
0600	Continue rig up & pressure test lines.													
0900	0	19106	138	20	S/I									
0930	Open well to flare on 8/64 ths & then increase to 17/64 ths.													
0950	Further increase choke to 22/64 ths.													
1000		19106	145	86	22									
1000	Trim flow through separator.													
1010	Informed by Moomba P.E. to change rate to 3MMSCF/DAY for first rate & 6MMSCF/DAY for second rate.													
1015	Reduce choke to 17/64 ths.													
1100	Install 1.750" orifice plate.													
1100		17113	193	87	17	3172	38	123.740	0.000	0.000	1.289	0.000	0.000	-
1114	Decrease choke to 14/64 ths.													
1142	R.I.H. with 1.750" gauge cutter for dummy run.													
1200	1	17748	207	88	14	3103	37	91.342	0.480	2.160	4.143	0.020	0.090	29
1335	Rig down slick-line after dummy run.													
1400	3	17762	214	89	14	3103	39	90.927	0.720	1.920	11.720	0.080	0.250	29
1600	5	17755	214	89	14	3068	38	90.584	0.120	2.280	19.269	0.090	0.440	26
1800	7	17775	214	90	14	3103	40	90.723	1.320	1.800	26.829	0.200	0.590	34
2200	11	17755	234	90	14	3206	41	90.250	0.360	2.160	41.871	0.260	0.950	28
27/05														
0200	15	17775	241	90	14	3206	41	89.611	0.720	1.920	56.806	0.380	1.270	29
0600	19	17789	248	90	14	3241	40	90.338	0.840	1.260	71.862	0.520	1.480	33
0700	Rig up E/line.													
0850	Engage Amerada stylus.													
0900	Stab lubricator onto wellhead. Gauges at atmosphere.													

OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: DILCHEE #2 LOWER

PAGE: 2

DATE: 27 / 05 / 93

TIME		WELLHEAD DATA				SEPARATOR DATA		FLOW RATES			CUMULATIVE PRODUCTION			
DATE	FLOW OR SHUT IN TIME	WELLHEAD PRESS	ANNULUS PRESS	W/HEAD TEMP	CHOKE SIZE	SEPARATOR PRESS	TEMP	GAS	OIL	WATER	GAS	OIL	WATER	L.G.R.
TIME	(hours)	kPa	kPa	°C	/64"	kPa	°C	m ³ 10 ³ /d	m ³ /d	m ³ /d	m ³ 10 ³	m ³	m ³	m ³ / 10 ⁶ m ³
27/05														
1000	23	17803	262	90	14	3103	39	89.688	0.780	1.140	86.810	0.650	1.670	21
1000	Pressure up lubricator.													
1100	Depressure lubricator. Open to atmosphere.													
1200	25	17810	269	90	14	3034	40	90.235	0.240	1.680	94.330	0.670	1.810	21
1200	Pressure up lubricator and run in hole with E/line.													
1320	Correlate with C.C.L.													
1350	Hang gauges at 8100'kb.													
1400	27	17768	276	90	14	3034	40	90.835	0.480	2.670	101.900	0.710	2.030	35
1600	29	17789	269	90	14	3103	40	91.943	0.480	1.920	109.562	0.750	2.190	26
1800	31	17796	269	90	14	3137	40	90.647	0.180	2.040	117.116	0.900	2.360	26
2000	33	17789	269	90	14	3137	40	91.883	0.600	2.160	124.773	0.950	2.540	30
2200	35	17803	269	90	14	3137	40	90.647	0.600	1.800	132.327	1.000	2.690	26
2200	Collect 1st set of H.P. samples, CONDENSATE # SPE 116, GAS # SPE 001.													
2300	36	17803	269	90	14	3137	40	90.647	1.200	1.200	136.104	1.050	2.740	26
2300	Collect 2nd set of H.P. samples, CONDENSATE # PDE 111, GAS # SPE 178.													
2400	37	17803	269	90	14	3137	40	90.647	1.200	1.200	139.881	1.100	2.790	26
28/05														
0200	39	17803	269	90	14	3240	42	89.930	0.600	1.800	147.375	1.150	2.940	26
0600	43	17803	269	90	14	3275	42	92.370	0.900	1.500	162.770	1.300	3.190	25
0800	45	17803	269	90	14	3240	41	90.654	1.200	1.400	170.324	1.400	3.390	29
0800	Commence 2nd rate, increase choke to 22/64".													
0900	Install 2.000" orifice plate.													
1000	47	15721	421	93	22	4826	56	179.627	1.200	1.800	185.292	1.500	3.440	17
1200	49	15686	648	94	22	4758	59	178.655	0.840	1.800	200.171	1.570	3.590	15
1400	51	15672	655	95	22	4758	60	178.952	0.960	3.600	215.083	1.650	3.890	25
1600	53	15672	655	95	22	4758	58	179.786	0.720	3.600	230.065	1.720	4.190	24
1800	55	15652	655	95	22	4758	63	176.930	1.680	2.400	244.809	1.860	4.390	23
2200	59	15624	655	95	22	4723	60	177.420	0.900	3.900	274.379	2.010	5.040	27
29/05														
0200	63	15590	655	95	22	4826	60	177.941	0.600	3.600	304.035	2.110	5.640	23
0600	67	15597	655	95	22	4826	60	177.114	0.600	3.600	333.554	2.210	6.240	23

000023

OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: DILCHEE #2 LOWER

PAGE: 3

DATE: 29 / 05 / 93

TIME		WELLHEAD DATA				SEPARATOR DATA		FLOW RATES			CUMULATIVE PRODUCTION			
DATE	FLOW OR SHUT IN TIME (hours)	WELLHEAD PRESS kPa	ANNULUS PRESS kPa	W/HEAD TEMP °C	CHOKE SIZE /64"	SEPARATOR PRESS 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	L.G.R. m ³ /10 ⁶ m ³
29/05														
0800	69	15583	545	95	22	4827	60	177.114	0.960	2.880	348.314	2.290	6.480	22
1000	71	15576	545	95	22	4758	60	178.143	1.080	3.000	363.159	2.380	6.730	23
1000	Shut well in at wing valve for build up.													
1015	0.25	18892	455	62	S/I									
1030	0.50	18934	393	53										
1045	0.75	18975	352	45										
1100	1	19003	310	40										
1115	1.25	19016	283	35										
1130	1.50	19030	269	33										
1145	1.75	19058	255	31										
1200	2	19072	228	30										
1300	3	19085	200	29										
1400	4	19099	193	31										
1800	8	19134	172	25										
2200	12	19168	151	20										
30/05														
0200	16	19189	151	20										
0600	20	19216	151	20										
1000	24	19237	151	28										
1400	28	19250	151	31										
1800	32	19257	151	25										
2200	36	19271	151	22										
31/05														
0200	40	19278	151	12										
0600	48	19292	151	17										
1000	52	19299	151	18										
1400	56	19306	151	16										
1800	60	19319	151	16										
2200	64	19319	151	14										
01/06														
0200	68	19327	151	11										

000024

OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: DILCHEE #2 LOWER

PAGE: 4

DATE: 01 / 06 / 93

TIME		WELLHEAD DATA				SEPARATOR DATA		FLOW RATES			CUMULATIVE PRODUCTION			
DATE	FLOW OR SHUT IN TIME (hours)	WELLHEAD PRESS kPa	ANNULUS PRESS kPa	W/HEAD TEMP °C	CHOKE SIZE /64"	SEPARATOR PRESS kPa	TEMP °C	GAS m³ 10³ /d	OIL m³ /d	WATER m³ /d	GAS m³ 10³	OIL m³	WATER m³	L.G.R. m³ / 10⁶ m³
01/06														
0600	68	19327	151	12										
0845	End of build up, R.I.H. to commence static gradient.													
0845	8478'kb.	GRADIENT (From E/Line results)												
0925	P.O.O.H.	0.27												
0936	8100'kb.													
1005	P.O.O.H.	0.29												
1010	8000'kb.													
1025	P.O.O.H.	0.004												
1034	7500'kb.													
1050	P.O.O.H.	0.072												
1058	7000'kb.													
1113	P.O.O.H.	0.076												
1121	6500'kb.													
1136	P.O.O.H.	0.075												
1144	6000'kb.													
1243	P.O.O.H.	0.071												
1250	5500'kb.													
1304	P.O.O.H.	0.073												
1312	5000'kb.													
1324	P.O.O.H.	0.070												
1337	4000'kb.													
1353	P.O.O.H.	0.070												
1405	3000'kb.													
1419	P.O.O.H.	0.070												
1432	2000'kb.													
1446	P.O.O.H.	0.133												
1457	1000'kb.													
1512	P.O.O.H.	0.013												
1529	Hang in lubricator. Veatrix = 2810 psig.(19375 kPaA).													
1605	Rig down, end of test.													

000025

OILSERV AUSTRALIA LTD : GAS FLOW CALCULATIONS

CLIENT: SANTOS LTD.	PERFORATIONS: (81-3), (82-1), (82-8), (83-3) (84-0), (85-0), (85-3), (86-0), (86-7), (87-1) (88-9).	PAGE: 1
WELL NAME: DILCHEE #2L		DATE: 26 / 05 / 93
TEST TYPE: 2 RATE & BUILD UP.	FORMATION: PATCHAWARRA.	OPR: G.KING.

ORIFICE MTR TYPE: DANIELS	STATIC PRESSURE RANGE: 0 - 1500 psig	GAS SPECIFIC GRAVITY (SG) = 0.800
METRE RUN SIZE: 3.826	DIFFERENTIAL PRESS RANGE: 0 - 200 in/hw	FG = $\sqrt{(1/SG)}$ = 1.1180
SEPARATOR No: TS-02-04	STANDARD CONDITIONS: 14.73 psi @ 60°F	CO ₂ % = 9% , H ₂ S ppm = 6

DATE TIME	FLOW TIME (hr)	CHOKE SIZE 64ths	STATIC PRESS (psia)	DIFF PRESS in/hw	GAS FLOW TEMP (°C)	ORIF PLATE SIZE (in)	$\sqrt{(P_F \times H_W)}$	$C_1 = F_B \times F_{TF} \times F_{PV} \times Y_2$				TOTAL GAS PROD (m ³ 10 ³)	C (C ₁ x C ₂)	GAS FLOW RATE Q = $\sqrt{(P_F \times H_W)} \times C$	
								F _B	F _{TF}	F _{PV}	Y ₂			MMSCFD	m ³ 10 ³ / d
26/05															
0930	Open well to flare on 8/64 ths & then increase to 17/64 ths.														
0950	Further increase choke to 22/64 ths.														
1000	Trim flow through separator.														
1010	Informed by Moomba P.E. to change rate to 3MMSCF/DAY for first rate & 6MMSCF/DAY for second rate.														
1015	Reduce choke to 17/64 ths.														
1100	Install 1.750" orifice plate.														
1100		17	475	133	38	1.750	251.2749	637.8335	0.9633	1.0583	1.0018	1.289	728.2847	4.392	123.740
1114	Reduce choke to 14/64 ths.														
1200	1	14	465	74	37	1.750	185.4455	637.8335	0.9648	1.0577	1.0010	4.143	728.4393	3.242	91.342
1400	3	14	465	74	39	1.750	185.4455	637.8335	0.9617	1.0563	1.0010	11.720	725.1347	3.227	90.927
1600	5	14	460	74	38	1.750	184.4452	637.8335	0.9633	1.0563	1.0010	19.269	726.3115	3.215	90.584
1800	7	14	465	74	40	1.750	185.4455	637.8335	0.9602	1.0556	1.0010	26.829	723.5056	3.220	90.723
2200	11	14	480	71	41	1.750	184.5558	637.8335	0.9587	1.0569	1.0009	41.871	723.2058	3.203	90.250
27/05															
0200	15	14	480	70	41	1.750	183.2515	637.8335	0.9587	1.0569	1.0009	56.806	723.1963	3.181	89.611
0600	19	14	485	70	40	1.750	184.2040	637.8335	0.9602	1.0583	1.0009	71.862	725.2912	3.206	90.338
1000	23	14	465	72	39	1.750	182.9223	637.8335	0.9617	1.0563	1.0010	86.810	725.1152	3.183	89.688
1200	25	14	455	75	40	1.750	184.6747	637.8335	0.9602	1.0542	1.0010	94.330	722.6127	3.203	90.235
1400	27	14	455	76	40	1.750	185.9018	637.8335	0.9602	1.0542	1.0010	101.900	722.6227	3.224	90.835
1600	29	14	465	76	40	1.750	187.9348	637.8335	0.9602	1.0556	1.0010	109.562	723.5251	3.263	91.943
1800	31	14	470	73	40	1.750	185.1764	637.8335	0.9602	1.0562	1.0010	117.116	723.9496	3.217	90.647
2000	33	14	470	75	40	1.750	187.6959	637.8335	0.9602	1.0562	1.0010	124.773	723.9688	3.261	91.883
2200	35	14	470	73	40	1.750	187.1764	637.8335	0.9602	1.0562	1.0010	132.327	723.9496	3.217	90.647
2200	Collect 1st set of H.P. samples, CONDENSATE # SPE 116, GAS # SPE 001														

000026

OILSERV AUSTRALIA LTD : GAS FLOW CALCULATIONS

CONTINUATION SHEET

WELL NAME: DILCHEE #2 LOWER

PAGE: 2

DATE: 27 / 05 / 93

ORIFICE MTR TYPE: DANIELS	STATIC PRESSURE RANGE: 0 - 1500 psig	GAS SPECIFIC GRAVITY (SG) = 0.800
METRE RUN SIZE: 3.826	DIFFERENTIAL PRESS RANGE: 0 - 200 in/hw	FG = $\sqrt{(1/SG)}$ = 1.1180
SEPARATOR No: TS-02-04	STANDARD CONDITIONS: 14.73 psi @ 60°F	CO ₂ % = 9% , H ₂ S ppm = 6

DATE TIME	FLOW TIME (hr)	CHOKE SIZE /64"	STATIC PRESS (psia)	DIFF PRESS in/hw	GAS FLOW TEMP (°C)	ORIF PLATE SIZE (in)	$\sqrt{(P_F \times H_W)}$	$C_1 = F_B \times F_{TF} \times F_{PV} \times Y_2$				TOTAL GAS PROD (m ³ 10 ³)	C (C ₁ x C ₂)	GAS FLOW RATE $Q = \sqrt{(P_F \times H_W)} \times C$	
								F _B	F _{TF}	F _{PV}	Y ₂			mmscfd	m ³ 10 ³ / d
27/05															
2300	36	14	470	73	40	1.750	185.1764	637.8335	0.9602	1.0562	1.0010	136.104	723.9496	3.217	90.647
2300	Collect 2nd set of H.P. samples, CONDENSATE #PDE 111 GAS #SPE 178														
2400	37	14	470	73	40	1.750	185.1764	637.8335	0.9602	1.0562	1.0010	139.881	723.9496	3.217	90.647
28/05															
0200	39	14	485	70	42	1.750	184.2040	637.8335	0.9571	1.0569	1.0009	147.375	722.0182	3.192	89.930
0600	43	14	490	73	42	1.750	189.0775	637.8335	0.9571	1.0575	1.0009	162.770	722.4903	3.279	92.370
0800	45	22	490	70	41	1.750	185.1516	637.8335	0.9587	1.0582	1.0009	170.324	724.0989	3.218	90.654
0800	Commence second rate, Increase choke to 22/64", Increase separator pressure.														
0900	Install 2.000" orifice plate.														
1000	47	22	715	108	56	2.000	277.8324	849.4091	0.9366	1.0740	1.0009	185.292	956.1578	6.376	179.627
1200	49	22	705	110	59	2.000	278.4247	849.4091	0.9323	1.0702	1.0009	200.171	948.4308	6.338	178.555
1400	51	22	705	111	60	2.000	279.6874	849.4091	0.9309	1.0693	1.0009	215.083	946.2471	6.352	178.952
1600	53	22	705	111	58	2.000	279.6874	849.4091	0.9338	1.0711	1.0009	230.065	950.6532	6.381	179.786
1800	55	22	705	110	63	2.000	278.4247	849.4091	0.9268	1.0668	1.0009	244.809	939.7951	6.280	176.930
2200	59	22	700	110	60	2.000	277.4352	849.4091	0.9309	1.0688	1.0009	274.379	945.7612	6.297	177.420
29/05															
0200	63	22	715	108	60	2.000	277.8324	849.4091	0.9309	1.0704	1.0009	304.035	947.1816	6.316	177.941
0600	67	22	715	107	60	2.000	276.5431	849.4091	0.9309	1.0704	1.0009	333.554	947.1737	6.286	177.114
0800	69	22	715	107	60	2.000	276.5431	849.4091	0.9309	1.0704	1.0009	348.314	947.1737	6.286	177.114
1000	71	22	705	110	60	2.000	278.4247	849.4091	0.9309	1.0693	1.0009	363.159	946.2391	6.323	178.143
1000	Shut well in at the wing valve for build up.														
UNCORRECTED RATE #1, Qg: 3.220 90.727															
UNCORRECTED RATE #2, Qg: 6.323 178.157															
NOTE: SAMPLED GAS SG = .739 ∴ CORRECT FG = 1.1633 (NOT 1.1180, WHICH WAS USED.)															
0000															

000027

OILSERV AUSTRALIA LTD : LIQUID PRODUCTION

CLIENT: SANTOS LTD.	PERFORATIONS: (81-3), (82-1), (83-3), (84-0) (85-0), (85-3), (86-0), (86-7), (87-1), (88-9)	PAGE: 1
WELL NAME: DILCHEE #2L		DATE: 26 / 05 / 93
TEST TYPE: 2 RATE AND BUILD UP.	FORMATION: PATCHAWARRA	OPR: G.KING.

TANK #1 = A NUMBER #2 = B	TANK #1 = 7.850 m ³ CAPACITY #2 = 7.850 m ³	TANK #1 = CALIBRATED LITRES SCALE #2 = CALIBRATED LITRES	OIL API GRAVITY @ 60°F = 39.3
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DATE	FLOW TIME	TANK USED	TOTAL TANK DIP (litres)	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP (litres)	TANK PRODUCTION (m ³)	FLOW RATE (m ³ /d)	CUMULATIVE PRODUCTION (m ³)	TOTAL TANK DIP (litres)	TANK PRODUCTION (m ³)	FLOW RATE (m ³ /d)	CUMULATIVE PRODUCTION (m ³)
26/05											
1100	Install	1.750"	orifice plate & establish liquid level.								
1100		1	100	100	0.000	0.000	0.000	0	0.000	0.000	0.000
1200	1	1	210	120	0.020	0.480	0.020	90	0.090	2.160	0.090
1400	3	1	430	180	0.060	0.720	0.080	250	0.160	1.920	0.250
1600	5	1	630	190	0.010	0.120	0.090	440	0.190	2.280	0.440
1800	7	1	890	300	0.110	1.320	0.200	590	0.150	1.800	0.590
2200	11	1	1310	360	0.060	0.360	0.260	950	0.360	2.160	0.950
27/05											
0200	15	1	1750	480	0.120	0.720	0.380	1270	0.320	1.920	1.270
0600	19	1	2100	620	0.140	0.840	0.520	1480	0.210	1.260	1.480
1000	23	1	2420	750	0.130	0.780	0.650	1670	0.190	1.140	1.670
1200	25	1	2580	770	0.020	0.240	0.670	1810	0.140	1.680	1.810
1400	27	1	2850	810	0.040	0.480	0.710	2040	0.230	2.670	2.030
1600	29	1	3050	850	0.040	0.480	0.750	2200	0.160	1.920	2.190
1800	31	1	3370	1000	0.150	0.180	0.900	2370	0.170	2.040	2.360
2000	33	1	3600	1050	0.050	0.600	0.950	2550	0.180	2.160	2.540
2200	35	1	3800	1100	0.050	0.600	1.000	2700	0.150	1.800	2.690
2200	Take 1st set of HP. samples COND. #SPE 116 GAS # SPE 001										
2300	36	1	3900	1150	0.050	1.200	1.050	2750	0.050	1.200	2.740
2300	Take 2nd set of HP. samples COND. #PDE 111 GAS # SPE 178										
2400	37	1	4000	1200	0.050	1.200	1.100	2800	0.050	1.200	2.790
28/05											
0200	39	1	4200	1250	0.050	0.600	1.150	2950	0.150	1.800	2.940
0600	41	1	4600	1400	0.150	0.900	1.300	3200	0.250	1.500	3.190
0800	43	1	4850	1500	0.100	1.200	1.400	3450	0.200	2.400	3.390
0800	Commence second rate. Increase choke to 22/64".										

44 HRS TOTAL RATE #1 Qc: 0.753 m³/d

RATE #1 Qw: 1.833 m³/d

028

OILSERV AUSTRALIA LTD : LIQUID PRODUCTION

CONTINUATION SHEET

WELL NAME: DILCHEE #2 LOWER

PAGE: 2

DATE: 28 / 5 / 93

DATE TIME	FLOW TIME (hours)	TANK USED (number)	TOTAL TANK DIP (litres)	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP (litres)	TANK PRODUCTION (m ³)	FLOW RATE (m ³ /d)	CUMULATIVE PRODUCTION (m ³)	TOTAL TANK DIP (litres)	TANK PRODUCTION (m ³)	FLOW RATE (m ³ /d)	CUMULATIVE PRODUCTION (m ³)
28/05											
1000	47	1	5100	1550	0.100	1.200	1.500	3550	0.150	1.800	3.440
1200	49	1	5320	1620	0.070	0.840	1.570	3700	0.150	1.800	3.590
1400	51	1	5700	1700	0.080	0.960	1.650	4000	0.300	3.600	3.890
1600	53	1	6060	1760	0.060	0.720	1.720	4300	0.300	3.600	4.190
1800	55	1	6400	1900	0.140	1.680	1.860	4500	0.200	2.400	4.390
2200		2	0	0				0			
2200	59	2	800	150	0.150	0.900	2.010	650	0.650	3.900	5.040
29/05											
0200	63	2	1500	250	0.100	0.600	2.110	1250	0.600	3.600	5.640
0600	67	2	2200	350	0.100	0.600	2.210	1850	0.600	3.600	6.240
0800	69	2	2520	430	0.080	0.960	2.290	2090	0.240	2.880	6.480
1000	71	2	2860	520	0.090	1.080	2.380	2340	0.250	3.000	6.730
1000	Shut well in at the wing valve for build up.										
20 HRS	TOTAL										

RATE #2, Q_c = 1.044 m³/d

RATE #2, Q_w = 3.748 m³/d

000029

OILSERV AUSTRALIA LIMITED 000030

OPERATIONS LOG

CLIENT : SANTOS LIMITED
WELL NAME : DILCHEE #2 LOWER

FIELD : DILCHEE
DATE : 25/05/92

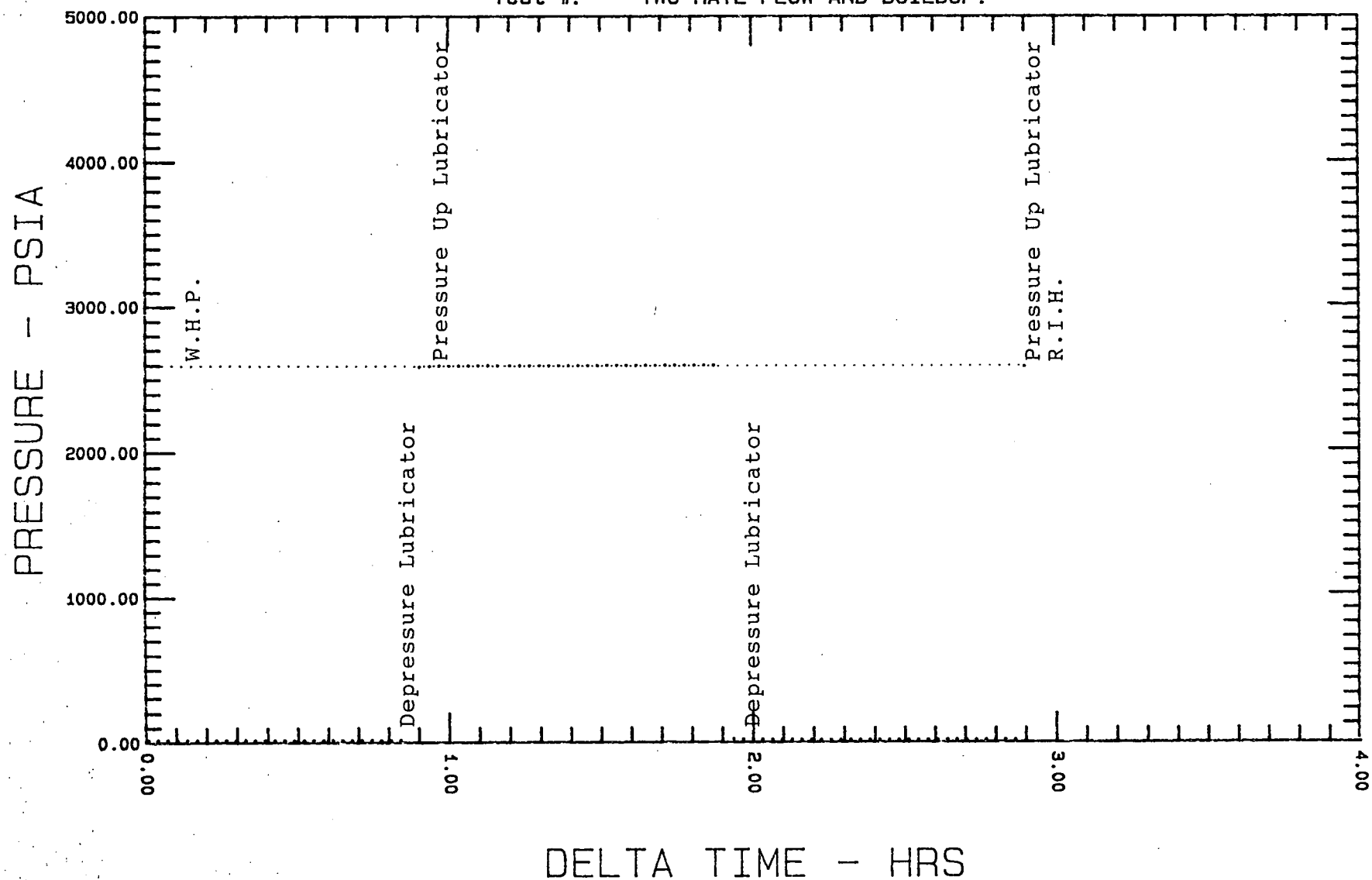
DATE	TIME	ACTIVITY
26/05/93	0600	RIG UP ON DILCHEE #2 LOWER.
	1120	RIG UP LUBRICATOR FOR DRIFT RUN.
	1142	OPEN WELL TO LUBRICATOR AND R.I.H WITH 1.750 GAUGE CUTTER , SPANG JARS , KNUCKLE JOINT , 5' WEIGHT BAR , KNUCKLE JOINT , 5' WEIGHT BAR , KNUCKLE JOINT , CABLE HEAD.
	1220	TAG T.D AT 8947' K.B P.O.O.H
	1335	TOOL IN LUBRICATOR CLOSE SWAB VALVE AND DEPRESSURE LUBRICATOR AND RIG DOWN.
	1420	CHANGE OUT B.O.B FRONT SEALS AND SET UP FOR E/LINE RUN.
	1800	POWER UP GAUGE S/N. 74442 AND RUN OVERNIGHT.
27/05/93	0600	PREPARE TO RIG UP AND RUN E/LINE.
	0900	STAB LYBRICATOR.
	1000	PRESSURE UP LUBRICATOR.
	1100	DEPRESSURE LUBRICATOR.
	1200	PRESSURE UP LUBRICATOR.
	1205	R.I.H WITH C/W CABLE HEAD , C.C.L , GRC GAUGE , KNUCKLE JOINT , 5' WEIGHT BAR , KNUCKLE JOINT , 5, WEIGHT BAR , KNUCKLE JOINT AND RPG - 3 AMERADA WITH 120 HOUR CLOCK.
	1320	CORRELATE WITH C.C.L.
	1350	HANG AT 8100' K.B
	2200	1 st. H.P SAMPLE TAKEN.
	2300	2 nd. H.P SAMPLE TAKEN.
28/05/93	0800	CHANGE CHOKE TO 22/64" SECOND FLOW RATE.
29/05/93	1000	SHUT IN WELL START BUILD UP
01/06/93	0827	END BUILD UP START STATIC GRADIENT
	0845	R.I.H TO 8478' KB
	0855	HANG AT 8478' KB
	0925	P.O.O.H 0.27
	0936	HANG AT 8100' KB
	1005	P.O.O.H 0.29
	1010	HANG AT 8000' KB
	1025	P.O.O.H .004
	1034	HANG AT 7500' KB
	1050	P.O.O.H .072
	1058	HANG AT 7000' KB
	1113	P.O.O.H .076
	1121	HANG AT 6500' KB
	1136	P.O.O.H .075
	1144	HANG AT 6000' KB
	1243	P.O.O.H .071
	1250	HANG AT 5500' KB
	1304	P.O.O.H .073
	1312	HANG AT 5000' KB
	1324	P.O.O.H .070
	1337	HANG AT 4000' KB
	1353	P.O.O.H .070

DATE	TIME	ACTIVITY
01/06/93	1405	HANG AT 3000' KB
	1419	P.O.O.H .070
	1432	HANG AT 2000' KB
	1446	P.O.O.H .133
	1457	HANG AT 1000' KB
	1512	P.O.O.H .013
	1529	HANG IN LUBRICATOR
	1540	DEPRESSURE LUBRICATOR
	1605	POWER DOWN SRO END TEST

Plot starting date: 5/27/93
time: 9: 8: 13
Gauge S/N 74442

Company: OILSERV AUSTRALIA LTD
Client: SANTOS LTD.
Well name: DILCHEE
Well #: 2 LOWER
Test #: TWO RATE FLOW AND BUILDUP.

Location: COOPER BASIN.
Operator: T.WEAVER
Comments: LUBRICATOR STOP



000032

Plot starting date: 5/27/93
time: 13:51:18

Gauge S/N 74442

Company: OILSERV AUSTRALIA LTD

Client: SANTOS LTD.

Well name: DILCHEE

Well #: 2 LOWER

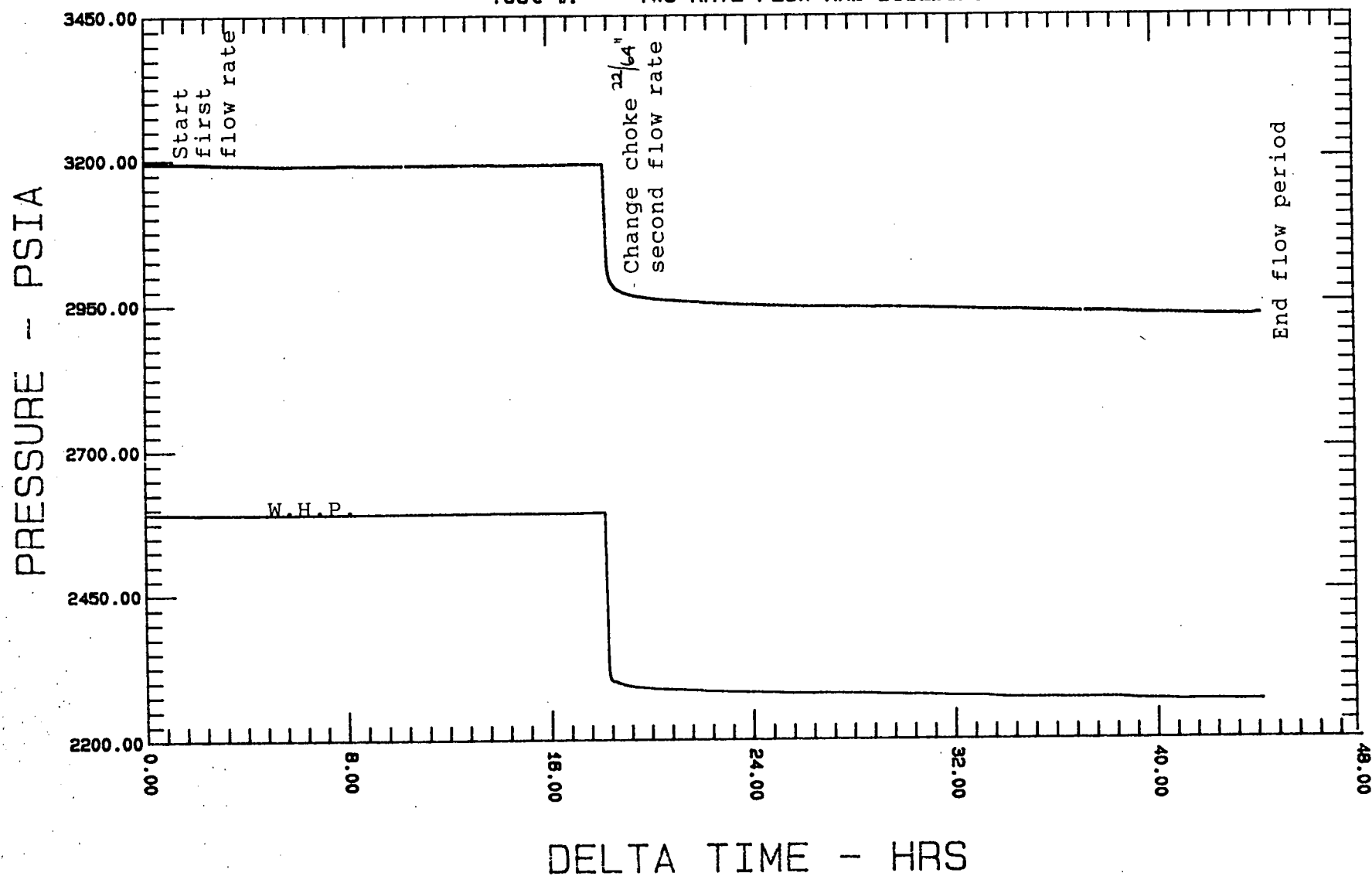
Test #: TWO RATE FLOW AND BUILDUP.

Location: COOPER BASIN.

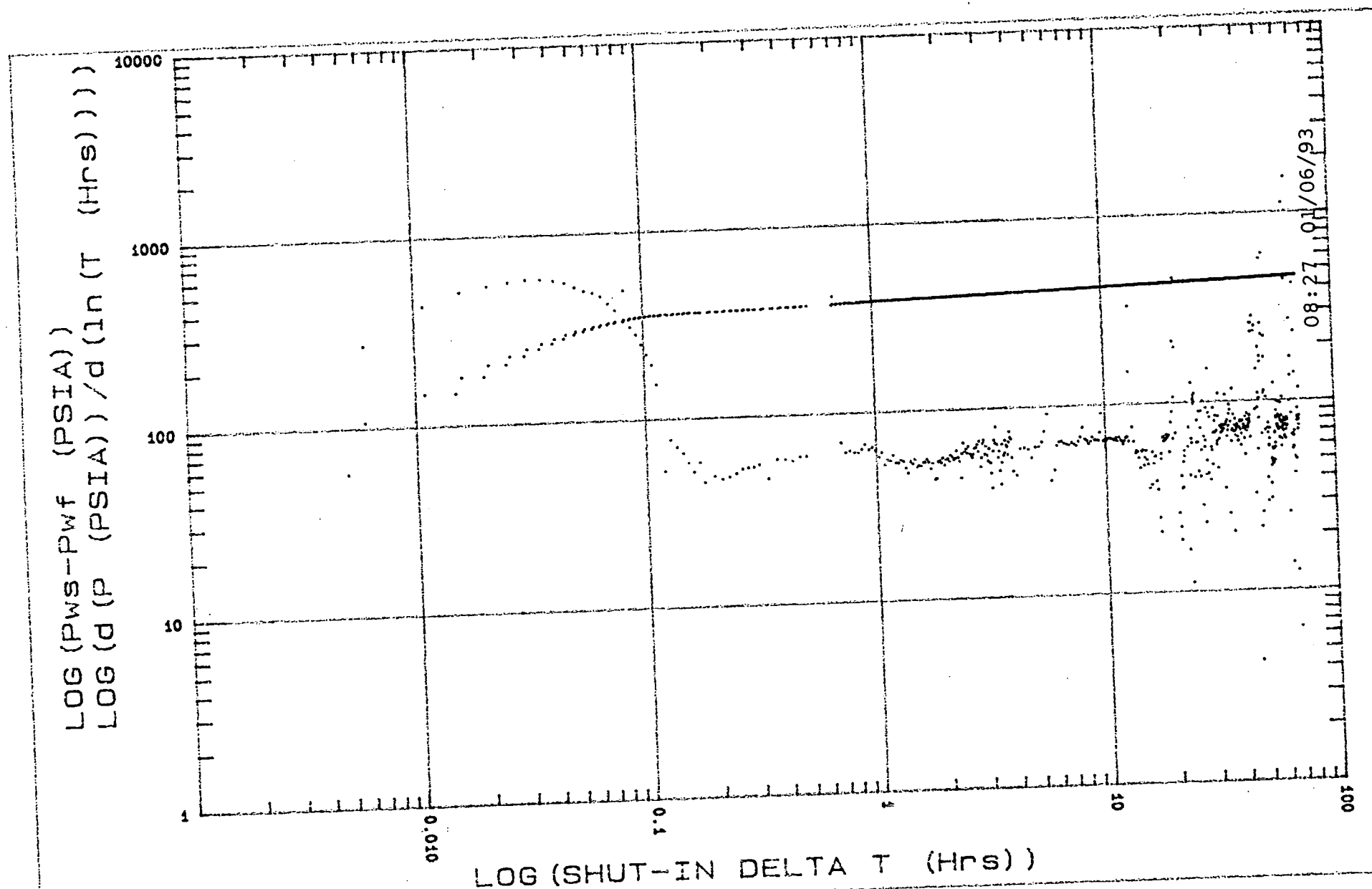
Operator: T.WEAVER

Comments: FLOW PERIOD

B.H.P. AND W.H.P.



000033



OILSERV AUSTRALIA LTD. - PRESSURE BUILDUP & DERIVATIVE Pwf=2944.12 PSIA
 CLIENT:
 WELL: DILCHEE #2 LOWER TEST: BUILD UP SURVEY
 DATA START: 01-06-1993 00:00:17

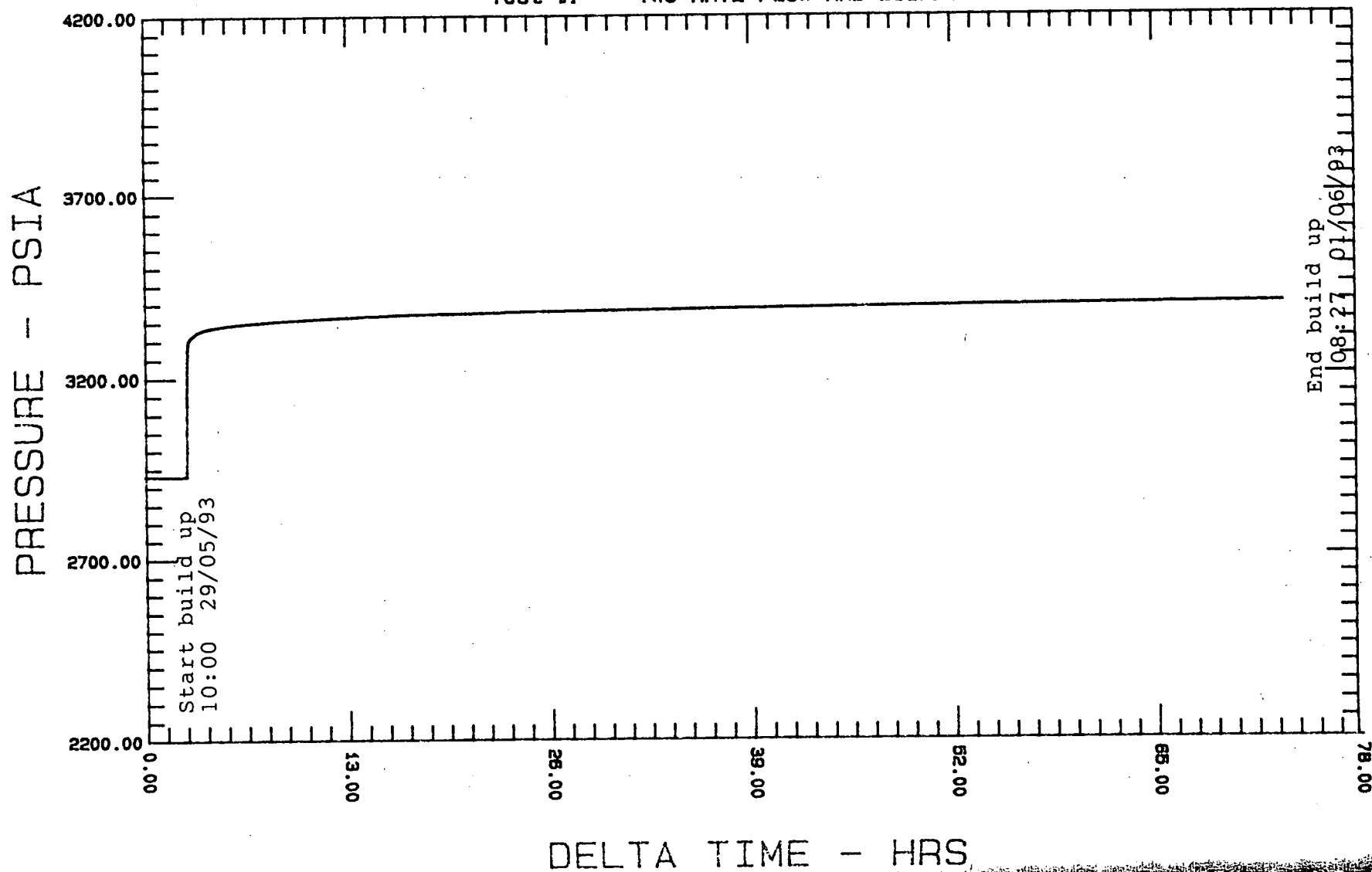
000034

Plot starting date: 5/29/93
time: 7:20:28

Gauge S/N 74442

Company: OILSERV AUSTRALIA LTD
Client: SANTOS LTD.
Well name: DILCHEE
Well #: 2 LOWER
Test #: TWO RATE FLOW AND BUILDUP.

Location: COOPER BASIN.
Operator: T.WEAVER
Comments: BUILD UP



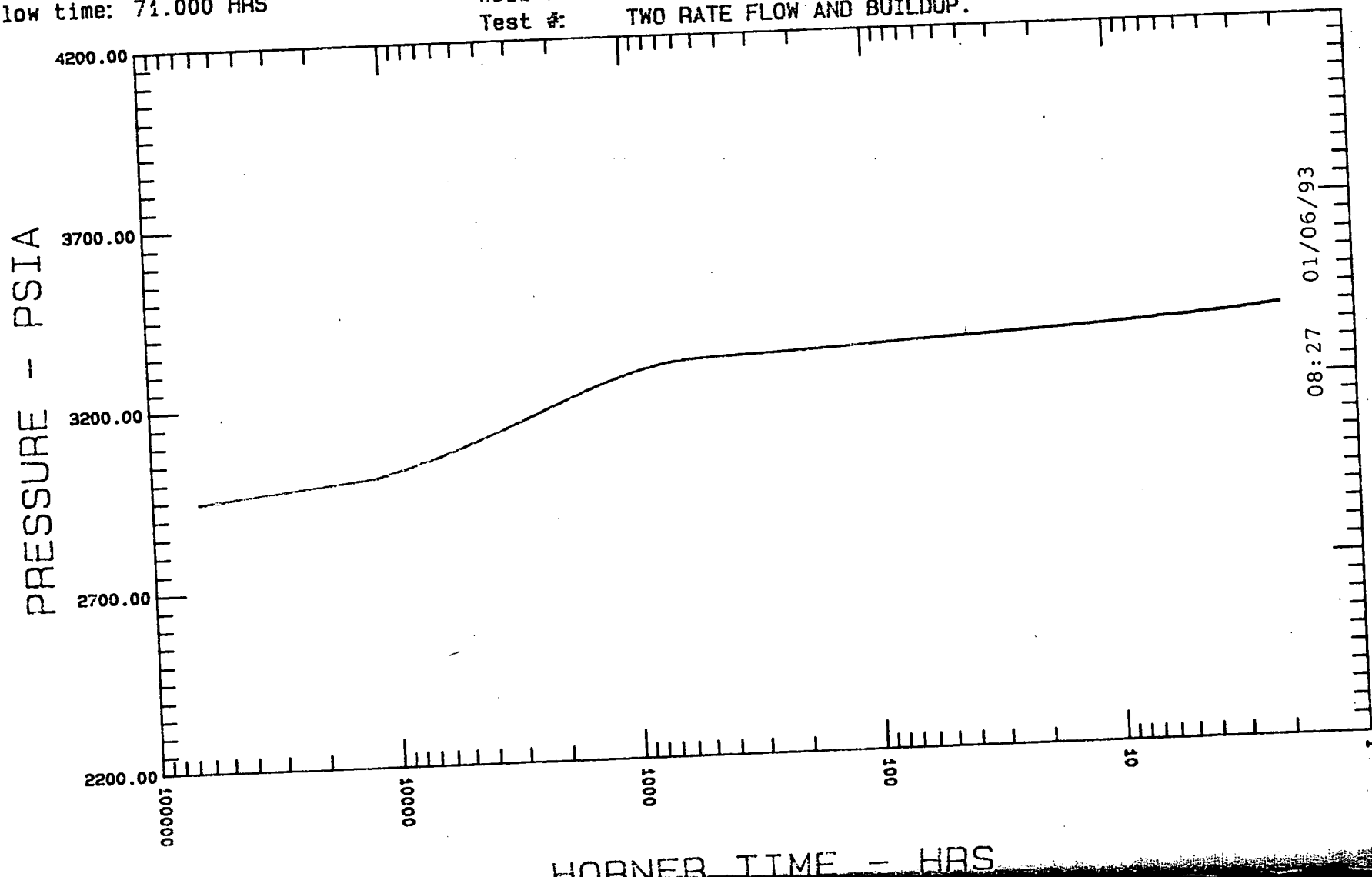
000035

Plot starting date: 5/29/93
time: 10: 0: 19

Gauge S/N 74442
Flow time: 71.000 HRS

Company: OILSERV AUSTRALIA LTD
Client: SANTOS LTD.
Well name: DILCHEE
Well #: 2 LOWER
Test #: TWO RATE FLOW AND BUILDUP.

Location: COOPER BASIN.
Operator: T.WEAVER
Comments: BUILD UP



000036

Plot starting date: 5/29/93

time: 10: 0: 19

Gauge S/N 74442

Reference pressure: 2930.620 PSIA

Company: OILSERV AUSTRALIA LTD

Client: SANTOS LTD.

Well name: DILCHEE

Well #: 2 LOWER

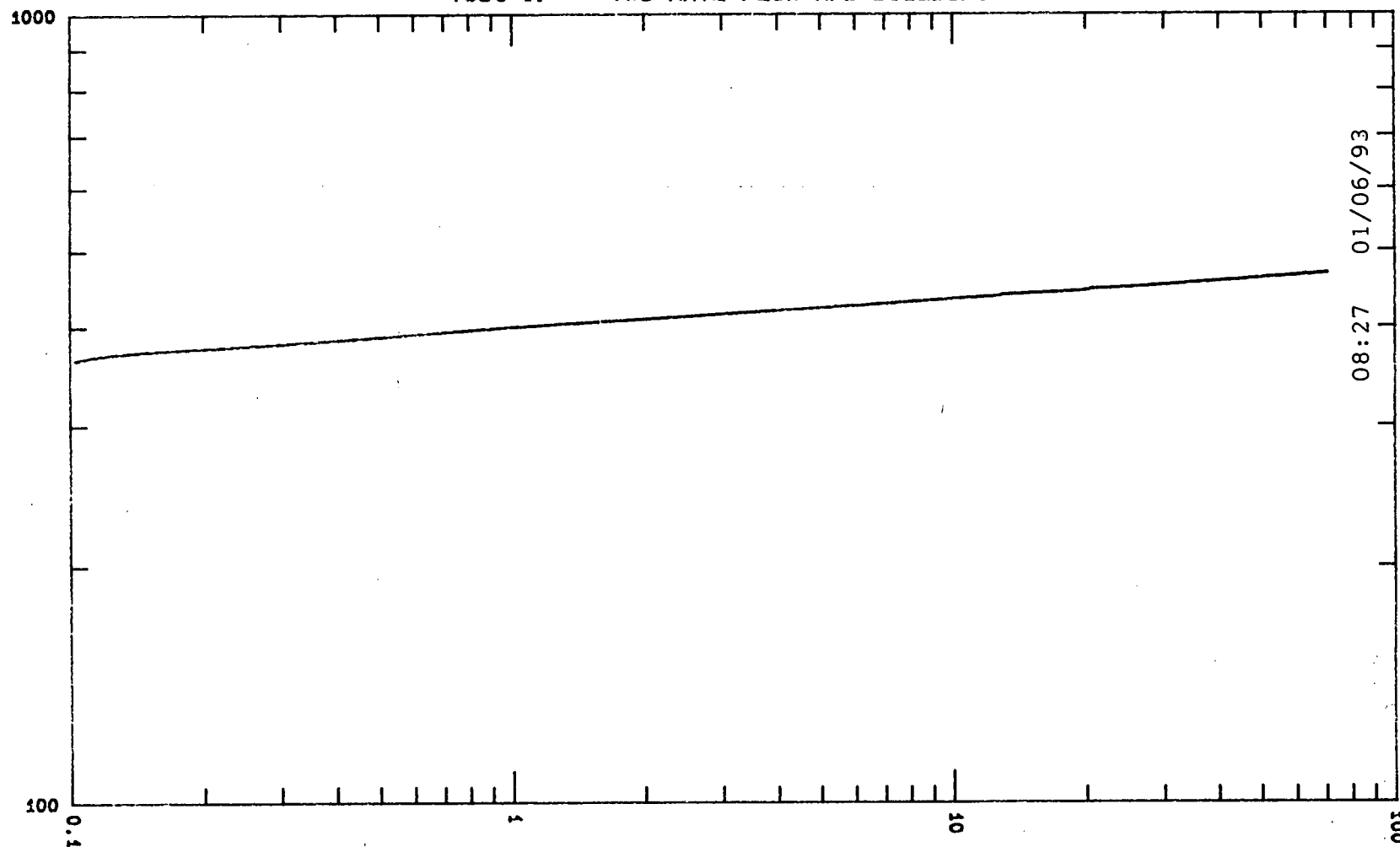
Test #: TWO RATE FLOW AND BUILDUP.

Location: COOPER BASIN.

Operator: T.WEAVER

Comments: BUILD UP

DELTA PRESSURE - PSIA



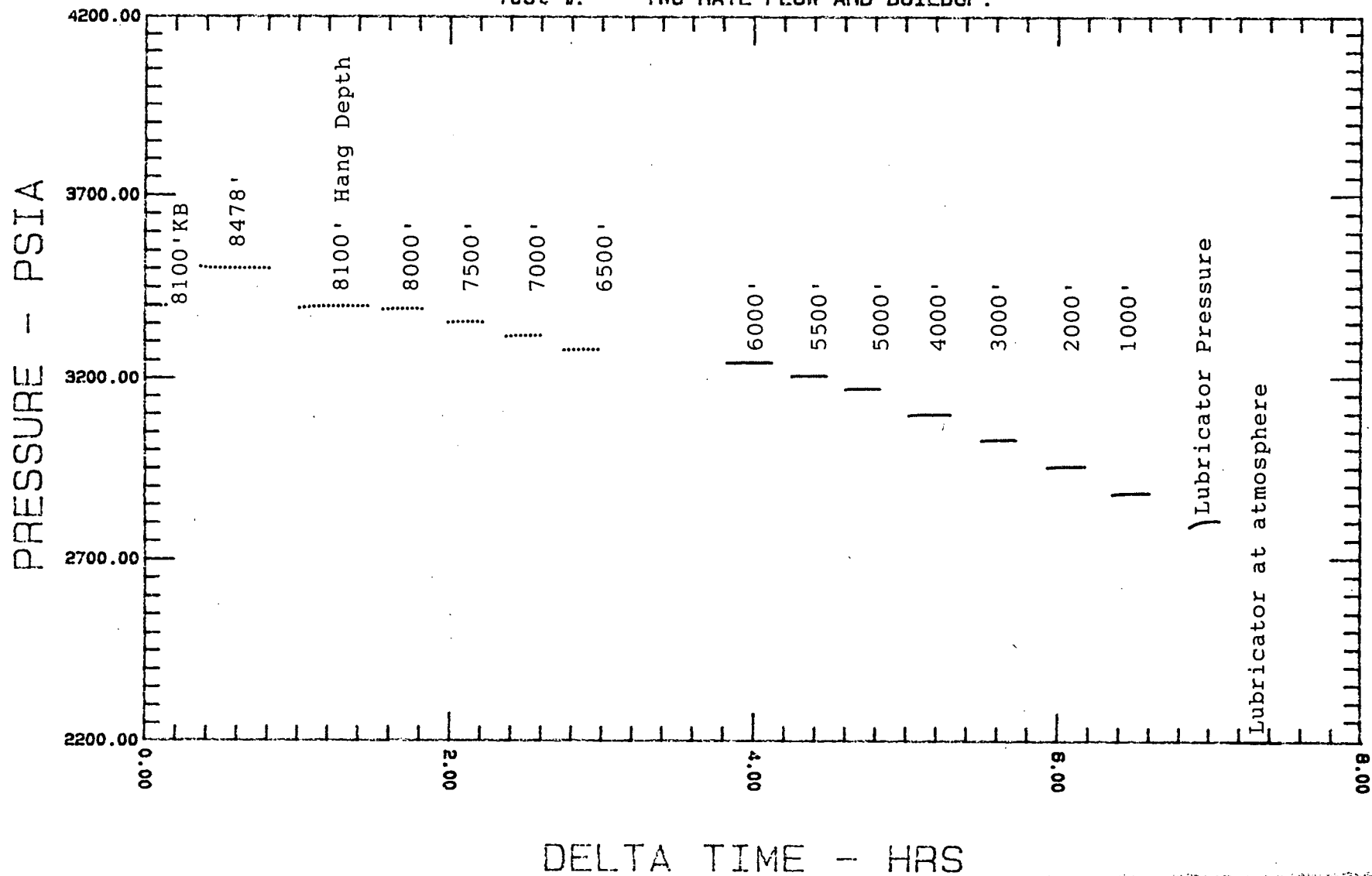
DELTA TIME - HRS

000037

Plot starting date: 6/ 1/93
time: 8: 36: 29
Gauge S/N 74442

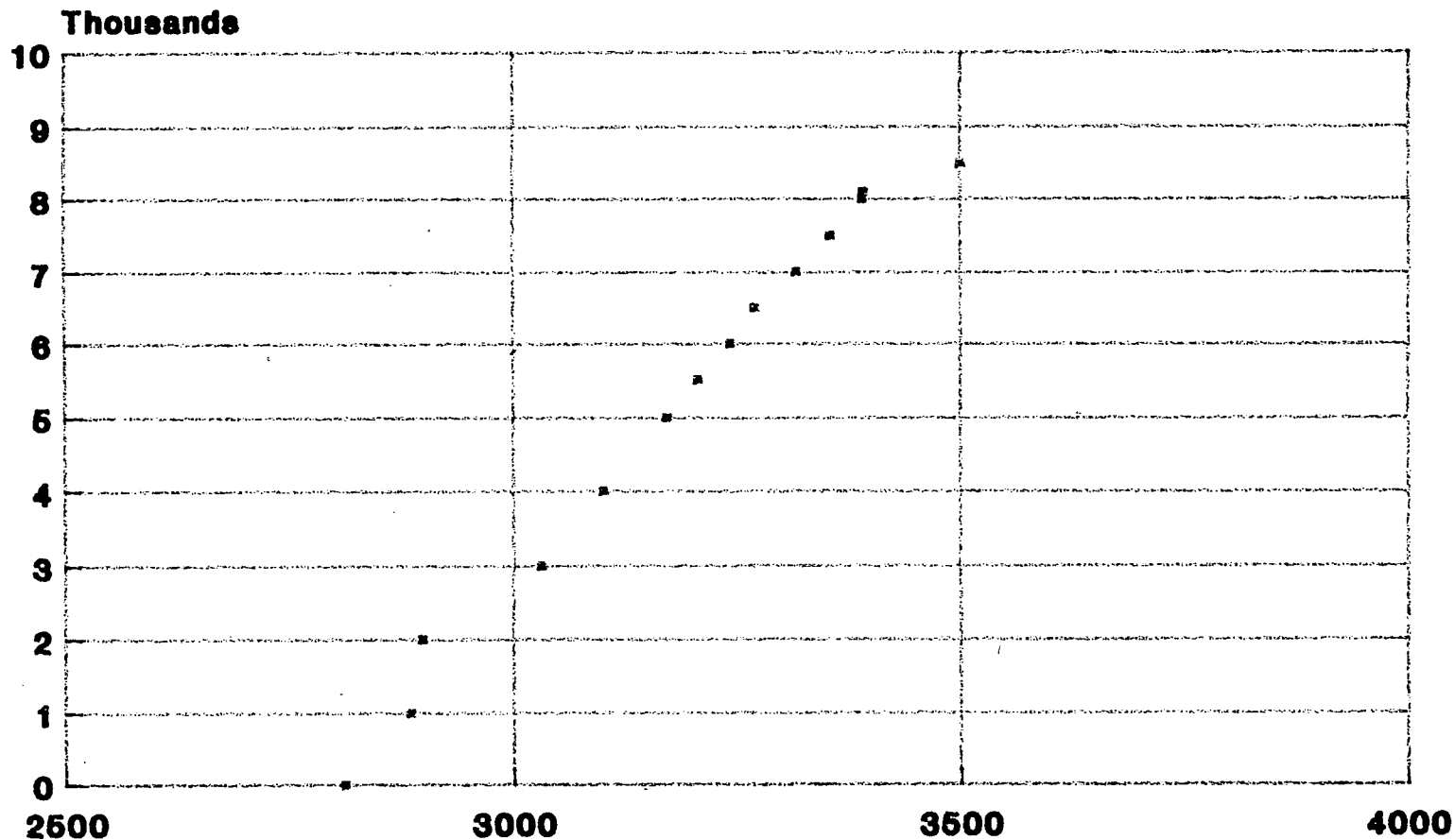
Company: OILSERV AUSTRALIA LTD
Client: SANTOS LTD.
Well name: DILCHEE
Well #: 2 LOWER
Test #: TWO RATE FLOW AND BUILDUP.

Location: COOPER BASIN.
Operator: T.WEAVER
Comments: STATIC GRADIENT SURVEY



000038

**OILSERV AUSTRALIA LTD
STATIC GRADIENT SURVEY
CLIENT : SANTOS LTD**



**WELL : DILCHEE #2 LOWER
DATE : 01/06/93
OPERATOR : T. WEAVER**

000039

SEQUENCE OF EVENTS

CUSTOMER : SANTOS LTD.

PERFORATIONS:

PAGE: 1 OF 1

WELL NAME: DILCHEE # 2 UPPER

FORMATION : TOOL ACHEE

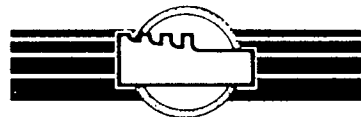
DATE: 27th OCTOBER 1993

TEST TYPE : S.G.S.

OPR : B. Hull

[illegible]

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS LTD

PERFORATIONS:

PAGE: 1 OF 1

WELL NAME: DILLGEE # 2 upper.

FORMATION : TOULACHEE

DATE: 27th OCTOBER 1993

TEST TYPE : S.G.S.

OPR : B. HULL

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

TIME
(HOURS)TUBING
PRESSURE
(PSI/KPa)ANNULUS
PRESSURE
(PSI/KPa)

ELEMENT SERIAL NO.

29321

29323

DATE

27.10.93

ELEMENT RANGE

PSI

4000

3950

PRESSURE LUBRICATOR

12:38

14660

0

RECORDING SECTION SERIAL NO.

14631

12963

RUN IN HOLE

12:53

14660

DATE OF CALIBRATION:

@ 290° F

25.6.93

25.6.93

ON DEPTH AT

7080

FT/

13:55

14670

CLOCK SERIAL NO.

A15012

A16084

DATE

27.10.93

CLOCK RANGE

hr

3

3

PULL OUT OF HOLE

14:05

14670

LEAD SCREW TYPE

L.T.S.

15

15

AT SURFACE

14:23

14670

DEPRESSURE LUBRICATOR

14:38

14670

0

ENGAGE STYLUS

DATE 27.10.93

TIME

12:30

12:30

MAXIMUM BHT AT 7080 FT/ = 264 °F

DISENGAGE STYLUS

DATE 27.10.93

TIME

14:43

14:43

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

DATE

TIME

REMARKS

000041

000042

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, 27th October 1993.

STATIC PRESSURE GRADIENT REPORT

CLIENT	LOCATION	FORMATION
SANTOS LTD.	DILCHEE #2U	TOOLACHEE

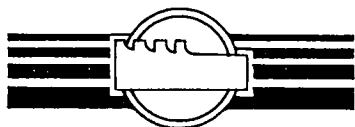
PRESSURE ELEMENT DATA				WELL DATA	
POSITION	SERIAL NO.	RANGE	CALIBRATED	PARAMETER	VALUE
Top	29321	4000	25/ 6/93	DWT In	2126 PSIG
Bottom	29323	3950	25/ 6/93	DWT Out	2127 PSIG
				Max BHT	264 DEG F

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	1.0635	2136.0	-	1.0705	2128.3	-
1000	1.1060	2221.9	0.086	1.1140	2215.3	0.087
2000	1.1460	2302.8	0.081	1.1555	2298.3	0.083
3000	1.1855	2382.7	0.080	1.1945	2376.2	0.078
4000	1.2255	2463.6	0.081	1.2355	2458.2	0.082
5000	1.2615	2536.4	0.073	1.2715	2530.2	0.072
5500	1.2805	2574.8	0.077	1.2900	2567.2	0.074
6000	1.2975	2609.2	0.069	1.3080	2603.1	0.072
6500	1.3165	2647.6	0.077	1.3270	2641.1	0.076
7080	1.3380	2691.1	0.075	1.3495	2686.1	0.078
LUB.	1.0650	2139.1	-	1.0725	2132.3	-

GENERAL REMARKS

000043

EXPERTEST PTY. LTD.



STATIC PRESSURE GRADIENT SURVEY

Location: DILCHEE #2U

Tested: 27th October 1993.

Formation: TOOLACHEE

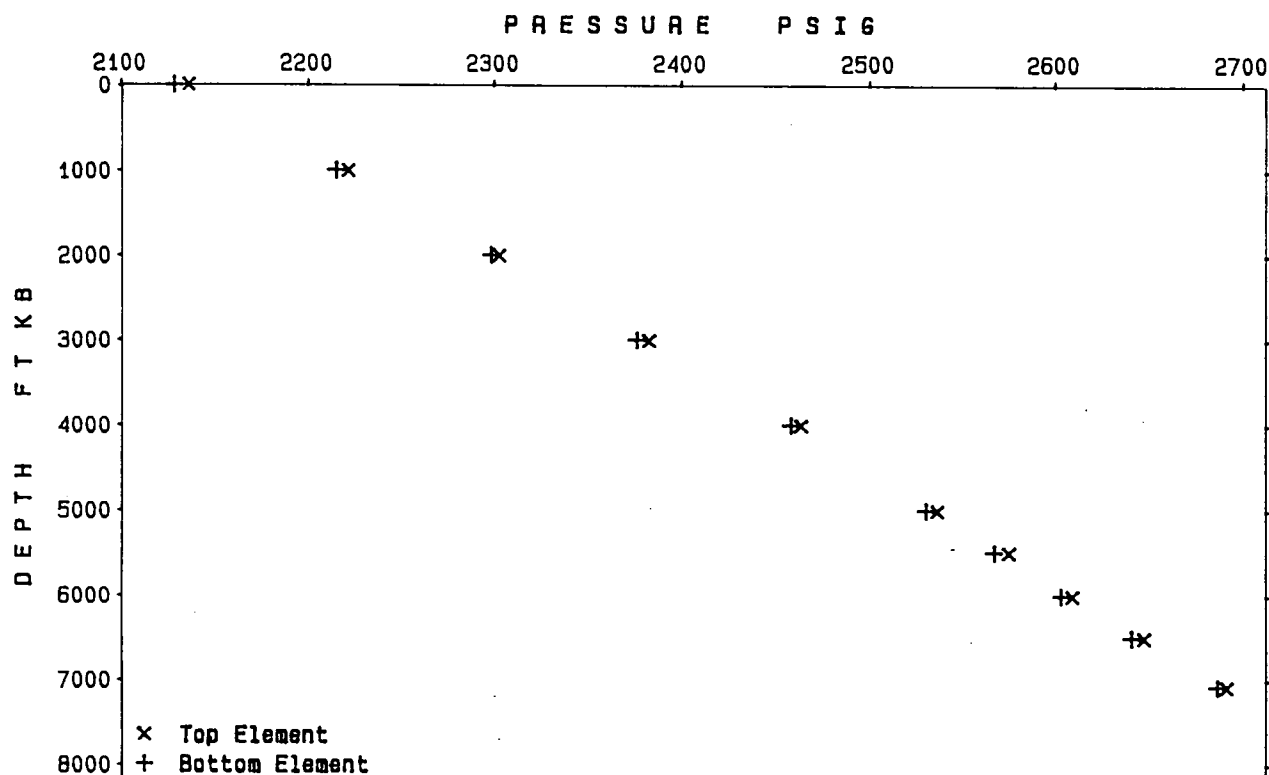
Client: SANTOS LTD.

PRESSURE ELEMENT DATA

Position	Serial No	Range	Calibrated
Top	29321	4000	25/ 6/93
Bottom	29323	3950	25/ 6/93

WELL DATA

DWT In	2126 PSIG
DWT Out	2127 PSIG
Max BHT	264 DEG F



TOP ELEMENT

BOTTOM ELEMENT

Depth FT KB	Deflection Inches	Pressure PSIG	Gradient PSI/FT	Deflection Inches	Pressure PSIG	Gradient PSI/FT
LUB.	1.0635	2136.0	-	1.0705	2128.3	-
1000	1.1060	2221.9	0.086	1.1140	2215.3	0.087
2000	1.1460	2302.8	0.081	1.1555	2298.3	0.083
3000	1.1855	2382.7	0.080	1.1945	2376.2	0.078
4000	1.2255	2463.6	0.081	1.2355	2458.2	0.082
5000	1.2615	2536.4	0.073	1.2715	2530.2	0.072
5500	1.2805	2574.8	0.077	1.2900	2567.2	0.074
6000	1.2975	2609.2	0.069	1.3080	2603.1	0.072
6500	1.3165	2647.6	0.077	1.3270	2641.1	0.076
7080	1.3380	2691.1	0.075	1.3495	2686.1	0.078
LUB.	1.0650	2139.1	-	1.0725	2132.3	-

GENERAL REMARKS

SEQUENCE OF EVENTS

CUSTOMER : Snatos

PERFORATIONS: 7130' - 7415' KB

PAGE: 1 OF 1

WELL NAME: Dilchee #2 Upper

FORMATION : Toolachee /

DATE: 23/10/93.

TEST TYPE : Drift run prior to S.G.S Daralingie

OPR : P. Bowyer

[illegible]

SEQUENCE OF EVENTS

CUSTOMER : SANTOS LTD.

WELL NAME: Dilchee #2 Lower

TEST TYPE : S.B.S.

PERFORATIONS: 8128'-8761' KB

FORMATION : PATCHAWARRA

PAGE: 1 OF 1

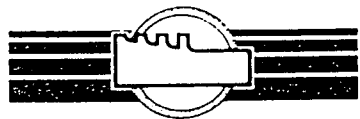
DATE: 28-10-93

OPR : P. STONE

DATE/TIME	DESCRIPTION OF EVENTS
28-10-93	
1045	Arrive location. Well was shut in. Spot & rig up w/L.
	Prepare 1x 4075 & 1x 4100psi pressure elements with 1x 200-400°F MBHTT.
1119	Pressure lube.
1135	RILH.
1244	Arrive at E-mail stop at 8445' KB.
1254	PORL.
1315	At surface.
1330	Depressure lube.
	Rig out gauges Charts OK.
	Rig out w/L.
	Secure well. Well shut in.
1445	Left location.
1430	Handed well back to production.
	* Note: Dift was run 23-10-93.

000045

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS LTD.PERFORATIONS: 8128' - 8761' KBPAGE: 1 OF 1WELL NAME: Dilchee #2 LowerFORMATION : PARTHAWARRADATE: 28-10-93TEST TYPE : SGSOPR : P. Stone

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

TIME
(HOURS)TUBING
PRESSURE
(PSI/KPa)ANNULUS
PRESSURE
(PSI/KPa)

ELEMENT SERIAL NO.

850207850208N/ADATE : 28-10-93

ELEMENT RANGE

Pi40754100

PRESSURE LUBRICATOR :

1119 16327 420

RECORDING SECTION SERIAL NO.

K3433K3434

RUN IN HOLE :

1135 16327 420

DATE OF CALIBRATION:

6-3-926-3-92ON DEPTH AT : 8445 FT/M1244 16334 420

CLOCK SERIAL NO.

KaA 1204725511DATE : 28-10-93

CLOCK RANGE

33

PULL OUT OF HOLE :

1254 16334 420

LEAD SCREW TYPE

1515

AT SURFACE :

1315 16341 420

DEPRESSURE LUBRICATOR :

1330 16334 420ENGAGE STYLUS DATE 28-10-93 TIME11091109MAXIMUM BHT AT 8445 FT/M = 306 °F/1DISENGAGE STYLUS DATE 28-10-93 TIME13261326

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

DATE

TIME

REMARKS

000046

**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 Thursday, 28th October 1993.

STATIC PRESSURE GRADIENT REPORT

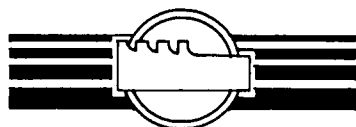
CLIENT	LOCATION	FORMATION
SANTOS LTD.	DILCHEE # 2 LOW	PATCHAWARRA

PRESSURE ELEMENT DATA				WELL DATA	
POSITION	SERIAL NO.	RANGE	CALIBRATED	PARAMETER	VALUE
Top	850207	4075	6/ 3/92	DWT In	2368 PSIG
Bottom	850208	4100	6/ 3/92	DWT Out	2369 PSIG
				Max BHT	306

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	1.1680	2375.0	-	1.1550	2371.5	-
1000	1.2010	2442.4	0.067	1.1880	2439.4	0.068
2000	1.2320	2505.7	0.063	1.2180	2501.1	0.066
3000	1.2620	2567.0	0.061	1.2490	2564.8	0.064
4000	1.2910	2626.3	0.059	1.2770	2622.4	0.058
5000	1.3200	2685.6	0.059	1.3060	2682.1	0.060
5500	1.3350	2716.3	0.061	1.3220	2715.0	0.066
6000	1.3500	2747.0	0.061	1.3370	2745.9	0.062
6500	1.3650	2777.7	0.061	1.3520	2776.7	0.062
7000	1.3800	2808.4	0.061	1.3670	2807.6	0.062
7500	1.3960	2841.1	0.066	1.3820	2838.5	0.062
8000	1.4120	2873.9	0.066	1.3980	2871.4	0.066
8445	1.4600	2972.2	0.221	1.4470	2972.2	0.227
LUB.	1.1690	2377.0	-	1.1560	2373.6	-

GENERAL REMARKS

EXPERTEST PTY. LTD.



STATIC PRESSURE GRADIENT SURVEY

Location: DILCHEE # 2 LOW

Tested: 28th October 1993.

Formation: PATCHAWARRA

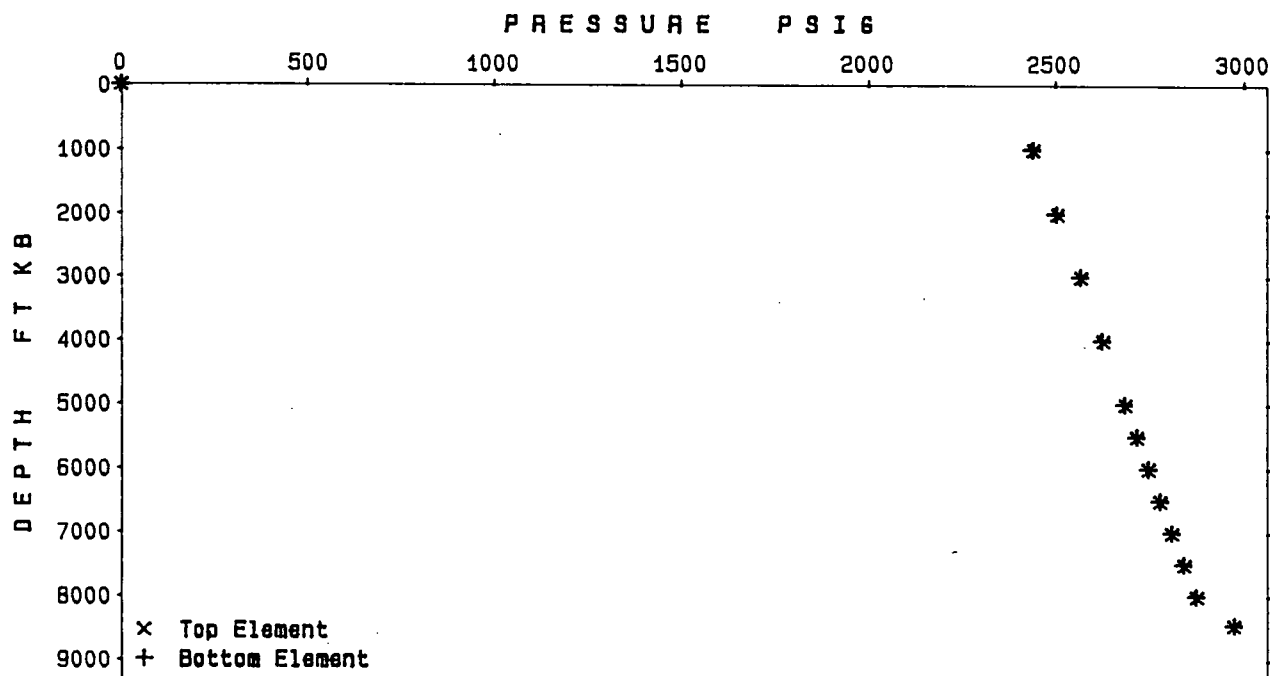
Client: SANTOS LTD.

PRESSURE ELEMENT DATA

Position	Serial No	Range	Calibrated
Top	850207	4075	6/ 3/92
Bottom	850208	4100	6/ 3/92

WELL DATA

DWT In	2368 PSIG
DWT Out	2369 PSIG
Max BHT	306



TOP ELEMENT

BOTTOM ELEMENT

Depth FT KB	Deflection Inches	Pressure PSIG	Gradient PSI/FT	Deflection Inches	Pressure PSIG	Gradient PSI/FT
LUB.	1.1680	2375.0	-	1.1550	2371.5	-
1000	1.2010	2442.4	0.067	1.1880	2439.4	0.068
2000	1.2320	2505.7	0.063	1.2180	2501.1	0.066
3000	1.2620	2567.0	0.061	1.2490	2564.8	0.064
4000	1.2910	2626.3	0.059	1.2770	2622.4	0.058
5000	1.3200	2685.6	0.059	1.3060	2682.1	0.060
5500	1.3350	2716.3	0.061	1.3220	2715.0	0.066
6000	1.3500	2747.0	0.061	1.3370	2745.9	0.062
6500	1.3650	2777.7	0.061	1.3520	2776.7	0.062
7000	1.3800	2808.4	0.061	1.3670	2807.6	0.062
7500	1.3960	2841.1	0.065	1.3820	2838.5	0.062
8000	1.4120	2873.9	0.065	1.3980	2871.4	0.066
8445	1.4600	2972.2	0.221	1.4470	2972.2	0.227
LUB.	1.1690	2377.0	-	1.1560	2373.6	-

GENERAL REMARKS

SEQUENCE OF EVENTS

CUSTOMER : Santos

PERFORATIONS: 8128' - 8761' KB

PAGE: 1 OF 1

WELL NAME: Dilchee #2 Lower

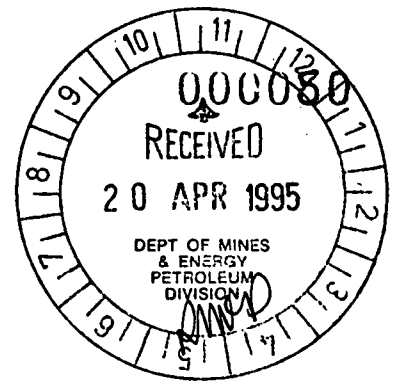
FORMATION : Patchawarra

DATE: 23/10/93

TEST TYPE : Drift run prior to S.G.S

OPR : P. Bowyer

[illegible]



Enw. 7288/2

SANTOS LTD
A.C.N. 007 550 923
PETROLEUM ENGINEERING DEPARTMENT

***DILCHEE 2 LOWER
PATCHAWARRA
TWO RATE TEST
May 1993***

Report No: **EDSA: 002/94**
Author: **Geoff Coker**
Date: **January 1994**

RESTXH/R-gl005(1)

LC
5-5-95



CONTENTS

1. INTRODUCTION
2. RESULTS
3. CONCLUSIONS & RECOMMENDATIONS
4. DISCUSSION

APPENDICES

- I. BACKGROUND INFORMATION
- II. TWO RATE TEST
- III. COMPOSITIONAL DATA

1. **INTRODUCTION**

Dilchee 2 was drilled in May 1990 as an appraisal well in the Toolachee Block 1.25 km southwest of Dilchee 1 and 2.7 km southeast of Pira 1.

The well was located near the Permian crest of the Dilchee structure updip of Dilchee 1. The Patchawarra formation was the primary gas target. The Toolachee and Epsilon formations and the Daralingie beds were secondary gas objectives.

Five DST's were run. DST 1 attempted to test the Toolachee 70-6 sand but was a misrun due to packer seat failure and tool plugging. DST 2 tested the same sand recording no flow to surface and recovering 2.7 bbls of mud. DST 3 tested the Toolachee 72-3 and 72-5 sands flowing gas at 2.1 MMscf/d at a FTHP of 474 psia and recovering 0.6 bbls of condensate, 3.4 bbls of condensate cut mud and 11.5 bbls of watery mud.

DST 4 tested the Patchawarra 84-0, 84-4, 84-5 and 85-0 sands and flowed 0.5 MMscf/d and 392 BWPD at a FTHP of 275 psia and recovered 36.5 bbls of water. The 84-4, 84-5 and 85-5 sands are interpreted to be water saturated. DST 5 tested the Patchawarra 89-1 and 89-5 sands flowing gas at 0.08 MMscf/d at a FTHP of 62 psia and recovering 4.7 bbls of rat hole mud and 3.2 bbls of very muddy water. Pay in these sands was rejected based on this test.

Log analysis indicates 58 feet of pay in the Toolachee formation, 10 feet in the Daralingie beds and 191 feet in the Patchawarra formation. The Toolachee and Daralingie gas reservoirs were new discoveries.

Dilchee 2 was completed in April 1993 as a dual Toolachee/Daralingie and Patchawarra gas producer with 2 $\frac{3}{8}$ " tubing for the upper completion and 2 $\frac{7}{8}$ " tubing for the lower completion. The perforated sands accessed by the lower completion are shown below.

FORMATION	SAND	NET PAY (ft)	POROSITY (%)	Sw (%)	PERFORATED INTERVAL (ft sub KB)
Patchawarra	81-3	26	11.2	9.3	8128 - 8156
	82-1	40	10.5	11.8	8195 - 8244
	82-8	17	12.0	25.4	8271 - 8294
	83-3	12	13.0	16.3	8318 - 8332
	84-0	11	12.3	15.9	8366 - 8382
	85-0	9	12.6	17.0	8452 - 8466
	85-3	7	10.5	21.8	8482 - 8490
	86-0	30	10.4	18.8	8526 - 8566
	86-7	3	11.3	15.4	8620 - 8628
	87-1	20	9.2	21.2	8655 - 8694
	88-9	16	11.2	14.3	8744 - 8761
Total		191	11.0	16.1	

All perforations were performed with 4 1/2 " casing guns with 5 spf and 60° phasing.

Dilchee 2 Lower was commissioned during April 1993. A two rate test and build-up began on May 26, 1993 to determine reservoir parameters. The well had produced approximately 180 MMscf prior to the build-up period. Separator fluid samples were collected during the first flowing period, and the recombined full well stream composition determined (see Appendix III).

This report presents the interpretation of the two rate test.

2. RESULTS

The two rate test build-up results compare with DST 4 as follows:

	DST 4 May 1990	Two Rate Test May 1993	
Formation	Patchawarra	Patchawarra	
Sands Tested	84-0,84-5&5,85-0	All	
Flow Capacity (md-ft)	3.7	779	
Pay (ft)	20	191	
Permeability (md)	0.2	4.1	
Apparent Skin	0	8.6	
True Skin		2.2	
Reservoir Pressure (psia)	3554 @8465'KB	3447 @8100'KB	
@ datum -7977'ASL (8249'KB)	3535	3528	
P/Z (psia)	3677	3671	
FLOW RATES		1st Rate	2nd Rate
Gas (MMscf/d)	0.46	3.4	6.6
Condensate (bbl/MMscf)		1.4	1.0
Water (bbl/MMscf)	852	3.4	3.8
FTHP (psia)	275	2582	2259
SIMPLIFIED ANALYSIS*			
AOF (MMscf/d)		24.3*	
C (MMscf/d*psia ²)		1.5E-6*	
n		1.0*	
LIT ANALYSIS*			
AOF (MMscf/d)		26.2*	
B (E+04 psia ² /cp*Mscf/d)		2.7*	
F(psia ² /cp*Mscf ² /d ²)		0.04*	

*Stabilisation was not reached during the second flowing period. Therefore, the LIT and simplified analysis may be unreliable.

3. CONCLUSIONS & RECOMMENDATIONS

1. Modelling of the build-up data yielded a total flow capacity of 779 md-ft (an average permeability of 4.1 md), a true skin of 2.2, and an average reservoir pressure of 3528 psia at a datum depth of -7977 'ASL. Horner analysis of the second flowing period draw-down data and the build-up data support these results.
2. Modelling of the build-up data suggests that the reservoirs are channel sands.
3. The LIT and simplified analysis may be unreliable because the second flowing period was not flowed to stabilisation.
4. The recombined full well stream composition obtained from separator sampling is considered valid (see Appendix III).

4. *DISCUSSION*

METHOD

The well was shut-in for 24 hours before the test. The well was then opened and flowed on a number of choke settings for approximately 2 hours before being choked to 14/64" (3.3 MMscf/d) for 44.8 hours during which separator samples were taken. A quartz gauge was positioned at 8100' KB during this flowing period. The well was then opened to 22/64" (6.6 MMscf/d) and flowed for 26 hours.

The well was shut-in for 70.5 hours. A static gradient survey was performed after the test.

ANALYSIS

The pressure survey analysis was performed using the PAN System software package. The well was assumed to have reached static conditions during the 24 hour shut-in before the test because the bottom-hole shut-in pressure would have been within 50 psi of the reservoir pressure.

The recombined reservoir fluid composition from separator samples is considered valid and is given in Appendix III.

RESULTS

The second rate drawdown and build-up log-log plots (Appendix II) both show a 1/2 slope in the late time, suggesting flow in channel reservoirs. Pressure information indicates that the reservoirs are not significantly depleted. Therefore cross-flow effects are not expected.

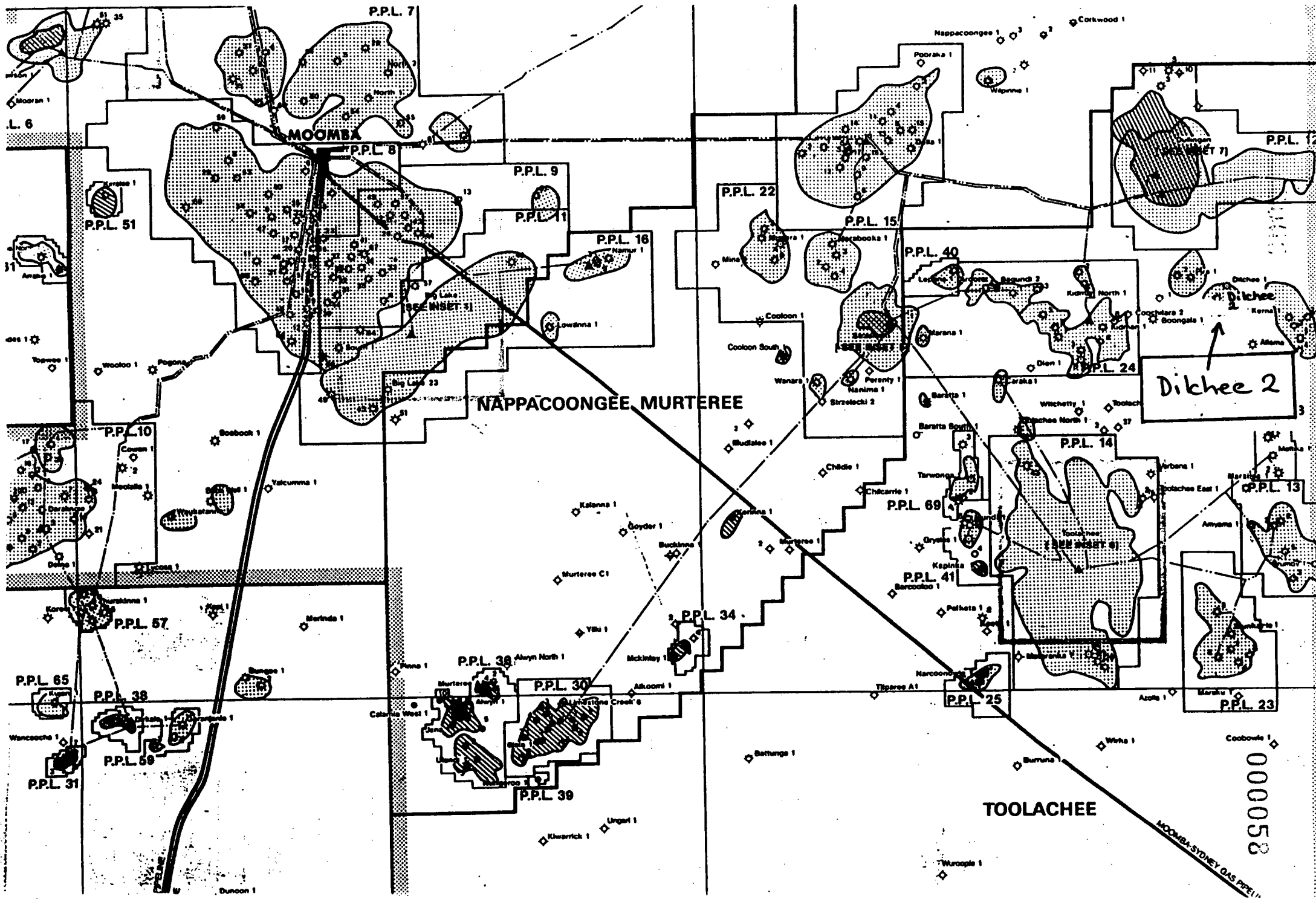
A flow capacity of 712 md-ft (an average permeability of 3.7 md-ft), and an apparent skin of 8.6 was determined from Horner analysis of the build-up data (Appendix II). This compares to a flow capacity of 477 md-ft and an apparent skin of 5.4 determined from Horner analysis of the second rate drawdown (Appendix II). A good model match which supports the Horner build-up analysis was obtained using a parallel fault (channel reservoir) model with the well at the centre of the channel. Results from this model indicate a flow capacity of 779 md-ft (an average permeability of 4.1 md) and a true skin of 2.2, indicating significant turbulence effects ($D = 1.2 \times 10^{-3}$ d/Mscf, calculated by the model).

An average reservoir pressure of 3528 psia at Datum (-7977' ASL) was calculated by the model. This is some 20 psi higher than that determined from Horner analysis of the build-up data, and compares with a reservoir pressure of 3535 psia at Datum determined from DST 4.

The LIT and simplified analysis may be unreliable because stabilisation was not reached during the second flowing period.

APPENDIX I

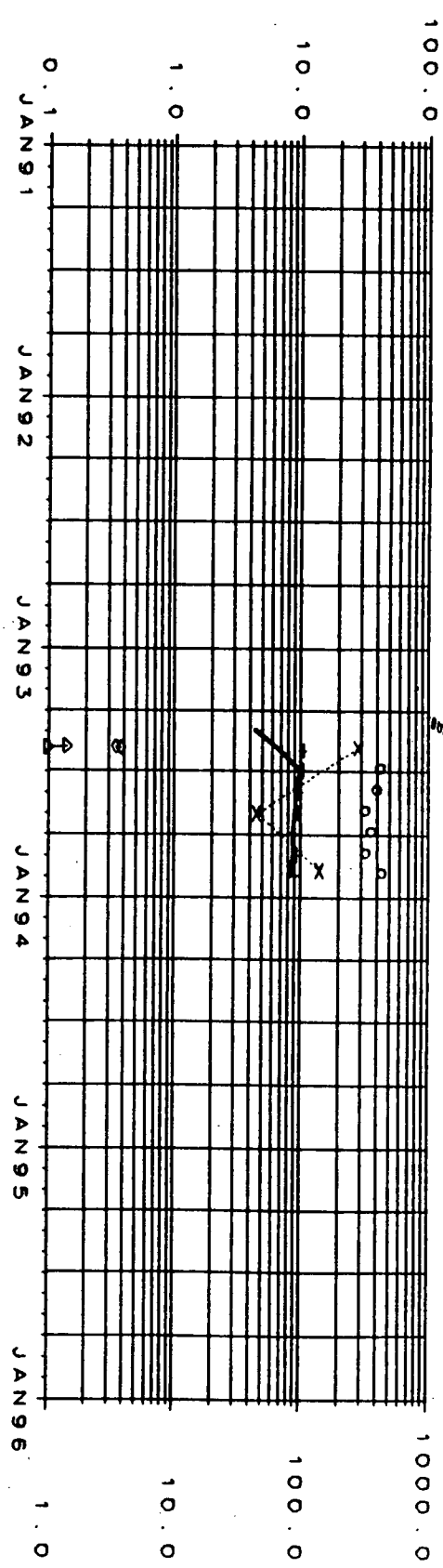
Background Information



000053

DILCHEE # 002L
To end NOV93

Raw Gas Prod-Day Rate (MMcf/Day)
Max. Deliverability Rate (MMcf/Day)
Rw (ohm-n)



Liquid Gas Ratios (bbls/MMcf)
FWHP - linear 0 to 1500 (psia)

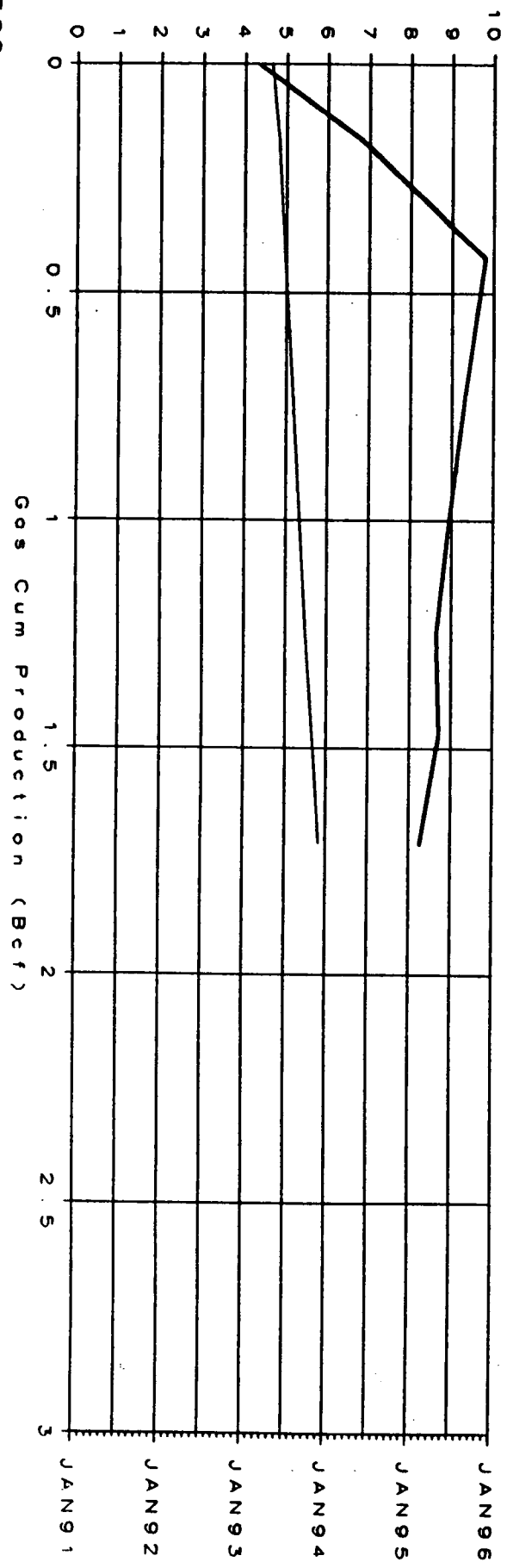
SANTOS

KEY : Δ CGR ◇ WGR + Deliv x Rw o FWHP

DILCHEE
WELL # 002L

0.03 15/01/94
To end NOV93

Raw Gas Prod-Day Rate (MMcf/Day)

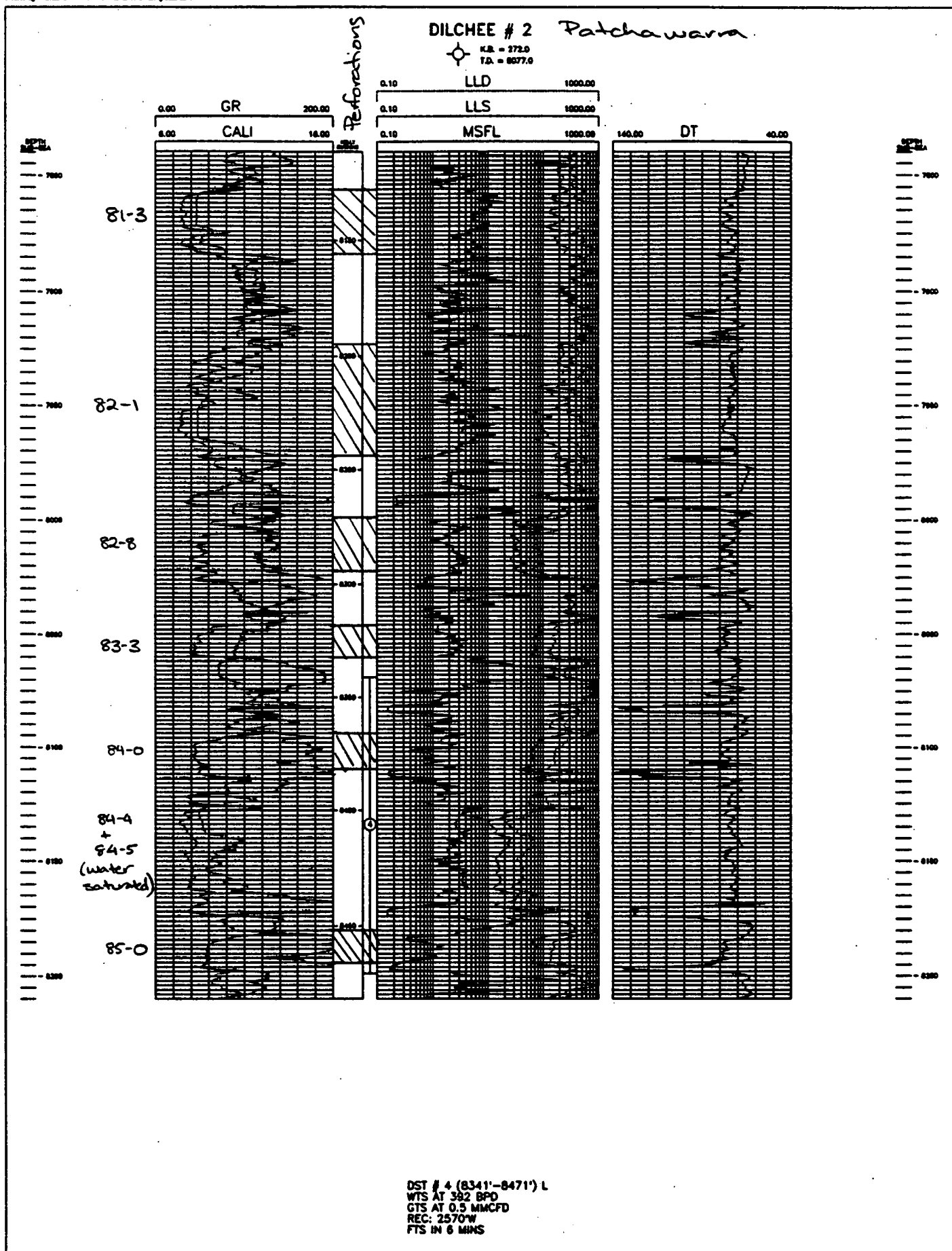


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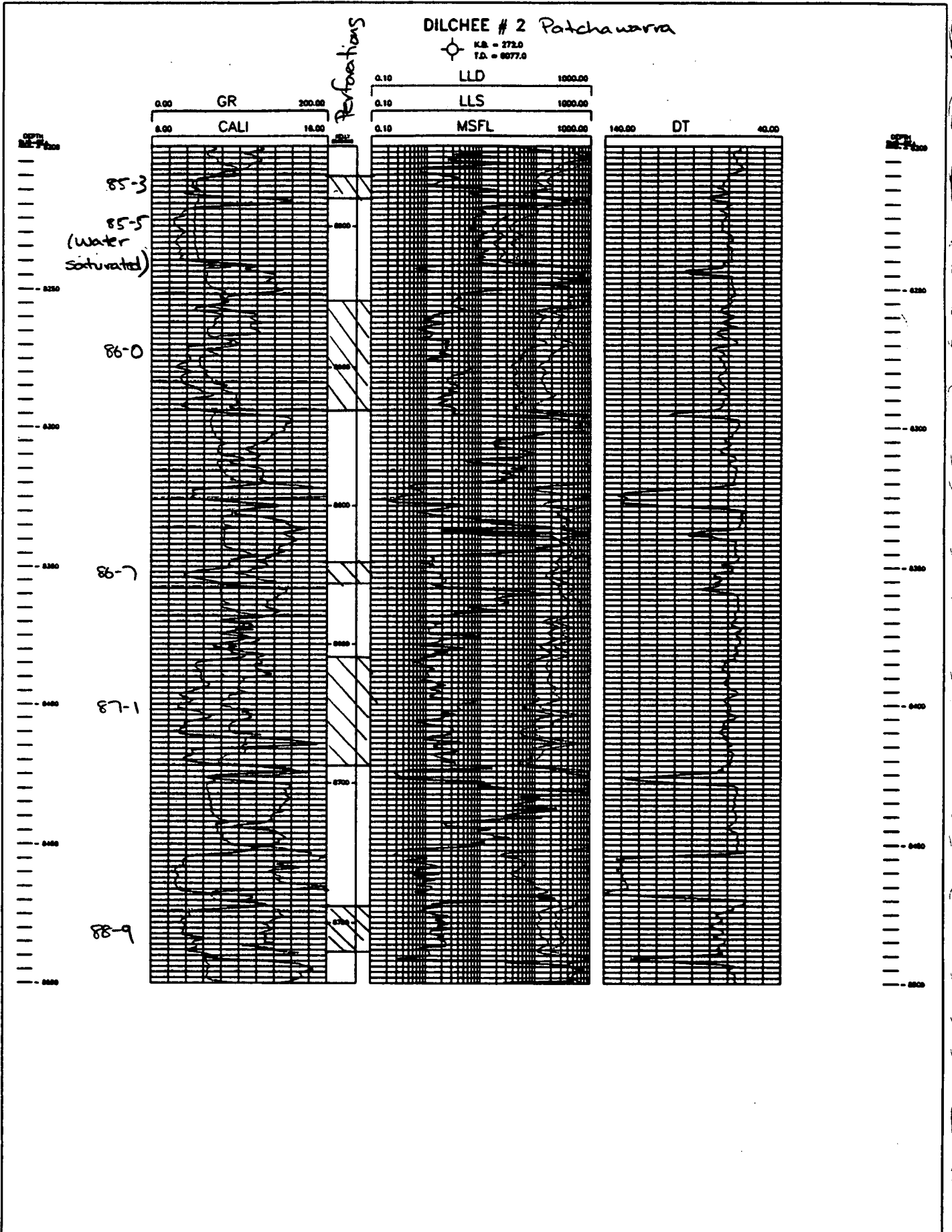
000060

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000061

Printed by: 00000 on: 11-07-2011 10:00:00 using 00000000



APPENDIX II

Two Rate Test

100063
Dilchee 2 Lower

Report File:

DIL2L.PAN

000063

Two Rate Test

Well Test Analysis Report

Analyst name	G Coker
Well	Dilchee 2, Lower Completion
Test	Two Rate Test and Build-up
Datum Depth - ft ASL	-7977
Gauge Type	GRC
Gauge Number	74442
Gauge Depth - ft sub KB	8100
Producing Formation	Patchawarra
Perforated Interval - ft sub KB	8128 - 8761
Test Date	26 May - 1 June 1993

Two Rate Test

Well Test Analysis Report

Reservoir Description

Fluid type : Gas

Well orientation : Vertical

Number of wells : 1

Number of layers : 1

Layer Parameters Data

	Layer 1
Formation thickness	191.0 ft
Average formation porosity	0.11
Water saturation	0.161
Gas saturation	0.839
Formation compressibility	4.6720e-6 psi-1
Total system compressibility	2.2280e-4 psi-1
Layer pressure	3447.0 psia
Temperature	287.0 deg F

Well Parameters Data

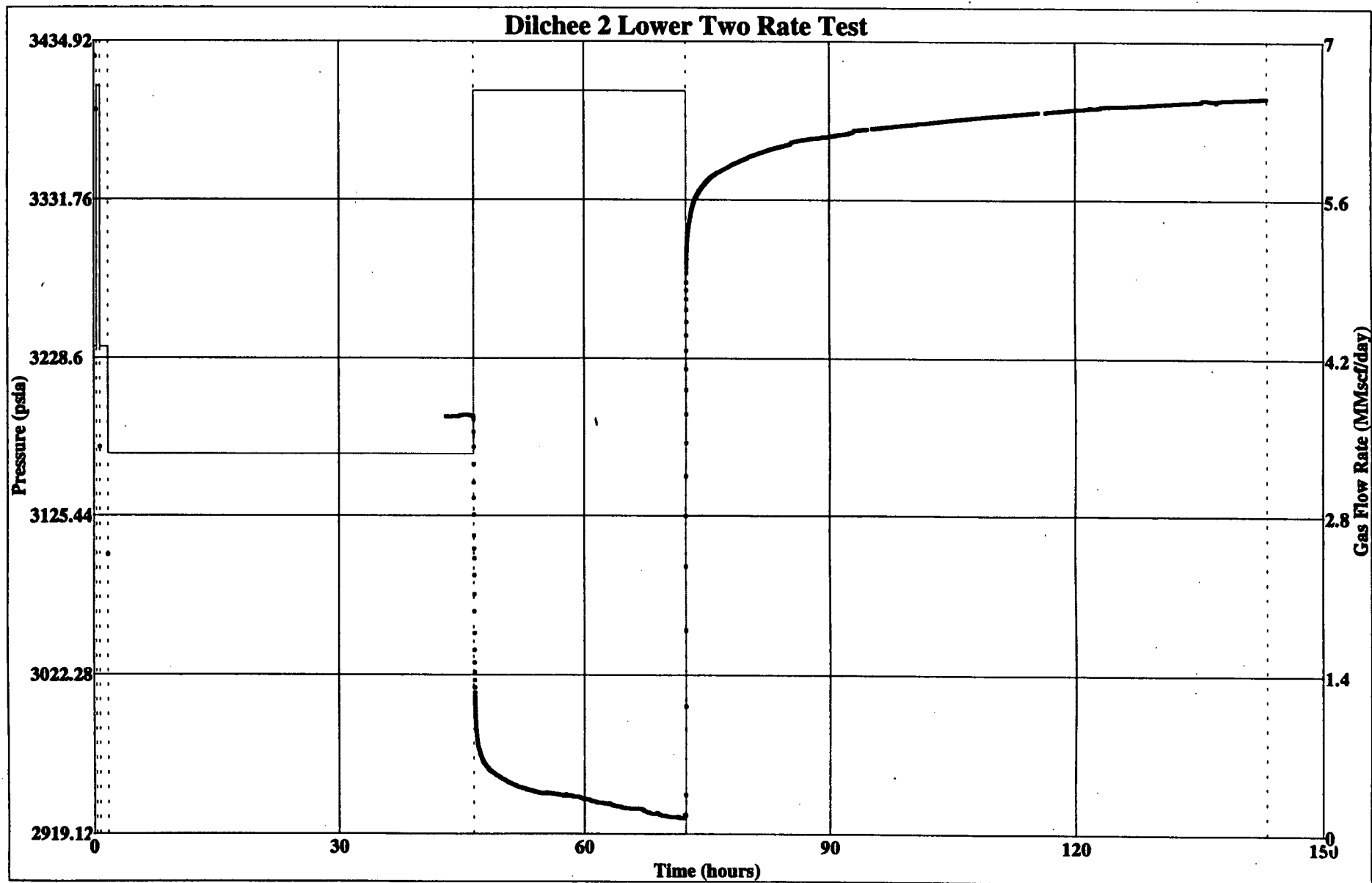
	Well 1
Well radius	0.354 ft
Distance from observation to active well	0.0 ft
Wellbore storage coefficient	0.025 bbl/psi
Well offset - x direction	0.0 ft
Well offset - y direction	0.0 ft

Fluid Parameters Data

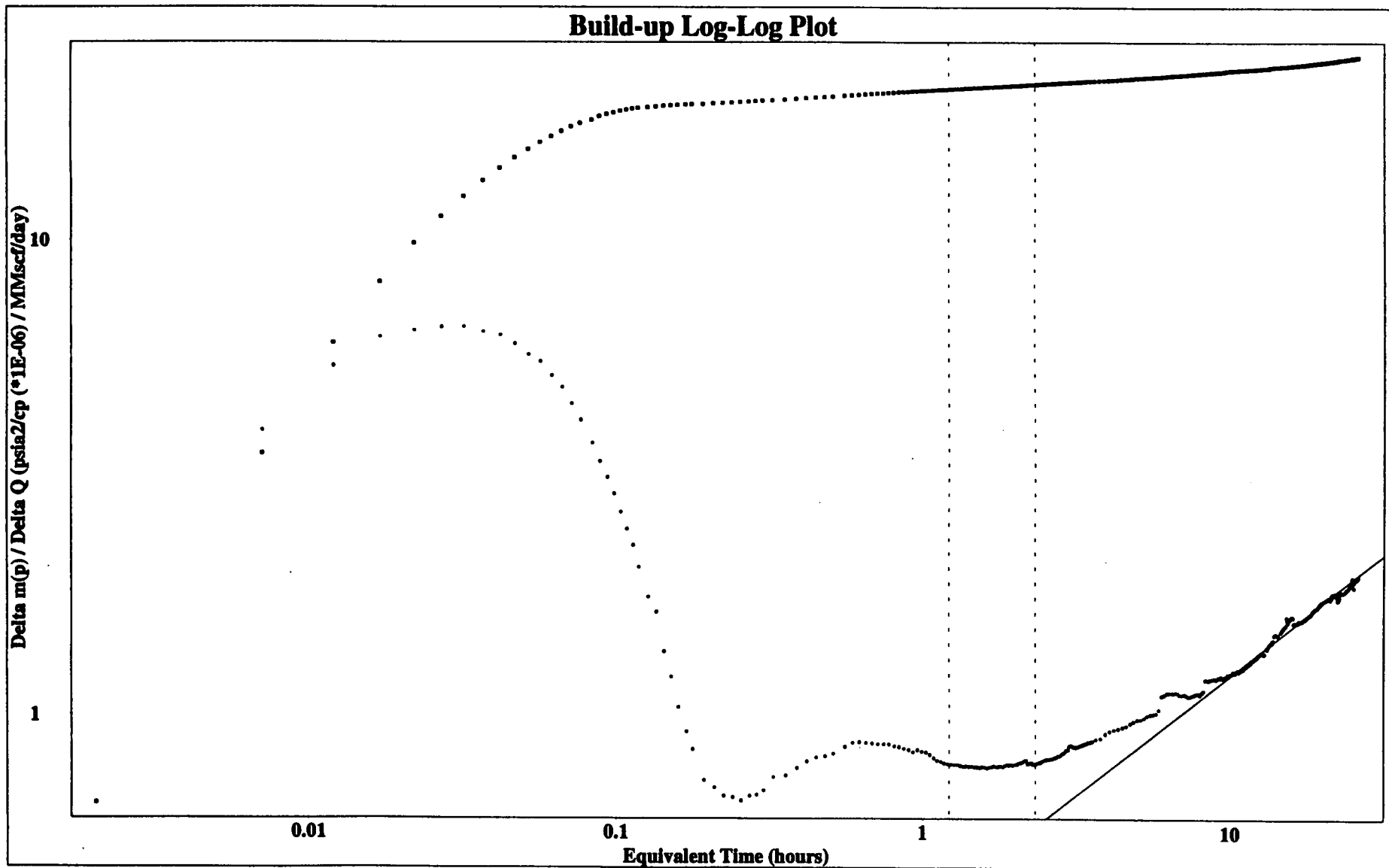
	Layer 1
Gas gravity	0.743 sp grav
Water-Gas ratio	1.4 STB/MMscf
Water salinity	0.0 ppm
Gas density	9.5952 lb/ft3
Gas viscosity	0.0199461 cp
Gas formation volume factor	5.9160e-3 ft3/scf
Water density	58.0879 lb/ft3
Water viscosity	0.1717 cp
Water formation volume factor	1.0737 RB/STB
Initial Z-factor	0.958
Gas compressibility	2.5935e-4 psi-1
Water compressibility	3.8320e-6 psi-1

Layer 1 Correlations

Ug Correlation : Carr et al

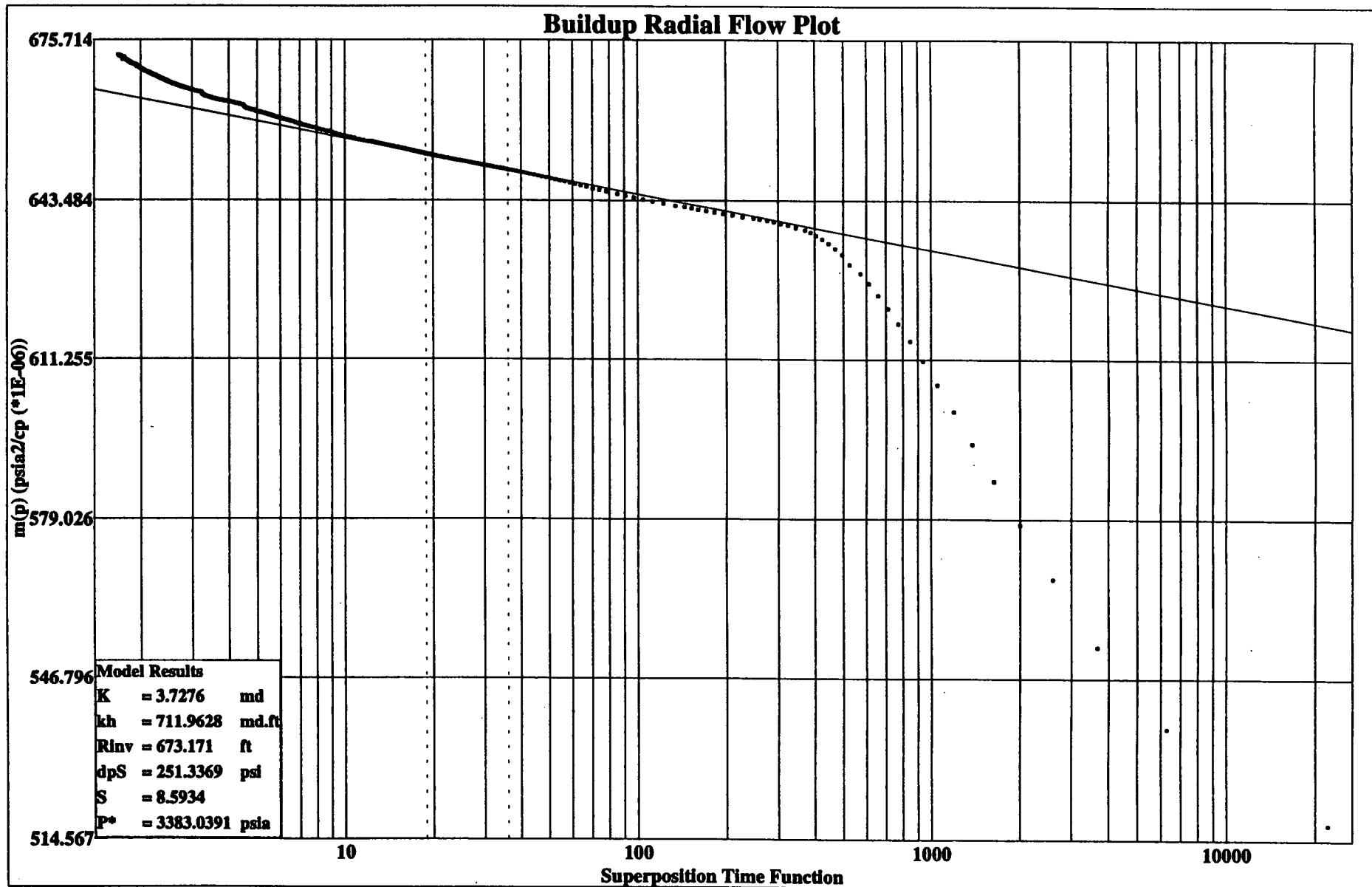


000065



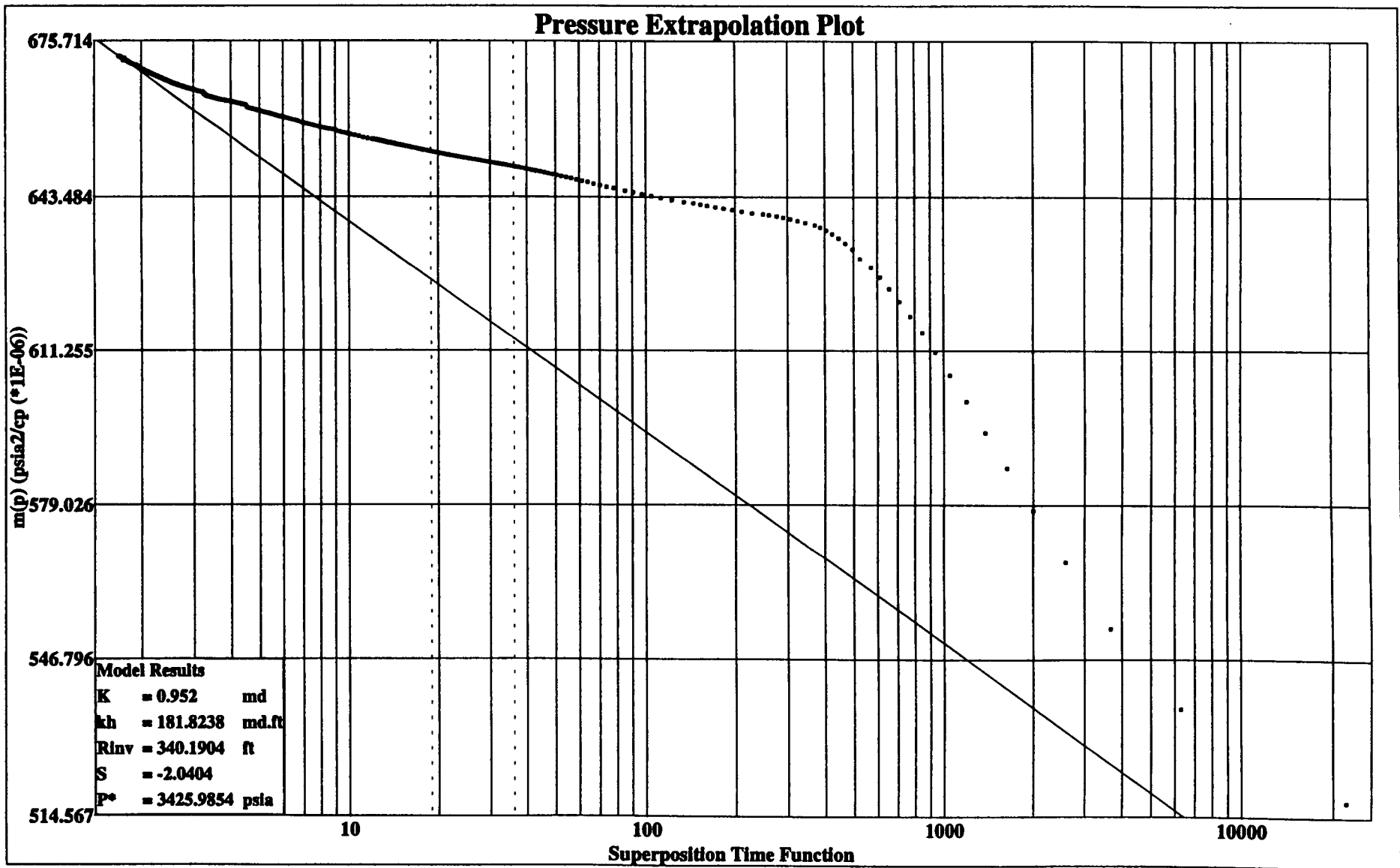
1/2 slope in late time may be due to a channel reservoir or cross-flow effects

990000



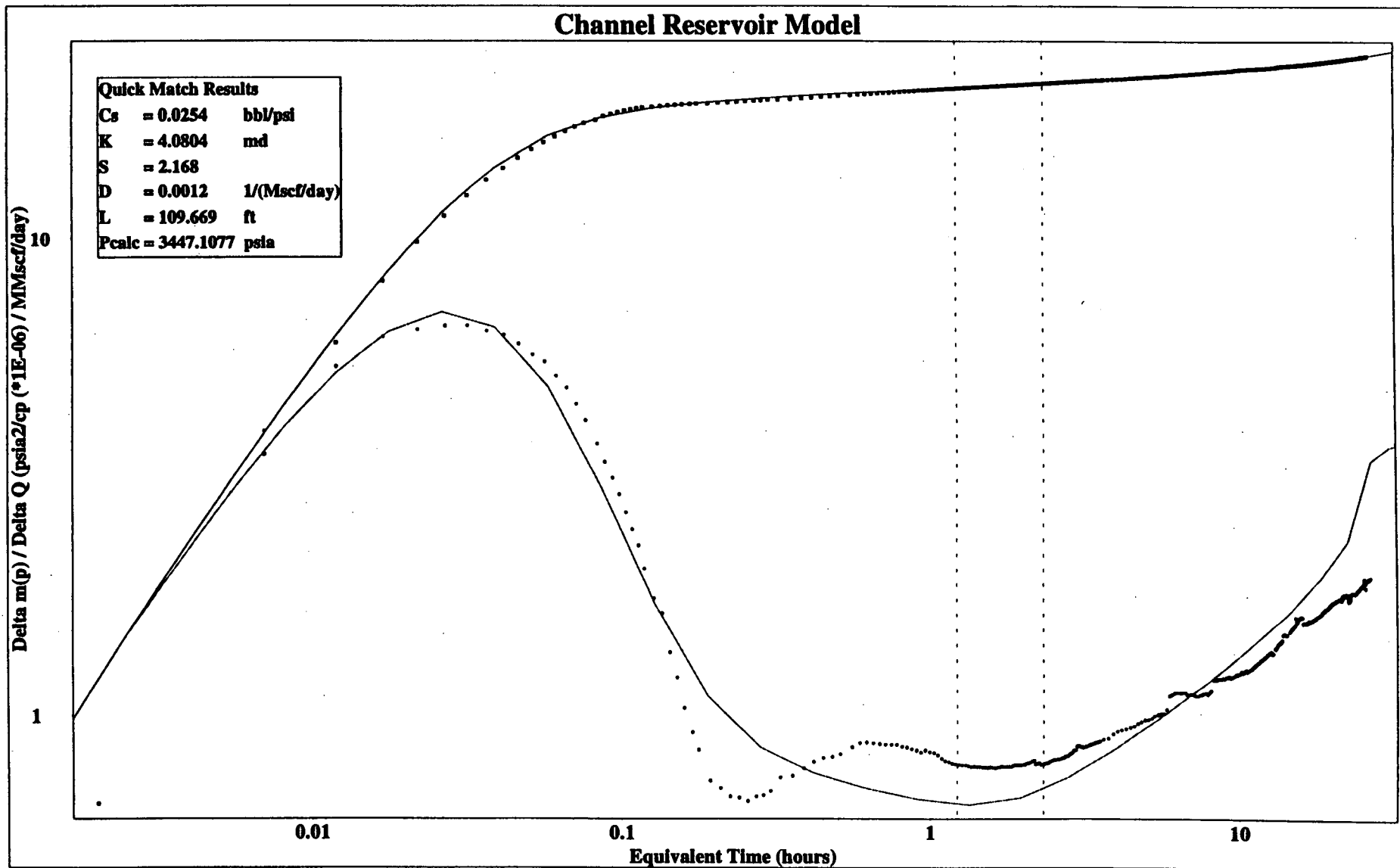
Line is representative of kh and s' , not representative of reservoir pressure.

000067



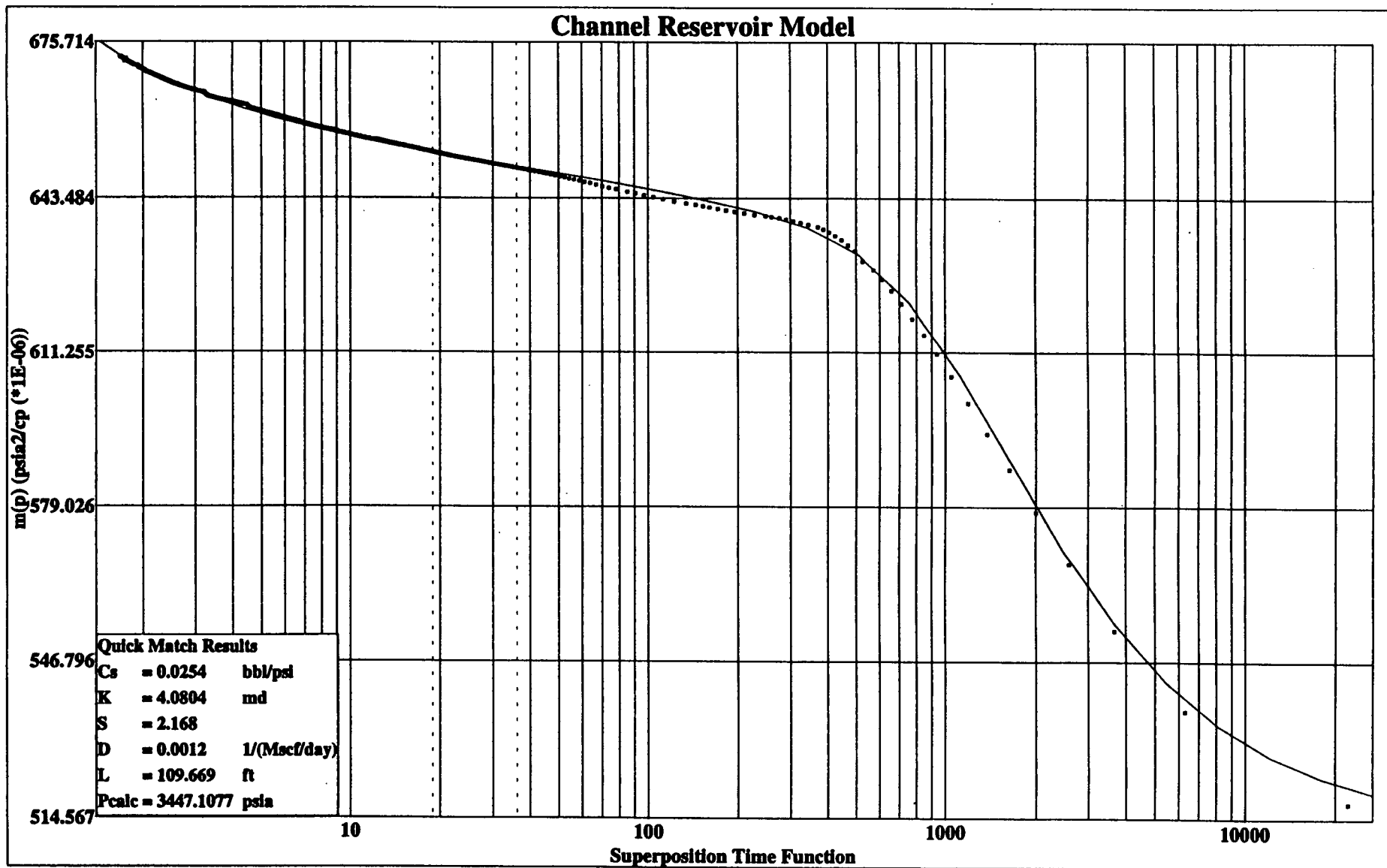
Line is representative of extrapolated reservoir pressure, not representative of kh and s'.

290063



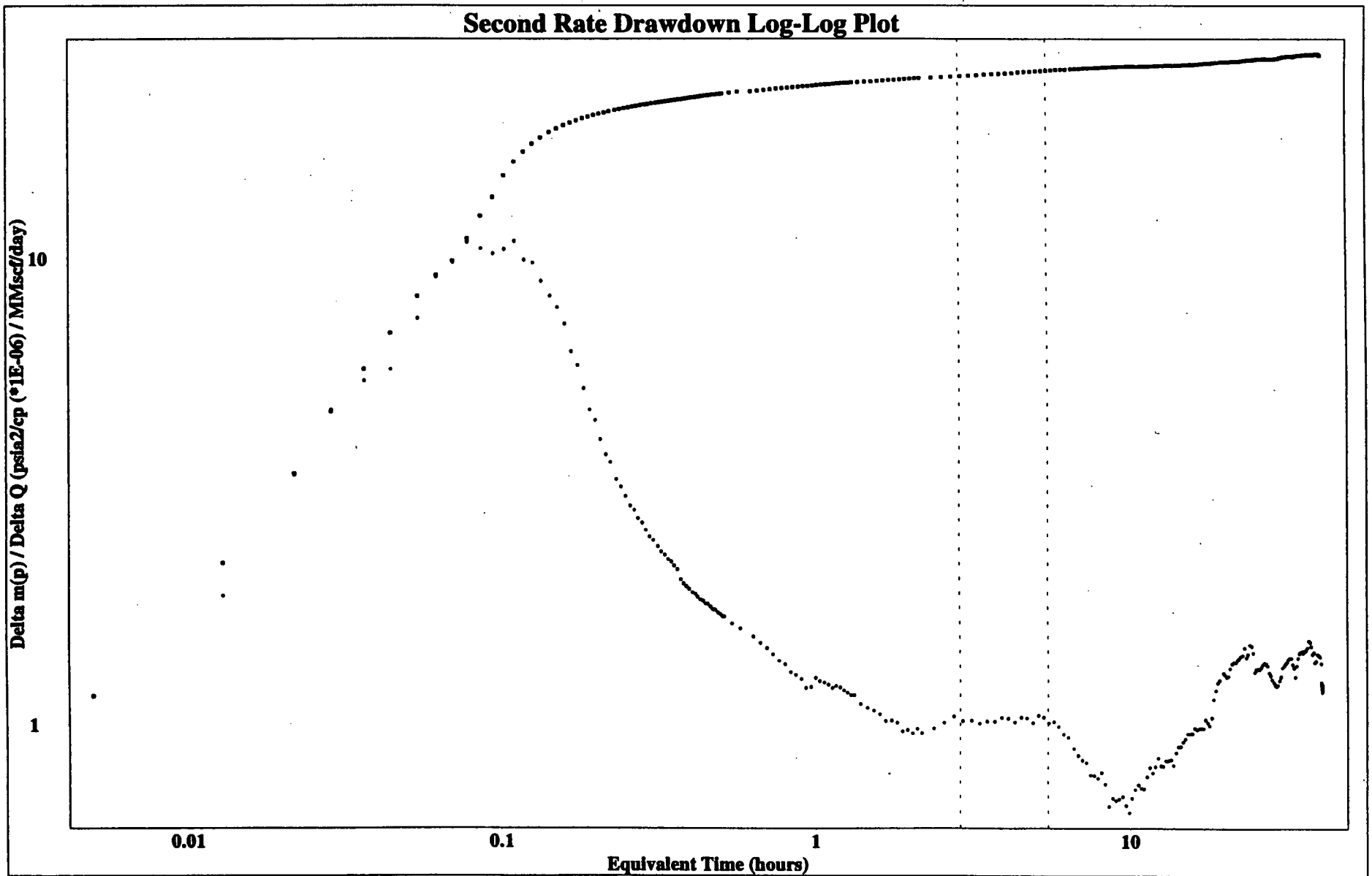
Match using a parallel fault model with the well equidistant from both faults.

690000



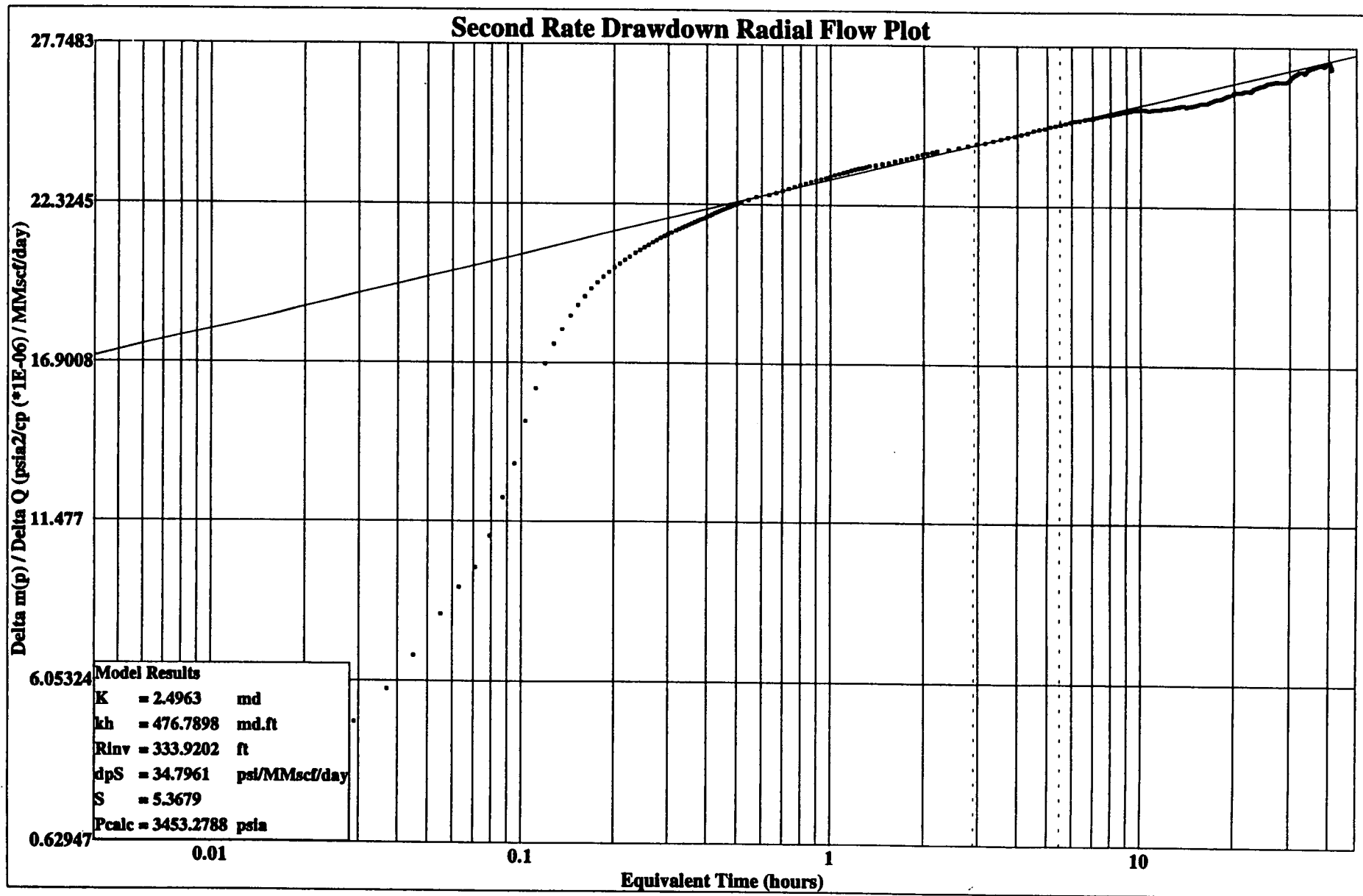
000070

Match using a parallel fault model with the well equidistant from both faults.

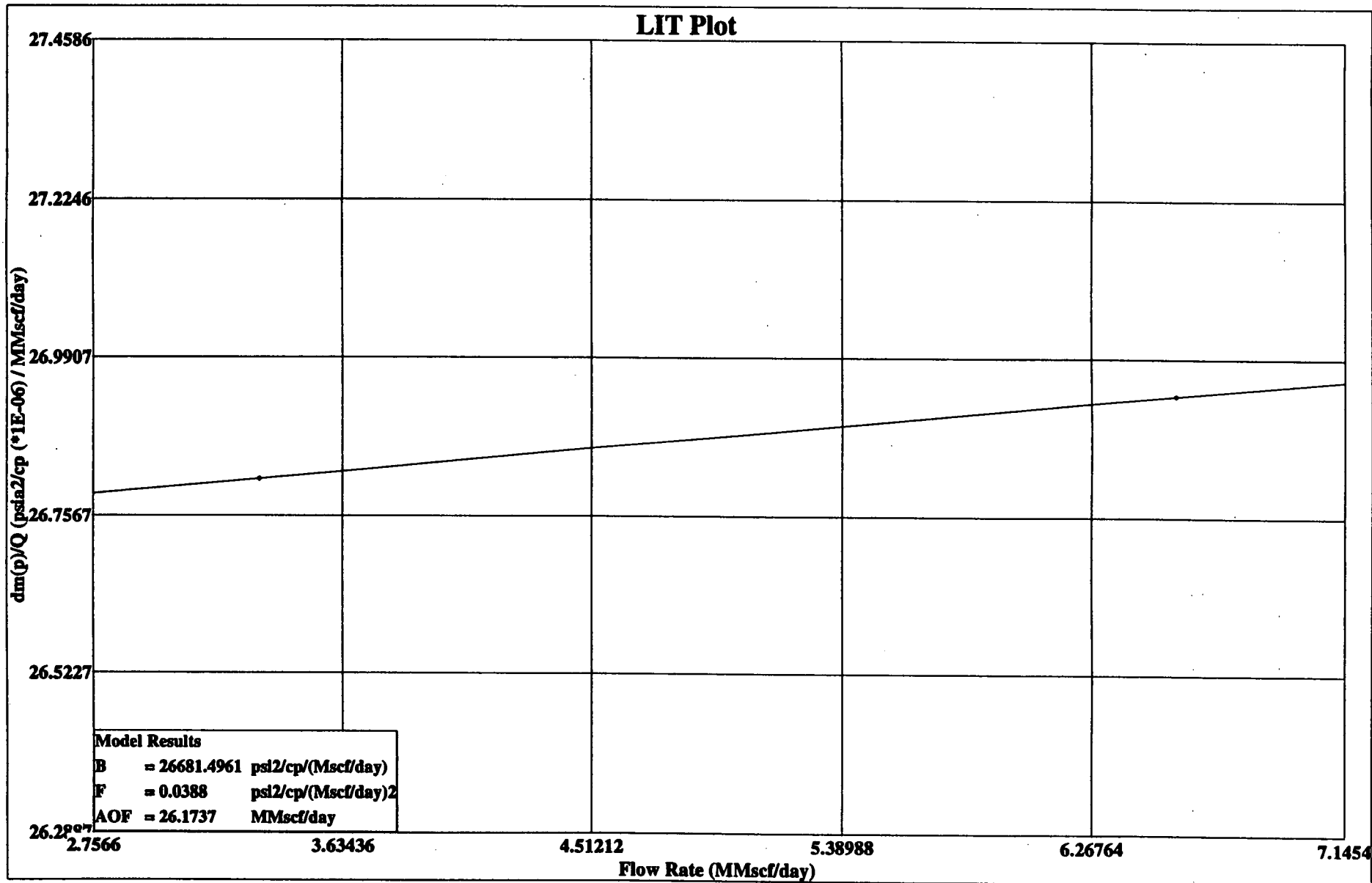


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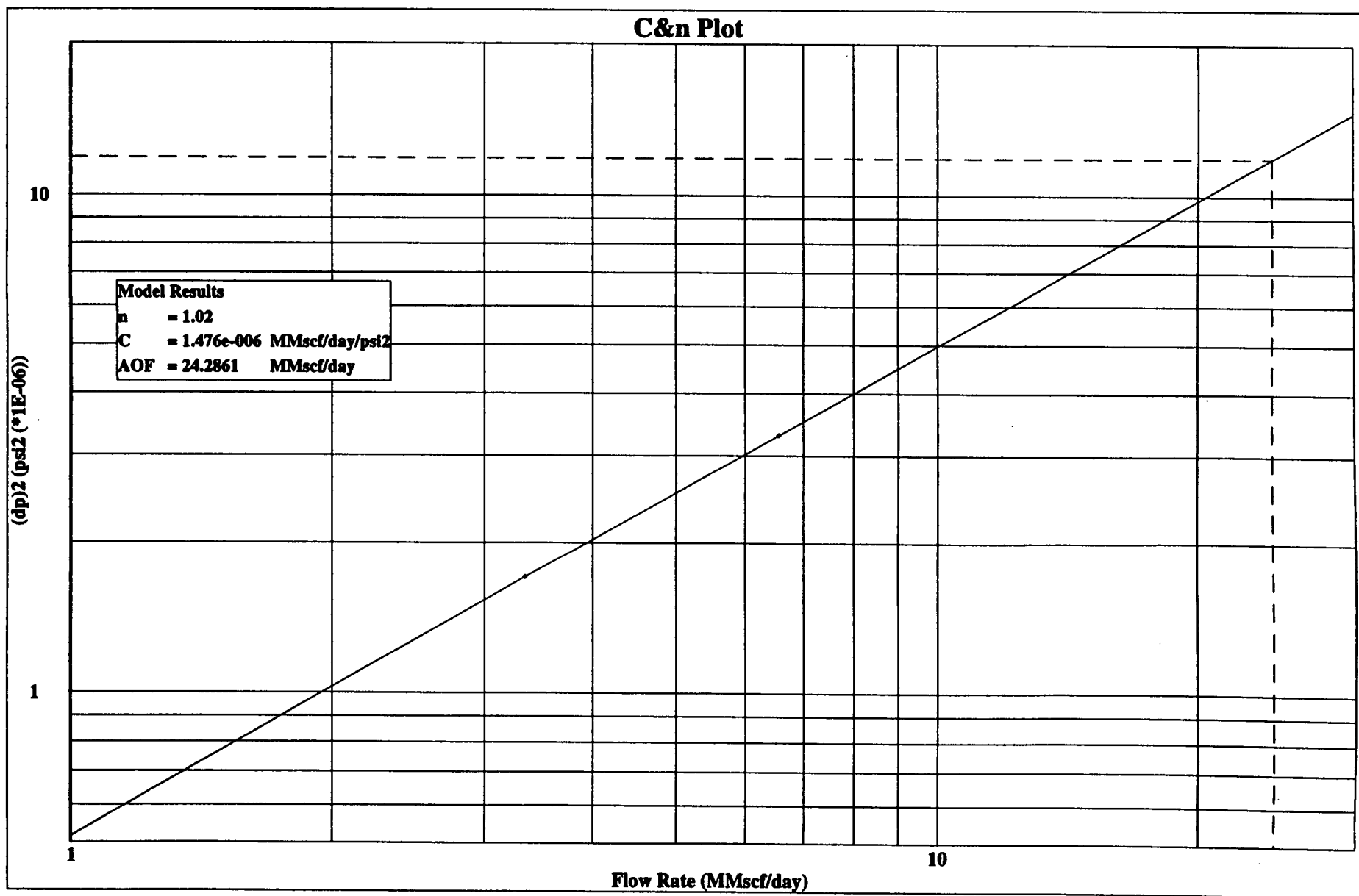
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000073



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000075

APPENDIX III

Compositional Data

Petroleum Services
PO Box 338
Torrensville SA 5031Telephone: (08) 379 9888
Facsimile: (08) 379 6623

23 August 1993

Santos Limited
GPO Box 2319
ADELAIDE SA 5001

Attention: Jamie Rodda/Mark Downie

REPORT LQ2405

CLIENT REFERENCE: 0729

WELL NAME/RE: Dilchee-2 Lower

MATERIAL: Hp Gas and Hp Condensate

WORK REQUIRED: Gas and Liquid Composition

Please direct technical enquiries regarding this work to the signatory below under whose supervision the work was carried out.

Brian L. Watson
Manager
Petroleum Services

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OPENING PRESSURE

WELL: DILCHEE - 2 LOWER

SEPARATOR: 3137 kPa, 40°C

DATE: 27/05/93

CYLINDER NO: SPE 178

OPENING PRESSURE: 3425 kPa at 50°C

LIQUID CHECK: nil



National Association of Testing
Authorities, Australia

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been performed in accordance with its
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not be reproduced except in full.

PETROLEUM SERVICES

Client: SANTOS Ltd.

Report # LQ2405

Page 1 of 5

Sample: DILCHEE-2 LOWER

Separator: 3137 kPa, 40°C

Date: 27/05/93, Cylinders #PDE 111 7 SPE 178

HP Gas Rate 94.30 x 1000 m³/D
Stock Tank Oil Rate 0.79 m³/D

COMPOSITIONAL ANALYSIS OF RECOMBINED RESERVOIR FLUID

Component	Mol %	GPM
Nitrogen	0.52	-
Carbon Dioxide	12.63	-
Methane	78.48	-
Ethane	6.19	1.65
Propane	1.10	0.30
I-Butane	0.18	0.06
N-Butane	0.22	0.07
I-Pentane	0.08	0.03
N-Pentane	0.07	0.03
Hexanes	0.12	0.05
Heptanes	0.21	0.10
Octanes plus	0.20	0.10
TOTAL	100.00	2.37

Derived data from Full Well Stream Composition

Molecular Weight 21.54
Gas Density (rel air = 1) 0.743
Molecular Weight C₈+ 122.7
Density C₈+ 0.7803

Heating Value Gross: 981 , Nett: 886 (BTU/ft³)
Wobbe Index 1138

Liquid Content Ethane 29.4
of Raw Gas (Bbl/MMSCF) LPG 9.9
Pentane + 7.1

Gas Liquid Ratio C₄-/C₅+ 24631 , Gas Shrinkage 0.8267

Critical Temperature T_c 216.9 °K 390.5 °R
Critical Pressure P_c 4946 kPa 717.4 psia

Approved Signatory R. Tamke.
Robyn L Tamke

Date

21-Aug-93

Registration No: 2013

PETROLEUM SERVICES

Client: SANTOS Ltd.

Report # LQ2405

Page 2 of 5

Sample: DILCHEE-2 LOWER

Separator: 3137 kPa, 40°C

Date: 27/05/93, Cylinders #PDE 111 7 SPE 178

COMPOSITIONAL ANALYSIS OF
RECOMBINED SEPARATOR FLUID

Component	Flashed Stock Tank Liquid Mol %	Flashed Stock Tank Gas Mol %	Recomb. Sep. Liquid Mol %
Nitrogen	-	0.64	0.10
Carbon Dioxide	-	23.83	3.90
Methane	-	45.53	7.44
Ethane	0.40	15.91	2.94
Propane	0.76	6.75	1.74
I-Butane	0.54	1.49	0.69
N-Butane	0.98	2.18	1.18
I-Pentane	0.74	0.91	0.77
N-Pentane	1.10	0.91	1.07
Hexanes	4.24	1.22	3.75
Heptanes	9.31	0.53	7.87
Octanes plus	81.93	0.10	68.55
TOTAL	100.00	100.00	100.00

RATIOS

Molar ratio	0.8348	0.1652	1.0000
Mass Ratio	0.9528	0.0472	1.0000
Gas Liquid Ratio	1.00 bbl @ SC	174.1 SCF	-

STREAM PROPERTIES

Molecular Weight	121.8	30.9	106.9
Density obs(g/cc)	0.8167 @ 15°C	-	-
Gas Density / API	41.69 API @ 60°F	1.066 (air=1)	-
GHV (BTU/scf)	-	1199	-

OCTANE PLUS PROPERTIES

Mol %	81.93	0.10	68.55
Molecular Weight	129.7	114.2	129.6
Density (g/cc)	0.8406 @ 15°C	-	-
API @ 60°F	36.77	-	-

LABORATORY FLASH SEPARATION DETAILS

Separation Temperature	19.9	°C
Flash Gas Volume	13.65	litres
Stabilised Liquid Volume	430	cc
Liquid Density	0.8126	g/cc

000080

PETROLEUM SERVICES

Client: SANTOS Ltd.

Report # LQ2405
Page 3 of 5Sample: DILCHEE-2 LOWER
Separator: 3137 kPa, 40°C
Date: 27/05/93, Cylinders #PDE 111 7 SPE 178COMPOSITIONAL ANALYSIS OF
RECOMBINED RESERVOIR FLUID

Component	Separator Liquid Mol %	Separator Gas Mol %	Recomb. Reservoir Fluid Mol %
Nitrogen	0.10	0.52	0.52
Carbon Dioxide	3.90	12.64	12.63
Methane	7.44	78.59	78.48
Ethane	2.94	6.20	6.19
Propane	1.74	1.10	1.10
I-Butane	0.69	0.18	0.18
N-Butane	1.18	0.22	0.22
I-Pentane	0.77	0.08	0.08
N-Pentane	1.07	0.07	0.07
Hexanes	3.75	0.11	0.12
Heptanes	7.87	0.20	0.21
Octanes plus	68.55	0.09	0.20
TOTAL	100.00	100.00	100.00
RATIOS			
Molar ratio	0.0016	0.9984	1.0000
Mass Ratio	0.0079	0.9921	1.0000
STREAM PROPERTIES			
Molecular Weight	106.9	21.4	21.5
Gas Density	-	0.739 (air=1)	0.743
GHV (BTU/scf)	-	974	981
OCTANE PLUS PROPERTIES			
Mol %	68.55	0.09	0.20
Molecular Weight	129.6	114.2	122.7
Density (g/cc) @15°C	-	-	0.7803
API @ 60°F	-	-	49.77

21.

000081

PETROLEUM SERVICES

Flash Liquid Analysis

Client: SANTOS Ltd.

Report # LQ2405
Page 4 of 5

Sample: DILCHEE-2 LOWER

Separator: 3137 kPa, 40°C

Date: 27/05/93, Cylinders #PDE 111 7 SPE 178

Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-88.6	Ethane	0.10	0.40
-42.1	Propane	0.27	0.76
-11.7	I-Butane	0.26	0.54
-0.5	N-Butane	0.47	0.98
27.9	I-Pentane	0.44	0.74
36.1	N-Pentane	0.65	1.10
36.1-68.9	C-6	3.00	4.24
80.0	Benzene	0.21	0.32
68.9-98.3	C-7	7.39	8.99
100.9	Methylcyclohexane	5.39	6.69
110.6	Toluene	10.93	14.45
98.3-125.6	C-8	6.43	6.86
136.1-144.4	Ethylbenz+Xylenes	14.57	16.73
125.6-150.6	C-9	6.95	6.60
150.6-173.9	CC-10	11.15	9.54
173.9-196.1	CC-11	10.32	8.04
196.1-215.0	CC-12	5.42	3.88
215.0-235.0	CC-13	5.97	3.96
235.0-252.2	CC-14	5.31	3.26
252.2-270.6	CC-15	2.36	1.35
270.6-287.8	CC-16	1.77	0.95
287.8-302.8	CC-17	0.89	0.45
302.8-317.2	CC-18	0.79	0.38
317.2-330.0	CC-19	0.60	0.27
330.0-344.4	CC-20	0.37	0.16
344.4-357.2	CC-21	0.26	0.10
357.2-369.4	CC-22	0.18	0.07
369.4-380.0	C-23	0.16	0.06
380.0-391.1	CC-24	0.11	0.04
391.1-401.7	CC-25	0.10	0.03
401.7-412.2	CC-26	0.09	0.03
412.2-422.2	C-27	0.03	0.01
>422.2	C-28+	0.06	0.02
Total		100.00	100.00
(0.00 = LESS THAN 0.01%)			

The above boiling point ranges refer to the normal paraffin hydrocarbon boiling in that range. Aromatics, branched hydrocarbons, naphthenes and olefins may have higher or lower carbon numbers but are grouped and reported according to their boiling points.

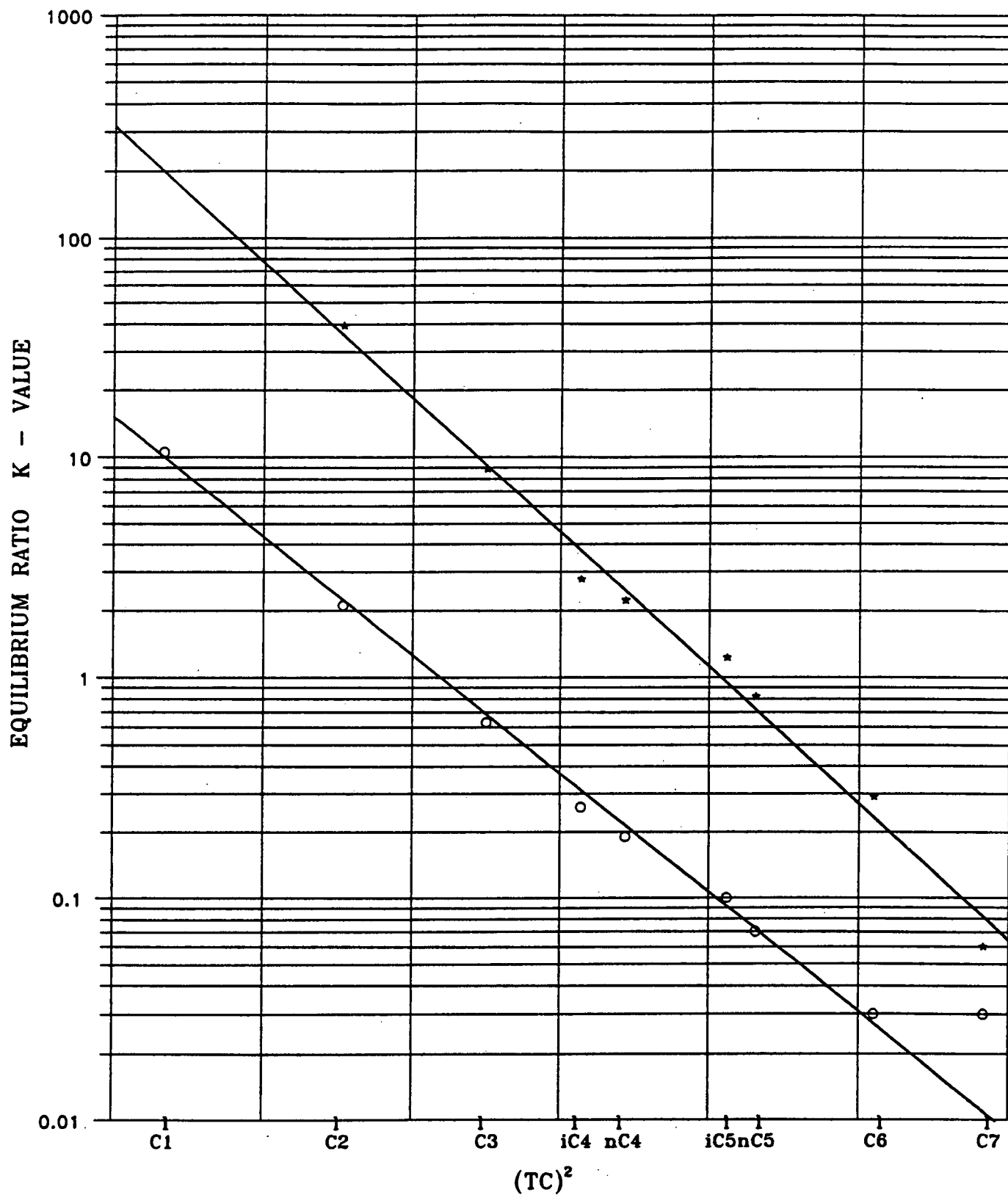
Oil Parameters:

Density	@	19.9 °C	0.8126	
Specific Gravity	@	15.6 °C	0.8167	
API Gravity			41.76	
Specific Gravity of C8+ fraction			0.8406	(calc)
Average molecular weight of C-8+ fraction				130

DILCHEE-2 LOWER

Separator: 3137 kPa, 40degC

Date: 27/05/93, Cylinders PDE 111 & SPE 178

***** Flash Gas Flash Liquid
ooooo HP Gas Recombined Liquid

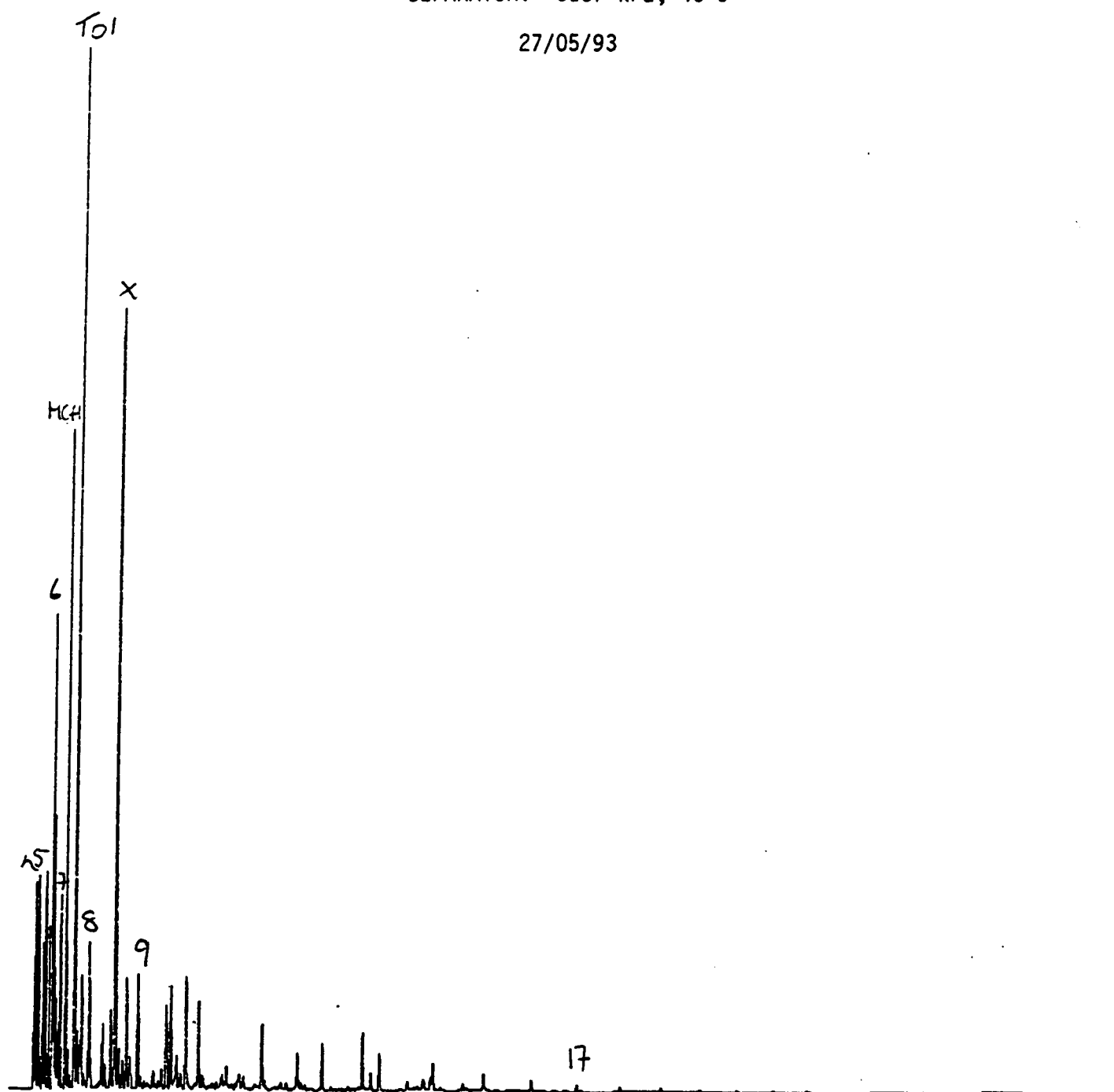
BT

000083

DILCHEE-2 LOWER

SEPARATOR: 3137 kPa, 40°C

27/05/93



e.7288/2

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 1 OF 3

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 02/02/94

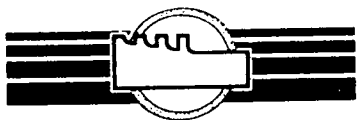
TEST TYPE : LET / BHP

OPR : T CHAPMAN

DATE/TIME	DESCRIPTION OF EVENTS
	This report has been generated by CARS Version 1.00 User No. 012.
	For further information, please call Dave Hawkes on (08) 354-0488.
02/02/94	
11:00	ARRIVE ON THE LOCATION - POSITION TEST EQUIPMENT
12:00	RIG UP TEST SEPARATOR AND FLOW LINES TO FLOW INLINE TO PRODUCTION
13:05	SHUT IN THE WELL - FIT AND PRESSURE TEST WIRELINE SWAB VALVE
13:25	WELL BACK ON LINE TO PRODUCTION ON 100% CHOKE
13:30	RIG UP WIRELINE UNIT AND LUBRICATOR
14:00	DIVERT FLOW THROUGH TEST SEPARATOR - INSTALL 1.75" ORIFACE PLATE
14:10	BYPASS WHILE CHANGING OUT FLUID DUMP SEAT
15:00	START LIQUID EVALUATION TEST
03/02/94	
08:27	CHOKE WELL BACK TO 30% IN PREPARATION FOR DRIFT RUN
08:30	RUN IN THE HOLE WITH 1.750" BLIND BOX
08:50	MEDIUM TO HEAVY FRICTION BINDS FROM 6500' TO 7080'KB
09:00	ARRIVE AT MAXIMUM SURVEY DEPTH OF 7080'KB - TUBING CLEAR
	PULL OUT OF HOLE
09:13	ARRIVE AT SURFACE - SECURE THE WIRELINE UNIT
09:15	OPEN CHOKE TO PRODUCTION SETTING OF 100% - CONTINUE L.E.T.
11:40	PREPARE BOTTOM HOLE PRESSURE RECORDERS - ENGAGE STYLUS
11:50	PRESSURE UP THE LUBRICATOR - START SURFACE STOP
13:00	DEPRESSURE THE LUBRICATOR - END SURFACE STOP
14:00	PRESSURE UP THE LUBRICATOR
	CUT CHOKE TO 30% - RUN IN THE HOLE WITH TANDUM 4000 PSI BHP RECORDERS

000084

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 2 OF 3

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 03/02/94

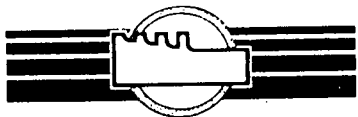
TEST TYPE : LET / BHP

OPR : T CHAPMAN

DATE/TIME	DESCRIPTION OF EVENTS
03/02/94	
14:18	HANG OFF RECORDERS AT 7080'KB - CONTINUE TO MONITOR FLOW
14:20	RETURN WELL TO THE PRODUCTION CHOKE SETTING OF 100%
04/02/94	
08:00	TAKE TWO 500cc WATER SAMPLES AS PER PROGRAMME
09:00	SHUT IN THE WELL FOR PROGRAMMED 96 HOUR BUILD UP
08/02/94	
09:00	ACHIEVE 96 HRS. OF BUILD UP - PULL OUT OF THE HOLE
09:15	CORKSCREW TUBING - VERY TIGHT TO 5200'KB
09:30	ARRIVE AT SURFACE - DEPRESSURE THE LUBRICATOR
10:30	PRESSURE UP THE LUBRICATOR - SURFACE STOP
11:30	DEPRESSURE THE LUBRICATOR - END BUILD UP
11:40	SERVICE B.H.P.RECORDERS - PREPARE TO RUN STATIC GRADIENT
12:00	PRESSURE UP THE LUBRICATOR - SURFACE STOP
12:15	DEPRESSURE THE LUBRICATOR - END SURFACE STOP
12:20	PRESSURE UP THE LUBRICATOR - RUN IN THE HOLE
	CONDUCT PROGRAMMED STATIC GRADIENT TO THE NEW MAXIMUM DEPTH OF 5200'K.B.
13:05	ARRIVE AT 5200'K.B. - FINAL GRADIENT STOP
13:15	PULL OUT OF THE HOLE
13:30	ARRIVE AT SURFACE - DEPRESSURE THE LUBRICATOR
13:35	PRESSURE UP THE LUBRICATOR - FINAL SURFACE STOP
13:50	DEPRESSURE THE LUBRICATOR
14:10	SERVICE B.H.P.RECORDERS - CHARTS GOOD
14:30	RIG DOWN WIRELINE UNIT AND ALL WELLTEST EQUIPMENT

000005

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 3 OF 3

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 08/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

DATE/TIME

DESCRIPTION OF EVENTS

08/02/94

14:50

SECURE AND DEPART LOCATION

16:00

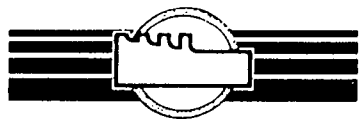
HAND WELL BACK TO PRODUCTION OPERATOR - JIM BINNING

END OF SURVEY

CHOKE : 100%
 FTHP : 9773 kPa
 Q_g : 165.149 F3 m³/d
 Q_e : 14.668 m³/d
 Q_w : 1.502 m³/d

000086

EXPERTEST PTY. LTD.



FIELD READINGS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 1 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 02/02/94

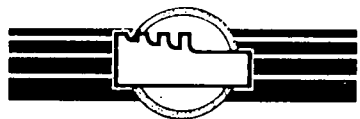
TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION			
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI)	ANNULUS PRESSURE (PSI)	WELLHEAD TEMP (°C)	CHOKE SIZE (%)	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF. PRESS. (IN WC)	GAS TEMP (°C)	TOTAL LIQUID (IN)	OIL (IN)	OIL API GRAVITY @ 60°F	WATER (IN)
This report has been generated by CARS Version 1.00 User No. 012.														
For further information, please call Dave Hawkes on (08) 354-0488.														
02/02/94														
11:00		ARRIVE ON THE LOCATION - POSITION TEST EQUIPMENT												
12:00		RIG UP TEST SEPARATOR AND FLOW LINES TO FLOW INLINE TO PRODUCTION												
13:05		SHUT IN THE WELL - FIT AND PRESSURE TEST WIRELINE SWAB VALVE												
13:25		WELL BACK ON LINE TO PRODUCTION ON 100% CHOKE												
13:30		RIG UP WIRELINE UNIT AND LUBRICATOR												
14:00		DIVERT FLOW THROUGH TEST SEPARATOR - INSTALL 1.75" ORIFACE PLATE												
14:00		1434	377	93	100		1.750							
14:10		BYPASS WHILE CHANGING OUT FLUID DUMP SEAT												
15:00	0.00	START LIQUID EVALUATION TEST												
15:00	0.00	1431	386	93	100		1.750	1300	91	89	15.50	7.00		8.50
16:00	1.00	1429	390	95	100		1.750	1300	91	89	18.00	9.50		8.50
18:00	3.00	1424	399	92	100		1.750	1280	94	88	22.75	13.75		9.00
03/02/94														
06:00	15.00	1403	399	92	100		1.750	1235	105	81	54.50	42.50		12.00
08:00	17.00	1404	400	91	100		1.750	1245	104	85	59.75	47.25		12.50
08:27	17.45	CHOKE WELL BACK TO 30% IN PREPARATION FOR DRIFT RUN												
08:30	17.50	RUN IN THE HOLE WITH 1.750" BLIND BOX												
08:50	17.83	MEDIUM TO HEAVY FRICTION BINDS FROM 6500' TO 7080'KB												
09:00	18.00	ARRIVE AT MAXIMUM SURVEY DEPTH OF 7080'KB - TUBING CLEAR												

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EXPERTEST PTY. LTD.



FIELD READINGS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130' - 7415' KB

PAGE: 2 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 03/02/94

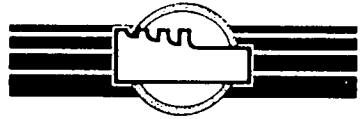
TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION			
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/)	ANNULUS PRESSURE (PSI/)	WELLHEAD TEMP (°C)	CHOKE SIZE (%)	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF PRESS. (IN WC)	GAS TEMP (°C)	TOTAL LIQUID (IN)	OIL (IN)	OIL API GRAVITY @ 60°F	WATER (IN)
03/02/94														
09:00	18.00	PULL OUT OF HOLE												
09:13	18.22	ARRIVE AT SURFACE - SECURE THE WIRELINE UNIT												
09:15	18.25	OPEN CHOKE TO PRODUCTION SETTING OF 100% - CONTINUE L.E.T.												
10:00	19.00	1409	402	92	100		1.750	1250	105	85	64.25	51.25		13.00
11:40	20.67	PREPARE BOTTOM HOLE PRESSURE RECORDERS - ENGAGE STYLUS												
11:50	20.84	1414	406	95	100									
11:50	20.84	PRESSURE UP THE LUBRICATOR - START SURFACE STOP												
12:00	21.00	1414	406	95	100		1.750	1260	106	88	69.25	55.75		13.50
13:00	22.00	DEPRESSURE THE LUBRICATOR - END SURFACE STOP												
14:00	23.00	1415	407	95	100		1.750	1260	105	88	74.25	60.25		14.00
14:00	23.00	PRESSURE UP THE LUBRICATOR												
14:00	23.00	CUT CHOKE TO 30% - RUN IN THE HOLE WITH TANDUM 4000 PSI BHP RECORDERS												
14:18	23.30	HANG OFF RECORDERS AT 7080' KB - CONTINUE TO MONITOR FLOW												
14:20	23.33	RETURN WELL TO THE PRODUCTION CHOKE SETTING OF 100%												
16:00	25.00	1405	400	95	100		1.750	1260	93	89	79.25	64.75		14.50
18:00	27.00	1404	397	94	100		1.750	1258	93	89	84.00	69.00		15.00
04/02/94														
06:00	39.00	1428	399	93	100		1.750	1275	94	85	112.00	94.00		18.00
08:00	41.00	1426	400	93	100		1.750	1275	93	85	118.50	100.00		18.50
08:00	41.00	TAKE TWO 500cc WATER SAMPLES AS PER PROGRAMME												
09:00	42.00	1421	401	91	100		1.750	1275	93	84	121.00	102.50		18.50

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EXPERTEST PTY. LTD.



FIELD READINGS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130' - 7415' KB

PAGE: 3 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 04/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/■)	ANNULUS PRESSURE (PSI/■)	WELLHEAD TEMP (°C)	CHOKE SIZE (%)	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF PRESS. (IN WC)	GAS TEMP (°C)	TOTAL LIQUID (IN ■)	OIL (IN ■)	OIL API GRAVITY @ 60°F	WATER (IN ■)	
04/02/94															
09:00	0.00	SHUT IN THE WELL FOR PROGRAMMED 96 HOUR BUILD UP													
09:15	0.25	2076	374												
09:30	0.50	2069	370												
09:45	0.75	2068	358												
10:00	1.00	2068	351												
10:15	1.25	2067	341												
10:30	1.50	2067	331												
10:45	1.75	2067	328												
11:00	2.00	2067	326												
11:15	2.25	2065	324												
11:30	2.50	2064	321												
11:45	2.75	2066	315												
12:00	3.00	2069	310												
12:15	3.25	2065	308												
12:30	3.50	2064	305												
12:45	3.75	2066	303												
13:00	4.00	2068	302												
14:00	5.00	2068	294												
18:00	9.00	2066	280												
05/02/94															
06:00	21.00	2070	267												

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EXPERTEST PTY. LTD.



FIELD READINGS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130' - 7415' KB

PAGE: 4 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 05/02/94

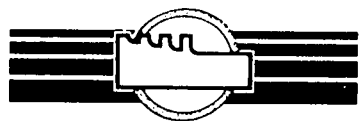
TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/)	ANNULUS PRESSURE (PSI/)	WELLHEAD TEMP (°C)	CHOKE SIZE (%)	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF PRESS. (IN WC)	GAS TEMP (°F)	TOTAL LIQUID (IN)	OIL (IN)	OIL API GRAVITY @ 60°F	WATER (IN)	
05/02/94															
10:00	25.00	2069	267												
14:00	29.00	2067	266												
18:00	33.00	2070	267												
06/02/94															
06:00	45.00	2069	265												
10:00	49.00	2067	267												
14:00	53.00	2070	267												
18:00	57.00	2070	267												
07/02/94															
06:00	69.00	2074	267												
10:00	73.00	2072	268												
14:00	77.00	2070	268												
18:00	81.00	2069	267												
08/02/94															
06:00	93.00	2071	262												
09:00	96.00	ACHIEVE 96 HRS. OF BUILD UP - PULL OUT OF THE HOLE													
09:00	96.00	2070	262												
09:15		CORKSCREW TUBING - VERY TIGHT TO 5200' KB													
09:30		ARRIVE AT SURFACE - DEPRESSURE THE LUBRICATOR													
09:30		2070	262												
10:30		PRESSURE UP THE LUBRICATOR - SURFACE STOP													

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EXPERTEST PTY. LTD.



FIELD READINGS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 5 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 08/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/)	ANNULUS PRESSURE (PSI/)	WELLHEAD TEMP (°C)	CHOKE SIZE (%)	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF. PRESS. (IN WC)	GAS TEMP (°F)	TOTAL LIQUID (IN)	OIL (IN)	OIL API GRAVITY @ 60°F	WATER (IN)	
10:30		2069	263												
11:30		DEPRESSURE THE LUBRICATOR - END BUILD UP													
11:30		2070	263												
11:40		SERVICE B.H.P.RECORDERS - PREPARE TO RUN STATIC GRADIENT													
12:00		PRESSURE UP THE LUBRICATOR - SURFACE STOP													
12:00		2070	263												
12:15		DEPRESSURE THE LUBRICATOR - END SURFACE STOP													
12:15		2069	263												
12:20		PRESSURE UP THE LUBRICATOR - RUN IN THE HOLE													
12:20		2069	264												
12:20		CONDUCT PROGRAMMED STATIC GRADIENT TO THE NEW MAXIMUM DEPTH OF 5200'K.B.													
13:05		ARRIVE AT 5200'K.B. - FINAL GRADIENT STOP													
13:05		2069	263												
13:15		PULL OUT OF THE HOLE													
13:15		2069	263												
13:30		ARRIVE AT SURFACE - DEPRESSURE THE LUBRICATOR													
13:30		2069	263												
13:35		PRESSURE UP THE LUBRICATOR - FINAL SURFACE STOP													
13:50		DEPRESSURE THE LUBRICATOR													
13:50		2069	264												
14:10		SERVICE B.H.P.RECORDERS - CHARTS GOOD													
14:30		RIG DOWN WIRELINE UNIT AND ALL WELLTEST EQUIPMENT													

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CUSTOMER : SANTOS LTD.	PERFORATIONS: 7130'-7415'KB	PAGE: 6 OF 5
WELL NAME: DILCHEE #2 UPPER	FORMATION : TOOLACHEE/DARRA.	DATE: 08/02/94
TEST TYPE : LET / BHP		OPR : T CHAPMAN

[illegible]

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TEST RESULTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 1 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

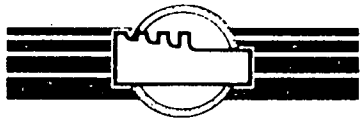
DATE: 02/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI Pa)	ANNULUS PRESSURE (PSI Pa)	WELLHEAD TEMP (°F °C)	CHOKE SIZE (%)	PRESSURE (PSI KPa)	TEMP (°F °C)	GAS m³10³/D	OIL m³/D	WATER m³/D	GAS m³10³	OIL m³	WATER m³	LGR m³/10⁶m³	
02/02/94															
11:00															
12:00															
13:05															
13:25															
13:30															
14:00															
14:00															
14:10															
15:00	0.00														
15:00	0.00	9866	2661	93	100	8963	89	163.50	0.00	0.00	0.00	0.00	0.00		
16:00	1.00	9853	2689	95	100	8963	89	163.50	16.02	0.00	6.81	0.67	0.00	97.98	
18:00	3.00	9818	2751	92	100	8825	88	165.12	13.62	1.60	20.57	1.80	0.13	92.17	
03/02/94															
06:00	15.00	9673	2751	92	100	8515	81	173.95	15.35	1.60	107.55	9.48	0.93	97.47	
08:00	17.00	9680	2758	91	100	8584	85	172.23	15.22	1.60	121.90	10.75	1.07	97.67	
08:27	17.45														
08:30	17.50														
08:50	17.83														
09:00	18.00														

000033



TEST RESULTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130' - 7415' KB

PAGE: 2 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 03/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI Pa)	ANNULUS PRESSURE (PSI Pa)	WELLHEAD TEMP (°F °C)	CHOKE SIZE (%)	PRESSURE (PSI Pa)	TEMP (°F °C)	GAS (MMSCFD m³10³/D)	OIL (BBL/D m³/D)	WATER (BBL/D m³/D)	GAS (MMSCFD m³10³)	OIL (BBL/D m³)	WATER (BBL/D m³)	LGR	
09:00	18.00	PULL OUT OF HOLE													
09:13	18.22	ARRIVE AT SURFACE - SECURE THE WIRELINE UNIT													
09:15	18.25	OPEN CHOKE TO PRODUCTION SETTING OF 100% - CONTINUE L.E.T.													
10:00	19.00	9715	2772	92	100	8618	85	173.45	12.82	1.60	136.36	11.81	1.20	83.13	
11:40	20.67	PREPARE BOTTOM HOLE PRESSURE RECORDERS - ENGAGE STYLUS													
11:50	20.84	9749	2799	95	100										
11:50	20.84	PRESSURE UP THE LUBRICATOR - START SURFACE STOP													
12:00	21.00	9749	2799	95	100	8687	88	173.82	14.42	1.60	150.84	13.02	1.33	92.17	
13:00	22.00	DEPRESSURE THE LUBRICATOR - END SURFACE STOP													
14:00	23.00	9756	2806	95	100	8687	88	172.99	14.42	1.60	165.26	14.22	1.47	92.60	
14:00	23.00	PRESSURE UP THE LUBRICATOR													
14:00	23.00	CUT CHOKE TO 30% - RUN IN THE HOLE WITH TANDUM 4000 PSI BHP RECORDERS													
14:18	23.30	HANG OFF RECORDERS AT 7080' KB - CONTINUE TO MONITOR FLOW													
14:20	23.33	RETURN WELL TO THE PRODUCTION CHOKE SETTING OF 100%													
16:00	25.00	9687	2758	95	100	8687	89	162.42	14.42	1.60	178.79	15.42	1.60	98.63	
18:00	27.00	9680	2737	94	100	8674	89	162.27	13.62	1.60	192.31	16.55	1.74	93.79	
04/02/94															
06:00	39.00	9846	2751	93	100	8791	85	165.94	13.35	1.60	275.29	23.23	2.54	90.10	
08:00	41.00	9832	2758	93	100	8791	85	165.06	19.22	1.60	289.04	24.83	2.67	126.17	
08:00	41.00	TAKE TWO 500cc WATER SAMPLES AS PER PROGRAMME													
09:00	42.00	9798	2765	91	100	8791	84	165.46	16.02	0.00	295.93	25.50	2.67	96.82	
09:00	0.00	SHUT IN THE WELL FOR PROGRAMMED 96 HOUR BUILD UP													

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 3 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 04/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI Pa)	ANNULUS PRESSURE (PSI Pa)	WELLHEAD TEMP (°F °C)	CHOKE SIZE (%)	PRESSURE (PSI Pa)	TEMP (°F °C)	GAS m³10³/D	OIL m³/D	WATER m³/D	GAS m³10³	OIL m³	WATER m³	LGR m³/10⁶m³	
09:15	0.25	14314	2579												
09:30	0.50	14265	2551												
09:45	0.75	14258	2468												
10:00	1.00	14258	2420												
10:15	1.25	14252	2351												
10:30	1.50	14252	2282												
10:45	1.75	14252	2261												
11:00	2.00	14252	2248												
11:15	2.25	14238	2234												
11:30	2.50	14231	2213												
11:45	2.75	14245	2172												
12:00	3.00	14265	2137												
12:15	3.25	14238	2124												
12:30	3.50	14231	2103												
12:45	3.75	14245	2089												
13:00	4.00	14258	2082												
14:00	5.00	14258	2027												
18:00	9.00	14245	1931												
05/02/94															
06:00	21.00	14272	1841												
10:00	25.00	14265	1841												
14:00	29.00	14252	1834												

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TEST RESULTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 4 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 05/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI Pa)	ANNULUS PRESSURE (PSI Pa)	WELLHEAD TEMP (°F °C)	CHOKE SIZE (%)	PRESSURE (PSI Pa)	TEMP (°F °C)	GAS m³/10³/D	OIL m³/D	WATER m³/D	GAS m³/10³	OIL m³	WATER m³	LGR m³/10⁶m³	
18:00	33.00	14272	1841												
06/02/94															
06:00	45.00	14265	1827												
10:00	49.00	14252	1841												
14:00	53.00	14272	1841												
18:00	57.00	14272	1841												
07/02/94															
06:00	69.00	14300	1841												
10:00	73.00	14286	1848												
14:00	77.00	14272	1848												
18:00	81.00	14265	1841												
08/02/94															
06:00	93.00	14279	1806												
09:00	96.00	ACHIEVE 96 HRS. OF BUILD UP - PULL OUT OF THE HOLE													
09:00	96.00	14272	1806												
09:15		CORKSCREW TUBING - VERY TIGHT TO 5200'KB													
09:30		ARRIVE AT SURFACE - DEPRESSURE THE LUBRICATOR													
09:30		14272	1806												
10:30		PRESSURE UP THE LUBRICATOR - SURFACE STOP													
10:30		14265	1813												
11:30		DEPRESSURE THE LUBRICATOR - END BUILD UP													
11:30		14272	1813												

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CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 5 OF 5

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 08/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI Pa)	ANNULUS PRESSURE (PSI Pa)	WELLHEAD TEMP (°F °C)	CHOKE SIZE (%)	PRESSURE (PSI Pa)	TEMP (°F °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	LGR m ³ /10 ⁶ m ³	
11:40		SERVICE B.H.P.RECORDERS - PREPARE TO RUN STATIC GRADIENT													
12:00		PRESSURE UP THE LUBRICATOR - SURFACE STOP													
12:00		14272	1813												
12:15		DEPRESSURE THE LUBRICATOR - END SURFACE STOP													
12:15		14265	1813												
12:20		PRESSURE UP THE LUBRICATOR - RUN IN THE HOLE													
12:20		14265	1820												
12:20		CONDUCT PROGRAMMED STATIC GRADIENT TO THE NEW MAXIMUM DEPTH OF 5200'K.B.													
13:05		ARRIVE AT 5200'K.B. - FINAL GRADIENT STOP													
13:05		14265	1813												
13:15		PULL OUT OF THE HOLE													
13:15		14265	1813												
13:30		ARRIVE AT SURFACE - DEPRESSURE THE LUBRICATOR													
13:30		14265	1813												
13:35		PRESSURE UP THE LUBRICATOR - FINAL SURFACE STOP													
13:50		DEPRESSURE THE LUBRICATOR													
13:50		14265	1820												
14:10		SERVICE B.H.P.RECORDERS - CHARTS GOOD													
14:30		RIG DOWN WIRELINE UNIT AND ALL WELLTEST EQUIPMENT													
14:50		SECURE AND DEPART LOCATION													
16:00		HAND WELL BACK TO PRODUCTION OPERATOR - JIM BINNING													
16:00		END OF SURVEY													

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GAS FLOW CALCULATIONS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7415'KB

PAGE: 1 OF 1

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARRA.

DATE: 02/02/94

TEST TYPE : LET / BHP

OPR : T CHAPMAN

ORIFICE METER TYPE: DANIEL SNR.

STATIC PRESSURE RANGE : 1500 PSIG

GAS SPECIFIC GRAVITY (SG) = 0.7910

METER RUN SIZE : 3.826 Inches

DIFFERENTIAL PRESS. RANGE: 200 IN WC

FG $\sqrt{(I/SG)}$ = 1.1244

SEPARATOR NO : 37

STANDARD CONDITIONS : 14.73 PSI @ 60°F

C₂ (FU x FG) = 26.9850

DATE TIME	FLOW TIME (HOURS)	CHOKE SIZE (%)	STATIC PRESS P _F (PSIA)	DIFF PRESS H _W (IN WC)	GAS FLOW TEMP (°F)	ORIF. PLATE SIZE (IN)	$\sqrt{(P_F \times H_W)}$	$C_1 = F_B \times F_{TF} \times F_{PV} \times Y_2$				C ₁	C (C = C ₁ × C ₂)	GAS FLOW RATE $Q = \sqrt{(P_F \times H_W) \times C}$		
								F _B	F _{TF}	F _{PV}	Y ₂			(MMSCFD)	(m ³ 10 ³ /D)	
					This report has been generated by CARS Version 1.00							User No.	012.			
					For further information, please call Dave Hawkes on							(08) 354-0488.				
	02/02/94															
	15:00	0.00	100	1315	91	192	1.750	345.89	637.83	0.8929	1.0859	1.0004	618.73	16696.52	5.775	163.495
	16:00	1.00	100	1315	91	192	1.750	345.89	637.83	0.8929	1.0859	1.0004	618.73	16696.52	5.775	163.495
	18:00	3.00	100	1295	94	190	1.750	348.86	637.83	0.8942	1.0859	1.0005	619.57	16719.13	5.833	165.123
	03/02/94															
	06:00	15.00	100	1250	105	178	1.750	362.25	637.83	0.9029	1.0909	1.0005	628.58	16962.35	6.145	173.952
	08:00	17.00	100	1260	104	185	1.750	361.96	637.83	0.8979	1.0870	1.0005	622.87	16808.05	6.084	172.231
	10:00	19.00	100	1265	105	185	1.750	364.41	637.83	0.8979	1.0873	1.0005	623.04	16812.77	6.127	173.449
	12:00	21.00	100	1275	106	190	1.750	367.59	637.83	0.8942	1.0847	1.0005	618.96	16702.72	6.140	173.816
	14:00	23.00	100	1275	105	190	1.750	365.85	637.83	0.8942	1.0847	1.0005	618.96	16702.64	6.111	172.993
	16:00	25.00	100	1275	93	192	1.750	344.31	637.83	0.8929	1.0837	1.0005	617.48	16662.69	5.737	162.418
	18:00	27.00	100	1273	93	192	1.750	344.04	637.83	0.8929	1.0836	1.0005	617.41	16660.96	5.732	162.274
	04/02/94															
	06:00	39.00	100	1290	94	185	1.750	348.19	637.83	0.8979	1.0888	1.0005	623.86	16834.86	5.862	165.944
	08:00	41.00	100	1290	93	185	1.750	346.33	637.83	0.8979	1.0888	1.0005	623.86	16834.77	5.830	165.059
	09:00	42.00	100	1290	93	183	1.750	346.33	637.83	0.8991	1.0899	1.0005	625.37	16875.65	5.845	165.459

Qg: 5.862 165.149

	PERFORATION
R	FORMATION

TEST TYPE : LET / BHP

OPR : T CHAPMAN

TANK	#1 =	56.6	bbbls/m ³
CAPACITY	#2 =		bbbls/m ³

TANK	#1 = .267 Cu. m/in
SCALE	#2 = bbls/in - m³/cm

OIL API GRAVITY = 0.0 @ 60°F

DATE TIME	FLOW TIME (HOURS)	TANK USED (NUMBER)	TOTAL TANK DIP (IN/C)	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP (IN/C)	TANK PRODUCTION (E m ³)	FLOW RATE (E m ³ /D)	CUMULATIVE PRODUCTION (E m ³)	TANK DIP (IN/)	TANK PRODUCTION (m ³)	FLOW RATE (m ³ /D)	CUMULATIVE PRODUCTION (m ³)
This report has been generated by CARS Version 1.00 User No. 012.											
For further information, please call Dave Hawkes on (08) 354-0488.											
02/02/94											
15:00	0.00	1	15.50	7.00	0.000	0.000	0.000	8.50	0.000	0.000	0.000
16:00	1.00	1	18.00	9.50	0.668	16.020	0.668	8.50	0.000	0.000	0.000
18:00	3.00	1	22.75	13.75	1.135	13.617	1.802	9.00	0.133	1.602	0.133
03/02/94											
06:00	15.00	1	54.50	42.50	7.676	15.352	9.479	12.00	0.801	1.602	0.934
08:00	17.00	1	59.75	47.25	1.268	15.219	10.747	12.50	0.133	1.602	1.068
10:00	19.00	1	64.25	51.25	1.068	12.816	11.815	13.00	0.134	1.602	1.201
12:00	21.00	1	69.25	55.75	1.201	14.418	13.016	13.50	0.133	1.602	1.335
14:00	23.00	1	74.25	60.25	1.202	14.418	14.218	14.00	0.134	1.602	1.468
16:00	25.00	1	79.25	64.75	1.201	14.418	15.419	14.50	0.133	1.602	1.602
18:00	27.00	1	84.00	69.00	1.135	13.617	16.554	15.00	0.133	1.602	1.735
04/02/94											
06:00	39.00	1	112.00	94.00	6.675	13.350	23.229	18.00	0.801	1.602	2.536
08:00	41.00	1	118.50	100.00	1.602	19.224	24.831	18.50	0.134	1.602	2.670
09:00	42.00	1	121.00	102.50	0.667	16.020	25.498	18.50	0.000	0.000	2.670
(32 HRS) Q _c = 14.668 m ³ /d Q _w = 1.502 m ³ /d											

EXPERTEST PTY. LTD.		BHP/BHT GAUGE RUN DATA							
		CUSTOMER : SANTOS LIMITED			PERFORATIONS: 7130'-7415'KB		PAGE: 1 OF 1		
		WELL NAME: DILCHEE #2 UPPER			FORMATION : TOOLACHEE/DARALINGIE		DATE: 3/2/94		
		TEST TYPE : L.E.T./B.H.P.S.					OPR : T. CHAPMAN		
GAUGE DATA		UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE	RUN DATA		TIME (HOURS)	TUBING PRESSURE (KPA)	ANNULUS PRESSURE (KPA)
ELEMENT SERIAL NO.		850207	850208		DATE : 03/02/94				
ELEMENT RANGE PSI		4075	4100		PRESSURE LUBRICATOR :		11:50	9750	2799
RECORDING SECTION SERIAL NO.		K3433	K3434		RUN IN HOLE :		14:00	9756	2806
DATE OF CALIBRATION: @ 290°F		6/3/92	6/3/92		ON DEPTH AT : 7080 FT		14:18	-	-
CLOCK/BATTERY SERIAL NO.		1389	F-15693		DATE : 08/02/94				
CLOCK/BATTERY RANGE HOUR		120	120		PULL OUT OF HOLE :		09:00	14273	1806
LEAD SCREW/BATTERY TYPE TURNS		15	15		AT SURFACE :		09:30	14273	1806
					DEPRESSURE LUBRICATOR :		11:30	14273	1813
ENGAGE STYLUS/BATTERY DATE 03/02/94 TIME		11:40	11:40		MAXIMUM BHT AT 7080 FT = 272 °F				
DISENGAGE STYLUS/BATTERY DATE 08/02/94 TIME		11:45	11:45		N.B. ALL DEPTHS ARE MEASURED FROM K.B.				
DATE	TIME	REMARKS							
03/02/94	14:30	WELL FLOWING INLINE TO PRODUCTION ON 100% CHOKE THROUGH TEST							
		SEPARATOR AS PART OF LIQUID EVALUATION TEST.							
04/02/94	09:00	SHUT IN THE WELL FOR 96 HOUR BUILD UP.							
08/02/94	09:00	ACHEIVE 96 HOURS OF BUILD UP - PULL OUT OF THE HOLE.							
		CORK SCREW TUBING TO APPROXIMATELY 5200'KB - NOTIFY PET. ENG.							

000100

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS		RUN 01 FIELD DILCHEE	WELL 2U
EFF DEPTH		WELL STAT	TOOL HUNG 7080'KB
CASING	-	CASING PRESS	ON BOTTOM 1418 3/2
LINER	-	TUBING PRESS	OFF BOTTOM 0900 4/2
DATE	940204	ELEMENT RANGE 0 - 4110	ZERO POINT
ELEVATION		ZONE	SHUT-IN 0900 8/2
MAX TEMP	272	PICK-UP	ON-PROD
PERF	-	CAL SER NO. 850208	MPP
TUBING	-		
UNITS	ENGLISH	PURPOSE	LET/BHP

SURVEY DATA

CO. SANTOS				RUN 01 FIELD DILCHEE				WELL 2U			
	TIME	P-T	DP-DT	DTIME		TIME	P-T	DP-DT	DTIME		
<u>START B/L</u>	9:00	2327.3	2327.3	.0		11:33	2540.6	2540.6	26.5		
	9:00	2342.5	2342.5	.0		14:48	2542.9	2542.9	29.8		
	9:00	2370.2	2370.2	.0		18:11	2542.0	2542.0	33.2		
	9:00	2407.2	2407.2	.0		21:42	2541.2	2541.2	36.7		
	9:00	2435.1	2435.1	.0		1:28	2542.2	2542.2	40.5		
	9:00	2470.3	2470.3	.0		5:20	2543.6	2543.6	44.3		
	9:02	2501.1	2501.1	.0		9:50	2543.0	2543.0	48.8		
	9:02	2522.1	2522.1	.0		13:48	2543.6	2543.6	52.8		
	9:03	2531.1	2531.1	.1		18:00	2544.9	2544.9	57.0		
	9:11	2533.7	2533.7	.2		22:35	2544.5	2544.5	61.6		
	9:26	2534.7	2534.7	.4		3:22	2544.9	2544.9	66.4		
	10:04	2535.8	2535.8	1.1		8:15	2545.0	2545.0	71.3		
	10:43	2535.2	2535.2	1.7		13:19	2546.1	2546.1	76.3		
	11:33	2535.5	2535.5	2.5		18:37	2546.4	2546.4	81.6		
	12:38	2536.9	2536.9	3.6		0:05	2547.6	2547.6	87.1		
	13:59	2538.4	2538.4	5.0		5:42	2547.2	2547.2	92.7		
	15:38	2538.1	2538.1	6.6		9:00	2547.5	2547.5	96.0	<u>END B/L</u>	
	17:35	2538.0	2538.0	8.6	-	5:50	2326.3	2326.3	-14.8		
	19:36	2538.8	2538.8	10.6	-	3:18	2327.7	2327.7	-12.3		
	21:52	2539.3	2539.3	12.9	-	0:39	2327.1	2327.1	-9.7		
	0:06	2540.1	2540.1	15.1		1:54	2330.9	2330.9	-7.1		
	2:53	2539.0	2539.0	17.9		4:28	2329.5	2329.5	-4.5		
	5:36	2540.5	2540.5	20.6		6:59	2328.5	2328.5	-2.0		
	8:38	2539.2	2539.2	23.6		8:40	2328.2	2328.2	-.3		

LUBRICATOR; DWT: IN: 1414 psig / OUT: 2070 psig
 AMERADA: IN: 1414 psig / OUT: 2070 psig

ELEMENT #850207 was also run.

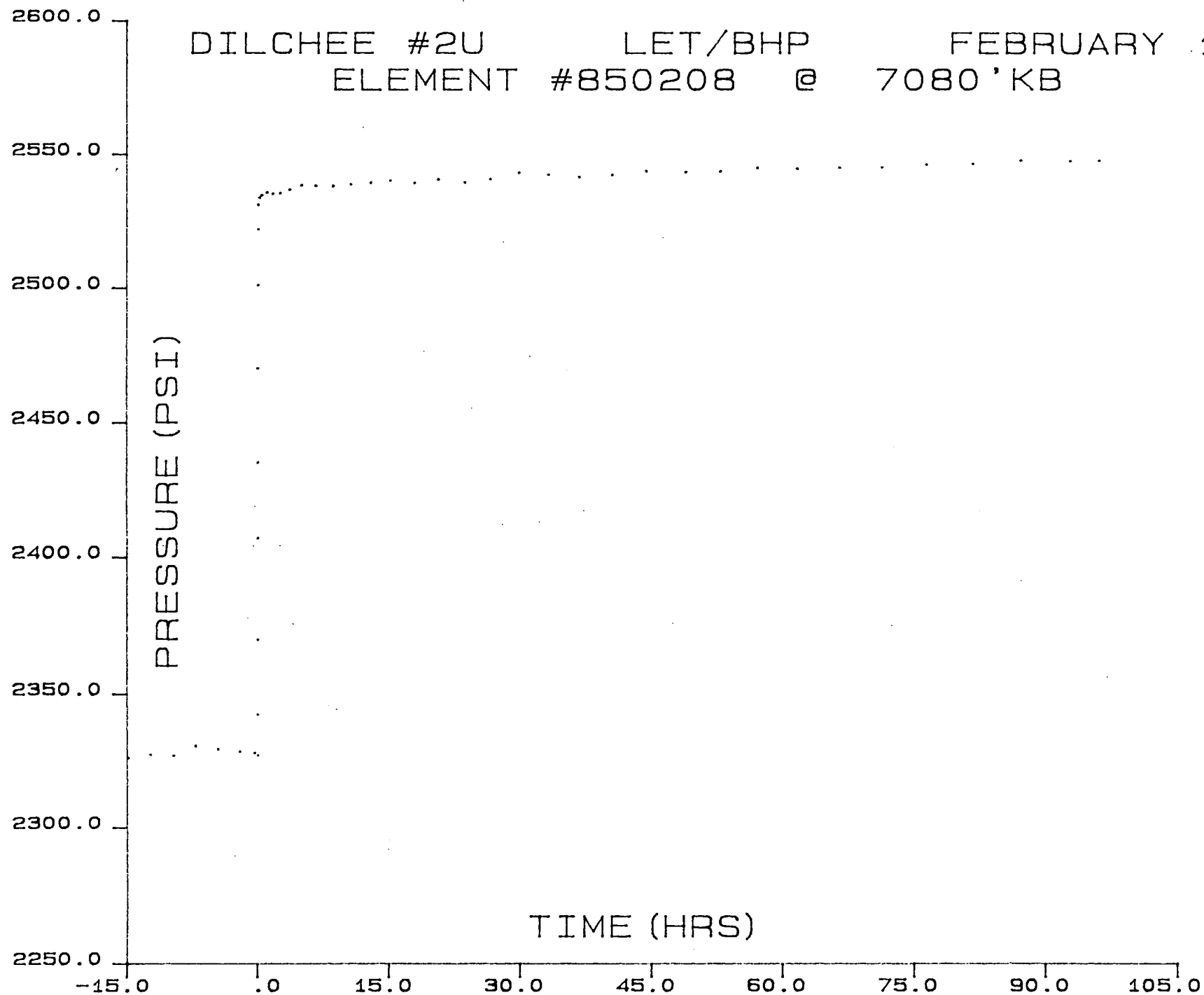
DILCHEE #2U

LET/BHP

FEBRUARY 1994

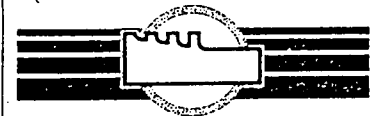
ELEMENT #850208 @

7080'KB



000102

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS LIMITED

PERFORATIONS: 7130'-7415'KB

PAGE: 1 OF 1

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE/DARALINGIE

DATE: 08/02/94

TEST TYPE : STATIC GRADIENT - LET/BHPS

OPR : T. CHAPMAN

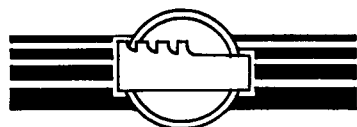
GAUGE DATA		UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE	RUN DATA	TIME (HOURS)	TUBING PRESSURE (KPA)	ANNULUS PRESSURE (KPA)
ELEMENT SERIAL NO.		850207	850208		DATE : 08/02/94			
ELEMENT RANGE	PSI	4075	4100		PRESSURE LUBRICATOR :	12:00	14273	1813
RECORDING SECTION SERIAL NO.		K 3433	K3434		RUN IN HOLE :	12:20	14266	1820
DATE OF CALIBRATION:	@ 290 F	06/03/92	06/03/92		ON DEPTH AT : 5200 FT	13:05	14266	1813
CLOCK/BATTERY SERIAL NO.		25511	#1		DATE : 08/02/94			
CLOCK/BATTERY RANGE	HOOR	3	3		PULL OUT OF HOLE :	13:15	14266	1813
LEAD SCREW/BATTERY TYPE	TLS	15	15		AT SURFACE :	13:30	14266	1813
					DEPRESSURE LUBRICATOR :	13:50	14266	1820
ENGAGE STYLUS/BATTERY	DATE 08/02/94 TIME	11:53	11:53		MAXIMUM BHT AT 5200 FT = 258 °F			
DISENGAGE STYLUS/BATTERY	DATE 08/02/94 TIME	14:25	14:25		N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

DATE	TIME	REMARKS
08/02/94		STATIC GRADIENT RUN AT THE CONCLUSION OF 96 HOURS OF BUILD UP.
		PROGRAMMED GRADIENT STOPS ALTERED TO A MAXIMUM OF 5200' DUE TO CORKSCREW TUBING.

000103

EXPERTEST PTY. LTD.

STATIC PRESSURE GRADIENT SURVEY



Location: DILCHEE #2U

Tested: 8th February 1994.

Formation: TOOL/DARA

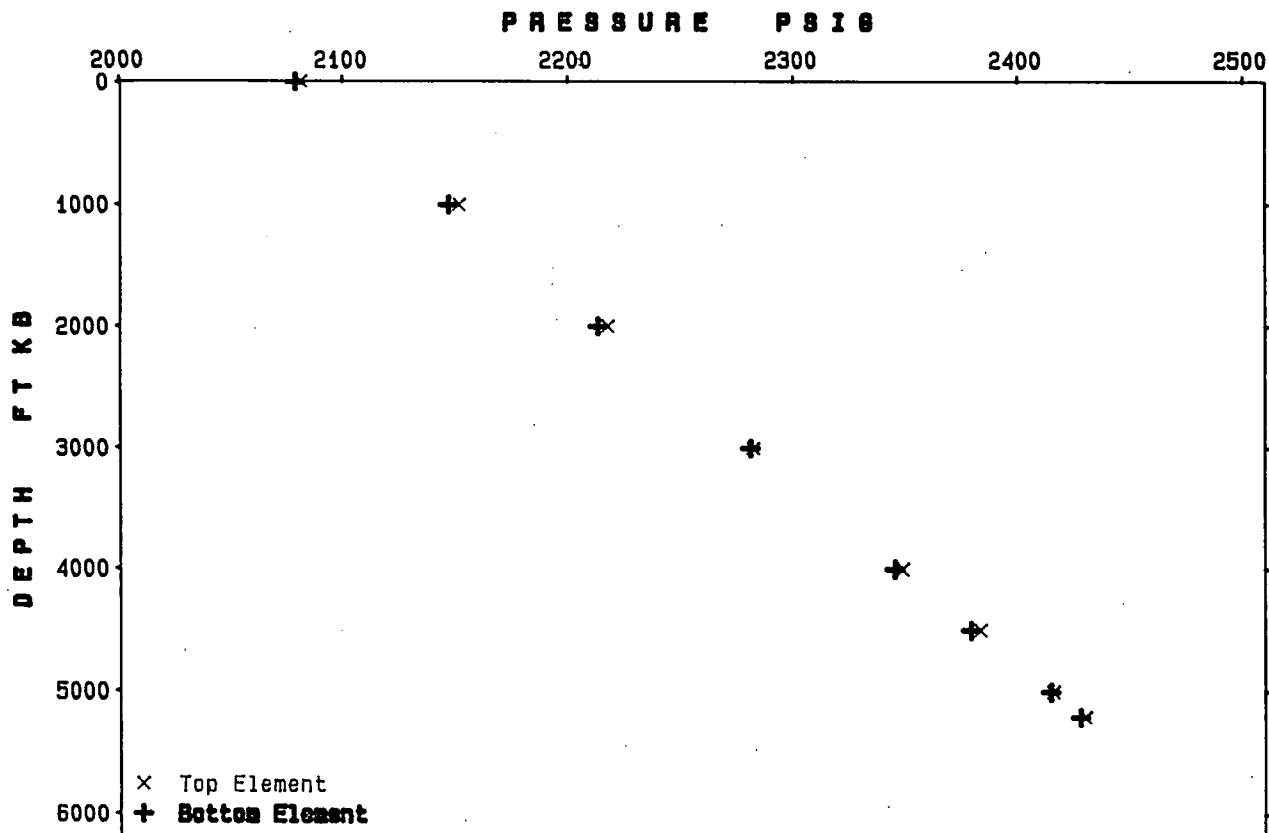
Client: SANTOS LTD.

PRESSURE ELEMENT DATA

Position	Serial No	Range	Calibrated
Top	850207	4075	6/ 3/92
Bottom	850208	4100	6/ 3/92

WELL DATA

DWT In	2070 PSIG
DWT Out	2069 PSIG
Max BHT	258 F



TOP ELEMENT

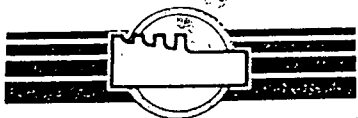
BOTTOM ELEMENT

Depth FT KB	Deflection Inches	Pressure PSIG	Gradient PSI/FT	Deflection Inches	Pressure PSIG	Gradient PSI/FT
LUB.	1.0240	2081.0	-	1.0125	2078.5	-
1000	1.0585	2151.4	0.070	1.0455	2146.4	0.068
2000	1.0910	2217.8	0.066	1.0780	2213.2	0.067
3000	1.1225	2282.1	0.064	1.1110	2281.0	0.068
4000	1.1550	2348.4	0.066	1.1420	2344.8	0.064
4500	1.1720	2383.2	0.069	1.1585	2378.7	0.068
5000	1.1880	2415.8	0.065	1.1760	2414.7	0.072
5200	1.1950	2430.1	0.072	1.1825	2428.1	0.067
LUB.	1.0260	2085.1	-	1.0160	2085.7	-

GENERAL REMARKS

STATIC GRADIENT RUN AT THE CONCLUSION OF 96 HR BUILD UP

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : Santos L.T.O.

PERFORATIONS: 8128' - 8761' KB

PAGE: 1 OF 2

WELL NAME: Dilchee #2 L

FORMATION : Patchawarra

DATE: 1.3.94

TEST TYPE : B.H.P.

OPR : S.TAYLOR

DATE/TIME	DESCRIPTION OF EVENTS
	1.3.94
13:00	Arrive on location.
	Standby - Field operator required to fit scrub valve.
14:50	Santos operator on location.
14:56	S.W.I. fit scrub valve
15:05	W.B.O.I. 100% choke
	Rig up wire line unit.
15:46	R.I.H. 1.75" blind box.
16:05	choke the well back to 30%.
	Pass through 2 7/8 x 2 3/8 sponge 7050' KB.
16:11	Tag R.B.T.D. @ 8973' KB.
16:30	At Surface
	Prepare gauges for B.H.P. survey.
16:45	Hang gauges in lubricator pressure up.
17:45	Depressure lubricator.
18:45	Pressure " " R.I.H.
19:03	choke well back to 40%.
	Pass through restriction 7050' KB.
19:10	Arrive at hang depth 8100' KB.
	Open well to 100% choke
19:15	Flow well on 100% choke overnight.
2.3.94	
08:00	S.W.I. 96 HR Build up.

000105

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : Santos L.T.O.

PERFORATIONS: 8128' - 8761' KB

PAGE: 2 OF 2

WELL NAME: Dilchee #2 L

FORMATION : Patchawarra

DATE: 6.3.94

TEST TYPE : B.H.P.

OPR : S. TAYLOR

DATE/TIME	DESCRIPTION OF EVENTS
6.3.94	
08:00	P.O.O.H. with B.H.P. survey.
08:20	Arrive at surface depressure lubricator.
09:20	Pressure lubricator.
10:20	Depressure lubricator retrieve gauges.
	Checks ok.
10:21	Prepare gauges for S.G.S.
10:44	Hang gauges in lubricator pressure up.
10:59	Depressure lubricator.
11:04	Pressure lubricator R.I.H.
12:11	Arrive at hang depth 8100' KB
12:28	Arrive at M.P.P. 8478' KB.
12:43	P.O.O.H.
13:12	At surface depressure lubricator
13:17	Pressure lubricator.
13:32	Depressure lubricator retrieve gauges.
1	Checks ok.
14:10	R.D.M.O.
14:30	Hand well back to production.
	Santos operator: Jim Binnings.

000106

CUSTOMER : Santos L.T.D.

PERFORATIONS: 8128' - 8761' KB

PAGE: 1 OF 1

WELL NAME: Dikhee # 21

FORMATION : Patchawarra

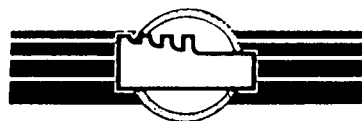
DATE: 1.3.94

TEST TYPE : B.H.P.

OPR : S. Taylor

TIME		WELLHEAD DATA						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 %	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		
1.3.94															
13:00															
14:50															
14:56															
15:05															
15:46															
16:05															
16:11															
16:30															
16:45		8430	2710	73	100										
17:45		8430	2709	70	100										
18:45		8430	2709	70	100										
19:03					40										
19:10		8470	2710	71	40										
19:15		8450	2710	70	100										
2.3.94															
08:00	0	8604	2820	86	100										
08:01		1220	2920												

000107



TEST RESULTS

CUSTOMER : Santos L.T.D.

PERFORATIONS: 8728'-8761' L3

PAGE: 2 OF 4

WELL NAME: Dilchee #2 L

FORMATION : Patchawarra

DATE: 2.3.94

TEST TYPE : B.H.P.

OPR : S. Taylor

TIME		WELLHEAD DATA						FLOW RATES			CUMULATIVE PRODUCTION				
DATE TIME	FLOW SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	PRESSURE (PSI/KPa)	TEMP (°F/°C)	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	GAS MMSCF m³10³	OIL BBLS m³	WATER BBLS m³		
2.3.94															
08:02		12750	2910												
08:03		13176	2910												
08:04		13527	2903												
08:05		13617	2840												
08:10		13749	2772												
08:15		13934	2682												
08:30		14045	2448												
08:45		14066	2199												
09:00	1	14086	2137												
10:00	2	14128	2006												
12:00	4	14204	1751												
14:00	6	14286	1558												
16:00	8	14376	1241												
20:00	12	14424													
24:00	16	14459													
3.3.94															
04:00	20	14486													
06:00	22	14493	1069												
10:00	26	14520	1048												
14:00	30	14541	1034												
18:00	34	14562	1027												

000108

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER : Santos L.T.D.

PERFORATIONS: 8128' - 8761' KB

PAGE: 3 OF 4

WELL NAME: Dilchee 2 L

FORMATION : Patchawarra

DATE: 3.3.94

TEST TYPE : B.H.P.

OPR : S. TAYLOR

TIME		WELLHEAD DATA						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	PRESSURE (PSI/KPa)	TEMP (°F/°C)	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	GAS MMSCF m³10³	OIL BBLS m³	WATER BBLS m³				
3.3.94																	
22:00	38	14576															
4.3.94																	
02:00	42	14589															
06:00	46	14603	1006														
10:00	50	14631	1006														
14:00	54	14652	1006														
18:00	58	14666															
22:00	62	14679															
5.3.94																	
02:00	66	14686															
06:00	70	14700	1027														
10:00	74	14700	1007														
14:00	78	14714	986														
18:00	82	14714	965														
22:00	86	14728															
6.3.94																	
02:00	90	14735															
06:00	94	14741	958														
08:00	96	14748	958														
08:20		14748	958														
09:20		14748	958														
P.O.O.H. with B.H.P. survey.																	
At surface depressure lubricator.																	
Pressure lubricator.																	

000109

000109

TEST RESULTS		
CUSTOMER : Santos L.T.D.	PERFORATIONS: 8128' - 8761' KB	PAGE: 4 OF 4
WELL NAME: Dilchee #2 L	FORMATION : Pakchawarra	DATE: 6.3.94
TEST TYPE : B.H.P. / S.G.S.		OPR : S. TAYLOR

PAGE: 4 OF 4

DATE: 6.3.94

OPR : S. TAYLOR

[illegible]

000110

	PERFORATIONS:
2 L	FORMATION :

WELL NAME: Dilchee #2 L

PERFORATIONS: 8178' - 8761' KB

FORMATION : Patchaworra

PAGE: 1 OF 2

DATE: 1.3.94

OPR : S. TAYLOR

GAUGE DATA		UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE	RUN DATA	TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)
ELEMENT SERIAL NO.		850208	850207	M.B.H.T.	DATE : 1.3.94			
ELEMENT RANGE	PSI	4100	4075		PRESSURE LUBRICATOR :	16:45	8430	2710
RECORDING SECTION SERIAL NO.		K3434	K3433		RUN IN HOLE :	18:45	8430	2709
DATE OF CALIBRATION:	@ 290°F	25.8.94	25.2.94		ON DEPTH AT : 8100 FT/M	19:10	8430	2710
CLOCK/BATTERY SERIAL NO.		3	4		DATE : 6.3.94			
CLOCK/BATTERY RANGE	HR	120	120		PULL OUT OF HOLE :	08:00	14748	958
LEAD SCREW/BATTERY TYPE	TLS	15	15		AT SURFACE :	08:20	14748	958
					DEPRESSURE LUBRICATOR :	10:20	14748	958
ENGAGE STYLUS/BATTERY	DATE 1.3.94 TIME	16:37	16:37		MAXIMUM BHT AT 8100 FT/M = 294 °F/°C			
DISENGAGE STYLUS/BATTERY	DATE 6.3.94 TIME	10:27	10:27		N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

DATE	TIME	REMARKS
		Charts ok.

000111

000111

SUB-SURFACE PRESSURE SURVEY

000112

CO. SANTOS		RUN 01 FIELD DILCHEE	WELL 2L
EFF DEPTH		WELL STAT	TOOL HUNG 8100'KB
CASING	-	CASING PRESS	ON BOTTOM 1910 1/3
LINER	-	TUBING PRESS	OFF BOTTOM 0800 6/3
DATE	940302	ELEMENT RANGE 0 - 4076	ZERO POINT
ELEVATION		ZONE	SHUT-IN 0800 2/3
MAX TEMP	294	PICK-UP	ON-PROD
PERF	-	CAL SER NO. 850207	MPP
TUBING	-		
UNITS	ENGLISH	PURPOSE	LET/BHP

SURVEY DATA

CO. SANTOS	TIME	P-T	DP-DT	RUN 01 FIELD DILCHEE	TIME	P-T	DP-DT	WELL 2L	DTIME
<u>START</u> <i>SLU</i>	8:00	1990.4	1990.4	.0	3:44	2545.4	2545.4		19.7
	8:02	2006.5	2006.5	.0	6:40	2549.3	2549.3		22.7
	8:03	2027.7	2027.7	.0	9:38	2552.7	2552.7		25.6
	8:04	2055.5	2055.5	.1	12:41	2555.1	2555.1		28.7
	8:04	2089.5	2089.5	.1	15:48	2556.3	2556.3		31.8
	8:05	2137.1	2137.1	.1	19:02	2557.7	2557.7		35.0
	8:07	2204.4	2204.4	.1	22:04	2562.0	2562.0		38.1
	8:08	2267.6	2267.6	.1	1:18	2564.3	2564.3		41.3
	8:08	2320.4	2320.4	.1	4:41	2567.1	2567.1		44.7
	8:09	2376.7	2376.7	.2	8:00	2570.4	2570.4		48.0
	8:11	2396.5	2396.5	.2	11:30	2571.7	2571.7		51.5
	8:13	2418.4	2418.4	.2	15:03	2574.2	2574.2		55.1
	8:19	2431.0	2431.0	.3	18:26	2574.8	2574.8		58.4
	8:26	2443.8	2443.8	.4	22:08	2575.6	2575.6		62.1
	8:35	2453.9	2453.9	.6	1:47	2576.6	2576.6		65.8
	8:45	2462.4	2462.4	.8	5:10	2578.9	2578.9		69.2
	9:00	2472.4	2472.4	1.0	8:49	2578.9	2578.9		72.8
	9:26	2482.6	2482.6	1.4	12:56	2582.1	2582.1		76.9
	10:07	2492.0	2492.0	2.1	16:57	2583.4	2583.4		80.9
	10:54	2499.0	2499.0	2.9	21:08	2584.1	2584.1		85.1
	11:36	2505.1	2505.1	3.6	1:20	2586.7	2586.7		89.3
	12:34	2510.5	2510.5	4.6	5:45	2588.1	2588.1		93.8
	13:38	2515.4	2515.4	5.6	8:00	2588.5	2588.5		96.0
	14:56	2519.4	2519.4	6.9	- 4:48	2119.9	2119.9		-12.8
	16:10	2525.7	2525.7	8.2	- 4:47	2076.5	2076.5		-12.8
	17:43	2528.7	2528.7	9.7	- 4:46	2001.4	2001.4		-12.8
	19:11	2531.8	2531.8	11.2	- 4:45	1962.8	1962.8		-12.7
	20:50	2535.7	2535.7	12.8	- 4:03	1969.2	1969.2		-12.1
	22:59	2539.0	2539.0	15.0	- 1:51	1971.8	1971.8		-9.9
	1:15	2542.9	2542.9	17.3	0:13	1973.9	1973.9		-7.8

END SLU

SURVEY DATA

000113

CO. SANTOS			RUN 01 FIELD DILCHEE			WELL 2L	
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
3:36	1984.9	1984.9	-4.4	7:22	1987.5	1987.5	-.6

LUBRICATO; DWT: IN: 1223 psig / OUT: 2139 psig
AMERADA: IN: 1224 psig / OUT: 2135 psig

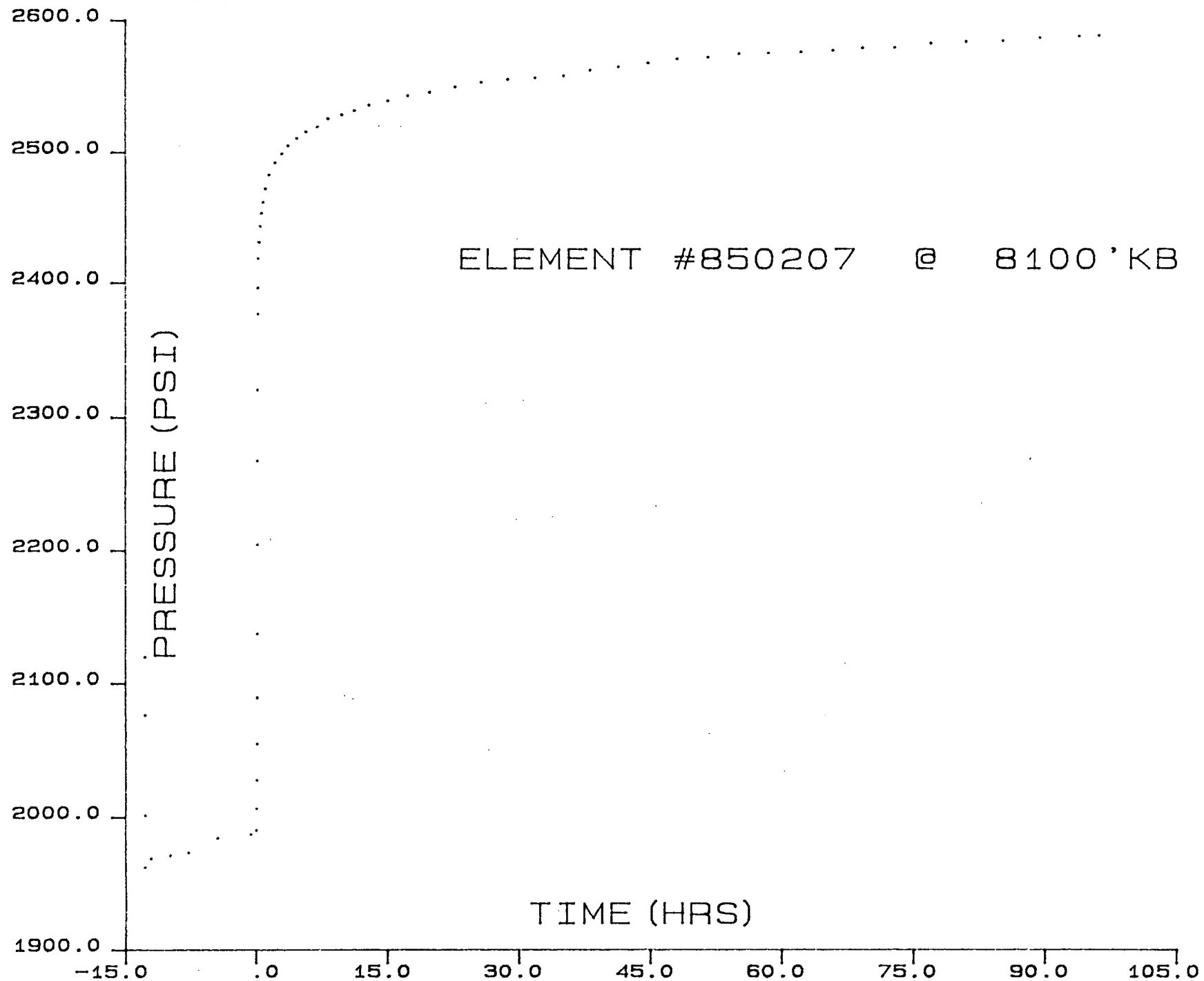
ELEMENT #850208 was also run.

NOTE: The BHP was run approximately 1 month after
the LET part of the programme.
The well was choked back while running in hole
with the pressure gauges.

DILCHEE #2L

BHP

MARCH 1994



000114

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : Santos L.T.D.

PERFORATIONS: 8128'-8761' KCS

PAGE: 2 OF 2

WELL NAME: Dilchee #2 L

FORMATION : Pakchawarra

DATE: 6.3.94

TEST TYPE : B.H.P. / S.G.S.

OPR : S. Taylor

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

TIME
(HOURS)TUBING
PRESSURE
(KPa)ANNULUS
PRESSURE
(KPa)

ELEMENT SERIAL NO.

850208

850207

M.B.H.T.

DATE : 6.3.94

ELEMENT RANGE

PSI

4100

4075

PRESSURE LUBRICATOR

10:44

14748

985

RECORDING SECTION SERIAL NO.

K3434

K3433

RUN IN HOLE

11:04

14748

985

DATE OF CALIBRATION:

@ 290°F

25.2.94

25.2.94

ON DEPTH AT

8478 FT/

12:28

14748

985

CLOCK/BATTERY SERIAL NO.

A-16080

A-16087

DATE : 6.3.94

CLOCK/BATTERY RANGE

HR

3

3

PULL OUT OF HOLE

12:43

14748

985

LEAD SCREW/BATTERY TYPE

TCS

15

15

AT SURFACE

13:12

14755

985

DEPRESSURE LUBRICATOR

13:32

14755

985

ENGAGE STYLUS/BATTERY

DATE 6.3.94

TIME

10:36

10:36

MAXIMUM BHT AT 8478 FT/ = 294 °F/

DISENGAGE STYLUS/BATTERY

DATE 6.3.94

TIME

13:43

13:43

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

DATE

TIME

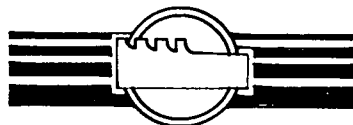
REMARKS

S.G.S. conducted at the completion of B.H.P. survey.
Charts ok.

000115

EXPERTEST PTY. LTD.

STATIC PRESSURE GRADIENT SURVEY



Location: DILCHEE 2L

Tested: 6th March 1994.

Formation: PATCHAWARRA

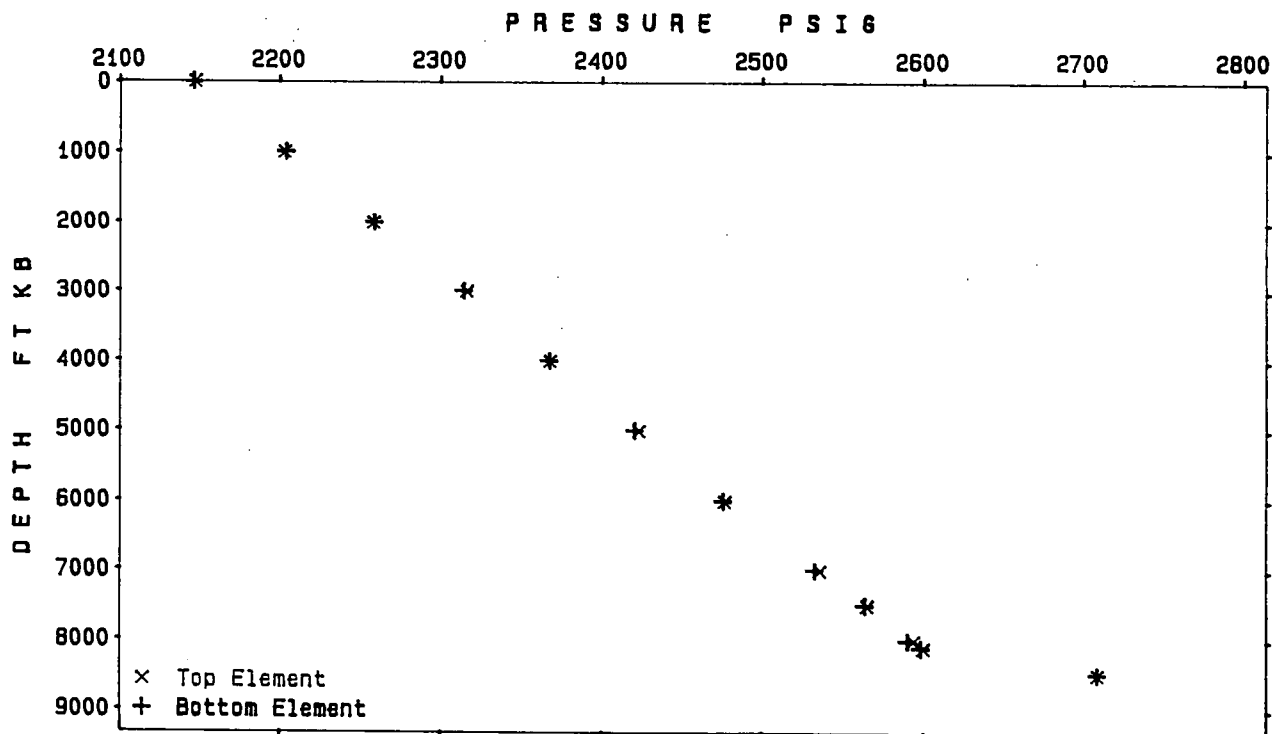
Client: SANTOS LTD.

PRESSURE ELEMENT DATA

Position	Serial No	Range	Calibrated
Top	850208	4100	25/ 2/94
Bottom	850207	4075	25/ 2/94

WELL DATA

DWT In	2139 PSIG
DWT Out	2140 PSIG
Max BHT	294 F



TOP ELEMENT

BOTTOM ELEMENT

Depth FT KB	Deflection Inches	Pressure PSIG	Gradient PSI/FT	Deflection Inches	Pressure PSIG	Gradient PSI/FT
LUB.	1.0450	2147.1	-	1.0570	2146.4	-
1000	1.0720	2202.7	0.056	1.0850	2203.6	0.057
2000	1.0990	2258.2	0.056	1.1120	2258.8	0.055
3000	1.1270	2315.9	0.058	1.1390	2314.0	0.055
4000	1.1520	2367.4	0.052	1.1650	2367.2	0.053
5000	1.1790	2422.9	0.056	1.1910	2420.4	0.053
6000	1.2050	2476.5	0.054	1.2180	2475.6	0.055
7000	1.2340	2536.1	0.060	1.2460	2532.9	0.057
7500	1.2480	2564.9	0.058	1.2610	2563.6	0.061
8000	1.2620	2593.7	0.058	1.2740	2590.2	0.053
8100	1.2650	2599.9	0.062	1.2780	2598.4	0.082
8478	1.3180	2708.9	0.288	1.3320	2708.9	0.292
LUB.	1.0480	2153.2	-	1.0610	2154.5	-

GENERAL REMARKS

S.G.S. CONDUCTED AT THE COMPLETION OF B.H.P. SURVEY
CHARTS OK

211124

7288/2

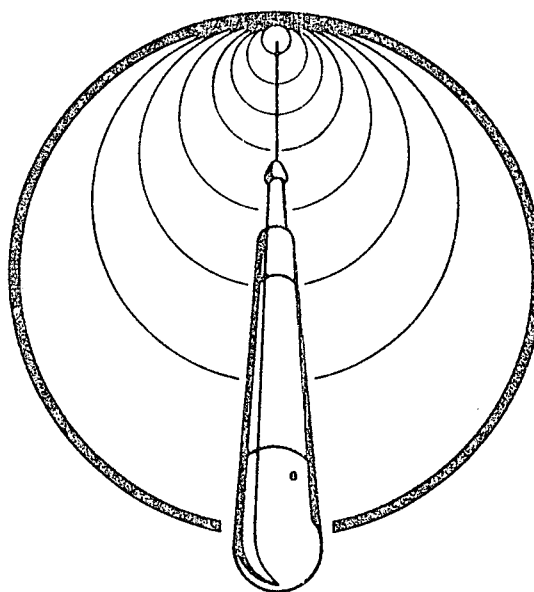
06 JAN 1995

COPY

000117

EXPERTEST PTY LTD

ELECTRIC WIRELINE
SERVICE



Customer: SANTOS LTD
Well: DILCHEE #2 UPPER
Formation: TOOLACHEE
Test Type: BHP/SGS
Date: 04/11/94



EXPERTEST PTY. LTD.

SEQUENCE OF EVENTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7366'KB

PAGE: 1 OF 2

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE

DATE: 04/11/94

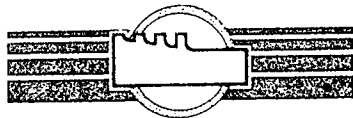
TEST TYPE : BHP/SGS

OPR : S. TAYLOR

DATE/TIME	DESCRIPTION OF EVENTS
	This report has been generated by CARS Version 1.00 User No. 016.
	For further information, please call Dave Hawkes on (08) 354-0488.
04/11/94	
11:12	ARRIVE ON LOCATION.
11:22	SHUT WELL IN FIT SWAB VALVE.
11:32	WELL BACK ON LINE 100% CHOKE.
11:35	RIG UP WIRELINE UNIT.
11:50	RUN IN HOLE 1.75" GAUGE RING PERFORM PICK UPS AT 500'FT INTERVALS.
12:15	ARRIVE AT 6000' KB PERFORM PICK UP TIGHT TO 5200'KB.
12:16	PULL OUT OF HOLE.
12:40	AT SURFACE.
12:43	ADVISE MOOMBA. NOTE: GAUGE RING DRIFT NOT RUN TO REQUIRED DEPTH R BHP SURVEY.
13:00	SECURE LOCATION.
05/11/94	
09:05	ARRIVE ON LOCATION.
09:10	RUN IN HOLE WITH 1.5" DRIFT PERFORM PICK UPS AT 500'FT INTERVALS.
09:23	ARRIVE AT 5500'KB PERFORM PICK UP TUBING TIGHT PULL OUT OF HOLE.
09:45	AT SURFACE.
09:50	ADVISE MOOMBA.
	NOTE: HANG DEPTH FOR BHPS AMMENDED FROM 7080'KB TO 6000'KB.
13:30	PREPARE GAUGES FOR BHPS.
14:00	HANG GAUGES IN LUBRICATOR.
14:15	PRESSURE LUBRICATOR.
14:30	RUN IN HOLE.

000118

211124..

	SEQUENCE OF EVENTS		
	CUSTOMER : SANTOS LTD.	PERFORATIONS: 7130'-7366'KB	PAGE: 2 OF 2
	WELL NAME: DILCHEE #2 UPPER	FORMATION : TOOLACHEE	DATE: 05/11/94
	TEST TYPE : BHP/SGS		OPR : S. TAYLOR

DATE/TIME	DESCRIPTION OF EVENTS
05/11/94	
14:46	ARRIVE AT HANG DEPTH 6000'KB, FLOW WELL OVERNIGHT ON 100% CHOKE.
06/11/94	
08:00	SHUT WELL IN FOR 96 HOUR BUILD UP.
	MONITOR BUILD UP.
07/11/94	
08:00	MONITOR BUILD UP.
08/11/94	
08:00	MONITOR BUILD UP.
09/11/94	
08:00	MONITOR BUILD UP.
10/11/94	
08:00	96 HOUR BUILD UP COMPLETE, PULL OUT OF HOLE WHILE PERFORMING SGS.
09:05	ARRIVE AT SURFACE WITH GAUGES.
09:20	DEPRESSURE LUBRICATOR RECOVER CHART. OK. EMR FAILED - NO DATA RECOVERED.
09:30	RIG DOWN WIRELINE EQUIPMENT.
09:55	SECURE LEASE.
10:00	HAND WELL BACK TO PRODUCTION.

000119

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7366'KB

PAGE: 1 OF 4

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE

DATE: 04/11/94

TEST TYPE : BHP/SGS

OPR : S. TAYLOR

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE /KPa	ANNULUS PRESSURE /KPa	WELLHEAD TEMP /°C	CHOKE SIZE (%)	PRESSURE /KPa	TEMP /°C	GAS m³10³/D	OIL m³/D	WATER m³/D	GAS m³10³	OIL m³	WATER m³	LGR m³/10⁶m³	
This report has been generated by CARS Version 1.00 User No. 016.															
For further information, please call Dave Hawkes on (08) 354-0488.															
04/11/94															
11:12		ARRIVE ON LOCATION.													
11:22		SHUT WELL IN FIT SWAB VALVE.													
11:32		WELL BACK ON LINE 100% CHOKE.													
11:35		RIG UP WIRELINE UNIT.													
11:50		RUN IN HOLE 1.75" GAUGE RING PERFORM PICK UPS AT 500'FT INTERVALS.													
12:15		ARRIVE AT 6000' KB PERFORM PICK UP TIGHT TO 5200'KB.													
12:16		PULL OUT OF HOLE.													
12:40		AT SURFACE.													
12:43		ADVISE MOOMBA. NOTE: GAUGE RING DRIFT NOT RUN TO REQUIRED DEPTH R BHP SURVEY.													
13:00		SECURE LOCATION.													
05/11/94															
09:05		ARRIVE ON LOCATION.													
09:10		RUN IN HOLE WITH 1.5" DRIFT PERFORM PICK UPS AT 500'FT INTERVALS.													
09:23		ARRIVE AT 5500'KB PERFORM PICK UP TUBING TIGHT PULL OUT OF HOLE.													
09:45		AT SURFACE.													
09:50		ADVISE MOOMBA.													
09:50		NOTE: HANG DEPTH FOR BHPS AMMENDED FROM 7080'KB TO 6000'KB.													
13:30		PREPARE GAUGES FOR BHPS.													
14:00	0.00	9115	4888	93	100										

000120

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7366'KB

PAGE: 2 OF 4

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE

DATE: 05/11/94

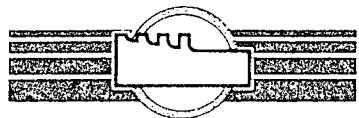
TEST TYPE : BHP/SGS

OPR : S. TAYLOR

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE [REDACTED]/KPa	ANNULUS PRESSURE [REDACTED]/KPa	WELLHEAD TEMP [REDACTED]/°C	CHOKE SIZE (%)	PRESSURE [REDACTED]/KPa	TEMP [REDACTED]/°C	GAS [REDACTED] m³10³/D	OIL [REDACTED] m³/D	WATER [REDACTED] m³/D	GAS [REDACTED] m³10³	OIL [REDACTED] m³	WATER [REDACTED] m³	LGR m³/10⁶m³	
14:00		HANG GAUGES IN LUBRICATOR.													
14:15	0.00	9115	4888	94	100										
14:15		PRESSURE LUBRICATOR.													
14:30	0.00	9115	4888	93	100										
14:30		RUN IN HOLE.													
14:46	0.00	9156	4888	94	100										
14:46		ARRIVE AT HANG DEPTH 6000'KB, FLOW WELL OVERNIGHT ON 100% CHOKE.													
06/11/94															
08:00	0.00	9074	4888	93	100										
08:00		SHUT WELL IN FOR 96 HOUR BUILD UP.													
08:00		MONITOR BUILD UP.													
08:05	0.00	12425	4840												
08:10	0.00	12652	4737												
08:15	0.00	12756	4675												
08:30	0.00	12880	4482												
08:45	0.00	12976	4351												
09:00	1.00	13232	4234												
09:15	1.25	13418	4137												
09:30	1.50	13445	4082												
09:45	1.75	13459	4047												
11:00	3.00	13445	3785												
11:15	3.25	13445													

000121

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER : SANTOS LTD.

PERFORATIONS: 7130'-7366'KB

PAGE: 3 OF 4

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE

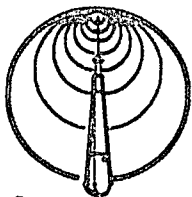
DATE: 06/11/94

TEST TYPE : BHP/SGS

OPR : S. TAYLOR

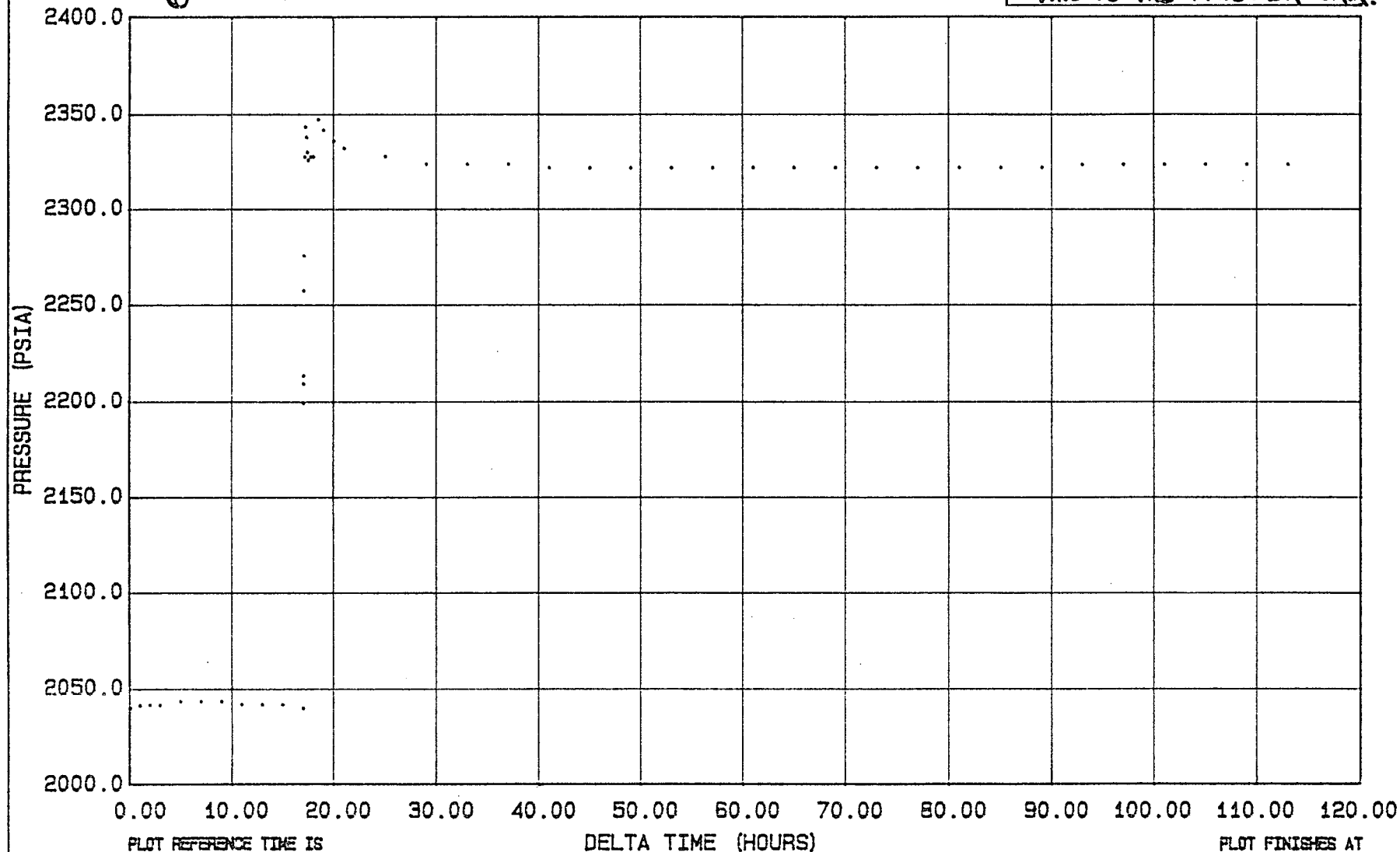
TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE [REDACTED]/KPa	ANNULUS PRESSURE [REDACTED]/KPa	WELLHEAD TEMP [REDACTED]/°C	CHOKE SIZE (%)	PRESSURE [REDACTED]/KPa	TEMP [REDACTED]/°C	GAS [REDACTED] m³10³/D	OIL [REDACTED] m³/D	WATER [REDACTED] m³/D	GAS [REDACTED] m³10³	OIL [REDACTED] m³	WATER [REDACTED] m³	LGR m³/10⁶m³	
11:30	3.50	13452													
11:45	3.75	13452													
12:00	4.00	13452													
15:00	7.00	13480	3558												
07/11/94															
08:00		MONITOR BUILD UP.													
08/11/94															
06:00	46.00	13431	3061												
08:00		MONITOR BUILD UP.													
18:00	58.00	13431	3040												
09/11/94															
06:00	70.00	13431	2971												
08:00		MONITOR BUILD UP.													
10/11/94															
06:00	94.00	13431	2971												
08:00	96.00	13431	2971												
08:00		96 HOUR BUILD UP COMPLETE, PULL OUT OF HOLE WHILE PERFORMING SGS.													
09:05	97.08	13431	2971												
09:05		ARRIVE AT SURFACE WITH GAUGES.													
09:20	97.33	13431	2971												
09:20		DEPRESSURE LUBRICATOR RECOVER CHART. OK.													
09:30		RIG DOWN WIRELINE EQUIPMENT.													

000122



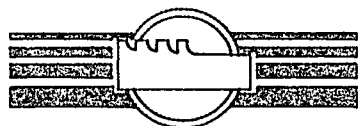
EXPERTEST PTY. LTD.
ELECTRIC WIRELINE SERVICE
LINEAR PLOT

Santos Ltd.
WELL: Dilchee 2 upper.
ZONE: Toolachee/Daraling
BHP/SGS
THIS IS THE AMERADA DATA.



000124

EXPERTEST PTY. LTD.



STATIC GRADIENT SURVEY

CUSTOMER: SANTOS LTD.

PERFORATIONS: 7130'-7366'KB

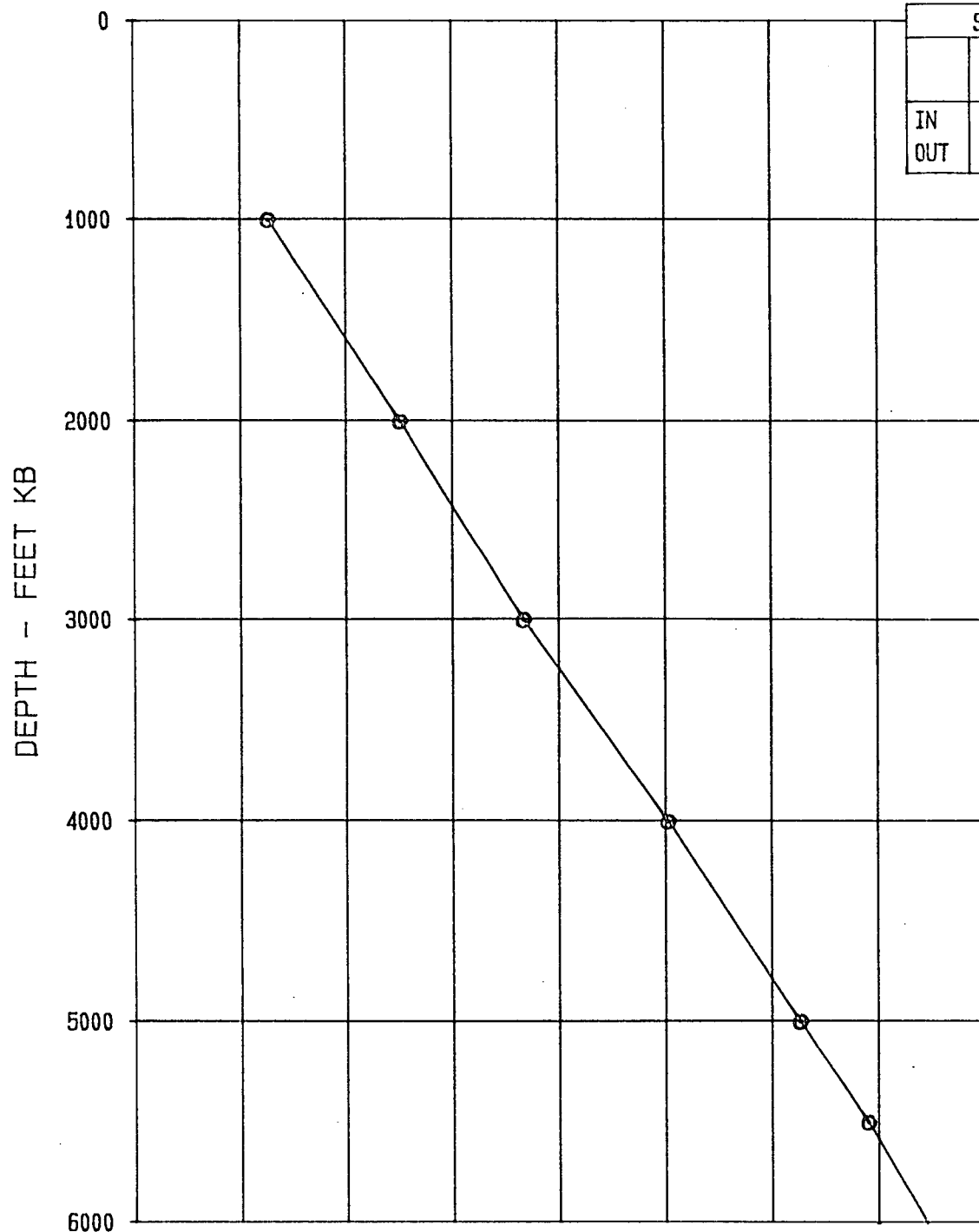
WELL NAME: DILCHEE 2 UPPER

FORMATION: TOOLA/DARALINGI

GRADIENT ON THE WAY OUT OF HOLE.

DATE: 10/11/94

PRESSURE 1950 2000 2050 2100 2150 2200 2250 2300 2350 PSIG



O TOP GAUGE - PRESSURE

SERIAL No: 29323

RANGE: 3950 PSI

211124..

000126

Path: A:\

File: DILCPPPER.

2,480 .a.. 11-12-94 5:16:04 pm

Page 1

E X P E R T E S T P T Y. L T D.

Page 1 of 2

GENERAL INFORMATION:

Customer: SANTOS LTD.

Location: DILCHEE 2 UPPER

Formation: TOOLA/DARALINGI

Perforations: 7130'-7366' KB

Type of Test: Static Gradient Survey

Date of Test: 10/11/94

Remarks: GRADIENT ON THE WAY OUT OF HOLE.

GAS LIFT VALVES:

Number of GLVs installed: 0

Mid-Point of Perforations: 7248.0 FEET KB

TUBING PRESSURES & TEMPERATURES:

Surface:

	T.H.P	T.H.T
In:	1322 PSIG	0.0 DEG F
Out:	1948 PSIG	0.0 DEG F

Mid-Point of Perforations:

B.H.P.

B.H.T. 0.0 DEG F

211124

E X P E R T E S T P T Y. L T D.

Page 2 of 2

000127

GENERAL INFORMATION:

Customer: SANTOS LTD.
Location: DILCHEE 2 UPPER
Formation: TOOLA/DARALINGI
Perforations: 7130'-7366' KB

Type of Test: Static Gradient Survey
Date of Test: 10/11/94
Remarks: GRADIENT ON THE WAY OUT OF HOLE.

GAUGE DATA:

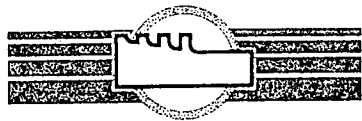
TOP GAUGE	MIDDLE GAUGE	BOTTOM GAUGE
-----	-----	-----
PRESSURE	NONE	NONE
Serial No: 29323	Serial No:	Serial No:
Range: 3950 PSI	Range:	Range:

TABLE OF RESULTS:

TIME	DEPTH FEET	TOP GAUGE	MIDDLE GAUGE		BOTTOM GAUGE		
		PRESSURE KB PSIG	GRADIENT PSI/FT	NONE	GRADIENT	NONE	GRADIENT
08:00	6000.0	2323.2	0.0000	0.0	0.0000	0.0	0.0000
08:10	5500.0	2295.3	0.0558	0.0	0.0000	0.0	0.0000
08:20	5000.0	2263.3	0.0640	0.0	0.0000	0.0	0.0000
08:30	4000.0	2201.3	0.0620	0.0	0.0000	0.0	0.0000
08:40	3000.0	2133.3	0.0680	0.0	0.0000	0.0	0.0000
08:50	2000.0	2075.4	0.0579	0.0	0.0000	0.0	0.0000
09:00	1000.0	2013.4	0.0620	0.0	0.0000	0.0	0.0000
09:10	0.0	1957.4	0.0000	0.0	0.0000	0.0	0.0000

211124

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS LTD

PERFORATIONS: 7130'-7366'KB

PAGE: 1 OF 1

WELL NAME: DILCHEE #2 UPPER

FORMATION : TOOLACHEE

DATE: 05/11/94

TEST TYPE : B.H.P./S.G.S.

DARALINGIE 7404'-7415'KB

OPR : S. TAYLOR

GAUGE DATA

UPPER
PRESSURE
GAUGE

LOWER
PRESSURE
GAUGE

TEMPERATURE
GAUGE

RUN DATA

TIME
(HOURS)

TUBING
PRESSURE
(KPa)

ANNULUS
PRESSURE
(KPa)

ELEMENT SERIAL NO.

614

29323

N/A

DATE

5/11/94

ELEMENT RANGE

PSI

5000

3950

PRESSURE LUBRICATOR

14:15

9115

48

RECORDING SECTION SERIAL NO.

12963

RUN IN HOLE

14:30

9115

48

DATE OF CALIBRATION:

30.9.94

28.3.90

ON DEPTH AT

6000

M

14:46

9156

48

37

F-15683

CLOCK/BATTERY SERIAL NO.

37

F-15683

DATE

10/11/94

CLOCK/BATTERY RANGE

120HR

PULL OUT OF HOLE

08:00

13431

2971

LEAD SCREW/BATTERY TYPE

15TLS

AT SURFACE

09:05

13431

2971

DEPRESSURE LUBRICATOR

09:20

13431

2971

ENGAGE STYLUS/BATTERY DATE 05.11.94

TIME

14:00

14:01

MAXIMUM BHT AT 6000 FT/ = °F/

DISENGAGE STYLUS/BATTERY DATE 10.11.94

TIME

09:44

09:27

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

DATE

TIME

REMARKS

NOTE: HANG DEPTH AMMENDED DUE TO CORKSCREW TUBING.

NO DATA RECOVERED FROM EMR

000128

EXPERTEST PTY. LTD.

ELECTRONIC BHP/BHT GAUGE QUALITY CONTROL SHEET

211124..

CUSTOMER: Santos L.T.O.

PERFORATIONS: 7130' - 7336' LB

PAGE: 1 OF 1

WELL NAME: Dilchee #2 upper

FORMATIONS: Todachee

DATE: 5-11-94

TEST TYPE: B.H.P. / S.G.S.

GAUGE SERIAL No.: EMP-S #614

OPR: S. Taylor

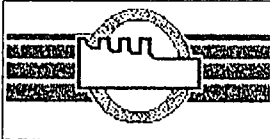
INSTRUMENT DEPARTMENT REPORT	DATE	LAB. COND.	GAUGE RESPONSE	GAUGE FREQUENCY	FIELD OPERATOR REPORT	TIME (HOURS)	PRESSURE WELL SITE	PRESSURE GAUGE
PRE-JOB LAB. CHECK / PERFORMED BY	4/11/94	Alan Crumley			DATE	5-11-94		
PRESS PSI / G		0.0	-0.735		ATMOSPHERIC CHECK			
TEMP °F / °C		69	78.80		PRESSURE LUBRICATOR	14:15		1322 psi
PRE-JOB CAL. CHECK / PERFORMED BY	3/11/94	T. S. HEALING			DATE	10-11-94		
PRESS PSI / G		2489	2487		MAX. RECORDED BHP			
TEMP °F / °C			283		MAX. RECORDED BHT			
POST-JOB LAB. CHECK / PERFORMED BY	10/11/94	Long Hearing			DATE	10-11-94		
PRESS PSI / G		0.0	3.43		DEPRESSURE LUBRICATOR	09:20	1948	
TEMP °F / °C		80	83.6		ATMOSPHERIC CHECK			
					TOTAL DURATION			
POST-JOB REDRESS CAL. CHECK / PERFORMED BY					FIELD OPERATOR'S SIGNATURE			
PRESS PSI / G								
TEMP °F / °C					COMMENTS: EMP #614 stopped after 8 hours.			
					investigating cause of gauge failure			
					Long Hearing			
CALIBRATION DATE	30/9/94							
BATTERY SERIAL No.:	37							
LOADED PRE-JOB VOLTS:	11.11	4/11/94						
POST-JOB VOLTS:								
(PRE-JOB) TOTAL HOURS:	3				This sheet is submitted as "Original" and is not typed.			
					Field staff please note units of measure.			

000129

COPY

000130

12 MAY 1995

**EXPERTEST PTY. LTD.**

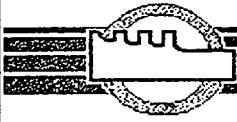
A.C.N. 008 034 062

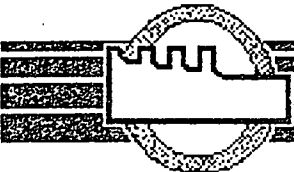
**Production Testing
Report****Test Details**

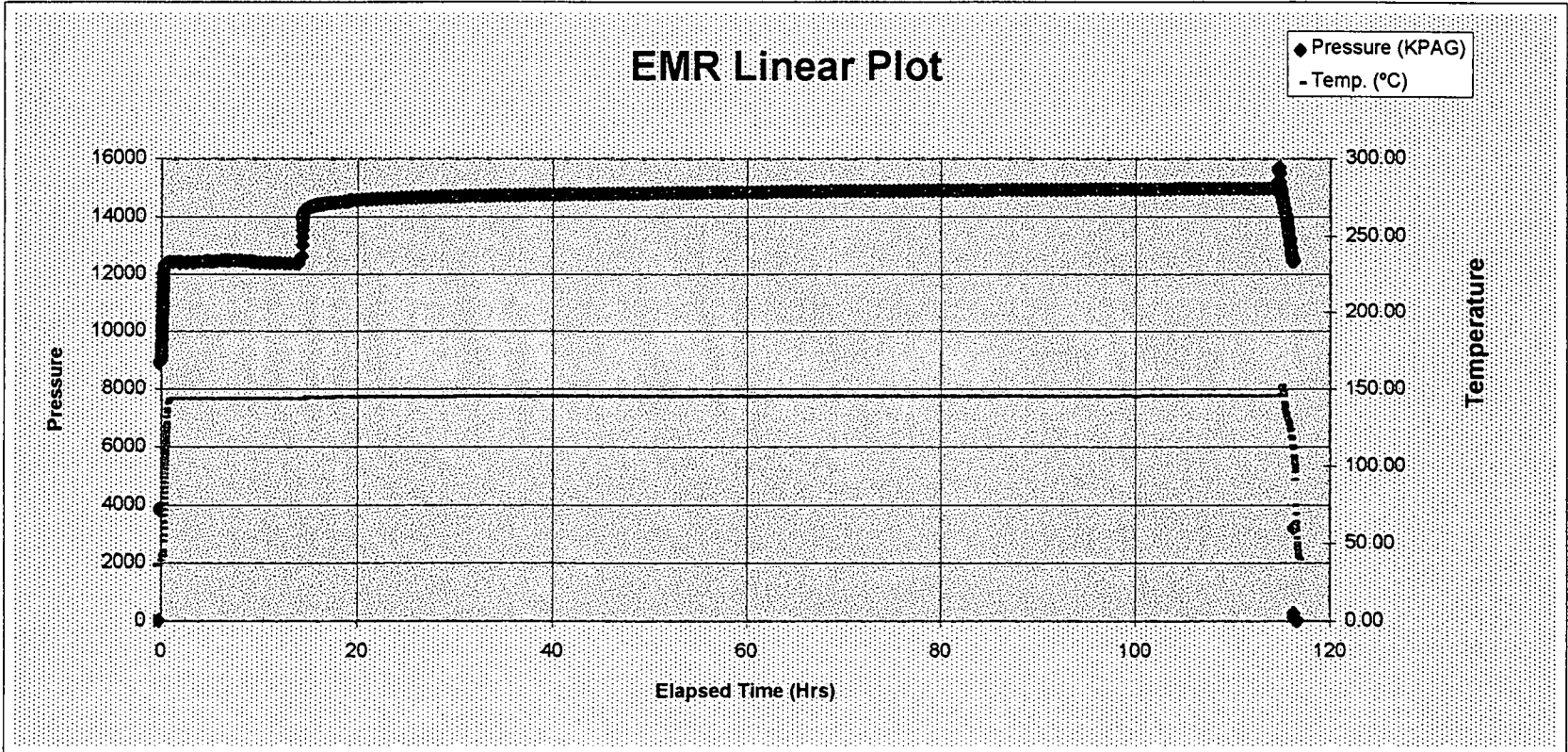
Customer	Santos Ltd
Well Name	Dilchee 2 Lower
Formation	Patchawarra
Perforations	8128' - 8761' KB
Type Of Test	BHP Survey
Operator	D. McAllister
Date Of Test	13/02/95
Reference Date	13/02/95
Reference Time	1609
Control No.	160301

7288/002

L

EXPERTEST PTY. LTD.		SEQUENCE OF EVENTS			
		Customer:	SANTOS LTD.	Well Name	DILCHEE 2 LOWER
		Perforations:	8128'-8761'	Type Of Test:	BHP SURVEY
		Date Of Test:	13/02/95 to 18/02/95	Formation:	PATCHAWARRA
				Operator:	D. McALLISTER
				Control No.:	160301
Date	Time	Description Of Events			
13/02/95	1330	MOVE IN RIG UP.			
13/02/95	1420	SHUT IN WELL, RIG IN SWAB VALVE.			
13/02/95	1440	WELL BACK ON LINE 100% CHOKE.			
13/02/95	1455	RUN IN HOLE 1.75" BLIND BOX, PERFORMING DRIFT RUN.			
13/02/95	1530	BLIND BOX AT 8948' KB. PULL OUT OF HOLE.			
13/02/95	1600	BLIND BOX IN LUBRICATOR.			
13/02/95	1600	TOOL STRING HANGING UP FROM 7117' KB WHEN RUN IN HOLE. CHOKE WELL BACK.			
13/02/95	1600	HEAVY PULLING FROM 8948'KB. WELL BACK ON 100% CHOKE.			
13/02/95	1609	ENGAGE EMR BATTERY.			
13/02/95	1622	ENGAGE STYLUS.			
13/02/95	1640	PRESSURE LUBRICATOR.			
13/02/95	1655	RUN IN HOLE. BHP SURVEY.			
13/02/95	1713	ELEMENTS AT HANG DEPTH OF 8085'KB.			
13/02/95	1716	DEPART LOCATION.			
14/02/95	0720	SHUT IN WELL FOR 96 HOUR PBU.			
14/02/95	1350	CHANGE WELL HEAD CHART.			
15/02/95	0715	CHANGE WELL HEAD CHART. TRAVEL TO MOOMBA.			
16/02/95	0700	CHANGE WELL HEAD CHART. TRAVEL TO MOOMBA.			
17/02/95	0700	CHANGE WELL HEAD CHART.			
18/02/95	0710	CHANGE WELL HEAD CHART.			
18/02/95	1130	ELEMENTS AT HANG DEPTH OF 8085' KB RUN IN HOLE (END BUILD UP).			
18/02/95	1132	ELEMENTS AT MID POINT PERFORATION 8445' KB.			
18/02/95	1142	PULL OUT OF HOLE PERFORMING SGS.			
18/02/95	1300	ELEMENTS IN LUBRICATOR.			
18/02/95	1310	DEPRESSURE LUBRICATOR.			
18/02/95	1317	DISENGAGE STYLUS MBHT 332 DEGREES F.			
18/02/95	1358	DISENGAGE EMR BATTERY.			
18/02/95	1405	RIG DOWN MOVE OFF. (VERIFY DATA).			

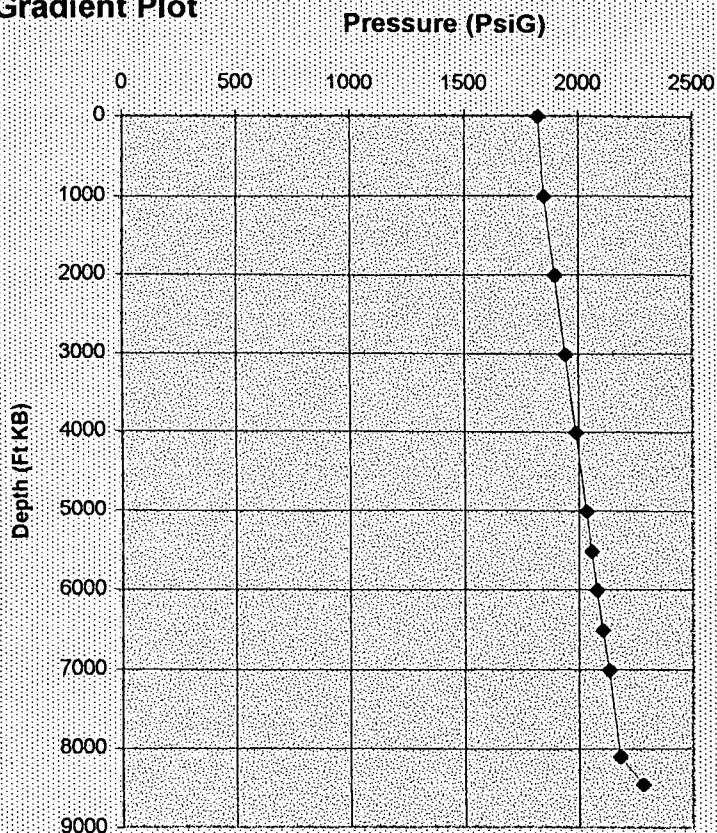
	Electronic Memory Recorder - Linear Plot					
	Customer:	Santos Ltd	Well Name:	Kilchee 2 Lower	Formation:	Patchawarra
	Perforations:	8128' - 8761' KB	Type Of Test:	BHP Survey	Operator:	D. McAllister
	Date Of Test:	13/02/95 - 18/02/95			Control No.:	160301
	McAllister File Ref: DILCHE2L.PRN			EMP Serial Number: 80-622		
	EMP Calibration I.D.: 757-14318			Full Scale Pressure: 5000.0 PSIA		
Probe Started: 13/02/95 @ 16:09:00			Data Filter: 1800 Secs; 2 PSI Window			



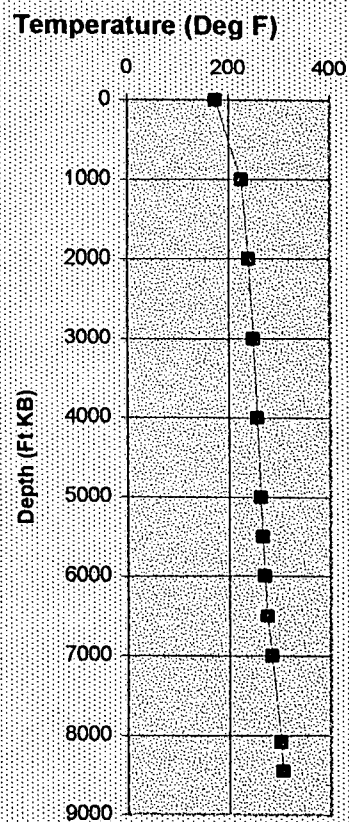
Gradient Report	
Well Name DILCHEE #2 LOWER Location PATCHAWARRA	
Expertest Pty Ltd File Reference DILCHE2L	
Representative D.J.McALLISTER Test Type B.H.P. & S.G.S. Date of Test 18/2/95	Recorder Depth (KB) 8085.00 ft Recorder Position TOP Serial # 622
Battery Connected 13/02/95 16:09:00	

Reading Time		Depth Ft KB	Pressure PsiG	Temp Deg F	Gradient Psi/ft	Remarks
MM/DD	hh:mm:ss					
02/18	11:41:20	8445.00	2278.606	305.16		
02/18	11:48:16	8085.00	2179.542	301.19	0.275	
02/18	11:57:52	7000.00	2130.458	283.24	0.045	
02/18	12:04:48	6500.00	2103.022	274.13	0.055	
02/18	12:11:44	6000.00	2078.199	269.40	0.050	
02/18	12:18:40	5500.00	2054.449	265.49	0.048	
02/18	12:25:36	5000.00	2030.818	261.81	0.047	
02/18	12:33:36	4000.00	1985.020	255.93	0.046	
02/18	12:41:04	3000.00	1939.821	247.80	0.045	
02/18	12:47:28	2000.00	1894.918	238.61	0.045	
02/18	12:56:00	1000.00	1848.016	224.88	0.047	
02/18	13:06:08	0.00	1821.984	174.44	0.026	

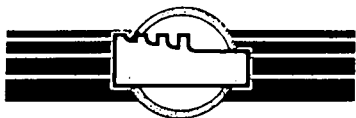
Gradient Plot



Gradient Plot



EXPERTEST PTY. LTD.



GAUGE RUN SHEET

160301..

CUSTOMER: SANTOS LTD
 WELL NAME: DILCHEE #2 LOWER
 TEST TYPE: B.H.P. SURVEY

PERFORATIONS: 8128'-8761' KB
 FORMATIONS: PATCHAWARLA

PAGE: 1 OF 1
 DATE: 13-2-95
 OPR: D.J. McALLISTER

GAUGE DATA	TOP GAUGE	BOTTOM GAUGE
ELEMENT SERIAL NO.	622	29388
ELEMENT RANGE PSI	5000	3000
ELEMENT TYPE	E.m.P-S	AMERADA
DATE OF CALIBRATION:	14.11.94	7-2-94
CLOCK SERIAL NO.		F15694
CLOCK RANGE HOURS		120
ENGAGE BATTERY/STYLUS DATE: 13-2-95 TIME	1609	1622
DISENGAGE BATTERY/STYLUS DATE: 18-2-95 TIME	1358	1317
GAUGE RUN TIME HOURS	389	
TEST DURATION HOURS	117.8	

RUN DATA	TIME (HOURS)	TUBING PRESSURE (PSI/FEET)	GAUGE RESPONSE (PSI/FEET)
DATE 13-2-95			
PRESSURE LUBRICATOR	1640	1300	559.7
RUN IN HOLE	1655	1307	1307.1
ON DEPTH AT 8085 FT	1713	1307	1797.7
MAX. RECORDED BHP 2278.9 PSI			
MAX. RECORDED BHT 306.1 S/F			
DATE 18-2-95			
PULL OUT OF HOLE	1142	1794	2278.9
DEPRESSURE LUBRICATOR	1310	1798	1815.3

NB: ALL DEPTHS ARE MEASURED FROM KB.

GAUGE CHECKS	COND.	GAUGE
PRE-JOB CHECK/PERFORMED BY	B. Potter	
DATE: 10-2-95 PRESS PSI A/G	0	3.371
TEMP C/F	77	76.76
POST-JOB CHECK/PERFORMED BY		
DATE: 19-2-95 PRESS PSI A/G	0	5.7
TEMP C/F	75	71.5
CALIBRATION CHECK/PERFORMED BY	B. Wilson	
DATE: 4.12.94 PRESS PSI A/G	2489	2488
TEMP C/F	269	270

BATTERY DATA	SERIAL NO.	SERIAL NO.	DATE
	# 4934		
PRE-JOB PBU/BHP CYCLES:	2		
PRE-JOB SGS/FGS CYCLES:	0		
PRE-JOB LOADED VOLTS: Loaded	10.89 V		10.2.95
POST-JOB LOADED VOLTS: Loaded	11.04		18-2-95

OPERATOR'S SIGNATURE

This sheet is submitted as 'Original' and is Not typed

COMMENTS:

000135