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NUMBER 7148/2

PPL 11

EROMANGA BASIN AND COOPER BASIN

MOOMBA 57

TEST REPORTS

Submitted by

Santos Ltd
1993

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MINES and ENERGY
RESOURCES SOUTH
AUSTRALIA



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ENVELOPE 7148/2

TENEMENT: PPL 11; Eromanga and Cooper Basins

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

CONTENTS

REPORTS:	Larkin, R., 1992. Operator's summary and field maintenance contractor's results of the completion clean-up flow plus single rate gas production test, 110.5 hour reservoir pressure buildup and static wellbore pressure gradient surveys of the Toolachee Formation gas reservoir perforated producing interval 7904-8082 feet depth KB, conducted over the period 30/4-7/5/92 (Expertest Pty Ltd). McAllister, D.J., 1993. Field maintenance contractor's results of the static wellbore pressure gradient survey of the above Toolachee Formation gas reservoir producing interval, conducted on 29/1/93 (Expertest Pty Ltd). Briscoe, K., 1993. Operator's summary and field testing contractor's results of the wireline production logging test run, plus single rate gas production test, 108.3 hour reservoir pressure buildup and static wellbore pressure gradient surveys, of the commingled Toolachee, Daralingie Beds, Epsilon and Patchawarra Formations gas reservoirs perforated producing intervals 7904-8082, 8158-8352, 8628-8724 and 9662-9858 feet depth KB, conducted over the period 19-30/10/93 (Oilserv Australia Ltd).	MESA NO. 7148/2 R 1 Pgs 3-26 7148/2 R 2 Pgs 27-31 7148/2 R 3 Pgs 32-61
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END OF CONTENTS

SINGLE RATE TEST AND BUILDUP SURVEYApril 30th - May 7th 1992Flow Test

30/4/92: Opened well to flare on 16/64" choke @ 1030 hrs.
 Opened choke to 24/64" @ 1033 hrs.
 Trimmed flow through separator @ 1045 hrs.
 Well set on 32/64" choke @ 1100 hrs.
 Tested well on 32/64" choke for 53.5 hrs.

F.T.H.P. (final)	=	4013	kPa
Average Separator Pressure	=	1944	kPa
Average Separator Temperature	=	32	°C
Gas Flow Rate	=	89.423	E3M ³ /d
Condensate Flow Rate	=	3.204	m ³ /d
Water Flow Rate	=	9.057	m ³ /d
F.B.H.P. @ 7864' KB	=	1432.7	psig
F.B.H.T.	=	287	°F

02/5/92: Shut well in at 1630 hrs.

Buildup Survey

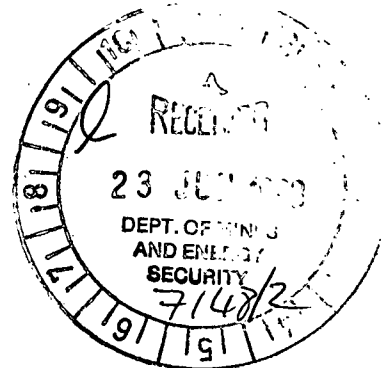
02/5/92 Shut well in at 1630 hours for 110.5 hrs buildup.
 Element #29323 at 7864' KB after 110.5 hrs buildup = 3214.7 psig
 Shut in bottomhole temperature = 300°F

07/5/92 POOH @ 0700 hrs.

Static Pressure Gradient

Mid point of perforations = 7993' KB.

07/5/92: Ran static pressure gradient.
 Element #29321 at MPP = 3212.3 psig (22149 kPa)
 Element #29323 at MPP = 3216.5 psig (22178 kPa)
 Shut in bottomhole temperature = 300°F (149°C)



SUB-SURFACE PRESSURE SURVEY

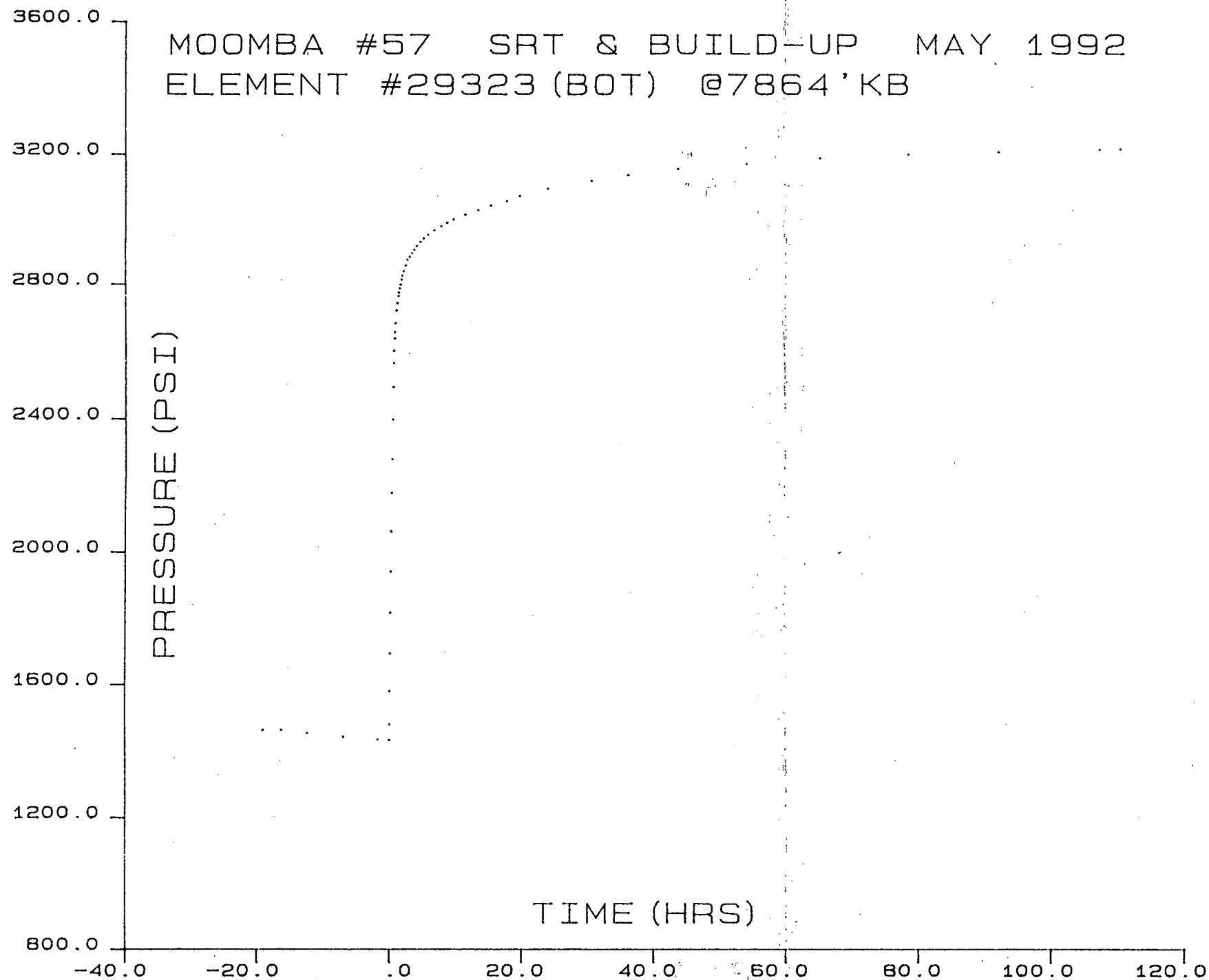
CO.		RUN 01 FIELD MOOMBA	WELL 57
EFF DEPTH		WELL STAT	TOOL HUNG 7864'
CASING	-	CASING PRESS	ON BOTTOM 1900 1/5
LINER	-	TUBING PRESS	OFF BOTTOM 0700 7/5
DATE	920507	ELEMENT RANGE 0 - 3983	ZERO POINT
ELEVATION		ZONE	SHUT-IN 1630 2/5
MAX TEMP	300°F	PICK-UP	ON-PROD
PERF	-	CAL SER NO. 29323	MPP
TUBING	-		
UNITS	ENGLISH	PURPOSE	SRT & BUILD-UP

SURVEY DATA

CO.	TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
	16:30	1432.7	1432.7	.0	20:36	2917.9	2917.9	4.1
	16:33	1480.4	1480.4	.1	21:11	2931.0	2931.0	4.7
	16:35	1579.8	1579.8	.1	21:41	2942.2	2942.2	5.2
	16:38	1690.9	1690.9	.1	22:21	2953.8	2953.8	5.9
	16:40	1813.5	1813.5	.2	23:17	2967.8	2967.8	6.8
	16:44	1940.3	1940.3	.2	0:20	2981.0	2981.0	7.8
	16:49	2062.9	2062.9	.3	1:15	2991.0	2991.0	8.7
	16:54	2179.9	2179.9	.4	2:13	3001.7	3001.7	9.7
	16:56	2280.1	2280.1	.4	4:00	3015.5	3015.5	11.5
	17:01	2399.1	2399.1	.5	5:59	3029.3	3029.3	13.5
	17:07	2494.2	2494.2	.6	7:51	3043.1	3043.1	15.4
	17:12	2565.6	2565.6	.7	10:16	3057.4	3057.4	17.8
	17:13	2602.4	2602.4	.7	12:13	3072.4	3072.4	19.7
	17:19	2639.6	2639.6	.8	16:28	3094.6	3094.6	24.0
	17:22	2657.9	2657.9	.9	23:03	3119.3	3119.3	30.5
	17:26	2682.9	2682.9	.9	4:37	3136.7	3136.7	36.1
	17:35	2720.9	2720.9	1.1	12:10	3155.6	3155.6	43.7
	17:41	2742.9	2742.9	1.2	22:33	3169.8	3169.8	54.0
	17:50	2764.1	2764.1	1.3	9:42	3187.4	3187.4	65.2
	17:55	2775.5	2775.5	1.4	22:59	3198.8	3198.8	78.5
	18:04	2788.5	2788.5	1.6	12:39	3206.4	3206.4	92.1
	18:09	2798.9	2798.9	1.7	3:53	3213.8	3213.8	107.4
	18:18	2814.0	2814.0	1.8	7:00	3214.7	3214.7	110.5
	18:26	2826.8	2826.8	1.9	2:43	1463.5	1463.5	-19.2
	18:38	2839.2	2839.2	2.1	0:10	1464.2	1464.2	-16.3
	18:57	2855.9	2855.9	2.4	4:06	1453.3	1453.3	-12.4
	19:14	2872.6	2872.6	2.7	9:35	1442.3	1442.3	-6.9
	19:33	2883.6	2883.6	3.0	14:46	1433.7	1433.7	-1.7
	19:54	2894.9	2894.9	3.4	16:30	1433.1	1433.1	.0
	20:16	2906.2	2906.2	3.8	0:00	.0	.0	.0

LUB IN DWT = 613 PSI / OUT = 2600 PSI
 LUB IN AMERADA = 602 PSI / OUT = 2592 PSI

MOOMBA #57 SRT & BUILD-UP MAY 1992
ELEMENT #29323 (BOT) @7864'KB



000005

000006

EXPERTEST

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWANDILLA 5033

PH. (08) 354 0488 TELEX RA87163

FAX (08) 43 7408

138 RICHMOND ROAD MARLESTON
SOUTH AUSTRALIA 5033

Tested Thursday, 7th May 1992.

CLIENT	LOCATION	FORMATION
Santos Ltd.	MOOMBA 57	TOOLACHEE

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	29321	4000	16/12/91
Bottom	29323	3950	16/12/91

WELL DATA	
PARAMETER	VALUE
DWT In	2590 PSIG
DWT Out	2585 PSIG
Max BHT	N/A

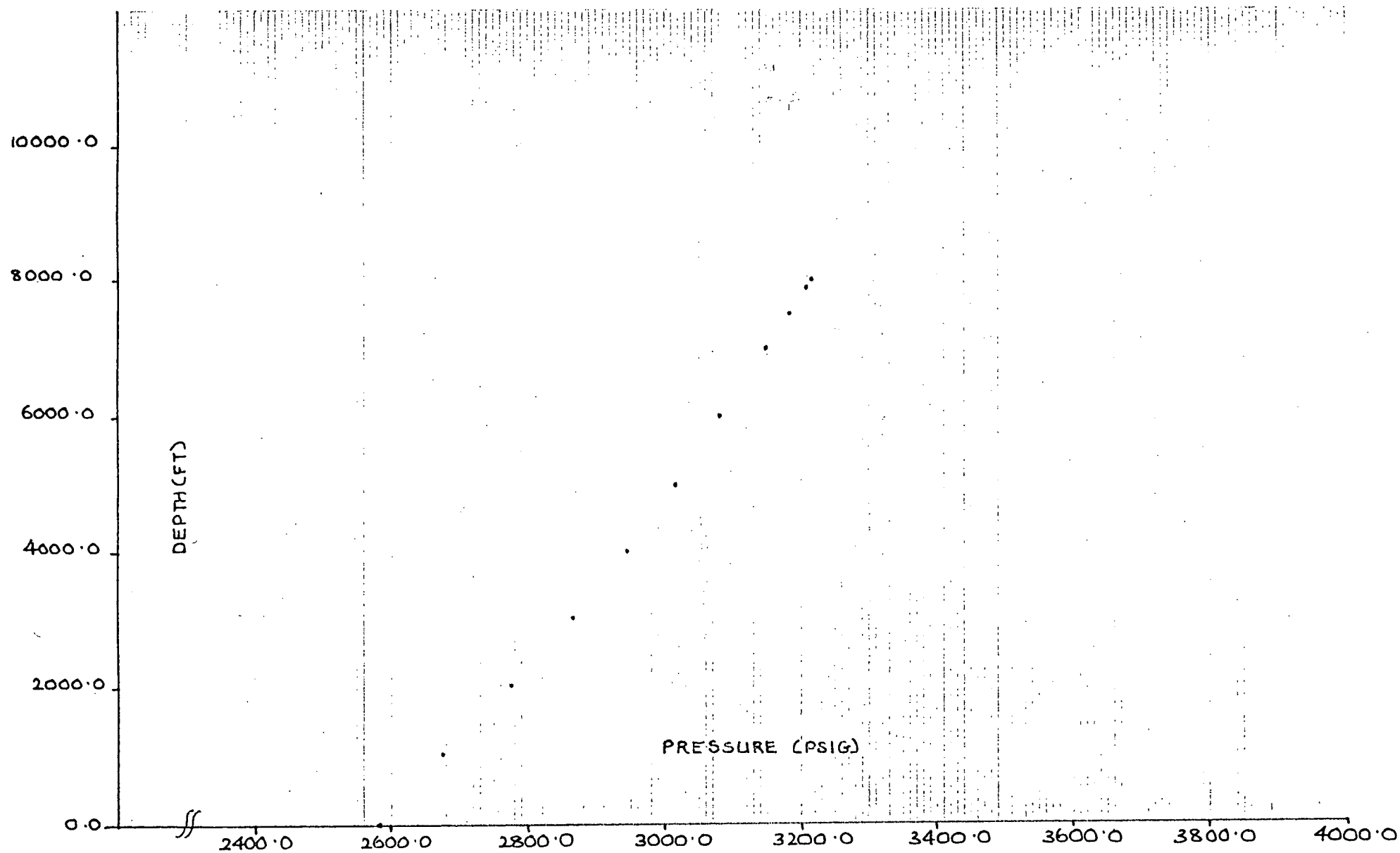
DEPTH FT KB	TOP ELEMENT			BOTTOM ELEMENT		
	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	1.2840	2577.8	-----	1.2990	2581.7	-----
1000	1.3330	2676.7	0.099	1.3470	2677.5	0.096
2000	1.3800	2771.6	0.095	1.3960	2775.3	0.098
3000	1.4240	2860.5	0.089	1.4410	2865.2	0.090
4000	1.4630	2939.3	0.079	1.4800	2943.0	0.078
5000	1.4980	3010.1	0.071	1.5160	3014.9	0.072
6000	1.5320	3078.8	0.069	1.5490	3080.8	0.066
7000	1.5640	3143.5	0.065	1.5830	3148.6	0.068
7500	1.5790	3173.8	0.061	1.6000	3182.6	0.068
7870	1.5930	3202.2	0.077	1.6130	3208.5	0.070
7993	1.5980	3212.3	0.082	1.6170	3216.5	0.065
LUB.	1.2820	2573.8	-----	1.2970	2577.7	-----

GENERAL REMARKS

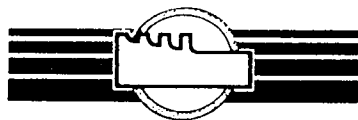
RAN TEMP. ELEMENT 29216/156-366 F

MOOMBA # 57 — STATIC PRESSURE GRADIENT — 7/5/92

ELEMENT # 29323/3950 (BOT)



EXPERTEST PTY. LTD.



FIELD READINGS

CUSTOMER : *SANTOS*PERFORATIONS: *7904' - 8082'*PAGE: *1* OFWELL NAME: *MOOMBA 4 57*FORMATION : *Toolachee*DATE: *30.4.92*TEST TYPE : *Single Rate / Build up*OPR : *R. LARKIN*

TIME		WELLHEAD DATA					SEPARATOR DATA					LIQUID PRODUCTION			
DATE	TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF. PRESS. (IN WC)	GAS TEMP (°F)	TOTAL LIQUID (IN/GM)	OIL (IN/GM)	OIL API GRAVITY @ 60°F	WATER (IN/GM)
<i>APRIL</i>	<i>30/92</i>														
	<i>1030</i>	<i>0</i>	<i>2692</i>	<i>0</i>		<i>open</i>		<i>on Flow to FLARE. By Pass Sep. 16/64 choke.</i>				<i>0</i>	<i>0</i>		<i>0</i>
	<i>1033</i>		<i>2460</i>			<i>open</i>		<i>to 24/64.</i>							
	<i>1045</i>					<i>TRIM through Sep. Lifting water.</i>									
	<i>1054</i>		<i>1220</i>			<i>open</i>		<i>to 28/64</i>							
	<i>1100</i>		<i>900</i>	<i>0</i>	<i>29</i>	<i>open</i>		<i>to 32/64.</i>							
	<i>1130</i>	<i>1</i>	<i>660</i>	<i>10</i>	<i>30</i>			<i>2.0</i>	<i>300</i>	<i>70</i>	<i>70</i>	<i>10</i>	<i>0</i>		<i>10</i>
	<i>1230</i>	<i>2</i>	<i>674</i>	<i>152</i>	<i>32</i>	<i>32/64</i>		<i>..</i>	<i>302</i>	<i>68</i>	<i>72</i>	<i>13</i>	<i>0</i>		<i>13</i>
	<i>1430</i>	<i>4</i>	<i>661</i>	<i>589</i>	<i>34</i>	<i>..</i>		<i>..</i>	<i>302</i>	<i>68</i>	<i>75</i>	<i>16.5</i>	<i>1.5</i>		<i>15</i>
	<i>1630</i>	<i>6</i>	<i>651</i>	<i>871</i>	<i>35</i>	<i>..</i>		<i>..</i>	<i>305</i>	<i>66</i>	<i>77</i>	<i>21</i>	<i>3</i>		<i>18</i>
			<i>DEPRESSURE ANNULUS to 200 PSI</i>												
	<i>1830</i>	<i>8</i>	<i>630</i>	<i>368</i>	<i>35</i>	<i>32/64</i>		<i>2.0</i>	<i>302</i>	<i>65</i>	<i>79</i>	<i>25</i>	<i>3.5</i>		<i>21.5</i>
	<i>2030</i>	<i>10</i>	<i>644</i>	<i>521</i>	<i>36</i>	<i>..</i>		<i>..</i>	<i>305</i>	<i>64</i>	<i>81</i>	<i>29</i>	<i>4.5</i>		<i>24.5</i>
	<i>2230</i>	<i>12</i>	<i>639</i>	<i>635</i>	<i>37</i>	<i>..</i>		<i>..</i>	<i>300</i>	<i>64</i>	<i>82</i>	<i>33.5</i>	<i>6</i>		<i>27.5</i>
	<i>MAY 1/92</i>														
	<i>0230</i>	<i>16</i>	<i>620</i>	<i>796</i>	<i>39</i>	<i>..</i>		<i>..</i>	<i>302</i>	<i>63</i>	<i>86</i>	<i>42</i>	<i>9</i>		<i>33</i>
	<i>0630</i>	<i>20</i>	<i>622</i>	<i>923</i>	<i>39</i>	<i>..</i>		<i>..</i>	<i>305</i>	<i>60</i>	<i>84</i>	<i>50.5</i>	<i>11.5</i>		<i>39</i>
	<i>0830</i>	<i>22</i>	<i>618</i>	<i>976</i>	<i>41</i>	<i>..</i>		<i>..</i>	<i>290</i>	<i>64</i>	<i>84</i>	<i>54</i>	<i>12</i>		<i>42</i>
			<i>DEPRESSURE casing to 130 PSI.</i>												
	<i>1030</i>	<i>24</i>	<i>616</i>	<i>193</i>	<i>41</i>	<i>32/64</i>		<i>2.0</i>	<i>290</i>	<i>63</i>	<i>90</i>	<i>57.5</i>	<i>13</i>		<i>44.5</i>
	<i>1430</i>	<i>26</i>	<i>620</i>	<i>238</i>	<i>43</i>	<i>..</i>		<i>..</i>	<i>285</i>	<i>64</i>	<i>93</i>	<i>61.5</i>	<i>13.5</i>		<i>48</i>
	<i>1430</i>	<i>28</i>	<i>611</i>	<i>271</i>	<i>43</i>	<i>..</i>		<i>..</i>	<i>285</i>	<i>64</i>	<i>95</i>	<i>66</i>	<i>15</i>	<i>52.3</i>	<i>51</i>

800000

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 2 OF

WELL NAME: MOOMBA 57

FORMATION : TOOLACHEE

DATE: 1.5.92

TEST TYPE: SRT / PRU

OPR: R. LARKIN

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION			
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE 64" h	BS&W (%)	ORIFICE PLATE SIZE (IN)	STATIC PRESS. (PSIG)	DIFF. PRESS. (IN WC)	GAS TEMP (°F)	TOTAL LIQUID (IN/CM)	OIL (IN/CM)	OIL API GRAVITY @ 60°F	WATER (IN/CM)
MAY 1/92											66	15		51
1555														
1630	30	613	303	44	32/64		2.0	290	62	95	69.5	15.5		54
1640														
1740		607												
1830	32	606	331	44	32/64		2.0	260	68	95	73	16.5		56.5
1840		611												
1842														
1900		786												
1901														
2030	34	609	350	45	32/64		2.0	260	65	93	76.5	17.5		59
2230	36	603	370	45	"		"	262	65	95	80	18.5		61.5
MAY 2/92														
0230	40	600	410	45	"		"	269	63	95	87.5	20.5		67
0630	44	598	446	45	"		"	270	62	95	94.5	22		72.5
0830	46	595	466	44	"		"	270	62	97	98	23		75
0930	47	598	472	45	"		"	269	62	98	100.5	24	51.9	76.5
1030	48	597	482	45	32/64		2.0	267	62	97	102	24.5		77.5
1230	50	590	498	45	32/64		2.0	260	64	98	106	25		81
1430	52	592	510	47	"		"	255	66	100	109.5	25.5		84

600000

EXPERTEST PTY. LTD.

FIELD READINGS

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 3 OF

WELL NAME: MOOMBA 57

FORMATION : TOOLACHEE

DATE: 2.5.92

TEST TYPE: SRT / PBU

OPR: R. LARKIN

TIME

WELLHEAD DATA

SEPARATOR DATA

LIQUID PRODUCTION

DATE

FLOW OR
SHUT IN
TIME
(HOURS)TUBING
PRESSURE
PSI
(PSI/KPa)ANNULUS
PRESSURE
PSI
(PSI/KPa)WELLHEAD
TEMP
(°F/°C)CHOKE
SIZE
64thBS&W
(%)ORIFICE
PLATE
SIZE (IN)STATIC
PRESS.
(PSIG)DIFF.
PRESS.
(IN WC)GAS
TEMP
(°F)TOTAL
LIQUID
(IN/CM)OIL
(IN/CM)OIL API
GRAVITY
@ 60°FWATER
(IN/CM)

TIME

64th

(%)

SIZE (IN)

(PSIG)

(IN WC)

(°F)

(IN/CM)

(IN/CM)

@ 60°F

(IN/CM)

MAY 2/92

1630 54

582

519

47

32/64

2.0

255

64

97

109.5

25.5

84

112.5

26

86.5

END OF FLOW. SHUT IN FOR BUILD UP.

See Test Results for PBU readings.

000010

TEST RESULTS

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 1 OF

WELL NAME: MOOMBA 57

FORMATION : Toolachee

DATE: 30.4.92

TEST TYPE : Single Rate / Build up

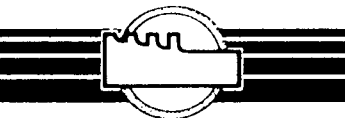
OPR : R. LARKIN

TIME		WELLHEAD DATA				SEP.		FLOW RATES			CUMULATIVE PRODUCTION				
DATE	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 MMSCFD m ³ /10 ³	OIL BBLs m ³	WATER BBLs m ³	L.G.R.	
APRIL	30/92				64th									M ³ /10 ⁶ m ³	
1030	0	18561	0			open on Flow By Pass SEP. to FLARE.						16/64 choke.			
1033		16962				open to 24/64 choke.									
1045						Trim Flow through SEP. LIFTING FLUID.									
1054		8412				open to 28/64									
1100		6206	0	29		open to 32/64									
1130	1	4551	69	30	32/64	2069	21	102.226	-	64		-	2.67	626	
1230	2	4647	1048	32	"	2082	22	100.857	-	19.22		-	3.471	191	
1430	4	4558	4061	34	"	2082	24	100.503	4.8	6.41		4.01	4.005	112	
1630	6	4489	6005	35	"	2103	25	99.281	4.8	9.6		8.02	4.806	145	
		Depressure casing to 1380 KPA.													
1830	8	4344	2537	35	32/64	2082	26	97.802	1.6	11.2		9.36	5.741	131	
2030	10	4440	3592	36	"	2103	27	97.312	3.2	9.6		1.203	6.542	132	
2230	12	4406	4378	37	"	2069	28	96.386	4.8	9.6		1.604	7.343	149	
MAY 1	192														
0230	16	4275	5488	39	"	2082	30	95.518	4.8	8.8		2.405	8.812	142	
0630	20	4289	6364	39	"	2103	29	93.893	4.0	9.6	80.971	3.073	10.414	145	
0830	22	4261	6730	41	"	2000	29	94.527	1.6	9.6		3.207	11.215	118	
		Depressure casing to 896 KPA.													
1030	24	4247	1331	42	32/64	2000	32	93.160	3.2	8.0		3.474	11.883	120	
1230	26	4275	1641	43	"	1965	34	92.773	1.6	11.2		3.608	12.818	138	
1430	28	4213	1869	43	"	1965	35	92.572	4.8	9.6		4.009	13.619	156	

000011

TEST RESULTS		
CUSTOMER : SANTOS	PERFORATIONS: 7904' - 8082	PAGE: 2 OF
WELL NAME: MOOMBA 457	FORMATION : Toolachee	DATE: 1.5.92
TEST TYPE : SRT / PBU		OPR : R. LARKIN

TIME		WELLHEAD DATA				S.C.P.		FLOW RATES			CUMULATIVE PRODUCTION			L.G.R
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE 6 1/4"	PRESSURE (PSI/KPa)	TEMP (°F/°C)	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	GAS MMSCF m³10³	OIL BBLG m³	WATER BBLG m³	
MAY 1/92												4.009	13.619	
1555														
1630	30	4227	2089	44	3 1/2	2000	35	91.912	1.6	9.6		4.143	14.420	122
1640		4227												
1740		4185												
1830	32	4178	2282	44	3 1/2	1793	35	91.143	3.2	8.0		4.410	15.088	123
1840		4213												
1842														
1900		5419												
1901														
2030	34	4199	2413	45	3 1/2	1793	34	89.295	3.2	8.0		4.677	15.756	125
2230	36	4158	2551	"	"	1806	35	89.445	3.2	8.0		4.944	16.424	125
MAY 2/92														
0230	40	4137	2827	45	"	1855	35	89.221	3.2	8.8		5.478	17.893	134
0630	44	4123	3075	45	"	1862	35	88.672	2.4	8.8	171.856	5.879	19.362	126
0830	46	4103	3213	44	"	1862	36	88.483	3.2	8.0		6.146	20.030	127
0930	47	4123	3254	45	"	1855	37	88.225	6.4	9.6		6.413	20.431	181
1030	48	4116	3323	45	3 1/2	1841	36	87.990	3.2	6.4		6.547	20.698	109
1230	50	4068	3434	45	3 1/2	1793	37	88.133	1.6	11.2		6.681	21.633	145
1430	52	4082	3516	47	"	1758	38	88.457	1.6	9.6		6.815	22.434	127



TEST RESULTS

CUSTOMER : SANTOS	PERFORATIONS: 7904'-8082'	PAGE: 3 OF
WELL NAME: MOOMBA 57	FORMATION : TOOLACHEE	DATE: 2.5.92
TEST TYPE : SRT / PBU		OPR : R. LARKIN

TIME		WELLHEAD DATA				Sep.		FLOW RATES			CUMULATIVE PRODUCTION				
DATE	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 MMSCFD m³10³	OIL BBLS m³	WATER BBLS m³	L. G. R.	
TIME					64 th										
MAY 2/92												6.815	22.568		
1630	54	4013	3578	47	32/64	1758	36	87.328	1.6	8.0	208.569	6.949	23.102	110	
		END OF FLOW. SHUT IN FOR BUILD UP													
1635		11032	3599												
1640		13038	3385												
1645		13997	3075												
1700		15059	2158												
1715		15459	1413												
1730	1	15672	931												
1745		15845	414												
1800		15990	35												
1815		16079	7												
1830	2	16114	0												
1845		16182	0												
1900		16224	0												
1915		16266	0												
1930	3	16320	0												
1945		16355	0												
2000		16396	0												
2015		16417	0												
2030	4	16445	0												
2230	6	16631	0												

000013

EXPERTEST PTY. LTD.

TEST RESULTS

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 4 OF

WELL NAME: MOOMBA 57

FORMATION : TOOLACHEE

DATE: 3.5.92

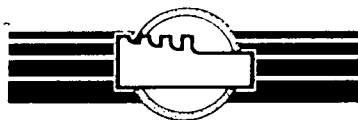
TEST TYPE : SRT/PBU

OPR : R. LARKIN

TIME		WELLHEAD DATA						FLOW RATES			CUMULATIVE PRODUCTION				
DATE	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		
MAY 3/92															
0230	10	16838	0												
0630	14	16962	0												
1030	18	17141	0												
1430	22	17272	0												
1830	26	17375	0												
2230	30	17417	0												
MAY 4/92															
0230	34	17465	0												
0630	38	17513	0												
1030	42	17582	0												
1430	46	17665	0												
1830	50	17686	0												
2230	54	17699	0												
MAY 5/92															
0230	58	17720	0												
0630	62	17734	0												
1030	66	17789	0												
1430	70	17803	0												
1830	74	17817	0												
2230	78	17824	0												

000014

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 5 OF 5

WELL NAME: MOOMBA 457

FORMATION : TOOLACHEE

DATE: MAY 6/92

TEST TYPE : SRT/PBU

OPR : R. LARKIN

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		
MAY 6/92															
0230	82	17830	0												
0630	86	17837	0												
1030	90	17893	0												
1430	94	17913	0												
1830	98	17906	0												
2230	102	17893	0												
MAY 7/92															
0230	106	17906	0												
0630	110	17913	0												
0700		17913	0												
0714															
0715		17913	0												
0815		17913	0												
1015		17927	0												
1114															
1129		17893	0												
12:44		17893	0												
12:59		17893	0												
13:22															
13:38		17824	0												

BUILD UP.

PULL PRES. RECORDERS OUT OF HOLE.

IN Lub.

Dep. Lub.

PRES. Lub.

Dep. Lub.

Static GRADIENT Survey.

PRES. Lub.

R.I.H.

ON Depth at 7993' K.B. M.P.P.

POOH

IN Lub.

Dep. Lub. CHARTS good. Rig DOWN. CHARTS good

000015

EXPERTEST PTY. LTD.



GAS FLOW CALCULATIONS

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 1 OF

WELL NAME: MOOMBA 457

FORMATION : Toolachee

DATE: 30.4.92

TEST TYPE : Single Rate/Build up

OPR : R. LARKIN

ORIFICE METER TYPE: DANIELS SENIOR

STATIC PRESSURE RANGE : 0 - 500 PSIG

GAS SPECIFIC GRAVITY (SG) = .73

METER RUN SIZE : 4.026"

DIFFERENTIAL PRESS. RANGE: 0 - 200 IN WC

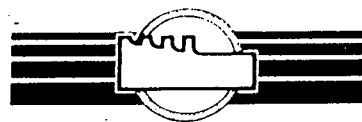
FG $\sqrt{(I/SG)}$ = 1.1704

SEPARATOR NO : 59

STANDARD CONDITIONS : 14.73 PSI @ 60°F

C₂ (FU x FG) = 28.0896

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 × F _{TF} × F _{PV} × 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)
APRIL 30/92															
1030	0														
1130	1	32/64	315	70	70	2.0	148.43	842.12	.9905	1.0369	1.0014	866.07	24327.94	3.611	102.226
1230	2	"	317	68	72	"	146.76	"	.9887	1.0366	1.0013	864.20	24275.36	3.563	100.857
1430	4	"	317	68	75	"	146.76	"	.9859	1.0359	1.0013	861.18	24190.30	3.550	100.503
1630	6	"	320	66	77	"	145.27	"	.9840	1.0358	1.0013	859.43	24141.36	3.507	99.281
1830	8	"	317	65	79	"	143.48	"	.9822	1.0350	1.0012	857.15	24077.22	3.455	97.802
2030	10	"	320	64	81	"	143.05	"	.9804	1.0349	1.0012	855.45	24029.45	3.437	97.312
2230	12	"	315	64	82	"	141.93	"	.9795	1.0341	1.0012	854.01	23989.09	3.405	96.386
MAY 1/92															
0230	16	"	317	63	86	"	141.26	"	.9759	1.0334	1.0012	850.32	23885.41	3.374	95.518
0630	20	"	320	60	84	"	138.51	"	.9777	1.0342	1.0011	852.46	23945.62	3.317	93.893
0830	22	"	305	64	84	"	139.65	"	.9777	1.0325	1.0013	851.18	23909.50	3.339	94.527
1030	24	"	305	63	90	"	138.56	"	.9723	1.0313	1.0013	845.50	23749.76	3.291	93.160
1230	26	"	300	64	93	"	138.50	"	.9697	1.0302	1.0013	842.32	23660.69	3.277	92.773
1430	28	"	300	64	95	"	138.50	"	.9680	1.0298	1.0013	840.49	23609.34	3.270	92.572
1630	30	"	305	62	95	"	137.45	"	.9680	1.0303	1.0012	840.86	23619.87	3.247	91.912
1830	32	"	275	68	95	"	136.68	"	.9680	1.0272	1.0015	838.54	23554.62	3.219	91.143
2030	34	"	275	65	93	"	133.63	"	.9697	1.0275	1.0014	840.28	23603.47	3.154	89.295
2230	36	"	277	65	95	"	134.12	"	.9680	1.0274	1.0014	838.65	23557.56	3.159	89.445



GAS FLOW CALCULATIONS

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 2 OF

WELL NAME: MOOMBA # 57

FORMATION : TOOLACHEE

DATE: 2.5.92

TEST TYPE: SRT/PBU

OPR: P. LARKIN

ORIFICE METER TYPE: DANIELS SENIOR

STATIC PRESSURE RANGE : 0 - 500 PSIG

GAS SPECIFIC GRAVITY (SG) = .73

METER RUN SIZE : 4.026"

DIFFERENTIAL PRESS. RANGE: 0 - 200 IN WC

FG $\sqrt{(1/SG)}$ = 1.1704

SEPARATOR NO : 59

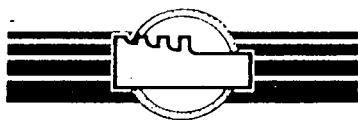
STANDARD CONDITIONS : 14.73 PSI @ 60°F

C₂ (FU x FG) = 28.0896

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 × F _{TF} × F _{PV} × 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)
2.5/92															
0230	40	32/64	284	63	95	2.0	133.70	842.12	.9680	1.0281	1.0014	839.18	23572.37	3.152	89.221
0630	44	"	285	62	95	"	132.86	"	.9680	1.0282	1.0013	839.24	23574.13	3.132	88.672
0830	46	"	285	62	97	"	132.87	"	.9662	1.0279	1.0013	837.45	23523.74	3.125	88.483
0930	47	"	284	62	98	"	132.63	"	.9653	1.0276	1.0013	836.48	23496.48	3.116	88.225
1030	48	"	282	62	97	"	132.16	"	.9662	1.0276	1.0013	837.21	23517.04	3.108	87.990
1230	50	"	275	64	98	"	132.60	"	.9653	1.0267	1.0014	835.80	23477.63	3.113	88.133
1430	52	"	270	66	100	"	133.42	"	.9636	1.0258	1.0015	833.70	23418.43	3.125	88.457
1630	54	"	270	64	97	"	131.39	"	.9662	1.0263	1.0014	836.30	23491.44	3.086	87.378
			END OF Flow TEST.												
			Ave: ^{PSIA} 297												
			^{PSIG} 282	64	89								Average:	3.285	92.559
			✓	✓	✓										✓
			S.G. = 0.776			✓							Corrected rate:	3.174	89.423
			CO ₂ = 11.86 %			✓									✓
			P _c = 714.2			✓									
			T _c = 432.2			✓									

0000017

EXPERTEST PTY. LTD.



LIQUID PRODUCTION

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 1 OF

WELL NAME: MOOMBA #57

FORMATION : Toolachee

DATE: 30.4.92

TEST TYPE: Single Rate / Build up

OPR: R. LARKIN

TANK
NUMBER #1 = 63

TANK

#1 = 56.6 m³ bbls/m³

TANK

#1 = .267 m³/inch bbls/in - m³/cm

OIL API GRAVITY = 52.3 @ 60°F

#2 =

CAPACITY

#2 = bbls/m³

SCALE

#2 = bbls/in - m³/cm

DATE TIME	FLOW TIME (HOURS)	TANK USED (NUMBER)	TOTAL TANK DIP (IN/CM)	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
				TANK DIP (IN/CM)	TANK PRODUCTION (BBLs/m ³)	FLOW RATE (BPD/m ³ D)	CUMULATIVE PRODUCTION (BBLs/m ³)	TANK DIP (IN/CM)	TANK PRODUCTION (BBLs/m ³)	FLOW RATE (BPD/m ³ D)	CUMULATIVE PRODUCTION (BBLs/m ³)
APRIL 30/92		#1	0	0				0			
1030	START	test.									
1130	1		10	0	-	-	-	10	.267	6.4	2.67
1230	2		13	0	-	-	-	13	.801	19.22	3.471
1430	4		16.5	1.5	.401	4.8	.401	15	.534	6.41	4.005
1630	6		21	3	.401	4.8	.802	18	.801	9.6	4.806
1830	8		25	3.5	.134	1.6	.936	21.5	.935	11.22	5.741
2030	10		29	4.5	.267	3.2	1.203	24.5	.801	9.6	6.542
2230	12		33.5	6	.401	4.8	1.604	27.5	.801	9.6	7.343
MAY 1/92											
0230	16		42	9	.801	4.8	2.405	33	1.469	8.8	8.812
0630	20		50.5	11.5	.668	4.0	3.073	39	1.602	9.61	10.414
0830	22		54	12	.134	1.6	3.207	42	.801	9.6	11.215
1030	24		57.5	13	.267	3.2	3.474	44.5	.668	8.0	11.883
1230	26		61.5	13.5	.134	1.6	3.608	48	.935	11.2	12.818
1430	28		66	15	.401	4.8	4.009	51	.801	9.6	13.619
1630	30		69.5	15.5	.134	1.6	4.143	54	.801	9.6	14.420
1830	32		73	16.5	.267	3.2	4.410	56.5	.668	8.0	15.088
2030	34		76.5	17.5	.267	3.2	4.677	59	.668	8.0	15.756
2230	36		80	18.5	.267	3.2	4.944	61.5	.668	8.0	16.424

000018

	PERFORATION
57	FORMATION

WELL NAME: MOO ME
TEST TYPE: SPT / R

FORMATION : Toolachee

DATE: 2.5.92

OPR : R. LARKIN

TANK	#1 = 56.6 M ³
CAPACITY	#2 =

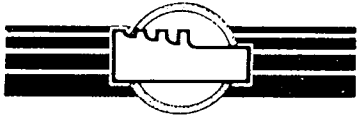
bbls/m³

SCALE

#2 = bbls/in - m³/cm

	5/11/10

[illegible]

	SAMPLING DATA											
	CUSTOMER : SANTOS						PERFORATIONS: 7904' - 8082'			PAGE: 1 OF		
	WELL NAME: MOOMBA 57						FORMATION: TOOLACHEE			DATE: 2.5.92		
TEST TYPE: SINGLE RATE/BUILD UP									OPR: R. LARKIN			

SEP. SAMPLE # HPGas # SPE026															
TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
0930	SPE026	500	HPGas	15	Vacuum	-	-		Meter Run		1855	37	14.73	23	
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D		PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	
4123	45	32/64		1855	37	1.0276	.73	51.9	88.2	6.4	9.6		-	-	

REMARKS:

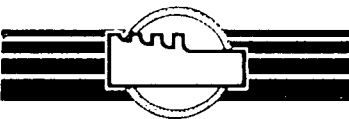
SAMPLE # SPE070															
TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
0930	SPE070	500	H.P. Cond	15	BRINE	470	30 mL		Sight glass		1855	-	14.73	23	
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D		PRESSURE (PSI/KPa)	TEMPERATURE (°F/°C)	
4123	45	32/64		1855	37	1.0276	.73	51.9	88.2	6.4	9.6		-	-	

REMARKS:

SAMPLE # SPE 029														
TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)
1030	SPE029	500	HPGas	15	Vacuum	-	-		Meter Run		1841	36	14.73	24
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES		RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D		PRESSURE (PSI/KPa)	TEMPERATURE (°F/°C)
4116	45	32/64		1841	36	1.0276	.73	51.9	87.79	3.2	6.4		-	-

REMARKS:

000020



SAMPLING DATA

CUSTOMER : SANTOS	PERFORATIONS: 7904' - 8082'	PAGE: 2 OF
WELL NAME: MOONBA 57	FORMATION : TOOLACHEE	DATE: 2-5-92
TEST TYPE : SINGLE RATE/BUILD UP		OPR : R. LARKIN

SEP. SAMPLE # SPE 025

TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
1030	SPE025	500	HPCOND.	15	BRINE	470	30		Sight Glass		1841	36	14.73	24	
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES			RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D		PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	
4116	45	32/64		1841	36	1.0276	.73	51.9	87.99	3.2	6.4		-	-	

REMARKS:

SAMPLE #

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

REMARKS:

SAMPLE #

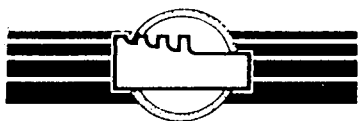
TIME SAMPLE COLLECTED	CYLINDER SERIAL NO.	CYLINDER VOLUME (CC)	SAMPLE TYPE	SAMPLING DURATION (MINS)	CYLINDER INITIALLY FILLED WITH	OUTAGE (CC)	VOLUME OF FILL REMAINING WITH SAMPLE (CC)		SAMPLE POINT		SAMPLE PRESS (PSI/KPa)	SAMPLE TEMP (°F/°C)	AMBIENT PRESS (PSI/KPa)	AMBIENT TEMP (°F/°C)	
WELLHEAD DATA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

00002

REMARKS:

000021

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 1 OF

WELL NAME: MOOMBA 51

FORMATION : Toolachee

DATE: 1.5.92

TEST TYPE: SRT / PBU

OPR: R. LARKIN

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

29216

DATE : 1.5.92

ELEMENT RANGE

4000

3950

156°-366°F

PRESSURE LUBRICATOR

1640

4227

2089

RECORDING SECTION SERIAL NO.

14631

12963

14926

RUN IN HOLE

1840

4213

DATE OF CALIBRATION:

@ 290°F

16.12.91

16.12.91

6.11.91

ON DEPTH AT : 7870' FT/M

1900

5419

CLOCK SERIAL NO.

K-4259

2868

2886

DATE : 7.5.92

CLOCK RANGE

180 hr

180 hr

180 hr

PULL OUT OF HOLE

0700

17913

0

LEAD SCREW TYPE

15 TLS

15 TLS

15 TLS

AT SURFACE

0714

17913

0

DEPRESSURE LUBRICATOR

1015

17927

0

ENGAGE STYLUS DATE 1.5.92 TIME

16:23

16:23

16:23

MAXIMUM BHT AT - FT/M = 300°F - °F/C

2600

DISENGAGE STYLUS DATE TIME

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

DATE

TIME

REMARKS

1.5.92

16:40

PRES. Lub.

17:40

Dep. Lub.

18:40

PRES. Lub.

R.I.H.

cut choke to 24/64.

19:00

ON Depth at 7870' KB.

reopen choke 32/64

2.5.92

16:30

Shut IN FOR BUILD up.

7.5.92

0700

P.O.O.H.

IN / OUT

0714

IN Lub.

BOT 602/2592

0715

Dep. Lub

0815

PRES. Lub

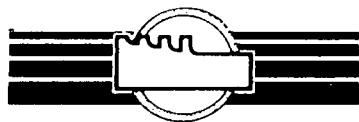
1015

Dep. Lub

CHARTS good

000022

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082'

PAGE: 1 OF

WELL NAME: MOOMBA 57

FORMATION : TOOLACHEE

DATE: 7.5.92

TEST TYPE : SGS

OPR: R. LARKIN

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

29216

DATE : 7.5.92

ELEMENT RANGE

4000

3950

156°-366°

PRESSURE LUBRICATOR

11:14

0

RECORDING SECTION SERIAL NO.

14631

12963

14926

RUN IN HOLE

11:29

17858

0

DATE OF CALIBRATION:

@ 290°F

16.12.91

16.12.91

6.11.91

ON DEPTH AT

7993

FT/M

12:44

17893

CLOCK SERIAL NO.

A-16084

A-16087

A-16088

DATE

CLOCK RANGE

3 HR

3 HR

3 HR

PULL OUT OF HOLE

12:59

17893

0

LEAD SCREW TYPE

15 TLS

15 TLS

AT SURFACE

13:22

DEPRESSURE LUBRICATOR

13:38

17824

0

ENGAGE SYLUS DATE 7.5.92 TIME

11:07

11:07

11:07

MAXIMUM BHT AT

FT/M =

°F/C

DISENGAGE SYLUS DATE 7.5.92 TIME

13:43

13:43

13:43

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

DATE

TIME

REMARKS

Note: clock # A-16084 stopped during 15 min
M.R.P. stop.

000023

000024

27 '92 11:52 SANTOS PET*ENG*OPS 224-7755

PETROLEUM ENGINEERING DEPT.

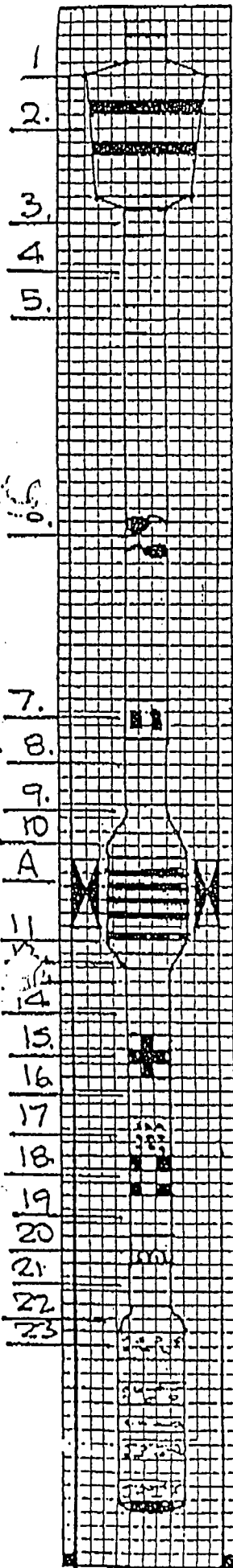
DOWNHOLE INSTALLATION DRAWING

WELL MOORE #57

DATE OF INSTALLATION 5/3/92

WELLSITE SUPERVISOR M. DUNNE

PROPOSED	
RE-COMPLETION	
COMPLETION	✓



Item No.	Description	Length (Ft.)	Depth Ref. K.B. (Ft.)	Minimum I.D. (in)
1	K.B. to top of tubinghead spool	16.07	0.00	
2	C.I.W 7 1/8 x 2 3/8 ABS TBG HANGER	0.70		
3	Nipple 2 3/8 ABS JSS	0.36		
4	1st. 2 3/8 4.7\" JSS BH3 TBG	31.68		
5	Rep. Jss 2 3/8 4.7\" JSS BH3 10M2	21.47		
6	241 JSS 2 3/8 4.7\" JSS BH3 TBG	7636.47		
7	2 3/8 OTS 121 XDH 18710 SLOW SEAL	3.50	7706.75	
8	1st. 2 3/8 4.7\" JSS BH3 TBG	31.65		
9	Surge 2 3/8 Box x 2 3/8 RW BH3 JSS	1.73		
10	Surge 2 3/8 Box x 3 1/2 RW BH3 JSS	0.68		
11	Baker F32.80-40. Anchor	2.81		
	SEAL ASSEMBLY 3/2 x 2 3/8 BH3			
A	Baker 7\" FB-1 Baker SS.40	(2.69)	7747.00	6
12	Surge 2 3/8 x 2 3/8 Bxp ABS JSS	0.61		
13	X/O 2 3/8 ABS Box x 2 3/8 RW	0.66		
14	1st. 4.7\" JSS EUE TBG.	30.84		
15	2 3/8 EUE OTS x NIPPLE CW GUN	1.20	7779.23	1.875"
16	Rep. Jss 2 3/8 4.7\" JSS EUE 2x10	19.99		
17	2 3/8 EUE JSS 1530ATED Rep. ST	10.00		
18	2 3/8 EUE OTS x NIPPLE CW GUN	1.35	7810.42	1.791"
19	Rep. Jss 2 3/8 4.7\" JSS EUE 2x10	20.06		
20	SCHLUMBERGER 2 3/8 EUE TBG. REL. SUB	1.55	7831.83	
21	2 JSS 2 3/8 4.7\" JSS EUE TBG.	56.80		
22	SCHUM. PERMISSON TRNG HEAD	1.84		
23	SAFETY SPACER	11.98		
24	3 7/8 OD. T.C.P. GUNS	178.00	7904.00	

PERFORATED INTERVALS:

Formation	Interval (Ft. KB)	Size	GUN: Type	CHARGES: SPF Type Wt.(g.)
TOOLACHEE.				
UNIT "C" 75-8	7904 - 7932	3 3/8	TCP.	6, Hrx 22g
76.1	7940 - 7956			
76.5	8014 - 8022			
76.8	8040 - 8051			
77.0	8068 - 8082			

REMARKS:

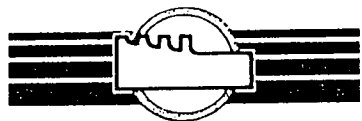
Annulus Fluid: 2% KCL 9.7 bbl. FILTERED & UNIONED BRINE
 String Weight (Indicated: 37,000 LBS) (CINCHMAN 4H FOR GUNS)
 (Calculated: 33,889)
 Slack-off Weight: 5000 LB

	SEQUENCE OF EVENTS		
	CUSTOMER : SANTOS	PERFORATIONS: 7904' - 8082'	PAGE: 1 OF
	WELL NAME: MOOMBA "57	FORMATION : Toolachee	DATE: 29.4.92
	TEST TYPE : Single Rate / Build up		OPR : R. LARKIN

DATE/TIME	DESCRIPTION OF EVENTS
APRIL 29/92	
13:15	ON Location . Rig up SWL unit.
13:50	R.I.H. 1.75" BLIND BOX : 18541 KPA TUBING PRES.
14:20	Tag TOP OF TCP GUNS at 10102' KB.
14:25	POOH.
15:00	at SURFACE . SECURE SWL.
	SPOT TEST EQUIPMENT . SEP. TANK.
	NOTE: TCP guns WERE PREVIOUSLY RELEASED FROM TUBING.
APRIL 30/92	
0630	Commence Rig IN test EQUIPMENT, SEP. TK, choke MANIFOLD.
1030	open well on FLOW to FLARE . By Pass SEP. 16/64 choke
1033	open to 24/64 choke.
1045	TRIM THROUGH SEP.
1054	open to 28/64
1100	open to 32/64 as per PROGRAM. MONITOR FLOW.
	NOTE: SPECIFIC GRAVITY .73 . FIELD AVERAGE.
1.5.92	
1555	PREPARE PRES. ELEMENTS FOR P.B.U. SURVE.
1640	PRES. Lub.
1740	DEP. Lub.
1840	PRES. Lub. R.I.H.
1842	cut choke to 24/64 to R.I.H.
1900	Hang at 7870' K.B.
1901	open to 32/64 choke.

000026

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : SANTOS

PERFORATIONS: 7904' - 8082

PAGE: 1 OF 1

WELL NAME: MOOMBA #57

FORMATION : TOOLACHEE

DATE: 29-1-93

TEST TYPE : STATIC GRADIENT

OPR : D.J. McALLISTER

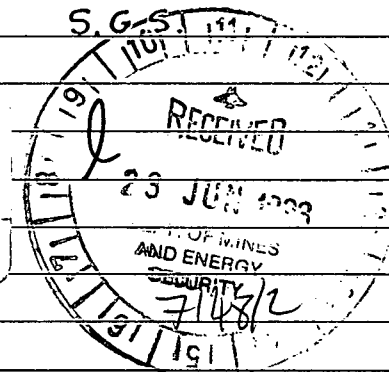
DATE/TIME	DESCRIPTION OF EVENTS
29-1-93	
0730	DEPART MOOMBA
0800	ARRIVE ON LOCATION W.S.I FOR S.G.S. T.H.P 13294 KPA
0805	S.I MASTER VALVE & WING VALVE BLEED OFF PRESSURE.
0842	COMPLETE WIRE LINE RIG UP.
0845	PRESSURE LUBRICATOR R.I.H 1.75" BLIND BOX. PERFORMING DUMMY RUN
0912	BLIND BOX @ 10000' - KB P.O.O.H.
0940	BLIND BOX IN LUBRICATOR. DEPRESSURE. NO OBSTRUCTIONS ENCOUNTERED
0943	RIG DOWN TOOLSTRING
0947	ENGAGE STYLUS
0953	ELEMENTS IN LUBRICATOR
0958	PRESSURE LUBRICATOR
1003	DEPRESSURE ———
1008	PRESSURE ———
1013	DEPRESSURE ———
1018	PRESSURE ——— R.I.H PERFORMING S.G.S REFER GAUGE RUN DATA
	ELEMENTS WERE FLEXED IN LUBRICATOR BEFORE S.G.S
1108	ELEMENTS @ MPP 7993' KB
1118	P.O.O.H.
1138	ELEMENTS IN LUBRICATOR DEPRESSURE
1143	PRESSURE LUBRICATOR
1153	DEPRESSURE ———
1158	RIG DOWN ELEMENTS
1202	DISENGAGE STYLUS CHARTS OK MBHT 292°F
1232	R.D.M.O.

Mines & Energy SA

07148/002



00004171



000027

PERFORATIONS: 7904'-8082'

PAGE: 1 OF 1

FORMATION : TOOLACHEE

DATE: 29-1-93

OPR : D.J. McALLISTER

GAUGE DATA		UPPER PRESSURE GAUGE	LOWER PRESSURE GAUGE	TEMPERATURE GAUGE	RUN DATA	TIME (HOURS)	TUBING PRESSURE /KPa)	ANNULUS PRESSURE /KPa)
ELEMENT SERIAL NO.		850208	850207		DATE : 29-1-93			
ELEMENT RANGE		4100 PSI	4075 PSI		PRESSURE LUBRICATOR :	1008	13314	—
RECORDING SECTION SERIAL NO.		K3434	K3433		RUN IN HOLE :	1018	13294	—
DATE OF CALIBRATION:	@ 290°F.	6-3-92	6-3-92		ON DEPTH AT : 7993 FT/	1108	13369	—
CLOCK SERIAL NO.		2431	2180		DATE : 29-1-93			
CLOCK RANGE		3 HR	3 HR		PULL OUT OF HOLE :	1118	13369	—
LEAD SCREW TYPE		15 T.L.S.	15 T.L.S.		AT SURFACE :	1138	13364	—
					DEPRESSURE LUBRICATOR :	1153	13342	—
ENGAGE STYLUS	DATE 29-1-93	TIME 0947	0947		MAXIMUM BHT AT 7993 FT/ = 292 °F.			
DISENGAGE STYLUS	DATE 29-1-93	TIME 1202	1202		N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

DATE	TIME	REMARKS
		ELEMENTS WERE FLEXYED IN LUBRICATOR.
		UNABLE TO FIT VAETRIX GAUGE TO CASING NIPPLE CELLAR WALL TO CLOSE.

000028

000028

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWANDILLA 5033

PH. (08) 354 0488 TELEX RA87183

FAX (08) 43 7408

138 RICHMOND ROAD MARLESTON

SOUTH AUSTRALIA 5033

Tested Friday, 29th January 1993.

STATIC PRESSURE GRADIENT REPORT

CLIENT

LOCATION

FORMATION

SANTOS LTD.

MOOMBA 57

TOOLACHEE

PRESSURE ELEMENT DATA

POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	850208	4100	6/ 3/92
Bottom	850207	4075	6/ 3/92

WELL DATA

PARAMETER	VALUE
DWT In	1931 PSIG
DWT Out	1935 PSIG
Max BHT	292 F

TOP ELEMENT

BOTTOM ELEMENT

DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.	0.9390	1927.5	-----	0.9480	1925.9	-----
1000	0.9760	2003.5	0.076	0.9860	2003.5	0.078
2000	1.0110	2075.5	0.072	1.0225	2078.0	0.075
3000	1.0450	2145.4	0.070	1.0560	2146.3	0.068
4000	1.0780	2213.2	0.068	1.0900	2215.7	0.069
5000	1.1100	2279.0	0.066	1.1215	2280.0	0.064
6000	1.1400	2340.7	0.062	1.1520	2342.3	0.062
7000	1.1740	2410.6	0.070	1.1860	2411.8	0.069
7500	1.1920	2447.6	0.074	1.2040	2448.5	0.074
7993	1.2090	2482.6	0.071	1.2210	2483.3	0.071
LUB.	0.9410	1931.6	-----	0.9520	1934.1	-----

GENERAL REMARKS

Elements were flexed in lubricator.

Unable to fit vaetrix gauge to casing nipple - cellar wall too close.

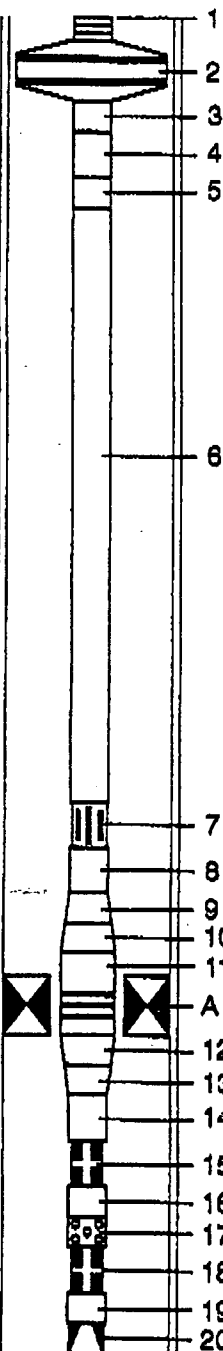


A.C.N. 007 550 923

PETROLEUM ENGINEERING DEPARTMENT

DOWNHOLE INSTALLATION

MOOMBA 57



ITEM NO.	DESCRIPTION	LENGTH (ft)	DEPTH K.B. (ft)	MIN. I.D. (in)
1	K.B. to top of tubinghead spool	16.07	0.00	
2	C.I.W. 7 ¹ / ₁₆ " x 2 ³ / ₈ " AB-IJ tubing hanger	0.70		
3	Nipple 2 ³ / ₈ " AB-DSS J55 pin x pin	0.36		
4	1 joint 2 ³ / ₈ " 4.7# J55 BH3 tubing	31.68		
5	Pup joints 2 ³ / ₈ " 4.7# J55 BH3 x 10' & 12'	21.47		
6	241 joints 2 ³ / ₈ " 4.7# J55 BH3 tubing	7636.47		
7	2 ³ / ₈ " 121XDH18710 sliding sleeve	3.50	7706.75	
8	1 joint 2 ³ / ₈ " 4.7# J55 EUE tubing	31.65		
9	Swage 2 ³ / ₈ " box x 2 ⁷ / ₈ " pin BH3 J55	1.73		
10	Swage 2 ⁷ / ₈ " x 3 ¹ / ₂ " pin BH3 J55	0.68		
11	Baker E22 80-40 anchor seal assembly	2.81		
	3 ¹ / ₂ " x 2 ⁷ / ₈ " BH3			
A	Baker 7" FB-1 packer 85-40	(2.69)	7747.00	C/L
12	Swage 2 ⁷ / ₈ " x 2 ³ / ₈ " box x pin AB-DSS J55	0.61		
13	X-over 2 ³ / ₈ " AB-DSS box x 2 ³ / ₈ " EUE pin	0.66		
14	1 joint 2 ³ / ₈ " 4.7# J55 EUE tubing	30.84		
15	2 ³ / ₈ " EUE Otis X nipple c/w collar	1.20	7779.23	1.875
16	Pup joints 2 ³ / ₈ " 4.7# J55 EUE x 2 x 10'	19.99		
17	2 ³ / ₈ " EUE J55 perforated pup joint	10.00		
18	2 ³ / ₈ " EUE Otis XN nipple c/w collar	1.35	7810.42	1.791
19	Pup joints 2 ³ / ₈ " 4.7# J55 EUE x 2 x 10'	20.06		
20	Schlumberger 2 ³ / ₈ " EUE tubing release sub	1.55	7831.83	
21	2 joints 2 ³ / ₈ " 4.7# J55 EUE tubing	56.80	10102.00	(Wireline Depth)
22	Schlumberger percussion firing head	1.84		
23	Safety spacer	11.98		
24	3 ³ / ₈ " O.D. TCP guns	178.00		

PERFORATED INTERVALS:

TOOLACHEE UNIT C

FORMATION	INTERVAL
75-8	7904' - 7932'
76-1	7940' - 7956'
76-5	8014' - 8022'
76-8	8040' - 8051'
77-0	8068' - 8082'

GUN:

CHARGES:

SIZE	TYPE	S.P.F.	TYPE	WT(g)
3 ³ / ₈ "	TCP	6	HMX	22
3 ³ / ₈ "	TCP	6	HMX	22
3 ³ / ₈ "	TCP	6	HMX	22
3 ³ / ₈ "	TCP	6	HMX	22
3 ³ / ₈ "	TCP	6	HMX	22

REMARKS:

ANNULUS FLUID: 2% KCl 9.7 ppg filtered and inhibited brine

INDICATED STRING WEIGHT: 37,000# Including 4,000# for blocks

CALCULATED STRING WEIGHT: 33,889#

SLACK-OFF WEIGHT: 5,000#

TENSION:

NOT TO SCALE

WELLSITE SUPERVISOR

M. Dunne

PROPOSED

DATE OF INSTALLATION

5/3/1992

RE-COMPLETION

DRAFTED

E. Coppins

DATE 3/7/1992

COMPLETION

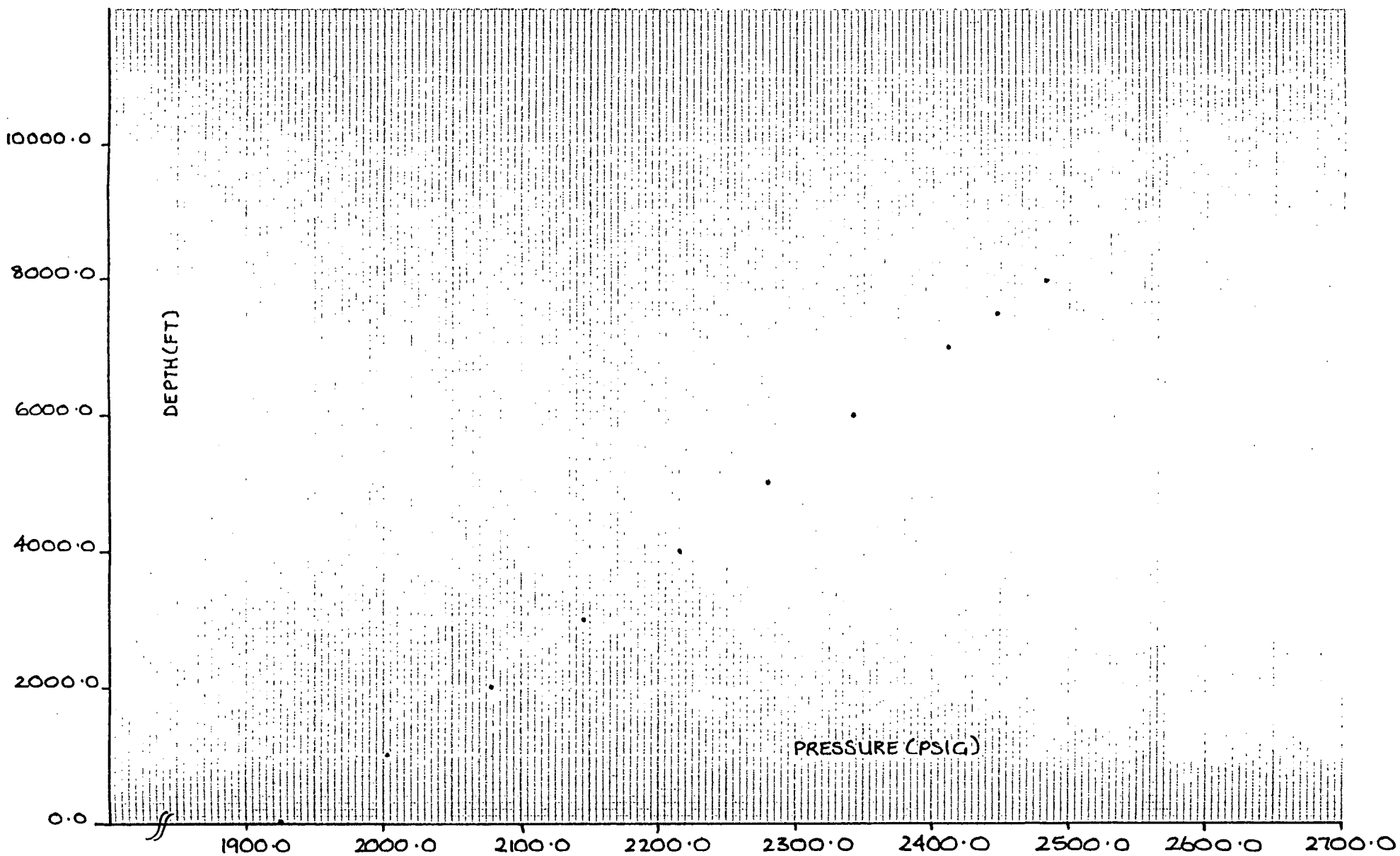
✓

REVISED

DATE

P.B.T.D. 10,345'
(Driller)

MOOMBA # 57 — STATIC PRESSURE GRADIENT — 29/1/93
ELEMENT # 850207/4075 (BOT)



000031

MOOMBA #57SUMMARY OF SINGLE RATE TEST AND BUILDUP SURVEY20/10/93 - 30/10/93PRE PLT FLOW:20/10/93

Opened well on 100% choke through separator at 0915 hrs.
 Monitored flow for 22 hours on 100% choke from 1000 hrs.

FTHP (Final)	= 4861	kPa
Separator Pressure (Final)	= 4827	kPa
Separator Temperature (Final)	= 54	°C
Gas Flow Rate	= 118.598	E3 m ³ /d
Condensate Flow Rate	= NIL	m ³ /d
Water Flow Rate	= 7.680	m ³ /d

FLOW:23/10/93

Opened well on 100% choke through separator at 1800 hrs after PLT.
 Monitored flow for 43 hours on 100% choke from 2200 hrs.

FTHP (Final)	= 5247	kPa
Separator Pressure (Final)	= 4792	kPa
Separator Temperature (Final)	= 61	°C
Gas Flow Rate	= 123.213	E3 m ³ /d
Condensate Flow Rate	= NIL	m ³ /d
Water Flow Rate	= 7.509	m ³ /d
FBHP @ 7900'KB (Final)	= 2541	psig
FBHT @ 7900'KB (Final)	= 299	°F

BUILDUP SURVEY:25/10/93:

Shut well in at 1700 hrs for 108.28 hrs of buildup.
 Pressure at 7900'KB after 108.28 hrs buildup
 = 2541 psig (17520 kPa)
 SIBHT at 7900'KB = 294°F (146°C)

9

MOOMBA #57SUMMARY OF SINGLE RATE TEST AND BUILDUP SURVEYCONTINUED20/10/93 - 30/10/93STATIC GRADIENT SURVEY:

Mid Point of Perforations = 8881'KB

30/10/93 Run in hole to 8676'KB at 0630 hrs. Conduct Static Gradient while POH.

Depth (KB)	Pressure (kPag)	Pressure (psig)
8676	17783	2579
7900	17561	2547
7500	17419	2526
7000	17243	2501
6500	17061	2474
6000	16876	2448
5500	16695	2421
5000	16511	2395
4000	16186	2348
3000	15823	2295
2000	15450	2241
1000	15035	2181
Lubricator	14597	2117

COMMENTS:

This Single rate test and Buildup was run in association with a Schlumberger run PLT.
 Gas flow rates have been corrected using the SG from the gas samples taken during the test.

000034

SECTION N01

TEST RESULTS

By: **OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033**

**TELEPHONE: (08) 371 2755
FACSIMILIE: (08) 371 2734**

OILSERV AUSTRALIA LTD : TEST RESULTS

CLIENT: SANTOS LTD.	PERFORATIONS: TOOLACHEE 7904-8082'KB DARALINGIE 8158-8352'KB	PAGE: 1
WELL NAME: MOOMBA # 57	EPSILON 8628-8724'KB PATHAWARRA 9662-9858	DATE: 20 / 10 / 93
TEST TYPE: PRODUCTION LOGGING TEST	FORMATION: TOOL/EPS/DAR	OPR: K. BRISCOE

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 oC	CHOKE SIZE %	SEPARATOR PRESS kPa	TEMP oC	GAS m3103/d	OIL m3/d	WATER m3/d	GAS m3103	OIL m3	WATER m3	L.G.R. m3/106m3
20/10						OPERATOR ARRIVED TO SHUT WELL IN STAB SCHLUMBERGER SWAB VALVE OPERATOR PUT WELL BACK ON LINE PRESSURE LINES TO SEPARATOR DIVERT FLOW THROUGH SEPARATOR								
0815														
0830														
0845														
0900		4654	1772	59	100%									
0915														
1000	0	4730	1758	60	100%	4654	58	115.818	--	--	4.826	--	--	---
1200	2	4744	1800	61	100%	4675	60	116.841	--	--	9.694	--	--	---
1400	4	4737	1786	69	100%	4675	62	115.600	0.00	7.800	14.511	0.00	0.650	67
1600	6	4750	1758	75	100%	4682	61	116.749	0.00	7.800	19.376	0.00	1.300	67
1800	8	4875	1737	74	100%	4833	60	117.467	0.00	7.800	24.270	0.00	1.950	66
2200	12	4909	1703	77	100%	4854	64	117.482	0.00	7.200	29.165	0.00	3.150	61
21/10														
0200	16	4854	1689	76	100%	4806	64	116.324	0.00	7.800	34.012	0.00	4.450	67
0600	20	4833	1669	73	100%	4785	60	117.023	0.00	7.800	38.888	0.00	5.750	67
0600						HP GAS SAMPLE TAKEN- # 057, LP WATER SAMPLE TAKEN								
0700	21	4840	1682	72	100%	4799	54	118.383	0.00	--	43.821	--	--	--
0700						HP GAS SAMPLE TAKEN- # 271, LP WATER SAMPLE TAKEN								
0755					100%	R.I.H. SCHLUMBERGER								
0800	22	4861	1696	71	100%	4827	54	117.969	0.00	7.800	48.736	0.00	6.400	66
0815					50%	REDUCE CHOKE TO 50% FLOW TO R.I.H.								
0830					25%	REDUCE CHOKE TO 25% FLOW TO R.I.H.								
0835					4/64	REDUCE CHOKE TO 4/64 FLOW								
0845					25%	INCREASE CHOKE TO 25% FLOW								
0900					4/64	REDUCE CHOKE TO 4/64 FLOW								
0945					25%	INCREASE CHOKE TO 25% FLOW								
1030					S.I.	SHUT WELL IN SCHLUMBERGER TOOL STUCK IN HOLE								

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 2

DATE: 21/ 10 / 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
21/10														
1130					8/64	OPEN TO FLOW 8/64 BYPASS SEPARATOR								
1135					S.I.	SHUT WELL IN								
1140					8/64	OPEN TO FLOW 8/64 BYPASS SEPARATOR								
1241					S.I.	SCHLUMBERGER PULLS FREE OF OBSTRUCTION. P.O.O.H.								
1300						SHUT WELL IN								
1400						SCHLUMBERGER ARRIVE IN LUBRICATOR AND RIG TOOL OUT								
						OPEN WELL TO FLOW 100% ON BYPASS TO TRY LIFTING SCHLUMBERGER								
						IMPELLER PART TO CHOKE.								
1555					S.I.	SHUT WELL IN. EXPERTEST RIG UP AND CARRY OUT DUMMY RUN.								
1734						DEPRESSURE LUBRICATOR AND RIG DOWN. NO OBSTRUCTION ENCOUNTERED								
1800	0	14293	138	28	100%	OPEN WELL TO 100% CHOKE AND TURN THROUGH SEPARATOR								
2200	4	5185	496	70	100%	4806	63	118.517	0.00	7.620	68.488	0.00	7.670	64
22/10														
0200	8	5226	799	71	100%	4806	63	122.996	0.00	8.220	88.987	0.00	9.040	67
0600	12	5233	1020	73	100%	4778	60	125.205	0.00	7.680	109.854	0.00	10.320	61
0750		5229	1076	72	100%	4778	62	125.490	0.00	7.200	119.440	0.00	10.870	57
0750						SHUT WELL IN. SCHLUMBERGER R.I.H.								
0845		13935	351	-	100%	OPEN WELL TO FLOW 100% CHOKE. SCHLUMBERGER ON DEPTH.								
0900	15	4964	351	69	100%	4647	67	102.111	0.00	0.000	120.503	0.00	10.870	-
1000	16	5082	510	72	100%	4737	61	115.342	0.00	6.960	125.308	0.00	11.160	60
1030		5102	565	73	100%	4744	58	119.029	0.00	9.120	127.787	0.00	11.350	77
1045		5123	586	73	100%	4758	59	118.024	0.00	9.600	129.016	0.00	11.450	81
1100	17	5144	607	75	100%	4764	58	119.322	0.00	7.680	130.258	0.00	11.530	64
1100						SCHLUMBERGER COMMENCE LOGGING								
1130		5137	634	75	100%	4806	63	119.426	0.00	8.160	132.746	0.00	11.700	68
1200	18	5185	655	75	100%	4785	65	120.386	0.00	11.040	135.254	0.00	11.930	91
1230		5247	717	75	100%	4785	65	120.386	0.00	5.760	137.762	0.00	12.050	48
1300	19	5171	745	76	100%	4778	67	120.633	0.00	7.200	140.275	0.00	12.200	60

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 3

DATE: 22/ 10 / 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
22/10														
1400	20	5233	793	76	100%	4827	65	129.566	0.00	7.440	145.673	0.00	12.510	57
1500	21	5220	848	76	100%	4792	66	124.560	0.00	8.160	150.863	0.00	12.850	66
1600	22	5171	848	75	100%	4771	65	122.819	0.00	6.960	155.980	0.00	13.140	57
1645		5178	862	75	100%	4771	63	125.103	0.00	6.720	159.889	0.00	13.350	54
1645						REDUCE CHOKE TO 12/64								
1700	23	8102	855	67	12/64	4675	60	105.086	0.00	3.840	160.983	0.00	13.390	37
1730		8115	814	65	12/64	4689	58	107.768	0.00	5.280	163.228	0.00	13.500	49
1800	24	8102	793	64	12/64	4689	56	108.280	0.00	4.800	165.483	0.00	13.600	44
1830		7950	745	65	12/64	4661	56	104.876	0.00	3.360	167.667	0.00	13.670	32
1900	25	7881	731	65	12/64	4661	56	102.798	0.00	5.760	169.808	0.00	13.790	56
1930		7895	724	65	12/64	4675	55	103.216	0.00	5.760	171.958	0.00	13.910	56
2000	26	8122	717	66	12/64	4661	55	101.986	0.00	7.680	174.082	0.00	14.070	75
2030		7915	710	65	12/64	4661	54	103.293	0.00	6.240	176.233	0.00	14.200	60
2100	27	7950	690	65	12/64	4661	54	102.232	0.00	6.240	178.362	0.00	14.330	61
2130		7991	690	65	12/64	4661	54	104.342	0.00	8.160	108.535	0.00	14.500	78
2200	28	7950	676	66	12/64	4654	56	103.775	0.00	6.000	110.696	0.00	14.625	58
2215		7971	668	66	12/64	4654	56	103.755	0.00	7.200	111.776	0.00	14.700	69
2215						SHUT WELL IN SCHLUMBERGER P.O.O.H.								
2318						OPEN WELL TO FLOW ON 100% CHOKE.								
23/10														
0000	29	6701	241	73	100%	6467	58	96.803	0.00	5.140	114.599	0.00	14.850	45
0400	33	5157	606	74	100%	4743	63	123.846	0.00	5.349	135.239	0.00	16.410	43
0600	35	5171	703	75	100%	4751	64	125.368	0.00	7.200	145.686	0.00	17.010	57
0800	37	5192	772	75	100%	4757	62	126.041	0.00	7.440	156.189	0.00	17.630	59
0939		5226	841	75	100%	4827	62	127.919	0.00	7.855	164.983	0.00	18.170	61
0939						S.I. SHUT WELL IN FOR SCHLUMBERGER TO R.I.H.								
1000		13418	359											
1030	1	13859	165											

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 4

DATE: 23/ 10 / 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
23/10														
1100		14024	103		S.I.									
1130	2	14073	62											
1200		14149	48											
1230	3	14204	34											
1300		14252	34											
1330	4	14183	21											
1400		14128	21											
1430	5	14024	21											
1500		14066	21											
1530	6	14038	0											
1600		14059	0											
1630	7	13997	14											
1700		14031	21											
1730	8	14086	35											
1750														
1800		14066	35		100%	SCHLUMBERGER TOOL IN LUB.DEPRESSURE AND RIG OUT OPEN WELL TO FLOW 100% CHOKE THROUGH SEPARATOR								
2200	4	5123	145	68	100%	4771	56	114.313	0.00	4.500	185.035	0.00	18.920	39
24/10														
0200	8	5143	255	68	100%	4792	54	118.048	0.00	8.400	203.710	0.00	20.320	71
0600	12	5164	365	71	100%	4778	58	112.891	0.00	7.500	222.525	0.00	21.570	66
0800	14	5171	421	72	100%	4778	58	122.247	0.00	7.560	232.715	0.00	22.200	62
1000	16	5199	462	75	100%	4820	66	122.361	0.00	9.000	242.908	0.00	22.950	74
1000					S.I.	SHUT WELL IN TO CHANGE OVER SWAB VALVES								
1008					100%	OPEN WELL TO FLOW 100% THROUGH SEPARATOR								
1115						SCHLUMBERGER DEPARTS LOCATION.RIG UP E/LINE								
1200	18	5226	510	73	100%	4827	58	124.740	0.00	6.480	252.610	0.00	23.490	52
1345						STAB LUB. HANG GAUGES AT ATMOSPHERE								
1400	20	5226	572	73	100%	4827	58	124.740	0.00	7.200	263.005	0.00	24.090	58

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 5

DATE: 24/ 10 / 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
24/10														
1530		5061	600			PRESSURE UP LUBRICATOR								
1600	22	5013	621	72	100%	4599	60	124.243	0.00	8.760	273.358	0.00	24.820	71
1600						DEPRESSURE LUBRICATOR								
1700						E/LINE SIGNAL FAILURE. RIG OUT GAUGES RETIE ROPE SOCKET AND TEST								
1800	24	5061	662	74	100%	4640	62	125.130	0.00	7.800	283.786	0.00	25.470	62
2200	28	5020	724	75	100%	4558	63	126.063	0.00	8.160	304.776	0.00	26.830	65
25/10														
0200	32	5020	765	73	100%	4558	61	125.816	0.00	7.740	325.745	0.00	28.120	62
0600	36	5006	807	72	100%	4571	59	127.425	0.00	8.100	346.982			
0723						STAB LUB. HANG GAUGES AT ATMOSPHERE								
0800	38	5006	827	71	100%	4571	56	127.493	0.00	7.080	357.626	0.00	30.060	56
0830		5033	848	72	100%	PRESSURE UP LUBRICATOR								
0930		5157	841	73	100%	DEPRESSURE LUBRICATOR								
1000	40	5151	855	74	100%	4737	59	126.611	0.00	7.560	368.176	0.00	30.690	58
1030		5171	883	75	100%	PRESSURE UP LUBRICATOR								
1042					5/64	CHOKE WELL BACK TO 5/64 TO R.I.H. E/LINE								
1200	42	11432	310	52	5/64	4399	45	58.382	0.00	4.800	373.041	0.00	31.090	82
300	43	11439	220	52	5/64	4399	45	58.382	0.00	1.200	375.473	0.00	31.140	21
1300					100%	HANG GAUGES @ 7900'KB. OPEN TO FLOW 100% CHOKE								
1400	44	5219	345	72	100%	4764	50	123.832	0.00	10.320	380.632	0.00	31.570	83
1500	45	5226	462	73	100%	4771	61	124.813	0.00	8.400	385.832	0.00	31.920	67
1600	46	5240	517	73	100%	4799	60	123.752	0.00	7.920	390.988	0.00	32.250	64
1700	47	5247	572	73	100%	4792	61	123.364	0.00	7.200	396.128	0.00	32.550	58
1700	0					S.I. SHUT WELL IN FOR BUILD UP								
1715		13238	324											
1730		13638	221											
1745		13831	165											
1800	1	13935	124											

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 6

DATE: 25/ 10 / 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
25/10														
1815		13969	97		S.I.									
1830		13997	76											
1845		14031	69											
1900	2	14059	62											
1915		14073	48											
1930		14086	41											
1945		14114	41											
2000	3	14135	34											
2015		14155	28											
2030		14176	28											
2045		14190	21											
2100	4	14204	14											
2200	5	14086	0											
26/10														
0200	9	13983	0											
0600	13	14010	0											
1000	17	14066	0											
1400	21	14114	0											
1800	25	14149	0											
2200	29	14197	0											
27/10														
0200	33	14217	0											
0600	37	14231	0											
1000	41	14238	0											
1400	45	14321	0											
1800	49	14342	0											
2200	53	14376	0											
28/10														

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OILSERV AUSTRALIA LTD : TEST RESULTS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 7

DATE: 28/ 10 / 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
28/10														
0200	57	14393	0		S.I.									
0600	61	14410	0											
1000	65	14473	0											
1400	69	14486	0											
1800	73	14500	0											
2200	77	14514	0											
29/10														
0200	81	14521	0											
0600	85	14535	0											
0700						P.O.O.H. E/LINE ARRIVE IN LUBRICATOR. DEPRESSURE. PRESSURE UP LUBRICATOR. R.I.H. E/LINE. HANG GAUGES @ 7900'KB.								
0849														
1256		14583	0											
1537		14597	0											
1800	97	14604	0											
30/10														
0200	101	14638	0											
0600	105	14659	0											
0630		14659	0			COMMENCE STATIC GRADIENT SURVEY RIG DOWN ALL SURFACE TESTING EQUIPMENT								
1000	109	14659	0											
1400		14659	0			ARRIVE IN LUBRICATOR DEPRESSURE LUBRICATOR PRESSURE UP LUBRICATOR DEPRESSURE LUBRICATOR RIG DOWN AND MOVE LOCATION								
1500		14659	0											
1530		14659	0											
1600		14659	0											

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SECTION N02

GAS FLOW CALCULATIONS

By: **OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033**

**TELEPHONE: (08) 371 2755
FACSIMILIE: (08) 371 2734**

OILSERV AUSTRALIA LTD : GAS FLOW CALCULATIONS

CLIENT: SANTOS LTD.	PERFORATIONS: 7904-7956, 8014-8082, 8158-8190, 8222-8244, 8342-8352, 8628-8642, 8682-8724, 9662-9686, 9720-9859	PAGE: 1
WELL NAME: MOOMBA # 57		DATE: 20 / 10 / 93
TEST TYPE: PRODUCTION LOGGING TEST	FORMATION: TOOLACHEE, EPSILON	OPR: K BRISCOE

ORIFICE MTR TYPE: DANIELS				STATIC PRESSURE RANGE: 0 - 1500 psig				GAS SPECIFIC GRAVITY (SG) = 0.808							
METER RUN SIZE: 3.826"				DIFFERENTIAL PRESS RANGE: 0 - 200 in/hw				FG = $\sqrt{(1/SG)}$ = 1.1125							
SEPARATOR No: TS-02-04				STANDARD CONDITIONS: 14.73 psi @ 60°F				CO ₂ % = 9.5 % H ₂ S = 15 PPM							
DATE TIME	FLOW TIME (hr)	CHOKE SIZE	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
20/10															
0915															
0930															
1000	0	100%	690	80	58	1.875	232.379	738.753	0.9341	1.0675	1.0006	4.826	737.091	4.111	115.818
1200	2	100%	693	82	60	1.875	235.788	738.753	0.9309	1.0650	1.0006	9.694	732.845	4.147	116.841
1400	4	100%	693	81	62	1.875	234.346	738.753	0.9279	1.0636	1.0006	14.511	729.523	4.103	115.600
1600	6	100%	694	82	61	1.875	235.962	738.753	0.9294	1.0651	1.0006	19.376	731.733	4.144	116.749
1800	8	100%	716	78	60	1.875	236.322	738.753	0.9309	1.0684	1.0005	24.270	735.112	4.169	117.467
2200	12	100%	719	79	64	1.875	238.330	738.753	0.9256	1.0656	1.0005	29.165	729.011	4.170	117.482
21/10															
0200	16	100%	712	80	64	1.875	236.136	738.753	0.9256	1.0649	1.0005	34.012	728.532	4.129	116.324
0600	20	100%	709	80	60	1.875	235.627	738.753	0.9309	1.0675	1.0005	38.888	734.492	4.154	117.023
0600															
0700	21	100%	711	79	54	1.875	234.487	738.753	0.9396	1.0750	1.0006	43.821	746.640	4.202	118.383
0700															
0800	22	100%	715	78	54	1.875	233.666	738.753	0.9396	1.0750	1.0006	48.736	746.640	4.187	117.969
1800	0	100%													
2200	4	100%	712	65	63	1.875	215.087	738.753	0.9268	1.0693	1.0006	68.488	814.903	4.207	118.517
22/10															
0200	8	100%	712	70	63	1.875	223.206	738.753	0.9268	1.0693	1.0006	88.987	814.938	4.366	122.996
0600	12	100%	708	72	60	1.875	225.735	738.753	0.9309	1.0715	1.0006	109.854	820.279	4.444	125.205
0750		100%	708	73	62	1.875	227.297	738.753	0.9282	1.0697	1.0006	119.440	816.498	4.454	125.490
0750		S.I.													

DIVERT FLOW THROUGH SEPARATOR
INSERT 1.875" (47.63mm) ORIFICE PLATE

HP GAS SAMPLE TAKEN - # 057, LP WATER SAMPLE TAKEN

HP GAS SAMPLE TAKEN - # 271, LP WATER SAMPLE TAKEN

NUMEROUS CHOKE ADJUSTMENTS AND WELL BEING FLOWED AND SHUT IN AS SCHLUMBERGER TOOL STUCK IN HOLE. SEPARATOR BYPASSED.

OPEN WELL TO FLOW 100% CHOKE THROUGH SEPARATOR (UNCORRECTED) PRE PLT FLOW: 4.152 116.966

WELL SHUT IN. SCHLUMBERGER R.I.H.

OILSERV AUSTRALIA LTD : GAS FLOW CALCULATIONS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 2

DATE: 22/ 10 / 93

ORIFICE MTR TYPE: DANIELS					STATIC PRESSURE RANGE: 0 - 1500 psig				GAS SPECIFIC GRAVITY (SG) = 0.808						
METER RUN SIZE: 3.826					DIFFERENTIAL PRESS RANGE: 0 - 200 in/hw				FG = $\sqrt{(1/SG)}$ = 1.1125						
SEPARATOR No: TS-02-04					STANDARD CONDITIONS: 14.73 psi @ 60°F				CO ₂ % = 9.5% H ₂ S = 15 PPM						
DATE TIME	FLOW TIME (hr)	CHOKE SIZE %	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
22/10 0845															
0900	15	100%	689	51	67	1.875	187.4173	738.7533	0.9213	1.0637	1.0005	120.503	805.7522	3.624	102.111
1000	16	100%	702	62	61	1.875	208.5839	738.7533	0.9296	1.0699	1.0005	125.308	817.7976	4.094	115.342
1030		100%	703	65	58	1.875	213.7228	738.7533	0.9338	1.0727	1.0006	127.787	823.6516	4.225	119.029
1045		100%	705	64	59	1.875	212.3740	738.7533	0.9323	1.0720	1.0006	129.016	821.8835	4.189	118.024
1100	17	100%	706	65	58	1.875	214.1785	738.7533	0.9338	1.0770	1.0006	130.258	823.9190	4.235	119.322
1130		100%	712	66	63	1.875	216.7353	738.7533	0.9268	1.0693	1.0006	132.746	814.9102	4.239	119.426
1200	18	100%	709	68	65	1.875	219.5305	738.7533	0.9240	1.0673	1.0006	135.254	811.0010	4.273	120.386
1230		100%	709	68	65	1.875	219.5305	738.7533	0.9240	1.0673	1.0006	137.762	811.0010	4.273	120.386
1300	19	100%	708	69	67	1.875	220.9827	738.7533	0.9213	1.0656	1.0006	140.275	807.3254	4.282	120.633
1400	20	100%	715	78	65	1.875	236.1121	738.7533	0.9240	1.0679	1.0007	145.673	811.5442	4.599	129.566
1500	21	100%	710	73	66	1.875	227.6187	738.7533	0.9227	1.0666	1.0006	150.863	809.3015	4.421	124.560
1600	22	100%	707	71	65	1.875	224.0041	738.7533	0.9240	1.0671	1.0006	155.980	810.8643	4.359	122.819
1645		100%	707	73	63	1.875	227.1372	738.7533	0.9268	1.0687	1.0006	159.889	814.5510	4.440	125.103
1645							REDUCE CHOKE TO 12/64								
1700	23	12/64	693	52	60	1.875	189.7945	738.7533	0.9309	1.0698	1.0005	160.983	818.8479	3.730	105.086
1730		12/64	695	54	58	1.875	193.6890	738.7533	0.9338	1.0718	1.0005	163.228	822.8606	3.825	107.768
1800	24	12/64	695	54	56	1.875	193.6890	738.7533	0.9366	1.0736	1.0005	165.483	826.7683	3.843	108.280
1830		12/64	691	51	56	1.875	187.6892	738.7533	0.9366	1.0731	1.0005	167.667	826.3781	3.722	104.876
1900	25	12/64	691	49	56	1.875	183.9722	738.7533	0.9366	1.0731	1.0004	169.808	826.3635	3.649	102.798
1930		12/64	693	49	55	1.875	184.2384	738.7533	0.9380	1.0743	1.0004	171.958	828.5295	3.664	103.216
2000	26	12/64	691	48	55	1.875	182.0853	738.7533	0.9380	1.0740	1.0004	174.082	828.3347	3.620	101.986
2030		12/64	691	49	54	1.875	183.9722	738.7533	0.9394	1.0750	1.0004	176.233	830.3420	3.666	103.293
2100	27	12/64	691	48	54	1.875	182.0853	738.7533	0.9394	1.0750	1.0004	178.362	830.3347	3.629	102.232
2130		12/64	691	50	54	1.875	185.8400	738.7533	0.9394	1.0750	1.0004	180.535	830.3494	3.703	104.342

000044

OILSERV AUSTRALIA LTD : GAS FLOW CALCULATIONS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 3

DATE: 22/ 10 /93

ORIFICE MTR TYPE: DANIELS					STATIC PRESSURE RANGE: 0 - 1500 psig					GAS SPECIFIC GRAVITY (SG) = 0.808					
METER RUN SIZE: 3.826					DIFFERENTIAL PRESS RANGE: 0 - 200 in/hw					FG = $\sqrt{(1/SG)}$ = 1.1125					
SEPARATOR No: TS-02-04					STANDARD CONDITIONS: 14.73 psi @ 60°F					CO ₂ % = 9.5% H ₂ S = 15 PPM					
DATE	FLOW TIME	CHOKE SIZE	STATIC PRESS	DIFF PRESS	GAS FLOW TEMP	ORIF PLATE SIZE	$\sqrt{(P_F \times H_W)}$	$C_1 = F_B \times F_{TF} \times F_{PV} \times Y_2$				TOTAL GAS PROD	C	GAS FLOW RATE	
TIME	(hr)	%	(psia)	in/hw	(°C)	(in)		F _B	F _{TF}	F _{PV}	Y ₂	(m ³ 10 ³)	(C ₁ x C ₂)	mmscfd	m ³ 10 ³ /d
22/10															
2200	28	12/64	690	50	56	1.875	185.7054	738.7533	0.9366	1.0730	1.0004	110.696	826.2788	3.683	103.755
2215		12/64	690	50	56	1.875	185.7054	738.7533	0.9366	1.0730	1.0004	111.776	826.2788	3.683	103.755
2215					SHUT WELL IN SCHLUMBERGER PULL OUT OF HOLE										
2318					OPEN WELL TO 100% CHOKE										
0000	29	100%	953	30	58	1.875	168.0618	738.7533	0.9338	1.1033	1.0002	114.599	846.8091	3.436	96.803
23/10															
0400	33	100%	703	72	63	1.875	224.9368	738.7533	0.9268	1.0683	1.0006	135.239	814.2178	4.396	123.840
0600	35	100%	704	74	64	1.875	228.2017	738.7533	0.9254	1.0676	1.0006	145.686	812.4722	4.450	125.368
0800	37	100%	705	74	62	1.875	228.3638	738.7533	0.9282	1.0694	1.0006	156.189	816.2561	4.474	126.041
0939		100%	715	75	62	1.875	231.5270	738.7533	0.9282	1.0705	1.0006	164.983	817.0939	4.540	127.919
0939					SHUT WELL IN FOR SCHLUMBERGER TO R.I.H.										
1800	0				OPEN WELL TO 100% CHOKE THROUGH SEPARATOR (SCHLUMBERGER POOM, RIG OUT)										
2200	4	100%	707	59	56	1.875	204.1986	738.7533	0.9366	1.0750	1.0005	184.035	827.9127	4.057	114.313
24/10															
0200	8	100%	710	62	54	1.875	209.7695	738.7533	0.9394	1.0774	1.0005	203.710	832.2565	4.190	118.048
0600	12	100%	708	67	58	1.875	202.6039	738.7533	0.9338	1.0733	1.0005	222.525	824.0476	4.007	112.891
0800	14	100%	708	68	58	1.875	219.3756	738.7533	0.9338	1.0733	1.0006	232.712	824.1187	4.339	122.247
1000	16	100%	714	70	66	1.875	223.5198	738.7533	0.9227	1.0670	1.0006	242.908	809.5910	4.343	122.361
1000					SHUT WELL IN TO SWAP SWAB VALVES										
1008					OPEN WELL TO FLOW 100% CHOKE										
1200	18	100%	715	70	58	1.875	223.6763	738.7533	0.9338	1.0741	1.0006	252.610	824.7581	4.427	124.740
1400	20	100%	715	70	58	1.875	223.6763	738.7533	0.9338	1.0741	1.0006	263.005	824.7581	4.427	124.740
1600	22	100%	682	74	60	1.875	224.6064	738.7533	0.9309	1.0685	1.0007	273.358	818.0676	4.410	124.243
1800	24	100%	688	75	62	1.875	227.1118	738.7533	0.9282	1.0675	1.0007	283.786	814.8573	4.442	125.130
2200	28	100%	676	78	63	1.875	229.5799	738.7533	0.9268	1.0654	1.0007	304.796	812.0715	4.474	126.063

000045

OILSERV AUSTRALIA LTD : GAS FLOW CALCULATIONS

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 4

DATE: 25/ 10 / 93

ORIFICE MTR TYPE: DANIELS				STATIC PRESSURE RANGE: 0 - 1500 psig				GAS SPECIFIC GRAVITY (SG) = 0.808							
METER RUN SIZE: 3.826				DIFFERENTIAL PRESS RANGE: 0 - 200 in/hw				FG = $\sqrt{(1/SG)}$ = 1.1125							
SEPARATOR No: TS-02-04				STANDARD CONDITIONS: 14.73 psi @ 60°F				CO ₂ % = 9.5% H ₂ S = 15 PPM							
DATE TIME	FLOW TIME (hr)	CHOKE SIZE %	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
25/10															
0200	32	100%	676	77	61	1.875	228.1035	738.7533	0.9296	1.0670	1.0007	325.765	815.7227	4.466	125.816
0600	36	100%	678	78	59	1.875	229.9194	738.7533	0.9323	1.0689	1.0007	347.002	819.6347	4.523	127.425
0800	38	100%	678	77	56	1.875	228.4408	738.7533	0.9366	1.0715	1.0007	357.626	825.3783	4.525	127.493
1000	40	100%	702	74	59	1.875	227.8772	738.7533	0.9323	1.0717	1.0006	368.176	821.6925	4.494	126.611
1042		5/64						CHOKE WELL BACK TO 5/64 TO R.I.H. E/LINE							
1200	42	5/64	653	16	45	1.875	102.1943	738.7533	0.9526	1.0790	1.0001	373.041	844.8770	2.072	58.382
1300	43	5/64	653	16	45	1.875	102.1943	738.7533	0.9526	1.0790	1.0001	375.473	844.8770	2.072	58.382
1300		100%						HANG GAUGES @7900'KB. OPEN WELL TO 100% CHOKE							
1400	44	100%	706	70	58	1.875	222.2636	738.7533	0.9338	1.0730	1.0006	380.632	823.9546	4.395	123.832
1500	45	100%	707	72	61	1.875	225.5761	738.7533	0.9296	1.0705	1.0006	385.832	818.2909	4.430	124.813
1600	46	100%	711	70	60	1.875	223.0495	738.7533	0.9309	1.0718	1.0006	390.988	820.5234	4.392	123.752
1700	47	100%	710	70	61	1.875	222.8926	738.7533	0.9296	1.0708	1.0006	396.128	818.5304	4.379	123.364
1700		S.I.						SHUT WELL IN FOR BUILD UP							
SAMPLED SG = .7859 ∴ CORRECT FG = 1.128 (UNCORRECTED) FLOW Q_g = 4.373 123.21 CORRECTED PRE PLT FLOW = 118.598 CORRECTED FLOW = 123.213															

000046

SECTION N03

LIQUID PRODUCTION

By: **OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033**

**TELEPHONE: (08) 371 2755
FACSIMILIE: (08) 371 2734**

OILSERV AUSTRALIA LTD LIQUID PRODUCTION

CLIENT: SANTOS LTD.	PERFORATIONS: TOOLACHEE 7904-8082'KB DARALINGIE 8158-8352'KB EPSILON 8628 -8724'KB PATCHAWARRA 9662-9858'KB.	PAGE: 1
WELL NAME: MOOMBA # 57		DATE: 20 / 10 /93
TEST TYPE: PRODUCTION LOGGING TEST	FORMATION: TOOLACHEE, EPSILON	OPR: K. BRISCOE

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 =
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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)
20/10											
1200	2	1	0	0	0	0	0	0	0	0	0
1400	4	1	650	0	0	0	0	650	0.650	7.800	0.650
1600	6	1	1300	0	0	0	0	1300	0.650	7.800	1.300
1800	8	1	1950	0	0	0	0	1950	0.650	7.800	1.950
2200	12	1	3150	0	0	0	0	3150	1.200	7.200	3.150
21/10											
0200	16	1	4450	0	0	0	0	4450	1.300	7.800	4.450
0600	20	1	5750	0	0	0	0	5750	1.300	7.800	5.750
0800	22	1	6400	0	0	0	0	6400	0.650	7.800	6.400
0800	(20 hrs)		Qc: NIL	NUMEROUS CHOKE CHANGES AND WELL BEING SHUT IN AND FLOWED AS SCHLUMBERGER TOOL STUCK IN HOLE. BYPASS SEPARATOR. QW: 7.680 m ³ /d OPEN WELL TO 100% CHOKE THROUGH SEP.							
1800	0	2	20					20			
2200	4	2	1290	0	0	0	0	1290	1.270	7.620	7.670
22/10											
0200	8	2	2660	0	0	0	0	2660	1.370	8.220	9.040
0600	12	2	3940	0	0	0	0	3940	1.280	7.680	10.320
0750		2	4490	0	0	0	0	4490	0.550	7.200	10.870
0750				SHUT WELL IN. SCHLUMBERGER R.I.H.							
0845				OPEN WELL TO FLOW 100% CHOKE							
0900	15	2	4490	0	0	0	0	4490	0.000	0.000	10.870
1000	16	2	4780	0	0	0	0	4780	0.290	6.960	11.160
1030		2	4970	0	0	0	0	4970	0.190	9.120	11.350
1045		2	5070	0	0	0	0	5070	0.100	9.600	11.450
1100	17	2	5150	0	0	0	0	5150	0.080	7.680	11.530
1130		2	5320	0	0	0	0	5320	0.170	8.160	11.700
1200	18	2	5550	0	0	0	0	5550	0.230	11.040	11.930

000048

OILSERV AUSTRALIA LTD : LIQUID PRODUCTION

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 2

DATE: 22/ 10 / 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
TIME	(hours)	(number)	(litres)	(litres)	(m ³)	(m ³ /d)	(m ³)	(litres)	(m ³)	(m ³ /d)	(m ³)
22/10											
1230		2	5670	0	0	0	0	5670	0.120	5.760	12.050
1300	19	2	5820	0	0	0	0	5820	0.150	7.200	12.200
1400	20	2	6130	0	0	0	0	6130	0.310	7.440	12.510
1500	21	2	6470	0	0	0	0	6470	0.340	8.160	12.850
1600	22	2	6760	0	0	0	0	6760	0.290	6.960	13.140
1645		1	90/300	0	0	0	0	90/300	0.210	6.720	13.350
1645				REDUCE CHOKE TO 12/64							
1700	23	1	340	0	0	0	0	340	0.040	3.840	13.390
1730		1	450	0	0	0	0	450	0.110	5.280	13.500
1800	24	1	550	0	0	0	0	550	0.100	4.800	13.600
1830		1	620	0	0	0	0	620	0.070	3.360	13.670
1900	25	1	740	0	0	0	0	740	0.120	5.760	13.790
1930		1	860	0	0	0	0	860	0.120	5.760	13.910
2000	26	1	1020	0	0	0	0	1020	0.160	7.680	14.070
2030		1	1150	0	0	0	0	1150	0.130	6.240	14.200
2100	27	1	1280	0	0	0	0	1280	0.130	6.240	14.330
2130		1	1450	0	0	0	0	1450	0.170	8.160	14.500
2200	28	1	1575	0	0	0	0	1575	0.125	6.000	14.625
2215		1	1650	0	0	0	0	1650	0.075	7.200	14.700
2215				SHUT WELL IN SCHLUMBERGER P.O.O.H.							
2318				OPEN WELL TO FLOW 100% CHOKE							
0000	29	1	1800	0	0	0	0	1800	0.150	5.140	14.850
23/10											
0400	33	1	3360	0	0	0	0	3360	1.560	5.349	16.410
0600	35	1	3960	0	0	0	0	3960	0.600	7.200	17.010
0800	37	1	4580	0	0	0	0	4580	0.620	7.440	17.630
0939		1	5120	0	0	0	0	5120	0.540	7.855	18.170
0939				SHUT WELL IN FOR SCHLUMBERGER TO R.I.H.							
1800	0	2	0	OPEN WELL TO FLOW 100% CHOKE THROUGH SEPARATOR							
2200	4	2	750	0	0	0	0	750	0.750	4.500	18.920
24/10											
0200	8	2	2150	0	0	0	0	2150	1.400	8.400	20.320

000049

OILSERV AUSTRALIA LTD : LIQUID PRODUCTION

CONTINUATION SHEET

WELL NAME: MOOMBA #57

PAGE: 3

DATE: 24/ 10 / 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
TIME	(hours)	(number)	(litres)	(litres)	(m ³)	(m ³ /d)	(m ³)	(litres)	(m ³)	(m ³ /d)	(m ³)
24/10				(NIL)				(4.78)			
0600	12	2	3400	0	0	0	0	3400	1.200	7.500	21.570
0800	14	2	4030	0	0	0	0	4030	0.630	7.560	22.200
1000	16	2	4780	0	0	0	0	4780	0.750	9.000	22.950
1000				SHUT WELL IN TO SWAP OVER SWAB VALVES							
1008				OPEN WELL TO 100% CHOKE THROUGH SEPARATOR							
1200	18	2	5320	0	0	0	0	5320	0.540	6.480	23.490
1400	20	2	5920	0	0	0	0	5920	0.600	7.200	24.090
1600	22	2	6650	0	0	0	0	6650	0.730	8.760	24.820
1800	24	1	0/650	0	0	0	0	0/650	0.650	7.800	25.470
2200	28	1	2010	0	0	0	0	2010	1.360	8.160	26.830
25/10											
0200	32	1	3300	0	0	0	0	3300	1.290	7.740	28.120
0600	36	1	4650	0	0	0	0	4650	1.350	8.100	29.470
0800	38	1	5240	0	0	0	0	5240	0.590	7.080	30.060
1000	40	1	5870	0	0	0	0	5870	0.630	7.560	30.690
1042				CHOKE WELL BACK TO 5/64 TO R.I.H. E/LINE							
1200	42	1	6270	0	0	0	0	6270	0.400	4.800	31.090
1300	43	1	6320	0	0	0	0	6320	0.050	1.200	31.140
1300				HANG GAUGES @ 7900'KB. OPEN CHOKE TO 100% FLOW							
1400	44	1	6750	0	0	0	0	6750	0.430	10.320	31.570
1500	45	2	0/350	0	0	0	0	0/350	0.350	8.400	31.920
1600	46	2	680	0	0	0	0	680	0.330	7.920	32.250
1700	47	2	980	0	0	0	0	980	0.300	7.200	32.550
1700				SHUT WELL IN FOR BUILD UP							
Qc: NIL m ³ /d				Qw: 7.509 m ³ /d							
(35 HRS)											

000050

SECTION N08

SEQUENCE OF EVENTS

By: **OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033**

**TELEPHONE: (08) 371 2755
FACSIMILIE: (08) 371 2734**

OILSERV AUSTRALIA LIMITED OPERATIONS LOG

CLIENT : SANTOS LTD.
WELL NAME : MOOMBA #57

FIELD : MOOMBA
DATE : 19/10/93

DATE	TIME	ACTIVITY
19/10/93	13:00	Arrive location and spot equipment.
	18:00	Stand down for evening.
20/10/93	08:15	Operator arrives to shut in well.
	08:45	Well brought back on line.
	09:00	Pressure test separator and high pressure lines.
	09:15	Divert flow through separator and monitor flow.
21/10/93	07:30	Schlumberger arrive to conduct P.L.T.
	07:55	Schlumberger R.I.H.
	08:15	Choke well back to 50%.
	08:30	Choke well back to 25%.
	10:30	Schlumberger stuck in hole, well shut in.
	12:15	Schlumberger retrieve tool and P.O.O.H.
	15:55	Expertest arrive to conduct drift run.
	18:00	Open well to flow through separator.
22/10/93		Schlumberger conducting P.L.T.
23/10/93		Schlumberger conducting P.L.T.
24/10/93	07:00	Schlumberger arrive to rig down equipment.
	11:15	Commence rig up E/line.
	13:45	Stab on lubricator and hang gauges at atmosphere for 3/4 hour.
	14:00	GRC gauge gives erratic readings. Check all surface equipment.
	15:30	Pressure up lubricator. Gauge still erratic.
	16:00	Depressure lubricator.
	17:00	Rig out gauges, retie rope socket and redress gauge.
	18:00	Retest all surface equipment. All functioning ok.
25/10/93	06:00	Prepare Ameradas to R.I.H.
	07:20	Stab on lubricator and hang at atmosphere for 1 hour.
	08:30	Pressure up lubricator.
	09:30	Depressure lubricator.
	10:30	Pressure up lubricator and R.I.H. c/w rope socket, C.C.L., GRC gauge, 2' weight bar, knuckle joint, 5' weight bar, knuckle joint, RPG-3 Amerada, knuckle joint and RT-7 Amerada.
	10:42	Choke well back to 5/64".
	12:30	Conduct 1 C.C.L. pass through B.H.A. No adjustment required. R.I.H. to 7900'kb, survey depth.
	12:54	Hang at 7900'kb, survey depth, and monitor flow.
	13:00	Open choke to 100%.
	17:00	Well shut in for build up.
26/10/93		Monitor build up.
27/10/93		Monitor build up.
28/10/93		Monitor build up.
	18:40	Suspect rope socket failure. P.O.O.H. in morning to retie rope socket.
29/10/93	07:00	P.O.O.H.
	08:49	In lubricator.
	08:50	Depressure lubricator. Unstab lubricator and rig out toolstring. Find RT-7 Amerada missing. Broken at knuckle joint.
	09:00	Retie rope socket and redress gauges.
	12:56	Pressure up lubricator.
	13:00	R.I.H. c/w rope socket, GRC gauge, 3' weight bar, knuckle joint, 5' weight bar, knuckle joint, RPG-3 Amerada, knuckle joint and RT-7 Amerada.

OPERATIONS LOG CONTINUED.

PAGE : 2

DATE	TIME	ACTIVITY
29/10/93	15:36	Hang at 7900'kb, survey depth and continue to monitor build up.
30/11/93		Monitor build up.
	06:30	R.I.H. to 8676'kb, first gradient stop.
	06:58	Hang at 8676'kb. 1st stop.
	07:35	P.O.O.H. 2593.7 psia 309.6f Gradient 0.041 psi/ft.
	08:03	Hang at 7900'kb. 2nd stop.
	08:35	P.O.O.H. 2561.7 psia 293.9f Gradient 0.041 psi/ft.
	08:47	Hang at 7500'kb. 3rd stop.
	09:10	P.O.O.H. 2540.9 psia 290.6f Gradient 0.050 psi/ft.
	09:22	Hang at 7000'kb. 4th stop.
	09:42	P.O.O.H. 2515.5 psia 283.9f Gradient 0.053 psi/ft.
	09:52	Hang at 6500'kb. 5th stop.
	10:11	P.O.O.H. 2489.1 psia 277.7f Gradient 0.054 psi/ft.
	10:21	Hang at 6000'kb. 6th stop
	10:50	P.O.O.H. 2462.2 psia 271.3f Gradient 0.053 psi/ft.
	11:00	Hang at 5500'kb. 7th stop.
	11:20	P.O.O.H. 2435.9 psia 264.5f Gradient 0.053 psi/ft.
	11:32	Hang at 5000'kb. 8th stop.
	11:51	P.O.O.H. 2409.3 psia 252.5f Gradient 0.047 psi/ft.
	12:06	Hang at 4000'kb. 9th stop.
	12:26	P.O.O.H. 2362.2 psia 228.4f Gradient 0.053 psi/ft.
	12:41	Hang at 3000'kb. 10th stop.
	13:00	P.O.O.H. 2309.5 psia 204.0f Gradient 0.054 psi/ft.
	13:16	Hang at 2000'kb. 11th stop.
	13:35	P.O.O.H. 2255.5 psia 178.7f Gradient 0.060 psi/ft.
	13:49	Hang at 1000'kb. 12th stop.
	14:09	P.O.O.H. 2195.2 psia 147.3f Gradient 0.064 psi/ft.
	14:41	In lubricator.
	15:00	Depressure lubricator.
	15:30	Pressure up lubricator.
	16:00	Depressure lubricator.
	16:30	End of test. Rig down test equipment and prepare to move location.

SECTION N09

SINGLE RATE FLOW DATA & PLOTS

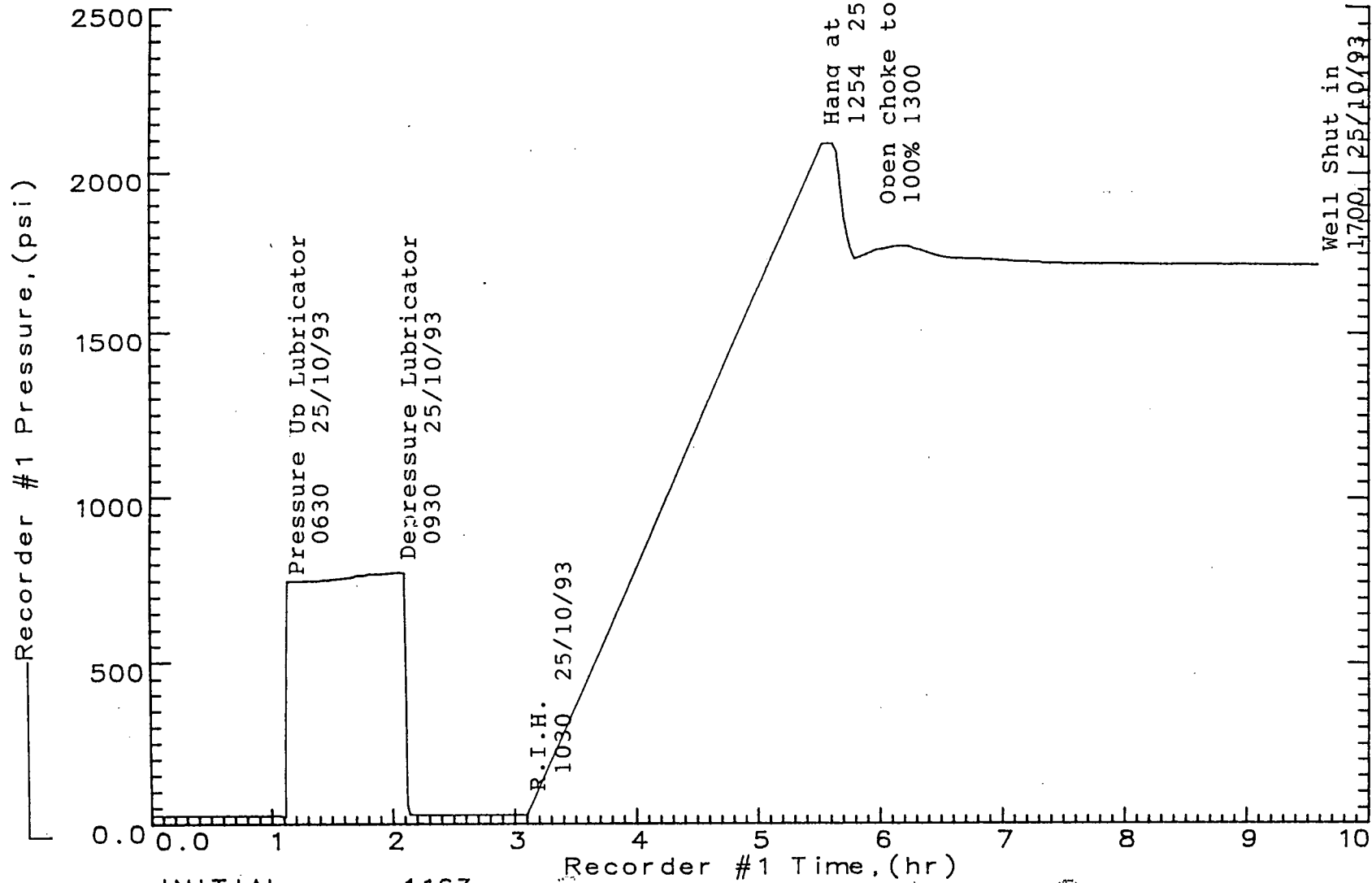
By: **OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033**

**TELEPHONE: (08) 371 2755
FACSIMILIE: (08) 371 2734**

VALIDATA

SANTOS LTD.
MOOMBA #57.

L.E.T. & B.H.P.
START DATE 25/10/93.



INITIAL = 1163
DELETED = 0
REMAINING = 1163

000055

000056

SECTION N010

BUILD UP SURVEY DATA & PLOTS

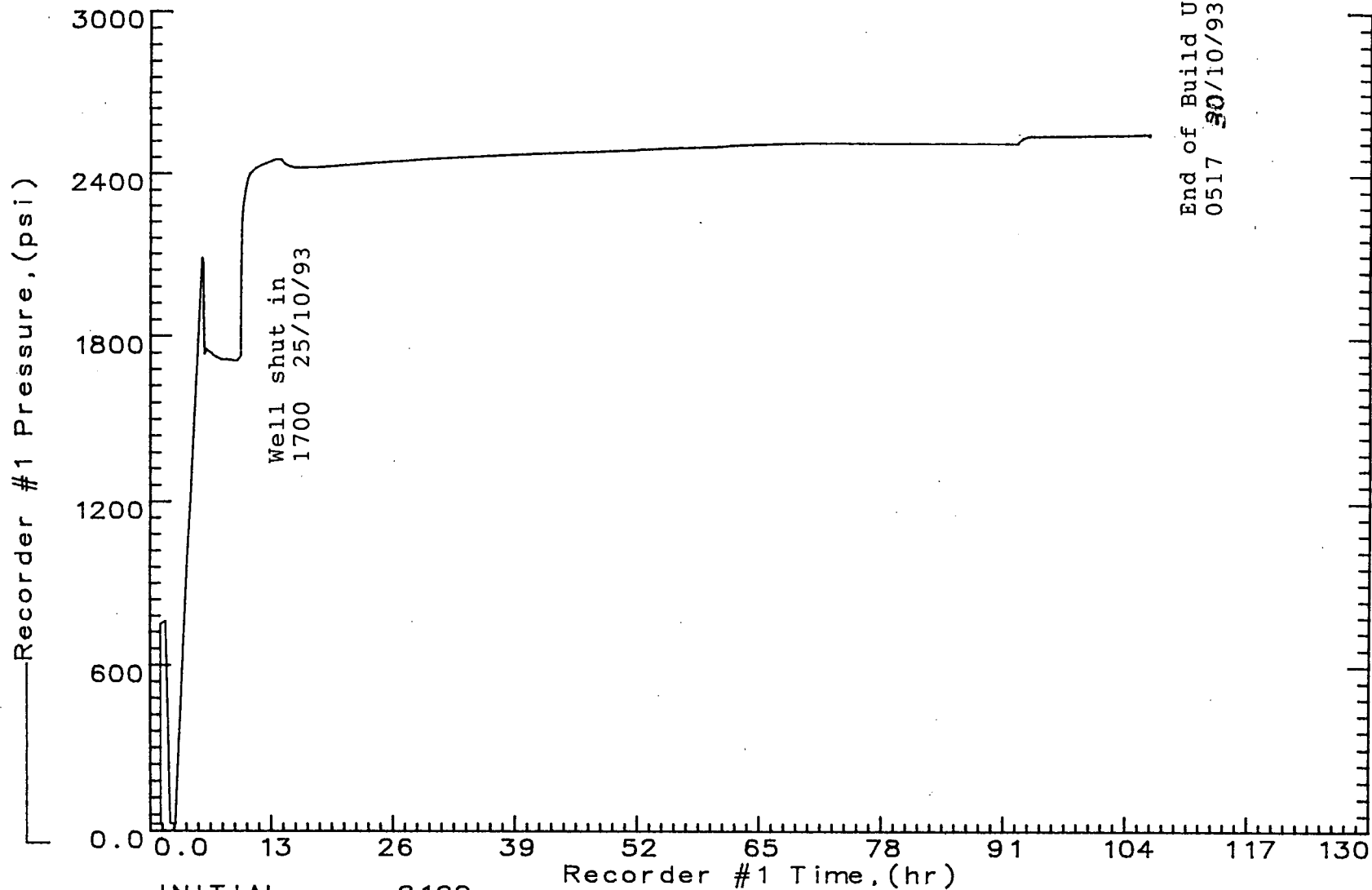
By: **OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033**

**TELEPHONE: (08) 371 2755
FACSIMILIE: (08) 371 2734**

VALIDATA

SANTOS LTD.
MOOMBA #57.

L.E.T. & B.H.P.:
START DATE 25/10/93.



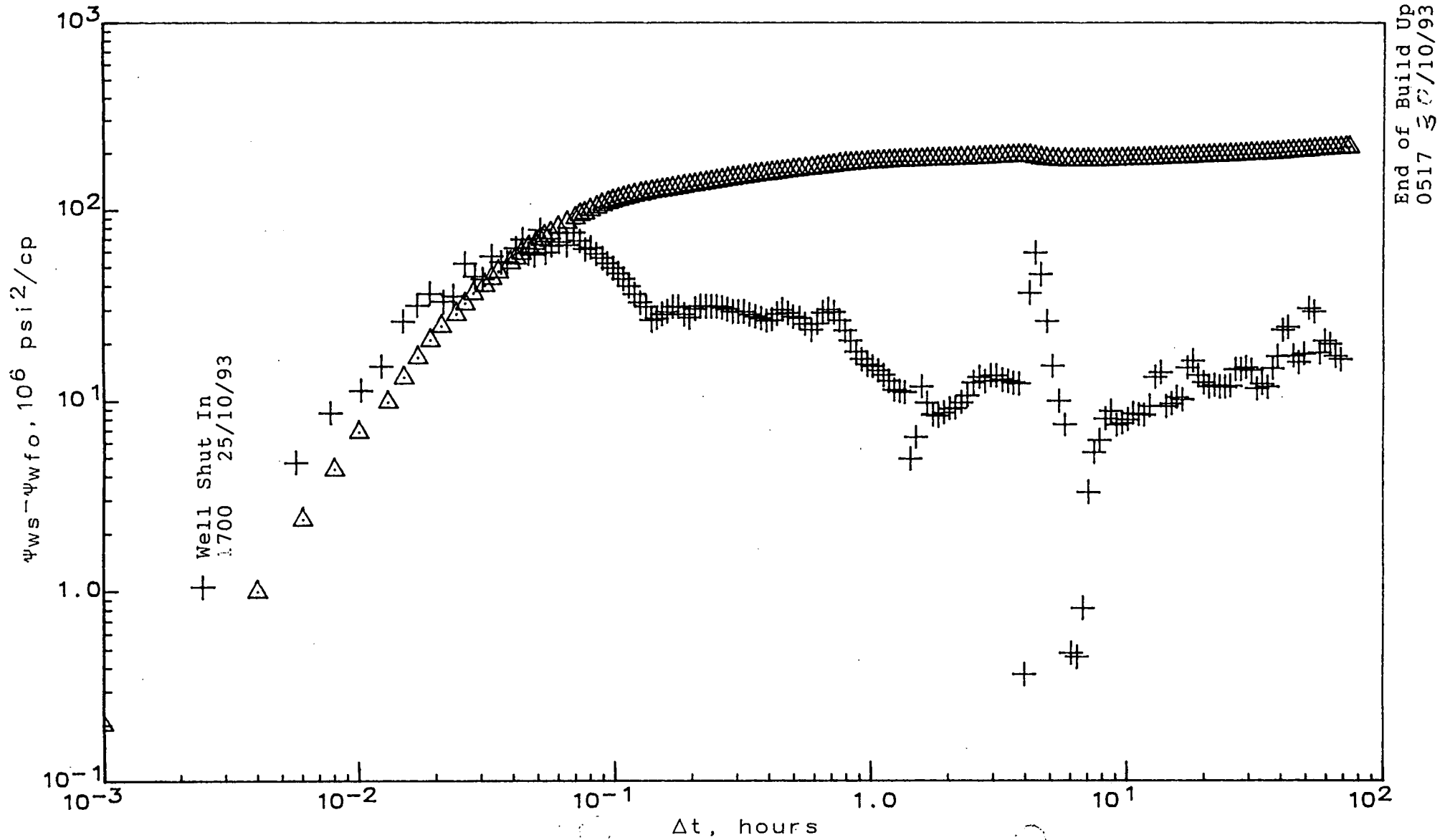
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DIAGNOSTIC PREPLOT TYPECURVE PRESSURE BUILDUP PLOT

SANTOS LTD.
MOOMBA #57.

L.E.T. & B.H.P.
START DATE 25/10/93.

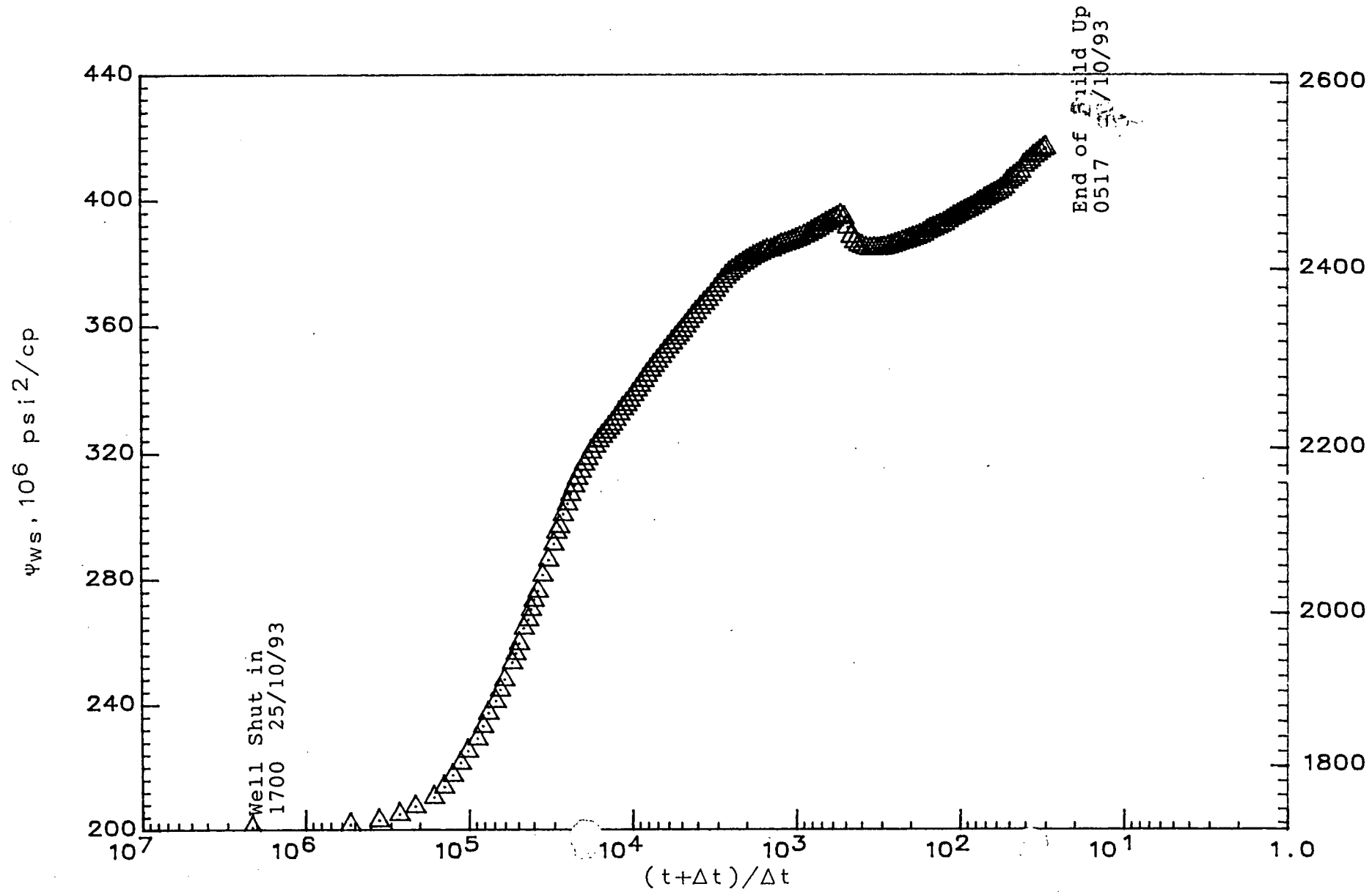


000058

HORNER PRESSURE BUILDUP PLOT

SANTOS LTD.
MOOMBA #57.

L.E.T. & B.H.P.
START DATE 25/10/93.



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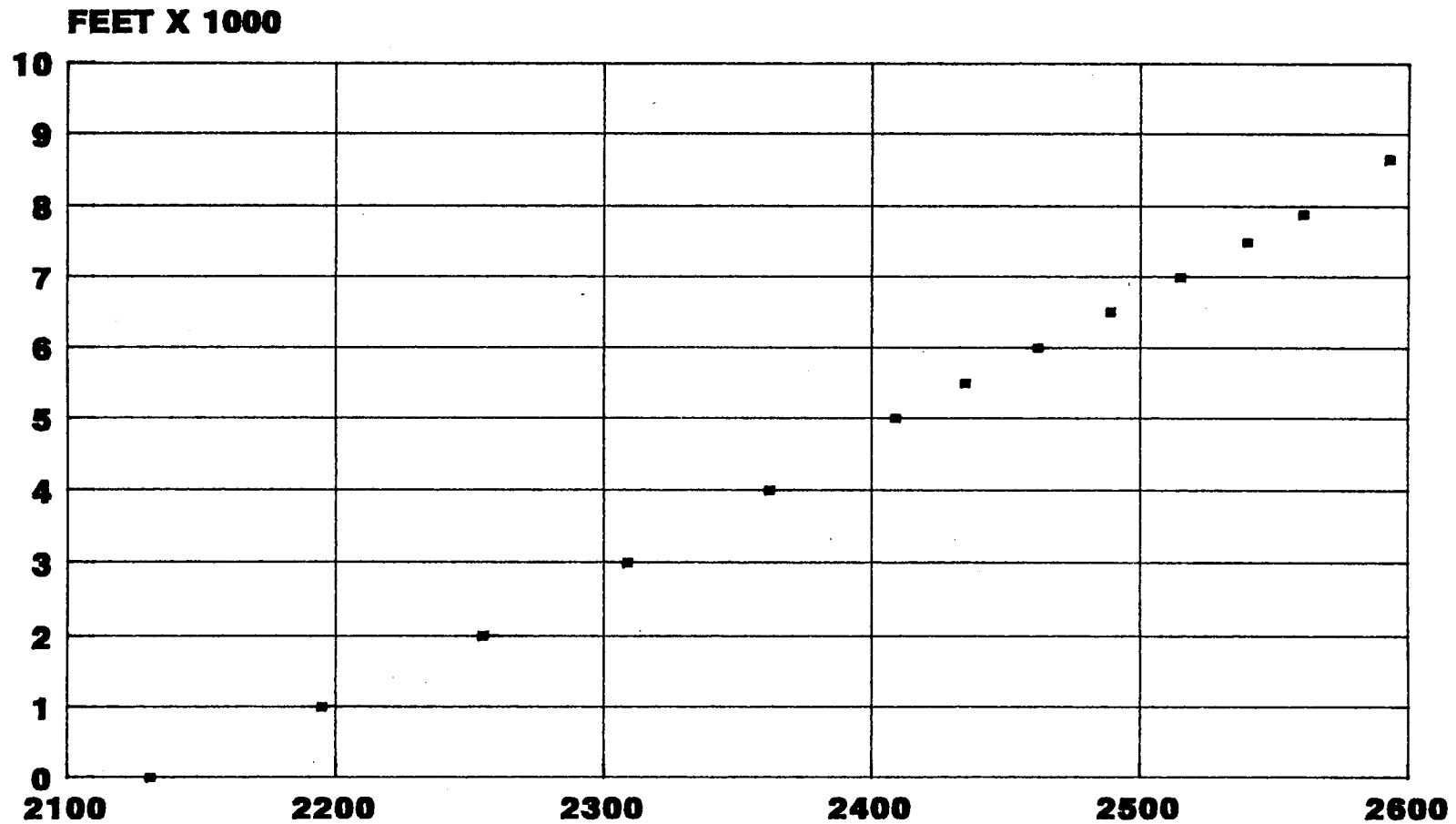
SECTION N011

STATIC GRADIENT SURVEY DATA & PLOTS

By: **OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033**

**TELEPHONE: (08) 371 2755
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**OILSERV AUSTRALIA LTD
STATIC GRADIENT SURVEY
CLIENT : SANTOS LTD**



**WELL : MOOMBA #57
DATE : 30/10/93
OPERATOR : V. Palska**

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