

Open File Envelope

NUMBER 7035/2

PEL 5 AND PEL 6, MERRIMELIA-INNAMINCKA BLOCK

COOPER AND EROMANGA BASINS

TAYLOR SOUTH 1

TEST REPORTS

Submitted by

Santos Ltd
1993

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MINES AND ENERGY
SOUTH AUSTRALIA



ENVELOPE 7035/2

TENEMENT: PEL 5 and PEL 6, Merrimelia-Innamincka Block; Eromanga and Cooper Basins

TENEMENT HOLDER: Santos Ltd (operator), Alliance Petroleum Australia NL, Delhi Petroleum Pty Ltd, Vamgas Ltd and South Australian Oil and Gas Corporation Pty Ltd

CONTENTS OF VOLUME ONE

	MESA NO.
REPORTS:	
Halliburton Services, 1987. Formation testing service report, DST 1 (25/6/87).	7035/2 R 1 Pgs 3-12
Halliburton Services, 1987. Formation testing service report, DST 2 (24/6/87).	7035/2 R 2 Pgs 13-22
Halliburton Services, 1987. Formation testing service report, DST 3 (25/6/87).	7035/2 R 3 Pgs 23-32
Halliburton Services, 1987. Formation testing service report, DST 4 (24/6/87).	7035/2 R 4 Pgs 33-44
Schlumberger-Seaco Inc., 1987. Report on the GEOGRAM processing of data from the velocity survey of the well Taylor South 1 (15/2/87).	7035/2 R 5 Pgs 45-131
PLAN Encl.	7035/2-1
REPORTS:	
Knox, L., 1988. Results of the post completion clean-up flow and modified isochronal gas production test, plus buildup and static gradient surveys, of the Tirrawarra Sandstone gas reservoir perforated interval 9502-9580 feet, conducted over the period 9-19/3/88 (Oilserv Australia Ltd).	7035/2 R 6 Pgs 132-172
Lanson, P.B., Wray, B.W. and Woodley, D.M., 1989. Interpretation of the results of the above modified isochronal test of the Tirrawarra Sandstone gas reservoir (Santos Ltd, Petroleum Development Department, report no. RE:021/89, June 1989).	7035/2 R 7 Pgs 173-210
Lohrey, B., 1989. Results of 96 hour reservoir pressure buildup, flowing bottomhole pressure and static pressure gradient surveys of the Tirrawarra producing zone, conducted over the period 27/2-3/3/89 (Oilserv Australia Ltd).	7035/2 R 8 Pgs 211-226
Smith, A. and Bowyer, P., 1991. Results of the post-frac single-rate gas production test, 170.5 hour buildup and static pressure gradient surveys of the Tirrawarra producing zone, conducted over the period 13-24/7/91 (Expertest Pty Ltd).	7035/2 R 9 Pgs 227-254

CONTENTS OF VOLUME TWO

Kappler, S., 1992. Results of a liquids evaluation test and flowing pressure gradient survey of the Tirrawarra producing zone, conducted over the period 21-22/8/92 (Oilserv Australia Ltd).	7035/2 R 10 Pgs 255-268
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MESA NO.**REPORTS:**

Serafini, K.M. and Evans, D.A., 1992. Interpretation of the February and November 1989 (pre-frac) and July 1991 (post-frac) pressure surveys of the Tirrawarra Sandstone gas reservoir in Taylor South Field (Santos Ltd, Petroleum Development Department, report no. RE:014/92, September 1992).

7035/2 R 11
Pgs 269-311

Black, P., 1993. Results of a static pressure gradient survey of the Tirrawarra producing zone, conducted over the period 30-31/5/93 (Expertest Pty Ltd).

7035/2 R 12
Pgs 312-315

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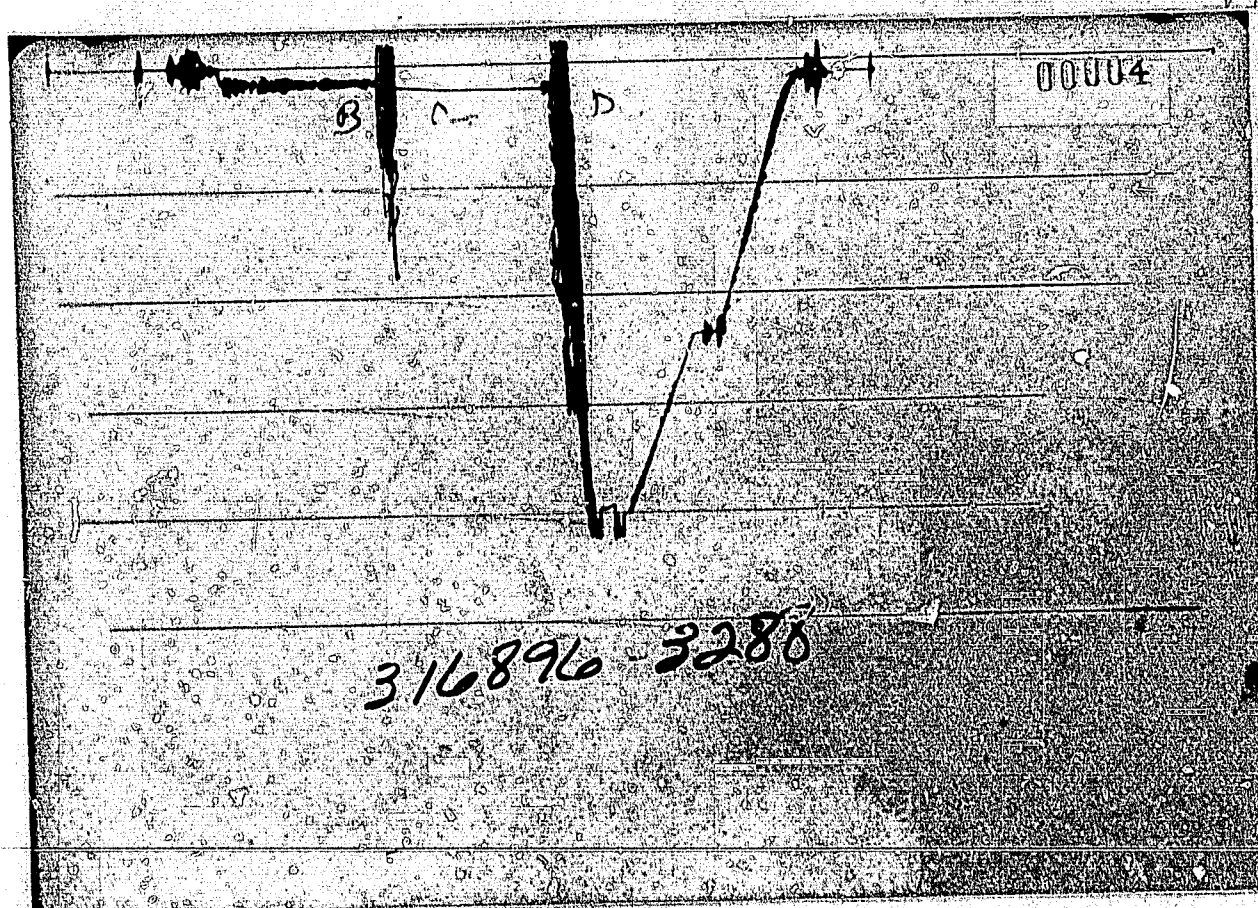
**HALLIBURTON
SERVICES**

TICKET NO. 31689500
25-JUN-87
MOOMBA



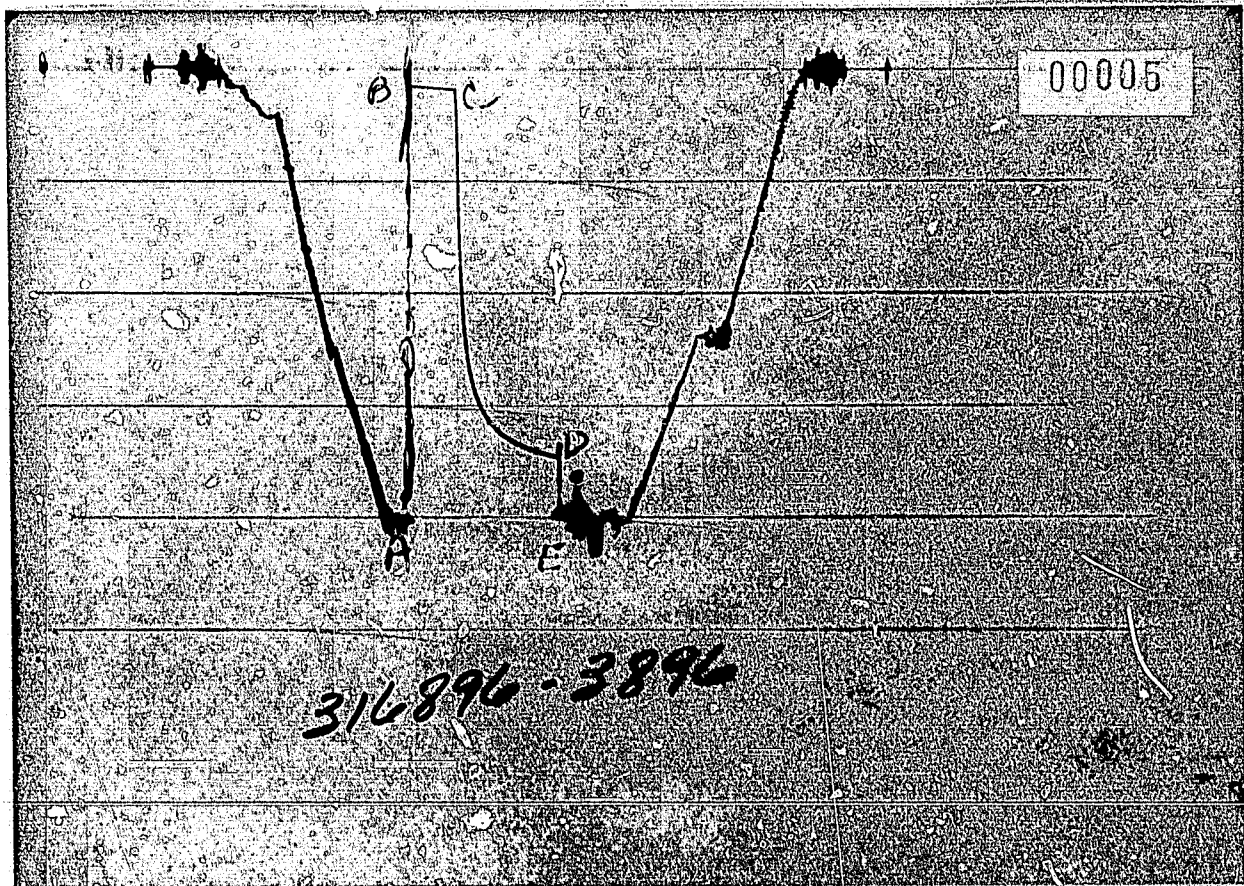
FORMATION TESTING SERVICE REPORT

3	3	3	3	3	3	3	3	3	3
LEGAL LOCATION	LEGAL NAME	WELL NO.	TEST NO.	FIELD NO.	COOPER BASIN	COUNTY	SOUTH CASTLE 19	STATE	AUSTRIA 19
SEE REMARKS									
					8449.5 - 8518.0		TESTED INTERVAL		
					DELHI/SANTOS		LEASE OWNER/COMPANY NAME		



GAUGE NO: 3288 DEPTH: 8405.8 BLANKED OFF: NO HOUR OF CLOCK: 24

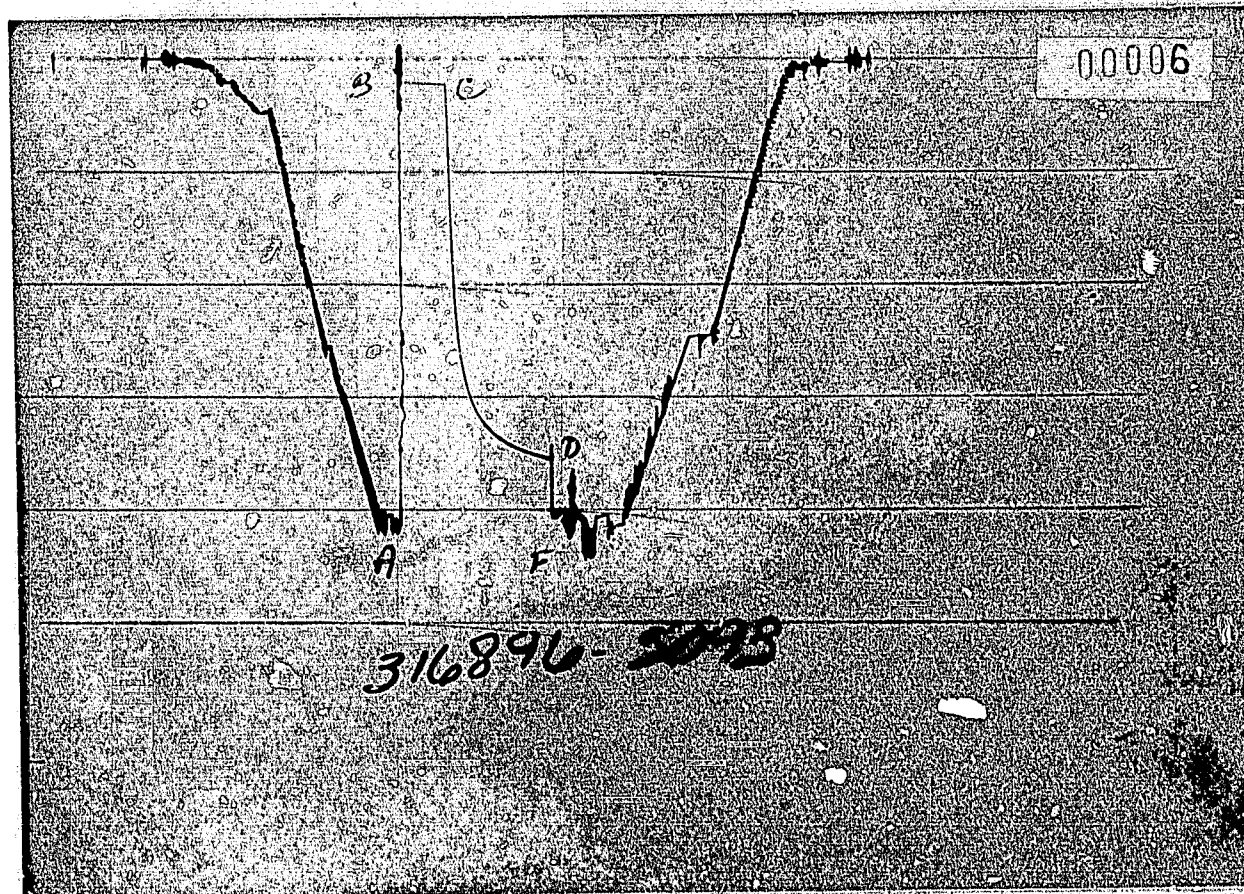
ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		67.3	64.0	59.8	F
C	FINAL FIRST FLOW		96.0			
C	INITIAL FIRST CLOSED-IN		96.0	128.2	132.2	C
D	FINAL FIRST CLOSED-IN		94.7			
E	FINAL HYDROSTATIC		3945.2			



GAUGE NO: 3896 DEPTH: 8426.8 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4037	3991.9			
B	INITIAL FIRST FLOW	160	154.9			
C	FINAL FIRST FLOW	170	182.1	64.0	59.8	F
C	INITIAL FIRST CLOSED-IN	170	182.1			
D	FINAL FIRST CLOSED-IN	3461	3460.6	128.0	132.2	C
E	FINAL HYDROSTATIC	4012	3976.1			

998



GAUGE NO: 5093 DEPTH: 8515.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4118	4051.5			
B	INITIAL FIRST FLOW	192	201.9	64.0	59.8	F
C	FINAL FIRST FLOW	213	226.7			
C	INITIAL FIRST CLOSED-IN	213	226.7	128.0	132.2	C
D	FINAL FIRST CLOSED-IN	3539	3554.3			
E	FINAL HYDROSTATIC	4072	4046.9			

00007 298

EQUIPMENT & HOLE DATA		
FORMATION TESTED: <u>NAPPAMERRI</u>		
NET PAY (ft): <u>20.0</u>		
GROSS TESTED FOOTAGE: <u>68.5</u>		
ALL DEPTHS MEASURED FROM: <u>KELLY BUSHING</u>		
CASING PERFS. (ft): _____		
HOLE OR CASING SIZE (in): <u>8.500</u>		
ELEVATION (ft): <u>161.0 KB - ABOVE M.G.L.</u>		
TOTAL DEPTH (ft): <u>8518.0</u>		
PACKER DEPTH(S) (ft): <u>8442. 8449</u>		
FINAL SURFACE CHOKE (in): <u>0.25000</u>		
BOTTOM HOLE CHOKE (in): <u>0.750</u>		
MUD WEIGHT (lb/gal): <u>9.30</u>		
MUD VISCOSITY (sec): <u>42</u>		
ESTIMATED HOLE TEMP. (°F): _____		
ACTUAL HOLE TEMP. (°F): <u>246 @ 8515.0 ft</u>		
FLUID PROPERTIES FOR RECOVERED MUD & WATER		
SOURCE	RESISTIVITY	CHLORIDES
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm
HYDROCARBON PROPERTIES		
OIL GRAVITY (°API): _____ @ _____ °F		
GAS/OIL RATIO (cu.ft. per bbl): _____		
GAS GRAVITY: _____		
SAMPLER DATA		
Psig AT SURFACE: _____		
cu.ft. OF GAS: _____		
cc OF OIL: _____		
cc OF WATER: _____		
cc OF MUD: _____		
TOTAL LIQUID cc: _____		
CUSHION DATA		
TYPE	AMOUNT	WEIGHT
FRESH WATER (FT)	<u>350.0</u>	<u>8.33</u>

RECOVERED:		
350 FEET OF WATER CUSHION		
150 FEET OF RAT HOLE MUD		
REMARKS:		
LEGAL LOCATION: LATITUDE - 27 DEGREES, 33', 42.74" SOUTH		
LONGITUDE -140 DEGREES, 29', 01.72" EAST		
TEST DATE IS 1 - FEB. - 87.		

MEASURED FROM
TESTER VALVE

898

TICKET NO: 31689600

698

00009

TICKET NO: 31689600

CLOCK NO: 26294 HOUR: 24



GAUGE NO: 3288

DEPTH: 8405.8

REF	MINUTES	PRESSURE	AP	$\frac{t \cdot \Delta t}{\Delta t}$	$\log \frac{t \cdot \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	AP	$\frac{t \cdot \Delta t}{\Delta t}$	$\log \frac{t \cdot \Delta t}{\Delta t}$
FIRST FLOW											
B	1	0.0	67.3								
	2	10.0	71.3	4.0							
	3	20.0	75.8	4.4							
	4	30.0	82.0	6.2							
	5	40.0	86.7	4.7							
	6	50.0	90.4	3.8							
C	7	59.8	95.0	5.6							
FIRST CLOSED-IN											
C	1	0.0	95.0								
D	2	132.2	94.7	-1.3	41.2	0.162					

REMARKS:
THIS CHART WAS MEASURED FROM CORRECTED BASELINE

098

00010

TICKET NO: 31689600
CLOCK NO: 28322 HOUR: 24



GAUGE NO: 3896
DEPTH 8426.8

REF	MINUTES	PRESSURE	AP	$\frac{t \pm \Delta t}{t \pm \Delta t}$	$\log \frac{t \pm \Delta t}{t \pm \Delta t}$	REF	MINUTES	PRESSURE	AP	$\frac{t \pm \Delta t}{t \pm \Delta t}$	$\log \frac{t \pm \Delta t}{t \pm \Delta t}$
FIRST FLOW											
B	1	0.0	154.9								
	2	10.0	160.0	5.1							
	3	20.0	164.7	4.7							
	4	30.0	168.2	3.4							
	5	40.0	172.9	4.7							
	6	50.0	178.4	5.5							
C	7	59.8	182.1	3.6							
FIRST CLOSED-IN											
C	1	0.0	182.1								
	2	5.0	1706.6	1524.5	4.6	1.112					
	3	10.0	2315.2	2133.1	8.6	0.844					
	4	15.0	2612.9	2430.8	12.0	0.697					
	5	20.0	2785.2	2603.2	15.0	0.601					
	6	25.0	2904.2	2722.2	17.6	0.530					
	7	30.0	2995.1	2813.1	20.0	0.475					
	8	35.0	3066.1	2884.1	22.1	0.433					
	9	40.0	3118.9	2936.8	23.9	0.397					
	10	45.0	3163.6	2981.5	25.7	0.367					
	11	50.0	3202.8	3020.7	27.2	0.342					
	12	55.0	3237.7	3055.7	28.6	0.319					
	13	60.0	3266.1	3084.1	29.9	0.300					
	14	65.0	3290.7	3108.6	31.1	0.283					
	15	70.0	3314.6	3132.6	32.2	0.268					
	16	75.0	3333.9	3151.8	33.3	0.255					
	17	80.0	3350.8	3168.8	34.2	0.242					
	18	85.0	3366.9	3184.9	35.1	0.231					
	19	90.0	3380.9	3198.9	35.9	0.221					
	20	95.0	3394.7	3212.7	36.7	0.212					
	21	100.0	3407.2	3225.2	37.4	0.204					
	22	105.0	3417.4	3235.3	38.1	0.196					
	23	110.0	3426.3	3244.2	38.7	0.188					
	24	114.9	3435.2	3254.2	39.3	0.182					
	25	120.0	3445.6	3264.6	39.9	0.175					
	26	125.0	3453.8	3271.8	40.4	0.170					
	27	130.0	3460.0	3277.9	40.9	0.164					
D	28	132.2	3460.6	3278.5	41.2	0.162					

REMARKS:

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00011

TICKET NO: 31689600

CLOCK NO: 29507 HOUR: 24



GAUGE NO: 5093

DEPTH: 8515.0

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B	1	0.0	201.9		
	2	10.0	208.8	6.8	
	3	20.0	211.1	2.4	
	4	30.0	215.2	4.1	
	5	40.0	218.6	3.4	
C	6	50.0	223.3	4.7	
	7	59.8	226.7	3.4	
FIRST CLOSED-IN					
C	1	0.0	226.7		
	2	5.0	1412.5	1185.8	4.6 1.111
	3	10.0	2129.3	1902.6	8.6 0.844
	4	15.0	2532.4	2305.7	12.0 0.698
	5	20.0	2744.8	2518.1	15.0 0.601
	6	25.0	2894.1	2667.4	17.6 0.531
	7	30.0	3006.3	2779.6	20.0 0.475
	8	35.0	3084.7	2868.0	22.1 0.433
	9	40.0	3161.1	2934.3	24.0 0.397
	10	45.0	3214.1	2987.4	25.7 0.367
	11	50.0	3258.5	3031.8	27.2 0.341
	12	55.0	3295.8	3069.1	28.6 0.319
	13	60.0	3331.4	3104.7	29.9 0.300
	14	65.0	3361.7	3135.0	31.1 0.283
	15	70.0	3382.7	3156.0	32.2 0.258
	16	75.0	3408.4	3181.7	33.3 0.254
	17	80.0	3426.1	3199.4	34.2 0.242
	18	85.0	3444.8	3218.1	35.1 0.231
	19	90.0	3461.1	3234.3	35.9 0.221
	20	95.0	3475.4	3248.7	36.7 0.212
	21	100.0	3489.9	3263.2	37.4 0.204
	22	105.0	3502.9	3276.2	38.1 0.196
	23	110.0	3513.9	3287.2	38.7 0.188
	24	115.0	3525.1	3298.3	39.3 0.182
	25	120.0	3534.1	3307.4	39.9 0.175
	26	125.0	3543.4	3316.7	40.4 0.170
	27	130.0	3550.5	3323.8	40.9 0.164
	D 28	132.2	3554.3	3327.6	41.2 0.162

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

00012

798

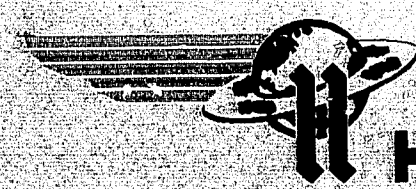
TICKET NO. 31689600

		O. D.	I. D.	LENGTH	DEPTH	
1		DRILL PIPE.....	5.000	3.750	7910.0	
4		FLEX WEIGHT.....	6.500	3.062	178.6	
3		DRILL COLLARS.....	6.125	2.750	268.8	
51		PUMP OUT REVERSING SUB.....	5.000	3.000	1.0	8344.7
3		DRILL COLLARS.....	6.125	2.750	29.5	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	8375.2
3		DRILL COLLARS.....	6.125	2.750	28.0	
258		BAR CATCHER SUB.....	5.750	1.120	1.0	
80		AP RUNNING CASE.....	5.000	2.250	4.1	8405.8
5		CROSSOVER.....	5.000	2.125	1.0	
12		DUAL CIP VALVE.....	5.000	0.870	1.3	
202		SAMPLE CHAMBER.....	5.000	2.500	1.9	
33		DRAIN VALVE.....	5.000	2.200	0.9	
60		HYDROSPRING TESTER.....	5.000	0.750	5.3	8425.3
80		AP RUNNING CASE.....	5.000	2.250	4.1	8426.8
15		JAR.....	5.000	1.750	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	2.8	
70		OPEN HOLE PACKER.....	7.750	1.530	5.8	8441.7
18		DISTRIBUTOR VALVE.....	5.000	1.680	2.0	
70		OPEN HOLE PACKER.....	7.750	1.530	5.8	8449.5
19		ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3	
5		CROSSOVER.....	5.750	2.500	0.9	
3		DRILL COLLARS.....	6.125	2.750	30.8	
5		CROSSOVER.....	5.750	2.437	0.7	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	26.0	
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1	8515.0
TOTAL DEPTH					8518.0	

EQUIPMENT DATA

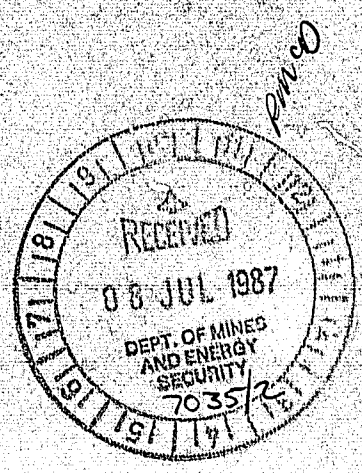
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00013



**HALLIBURTON
SERVICES**

TICKET NO. 31689700
24-JUN-87
MOOMBA



FORMATION TESTING SERVICE REPORT

TRAYLOR SOUTH	1	2	3669.5	8730.0	DELHI/SANTOS
LEASE NAME	WELL NO.	TEST NO.	ISSUED INTERVAL		LEASE OWNER/COMPANY NAME
LEGAL LOCATION	FIELD				
SEE REMARKS	COOPER BASIN				
	COUNTY				
	SOUTH AUSTRALIA				
	STATE				
	AUSTRALIA				

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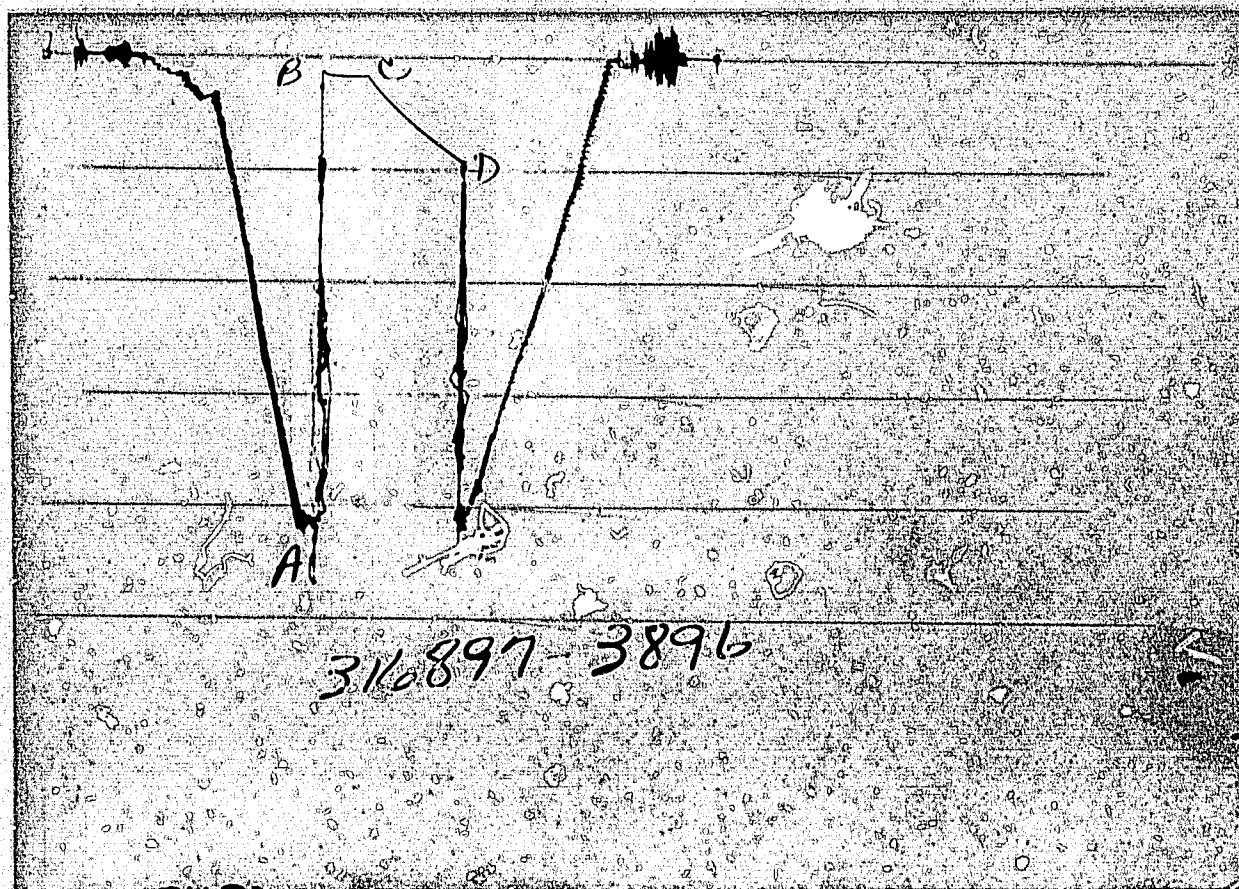
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316897-3289

GAUGE NO: 3289 DEP: 8625.8 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		185.9			
C	FINAL FIRST FLOW		238.6	60.0	61.1	F
C	INITIAL FIRST CLOSED-IN		238.6			
D	FINAL FIRST CLOSED-IN	242	256.5	120.0	118.9	C
E	FINAL HYDROSTATIC					

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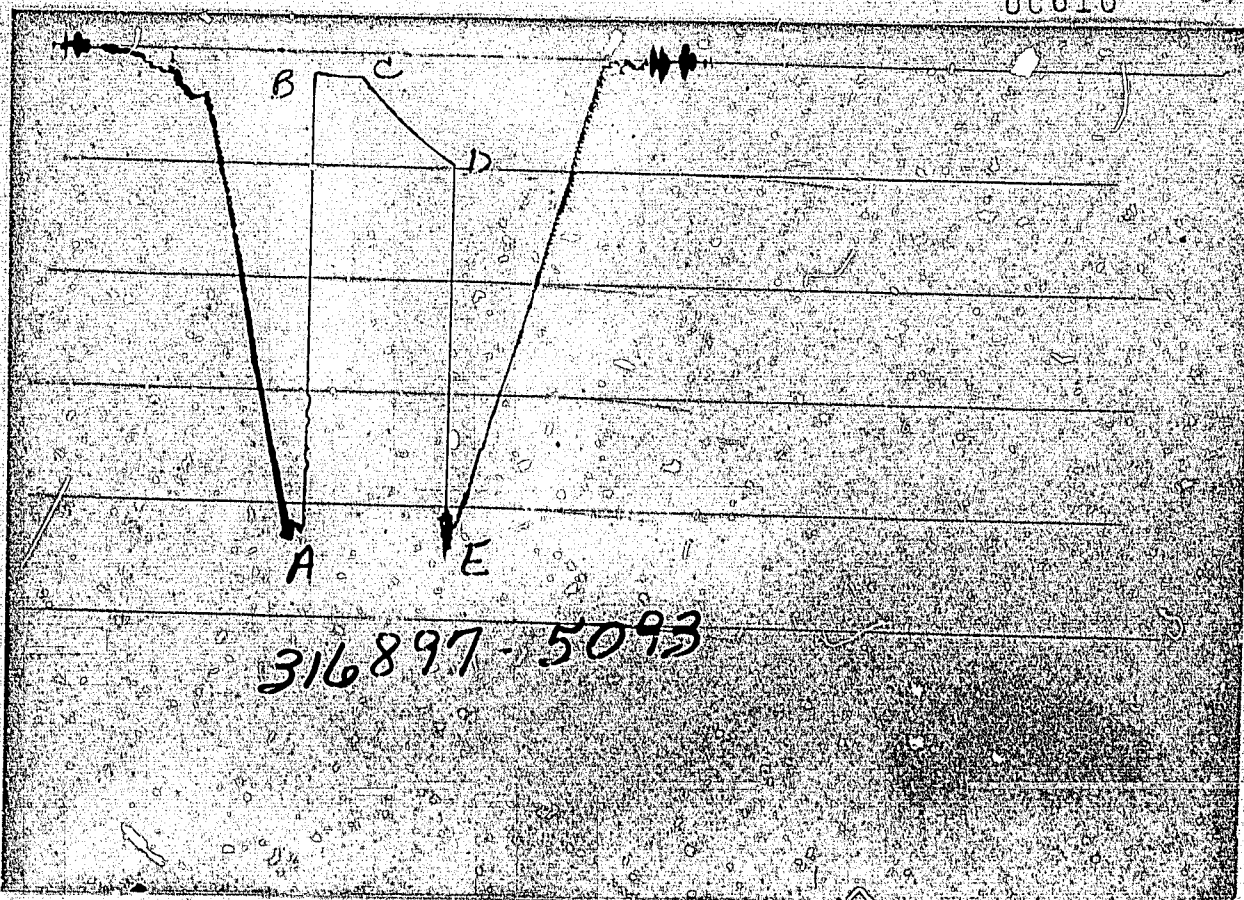


GAUGE NO: 3896 DEPTH: 8645.8 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4159	4102.7			
B	INITIAL FIRST FLOW	138	133.1			
C	FINAL FIRST FLOW	149	172.0	60.0	61.1	F
C	INITIAL FIRST CLOSED-IN	149	172.0			
D	FINAL FIRST CLOSED-IN	908	916.7	120.0	118.9	T
E	FINAL HYDROSTATIC	4117	4088.2			

00016

017



GAUGE NO: 5093 DEPTH: 8727.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4210	4195.0			
B	INITIAL FIRST FLOW	166	182.5			
C	FINAL FIRST FLOW	213	212.6	60.0	61.1	F
C	INITIAL FIRST CLOSED-IN	213	212.6			
D	FINAL FIRST CLOSED-IN	961	967.5	120.0	118.9	C
E	FINAL HYDROSTATIC	4177	4169.6			

00017

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EQUIPMENT & HOLE DATA			TICKET NUMBER: 31689700	
FORMATION TESTED: TOOLACHEE			DATE: 2-3-87 TEST NO: 2	
NET PAY (ft): 8.0			TYPE DST: OPEN HOLE	
GROSS TESTED FOOTAGE: 60.5			HALLIBURTON CAMP: MOLIMBA	
ALL DEPTHS MEASURED FROM: KELLY BUSHING			TESTER: W. J. CASKEY	
CASING PERFS. (ft):			WITNESS:	
HOLE OR CASING SIZE (in): 8.500			DRILLING CONTRACTOR:	
ELEVATION (ft): 161.0 K.B. (A.M.G.L.)			D.D. & E. RTG #5	
TOTAL DEPTH (ft): 8730.0				
PACKER DEPTH(S) (ft): 8662, 8669				
FINAL SURFACE CHOKE (in): 0.50000 25				
BOTTOM HOLE CHOKE (in): 0.750				
MUD WEIGHT (lb/gal): 9.30				
MUD VISCOSITY (sec): 40				
ESTIMATED HOLE TEMP. (°F):				
ACTUAL HOLE TEMP. (°F): 253 @ 8727.0 ft				
FLUID PROPERTIES FOR RECOVERED MUD & WATER			SAMPLER DATA	
SOURCE	RESISTIVITY	CHLORIDES	Paig AT SURFACE:	
MUD	0.450 @ 72 °F	ppm	cu.ft. OF GAS:	
WATER	2.500 @ 65 °F	ppm	cc OF OIL:	
	@ °F	ppm	cc OF WATER:	
	@ °F	ppm	cc OF MUD:	
	@ °F	ppm	TOTAL LIQUID cc:	
HYDROCARBON PROPERTIES			CUSHION DATA	
OIL GRAVITY (°API): @ °F			TYPE AMOUNT WEIGHT	
GAS/OIL RATIO (cu.ft. per bbl):			FRESH WATER (FT) 350.0 8.33	
GAS GRAVITY:				
RECOVERED:			MEASURED FROM TESTER VALVE	
350 FEET OF WATER CUSHION 124 FEET OF SLIGHTLY GAS CUT MUD				
REMARKS:				
LEGAL LOCATION: LATITUDE - 27 DEGREES, 33', 42.74" SOUTH LONGITUDE -140 DEGREES, 29', 01.72" EAST				
TEST DATE IS 3 - FEB - 87.				

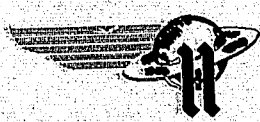
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00019 674

TICKET NO: 31689700
CLOCK NO: 26294 HOUR: 24

GAUGE NO: 3289
DEPTH: 8625.8



REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta P}{t \times \Delta t}$	$\log \frac{1 \times \Delta P}{t \times \Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta P}{t \times \Delta t}$	$\log \frac{1 \times \Delta P}{t \times \Delta t}$
FIRST FLOW											
B	1	0.0	185.9								
	2	10.0	223.0	37.1							
	3	20.0	239.5	16.5							
	4	30.0	240.4	0.9							
	5	40.0	237.5	-2.9							
	6	50.0	235.6	-0.9							
C	7	61.1	238.6	2.0							
FIRST CLOSED-IN											
C	1	0.0	238.6								
D	2	118.9	256.5	17.9	40.4	0.180					

REMARKS:

414

00020

TICKET NO: 31689700
CLOCK NO: 28322 HOUR: 24



GAUGE NO: 3896
DEPTH: 8646.8

REF	MINUTES	PRESSURE	ΔP	$\frac{\Delta P}{\Delta t}$	$\log \frac{\Delta P}{\Delta t}$
FIRST FLOW					
B	1	0.0	133.1		
	2	10.0	161.5	28.4	
	3	20.0	168.8	7.3	
	4	30.0	172.6	3.8	
	5	40.0	173.9	1.3	
	6	50.0	172.6	-1.3	
C	7	61.1	172.0	-0.6	
FIRST CLOSED-IN					
D	1	0.0	172.0		
	2	1.0	179.9	7.9	1.0 1.793
	3	2.0	190.8	10.8	2.0 1.493
	4	3.0	199.6	12.6	2.3 1.325
	5	4.0	207.9	15.9	3.7 1.214
	6	5.0	217.9	15.9	4.6 1.124
	7	6.0	227.6	15.6	5.4 1.050
	8	7.0	236.1	16.1	6.3 0.986
	9	8.0	244.0	12.0	7.1 0.935
	10	9.0	253.4	11.4	7.8 0.891
	11	10.0	262.2	10.2	8.6 0.851
	12	12.0	277.4	105.3	10.0 0.784
	13	14.0	294.2	122.2	11.4 0.729
	14	16.0	310.3	138.2	12.7 0.683
	15	18.0	324.4	152.4	13.9 0.643
	16	20.0	339.5	167.5	15.1 0.607
	17	22.0	354.1	182.1	16.2 0.577
	18	24.0	369.4	197.4	17.2 0.550
	19	26.0	385.5	213.5	18.3 0.525
	20	28.0	397.6	225.6	19.2 0.502
	21	30.0	412.0	240.0	20.1 0.482
	22	35.0	447.0	275.0	22.2 0.439
	23	40.0	479.9	307.9	24.2 0.403
	24	45.0	510.0	338.0	25.9 0.372
	25	50.0	543.6	371.6	27.5 0.347
	26	55.0	574.6	402.6	28.9 0.324
	27	60.0	606.4	434.4	30.3 0.305
	28	70.0	663.2	491.2	32.6 0.272
	29	80.0	717.9	545.9	34.6 0.246
	30	90.0	771.8	599.8	36.4 0.225
	31	100.0	824.6	652.6	37.9 0.207
	32	110.0	872.9	700.9	39.3 0.192
D	33	118.9	916.7	744.7	40.4 0.180

REF	MINUTES	PRESSURE	ΔP	$\frac{\Delta P}{\Delta t}$	$\log \frac{\Delta P}{\Delta t}$

REMARKS:

00021 517

TICKET NO: 31689700
CLOCK NO: 29507 HOUR: 24



GAUGE NO: 5093
DEPTH: 8727.0

REF	MINUTES	PRESSURE	AP	$\frac{t-t_0}{t-t_0}$	$\log \frac{t-t_0}{t-t_0}$
FIRST FLOW					
B 1	0.0	182.5			
2	10.0	192.1	9.6		
3	20.0	203.6	11.5		
4	30.0	209.6	6.0		
5	40.0	212.6	3.0		
6	50.0	212.6	0.0		
C 7	61.1	212.6	0.0		
FIRST CLOSED-IN					
C 1	0.0	212.6			
2	1.0	220.7	8.1	1.0	1.776
3	2.0	230.8	18.2	1.9	1.501
4	3.0	239.1	26.5	2.9	1.326
5	4.0	243.8	31.2	3.7	1.214
6	5.0	255.6	42.9	4.6	1.120
7	6.0	265.0	52.4	5.5	1.047
8	7.0	275.0	62.4	6.3	0.989
9	8.0	285.0	72.4	7.1	0.937
10	9.0	296.8	84.2	7.8	0.891
11	10.0	303.2	90.6	8.6	0.852
12	12.0	316.2	103.6	10.0	0.784
13	14.0	329.5	116.9	11.4	0.728
14	16.0	344.0	131.4	12.7	0.682
15	18.0	356.8	144.2	13.9	0.643
16	20.0	376.1	163.5	15.1	0.608
17	22.0	391.5	178.8	16.2	0.577
18	24.0	403.8	191.2	17.2	0.550
19	26.0	419.2	206.6	18.2	0.525
20	28.0	432.5	219.9	19.2	0.503
21	30.0	450.4	237.8	20.1	0.482
22	35.0	462.1	269.4	22.3	0.439
23	40.0	516.5	303.8	24.2	0.403
24	45.0	557.7	345.1	25.9	0.373
25	50.0	586.5	373.9	27.5	0.347
26	55.0	616.5	403.8	28.9	0.324
27	60.0	648.3	435.7	30.3	0.305
28	70.0	707.5	494.9	32.6	0.272
29	80.0	785.6	553.0	34.6	0.246
30	90.0	820.5	607.9	36.4	0.225
31	100.0	875.0	662.4	37.9	0.207
32	110.0	927.6	715.0	39.3	0.192
D 33	118.9	967.5	754.9	40.4	0.180

REF	MINUTES	PRESSURE	AP	$\frac{t-t_0}{t-t_0}$	$\log \frac{t-t_0}{t-t_0}$

REMARKS:

00022
TICKET NO. 31689700

917

		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE	5.000	3.750	81.4.2	
4	FLEX WRIGHT	6.500	3.062	178.6	
3	DRILL COLLARS	6.125	2.750	268.8	
51	PUMP OUT REVERSING SUB	6.000	3.000	1.0	8564.7
3	DRILL COLLARS	6.125	2.750	29.5	
50	IMPACT REVERSING SUB	6.000	3.000	1.0	8595.2
3	DRILL COLLARS	6.125	2.750	28.0	
258	BAR CATCHER SUB	5.750	1.120	1.0	
60	AP RUNNING CASE	5.000	2.250	4.1	8625.8
5	CROSSOVER	5.000	2.125	1.0	
12	DUAL CIP VALVE	5.000	0.870	4.9	
202	SAMPLE CHAMBER	5.000	2.500	4.9	
33	DRAIN VALVE	5.000	2.200	0.9	
60	HYDROSPRING TESTER	5.000	0.750	5.3	8645.0
80	AP RUNNING CASE	5.000	2.250	4.1	8646.8
15	JAR	5.000	1.750	5.0	
16	VR SAFETY JOINT	5.000	1.000	2.8	
70	OPEN HOLE PACKER	7.750	1.530	5.8	8661.7
18	DISTRIBUTOR VALVE	5.000	1.680	2.0	
70	OPEN HOLE PACKER	7.750	1.530	5.8	8669.5
19	ANCHOR PIPE SAFETY JOINT	5.000	1.500	4.3	
5	CROSSOVER	5.750	2.500	0.9	
3	DRILL COLLARS	6.125	2.750	30.8	
5	CROSSOVER	5.750	2.437	0.7	
20	FLUSH JOINT ANCHOR	5.000	2.870	18.0	
81	BLANKED-OFF RUNNING CASE	5.000		4.1	8727.0
TOTAL DEPTH					8730.0

EQUIPMENT DATA

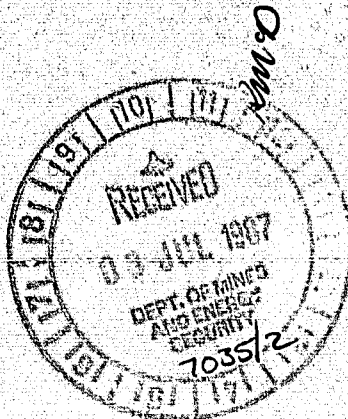
495

00023



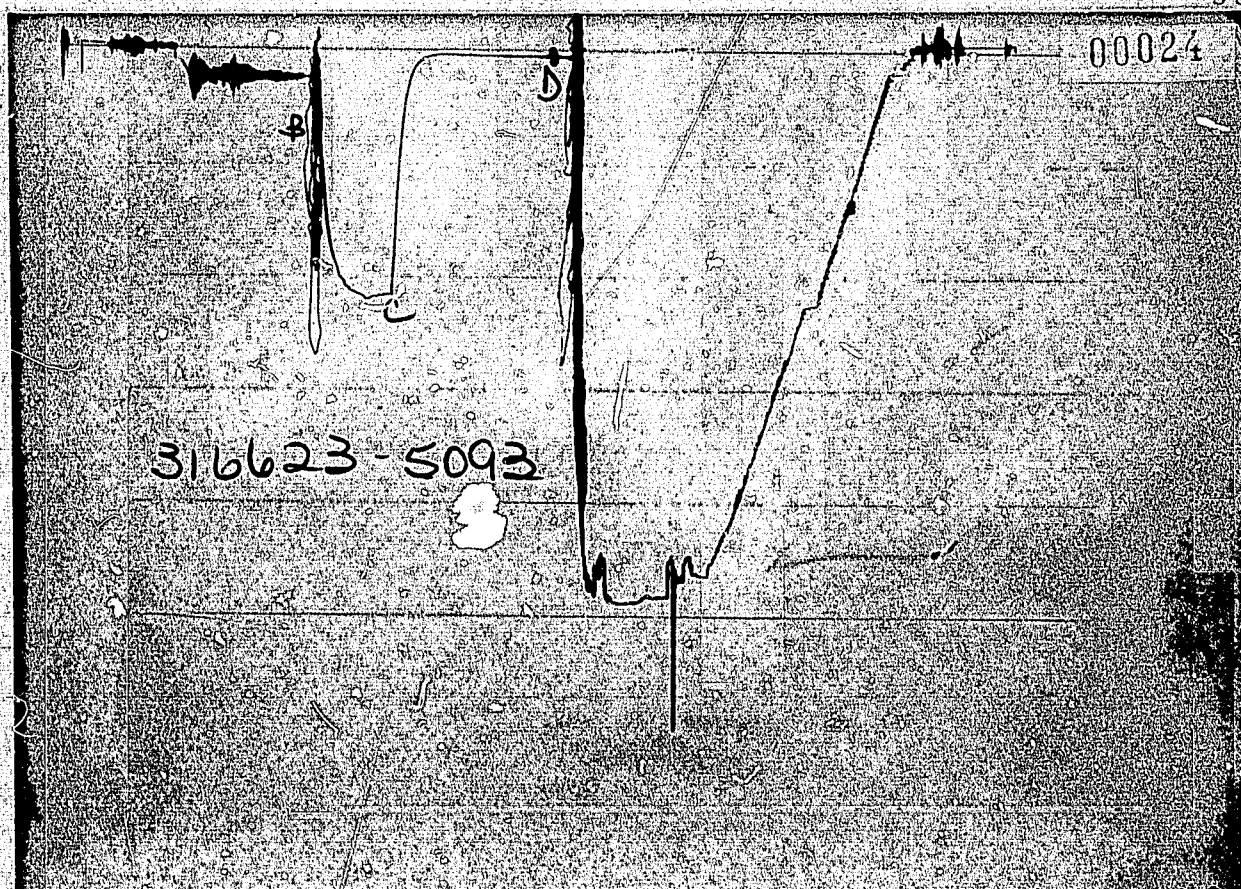
**HALLIBURTON
SERVICES**

TICKET NO. 31662300
25-JUN-87
MODMBA



FORMATION TESTING SERVICE REPORT

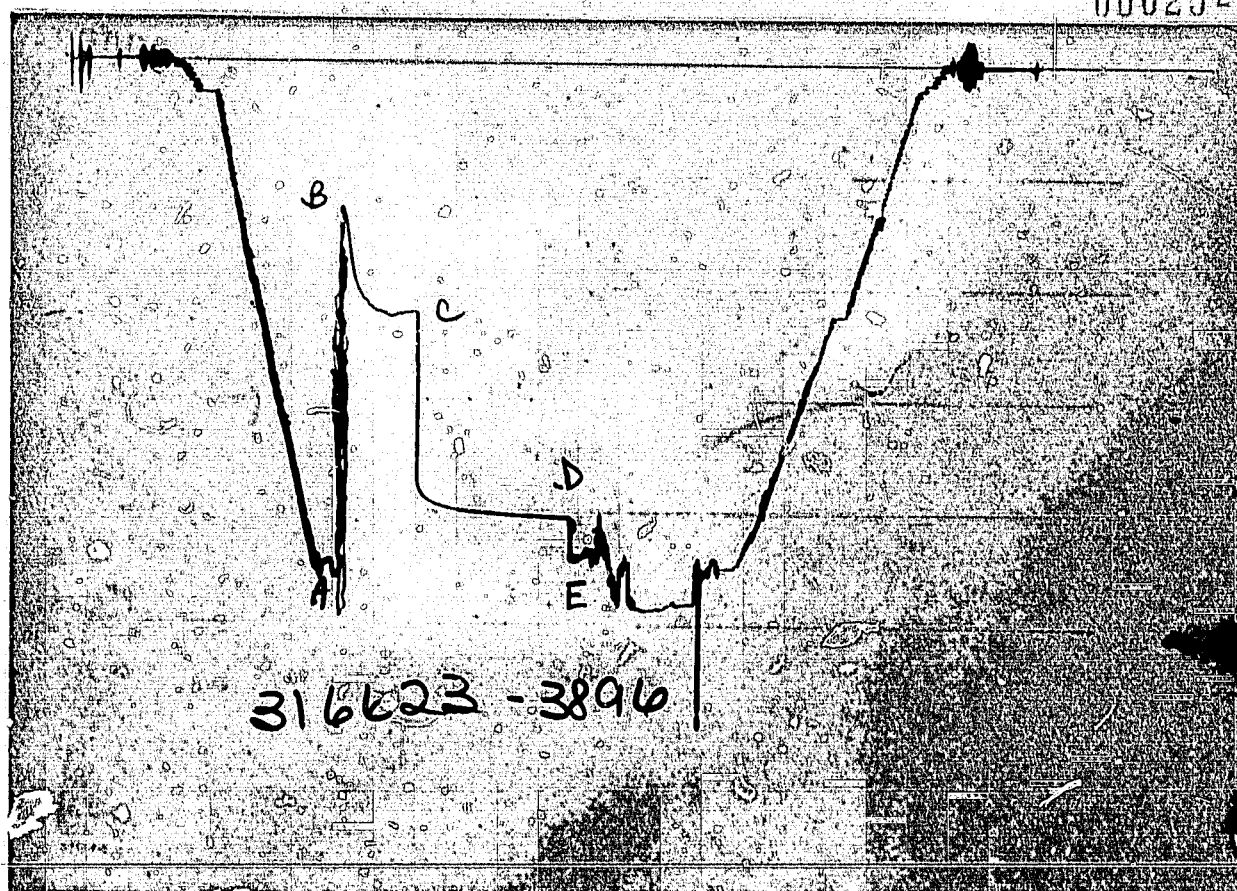
TRAYLOR SOUTH	WELL NO. 1	TEST NO. 3	9473.5 - 9560.0	DELHI/SANTOS
LEASE NAME			TESTED INTERVAL	LEASE OWNER/COMPANY NAME
LEGAL LOCATION	SEE REMARKS	FIELD	COOPER BASIN	COUNTY SOUTH AUSTRALIA
				SITE AUSTRALIA
				PU



GAUGE NO: 5093 DEPTH: 9429.7 BLANKED OFF: NO HOUR OF CLOCK: 24

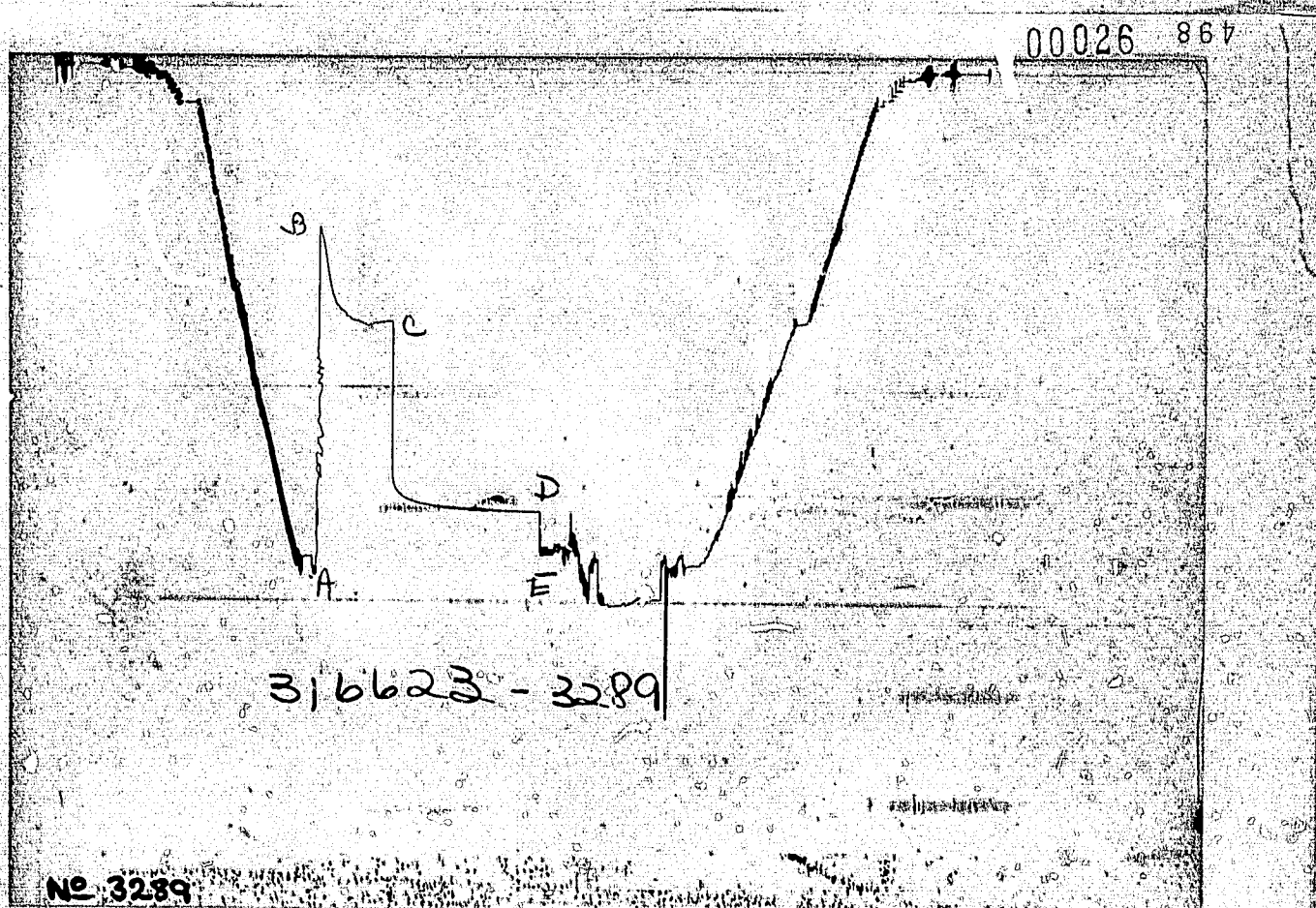
ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW	244	765.8			
C	FINAL FIRST FLOW		2162.9	98.0	97.0	F
C	INITIAL FIRST CLOSED-IN		2162.9			
D	FINAL FIRST CLOSED-IN	60	52.4	193.0	194.0	C
E	FINAL HYDROSTATIC					

00025267



GAUGE NO. 3896 DEPTH: 9450.7 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4433	4440.1			
B	INITIAL FIRST FLOW	1302	1293.0			
C	FINAL FIRST FLOW	2224	2220.5	98.0	97.0	F
C	INITIAL FIRST CLOSED-IN	2224	2220.5			
D	FINAL FIRST CLOSED-IN	4046	4044.3	193.0	194.0	C
E	FINAL HYDROSTATIC	4420	4422.3			



GAUGE NO: 3289 DEPTH: 9557.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4588	4591.0			
B	INITIAL FIRST FLOW	1506	1509.0			
C	FINAL FIRST FLOW	2387	2385.2	98.0	97.0	F
C	INITIAL FIRST CLOSED-IN	2387	2385.2			
D	FINAL FIRST CLOSED-IN	4165	4164.5	193.0	194.0	C
E	FINAL HYDROSTATIC	4566	4560.9			

667

00027

EQUIPMENT & HOLE DATAFORMATION TESTED: IRRAWARRANET PAY (ft): 62.0GROSS TESTED FOOTAGE: 86.5ALL DEPTHS MEASURED FROM: KBCASING PERFS. (ft): HOLE OR CASING SIZE (in): 8.500ELEVATION (ft): 161.0 KB- ABOVE MEAN G.L.TOTAL DEPTH (ft): 9560.0PACKER DEPTH(S) (ft): 9466, 9474FINAL SURFACE CHOKE (in): 0.50000BOTTOM HOLE CHOKE (in): 0.750MUD WEIGHT (lb/gal): 9.30MUD VISCOSITY (sec): 39ESTIMATED HOLE TEMP. (°F): ACTUAL HOLE TEMP. (°F): 281 @ 9556.0 ftTICKET NUMBER: 33662300DATE: 2-7-87 TEST NO: 3TYPE DST: OPEN HOLEHALLIBURTON CAMP: MOOMBATESTER: P. BATESWITNESS: L. WEREKYDRILLING CONTRACTOR: D.D. & E. RIG #5**FLUID PROPERTIES FOR
RECOVERED MUD & WATER**

SOURCE

RESISTIVITY

CHLORIDES

 °F ppm °F ppm °F ppm °F ppm °F ppm °F ppm**SAMPLER DATA**Psig AT SURFACE: cu.ft. OF GAS: cc OF OIL: cc OF WATER: cc OF MUD: TOTAL LIQUID vol: **HYDROCARBON PROPERTIES**OIL GRAVITY (°API): @ °FGAS/OIL RATIO (cu.ft. per bbl): GAS GRAVITY: **CUSHION DATA**

TYPE

AMOUNT

WEIGHT

WATER (FEET)560.08.34**RECOVERED:**

REVERSE CIRCULATED UP GAS AND CONDENSATE CUT MUD.
CALCULATED 177' OF CONDENSATE FROM THE TOP
(RECOVERY) B.T. CHART.

MEASURED FROM
TESTER VALVE**REMARKS:**

LEGAL LOCATION: LAT. 27 DEGREES - 33' - 42.74" SOUTH

LONG. 140 DEGREES - 29' - 01.72" EAST

SEISMIC: 124.8 M. WEST OF S.P. 390 ON LINE 85-XZG

TEST DATE IS 7 - FEB. - 87

009

00028

TYPE A SIZE MEASURING DEVICE: 6" SURFACE CERAMIC CHOKE					TICKET NO: 31552300
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
2-7-87					
0610					STARTED PICKING UP TOOLS
0720					STARTED INTO HOLE
1030					RIGGED UP HEAD AND FLOOR LINES
1049					SEAT PACKERS
1051	.50"				OPENED TOOL - WEAK BLOW
1054					STRONG BLOW
1055		70			
1056		170			GAS TO THE SURFACE
1057		300			
1058		370			
1059		430			
1100		500			
1105		860			
1110		1055			
1115		1160			
1120		1195			FLOWING THROUGH OILSERV SEPARATOR
1125		1300			
1130		1368			
1135		1390			
1140		1400			
1145		1420			
1200		1480			
1215		1450			
1229		1452			CLOSED TOOL
1542					OPENED BYPASS AND PULLED FREE
1550					LAID DOWN HEAD
1555					PULLED 220'
1607					PICKED-UP HEAD
1618					DROPPED IMPACT REVERSING BAR
1619					STARTED REVERSE CIRCULATION
1840					LAID DOWN HEAD - FINISHED
					CIRCULATING
1910					STARTED OUT OF HOLE
2337					STARTED BREAKING OUT TOOLS
2-8-87					
0042					FINISHED LAYING TOOLS DOWN

109

00029

TICKET NO: 31662300
CLOCK NO: 29507 HOUR: 24



GAUGE NO: 5093
DEPTH: 9429.7

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{t}$
FIRST FLOW					
B 1	0.0	715.8			
2	10.0	1460.7	694.9		
3	20.0	1841.2	380.5		
4	30.0	2022.5	181.3		
5	40.0	2108.2	85.7		
6	50.0	2150.9	42.7		
7	60.0	2184.2	33.3		
8	70.0	2190.7	6.5		
9	80.0	2174.1	-16.6		
10	90.0	2161.5	-12.6		
C 11	97.0	2162.9	1.5		
FIRST CLOSED-IN					
I 1	0.0	2162.9			
D 2	194.0	52.4	-2110.6	64.7	0.176

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{t}$

REMARKS:

00030

TICKET NO: 31662300
CLOCK NO: 28322 HOUR: 24



GAUGE NO: 3896
DEPTH: 9450.7

REF	MINUTES	PRESSURE	ΔP	$\frac{P-P_0}{\rho g}$	$\log \frac{P-P_0}{\rho g}$	REF	MINUTES	PRESSURE	ΔP	$\frac{P-P_0}{\rho g}$	$\log \frac{P-P_0}{\rho g}$
FIRST FLOW						FIRST CLOSED-IN - CONTINUED					
B	1	0.0	1293.0			37	180.0	4043.1	1822.6	53.0	0.187
	2	10.0	1559.6	266.6		D 38	194.0	4044.3	1823.9	54.7	0.175
	3	20.0	1963.8	404.3							
	4	30.0	2105.5	141.7							
	5	40.0	2175.3	69.8							
	6	50.0	2213.1	37.8							
	7	60.0	2243.2	30.2							
	8	70.0	2243.2	0.0							
	9	80.0	2228.9	-14.3							
	10	90.0	2220.3	-8.6							
C	11	97.0	2220.5	0.2							
FIRST CLOSED-IN											
C	1	0.0	2220.5								
1	2	1.0	2684.4	463.9	1.0	1.990					
	3	2.0	3797.0	1576.6	2.0	1.687					
	4	3.0	3814.6	1594.2	2.9	1.526					
	5	4.0	3829.0	1608.6	3.9	1.398					
	6	5.0	3839.8	1619.4	4.8	1.305					
	7	6.0	3848.7	1628.3	5.7	1.234					
	8	7.0	3857.2	1636.7	6.5	1.173					
	9	8.0	3865.3	1644.8	7.4	1.118					
	10	9.0	3871.6	1651.1	8.2	1.071					
	11	10.0	3878.2	1657.7	9.1	1.029					
	12	12.0	3889.6	1669.2	10.7	0.958					
	13	14.0	3899.4	1678.9	12.2	0.900					
	14	16.0	3907.6	1687.2	13.7	0.850					
	15	18.0	3915.7	1695.2	15.2	0.806					
	16	20.0	3922.2	1701.8	16.6	0.767					
	17	22.0	3927.3	1706.9	17.9	0.734					
	18	24.0	3933.3	1712.8	19.2	0.702					
	19	26.0	3939.6	1719.2	20.5	0.674					
	20	28.0	3943.6	1723.2	21.7	0.650					
	21	30.0	3947.0	1726.6	22.9	0.626					
	22	35.0	3957.2	1736.7	25.7	0.576					
	23	40.0	3966.1	1745.6	28.3	0.534					
	24	45.0	3974.2	1753.7	30.7	0.499					
	25	50.0	3979.9	1759.4	33.0	0.468					
	26	55.0	3985.2	1764.7	35.1	0.442					
	27	60.0	3989.6	1768.2	37.1	0.418					
	28	70.0	3998.1	1777.6	40.7	0.379					
	29	80.0	4005.3	1784.8	43.9	0.345					
	30	90.0	4011.6	1791.1	46.7	0.318					
	31	100.0	4017.6	1797.2	49.2	0.295					
	32	110.0	4020.6	1800.1	51.5	0.275					
	33	120.0	4026.3	1805.8	53.6	0.257					
	34	135.0	4030.5	1810.0	56.5	0.235					
	35	150.0	4035.7	1815.3	58.9	0.217					
	36	165.0	4040.8	1820.3	61.3	0.201					

LEGEND:
[] STAIR-STEP
REMARKS:

809

00031

TICKET NO: 31662300

CLOCK NO: 26294 HOUR: 24

GAUGE NO: 3289

DEPTH: 9557.0

REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta}{1 \times \Delta}$	$\log \frac{1 \times \Delta}{1 \times \Delta}$
FIRST FLOW					
1B	0.0	1509.0			
2	10.0	1800.7	291.7		
3	20.0	2163.0	362.4		
4	30.0	2280.9	117.8		
5	40.0	2347.3	66.5		
6	50.0	2381.7	34.4		
7	60.0	2404.1	22.4		
8	70.0	2407.3	3.2		
9	80.0	2393.3	-14.0		
10	90.0	2383.2	-10.1		
11	97.0	2385.2	1.9		

FIRST CLOSED-IN					
1C	0.0	2385.2			
2	1.0	3866.5	1481.3	1.0	1.979
3	2.0	3910.0	1524.8	2.0	1.689
4	3.0	3931.4	1546.2	2.9	1.524
5	4.0	3946.8	1561.6	3.8	1.403
6	5.0	3959.3	1574.1	4.7	1.313
7	6.0	3969.3	1584.1	5.6	1.237
8	7.0	3980.5	1595.4	6.6	1.169
9	8.0	3989.0	1603.8	7.4	1.119
10	9.0	3997.8	1612.7	8.3	1.069
11	10.0	4003.4	1618.3	9.1	1.028
12	12.0	4015.8	1630.7	10.7	0.959
13	14.0	4026.5	1641.3	12.2	0.897
14	16.0	4035.0	1649.9	13.7	0.849
15	18.0	4042.3	1657.1	15.2	0.806
16	20.0	4050.0	1664.8	16.6	0.767
17	22.0	4056.4	1671.2	17.9	0.733
18	24.0	4061.3	1676.2	19.2	0.703
19	26.0	4066.5	1681.3	20.5	0.675
20	28.0	4070.5	1685.4	21.7	0.650
21	30.0	4074.8	1689.6	22.9	0.627
22	35.0	4084.4	1699.2	25.7	0.577
23	40.0	4091.9	1706.7	28.3	0.535
24	45.0	4098.5	1713.3	30.7	0.499
25	50.0	4104.5	1719.3	33.0	0.468
26	55.0	4109.0	1723.8	35.1	0.441
27	60.0	4114.3	1729.2	37.1	0.418
28	70.0	4123.5	1738.3	40.7	0.37
29	80.0	4129.1	1743.9	43.8	0.34
30	90.0	4134.6	1749.5	46.7	0.316
31	100.0	4139.3	1754.2	49.2	0.294
32	110.0	4143.6	1758.4	51.6	0.275
33	120.0	4147.6	1762.5	53.6	0.257
34	135.0	4152.6	1767.4	56.5	0.235
35	150.0	4156.2	1771.0	58.9	0.217
36	165.0	4159.4	1774.2	61.1	0.201
37	180.0	4161.5	1776.4	63.0	0.187

REMARKS:

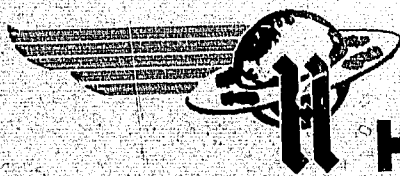
00032

709

TICKET NO. 31652300

		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE	5.000	3.750	8860.7	
4	FLEX WEIGHT	5.500	3.050	178.6	
3	DRILL COLLARS	5.120	2.750	326.6	
51	PUMP OUT REVERSING SUB	5.000	3.000	1.0	9366.2
3	DRILL COLLARS	5.120	2.750	30.4	
50	IMPACT REVERSING SUB	5.000	3.000	1.0	9397.7
3	DRILL COLLARS	5.120	2.750	29.5	
258	BAR CATCHER SUB	5.750	1.120	1.0	
80	AP RUNNING CASE	5.000	2.250	4.1	9429.7
5	CROSSOVER	5.000	2.200	1.0	
12	DUAL CIP VALVE	5.000	0.870	4.9	
202	SAMPLE CHAMBER	5.000	2.500	4.9	
33	DRAIN VALVE	5.000	2.200	0.9	
60	HYDROSPRING TESTER	5.000	0.750	5.3	9449.2
80	AP RUNNING CASE	5.000	2.250	4.1	9450.7
15	JAR	5.000	1.750	5.0	
16	VR SAFETY JOINT	5.000	1.000	2.8	
70	OPEN HOLE PACKER	7.500	1.530	5.8	9465.7
18	DISTRIBUTOR VALVE	5.000	1.680	2.0	
70	OPEN HOLE PACKER	7.500	1.530	5.8	9473.5
19	ANCHOR PIPE SAFETY JOINT	5.000	1.500	4.3	
5	CROSSOVER	5.750	2.500	0.9	
3	DRILL COLLARS	5.120	2.750	58.8	
5	CROSSOVER	5.750	2.440	0.7	
20	FLUSH JOINT ANCHOR	5.000	2.370	16.0	
81	BLANKED-OFF RUNNING CASE	5.000		4.1	9557.0
TOTAL DEPTH					9560.0

EQUIPMENT DATA



HALLIBURTON SERVICES

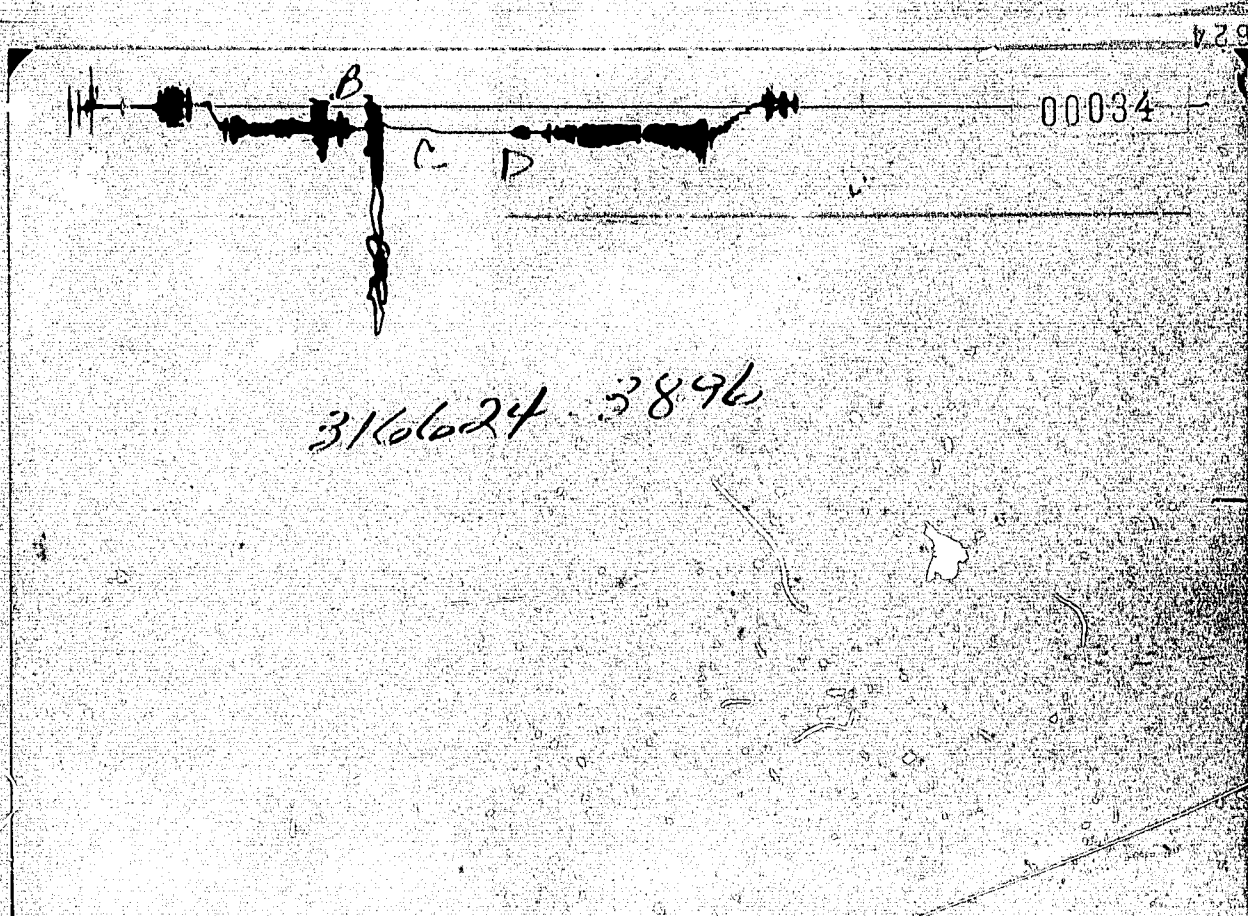
TICKET NO. 31662400
24-JUN-87
MOOMBA

00033

LEGAL LOCATION	TEST NO.	TESTED INTERVAL	DELHI/SHANTIS
TRAYLOR SOUTH	4	8239.2 - 9350.5	
LEASE NAME	WELL NO.		LEASE OWNER/COMPANY NAME
SEC. REMARKS	FIELD AREA	COUNTRY	STATE
		SOUTH AUSTRALIA	AUSTRALIA

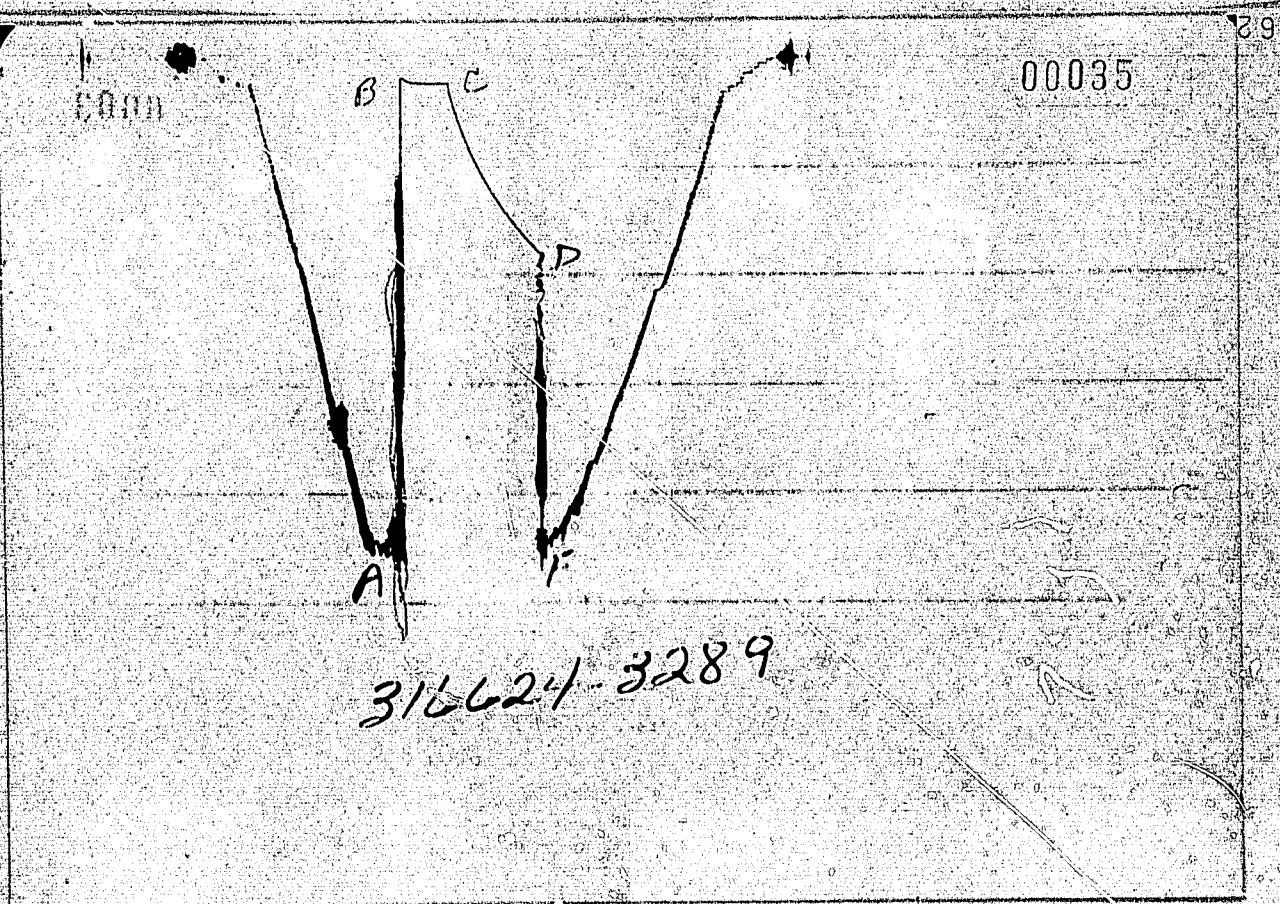
RM
2/1/87

FORMATION TESTING SERVICE REPORT



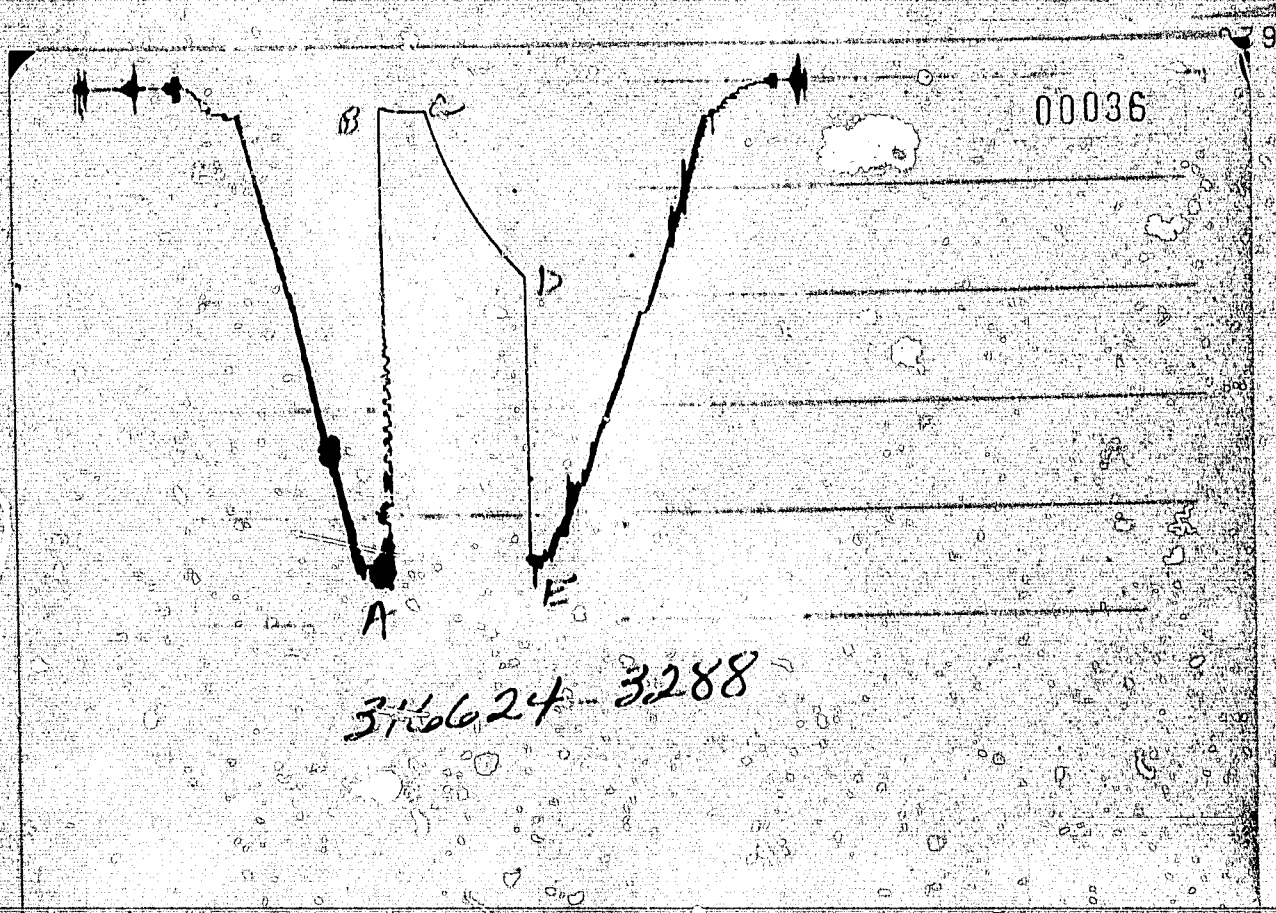
GAUGE NO: 3896 DEPTH: 9193.4 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		166.9	60.0	59.1	F
C	FINAL FIRST FLOW		213.9			
C	INITIAL FIRST CLOSED-IN		213.9	120.0	120.9	C
D	FINAL FIRST CLOSED-IN	230	248.5			
E	FINAL HYDROSTATIC					
F	HYDROSTATIC RELEASE					



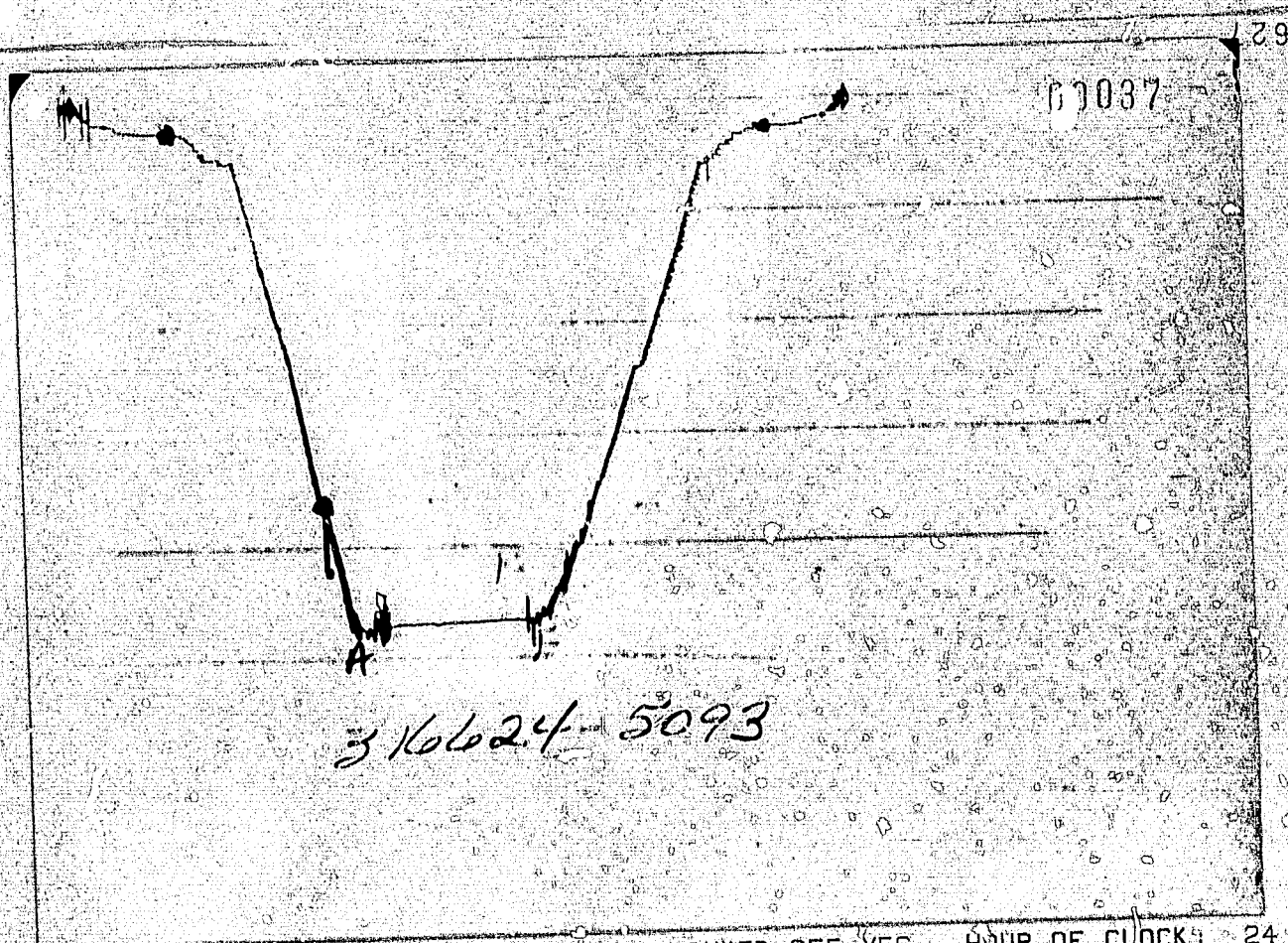
GAUGE NO: 3289 DEPTH: 9214.4 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4433	4443.2			
B	INITIAL FIRST FLOW	176	178.1			
C	FINAL FIRST FLOW	225	222.7	60.0	59.1	F
C	INITIAL FIRST CLOSED-IN	225	222.7			
D	FINAL FIRST CLOSED-IN	1789	1797.2	120.0	120.9	C
E	FINAL HYDROSTATIC	4446	4461.5			
F	HYDROSTATIC RELEASE					



GAUGE NO: 3288 DEPTH: 9255.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4448	4464.6			
B	INITIAL FIRST FLOW	208	220.4			
C	FINAL FIRST FLOW	244	246.9	60.0	59.1	F
D	INITIAL FIRST CLOSED-IN	244	246.9			
E	FINAL FIRST CLOSED-IN	1792	1801.3	120.0	120.9	C
F	FINAL HYDROSTATIC	4430	4461.5			
G	HYDROSTATIC RELEASE					



GAUGE NO: 5093 DEPTH: 9723.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	4710	4752.9			
B	INITIAL FIRST FLOW			60.0		F
C	FINAL FIRST FLOW					
C	INITIAL FIRST CLOSED-IN			120.0		C
D	FINAL FIRST CLOSED-IN					
E	FINAL HYDROSTATIC	4656	4767.3			
F	HYDROSTATIC RELEASE		4660.6			

00038

829

EQUIPMENT & HOLE DATA

FORMATION TESTED: PATCHAWARRA
NET PAY (ft): 12.0
GROSS TESTED FOOTAGE: 1112.3
ALL DEPTHS MEASURED FROM: KELLY BUSHING
CASING PERFS. (ft):
HOLE OR CASING SIZE (in): 8.500
ELEVATION (ft): 161.0 K B (A.M.S.L.)
TOTAL DEPTH (ft): 9726.0
PACKER DEPTH(S) (ft): 9230, 9238, 9351, 9358
FINAL SURFACE CHOKE (in): 0.25000
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 9.30
MUD VISCOSITY (sec): 43
ESTIMATED HOLE TEMP. (°F):
ACTUAL HOLE TEMP. (°F): 270 @ 9722.0 ft

TICKET NUMBER: 31662400

DATE: 2-11-87 TEST NO: 4

TYPE DST: ON BTM. STRADDLE

HALLIBURTON CAMP:
MOOMBA

TESTER: P. BATES

WITNESS: L. WERECKY

DRILLING CONTRACTOR:
O.D. & E. RIG #5FLUID PROPERTIES FOR
RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
	°F	ppm
	°F	ppm
	°F	ppm
	°F	ppm
	°F	ppm
	°F	ppm

SAMPLER DATA

Psig AT SURFACE:
cu.ft. OF GAS:
cc OF OIL:
cc OF WATER:
cc OF MUD:
TOTAL LIQUID cc:

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): @ °F
GAS/OIL RATIO (cu.ft. per bbl):
GAS GRAVITY:

CUSHION DATA

TYPE	AMOUNT	WEIGHT
WATER (FEET)	525.0	8.34

RECOVERED:

525 FEET OF WATER
60 FEET OF RAT HOLE MUD

MEASURED FROM
TESTER VALVE

REMARKS:

LEGAL LOCATION: LATITUDE - 27 DEGREES, 33', 42.74" SOUTH
LONGITUDE - 140 DEGREES, 29', 01.72" EAST
SEISMIC - 124.8 M WEST OF G.P. 390 ON LINE 85 XZG

TEST DATE IS 11 - FEB. - 87.

00039 629

TYPE & SIZE MEASURING DEVICE: 6" CERAMIC SURFACE CHOKE					TICKET NO: 31652400
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
2-11-87					
0100					PICKED UP GAUGES
0110					RAN 11 DRILL COLLARS
0125					PICKED UP TOOLS
0152					RAN 3 DRILL COLLARS
0200					PICKED UP TOOLS
0315					FINISHED MAKING UP TOOLS - RAN
					IN HOLE
0355					MADE UP HEAD
0407					RAN IN HOLE
0702					RIGGED UP HEAD AND FLOOR LINES
0732					SET PACKERS
0735	.25	0			OPENED TOOL WITH VERY WEAK BLOW
0737		0			WEAK TO MODERATE BLOW
0738		1			
0740		4			
0742		10			
0745		11			
0750		11			
0755		12			GAS TO SURFACE
0800		12			
0815		12			
0830		11			
0835		11			CLOSED TOOL
1035					OPENED BYPASS AND PULLED FREE
1040					LAI D DOWN HEAD AND FLOOR LINES
1043					STARTED OUT OF HOLE
1545					STARTED BREAKING OUT TOOLS
1637					PULLED 3 DRILL COLLARS
1645					BROKE OUT TOOLS
1709					PULLED 11 DRILL COLLARS
1727					BROKE OUT GAUGES
1738					FINISHED LAYING DOWN TOOLS

TICKET NO: 31662400

CLOCK NO: 26294 HOUR: 24

GAUGE NO: 3289

DEPTH: 9214.4

00041

189

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B	1	0.0	178.1		
	2	10.0	211.0	32.9	
	3	20.0	219.9	8.9	
	4	30.0	221.9	2.0	
	5	40.0	223.6	1.8	
	6	50.0	223.0	-0.7	
C	7	59.1	222.7	-0.2	
FIRST CLOSED-IN					
C	1	0.0	222.7		
	2	5.0	402.6	179.9	4.6 1.108
	3	10.0	520.8	298.0	8.6 0.838
	4	15.0	621.6	398.9	11.9 0.694
	5	20.0	717.4	494.7	15.0 0.597
	6	25.0	807.9	585.2	17.5 0.527
	7	30.0	887.6	664.9	19.9 0.472
	8	35.0	961.6	738.9	22.0 0.429
	9	40.0	1033.5	810.7	23.9 0.394
	10	45.0	1100.0	877.3	25.5 0.364
	11	50.0	1162.6	939.8	27.1 0.339
	12	55.0	1223.6	1000.9	28.5 0.317
	13	60.0	1277.7	1054.9	29.8 0.298
	14	65.0	1333.5	1110.7	31.0 0.281
	15	70.0	1387.5	1164.8	32.0 0.266
	16	75.0	1439.8	1217.1	33.0 0.252
	17	80.0	1486.4	1263.7	34.0 0.240
	18	85.0	1536.3	1313.6	34.9 0.229
	19	90.0	1578.8	1356.0	35.7 0.219
	20	95.0	1624.5	1401.8	36.4 0.210
	21	100.0	1666.5	1443.8	37.1 0.202
	22	105.0	1703.5	1480.8	37.8 0.194
	23	110.0	1742.7	1519.9	38.4 0.187
	24	115.0	1780.1	1557.4	39.0 0.180
D	25	120.9	1797.2	1574.4	39.7 0.173

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

00042

289

TICKET NO: 31662400

CLOCK NO: 16139 HOUR: 24



GAUGE NO: 3288

DEPTH: 9255.0

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	220.4			
2	10.0	228.9	8.4		
3	20.0	242.0	13.1		
4	30.0	245.7	4.7		
5	40.0	245.7	0.0		
6	50.0	245.7	0.0		
C 7	59.1	246.9	0.2		
FIRST CLOSED-IN					
C 1	0.0	246.9			
2	5.0	361.6	114.7	4.6	1.107
3	10.0	477.3	230.4	8.6	0.839
4	15.0	575.6	328.7	12.0	0.693
5	20.0	663.8	416.9	15.0	0.597
6	25.0	755.1	508.2	17.6	0.527
7	30.0	832.7	585.8	19.9	0.472
8	35.0	911.1	664.2	22.0	0.429
9	40.0	965.3	738.4	23.8	0.394
10	45.0	1054.0	807.2	25.6	0.364
11	50.0	1117.7	870.8	27.1	0.339
12	55.0	1179.9	933.0	28.5	0.317
13	60.0	1240.0	993.2	29.8	0.298
14	65.0	1293.9	1047.0	30.9	0.281
15	70.0	1351.9	1105.0	32.0	0.266
16	75.0	1404.2	1157.3	33.0	0.252
17	80.0	1450.1	1203.2	34.0	0.240
18	85.0	1499.1	1252.2	34.9	0.229
19	90.0	1546.4	1299.5	35.7	0.219
20	95.0	1593.7	1346.8	36.4	0.210
21	100.0	1635.1	1389.2	37.1	0.202
22	105.0	1677.7	1430.6	37.8	0.194
23	110.0	1715.3	1468.4	38.4	0.187
24	115.0	1755.1	1508.3	39.0	0.180
D 25	120.9	1801.3	1554.4	39.7	0.173

REMARKS:

00043

889

TICKET NO. 31562400

		O.D.	I.D.	LENGTH	DEPTH
1		DRILL PIPE	5.000	4.410	8728.8
4		FLEX WEIGHT	6.500	3.060	178.6
3		DRILL COLLARS	6.120	2.750	241.1
51		PUMP OUT REVERSING SUB	6.000	3.000	1.0 9130.0
3		DRILL COLLARS	6.120	2.750	29.4
50		IMPACT REVERSING SUB	6.000	3.000	1.0 9160.8
3		DRILL COLLARS	6.120	2.750	30.1
258		BAR CATCHER SUB	5.750	1.120	1.0
80		AP RUNNING CASE	5.000	2.250	4.1 9193.4
5		CROSSOVER	5.000	2.200	1.0
12		DUAL CIP VALVE	5.000	0.870	4.9
202		SAMPLE CHAMBER	5.000	2.500	4.9
33		DRAIN VALVE	5.000	2.200	0.9
60		HYDROSPRING TESTER	5.000	0.750	5.3 9212.9
80		AP RUNNING CASE	5.000	2.250	4.1 9214.4
15		JAR	5.000	1.750	5.0
16		VR SAFETY JOINT	5.000	1.000	2.8
17		PRESSURE EQUALIZING CROSSOVER	4.870		1.0
70		OPEN HOLE PACKER	7.500	1.530	5.8 9230.3
18		DISTRIBUTOR VALVE	5.000	1.680	2.0
70		OPEN HOLE PACKER	7.500	1.530	5.8 9238.2
20		FLUSH JOINT ANCHOR	5.000	2.370	13.0
17		PRESSURE EQUALIZING CROSSOVER	4.620	2.750	1.0
80		AP RUNNING CASE	5.000	2.250	4.1 9255.0
5		CROSSOVER	5.000	2.500	0.8
5		CROSSOVER	6.000	2.500	0.7
3		DRILL COLLARS	6.120	2.750	87.8
5		CROSSOVER	6.000	2.500	0.7

CONTINUED

EQUIPMENT DATA

00044

TICKET NO. 31662400

489

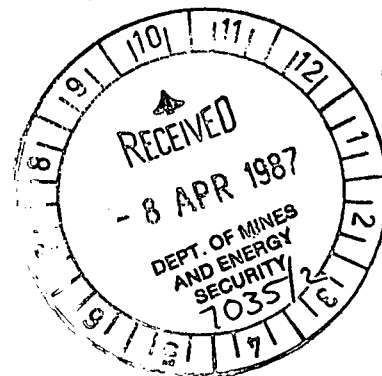
		O.D.	I.D.	LENGTH	DEPTH
5		CROSS VER.	5.000	2.500	0.6
70		OPEN HOLE PACKER.	7.500	1.530	5.8
18		DISTRIBUTOR VALVE.	5.000	1.680	2.0
70		OPEN HOLE PACKER.	7.500	1.530	5.8
5		CROSSOVER.	4.620	2.500	0.8
19		ANCHOR PIPE SAFETY JOINT.	5.000	1.500	4.3
20		FLUSH JOINT ANCHOR.	5.000	2.370	25.0
5		CROSSOVER.	6.000	2.500	1.0
3		DRILL COLLARS.	6.120	2.750	327.5
5		CROSSOVER.	6.000	2.440	1.0
81		BLANKED-OFF RUNNING CASE.	5.000		4.1
					9723.0
					9726.0
					TOTAL DEPTH

EQUIPMENT DATA

SANTOS/DELHI AND PARTNERS

A report on the GEOGRAM processing of data
from the VELOCITY SURVEY of the well
TAYLOR SOUTH 1

FIELD : BOOKABOURDIE
COUNTRY : AUSTRALIA
STATE : SOUTH AUSTRALIA
COORDINATES : 27 33' 42.74 $\frac{1}{4}$ SOUTH
140 29' 09.72 $\frac{1}{4}$ EAST
DATE OF SURVEY : 10 FEB 87
REFERENCE NUMBER : 550229, 550230, 550231



The near surface velocity, well name, seismic line details, formation tops, borehole reference data and location map were furnished by the customer.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee, the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by one of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.

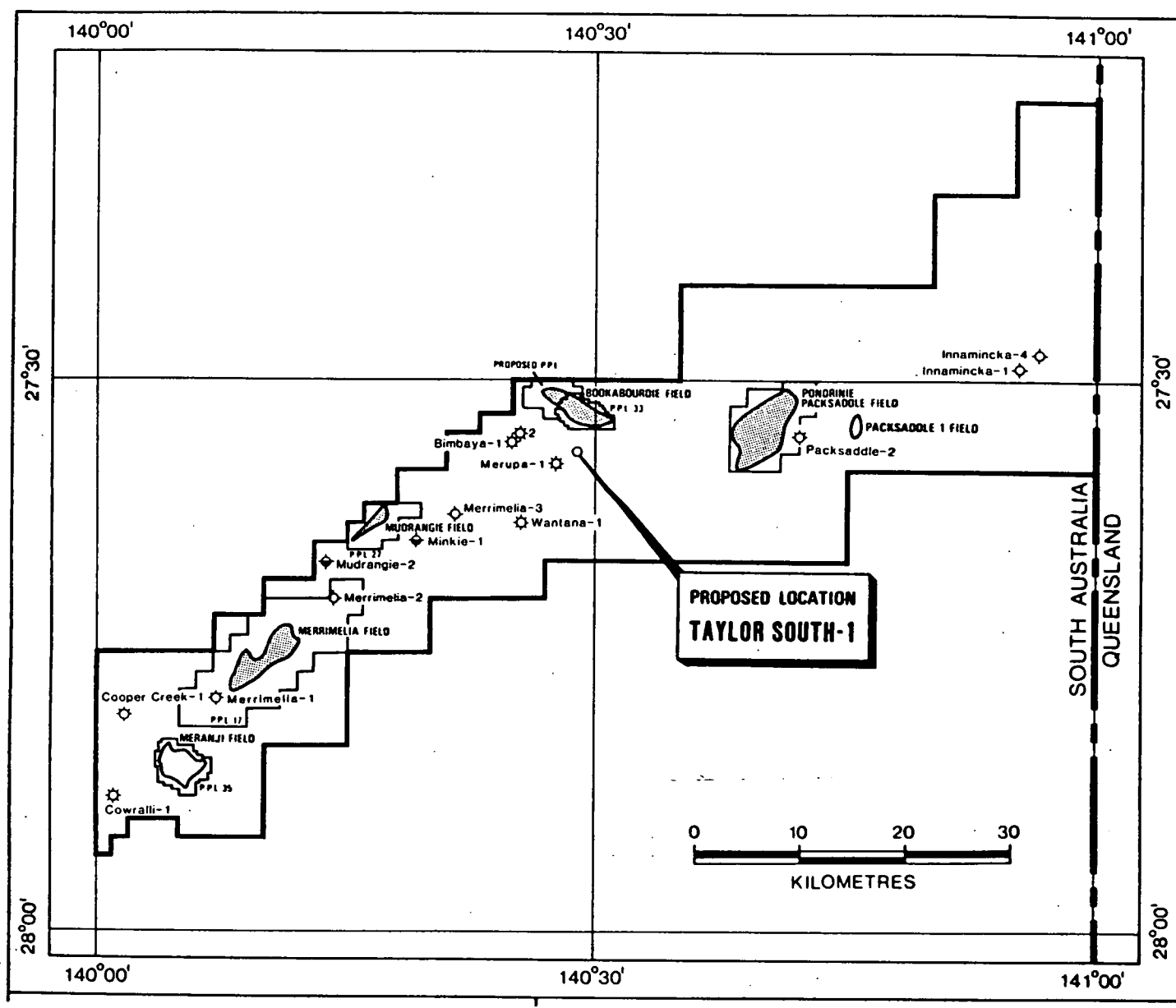
SCANNED

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1 INTRODUCTION

A velocity check shot survey was conducted in the TAYLOR SOUTH 1 well on 10th February 1987. Thirty three levels were shot, from 161 feet to 9590 feet below the Kelly Bushing, using a dynamite source. All levels have been used in the calibration of the sonic log.

2 LOCATION MAPFigure 1 :**TAYLOR SOUTH-1**

3 DATUM SURVEY

Six shots at varying source offset in addition to the checkshot survey were taken with the downhole tool locked at mean sea level, 161 feet below KB.

For each shot the reference hydrophone was at a horizontal distance of 5 feet from the source and 6 feet below GL. Ground level was surveyed at 141 feet above mean sea level.

Table 1 : Datum Survey Results

Stack Shot No.	Shot Depth Below Ground (feet)	Shot Offset From Wellhead (feet)	Recorded Transit Time (ms)	Shot To Datum Vertical Transit Time (ms)	Surface to Datum Vertical Transit Time (ms)
38*	6	160.3	49	31.6	34.1
37	6.5	85.6	38	32.1	34.3
36	6	110.5	44	34.0	36.3
35	5.5	135.4	45	31.8	34.1
34	5.5	160.3	49	31.6	33.9
33	6.5	85.6	33	27.8	30.6

* Shot from checkshot survey with tool at MSL.

$$\text{Shot to Datum Vertical Transit Time} = \text{Recorded Transit Time} * \frac{\text{Shot Elevation}}{\sqrt{\text{Shot Elevation}^2 + \text{Shot Offset}^2}}$$

Where Shot Elevation = GL - Shot Depth.

The Surface to Datum Static was computed using a Velocity from Source to Surface of 2394.984 feet/second. This velocity is from the nearest uphole survey.

Table 2 : Comparison of Seismic and Velocity Survey Statics

	Seismic Line	Velocity Survey	Difference
Ground Level (feet)	141	141	0
Surface to Datum Static (millisecond)	30	34.5	4.5
Interval Velocity GL-MSL (feet/second)	4700	4087	613

4 CHECKSHOT SURVEY

A number of shots were made running in to check for relaxation of the shot hole. These shots were performed with the geophone anchored at Mean Sea Level and at the top of the Cadna-Owie formation

Thirty three levels were recorded from 161 feet to 9590 feet below KB with a subsurface sampling not exceeding 500 feet.

Figure 2 : Survey Geometry

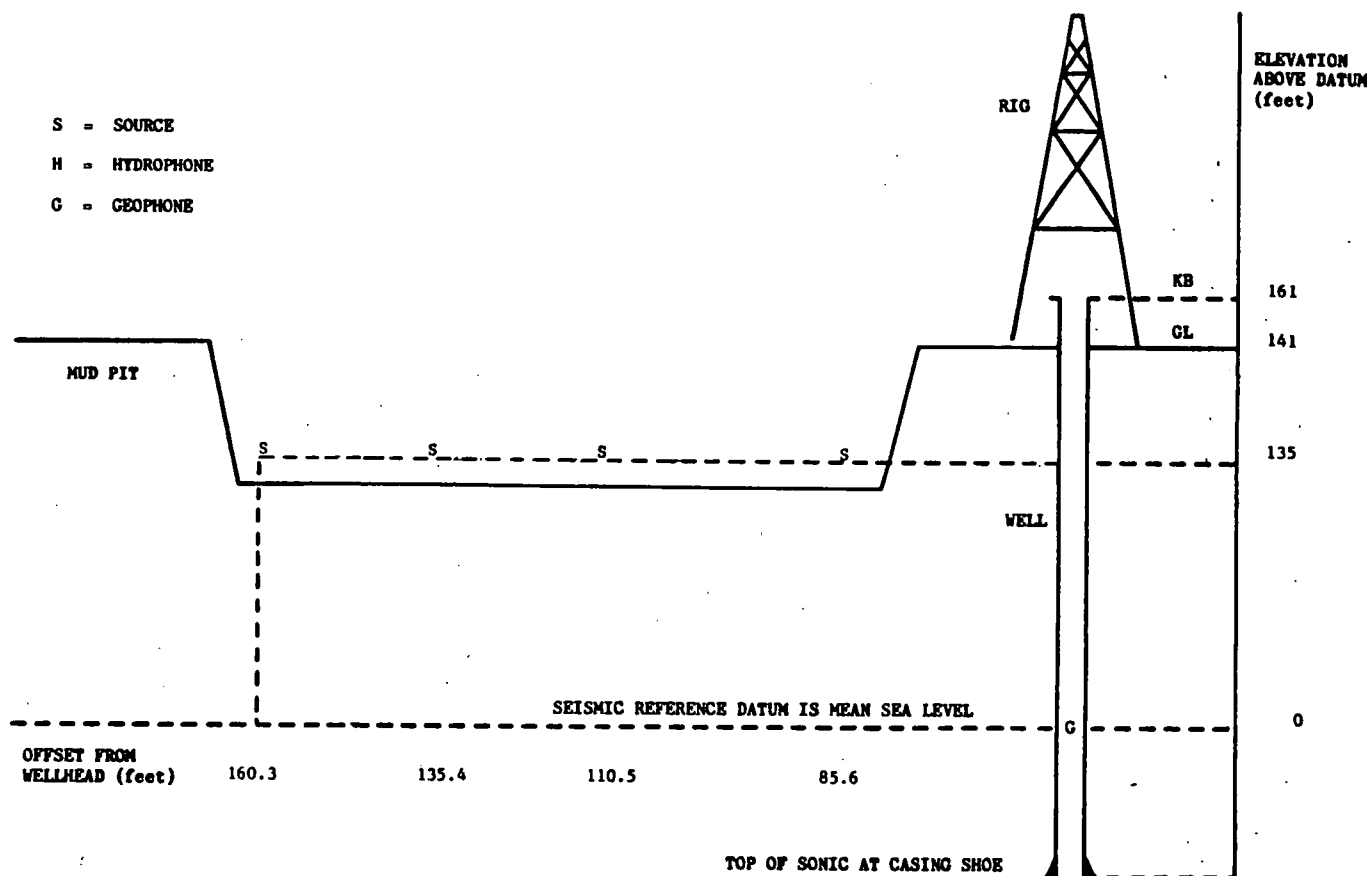
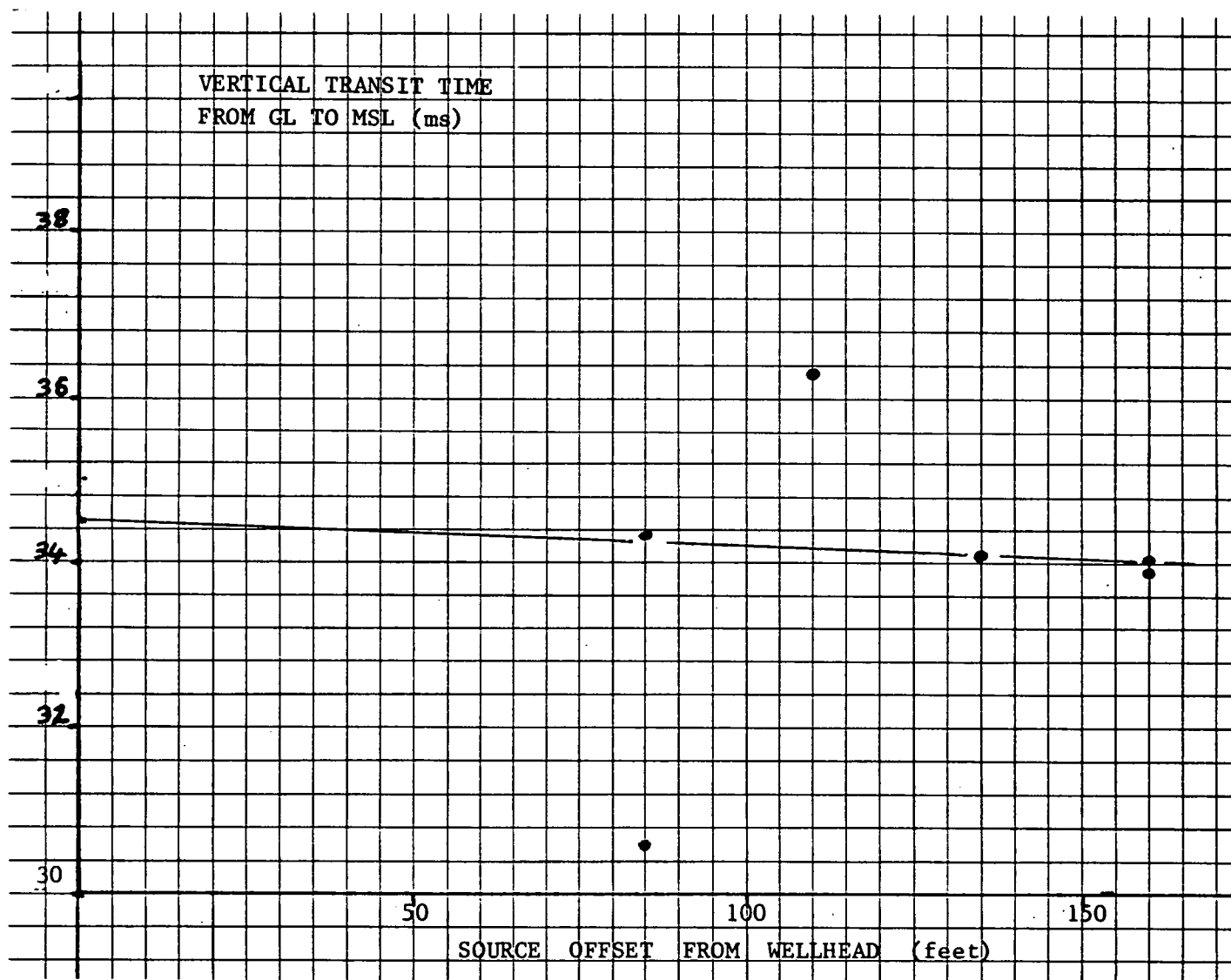


Figure 3 : Static Time

The static time from Ground Level to Mean Sea Level, when source offset is zero, is 34.5 milliseconds.

To impose this static time a recorded transit time, 49.685 milliseconds, is imposed when the geophone is anchored at Mean Sea Level.



5 SONIC CALIBRATION

A drift curve is obtained using the sonic log and the vertical check times. The term drift is defined as the seismic time (from check shots) minus the sonic time (from integration of the sonic log).

The gradient of drift, that is the slope of the drift curve, can be negative or positive or zero.

For a negative gradient of the drift curve the change in drift divided by the change in depth is less than zero, the sonic time is greater than the seismic time over a certain section of the log.

For a positive gradient of the drift curve the change in drift divided by the change in depth is greater than zero, the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is an indication of the error on the integrated sonic as we assume checkshot times give us the absolute time/depth correspondence at the well. Drift defines the correction to be applied to the sonic to have the TTI (integrated transit time) of the corrected sonic match the check shot times within a predefined error limit.

Two methods of correction to the sonic log are used.

- . Uniform or block shift.

This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is represented by the drift curve gradient expressed in microseconds/foot.

- . DELTA-t Minimum.

In the case of negative drift a different method is used. This method applies a differential correction to the sonic log, it is empirically proven that the greatest transit time error is caused by the lower velocity sections on the log. Over a given interval the method will correct only DELTA-t values which are higher than a threshold, the DELTA-t-min. Values of DELTA-t which are lower than the threshold are not corrected. The correction is a reduction based on the criteria (DELTA-t) minus (DELTA-t-min)

(DELTA-t) minus (DELTA-t-min) is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, is defined as:

$$G = 1 + \frac{\text{DRIFT}}{\int (\text{DELTA-t} - \text{DELTA-t-min})dZ}$$

Where "DRIFT" is the drift over the interval to be corrected and the value " $\int (\text{DELTA-t} - \text{DELTA-t-min}) dz$ " is the time difference between the integrals of the two curves DELTA-t and DELTA-t-min, only over the intervals where DELTA-t is greater than DELTA-t-min.

Hence the corrected sonic:

$$\text{DELTA-t}_{\text{corrected}} = G * (\text{DELTA-t} - \text{DELTA-t-min}) + \text{DELTA-t-min}.$$

6 SONIC CALIBRATION PROCESSING

6.1 Open Hole Logs

Minor zones of cycle skipping have been edited from the sonic log and where the long spaced sonic log gave a more consistent response it was substituted in place of this sonic log. There was no density log recorded so a constant density reading of 2.4 grams/cubic centimeter has been imposed over the entire interval.

Sonic log interval : 9732-688 feet below KB.

6.2 Correction To Datum

The checkshots taken with the geophone anchored at Mean Sea Level gave the source to datum static as 32 milliseconds (i.e. subtract ground level to source elevation static of 2.5 milliseconds from ground level to datum static, from Figure 3). This was used as the vertical correction to datum.

6.3 Sonic Calibration Results

The top of the sonic log (688 feet below KB) is taken as the start point for the calibration drift curve.

The drift curve indicates a number of corrections to be made to the sonic log. Knees (which separate zones of adjustment) have been selected at major formation changes, including the CADNA-OWIE formation as indicated by the log data.

The imposed drift curve follows the calculated drift as indicated by the corrected shot times. There are no anomalous shots. A list of shifts used on the sonic data is given in the sonic adjustment parameter report.

The adjusted sonic curve is considered to be the best result using the available data.

6.4 Drift Tie Point

The drift curve was shifted to impose zero drift at the CADNA-OWIE formation.

6.5 Processing Without Drift Correction

To generate a seismogram from data that has not been drift corrected the top of the sonic log was kept at the time from the checkshot survey and a dummy shot was imposed at TD to equal the total integrated time from the sonic. Then a bulk shift was applied to this seismogram to tie it with the drift corrected seismogram at the CADNA-OWIE formation.

7 GEOGRAM PROCESSING

GEOGRAM plots were generated using a 10-55 Hz Klauder wavelet with phase rotations of 0, 90, 180 and 270 degrees.

The presentations include both normal and reverse polarity at 5 inches/second.

GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated from sonic and density measurements in the wellbore. The steps in the processing chain are the following:

- Time to depth conversion
- Reflection coefficients
- Attenuation coefficients
- Convolution
- Output.

7.1 Time To Depth Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index and read from the top to bottom in order to match the seismic section.

7.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 or 4 milliseconds). Reflection coefficients are then computed using:

$$R = \frac{(\text{density}(2) * \text{velocity}(2)) - (\text{density}(1) * \text{velocity}(1))}{(\text{density}(2) * \text{velocity}(2)) + (\text{density}(1) * \text{velocity}(1))}$$

where

- . density(1) = density of the layer above the reflection interface
- . density(2) = density of the layer below the reflection interface
- . velocity(1) = compressional wave velocity of the layer above the reflection interface
- . velocity(2) = compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

7.3 Primaries With Transmission Loss

Transmission loss on two-way attenuation coefficients are computed using:

$$A(n) = (1 - R(1)^2) \cdot (1 - R(2)^2) \cdot (1 - R(3)^2) \dots (1 - R(n)^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$\text{Primary}(n) = R(n) \cdot A(n)^{-1}$$

7.4 Primaries Plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the total (Primaries + Multiples) impulse response of the earth. The transform outputs primaries plus multiples.

7.5 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

- Klauder wavelet
- Ricker zero phase wavelet
- Ricker minimum phase wavelet
- User defined wavelet.

All wavelets can be chosen with or without Butterworth filtering and with user defined center frequencies. Polarity conventions are shown on the plots of the synthetic seismograms. A time variant filter can be applied.

7.6 Convolution

Standard procedure of convolution of wavelet with reflection coefficients. The output is the synthetic seismogram.

8 DATA ACQUISITION

Table 3 : Field Equipment and Survey Parameters

Elevation SRD	0 feet above MSL
Elevation KB	161 feet above MSL
Elevation RT/DF	160 feet above MSL
Elevation GL	141 feet above MSL
No. of Levels	33
Well Deviation	Nil
Total Depth	9732 feet below KB
Energy Source	Dynamite 300grams, Anzomex Boosters
Source Offset	160.3 feet from well
Source Depth	6 feet below Ground Level
Source Azimuth	0 degrees from magnetic north
Reference Sensor	Hydrophone
Sensor Offset	5 feet
Sensor Depth	6 feet below Ground Level
Sensor Azimuth	0 degrees
Downhole Geophone	Geospace HS-1
	High Temp. (350 F)
	Coil Resist. 225 ohms
	Natural Freq. 8-12 hertz
	Sensitivity 0.45 V/in/sec
	Maximum tilt angle 60

Recording was made on the Schlumberger Cyber Service Unit (CSU) using LIS format.

9 SUMMARY OF GEOPHYSICAL LISTINGS

The geophysical data listings show the detail of the data analysis. Following is a brief description of the format of each listing and the mnemonics.

9.1 Checkshot Survey Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from RT : DRT, the depth in feet from rotary table.
3. Vertical depth from SRD : DSRD, the depth in feet from seismic reference datum.
4. Vertical depth from GL : DGL, the depth in feet from ground level.
5. Observed travel time HYD to GEO : TIMO, the transit time picked from the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.
6. Vertical travel time SRC to GEO : TIMV, is corrected for source to hydrophone distance and for source offset.
7. Vertical travel time SRD to GEO : SHTM, is TIMV corrected for the vertical distance between source and datum.
8. Average velocity SRD to GEO : the average seismic velocity from datum to the corresponding checkshot level, DRSD / SHTM.
9. Delta depth between shots : DELTA depth, the vertical distance between each level.
10. DELTA-time between shots : DELTA-time, the difference in vertical travel time (SHTM) between each level.
11. Interval velocity between shots : the average seismic velocity between each level, DELTA depth / DELTA-time.

9.2 Drift Computation Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from RT : the depth in feet from rotary table.
3. Vertical depth from SRD : the depth in feet from seismic reference datum.
4. Vertical depth from GL : the depth in feet from ground level.
5. Vertical travel time SRD to GEO : the calculated vertical travel time from datum to downhole geophone (see column 7, Checkshot Survey Report).
6. Integrated raw sonic time : the raw sonic log is integrated from top to bottom and listed at each level. An initial value at the top of the sonic log is set equal to the checkshot time at that level. This may be an imposed shot if a shot was not taken at the top of the sonic.
7. Computed drift at level : the checkshot time minus the integrated raw sonic time.
8. Computed blk - shft correction : the drift gradient between any two checkshot levels (DELTA drift / DELTA depth).

9.3 Sonic Adjustment Parameter Report

1. Knee number : the knee number starting from the highest knee. (The first knees listed will generally be at SRD and the top of sonic. The drift imposed at these knees will normally be zero.)
2. Vertical depth from RT : the depth in feet from rotary table.
3. Vertical depth from SRD : the depth in feet from seismic reference datum.
4. Vertical depth from GL : the depth in feet from ground level.
5. Drift at knee : the value of drift imposed at each knee.
6. Blockshift used : the change in drift divided by the change in depth between any two levels.
7. DELTA-t minimum used : see the sonic calibration section.
8. Reduction factor : see the sonic calibration section.
9. Equivalent blockshift : the gradient of the imposed drift curve.

9.4 Velocity Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from RT : the depth in feet from rotary table
3. Vertical depth from SRD : the depth in feet from seismic reference datum
4. Vertical depth from GL : the depth in feet from ground level
5. Vertical travel time SRD to GEOPH : the vertical travel time from SRD to downhole geophone (see column 7, Checkshot Survey Report)
6. Integrated adjusted sonic time : the adjusted sonic log is integrated from top to bottom. An initial value at the the top of the sonic is set equal the checkshot time at that level. (The adjusted sonic log is the drift corrected sonic log.)
7. Drift=shot time - raw son : the check shot time minus the raw integrated sonic time.
8. Residual=shot time - adj son : the check shot time minus the adjusted integrated sonic time. This is the difference between calculated drift and the imposed drift.
9. Adjusted interval velocity : the interval velocity calculated from the integrated adjusted sonic time at each level.

9.5 Time Converted Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at SRD (0 milliseconds) and the sampling rate is 2 milliseconds.
2. Measured depth from RT : the depth from RT at each corresponding value of two way time.
3. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.
4. Average velocity SRD to GEO : the vertical depth from SRD divided by half the two way time.
5. RMS velocity : the root mean square velocity from datum to the corresponding value of two way time.

$$V_{rms} = \frac{\sum_{i=1}^n V_i^2 \cdot T_i}{\sum_{i=1}^n T_i}$$

where V_i is the velocity between each 2 milliseconds interval.

6. First normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 3000 feet).
7. Second normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 4500 feet)
8. Third normal moveout : the correction time in milliseconds to be applied to the two way travel time for a specified moveout distance (default = 6000 feet).
9. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 milliseconds two way time, (1 millisecon one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

NOTE:

The checkshot at mean sea level gave a vertical transit time from ground level to datum of 34.1 milliseconds (see table 1, DATUM SURVEY section). This was changed to the correct vertical transit time of 34.5 milliseconds (see table 2, DATUM SURVEY section).

An artificial transit time was specified with the receiver anchored at datum, to impose a vertical transit time from ground level to datum of 34.5 milliseconds (see CHECKSHOT SURVEY section). This results in a vertical transit time from source to datum of 32 milliseconds shown in the CHECKSHOT SURVEY REPORT.

ANALYST: C. BUTTERWORTH.

17-FEB-87 09:30:00

PROGRAM: GSHOT 007.E08

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*****  
*                                     *  
*                                     *  
*                                     *  
*****  
*                                     *  
*   SCHLUMBERGER   *  
*                                     *  
*****
```

CHECKSHOT SURVEY REPORT

COMPANY : SANTOS/DELHI & PARTNERS
WELL : TAYLOR SOUTH 1
FIELD : WILDCAT
REFERENCE: 550230

00064

ANALYST: C. BUTTERWORTH.

17-FEB-87 09:30:00

PROGRAM: GSHOT 007.E08

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*****
*                                     *
*                                     *
*                                     *
*****
*   SCHLUMBERGER   *
*                                     *
*****
```

CHECKSHOT SURVEY REPORT

COMPANY : SANTOS/DELHI & PARTNERS
WELL : TAYLOR SOUTH 1
FIELD : WILDCAT
REFERENCE: 550230

00065

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - Elevation of Kelly Bushing
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
VELHYD - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE
VELSUR - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

MATRIX

GUNELZ - SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)
GUNEWS - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
GUNNSZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
HYDELZ - HYDROPHONE ELEVATION ABOVE SRD (CF. GUNELZ)
HYDEWS - HYDROPHONE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
HYDNSZ - HYDROPHONE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
TRTHYD - TRAVEL TIME FROM THE HYDROPHONE TO THE SOURCE
TRTSRD - TRAVEL TIME FROM THE SOURCE TO THE SRD
DEWEL - DEVIATED WELL DATA PER SHOT : MEAS. DEPTH, VERT. DEPTH, EW, NS

SAMPLED

SHOT.GSH - Shot number
DKB.GSH - MEASURED DEPTH FROM KELLY-BUSHING
DSRD.GSH - Depth from SRD
DGL.GSH - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
TIMO.GSH - MEASURED TRAVEL TIME FROM HYDROPHONE TO GEOPHONE
TIMV.GSH - VERTICAL TRAVEL TIME FROM THE SOURCE TO THE GEOPHONE
SHTM.GSH - Shot time (WST)
AVGV.GSH - Average seismic velocity
DELZ.GSH - DEPTH INTERVAL BETWEEN SUCCESSIVE SHOTS
DELT.GSH - TRAVEL TIME INTERVAL BETWEEN SUCCESSIVE SHOTS
INTV.GSH - Internal velocity, average

(GLOBAL PARAMETERS)

(VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	161.000	FT
ELEV OF SRD AB. MSL (WST)	SRD	:	0	FT
Elevation of Kelly Bushing	EKB	:	161.000	FT
ELEV OF GL AB. SRD (WST)	GL	:	141.000	FT
VEL SOURCE-HYDRO (WST)	VELHYD	:	5000.00	FT/S
VEL SOURCE-SRD (WST)	VELSUR	:	4218.75	FT/S

(MATRIX PARAMETERS)

00069

COMPANY : SANTOS/DELHI & PARTNERS

WELL : TAYLOR SOUTH 1

PAGE 2

	SOURCE ELV FT	SOURCE EW FT	SOURCE NS FT	HYDRO ELEV FT	HYDRO EW FT	HYDRO NS FT
1	135.0	0	160.3	135.0	0	160.3

	TRT HYD-SC MS	TRT SC-SRD MS
1	0	-32.00

	MD @ KB FT	VD @ KB FT	VD @ SRD FT	E-W COORD FT	N-S COORD FT
1	161.0	161.0	0	0	0
2	635.0	635.0	474.0	0	0
3	1120.0	1120.0	959.0	0	0
4	1600.0	1600.0	1439.0	0	0
5	2100.0	2100.0	1939.0	0	0
6	2600.0	2600.0	2439.0	0	0
7	3100.0	3100.0	2939.0	0	0
8	3600.0	3600.0	3439.0	0	0
9	4100.0	4100.0	3939.0	0	0
10	4600.0	4600.0	4439.0	0	0
11	5100.0	5100.0	4939.0	0	0
12	5510.0	5510.0	5349.0	0	0
13	5757.0	5757.0	5596.0	0	0
14	5954.0	5954.0	5793.0	0	0
15	6048.0	6048.0	5887.0	0	0
16	6216.0	6216.0	6055.0	0	0
17	6660.0	6660.0	6499.0	0	0
18	6724.0	6724.0	6563.0	0	0
19	6753.0	6753.0	6592.0	0	0
20	6971.0	6971.0	6810.0	0	0
21	7000.0	7000.0	6839.0	0	0
22	7192.0	7192.0	7031.0	0	0
23	7494.0	7494.0	7333.0	0	0
24	7666.0	7666.0	7505.0	0	0
25	8064.0	8064.0	7903.0	0	0
26	8456.0	8456.0	8295.0	0	0
27	8670.0	8670.0	8509.0	0	0
28	8755.0	8755.0	8594.0	0	0
29	8821.0	8821.0	8660.0	0	0
30	8992.0	8992.0	8831.0	0	0
31	9250.0	9250.0	9089.0	0	0
32	9503.0	9503.0	9342.0	0	0
33	9590.0	9590.0	9429.0	0	0

00067

LEVEL NUMBER	MEASUR DEPTH FROM KB FT	VERTIC DEPTH FROM SRD FT	VERTIC DEPTH FROM GL FT	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO FT/S	DELTA DEPTH BETWEEN SHOTS FT	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS FT/S
1	161.0	0	141.0	49.68	32.00	0		474.0	83.08	5705
2	635.0	474.0	615.0	119.00	115.08	83.08	5705	485.0	79.84	6075
3	1120.0	959.0	1100.0	197.00	194.92	162.92	5886	480.0	71.70	6694
4	1600.0	1439.0	1580.0	268.00	266.62	234.62	6133	500.0	69.38	7207
5	2100.0	1939.0	2080.0	337.00	336.00	304.00	6378	500.0	67.22	7438
6	2600.0	2439.0	2580.0	404.00	403.22	371.22	6570	500.0	59.15	8453
7	3100.0	2939.0	3080.0	463.00	462.37	430.37	6829	500.0	53.11	9414
8	3600.0	3439.0	3580.0	516.00	515.48	483.48	7113	500.0	62.07	8055
9	4100.0	3939.0	4080.0	578.00	577.55	545.55	7220	500.0	61.05	8189
10	4600.0	4439.0	4580.0	639.00	638.61	606.61	7318	500.0	57.04	8765
11	5100.0	4939.0	5080.0	696.00	695.65	663.65	7442	410.0	42.03	9754
12	5510.0	5349.0	5490.0	738.00	737.68	705.68	7580	247.0	23.02	10731
13	5757.0	5596.0	5737.0	761.00	760.70	728.70	7679	197.0	15.01	13121
14	5954.0	5793.0	5934.0	776.00	775.72	743.72	7789	94.0	8.01	11741
15	6048.0	5887.0	6028.0	784.00	783.72	751.72	7831	168.0	13.01	12913
16	6216.0	6055.0	6196.0	797.00	796.73	764.73	7918	444.0	33.02	13444
17	6660.0	6499.0	6640.0	830.00	829.76	797.76	8147	64.0	4.00	15986
18	6724.0	6563.0	6704.0	834.00	833.76	801.76	8186	29.0	3.00	9663
19	6753.0	6592.0	6733.0	837.00	836.76	804.76	8191	218.0	14.01	15559
20	6971.0	6810.0	6951.0	851.00	850.77	818.77	8317	29.0	3.00	9664
21	7000.0	6839.0	6980.0	854.00	853.77	821.77	8322	192.0	15.01	12793
22	7192.0	7031.0	7172.0	869.00	868.78	836.78	8402	302.0	22.01	13720
23	7494.0	7333.0	7474.0	891.00	890.79	858.79	8539	172.0	13.01	13224
24	7666.0	7505.0	7646.0	904.00	903.80	871.80	8609			

00068

COMPANY : SANTOS/DELHI & PARTNERS

WELL : TAYLOR SOUTH 1

PAGE 4

LEVEL NUMBER	MEASUR DEPTH FROM KB FT	VERTIC DEPTH FROM SRD FT	VERTIC DEPTH FROM GL FT	OBSERV TRAVEL TIME HYD/GEO MS	VERTIC TRAVEL TIME SRC/GEO MS	VERTIC TRAVEL TIME SRD/GEO MS	AVERAGE VELOC SRD/GEO FT/S	DELTA DEPTH BETWEEN SHOTS FT	DELTA TIME BETWEEN SHOTS MS	INTERV VELOC BETWEEN SHOTS FT/S
25	8064.0	7903.0	8044.0	934.00	933.81	901.81	8763	398.0	30.01	13261
26	8456.0	8295.0	8436.0	956.00	955.83	923.83	8979	392.0	22.01	17808
27	8670.0	8509.0	8650.0	970.00	969.83	937.83	9073	214.0	14.01	15279
28	8755.0	8594.0	8735.0	977.00	976.84	944.84	9096	85.0	7.00	12139
29	8821.0	8660.0	8801.0	985.00	984.84	952.84	9089	66.0	8.00	8249
30	8992.0	8831.0	8972.0	1000.00	999.84	967.84	9124	171.0	15.00	11397
31	9250.0	9089.0	9230.0	1020.00	1019.85	987.85	9201	258.0	20.01	12896
32	9503.0	9342.0	9483.0	1037.00	1036.85	1004.85	9297	253.0	17.01	14877
33	9590.0	9429.0	9570.0	1043.00	1042.85	1010.85	9328	87.0	6.00	14495

69000

ANALYST: C. BUTTERWORTH.

17-FEB-87 09:45:59

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*                                     *  
*                                     *  
* *****                           *  
*                                     *  
*      SCHLUMBERGER                  *  
*                                     *  
*                                     *  
*****
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DRIFT COMPUTATION REPORT

COMPANY : SANTOS/DELHI & PARTNERS
WELL : TAYLOR SOUTH 1
FIELD : WILDCAT
REFERENCE: 550230

00070

Computer Resources Company 15001

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - Elevation of Kelly Bushing
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
XSTART - TOP OF ZONE PROCESSED BY WST
XSTOP - BOTTOM OF ZONE PROCESSED BY WST
GAD001 - RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT
UNFDEN - UNIFORM DENSITY VALUE

ZONE

LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

SHOT - Shot number
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - Depth from SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - Shot time (WST)
RAWS - Raw Sonic (WST)
SHDR - DRIFT AT SHOT OR KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE

(GLOBAL PARAMETERS)

(VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	161.000	FT
ELEV OF SRD AB. MSL (WST)	SRD	:	0	FT
Elevation of Kelly Bushi	EKB	:	161.000	FT
ELEV OF GL AB. SRD (WST)	GL	:	141.000	FT
TOP OF ZONE PROCD (WST)	XSTART	:	0	FT
BOT OF ZONE PROCD (WST)	XSTOP	:	0	FT
RAW SONIC CH NAME (WST)	GAD001	:	DT.ATT.002.FLP.*	
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(ZONED PARAMETERS)

(VALUE)

(LIMITS)

LAYER OPTION FLAG DENS	LOFDEN	:	1.000000	99999.0	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:	-999.2500	G/C3	99999.0	0

00071

COMPANY : SANTOS/DELHI & PARTNERS
 LEVEL MEASURED VERTICAL
 NUMBER DEPTH DEPTH
 FROM FROM
 KB SRD
 FT FT

WELL
 VERTICAL
 DEPTH
 FROM
 GL
 FT

: TAYLOR SOUTH 1
 VERTICAL INTEGRATED
 TRAVEL RAW SONIC
 TIME TIME
 SRD/GEO MS MS

COMPUTED
 DRIFT
 AT LEVEL
 MS

PAGE 2
 COMPUTED
 BLK-SHFT
 CORRECTION
 US/F

1	161.0	0	141.0	0	0	0	0
2	635.0	474.0	615.0	83.08	83.08	0	0
3	688.0	527.0	668.0	91.80	91.80	0	0
4	1120.0	959.0	1100.0	162.92	159.80	3.12	7.22
5	1600.0	1439.0	1580.0	234.62	230.89	3.73	1.28
6	2100.0	1939.0	2080.0	304.00	300.76	3.24	-.99
7	2600.0	2439.0	2580.0	371.22	364.02	7.20	7.93
8	3100.0	2939.0	3080.0	430.37	423.29	7.08	-.23
9	3600.0	3439.0	3580.0	483.48	478.26	5.22	-3.72
10	4100.0	3939.0	4080.0	545.55	533.85	11.70	12.96
11	4600.0	4439.0	4580.0	606.61	588.83	17.78	12.15
12	5100.0	4939.0	5080.0	663.65	642.00	21.66	7.76
13	5510.0	5349.0	5490.0	705.68	683.37	22.31	1.60
14	5757.0	5596.0	5737.0	728.70	705.81	22.90	2.37
15	5954.0	5793.0	5934.0	743.72	721.32	22.39	-2.54
16	6048.0	5887.0	6028.0	751.72	728.70	23.02	6.68
17	6216.0	6055.0	6196.0	764.73	741.72	23.01	-.08
18	6660.0	6499.0	6640.0	797.76	774.25	23.50	1.11
19	6724.0	6563.0	6704.0	801.76	778.74	23.03	-7.45
20	6753.0	6592.0	6733.0	804.76	781.01	23.75	24.92
21	6971.0	6810.0	6951.0	818.77	798.70	20.07	-16.86
22	7000.0	6839.0	6980.0	821.77	800.89	20.89	28.13
23	7192.0	7031.0	7172.0	836.78	814.80	21.98	5.70
24	7494.0	7333.0	7474.0	858.79	837.84	20.95	-3.41

00072

COMPANY : SANTOS/DELHI & PARTNERS	WELL	: TAYLOR SOUTH 1		PAGE 3
LEVEL	VERTICAL	VERTICAL	INTEGRATED	COMPUTED
NUMBER	DEPTH	TRAVEL	RAW SONIC	DRIFT
	FROM	TIME	TIME	AT LEVEL
	KB	SRD/GEO		
	FT	MS	MS	MS
				US/F
25	7666.0	871.80	850.11	21.69
26	8064.0	901.81	876.85	24.96
27	8456.0	923.83	902.73	21.09
28	8670.0	937.83	916.49	21.34
29	8755.0	944.84	922.62	22.21
30	8821.0	952.84	928.04	24.79
31	8992.0	967.84	942.66	25.18
32	9250.0	987.85	961.15	26.69
33	9503.0	1004.85	979.07	25.79
34	9590.0	1010.85	985.18	25.67
35	9732.0	1019.86	994.19	25.67

4.29
8.22
-9.87
1.16
10.21
39.15
2.25
5.87
-3.59
-1.29
0

00073

ANALYST: C. BUTTERWORTH.

17-FEB-87 10:56:57

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SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : SANTOS/DELHI & PARTNERS
WELL : TAYLOR SOUTH 1
FIELD : WILDCAT
REFERENCE: 550230

00074

COMPANY : SANTOS/DELHI & PARTNERS
LONG DEFINITIONS

WELL : TAYLOR SOUTH 1

PAGE 1

GLOBAL

SRCDRF - ORIGIN OF ADJUSTMENT DATA
CONADJ - CONSTANT ADJUSTMENT TO AUTOMATIC DELTA-T MINIMUM = 7.5 US/F
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

ZDRIFT - USER DRIFT AT BOTTOM OF THE ZONE
ADJOPZ - TYPE OF ADJUSTMENT IN THE DRIFT ZONE : 0=DELTA-T MIN, 1=BLOCKSHIFT
ADJUSZ - DELTA-T MINIMUM USED FOR ADJUSTMENT IN THE DRIFT ZONE
LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - Shot number
VDKB - VERTICAL DEPTH RELATIVE TO KB
DSRD - Depth from SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
KNEE - Knee
ELSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE
DTMI - VALUE OF DELTA-T MINIMUM USED
COEF - DELTA-T MIN COEFFICIENT USED IN THE DRIFT ZONE
DRGR - GRADIENT OF DRIFT CURVE

(GLOBAL PARAMETERS)

(VALUE)

ORIG OF ADJ DATA (WST)	SRCDRF	:	2.00000	
CONS SONIC ADJUST (WST)	CONADJ	:	7.50000	US/F
UNIFORM EARTH VELOCITY	UNERTH	:	7000.00	FT/S

(ZONED PARAMETERS)

(VALUE)

(LIMITS)

USER DRIFT ZONE (WST)	ZDRIFT	:	3.000000	MS	9732.00	-	5510.00
			0		5510.00		4962.00
			-2.000000		4962.00		3820.00
			-14.000000		3820.00		2436.00
			-17.000000		2436.00		688.000
			-22.000000		688.000		0
ADJUSMNT MODE (WST)	ADJOPZ	:	-999.2500		99999.0	-	0
USER DELTA-T MIN (WST)	ADJUSZ	:	-999.2500	US/F	99999.0	-	0
LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		99999.0	-	0
USER VELOC (WST)	LAYVEL	:	5000.000	FT/S	99999.0	-	0

00075

COMPANY KNEE NUMBER	: SANTOS/DELHI & PARTNERS VERTICAL DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	WELL : TAYLOR SOUTH 1 DRIFT AT KNEE MS	BLOCKSHIFT USED US/F	DELTA-T MINIMUM USED US/F	REDUCTION FACTOR G	PAGE 2 EQUIVALENT BLOCKSHIFT US/F
						83.46	.46	-31.98
2	688.0	527.0	668.0	-22.00				
3	2436.0	2275.0	2416.0	-17.00	2.86			2.86
4	3820.0	3659.0	3800.0	-14.00	2.17			2.17
5	4962.0	4801.0	4942.0	-2.00	10.51			10.51
6	5510.0	5349.0	5490.0	0	3.65			3.65
7	9732.0	9571.0	9712.0	3.00	.71			.71

00076

ANALYST: C. BUTTERWORTH.

17-FEB-87 10:57:19

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VELOCITY REPORT

COMPANY : SANTOS/DELHI & PARTNERS
WELL : TAYLOR SOUTH 1
FIELD : WILDCAT
REFERENCE: 550230

00077

COMPANY : SANTOS/DELHI & PARTNERS
LONG DEFINITIONS

WELL : TAYLOR SOUTH 1

PAGE 3

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - Elevation of Kelly Bushing
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - Shot number
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - Depth from SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - Shot time (WST)
ADJS - ADJUSTED SONIC TRAVEL TIME
SHDR - DRIFT AT SHOT OR KNEE
REST - RESIDUAL TRAVEL TIME AT KNEE
INTV - Internal velocity, average

(GLOBAL PARAMETERS)

(VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	161.000	FT
ELEV OF SRD AB. MSL(WST)	SRD	:	0	FT
Elevation of Kelly Bushi	EKB	:	161.000	FT
ELEV OF GL AB. SRD(WST)	GL	:	141.000	FT
UNIFORM EARTH VELOCITY	UNERTH	:	7000.00	FT/S

(ZONED PARAMETERS)

(VALUE)

(LIMITS)

LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000	99999.0	-	0	
USER VELOC (WST)	LAYVEL	:	5000.000	FT/S	99999.0	-	0

00078

COMPANY LEVEL NUMBER	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	WELL VERTICAL TRAVEL TIME SRD/GEOPH MS	: TAYLOR SOUTH 1 INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	PAGE 4 ADJUSTED INTERVAL VELOCITY FT/S
1	161.0	0	141.0	0	0	0	0	5705
2	635.0	474.0	615.0	83.08	83.08	0	0	6090
3	688.0	527.0	668.0	91.80	91.78	0	.02	6240
4	1120.0	959.0	1100.0	162.92	161.01	3.12	1.90	6624
5	1600.0	1439.0	1580.0	234.62	233.48	3.73	1.14	7012
6	2100.0	1939.0	2080.0	304.00	304.78	3.24	-.78	7743
7	2600.0	2439.0	2580.0	371.22	369.35	7.20	1.87	8284
8	3100.0	2939.0	3080.0	430.37	429.71	7.08	.67	8920
9	3600.0	3439.0	3580.0	483.48	485.76	5.22	-2.28	8473
10	4100.0	3939.0	4080.0	545.55	544.77	11.70	.78	8301
11	4600.0	4439.0	4580.0	606.61	605.01	17.78	1.60	8700
12	5100.0	4939.0	5080.0	663.65	662.48	21.66	1.17	9563
13	5510.0	5349.0	5490.0	705.68	705.35	22.31	.33	10925
14	5757.0	5596.0	5737.0	728.70	727.96	22.90	.74	12584
15	5954.0	5793.0	5934.0	743.72	743.62	22.39	.10	12626
16	6048.0	5887.0	6028.0	751.72	751.06	23.02	.66	12782
17	6216.0	6055.0	6196.0	764.73	764.20	23.01	.53	13517
18	6660.0	6499.0	6640.0	797.76	797.05	23.50	.71	14141
19	6724.0	6563.0	6704.0	801.76	801.58	23.03	.19	12613
20	6753.0	6592.0	6733.0	804.76	803.88	23.75	.89	12219
21	6971.0	6810.0	6951.0	818.77	821.72	20.07	-2.94	13146
22	7000.0	6839.0	6980.0	821.77	823.92	20.89	-2.15	13666
23	7192.0	7031.0	7172.0	836.78	837.97	21.98	-1.19	12986
24	7494.0	7333.0	7474.0	858.79	861.23	20.95	-2.43	

00079

COMPANY : SANTOS/DELHI & PARTNERS

WELL : TAYLOR SOUTH 1

PAGE 5

LEVEL NUMBER	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	VERTICAL DEPTH FROM GL FT	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY FT/S
25	7666.0	7505.0	7646.0	871.80	873.62	21.69	-1.82	13882
26	8064.0	7903.0	8044.0	901.81	900.64	24.96	1.17	14728
27	8456.0	8295.0	8436.0	923.83	926.80	21.09	-2.98	14984
28	8670.0	8509.0	8650.0	937.83	940.71	21.34	-2.88	15385
29	8755.0	8594.0	8735.0	944.84	946.91	22.21	-2.07	13723
30	8821.0	8660.0	8801.0	952.84	952.37	24.79	.46	12079
31	8992.0	8831.0	8972.0	967.84	967.11	25.18	.73	11601
32	9250.0	9089.0	9230.0	987.85	985.79	26.69	2.06	13816
33	9503.0	9342.0	9483.0	1004.85	1003.88	25.79	.97	13982
34	9590.0	9429.0	9570.0	1010.85	1010.06	25.67	.80	14086
35	9732.0	9571.0	9712.0	1019.86	1019.17	25.67	.70	15585

00080

ANALYST: C. BUTTERWORTH.

17-FEB-87 11:05:29

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TIME CONVERTED VELOCITY REPORT

COMPANY : SANTOS/DELHI & PARTNERS
WELL : TAYLOR SOUTH 1
FIELD : WILDCAT
REFERENCE: 550230

00081

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)
UNFDEN - UNIFORM DENSITY VALUE

MATRIX

MVODIS - MOVE-OUT DISTANCE FROM BOREHOLE

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA
LOFDEN - LAYER OPTION FLAG FOR DENSITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

TWOT - TWO WAY TRAVEL TIME (RELATIVE TO THE SEISMIC REFERENCE
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - Depth from SRD
AVGV - Average seismic velocity
RMSV - Root Mean Square Velocity (Seismic)
MVOT - NORMAL MOVE-OUT
MVOT - NORMAL MOVE-OUT
MVOT - NORMAL MOVE-OUT
INTV - Internal velocity, average

(GLOBAL PARAMETERS)

(VALUE)

ELEV OF KB AB. MSL (WST)	KB	:	161.000	FT
ELEV OF SRD AB. MSL (WST)	SRD	:	0	FT
ELEV OF GL AB. SRD (WST)	GL	:	141.000	FT
UNIFORM EARTH VELOCITY	UNERTH	:	7000.00	FT/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

MVOUT DIST
FT

1	3000.0
2	4500.0
3	6000.0

00082

COMPANY : SANTOS/DELHI & PARTNERS
(ZONED PARAMETERS)

WELL
(VALUE)

: TAYLOR SOUTH 1
(LIMITS)

PAGE 2

LAYER OPTION FLAG VELOC	LOFVEL	:	1.000000		99999.0	-	0
USER VELOC (WST)	LAYVEL	:	5000.000	FT/S	99999.0	-	0
LAYER OPTION FLAG DENS	LOFDEN	:	1.000000		99999.0	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:	-999.2500	G/C3	99999.0	-	0

00083

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 3 INTERVAL VELOCITY FT/S
0	161.0	0						5000
2.00	166.7	5.7	5705	5705	523.81	786.72	1049.62	5705
4.00	172.4	11.4	5705	5705	521.83	784.73	1047.63	5705
6.00	178.1	17.1	5705	5705	519.84	782.74	1045.64	5705
8.00	183.8	22.8	5705	5705	517.87	780.76	1043.65	5705
10.00	189.5	28.5	5705	5705	515.91	778.78	1041.67	5705
12.00	195.2	34.2	5705	5705	513.95	776.81	1039.69	5705
14.00	200.9	39.9	5705	5705	512.00	774.84	1037.71	5705
16.00	206.6	45.6	5705	5705	510.05	772.88	1035.74	5705
18.00	212.3	51.3	5705	5705	508.12	770.92	1033.78	5705
20.00	218.1	57.1	5705	5705	506.19	768.97	1031.81	5705
22.00	223.8	62.8	5705	5705	504.27	767.02	1029.85	5705
24.00	229.5	68.5	5705	5705	502.36	765.08	1027.90	5705
26.00	235.2	74.2	5705	5705	500.45	763.14	1025.94	5705
28.00	240.9	79.9	5705	5705	498.56	761.21	1023.99	5705
30.00	246.6	85.6	5705	5705	496.67	759.29	1022.05	5705
32.00	252.3	91.3	5705	5705	494.78	757.37	1020.11	5705
34.00	258.0	97.0	5705	5705	492.91	755.45	1018.17	5705
36.00	263.7	102.7	5705	5705	491.04	753.54	1016.24	5705
38.00	269.4	108.4	5705	5705	489.18	751.63	1014.31	5705
40.00	275.1	114.1	5705	5705	487.33	749.73	1012.38	5705
42.00	280.8	119.8	5705	5705	485.49	747.83	1010.46	5705
44.00	286.5	125.5	5705	5705	483.65	745.94	1008.54	5705
46.00	292.2	131.2	5705	5705	481.82	744.06	1006.63	5705

00084

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE
TWO-WAY	MEASURED	VERTICAL	AVERAGE	RMS	FIRST	SECOND	THIRD	INTERVAL
TRAVEL	DEPTH	DEPTH	VELOCITY	VELOCITY	NORMAL	NORMAL	NORMAL	VELOCITY
TIME	FROM	FROM	SRD/GEO		MOVEOUT	MOVEOUT	MOVEOUT	
FROM SRD	KB	SRD						
MS	FT	FT	FT/S	FT/S	MS	MS	MS	FT/S
								5705
48.00	297.9	136.9	5705	5705	480.00	742.18	1004.72	5705
50.00	303.6	142.6	5705	5705	478.18	740.30	1002.81	5705
52.00	309.3	148.3	5705	5705	476.38	738.43	1000.91	5705
54.00	315.0	154.0	5705	5705	474.58	736.56	999.01	5705
56.00	320.8	159.8	5705	5705	472.78	734.70	997.11	5705
58.00	326.5	165.5	5705	5705	471.00	732.85	995.22	5705
60.00	332.2	171.2	5705	5705	469.22	731.00	993.33	5705
62.00	337.9	176.9	5705	5705	467.45	729.15	991.45	5705
64.00	343.6	182.6	5705	5705	465.69	727.31	989.57	5705
66.00	349.3	188.3	5705	5705	463.94	725.47	987.69	5705
68.00	355.0	194.0	5705	5705	462.19	723.64	985.82	5705
70.00	360.7	199.7	5705	5705	460.45	721.82	983.95	5705
72.00	366.4	205.4	5705	5705	458.72	720.00	982.08	5705
74.00	372.1	211.1	5705	5705	456.99	718.18	980.22	5705
76.00	377.8	216.8	5705	5705	455.27	716.37	978.36	5705
78.00	383.5	222.5	5705	5705	453.56	714.56	976.51	5705
80.00	389.2	228.2	5705	5705	451.86	712.76	974.66	5705
82.00	394.9	233.9	5705	5705	450.17	710.97	972.81	5705
84.00	400.6	239.6	5705	5705	448.48	709.18	970.97	5705
86.00	406.3	245.3	5705	5705	446.80	707.39	969.13	5705
88.00	412.0	251.0	5705	5705	445.12	705.61	967.30	5705
90.00	417.7	256.7	5705	5705	443.46	703.83	965.47	5705
92.00	423.5	262.5	5705	5705	441.80	702.06	963.64	5705
94.00	429.2	268.2	5705	5705	440.15	700.30	961.81	5705

00085

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	5
96.00	434.9	273.9	5705	5705	438.50	698.54	959.99	5705	
98.00	440.6	279.6	5705	5705	436.87	696.78	958.18	5705	
100.00	446.3	285.3	5705	5705	435.24	695.03	956.37	5705	
102.00	452.0	291.0	5705	5705	433.61	693.28	954.56	5705	
104.00	457.7	296.7	5705	5705	432.00	691.54	952.75	5705	
106.00	463.4	302.4	5705	5705	430.39	689.81	950.95	5705	
108.00	469.1	308.1	5705	5705	428.79	688.08	949.15	5705	
110.00	474.8	313.8	5705	5705	427.19	686.35	947.36	5705	
112.00	480.5	319.5	5705	5705	425.61	684.63	945.57	5705	
114.00	486.2	325.2	5705	5705	424.03	682.91	943.78	5705	
116.00	491.9	330.9	5705	5705	422.45	681.20	942.00	5705	
118.00	497.6	336.6	5705	5705	420.89	679.49	940.22	5705	
120.00	503.3	342.3	5705	5705	419.33	677.79	938.45	5705	
122.00	509.0	348.0	5705	5705	417.78	676.10	936.67	5705	
124.00	514.7	353.7	5705	5705	416.23	674.40	934.91	5705	
126.00	520.4	359.4	5705	5705	414.70	672.72	933.14	5705	
128.00	526.2	365.2	5705	5705	413.17	671.04	931.38	5705	
130.00	531.9	370.9	5705	5705	411.64	669.36	929.63	5706	
132.00	537.6	376.6	5705	5705	410.13	667.69	927.87	5705	
134.00	543.3	382.3	5705	5705	408.62	666.02	926.12	5706	
136.00	549.0	388.0	5705	5705	407.11	664.36	924.38	5705	
138.00	554.7	393.7	5705	5705	405.62	662.70	922.64	5706	
140.00	560.4	399.4	5705	5705	404.13	661.05	920.90	5705	
142.00	566.1	405.1	5705	5705	402.65	659.40	919.17		

98006

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE	6
TWO-WAY	MEASURED	VERTICAL	AVERAGE	RMS	FIRST	SECOND	THIRD	INTERVAL	
TRAVEL	DEPTH	DEPTH	VELOCITY	VELOCITY	NORMAL	NORMAL	NORMAL	VELOCITY	
TIME	FROM	FROM	SRD/GEO		MOVEOUT	MOVEOUT	MOVEOUT		
FROM SRD	KB	SRD							
MS	FT	FT	FT/S	FT/S	MS	MS	MS	FT/S	
								5705	
144.00	571.8	410.8	5705	5705	401.17	657.75	917.43	5706	
146.00	577.5	416.5	5705	5705	399.70	656.12	915.71	5705	
148.00	583.2	422.2	5705	5705	398.24	654.48	913.98	5705	
150.00	588.9	427.9	5705	5705	396.79	652.85	912.27	5705	
152.00	594.6	433.6	5705	5705	395.34	651.23	910.55	5706	
154.00	600.3	439.3	5705	5705	393.90	649.61	908.84	5705	
156.00	606.0	445.0	5705	5705	392.46	648.00	907.13	5705	
158.00	611.7	450.7	5705	5705	391.04	646.39	905.42	5705	
160.00	617.4	456.4	5705	5705	389.62	644.78	903.72	5706	
162.00	623.1	462.1	5705	5705	388.20	643.18	902.03	5705	
164.00	628.8	467.8	5705	5705	386.79	641.59	900.33	5705	
166.00	634.6	473.6	5705	5705	385.39	640.00	898.64	6046	
168.00	640.6	479.6	5710	5710	383.63	637.85	896.20	6075	
170.00	646.7	485.7	5714	5714	381.86	635.67	893.71	6075	
172.00	652.7	491.7	5718	5718	380.10	633.51	891.25	6075	
174.00	658.8	497.8	5722	5723	378.36	631.37	888.81	6075	
176.00	664.9	503.9	5726	5727	376.63	629.26	886.40	6075	
178.00	671.0	510.0	5730	5731	374.92	627.16	884.00	6075	
180.00	677.0	516.0	5734	5735	373.23	625.08	881.63	6075	
182.00	683.1	522.1	5738	5739	371.55	623.01	879.28	6212	
184.00	689.3	528.3	5743	5744	369.76	620.76	876.67	5889	
186.00	695.2	534.2	5744	5745	368.29	619.01	874.73	5898	
188.00	701.1	540.1	5746	5747	366.82	617.25	872.79	5717	
190.00	706.8	545.8	5746	5747	365.53	615.77	871.21		

00087

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	7
192.00	712.5	551.5	5744	5746	364.32	614.40	869.78	5629	
194.00	718.4	557.4	5746	5747	362.87	612.65	867.84	5908	
196.00	725.0	564.0	5755	5757	360.78	609.91	864.56	6596	
198.00	731.6	570.6	5764	5766	358.68	607.14	861.23	6637	
200.00	737.5	576.5	5765	5768	357.27	605.45	859.35	5909	
202.00	743.3	582.3	5765	5767	356.00	603.96	857.75	5758	
204.00	748.9	587.9	5764	5766	354.83	602.62	856.33	5648	
206.00	754.9	593.9	5766	5769	353.35	600.80	854.28	6016	
208.00	761.2	600.2	5771	5774	351.68	598.66	851.79	6265	
210.00	767.4	606.4	5776	5778	350.04	596.58	849.37	6243	
212.00	773.8	612.8	5782	5785	348.27	594.29	846.67	6403	
214.00	781.0	620.0	5795	5799	345.82	590.93	842.52	7182	
216.00	788.9	627.9	5814	5822	342.73	586.54	836.96	7887	
218.00	796.7	635.7	5832	5843	339.77	582.36	831.68	7815	
220.00	803.5	642.5	5841	5852	337.85	579.80	828.61	6735	
222.00	810.7	649.7	5853	5866	335.53	576.62	824.67	7226	
224.00	817.5	656.5	5861	5875	333.64	574.09	821.62	6769	
226.00	823.4	662.4	5862	5876	332.37	572.53	819.88	5985	
228.00	829.5	668.5	5864	5877	331.06	570.90	818.05	6050	
230.00	836.0	675.0	5870	5883	329.41	568.74	815.49	6523	
232.00	843.4	682.4	5883	5898	327.05	565.45	811.39	7427	
234.00	851.1	690.1	5898	5915	324.54	561.91	806.95	7657	
236.00	857.3	696.3	5901	5918	323.20	560.22	805.02	6178	
238.00	863.3	702.3	5902	5919	321.96	558.68	803.29	6048	

0008

COMPANY : SANTOS/DELHI & PARTNERS	WELL : TAYLOR	SOUTH 1	PAGE		8			
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
								5910
240.00	869.2	708.2	5902	5919	320.82	557.29	801.77	5948
242.00	875.2	714.2	5902	5919	319.66	555.86	800.19	5950
244.00	881.1	720.1	5903	5919	318.50	554.44	798.61	5857
246.00	887.0	726.0	5902	5919	317.41	553.11	797.17	5975
248.00	893.0	732.0	5903	5919	316.25	551.68	795.56	6019
250.00	899.0	738.0	5904	5920	315.07	550.20	793.90	6870
252.00	905.9	744.9	5912	5928	313.34	547.84	791.04	6783
254.00	912.6	751.6	5918	5935	311.68	545.59	788.33	5771
256.00	918.4	757.4	5917	5934	310.68	544.39	787.02	6131
258.00	924.5	763.5	5919	5936	309.47	542.84	785.26	6139
260.00	930.7	769.7	5921	5937	308.26	541.29	783.50	6004
262.00	936.7	775.7	5921	5938	307.14	539.88	781.91	5905
264.00	942.6	781.6	5921	5937	306.08	538.57	780.45	5980
266.00	948.6	787.6	5922	5938	304.99	537.19	778.91	6523
268.00	955.1	794.1	5926	5942	303.58	535.30	776.67	6685
270.00	961.8	800.8	5932	5948	302.08	533.27	774.22	6189
272.00	968.0	807.0	5934	5950	300.89	531.73	772.45	6377
274.00	974.3	813.3	5937	5953	299.60	530.02	770.44	6312
276.00	980.7	819.7	5940	5956	298.36	528.39	768.53	6319
278.00	987.0	826.0	5942	5959	297.13	526.76	766.62	6602
280.00	993.6	832.6	5947	5963	295.74	524.87	764.37	5832
282.00	999.4	838.4	5946	5963	294.78	523.68	763.06	5804
284.00	1005.2	844.2	5945	5961	293.84	522.51	761.78	6129
286.00	1011.3	850.3	5946	5963	292.74	521.08	760.13	

00089

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	9
288.00	1017.0	856.0	5945	5961	291.86	520.00	758.96	5702	
290.00	1023.2	862.2	5946	5962	290.76	518.55	757.29	6159	
292.00	1029.3	868.3	5947	5963	289.68	517.14	755.66	6125	
294.00	1035.3	874.3	5948	5963	288.68	515.86	754.22	5969	
296.00	1041.7	880.7	5951	5966	287.47	514.23	752.29	6394	
298.00	1047.8	886.8	5951	5967	286.44	512.88	750.74	6073	
300.00	1053.8	892.8	5952	5968	285.43	511.56	749.24	6036	
302.00	1059.5	898.5	5950	5966	284.60	510.54	748.14	5654	
304.00	1065.1	904.1	5948	5964	283.78	509.52	747.04	5652	
306.00	1071.2	910.2	5949	5964	282.77	508.20	745.52	6053	
308.00	1077.1	916.1	5949	5964	281.81	506.95	744.10	5971	
310.00	1083.1	922.1	5949	5964	280.84	505.68	742.64	6004	
312.00	1089.1	928.1	5949	5964	279.91	504.46	741.27	5930	
314.00	1095.1	934.1	5950	5964	278.94	503.20	739.82	6006	
316.00	1101.6	940.6	5953	5968	277.75	501.56	737.85	6501	
318.00	1108.0	947.0	5956	5971	276.63	500.03	736.03	6373	
320.00	1114.1	953.1	5957	5972	275.62	498.67	734.44	6160	
322.00	1119.9	958.9	5956	5971	274.76	497.56	733.20	5817	
324.00	1126.0	965.0	5957	5971	273.82	496.30	731.75	6034	
326.00	1131.8	970.8	5956	5971	272.94	495.16	730.46	5873	
328.00	1137.6	976.6	5955	5970	272.11	494.09	729.26	5785	
330.00	1143.4	982.4	5954	5969	271.27	492.99	728.02	5828	
332.00	1149.2	988.2	5953	5967	270.47	491.95	726.87	5728	
334.00	1155.1	994.1	5953	5967	269.59	490.79	725.54	5923	

06000

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE	10
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
								6079	
336.00	1161.2	1000.2	5953	5968	268.65	489.53	724.07	6063	
338.00	1167.2	1006.2	5954	5968	267.73	488.28	722.61	6632	
340.00	1173.9	1012.9	5958	5972	266.56	486.62	720.59	6353	
342.00	1180.2	1019.2	5960	5975	265.52	485.18	718.87	7356	
344.00	1187.6	1026.6	5968	5984	264.03	482.99	716.10	7066	
346.00	1194.6	1033.6	5975	5990	262.70	481.05	713.67	6992	
348.00	1201.6	1040.6	5981	5997	261.41	479.18	711.34	7737	
350.00	1209.4	1048.4	5991	6008	259.78	476.73	708.21	9620	
352.00	1219.0	1058.0	6011	6035	257.13	472.59	702.72	7903	
354.00	1226.9	1065.9	6022	6047	255.47	470.09	699.50	7723	
356.00	1234.6	1073.6	6032	6058	253.92	467.76	696.52	6531	
358.00	1241.2	1080.2	6034	6060	252.91	466.33	694.78	5984	
360.00	1247.1	1086.1	6034	6060	252.11	465.24	693.52	6679	
362.00	1253.8	1092.8	6038	6064	251.05	463.72	691.66	7475	
364.00	1261.3	1100.3	6046	6072	249.67	461.65	689.02	7490	
366.00	1268.8	1107.8	6053	6081	248.29	459.59	686.40	6994	
368.00	1275.8	1114.8	6059	6086	247.14	457.90	684.29	6500	
370.00	1282.3	1121.3	6061	6088	246.19	456.54	682.64	6203	
372.00	1288.5	1127.5	6062	6089	245.35	455.37	681.25	6019	
374.00	1294.5	1133.5	6061	6089	244.58	454.31	680.01	5823	
376.00	1300.3	1139.3	6060	6087	243.88	453.37	678.93	6187	
378.00	1306.5	1145.5	6061	6088	243.06	452.22	677.57	6418	
380.00	1312.9	1151.9	6063	6090	242.17	450.94	676.02	7215	
382.00	1320.1	1159.1	6069	6096	240.98	449.16	673.77		

00091

COMPANY : SANTOS/DELHI & PARTNERS	WELL		: TAYLOR		SOUTH 1		PAGE	
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
								7436
384.00	1327.6	1166.6	6076	6104	239.72	447.25	671.33	7363
386.00	1334.9	1173.9	6083	6111	238.50	445.41	668.98	7241
388.00	1342.2	1181.2	6089	6117	237.33	443.66	666.77	6810
390.00	1349.0	1188.0	6092	6121	236.34	442.20	664.95	6096
392.00	1355.1	1194.1	6092	6121	235.60	441.15	663.71	6838
394.00	1361.9	1200.9	6096	6125	234.61	439.69	661.88	7047
396.00	1369.0	1208.0	6101	6130	233.55	438.11	659.88	6552
398.00	1375.5	1214.5	6103	6132	232.68	436.83	658.31	6227
400.00	1381.7	1220.7	6104	6133	231.91	435.73	657.00	6515
402.00	1388.3	1227.3	6106	6134	231.06	434.49	655.47	6078
404.00	1394.3	1233.3	6106	6134	230.35	433.48	654.27	6225
406.00	1400.6	1239.6	6106	6135	229.59	432.40	652.97	6370
408.00	1406.9	1245.9	6108	6136	228.80	431.25	651.56	6148
410.00	1413.1	1252.1	6108	6136	228.08	430.21	650.33	6229
412.00	1419.3	1258.3	6108	6136	227.34	429.14	649.04	6239
414.00	1425.6	1264.6	6109	6137	226.60	428.07	647.74	6182
416.00	1431.7	1270.7	6109	6137	225.88	427.04	646.49	6289
418.00	1438.0	1277.0	6110	6138	225.14	425.95	645.17	6519
420.00	1444.5	1283.5	6112	6140	224.32	424.75	643.68	7248
422.00	1451.8	1290.8	6117	6145	223.29	423.15	641.64	8714
424.00	1460.5	1299.5	6130	6160	221.72	420.65	638.30	6525
426.00	1467.0	1306.0	6132	6162	220.93	419.47	636.85	6540
428.00	1473.6	1312.6	6134	6164	220.14	418.29	635.39	6181
430.00	1479.8	1318.8	6134	6164	219.46	417.30	634.18	

00092

COMPANY : SANTOS/DELHI & PARTNERS	WELL		: TAYLOR		SOUTH 1		PAGE	
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
								6751
432.00	1486.5	1325.5	6137	6167	218.62	416.03	632.58	6533
434.00	1493.0	1332.0	6138	6168	217.84	414.87	631.14	6268
436.00	1499.3	1338.3	6139	6169	217.15	413.85	629.89	5929
438.00	1505.2	1344.2	6138	6168	216.55	412.98	628.87	6786
440.00	1512.0	1351.0	6141	6171	215.72	411.72	627.27	6544
442.00	1518.6	1357.6	6143	6172	214.96	410.58	625.84	5856
444.00	1524.4	1363.4	6142	6171	214.39	409.75	624.87	6017
446.00	1530.4	1369.4	6141	6170	213.78	408.86	623.80	6837
448.00	1537.3	1376.3	6144	6173	212.95	407.59	622.19	7276
450.00	1544.5	1383.5	6149	6179	212.00	406.11	620.27	6560
452.00	1551.1	1390.1	6151	6181	211.26	404.99	618.86	6450
454.00	1557.6	1396.6	6152	6182	210.56	403.92	617.53	6727
456.00	1564.3	1403.3	6155	6184	209.78	402.73	616.03	6367
458.00	1570.7	1409.7	6156	6185	209.11	401.72	614.77	6573
460.00	1577.2	1416.2	6158	6187	208.38	400.61	613.38	6852
462.00	1584.1	1423.1	6161	6190	207.59	399.38	611.81	6266
464.00	1590.3	1429.3	6161	6190	206.95	398.42	610.62	6882
466.00	1597.2	1436.2	6164	6193	206.16	397.19	609.04	6458
468.00	1603.7	1442.7	6165	6194	205.48	396.16	607.75	6743
470.00	1610.4	1449.4	6168	6197	204.74	395.00	606.28	6934
472.00	1617.4	1456.4	6171	6200	203.95	393.77	604.69	6679
474.00	1624.0	1463.0	6173	6202	203.23	392.65	603.27	6562
476.00	1630.6	1469.6	6175	6204	202.54	391.60	601.94	6533
478.00	1637.1	1476.1	6176	6205	201.87	390.56	600.62	

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COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	13
								6704	
480.00	1643.8	1482.8	6178	6207	201.16	389.45	599.21	6360	
482.00	1650.2	1489.2	6179	6208	200.53	388.49	598.01	6457	
484.00	1656.7	1495.7	6180	6209	199.89	387.50	596.76	6816	
486.00	1663.5	1502.5	6183	6212	199.16	386.36	595.29	6941	
488.00	1670.4	1509.4	6186	6215	198.41	385.17	593.75	6929	
490.00	1677.3	1516.3	6189	6218	197.66	383.99	592.23	6364	
492.00	1683.7	1522.7	6190	6219	197.06	383.05	591.06	7180	
494.00	1690.9	1529.9	6194	6223	196.26	381.78	589.39	7164	
496.00	1698.0	1537.0	6198	6227	195.47	380.52	587.74	6985	
498.00	1705.0	1544.0	6201	6230	194.74	379.34	586.21	7004	
500.00	1712.0	1551.0	6204	6233	194.00	378.17	584.68	7557	
502.00	1719.6	1558.6	6210	6239	193.13	376.75	582.81	7526	
504.00	1727.1	1566.1	6215	6245	192.28	375.36	580.97	6860	
506.00	1734.0	1573.0	6217	6247	191.59	374.27	579.55	7330	
508.00	1741.3	1580.3	6222	6252	190.80	372.99	577.85	7450	
510.00	1748.8	1587.8	6227	6257	189.98	371.66	576.09	6908	
512.00	1755.7	1594.7	6229	6260	189.30	370.57	574.67	7255	
514.00	1762.9	1601.9	6233	6264	188.54	369.34	573.05	6856	
516.00	1769.8	1608.8	6236	6266	187.88	368.28	571.68	6823	
518.00	1776.6	1615.6	6238	6269	187.24	367.24	570.33	6829	
520.00	1783.4	1622.4	6240	6271	186.59	366.20	568.98	6277	
522.00	1789.7	1628.7	6240	6271	186.06	365.37	567.93	6617	
524.00	1796.3	1635.3	6242	6272	185.47	364.43	566.71	6564	
526.00	1802.9	1641.9	6243	6273	184.89	363.50	565.52		

36000

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE
TWO-WAY	MEASURED	VERTICAL	AVERAGE	RMS	FIRST	SECOND	THIRD	INTERVAL
TRAVEL	DEPTH	DEPTH	VELOCITY	VELOCITY	NORMAL	NORMAL	NORMAL	VELOCITY
TIME	FROM	FROM	SRD/GEO		MOVEOUT	MOVEOUT	MOVEOUT	
FROM SRD	KB	SRD						
MS	FT	FT	FT/S	FT/S	MS	MS	MS	FT/S
								7080
528.00	1810.0	1649.0	6246	6277	184.20	362.39	564.05	6845
530.00	1816.8	1655.8	6248	6279	183.57	361.37	562.72	7149
532.00	1824.0	1663.0	6252	6282	182.88	360.24	561.23	6992
534.00	1831.0	1670.0	6255	6285	182.23	359.18	559.83	7429
536.00	1838.4	1677.4	6259	6290	181.49	357.95	558.19	6917
538.00	1845.3	1684.3	6261	6292	180.86	356.93	556.85	6745
540.00	1852.0	1691.0	6263	6294	180.27	355.98	555.60	7451
542.00	1859.5	1698.5	6268	6299	179.54	354.76	553.98	7087
544.00	1866.6	1705.6	6271	6302	178.89	353.69	552.57	6528
546.00	1873.1	1712.1	6271	6303	178.35	352.83	551.45	6722
548.00	1879.8	1718.8	6273	6304	177.78	351.91	550.24	6905
550.00	1886.7	1725.7	6275	6306	177.18	350.92	548.94	6360
552.00	1893.1	1732.1	6276	6307	176.68	350.12	547.91	7273
554.00	1900.4	1739.4	6279	6310	176.02	349.01	546.43	6695
556.00	1907.1	1746.1	6281	6312	175.47	348.12	545.25	6752
558.00	1913.8	1752.8	6283	6313	174.91	347.20	544.05	6864
560.00	1920.7	1759.7	6285	6316	174.33	346.25	542.80	7494
562.00	1928.2	1767.2	6289	6320	173.64	345.09	541.23	6750
564.00	1934.9	1773.9	6291	6322	173.09	344.19	540.04	7246
566.00	1942.2	1781.2	6294	6325	172.45	343.12	538.61	7663
568.00	1949.8	1788.8	6299	6330	171.73	341.91	536.97	7583
570.00	1957.4	1796.4	6303	6335	171.04	340.74	535.38	7456
572.00	1964.9	1803.9	6307	6340	170.38	339.62	533.87	7079
574.00	1972.0	1811.0	6310	6342	169.79	338.64	532.56	

00095

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	15
576.00	1978.6	1817.6	6311	6343	169.28	337.79	531.44	6689	
578.00	1985.4	1824.4	6313	6345	168.75	336.91	530.27	6796	
580.00	1992.3	1831.3	6315	6347	168.20	336.00	529.06	6897	
582.00	1999.2	1838.2	6317	6349	167.67	335.12	527.89	6842	
584.00	2005.8	1844.8	6318	6350	167.19	334.32	526.84	6575	
586.00	2012.9	1851.9	6320	6352	166.62	333.36	525.55	7099	
588.00	2021.0	1860.0	6327	6359	165.84	332.03	523.71	8179	
590.00	2028.2	1867.2	6330	6363	165.26	331.05	522.38	7209	
592.00	2035.2	1874.2	6332	6365	164.73	330.15	521.18	6955	
594.00	2042.1	1881.1	6334	6366	164.21	329.28	520.01	6892	
596.00	2049.2	1888.2	6336	6369	163.65	328.33	518.73	7147	
598.00	2056.4	1895.4	6339	6372	163.09	327.37	517.44	7199	
600.00	2063.7	1902.7	6342	6375	162.52	326.41	516.14	7219	
602.00	2070.6	1909.6	6344	6377	162.00	325.53	514.94	6994	
604.00	2077.9	1916.9	6347	6380	161.44	324.57	513.64	7239	
606.00	2085.4	1924.4	6351	6384	160.84	323.54	512.24	7473	
608.00	2093.5	1932.5	6357	6391	160.13	322.30	510.52	8139	
610.00	2101.6	1940.6	6363	6397	159.42	321.08	508.82	8112	
612.00	2108.8	1947.8	6365	6400	158.89	320.17	507.59	7149	
614.00	2115.6	1954.6	6367	6401	158.42	319.36	506.50	6856	
616.00	2122.7	1961.7	6369	6404	157.90	318.47	505.29	7118	
618.00	2129.7	1968.7	6371	6406	157.40	317.63	504.15	6999	
620.00	2136.7	1975.7	6373	6408	156.92	316.80	503.03	6939	
622.00	2144.2	1983.2	6377	6412	156.35	315.81	501.67	7510	

00096

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE
TWO-WAY	MEASURED	VERTICAL	AVERAGE	RMS	FIRST	SECOND	THIRD	INTERVAL
TRAVEL	DEPTH	DEPTH	VELOCITY	VELOCITY	NORMAL	NORMAL	NORMAL	VELOCITY
TIME	FROM	FROM	SRD/GEO		MOVEOUT	MOVEOUT	MOVEOUT	
FROM SRD	KB	SRD						
MS	FT	FT	FT/S	FT/S	MS	MS	MS	FT/S
								7038
624.00	2151.2	1990.2	6379	6414	155.85	314.97	500.52	7421
626.00	2158.6	1997.6	6382	6417	155.30	314.02	499.21	7152
628.00	2165.8	2004.8	6385	6420	154.80	313.15	498.03	7000
630.00	2172.8	2011.8	6387	6422	154.32	312.33	496.91	7625
632.00	2180.4	2019.4	6391	6426	153.75	311.33	495.53	6881
634.00	2187.3	2026.3	6392	6427	153.29	310.55	494.47	7450
636.00	2194.7	2033.7	6395	6431	152.76	309.61	493.18	7356
638.00	2202.1	2041.1	6398	6434	152.24	308.71	491.94	7134
640.00	2209.2	2048.2	6401	6436	151.75	307.87	490.79	7132
642.00	2216.4	2055.4	6403	6438	151.27	307.04	489.65	7624
644.00	2224.0	2063.0	6407	6442	150.72	306.08	488.31	6960
646.00	2231.0	2070.0	6409	6444	150.27	305.30	487.25	7776
648.00	2238.7	2077.7	6413	6449	149.71	304.30	485.86	7432
650.00	2246.2	2085.2	6416	6452	149.19	303.40	484.61	8298
652.00	2254.5	2093.5	6422	6458	148.55	302.26	483.00	10757
654.00	2265.2	2104.2	6435	6476	147.46	300.25	480.10	7802
656.00	2273.0	2112.0	6439	6480	146.90	299.28	478.73	7372
658.00	2280.4	2119.4	6442	6483	146.42	298.43	477.55	7227
660.00	2287.6	2126.6	6444	6486	145.96	297.62	476.44	7498
662.00	2295.1	2134.1	6447	6489	145.46	296.74	475.22	7725
664.00	2302.8	2141.8	6451	6493	144.94	295.81	473.91	9190
666.00	2312.0	2151.0	6460	6503	144.19	294.45	471.95	9100
668.00	2321.1	2160.1	6467	6512	143.45	293.12	470.05	8220
670.00	2329.4	2168.4	6473	6518	142.87	292.07	468.57	

00097

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	17
672.00	2336.6	2175.6	6475	6520	142.44	291.30	467.50	7200	
674.00	2343.8	2182.8	6477	6522	142.00	290.54	466.44	7216	
676.00	2351.0	2190.0	6479	6524	141.56	289.76	465.35	7272	
678.00	2358.2	2197.2	6482	6526	141.13	289.00	464.30	7196	
680.00	2365.9	2204.9	6485	6530	140.65	288.14	463.09	7638	
682.00	2373.2	2212.2	6487	6533	140.21	287.35	461.99	7350	
684.00	2381.1	2220.1	6492	6537	139.69	286.43	460.68	7919	
686.00	2389.2	2228.2	6496	6542	139.16	285.47	459.32	8046	
688.00	2396.5	2235.5	6499	6544	138.73	284.71	458.26	7312	
690.00	2404.1	2243.1	6502	6548	138.26	283.87	457.08	7629	
692.00	2411.2	2250.2	6503	6549	137.87	283.17	456.11	7071	
694.00	2419.0	2258.0	6507	6553	137.39	282.31	454.89	7750	
696.00	2426.2	2265.2	6509	6555	136.98	281.58	453.87	7243	
698.00	2434.3	2273.3	6514	6560	136.46	280.64	452.52	8140	
700.00	2443.4	2282.4	6521	6569	135.82	279.45	450.81	9030	
702.00	2450.9	2289.9	6524	6572	135.38	278.66	449.69	7558	
704.00	2459.2	2298.2	6529	6577	134.85	277.70	448.31	8281	
706.00	2467.2	2306.2	6533	6582	134.36	276.80	447.03	8021	
708.00	2474.8	2313.8	6536	6585	133.92	276.02	445.93	7583	
710.00	2483.1	2322.1	6541	6590	133.40	275.07	444.56	8302	
712.00	2490.7	2329.7	6544	6593	132.97	274.28	443.44	7632	
714.00	2498.3	2337.3	6547	6596	132.55	273.53	442.38	7511	
716.00	2506.5	2345.5	6552	6601	132.04	272.60	441.04	8275	
718.00	2514.0	2353.0	6554	6604	131.64	271.87	440.00	7480	

86000

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE	18
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
								8706	
720.00	2522.7	2361.7	6560	6611	131.08	270.84	438.51	8168	
722.00	2530.9	2369.9	6565	6616	130.60	269.95	437.24	8090	
724.00	2539.0	2378.0	6569	6620	130.13	269.09	436.00	9320	
726.00	2548.3	2387.3	6577	6629	129.50	267.92	434.30	7752	
728.00	2556.0	2395.0	6580	6632	129.08	267.15	433.19	7934	
730.00	2564.0	2403.0	6584	6636	128.64	266.34	432.03	7470	
732.00	2571.4	2410.4	6586	6639	128.25	265.64	431.03	8591	
734.00	2580.0	2419.0	6591	6645	127.74	264.69	429.65	7380	
736.00	2587.4	2426.4	6594	6647	127.36	264.01	428.69	8643	
738.00	2596.1	2435.1	6599	6653	126.85	263.06	427.30	9403	
740.00	2605.5	2444.5	6607	6662	126.24	261.92	425.63	8715	
742.00	2614.2	2453.2	6612	6669	125.73	260.96	424.24	8398	
744.00	2622.6	2461.6	6617	6674	125.26	260.09	422.97	8439	
746.00	2631.0	2470.0	6622	6679	124.78	259.21	421.69	8361	
748.00	2639.4	2478.4	6627	6684	124.32	258.35	420.44	10254	
750.00	2649.6	2488.6	6636	6696	123.62	257.03	418.49	9921	
752.00	2659.6	2498.6	6645	6707	122.98	255.81	416.68	9424	
754.00	2669.0	2508.0	6652	6716	122.40	254.73	415.09	8125	
756.00	2677.1	2516.1	6656	6720	121.98	253.95	413.96	8358	
758.00	2685.5	2524.5	6661	6725	121.54	253.13	412.76	8017	
760.00	2693.5	2532.5	6664	6728	121.14	252.39	411.68	8122	
762.00	2701.6	2540.6	6668	6732	120.73	251.62	410.58	8433	
764.00	2710.0	2549.0	6673	6737	120.29	250.80	409.37	8459	
766.00	2718.5	2557.5	6678	6742	119.85	249.98	408.17		

00099

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 19 INTERVAL VELOCITY FT/S
768.00	2728.0	2567.0	6685	6751	119.30	248.93	406.62	9475
770.00	2736.7	2575.7	6690	6757	118.83	248.05	405.33	8775
772.00	2745.6	2584.6	6696	6763	118.36	247.17	404.03	8823
774.00	2754.3	2593.3	6701	6769	117.91	246.32	402.78	8686
776.00	2763.4	2602.4	6707	6776	117.42	245.39	401.40	9108
778.00	2773.9	2612.9	6717	6788	116.76	244.12	399.51	10557
780.00	2783.7	2622.7	6725	6797	116.20	243.06	397.93	9742
782.00	2791.7	2630.7	6728	6801	115.84	242.38	396.93	8002
784.00	2800.2	2639.2	6733	6806	115.43	241.60	395.79	8495
786.00	2808.2	2647.2	6736	6809	115.06	240.91	394.78	8079
788.00	2816.9	2655.9	6741	6815	114.63	240.10	393.59	8687
790.00	2825.2	2664.2	6745	6819	114.25	239.38	392.52	8304
792.00	2833.3	2672.3	6748	6822	113.89	238.71	391.54	8031
794.00	2841.0	2680.0	6751	6825	113.56	238.09	390.64	7737
796.00	2848.7	2687.7	6753	6827	113.24	237.48	389.75	7730
798.00	2856.5	2695.5	6756	6830	112.91	236.87	388.85	7763
800.00	2864.4	2703.4	6758	6832	112.58	236.24	387.93	7870
802.00	2872.0	2711.0	6761	6835	112.26	235.65	387.08	7646
804.00	2879.6	2718.6	6763	6837	111.95	235.07	386.23	7638
806.00	2887.4	2726.4	6765	6839	111.64	234.48	385.36	7722
808.00	2896.0	2735.0	6770	6844	111.24	233.72	384.24	8641
810.00	2904.0	2743.0	6773	6847	110.91	233.09	383.31	7959
812.00	2912.9	2751.9	6778	6853	110.49	232.28	382.11	8958
814.00	2921.1	2760.1	6782	6856	110.14	231.63	381.14	8151

00100

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 20 INTERVAL VELOCITY FT/S
								7704
816.00	2928.8	2767.8	6784	6859	109.84	231.06	380.30	8367
818.00	2937.1	2776.1	6788	6863	109.48	230.37	379.29	9087
820.00	2946.2	2785.2	6793	6869	109.05	229.56	378.07	7698
822.00	2953.9	2792.9	6795	6871	108.76	228.99	377.24	7409
824.00	2961.3	2800.3	6797	6873	108.48	228.48	376.49	7814
826.00	2969.2	2808.2	6799	6875	108.18	227.90	375.64	8564
828.00	2977.7	2816.7	6804	6880	107.81	227.20	374.59	7794
830.00	2985.5	2824.5	6806	6882	107.51	226.63	373.75	8024
832.00	2993.5	2832.5	6809	6885	107.20	226.03	372.86	7952
834.00	3001.5	2840.5	6812	6888	106.89	225.44	371.99	7657
836.00	3009.1	2848.1	6814	6890	106.60	224.90	371.20	7312
838.00	3016.5	2855.5	6815	6891	106.35	224.42	370.49	7333
840.00	3023.8	2862.8	6816	6892	106.09	223.93	369.78	7682
842.00	3031.5	2870.5	6818	6894	105.81	223.40	368.99	7558
844.00	3039.0	2878.0	6820	6895	105.54	222.88	368.23	8311
846.00	3047.3	2886.3	6823	6899	105.21	222.25	367.29	7440
848.00	3054.8	2893.8	6825	6900	104.95	221.76	366.56	9729
850.00	3064.5	2903.5	6832	6908	104.50	220.89	365.24	8353
852.00	3072.9	2911.9	6835	6912	104.18	220.26	364.30	7329
854.00	3080.2	2919.2	6837	6913	103.93	219.79	363.61	7375
856.00	3087.6	2926.6	6838	6914	103.68	219.32	362.92	6798
858.00	3094.4	2933.4	6838	6914	103.48	218.93	362.35	8053
860.00	3102.4	2941.4	6841	6917	103.18	218.36	361.50	7178
862.00	3109.6	2948.6	6841	6917	102.95	217.92	360.85	

00101

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 21 INTERVAL VELOCITY FT/S
864.00	3116.9	2955.9	6842	6918	102.71	217.47	360.18	7293
866.00	3124.9	2963.9	6845	6921	102.42	216.91	359.36	7995
868.00	3133.3	2972.3	6849	6925	102.11	216.31	358.45	8370
870.00	3144.4	2983.4	6858	6938	101.54	215.19	356.74	11177
872.00	3152.9	2991.9	6862	6941	101.23	214.58	355.82	8463
874.00	3161.5	3000.5	6866	6946	100.90	213.95	354.87	8610
876.00	3170.1	3009.1	6870	6950	100.58	213.32	353.92	8587
878.00	3178.7	3017.7	6874	6954	100.26	212.70	352.98	8593
880.00	3187.7	3026.7	6879	6959	99.91	212.02	351.95	9006
882.00	3196.0	3035.0	6882	6963	99.61	211.44	351.08	8341
884.00	3205.9	3044.9	6889	6971	99.20	210.62	349.83	9858
886.00	3214.5	3053.5	6893	6975	98.88	210.01	348.91	8602
888.00	3221.9	3060.9	6894	6976	98.66	209.58	348.26	7381
890.00	3229.7	3068.7	6896	6978	98.40	209.08	347.52	7867
892.00	3238.6	3077.6	6900	6983	98.07	208.44	346.54	8885
894.00	3249.2	3088.2	6909	6993	97.61	207.52	345.12	10586
896.00	3259.0	3098.0	6915	7001	97.21	206.73	343.92	9841
898.00	3267.8	3106.8	6919	7005	96.90	206.12	342.99	8759
900.00	3276.3	3115.3	6923	7009	96.61	205.56	342.13	8477
902.00	3285.4	3124.4	6928	7014	96.27	204.90	341.13	9120
904.00	3294.4	3133.4	6932	7019	95.95	204.27	340.17	8951
906.00	3304.9	3143.9	6940	7029	95.51	203.39	338.82	10523
908.00	3314.4	3153.4	6946	7035	95.15	202.68	337.73	9551
910.00	3323.1	3162.1	6950	7039	94.86	202.11	336.87	8649

00102

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE	22
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
								8559	
912.00	3331.6	3170.6	6953	7043	94.58	201.56	336.02	10435	
914.00	3342.1	3181.1	6961	7052	94.15	200.72	334.73	9238	
916.00	3351.3	3190.3	6966	7057	93.83	200.08	333.74	8181	
918.00	3359.5	3198.5	6968	7060	93.58	199.58	332.99	9222	
920.00	3368.7	3207.7	6973	7065	93.25	198.95	332.01	9034	
922.00	3377.7	3216.7	6978	7070	92.95	198.34	331.09	8534	
924.00	3386.3	3225.3	6981	7074	92.68	197.81	330.28	8396	
926.00	3394.7	3233.7	6984	7077	92.42	197.30	329.50	8793	
928.00	3403.5	3242.5	6988	7081	92.13	196.74	328.64	9111	
930.00	3412.6	3251.6	6993	7086	91.83	196.14	327.72	9967	
932.00	3422.5	3261.5	6999	7094	91.47	195.41	326.60	9551	
934.00	3432.1	3271.1	7004	7100	91.14	194.76	325.59	9124	
936.00	3441.2	3280.2	7009	7105	90.84	194.17	324.68	9277	
938.00	3450.5	3289.5	7014	7110	90.53	193.56	323.74	10360	
940.00	3460.9	3299.9	7021	7118	90.15	192.80	322.55	8831	
942.00	3469.7	3308.7	7025	7123	89.88	192.25	321.72	9359	
944.00	3479.1	3318.1	7030	7128	89.57	191.65	320.78	8583	
946.00	3487.6	3326.6	7033	7131	89.32	191.14	320.01	8390	
948.00	3496.0	3335.0	7036	7134	89.08	190.66	319.28	8397	
950.00	3504.4	3343.4	7039	7137	88.84	190.19	318.55	8650	
952.00	3513.1	3352.1	7042	7141	88.58	189.68	317.78	8693	
954.00	3521.8	3360.8	7046	7144	88.33	189.18	317.00	8721	
956.00	3530.5	3369.5	7049	7148	88.07	188.67	316.21	8859	
958.00	3539.3	3378.3	7053	7152	87.81	188.15	315.41		

00103

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI MEASURED DEPTH FROM KB FT	& PARTNERS VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	23
								9950	
960.00	3549.3	3388.3	7059	7159	87.48	187.48	314.38	8642	
962.00	3557.9	3396.9	7062	7162	87.23	186.99	313.62	8674	
964.00	3566.6	3405.6	7066	7166	86.98	186.50	312.86	9254	
966.00	3575.9	3414.9	7070	7171	86.70	185.94	312.00	8997	
968.00	3584.9	3423.9	7074	7175	86.44	185.42	311.18	8604	
970.00	3593.5	3432.5	7077	7178	86.20	184.94	310.45	8539	
972.00	3602.0	3441.0	7080	7181	85.97	184.48	309.74	9467	
974.00	3611.5	3450.5	7085	7187	85.68	183.90	308.84	8811	
976.00	3620.3	3459.3	7089	7190	85.44	183.41	308.08	8935	
978.00	3629.2	3468.2	7092	7194	85.19	182.91	307.30	8904	
980.00	3638.1	3477.1	7096	7198	84.94	182.41	306.53	8914	
982.00	3647.0	3486.0	7100	7202	84.69	181.92	305.76	8559	
984.00	3655.6	3494.6	7103	7205	84.46	181.46	305.06	8554	
986.00	3664.2	3503.2	7106	7208	84.24	181.02	304.37	8448	
988.00	3672.6	3511.6	7108	7211	84.02	180.58	303.69	8934	
990.00	3681.5	3520.5	7112	7215	83.78	180.09	302.93	8879	
992.00	3690.4	3529.4	7116	7219	83.54	179.61	302.19	8610	
994.00	3699.0	3538.0	7119	7222	83.31	179.16	301.50	8567	
996.00	3707.6	3546.6	7122	7225	83.09	178.72	300.81	8825	
998.00	3716.4	3555.4	7125	7228	82.86	178.26	300.09	8707	
1000.00	3725.1	3564.1	7128	7231	82.64	177.81	299.39	8711	
1002.00	3733.8	3572.8	7131	7235	82.41	177.36	298.69	8735	
1004.00	3742.6	3581.6	7135	7238	82.19	176.91	297.99	8754	
1006.00	3751.3	3590.3	7138	7241	81.97	176.46	297.29		

00104

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE	24
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
								8750	
1008.00	3760.1	3599.1	7141	7245	81.74	176.01	296.60	8722	
1010.00	3768.8	3607.8	7144	7248	81.52	175.57	295.91	8722	
1012.00	3777.5	3616.5	7147	7251	81.31	175.13	295.22	8684	
1014.00	3786.2	3625.2	7150	7254	81.09	174.70	294.55	8816	
1016.00	3795.0	3634.0	7154	7258	80.87	174.25	293.85	8822	
1018.00	3803.8	3642.8	7157	7261	80.65	173.81	293.16	9011	
1020.00	3812.8	3651.8	7160	7265	80.42	173.35	292.44	8792	
1022.00	3821.6	3660.6	7164	7268	80.20	172.91	291.76	8344	
1024.00	3830.0	3669.0	7166	7270	80.01	172.52	291.16	8373	
1026.00	3838.4	3677.4	7168	7273	79.82	172.13	290.55	8280	
1028.00	3846.6	3685.6	7171	7275	79.63	171.76	289.96	8210	
1030.00	3854.8	3693.8	7173	7277	79.44	171.39	289.38	8454	
1032.00	3863.3	3702.3	7175	7279	79.25	170.99	288.77	8393	
1034.00	3871.7	3710.7	7177	7282	79.06	170.61	288.17	8102	
1036.00	3879.8	3718.8	7179	7283	78.88	170.25	287.62	8107	
1038.00	3887.9	3726.9	7181	7285	78.71	169.90	287.07	8321	
1040.00	3896.2	3735.2	7183	7287	78.52	169.52	286.48	8312	
1042.00	3904.5	3743.5	7185	7289	78.34	169.15	285.90	8328	
1044.00	3912.9	3751.9	7187	7291	78.15	168.78	285.32	8251	
1046.00	3921.1	3760.1	7190	7293	77.97	168.42	284.76	8150	
1048.00	3929.3	3768.3	7191	7295	77.80	168.07	284.21	8298	
1050.00	3937.6	3776.6	7193	7297	77.62	167.71	283.64	8352	
1052.00	3945.9	3784.9	7196	7299	77.44	167.34	283.07	8142	
1054.00	3954.1	3793.1	7197	7301	77.27	166.99	282.53		

00105

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE INTERVAL VELOCITY FT/S	25
1056.00	3962.1	3801.1	7199	7302	77.10	166.65	282.00	8075	
1058.00	3970.4	3809.4	7201	7304	76.92	166.30	281.44	8302	
1060.00	3979.1	3818.1	7204	7307	76.73	165.91	280.82	8682	
1062.00	3987.9	3826.9	7207	7310	76.53	165.50	280.19	8796	
1064.00	3996.2	3835.2	7209	7312	76.36	165.16	279.65	8254	
1066.00	4004.2	3843.2	7211	7314	76.20	164.82	279.13	8078	
1068.00	4012.8	3851.8	7213	7316	76.01	164.45	278.55	8532	
1070.00	4020.8	3859.8	7215	7318	75.85	164.13	278.04	8009	
1072.00	4028.8	3867.8	7216	7319	75.69	163.81	277.54	7972	
1074.00	4036.8	3875.8	7217	7320	75.54	163.49	277.04	8007	
1076.00	4044.8	3883.8	7219	7322	75.38	163.17	276.54	8026	
1078.00	4052.9	3891.9	7221	7323	75.22	162.84	276.03	8079	
1080.00	4060.9	3899.9	7222	7324	75.06	162.52	275.53	8034	
1082.00	4069.0	3908.0	7224	7326	74.90	162.20	275.02	8072	
1084.00	4077.1	3916.1	7225	7327	74.74	161.88	274.51	8161	
1086.00	4085.4	3924.4	7227	7329	74.58	161.54	273.98	8267	
1088.00	4093.7	3932.7	7229	7331	74.41	161.21	273.46	8262	
1090.00	4101.9	3940.9	7231	7333	74.25	160.88	272.94	8221	
1092.00	4110.2	3949.2	7233	7335	74.09	160.55	272.42	8278	
1094.00	4118.5	3957.5	7235	7337	73.92	160.21	271.89	8290	
1096.00	4126.6	3965.6	7237	7338	73.76	159.89	271.39	8178	
1098.00	4134.7	3973.7	7238	7340	73.61	159.58	270.90	8053	
1100.00	4142.9	3981.9	7240	7341	73.46	159.26	270.40	8175	
1102.00	4150.8	3989.8	7241	7342	73.31	158.96	269.93	7958	

00106

COMPANY : SANTOS/DELHI & PARTNERS					WELL : TAYLOR SOUTH 1			PAGE 26
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
1104.00	4158.9	3997.9	7243	7344	73.16	158.65	269.44	8083
1106.00	4167.0	4006.0	7244	7345	73.01	158.35	268.96	8057
1108.00	4175.0	4014.0	7246	7346	72.86	158.04	268.48	8068
1110.00	4183.1	4022.1	7247	7348	72.71	157.74	268.00	8090
1112.00	4191.2	4030.2	7249	7349	72.56	157.43	267.51	8121
1114.00	4199.3	4038.3	7250	7351	72.41	157.13	267.03	8070
1116.00	4207.4	4046.4	7252	7352	72.26	156.82	266.55	8115
1118.00	4215.5	4054.5	7253	7353	72.11	156.53	266.08	8049
1120.00	4223.7	4062.7	7255	7355	71.96	156.22	265.60	8192
1122.00	4232.0	4071.0	7257	7357	71.81	155.90	265.10	8294
1124.00	4240.4	4079.4	7259	7359	71.65	155.58	264.59	8391
1126.00	4248.7	4087.7	7261	7361	71.49	155.26	264.09	8329
1128.00	4257.0	4096.0	7262	7362	71.34	154.95	263.59	8287
1130.00	4265.1	4104.1	7264	7364	71.20	154.65	263.12	8141
1132.00	4273.2	4112.2	7265	7365	71.05	154.36	262.65	8132
1134.00	4281.4	4120.4	7267	7367	70.91	154.06	262.18	8160
1136.00	4289.7	4128.7	7269	7368	70.76	153.75	261.69	8300
1138.00	4298.1	4137.1	7271	7370	70.60	153.44	261.19	8422
1140.00	4306.6	4145.6	7273	7372	70.45	153.12	260.69	8455
1142.00	4314.6	4153.6	7274	7374	70.31	152.84	260.24	8033
1144.00	4322.7	4161.7	7276	7375	70.17	152.55	259.78	8110
1146.00	4331.3	4170.3	7278	7377	70.01	152.23	259.27	8562
1148.00	4340.4	4179.4	7281	7381	69.83	151.86	258.69	9097
1150.00	4348.4	4187.4	7283	7382	69.70	151.58	258.24	8071

00107

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 27 INTERVAL VELOCITY FT/S
1152.00	4356.6	4195.6	7284	7383	69.56	151.29	257.78	8185
1154.00	4364.7	4203.7	7286	7385	69.42	151.01	257.33	8112
1156.00	4373.0	4212.0	7287	7386	69.28	150.72	256.87	8236
1158.00	4381.1	4220.1	7289	7388	69.14	150.44	256.42	8121
1160.00	4389.2	4228.2	7290	7389	69.00	150.16	255.98	8077
1162.00	4397.7	4236.7	7292	7391	68.85	149.85	255.49	8501
1164.00	4407.2	4246.2	7296	7395	68.67	149.46	254.86	9553
1166.00	4415.8	4254.8	7298	7397	68.52	149.15	254.37	8521
1168.00	4424.3	4263.3	7300	7399	68.37	148.84	253.88	8572
1170.00	4432.9	4271.9	7302	7401	68.22	148.54	253.39	8539
1172.00	4441.3	4280.3	7304	7403	68.08	148.24	252.92	8434
1174.00	4449.9	4288.9	7306	7406	67.93	147.94	252.43	8583
1176.00	4458.4	4297.4	7308	7408	67.78	147.64	251.95	8511
1178.00	4466.9	4305.9	7310	7410	67.64	147.34	251.48	8484
1180.00	4475.3	4314.3	7312	7411	67.50	147.05	251.01	8425
1182.00	4483.7	4322.7	7314	7413	67.36	146.77	250.56	8358
1184.00	4491.9	4330.9	7316	7415	67.23	146.49	250.12	8225
1186.00	4500.2	4339.2	7317	7416	67.09	146.21	249.68	8276
1188.00	4508.6	4347.6	7319	7418	66.95	145.93	249.22	8397
1190.00	4516.6	4355.6	7320	7419	66.83	145.67	248.81	8007
1192.00	4525.3	4364.3	7323	7421	66.68	145.36	248.32	8769
1194.00	4533.3	4372.3	7324	7422	66.56	145.11	247.91	8003
1196.00	4541.4	4380.4	7325	7423	66.43	144.85	247.50	8082
1198.00	4549.8	4388.8	7327	7425	66.30	144.57	247.05	8353

00108

COMPANY : SANTOS/DELHI & PARTNERS	WELL : TAYLOR SOUTH 1	PAGE 28						
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
1200.00	4558.2	4397.2	7329	7427	66.16	144.30	246.61	8380
1202.00	4566.3	4405.3	7330	7428	66.04	144.03	246.19	8147
1204.00	4574.8	4413.8	7332	7430	65.90	143.75	245.74	8453
1206.00	4582.9	4421.9	7333	7431	65.78	143.49	245.32	8189
1208.00	4591.4	4430.4	7335	7433	65.64	143.22	244.88	8444
1210.00	4599.9	4438.9	7337	7435	65.50	142.93	244.42	8557
1212.00	4608.7	4447.7	7339	7437	65.36	142.64	243.95	8719
1214.00	4617.2	4456.2	7341	7439	65.23	142.35	243.49	8557
1216.00	4625.8	4464.8	7343	7441	65.09	142.07	243.04	8578
1218.00	4634.5	4473.5	7346	7444	64.95	141.78	242.57	8701
1220.00	4643.8	4482.8	7349	7447	64.79	141.45	242.03	9308
1222.00	4652.7	4491.7	7351	7450	64.64	141.15	241.55	8926
1224.00	4661.4	4500.4	7354	7452	64.51	140.86	241.09	8625
1226.00	4669.9	4508.9	7355	7454	64.38	140.59	240.65	8552
1228.00	4679.2	4518.2	7359	7457	64.22	140.27	240.13	9272
1230.00	4688.1	4527.1	7361	7460	64.08	139.97	239.64	8930
1232.00	4696.7	4535.7	7363	7461	63.95	139.70	239.21	8541
1234.00	4705.3	4544.3	7365	7464	63.82	139.42	238.76	8631
1236.00	4713.7	4552.7	7367	7465	63.69	139.16	238.34	8428
1238.00	4722.1	4561.1	7368	7467	63.57	138.90	237.93	8366
1240.00	4730.4	4569.4	7370	7468	63.44	138.65	237.52	8333
1242.00	4738.5	4577.5	7371	7469	63.33	138.41	237.13	8111
1244.00	4746.8	4585.8	7373	7471	63.21	138.16	236.74	8253
1246.00	4755.1	4594.1	7374	7472	63.09	137.92	236.34	8280

00109

COMPANY : SANTOS/DELHI & PARTNERS				WELL : TAYLOR SOUTH 1		PAGE 29		
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
1248.00	4763.3	4602.3	7376	7473	62.97	137.67	235.94	8272
1250.00	4771.7	4610.7	7377	7475	62.85	137.42	235.53	8404
1252.00	4780.2	4619.2	7379	7477	62.73	137.16	235.12	8428
1254.00	4788.5	4627.5	7380	7478	62.61	136.91	234.72	8383
1256.00	4796.8	4635.8	7382	7479	62.49	136.67	234.33	8233
1258.00	4805.0	4644.0	7383	7481	62.38	136.43	233.95	8193
1260.00	4813.2	4652.2	7384	7482	62.26	136.20	233.56	8206
1262.00	4821.6	4660.6	7386	7483	62.15	135.95	233.16	8401
1264.00	4829.8	4668.8	7387	7485	62.03	135.71	232.78	8230
1266.00	4838.1	4677.1	7389	7486	61.92	135.47	232.40	8255
1268.00	4846.3	4685.3	7390	7487	61.80	135.23	232.01	8257
1270.00	4854.5	4693.5	7391	7488	61.69	135.00	231.63	8229
1272.00	4862.8	4701.8	7393	7489	61.58	134.77	231.26	8206
1274.00	4871.0	4710.0	7394	7491	61.47	134.54	230.88	8209
1276.00	4879.2	4718.2	7395	7492	61.36	134.30	230.51	8224
1278.00	4887.5	4726.5	7397	7493	61.24	134.07	230.12	8333
1280.00	4896.0	4735.0	7398	7495	61.13	133.82	229.73	8447
1282.00	4904.2	4743.2	7400	7496	61.02	133.59	229.36	8231
1284.00	4912.4	4751.4	7401	7497	60.91	133.36	228.99	8221
1286.00	4921.2	4760.2	7403	7499	60.78	133.11	228.57	8736
1288.00	4929.4	4768.4	7404	7500	60.67	132.88	228.20	8208
1290.00	4937.7	4776.7	7406	7502	60.56	132.65	227.83	8311
1292.00	4946.2	4785.2	7407	7504	60.45	132.40	227.43	8535
1294.00	4954.5	4793.5	7409	7505	60.34	132.18	227.06	8281

00110

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE 30
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
								8809
1296.00	4963.3	4802.3	7411	7507	60.22	131.92	226.64	9352
1298.00	4972.7	4811.7	7414	7510	60.08	131.63	226.16	9189
1300.00	4981.8	4820.8	7417	7513	59.94	131.35	225.71	9809
1302.00	4991.6	4830.6	7420	7517	59.79	131.03	225.19	9530
1304.00	5001.2	4840.2	7424	7521	59.65	130.73	224.70	9329
1306.00	5010.5	4849.5	7427	7524	59.51	130.44	224.23	9813
1308.00	5020.3	4859.3	7430	7528	59.37	130.13	223.72	9574
1310.00	5029.9	4868.9	7433	7531	59.22	129.83	223.23	9497
1312.00	5039.4	4878.4	7437	7535	59.09	129.54	222.75	9698
1314.00	5049.1	4888.1	7440	7538	58.94	129.24	222.26	9626
1316.00	5058.7	4897.7	7443	7542	58.80	128.94	221.77	9678
1318.00	5068.4	4907.4	7447	7546	58.66	128.64	221.28	9012
1320.00	5077.4	4916.4	7449	7548	58.54	128.39	220.86	8933
1322.00	5086.3	4925.3	7451	7550	58.42	128.13	220.45	9288
1324.00	5095.6	4934.6	7454	7553	58.29	127.86	220.01	9247
1326.00	5104.9	4943.9	7457	7556	58.16	127.60	219.57	9322
1328.00	5114.2	4953.2	7460	7559	58.03	127.32	219.13	9240
1330.00	5123.4	4962.4	7462	7562	57.91	127.06	218.69	9337
1332.00	5132.8	4971.8	7465	7565	57.78	126.79	218.25	9306
1334.00	5142.1	4981.1	7468	7568	57.65	126.52	217.81	9386
1336.00	5151.5	4990.5	7471	7571	57.53	126.25	217.37	9607
1338.00	5161.1	5000.1	7474	7574	57.39	125.97	216.91	9802
1340.00	5170.9	5009.9	7477	7578	57.25	125.68	216.43	9387
1342.00	5180.3	5019.3	7480	7581	57.13	125.41	215.99	

0011

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 31 INTERVAL VELOCITY FT/S
								9331
1344.00	5189.6	5028.6	7483	7584	57.00	125.15	215.56	9835
1346.00	5199.4	5038.4	7487	7588	56.86	124.86	215.08	9979
1348.00	5209.4	5048.4	7490	7592	56.72	124.56	214.59	9902
1350.00	5219.3	5058.3	7494	7596	56.58	124.27	214.11	9751
1352.00	5229.1	5068.1	7497	7600	56.45	123.98	213.64	9771
1354.00	5238.8	5077.8	7500	7603	56.32	123.70	213.18	9954
1356.00	5248.8	5087.8	7504	7607	56.18	123.41	212.70	9890
1358.00	5258.7	5097.7	7508	7611	56.05	123.12	212.22	9740
1360.00	5268.4	5107.4	7511	7615	55.91	122.85	211.77	9825
1362.00	5278.2	5117.2	7514	7618	55.78	122.57	211.31	9689
1364.00	5287.9	5126.9	7517	7622	55.65	122.29	210.86	9953
1366.00	5297.9	5136.9	7521	7626	55.52	122.01	210.39	9580
1368.00	5307.5	5146.5	7524	7629	55.40	121.75	209.96	9339
1370.00	5316.8	5155.8	7527	7632	55.28	121.50	209.55	9364
1372.00	5326.2	5165.2	7529	7635	55.16	121.25	209.14	9411
1374.00	5335.6	5174.6	7532	7638	55.04	121.00	208.73	9467
1376.00	5345.0	5184.0	7535	7641	54.92	120.75	208.31	9596
1378.00	5354.6	5193.6	7538	7644	54.80	120.49	207.89	9457
1380.00	5364.1	5203.1	7541	7647	54.69	120.24	207.48	9590
1382.00	5373.7	5212.7	7544	7650	54.56	119.99	207.06	9708
1384.00	5383.4	5222.4	7547	7653	54.44	119.72	206.63	9565
1386.00	5393.0	5232.0	7550	7656	54.32	119.47	206.21	9967
1388.00	5402.9	5241.9	7553	7660	54.19	119.20	205.76	9743
1390.00	5412.7	5251.7	7556	7664	54.07	118.94	205.33	

00112

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE	32
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
								9906	
1392.00	5422.6	5261.6	7560	7667	53.95	118.67	204.89	9660	
1394.00	5432.2	5271.2	7563	7670	53.83	118.42	204.47	9404	
1396.00	5441.6	5280.6	7565	7673	53.72	118.18	204.08	9409	
1398.00	5451.0	5290.0	7568	7676	53.60	117.94	203.69	9427	
1400.00	5460.5	5299.5	7571	7679	53.49	117.71	203.29	9257	
1402.00	5469.7	5308.7	7573	7681	53.38	117.48	202.92	8849	
1404.00	5478.6	5317.6	7575	7683	53.29	117.27	202.58	8960	
1406.00	5487.5	5326.5	7577	7685	53.19	117.06	202.23	9370	
1408.00	5496.9	5335.9	7579	7688	53.08	116.83	201.84	9599	
1410.00	5506.5	5345.5	7582	7691	52.96	116.59	201.44	10633	
1412.00	5517.1	5356.1	7587	7696	52.82	116.29	200.95	10958	
1414.00	5528.1	5367.1	7591	7701	52.68	115.98	200.43	11140	
1416.00	5539.2	5378.2	7596	7707	52.53	115.65	199.89	11394	
1418.00	5550.6	5389.6	7602	7714	52.37	115.32	199.33	11848	
1420.00	5562.5	5401.5	7608	7721	52.20	114.95	198.73	11203	
1422.00	5573.7	5412.7	7613	7727	52.05	114.63	198.19	11332	
1424.00	5585.0	5424.0	7618	7733	51.90	114.31	197.65	10870	
1426.00	5595.9	5434.9	7623	7739	51.76	114.01	197.15	10833	
1428.00	5606.7	5445.7	7627	7744	51.62	113.71	196.66	10625	
1430.00	5617.3	5456.3	7631	7749	51.49	113.43	196.19	11104	
1432.00	5628.4	5467.4	7636	7754	51.34	113.12	195.68	10981	
1434.00	5639.4	5478.4	7641	7760	51.20	112.82	195.18	10907	
1436.00	5650.3	5489.3	7645	7765	51.07	112.53	194.70	10685	
1438.00	5661.0	5500.0	7650	7770	50.93	112.25	194.23		

00113

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 33 INTERVAL VELOCITY FT/S
1440.00	5671.6	5510.6	7654	7774	50.81	111.98	193.78	10561
1442.00	5682.2	5521.2	7658	7779	50.68	111.71	193.32	10643
1444.00	5692.8	5531.8	7662	7784	50.55	111.44	192.87	10582
1446.00	5703.6	5542.6	7666	7789	50.42	111.16	192.41	10779
1448.00	5714.3	5553.3	7670	7793	50.29	110.88	191.95	10680
1450.00	5724.9	5563.9	7674	7798	50.17	110.61	191.50	10679
1452.00	5735.8	5574.8	7679	7803	50.04	110.33	191.04	10830
1454.00	5746.6	5585.6	7683	7808	49.91	110.06	190.58	10816
1456.00	5757.4	5596.4	7687	7813	49.78	109.78	190.12	10846
1458.00	5768.9	5607.9	7693	7819	49.64	109.48	189.61	11437
1460.00	5780.9	5619.9	7698	7826	49.48	109.14	189.05	11989
1462.00	5793.4	5632.4	7705	7835	49.31	108.78	188.44	12511
1464.00	5806.1	5645.1	7712	7843	49.14	108.41	187.81	12716
1466.00	5818.6	5657.6	7718	7851	48.98	108.05	187.22	12466
1468.00	5831.4	5670.4	7725	7860	48.80	107.68	186.60	12800
1470.00	5844.4	5683.4	7732	7870	48.62	107.30	185.95	13021
1472.00	5856.9	5695.9	7739	7878	48.46	106.95	185.36	12567
1474.00	5870.0	5709.0	7746	7887	48.28	106.57	184.72	13065
1476.00	5882.6	5721.6	7753	7896	48.12	106.22	184.14	12572
1478.00	5894.9	5733.9	7759	7903	47.97	105.88	183.58	12360
1480.00	5907.4	5746.4	7765	7911	47.81	105.54	183.01	12439
1482.00	5920.0	5759.0	7772	7919	47.65	105.20	182.43	12641
1484.00	5933.1	5772.1	7779	7929	47.48	104.83	181.81	13073
1486.00	5946.1	5785.1	7786	7938	47.31	104.47	181.20	13008

00114

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 34 INTERVAL VELOCITY FT/S
1488.00	5958.9	5797.9	7793	7946	47.15	104.12	180.62	12759
1490.00	5971.7	5810.7	7800	7955	46.99	103.78	180.04	12794
1492.00	5984.5	5823.5	7806	7963	46.83	103.43	179.46	12819
1494.00	5997.3	5836.3	7813	7972	46.67	103.09	178.88	12875
1496.00	6010.1	5849.1	7820	7980	46.51	102.75	178.31	12784
1498.00	6022.5	5861.5	7826	7988	46.37	102.43	177.78	12402
1500.00	6034.9	5873.9	7832	7995	46.22	102.12	177.26	12379
1502.00	6047.3	5886.3	7838	8003	46.08	101.81	176.73	12383
1504.00	6060.3	5899.3	7845	8011	45.92	101.47	176.16	13012
1506.00	6073.5	5912.5	7852	8020	45.76	101.12	175.57	13230
1508.00	6086.4	5925.4	7859	8029	45.60	100.79	175.01	12874
1510.00	6099.1	5938.1	7865	8037	45.45	100.47	174.47	12731
1512.00	6111.9	5950.9	7872	8045	45.31	100.15	173.93	12772
1514.00	6124.3	5963.3	7878	8052	45.17	99.85	173.43	12427
1516.00	6136.9	5975.9	7884	8060	45.02	99.54	172.91	12530
1518.00	6149.9	5988.9	7891	8069	44.87	99.21	172.36	13074
1520.00	6163.0	6002.0	7897	8077	44.72	98.89	171.80	13072
1522.00	6175.7	6014.7	7904	8085	44.58	98.58	171.28	12730
1524.00	6188.5	6027.5	7910	8093	44.44	98.27	170.77	12761
1526.00	6200.8	6039.8	7916	8100	44.30	97.98	170.29	12303
1528.00	6213.5	6052.5	7922	8108	44.17	97.68	169.78	12660
1530.00	6226.9	6065.9	7929	8117	44.01	97.35	169.22	13412
1532.00	6240.4	6079.4	7937	8126	43.85	97.01	168.64	13546
1534.00	6254.0	6093.0	7944	8136	43.70	96.67	168.07	13609

00115

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 35 INTERVAL VELOCITY FT/S
1536.00	6267.6	6106.6	7951	8145	43.54	96.34	167.50	13564
1538.00	6281.2	6120.2	7959	8155	43.39	96.00	166.94	13568
1540.00	6294.5	6133.5	7966	8163	43.24	95.69	166.40	13319
1542.00	6307.2	6146.2	7972	8171	43.11	95.40	165.92	12712
1544.00	6319.9	6158.9	7978	8178	42.98	95.11	165.43	12713
1546.00	6333.2	6172.2	7985	8187	42.83	94.80	164.90	13321
1548.00	6346.7	6185.7	7992	8196	42.69	94.48	164.37	13436
1550.00	6360.2	6199.2	7999	8205	42.54	94.16	163.83	13538
1552.00	6373.6	6212.6	8006	8214	42.40	93.86	163.31	13351
1554.00	6387.0	6226.0	8013	8223	42.25	93.54	162.78	13467
1556.00	6400.3	6239.3	8020	8231	42.11	93.24	162.27	13283
1558.00	6413.6	6252.6	8027	8240	41.97	92.94	161.76	13335
1560.00	6427.2	6266.2	8034	8249	41.83	92.63	161.24	13541
1562.00	6440.4	6279.4	8040	8257	41.70	92.34	160.75	13169
1564.00	6453.6	6292.6	8047	8265	41.56	92.05	160.25	13262
1566.00	6467.0	6306.0	8054	8274	41.43	91.76	159.75	13369
1568.00	6480.6	6319.6	8061	8283	41.29	91.45	159.24	13569
1570.00	6494.0	6333.0	8068	8292	41.15	91.16	158.74	13482
1572.00	6507.4	6346.4	8074	8300	41.02	90.87	158.25	13321
1574.00	6520.6	6359.6	8081	8308	40.89	90.59	157.77	13290
1576.00	6534.1	6373.1	8088	8317	40.75	90.30	157.28	13447
1578.00	6547.8	6386.8	8095	8326	40.62	90.00	156.77	13664
1580.00	6561.4	6400.4	8102	8335	40.48	89.70	156.27	13653
1582.00	6574.8	6413.8	8108	8343	40.35	89.42	155.80	13378

00116

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE 36
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
1584.00	6588.4	6427.4	8115	8352	40.22	89.14	155.31	13598
1586.00	6602.5	6441.5	8123	8361	40.08	88.83	154.79	14066
1588.00	6616.8	6455.8	8131	8371	39.93	88.51	154.25	14356
1590.00	6631.1	6470.1	8138	8382	39.79	88.20	153.72	14281
1592.00	6645.2	6484.2	8146	8391	39.65	87.90	153.21	14091
1594.00	6659.2	6498.2	8153	8401	39.51	87.60	152.70	14061
1596.00	6674.3	6513.3	8162	8412	39.36	87.26	152.12	15057
1598.00	6688.7	6527.7	8170	8423	39.22	86.95	151.59	14440
1600.00	6702.7	6541.7	8177	8432	39.08	86.66	151.10	13988
1602.00	6716.3	6555.3	8184	8440	38.96	86.39	150.64	13580
1604.00	6729.6	6568.6	8190	8448	38.84	86.14	150.21	13248
1606.00	6742.1	6581.1	8196	8454	38.74	85.91	149.82	12583
1608.00	6754.3	6593.3	8201	8460	38.64	85.69	149.46	12198
1610.00	6766.0	6605.0	8205	8465	38.55	85.50	149.13	11619
1612.00	6777.7	6616.7	8209	8469	38.46	85.31	148.80	11713
1614.00	6789.5	6628.5	8214	8474	38.37	85.11	148.47	11792
1616.00	6801.1	6640.1	8218	8479	38.28	84.92	148.14	11626
1618.00	6813.8	6652.8	8223	8485	38.18	84.69	147.76	12669
1620.00	6824.8	6663.8	8227	8489	38.10	84.52	147.47	11091
1622.00	6837.0	6676.0	8232	8495	38.00	84.32	147.12	12173
1624.00	6848.9	6687.9	8236	8500	37.91	84.12	146.79	11857
1626.00	6861.0	6700.0	8241	8505	37.82	83.92	146.44	12156
1628.00	6873.7	6712.7	8247	8511	37.72	83.70	146.07	12681
1630.00	6885.8	6724.8	8251	8517	37.63	83.50	145.73	12129

00117

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	PAGE 37
1632.00	6897.9	6736.9	8256	8522	37.54	83.30	145.39	12030	
1634.00	6909.9	6748.9	8261	8527	37.44	83.10	145.06	12060	
1636.00	6922.0	6761.0	8265	8532	37.35	82.91	144.72	12069	
1638.00	6935.0	6774.0	8271	8539	37.25	82.68	144.34	13013	
1640.00	6948.3	6787.3	8277	8547	37.14	82.44	143.94	13290	
1642.00	6961.5	6800.5	8283	8554	37.04	82.21	143.54	13185	
1644.00	6974.3	6813.3	8289	8560	36.94	82.00	143.18	12802	
1646.00	6987.7	6826.7	8295	8568	36.83	81.76	142.77	13445	
1648.00	7001.1	6840.1	8301	8575	36.72	81.53	142.38	13331	
1650.00	7015.2	6854.2	8308	8584	36.60	81.27	141.93	14118	
1652.00	7029.0	6868.0	8315	8593	36.49	81.02	141.51	13820	
1654.00	7042.4	6881.4	8321	8600	36.39	80.79	141.12	13401	
1656.00	7056.0	6895.0	8327	8608	36.28	80.56	140.72	13599	
1658.00	7070.2	6909.2	8334	8617	36.16	80.30	140.29	14162	
1660.00	7084.2	6923.2	8341	8625	36.05	80.06	139.86	14037	
1662.00	7098.1	6937.1	8348	8633	35.94	79.82	139.45	13860	
1664.00	7111.0	6950.0	8353	8640	35.84	79.61	139.10	12967	
1666.00	7124.2	6963.2	8359	8647	35.74	79.39	138.73	13159	
1668.00	7137.8	6976.8	8365	8654	35.64	79.16	138.34	13625	
1670.00	7151.6	6990.6	8372	8663	35.53	78.93	137.94	13832	
1672.00	7165.8	7004.8	8379	8671	35.42	78.68	137.52	14201	
1674.00	7179.7	7018.7	8386	8679	35.31	78.45	137.12	13863	
1676.00	7192.4	7031.4	8391	8685	35.22	78.26	136.80	12645	
1678.00	7205.5	7044.5	8396	8692	35.13	78.05	136.44	13195	

00118

COMPANY : SANTOS/DELHI & PARTNERS	WELL : TAYLOR	SOUTH 1	PAGE 38					
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
1680.00	7218.3	7057.3	8402	8698	35.04	77.86	136.11	12774
1682.00	7231.5	7070.5	8407	8705	34.95	77.65	135.76	13150
1684.00	7244.8	7083.8	8413	8711	34.85	77.45	135.40	13318
1686.00	7258.1	7097.1	8419	8718	34.76	77.24	135.05	13332
1688.00	7271.6	7110.6	8425	8726	34.66	77.03	134.69	13470
1690.00	7284.6	7123.6	8430	8732	34.57	76.83	134.35	12958
1692.00	7297.4	7136.4	8435	8738	34.48	76.64	134.03	12852
1694.00	7310.6	7149.6	8441	8744	34.39	76.44	133.69	13229
1696.00	7323.6	7162.6	8446	8751	34.30	76.25	133.36	12963
1698.00	7336.2	7175.2	8451	8756	34.22	76.07	133.05	12571
1700.00	7348.9	7187.9	8456	8762	34.14	75.89	132.74	12778
1702.00	7361.9	7200.9	8462	8768	34.05	75.70	132.41	12994
1704.00	7375.0	7214.0	8467	8774	33.96	75.50	132.08	13102
1706.00	7387.8	7226.8	8472	8780	33.88	75.32	131.77	12736
1708.00	7400.3	7239.3	8477	8785	33.80	75.15	131.48	12508
1710.00	7413.2	7252.2	8482	8791	33.72	74.97	131.16	12932
1712.00	7426.3	7265.3	8487	8798	33.63	74.78	130.84	13034
1714.00	7439.0	7278.0	8492	8803	33.55	74.60	130.54	12787
1716.00	7451.5	7290.5	8497	8809	33.47	74.43	130.25	12493
1718.00	7464.3	7303.3	8502	8814	33.39	74.25	129.95	12773
1720.00	7477.6	7316.6	8508	8821	33.30	74.06	129.62	13306
1722.00	7491.0	7330.0	8513	8827	33.22	73.87	129.29	13363
1724.00	7504.3	7343.3	8519	8834	33.13	73.68	128.97	13322
1726.00	7517.0	7356.0	8524	8839	33.05	73.51	128.68	12708

00119

COMPANY : SANTOS/DELHI & PARTNERS	PAGE 39							
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
1728.00	7530.0	7369.0	8529	8845	32.97	73.34	128.37	12975
1730.00	7542.9	7381.9	8534	8851	32.89	73.16	128.07	12935
1732.00	7556.3	7395.3	8540	8858	32.80	72.97	127.75	13417
1734.00	7570.7	7409.7	8546	8866	32.71	72.76	127.38	14395
1736.00	7585.5	7424.5	8554	8875	32.60	72.53	126.99	14761
1738.00	7600.5	7439.5	8561	8885	32.50	72.30	126.59	15021
1740.00	7614.8	7453.8	8568	8893	32.40	72.09	126.23	14323
1742.00	7628.2	7467.2	8573	8899	32.32	71.91	125.92	13327
1744.00	7642.2	7481.2	8579	8907	32.23	71.71	125.58	14059
1746.00	7656.7	7495.7	8586	8915	32.13	71.50	125.22	14501
1748.00	7671.7	7510.7	8593	8925	32.03	71.27	124.83	14987
1750.00	7686.7	7525.7	8601	8934	31.93	71.05	124.45	14988
1752.00	7700.9	7539.9	8607	8942	31.84	70.85	124.11	14218
1754.00	7715.7	7554.7	8614	8951	31.74	70.63	123.73	14826
1756.00	7730.6	7569.6	8621	8960	31.64	70.42	123.36	14900
1758.00	7745.7	7584.7	8629	8969	31.54	70.20	122.99	15045
1760.00	7760.2	7599.2	8635	8977	31.45	69.99	122.64	14503
1762.00	7774.5	7613.5	8642	8985	31.36	69.80	122.30	14365
1764.00	7788.7	7627.7	8648	8993	31.27	69.60	121.97	14201
1766.00	7803.3	7642.3	8655	9001	31.18	69.40	121.62	14579
1768.00	7817.7	7656.7	8661	9009	31.09	69.21	121.29	14380
1770.00	7832.3	7671.3	8668	9017	31.00	69.01	120.95	14542
1772.00	7846.8	7685.8	8675	9025	30.91	68.81	120.61	14547
1774.00	7861.2	7700.2	8681	9033	30.82	68.62	120.27	14440

00120

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE	40
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
								15135	
1776.00	7876.4	7715.4	8688	9042	30.72	68.41	119.91	14902	
1778.00	7891.3	7730.3	8695	9051	30.63	68.21	119.56	14781	
1780.00	7906.1	7745.1	8702	9059	30.54	68.01	119.22	14445	
1782.00	7920.5	7759.5	8709	9067	30.45	67.82	118.89	14878	
1784.00	7935.4	7774.4	8716	9076	30.36	67.62	118.55	15039	
1786.00	7950.4	7789.4	8723	9085	30.27	67.42	118.20	15167	
1788.00	7965.6	7804.6	8730	9094	30.18	67.21	117.85	15099	
1790.00	7980.7	7819.7	8737	9103	30.09	67.01	117.50	14594	
1792.00	7995.3	7834.3	8744	9111	30.00	66.82	117.18	15045	
1794.00	8010.3	7849.3	8751	9119	29.91	66.63	116.84	15002	
1796.00	8025.3	7864.3	8758	9128	29.82	66.43	116.50	14810	
1798.00	8040.1	7879.1	8764	9136	29.74	66.24	116.18	14985	
1800.00	8055.1	7894.1	8771	9145	29.65	66.05	115.85	14171	
1802.00	8069.3	7908.3	8777	9152	29.57	65.88	115.55	15278	
1804.00	8084.6	7923.6	8784	9161	29.48	65.68	115.21	15247	
1806.00	8099.8	7938.8	8792	9170	29.39	65.48	114.87	14925	
1808.00	8114.7	7953.7	8798	9178	29.31	65.30	114.55	15090	
1810.00	8129.8	7968.8	8805	9187	29.22	65.11	114.22	14566	
1812.00	8144.4	7983.4	8812	9195	29.14	64.93	113.92	15387	
1814.00	8159.8	7998.8	8819	9204	29.05	64.73	113.58	15221	
1816.00	8175.0	8014.0	8826	9213	28.96	64.54	113.25	14900	
1818.00	8189.9	8028.9	8833	9221	28.88	64.36	112.94	14698	
1820.00	8204.6	8043.6	8839	9229	28.80	64.19	112.64	14216	
1822.00	8218.8	8057.8	8845	9236	28.73	64.02	112.36		

00121

COMPANY : TWO-WAY TRAVEL TIME FROM SRD MS	SANTOS/DELHI & PARTNERS MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	WELL RMS VELOCITY FT/S	: TAYLOR FIRST NORMAL MOVEOUT MS	SOUTH 1 SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	PAGE 41 INTERVAL VELOCITY FT/S
1824.00	8233.7	8072.7	8852	9244	28.65	63.85	112.05	14843
1826.00	8247.9	8086.9	8858	9251	28.57	63.69	111.77	14267
1828.00	8261.8	8100.8	8863	9257	28.51	63.53	111.51	13859
1830.00	8276.4	8115.4	8869	9264	28.43	63.37	111.22	14572
1832.00	8290.4	8129.4	8875	9271	28.36	63.21	110.95	14020
1834.00	8304.8	8143.8	8881	9278	28.28	63.05	110.67	14456
1836.00	8319.7	8158.7	8888	9286	28.21	62.88	110.37	14890
1838.00	8334.7	8173.7	8894	9294	28.13	62.70	110.07	14980
1840.00	8349.9	8188.9	8901	9303	28.05	62.52	109.77	15208
1842.00	8365.2	8204.2	8908	9311	27.97	62.34	109.46	15306
1844.00	8381.0	8220.0	8915	9321	27.88	62.15	109.13	15775
1846.00	8396.5	8235.5	8923	9330	27.80	61.97	108.82	15486
1848.00	8411.9	8250.9	8930	9338	27.72	61.79	108.51	15453
1850.00	8427.7	8266.7	8937	9348	27.63	61.61	108.18	15783
1852.00	8443.4	8282.4	8944	9357	27.55	61.43	107.87	15639
1854.00	8458.8	8297.8	8951	9366	27.47	61.25	107.56	15475
1856.00	8474.1	8313.1	8958	9374	27.39	61.08	107.27	15312
1858.00	8488.6	8327.6	8964	9381	27.32	60.92	107.00	14456
1860.00	8503.8	8342.8	8971	9389	27.24	60.76	106.71	15176
1862.00	8519.3	8358.3	8978	9398	27.17	60.58	106.41	15501
1864.00	8534.8	8373.8	8985	9407	27.09	60.41	106.11	15542
1866.00	8550.3	8389.3	8992	9415	27.01	60.24	105.82	15523
1868.00	8565.8	8404.8	8999	9424	26.93	60.07	105.52	15479
1870.00	8581.4	8420.4	9006	9433	26.85	59.89	105.22	15606

00122

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR	SOUTH 1		PAGE	42
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
									15558
1872.00	8597.0	8436.0	9013	9441	26.78	59.72	104.93		15735
1874.00	8612.7	8451.7	9020	9450	26.70	59.55	104.63		15133
1876.00	8627.9	8466.9	9026	9458	26.63	59.39	104.36		15487
1878.00	8643.3	8482.3	9033	9467	26.55	59.23	104.07		15588
1880.00	8658.9	8497.9	9040	9475	26.47	59.06	103.78		15614
1882.00	8674.5	8513.5	9047	9484	26.40	58.89	103.49		10070
1884.00	8684.6	8523.6	9048	9484	26.37	58.82	103.37		14650
1886.00	8699.3	8538.3	9054	9491	26.30	58.68	103.12		13703
1888.00	8713.0	8552.0	9059	9497	26.24	58.55	102.90		14566
1890.00	8727.5	8566.5	9065	9504	26.18	58.41	102.66		14393
1892.00	8741.9	8580.9	9071	9510	26.12	58.27	102.42		14477
1894.00	8756.4	8595.4	9076	9517	26.05	58.13	102.18		10434
1896.00	8766.8	8605.8	9078	9518	26.02	58.06	102.05		8105
1898.00	8774.9	8613.9	9077	9516	26.00	58.02	101.98		13709
1900.00	8788.6	8627.6	9082	9522	25.95	57.89	101.77		12097
1902.00	8800.7	8639.7	9085	9525	25.90	57.80	101.60		14657
1904.00	8815.4	8654.4	9091	9532	25.84	57.66	101.36		12186
1906.00	8827.6	8666.6	9094	9535	25.79	57.56	101.19		12867
1908.00	8840.5	8679.5	9098	9539	25.75	57.45	101.00		13456
1910.00	8853.9	8692.9	9103	9544	25.69	57.34	100.80		13611
1912.00	8867.5	8706.5	9107	9549	25.64	57.22	100.60		12062
1914.00	8879.6	8718.6	9110	9552	25.60	57.12	100.44		10042
1916.00	8889.6	8728.6	9111	9553	25.57	57.06	100.32		11478
1918.00	8901.1	8740.1	9114	9555	25.53	56.98	100.18		

00123

COMPANY : SANTOS/DELHI & PARTNERS		WELL : TAYLOR		SOUTH 1		PAGE 43		
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
								8155
1920.00	8909.3	8748.3	9113	9553	25.51	56.93	100.11	12235
1922.00	8921.5	8760.5	9116	9557	25.47	56.84	99.94	13826
1924.00	8935.3	8774.3	9121	9562	25.41	56.72	99.74	13180
1926.00	8948.5	8787.5	9125	9567	25.36	56.61	99.55	7285
1928.00	8955.8	8794.8	9123	9564	25.35	56.58	99.49	11512
1930.00	8967.3	8806.3	9126	9567	25.31	56.49	99.35	13225
1932.00	8980.5	8819.5	9130	9571	25.26	56.38	99.16	10335
1934.00	8990.9	8829.9	9131	9572	25.23	56.32	99.04	14746
1936.00	9005.6	8844.6	9137	9579	25.17	56.18	98.81	11660
1938.00	9017.3	8856.3	9140	9581	25.13	56.10	98.67	14821
1940.00	9032.1	8871.1	9145	9588	25.07	55.96	98.43	12524
1942.00	9044.6	8883.6	9149	9592	25.03	55.87	98.26	13827
1944.00	9058.4	8897.4	9154	9597	24.97	55.75	98.06	12813
1946.00	9071.3	8910.3	9158	9601	24.93	55.65	97.89	13728
1948.00	9085.0	8924.0	9162	9606	24.88	55.54	97.69	14532
1950.00	9099.5	8938.5	9168	9612	24.82	55.41	97.47	11653
1952.00	9111.2	8950.2	9170	9615	24.78	55.33	97.33	14840
1954.00	9126.0	8965.0	9176	9621	24.72	55.20	97.10	15243
1956.00	9141.2	8980.2	9182	9629	24.66	55.06	96.86	14303
1958.00	9155.5	8994.5	9187	9635	24.60	54.94	96.65	14199
1960.00	9169.7	9008.7	9193	9640	24.55	54.82	96.44	13657
1962.00	9183.4	9022.4	9197	9645	24.50	54.71	96.25	13514
1964.00	9196.9	9035.9	9202	9650	24.45	54.60	96.07	13316
1966.00	9210.2	9049.2	9206	9655	24.40	54.50	95.89	

00124

COMPANY : SANTOS/DELHI & PARTNERS				WELL	: TAYLOR SOUTH 1			PAGE	44
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S	
								13788	
1968.00	9224.0	9063.0	9210	9660	24.35	54.39	95.70	13965	
1970.00	9238.0	9077.0	9215	9665	24.30	54.27	95.50	14865	
1972.00	9252.9	9091.9	9221	9672	24.25	54.15	95.28	12174	
1974.00	9265.0	9104.0	9224	9675	24.21	54.06	95.13	15215	
1976.00	9280.2	9119.2	9230	9682	24.15	53.93	94.90	14056	
1978.00	9294.3	9133.3	9235	9687	24.10	53.82	94.71	13891	
1980.00	9308.2	9147.2	9240	9692	24.05	53.71	94.52	14184	
1982.00	9322.4	9161.4	9245	9698	24.00	53.59	94.32	13944	
1984.00	9336.3	9175.3	9249	9703	23.95	53.48	94.13	14244	
1986.00	9350.6	9189.6	9254	9709	23.89	53.37	93.93	13600	
1988.00	9364.2	9203.2	9259	9713	23.85	53.27	93.75	13082	
1990.00	9377.2	9216.2	9263	9717	23.80	53.17	93.59	13474	
1992.00	9390.7	9229.7	9267	9722	23.76	53.07	93.41	13394	
1994.00	9404.1	9243.1	9271	9726	23.71	52.97	93.24	13947	
1996.00	9418.1	9257.1	9276	9731	23.67	52.86	93.06	13771	
1998.00	9431.8	9270.8	9280	9736	23.62	52.76	92.88	14433	
2000.00	9446.3	9285.3	9285	9742	23.57	52.65	92.68	14602	
2002.00	9460.9	9299.9	9291	9748	23.52	52.53	92.48	13658	
2004.00	9474.5	9313.5	9295	9753	23.47	52.43	92.30	15183	
2006.00	9489.7	9328.7	9301	9760	23.41	52.31	92.09	15063	
2008.00	9504.8	9343.8	9307	9767	23.36	52.18	91.88	14010	
2010.00	9518.8	9357.8	9311	9772	23.31	52.08	91.69	14354	
2012.00	9533.1	9372.1	9316	9777	23.26	51.97	91.50	13675	
2014.00	9546.8	9385.8	9321	9782	23.22	51.87	91.33		

00125

COMPANY : SANTOS/DELHI & PARTNERS	WELL	: TAYLOR	SOUTH 1		PAGE	45		
TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB FT	VERTICAL DEPTH FROM SRD FT	AVERAGE VELOCITY SRD/GEO FT/S	RMS VELOCITY FT/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY FT/S
2016.00	9560.7	9399.7	9325	9787	23.17	51.77	91.16	13894
2018.00	9574.9	9413.9	9330	9792	23.12	51.66	90.97	14242
2020.00	9589.1	9428.1	9335	9798	23.08	51.56	90.79	14186
2022.00	9604.6	9443.6	9341	9805	23.02	51.43	90.57	15436
2024.00	9620.4	9459.4	9347	9813	22.96	51.30	90.35	15836
2026.00	9635.6	9474.6	9353	9819	22.91	51.18	90.14	15245
2028.00	9650.7	9489.7	9359	9826	22.85	51.07	89.93	15083
2030.00	9665.5	9504.5	9364	9832	22.80	50.96	89.74	14734
2032.00	9681.5	9520.5	9371	9840	22.74	50.82	89.51	16038
2034.00	9697.7	9536.7	9377	9848	22.68	50.69	89.28	16171
2036.00	9713.8	9552.8	9384	9856	22.62	50.56	89.05	16129
2038.00	9729.4	9568.4	9390	9864	22.57	50.44	88.84	15582

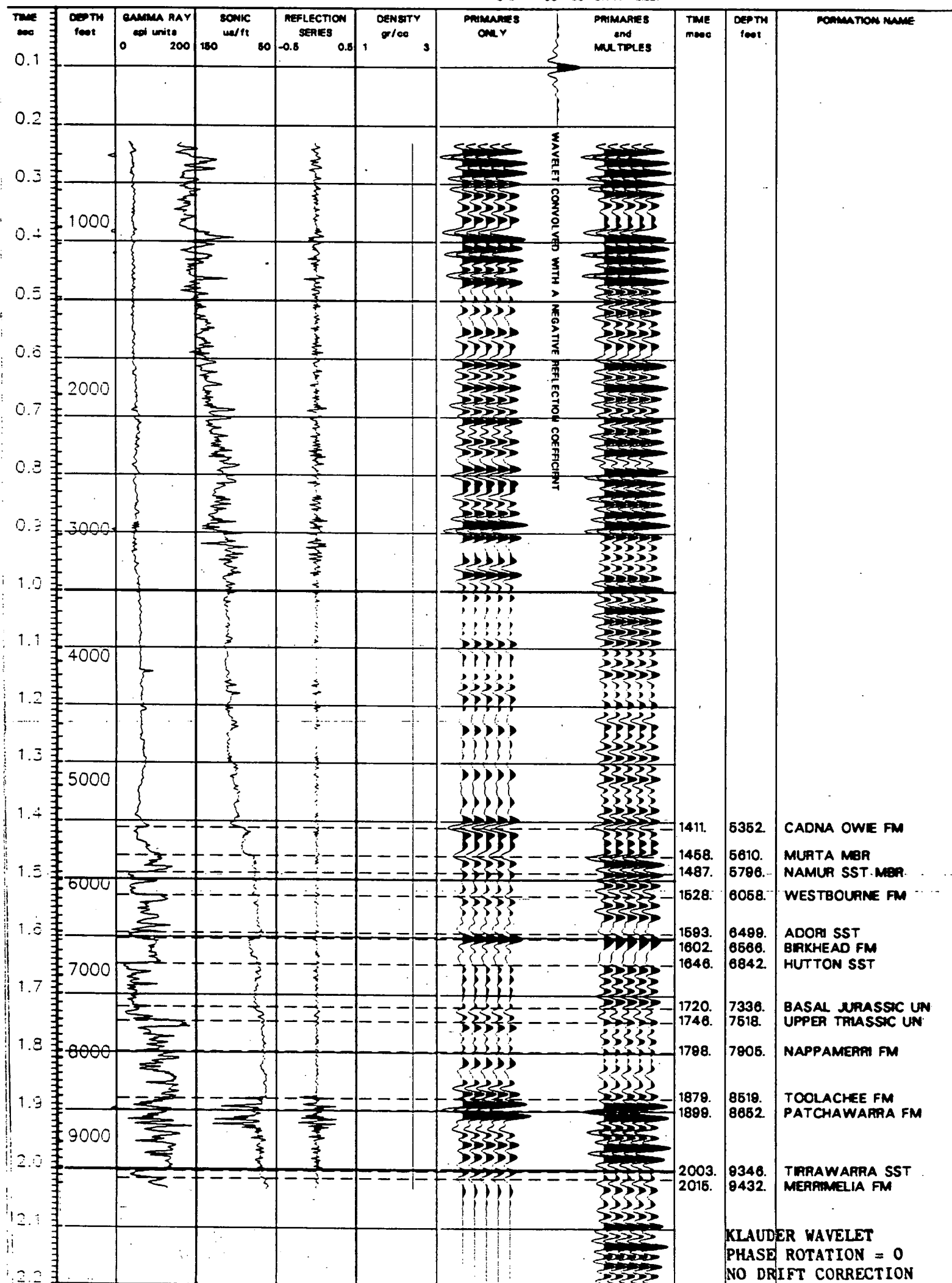
00126

Company: SANTOS/DELHI & PARTNERS
Well: TAYLOR SOUTH #1
Field: BOOKABOURDIE
Location: LINE:85-XZG 8TN:390 12.8m W

KLAUDER WAVELET
PHASE ROTATION = 0
REFLECTION SERIES FROM SONIC * DENSITY
NO DRIFT CORRECTION APPLIED.

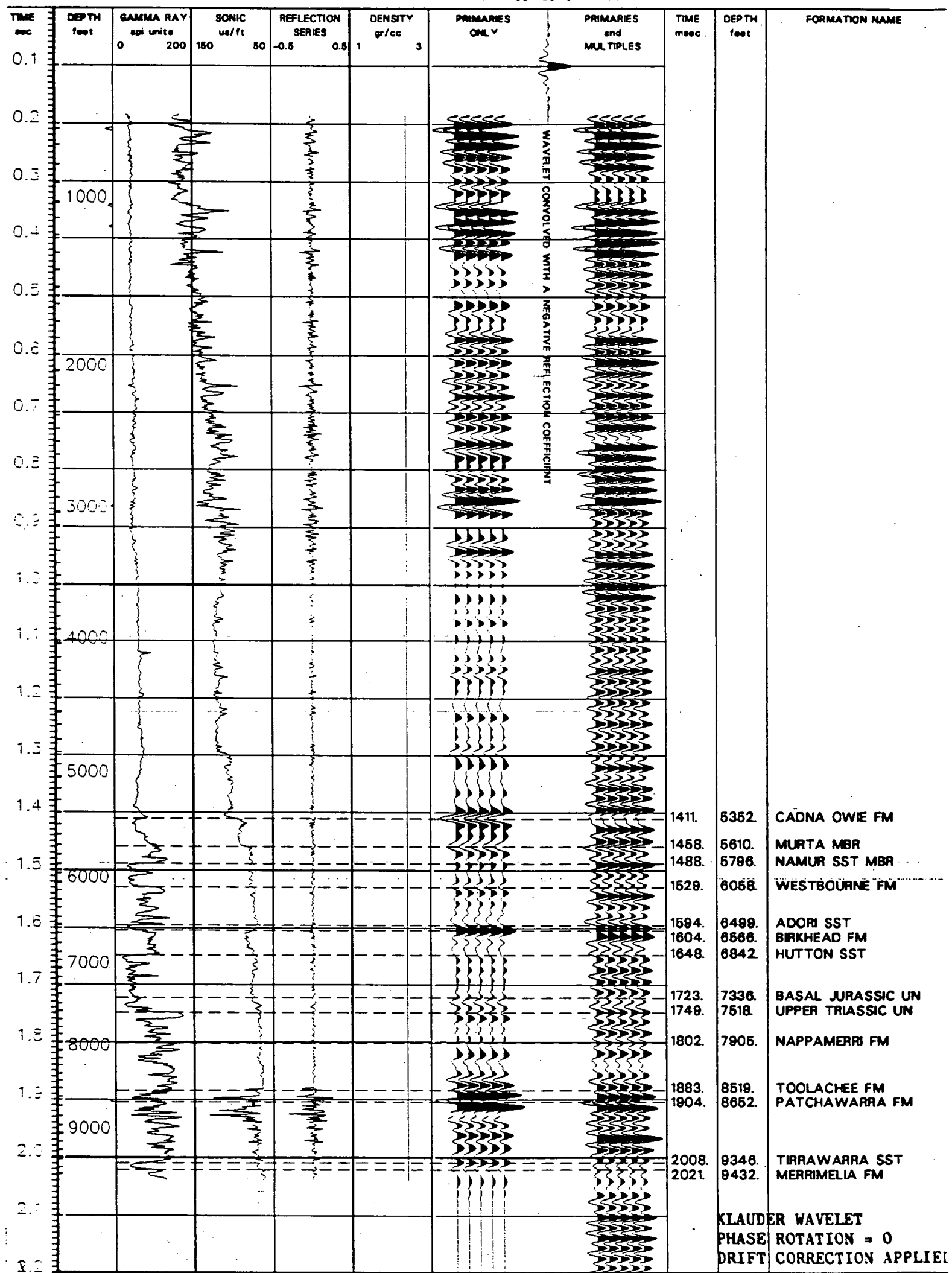
00127

Seismic Engineering



**KLAUDER WAVELET
PHASE ROTATION = 0
REFLECTION SERIES FROM SONIC • DENSITY
DRIFT CORRECTION APPLIED.**

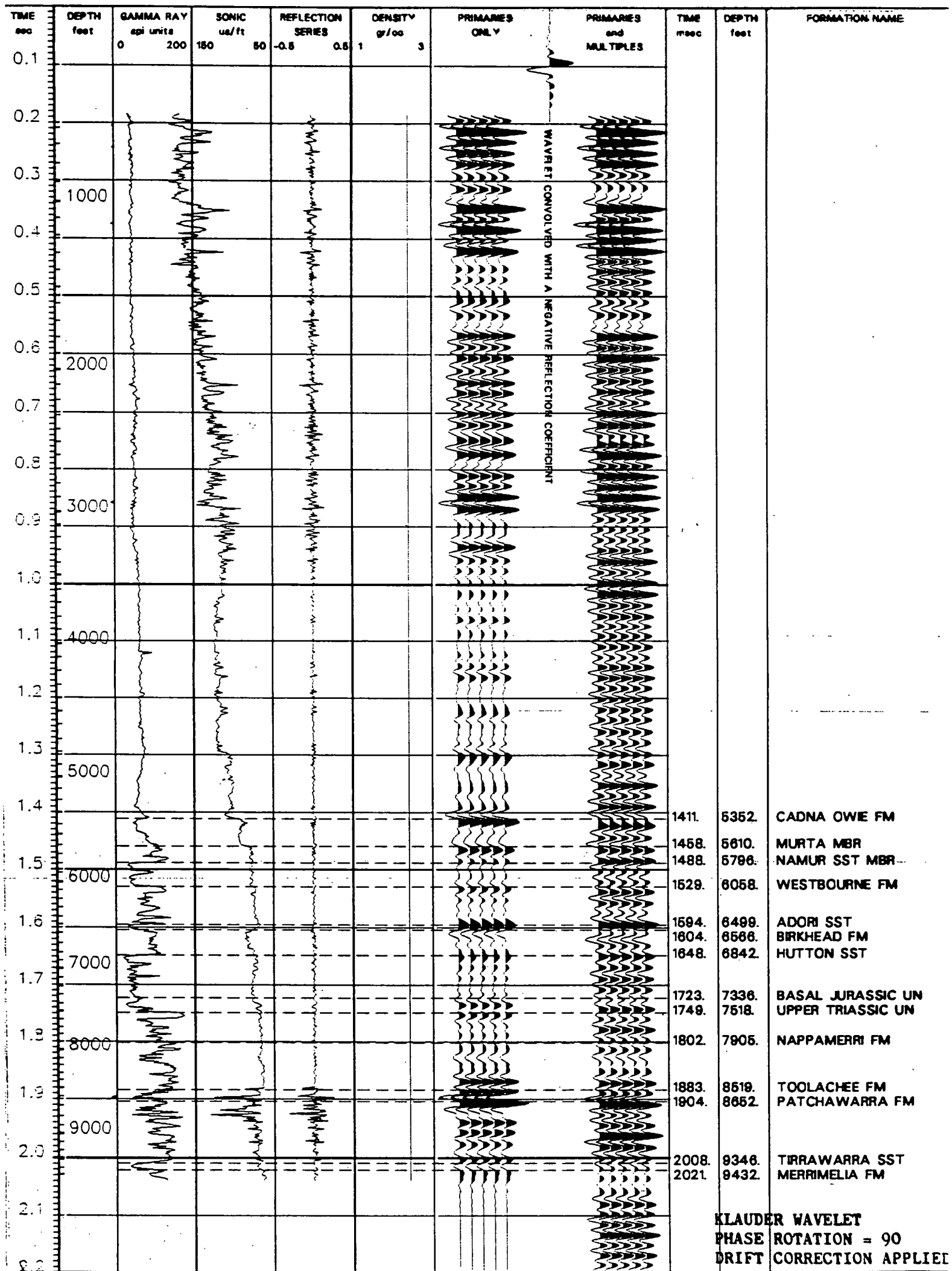
Schlumberger



**KLAUDER WAVELET
PHASE ROTATION = 90
REFLECTION SERIES FROM SONIC * DENSITY
DRIFT CORRECTION APPLIED**

00129

Solutions:

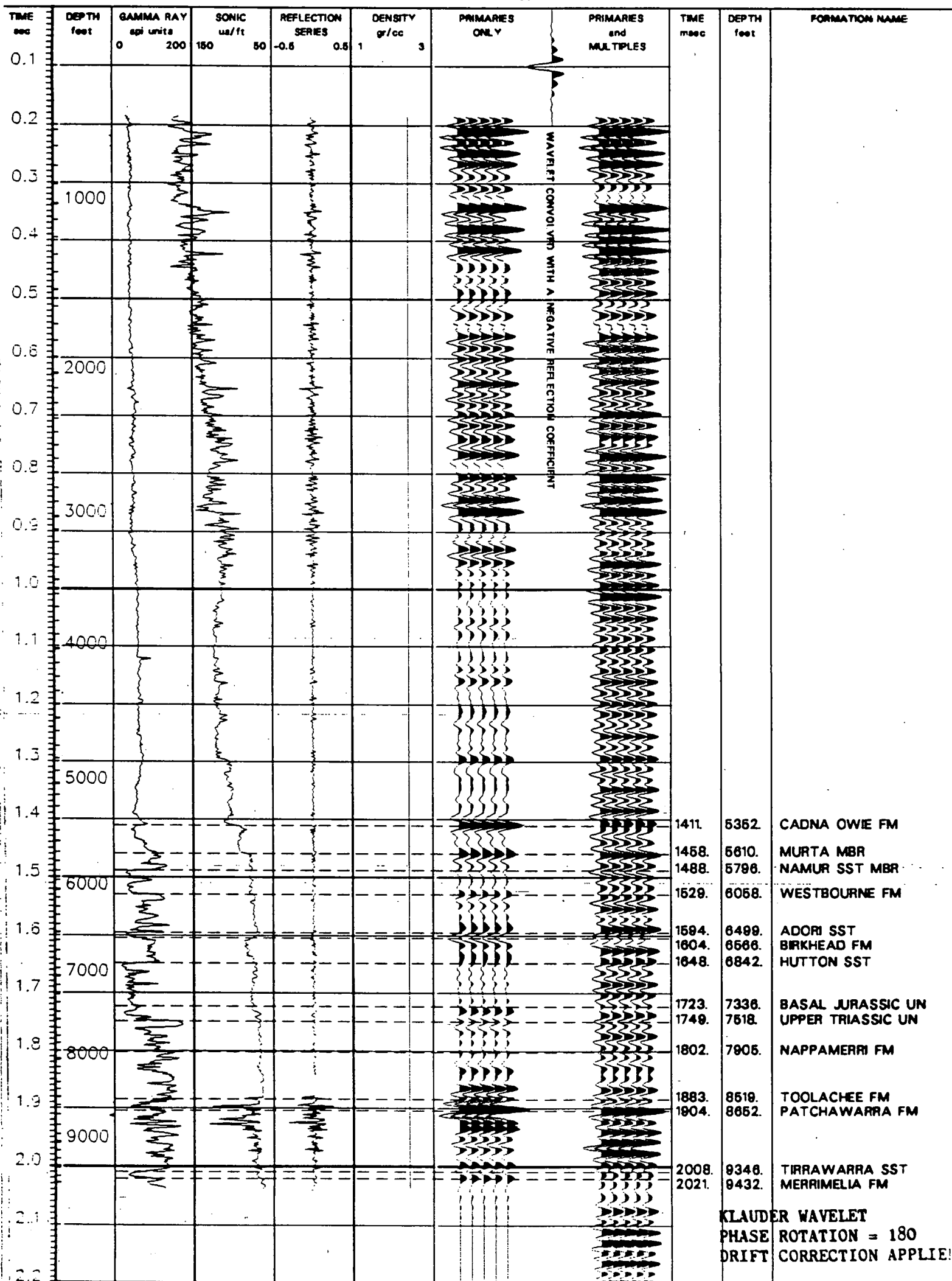


Company: SANTOS/DELHI & PARTNERS
 Well: TAYLOR SOUTH #1
 Field: BOOKABOURDIE
 Location: LINE:85-XZG STN:390 12.8m W

KLAUDER WAVELET
 PHASE ROTATION = 180
 REFLECTION SERIES FROM SONIC * DENSITY
 DRIFT CORRECTION APPLIED.

00130

Schlumberger

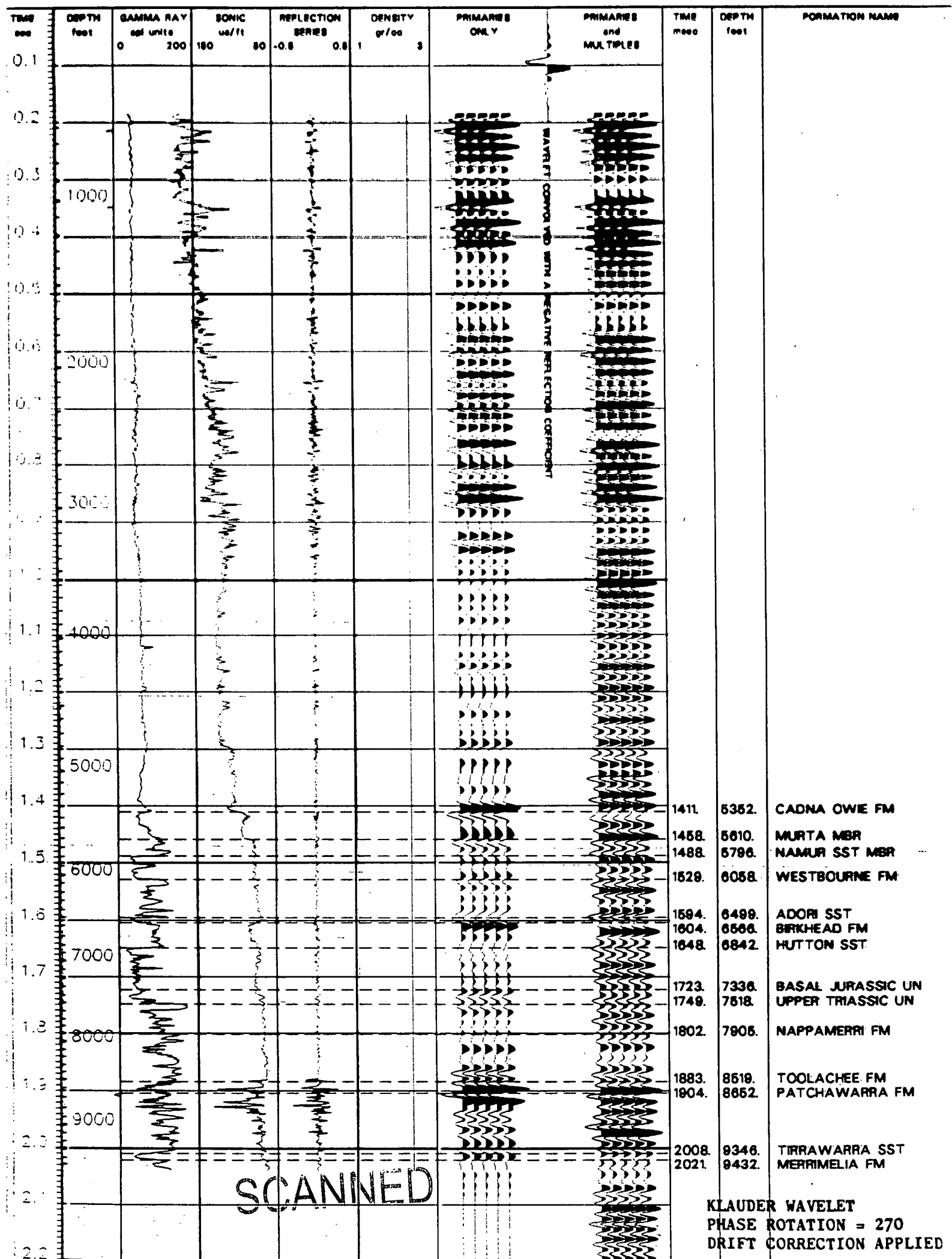


Company: SANTOS/DELHI & PARTNERS
Well: TAYLOR SOUTH #1
Field: BOOKABOURDIE
Location: LINE:86-XZG 8TN:390 12.6m W

KLAUDER WAVELET
PHASE ROTATION = 270
REFLECTION SERIES FROM SONIC * DENSITY
DRIFT CORRECTION APPLIED.

00131

Schlumberger



Schlumberger

SEISMIC CALIBRATION LOG

(Adjusted Continuous Velocity Log)

Company: SANTOS/DELHI & PARTNERS

Well: TAYLOR SOUTH #1

Field: WILDCAT

Country: AUSTRALIA

Reference No: 550230Interval: 0.00 to 957100

Date Logged: 10 FEB 87Date Processed: 15 FEB 87

Location: 027° 33' 42.7" S140° 29' 01.7" E

Elevations: KB: 161 ftDF: 160 ftGL: 141 ft

Permanent Datum: MSLDepth Units: FEET

FIELD RECORDING: Engineer: G SANSONLocation: LEAProgram Version: 28.4

COMPUTATION: Analyst: BUTTERWORTHCentre: EAJBaseline: 14.74X4

ELEVATION ABOVE MEAN SEA LEVEL

Logging Datum: 161 ft

Seismic Reference Datum: MSL

Ground Level (floor): 141 ft

LOGGING DATUM

GROUND FLOOR

SEISMIC REFERENCE LEVEL

MEAN SEA LEVEL

Total Number of VSP Levels33 (161 - 9590 ft below KB)

VSP Depth ReferenceSRD

VSP Time ReferenceSRD

Run	Date	Tool Type	Bit Size/Depth	Casing Size/Depth	Top Depth	Bottom Depth
1	23/01/87	SLS	17.5" @ 686 ft	13.375" @ 686 ft	690 ft	5623 ft
2	08/02/87	SLS	12.25" @ 5680 ft	9.625" @ 5680 ft	5638	9709
			8.5" @ 9718			

VSP Run	Date	Gun Offset	Hydro. Offset	Gun Elevation	Hydrophone Elevation	Gun Azimuth	Hydro. Azimuth
1	10/02/87	160.3 ft	160.3 ft	136 ft above SRD	136 ft above SRD	0°	0°

REMARKS

ADelaide LOG INTERPRETATION CENTRE

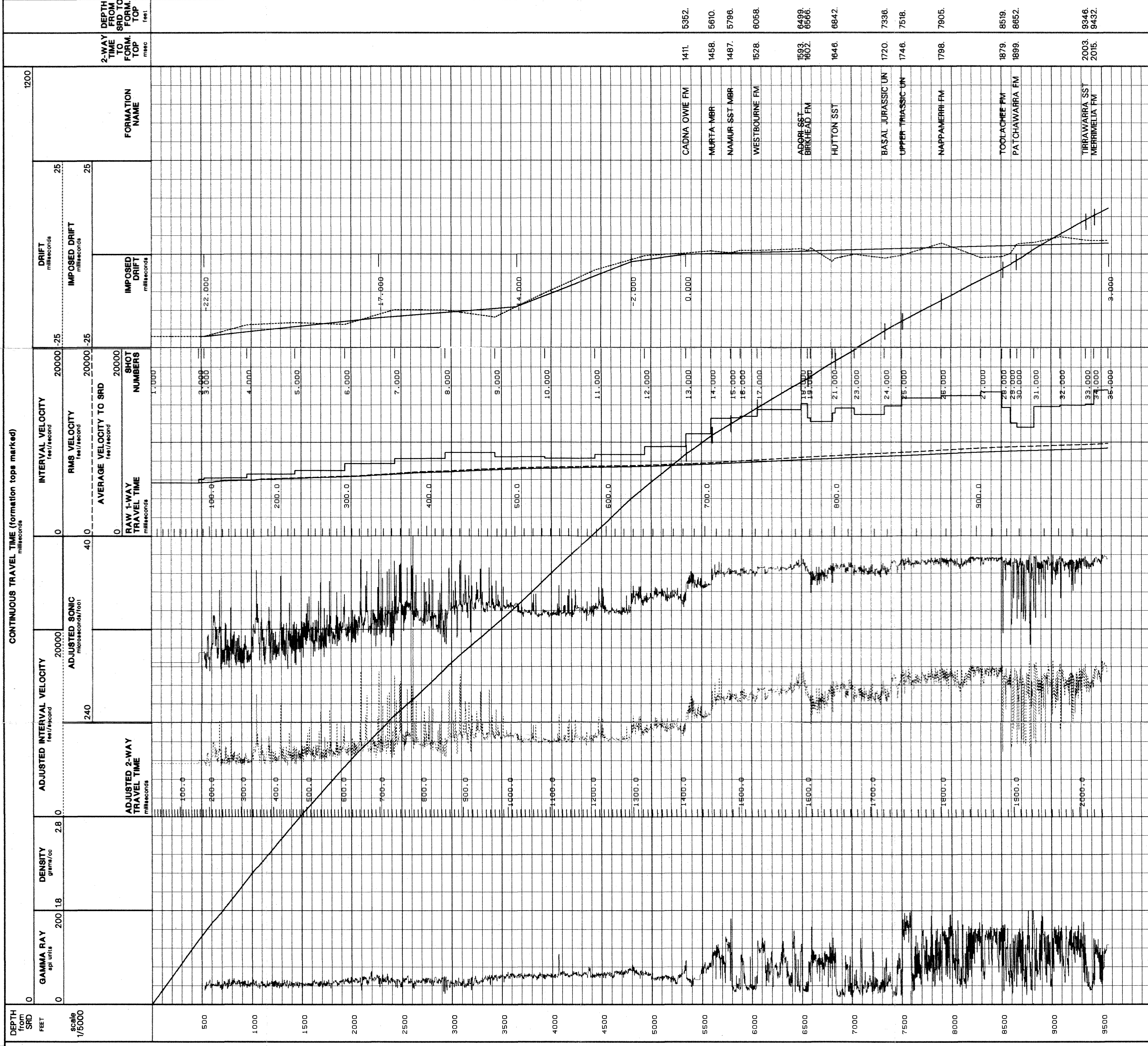
7035/2-1

Company: SANTOS/DELHI & PARTNERS

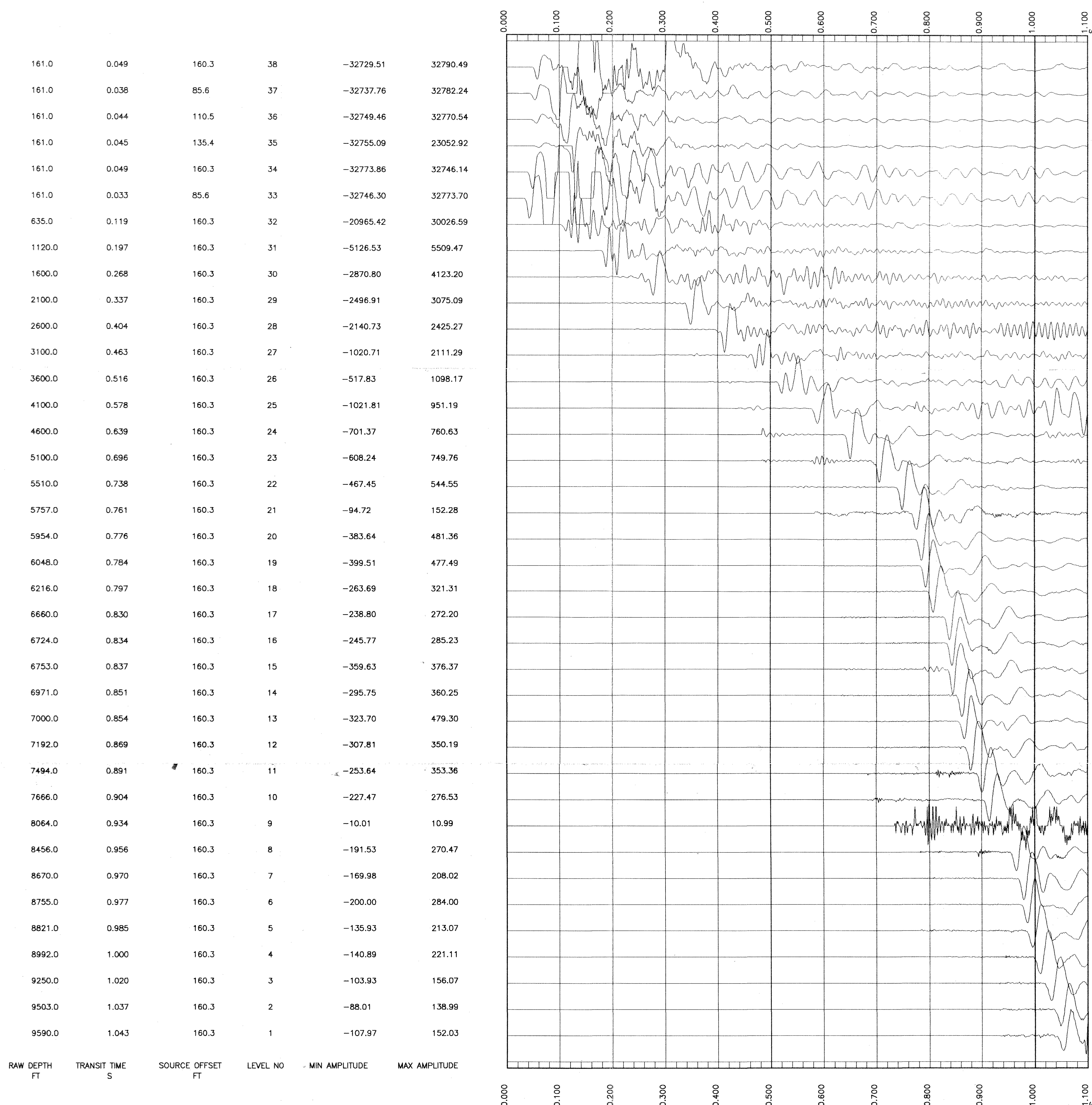
Well: TAYLOR SOUTH #1

Field: BOOKABOURIE

Schlumberger



CLIENT : SANTOS/DELHI & PARTNRS
WELL : TAYLOR SOUTH 1
LOCATION : 124.8M WEST OF STN: 390
ON LINE 85-XZG
STACKED DATA
SHOTS WITH LOW SIGNAL/NOISE
RATIO HAVE BEEN ELIMINATED PRIOR
TO STACKING



00132

SA



OILSERV AUSTRALIA

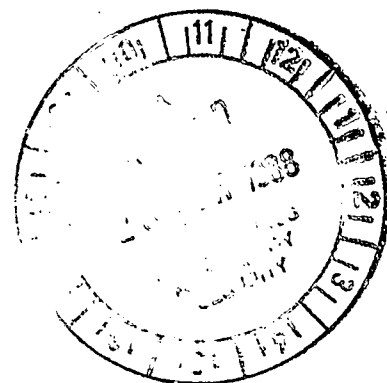
Well Testing/Oilfield Equipment Supply/Personnel-Consultant Placement

MODIFIED ISOCHRONAL TEST REPORT

TAYLOR SOUTH NO:1

SANTOS LTD

7035/2



Suite 21, 242-244 Glen Osmond Road,
Fullarton, S.A. 5063
Telephone: (08) 338 1630 — Telex: AA88713

WELL: Taylor St. #1TYPE OF TEST: Clean Up

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 9/3/88PAGE No: 1 of 11

DATE	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS			
	CASING TIME	TUBING KPA	TEMP. °C	CHOKE SIZE MM	B.S.W. %	PI KPA	HW KPA	TEMP. °C	ORIFICE SIZE MM	TANK DIP H	TANK PROD M ³	API GRAVITY @80 °F	TANK DIP CM	TANK PROD M ³	GAS FLOW RATE M ³ /DAY	OIL FLOW RATE M ³ /DAY	WATER FLOW RATE M ³ /DAY	TOTAL LIQUID FLOW RATE M ³ /DAY
March 9, 1988																		
1645	Ø	21200		S.I.														
1730	Ø	21200																
1810	Ø	21200																
March 10, 1988																		
0600	Ø	21210																
1030	Ø	21210																
1040																		
1200	Ø	20770																
1205	Ø	14275		12.7														
1210	Ø	9170	29															
1215	Ø	7240	29	11.1														
1228	Ø	3172	30															
1229																		
1230	Ø	4137	33															
1245	Ø	21840	33															
1300	Ø	4490	33															

00133

WELL: Taylor Stn #1TYPE OF TEST: Clean Up

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 10/3/88PAGE No: 2 of 11

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION				WATER PRODUCTION		WELL TEST RESULTS				
	CASING	TUBING	TEMP.	CHOKE	B.S.W.	PI	HW	TEMP.	ORIFICE	TANK	TANK	API	TANK	TANK		GAS	OIL	WATER	TOTAL	O.G.R.
	KPA	KPA	°C	SIZE	%	KPA	KPA	°C	SIZE	DIP	PROD	GRAVITY	DIP	PROD		FLOW	FLOW	FLOW	FLOW	
				MM					MM	CM	M ³	°80 °F	CM	M ³		RATE	RATE	RATE	RATE	
																M ³ /DAY	M ³ /DAY	M ³ /DAY	M ³ /DAY	
March 10, 1988																				
1400	Ø	4750	33	11.1																
1500	Ø	5000	34																	
1600	Ø	5135	35																	
1800	Ø	5405	37																	
2200	Ø	5670	40																	
March 11, 1988																				
0200	Ø	5880	43																	
0600	Ø	6025	45																	
1000	Ø	6205	47																	
1400	Ø	6315	49																	
1800	Ø	6390	50																	
2200	Ø	6440	51																	
March 12, 1988																				
0200	Ø	6474	52																	
0600	Ø	6535	53																	
0800	Ø	6545	53	✓																
0801																				
0830	Ø	13310	51	4.8																

M134

WELL: Taylor Sh. #1TYPE OF TEST: Flow

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 12/3/88PAGE No: 3 of 11

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING KPA	TUBING KPA	TEMP. °C	CHOKE SIZE MM	B.S.W. %	PI KPA	HW KPA	TEMP. °C	ORIFICE SIZE MM	TANK DIP CM	TANK PROD M ³	API GRAVITY @80 °F	TANK DIP CM	TANK PROD M ³	GAS FLOW RATE M ³ /D	OIL FLOW RATE M ³ /D	WATER FLOW RATE M ³ /D	TOTAL LIQUID FLOW RATE M ³ /D	O.G.R. M ³ /M ³ × 10 ³
March 12, 1988																			
0845	Ø	14480	51	4.8		2068	3.73	11	50.8						44.9				
0846						Open Choke To 7.9 MM													
0900	Ø	12420	52	7.9		2082	13.94	12	50.8	226.0	0.367		47.5	0.052	86.8	8.82	1.26	10.08	
0915	Ø	11855	52	7.9		1972	10.96	13	50.8						74.6				
0916						Open Choke To 16.7 MM													
0945	Ø	3780	53	16.7		Cut Choke To 15.9 MM													
1000	Ø	3790	54	15.9		2055	28.88	41	50.8	233.5	0.787		49.0	0.157	116.3	18.90	3.78	22.68	
1001						Cut Choke To 13.9 MM													
1030	Ø	4750	54	13.9		1986	27.39	38	50.8						112.0				
1035						Cut Choke To 13.5 MM													
1100	Ø	4930	54	13.5		1958	26.89	38	50.8	238.0	0.472		50.0	0.105	110.1	11.34	2.52	13.86	
1200	Ø	4945	55	13.5		1944	26.89	39	50.8	243.5	0.571	50.8	50.5	0.052	109.5	13.86	1.25	15.11	0.127
	* Shut To Well, End of Cleanup Flow																		
1205	Ø	7345		51.															
1210	Ø	9100																	
1215	Ø	11515																	
1230	Ø	17065																	
1300	Ø	20215		Y															

00135

WELL: Taylor St. #1TYPE OF TEST: Flow

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 12/3/88PAGE No: 4 of 11

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING KPA	TUBING KPA	TEMP. °C	CHOKE SIZE MM	B.S.W. %	PI K.P.A.	HW K.P.A.	TEMP. °C	ORIFICE SIZE MM	TANK DIP CM	TANK PROD L/3	API GRAVITY °80 °F	TANK DIP CM	TANK PROD L/3	GAS FLOW RATE L/3	OIL FLOW RATE L/3	WATER FLOW RATE L/3	TOTAL LIQUID FLOW RATE L/3	G.O.R. SCF/BBL
March 12, 1988																			
1400	Ø	20685		S.I.															
1500	Ø	20790																	
1600	Ø	20885																	
1700	Ø	20940																	
1800	Ø	20980																	
2400	Ø	21140																	
March 13, 1988																			
0600	Ø	21210																	
1200	Ø	21250																	
1300	Ø	21290																	
2100	Ø	21300																	
March 14, 1988																			
0600	Ø	21320																	
1118	Ø	21320																	
1220	Ø	21325																	
1300	Ø	21335																	
1400	Ø	21335																	
1415	Ø	17960	34	4.76		1690	25.15	-7	38.1	238	Ø		54	Ø	61.1				

Pressure Up Lub To R.I. 14. With Ameradas

Run In Hole With Tandem 6000psi Ameradas 9" 120 Ht Cables

Ameradas @ Hand Depth of 94'40' KB As Per Program

Open Well On T264 Choke For Rate #1

00156

WELL: Taylor St. #1TYPE OF TEST: Prod. Isochoral

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 14/3/88PAGE No: 5 of 11

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING KPA	TUBING KPA	TEMP. °C	CHOKE SIZE IN	B.S.W. %	PI KPA	HW KPA	TEMP. °C	ORIFICE SIZE IN	TANK DIP CM	TANK PROD LIT	API GRAVITY @ 60 °F	TANK DIP CM	TANK PROD LIT	GAS FLOW RATE M ³ /D	OIL FLOW RATE M ³ /D	WATER FLOW RATE M ³ /D	TOTAL LIQUID FLOW RATE M ³ /D	C.G. R. M ³ /11° x 10 ³
March 14, 1988																			
1430	Ø	17010	34	4.76		1760	21.41	-12	38.1	238.0			54.0	Ø	58.4	Ø	Ø	Ø	
1445	Ø	16680	35			1745	19.42	-13							55.5				
1500	Ø	16625	35			1760	19.42	-13		240.0	.210		54.0	Ø	55.7	10.08	Ø	10.08	.181
1515	Ø	16585	36			1740	19.92	-13							56.0				
1530	Ø	16460	36			1745	20.42	-13		242.5	.262		54.0	Ø	56.7	12.60	Ø	12.60	.222
1545	Ø	16530	37			1745	20.42	-13							56.7				
1600	Ø	16515	37	↓		1760	20.42	-13	↓	245.0	.262	54.4	54.0	Ø	57.1	12.60	Ø	12.60	.221
1615	Ø	19920		S.I.		* Shut In Well, End Of Rate #1													
1630	Ø	20895																	
1645	Ø	21225				Total Gas Flared - Rate #1 = 4.76 M ³ x 10 ³													
1700	Ø	21285				Total Condensate Produced - Rate #1 = 0.734 M ³													
1715	Ø	21320				Total Water Produced - Rate #1 = Ø													
1730	Ø	21335																	
1745	Ø	21355																	
1800	Ø	21370		↓		Open Well On 19/64 Choke For Rate #2													
1815	Ø	14550	36	7.54		1725	34.61	-14	47.6						116.9				
1830	Ø	12460	37			1725	29.13	-10		249.5	.472		54.0	Ø	106.0	22.68	Ø	22.68	.214
1845	Ø	12205	38	↓		1725	23.65	-5	↓						74.2		Ø		

00137

WELL: Taylor St. #1TYPE OF TEST: Mod. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 14/3/88PAGE No: 6 of 11

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING	TUBING	TEMP.	CHOKE	B.S.W.	PI	HW	TEMP.	ORIFICE	TANK	TANK	API	TANK	TANK	GAS	OIL	WATER	TOTAL	C.G.R.
	KPA	KPA	°C	SIZE	%	KPA	KPA	°C	SIZE	DIP	PROD	GRAVITY	DIP	PROD	FLOW	FLOW	FLOW	FLOW	
				MM					CM	CM	M ³	°F	CM	M ³	10 ³	10 ³	10 ³	10 ³	M ³ /M ³ × 10 ³
March 14, 1988																			
1900	Ø	12030	39	7.54		1710	24.65	-5	47.6	2535	.420		540	Ø	95.8	20.16	Ø	20.16	.210
1915	Ø	11915	39			1695	25.15	-5							96.3				
1930	Ø	11810	39			1690	24.90	-5		2575	.420		540	Ø	95.6	20.16	Ø	20.16	.211
1945	Ø	11765	39			1690	24.15	-4							93.9				
*2000	Ø	11775	40	✓		1690	23.90	-1	✓	2620	.367	55.1	540	Ø	92.7	17.64	Ø	17.64	.190
2015	Ø	17440		S.I.		* Shut In Well, End Of Rate #2													
2030	Ø	20060																	
2045	Ø	20790				Total Gas Flared - Rate #2 = 8.24 M ³ × 10 ³													
2100	Ø	20860				Total Cond. Produced - Rate #2 = 1.679 M ³													
2115	Ø	21035				Total Water Produced - Rate #2 = Ø													
2130	Ø	21105																	
2145	Ø	21170																	
2200	Ø	21215		✓		Open Well On 27/64 Choke For Rate #3													
2215	Ø	10165	38	10.72		1750	34.11	-4	57.1						118.3				
2230	Ø	8520	40			1725	21.91	8		2620	.735		540	Ø	129.6	35.28	Ø	35.28	.272
2245	Ø	7825	41			1655	20.92	11							123.0				
2300	Ø	7660	41			1860	16.93	13		2735	.577		540	Ø	117.2	27.72	Ø	27.72	.237
2315	Ø	7515	42	✓		1795	17.70	13	✓						117.4				

00138

WELL: <i>Taylor St. #1</i>						SANTOS LTD.										DATE: <i>14/3/88</i>				
TYPE OF TEST: <i>Mod. Isothermal</i>						WELL TEST DATA SHEET										PAGE No: <i>7 of 11</i>				
DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS					
	CASING KPA	TUBING KPA	TEMP. °C	CHOKE SIZE MM	B.S.W. %	PI KPA	HW KPA	TEMP. °F	ORIFICE SIZE MM	TANK DIP CM	TANK PROD M ³	API GRAVITY @80 °F	TANK DIP CM	TANK PROD M ³	GAS FLOW RATE M ³ /D	OIL FLOW RATE M ³ /D	WATER FLOW RATE M ³ /D	TOTAL LIQUID FLOW RATE M ³ /D	C.G.R.	
<i>March 14, 1988</i>																				
<i>2330</i>	<i>Ø</i>	<i>7510</i>	<i>42</i>	<i>10.72</i>		<i>1760</i>	<i>17.67</i>	<i>14</i>	<i>57.1</i>	<i>2770</i>	<i>.367</i>		<i>54.0</i>	<i>Ø</i>	<i>115.9</i>	<i>17.64</i>	<i>Ø</i>	<i>17.64</i>	<i>.152</i>	
<i>2345</i>	<i>Ø</i>	<i>7495</i>	<i>42</i>			<i>1745</i>	<i>17.67</i>	<i>14</i>							<i>115.4</i>					
<i>* 2400</i>	<i>Ø</i>	<i>7480</i>	<i>42</i>	<i>↓</i>		<i>1760</i>	<i>17.67</i>	<i>15</i>	<i>↓</i>	<i>281.0</i>	<i>.420</i>	<i>51.0</i>	<i>54.5</i>	<i>.052</i>	<i>115.6</i>	<i>20.16</i>	<i>2.52</i>	<i>2268</i>	<i>.174</i>	
<i>March 15, 1988</i>						<i>* Shut In Well End Of Rate #3</i>														
<i>0015</i>	<i>Ø</i>	<i>14410</i>		<i>S.I.</i>																
<i>0030</i>	<i>Ø</i>	<i>18260</i>				<i>Total Gas Flared - Rate #3 = 10.44 M³ x 10³</i>														
<i>0045</i>	<i>Ø</i>	<i>20270</i>				<i>Total Cond. Produced - Rate #3 = 2.099 M³</i>														
<i>0100</i>	<i>Ø</i>	<i>20780</i>				<i>Total Water Produced - Rate #3 = 0.052 M³</i>														
<i>0115</i>	<i>Ø</i>	<i>20855</i>																		
<i>0130</i>	<i>Ø</i>	<i>21015</i>																		
<i>0145</i>	<i>Ø</i>	<i>21080</i>																		
<i>0200</i>	<i>Ø</i>	<i>21100</i>		<i>↓</i>		<i>Open Well On 40/64 Choke For Rate #4</i>														
<i>0215</i>	<i>Ø</i>	<i>6445</i>	<i>41</i>	<i>15.87</i>		<i>1690</i>	<i>49.80</i>	<i>12</i>	<i>57.1</i>						<i>191.3</i>					
<i>0230</i>	<i>Ø</i>	<i>4345</i>	<i>42</i>			<i>1725</i>	<i>24.13</i>	<i>25</i>		<i>289.0</i>	<i>.840</i>		<i>55.5</i>	<i>.105</i>	<i>143.4</i>	<i>40.32</i>	<i>5.04</i>	<i>45.36</i>	<i>.281</i>	
<i>0245</i>	<i>Ø</i>	<i>4185</i>	<i>42</i>			<i>1725</i>	<i>24.65</i>	<i>27</i>							<i>131.2</i>					
<i>0300</i>	<i>Ø</i>	<i>4145</i>	<i>43</i>			<i>1760</i>	<i>24.65</i>	<i>29</i>		<i>292.0</i>	<i>.315</i>		<i>56.5</i>	<i>.105</i>	<i>132.1</i>	<i>15.12</i>	<i>5.04</i>	<i>20.16</i>	<i>.114</i>	
<i>0315</i>	<i>Ø</i>	<i>4090</i>	<i>43</i>			<i>1730</i>	<i>24.15</i>	<i>29</i>							<i>129.7</i>					
<i>0330</i>	<i>Ø</i>	<i>4090</i>	<i>44</i>	<i>↓</i>		<i>1725</i>	<i>23.90</i>	<i>30</i>	<i>↓</i>	<i>294.0</i>	<i>.210</i>		<i>58.5</i>	<i>.210</i>	<i>128.4</i>	<i>10.08</i>	<i>10.08</i>	<i>20.16</i>	<i>.079</i>	

00139

WELL: Taylor St. #1TYPE OF TEST: Mod. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 15/3/88PAGE No: 8 of 11

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING KPA	TUBING KPA	TEMP. °C	CHOKE SIZE mm	B.S.W. %	PI KPA	HW KPA	TEMP. °C	ORIFICE SIZE mm	TANK DIP cm	TANK PROD m³	API GRAVITY °API	TANK DIP cm	TANK PROD m³	GAS FLOW RATE m³/day	OIL FLOW RATE m³/day	WATER FLOW RATE m³/day	TOTAL LIQUID FLOW RATE m³/day	C.G.R. M³/M³ x 10³
March 15, 1988																			
0345	Ø	4075	44	15.87		1725	23.90	30	57.1						128.4				
0400	Ø	4070	45	↓		1725	23.90	30	↓	2975	.367		59.0	.052	128.4	17.64	2.52	20.16	.137
						* Cut Choke To 3 1/64 For Extended Rate													
						Total Gas Flared - Rate #4 = 11.59 M³ x 10³													
						Total Cond. Produced - Rate #4 = 1.732 M³													
						Total Water Produced - Rate #4 = 0.472 M³													
0435	Ø	5280	45	13.49		1710	21.41	27	57.1						121.7				
0500	Ø	5285	46			1725	21.41	27		3030	.577		61.0	.210	122.2	13.86	5.04	18.90	.113
0600	Ø	5290	47			1725	21.41	28		310.0	.735	52.5	61.5	.052	122.1	17.64	1.26	18.90	.144
0700	Ø	5275	48			1725	21.41	29		316.5	.682		63.0	.157	121.8	16.38	3.78	20.16	.134
0800	Ø	5270	49			1730	21.41	30		323.5	.735	50.6	61.5	.157	121.7	17.64	3.78	21.42	.145
0900	Ø	5260	50			1805	20.67	32		329.5	.630		65.5	.105	121.4	15.12	2.52	17.64	.125
1000	Ø	5245	51			1825	19.92	33		336.0	.682		66.5	.105	119.7	16.38	2.52	18.90	.137
1100	Ø	5245	52			1895	19.67	35		342.0	.630		67.5	.105	120.7	15.12	2.52	17.64	.125
1200	Ø	5270	53			1950	19.42	36		347.5	.577	49.8	69.0	.157	121.4	13.86	3.78	17.64	.114
1300	Ø	5270	53			1855	20.42	37		353.5	.630		70.0	.105	121.4	15.12	2.52	17.64	.125
1400	Ø	5270	54	↓		1860	20.17	37	↓	3600	.682		70.5	.052	120.8	16.38	1.26	17.64	.136

01140

WELL: *Taylor Stk. #1*TYPE OF TEST: *Prod. Test Initial*

SANTOS LTD.

WELL TEST DATA SHEET

DATE: *15/3/88*PAGE No: *9 of 11*

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING KPA	TUBING KPA	TEMP. °C	CHOKE SIZE IN	B.S.W. %	PI KPA	HW KPA	TEMP. °C	ORIFICE SIZE IN	TANK DIP CM	TANK PROD M ³	API GRAVITY °Bé	TANK DIP CM	TANK PROD M ³	GAS FLOW RATE M ³ /DAY	OIL FLOW RATE M ³ /DAY	WATER FLOW RATE M ³ /DAY	TOTAL LIQUID FLOW RATE M ³ /DAY	C.G.R. M ³ /M ³ × 10 ³
<i>March 15, 1988</i>																			
<i>1500</i>	<i>Ø</i>	<i>5275</i>	<i>54</i>	<i>13.49</i>		<i>1860</i>	<i>19.92</i>	<i>38</i>	<i>57.1</i>	<i>366.5</i>	<i>.682</i>		<i>71.5</i>	<i>.105</i>	<i>120.0</i>	<i>16.38</i>	<i>2.52</i>	<i>18.90</i>	<i>.136</i>
<i>1600</i>	<i>Ø</i>	<i>5260</i>	<i>54</i>	<i> </i>		<i>1795</i>	<i>20.67</i>	<i>38</i>	<i> </i>	<i>371.5</i>	<i>.525</i>	<i>48.3</i>	<i>72.5</i>	<i>.105</i>	<i>119.9</i>	<i>12.60</i>	<i>2.52</i>	<i>15.12</i>	<i>.105</i>
<i>1700</i>	<i>Ø</i>	<i>5275</i>	<i>55</i>	<i> </i>		<i>1815</i>	<i>20.67</i>	<i>38</i>	<i> </i>	<i>378.0</i>	<i>.682</i>		<i>73.5</i>	<i>.105</i>	<i>120.3</i>	<i>16.38</i>	<i>2.52</i>	<i>18.90</i>	<i>.136</i>
<i>1800</i>	<i>Ø</i>	<i>5270</i>	<i>55</i>	<i>↓</i>		<i>1780</i>	<i>20.92</i>	<i>38</i>	<i>↓</i>	<i>384.0</i>	<i>.630</i>		<i>74.5</i>	<i>.105</i>	<i>119.9</i>	<i>15.12</i>	<i>2.52</i>	<i>17.64</i>	<i>.126</i>
<i>1810</i>	<i>Start H.P. Sampling Procedure</i>																		
<i>1830</i>	<i>H.P. Gas Sample #066 & H.P. Condensate Sample #093 Completed</i>																		
<i>1855</i>	<i>H.P. Gas Sample #016 & H.P. Condensate Sample #611 Completed</i>																		
<i>1900</i>	<i>Ø</i>	<i>5270</i>	<i>56</i>	<i>13.49</i>		<i>1785</i>	<i>20.92</i>	<i>38</i>	<i>57.1</i>	<i>389.5</i>	<i>.577</i>		<i>75.5</i>	<i>.105</i>	<i>120.1</i>	<i>13.86</i>	<i>2.52</i>	<i>16.38</i>	<i>.115</i>
<i>2000</i>	<i>Ø</i>	<i>5260</i>	<i>56</i>	<i> </i>		<i>1780</i>	<i>20.92</i>	<i>38</i>	<i> </i>	<i>395.0</i>	<i>.577</i>	<i>48.1</i>	<i>76.5</i>	<i>.103</i>	<i>119.9</i>	<i>13.86</i>	<i>2.52</i>	<i>16.38</i>	<i>.116</i>
<i>2200</i>	<i>Ø</i>	<i>5255</i>	<i>57</i>	<i> </i>		<i>1725</i>	<i>21.41</i>	<i>39</i>	<i> </i>	<i>412.5</i>	<i>.1210</i>		<i>78.5</i>	<i>.210</i>	<i>119.1</i>	<i>14.49</i>	<i>2.52</i>	<i>17.01</i>	<i>.122</i>
<i>2400</i>	<i>Ø</i>	<i>5260</i>	<i>57</i>	<i> </i>		<i>1670</i>	<i>22.66</i>	<i>38</i>	<i> </i>	<i>418.5</i>	<i>.1260</i>	<i>50.2</i>	<i>81.0</i>	<i>.262</i>	<i>119.7</i>	<i>15.12</i>	<i>3.15</i>	<i>18.27</i>	<i>.126</i>
<i>March 16, 1988</i>																			
<i>0200</i>	<i>Ø</i>	<i>5255</i>	<i>58</i>	<i> </i>		<i>1655</i>	<i>22.41</i>	<i>38</i>	<i> </i>	<i>428.5</i>	<i>.155</i>		<i>82.5</i>	<i>.157</i>	<i>119.6</i>	<i>13.86</i>	<i>1.89</i>	<i>15.75</i>	<i>.116</i>
<i>0400</i>	<i>Ø</i>	<i>5270</i>	<i>58</i>	<i> </i>		<i>1725</i>	<i>21.91</i>	<i>38</i>	<i> </i>	<i>441.0</i>	<i>.1210</i>	<i>50.8</i>	<i>85.0</i>	<i>.262</i>	<i>120.8</i>	<i>14.49</i>	<i>3.15</i>	<i>17.64</i>	<i>.120</i>
<i>0600</i>	<i>Ø</i>	<i>5260</i>	<i>58</i>	<i> </i>		<i>1690</i>	<i>22.16</i>	<i>38</i>	<i> </i>	<i>452.5</i>	<i>.1210</i>		<i>87.5</i>	<i>.262</i>	<i>120.2</i>	<i>14.49</i>	<i>3.15</i>	<i>17.64</i>	<i>.121</i>
<i>*0800</i>	<i>Ø</i>	<i>5260</i>	<i>58</i>	<i>↓</i>		<i>1710</i>	<i>22.16</i>	<i>39</i>	<i>↓</i>	<i>463.0</i>	<i>.155</i>	<i>49.8</i>	<i>89.5</i>	<i>.210</i>	<i>120.7</i>	<i>13.86</i>	<i>2.52</i>	<i>16.38</i>	<i>.115</i>
<i>0805</i>	<i>Ø</i>	<i>8690</i>		<i>S.I.</i>	<i>*</i>	<i>Shut In Well, End of Test</i>													
<i>0810</i>	<i>Ø</i>	<i>10965</i>		<i>"</i>															

00141

WELL: Taylor St. #1TYPE OF TEST: Mod. Isochronal

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 16/3/88PAGE No: 10 of 11

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING	TUBING	TEMP.	CHOKE	B.S.W.	PI	HW	TEMP.	ORIFICE	TANK	TANK	API	TANK	TANK	GAS	OIL	WATER	TOTAL LIQUID	G.O.R.
	KPA	KPA	°F	SIZE INS.	%	PSI	INSH ₂ O	°F	SIZE INS.	DIP INS.	PROD BBLs	GRAVITY @ 60 °F	DIP INS.	PROD BBLs	FLOW RATE MMSCFD	FLOW RATE BBLs/ DAY	FLOW RATE BBLs/ DAY	FLOW RATE BBLs/ DAY	SCF/BBL
March 16, 1988																			
0815	Ø	12860		S.I.															
0830	Ø	17460																	
0845	Ø	19335																	
0900	Ø	20030																	
0915	Ø	20290																	
0930	Ø	20410																	
0945	Ø	20480																	
1000	Ø	20540																	
1100	Ø	20700																	
1200	Ø	20790																	
1300	Ø	20870																	
1400	Ø	20920																	
1800	Ø	21060																	
2400	Ø	21160																	
March 17, 1988																			
0600	Ø	21210																	
1200	Ø	21260																	
1800	Ø	21280																	
2400	Ø	21290																	

* Lubricator O-Ring Passing, Close B.C.P.'s To Stop Leak

00142

WELL HEAD						GAS FLOW DATA				OIL / CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
CASEING KPA	TUBING KPA	TEMP. °F	CHOKE SIZE INS.	B.S.W. %	P.I. PSI	H.W. IN H ₂ O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP INS.	TANK PROD BBL S	API GRAVITY @ 60 °F	TANK DIP INS.	TANK PROD BBL S	GAS FLOW RATE MMSCFD	OIL FLOW RATE BBL S/DAY	WATER FLOW RATE BBL S/DAY	TOTAL LIQUID FLOW RATE BBL S/DAY	G.O.R. SCF/BBL	
DATE:																			
TYPE OF TEST:																			
SANTOS LTD. WELL TEST DATA SHEET																			
DATE:																			
PAGE No:																			
TIME	KPA	KPA	°F	INS.	%	PI PSI	H.W IN H₂O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP INS.	TANK PROD BBL S	API GRAVITY @ 60 °F	TANK DIP INS.	TANK PROD BBL S	GAS FLOW RATE MMSCFD	OIL FLOW RATE BBL S/DAY	WATER FLOW RATE BBL S/DAY	TOTAL LIQUID FLOW RATE BBL S/DAY	G.O.R. SCF/BBL
March 18, 1988																			
0600	21305																		
0700																			
1200	3725	21335																	
1800	3725	21340																	
2400	3725	21340																	
A.G. Valve On Csg. Plugged, Move Gauge To Opposite Side																			
March 19, 1988																			
0600	3725	21345																	
0610																			
0656																			
0840	3725	21308																	
0855	3725	21335																	
1037	3725	21345																	
1127	3725	21355																	
Open B.O.P.'s																			
Begin To Pull Out Of Hole With Amaradas																			
In Lubricator, Depressure Immediately Due To Leak																			
Pressure Up Lub. To Begin Static Gradient Survey																			
Run In Hole																			
Begin To Pull Out Of Hole																			
Depressure Lubricatory, End Of Gradient Survey																			
Rig Down Equipment & Move To Next Location																			

00143

WELL: Taylor St. #1
 OPERATOR: L. Knox



SANTOS LTD
 WELL TEST DATA
 METRIC SUMMARY SHEET

DATE: 10/3/88
 PAGE No: 1 of 8

TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
March 10, 1988															
300	Ø	Ø	3016	21210	S.I.	Pressure Test Flow Lines & Separator									
200	Ø	Ø	3012	20710	"	Open Well To Flare									
100	Ø	Ø	689	4750	28/64	91	33	Divert Flow Through Separator							
100	Ø	Ø	745	5135		95	35	39.62	6.30	7.92	1.26	2.902	81.8		
100	Ø	Ø	784	5405		99	37	67.36	10.71	3.96	0.63	3.056	86.1		
200	Ø	Ø	822	5670		104	40	101.01	16.06	13.90	2.21	3.160	89.0		
March 11, 1988															
100	Ø	Ø	853	5880		109	43	87.17	13.86	17.50	2.83	3.296	92.9		
100	Ø	Ø	874	6025		113	45	85.16	13.54	15.85	2.52	3.368	94.9		
100	Ø	Ø	900	6205		117	47	93.08	14.80	17.80	2.83	3.398	95.7		
100	Ø	Ø	916	6315	✓	120	49	86.79	13.80	13.84	2.20	3.480	98.1		

00144

CONVERSION FACTORS:

• BBL'S x 0.15899 = M³

• MMSCF x 28.174 = 10³ M³

• Cu/FT PER BBL x 0.1773 = M³/M³

• PSI x 6.895 = KPA

• °C x 9 ÷ 5 + 32 = °F

WELL: *Taylor Stk. #1*OPERATOR: *L. K. A. X.*

SANTOS LTD WELL TEST DATA

METRIC SUMMARY SHEET

DATE: *11/3/88*PAGE No: *2 of 8*

E TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M ³ /D	FLOWRATE H ₂ O BBL'S/D	FLOWRATE H ₂ O M ³ /D	MMSCF/D	Mm ³ /D	G.O.R. Cu/FT BBL	G.O.R. M ³ /M ³
<i>March 11, 1988</i>															
20	Ø	Ø	927	6390	28/64	122	50	85.16	13.54	13.84	2.20	3.608	101.6		
200	Ø	Ø	934	6440		124	51	83.21	13.23	15.85	2.52	3.534	99.6		
<i>March 12, 1988</i>															
200	Ø	Ø	939	6474		126	52	89.12	14.17	15.85	2.52	3.576	100.8		
200	Ø	Ø	948	6535		127	53	81.19	12.91	13.84	2.20	3.493	98.4		
200	Ø	Ø	949	6545		127	53	91.13	14.49	15.85	2.52	3.360	94.7		
45	Ø	Ø	2100	14480	12/64	124	51					1.593	44.9		
15	Ø	Ø	1719	11855	20/64	126	52					2.649	74.6		
100	Ø	Ø	550	3790	40/64	129	54					4.128	116.3		
30	Ø	Ø	689	4750	35/64	129	54					3.976	112.0		
200	Ø	Ø	714	4945	34/64	131	55	87.17	13.86	7.86	1.25	3.888	109.5	SI Well, End Cleanup	00145

CONVERSION FACTORS:

• BBL'S x 0.15899 = M³

• MMSCF x 28.174 = 10³ M³

• Cu/FT PER BBL x 0.1773 = M³/M³

• PSI x 6.895 = KPA

• °C x 9 ÷ 5 + 32 = °F

WELL: *Taylor Stk #1*.....

OPERATOR: *L. K. K. K.*.....



SANTOS LTD
WELL TEST DATA

METRIC SUMMARY SHEET

DATE: *12/3/88*.....

PAGE No: *3 of 8*.....

TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
<i>12/3/88</i>															
<i>30</i>	<i>Ø</i>	<i>Ø</i>	<i>2975</i>	<i>17065</i>	<i>S.I.</i>										
<i>00</i>	<i>Ø</i>	<i>Ø</i>	<i>2932</i>	<i>20215</i>											
<i>20</i>	<i>Ø</i>	<i>Ø</i>	<i>2994</i>	<i>20645</i>											
<i>20</i>	<i>Ø</i>	<i>Ø</i>	<i>3029</i>	<i>20885</i>											
<i>00</i>	<i>Ø</i>	<i>Ø</i>	<i>3044</i>	<i>20990</i>											
<i>00</i>	<i>Ø</i>	<i>Ø</i>	<i>3066</i>	<i>21140</i>											
<i>12/3/88</i>															
<i>00</i>	<i>Ø</i>	<i>Ø</i>	<i>3076</i>	<i>21210</i>											
<i>20</i>	<i>Ø</i>	<i>Ø</i>	<i>3083</i>	<i>21260</i>											
<i>20</i>	<i>Ø</i>	<i>Ø</i>	<i>3088</i>	<i>21290</i>											
<i>00</i>	<i>Ø</i>	<i>Ø</i>	<i>3089</i>	<i>21300</i>	<i>✓</i>										

00146

CONVERSION FACTORS:

• BBL'S x 0.15899 = M³

• MMSCF x 28.174 = 10³ M³

• Cu/FT PER BBL x 0.1773 = M³/M³

• PSI x 6.895 = KPA

• °C x 9 ÷ 5 + 32 = °F

WELL: *Taylor Stk #1*OPERATOR: *L. K. K. K. K.*

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: *14/3/88*PAGE No: *4 of 8*

TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
<i>March 14, 1988</i>															
00	Ø	Ø	3092	21320	S.I.										
15	Ø	Ø	3092	21320	"										
20	Ø	Ø	3093	21325	"										
20	Ø	Ø	3094	21335	"										
20	Ø	Ø	3094	21335	"										
20	Ø	Ø	3094	21335	"										
30	Ø	Ø	2395	16515	12/64	99	37	79.25	12.60	Ø	Ø	2.027	57.1		
* Shut In Well, End Of Rate #1															
00	Ø	Ø	3099	21370	S.I.										
00	Ø	Ø	1708	11775	19/64	104	40	110.94	17.64	Ø	Ø	3.291	92.7		
* Shut In Well, End Of Rate #2															

00147

CONVERSION FACTORS:

• BBL'S x 0.15899 = M³

• MMSCF x 28.174 = 10³ M³

WELL: *Taylor Stk #1*OPERATOR: *L. Knax*

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: *14/3/88*PAGE No: *5 of 8*

TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
<i>March 14, 1988</i>															
<i>200</i>	<i>Ø</i>	<i>Ø</i>	<i>3077</i>	<i>21215</i>	<i>S.I.</i>										
<i>100</i>	<i>Ø</i>	<i>Ø</i>	<i>1085</i>	<i>7480</i>	<i>27/64</i>	<i>108</i>	<i>42</i>	<i>126.79</i>	<i>20.16</i>	<i>15.85</i>	<i>2.52</i>	<i>4.103</i>	<i>115.6</i>		
<i>* Shut In Well, End Of Rate #3</i>															
<i>March 15, 1988</i>															
<i>200</i>	<i>Ø</i>	<i>Ø</i>	<i>3060</i>	<i>21100</i>	<i>S.I.</i>										
<i>100</i>	<i>Ø</i>	<i>Ø</i>	<i>590</i>		<i>40/64</i>	<i>113</i>	<i>45</i>	<i>110.94</i>	<i>17.64</i>	<i>15.85</i>	<i>2.52</i>	<i>4.559</i>	<i>128.4</i>		
<i>* Cut Choke To 34/64 For Extended Flow Rate</i>															
<i>100</i>	<i>Ø</i>	<i>Ø</i>	<i>768</i>	<i>5295</i>	<i>34/64</i>	<i>115</i>	<i>46</i>	<i>87.17</i>	<i>13.86</i>	<i>31.70</i>	<i>5.04</i>	<i>4.337</i>	<i>122.2</i>		
<i>100</i>	<i>Ø</i>	<i>Ø</i>	<i>767</i>	<i>5290</i>	<i>"</i>	<i>117</i>	<i>47</i>	<i>110.94</i>	<i>17.64</i>	<i>7.92</i>	<i>1.26</i>	<i>4.332</i>	<i>122.1</i>		
<i>100</i>	<i>Ø</i>	<i>Ø</i>	<i>764</i>	<i>5270</i>	<i>"</i>	<i>120</i>	<i>49</i>	<i>110.94</i>	<i>17.64</i>	<i>23.77</i>	<i>3.78</i>	<i>4.321</i>	<i>121.7</i>		

00148

CONVERSION FACTORS:

•BBL'S x 0.15899 = M³•MMSCF x 28.174 = 10³ M³

WELL: *Taylor Stk #1*OPERATOR: *L. Knox*

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: *15/3/88*PAGE No: *6 of 8*

TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
<i>March 15, 1988</i>															
00	Ø	Ø	761	5245	<i>34/64</i>	124	51	103.02	16.38	15.85	2.52	4.249	119.7		
00	Ø	Ø	764	5270		127	53	87.17	13.86	23.77	3.78	4.310	121.4		
20	Ø	Ø	764	5270		129	54	103.02	16.38	7.92	1.26	4.289	120.8		
20	Ø	Ø	763	5260		129	54	79.25	12.60	15.85	2.52	4.254	119.9		
20	Ø	Ø	764	5270		131	55	95.09	15.12	15.85	2.52	4.255	119.9		
20	Ø	Ø	763	5260		133	56	87.17	13.86	15.85	2.52	4.255	119.9		
20	Ø	Ø	762	5255		135	57	91.13	14.49	15.85	2.52	4.226	119.1		
100	Ø	Ø	763	5260		135	57	95.09	15.12	19.81	3.15	4.250	119.7		
<i>March 16, 1988</i>															
20	Ø	Ø	762	5255	<i>Y</i>	136	58	87.17	13.86	11.89	1.89	4.246	119.6		

00149

CONVERSION FACTORS:

• BBL'S x 0.15899 = M³

• MMSCF x 28.174 = 10³ M³

• Cu/FT PER BBL x 0.1732 = M³/M³

• PSI x 6.895 = KPA

• °F x 0.5556 = °C

WELL: *Taylor St.*OPERATOR: *L. Knox*

SANTOS LTD
WELL TEST DATA
METRIC SUMMARY SHEET

DATE: *16/3/88*PAGE No: *7 of 8*

TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M ³ /D	FLOWRATE H ₂ O BBL'S/D	FLOWRATE H ₂ O M ³ /D	MMSCF/D	Mm ³ /D	G.O.R. Cu/FT BBL	G.O.R. M ³ /M ³
<i>March 16, 1988</i>															
00	Ø	Ø	764	5270	<i>34/64</i>	136	58	91.13	14.49	19.81	3.15	4.286	120.8		
00	Ø	Ø	763	5260	↓	136	58	91.13	14.49	19.81	3.15	4.276	120.2		
300	Ø	Ø	763	5260	↓	136	58	87.17	13.86	15.85	2.52	4.284	120.7		
<i>* Shut In Well, End of Test</i>															
00	Ø	Ø	2979	20340	<i>S.I.</i>										
00	Ø	Ø	3034	20920	↓										
00	Ø	Ø	3034	21060	↓										
100	Ø	Ø	3069	21160	↓										
<i>March 17, 1988</i>															
00	Ø	Ø	3076	21210	↓										

00150

CONVERSION FACTORS:

• BBL'S x 0.15899 = M³

• MMSCF x 28.174 = 10³ M³

• Cu/FT PER BBL x 0.1773 = M³/M³

• PSI x 6.895 = KPA

• °C x 9 ÷ 5 + 32 = °F

OPERATOR: L. Knox



SANTOS LTD WELL TEST DATA METRIC SUMMARY SHEET

DATE: 17/3/88

PAGE No:...8...9...8.....

DATE TIME	WELLHEAD							FLUID PRODUCTION				GAS PRODUCTION			
	CASING PSI	CASING KPA	TUBING PSI	TUBING KPA	CHOKE SIZE INS.	TEMP °F	TEMP °C	FLOWRATE OIL-COND BBL'S/D	FLOWRATE OIL-COND M3/D	FLOWRATE H2O BBL'S/D	FLOWRATE H2O M3/D	MMSCF/D	Mm3/D	G.O.R. Cu/FT BBL	G.O.R. M3/M3
March 17, 1988															
00	Ø	Ø	3083	21260	S.I.										
20	Ø	Ø	3086	21280											
00	Ø	Ø	3088	21290											
March 18, 1988															
00	Ø	Ø	3090	21305											
20	540	3725	3094	21335											
20	540	3725	3095	21340											
00	540	3725	3095	21340											
March 19, 1988															
00	540	3725	3096	21345											
Pull ISanks, Redress & Run Static Gradient Survey															
Rig Down & Secure Well															

00151

CONVERSION FACTORS:

●BBL'S x 0.15899 = M³

$$\bullet \text{MMSCF} \times 28.174 = 10^3 \text{ M}^3$$

●Cu/FT PER BBL x 0.1773 = M³/M³

●PSI x 6.895 = KPA

$$\bullet \text{ } ^{\circ}\text{C} \times 9 \div 5 + 32 = ^{\circ}\text{F}$$

100-

WELL *Taylor Stk #1*

TANK - CAPACITY *56.6 M³*

SCALE *1 cm = .105 M³*



SANTOS LTD

FLUID PRODUCTION SHEET

DATE *10/3/88*

PAGE No. *1 of 5*

OPERATOR *L. Knox*

DATE TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP CM	TANK PROD. M ³	FLOWRATE M ³ /Day	CUM. PROD. M ³	OIL CONDENSATE GRAVITY "API60F"	TANK DIP CM	TANK PROD. M ³	FLOWRATE M ³ /Day	CUM. PROD. M ³	SALINITY PPM	
<i>March 10, 1988</i>												
<i>1200</i>		<i>Open Well On Bypass To Flare</i>										
<i>1400</i>		<i>Direct Flow Through Separator</i>										
<i>1500</i>		<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>		<i>9.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>1600</i>		<i>2.5</i>	<i>.262</i>	<i>6.30</i>	<i>.262</i>	<i>54.5</i>	<i>9.5</i>	<i>.052</i>	<i>1.26</i>	<i>.052</i>	<i>7,100</i>	
<i>1800</i>		<i>11.0</i>	<i>.892</i>	<i>10.71</i>	<i>1.154</i>	<i>54.2</i>	<i>10.0</i>	<i>.052</i>	<i>0.63</i>	<i>.104</i>	<i>6,800</i>	
<i>2200</i>		<i>36.5</i>	<i>2.678</i>	<i>16.06</i>	<i>3.832</i>	<i>53.0</i>	<i>13.5</i>	<i>.368</i>	<i>2.21</i>	<i>.472</i>	<i>3,100</i>	
<i>March 11, 1988</i>												
<i>0200</i>		<i>58.5</i>	<i>2.310</i>	<i>13.86</i>	<i>6.142</i>	<i>53.0</i>	<i>18.0</i>	<i>.472</i>	<i>2.83</i>	<i>.944</i>	<i>2,500</i>	
<i>0600</i>		<i>80.0</i>	<i>2.257</i>	<i>13.54</i>	<i>8.399</i>	<i>53.4</i>	<i>22.0</i>	<i>.420</i>	<i>2.52</i>	<i>1.364</i>	<i>1,600</i>	
<i>1000</i>		<i>103.5</i>	<i>2.467</i>	<i>14.80</i>	<i>10.866</i>	<i>52.9</i>	<i>26.5</i>	<i>.472</i>	<i>2.83</i>	<i>1.836</i>	<i>1,600</i>	
<i>1400</i>		<i>125.5</i>	<i>2.310</i>	<i>13.80</i>	<i>13.176</i>	<i>51.4</i>	<i>30.0</i>	<i>.367</i>	<i>2.20</i>	<i>2.203</i>	<i>1,000</i>	
<i>1800</i>		<i>147.0</i>	<i>2.257</i>	<i>13.54</i>	<i>15.433</i>	<i>49.8</i>	<i>33.5</i>	<i>.367</i>	<i>2.20</i>	<i>2.570</i>	<i>1,000</i>	
<i>2200</i>		<i>168.0</i>	<i>2.205</i>	<i>13.23</i>	<i>17.638</i>	<i>49.5</i>	<i>37.5</i>	<i>.420</i>	<i>2.52</i>	<i>2.99</i>	<i>1,200</i>	
<i>March 12, 1988</i>												
<i>0200</i>		<i>190.5</i>	<i>2.362</i>	<i>14.17</i>	<i>20.000</i>	<i>51.0</i>	<i>41.5</i>	<i>.420</i>	<i>2.52</i>	<i>3.41</i>	<i>1,100</i>	
<i>0600</i>		<i>211.0</i>	<i>2.152</i>	<i>12.91</i>	<i>22.152</i>	<i>51.0</i>	<i>45.0</i>	<i>.368</i>	<i>2.20</i>	<i>3.778</i>	<i>1,100</i>	
<i>0800</i>		<i>222.5</i>	<i>1.207</i>	<i>14.49</i>	<i>23.359</i>		<i>47.0</i>	<i>.210</i>	<i>2.52</i>	<i>3.988</i>		
<i>0900</i>		<i>226.0</i>	<i>.367</i>	<i>8.82</i>	<i>23.726</i>		<i>47.5</i>	<i>.052</i>	<i>1.26</i>	<i>4.040</i>		

WELL *Taylor Stk #1*TANK— CAPACITY *56.6 M³*
SCALE *1 cm = .105 M³*

SANTOS LTD

FLUID PRODUCTION SHEET

DATE *14/3/88*PAGE No. *3 of 5*OPERATOR *L. Knox*

DATE TIME	CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
		TANK DIP CM	TANK PROD. M ³	FLOWRATE M ³ /Day	CUM. PROD. M ³	OIL CONDENSATE GRAVITY "API60F"	TANK DIP CM	TANK PROD. M ³	FLOWRATE M ³ /Day	CUM. PROD. M ³	SALINITY PPM	
<i>March 14, 1988</i>		<i>243.5</i>										
<i>1400</i>		<i>Open Well On 1 3/4 Choke For Rate #1</i>										
<i>1430</i>		<i>238.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>1500</i>		<i>240.0</i>	<i>.210</i>	<i>10.08</i>	<i>.210</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>1530</i>		<i>242.5</i>	<i>.262</i>	<i>12.60</i>	<i>.472</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>*1600</i>		<i>245.0</i>	<i>.262</i>	<i>12.60</i>	<i>.734</i>	<i>54.4</i>	<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
		<i>* Shut In Well, End Of Rate #1</i>										
<i>1800</i>		<i>Open Well On 1 9/16 Choke For Rate #2</i>										
<i>1830</i>		<i>249.5</i>	<i>.472</i>	<i>22.68</i>	<i>1.206</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>1900</i>		<i>253.5</i>	<i>.420</i>	<i>20.16</i>	<i>1.626</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>1930</i>		<i>257.5</i>	<i>.420</i>	<i>20.16</i>	<i>2.046</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>2000</i>		<i>261.0</i>	<i>.367</i>	<i>17.64</i>	<i>2.413</i>	<i>55.1</i>	<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
		<i>* Shut In Well, End Of Rate #2</i>										
<i>2200</i>		<i>Open Well On 2 7/16 Choke For Rate #3</i>										
<i>2230</i>		<i>268.0</i>	<i>.735</i>	<i>35.28</i>	<i>3.148</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>2300</i>		<i>273.5</i>	<i>.577</i>	<i>27.72</i>	<i>3.725</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		
<i>2330</i>		<i>277.0</i>	<i>.367</i>	<i>17.64</i>	<i>4.092</i>		<i>54.0</i>	<i>0</i>	<i>0</i>	<i>0</i>		

00154

WELL Taylor Stk #1TANK: - CAPACITY 56.6 M³
SCALE 1 cm = 1.05 M³

SANTOS LTD

FLUID PRODUCTION SHEET

DATE 14/3/88PAGE No. 4 of 5OPERATOR L. Knox

DATE		CUM. TIME	OIL/CONDENSATE PRODUCTION					WATER PRODUCTION					REMARKS
TIME	TANK DIP CM		TANK PROD. M ³	FLOWRATE M ³ /Day	CUM. PROD. M ³	OIL CONDENSATE GRAVITY °API60F	TANK DIP CM	TANK PROD. M ³	FLOWRATE M ³ /Day	CUM. PROD. M ³	SALINITY PPM		
March 14, 1988													
*2400	281.0	.420	20.16	4.512	51.0	54.5	.052	2.52	.052	1,000			
* Shut In Well, End Of Rate #3													
March 15, 1988													
0200	Open Well On 1/64 Choke For Rate #4												
0230	289.0	.840	40.32	5.352		55.5	.105	5.04	.157	800			
0300	292.0	.315	15.12	5.667		56.5	.105	5.04	.262	800			
0330	294.0	.210	10.08	5.877		58.5	.210	10.08	.472	800			
*0400	297.5	.367	17.64	6.244	52.2	59.0	.052	2.52	.524	800			
* Cut Choke To 3/64 For Extended Flow Rate													
0500	303.0	.577	13.86	6.821		61.0	.210	5.04	.734	900			
0600	310.0	.735	17.64	7.556	52.5	61.5	.052	1.26	.786	900			
0700	316.5	.682	16.38	8.238		63.0	.157	3.78	.943				
0800	323.5	.735	17.64	8.973	50.6	64.5	.157	3.78	1.100				
0900	329.5	.630	15.12	9.603		65.5	.105	2.52	1.205				
1000	336.0	.682	16.38	10.285		66.5	.105	2.52	1.310	400			
1100	342.0	.630	15.12	10.915		67.5	.105	2.52	1.415				
1200	347.5	.577	13.86	11.492	49.8	69.0	.157	3.78	1.572				
1300	353.5	.630	15.12	12.122		70.0	.105	2.52	1.677				

00155

0005676

90/5676

00155

Client: Santos Ltd.Well: Taylor Stn. #1Test: Clean UpOperator: L. KnoxInterval: 9502' To 9580' KBMeter Run Size: 4.026"

Date	Gas Gravity	Orifice diam.	Gas Temp	Diff hw	Static Pf	√Hw*Pf	Fb	Fg	Y	Ftf	Fpv	C	Gas Rate Q	Cumulative Production
Time	Accum	Air=1	Inches	degF	"H2O	psia							MscfD	MMscfD
March 10, 1988														
1200														
1400	2.0													
1500	3.0	.874	2.00	72	55	275	122.92	842.12	1.0697	1.0012	.9887	1.0471	933.6813	2.755
1600	4.0	.874		73	60	280	129.35		1.0697	1.0013	.9877	1.0478	933.4583	2.902
1800	6.0	.874		70	66	280	135.88		1.0697	1.0014	.9905	1.0488	937.1156	3.056
2200	10.0	.879		72	66	300	140.65		1.0666	1.0013	.9887	1.0528	936.1497	3.160
March 11, 1988														
2200	14.0	.879		73	75	289	147.16		1.0666	1.0016	.9877	1.0502	933.2178	3.296
2600	18.0	.879		75	79	288	150.77		1.0666	1.0017	.9859	1.0493	930.7703	3.368
1000	22.0	.882		82	79	298	153.36		1.0648	1.0016	.9795	1.0493	923.0720	3.398
1400	26.0	.882		88	82	305	158.08		1.0648	1.0016	.9741	1.0486	917.4139	3.480
1800	30.0	.876		84	90	295	162.87		1.0684	1.0019	.9777	1.0475	922.9897	3.608
2200	34.0	.876	✓	84	88	290	159.68	✓	1.0684	1.0018	.9777	1.0464	922.1852	3.534

00157

OILSERV AUSTRALIA

GAS RATE CALCULATION

Page 2 of 7

Client: Santos Ltd.Well: Taylor Stk. #1Test: Clean UpOperator: L. KnoxInterval: 9502' To 9580' KBMeter Run Size: 4.026"

Date		Gas Gravity Air=1	Orifice diam. Inches	Gas Temp degF	Diff hw "H2O	Static Pf psia	√Hw*Pf	Fb	Fg	Y	Ftf	Fpv	C	Gas Rate Q MscfD	Cumulative Production MMscfD
Time	Accum														
March 12, 1988															
2200	38.0	.874	2.00	82	93	280	161.29	842.12	1.0697	1.0020	.9795	1.0450	923.8351	3.576	
0600	42.0			81	94	265	157.75		1.0697	1.0022	.9804	1.0426	922.6909	3.493	
0800	44.0			81	99	235	152.44		1.0697	1.0026	.9804	1.0373	918.4834	3.360	
0830				57	12	293	59.27			1.0002	1.0029	1.0564	954.5724	1.358	
0845				52	15	315	68.71			1.0003	1.0078	1.0638	966.0522	1.593	
0900	45.0			54	56	317	133.18			1.0011	1.0058	1.0633	964.4526	3.082	
0915				55	44	301	115.03			1.0009	1.0048	1.0591	959.4962	2.649	
1000	46.0			106	116	313	190.46			1.0023	.9585	1.0435	903.0635	4.128	
1030				100	110	303	182.48			1.0022	.9636	1.0436	907.8649	3.976	
1100	47.0			100	108	299	178.62			1.0022	.9636	1.0430	907.2961	3.911	
1200	48.0	✓	✓	102	108	297	179.01	✓	✓	1.0022	.9619	1.0421	904.9429	3.888	
* Shut In Well, End of Cleanup Flow															

00158

OILSERV AUSTRALIA

GAS RATE CALCULATION

Page 3 of 7

Client: Santos Ltd.Well: Taylor Stn. #1Test: Modified IsachandInterval: 9502' To 9580' KB Meter Run Size: 0.26

Date	Gas Gravity	Orifice diam.	Gas Temp	Diff hw	Static Pf	√Hw*Pf	Fb	Fg	Y	Ftf	Fpv	C	Gas Rate Q	Cumulative Production
Time	Accum	Air=1	Inches	degF	"H2O	psia							MscfD	MMscfD
March 14, 1988														
1400		Open Well On	12/64	Choke For Rate #1										
1415		.833	1.500	19	101	260	161.97	460.79	1.0957	1.0025	1.0419	1.0582	558.0653	2.169
1430				10	86	270	152.30			1.0021	1.0518	1.0655	567.0161	2.073
1445				9	78	268	144.51			1.0019	1.0530	1.0655	567.4945	1.968
1500				9	78	270	145.05			1.0019	1.0530	1.0661	567.8029	1.977
1515				9	80	267	146.08			1.0019	1.0530	1.0652	567.3684	1.989
1530				9	82	268	148.17			1.0020	1.0530	1.0655	567.5495	2.018
1545				9	82	268	148.17			1.0020	1.0530	1.0655	567.5495	2.018
*1600		↓	↓	9	82	270	148.72	↓	↓	1.0020	1.0530	1.0661	567.8575	2.027
		* Shut In Well, End Of Rate #1												
1800		Open Well On	19/64	Choke For Rate #2										
1815		.848	1.875	7	139	265	191.83	733.68	1.0859	1.0030	1.0552	1.0687	901.4148	4.150
1830				14	117	265	175.99			1.0028	1.0474	1.0648	891.0101	3.763
1845		↓	↓	23	95	265	158.59	↓	↓	1.0022	1.0376	1.0605	878.4509	3.343

00159

OILSERV AUSTRALIA

GAS RATE CALCULATION

Page 4 of 7

Client: Santos Ltd.Well: Taylor Stb. #1Test: Modified IsochronalOperator: L. KnoxInterval: 9502' To 9580' LTB Meter Run Size: 4.026"

Date	Accum	Gas Gravity Air=1	Orifice diam. Inches	Gas Temp degF	Diff hw "H2O	Static Pf psia	√Hw*Pf	Fb	Fg	Y	Ftf	Fpv	C	Gas Rate Q MscfD	Cumulative Production MMscfD
March 14, 1988															
1900		.848	1.875	23	99	263	161.28	73368	1.0559	1.0023	1.0376	1.0597	878.1013	3.399	
1915				23	101	261	162.28			1.0024	1.0376	1.0592	877.7126	3.418	
1930				23	100	260	161.16			1.0024	1.0376	1.0589	877.4770	3.394	
1945				25	97	260	158.73			1.0023	1.0355	1.0580	874.8341	3.333	
* 2000		↓	↓	30	96	260	157.91	↓	↓	1.0023	1.0302	1.0558	868.5319	3.291	
* Shut In Well, End of Rate #2															
2200		Open Well On 2 7/8" Choke For Rate #3													
2215		.860	2.250	25	137	269	191.87	1089.91	1.0783	1.0029	1.0355	1.0625	1296.8159	5.972	
2230				46	88	265	152.63			1.0019	1.0137	1.0523	1256.1445	4.601	
2245				52	84	255	146.28			1.0019	1.0078	1.0479	1243.6340	4.366	
2300				55	68	285	139.15			1.0014	1.0048	1.0533	1245.5961	4.160	
2315				55	71	275	139.66			1.0015	1.0048	1.0511	1243.1955	4.167	
2330				57	71	270	138.39			1.0015	1.0029	1.0494	1238.7265	4.114	
2345		↓	↓	57	71	268	137.87	↓	↓	1.0015	1.0029	1.0489	1238.2481	4.097	

00160

Client: Santos Ltd.Well: Taylor Stk. #1Test: Modified IsochronalOperator: L. KnoxInterval: 9502' To 9580' KBMeter Run Size: 4.026"

Date	Gas Gravity	Orifice diam.	Gas Temp	Diff hw	Static Pf	√Hw*Pf	Fb	Fg	Y	Ftf	Fpv	C	Gas Rate Q	Cumulative Production
Time	Accum	Air=1	Inches	degF	"H2O	psia							MscfD	MMscfD
March 14, 1988														
* 2400		.860	2.250	59	71	270	138.39	1089.91	1.0783	1.0015	1.0010	1.0487	1235.5169	4.103
		* Shut In Well, End Of Rate #3												
March 15, 1988														
2200		Open Well On 40/64 Choke For Rate #4												
2215		.866	2.250	54	200	266	227.92	1089.91	1.0746	1.0044	1.0058	1.0491	1241.3470	6.790
2230				77	117	265	175.99			1.0025	.9840	1.0428	1204.8664	5.089
2245				81	99	265	161.89			1.0021	.9804	1.0416	1198.6372	4.657
2300				84	99	270	163.41			1.0021	.9777	1.0417	1195.3225	4.688
2315				84	97	266	160.55			1.0021	.9777	1.0410	1194.5231	4.603
2330				86	96	265	159.42			1.0021	.9759	1.0403	1191.5106	4.559
2345				86	96	265	159.42			1.0021	.9759	1.0403	1191.5106	4.559
2400		✓	✓	86	96	265	159.42	✓	✓	1.0021	.9759	1.0403	1191.5106	4.559
		* Cut Choke To 34/64 For Extended Flow Rate												
2430		.867	2.250	81	86	263	160.32	1089.91	1.0740	1.0019	.9804	1.0414	1197.3509	4.320

00161

OILSERV AUSTRALIA

GAS RATE CALCULATION

Page 6 of 7

Client: Santos Ltd.Well: Taylor St L. #1Test: Modified IsochronalOperator: L. KnoxInterval: 9502' to 9580' KISMeter Run Size: 4.026"

Date	Gas Gravity	Orifice diam.	Gas Temp	Diff hw	Static Pf	√Hw*Pf	Fb	Fg	Y	Ftf	Fpv	C	Gas Rate Q	Cumulative Production
Time	Accum	Air=1	Inches	degF	"H2O	psia							MscfD	MMscfD
March 15, 1988														
2500		.867	2.250	81	86	265	150.89	1089.91	1.0740	1.0019	.9804	1.0418	1197.7369	4.337
2600				82	86	265	150.89			1.0019	.9795	1.0415	1196.3137	4.332
2700				84	86	265	150.89			1.0019	.9777	1.0409	1193.4881	4.322
2800		↓		86	86	266	151.17		↓	1.0019	.9759	1.0406	1190.8730	4.321
2900		.872		90	83	277	151.55		1.0709	1.0017	.9723	1.0419	1184.4703	4.308
1000				91	80	280	149.59			1.0016	.9715	1.0421	1183.5586	4.249
1100				95	79	290	151.24			1.0016	.9680	1.0427	1179.8123	4.284
1200		↓		97	78	298	152.39		↓	1.0015	.9662	1.0434	1178.4368	4.310
1300		.866		99	82	284	152.53		1.0746	1.0017	.9645	1.0400	1176.7192	4.308
1400				99	81	285	151.87			1.0016	.9645	1.0401	1176.8640	4.289
1500				100	80	285	150.93			1.0016	.9636	1.0399	1175.4993	4.258
1600		↓		100	83	275	151.01		↓	1.0017	.9636	1.0387	1173.9079	4.254
1700		.870		100	83	278	151.83		1.0721	1.0017	.9636	1.0392	1172.1706	4.271
1800		↓	↓	100	84	273	151.36	↓	↓	1.0018	.9636	1.0384	1171.3593	4.255

00162

Page 7 of 7

Test: Modified Isachronal

Meter Run Size: 4.026"

0193

FIELD _____ INTERVAL TESTED _____

Pressure Gauge Calibration Report

COUNTRY _____ TECHNICIAN WALLER

CALIBRATION NO. _____ DATE OF LAST CALIBRATION: _____ PAGE _____ OF _____

CALIBRATION STEPS

[illegible]

$$A = \frac{\sum P}{n}$$

$$B = \frac{\sum Y}{n}$$

$$C = \frac{\sum (Y)^2}{\sum Y}$$

$$D = \frac{\sum (Y_P)}{\sum Y}$$

$$K = \frac{D - A}{C - B}$$

$$a = A - BK$$

я = D - СК

$$Q = \frac{\sum C_i}{n}$$

$$= 4.95$$

GAUGE: OIL SERV TYPE OF ELEMENT: GRE RRG-3

ELEMENT NO. 71589 RANGE: 0-6000 RECORDING SECTION NO. 12068

WEIGHT TESTER TYPE AND RANGE: CHANDLER 55-1 0-10000 LB SERIAL NO. _____

DRAWN AT ATMOSPHERIC PRESSURE READING D_0 = _____ TEMPERATURE = AMBT

E LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____

TEMPERATURE EXPECTED - 280°F CALIBRATION TEMPERATURE - 280°F

ALL CALIBRATION STEPS ☐ WITH A CLOCK ☒ WITH A CRANK _____

NT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLAWS _____

REFERENCE: $H =$ _____ ☐ PLUS IN CASE OF DWT ABOVE THE BELLWS

REFERENCE: $H =$ _____ } $P =$ _____ ☐ PLUS IN CASE OF DWT ABOVE THE BELLOW

GRAVITY OF OIL: $D =$ _____ } ☐ MINUS IN CASE OF DWT BENEATH THE BELLOW

LOADING ON THE CHART SCANNER FOR THE PRESSURE p (5) $\Delta Y =$ FOR CHECKING

READING FOR BASE LINE (6) n = NUMBER OF CALIBRATION STEPS

READING FOR REFERENCE LINE (7) Σ = SUM
STANDARD DEVIATION

REFLECTION { ☐ D - DO IF NO REFERENCE LINE (6) Q - STANDARD DEVIATION
☐ D - DR IF REFERENCE LINE DRAWN

CALIBRATION RESULTS		CHECK PRESSURE	REMARKS
1	100	100	
2	100	100	
3	100	100	
4	100	100	
5	100	100	
6	100	100	
7	100	100	
8	100	100	
9	100	100	
10	100	100	
11	100	100	
12	100	100	
13	100	100	
14	100	100	
15	100	100	
16	100	100	
17	100	100	
18	100	100	
19	100	100	
20	100	100	
21	100	100	
22	100	100	
23	100	100	
24	100	100	
25	100	100	
26	100	100	
27	100	100	
28	100	100	
29	100	100	
30	100	100	
31	100	100	
32	100	100	
33	100	100	
34	100	100	
35	100	100	
36	100	100	
37	100	100	
38	100	100	
39	100	100	
40	100	100	
41	100	100	
42	100	100	
43	100	100	
44	100	100	
45	100	100	
46	100	100	
47	100	100	
48	100	100	
49	100	100	
50	100	100	
51	100	100	
52	100	100	
53	100	100	
54	100	100	
55	100	100	
56	100	100	
57	100	100	
58	100	100	
59	100	100	
60	100	100	
61	100	100	
62	100	100	
63	100	100	
64	100	100	
65	100	100	
66	100	100	
67	100	100	
68	100	100	
69	100	100	
70	100	100	
71	100	100	
72	100	100	
73	100	100	
74	100	100	
75	100	100	
76	100	100	
77	100	100	
78	100	100	
79	100	100	
80	100	100	
81	100	100	
82	100	100	
83	100	100	
84	100	100	
85	100	100	
86	100	100	
87	100	100	
88	100	100	
89	100	100	
90	100	100	
91	100	100	
92	100	100	
93	100	100	
94	100	100	
95	100	100	
96	100	100	
97	100	100	
98	100	100	
99	100	100	
100	100	100	

$$1750 = 1747.59 / 2600 = 3597.42$$

3131.0640 PSI/inch

$$-78.6876 \text{ PSI} \quad 3800 - 3794.99 / 4200 = 4197.02 / 44$$

CHICK PRESSURE REMARKS

$$1750 = 1747.59 / 3600 = 3597.42$$
$$3800 = 3794.99 / 4200 = 4197.02 / 4400 = 4395.53$$

FIELD _____ INTERVAL TESTED _____

Pressure Gauge Calibration Report

COUNTRY _____ TECHNICIAN WARREN _____

CALIBRATION NO. _____ DATE OF LAST CALIBRATION: _____

PAGE _____ OF _____

CALIBRATION STEPS

[illegible]

$$A = \frac{\sum p}{n}$$

$$B = \frac{\Sigma Y}{n}$$

$$C = \frac{\sum (Y)^2}{\sum Y}$$

$$D = \frac{\sum (YP)}{\sum Y}$$

$$K = \frac{D - A}{C - B}$$

$$a = A - BK$$

a = D - CK

$$Q = \frac{\sum C_i}{n}$$

$$= 8.10$$

$$\Sigma + = 14.70$$
$$\Sigma = 14.71$$

97.19

OF GAUGE: 01552V TYPE OF ELEMENT: GRC RGC-3

ELEMENT NO. 71588 RANGE: 0-6000 PSI RECORDING SECTION NO. 62363

RIGHT TESTER TYPE AND RANGE: CHANDLER 55-1 0-10000 PSI SERIAL NO.

DRAWN AT ATMOSPHERIC PRESSURE READING D_0 = _____ TEMPERATURE = AMBT.

LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____

TEMPERATURE EXPECTED - 280°F CALIBRATION TEMPERATURE - 280°F

ALL CALIBRATION STEPS ☐ WITH A CLOCK ☒ WITH A CRANK

■ T PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLOWS _____

DIFFERENCE H = _____ ☐ PLUS IN CASE OF DWT ABOVE THE BELLWS

GRAVITY OF OIL D = _____ } P = _____ } ☐ PLUS IN CASE OF DWT ABOVE THE BELLOW
☐ MINUS IN CASE OF DWT BENEATH THE BELLOW.

READING ON THE CHART SCANNER FOR THE PRESSURE p (5) $\Delta Y =$ FOR CHECKING

READING FOR BASE LINE	(6) n	=	NUMBER OF CALIBRATION STEPS
READING FOR REFERENCE LINE	(7) S	=	SUM

HEADING FOR REFERENCE LINE	(7) Σ	SUM
C.D. - DO IF NO REFERENCE LINE	(8) σ	STANDARD DEVIATION

REFLECTION { ☐ D - DD IF NO REFERENCE LINE (b) ☐ STANDARD DEVIATION
☐ D - DR IF REFERENCE LINE DRAWN

[illegible]
$$22-3 = 395 \text{ g.}$$

3303.5 383 PSI/INCH

$$-4.459 \text{ PSI} \quad 4700 = 4200 \cdot 65 / 4400 = 4400.18$$

ISO - CHRONAL AND BUILD-UP SURVEY

Well: Taylor Stk #1Date: 14/3/88

Lubricator Data:

Pressure with D.W.T. 21320 KPAOut: 21345 KPATime Pressured 1118 Hrs - 14/3/88Time Depressed 0656 Hrs - 19/3/88Time Run in Hole 1220 Hrs - 14/3/88Time off Bottom 0610 Hrs - 19/3/88

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range	<u>71588 / 41370 KPA</u>	<u>71589 / 41370 KPA</u>
Recorder No:	<u>62363 / 15 T.L.S.</u>	<u>12068 / 15 T.L.S.</u>
Clock and Lead Screw Data	<u>F23152 / 120 Hrs.</u>	<u>F23013 / 120 Hrs.</u>
Engage Stylus	Date: <u>14/3/88</u> Time: <u>@ 1100 Hrs</u>	Date: <u>14/3/88</u> Time: <u>@ 1100 Hrs.</u>
Disengage	Date: <u>19/3/88</u> Time: <u>0820 Hrs</u>	Date: <u>19/3/88</u> Time: <u>0820 Hrs</u>

Remarks: Temp. Element # 10066 / 32° To 176° C. Also Rec.

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead KPA ± G.	Casing KPA ± G.	Wellhead Temp. °C	Remarks
<u>14/3/88</u>						
<u>1300</u>			<u>21335</u>	<u>0</u>		<u>@ Hang Depth - 9470'c</u>
<u>1400</u>			<u>21335</u>	<u>0</u>		<u>Open 13/64 - Rate #1</u>
<u>1500</u>			<u>16515</u>	<u>0</u>	<u>37</u>	<u>S.I. Well</u>
<u>1800</u>			<u>21370</u>	<u>0</u>		<u>Open 19/64 - Rate #2</u>
<u>2000</u>			<u>11775</u>	<u>0</u>	<u>40</u>	<u>S.I. Well</u>
<u>2200</u>			<u>21215</u>	<u>0</u>		<u>Open 27/64 - Rate #3</u>
<u>2400</u>			<u>7480</u>	<u>0</u>	<u>42</u>	<u>S.I. Well</u>
<u>15/3/88</u>						
<u>2000</u>			<u>21100</u>	<u>0</u>		<u>Open 40/64 - Rate #4</u>
<u>2400</u>			<u>4070</u>	<u>0</u>	<u>45</u>	<u>Cut Choke - 5/64 - Ex. Rate</u>
<u>2600</u>			<u>5290</u>	<u>0</u>	<u>47</u>	
<u>2800</u>			<u>5270</u>	<u>0</u>	<u>49</u>	
<u>3000</u>			<u>5245</u>	<u>0</u>	<u>51</u>	
<u>3200</u>			<u>5270</u>	<u>0</u>	<u>53</u>	
<u>3400</u>			<u>5270</u>	<u>0</u>	<u>54</u>	
<u>3600</u>			<u>5260</u>	<u>0</u>	<u>54</u>	
<u>3800</u>			<u>5270</u>	<u>0</u>	<u>55</u>	
<u>4000</u>			<u>5260</u>	<u>0</u>	<u>56</u>	
<u>4200</u>			<u>5255</u>	<u>0</u>	<u>57</u>	
<u>4400</u>			<u>5261</u>	<u>0</u>	<u>57</u>	
<u>16/3/88</u>						
<u>0200</u>			<u>5255</u>	<u>0</u>		

ISO - CHRONAL AND BUILD-UP SURVEY CONTINUATION

Well: Taylor St. #1

Date:

Page 2 of 2

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	Wellhead K.P.A.G.	Casing K.P.A.G.	Wellhead Temp. °C	Remarks
16/1/82						
	0400		5270	Ø	58	
	0600		5260	Ø	58	
	0800		5260	Ø	58	
	0805		8690	Ø		S.I. Well For Buildup
	0810		10965	Ø		
	0815	.25	12860	Ø		
	0830	.50	17460	Ø		
	0845	.75	19335	Ø		
	0900	1.0	20030	Ø		
	0915	1.25	20290	Ø		
	0930	1.50	20410	Ø		
	0945	1.75	20480	Ø		
	1000	2.0	20540	Ø		
	1100	3.0	20700	Ø		
	1200	4.0	20790	Ø		
	1300	5.0	20870	Ø		
	1400	6.0	20920	Ø		
	1800	10.0	21060	Ø		
	2400	16.0	21160	Ø		
17/1/82						
	0600	22.0	21210	Ø		
	1200	28.0	21260	Ø		
	1800	34.0	21280	Ø		
	2400	40.0	21290	Ø		
8/3/88						
	0600	46.0	21305	Ø		
	1200	52.0	21335	3725		
	1800	58.0	21340	3725		
	2400	64.0	21340	3725		
9/3/88						
	0600	70.0	21345	3725		
	0610					P.O.H. With Ammandas
	0615					In Lub. & Depress.

VELL NAME: Taylor Sth. #1

STATIC GRADIENT SURVEY

DATE: 19/3/88

BOMB No. 1 DATA

MENT No. 71588 ELEMENT RANGE: 0-6000ps.
ORDER No. 62363 CLOCK DATA: 18547/344.
AGE STYLUS: 0828 Hrs. DISENGAGE: 1150 Hrs.

BOMB No. 2 DATA

ELEMENT No. 71589 ELEMENT RANGE: 0.40090
RECORDER No. 12068 CLOCK DATA: 18548
ENGAGE SYLUS: 0828H₃ DISENGAGE: 1150H₃

LUBRICATOR DATA
3090

PRESSURE WITH D.W.T. 5.21305 KPM Out. 2135
TIME PRESSURED: 0840 Hrs.
TIME DEPRESSURED: 1127 Hrs.

[illegible]

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WIRELINE REPORT

WELL: Taylor St. #1DATE: 9/3/88PROGRAM: Modified Isochronal Test ProgramPURPOSE OF WORK: Tag P.B.T.D. & Insure Tbg.
Free Of Obstructions

REPORT OF WORK PERFORMED:

1630 Hrs: Pressure Test B.O.P.'s & Lub.1645 Hrs: Run In Hole With 1.75" Blind Box1730 Hrs: Tag P.B.T.D. @ 9683' KB & P.O.H.1810 Hrs: Tool String @ Surface, Secure
Well Overnight

OPERATOR'S SIGNATURE

WORK PERFORMED BY: L. Knox OF Oil Serv Aust.

WELL DATA:

Tubing Size: 3 1/2" FWHP: _____ SIWHP: 24650 KPASub Surface S.V./Landing Nipple @ _____ S.S.D. @: 9293' KB"X" Nipple @ 9350' KB "N"/"X" Nipple @ 9362' KB Other _____Min I.D. 2.205 " @ 9362' KB Packer @ 9328' KBPerforated Interval: 9502' To 9580' KBForward to: Petroleum Engineering — Adelaide
Production Department — Moomba

SANTOS LTD

39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS	RUN 01 FIELD TAYLOR SOUTH	WELL 01
EFF DEPTH	WELL STAT	TOOL HUNG 19458
CASING 7"	CASING PRESS	ON BOTTOM 1300 14/3
LINER	TUBING PRESS	OFF BOTTOM 0610 19/3
DATE 880319	ELEMENT RANGE 0 - 6615	ZERO POINT
ELEVATION	ZONE	SHUT-IN 0800 16/3
MAX TEMP	PICK-UP	ON-PROD
BEARF 95021-9580	CAL SER NO. 71588	MPP 9541
TUBING 3-1/2"		
UNITS ENGLISH	PURPOSE	MODIFIED ISOCHRONAL

SURVEY DATA

CO. SANTOS				RUN 01 FIELD TAYLOR SOUTH				WELL 01			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME				
8:00	4134.2	0.0	0.0	12:00	4130.9	2976.7	28.0				
8:05	4421.1	266.9	.1	18:00	4134.0	2979.8	34.0				
8:10	4684.4	530.2	.2	0:01	4135.9	2981.7	40.0				
8:15	4990.3	836.1	.3	6:01	4139.4	2985.2	46.0				
8:30	2366.7	1412.5	.5	12:00	4143.5	2989.4	52.0				
8:45	3038.0	1883.8	.8	18:00	4137.8	2983.6	58.0				
9:01	3432.1	2277.9	1.0	0:00	4134.4	2980.2	64.0				
9:15	3721.9	2567.7	1.2	6:01	4138.5	2984.3	70.0				
9:30	3834.6	2680.4	1.5	6:10	4138.4	2984.2	70.2				
9:45	3886.3	2732.3	1.7	- 9:11	4200.4	3046.2	-41.2				
10:00	3914.7	2760.5	2.0	- 7:23	3286.4	2132.2	-39.4				
11:00	3968.2	2814.0	3.0	- 5:14	4162.6	3008.4	-37.2				
12:00	3997.3	2843.1	4.0	- 3:35	2410.7	1256.6	-35.6				
13:00	4015.2	2861.0	5.0	- 1:14	4123.4	2969.3	-33.2				
14:00	4032.4	2878.2	6.0	- 23:47	1583.3	429.1	-31.8				
18:01	4071.8	2917.6	10.0	- 21:13	4097.1	2942.9	-29.2				
23:59	4103.1	2948.9	16.0	- 19:51	1011.5	-142.6	-27.9				
6:00	4119.1	2964.9	22.0	8:00	1163.2	9.0	0.0				

LUB IN DWT = 3092 PSI / OUT = 3096 PSI

LUB IN AMERADA = 3139 PSI / OUT = 3108 PSI

SANTOS LTD
39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS	RUN 02 FIELD TAYLOR SOUTH	WELL 01
EFF DEPTH	WELL STAT	TOOL HUNG 9564
CASING 7"	CASING PRESS	ON BOTTOM 1300 14/3
LINER	TUBING PRESS	OFF BOTTOM 0610 19/3
DATE 880319	ELEMENT RANGE 0 - 6230	ZERO POINT
ELEVATION	ZONE	SHUT-IN 0800 16/3
MAX TEMP	RICK-UP	ON-PROD
PERF 95021-95801	CAL SER NO. 71589	MPP 9541
TUBING 3-1/2"		
UNITS ENGLISH	PURPOSE	MODIFIED ISOCHRONAL

SURVEY DATA

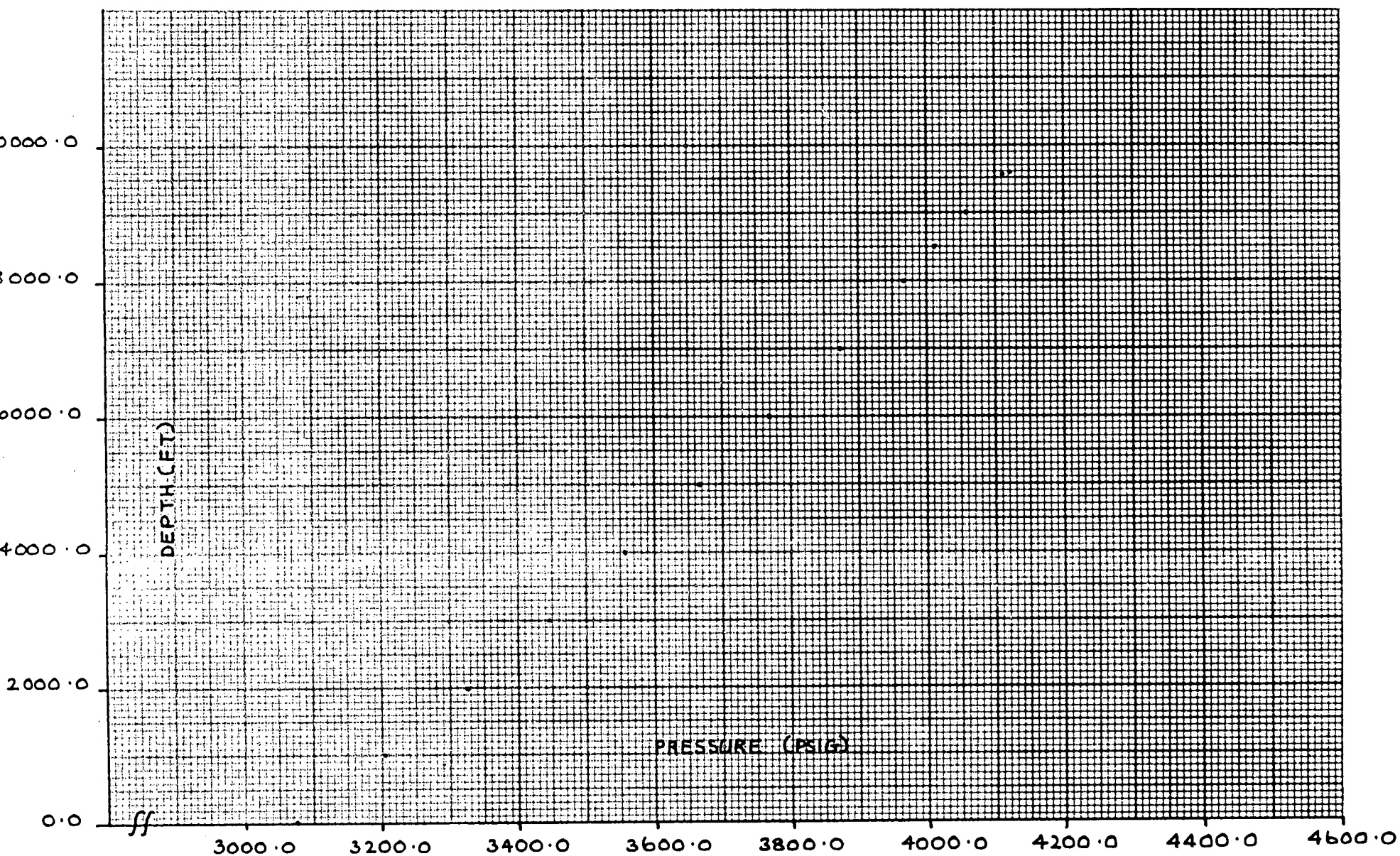
CO. SANTOS	RUN 02 FIELD TAYLOR SOUTH				WELL 01			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME	
8:00	1103.7	0.0	0.0	12:00	4069.7	2966.1	28.0	
8:05	1216.6	112.9	1	18:00	4075.9	2972.2	34.0	
8:10	1455.4	351.7	2	0:00	4078.9	2975.3	40.0	
8:15	1685.5	581.8	3	6:01	4083.5	2979.9	46.0	
8:31	2382.4	1278.8	5	12:00	4085.9	2982.3	52.0	
8:45	2904.4	1800.7	8	18:00	4088.1	2984.4	58.0	
9:00	3324.5	2220.8	1.0	0:00	4090.1	2986.5	64.0	
9:15	3615.6	2511.9	1.2	6:00	4091.0	2987.3	70.0	
9:30	3765.1	2661.4	1.5	6:10	4084.7	2981.0	70.2	
9:46	3831.4	2727.7	1.8	8:50	4130.1	3026.4	-40.8	
10:00	3859.2	2755.5	2.0	7:06	3228.8	2125.2	-39.1	
11:00	3911.7	2808.0	3.0	4:58	4096.7	2993.0	-37.0	
12:00	3941.1	2837.4	4.0	3:20	2358.4	1254.7	-35.3	
13:00	3961.7	2858.0	5.0	1:01	4055.4	2951.7	-33.0	
14:01	3976.6	2873.0	6.0	23:30	1523.2	419.5	-31.5	
18:00	4014.2	2910.6	10.0	21:03	4032.6	2928.9	-29.0	
0:01	4044.5	2940.9	16.0	19:38	956.2	-147.5	-27.6	
6:00	4058.9	2955.2	22.0	8:00	1106.5	2.8	0.0	

LUB IN DWT = 3092 PSI / OUT = 3096 PSI

LUB IN AMERADA = 3074 PSI / OUT = 3082 PSI

TAYLOR SOUTH # 1 - STATIC PRESSURE GRADIENT - 19 / 3 / 88

ELEMENT # 71588 / 6000 (TOP)



SANTOS LIMITED
PETROLEUM DEVELOPMENT DEPARTMENT

TAYLOR SOUTH #1 - TIRRAWARRA SANDSTONE
MODIFIED ISOCHRONAL
9TH - 17TH MARCH, 1988

Report No.:021/89
Author: P.B. Lansom/B.W. Wray/D.M. Woodley
Date: June 1989

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Figure 3 Horner Plot

Figure 4 Horner Plot (magnified view)

Figure 5 Back Pressure Plot

Figure 6 Deliverability Plot

Figure 7 Log k vs T_c^2 Plot

Figure 8 Static Gradient Plot

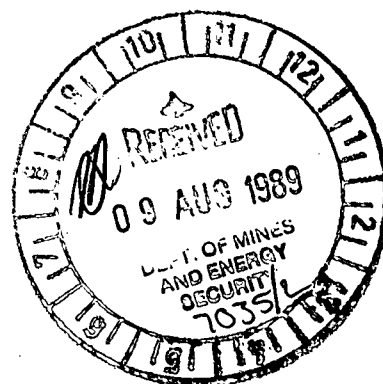
6. APPENDIX

Gaspac PVT Properties of FWS Composition

Recombination Calculation Sheets

AMDEL Compositional Analysis

Well Test Summary Sheets



1. SUMMARY

This report presents the results of the modified isochronal test performed on the Tirrawarra Sandstone in Taylor South #1 in March 1988. A representative full well stream composition has been determined from high pressure gas and liquid samples taken during the test. Analysis of the pressure build-up indicated a flow capacity of 53.4 md-ft, a permeability of 1.2 md and an extrapolated reservoir pressure of 4119 psia at 9541'KB (MPP). The initial reservoir pressure however is taken to be 4143 psia which was recorded at the end of the pre-test shut-in period. The LIT analysis indicated that the well has an absolute open flow potential of 4.6 MMSCFD. The wellbore is in good condition and no remedial work will be required.

2. INTRODUCTION

Taylor South #1 was drilled in January/February 1987 as a Jurassic oil/Permian gas exploration well on an independent partly fault bound anticlinal structure some 2 km south of Bookabourdie #1 in the Merrimelia/Innamincka Block.

Based upon the results of drill stem tests and log analysis, sands within the Toolachee and Patchawarra Formation are interpreted to be gas saturated and tight. 46' of gas pay is mapped within the Tirrawarra Sandstone with no fluid contacts intersected. DST #3 flowed gas and condensate to surface at rates of 6.51 MMSCFD and 66 BCPD respectively (at 1467 psia) from the Tirrawarra Sandstone.

The well was completed and perforated in January, 1988 as a single gas producer from the Tirrawarra Sandstone. Below are the geological parameters:

SAND	PERFORATION INTERVAL (ft KB)	NET PAY (ft)	POROSITY (%)	WATER SATURATION (%)
95-0	9502-9580	46.0	10.7	18.5

All perforations were shot with 2 1/8" enerjets at 4 spf and 0° phasing.

This report presents the results of the modified isochronal and build-up test performed in March, 1988.

3. RESULTS

Interpretation of the test data yielded the following results:

Initial Reservoir Pressure (psia)		
at 9541'KB (MPP)		4143
Flow Capacity (md-ft)		53.4
Permeability (md)		1.2
Apparent Skin		4.3
Turbulence Coefficient (D/MMSCF)		0.62
True Skin		1.63
LIT Absolute Open Flow Potential (MMSCF/D)		4.63
Stabilized Flow Constants	B	$1.508 \times 10^5 \text{ psia}^2/\text{cp/Mscfd}$
	F	$12.37 \text{ psia}^2/\text{cp/Mscfd}^2$
Back Pressure Coefficients	C	$5.840 \times 10^{-4} \text{ Mscfd/psia}$
	n	0.95
Simplified Analysis AOF (MMSCF/D)		4.61

EXTENDED FLOW

Gas Rate (MMSCF/D)	4.29
Condensate Rate (BBLS/D)	93.69
Water Rate (BBLS/D)	17.27
Choke (inches)	34/64
FTP (psia)	765

4. DISCUSSION

4.1 Horner Data

Figure 2 is a log $\Delta\Psi$ versus log Δt plot to determine the valid data for the straight line portion of the Horner build-up (Figures 3 and 4). The Horner plot provides a good straight line and the results are considered representative of the reservoir properties.

The corrected extrapolated reservoir pressure is 4119 psia at 9541'KB (MPP). However, the pre-test shut-in period (SI time = 50 hours) recorded a pressure of 4143 psia at 9541'KB and this higher pressure is taken to be the stabilized initial reservoir pressure. The static gradient survey performed four hours after the build-up was completed, recorded a bottomhole pressure of 4129 psia. The use of the pre-test shut-in pressure as the initial reservoir pressure (4143 psia) is supported by this static gradient pressure being higher than the extrapolated pressure from the build-up (4119 psia).

The Horner plot gave a flow capacity of 53.4 md-ft, corresponding to a permeability of 1.2 md, an apparent skin of 4.3 and a true skin of 1.6. These results compare somewhat unfavourably with those obtained during DST #3 ($k = 3.7$ md, $s' = 4.2$), but a permeability of 1.2 md is considered more representative of the average reservoir permeability due to the greater radius of investigation.

4.2 Modified Isochronal Data

The Back Pressure Plot (Figure 5) gave a straight line when Flow 4 was omitted. The slope gave an 'n' exponent of 0.95 indicating minor turbulent flow.

The Deliverability Plot (Figure 6) had a satisfactory unit slope indicating valid data and gave an Absolute Open Flow Potential of 4.63 MMSCFD. This is significantly less than the DST rate of 6.6 MMSCFD. The lower AOF and permeability obtained from this test as compared to the DST results is most likely a result of the much smaller radius of investigation of the DST. The DST tested a small area around the wellbore of high permeability whereas this test investigated a much greater area of the reservoir with a lower average permeability.

4.3 Gas Composition and FWS Recombination

During the stabilized flow period separator gas and liquid samples were taken and sent to AMDEL for analysis. The flash gas and stock tank liquid resulting from the flash of the separator liquid to stock tank conditions were recombined to form the HP liquid.

The HP Gas and HP liquid were then recombined to form the full well stream. A plot of $\log k$ vs T_c^2 (Figure 7) indicates the samples appear valid. The recombination data is in the Appendix, along with the AMDEL report. It is recommended that this composition be carried as the FWS for Taylor South, Tirrawarra Sandstone. It should be noted that the composition of the flash gas from the HP liquid sample contained unusually high nitrogen mole %, however this anomaly has insignificant effect on the recombined FWS.

FIGURES

TAYLOR SOUTH TAYLOR SOUTH #1 Test 1 (9 MAR 1988)

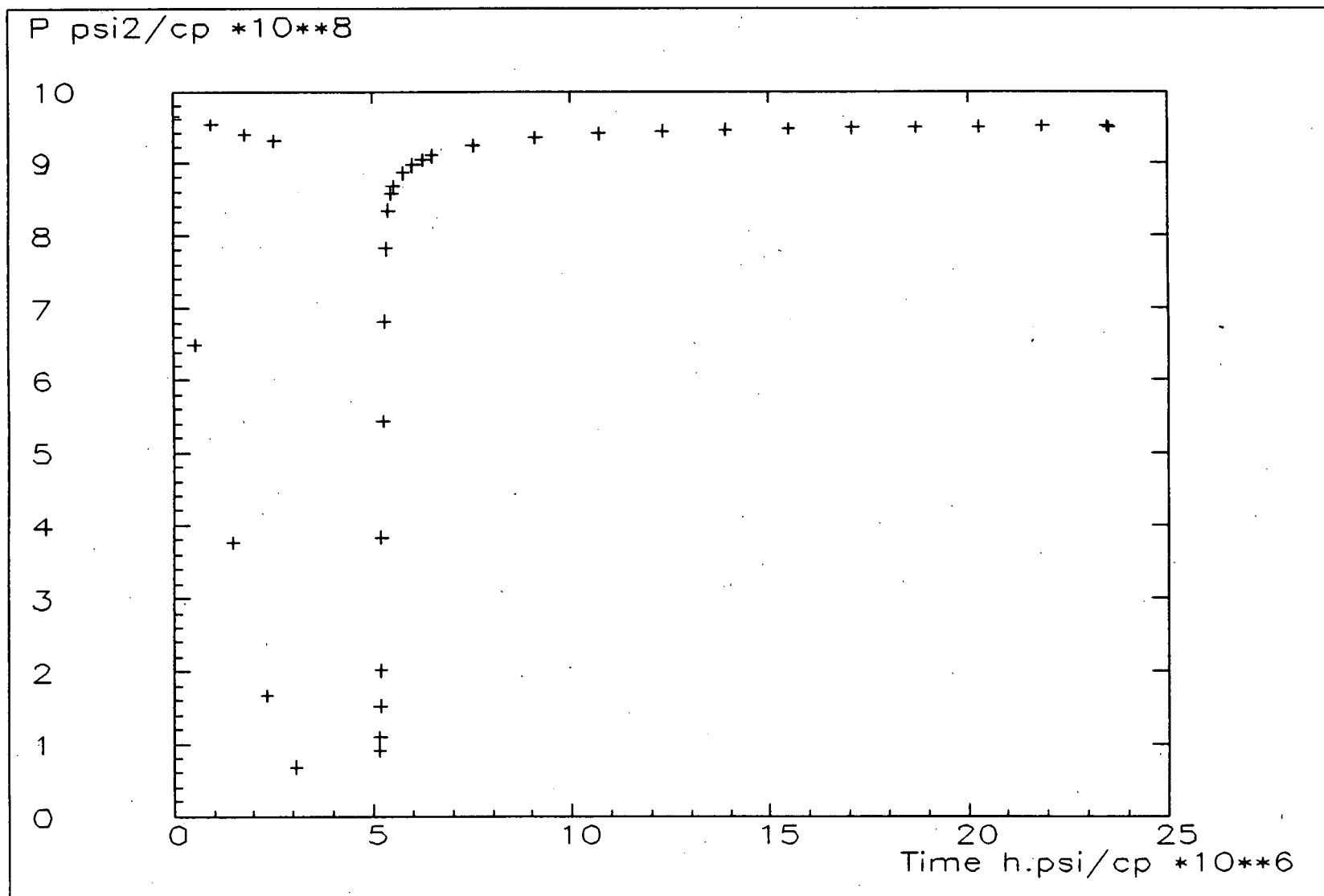


FIGURE 1
Pressure vs Time Plot

TAYLOR SOUTH

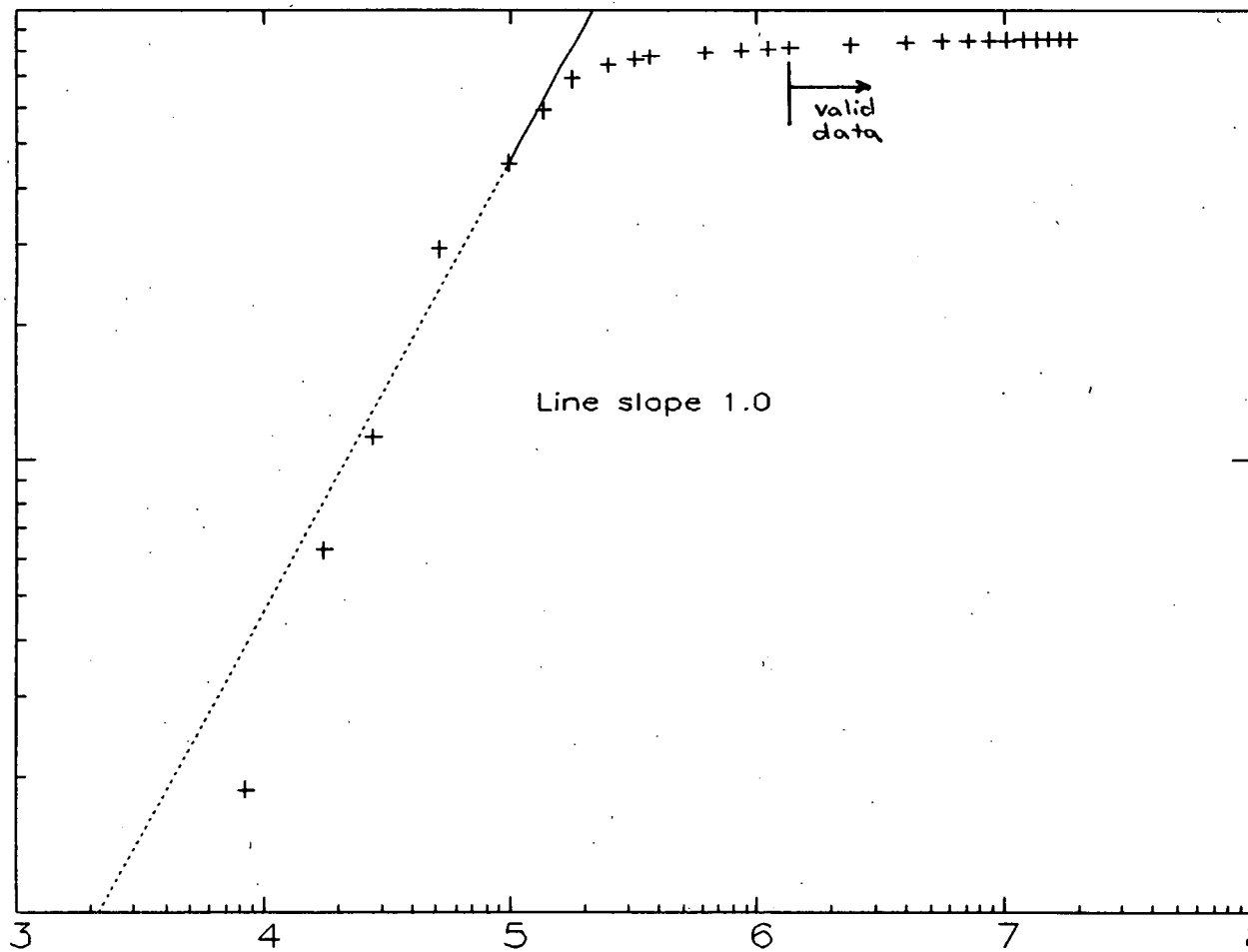
TAYLOR SOUTH #1 Test 1 (9 MAR 1988)

DP psi2/cp 10**

9

8

7



DT h.psi/cp 10**

LOG ΔP vs LOG Δt PLOT

FIGURE 2

00181

TAYLOR SOUTH TAYLOR SOUTH #1 Test 1 (9 MAR 1988)

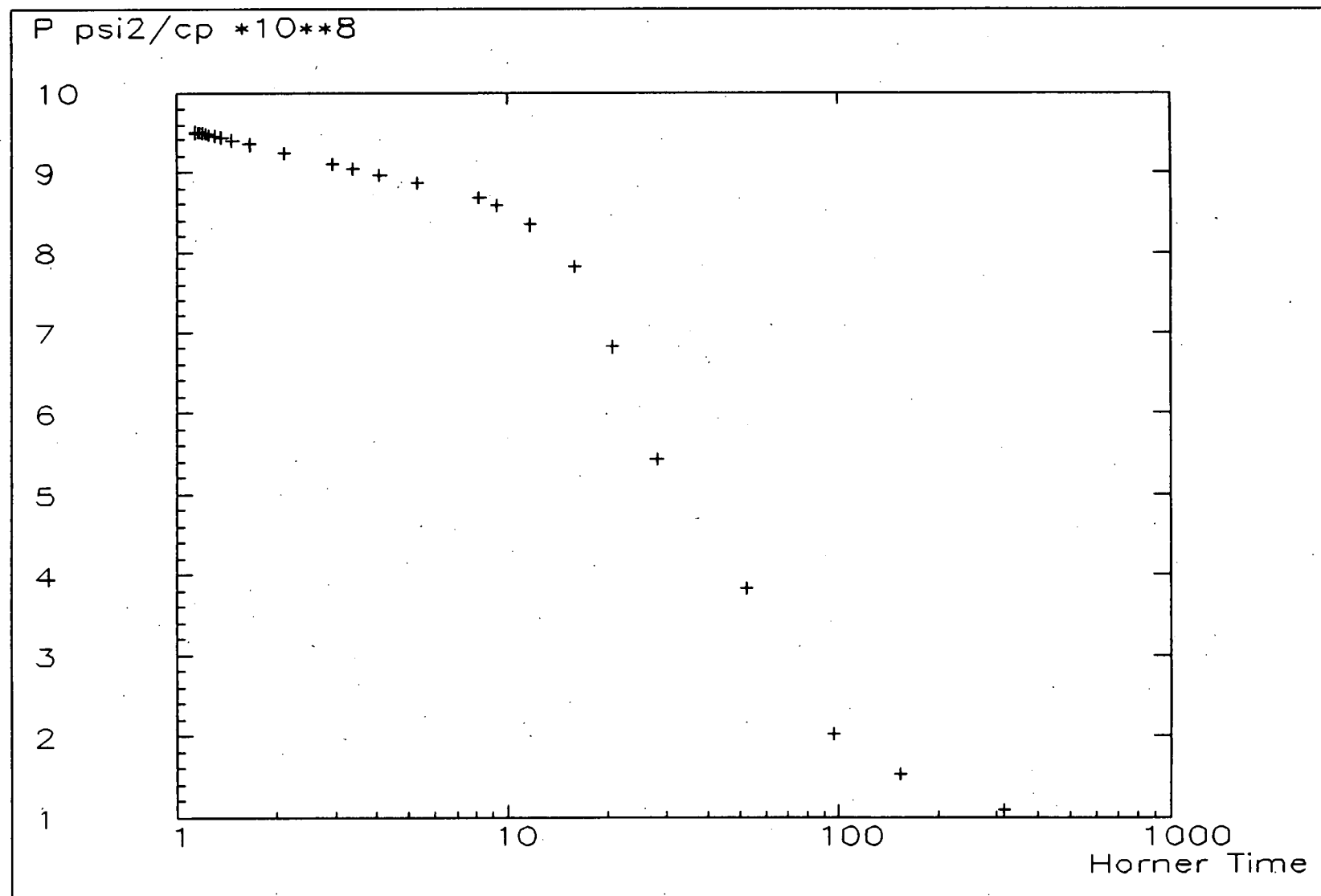


FIGURE 3
HORNER PLOT

00182

TAYLOR SOUTH

TAYLOR SOUTH #1

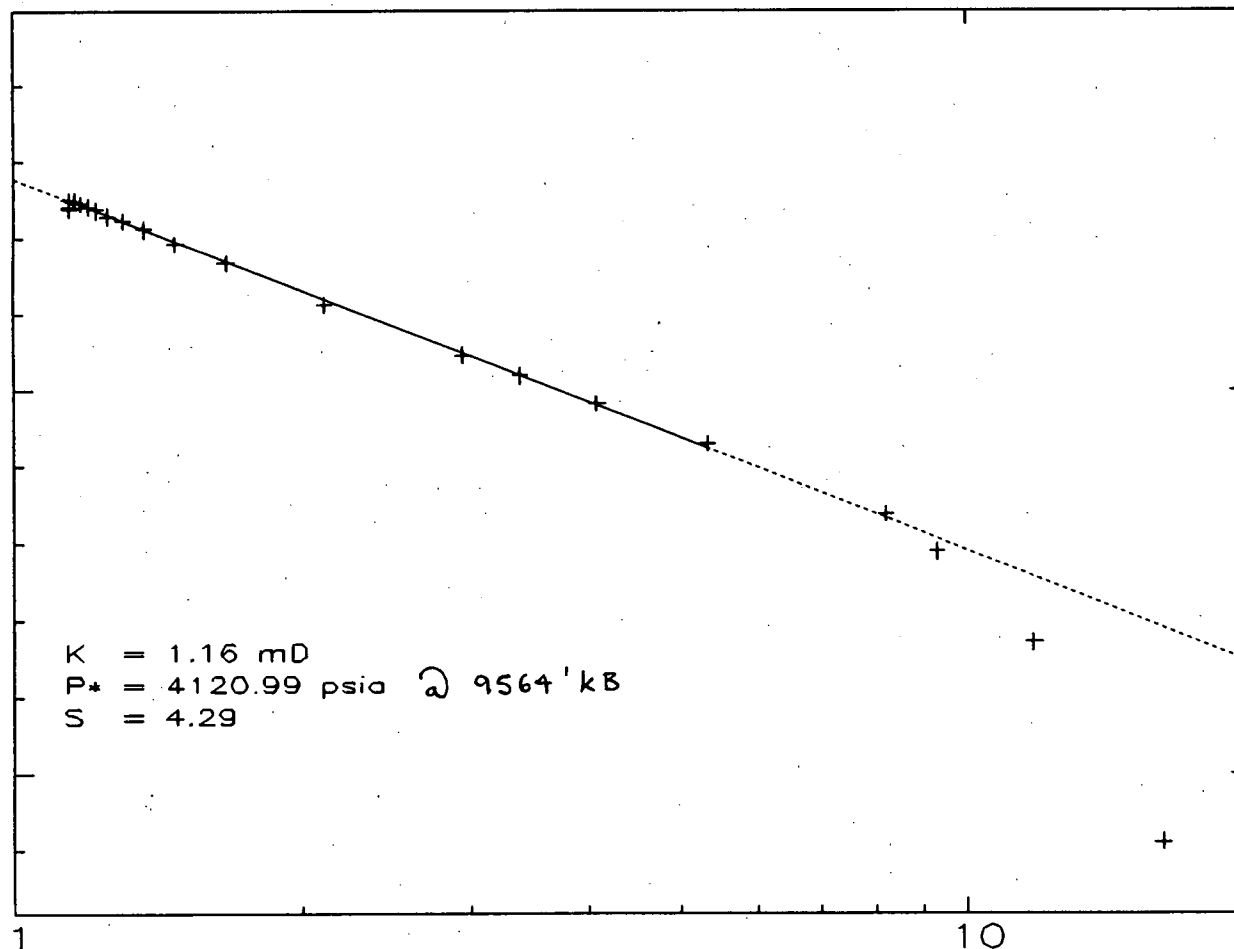
Test 1 (9 MAR 1988)

P psi²/cp *10**8

10

9

8



K = 1.16 mD
P* = 4120.99 psia @ 9564' KB
S = 4.29

Horner Time

FIGURE 4
HORNER PLOT
(magnified view)

00183

TAYLOR SOUTH TAYLOR SOUTH #1 Test 1 (9 MAR 1988)

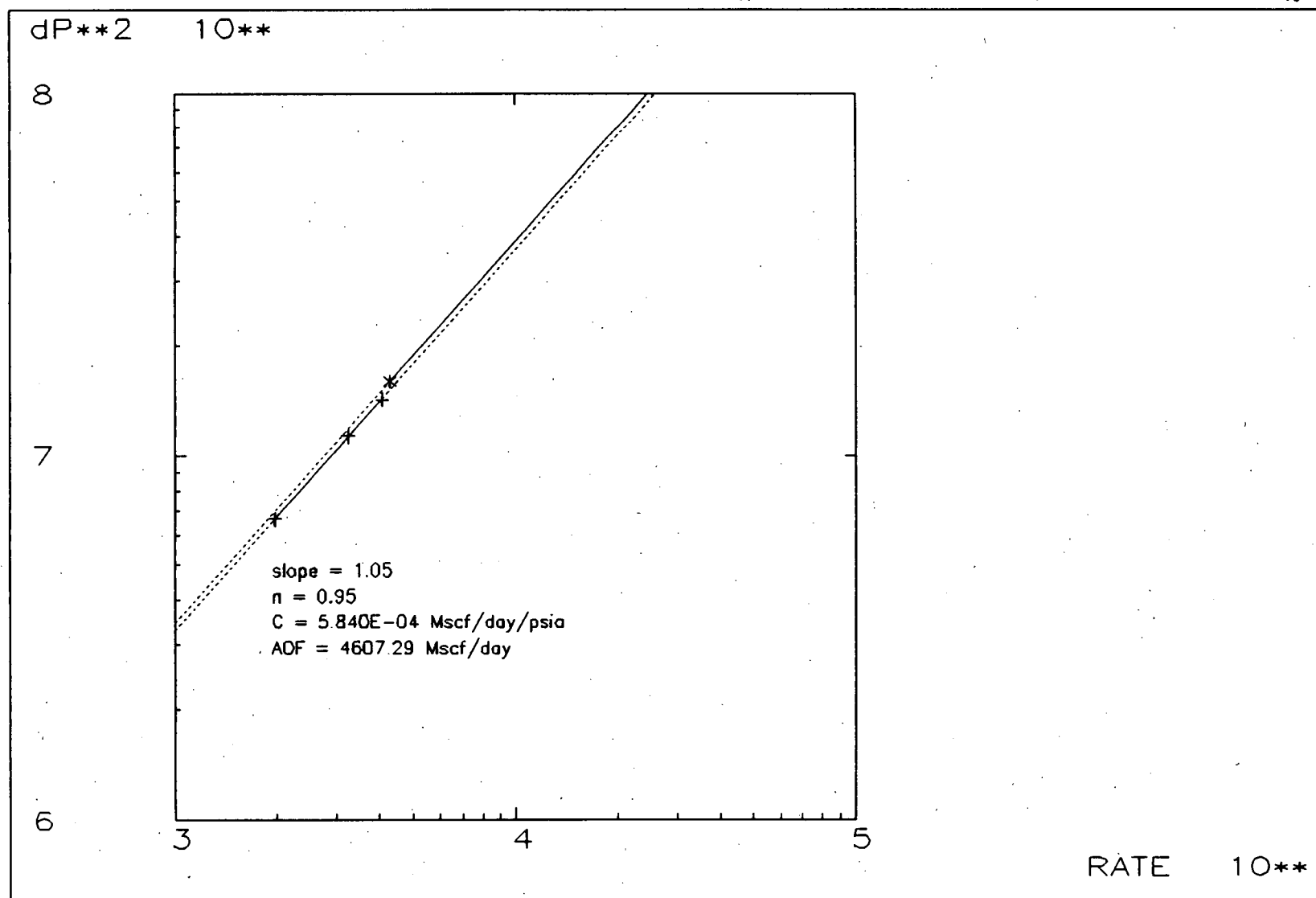


FIGURE 5
Back Pressure Plot

TAYLOR SOUTH TAYLOR SOUTH #1 Test 1 (9 MAR 1988)

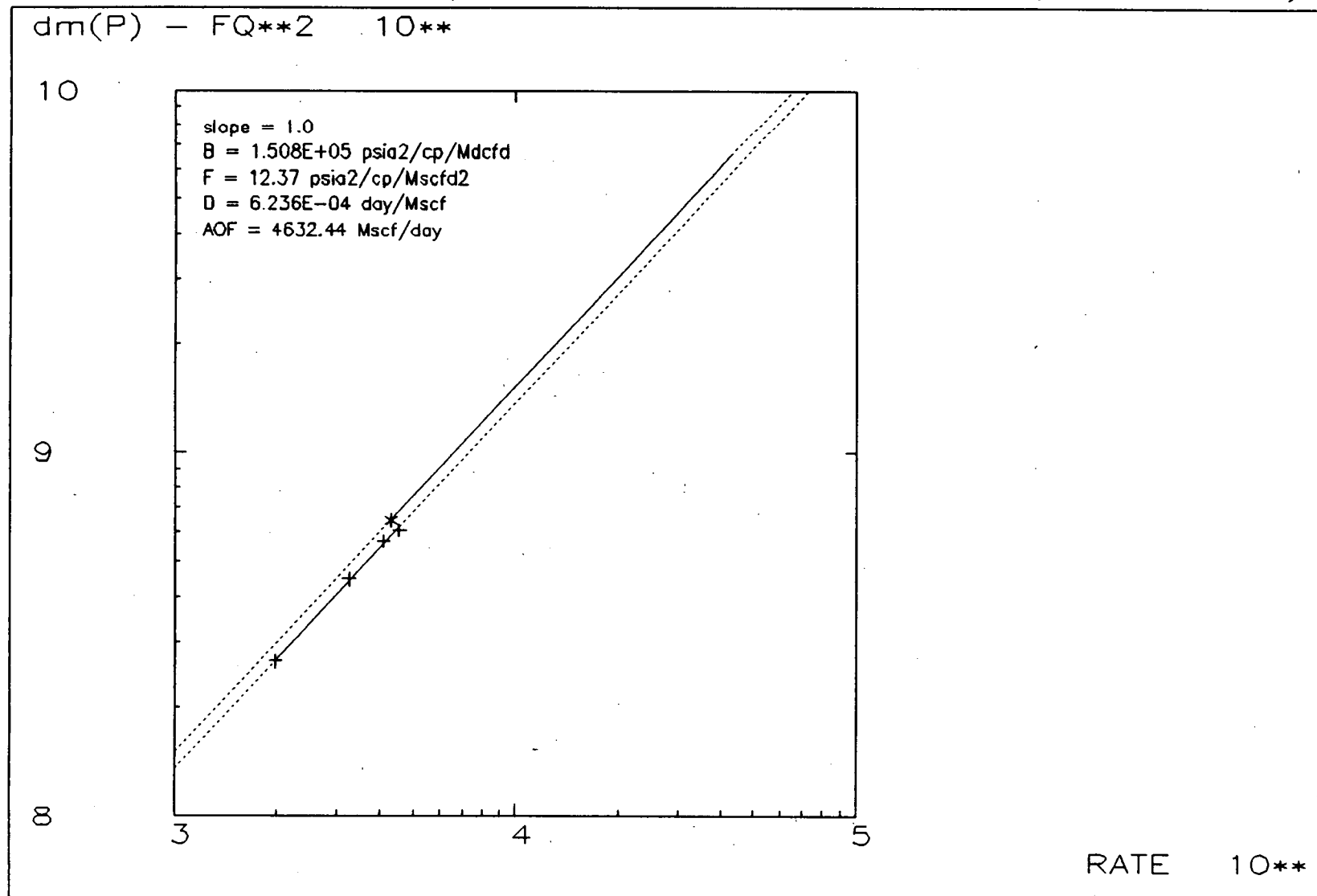


FIGURE 6
Deliverability Plot

WELL=TAYLOR SOUTH # 1 L Date of sample=15/03/88

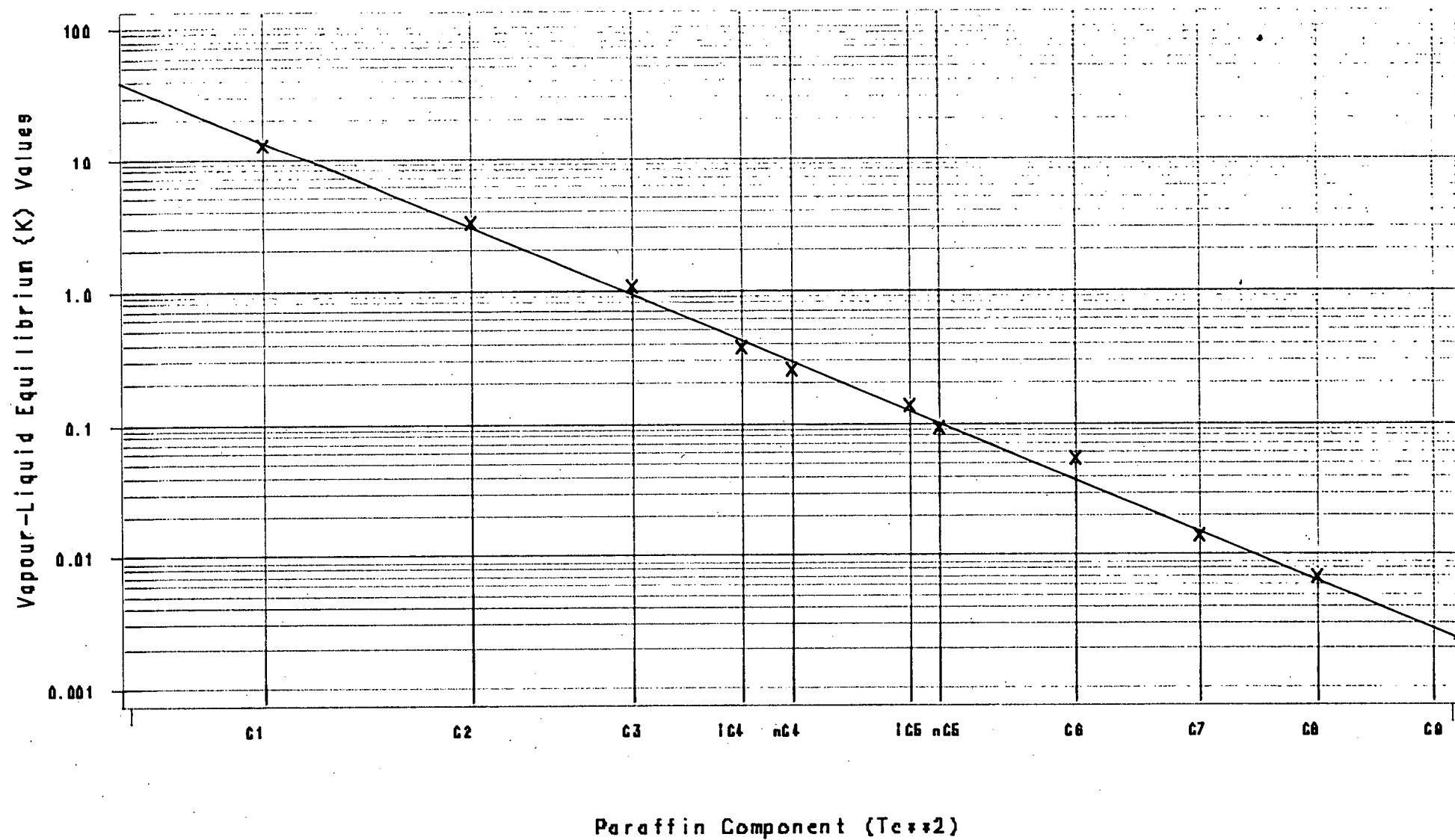


FIGURE 7
Log k vs Tc² Plot

00186

TAYLOR SOUTH # 1 - STATIC PRESSURE GRADIENT - 19 / 3 / 88

ELEMENT # 71588 / 6000 (TOP)

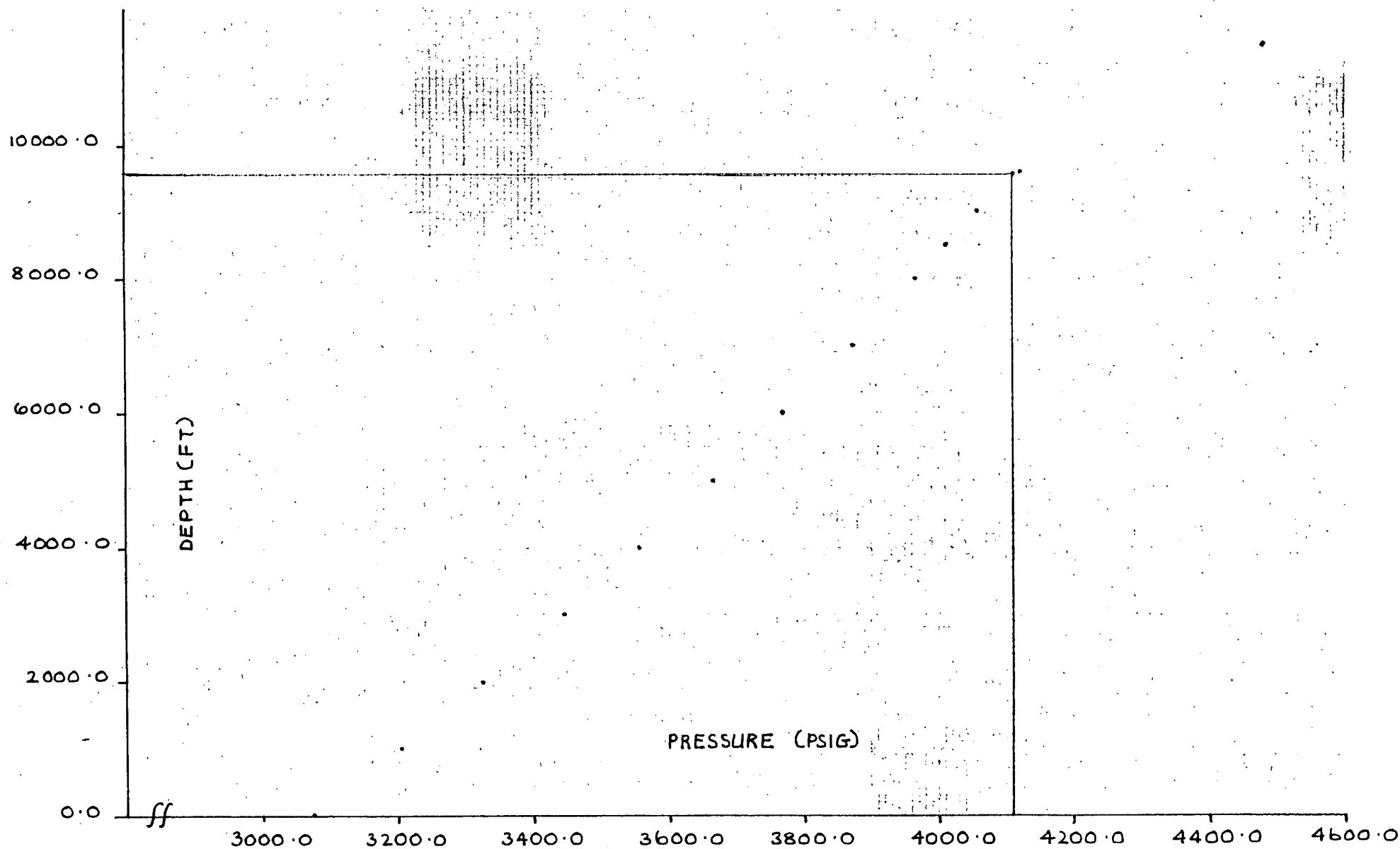


FIGURE 8

APPENDIX

GASPAC PVT PROPERTIES OF FWS COMPOSITION

RECOMBINATION CALCULATION SHEETS

AMDEL COMPOSITIONAL ANALYSIS

WELL TEST SUMMARY SHEETS

TAYLOR SOUTH-TIRRAWARRA
GASPAC PACKAGE - GAS

MODIFIED ISOCHRONAL - 15/3/88

FVT TABLE AT RESERVOIR

TEMPERATURE = 285. DEG. F = 745. DEG. R

PRESSURE PSIA	Z	COMPRESS. PSIA(-1) X 10(-3)	VISCOSITY CP	POTENTIAL PSIA(2)/CP X 10(6)	PRESSURE GRADIENT PSI/FT	P/Z PSIA
14.65	0.99878	68.34290	0.01368			
100.00	0.99172	10.08259	0.01371	0.734	0.00227	100.84
200.00	0.98362	5.08129	0.01380	2.944	0.00458	203.33
300.00	0.97573	3.41310	0.01392	6.627	0.00692	307.46
400.00	0.96806	2.57800	0.01406	11.779	0.00930	413.20
500.00	0.96064	2.07600	0.01419	18.384	0.01172	520.49
600.00	0.95347	1.74040	0.01438	26.436	0.01417	629.28
700.00	0.94658	1.49977	0.01456	35.883	0.01665	739.50
800.00	0.94000	1.31839	0.01480	46.717	0.01916	851.07
900.00	0.93373	1.17642	0.01502	58.879	0.02170	963.87
1000.00	0.92781	1.06195	0.01522	72.376	0.02426	1077.81
1100.00	0.92224	0.96741	0.01539	87.208	0.02685	1192.74
1200.00	0.91706	0.88776	0.01559	103.356	0.02946	1308.53
1300.00	0.91227	0.81952	0.01581	120.768	0.03208	1425.02
1400.00	0.90789	0.76020	0.01602	139.409	0.03471	1542.04
1500.00	0.90393	0.70801	0.01626	159.241	0.03736	1659.42
1600.00	0.90041	0.66160	0.01649	180.223	0.04000	1776.96
1700.00	0.89734	0.61994	0.01673	202.324	0.04265	1894.48
1800.00	0.89473	0.58226	0.01696	225.510	0.04529	2011.79
1900.00	0.89257	0.54795	0.01720	249.748	0.04792	2128.70
2000.00	0.89086	0.51653	0.01743	275.004	0.05054	2245.01
2100.00	0.88962	0.48762	0.01767	301.243	0.05314	2360.56
2200.00	0.88883	0.46092	0.01798	328.378	0.05572	2475.17
2300.00	0.88848	0.43617	0.01829	356.303	0.05828	2588.68
2400.00	0.88858	0.41317	0.01860	384.977	0.06080	2700.94
2500.00	0.88910	0.39176	0.01892	414.361	0.06330	2811.83
2600.00	0.89004	0.37179	0.01923	444.417	0.06576	2921.22
2700.00	0.89138	0.35312	0.01955	475.107	0.06819	3029.01
2800.00	0.89311	0.33567	0.01986	506.393	0.07058	3135.12
2900.00	0.89521	0.31933	0.02020	538.225	0.07293	3239.47
3000.00	0.89767	0.30403	0.02053	570.544	0.07523	3342.00
3100.00	0.90047	0.28967	0.02087	603.314	0.07750	3442.66
3200.00	0.90359	0.27620	0.02121	636.505	0.07972	3541.44
3300.00	0.90702	0.26356	0.02155	670.084	0.08190	3638.29
3400.00	0.91074	0.25168	0.02189	704.022	0.08404	3733.22
3500.00	0.91474	0.24052	0.02223	738.291	0.08613	3826.21
3600.00	0.91901	0.23001	0.02257	772.862	0.08818	3917.27
3700.00	0.92352	0.22013	0.02291	807.710	0.09019	4006.42
3800.00	0.92826	0.21083	0.02325	842.811	0.09215	4093.66
3900.00	0.93323	0.20206	0.02359	878.141	0.09408	4179.04
4000.00	0.93840	0.19379	0.02392	913.678	0.09596	4262.56
4100.00	0.94377	0.18599	0.02426	949.400	0.09780	4344.26
4200.00	0.94933	0.17863	0.02460	985.288	0.09959	4424.17
4300.00	0.95506	0.17168	0.02493	1021.331	0.10135	4502.33
4400.00	0.96096	0.16510	0.02525	1057.524	0.10307	4578.77
4500.00	0.96701	0.15888	0.02558	1093.851	0.10476	4653.53
4600.00	0.97320	0.15300	0.02590	1130.296	0.10640	4726.66
4700.00	0.97954	0.14743	0.02622	1166.843	0.10801	4798.18
4800.00	0.98600	0.14214	0.02655	1203.477	0.10959	4868.15
4900.00	0.99259	0.13713	0.02687	1240.185	0.11113	4936.59
5000.00	0.99929	0.13238	0.02720	1276.955	0.11264	5003.55

11:18 WEDNESDAY, JULY 5, 1989

FWS RECOMBINATION PROCEDURE
INPUT DATA FOR TAYLOR SOUTH # 1 L SAMPLED ON: MAR 15, 1988

JUL 5, 1989 Page 1.

TEST DATA

Date of test 15/03/88
FTHP 5270 kPa
Choke Size 34 / 64ths
Separator Pressure 1785 Kpa
Separator Temperature 38 deg C
Hours on Test 28.00
Separator Code

Line Oil Rate m3/d
Stock Tank Oil Rate 15.12 m3/d
Reported Gas Rate 120.78 x10E3 m3/d
Confirmed Gas Rate 120.78 x10E3 m3/d
Water Rate 2.520 m3/d
Line Oil Density kg/m3

SAMPLE DATA

Date of Sample 15/03/88
Sample Source/Point SEPARATOR
Sample Temperature 38.0 deg C
Sample Pressure 1785 kPa

Laboratory AMDEL
Laboratory Reference F5181/88

H. P. GAS SAMPLE ANALYSIS

N2	1.33
CO2	11.42
C1	66.77
C2	13.19
C3	4.13
iC4	0.59
nC4	0.94
iC5	0.36
nC5	0.33
C6	0.40
C7	0.18
C8+	0.36
Total	100.00
Density	0.837 (Air=1)
Mol Wt.	24.220
Gross H.V.	42.570 MJ/m3

FLASH GAS SAMPLE ANALYSIS

N2	12.08
CO2	8.64
C1	30.43
C2	21.77
C3	14.65
iC4	3.38
nC4	4.77
iC5	1.49
nC5	0.93
C6	0.69
C7	0.50
C8+	0.67
Total	100.00
Density	1.158 (Air=1)
Mol wt.	33.418
Gross H.V.	56.950 MJ/m3

FLASH LIQ SAMPLE ANALYSIS

N2	0.00
CO2	0.00
C1	0.00
C2	0.42
C3	1.55
iC4	1.20
nC4	3.35
iC5	2.91
nC5	4.08
C6	8.56
BENZ	0.09
C7	14.80
MCH	8.62
TOL	4.48
C8+	49.94
Total	100.00
SG at 22.3	0.762
SG at 15.6	0.768
Deg API	52.790
SG of C8+	0.825
Mol Wt. C8	137.00

Vol. of Flash Gas 13.50 litres
Vol. of Flash Liq 409.00 mls
Temp. of Flash 22.3 deg C

00190

FWS RECOMBINATION PROCEDURE JUL 5, 1989 Page 2.
 RECOMBINATION OUTPUT FOR TAYLOR SOUTH # 1 L
 SAMPLED ON: MAR 15, 1988

H. P. Gas Molar Rate	5108.25 kg-mol/d
Moles of Flash Gas	0.557 moles
Mol. Wt. of Flash Liquid	111.78 kg/kg-mol
Moles of Flash Liquid	2.79 moles
Moles of H.P. Liquid	3.34 moles

HP Sample Composition

N2	2.01
CO2	1.44
C1	5.07
C2	3.97
C3	3.73
iC4	1.56
nC4	3.59
iC5	2.67
nC5	3.56
C6	7.25
C7	12.49
C8+	52.66

Total 100.00

Mol. Wt. of H.P. Liquid Sample	103.245 kg/kg-mol
Separator Oil Molar Rate	123.65 kg-mol/d
F.W.S. Molar Rate	5231.90 kg-mol/d
Gas Recombination Factor	0.976
Oil Recombination Factor	0.024

F.W.S. Composition

K Values

N2	1.35	.
CO2	11.18	.
C1	65.31	13.170
C2	12.97	3.322
C3	4.12	1.107
iC4	0.61	0.378
nC4	1.00	0.262
iC5	0.41	0.135
nC5	0.41	0.093
C6	0.56	0.055
C7	0.47	0.014
C8+	1.61	0.007

Total 100.00

00191



technology and enterprise

Amdel Limited
(Incorporated in S.A.)
31 Flemington Street,
Frewville, S.A. 5063

Telephone: (08) 372 2700

P.O. Box 114,
Eastwood, S.A. 5063

Telex: AA82520
Facsimile: (08) 79 6623

21 April 1988

Santos Limited
Santos House
39 Grenfell Street
ADELAIDE SA 5000

Attention: Mr D. Crane

Dear Sir,

F 5181/88

Please find attached our analyses of Taylor South-1 stable liquid and HP liquid and gas from the separator.

The HP gas analysis is similar to that obtained before, without, however, the high values for C7 and C8. In both analyses the gas was heated before being analysed.

The flash gas composition seemed unusual to us and we have therefore analysed the gas three times. Since we have obtained the same result, I can only state that the nitrogen is present in the flash gas at a level of about 12 mol %.

Please contact me if we can assist any further with the analysis of these samples.

Yours faithfully

Dr Brian G. Steveson
Manager
Petroleum Services Section

BGS:cap
Encls.



Amdel Limited
(Incorporated in S.A.)
31 Flemington Street,
Frewville, S.A. 5063

P.O. Box 114,
Eastwood, S.A. 5063

NATA CERTIFICATE

Telephone: (08) 372 2700

Telex: AA82520
Facsimile: (08) 79 6623

AMDEL LIQUID ANALYSIS SERVICE Method R2.1

Client: SANTOS LTD

Report # F5181/88

Sample: TAYLOR SOUTH 1
Tirrawarra fmtn., 9502-9580ft
ex separator sight glass, 15/3/88

Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-88.6	ETHANE	0.00	0.00
-42.1	PROPANE	0.03	0.09
-11.7	I-BUTANE	0.05	0.12
-0.5	N-BUTANE	0.16	0.37
27.9	I-PENTANE	0.20	0.37
36.1	N-PENTANE	0.24	0.45
36.1-68.9	C-6	1.96	3.05
80.0	BENZENE	0.04	0.07
68.9-98.3	C-7	8.35	11.19
100.9	METHYLCYCHX	6.13	8.38
110.6	TOLUENE	2.77	4.04
98.3-125.6	C-8	12.39	14.57
136.1-144.4	ETHYLBZ+XYL	9.05	11.45
125.6-150.6	C-9	7.91	8.30
150.6-173.9	C-10	12.02	11.34
173.9-196.1	C-11	7.84	6.74
196.1-215.0	C-12	5.61	4.42
215.0-235.0	C-13	4.20	3.06
235.0-252.2	C-14	4.21	2.85
252.2-270.6	C-15	4.46	2.82
270.6-287.8	C-16	2.69	1.60
287.8-302.8	C-17	1.87	1.04
302.8-317.2	C-18	2.13	1.12
317.2-330.0	C-19	1.56	0.78
330.0-344.4	C-20	1.12	0.53
344.4-357.2	C-21	0.83	0.38
357.2-369.4	C-22	0.58	0.25
369.4-380.0	C-23	0.46	0.19
380.0-391.1	C-24	0.38	0.15
391.1-401.7	C-25	0.28	0.11
401.7-412.2	C-26	0.20	0.07
412.2-422.2	C-27	0.16	0.06
>422.2	C-28+	0.12	0.04
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.

Average molecular weight of C-8 plus 147 g/mol

This report relates specifically to the sample tested; it also relates to the batch insofar as the sample is representative of the Batch.

Approved Signatory

Date

16-Apr-88

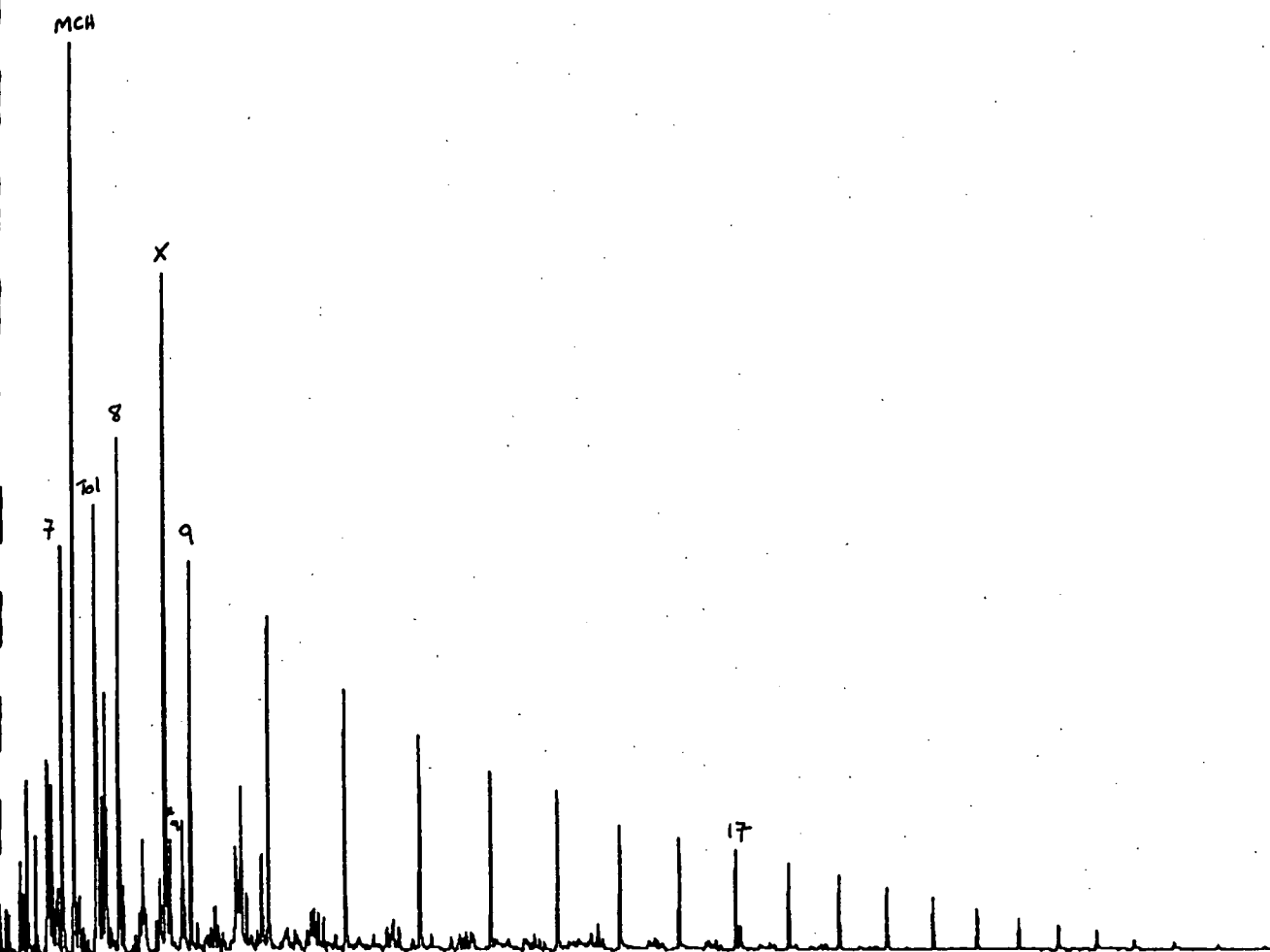


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043

PERKIN-ELMER CORP. PART NO. N625-1026

TAYLOR SOUTH-1



NATA CERTIFICATE

Telephone: (08) 372 2700

AMDEL GAS ANALYSIS SERVICE

Method R1.1

page 1 of 2

ASTM D 1945-81 (modified)

Client: SANTOS LTD

Report # F5181/88

Sample: TAYLOR SOUTH 1
Tirrawarra ftn., 15/3/88
Separator: 38 degrees C, 1785KPa
cylinder #016, 1855hrs

GAS	MOL %
Nitrogen	1.33
Carbon Dioxide	11.42
Methane	66.77
Ethane	13.19
Propane	4.13
I-Butane	0.59
N-Butane	0.94
I-Pentane	0.36
N-Pentane	0.33
Hexanes	0.40
Heptanes	0.18
Octanes and higher h'c	0.36
Total	100.00

(0.00 = less than 0.01%)

Calculated Gas Density

(Air = 1) : 0.837

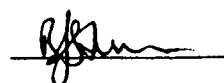
Calorific Value (15.0 deg C, 101.325 kPa)

Gross:	1143 BTU/CU Ft	42.57 MJ/CU.M
Nett:	1037 BTU/CU Ft	38.65 MJ/CU.M

Gross calorific value of water-saturated gas	41.83 MJ/CU.M
Average Molecular Weight =	24.220

All results are calculated on the basis that only the measured constituents are present. This report relates specifically to the sample tested; it also relates to the entire batch insofar as the sample is truly representative of the batch.

Approved Signatory



Date

15-Apr-88



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AMDEL METHOD R1.1 (ASTM D1945-81, modified)

This method conforms to ASTM D1945-81, "Analysis of Natural Gas by Gas Chromatography"; however, this standard is quite general and permits considerable scope in the configuration of equipment and processing of results.

Tests carried out by Amdel Limited in May and June, 1987 indicate that the repeatability of our analyses conforms to that specified in the standard. This being the case, we maintain that our analyses will reach the reproducibility requirement also. These precision estimates are:

Component Level, (mol. %)	Repeatability	Reproducibility
0.01 to 1	0.03	0.06
1 to 5	0.05	0.10
5 to 25	0.15	0.20
Over 25	0.30	0.60
C ₆ and heavier fractions*	5% of amount	10% of amount

*The standard assumes calculation of results into C₆ and C₇(+) fractions.

The repeatability is the value below which, in 95% of cases, the difference between two single values obtained under the same conditions may be expected to lie. Reproducibility is defined similarly but refers to analyses carried out by, for example, different operators, different days or different laboratories.

For the sake of uniformity and client's convenience, we retain two decimal place reporting.

AMDEL High Pressure Liquid Analysis R2.2

Page 1 of 3

Client: SANTOS LTD

Report # F5181/88

 Sample: TAYLOR SOUTH 1
 Tirrawarra ftn., 9502-9580ft
 15/3/88

After compression to a pressure greater than that at which it was collected, the sample was flashed to atmosphere at 25°C.

The volume of each is then measured and the density of the oil determined. Both fractions are then analysed chromatographically. Mathematical recombination of the results gives an analysis of the sample as received.

The sample yielded 409 mls of liquid
 and 13.5 litres of gas at 22.3 °C.

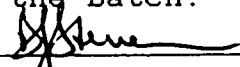
Flash Gas Analysis

Component Gas	Mol (%)
Nitrogen	12.08
Carbon Dioxide	8.64
Methane	30.43
Ethane	21.77
Propane	14.65
I-Butane	3.38
N-Butane	4.77
I-Pentane	1.49
N-Pentane	0.93
Hexanes	0.69
Heptanes	0.50
Octanes and Higher Hydrocarbons	0.67
Total	100.00
Calculated Gas Density (rel air =1)	1.158

Calorific Value (15.0 deg C, 101.325 kPa)

Gross:	1528.96 BTU/CU Ft	56.95 MJ/CU.M
Nett:	1400.39 BTU/CU Ft	52.16 MJ/CU.M
Gross calorific value of water-satura		55.97 MJ/CU.M
Average Molecular Weight =	33.418	

This report relates specifically to the sample tested; it also relates to the batch insofar as the sample is representative of the Batch.

 Approved Signatory 

Date

18-Apr-88



This laboratory is registered by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of registration. This document shall not be reproduced except in full.

AMDEL High Pressure Liquid Analysis R2.2

NATA Certificate

Flash Liquid Analysis

Page 2 of 3

Client: SANTOS LTD

Report # F5181/88

Sample: TAYLOR SOUTH 1
Tirrawarra fmtn., 9502-9580ft
15/3/88

18-Apr-88

Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-88.6	Ethane	0.11	0.42
-42.1	Propane	0.60	1.55
-11.7	I-Butane	0.61	1.20
-0.5	N-Butane	1.71	3.35
27.9	I-Pentane	1.84	2.91
36.1	N-Pentane	2.58	4.08
36.1-68.9	C-6	6.47	8.56
80.0	Benzene	0.06	0.09
68.9-98.3	C-7	13.01	14.80
100.9	Methylcyclohexane	7.42	8.62
110.6	Toluene	3.62	4.48
98.3-125.6	C-8	12.40	12.38
136.1-144.4	Ethylbenz+Xylenes	8.09	8.69
125.6-150.6	C-9	7.45	6.62
150.6-173.9	C-10	10.01	8.02
173.9-196.1	C-11	6.11	4.46
196.1-215.0	C-12	3.90	2.61
215.0-235.0	C-13	3.16	1.95
235.0-252.2	C-14	2.25	1.29
252.2-270.6	C-15	2.29	1.23
270.6-287.8	C-16	1.22	0.61
287.8-302.8	C-17	0.96	0.46
302.8-317.2	C-18	1.02	0.46
317.2-330.0	C-19	0.68	0.29
330.0-344.4	C-20	0.56	0.23
344.4-357.2	C-21	0.42	0.16
357.2-369.4	C-22	0.38	0.14
369.4-380.0	C-23	0.30	0.11
380.0-391.1	C-24	0.25	0.08
391.1-401.7	C-25	0.19	0.06
401.7-412.2	C-26	0.14	0.04
412.2-422.2	C-27	0.11	0.03
>422.2	C-28+	0.08	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:

Specific Gravity @ 22.3 °C 0.7620
Specific Gravity @ 15.6 °C 0.7678
API Gravity 52.79
Specific Gravity of C8+ fraction 0.8250 ✓ (calc)
Average molecular weight of C-8+ fraction 137 ✓



AMDEL High Pressure Liquid Analysis R2.2 NATA Certificate
Calculated Composition of Total Sample as Received

Page 3 of 3

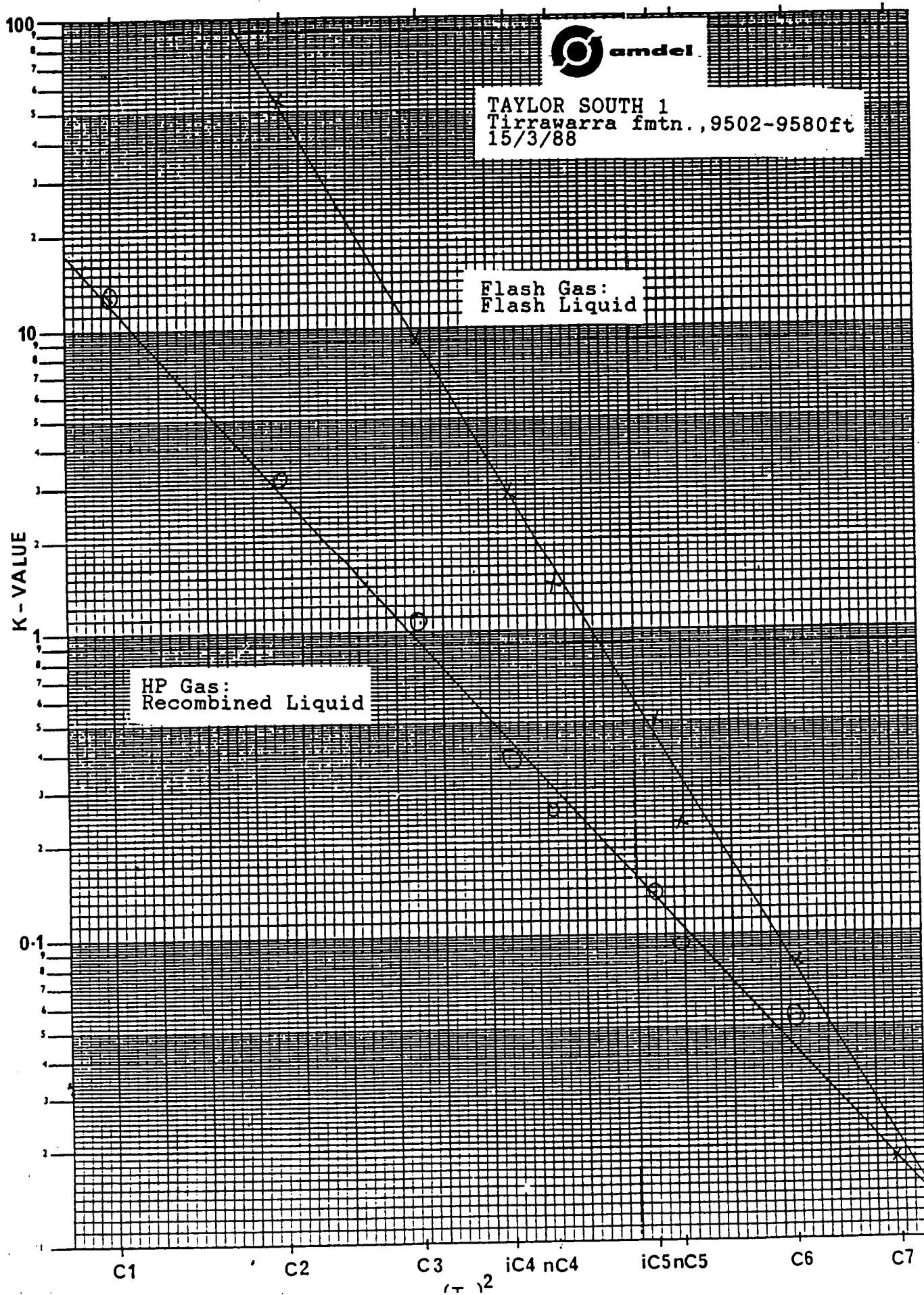
Client: SANTOS LTD

Report # F5181/88

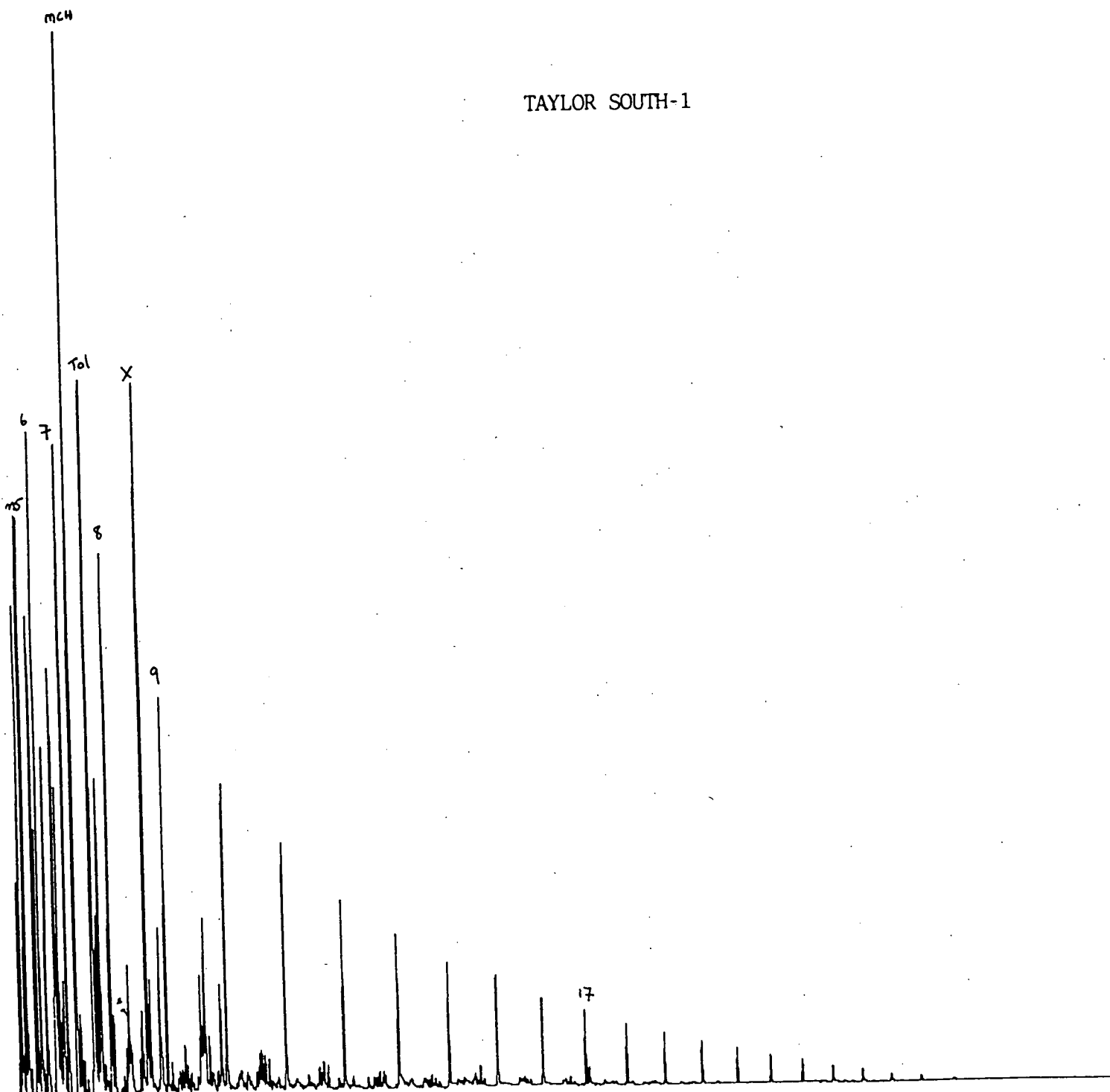
Sample: TAYLOR SOUTH 1
Tirrawarra fmn., 9502-9580ft
15/3/88

18-Apr-88

Boiling Point Range (Deg.C)	Component	Weight%	Mol%
-195.8	Nitrogen	0.60	2.12
-78.5	Carbon Dioxide	0.67	1.52
-164	Methane	0.86	5.35
-88.6	Ethane	1.26	4.17
-42.1	Propane	1.72	3.90
-11.7	I-Butane	0.92	1.58
-0.5	N-Butane	2.10	3.60
27.9	I-Pentane	1.92	2.66
36.1	N-Pentane	2.55	3.52
36.1-68.9	C-6	6.19	7.17
80.0	Benzene	0.06	0.07
68.9-98.3	C-7	12.33	12.28
100.9	Methylcyclohexane	6.98	7.10
110.6	Toluene	3.41	3.69
98.3-125.6	C-8	11.80	10.31
136.1-144.4	Ethylbenz+Xylenes	7.61	7.16
125.6-150.6	C-9	7.01	5.46
150.6-173.9	C-10	9.42	6.61
173.9-196.1	C-11	5.75	3.66
196.1-215.0	C-12	3.67	2.15
215.0-235.0	C-13	2.97	1.61
235.0-252.2	C-14	2.12	1.07
252.2-270.6	C-15	2.15	1.01
270.6-287.8	C-16	1.15	0.51
287.8-302.8	C-17	0.90	0.37
302.8-317.2	C-18	0.96	0.38
317.2-330.0	C-19	0.64	0.24
330.0-344.4	C-20	0.53	0.19
344.4-357.2	C-21	0.40	0.13
357.2-369.4	C-22	0.36	0.11
369.4-380.0	C-23	0.28	0.09
380.0-391.1	C-24	0.24	0.07
391.1-401.7	C-25	0.18	0.05
401.7-412.2	C-26	0.13	0.04
412.2-422.2	C-27	0.10	0.03
>422.2	C-28+	0.08	0.02
	Total	100.00	100.00



TAYLOR SOUTH-1



DATE: 9-17/3/1988 FORMATION: Tirrawarra
PRODUCING THROUGH: Tubing
GRADE: N80 & J55
GRADE: L80 EUE

INITIAL SHUT IN PERIOD

[illegible]

Orifice Size: 1.500 ins
Meter Run: 4.026 ins

[illegible]

00202

SANTOS LTD.
WELL TEST SUMMARY

Page 2.

2nd SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing	Casing	Temp.	
			kPa	kPa	°C	
14/3/88	1600	0	16515	0	37	Shut well in
	1615	0.25	19920	0		
	1630	0.5	20995	0		
	1645	0.75	21225	0		
	1700	1	21285	0		
	1715	1.25	21320	0		
	1730	1.5	21335	0		
	1745	1.75	21335	0		
	1800	2	21370	0		opened well on rate # 2

Flow Period

Run No.: 2 Duration of Run: 2 Hours.
Flow Well On: 19/64" Choke.

Orifice Size: 1.875 ins
Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production m ³ /d	Water Production m ³ /d
			Tubing kPa	Casing kPa	Temp. °C	Pf kPa	Hw kPa	Temp. °C		
14/3/88	1800	0	21370	0						
	1815	0.25	14550	0	36	1725	34.61	-14		
	1830	0.5	12460	0	37	1725	29.13	-10	22.680	NIL
	1845	0.75	12205	0	38	1725	23.65	-5		
	1900	1	12030	0	39	1710	24.65	-5	20.160	NIL
	1915	1.25	11915	0	39	1695	25.13	-5		
	1930	1.5	11810	0	39	1690	24.90	-5	20.160	NIL
	1945	1.75	11765	0	39	1690	24.15	-4		
	2000	2	11775	0	40	1690	23.90	-1	17.640	NIL

00203

3RD SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing	Casing	Temp.	
			kPa	kPa	°C	
14/3/88	2000	0	11775	0		Shut well in
	2015	0.25	17440	0		
	2030	0.5	20060	0		
	2045	0.75	20790	0		
	2100	1	20960	0		
	2115	1.25	21035	0		
	2130	1.5	21105	0		
	2145	1.75	21170	0		
	2200	2	21215	0		Opened well on rate # 3

Flow Period

Run No.: 3 Duration of Run: 2 Hours.
Flow Well On: 27/64" Choke.

Orifice Size: 2.250 ins
Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover		Data	Condensate Production m ³ /d	Water Production m ³ /d
			Tubing	Casing	Temp.	Pf	Hw	Temp.		
			kPa	kPa	°C	kPa	kPa	°C		
14/3/88	2200	0	21215	0						
	2215	0.25	10165	0	38	1750	34.11	-4		
	2230	0.5	8520	0	40	1725	21.91	8	35.280	NIL
	2245	0.75	7825	0	41	1655	20.92	11		
	2300	1	7660	0	41	1860	16.93	13	27.720	NIL
	2315	1.25	7515	0	42	1795	17.70	13		
	2330	1.5	7510	0	42	1760	17.67	14	17.640	NIL
	2345	1.75	7495	0	42	1745	17.67	14		
	2400	2	7480	0	42	1760	17.67	15	20.160	2.520

SANTOS LTD.
WELL TEST SUMMARY

Page 4.

4TH SHUT IN PERIOD

Time of Observations			Observed Pressures			REMARKS
Date	Time	Shut In Time (Hours)	Tubing	Casing	Temp.	
			kPa	kPa	°C	
14/3/88	2400	0	7480	0	42	Shut well in
15/3/88	0015	0.25	14410	0		
	0030	0.5	18260	0		
	0045	0.75	20270	0		
	0100	1	20780	0		
	0115	1.25	20955	0		
	0130	1.5	21015	0		
	0145	1.75	21080	0		
	0200	2	21100	0		Opened well on note # 4

Flow Period

Run No.: 4 Duration of Run: 2 Hours.
Flow Well On: 40/64" Choke.

Orifice Size: 2.250 ins
Meter Run: 4.026 ins

Date	Time	Flow Time (Hours)	Wellhead Readings			Meter or Prover Data			Condensate Production m ³ /d	Water Production m ³ /d
			Tubing kPa	Casing kPa	Temp. °C	Pf kPa	Hw kPa	Temp. °C		
15/3/88	0200	0	21100	0						
	0215	0.25	6445	0	41	1690	49.80	12		
	0230	0.5	4345	0	42	1725	29.13	25	40.320	5.040
	0245	0.75	4185	0	42	1725	24.65	27		
	0300	1	4145	0	43	1760	24.65	29	15.120	5.040
	0315	1.25	4090	0	43	1730	24.15	29		
	0330	1.5	4090	0	44	1725	23.90	30	10.080	10.080
	0345	1.75	4075	0	44	1725	23.90	30		
	0400	2	4070	0	45	1725	23.90	30	17.640	2.520

WP 2548G

00205

Flow Period

Orifice Size: 2.250 ins
Meter Run: 4.026 ins

[illegible]

✓

00207

WELL TEST SUMMARY

BOMB DEPTH 9564 'KB

DWT IN : 3092 PSIG / OUT : 3096 PSIG

LUB.IN: 3074 PSIG / OUT: 3082 PSIG

$$T = \text{cumulative Prod} / \text{Last Producing rate.}$$
$$T = (6.154 / 4.287) 24$$
$$T = 34.452 \text{ hours.}$$

SANTOS LTD.
WELL TEST SUMMARY
CALCULATION SHEET

Page 8.

GAS RATES THROUGH SEPARATOR

Run No.	Hw		Pf		Size Orifice Plate		Ft	
	(kPa)	(" w.g)	(kPa)	(psig)	(mm)	(inches)	(°C)	(°F)
1	20.42	82	1760	255	38.100	1.500	-13	8.6
2	23.90	96	1690	245	47.625	1.875	-1	30.2
3	17.67	71	1760	255	57.150	2.250	15	59.0
4	23.90	96	1725	250	57.150	2.250	30	86.0
5	22.16	89	1710	248	57.150	2.250	39	102.2

Separator Gas Properties

Correct
Specific Gravity = 0.837 0.8931
TC = 407.71 °R 431.6
PC = 686.61 psia 702.9
CO2 CONTENT = 11.42 mole % 11.22
Meter Run = 4.026" ✓ (102.260 mm)

GAS RATES THROUGH SEPARATOR

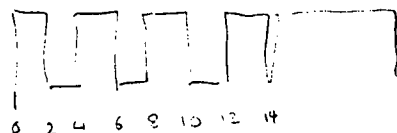
Run No.	Q	
	E3 m ³ /d	(Mmscfd)
1	55.616	1.974
2	91.051	3.232
3	114.758	4.073
4	128.053	4.545
5	120.783	4.287

PRODUCTION (mmscf)

0.165
0.269
0.339
0.379
5.002
6.154 ✓

WP 2548G

00209



GAS WELL DELIVERABILITY TEST CALCULATIONS
 (Base Conditions = 14.65 psia and 60°F)

WELL NAME: Taylor South # 1DATE: 9-17/3/88ELEMENT NO: 71589/6000 (BOT) DEPTH TESTED: 9564' KBDWT IN: 3092 PSIGOUT: 3096 PSIGLUB IN: 3074 PSIGOUT: 3082 PSIG

SIMPLIFIED ANALYSIS

	Duration (hours)	Sandface Pressure		Temp. (°F)	Meas.	Δp_2^2 (x10 ⁶ psia ²)	Flow Rate (Mmscfd)	H/Carbon Prod. (m ³ /D)	Water Prod. (m ³ /D)	REMARKS
		psia	KPa (abs)							
Initial Shut In	50	4145	28580	284.7	✓	-	-	-	-	$q = C(\bar{p}_R^2 - p_{wf}^2)^n$ slope n = _____ $\bar{p}_R =$ _____ psia $C = \frac{q}{(\bar{p}_R^2 - p_{wf}^2)^n}$ = _____ AOF (MMscfd) = _____
Flow 1	2	3243	22360	282.1	✓	6.664		8.820 ✓	NIL ✓	
Shut In	2	4111	28345	285.4	✓	-	-	-	-	
Flow 2	2	2373	16362	269.2	✓	11.269		20.160 ✓	NIL ✓	
Shut In	2	4070	28063	282.2	✓	-	-	-	-	
Flow 3	2	1538	10605	250.7	✓	14.199		25.200 ✓	0.630 ✓	
Shut In	2	4047	27904	278.3	✓	-	-	-	-	
Flow 4	2	971	6695	233.1	✓	15.435		20.790 ✓	5.670 ✓	
Extended Flow	28	1118	7709	237.5	✓	15.552		14.895 ✓	2.745 ✓	✓
Final Shut In	70.17	4099	28263	284.8	✓	-	-	-	-	

WP 2548G

00210

ROLLING BOTTOMHOLE PRESSURE SURVEY GAS CALCULATION SHEET

WELL: Taylor South # 1 Pf = 6450 kPa
 ORIFICE SIZE: 38.000 mm 1.496 " T = 60 °C
 LINE SIZE: 73.660 mm 2.900 " Diff = 14 kPa

Cumulative Production to end of February = 23.283 m³ x 10⁶

Number of hours online in February = 616

Production in February = 1.985 m³ x 10⁶

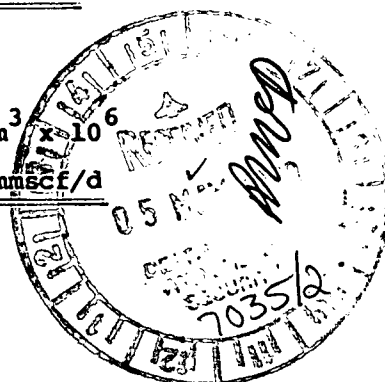
.. Average flow rate in February = (1.985 / 616) x 24 = 0.077 m³ x 10⁶/d

Number of days online in February ^{after} ~~before~~ Shut In 1600 hrs 27 / 2 / 89
 = Nil

.. Production up to 1600 hrs 27 / 2 / 89 = February Prod. = m³ x 10⁶

Total cumulative production = Cumulative production to end of February.
 = 23.283 m³ x 10⁶
 = 826.407 mmscf ✓

Flow rate just prior to Shut In = 0.080 m³ x 10⁶
 = 2.857 mmscf/d



SANTOS LTD
39 GRENFELL ST
ADELAIDE

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS		RUN 01 FIELD TAYLOR SOUTH	WELL 01
EFF DEPTH		WELL STAT	TOOL HUNG 9463'
CASING	-	CASING PRESS	ON BOTTOM 0958 27/2
LINER	-	TUBING PRESS	OFF BOTTOM 0930 3/3
DATE	890227	ELEMENT RANGE 0 - 5277	ZERO POINT
ELEVATION		ZONE	SHUT-IN 1600 27/2
MAX TEMP		PICK-UP	ON-PROD
PERF	-	CAL SER NO. 53563	MPP
TUBING	-		
UNITS	ENGLISH	PURPOSE	BUILD-UP

SURVEY DATA

CO. SANTOS				RUN 01 FIELD TAYLOR SOUTH				WELL 01			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
16:00	1309.0	0.0	0.0	18:00	3127.2	1818.2	2.0				
16:02	1360.4	51.4	.0	18:15	3139.9	1830.9	2.2				
16:04	1435.4	126.4	.1	18:30	3149.8	1840.8	2.5				
16:06	1544.2	235.2	.1	18:45	3158.1	1849.1	2.7				
16:08	1606.3	297.2	.1	19:00	3164.1	1855.1	3.0				
16:10	1679.7	370.7	.2	19:15	3170.2	1861.2	3.2				
16:12	1748.1	439.1	.2	19:30	3176.2	1867.2	3.5				
16:14	1812.1	503.1	.2	19:45	3180.5	1871.5	3.7				
16:16	1862.7	553.7	.3	20:00	3185.7	1876.7	4.0				
16:18	1932.5	623.5	.3	21:00	3199.4	1890.4	5.0				
16:20	1995.0	685.9	.3	22:00	3211.6	1902.6	6.0				
16:25	2180.7	871.7	.4	23:00	3220.6	1911.6	7.0				
16:30	2357.1	1048.1	.5	0:00	3228.0	1919.0	8.0				
16:35	2462.9	1153.8	.6	1:01	3235.5	1926.5	9.0				
16:40	2556.5	1247.5	.7	2:00	3241.3	1932.3	10.0				
16:45	2650.6	1341.6	.8	3:00	3245.9	1936.8	11.0				
16:50	2734.7	1425.7	.8	4:00	3251.2	1942.2	12.0				
16:55	2810.9	1501.9	.9	5:00	3255.2	1946.2	13.0				
17:01	2874.6	1565.6	1.0	6:00	3259.4	1950.4	14.0				
17:05	2932.9	1623.9	1.1	7:01	3263.5	1954.5	15.0				
17:10	2975.8	1666.8	1.2	8:00	3266.9	1957.9	16.0				
17:15	3007.6	1698.6	1.2	9:00	3270.4	1961.4	17.0				
17:20	3035.0	1726.0	1.3	10:00	3273.1	1964.1	18.0				
17:25	3055.8	1746.8	1.4	16:00	3286.9	1977.9	24.0				
17:30	3072.7	1763.7	1.5	22:00	3298.1	1989.1	30.0				
17:35	3087.0	1777.9	1.6	4:00	3306.9	1997.8	36.0				
17:40	3097.0	1788.0	1.7	10:00	3315.6	2006.6	42.0				
17:46	3108.1	1799.1	1.8	16:00	3319.1	2010.1	48.0				
17:50	3115.8	1806.7	1.8	22:00	3324.5	2015.5	54.0				
17:55	3121.1	1812.1	1.9	4:01	3329.6	2020.6	60.0				

SURVEY DATA

CO. SANTOS				RUN 01 FIELD TAYLOR SOUTH		WELL 01		
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME	
10:00	3333.1	2024.1	66.0	4:00	3341.6	2032.6	84.0	
16:00	3334.5	2025.5	72.0	9:30	3346.6	2037.6	89.5	
22:00	3338.1	2029.0	78.0	0:00	0.0	0.0	0.0	

LUB IN DWT = 957 PSI / OUT = 2517 PSI
LUB IN AMERADA = 945 PSI / OUT = 2509 PSI

WELL: <u>Taylor South #1</u>						SANTOS LTD.										DATE: <u>26.2.89</u>				
TYPE OF TEST: <u>Pressure Survey</u>						WELL TEST DATA SHEET										PAGE No: <u>1 of 4</u>				
DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS					
	CASING KPA	TUBING KPA	TEMP. °C	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INS. H ₂ O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP INS.	TANK PROD BBLs	API GRAVITY @ 60 °F	TANK DIP INS.	TANK PROD BBLs	GAS FLOW RATE MMSCFD	OIL FLOW RATE BBLs/ DAY	WATER FLOW RATE BBLs/ DAY	TOTAL LIQUID FLOW RATE BBLs/ DAY	G.O.R. SCF/BBL	
09.30																				
10.40																				
12.45																				
15.00	0	6653	RT																	
16.05																				
17.15	0	6653	in																	
27.2.89																				
07.05																				
09.05	0	6598	50	100%																
09.58																				
10.00	0	6605	55	100%																
10.30	0	6605	58	"																
11.00	0	6612	60	"																
11.30	0	6612	62	"																
12.00	0	6612	63	"																
12.30	0	6626	61	"																
13.00	0	6626	63	"																

OPERATOR: B. Lohva

0021#

WELL: <u>Taylor South #1</u>						SANTOS LTD.										DATE: <u>27/2/89</u>				
TYPE OF TEST: <u>Press. Survey</u>						WELL TEST DATA SHEET										PAGE No: <u>2 of 4</u>				
DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS					
	CASING KPA	TUBING KPA	TEMP. °C	CHOKE SIZE INS.	B.S.W. %	PI PSI	HW INSH ₂ O	TEMP. °F	ORIFICE SIZE INS.	TANK DIP INS.	TANK PROD BBLs	API GRAVITY @60 °F	TANK DIP INS.	TANK PROD BBLs	GAS FLOW RATE MMSCFD	OIL FLOW RATE BBLs/ DAY	WATER FLOW RATE BBLs/ DAY	TOTAL LIQUID FLOW RATE BBLs/ DAY	G.O.R. SCF/BBL	
13.30	0	6626	65	100%																
14.00	0	6639	63	"																
14.30	0	6639	63	"																
15.00	0	6639	63	"																
15.30	0	6639	63	"																
16.00	0	6646	60	100%																
16.15	0	11493	50	—																
16.30	0	13900	45																	
16.45	0	15458	45																	
17.00	0	15920	44																	
17.15	0	16251	43																	
17.30	0	16354	43																	
17.45	0	16451	41																	
18.00	0	16513	40																	
18.15	0	16541	40																	
18.30	0	16596	39																	
18.45	0	16623	38																	
19.00	0	16651	37																	
19.15	0	16679	36																	
19.30	0	16699	35																	

Well shut in by SANTOS operator at wing valve.

OPERATOR: B. Lohrey

00215

WELL: Taylor South #1TYPE OF TEST: Press Survey

SANTOS LTD.

WELL TEST DATA SHEET

DATE: 27.2.89PAGE No: 3 of 4

DATE TIME	WELLHEAD					GAS FLOW DATA				OIL/CONDENSATE PRODUCTION			WATER PRODUCTION		WELL TEST RESULTS				
	CASING	TUBING	TEMP.	CHOKE	B.S.W.	PI	HW	TEMP.	ORIFICE	TANK	TANK	API	TANK	TANK	GAS	OIL	WATER	TOTAL	G.O.R.
	KPA	KPA	°E	SIZE	%	PSI	INS. H ₂ O	°F	SIZE	DP	PROD	GRAVITY	DP	PROD	FLOW	FLOW	FLOW	FLOW	SCF/BBL
19.45	0	16713	34																
20.00	0	16734	33																
20.15	0	16747	33																
20.30	0	16761	32																
20.45	0	16775	31																
21.00	0	16789	31																
21.15	0	16803	31																
21.30	0	16816	30																
21.45	0	16830	30																
22.00	0	16844	29																
23.00	0	16878	27																
24.00	0	16906	26																
28.2.89																			
06.00	0	17037	23																
12.00	0	17113	45																
18.00	0	17168	39																
24.00	0	17203	26																
1.3.89																			
06.00	0	17237	22																
12.00	0	17265	44																

00216

OPERATOR: B. Lohrey

TYPE OF TEST: Press Survey



WELL TEST DATA SHEET

DATE: 1.3.89

PAGE No: 4 of 4.

[illegible]

1800

B1 obre.



WIRELINE REPORT

00218

WELL: Taylor South #1

DATE: 26/2/89

PROGRAM: Pressure Survey

PURPOSE OF WORK: Dummy Run

REPORT OF WORK PERFORMED:

1500 Pressure up lubricator. RIH, with 1.750"

gauge ring

16.05 Tag PBTD @ 9652 ft KB POOH

17.15 In Lubricator Bleed down

No restrictions

B. Lohrey

OPERATOR'S SIGNATURE

WORK PERFORMED BY: Bruce Lohrey OF Oil Serv Aust

WELL DATA:

Tubing Size: 3 1/2"

FWHP:

SIWHP:

Sub Surface

S.V./Landing Nipple @

S.S.D. @: 9296.46 ft KB

"X" Nipple @ 9351.47 ft

"N"/"X" Nipple @ 9362.66"

other

Min I.D. 2.205"

@ 9362.66 ft

Packer @

9328 ft KB

Perforated Interval:

Tirrawarra

9502 ft KB

— 9580 ft KB

Forward to:

Petroleum Engineering — Adelaide
Production Department — Moomba



WIRELINE REPORT

00219

WELL: Taylor South #1

DATE: 27/2/89

PROGRAM: Pressure Survey

PURPOSE OF WORK: Pressure Survey Flowing / Buildup

REPORT OF WORK PERFORMED:

07.05 Pressure up lubricator.

09.05 Run in hole with 2 x RP6 3 pressure gauges and 1 x RT1 Temp. gauge.

09.58 On bottom @ 9475 ft KB.

3.3.89

09.30 POOH

10.26 In Lubricator.

12.26 Bleed off Rig at gauges

B. Lohrey

OPERATOR'S SIGNATURE

WORK PERFORMED BY: Bruce Lohrey OF Oil Serv Aust.

WELL DATA:

Tubing Size: 3 1/2"

FWHP:

SIWHP:

Sub Surface 8 1/2"/Landing Nipple @ S.S.D. @: 9296.46 ft KB

"X" Nipple @ 9351.47 ft "N"/"X" Nipple @ 9362.66 ft KB other

Min I.D. 2.205" @ 9362.66 ft Packer @ 9328 ft KB

Perforated Interval: Tirrawarra 9502'-9580'

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba



WIRELINE REPORT

00220

WELL: Taylor South #1

DATE: 3.3.89

PROGRAM: Bottom Hole Pressure Survey

PURPOSE OF WORK: Static Gradient Survey

REPORT OF WORK PERFORMED:

13.18 Pressure up lubricator

13.28 Run in hole with 2 x RPG 3 pressure gauges and 1 x 1ax Thermometer for gradient survey as per programme

15.06 @ Lowest point 9580 ft KB

15.11 POOH

16.08 In Lubricator

16.18 Bleed off lubricator

B Lohrey

OPERATOR'S SIGNATURE

WORK PERFORMED BY: Bruce Lohrey OF Oil Serv Aust

WELL DATA:

Tubing Size: 3 1/2" FWHP: SIWHP:

Sub Surface S.V./Landing Nipple @ S.S.D. @ 9296.46 ft KB

"X" Nipple @ 9351.47 ft "N"/"XN" Nipple @ 9362.66 ft other

Min I.D. 2.205" @ 9362.66 ft Packer @ 9328 ft

Perforated Interval: 9502 ft - 9580 ft KB, Tirrawarra

Forward to: Petroleum Engineering — Adelaide
Production Department — Moomba

ISO - CHRONAL AND BUILD-UP SURVEY

Talyor South #1

Date: 27.2.89

Lubricator Data:

① 945 / 2509

② clock stopped

Pressure with D.W.T. 957 PSIG / 2517 PSIG

Time Pressured 07.05 27.2.89

Time Depressed 12.26 3.3.89

Time Run In Hole 09.05 27.2.89

Time off Bottom 09.30 3.3.89

Bomb No. 1 Data

Bomb No. 2 Data

Element No. and Range	53563 0-5000 psi	53564 0-5000 psi.
Recorder No.	73359	47405
Clock and Lead Screw Data	23707 S.P. 120 hr.	23708 120 hr S.P.
Engage Stylus	Date: 27.2.89 Time: 06.31	Date: 27.2.89 Time: 06.29
Engage	Date: 3.3.89 Time: 12.41	Date: 3.3.89 Time: 12.45

Remarks: RT7 # 10066 RE# 12068, Clock# F16591 120 hr S.P.

on 06.27 hrs 27.2.89 ST off 12.37 hrs 3.3.89

SIGHT: 270° F

Well-Head Data for Final Build-up

Date	Time	Hours shut-in Time	K.P.A. Wellhead	K.P.A. Casing	Wellhead Temp. °C.	Remarks
27.2.89	07.05					Pressure up lubricator.
						(Well flowing 100%)
	09.05		6598	0	50	R.I.H.
	09.58			0		On bottom @ 9475 ft.
	10.00		6605	0	55	
	10.30		6605	0	58	
	11.00		6612	0	60	
	11.30		6612	0	62	
	12.00		6612	0	63	
	12.30		6626	0	61	
	13.00		6626	0	63	
	13.30		6626	0	65	
	14.00		6639	0	63	
	14.30		6639	0	63	
	15.00		6639	0	63	
	15.30		6639	0	63	
	16.00		6646	0	60	Shut in at wing valve.
	16.15		11493	0	50	
	16.30		13900	0	45	
	16.45		15458	0	45	
	17.00		15920	0	44.	
	17.15		16251	0	43	
	17.30		16354	0	43	

ISO - CHRONAL AND BUILD-UP SURVEY CONTINUATION

Date: 27/2/89
PAGE 2 of 2.

PAGE 2 of 2

Well-Head Data for Final Build-up

Well-Head Data for Final Build-up						
Date	Time	Hours shut-in Time	KPA Wellhead	KPA Casing	Wellhead Temp. °C.	Remarks
2-28-89	17.45		16451	0	41.	Build up cont.
	18.00		16513	0	40	
	18.15		16541	0	40	
	18.30		16596	0	39	
	18.45		16623	0	38	
	19.00		16651	0	37	
	19.15		16679	0	36	
	19.30		16699	0	35.	
	45		16713	0	34	
	20.00		16734	0	33	
	20.15		16747	0	33	
	20.30		16761	0	32	
	20.45		16775	0	31	
	21.00		16789	0	31	
	21.15		16803	0	31	
	21.30		16816	0	30	
	21.45		16830	0	30	
	22.00		16844	0	29	
	23.00		16878	0	27.	
	24.00		16906	0	26.	
2-28-89	06.00		17037	0	23	
	12.00		17113	0	45	
	18.00		17168	0	39	
	24.00		17203	0	26	
1-3-89	06.00		17237	0	22	
	12.00		17265	0	44.	
	18.00		17285	0	37.	
	24.00		17299	0	27.	
2-3-89	06.00		17299	0	22	
	12.00		17320	0	45	
	18.00		17340	0.	39	
	24.00		17347	0	26	
2-3-89	06.00		17354	0	22	
	09.30					POOH
	10.26					In Lubricator.
	12.26		17354	0	45	Bleed off, rig out gauges
						clock stopped on
						on middle gauge #53564



RODUCTION
SERVICES

26 FEB 89

COMPANY SANTOS

WELL NO. TAYLOR SOUTH #1

FIELD _____

INTERVAL TESTED _____

COUNTRY AUSTRALIA

TECHNICIAN G.T. & W NASALOWSKI

CALIBRATION NO. _____

DATE OF LAST CALIBRATION: 26 JAN 89

Subsurface
Pressure Gauge
Calibration
Report

PAGE 1 of 1

CALIBRATION STEPS

P (SURE) WT	D (1)	Y (4)	ΔY (5)	Y'	Y P	Po = KY + b	NON LINEARITY CORRECTION C = P - Po	C'
0		1874				497.0098		
0		3775				997.6275		
0		5682				1499.8252		
0		7589				2002.0229		
0		9493				2503.4307		
0		11391				3003.2583		
0		13287				3502.5592		
0		15172				3998.9634		
500		17072				4499.3177		
500		18958				4995.9853		
27500		10.4293		13.8511	36512.50	Σ + = Σ - =		

LEAST SQUARES CALCULATIONS

$$\begin{aligned} A &= \frac{\Sigma P}{n} = 2750.00 \\ B &= \frac{\Sigma Y}{n} = 1.0429 \\ C &= \frac{\Sigma (Y)^2}{\Sigma Y} = 1.3281 \\ D &= \frac{\Sigma (YP)}{\Sigma Y} = 3500.9540 \\ K &= \frac{D - A}{C - B} = 2633.4433 \\ a &= A - BK = 3.5024 \\ a &= D - CK = \\ Q &= \frac{\Sigma C'}{n} = \end{aligned}$$

CALIBRATION RESULTS

$$\begin{aligned} K &= 2633.4438 \\ a + p &= 3.5024 \\ D_R - D_O &= Y_R = P_R = \end{aligned}$$

REMARKS

NER OF GAUGE: OILSERV AUST. TYPE OF ELEMENT: RPG-3
SSURE ELEMENT NO. 53563 RANGE: 5000 PSI RECORDING SECTION NO. 73359
DWEIGHT TESTER TYPE AND RANGE: CHANDLER 55-1 SERIAL NO. 18731
E LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_O = _____ TEMPERATURE = _____
ERENCE LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____
IMUM TEMPERATURE EXPECTED = 280°F CALIBRATION TEMPERATURE = 280°F
WING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☒ WITH A CRANK CRANK
IVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLWS _____
EL DIFFERENCE H = _____ } p = _____ ☐ PLUS IN CASE OF DWT ABOVE THE BELLWS
CIFIC GRAVITY OF OIL D = _____ } ☐ MINUS IN CASE OF DWT BENEATH THE BELLWS

D = READING ON THE CHART SCANNER FOR THE PRESSURE p (5) Δ Y = FOR CHECKING
 D_O = READING FOR BASE LINE (6) n = NUMBER OF CALIBRATION STEPS
 D_R = READING FOR REFERENCE LINE (7) Σ = SUM
DEFLECTION ☐ $D - D_O$ IF NO REFERENCE LINE (8) σ = STANDARD DEVIATION
☐ $D - D_O$ IF REFERENCE LINE DRAWN

00223

COMPANY SANTOSWELL NO. TAYLOR SOUTH 1

Subsurface

Pressure Gauge
Calibration
ReportPAGE 1 OF 1

FIELD _____ INTERVAL TESTED _____

COUNTRY AUSTRALIA TECHNICIAN G.T. & W. NASALOWSKICALIBRATION NO. _____ DATE OF LAST CALIBRATION: 26 JAN 89DATE: 26 FEB 89

CALIBRATION STEPS

LEAST SQUARES CALCULATIONS

P (PRESSURE) DWT	D (1)	Y (4)	ΔY (5)	Y'	Y P	Pc = KY + s	NON LINEARITY CORRECTION C = P - Pc	C'
500		1873				497.7871		
1000		3768				997.8742		
1500		5673				1500.6003		
2000		7571				2001.4791		
2500		9469				2502.3579		
3000		11362				3001.9172		
3500		13257				3502.0044		
4000		15142				3999.4525		
4500		17037				4499.5396		
5000		18922				4996.9878		
Σ 27500		104074		13.7930	36435.85	Σ + = Σ - =		

$$\begin{aligned} A &= \frac{\sum P}{n} = \frac{27500}{10} = 2750.00 \\ B &= \frac{\sum Y}{n} = \frac{104074}{10} = 10407.4 \\ C &= \frac{\sum (Y)^2}{\sum Y} = \frac{137930}{104074} = 1.3253 \\ D &= \frac{\sum (YP)}{\sum Y} = \frac{36435.85}{104074} = 3500.9561 \\ K &= \frac{D - A}{C - B} = \frac{3500.9561 - 2750.00}{10407.4 - 10407.4} = 2638.9822 \\ a &= A - BK = 2750.00 - 2638.9822 \times 10407.4 = 3.5057 \\ a &= D - CK = 3500.9561 - 2638.9822 \times 10407.4 = 3.5057 \\ Q &= \frac{\sum C'}{n} = \frac{0}{10} = 0 \end{aligned}$$

CALIBRATION RESULTS

$$K = 2638.9822$$

$$a + p = 3.5057$$

$$D_R - D_O = Y_R = P_R$$

REMARKS

00224

OWNER OF GAUGE: OILSERV AUST. TYPE OF ELEMENT: PPG-3

PRESSURE ELEMENT NO. 53564 RANGE: 5000 PSI RECORDING SECTION NO. 47405

DEADWEIGHT TESTER TYPE AND RANGE: CHANDLER 55-1 SERIAL NO. 18731

BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_O = _____ TEMPERATURE = _____

REFERENCE LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____

MAXIMUM TEMPERATURE EXPECTED = 280°F CALIBRATION TEMPERATURE = 280°F

DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☒ WITH A CRANK CRANK

EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLWS _____

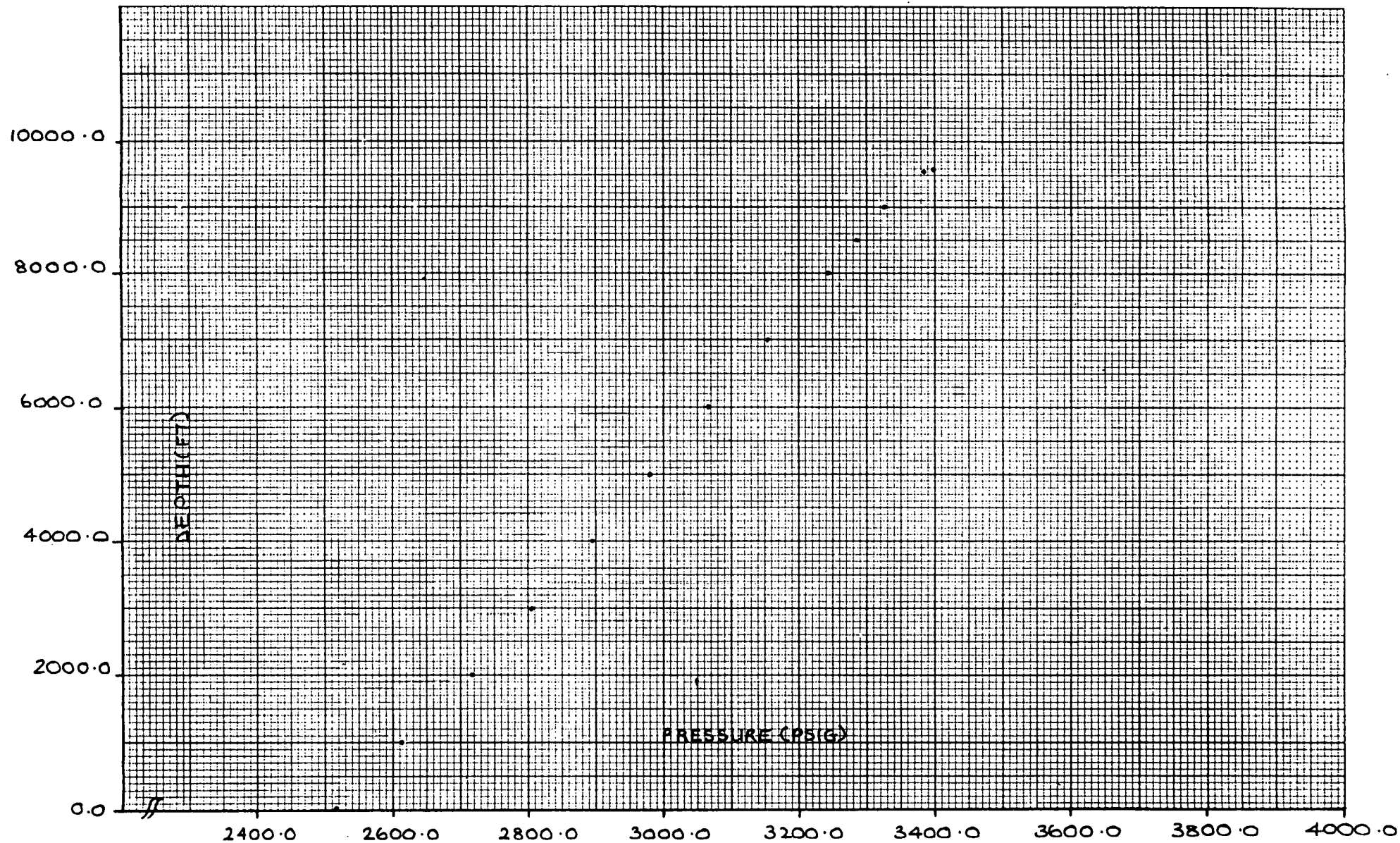
LEVEL DIFFERENCE H = _____

SPECIFIC GRAVITY OF OIL D = _____ } P = ☐ PLUS IN CASE OF DWT ABOVE THE BELLWS
☐ MINUS IN CASE OF DWT BENEATH THE BELLWS

- (1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p (5) ΔY = FOR CHECKING
- (2) D_O = READING FOR BASE LINE (6) n = NUMBER OF CALIBRATION STEPS
- (3) D_R = READING FOR REFERENCE LINE (7) Σ = SUM
- (4) y = DEFLECTION { ☐ $D - D_O$ IF NO REFERENCE LINE (8) Q = STANDARD DEVIATION
☐ $D - D_R$ IF REFERENCE LINE DRAWN

TAYLOR SOUTH # 1 — STATIC PRESSURE GRADIENT — 3/3/89

ELEMENT # 53564 /5000 (BOT)



WELL NAME 1aylor south #1

STATIC GRADIENT SURVEY

DATE 3.3.89

BOMB No. 1 DATA

ELEMENT No. 53563 ELEMENT RANGE: 0-5000 PSI
REORDER No. 73359 CLOCK DATA: 3 hr SP#
ENGAGE SYLUS: 13.10 DISENGAGE: 16.32

BOMB No. 2 DATA

ELEMENT No. 53567 ELEMENT RANGE: 0-5000
REORDER No. 47405 CLOCK DATA: 3 hr SP#
ENGAGE SYLUS: 13.09 DISENGAGE: 16.28

LUBRICATOR DATA

PRESSURE WITH D.W.T.: 17354. KPA (2517 PSI)
TIME PRESSURED: 13.18
TIME DEPRESSURED: 16.18

DATE	TIME	DEPTH'	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH'	DEFLECTION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS
3.89	13.18	Press Lub		2518.5				2516.7		Pressure up lubricator
	13.28									RIH
	13.33	1000		2613.1		1000		2614.1		RIH
	13.38									RIH
	13.42	2000		2707.7		2000		2711.7		RIH
	13.47									RIH
	13.50	3000		2798.9		3000		2803.8		RIH
	13.55									RIH
	13.59	4000		2888.8		4000		2893.3		RIH
	14.04									RIH
	14.08	5000		2974.6		5000		2981.1		RIH
	14.13									RIH
	14.17	6000		3060.3		6000		3068.0		MSLBH Temp = 288°F
	14.22									RIH
	14.26	7000		3145.6		7000		3154.8		RIH
	14.31									RIH
	14.35	8000		3233.8		8000		3242.2		RIH
	14.40									RIH
	14.42	8500		3273.9		8500		3286.1		RIH
	14.47									RIH
	14.49	9000		3315.9		9000		3326.7		RIH
	14.54									RIH
	14.56	9541		3372.3		9541		3384.9		RIH
	15.06	9580		3384.3		9581		3398.5		RIH
	15.11	POOH				POOH				POOH
	16.08	In Lub.		2492.9		In Lub		2529.8		In Lubricator
	16.18									Bleed off lubricator Rig out gauges

00225

Taylor South #1

Summary of Post Frac Single Rate Test
and Buildup

14 - 24 July 1991

Single Rate Test

14/07/91 Flowed well through separator on 100% choke @ 1350 hrs.
and start test @ 1400 hrs.

16/07/91 Ran in the hole with ameradas; on depth @ 9450' KB
@ 1800 hrs. Continued to monitor flow until
0800 hrs. on 17/7/91. Total flow period 66 hours

FIP = 717 psig

Gas rate = 107.65 $10^3 \text{ m}^3/\text{d}$

Oil rate = 5.308 m^3/d

Water rate = 4.217 m^3/d

Separator P = 660 psig

Separator T = 172 psig

FBHP @ 1800 hrs on 16/7/91 = 1078.3 psi = 7435 kPa

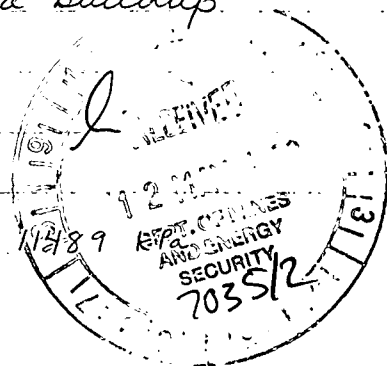
FBHP @ 0800 hrs on 17/7/91 = 1077.1 psi = 7427 kPa

Buildup Survey

17/7/91 - Shut well in @ 0800 hrs. and monitored buildup
until 1030 hrs. on 24/7/91 for a buildup
time of 170 hrs. 30 min.

Element # 21379 @ 9444 ft KB.

SBHP (final) = 1666.3 psig =



00228

Taylor South #1
Summary of Post Frac S.R.T.
and Buildup

Static Gradient

24/7/91 A static gradient was run to MPP depth of
9541 ft KB.

Element # 21379 SIBHP @ MPP = 1718.5 psig = 11849 kPa

Production Summary

Cumulative Production to 30/06/91 = $91.2 \times 10^6 \text{ m}^3$

Average daily rate for June 1991 = $79.5 \times 10^3 \text{ m}^3/\text{d}$

assume Average production for July until test shut-in @ 0800 on 17/7/91
= 16.33 days $\times 79.5 \times 10^3 \text{ m}^3/\text{d} = 1299 \times 10^3 \text{ m}^3$

New cumulative = $91200 + 1299 = 92499 \times 10^3 \text{ m}^3$

$$t = \frac{92499 \times 10^3 \text{ m}^3}{79.5 \times 10^3 \text{ m}^3/\text{d}} \times 24 \quad t = 27924 \text{ hrs.}$$

assume Average production for July until test shut-in using ^(post-frac) test rate.
= 16.33 days $\times 107.65 \times 10^3 \text{ m}^3/\text{d} = 1758 \times 10^3 \text{ m}^3$

New cumulative = $91200 + 1758 = 92958 \times 10^3 \text{ m}^3$

$$t = \frac{92958 \times 10^3 \text{ m}^3}{107.65 \times 10^3 \text{ m}^3/\text{d}} \times 24 \quad t = 20724 \text{ hrs.}$$

00228

SUB-SURFACE PRESSURE SURVEY

CO. SANTOS		RUN 01 FIELD TAYLOR SOUTH	WELL 01
EFF DEPTH		WELL STAT	TOOL HUNG 9444 FT KB
CASING	-	CASING PRESS	ON BOTTOM 1800 910716
LINER	-	TUBING PRESS	OFF BOTTOM 1030 910724
DATE	910714	ELEMENT RANGE	0 - 4950
ELEVATION		ZONE	SHUT-IN 0800 910717
MAX TEMP		PICK-UP	ON-PROD
PERF	-	CAL SER NO.	21379
TUBING	-		MPP
UNITS	ENGLISH	PURPOSE	POST FRAC. SRT & BUILDUP

SURVEY DATA

CO. SANTOS				RUN 01 FIELD TAYLOR SOUTH				WELL 01			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME
8:00	1077.1	1077.1	.0	1:01	1399.8	1399.8	17.0				
8:00	1092.4	1092.4	.0	2:34	1410.8	1410.8	18.6				
8:00	1102.8	1102.8	.0	3:50	1419.1	1419.1	19.8				
8:00	1131.7	1131.7	.0	5:44	1429.5	1429.5	21.7				
8:07	1145.8	1145.8	.1	9:31	1447.7	1447.7	25.5				
8:14	1161.6	1161.6	.2	12:43	1460.9	1460.9	28.7				
8:22	1169.9	1169.9	.4	15:19	1471.7	1471.7	31.3				
8:41	1187.7	1187.7	.7	21:33	1496.1	1496.1	37.5				
8:50	1194.0	1194.0	.8	3:19	1511.0	1511.0	43.3				
8:58	1200.9	1200.9	1.0	9:01	1527.1	1527.1	49.0				
9:08	1210.5	1210.5	1.1	16:10	1542.7	1542.7	56.2				
9:25	1219.6	1219.6	1.4	0:21	1560.9	1560.9	64.3				
9:39	1228.2	1228.2	1.7	9:13	1575.0	1575.0	73.2				
9:55	1233.3	1233.3	1.9	18:53	1591.4	1591.4	82.9				
10:09	1240.5	1240.5	2.1	2:30	1599.9	1599.9	90.5				
10:28	1247.6	1247.6	2.5	10:59	1609.9	1609.9	99.0				
10:57	1256.8	1256.8	2.9	19:25	1619.9	1619.9	107.4				
11:32	1267.8	1267.8	3.5	3:31	1627.3	1627.3	115.5				
12:11	1282.0	1282.0	4.2	10:46	1631.9	1631.9	122.8				
12:55	1292.9	1292.9	4.9	19:30	1639.2	1639.2	131.5				
13:47	1303.6	1303.6	5.8	6:09	1650.6	1650.6	142.2				
14:27	1312.6	1312.6	6.5	14:01	1655.3	1655.3	150.0				
15:01	1318.2	1318.2	7.0	2:08	1659.7	1659.7	162.1				
15:40	1326.4	1326.4	7.7	6:33	1662.1	1662.1	166.6				
17:02	1341.9	1341.9	9.0	8:34	1666.8	1666.8	168.6				
18:21	1351.7	1351.7	10.4	10:30	1666.3	1666.3	170.5				
19:35	1361.1	1361.1	11.6	- 14:36	1078.3	1078.3	-22.6				
20:47	1370.9	1370.9	12.8	- 12:00	1077.6	1077.6	-20.0				
22:02	1378.0	1378.0	14.0	- 8:23	1076.7	1076.7	-16.4				
23:02	1388.9	1388.9	15.0	- 3:28	1075.5	1075.5	-11.5				

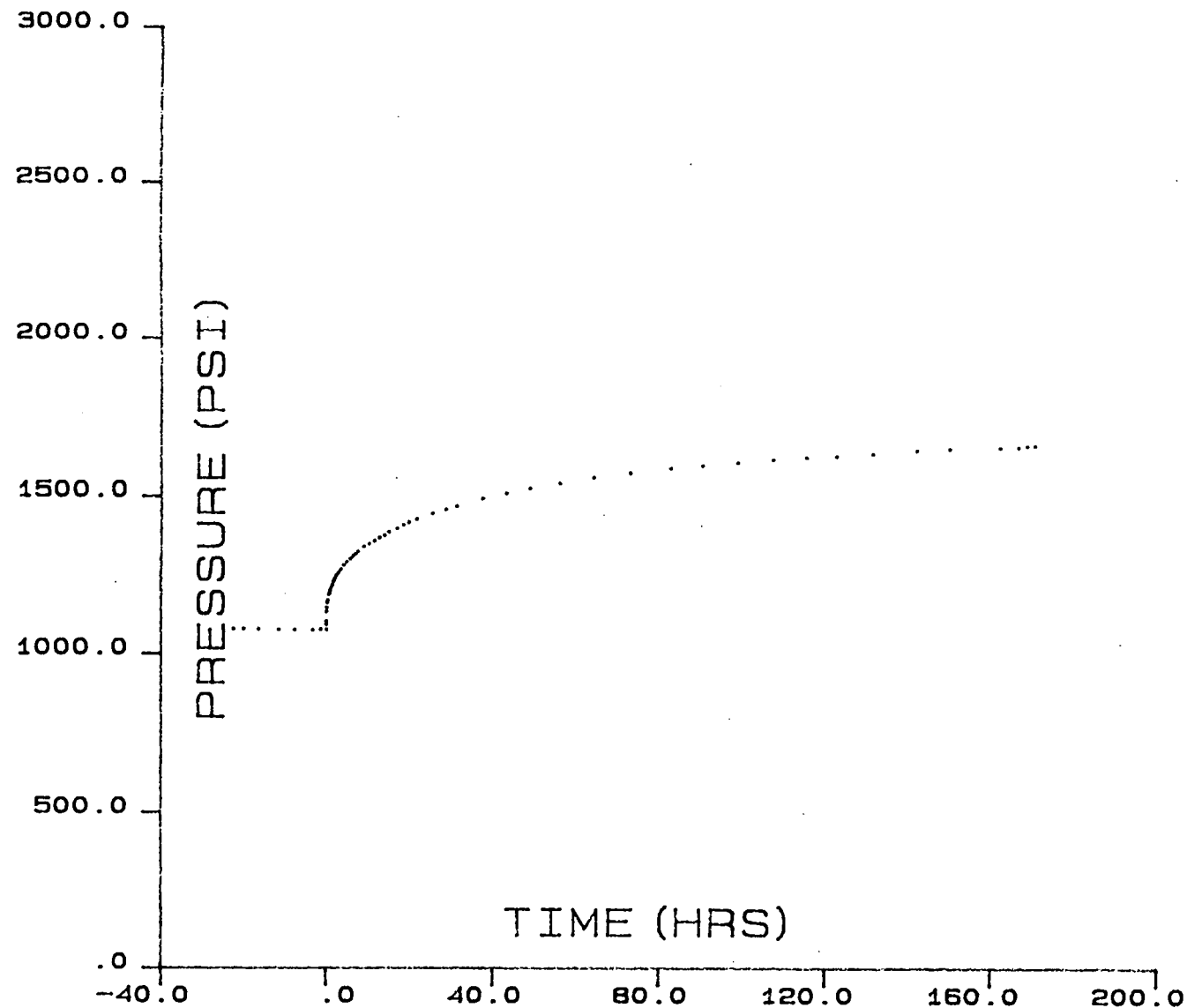
SURVEY DATA

CO. SANTOS				RUN 01 FIELD TAYLOR SOUTH				WELL 01			
TIME	P-T	DP-DT	DTIME	TIME	P-T	DP-DT	DTIME				
0:22	1074.5	1074.5	-7.6	6:41	1077.4	1077.4	-1.3				
4:43	1073.5	1073.5	-3.3	0:00	.0	.0	.0				

LUB IN DWT = 718 PSI / OUT = 1327 PSI

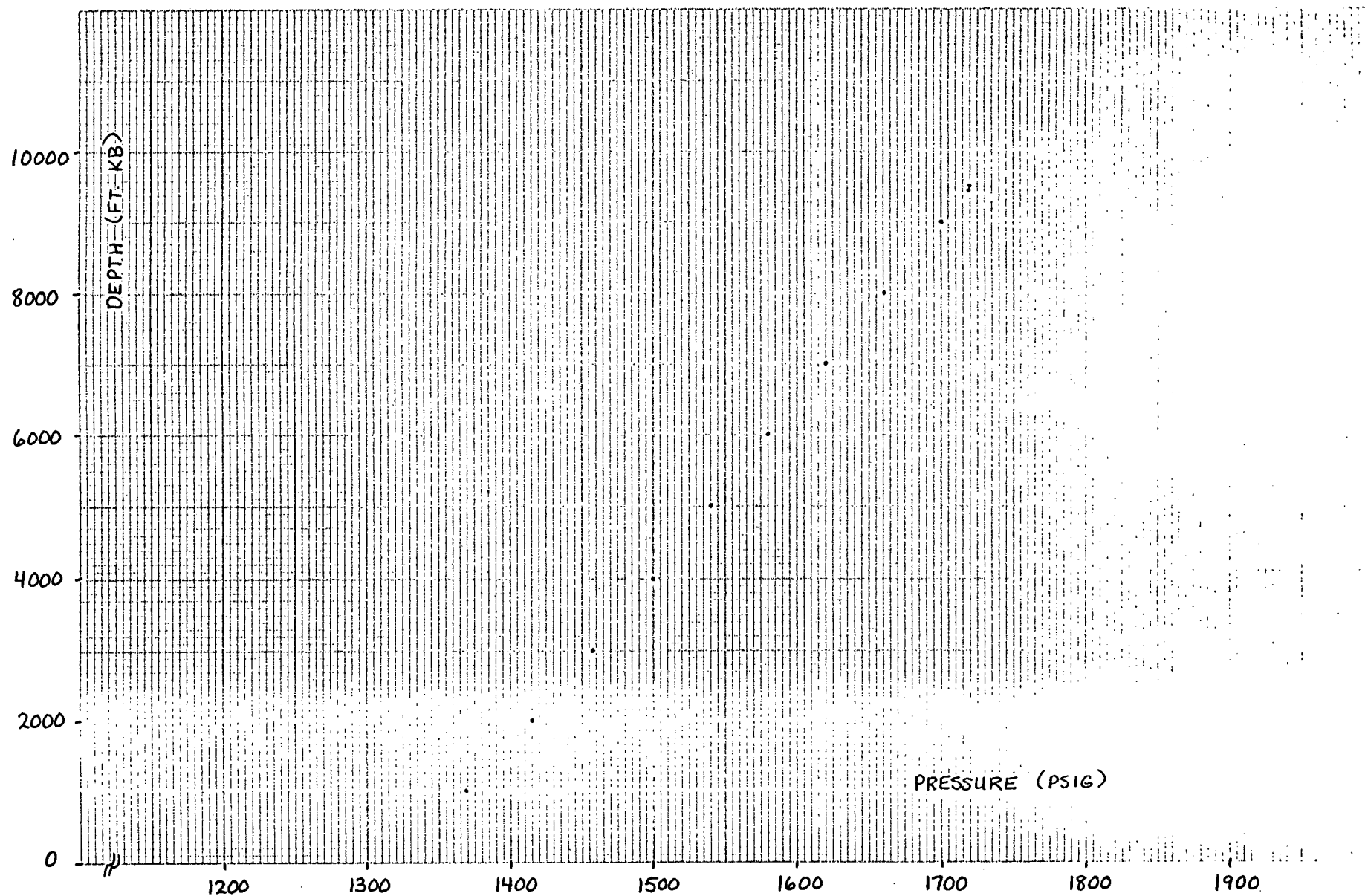
LUB IN AMERADA = 732 PSI / OUT = 1337 PSI

TAYLOR SOUTH 1 POST FRAC SRT & BUILDUP
14 - 24 JULY 1991
ELEMENT # 21379 @ 9444 FT KB



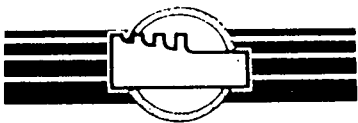
00231

TAYLOR SOUTH #1 - STATIC PRESSURE GRADIENT - 24 / 7 / 91.
ELEMENT # 21379 (TOP)



00232

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : SANTOS

WELL NAME: TAYLOR 5TH #1.

TEST TYPE : POST FRAC & BUILD UP.

PERFORATIONS: 9502' → 9580' KB

FORMATION : TIRANARRA

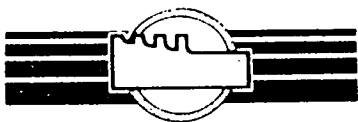
PAGE: 1. OF 2

DATE: 13-7-91

OPR: A. SMITH

DATE/TIME	DESCRIPTION OF EVENTS
13 TH JULY 1991.	
10:55	ARRIVE ON LOCATION, SPOT & COMMENCE RIGGING IN OF WIRELINE UNIT & TESTING EQUIPMENT. NOTE: WELL SHUT IN @ 10:50 FOR SANTOS MAINTENENCE ON INSTRUMENTATION.
11:20	PRESSURE TEST WIRELINE EQUIPMENT & O.K.
11:30	R.I.H WITH 1.75" BUND BOX TO P.B.T.D.
11:55	TAG P.B.T.D @ 9550' KB. (30' OF PERFORATIONS COVERED, TUBING CLEAR) & P.O.O.H.
12:20	@ SURFACE, SANTOS MAINTENENCE COMPLETED & BRING WELL BACK ON LINE 100% (NORMAL - WELL FLOW CONDITIONS).
12:30	SECURE LOCATION & CREW TO MOOMBA FOR REMAINING EQUIPMENT.
14 TH JULY 1991.	
10:30	ARRIVE BACK ON LOCATION & CONTINUE RIGGING UP.
13:30	PRESSURE TEST EQUIPMENT & O.K.
13:50	TRIM FLOW THROUGH SEPARATOR, (WELL ON 100% CHOKE), ENGAGE A 1.75" ORIFICE PLATE, COLLECT - FLUIDS & GAS BACK IN LINE TO PRODUCTION.
14:00	COMMENCE POST FRAC.
15 TH JULY 1991.	
10:00	OPEN CASING TO ATMOSPHERE TO DEPRESSURE & UNSUCCESSFUL. (SUSPECT CUMUNICATION). NOTE: INITIAL CASING PRESSURE @ 10:00 = 732 PSI & AFTER 1/2 HR OF BLEEDING @ 10:30 = 695 PSI.
10:30	CLOSE CASING. NOTE: CASING BACK TO INITIAL PRESSURE BY 10:40 = 732 PSI.
16 TH JULY 1991.	
14:30	PREPARE ELEMENTS FOR POST FRAC & BUILD UP SURVEY. NOTE: REFER TO GAUGE RUN DATA #1 FOR MORE INFORMATION.
17:40	R.I.H WITH 2 PRESSURE ELEMENTS & M.B.H THERMOMETER.
18:00	@ HANGE DEPTH 9450' KB.
24:00	COLLECT 1 ST SAMPLES, 1x 500ml H.P GAS, 1x 500ml H.P OIL & 1x 500ml H.P WATER.

EXPERTEST PTY. LTD.



SEQUENCE OF EVENTS

CUSTOMER : SANTOS
 WELL NAME : TAYLOR 5TH #1.
 TEST TYPE : POST FRAC & BUILD UP

PERFORATIONS: 9502' → 9580' KB
 FORMATION : TIRRAWARRA

PAGE: 2. OF 2

DATE: 17-7-91

OPR: A. SMITH

DATE/TIME	DESCRIPTION OF EVENTS
17TH JULY 1991.	
01:00	COLLECT 2 ND SAMPLES, 1x 500ml H.P GAS, 1x 500 ml H.P. OIL & 1x 500 ml L.P WATER.
08:00	S.W.I FOR BUILD UP.
21 ST JULY 1991.	
13:00	RIG OUT WELLHEAD RECORDER FOR NEXT TEST @ BIMBAYA #1.
24TH JULY 1991.	
10:30	BUILDUP COMPLETED & P.O.O.H
10:55	@ LUB & BLEED.
11:55	PRESSURE LUB.
1423	Depressure lub, remove aneradas & reload for static Gradient.
1450	Pressure lub for S.G.S.
1500	Depressure lub.
1505	Pressure lub & R.I.H to stops as per program.
1614	At 9541' KB m.p.p.
1624	P.O.O.H
1649	In lub, depressure.
1654	Pressure lub.
1704	Depressure lub, remove aneradas & check charts. (good charts)
1718	Rig down
1740	Move off location.

002334

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER : SANTOS

PERFORATIONS: 9502' - 9580' KB

PAGE: 1. OF 6

WELL NAME: TAYLOR 5TH #1.

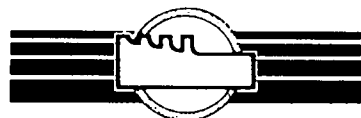
FORMATION : TIRRAWARRA

DATE: 14-7-91

TEST TYPE : POST FRAC SRT & PBU.

OPR : A. SMITH

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (P01/KPa)	ANNULUS PRESSURE (P01/KPa)	WELLHEAD TEMP (P1/°C)	CHOKE SIZE %	PRESSURE (P01/KPa)	TEMP (P1/°C)	GAS MMSCFD m³10³/D	OIL BPD m³/D	WATER BPD m³/D	GAS MMSCF m³10³	OIL BBLs m³	WATER BBLs m³	L.G.R m³/10⁶m³	
14 TH JULY 1991.															
14:00	0	4957	5040	60	100%	COMMENCE	POST FRAC								
16:00	2	4964	5054	64		4620	76	108.26	3.199	1.599	9.022	.266	.133	44	
18:00	4	4985	5075	69		4585	78	110.76	2.399	4.799	18.252	.466	.533	65	
20:00	6	4957	5040	68		4551	78	109.63	7.198	4.799	27.388	1.066	.933	109	
22:00	8	4944	5054	68		4551	78	109.63	6.398	3.199	36.524	1.599	1.199	88	
24:00	10	4951	5047	67		4551	78	110.29	5.599	4.799	45.715	2.066	1.599	94	
15 TH JULY 1991.															
02:00	12	4944	5047	67		4551	78	110.94	4.799	4.799	54.960	2.466	1.999	86	
04:00	14	4951	5047	66		4551	77	109.76	4.799	4.799	64.107	2.866	2.399	87	
06:00	16	4951	5047	65		4551	77	109.76	3.999	4.799	73.254	3.199	2.799	80	
08:00	18	4923	5047	65		4585	77	110.23	6.398	3.199	82.440	3.732	3.066	87	
10:00	20	4958	5047	64		4620	76	110.30	5.599	3.199	91.632	4.199	3.399	80	
12:00	22	4951	5054	68		4654	77	110.49	3.199	4.799	100.839	4.466	3.799	72	
14:00	24	4951	5054	68		4654	77	109.82	8.798	3.999	109.991	5.199	4.132	116	
16:00	26	4957	5054	66		4620	77	108.68	5.599	3.999	119.048	5.666	4.465	88	
18:00	28	4951	5033	69		4585	78	108.09	2.399	4.799	128.055	5.866	4.865	67	
20:00	30	4957		68		4551	78	106.95	6.398	3.999	136.967	6.399	5.198	97	
22:00	32	4957		68		4551	78	107.63	4.799	4.799	145.936	6.799	5.598	89	
24:00	34	4957		68		4551	78	106.95	7.198	3.999	154.848	7.399	5.931	105	
16 TH JULY 1991.															
02:00	36	4999	5033	67	100%	4620	77	105.22	5.599	3.199	163.616	7.866	6.198	84	00235



CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 2 OF 6

WELL NAME: TAYLOR 5TH #1.

FORMATION : TIRRAWARRA

DATE: 16-7-91

TEST TYPE : POST FRAC & BUILD UP.

OPR : A. SMITH

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION				
DATE	TIME	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (B87/KPa)	ANNULUS PRESSURE (B87/KPa)	WELLHEAD TEMP (°C)	CHOKE SIZE %	PRESSURE (B87/KPa)	TEMP (°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 m ³ /10 ⁶ m ³
16 TH JULY 1991.															
04:00	38	4944	5033	68	100%	4551	78	107.63	3.999	4.799	172.58	8.199	6.598	82	
06:00	40	4944	↑	67	↑	4551	78	108.96	4.799	3.999	181.66	8.599	6.931	81	
08:00	42	4944	↑	66	↑	4585	76	110.49	5.599	3.999	190.87	9.066	7.264	87	
10:00	44	4944	↑	63	↑	4620	75	110.57	5.599	4.799	200.08	9.533	7.664	94	
12:00	46	4957	↑	67	↑	4620	75	110.57	6.398	3.199	209.29	10.066	7.931	87	
14:00	48	4944	↑	68	↑	4654	77	109.82	6.398	5.599	218.44	10.599	8.397	109	
16:00	50	4951	↑	69	↑	4620	77	108.68	3.999	5.599	227.49	10.932	8.863	88	
17:40		4944	↓	69	↓	R.I.H WITH 2 PRESSURE ELEMENTS & M.R.H THERMOMETER.									
18:00	52	4944	5033	69	100%	4585	78	108.09	3.999	3.199	236.50	11.265	9.130	67	
18:00						@ HANG DEPTH 9450' KB.									
19:00	53	4944	5033	69	100%	4585	78	108.09	4.799	4.799	241.00	11.465	9.330	89	
20:00	54	4944	↑	69	↑	4551	78	107.63	6.398	3.199	245.48	11.732	9.463	89	
21:00	55	4937	↑	68	↑	4551	78	106.95	3.199	4.799	249.94	11.865	9.663	75	
22:00	56	4937	↑	68	↑	4551	78	106.27	4.799	4.799	254.37	12.065	9.863	90	
23:00	57	4937	↓	68	↓	4551	78	105.59	6.398	3.199	258.77	12.332	9.996	91	
24:00	58	4937	5033	68	100%	4551	78	104.89	7.998	3.199	263.14	12.665	10.129	107	
24:00						COLLECT 1ST SAMPLES									
17 TH JULY 1991.															
01:00	59	4937	5033	69	100%	4551	78	104.89	6.398	4.799	267.51	12.932	10.329	107	
01:00						COLLECT 2ND SAMPLES									
02:00	60	4930	5033	69	100%	4551	78	104.20	6.398	3.199	271.85	13.199	10.462	92	



TEST RESULTS

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 3 OF 6

WELL NAME: TAYLOR 5TH #1.

FORMATION : TIRRAWARRA

DATE: 17-7-91

TEST TYPE : POST FRAC & BUILD UP

OPR : A. SMITH

TIME		WELLHEAD DATA				SEPARATOR		FLOW RATES			CUMULATIVE PRODUCTION			A.C.R	m ³ /10 ⁶ m ³
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 MMSCFD m ³ /10 ³	OIL BBLS m ³	WATER BBLS m ³		
17 TH JULY 1991															
03:00	61	4930	5033	69	100%	4551	78	103.51	6.398	3.199	276.16	13.466	10.595	93	
04:00	62	4930	↑	69	↑	4551	78	103.51	4.799	4.799	280.47	13.666	10.795	93	
05:00	63	4930	↑	69	↑	4551	78	103.51	6.398	4.799	284.78	13.933	10.995	108	
06:00	64	4930	↑	68	↑	4551	78	103.51	4.799	4.799	289.09	14.133	11.195	93	
07:00	65	4930	↓	68	↓	4516	77	102.49	4.799	4.799	293.39	14.333	11.395	92	
08:00	66	4937	5033	68	100%	4551	77	102.93	6.398	4.799	297.68	14.599	11.595	109	
08:00	0				S.W.I FOR BUILD UP.										
08:15		6309	5550												
08:30	.5	6447	6137												
08:45		6550	6447												
09:00	1	6619	6585												
09:15		6681	6681												
09:30		6729	6729												
09:45		6769	6769												
10:00	2	6805	6805												
10:15		6916	6916												
10:30		6957	6957												
10:45		6991	6991												
11:00	3	7026	7026												
11:15		7060	7060												
11:30		7095	7095												

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 4 OF 6

WELL NAME: TAYLOR STH #1,

FORMATION : TIRRAWARRA

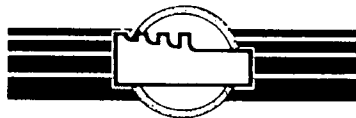
DATE: 17-7-91

TEST TYPE : POST FRAC & BUILD UP

OPR : A. SMITH

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 m³10³/D	OIL BPD m³/D	WATER BPD m³/D	GAS MMSCF m³10³	OIL BBLS m³	WATER BBLS m³		
17TH JULY 1991.															
11:45		7129	7129												
12:00	4	7169	7169												
16:00		7412	7412												
20:00	12	7619	7619												
24:00		7743	7743												
18TH JULY 1991.															
04:00		7846	7846												
08:00	24	7950	7950												
12:00		8053	8053												
16:00		8143	8143												
20:00	36	8226	8226												
24:00		8308	8308												
19TH JULY 1991.															
04:00		8391	8391												
08:00	48	8446	8446												
12:00		8481	8481												
16:00		8515	8515												
20:00	60	8543	8543												
24:00		8570	8570												
20TH JULY 1991.															
04:00		8591	8591												

EXPERTEST PTY. LTD.



TEST RESULTS

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 5. OF 6

WELL NAME: TAYLOR 5TH #1.

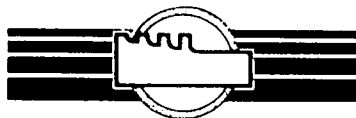
FORMATION : TIRRAWARRA

DATE: 20-7-91

TEST TYPE : POST FRAC & BUILD UP

OPR : A. SMITH

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		
20 TH JULY 1991.															
08:00	72	8626	8626												
12:00		8660	8660												
16:00		8688	8688												
20:00	84	8715	8715												
24:00		8743	8743												
21 ST JULY 1991.															
04:00		8770	8770												
08:00	96	8798	8798												
12:00		8826	8826												
16:00		8853	8853												
20:00	108	8881	8881												
24:00		8908	8908												
22 ND JULY 1991.															
04:00		8929	8929												
08:00	120	8943	8943												
12:00		8957	8957												
16:00		8970	8970												
20:00	132	8984	8984												
24:00		8998	8998												
23 RD JULY 1991.															
04:00		9005	9005												



CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 6. OF 6

WELL NAME: TAYLOR 5TH #1.

FORMATION : TIRRAWARRA

DATE: 23-7-91

TEST TYPE : POST FRAC & BUILDUP

OPR :

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 /D	OIL BPD m ³ /D	WATER BPD m ³ /D	GAS MMSCF m ³ /D	OIL BBLS m ³	WATER BBLS m ³		
23 RD JULY 1991.															
08:00	14A	9019	9019												
12:00		9039	9039												
16:00		9060	9060												
20:00	156	9074	9074												
24:00		9081	9081												
24 TH JULY 1991.															
04:00		9094	9094												
08:00	168	9101	9101												
10:30		9108	9108	BUILD UP COMPLETED & P.O.O.H.											
10:55		9108	9108	@ LUBRICATOR. NOTE: REFER TO GAUGE RUN DATA & SEQUENCE OF EVENTS FOR MORE -											
				- INFORMATION											
1435				Prepare ameradas for static Gradient survey.											
1450		9128	9128	Pressure Lub for S.G.S.											
1500		9128	9128	Depressure Lub.											
1505		9135	9135	Pressure Lub & R.L.H to stops as per program.											
1614		9135	9135	At MPP 9541' KB.											
1624		9142	9142	P.O.O.H.											
1649		9142	9142	In Lub, depressure.											
1654		9135	9135	Pressure Lub.											
1704		9135	9135	Depressure Lub, remove ameradas & check charts, all ok, Rig down.											
1740				Move off location.											

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GAS FLOW CALCULATIONS

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 1. OF 3

WELL NAME: TAYLOR STN #1.

FORMATION : TIRRAWARRA

DATE: 14-7-91

TEST TYPE : POST FRAC SRT & PBU.

OPR : A. SMITH

ORIFICE METER TYPE: DANIELS SNR.

STATIC PRESSURE RANGE : 0 → 1500 PSIG

GAS SPECIFIC GRAVITY (SG) = .889

METER RUN SIZE : 3.068"

DIFFERENTIAL PRESS. RANGE: 0 → 200 IN WC

FG $\sqrt{1/SG}$ = 1.0606

SEPARATOR NO : # 459.

STANDARD CONDITIONS : 14.73 PSI @ 60°F

C₂ (FU x FG) = 25.4543

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)	√(P _F × H _W)	C ₁ = F _B × F _{TF} × F _{pv} × Y ₂				C ₁	C (C = C ₁ × C ₂)	GAS FLOW RATE Q = √(P _F × H _W) × C	
								F _B	F _{TF}	F _{pv}	Y ₂			(MMSCFD)	(m ³ 10 ³ /D)
14 TH JULY 1991.															
14:00	0	COMMENCE POST FRAC. FLOW													
16:00	2	100%	685	79	169	1.75	232.626	663.42	.9092	1.0751	1.0007	648.926	16517.950	3.843	108.26
18:00	4		680	84	172		238.998		.9071	1.0731	1.0007	646.217	16448.996	3.931	110.76
20:00	6		675	83	172		236.696		.9071	1.0725	1.0007	645.838	16439.349	3.891	109.63
22:00	8		675	83	172		236.696		.9071	1.0725	1.0007	645.838	16439.349	3.891	109.63
24:00	10		675	84	172		238.117		.9071	1.0725	1.0007	645.844	16439.486	3.915	110.29
15 TH JULY 1991.															
02:00	12		675	85	172		239.531		.9071	1.0725	1.0007	645.849	16439.629	3.938	110.94
04:00	14		675	83	171		236.696		.9078	1.0729	1.0007	646.615	16459.126	3.896	109.76
06:00	16		675	83	171		236.696		.9078	1.0729	1.0007	646.615	16459.126	3.896	109.76
08:00	18		680	83	171		237.571		.9078	1.0736	1.0007	646.992	16468.713	3.912	110.23
10:00	20		685	82	169		237.002		.9092	1.0751	1.0007	648.942	16518.358	3.915	110.30
12:00	22		690	82	171		237.865		.9078	1.0748	1.0007	647.743	16487.826	3.922	110.49
14:00	24		690	81	171		236.411		.9078	1.0748	1.0007	647.738	16487.691	3.898	109.82
16:00	26		685	80	171		234.094		.9078	1.0742	1.0007	647.354	16477.917	3.857	108.68
18:00	28		680	80	172		233.238		.9071	1.0731	1.0007	646.196	16448.450	3.836	108.09
20:00	30		675	79	172		230.922		.9071	1.0725	1.0007	645.817	16438.799	3.796	106.95
22:00	32		675	80	172		232.379		.9071	1.0725	1.0007	645.822	16438.936	3.820	107.63
24:00	34		675	79	172		230.922		.9071	1.0725	1.0007	645.817	16438.799	3.796	106.95

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GAS FLOW CALCULATIONS

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 2 OF 3

WELL NAME: TAYLOR STH #1.

FORMATION : TIRRAWARRA

DATE: 16-7-91

TEST TYPE : POST FRAC & BUILD UP

OPR : A. SMITH

ORIFICE METER TYPE: DANIELS SNR.

STATIC PRESSURE RANGE : 0 → 1500 PSIG

GAS SPECIFIC GRAVITY (SG) = .889

METER RUN SIZE : 3.068"

DIFFERENTIAL PRESS. RANGE: 0 → 200 IN WC

FG $\sqrt{1/SG}$ = 1.0606

SEPARATOR NO : #459.

STANDARD CONDITIONS : 14.73 PSI @ 60°F

C₂ (FU × FG) = 26.4543

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)
16 TH JULY 1991															
02:00	36	100%	685	75	171	1.75"	226.660	663.42	.9078	1.0742	1.0006	647.327	16477.238	3.735	105.22
04:00	38		675	80	172		232.379		.9071	1.0725	1.0007	645.822	16438.936	3.820	107.63
06:00	40		675	82	172		235.266		.9071	1.0725	1.0007	645.833	16439.211	3.867	108.96
08:00	42		680	83	169		237.571		.9092	1.0745	1.0007	648.564	16508.726	3.922	110.49
10:00	44		685	82	167		237.002		.9107	1.0760	1.0007	650.537	16558.945	3.924	110.57
12:00	46		685	82	167		237.002		.9107	1.0760	1.0007	650.537	16558.945	3.924	110.57
14:00	48		690	81	171		236.411		.9078	1.0748	1.0007	647.738	16487.691	3.898	109.82
16:00	50		685	80	171		234.094		.9078	1.0742	1.0007	647.354	16477.917	3.857	108.68
18:00	52		680	80	172		233.238		.9071	1.0731	1.0007	646.196	16448.450	3.836	108.09
19:00	53		680	80	172		233.238		.9071	1.0731	1.0007	646.196	16448.450	3.836	108.09
20:00	54		675	80	172		232.379		.9071	1.0725	1.0007	645.822	16438.936	3.820	107.63
21:00	55		675	79	172		230.922		.9071	1.0725	1.0007	645.817	16438.799	3.796	106.95
22:00	56		675	78	172		229.456		.9071	1.0725	1.0007	645.811	16438.661	3.772	106.27
23:00	57		675	77	172		227.980		.9071	1.0725	1.0006	645.806	16438.524	3.748	105.59
24:00	58		675	76	172		226.495		.9071	1.0725	1.0006	645.801	16438.386	3.723	104.89
17 TH JULY 1991															
01:00	59		675	76	172		226.495		.9071	1.0725	1.0006	645.801	16438.386	3.723	104.89
02:00	60		675	75	172		225.000		.9071	1.0725	1.0006	645.795	16438.249	3.699	104.20
03:00	61		675	74	172		223.495		.9071	1.0725	1.0006	645.790	16438.111	3.674	103.51

CUSTOMER :	SANTOS	PERFORATIONS:	9502' → 9580' CB.	PAGE: 3	OF 3
WELL NAME:	TAULOR STH #1.	FORMATION :	TIRRAWARRA	DATE:	17-7-91
TEST TYPE :	POST FRAC & BUILDUP			OPR :	A.SMITH

ORIFICE METER TYPE:	DANIELS SNR.	STATIC PRESSURE RANGE :	0 → 1500 PSIG	GAS SPECIFIC GRAVITY (SG) =	.889
METER RUN SIZE :	3.068"	DIFFERENTIAL PRESS. RANGE:	0 → 200 IN WC	FG $\sqrt{(1/SG)}$	= 1.0606
SEPARATOR NO :	# 459	STANDARD CONDITIONS :	14.73 PSI @ 60°F	C ₂ (FU × FG)	= 25.4543

[illegible]

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LIQUID PRODUCTION

CUSTOMER : SANTOS

PERFORATIONS: 9502' - 9580' KB

PAGE: 1 OF 3

WELL NAME: TAYLOR 5TH #1.

FORMATION : TIRRAWARRA

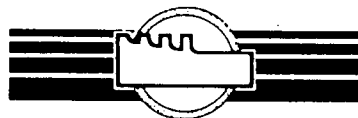
DATE: 14-7-91

TEST TYPE : POST FRAC SRT & PBU.

OPR : A. SMITH

TANK NUMBER		#1 = 58	TANK CAPACITY		#1 = 56.6	TANK SCALE		#1 = 1" = .2666 m ³	OIL API GRAVITY = 51.6 @ 60°F			
		#2 =			bbls/m ³			#2 =	bbls/in - m ³ /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)	
14 TH JULY 1991.												
14:00	0	COMMENCE POST FRAC.										
14:00	0	# 58	3	0	TARE DIP			3				
16:00	2		4.5	1	.266	3.199	.266	3.5	.133	1.599	.133	
18:00	4		6.75	1.75	.199	2.399	.466	5	.399	4.799	.533	
20:00	6		10.5	4	.599	7.198	1.066	6.5	.399	4.799	.933	
22:00	8		13.5	6	.533	6.398	1.599	7.5	.266	3.199	1.199	
24:00	10		16.75	7.75	.466	5.599	2.066	9	.399	4.799	1.599	
15 TH JULY 1991.												
02:00	12		19.75	9.25	.399	4.799	2.466	10.5	.399	4.799	1.999	
04:00	14		22.75	10.75	.399	4.799	2.866	12	.399	4.799	2.399	
06:00	16		25.5	12	.333	3.999	3.199	13.5	.399	4.799	2.799	
08:00	18		28.5	14	.533	6.398	3.732	14.5	.266	3.199	3.066	
10:00	20		31.5	15.75	.466	5.599	4.199	15.75	.333	3.999	3.399	
12:00	22		34	16.75	.266	3.199	4.466	17.25	.399	4.799	3.799	
14:00	24		38	19.5	.733	8.798	5.199	18.5	.333	3.999	4.132	
16:00	26		41	21.25	.466	5.599	5.666	19.75	.333	3.999	4.465	
18:00	28		43.25	22	.199	2.399	5.866	21.25	.399	4.799	4.865	
20:00	30		46.5	24	.533	6.398	6.399	22.5	.333	3.999	5.198	
22:00	32		49.5	25.5	.399	4.799	6.799	24	.399	4.799	5.598	
24:00	34		53	27.75	.599	7.198	7.399	25.25	.333	3.999	5.931	

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LIQUID PRODUCTION

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 2 OF 3

WELL NAME: TAYLOR 5TH #1.

FORMATION : TIRRAWARRA

DATE: 16-7-91

TEST TYPE : POST FRAC & BUILD UP

OPR : A. SMITH

TANK #1 = 58

TANK

#1 = 56.6

bbls/m³

TANK

#1 = 1" = .2666 m³ bbls/in - m³/cm

OIL API GRAVITY = 51.6 @ 60°F

NUMBER

#2 =

CAPACITY

#2 =

bbls/m³

SCALE

#2 =

bbls/in - m³/cm

DATE

FLOW

TANK

TOTAL

OIL/CONDENSATE PRODUCTION

WATER PRODUCTION

TIME

TIME
(HOURS)USED
(NUMBER)TANK DIP
(IN/CM)TANK
DIP
(IN/CM)TANK
PRODUCTION
(BBLs/m³)FLOW
RATE
(BPD/m³D)CUMULATIVE
PRODUCTION
(BBLs/m³)TANK
DIP
(IN/CM)TANK
PRODUCTION
(BBLs/m³)FLOW
RATE
(BPD/m³D)CUMULATIVE
PRODUCTION
(BBLs/m³)16TH JULY 1991.

02:00

36

#58

55.75

29.5

.466

5.599

7.866

26.25

.266

3.199

6.198

04:00

38

58.5

30.75

.333

3.999

8.199

27.75

.399

4.799

6.598

06:00

40

61.25

32.25

.399

4.799

8.599

29

.333

3.999

6.931

08:00

42

64.25

34

.466

5.599

9.066

30.25

.333

3.999

7.264

10:00

44

67.5

35.75

.466

5.599

9.533

31.75

.399

4.799

7.664

12:00

46

70.5

37.75

.533

6.398

10.066

32.75

.266

3.199

7.931

14:00

48

74.25

39.75

.533

6.398

10.599

34.5

.466

5.599

8.397

16:00

50

77.25

41

.333

3.999

10.932

36.25

.466

5.599

8.863

18:00

52

79.5

42.25

.333

3.999

11.265

37.25

.266

3.199

9.130

19:00

53

81

43

.199

4.799

11.465

38

.199

4.799

9.330

20:00

54

82.5

44

.266

6.398

11.732

38.5

.133

3.199

9.463

21:00

55

83.75

44.5

.133

3.199

11.865

39.25

.199

4.799

9.663

22:00

56

85.25

45.25

.199

4.799

12.065

40

.199

4.799

9.863

23:00

57

86.75

46.25

.266

6.398

12.332

40.5

.133

3.199

9.996

24:00

58

88.5

47.5

.333

7.998

12.665

41

.133

3.199

10.129

17TH JULY 1991.

01:00

59

90.25

48.5

.266

6.398

12.932

41.75

.199

4.799

10.329

02:00

60

91.75

49.5

.266

6.398

13.199

42.25

.133

3.199

10.462

03:00

61

93.25

50.5

.266

6.398

13.466

42.75

.133

3.199

10.595

04:00

62

94.75

51.25

.199

4.799

13.666

43.5

.199

4.799

10.795

CUSTOMER :	SANTOS	PERFORATIONS:	9502' → 9580' KB.	PAGE: 3	OF 3
WELL NAME:	TAYLOR 5TH #1.	FORMATION :	TIRRAWARRA	DATE:	17-7-91
TEST TYPE :	POST FRAC & BUILD UP			OPR :	A. SMITH

TANK	#1 = 58	TANK	#1 = 56.6	bbls/m³	TANK	#1 = 1" = .2666 m ³	bbls/in³cm	OIL API GRAVITY = 51.6 @ 60°F
NUMBER	#2 =	CAPACITY	#2 =	bbls/m ³	SCALE	#2 =	bbls/in ³ · m ³ /cm	

[illegible]

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FIELD READINGS

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' CB.

PAGE: 1. OF 3

WELL NAME: TAYLOR 5TH #1.

FORMATION : TIRRAWARRA

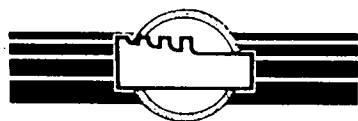
DATE: 13-7-91

TEST TYPE : POST FRAC SRT & PBU.

OPR : A.SMITH.

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION			
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE %	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)
13 TH JULY 1991.														
10:55	ARRIVE ON LOCATION & RIG UP WIRELINE UNIT & TESTING EQUIPMENT.													
11:20	PRESSURE TEST WIRELINE EQUIPMENT & PERFORM BLIND BOX RUN. NOTE: REFER TO SEQUENCE FOR DATA.													
12:20	BLIND BOX RUN COMPLETED & SECURE LOCATION.													
14 TH JULY 1991.														
10:30	ARRIVE BACK ON LOCATION & CONTINUE RIGGING UP TEST IN EQUIPMENT.													
13:30	PRESSURE TEST EQUIPMENT & O.K.													
13:50		4957	5040	60	100%	TRIM FLOW THROUGH SEPARATOR ENGAGING A 1.750" ORIFICE PLATE.								
14:00	0	4957	5040	60	↑		1.75"	COMMENCE POST FRAC						
16:00	2	4964	5054	64			↑	670	79	169	4.5	1		3.5
18:00	4	4985	5075	69				665	84	172	6.75	1.75		5
20:00	6	4957	5040	68				660	83	172	10.5	4		6.5
22:00	8	4944	5054	68				660	83	172	13.5	6		7.5
24:00	10	4951	5047	67				660	84	172	16.75	7.75		9
15 TH JULY 1991.														
02:00	12	4944	5047	67				660	85	172	19.75	9.25		10.5
04:00	14	4951	5047	66				660	83	171	22.75	10.75		12
06:00	16	4951	5047	65				660	83	171	25.5	12		13.5
08:00	18	4923	5047	65				665	83	171	28.5	14		14.5
10:00	20	4958	5047	64	100%		1.75"	670	82	169	31.5	15.75		15.75
10:00	OPEN CASING TO ATMOSPHERE TO DEPRESSURE & UNSUCCESSFUL.													
12:00	22	4951	5054	68	100%		1.75"	675	82	171	34	16.75		17.25

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FIELD READINGS

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB.

PAGE: 2 OF 3

WELL NAME: TAYLOR 5TH #1.

FORMATION : TIRRAWARRA

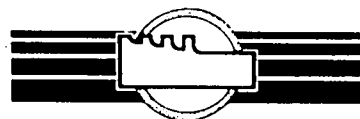
DATE: 15-7-91

TEST TYPE : POST FRAC & BUILD UP.

OPR : A. SMITH

TIME		WELLHEAD DATA					SEPARATOR DATA				LIQUID PRODUCTION			
DATE	FLOW OR SHUT IN TIME (HOURS)	TUBING PRESSURE (PSI/KPa)	ANNULUS PRESSURE (PSI/KPa)	WELLHEAD TEMP (°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)
15 TH JULY 1991.														
14:00	24	4951	5054	68	100%		1.75"	675	81	171	38	19.5		18.5
16:00	26	4957	5054	66				670	80	171	41	21.25		19.75
18:00	28	4951	5033	69				665	80	172	43.25	22		21.25
20:00	30	4957		68				660	79	172	46.5	24		22.5
22:00	32	4957		68				660	80	172	49.5	25.5		24
24:00	34	4957		68				660	79	172	53	27.75		25.25
16 TH JULY 1991.														
02:00	36	4999		67				670	75	171	55.75	29.5		26.25
04:00	38	4944		68				660	80	172	58.5	30.75		27.75
06:00	40	4944		67				660	82	172	61.25	32.25		29
08:00	42	4944		66				665	83	169	64.25	34		30.25
10:00	44	4944		63				670	82	167	67.5	35.75		31.75
12:00	46	4957		67				670	82	167	70.5	37.75		32.75
14:00	48	4944	5033	68	100%		1.75"	675	81	171	74.25	39.75	51.6	34.5
14:30	PREPARE ELEMENTS FOR BUILD UP / POST FRAC.													
15:10		4951	5033	68	PRESSURE LUBRICATOR.									
16:00	50	4951	5033	69	100%		1.75"	670	80	171	77.25	41		36.25
17:10		4944	5033	67	DEPRESSURE LUBRICATOR.									
17:40		4944	5033	69	PRESSURE LUBRICATOR & R.I. H WITH 2 PRESSURE ELEMENTS & M.B.H THERMOMETER									
18:00	52	4944	5033	69	100%		1.75"	665	80	172	79.5	42.25		37.25
18:00					@ HANG DEPTH 9450' KB.									

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FIELD READINGS

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB

PAGE: 3 OF 3

WELL NAME: TAYLOR STN #1.

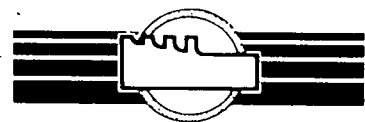
FORMATION : TIRRAWARRA

DATE: 16-7-91

TEST TYPE : POST FRAC & BUILD UP

OPR : A. SMITH

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)
16 TH JULY 1991														
19:00	53	4944	5033	69	100%		1.75"	665	80	172	81	43	51.6	38
20:00	54	4944	↑	69	↑		↑	660	80	172	82.5	44		38.5
21:00	55	4937	↑	68	↑		↑	660	79	172	83.75	44.5		39.25
22:00	56	4937	↑	68	↑		↑	660	78	172	85.25	45.25		40
23:00	57	4937	↓	68	↓		↓	660	77	172	86.75	46.25		40.5
24:00	58	4937	5033	68	100%		1.75"	660	76	172	88.5	47.5		41
24:00	COLLECT 1 ST SAMPLES. 1x 500ml H.P GAS, 1x 500ml H.P OIL & 1x 500ml L.P WATER.													51.6
17 TH JULY 1991														
01:00	59	4937	5033	69	100%		1.75"	660	76	172	90.25	48.5		41.75
01:00	COLLECT 2 ND SAMPLES. 1x 500ml H.P GAS, 1x 500ml H.P OIL & 1x 500ml L.P WATER.													
02:00	60	4930	5033	69	100%		1.75"	660	75	172	91.75	49.5		42.25
03:00	61	4930	↑	69	↑		↑	660	74	172	93.25	50.5		42.75
04:00	62	4930	↑	69	↑		↑	660	74	172	94.75	51.25		43.5
05:00	63	4930	↑	69	↑		↑	660	74	172	96.5	52.25		44.25
06:00	64	4930	↑	68	↑		↑	660	74	172	98	53		45
07:00	65	4930	↓	68	↓		↓	655	73	171	99.5	53.75		45.75
08:00	66	4937	5033	68	100%		1.75"	660	73	171	101.25	54.75		46.5
08:00	S.W.I FOR BUILDUP & REFER TO TEST RESULTS FOR SHUT IN INFORMATION.													



CUSTOMER : **SANTOS** PERFORATIONS: **9502' → 9580' KNS** PAGE: **1** OF **1**
 WELL NAME: **TAYLOR 5TH #1** FORMATION : **TIRRAWARRA** DATE: **17-7-91**
 TEST TYPE : **POST FRAC & P.B.V.** OPR : **A. SMITH**

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)		
00:00	1	500ml	H ² O	1				SEPARATOR	0	78	101	17		
WELLHEAD DATA				SEPARATOR DATA			GRAVITIES		FLOW RATES		RATIOS		BOTTOM HOLE	
TUBING PRESS (PSI/KPa)	WELLHEAD TEMP (°F/°C)	CHOKE SIZE	BS&W (%)	SEPARATOR PRESS (PSI/KPa)	SEPARATOR TEMP (°F/°C)	FPV	GAS SPECIFIC GRAVITY	OIL API GRAV @60°F	GAS MMSCFD m ³ /10 ³ /D	OIL BPD m ³ /D	WATER BPD m ³ /D	M ³ /10 ⁶ m ³	PRESSURE	TEMPERATURE
													(PSI/KPa)	(°F/°C)
4937	68	100%		4551	78	1.0725	.889		104.9	7.9	3.2	107		

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)			
01:00	2	500ml	H ₂ O	1				SEPARATOR	0	78	101	17			
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	M³/10⁶ M³	PRESSURE	TEMPERATURE	
														(PSI/KPa)	(°F/°C)
4437	69	100%		4551	78	1.0725	.889		104.9	6.4	4.8	107			

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)		
00:00	90	500ml	GAS	30	EVACUATED				METER RUN	4551	78	101	17		
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	M³/10⁶ M³	PRESSURE	TEMPERATURE	
													(PSI/KPa)	(°F/°C)	
4937	68	100%		4551	78	1.0725	.889		104.9	7.9	3.2	107			

REMARKS:



CUSTOMER : **SANTOS** PERFORATIONS: **9502' → 9580' KB** PAGE: **2 OF 1**
 WELL NAME: **TAYLOR 5TH #1** FORMATION : **TIRRAWARRA** DATE: **17-7-91**
 TEST TYPE : **POST FRAC & P.B.U.** OPR : **A. SMITH**

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)		
01:00	269	500ml	GAS	30	EVALUATED			METER RUN	4551	78	101	17		
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	M³/10⁶ M³	PRESSURE (PSI/KPa)	TEMPERATURE (°F/°C)
4937	69	100%		4551	78	1.0725	.889		104.9	6.4	4.8		107	

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)	
00:00	77	500ml	OIL	30	ACIDIFIED BRINE	475ml	25 ml		SEPARATOR		4551	78	101	17	
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	M³/10⁶ M³	PRESSURE (PSI/KPa)	TEMPERATURE (°F/°C)	
4937	68	100%		4551	78	1.0725	.889	51.6	104.9	7.9	3.2		107		

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)	
01:00	164	500ml	OIL	30	ACIDIFIED BRINE	475ml	25ml		SEPARATOR		4551	78	101	17	
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	M³/10⁶ M³	PRESSURE (PSI/KPa)	TEMPERATURE (°F/°C)	
4937	69	100%		4551	78	1.0725	.889	51.6	104.9	6.4	4.8		107		

REMARKS:

EXPERTEST PTY. LTD.

BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS

PERFORATIONS : 9502' → 9580' KB.

PAGE: 1 OF 1

WELL NAME : TAYLOR 5TH #1.

FORMATION : TIRRAWARRA

DATE: 16-7-91

TEST TYPE : POST FRAC & BUILD UP

OPR : A. SMITH

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

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

ELEMENT SERIAL NO.

21379

21821

DATE : 16-7-91

ELEMENT RANGE

4825 PSI

4750 PSI

PRESSURE LUBRICATOR

15:10

4951

5033

RECORDING SECTION SERIAL NO.

59288

14619

RUN IN HOLE

17:40

4944

5033

DATE OF CALIBRATION:

@ 290°F

4-6-91

4-6-91

ON DEPTH AT

9450 FT/M

18:00

4944

5033

CLOCK SERIAL NO.

2708

2870

DATE : 24-7-91

CLOCK RANGE

180 HR

180 HR

PULL OUT OF HOLE

10:30

9108

9108

LEAD SCREW TYPE

15 TLS

15 TLS

AT SURFACE

10:55

9108

9108

DEPRESSURE LUBRICATOR

14:23

9149

9149

ENGAGE STYLUS DATE 16-7-91 TIME

15:05

15:05

MAXIMUM BHT AT 9450' FT/M = N/A °F

DISENGAGE STYLUS DATE 24-7-91 TIME

14:31

14:31

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

DATE

TIME

REMARKS

16TH JULY 1991.

17:10

DEPRESSURE LUBRICATOR (4944 TUBING / CASIN 5033 KPa).

17:40

PRESSURE LUBRICATOR & R.I.H

18:00

@ HANG DEPTH 9450' KB

24TH JULY 1991.

10:30

P.O.O.H

10:55

@ LUB & BLEED

11:55

PRESSURE LUB.

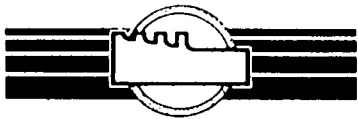
14:23

Depressure lub. remove annulars

NB: Clock # 2708 stopped during build up & no lub stop on bot element as we were out of clock time.

00252

EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS

PERFORATIONS: 9502' → 9580' KB

PAGE: 2. OF 2.

WELL NAME: TAYLOR STH #1.

FORMATION : TIRRAWARRA

DATE: 24/7/91

TEST TYPE : STATIC GRADIENT

OPR : P. Bowyer

GAUGE DATA

UPPER
PRESSURE
GAUGELOWER
PRESSURE
GAUGETEMPERATURE
GAUGE

RUN DATA

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

ELEMENT SERIAL NO.

21379

21821

DATE : 24/7/91

ELEMENT RANGE

PSI

4825

4750

PRESSURE LUBRICATOR :

14:50

9128

9128

RECORDING SECTION SERIAL NO.

59288

14619

RUN IN HOLE :

1505

9135

9135

DATE OF CALIBRATION:

@ 290°F

4/6/91

4/6/91

ON DEPTH AT MPP. : 9541 FT/M

16:14

9135

9135

CLOCK SERIAL NO.

A15014

A15013

DATE : 24/7/91

CLOCK RANGE

HR

3

3

PULL OUT OF HOLE :

16:24

9142

9142

LEAD SCREW TYPE

15TUS

15TUS

AT SURFACE :

16:49

9142

9142

DEPRESSURE LUBRICATOR :

17:04

9135

9135

ENGAGE STYLUS DATE 24/7/91 TIME

14:43

14:43

MAXIMUM BHT AT 9541 FT/M = N/A. W/C

DISENGAGE STYLUS DATE — " — TIME

17:10

17:10

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

DATE

TIME

REMARKS

24/7/91

1450

Pressure Lub

1500

Depressure Lub

1505

Pressure Lub & R.I.H.

1649

Depressure Lub

1654

Pressure Lub

1704

Depressure Lub, remove amercadas

00253

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, 24th July 1991.

CLIENT	LOCATION	FORMATION
Santos Ltd.	TAYLOR 5TH #1	TIRRAWARRA

STATIC PRESSURE GRADIENT REPORT

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

WELL DATA	
PARAMETER	VALUE
DWT In	1325 PSIG
DWT Out	1325 PSIG
Max BHT	N/A

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT./KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT.	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT.
LUB.	0.5378	1321.4	-----	0.5292	1327.9	-----
1000	0.5567	1368.0	0.047	0.5464	1371.0	0.043
2000	0.5752	1413.6	0.046	0.5642	1415.7	0.045
3000	0.5930	1457.4	0.044	0.5821	1460.6	0.045
4000	0.6099	1499.1	0.042	0.5991	1503.3	0.043
5000	0.6259	1538.5	0.039	0.6150	1543.2	0.040
6000	0.6424	1579.2	0.041	0.6299	1580.6	0.037
7000	0.6590	1620.1	0.041	0.6445	1617.2	0.037
8000	0.6755	1660.8	0.041	0.6603	1656.9	0.040
9000	0.6914	1700.0	0.039	0.6762	1696.8	0.040
9450	0.6986	1717.7	0.039	0.6840	1716.4	0.044
9541	0.6989	1718.5	0.008	0.6851	1719.1	0.030
LUB.	0.5377	1321.2	-----	0.5270	1322.3	-----

GENERAL REMARKS

ENVELOPE 7035/2

TENEMENT: PEL 5 and PEL 6, Merrimelia-Innamincka Block; Eromanga and Cooper Basins

TENEMENT HOLDER: Santos Ltd (operator), Alliance Petroleum Australia NL, Delhi Petroleum Pty Ltd, Vamgas Ltd and South Australian Oil and Gas Corporation Pty Ltd

CONTENTS OF VOLUME ONE

		MESA NO.
REPORTS:	Halliburton Services, 1987. Formation testing service report, DST 1 (25/6/87).	7035/2 R 1 Pgs 3-12
	Halliburton Services, 1987. Formation testing service report, DST 2 (24/6/87).	7035/2 R 2 Pgs 13-22
	Halliburton Services, 1987. Formation testing service report, DST 3 (25/6/87).	7035/2 R 3 Pgs 23-32
	Halliburton Services, 1987. Formation testing service report, DST 4 (24/6/87).	7035/2 R 4 Pgs 33-44
	Schlumberger-Seaco Inc., 1987. Report on the GEOGRAM processing of data from the velocity survey of the well Taylor South 1 (15/2/87).	7035/2 R 5 Pgs 45-131
PLAN Encl.	Seismic calibration log.	7035/2-1
REPORTS:	Knox, L., 1988. Results of the post completion clean-up flow and modified isochronal gas production test, plus buildup and static gradient surveys, of the Tirrawarra Sandstone gas reservoir perforated interval 9502-9580 feet, conducted over the period 9-19/3/88 (Oilserv Australia Ltd).	7035/2 R 6 Pgs 132-172
	Lanson, P.B., Wray, B.W. and Woodley, D.M., 1989. Interpretation of the results of the above modified isochronal test of the Tirrawarra Sandstone gas reservoir (Santos Ltd, Petroleum Development Department, report no. RE:021/89, June 1989).	7035/2 R 7 Pgs 173-210
	Lohrey, B., 1989. Results of 96 hour reservoir pressure buildup, flowing bottomhole pressure and static pressure gradient surveys of the Tirrawarra producing zone, conducted over the period 27/2-3/3/89 (Oilserv Australia Ltd).	7035/2 R 8 Pgs 211-226
	Smith, A. and Bowyer, P., 1991. Results of the post-frac single-rate gas production test, 170.5 hour buildup and static pressure gradient surveys of the Tirrawarra producing zone, conducted over the period 13-24/7/91 (Expertest Pty Ltd).	7035/2 R 9 Pgs 227-254

CONTENTS OF VOLUME TWO

Kappler, S., 1992. Results of a liquids evaluation test and flowing pressure gradient survey of the Tirrawarra producing zone, conducted over the period 21-22/8/92 (Oilserv Australia Ltd).	7035/2 R 10 Pgs 255-268
---	-----------------------------------

MESA NO.**REPORTS:**

Serafini, K.M. and Evans, D.A., 1992. Interpretation of the February and November 1989 (pre-frac) and July 1991 (post-frac) pressure surveys of the Tirrawarra Sandstone gas reservoir in Taylor South Field (Santos Ltd, Petroleum Development Department, report no. RE:014/92, September 1992).

7035/2 R 11
Pgs 269-311

Black, P., 1993. Results of a static pressure gradient survey of the Tirrawarra producing zone, conducted over the period 30-31/5/93 (Expertest Pty Ltd).

7035/2 R 12
Pgs 312-315

END OF CONTENTS



A.C.N. 007.550.923

PETROLEUM ENGINEERING : TEST RESULTS

CONTRACTOR: OILSERV AUSTRALIA LTD	PERFORATIONS: 9502' - 9580' K.B.	PAGE: 1 OF
WELL NAME: TAYLOR SOUTH #1	FORMATION: TIRRAWARRA	DATE: 21/8/92
TEST TYPE: LET. & F.G.S.		OPR: S. KAPLER

TIME		WELLHEAD DATA				SEPARATOR 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 m³/10³D	OIL BPD m³/D	WATER BPD m³/D	GAS MMSCFD m³/10³	OIL BBLs m³	WATER BBLs m³	L.G.R. BBLs/MMSCFD m³/10³m³
21/8/92	0915														Q _g = 65.071 10³m³/d
	1030														Q _c = 4.347 m³/d
	1045														Q _w = 3.502 m³/d
	1330														
	1400	00:00													
	1600	02:00	4729	2482	70	100%	4585	66	63.9959	3.240	1.440	5.3330	0.270	0.120	0.073
	1800	04:00	4758	2482	69	100%	4620	65	63.8337	4.860	3.060	10.6525	0.675	0.375	0.124
	2200	08:00	4771	2482	68	100%	4586	65	62.9839	4.500	3.450	21.1498	1.425	0.950	0.126
22/8/92	0200	12:00	4771	2482	68	100%	4551	65	63.8711	4.200	3.600	31.7950	2.125	1.550	0.122
	0600	16:00	4758	2482	68	100%	4551	65	64.4401	4.050	3.600	42.5350	2.800	2.150	0.119
	0800	18:00	4758	2482	69	100%	4551	65	64.4401	4.080	4.080	47.9050	3.140	2.490	0.127
	0800														
	10:00	20:00	4764	2482	70	100%	4620	65	64.9864	4.560	3.480	53.3205	3.520	2.780	0.124
	11:4		RIH To complete drift run												
	12:00	22:00	4792	2482	70	100%	4654	67	67.4820	4.9200	4.08	58.9440	3.930	3.120	0.133
	13:45		Start to RIH for flowing gradient survey												
	14:00	24:00	4792	2482	70.5	100%	4654	67	67.7564	4.68	3.12	64.5904	4.320	3.380	0.115
	16:00	26:00	4792	2482	71	100%	4654	65.5	65.7542	4.44	4.56	70.0699	4.690	3.760	0.137
	16:55		Complete Flowing gradient survey												
	17:00	27:00	4792	2482	71	100%	4654	66	66.2639	4.80	4.32	72.8300	4.890	3.940	0.138
			By-pass separator												
			END OF TEST												

SECTION NO 2

GAS FLOW CALCULATIONS

By: OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033

TELEPHONE: (08) 371 2755
FACSIMILE: (08) 371 2734



PETROLEUM ENGINEERING : GAS FLOW CALCULATIONS

CONTRACTOR: OILSERV AUST LTD	PERFORATIONS: 9502'-9580' K.B.	PAGE: 1 OF 1
WELL NAME: TAYLOR SOUTH #1	FORMATION: TIRRAWARRA	DATE: 21/8/92
TEST TYPE: LET & FGS		OPR: S. KAPPLER

ORIFICE METER TYPE: DANIEL							STATIC PRESSURE RANGE: 0-1500 PSIG				GAS SPECIFIC GRAVITY (SG) = 0.840				
METER RUN SIZE: 3.826"							DIFFERENTIAL PRESS. RANGE: 0-200 IN WC				FG = $\sqrt{(1/SG)}$ = 1.0911				
SEPARATOR NO.: S-06							STANDARD CONDITIONS: 14.73 PSI @ 60°F				C ₂ = (FU X FG) =				
DATE TIME	FLOW TIME (HOURS)	CHOKE SIZE	STATIC PRESS P _f (PSIA)	DIFF PRESS H _w (IN WC)	GAS FLOW TEMP. (°F/°C)	ORIF. PLATE SIZE (IN)	$\sqrt{(P_f \times H_w)}$	$C_1 = F_b \times F_{TF} \times F_{PV} \times Y_2$				CUMULATIVE GAS PRODUCTION m ³ 10 ³	C (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)
21/8/92															
1400	00:00	100%						TRIM FLOW THROUGH SEPARATOR							
1600	02:00	100%	680	112	66	1.25	275.9162	318.0314	0.9227	1.0702	1.0011	5.3330	343.0168	2.2715	63.9959
1800	04:00	100%	685	110	65	1.25	274.4454	318.0314	0.9240	1.0717	1.0011	10.6525	343.9806	2.2657	63.8337
2200	08:00	100%	680	108	65	1.25	270.9443	318.0314	0.9240	1.0711	1.0010	21.1498	343.7870	2.2355	62.9839
22/8/92															
0200	12:00	100%	675	112	65	1.25	274.8995	318.0314	0.9240	1.0705	1.0011	31.7950	343.6137	2.2670	63.8711
0600	16:00	100%	675	114	65	1.25	277.3431	318.0314	0.9240	1.0705	1.0011	42.5350	343.6204	2.2872	64.4401
0800	18:00	100%	675	114	65	1.25	277.3431	318.0314	0.9240	1.0705	1.0011	47.9050	343.6204	2.2872	64.4401
0800								COLLECT 2x 500" L.P. H ₂ O SAMPLES							
1000	20:00	100%	685	114	65	1.25	279.3908	318.0314	0.9240	1.0717	1.0011	53.3205	343.9938	2.3066	64.9864
1114								RIN TO COMPLETE DRIFT RUN							
1200	22:00	100%	690	123	67	1.25	291.2676	318.0314	0.9213	1.0705	1.0012	58.9440	342.6386	2.3952	67.4820
1312								FINISH DRIFT RUN							
1345								START TO CONDUCT FLOWING GRADIENT SURVEY							
1400	24:00	100%	690	124	67	1.25	292.4492	318.0314	0.9213	1.0705	1.0012	64.5904	342.6418	2.4049	67.7564
1600	2600	100%	690	116	65.5	1.25	282.8581	318.0314	0.9234	1.0718	1.0011	70.0699	343.7917	2.3339	65.7542
17:00	27:00	100%	690	118	66	1.25	285.2861	318.0314	0.9227	1.0714	1.0011	72.8300	343.4043	2.3512	66.2439
17:00		By-pass separator.						END OF TEST.					Agave = 2.3096		65.071

SECTION NO 3**LIQUID PRODUCTION**

By: OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033

TELEPHONE: (08) 371 2755
FACSIMILE: (08) 371 2734



A.C.N. 007 550 923

PETROLEUM ENGINEERING : LIQUID PRODUCTION

CONTRACTOR:	OILSERV AUSTRALIA LTD	PERFORATIONS:	9502'-9580' K.B.	PAGE:	1 OF
WELL NAME:	TAYLOR SOUTH #1	FORMATION:	TIRRAWARRA	DATE:	21/8/92
TEST TYPE:	LET & FGS			OPR:	S. KAPPLER
				OIL API GRAVITY =	@ 60°F
					52.7

TANK NUMBER	#1 =	TANK CAPACITY	#1 =	bbls/m ³	TANK SCALE	#1 =	CALIBRATED LITRES	bbls/in-m ³ /cm	#2 =	CALIBRATED LITRES	bbls/in-m ³ /cm
	#2 =		#2 =	bbls/m ³							
DATE	FLOW TIME (HOURS)	TANK USED (NUMBER)	TOTAL TANK DIP LITRES	OIL/CONDENSATE PRODUCTION				WATER PRODUCTION			
TIME				TANK DIP LITRES	TANK PRODUCTION (BBLs/m ³)	FLOW RATE (BPD) (m ³ /D)	CUMULATIVE PRODUCTION (BBLs/m ³)	TOTAL TANK DIP LITRES	TANK PRODUCTION (BBLs/m ³)	FLOW RATE (BPD) (m ³ /D)	CUMULATIVE PRODUCTION (BBLs/m ³)
21/8/92											
1400	00.00										
1600	02.00	*1	0/390	0/270	0.270	3.240	0.270	0/120	0.120	1.440	0.120
1800	04.00	*1	1050	675	0.405	4.860	0.675	375	0.255	3.060	0.375
2200	08.00	*1	2375	1425	0.750	4.500	1.425	950	0.575	3.450	0.950
22/8/92											
0200	12.00	*1	3675	2125	0.700	4.200	2.125	1550	0.600	3.600	1.550
0600	16.00	*1	4950	2800	0.675	4.050	2.800	2150	0.600	3.600	2.150
0800	18.00	*1	5630	3140	0.340	4.080	3.140	2490	0.340	4.080	2.490
0800				COLLECT	2x 500"	L.P. H ₂ O	SAMPLES				
1000	20.00	*1	6300	3520	0.380	4.560	3.52	2780	0.290	3.480	2.780
1114				R1H TO	PERFORM	DRIFT RUN					
1200	22.00	*2	0/750	0/410	0.410	4.92	3.93	0/340	0.340	4.08	3.12
1312				COMPLETE	DRIFT RUN						
1345				START TO	CONDUCT	FLOWING	GRADIENT SURVEY				
1400	24.00	*2	1400	390	0.390	4.68	4.32	600	0.260	3.12	3.38
1600	26.00	*2	2150	370	0.370	4.44	4.69	980	0.380	4.56	3.76
17.00	27.00	*2	2530	1370	0.200	4.80	4.89	1160	0.18	4.32	3.94
17.00			By-pass separator	end Test.							
						Q _c = 4.347 m ³ /d				Q _w = 3.502 m ³ /d	

S E C T I O N N O 4**FLOWING GRADIENT SURVEY**

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

TELEPHONE: (08) 371 2755
FACSIMILE: (08) 371 2734



SANTOS LIMITED
PETROLEUM ENGINEERING

FLOWING GRADIENT SURVEY

Well Name TAYLOR SOUTH #1

Date 22/8/92

TOP BOMB No. 1 DATA						MIDDLE BOMB No. 2 DATA				LUBRICATOR DATA	
Element No. <u>55993</u> ✓ Element Range <u>0-5200 PSI</u>						Element No. <u>55994</u> Element Range <u>0-5000</u>				Pressure with D. W. T. <u>IN - 694, OUT 694</u>	
Recorder No. <u>55387 x 7 1/2 TLS</u> Clock Data <u>B-9079 x 12 HR</u>						Recorder No. <u>55663</u> Clock Data <u>B-10620 x 12 HR</u>				Time Pressured <u>1345 HRS</u>	
Engage Stylus <u>1321</u> Disengage <u>1700</u>						Engage Stylus <u>1321</u> Disengage <u>1701</u>				Time Depressured <u>1655 HRS</u>	
DATE	TIME	DEPTH	DEFLECTION	PRESSURE TEMP.	GRADIENT Psi/Feet	DEPTH	DEFLECTION	PRESSURE TEMP.	GRADIENT Psi/Feet	REMARKS	
22/8/92	1345	LUB	0.2677	667.836		LUB	0.2664	692.427		5	STOPS ATMOSPHERIC
	1350	LUB	0.0	0.0		LUB	0.0			15	" FWHP
	1405	LUB	0.2674	667.062		LUB	0.2657	690.633		5	" ATMOSPHERIC
	1411	RIM	-			RIM	-				
	1415	1000	0.2791	697.278	0.030	1000	0.2665	692.683	0.002	5	"
	1423	2000	0.2926	732.142	0.035	2000	0.2803	727.754	0.035	5	"
	1431	3000	0.3045	762.875	0.031	3000	0.2932	760.817	0.033	5	"
	1439	4000	0.3187	799.547	0.037	4000	0.3056	772.599	0.032	5	"
	1447	5000	0.3332	836.994	0.038	5000	0.3194	827.72	0.035	5	"
	1455	6000	0.3457	869.301	0.032	6000	0.3323	860.733	0.033	5	"
	1503	7000	0.3574	899.517	0.030	7000	0.3443	891.29	0.031	5	"
	1512	8000	0.3669	924.051	0.025	8000	0.3558	920.765	0.030	5	"
	1518	8500	0.3710	934.64	0.021	8500	0.3655	945.527	0.050	5	"
	1525	9000	0.3765	948.844	0.028	9000	0.3712	960.037	0.029	5	"
	1532	9450	0.3819	962.79	0.031	9450	0.3869	1000.227	0.089	15	"
	1548	9541	0.3852	971.312	0.094	9541	0.3885	1004.328	0.045	15	"
	1603	POOH	-			POOH	-				
	1628	LUB	0.2727	680.749	0.031	LUB	0.1882	492.595	0.054	5	" ATMOSPHERIC
	1634	LUB	0.0035	14.726		LUB	0.0006	9.863		15	" FWHP
	1650	LUB	0.2713	677.134		LUB	0.2325	605.839		5	" ATMOSPHERIC
	1655										BLEED DOWN
						N.B. OIL TRAP & UNDELLOWS FULL OF FRAC. SAND. THIS CHART UNRELIABLE # 55994.				N.B. MIDDLE BOMB S/N 55994 HAD ERRATIC CHART MOVEMENT = POOR TRACE	

ONE TEMPERATURE ELEMENT USED - 59548 200°F - 400°F & CLOCK SUSPECT.

PETENG 01



SANTOS LIMITED
PETROLEUM ENGINEERING

FLOWING

GRADIENT SURVEY

Well Name TAYLOR SOUTH #1

Date 22/8/92

BOTTOM BOMB No. 1 DATA						BOMB No. 2 DATA				LUBRICATOR DATA	
TEMPERATURE. Element No. <u>59548</u> Element Range <u>200°F-400°F</u>						Element No. <u> </u> Element Range <u> </u>				Pressure with D. W. T. <u>IN-694; OUT 694 PSI</u>	
Recorder No. <u>68733x15TLS</u> Clock Data <u> </u>						Recorder No. <u> </u> Clock Data <u> </u>				Time Pressured <u>1345 HRS</u>	
Engage Stylus <u>1321</u> Disengage <u>17.00</u>						Engage Stylus <u> </u> Disengage <u> </u>				Time Depressed <u>1655 HRS</u>	
DATE	TIME	DEPTH	DEFLECTION	PRESSURE TEMP.	GRADIENT Psi/Feet	DEPTH	DEFLECTION	PRESSURE TEMP.	GRADIENT Psi/Feet	REMARKS	
22.8.92	13.45	Lub								5	STOPS ATMOSPHERIC
	13.50	Lub								15	" FWHP
	14.05	Lub								5	" ATMOSPHERIC
	14.11	RIH									
	14.15	1000								5	"
	14.23	2000								5	"
	14.31	3000								5	"
	14.39	4000								5	"
	14.47	5000								5	"
	14.55	6000								5	"
	15.03	7000								5	"
	15.12	8000								5	"
	15.18	8500								5	"
	15.25	9000								5	"
	15.32	9450								15	"
	15.48	9541								15	"
	16.03	POOH									
	16.28	Lub								5	" ATMOSPHERIC
	16.34	Lub								15	" FWHP
	16.50	Lub								5	" ATMOSPHERIC
	16.55										
											Bled down Lub.

TWO PRESSURE ELEMENTS USED -

55993 x 5000 PSI
55994 x 5000 PSI

PETENG 1054

SECTION NO 5

SUBSURFACE PRESSURE GAUGE REPORTS

By: OILSERV AUSTRALIA LTD
23 GROVE AVENUE
MARLESTON SA 5033

TELEPHONE: (08) 371 2755
FACSIMILE: (08) 371 2734



COMPANY SANTOS WELL NO. BOOKABOORDIE #1
FIELD BOOKABOORDIE INTERVAL TESTED 9372' - 9480' K.B. TIRRAWARRA.
COUNTRY AUSTRALIA TECHNICIAN G. JULIEN
DATE: 13/8/92 CALIBRATION NO. 1 DATE OF LAST CALIBRATION: 27/7/92

Subsurface
Pressure Gauge
Calibration
Report

PAGE 1 OF 1

CALIBRATION STEPS

P (PRESSURE) DWT	D (1)	Y (4)	ΔY (5)	Y'	Y P	Pc = KY + B	NON LINEARITY CORRECTION C = P - Pc	C'
500		0.2029				499.74	0.258	
1000		0.3965				999.72	0.275	
1500		0.5903				1500.22	-0.224	
2000		0.7840				2000.46	-0.465	
2500		0.9773				2499.67	0.327	
3000		1.1711				3000.17	-0.172	
3500		1.3648				3500.41	-0.413	
4000		1.5584				4000.40	-0.396	
4500		1.7515				4499.09	0.913	
5000		1.9455				5000.10	-0.103	
Σ	27500	10.7423		3.785	9727.50	Σ + =	Σ - =	

LEAST SQUARES CALCULATIONS

$$\begin{aligned} A &= \frac{\sum P}{n} = \frac{27500}{10} = 2750 \\ B &= \frac{\sum Y}{n} = \frac{10.7423}{10} = 1.07423 \\ C &= \frac{\sum (Y')}{\sum Y} = \frac{3.785}{10.7423} = 0.3523 \\ D &= \frac{\sum (YP)}{\sum Y} = \frac{9727.50}{10.7423} = 905.56 \\ K &= \frac{D - A}{C - B} = \frac{905.56 - 2750}{0.3523 - 1.07423} = 2582.56 \\ a &= A - BK = 2750 - 2582.56 \times 1.07423 = -24.26 \\ a &= D - CK = 905.56 - 2582.56 \times 0.3523 = 0.17 \\ Q &= \frac{\sum C'}{n} = \frac{0.17}{10} = 0.017 \end{aligned}$$

CALIBRATION RESULTS

$$\begin{aligned} K &= 2582.56 \\ a + p &= -24.26 + 0.495 = -23.765 \\ D_R - D_O &= Y_R - P_R = \end{aligned}$$

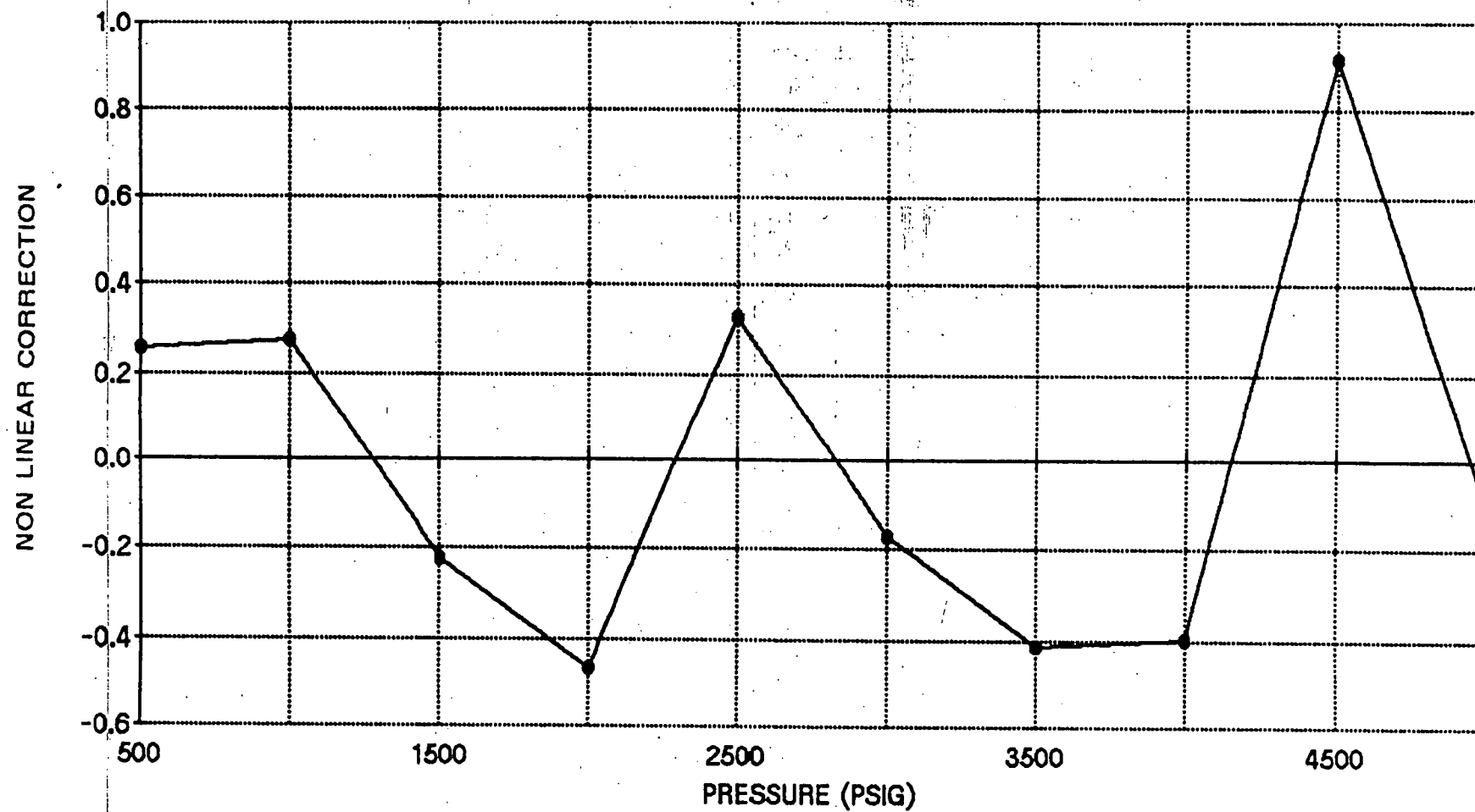
REMARKS

OWNER OF GAUGE: OILSERV AUST TYPE OF ELEMENT: RPG-3
PRESSURE ELEMENT NO. 55993 RANGE: 0-5000 PSI RECORDING SECTION NO. 61430
DEADWEIGHT TESTER TYPE AND RANGE: CHANDLER 55-1 SERIAL NO. 18731
BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING $D_O =$ TEMPERATURE =
REFERENCE LINE READING $D_R =$ REFERENCE PRESSURE $P_R =$ TEMPERATURE =
MAXIMUM TEMPERATURE EXPECTED = CALIBRATION TEMPERATURE =
DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☒ WITH A CRANK CRANK
EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLWS
LEVEL DIFFERENCE $H = 1.5$
SPECIFIC GRAVITY OF OIL $D = 0.33$ } $p = 0.495$ ☒ PLUS IN CASE OF DWT ABOVE THE BELLWS
☐ MINUS IN CASE OF DWT BENEATH THE BELLWS

- (1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p (5) Δ Y = FOR CHECKING
(2) D_O = READING FOR BASE LINE (6) n = NUMBER OF CALIBRATION STEPS
(3) D_R = READING FOR REFERENCE LINE (7) Σ = SUM
(4) Y = DEFLECTION { ☐ $D - D_O$ IF NO REFERENCE LINE
 ☐ $D - D_R$ IF REFERENCE LINE DRAWN (8) σ = STANDARD DEVIATION

00264

OILSERV AUSTRALIA LTD
GAUGE #55993 NON LINEARITY CURVE





WELL NO. BOOKABOURDIE #1

INTERVAL TESTED 9372'-9480' K.B. TIRRAWARRA

TECHNICIAN _____ G. JULIEN

DATE: 13/8/92

CALIBRATION NO. _____

DATE OF LAST CALIBRATION: 3/8/92

Subsufac
Pressure Gaug.
Calibratio:
Report

PAGE 1 OF 1

P (PRESSURE) DWT		CALIBRATION STEPS							
		D (1)	Y (4)	ΔY (5)	Y'	Y P	Pc = KY + a	NON LINEARITY CORRECTION C = P - Pc	C'
500			0.1913				498.14	1.858	3.452
1000			0.3870				999.73	0.266	0.071
1500			0.5829				1501.84	-1.838	3.380
2000			0.7776				2000.87	-0.867	0.752
2500			0.9728				2501.18	-1.178	1.387
3000			1.1672				2999.44	0.562	0.316
3500			1.3625				3500.00	-0.004	0.000
4000			1.5573				3999.29	0.711	0.505
4500			1.7521				4498.57	1.426	2.032
5000			1.9481				5000.94	-0.935	0.875
Σ	27500		10.6988		14.586	37468.70	$\Sigma + =$ $\Sigma - =$		12.770

LEAST SQUARES CALCULATIONS

$A =$	$\frac{\Sigma P}{n} =$		$= 2750$
$B =$	$\frac{\Sigma Y}{n} =$		$= 1.07$
$C =$	$\frac{\Sigma (Y)^2}{\Sigma Y} =$		$= 1.36$
$D =$	$\frac{\Sigma (YP)}{\Sigma Y} =$		$= 3502.14$
$K =$	$\frac{D - A}{C - B} =$		$= 2563.07$
$a =$	$A - BK =$		$= 7.83$
$a =$	$D - CK =$		$=$
$Q =$	$\frac{\Sigma C^2}{n} =$		$= 1.28$

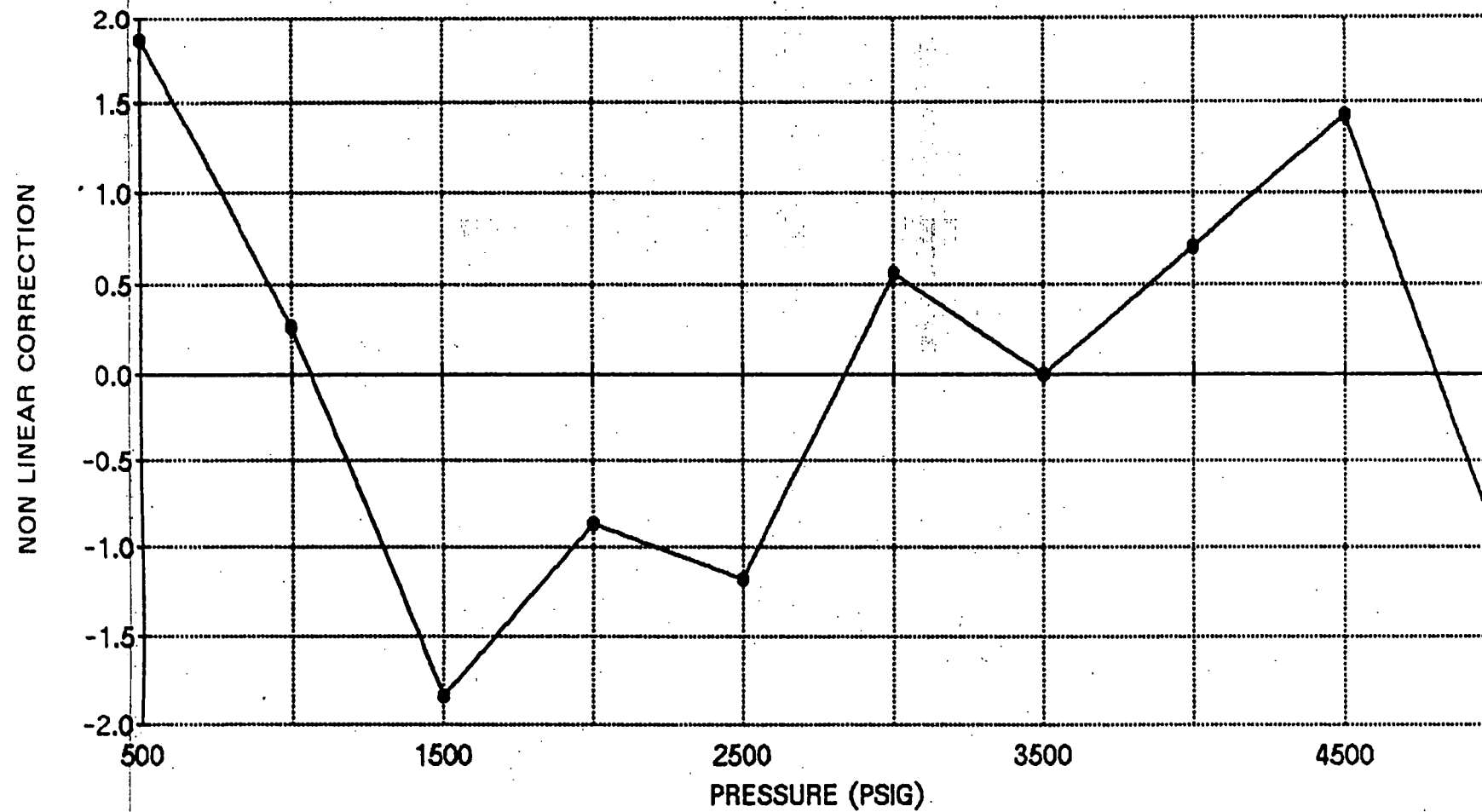
OWNER OF GAUGE: OILSERV AUST TYPE OF ELEMENT: RPG-3
PRESSURE ELEMENT NO. 55994 RANGE: 0-5000 PSI RECORDING SECTION NO. 55663
DEADWEIGHT TESTER TYPE AND RANGE: CHANDLER 55-1 SERIAL NO. 18731
BASE LINE DRAWN AT ATMOSPHERIC PRESSURE READING D_0 = _____ TEMPERATURE = _____
REFERENCE LINE READING D_R = _____ REFERENCE PRESSURE P_R = _____ TEMPERATURE = _____
MAXIMUM TEMPERATURE EXPECTED = _____ CALIBRATION TEMPERATURE = _____
DRAWING ALL CALIBRATION STEPS ☐ WITH A CLOCK ☒ WITH A CRANK CRANK
EQUIVALENT PRESSURE p OF LEVEL DIFFERENCE BETWEEN DWT AND THE BELLAWS _____
LEVEL DIFFERENCE H = 1.5
SPECIFIC GRAVITY OF OIL D = 0.33 } P = 0.495 { ☒ PLUS IN CASE OF DWT ABOVE THE BELLAWS
☐ MINUS IN CASE OF DWT BENEATH THE BELLAWS

CALIBRATION RESULTS	
K = _____	
$a + p = 7.83 + 0.495 = 8.325$	
$D_R - D_O = Y_R =$ _____	$P_R =$ _____
REMARKS	

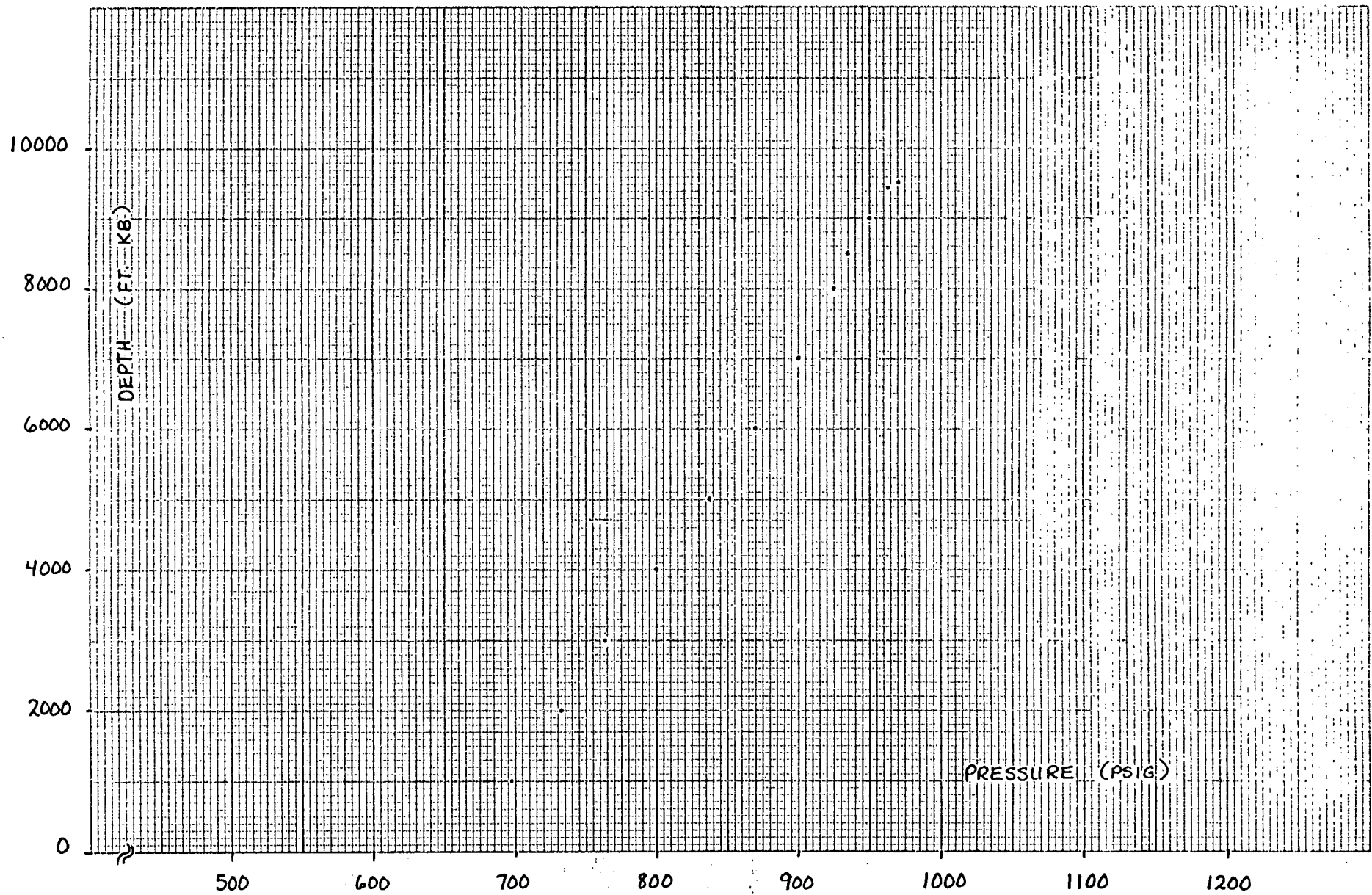
(1) D = READING ON THE CHART SCANNER FOR THE PRESSURE p	(5) Δ Y = FOR CHECKING
(2) D ₀ = READING FOR BASE LINE	(6) n = NUMBER OF CALIBRATION STEPS
(3) D _r = READING FOR REFERENCE LINE	(7) Σ = SUM
(4) γ = DEFLECTION	(8) Q = STANDARD DEVIATION
☐ D - D₀ IF NO REFERENCE LINE ☐ D - D_r IF REFERENCE LINE DRAWN	

00256

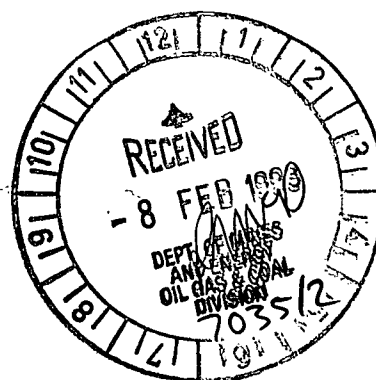
OILSERV AUSTRALIA LTD
GAUGE #55994 NON LINEARITY CURVE



TAYLOR SOUTH #1 - FLOWING PRESSURE GRADIENT - 22/08/92.
ELEMENT # 55993 (TOP)



00268

**SANTOS LTD**

A.C.N. 007 550 923

PETROLEUM DEVELOPMENT DEPARTMENT**TAYLOR SOUTH FIELD TIRRAWARRA FORMATION
FEBRUARY AND NOVEMBER 1989 PRE-FRAC
AND JULY 1991 POST FRAC PRESSURE SURVEYS**

Report No.:	RE: 014/92
Author:	K.M. Serafini/D.A. Evans
Date:	September 1992

1. INTRODUCTION
2. RESULTS
3. CONCLUSIONS
4. RECOMMENDATIONS
5. DISCUSSION
 - 5.1 General
 - 5.2 February 1989 BHPS Results
 - 5.3 November 1989 BHPS Results
 - 5.4 July 1991 SRT/PBU Results
 - 5.5 OGIP Estimates
6. REFERENCES

TABLES

1. Weltest Summary
2. Geological Data
3. Gaspac Data
4. Compositional/LET Data

FIGURES

1. Isopach Map
2. Log Section
3. Productivity/Skin Relationship
4. P/Z Plot
5. Production Plots

APPENDICES

- I. February 1989 BHPS Results
- II. November 1989 BHPS Results
- III. July 1991 SRT/PBU Results
- IV. Fracture Stimulation Prediction
- V. Compositional Data

172PETDEV1(2)
KMS:jmt

1. INTRODUCTION

Taylor South 1 was drilled in January/February 1987 as a Jurassic oil/Permian gas exploration well on an independent, partly fault bound anticlinal structure some 2 km south of the Bookabourdie Field in the Merrimelia/Innamincka Block. It is the only well in the field (Figure 1).

The well was completed in January 1988 as a single gas producer from the Tirrawarra Sandstone (Figure 2). The proved and probable OGIP booked at Year End 1991 was 5.7 Bcf, determined from an earlier P/Z analysis. The volumetric estimates are 2.8 Bcf to the LKG and 7.1 Bcf to 80% fill (Reference 1).

Bottom hole pressure surveys were conducted in February 1989 and in November 1989. The main objectives of these surveys were to determine reservoir pressure and reservoir parameters such as kh and skin as well as to derive a P/Z OGIP estimate. As a result of these surveys, the well was subsequently fracture stimulated in October 1990 to improve gas productivity. A post-frac pressure survey was conducted in July 1991 and is included in this report also.

This report presents the results of the three bottom hole pressure surveys and the derived P/Z OGIP estimate.

2. RESULTS

A summary of the results from the pressure tests is outlined below. A comparison of these results (i.e. reservoir pressure, kh and skin) with those from previous tests is presented in Table 1.

Date	BHPS	BHPS	PBU
	February 1989	November 1989	July 1991
Flow capacity, md-ft	87	83	64
Permeability, md	1.9	1.8	1.4
Apparent skin	9.0	8.3	-5.0
Gauge depth, 'KB	9463	9463	9450
Extrapolated pressure, psia	3417	3078	1804
MPP, 'KB	9541	9541	9541
P _R at MPP, psia	3425	3086	1810
Datum, 'KB	9541	9541	9541
P _R at datum, psia	3425	3086	1810
Z	0.914	0.902	0.897
P/Z, psia	3749	3421	2019
Cumulative production, Bcf	0.8	1.4	3.3
P/Z OGIP, Bcf	5.6	-	6.1
Q, MMscf/d	2.9	2.4	3.0
FTHP, psia	1324	875	731

3. CONCLUSIONS

1. The P/Z OGIP estimate determined from the surveys is 6.1 Bcf.
2. The 1989 pressure surveys indicated that there was potential for productivity improvement in Taylor South 1 by reducing/removing skin in the wellbore. As a result the well was successfully fracture stimulated in October 1990. The skin decreased to - 5, while the well's deliverability increased from 1.6 MMscf/d to 7.1 MMscf/d.
3. The Taylor South Field may be retrograde as evident from the March 1988 initial sample (C5+ = 31.6 bbls/MMscf) and the July 1991 sample (C5+ = 23.5 bbls/MMscf).

4. RECOMMENDATIONS

1. The P/Z OGIP estimate of 6.1 Bcf should be booked as Proved and Probable OGIP.
2. Further sampling should be conducted to confirm the full well stream producing composition.
3. Further pressure surveys to confirm the P/Z OGIP are not required. Future surveys should be undertaken when and if anomalous behaviour, such as unexpectedly high decline in deliverability, is observed in the well.

5. DISCUSSION

5.1 General

The pressure tests were analysed using the ECL WELTEST package and the Ramey-Cobb method (Reference 2). Relevant petrophysical data of the tested interval is contained in Table 2. Compositional data was taken from the 1988 Modified Isochronal report (Reference 3) since no samples were taken during the 1989 tests. The composition was reviewed and adjusted for liquid carry over (see Appendix 5). A GASPAC run of this data is included as Table 3. A sample taken during the July 1991 single rate test was also adjusted for liquid carryover. It was leaner ($C_{5+} = 23.5$ bbls/MMscf) than the initial composition ($C_{5+} = 31.6$ bbls/MMscf) suggesting the possibility of retrograde behaviour. Further sampling will be required to confirm this. Table 4 compares full well streams and LET results to date.

Currently, the booked 2P OGIP is 5.7 Bcf (based on earlier preliminary interpretation of the February 1989 survey) and the Volumetric OGIP to 80% fill is 7.1 Bcf (Reference 1) based on the isopach map for the Tirrawarra Sandstone (Figure 1).

5.2 February 1989 BHPS Results

The test was performed after 0.8 Bcf had been produced. The well was flowing 2.86 MMscf/d at 1324 psia prior to being shut-in for 86 hours.

Pressure data (bomb hung at 9463'KB) was analysed for reservoir parameters (Appendix I) assuming a circular drainage area, ($C_A = 31.6$). Diagnostic plots indicated a homogeneous infinite reservoir with a flow capacity of 87 md-ft and an apparent skin of 9.0. These results were not a good match to those of the 1988 Modified Isochronal test (shut-in 70 hours) which gave a flow capacity of 53 md-ft, or to DST 3 which tested 34' of pay and resulted in a flow capacity of 124 md-ft and permeability of 3.7 md.

5.3 November 1989 BHPS Results

The test was performed after 1.4 Bcf and been produced. The well was flowing 2.4 MMscf/d at 875 psia prior to being shut-in for 100 hours.

Pressure data (bomb hung at 9463'KB) was analysed for reservoir parameters (Appendix II) assuming a circular drainage area ($C_A = 31.6$). The interpretation yielded a flow capacity of 83 md-ft and an apparent skin of 8.3. The results were consistent with the February 1989 BHPS (Table 1) and are thus believed to be more representative of the well than the modified isochronal test.

The 1989 pressure surveys indicate that the well was damaged. A relationship of productivity and skin was established to identify possible productivity improvement on Taylor South 1 (Reference 4 and Appendix IV). Figure 3 shows that the well productivity should increase by 1.9 times if the skin factor is reduced from 8 to 0 assuming a constant drawdown.

5.4 July 1991 SRT/PBU Results

The well was fracture stimulated in October 1990 and a total of 138,000 lbs of proppant was pumped into the formation. Rate increased from 1.6 MMscf/d at 813 psia to 7.1 MMscf/d at 885 psia post fracture stimulation and declined to 1.5 MMscf/d at 813 psia (July 1992). The well's performance was tested after an additional 1.2 Bcf had been produced post fracture stimulation (a total of 3.3 Bcf had been produced to July 1991). The well was flowing 3.0 MMscf/d at 731 psia prior to being shut-in for 170 hours.

Pressure data (bomb hung at 9450' KB) was analysed for reservoir parameters (Appendix III) assuming a circular drainage area ($C_A = 31.6$). A shape factor consistent with the effects of fracture flow was not utilised during the analysis because the well experienced pseudo radial flow during the late time period of the test. The interpretation yielded a flow capacity of 64 md-ft and an apparent skin of -5 indicating successful damage removal. The decrease in flow capacity compared to the previous tests (87 and 83 md-ft) suggests that the fracture is accessing either poorer quality or thinner sand away from the wellbore. The initial well response to the fracture stimulation (approximately a 4.4 fold increase in flow rate) is in good agreement with that predicted from Figure 3. No reliable estimate of fracture half length was possible since the bilinear flow period was of short duration.

5.5 OGIP Estimates

The P/Z OGIP estimate has increased from 5.6 Bcf (February 1989) to 6.1 Bcf (July 1991). There is some minor concave curvature evidence in the early part of the P/Z versus cumulative plot (Figure 4). This may indicate pressure support from low permeability gas which was not effectively accessed in the early stages of the reservoir's depletion. Porosity partitioning which indicates 22% low permeability gas in Taylor South 1 also suggests this possibility. Aquifer support is unlikely from both production data and geological information.

6. REFERENCES

- 1 "Hydrocarbon-in-Place Estimate - post Taylor South 1", HIP: 068/89, Santos Ltd, April, 1989.
- 2 Kelemen, S.G., "Welltest Analysis", PER:0816/92, Santos Ltd, August 1992.
- 3 Lansom P.B, Wray B.W. and Woodley D.M., "Taylor South 1 Tirrawarra Sandstone Modified Isochronal 9-17th March, 1988", RE: 021/89, Santos Ltd, June 1989.
- 4 Energy Resources Conservation Board, "Theory and Practice of the Testing of Gas Wells", third edition, Calgary, Alberta, Canada, 1975.
5. Campbell, J.M., "Gas Conditioning and Processing, Volume 1: The Basic Principles", sixth edition, Oklahoma, U.S.A., 1984.

TABLES

TAYLOR SOUTH 1

WELLTEST SUMMARY

TABLE 1

TEST	DATE	SAND	PERFORATION INTERVAL 'KB	Q MMscf/d	FTHP psia	h ft	Kh md-ft	K md	S'	P _R psia	Z	P/Z psia	Gp, Bcf	P/Z OGIP Bcf
DST 3	Feb 87	95-0	9474-9560	7.6	1467	34	124	3.7	4.2	4207	0.950	4428	0	-
Mod Iso	Mar 88	95-0	9502-9580	4.3	779	46	53	1.2	4.3	4143	0.947	4377	0	-
BHPS	Feb 89	95-0	9502-9580	2.9	1324	46	87	1.9	9.0	3425	0.914	3749	0.8	5.6
BHPS	Nov 89	95-0	9502-9580	2.4	875	46	83	1.8	8.3	3086	0.902	3421	1.4	6.5
SRT/PBU	July 91	95-0	9502-9580	3.0	731	46	64	1.4	-5	1810	0.897	2019	3.3	6.1

P_R at datum, 9541'KB

172PETDEV1(16)

KMS:jmt

RE:014/92

00279

TAYLOR SOUTH 1PETROPHYSICAL DATATABLE 2

SAND	PERFORATION INTERVAL 'KB	NET PAY ft	POROSITY %	WATER SATURATION %
95-0	9502 - 9580	46	10.7	18.5

00281

GAS PROPERTIES TAYLOR SOUTH 1 3/88 MOD ISO FWS

CONSTITUENTS :	MOLE PERCENT
NITROGEN :	1.340
CO2 :	11.250
H2S :	0.000
METHANE :	65.670
ETHANE :	13.030
PROPANE :	4.130
I-BUTANE :	0.610
N-BUTANE :	1.000
I-PENTANE :	0.410
N-PENTANE :	0.400
HEXANE :	0.550
HEPTANE :	0.440
OCTANE :	1.170
TOTAL :	100.000

MOLECULAR WEIGHT OF OCTANE + = 128.259
 PSEUDO-CRITICAL TEMPERATURE OF OCTANE + = 1070.35 DEG. R
 PSEUDO-CRITICAL PRESSURE OF OCTANE + = 332.0 PSIA
 MOLECULAR WEIGHT = 25.54
 SPECIFIC GRAVITY = 0.8816
 PSEUDO-CRITICAL TEMPERATURE = 429.8 DEG. R
 PSEUDO-CRITICAL PRESSURE = 704.1 PSIA
 RESERVOIR TEMPERATURE = 285.0 DEG. F = 744.7 DEG. R
 TUBING HEAD TEMPERATURE = 140.0 DEG. F = 599.7 DEG. R
 MAXIMUM PRESSURE FOR PVT TABLES = 5000. PSIA
 PRESSURE INCREMENT FOR PVT TABLES = 100. PSI
 1EXAMPLE GASPAC INPUT FILE

21/09/92 PAGE 3

GASPAC PACKAGE - GAS

GAS PROPERTIES

PVT TABLE AT RESERVOIR TEMPERATURE = 285. DEG. F = 745. DEG. R

PRESSURE PSIA	Z	COMPRESS. PSIA(-1) X 10(-3)	VISCOSITY CP	POTENTIAL PSIA(2)/CP X 10(6)	PRESSURE GRADIENT PSI/FT	P/Z PSIA	FVF RB/MSCF	EXPANSION FACTOR
14.70	0.99879	68.10935	0.01372					
100.00	0.99186	10.08118	0.01375	0.732	0.00224	100.82	37.260	4.78
200.00	0.98390	5.07985	0.01384	2.935	0.00452	203.27	18.481	9.64
300.00	0.97615	3.41164	0.01395	6.607	0.00683	307.33	12.223	14.57
400.00	0.96862	2.57653	0.01410	11.743	0.00918	412.96	9.097	19.58
500.00	0.96133	2.07452	0.01422	18.327	0.01156	520.11	7.223	24.66
600.00	0.95430	1.73891	0.01442	26.353	0.01397	628.73	5.975	29.81
700.00	0.94755	1.49829	0.01460	35.768	0.01642	738.75	5.085	35.03
800.00	0.94109	1.31693	0.01484	46.559	0.01889	850.07	4.419	40.30
900.00	0.93496	1.17498	0.01506	58.674	0.02139	962.61	3.903	45.64
1000.00	0.92916	1.06055	0.01526	72.118	0.02392	1076.24	3.490	51.03
1100.00	0.92371	0.96606	0.01542	86.895	0.02646	1190.85	3.155	56.46
1200.00	0.91864	0.88647	0.01562	102.988	0.02903	1306.28	2.876	61.93
1300.00	0.91395	0.81829	0.01582	120.345	0.03161	1422.39	2.641	67.44
1400.00	0.90967	0.75906	0.01604	138.933	0.03420	1539.01	2.441	72.97
1500.00	0.90581	0.70696	0.01627	158.714	0.03680	1655.97	2.269	78.51
1600.00	0.90238	0.66064	0.01650	179.645	0.03940	1773.09	2.119	84.07
1700.00	0.89938	0.61909	0.01673	201.693	0.04200	1890.18	1.987	89.62
1800.00	0.89683	0.58152	0.01696	224.827	0.04460	2007.07	1.872	95.16
1900.00	0.89473	0.54732	0.01719	249.014	0.04719	2123.55	1.769	100.68
2000.00	0.89307	0.51602	0.01743	274.220	0.04977	2239.46	1.677	106.18
2100.00	0.89187	0.48723	0.01766	300.410	0.05232	2354.61	1.595	111.64
2200.00	0.89110	0.46064	0.01796	327.501	0.05486	2468.85	1.522	117.05
2300.00	0.89078	0.43600	0.01827	355.386	0.05738	2582.01	1.455	122.42
2400.00	0.89088	0.41311	0.01858	384.024	0.05986	2693.96	1.394	127.73
2500.00	0.89141	0.39180	0.01889	413.375	0.06232	2804.55	1.339	132.97
2600.00	0.89234	0.37192	0.01920	443.401	0.06475	2913.69	1.289	138.14
2700.00	0.89367	0.35335	0.01951	474.066	0.06714	3021.26	1.243	143.24
2800.00	0.89538	0.33598	0.01982	505.333	0.06949	3127.18	1.201	148.26
2900.00	0.89745	0.31972	0.02015	537.151	0.07181	3231.37	1.163	153.21
3000.00	0.89988	0.30448	0.02049	569.462	0.07408	3333.79	1.127	158.06
3100.00	0.90264	0.29019	0.02082	602.231	0.07632	3434.37	1.094	162.83
3200.00	0.90572	0.27677	0.02116	635.427	0.07851	3533.10	1.063	167.51
3300.00	0.90911	0.26418	0.02149	669.017	0.08066	3629.94	1.035	172.10
3400.00	0.91278	0.25234	0.02183	702.972	0.08277	3724.89	1.009	176.60
3500.00	0.91673	0.24121	0.02216	737.264	0.08484	3817.93	0.984	181.01
3600.00	0.92093	0.23074	0.02250	771.866	0.08687	3909.07	0.961	185.34

3700.00	:	0.92539	0.22088	0.02284	:	806.752	:	0.08885	3998.33	:	0.940	189.57
3800.00	:	0.93007	0.21160	0.02317	:	841.896	:	0.09079	4085.71	:	0.919	193.71
3900.00	:	0.93497	0.20284	0.02351	:	877.277	:	0.09269	4171.24	:	0.901	197.77
4000.00	:	0.94008	0.19459	0.02384	:	912.871	:	0.09455	4254.94	:	0.883	201.73
4100.00	:	0.94539	0.18680	0.02418	:	948.658	:	0.09637	4336.84	:	0.866	205.62
4200.00	:	0.95088	0.17945	0.02451	:	984.617	:	0.09815	4416.98	:	0.850	209.42
4300.00	:	0.95654	0.17250	0.02484	:	1020.735	:	0.09990	4495.38	:	0.836	213.13
4400.00	:	0.96236	0.16592	0.02516	:	1057.008	:	0.10160	4572.08	:	0.822	216.77
4500.00	:	0.96834	0.15971	0.02548	:	1093.420	:	0.10327	4647.11	:	0.808	220.33
4600.00	:	0.97447	0.15382	0.02580	:	1129.953	:	0.10490	4720.52	:	0.796	223.81
4700.00	:	0.98073	0.14824	0.02612	:	1166.593	:	0.10650	4792.35	:	0.784	227.21
4800.00	:	0.98712	0.14296	0.02645	:	1203.324	:	0.10806	4862.62	:	0.773	230.55
4900.00	:	0.99363	0.13794	0.02677	:	1240.134	:	0.10958	4931.39	:	0.762	233.81
5000.00	:	1.00026	0.13318	0.02709	:	1277.009	:	0.11108	4998.68	:	0.752	237.00

COMPOSITIONAL/LET DATA

TABLE 4

DATE TEST	3/88 MOD.ISO. (Unadjusted)	3/88 MOD.ISO. (Adjusted)	7/91 SRT/BU (Unadjusted)	7/91 SRT/BU (Adjusted)	8/92 LET
N ₂	1.34	1.34	1.56	1.57	-
CO ₂	11.21	11.25	11.15	11.21	-
C ₁	65.45	65.67	66.35	66.69	-
C ₂	12.99	13.03	12.21	12.27	-
C ₃	4.12	4.13	4.25	4.27	-
iC ₄	0.61	0.61	0.71	0.71	-
nC ₄	1.00	1.00	1.07	1.08	-
iC ₅	0.41	0.41	0.38	0.38	-
nC ₅	0.40	0.40	0.33	0.33	-
C ₆	0.55	0.55	0.46	0.36	-
C ₇	0.44	0.44	0.48	0.36	-
C ₈₊	1.48	<u>1.17</u>	1.05	<u>0.77</u>	-
TOTAL		100.00		100.00	-
FWS C ₅₊ bbls/MMscf	35.5	31.6	29.5	23.5	-
P _R psia		4143		1810	1152 *
T _{sep} °C		38		78	66
P _{sep} psia		272		677	683
CGR bbls/MMscf		21.0		8.9	11.9
WGR bbls/MMscf		3.8		6.9	9.6
FTHP psia		779		731	707

- P_R at datum, 9541'KB

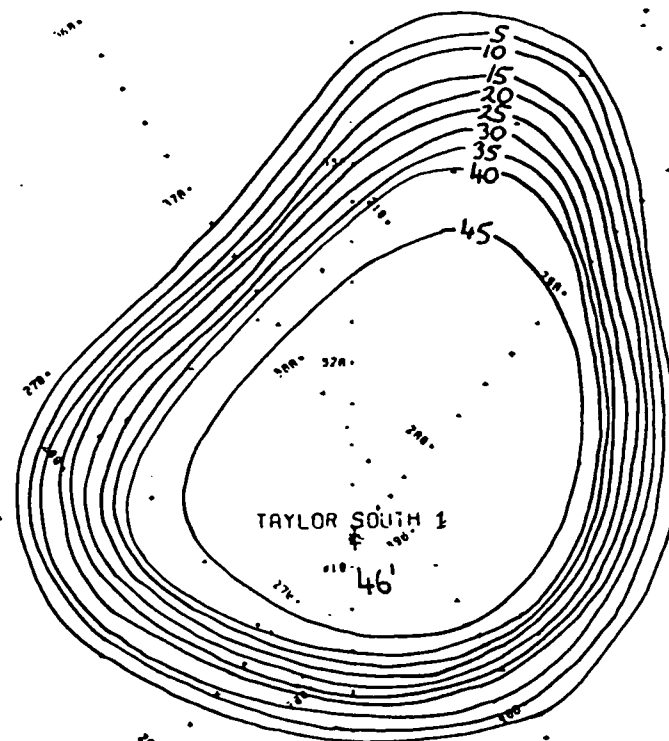
* estimated from P/Z plot

172PETDEV1(21)

KMS:jmt

RE:014/92

FIGURES



PSEUDO LKG - 9488'
(80% Fill)

**SANTOS LIMITED**

COOPER BASIN UNIT

TAYLOR SOUTH FIELD

NET GAS

ISOPACH MAP

PROVED & PROBABLE

95-0 SAND

TIRRAWARRA SANDSTONE

(TO 80% STRUCTURAL FILL)

00284

0 0.5 10 km

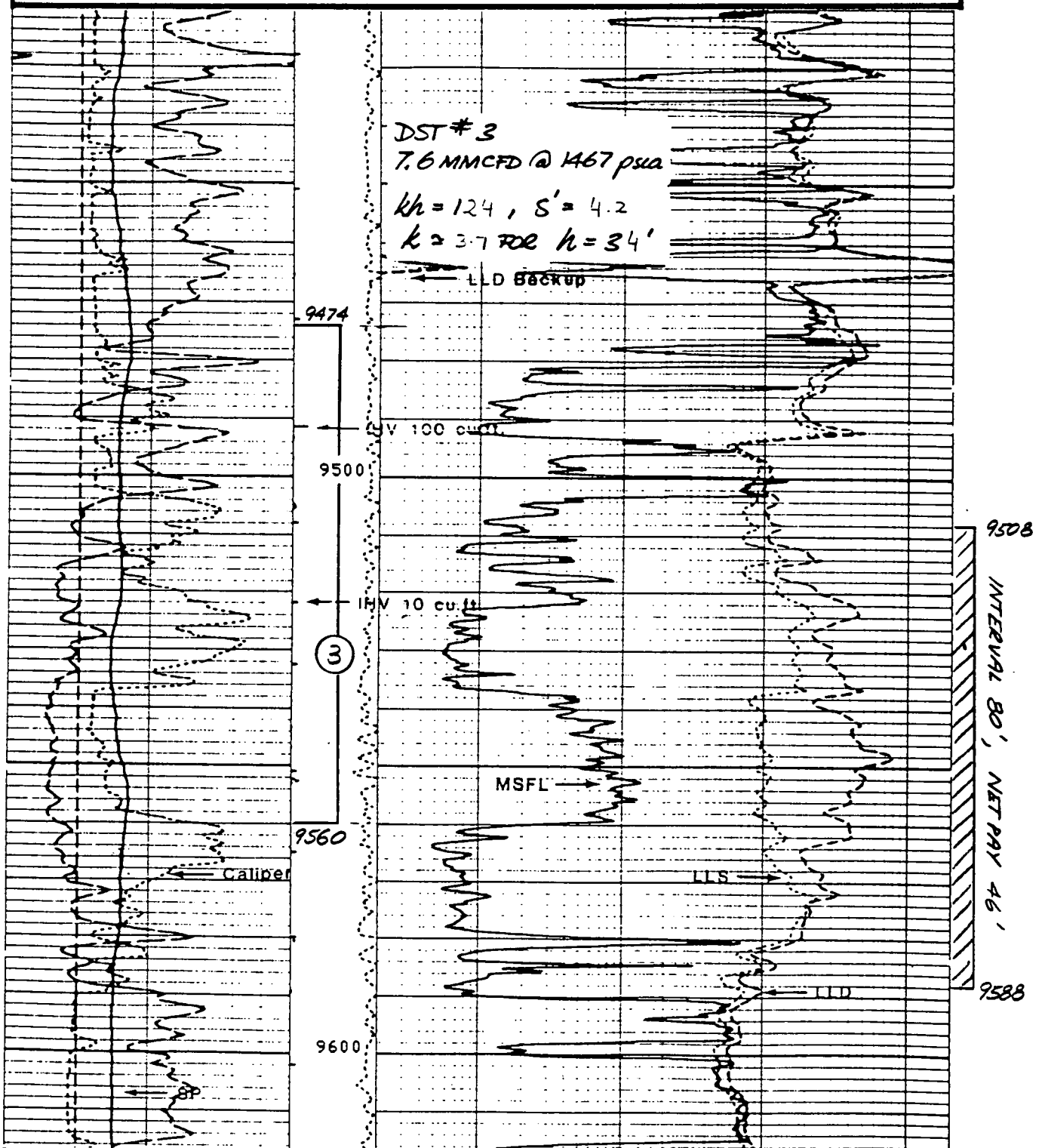
1:10000 MJS April '89

FIGURE 1

Schlumberger

DLL-MSFL-GR TAYLOR SOUTH #1 5"

CSU Field Log



ES (IN)	2	LLD (DHMM)	2000.0	200000
CALS (IN)	16.000	LLS (DHMM)	2000.0	200000
GR (GAPI)	16.000	MSFL (DHMM)	.20000	2000.0
SP (MV)	200.00	LLD (DHMM)	.20000	2000.0
	200.00	LLS (DHMM)	.20000	2000.0

TAYLOR SOUTH 1
-relationship between productivity and skin factor

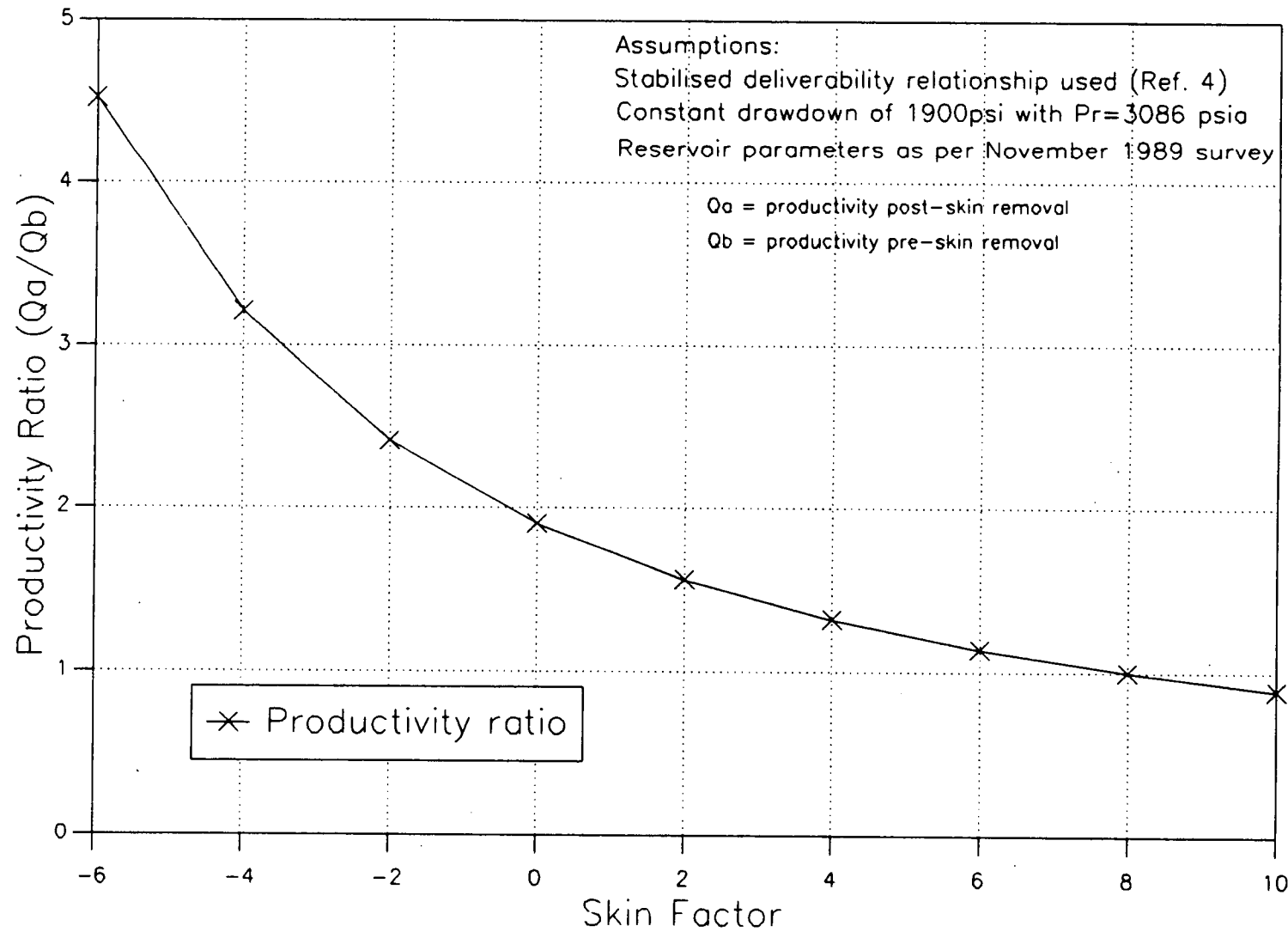


FIGURE 3

TAYLOR SOUTH 1 P/Z PLOT

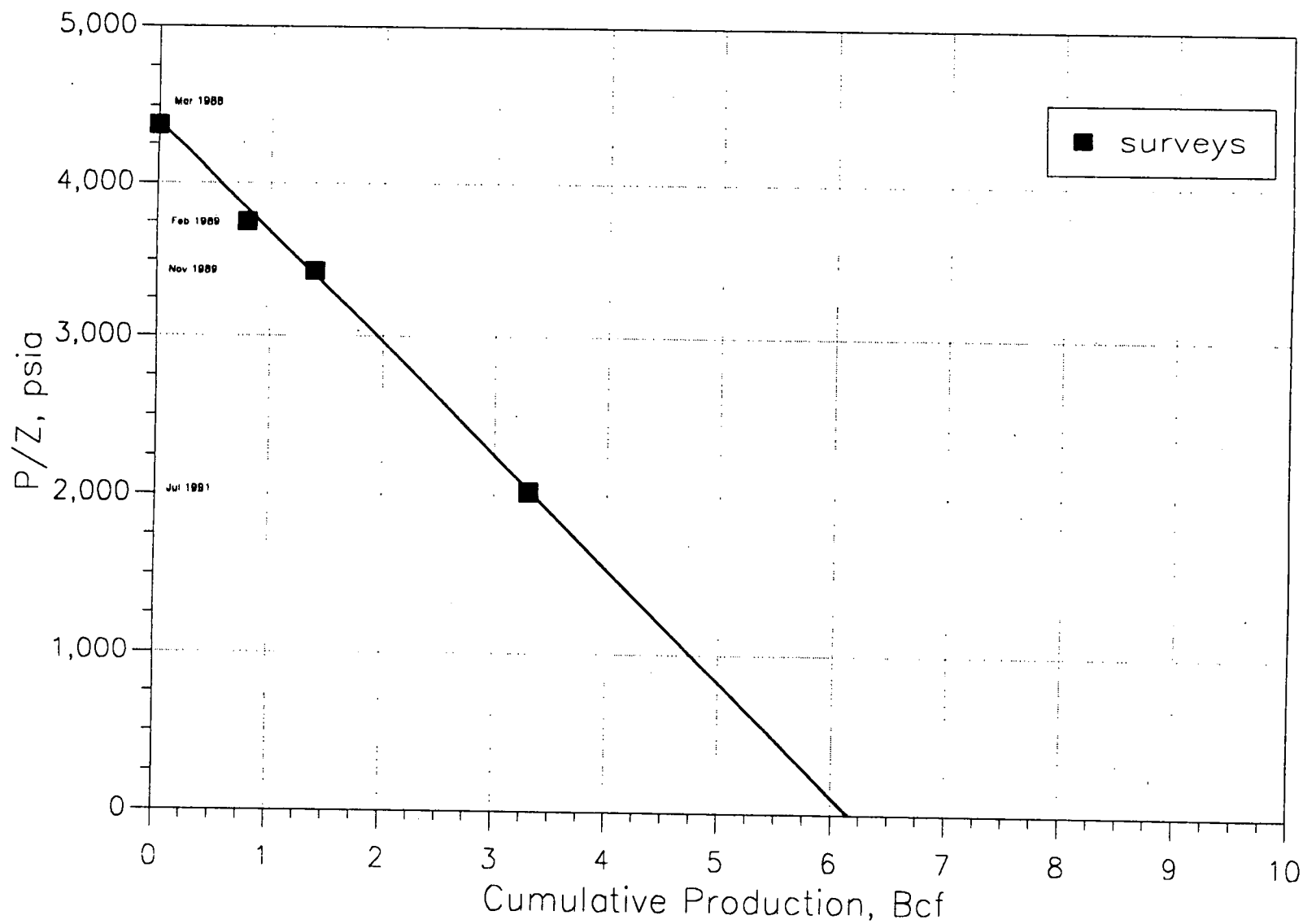
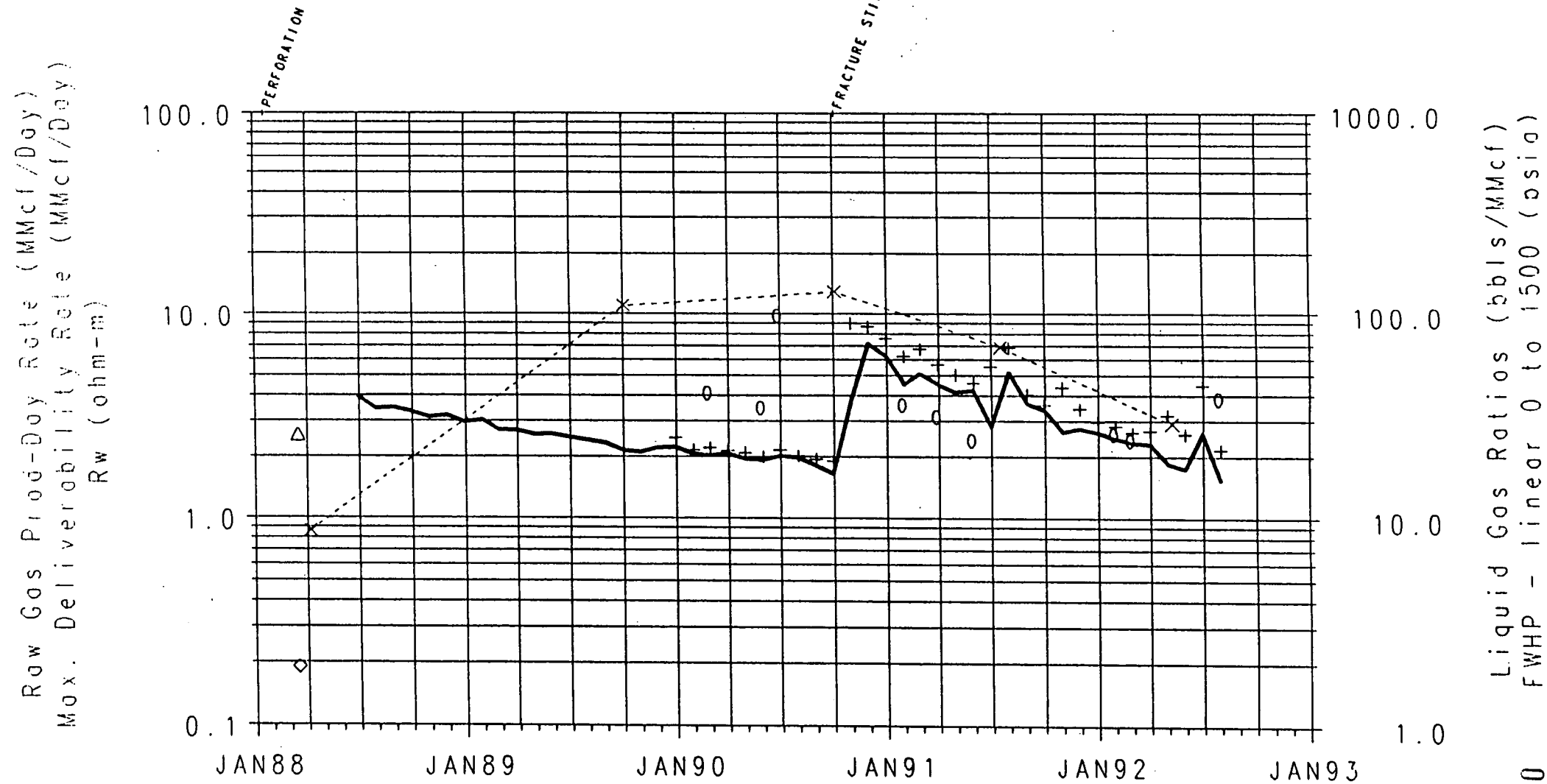


FIGURE 4

TAYLOR SOUTH
WELL # 001

to end JUL92



SANTOS

KEY : Δ CGR ◇ WGR + Deliv x Rw o FWHP

9:29 11/09/92

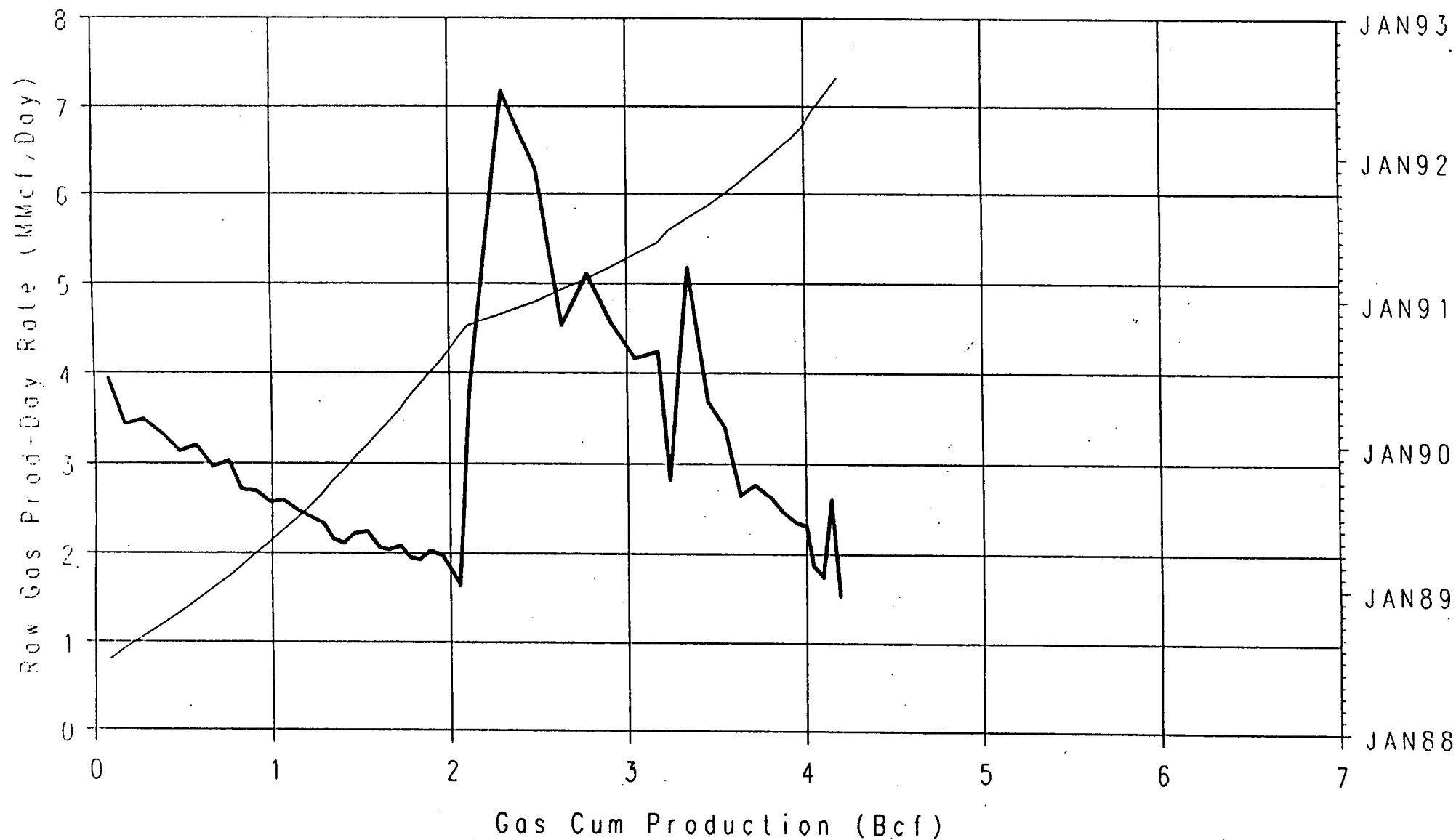
00288

FIGURE 5
1 of 2

TAYLOR SOUTH

WELL # 001

To end JUL92



Time

FIGURE 5
00289 2 of 2

APPENDIX I

FIELD : TAYLOR SOUTH

WELL : TAYLOR SOUTH 1

TEST NO. : 1

DATE : 27 FEB 1989

PRESSURE DATA

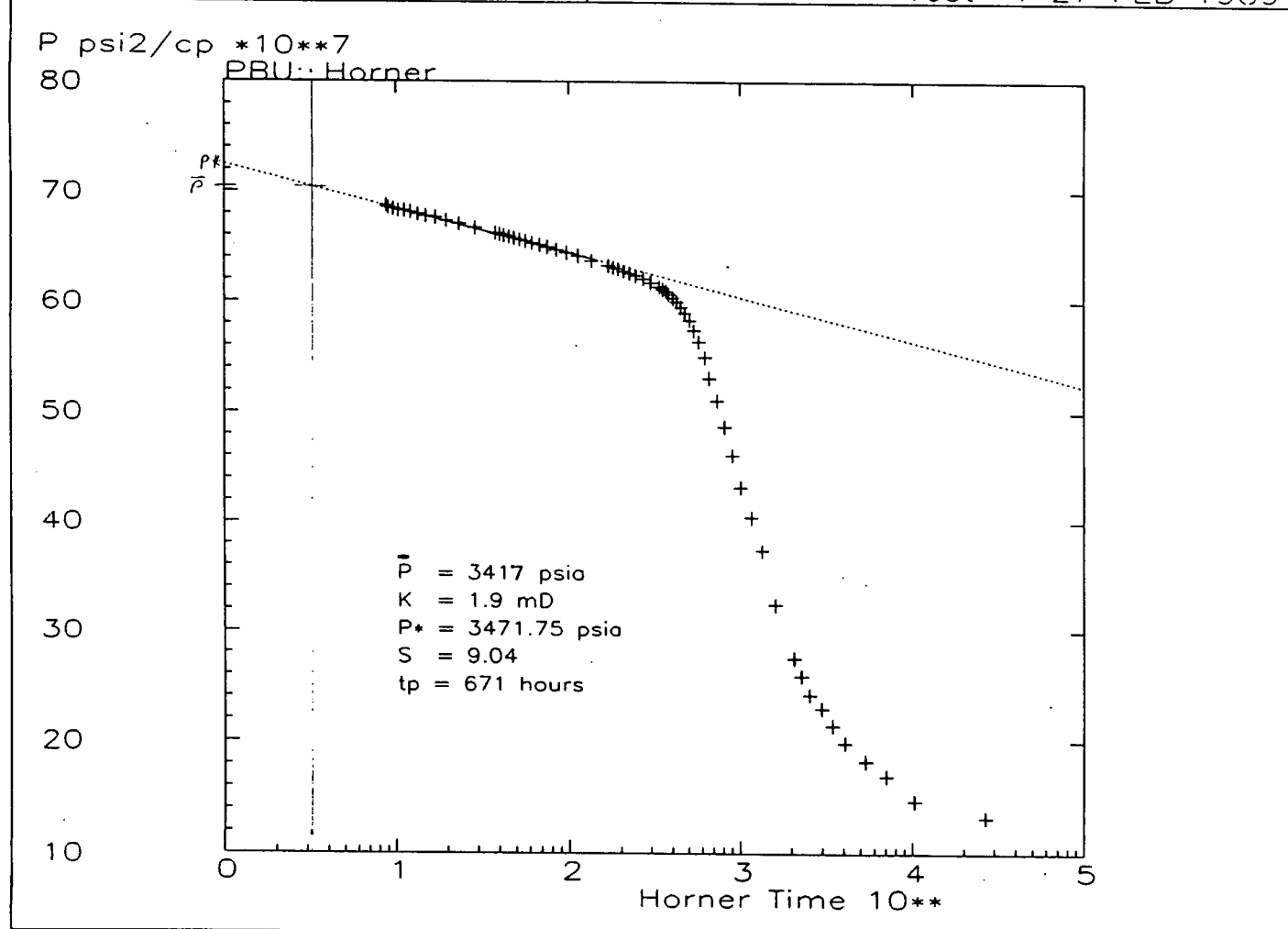
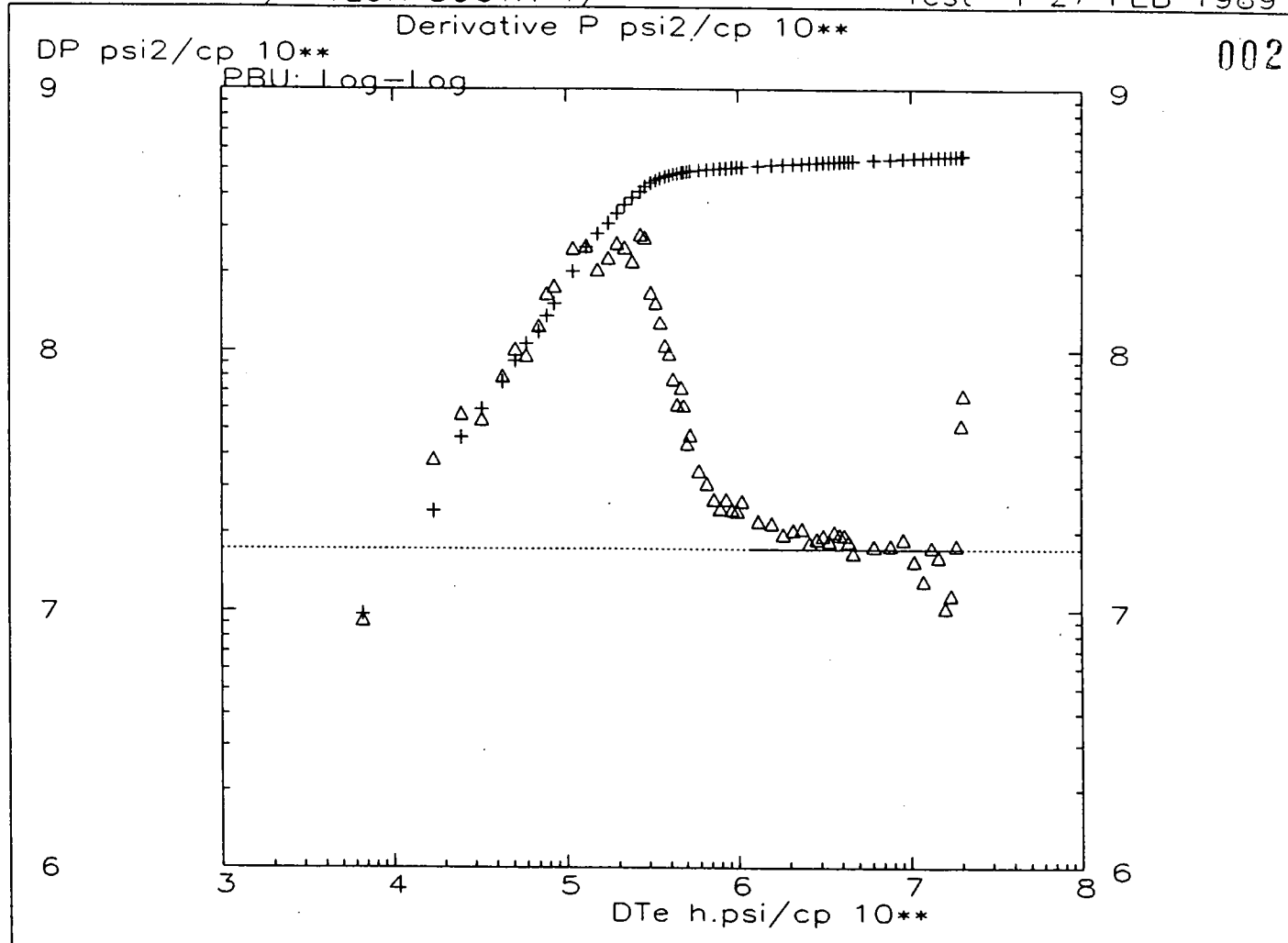
00292

Time	Pressure	Time	Pressure
Hours	psia	Hours	psia
0.0	4143.0	683.495	3164.5
681.0	1323.7	683.745	3172.8
681.025	1375.1	683.995	3178.8
681.065	1450.1	684.245	3184.9
681.095	1558.9	684.495	3190.9
681.125	1621.0	684.745	3195.2
681.165	1694.6	684.995	3200.4
681.195	1762.8	685.995	3214.1
681.225	1826.8	686.995	3226.3
681.265	1877.4	687.995	3235.3
681.295	1947.2	688.995	3242.7
681.325	2009.7	690.015	3250.2
681.415	2195.4	690.995	3256.0
681.495	2371.8	691.995	3260.6
681.575	2477.6	692.995	3265.9
681.665	2571.2	693.995	3269.9
681.745	2665.3	694.995	3274.1
681.825	2749.4	696.015	3278.2
681.915	2825.6	696.995	3281.6
682.015	2889.3	697.995	3285.1
682.075	2947.6	698.995	3287.8
682.165	2990.5	704.995	3301.6
682.245	3022.3	710.995	3312.8
682.325	3049.7	716.995	3321.6
682.415	3070.5	722.995	3330.3
682.495	3087.4	728.995	3333.8
682.575	3101.7	734.995	3339.2
682.665	3111.7	741.015	3344.3
682.765	3122.8	746.995	3347.8
682.825	3130.5	752.995	3349.2
682.915	3135.8	758.995	3352.8
682.995	3141.9	764.995	3356.3
683.245	3154.6	767.495	3361.3

RATE DATA

Time	Rate
Hours	Mscf/day
0.0	2857.0
681.0	0.0
767.495	0.0

00293



Pressure Survey Data Sheet

Project: SRT/BU Feb 1989

Well: Taylor South 1

By: DAE File: TS1_F89

Date: 22-Sep-92 09:55 AM

Sheet 1 of 1

Data						
~~~~~						
	P Approx		3367 (Psia) for Z, $\mu$ and Cg estimates			
OGIP	5.620 (BCF)	$\phi$	0.107 (fraction)	)	Cg	2.56E-04 (1/psi)
Gp	0.800 (BCF)	Sw	0.185 (fraction)	)	Cw	3.50E-06 (1/psi)
RRG	4.820 (BCF)	Sg	0.815 (fraction)	)	Cf	4.50E-06 (1/psi)
Z @ PBar	0.914	H	46.0 (feet)		Ct	2.13E-04 (1/psi)
T	747 (°R)		0.0217 (cp)			1.9 (mD)
P @ Datum	3425 (Psia)	Ca	31.620 Shape Fac		tDaPSS	0.1
Last Rate	2.86 (MMSCFD)					

## Calculations

~~~~~

| | | |
|----------------------|-----------------|--|
| Area | 6.752E+06 sq ft | |
| | 155 acres | |
| T to Pss | 679 Hrs | |
| Eff Prod T. | 6720 Hrs | |
| Time To Use | | |
| For Plc: | 679 Hrs | |
| Ramey Cobb Horner T. | 3.16 | |
| Log of P.C. time | 0.500 | |
| $\phi h S_g$ | 4.01 | |

~~~~~

## Net Pay Averages

~~~~~

Datum Correction

~~~~~

	KB	SS
B	160	(feet)
Extrap. Pressure	3417	(Psia)
Gauge Depth	9463	9303 (feet)
MPP	9541	9381 (feet)
Static Gradient	0.108	(Psi/ft)
Correction	8.424	(Psi)
P @ Mpp	3425.4	(Psia)
Datum Depth	9541	9381 (feet)
Gas Gradient	0.083	(Psi/ft)
Correction	0	(Psi)
P @ Datum Depth	3425.4	(Psia)
=====		
Z @ PBar	0.914	(psia)
P/Z	3748.6	(BCF)
Gp	0.8	

~~~~~

| Formation | Sand | H | ϕ | Sw |
|------------|------|----|--------|-------|
| ~~~~~ | | | | |
| Tirrawarra | 95-0 | 46 | 0.107 | 0.185 |
| ~~~~~ | | | | |
| Totals | | 46 | 0.107 | 0.185 |

Comments

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Z & μ Interpolation | | | |
|-------------------------|-------|--------|----------|
| ~~~~~ | | | |
| Press | Z | μ | Cg |
| ~~~~~ | | | |
| 3400 | 0.913 | 0.0218 | 2.52E-04 |
| 3500 | 0.917 | 0.0222 | 2.41E-04 |

APPENDIX II

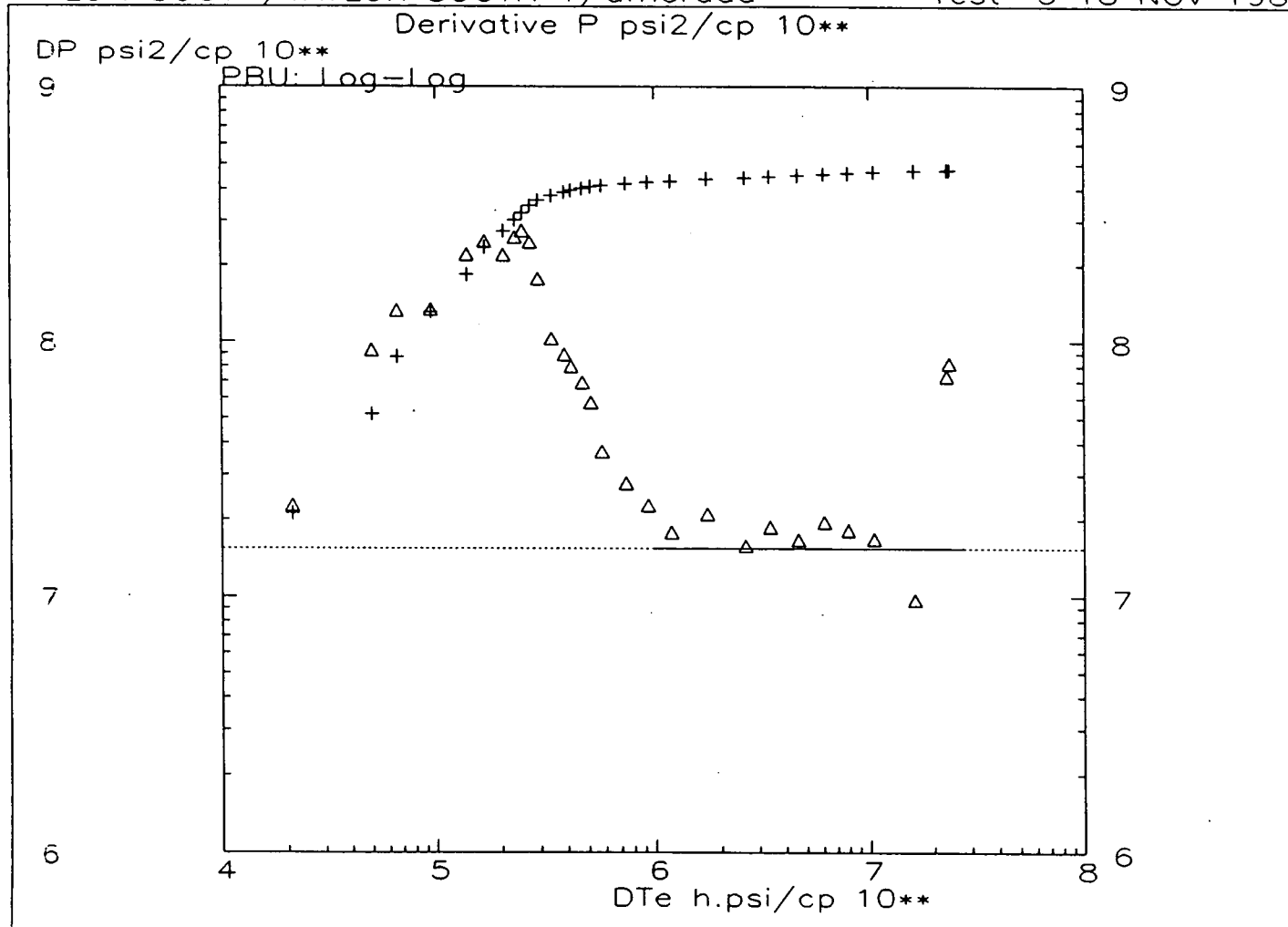
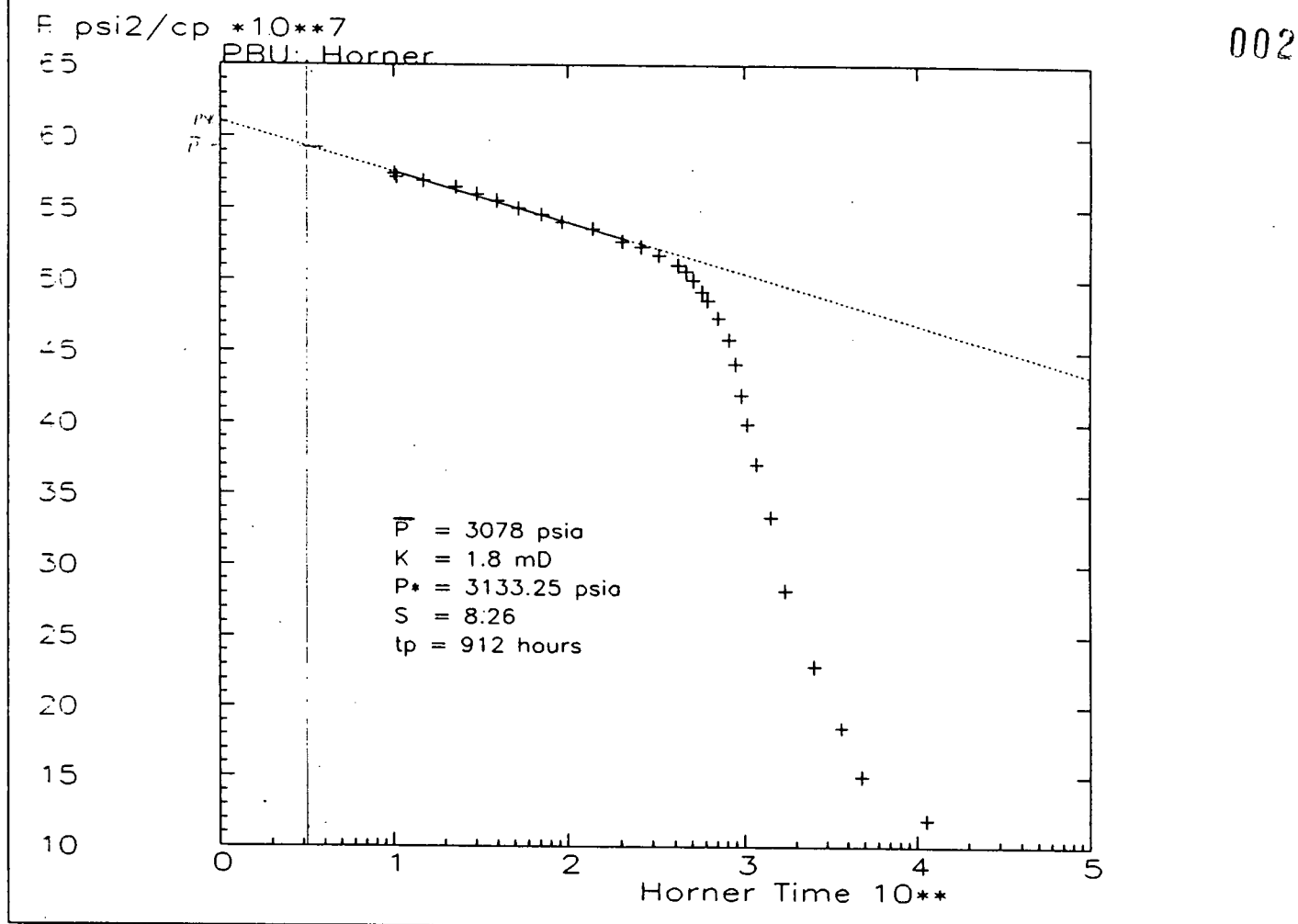
FIELD : TAYLOR SOUTH

WELL : TAYLOR SOUTH 1

TEST NO. : 3

DATE : 18 NOV 1989

00297



Project: SRT/BU Nov 1989
 Well: Taylor South 1
 By: DAE File: TS1\_N89

Pressure Survey Data Sheet
 =====
 Date: 22-Sep-92 09:10 AM

Sheet 1 of 1

| Data
~~~~~ | | P Approx 3044 (Psia) for Z, μ and Cg estimates | | | |
|---------------|---------------|--|------------------|---|---------------------|
| OGIP | 6.480 (BCF) | ϕ | 0.107 (fraction) |) | Cg 2.98E-04 (1/psi) |
| Gp | 1.400 (BCF) | Sw | 0.185 (fraction) |) | Cw 3.50E-06 (1/psi) |
| RRG | 5.080 (BCF) | Sg | 0.815 (fraction) |) | Cf 4.50E-06 (1/psi) |
| Z @ PBar | 0.902 | H | 46.0 (feet) |) | Ct 2.48E-04 (1/psi) |
| T | 747 (°R) | μ | 0.0206 (cp) |) | K 1.8 (mD) |
| P @ Datum | 3086 (Psia) | Ca | 31.620 Shape Fac |) | tDaPSS 0.1 |
| Last Rate | 2.41 (MMSCFD) | | | | |

Calculations

~~~~~

Area 7.799E+06 sq ft  
 179 acres

T to Pss 899 Hrs  
 Eff Prod T. 13953 Hrs  
 Time To Use  
 For Plot 899 Hrs  
 Ramey Cobb Horner T. 3.16  
 Log of R.C. time 0.500

$\phi h S_g$  4.01

=====

## Datum Correction

~~~~~

| | | |
|------------------|--------|-------------|
| | KB | SS |
| KB | 160 | (feet) |
| Extrap. Pressure | 3078 | (Psia) |
| Gauge Depth | 9463 | 9303 (feet) |
| MPP | 9541 | 9381 (feet) |
| Static Gradient | 0.108 | (Psi/ft) |
| Correction | 8.424 | (Psi) |
| P @ Mpp | 3086.4 | (Psia) |
| Datum Depth | 9541 | 9381 (feet) |
| Gas Gradient | 0.076 | (Psi/ft) |
| Correction | 0 | (Psi) |
| P @ Datum Depth | 3086.4 | (Psia) |

=====

Z @ PBar 0.902 (psia)
 P/Z 3420.7 (BCF)
 Gp 1.4

=====

Net Pay Averages

| Formation | Sand | H | ϕ | Sw | Z & μ Interpolation | | | |
|------------|------|----|--------|-------|-------------------------|-------|--------|----------|
| ~~~~~ | | | | | Press | Z | μ | Cg |
| ~~~~~ | | | | | ~~~~~ | | | |
| Tirrawarra | 95-0 | 46 | 0.107 | 0.185 | 3000 | 0.9 | 0.0205 | 3.04E-04 |
| | | | | | 3100 | 0.903 | 0.0208 | 2.90E-04 |
| ----- | | | | | ----- | | | |
| Totals | | 46 | 0.107 | 0.185 | | | | |

Comments

APPENDIX III

FIELD : taylor south

WELL : taylor south 1

TEST NO. : 3

DATE : 14 JUL 1991

PRESSURE DATA

00301

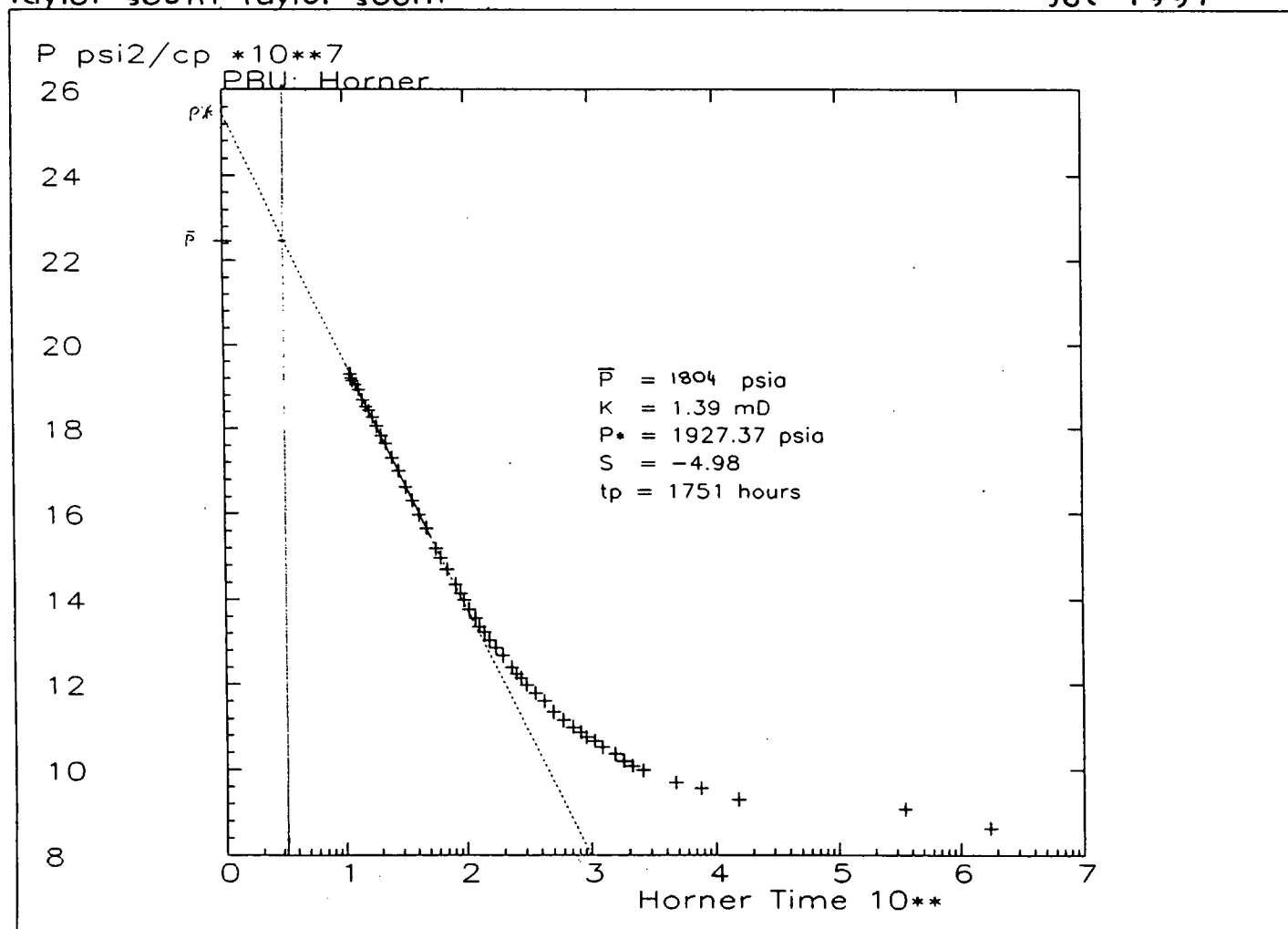
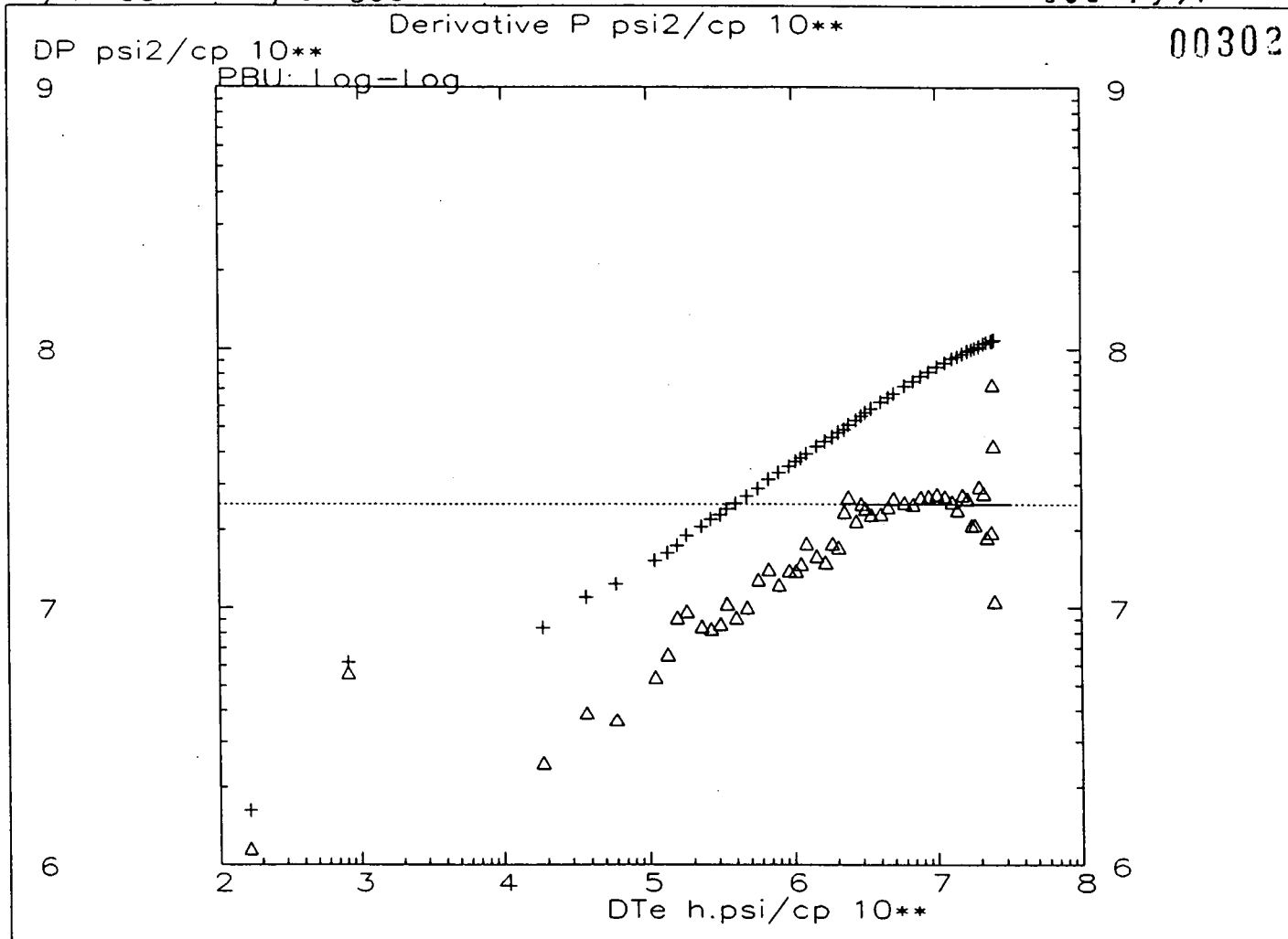
Gauge type : amerada

| Time | Pressure | Time | Pressure |
|----------|----------|----------|----------|
| Hours | psia | Hours | psia |
| 0.0 | 2500.0 | 1740.039 | 1378.01 |
| 1726.0 | 1092.41 | 1741.024 | 1388.9 |
| 1726.001 | 1102.78 | 1743.016 | 1399.78 |
| 1726.005 | 1131.7 | 1744.559 | 1410.78 |
| 1726.115 | 1145.76 | 1745.834 | 1419.12 |
| 1726.231 | 1161.55 | 1747.729 | 1429.54 |
| 1726.368 | 1169.93 | 1751.507 | 1447.65 |
| 1726.678 | 1187.65 | 1754.722 | 1460.95 |
| 1726.827 | 1194.04 | 1757.317 | 1471.68 |
| 1726.964 | 1200.93 | 1763.542 | 1496.11 |
| 1727.124 | 1210.54 | 1769.316 | 1511.0 |
| 1727.421 | 1219.61 | 1775.022 | 1527.14 |
| 1727.65 | 1228.21 | 1782.161 | 1542.68 |
| 1727.918 | 1233.34 | 1790.347 | 1560.92 |
| 1728.141 | 1240.46 | 1799.209 | 1575.04 |
| 1728.466 | 1247.55 | 1808.874 | 1591.43 |
| 1728.945 | 1256.83 | 1816.501 | 1599.92 |
| 1729.538 | 1267.81 | 1824.987 | 1609.92 |
| 1730.182 | 1282.0 | 1833.422 | 1619.94 |
| 1730.911 | 1292.95 | 1841.516 | 1627.32 |
| 1731.789 | 1303.62 | 1848.767 | 1631.94 |
| 1732.455 | 1312.6 | 1857.498 | 1639.16 |
| 1733.019 | 1318.15 | 1868.151 | 1650.6 |
| 1733.657 | 1326.41 | 1876.017 | 1655.32 |
| 1735.035 | 1341.9 | 1888.125 | 1659.72 |
| 1736.356 | 1351.71 | 1892.555 | 1662.08 |
| 1737.58 | 1361.06 | 1894.569 | 1666.77 |
| 1738.776 | 1370.9 | 1896.497 | 1666.29 |

RATE DATA

| Time | Rate |
|----------|----------|
| Hours | Mscf/day |
| 0.0 | 3036.0 |
| 1726.0 | 0.0 |
| 1896.497 | 0.0 |

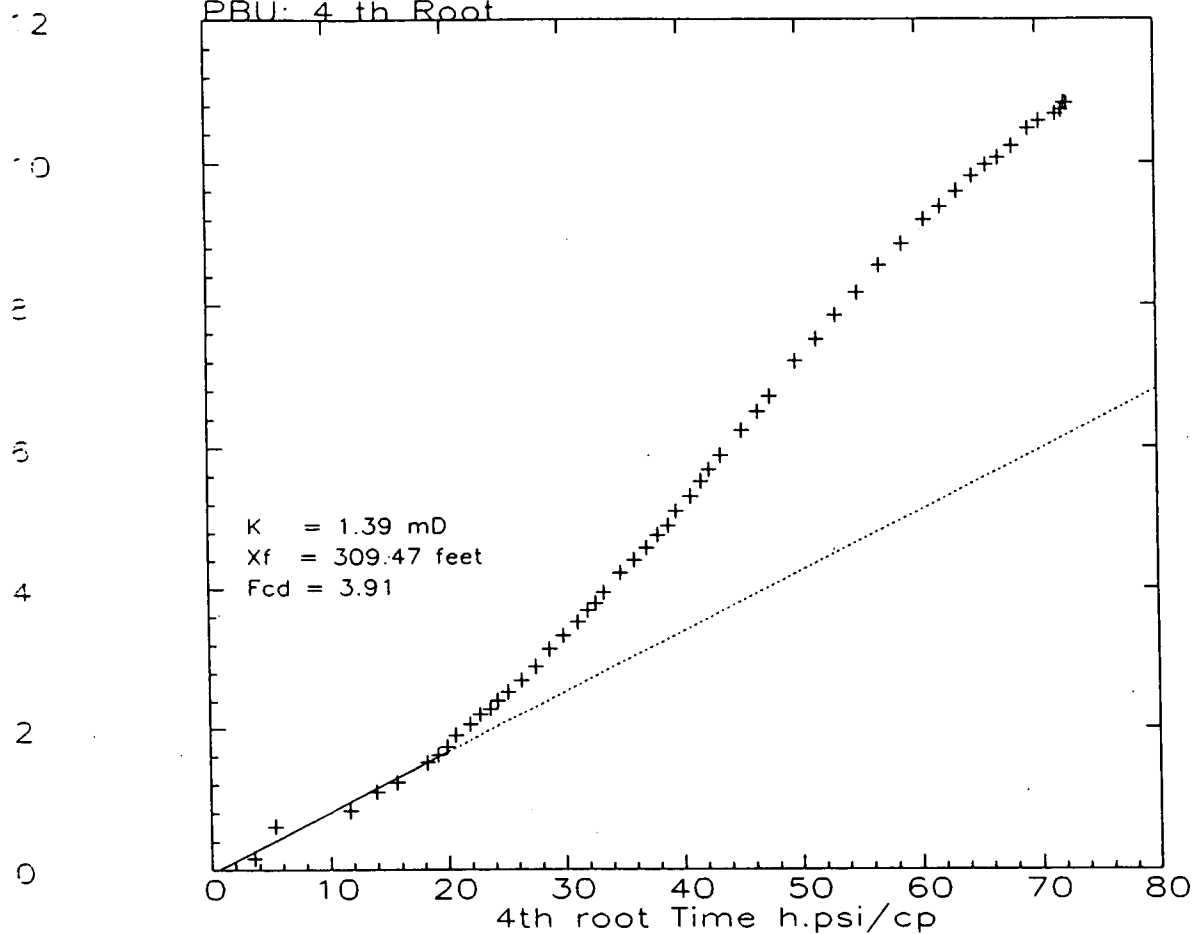
00302



00303

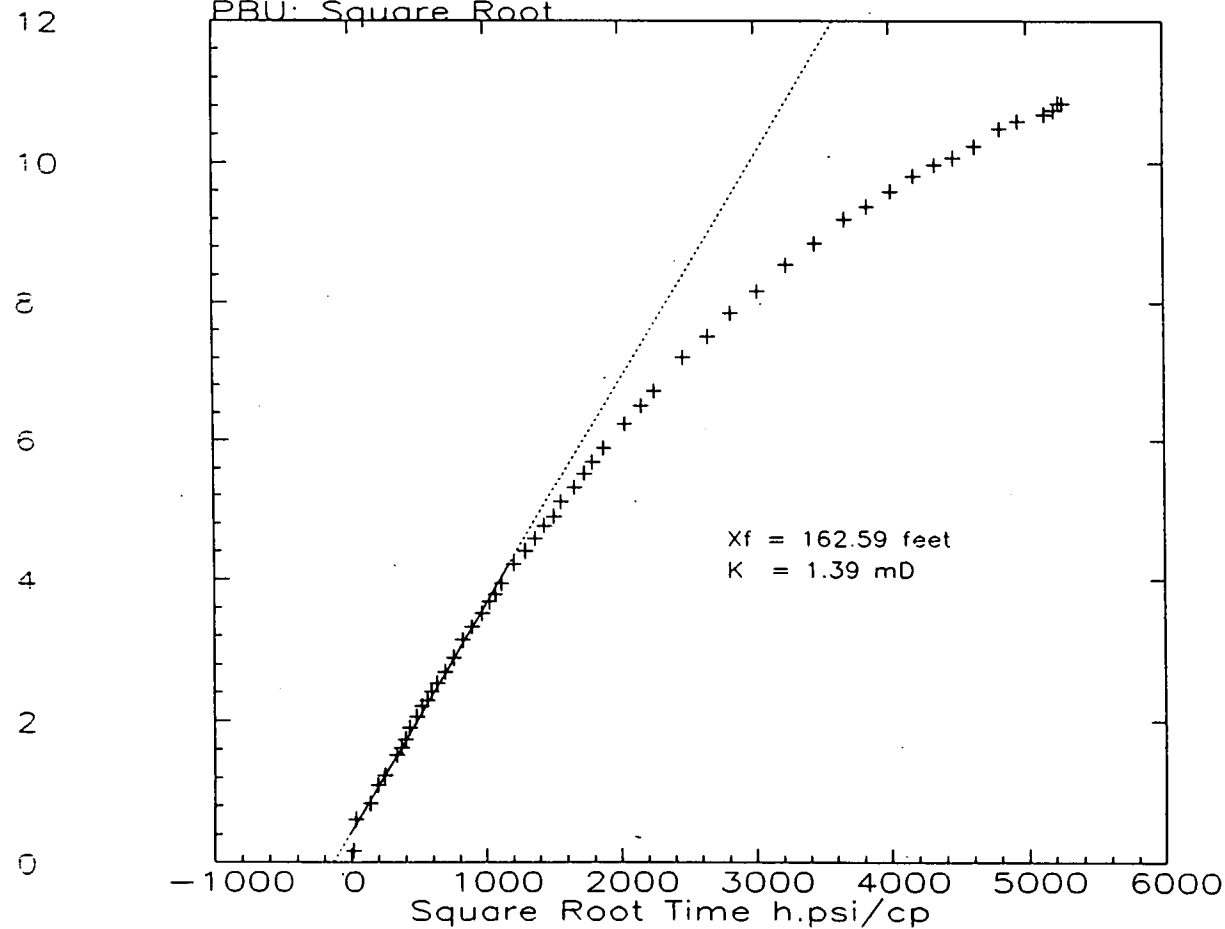
DP psi<sup>2</sup>/cp \*10\*\*7

PBU: 4 th Root



DP psi<sup>2</sup>/cp \*10\*\*7

PBU: Square Root



Pressure Survey Data Sheet

Project: POSTFRAC SRT/BU JUL 91
 Well: Taylor South 1
 By: DAE File: TS1\_J91

Date: 22-Sep-92 09:35 AM

Sheet 1 of 1

| Data | | P Approx | | 1800 (Psia) for Z, μ and Cg estimates | |
|-----------|---------------|----------|------------------|---|------------------|
| OGIP | 6.100 (BCF) | ϕ | 0.107 (fraction) | Cg | 5.81E-04 (1/psi) |
| Gp | 3.280 (BCF) | Sw | 0.185 (fraction) | Cw | 3.50E-06 (1/psi) |
| RRG | 2.820 (BCF) | Sg | 0.815 (fraction) | Cf | 4.50E-06 (1/psi) |
| Z @ PBar | 0.897 | H | 46.0 (feet) | Ct | 4.79E-04 (1/psi) |
| T | 747 (°R) | μ | 0.0170 (cp) | K | 1.4 (mD) |
| P @ Datum | 1810 (Psia) | Ca | 31.620 Shape Fac | tDaPSS | 0.1 |
| Last Rate | 3.04 (MMSCFD) | | | | |

Calculations

Area 7.334E+06 sq ft
 168 acres

T to Pss 1726 Hrs
 Eff Prod T. 25895 Hrs
 Time To Use
 For Plot 1726 Hrs
 Ramey Cobb Horner T. 3.16
 Log of R.C. time 0.500

$\phi h S_g$ 4.01

Datum Correction

KB SS

KB 160 (feet)
 Extrap. Pressure 1804 (Psia)
 Gauge Depth 9450 9290 (feet)
 MPP 9541 9381 (feet)
 Static Gradient 0.07 (Psi/ft)
 Correction 6.37 (Psi)
 P @ Mpp 1810.4 (Psia)
 Datum Depth 9541 9381 (feet)
 Gas Gradient 0.045 (Psi/ft)
 Correction 0 (Psi)
 P @ Datum Depth 1810.4 (Psia)

Z @ PBar 0.897 (psia)
 P/Z 2019.1 (BCF)
 Gp 3.28

Net Pay Averages

| Formation | Sand | H | ϕ | Sw | Z & μ Interpolation | | | |
|------------|------|----|--------|-------|-------------------------|-------|--------|----------|
| Tirrawarra | 95-0 | 46 | 0.107 | 0.185 | Press | Z | μ | Cg |
| | | | | | 1800 | 0.897 | 0.0170 | 5.81E-04 |
| | | | | | 1900 | 0.895 | 0.0172 | 5.47E-04 |
| Totals | | 46 | 0.107 | 0.185 | | | | |

Comments

APPENDIX IV

TAYLOR SOUTH 1FRACTURE STIMULATION PREDICTION

The expected rate increment post fracture stimulation of Taylor South 1 was estimated using the following equation:

$$P_R^2 - P_{wf}^2 = Aq + Fq^2$$

where

$$A = \frac{3.263E6\mu ZT}{kh} \log \frac{0.472 r_e}{r_w} + \frac{s}{2.303}$$

$$F = \frac{3.14E-6\beta ZT}{h^2 r_w} \quad , \quad \text{is gas gravity}$$

$$\text{and } \beta = \frac{4.11E10}{k^{4/3}}$$

Assumptions

1. The drawdown is constant from pre - to post fracture stimulation.

Parameters at November 1989:

$$\begin{aligned} P_R &= 3086 \text{ psia at MPP} \\ P_{wf} &= 1190 \text{ psia at MPP} \end{aligned}$$

$$\begin{aligned} \text{ie. - FTHP} &= 875 \text{ psia, flowing gradient} = 0.033 \text{ psi/ft (August 1992 FGS)} \\ \text{.. FBHP} &= 875 + (9541 \times 0.033) \end{aligned}$$

$$\begin{aligned} \emptyset &= 0.107\% \\ \mu &= 0.021 \text{ cp} \\ Z &= 0.902 \\ k &= 1.8 \text{ md} \\ h &= 46' \\ T &= 747^\circ\text{R} \\ A &= 179 \text{ Acres (} r = 1574' \text{)} \\ &= 0.893 \end{aligned}$$

Hence:

For:

s = 10

q = 1.89 MMscf/d

s = 8

2.12 MMscf/d

s = 6

2.41 MMscf/d

s = 4

2.79 MMscf/d

s = 2

3.30 MMscf/d

s = 0

4.03 MMscf/d

s = -2

5.11 MMscf/d

s = -4

6.81 MMscf/d

s = -6

9.60 MMscf/d

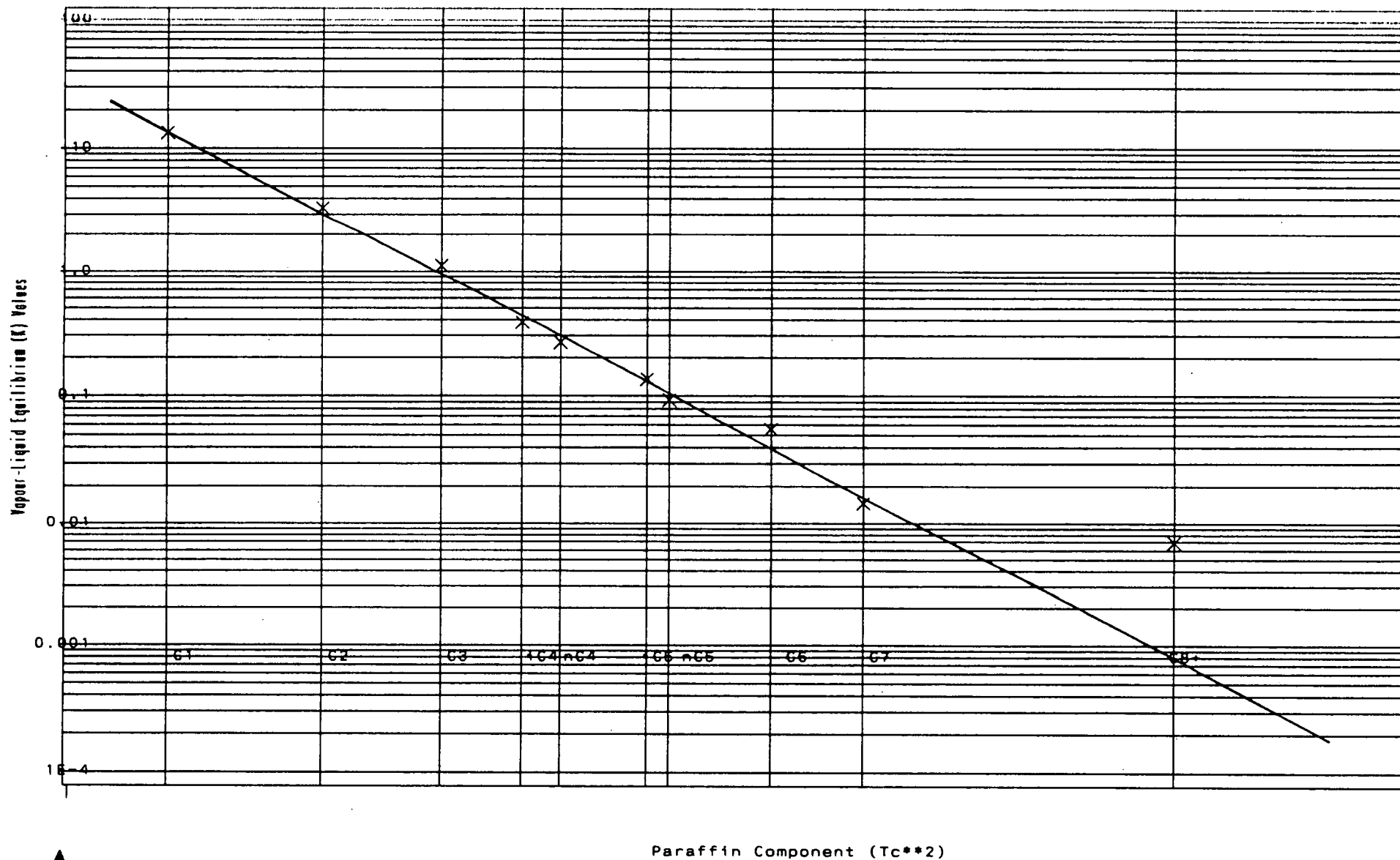
APPENDIX V

TAYLOR SOUTHCOMPOSITIONAL DATA

Each sample was checked to ensure sampling had occurred when the well was stable ie - stable liquid and gas rate (no 'slugging' evident on wellhead charts) and stable flowing tubing head pressure. As an additional check, K-plots ($\log k$ vs T_c^2) were used to ensure internal consistency ie - the liquid and gas phases were in equilibrium. In the cases where the k-values deviated from the straight line, they were adjusted to lie on the line (Reference 5) by 'correcting' the high pressure gas composition. Only values from the heavier components (C6 - C8+) were changed if they lay above the line (this was considered to represent liquid carryover in the gas phase). If other components' k-values deviated from the line, the sample was considered to be poor and not recombined.

Table 4 gives the before and after adjustment FWS compositions for the March 1988 and July 1991 samples which were corrected in the above manner. The original unadjusted K-plots for these samples are attached.

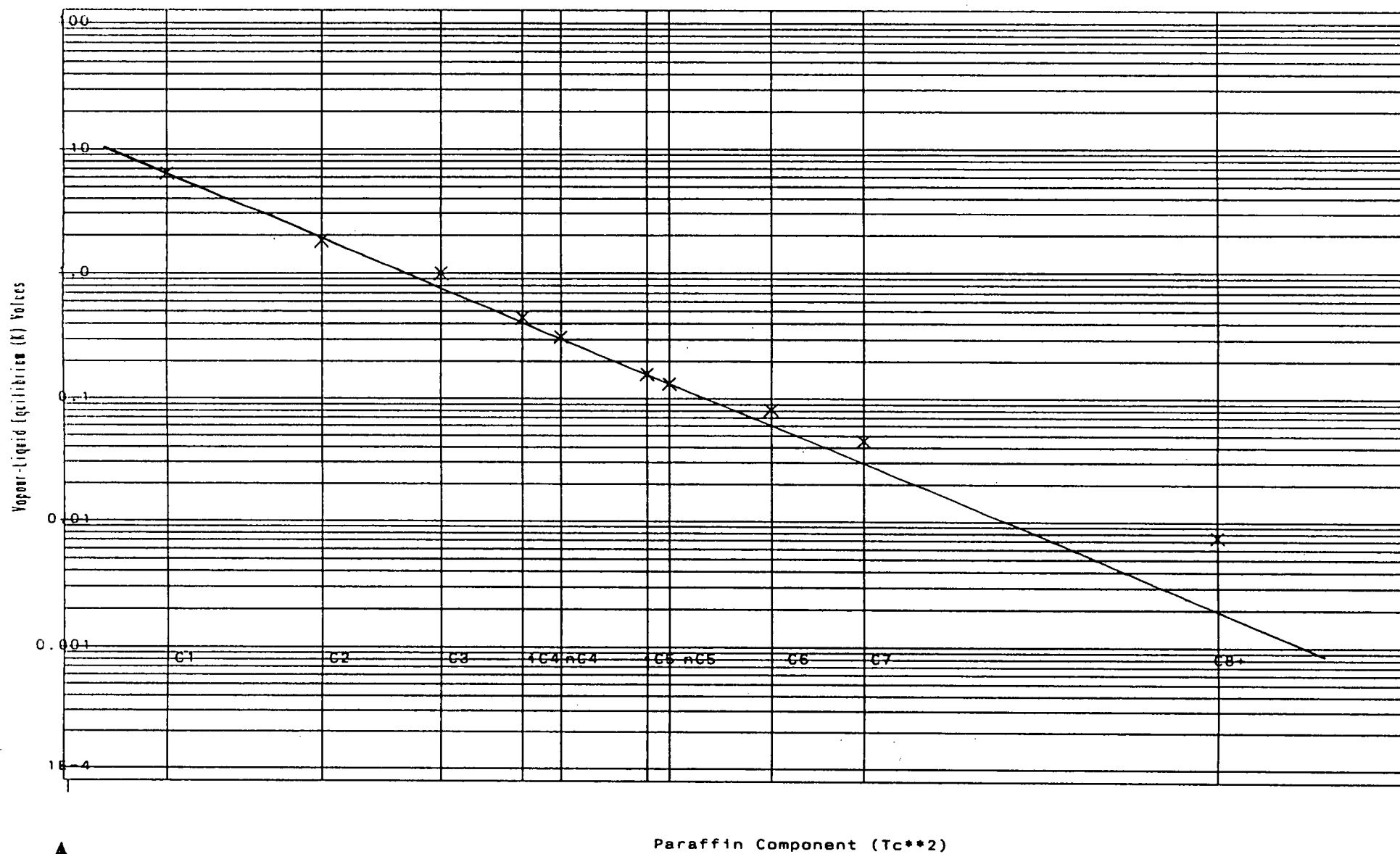
WELL=TAYLOR SOUTH # 1 Date of sample=15/03/88



Data Generated Sep 21, 1982

00310

WELL=TAYLOR SOUTH # 1 Date of sample=17/07/91



Data Generated Jul 6, 1992

00311

BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS LTD

PERFORATIONS: 9502' - 9580' K.B.

PAGE: 1 OF 1

WELL NAME: TAYLOR STH. #1

FORMATION : TIRRAWARRA

DATE: 31.5.93

TEST TYPE : S.G. S.

OPR : P. BLACK

| 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. | 850207 | 850208 | N/A | DATE : 31.5.93 | | | |
| ELEMENT RANGE P.S.I. | 4075 | 4100 | | PRESSURE LUBRICATOR : | 08:16 | 6681 | 5378 |
| RECORDING SECTION SERIAL NO. | 3433 | 3434 | | RUN IN HOLE : | 08:36 | 6681 | 5378 |
| DATE OF CALIBRATION: @ 290°F | 6.3.92 | 6.3.92 | | ON DEPTH AT : 9541' FT/M | 10:04 | 6701 | 5371 |
| | | | | | | | |
| CLOCK SERIAL NO. | A-15013 | A-16084 | | DATE : 31.5.93 | | | |
| CLOCK RANGE HRS. | 3 | 3 | | PULL OUT OF HOLE : | 10:19 | 6701 | 5371 |
| LEAD SCREW TYPE T.L.S. | 15 | 15 | | AT SURFACE : | 10:39 | 6701 | 5371 |
| | | | | DEPRESSURE LUBRICATOR : | 10:59 | 6701 | 5371 |
| ENGAGE STYLUS DATE 31.5.93 TIME 08:08 | 08:08 | 08:08 | | MAXIMUM BHT AT 9541' FT/M = 288° °F/° | | | |
| DISENGAGE STYLUS DATE 31.5.93 TIME 11:01 | 11:01 | 11:01 | | N.B. ALL DEPTHS ARE MEASURED FROM K.B. | | | |

[illegible]

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 Monday, 31st May 1993.

STATIC PRESSURE GRADIENT REPORT**CLIENT****LOCATION****FORMATION**

SANTOS LTD.

TAYLOR STH. #1

TIRRAWARRA

P R E S S U R E E L E M E N T D A T A**W E L L D A T A**

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

| PARAMETER | VALUE |
|-----------|----------|
| DWT In | 969 PSIG |
| DWT Out | 972 PSIG |
| Max BHT | 288 F |

T O P E L E M E N T**B O T T O M E L E M E N T**

| DEPTH
FT KB | DEFLECTION
INCHES | PRESSURE
PSIG | GRADIENT
PSI/FT | DEFLECTION
INCHES | PRESSURE
PSIG | GRADIENT
PSI/FT |
|----------------|----------------------|------------------|--------------------|----------------------|------------------|--------------------|
| LUB. | 0.4790 | 970.3 | - | 0.4720 | 967.5 | - |
| 1000 | 0.4890 | 990.7 | 0.020 | 0.4890 | 1002.5 | 0.035 |
| 2000 | 0.5010 | 1015.1 | 0.024 | 0.5050 | 1035.4 | 0.033 |
| 3000 | 0.5160 | 1045.6 | 0.031 | 0.5210 | 1068.3 | 0.033 |
| 4000 | 0.5310 | 1076.1 | 0.031 | 0.5350 | 1097.1 | 0.029 |
| 5000 | 0.5460 | 1106.7 | 0.031 | 0.5510 | 1130.1 | 0.033 |
| 6000 | 0.5620 | 1139.2 | 0.033 | 0.5670 | 1163.0 | 0.033 |
| 7000 | 0.5780 | 1171.8 | 0.033 | 0.5830 | 1195.9 | 0.033 |
| 7500 | 0.5850 | 1186.1 | 0.029 | 0.5900 | 1210.2 | 0.029 |
| 8000 | 0.5940 | 1204.4 | 0.037 | 0.5990 | 1228.8 | 0.037 |
| 8500 | 0.6030 | 1222.7 | 0.037 | 0.6080 | 1247.3 | 0.037 |
| 9000 | 0.6120 | 1241.0 | 0.037 | 0.6170 | 1265.8 | 0.037 |
| 9541 | 0.6250 | 1267.5 | 0.049 | 0.6280 | 1288.4 | 0.042 |
| LUB. | 0.4810 | 974.4 | - | 0.4720 | 967.5 | - |

G E N E R A L R E M A R K S

TAYLOR SOUTH #1 --- STATIC PRESSURE GRADIENT --- 31/05/93
 ELEMENT #850207/4075 (TOP)

