

SOUTH AUSTRALIA
DEPARTMENT OF MINES AND ENERGY



OPEN FILE ENVELOPE NO. 6405

PEL 5 AND PEL 6, MURTA BLOCK

EROMANGA BASIN

SPENCER 3

TEST REPORTS

Submitted by

Delhi Petroleum Pty Ltd

1992

(c) South Australian Department of Mines and Energy: 13/12/91

This report was supplied as part of the requirement to hold a mineral or petroleum exploration tenement in the State of South Australia. The Department accepts no responsibility for statements made, or conclusions drawn, in the report or for the quality of original text or drawings.

All rights reserved under the copyright. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the written permission of the S.A. Department of Mines and Energy, P.O. Box 191, Eastwood, S.A. 5063.

ENVELOPE 6405

TENEMENT: PEL 5 and PEL 6, Murta Block; Eromanga Basin

TENEMENT HOLDER: Delhi Petroleum Pty Ltd (operator), Santos Ltd, Vamgas Ltd, Hartogen Energy Ltd and South Australian Oil and Gas Corporation Pty Ltd

CONTENTS

	SADME NO.
REPORTS:	
Halliburton Services, 1986. Formation testing service report, (open hole) DST 1 (22 April 1986).	6405 R 1 Pgs 3-13
Halliburton Services, 1986. Formation testing service report, (cased hole) DST 1 (3 June 1986).	6405 R 2 Pgs 14-24
Halliburton Services, 1986. Formation testing service report, (cased hole) DST 2 (22 April 1986).	6405 R 3 Pgs 25-35
Wilson, M., 1986. Interpretation of Birkhead Formation oil reservoir production test conducted during the period 9-16 February 1986. (Delhi reservoir engineering report, April 1986).	6405 R 4 Pgs 36-49
APPENDIX A: Calculations.	Pgs 50-62
APPENDIX B: Cleggett, M., 1986. Results of above Birkhead (producing zone) oil flow test and reservoir pressure build-up survey plus static pressure gradient survey (Expertest Pty Ltd, February 1986).	Pgs 63-102
REPORTS:	
Sargeant, R., 1989. Results of Birkhead zone static pressure gradient survey run on 18 February 1989 (Expertest Pty Ltd).	6405 R 5 Pgs 103-107
Sargeant, R., 1989. Results of Birkhead zone static pressure gradient survey run on 14 August 1989 (Expertest Pty Ltd).	6405 R 6 Pgs 108-110
Buckland, R., 1992. Results of Birkhead zone static pressure gradient survey run on 29 March 1992 (Expertest Pty Ltd).	6405 R 7 Pgs 111-114

END OF CONTENTS

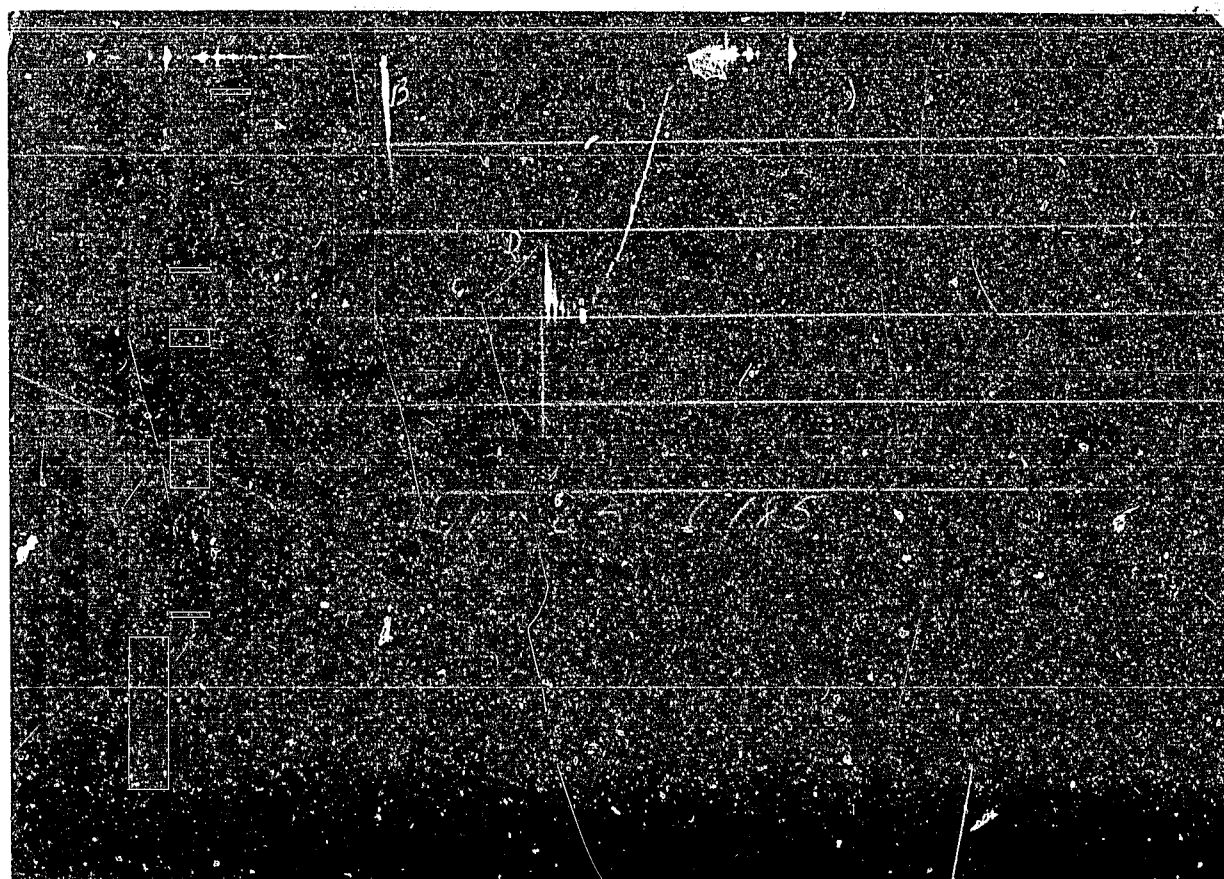


TICKET NO. 34656500
22-APR-86
MOOMBA

FORMATION TESTING SERVICE REPORT

SPENCER		3		1		5940.0 - 5990.0		DELHI PETROLEUM PTY. LTD.	
LEASE NAME		WELL NO.		TEST NO.		TESTED INTERVAL		LEASE OWNER/COMPANY NAME	
LEGAL LOCATION		REMARKS		FIELD AREA		COOPER BRSTN		COUNTY SOUTH AUSTRALIA	
SEC. - TWP. - RMC.								STATE AUSTRALIA SM	

0000



GAUGE NO: 6185 DEPTH: 5896.3 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW		76.5			
C	FINAL FIRST FLOW		2498.4	95.0	93.4	F
D	INITIAL FIRST CLOSED-IN		2498.4			
E	FINAL FIRST CLOSED-IN	2616	2358.4	60.0	61.6	C
F	FINAL HYDROSTATIC					

GAUGE NO: 8721 DEPTH: 5917.4 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2814	2903.6			
B	INITIAL FIRST FLOW	1222	1204.4			
C	FINAL FIRST FLOW	2507	2522.2	95.0	93.4	F
C	INITIAL FIRST CLOSED-IN	2507	2522.2			
D	FINAL FIRST CLOSED-IN	2626	2645.8	60.0	61.6	C
E	FINAL HYDROSTATIC	2797	2874.2			

GAUGE NO: 3840 DEPTH: 5987.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2899	2897.7			
B	INITIAL FIRST FLOW	1507	1475.8	95.0	93.4	F
C	FINAL FIRST FLOW	2339	2540.6			
D	INITIAL FIRST CLOSED-IN	2339	2540.6	60.0	31.6	C
E	FINAL FIRST CLOSED-IN	2643	2643.4			
F	FINAL HYDROSTATIC	2878	2871.5			

EQUIPMENT & HOLE DATA

FORMATION TESTED: PAICHAVARRA

NET PAY (ft): _____

GROSS TESTED FOOTAGE: 50.0ALL DEPTHS MEASURED FROM: KELLY BUSHING

CASING PERFS. (ft): _____

HOLE OR CASING SIZE (in): 8.500ELEVATION (ft): 102.0TOTAL DEPTH (ft): 5990.0PACKER DEPTH(S) (ft): 5932, 5940FINAL SURFACE CHOKE (in): 0.50000BOTTOM HOLE CHOKE (in): 0.750MUD WEIGHT (lb/gal): 9.40MUD VISCOSITY (sec): 37

ESTIMATED HOLE TEMP. (°F): _____

ACTUAL HOLE TEMP. (°F): 218 @ 5986.0 ftTICKET NUMBER: 34656500DATE: 1-15-86 TEST NO: 1TYPE DST: OPEN HOLEHALLIBURTON CAMP:
MOOMBATESTER: P. CORRY

WITNESS: _____

DRILLING CONTRACTOR:
RICHTER #18FLUID 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
_____	_____	_____
_____	_____	_____

RECOVERED:

FULL STRING OF VERY CLEAN WATER....SAME IN SAMPLE CHAMBER

MEASURED FROM
TESTER VALVE

REMARKS:

LEGAL LOCATION: LAT. 28 DEGREES, 11', 32.7"S. AND LONG 139 DEGREES, 51', 11.3" EAST.

0008

TYPE & SIZE MEASURING DEVICE: 6" SURFACE CERAMIC CHOKE					TICKET NO: 34656500
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
					LOADED BT'S
					STARTED MAKING UP TOOLS
					RAN IN HOLE
					MADE UP HEAD WHILE RUNNING IN HOLE
					TAGGED BOTTOM AND SEATED PACKERS WITH 30,000H
	.5				HYDROSPRING OPENED WITH MODERATE BLOW
	.5				BLOW INCREASED TO STRONG, OPENED VALVE TO FLARE PIT
	.5				BLOW DECREASED SLIGHTLY...NOW MODERATE
1018	.5				BLOW MODERATE
1020	.5				GAS TO THE SURFACE
1040	.5	40			FLUID TO THE SURFACE
1050	.5	40			
1054		44			
1056		46			
1058		47			
1100		48			
1102		49			
1104		52			
1106		56			
1108		58			
1110		60			
1112		64			
1114		65			
1132		68			
1134		69			
1141					SHUT IN QCIP
1241					OPENED BYPASS AND PULLED FREE
1243					PULLED 2 STANDS OF DRILL PIPE AND RECONNECTED TEST HEAD.
1310					DROPPED REVERSING BAR
					REVERSE IMPACT SUB DID NOT OPEN

0010

TICKET NO: 34656500

CLOCK NO: 7499 HOUR: 24



GAUGE NO: 6185

DEPTH: 5896.3

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW											
B	1	0.0	76.5								
	2	5.0	962.8	886.3							
	3	10.0	1461.8	499.0							
	4	15.0	1889.6	427.8							
	5	20.0	2149.5	259.0							
	6	25.0	2316.0	187.5							
	7	30.0	2444.3	128.3							
	8	35.0	2500.3	56.0							
	9	40.0	2505.6	5.3							
	10	45.0	2509.1	3.5							
	11	50.0	2509.6	0.5							
	12	55.0	2506.4	-3.2							
	13	60.0	2506.4	0.0							
	14	65.0	2504.3	-2.1							
	15	70.0	2501.6	-2.7							
	16	75.0	2498.9	-2.7							
	17	80.0	2498.9	0.0							
	18	85.0	2500.5	1.6							
	19	90.0	2499.2	-1.3							
C	20	93.4	2498.4	-0.8							
FIRST CLOSED-IN											
C	1	0.0	2498.4								
D	2	61.6	2358.4	-140.0	37.1	0.401					

REMARKS:

0011

TICKET NO: 34656500

CLOCK NO: 32069 HOUR: 24

HALLIBURTON
SERVICES

GAUGE NO: 8721

DEPTH: 5917.4

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW											
B	1	0.0	1204.4								
	2	5.0	1424.5	220.1							
	3	10.0	1764.5	340.0							
	4	15.0	2025.1	260.6							
	5	20.0	2215.7	190.6							
	6	25.0	2347.8	132.1							
	7	30.0	2455.1	107.3							
	8	35.0	2513.5	58.4							
	9	40.0	2521.0	7.5							
	10	45.0	2525.8	4.8							
	11	50.0	2526.8	1.0							
	12	55.0	2526.8	0.0							
	13	60.0	2526.8	0.0							
	14	65.0	2526.8	0.0							
	15	70.0	2524.6	-2.2							
	16	75.0	2523.0	-1.5							
	17	80.0	2521.7	-1.4							
	18	85.0	2521.7	0.0							
	19	90.0	2521.7	0.0							
C	20	93.4	2522.2	0.5							
FIRST CLOSED-IN											
C	1	0.0	2522.2								
	2	1.0	2599.7	77.5	1.0	1.974					
	3	2.0	2611.6	89.4	2.0	1.677					
	4	3.0	2618.8	96.6	2.9	1.510					
	5	4.0	2625.1	102.9	3.8	1.389					
	6	5.0	2629.7	107.5	4.7	1.298					
	7	6.0	2632.1	109.9	5.6	1.222					
	8	7.0	2635.2	113.0	6.5	1.159					
	9	8.0	2637.0	114.8	7.4	1.102					
	10	9.0	2639.2	117.1	8.2	1.055					
	11	10.0	2640.6	118.4	9.1	1.014					
	12	12.0	2643.7	121.5	10.7	0.943					
	13	14.0	2644.9	122.7	12.2	0.886					
	14	16.0	2645.9	123.7	13.7	0.835					
	15	18.0	2646.2	124.1	15.1	0.793					
	16	20.0	2647.8	125.6	16.4	0.754					
	17	22.0	2648.6	126.5	17.8	0.720					
	18	24.0	2649.5	127.3	19.1	0.689					
	19	26.0	2649.5	127.3	20.4	0.662					
	20	28.0	2649.5	127.3	21.5	0.637					
	21	30.0	2649.5	127.3	22.7	0.614					
	22	35.0	2649.5	127.3	25.5	0.564					
	23	40.0	2649.5	127.3	28.0	0.523					
	24	45.0	2649.5	127.3	30.4	0.488					
	25	50.0	2649.5	127.3	32.6	0.457					
	26	55.0	2649.5	127.3	34.6	0.431					
D	27	61.6	2649.8	127.6	37.1	0.401					

REMARKS:

0012

TICKET NO: 34656500

CLOCK NO: 13446 HOUR: 24



GAUGE NO: 3840

DEPTH: 5987.0

REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	AP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW											
B	1	0.0	1475.8								
	2	5.0	1694.4	218.6							
	3	10.0	1920.6	226.1							
	4	15.0	2105.7	185.2							
	5	20.0	2299.7	199.9							
	6	25.0	2411.5	111.8							
	7	30.0	2492.9	81.4							
	8	35.0	2536.7	49.9							
	9	40.0	2543.9	7.2							
	10	45.0		2.6							
	11	50.0	2547.4	0.9							
	12	55.0	2547.4	0.0							
	13	60.0	2545.3	-2.1							
	14	65.0	2544.9	-0.3							
	15	70.0	2543.0	-1.9							
	16	75.0	2541.1	-1.9							
	17	80.0	2541.1	0.0							
	18	85.0	2541.1	0.0							
	19	90.0	2541.1	0.0							
C	20	93.4	2540.6	-0.5							
FIRST CLOSED-IN											
C	1	0.0	2540.6								
	2	1.0	2605.6	65.0	1.0	1.965					
	3	2.0	2614.9	74.3	1.9	1.688					
	4	3.0	2622.6	82.0	2.9	1.510					
	5	4.0	2626.2	85.7	3.8	1.389					
	6	5.0	2630.2	89.7	4.7	1.297					
	7	6.0	2633.2	92.7	5.6	1.220					
	8	7.0	2635.1	94.6	6.6	1.154					
	9	8.0	2637.2	96.7	7.4	1.104					
	10	9.0	2638.6	98.1	8.2	1.056					
	11	10.0	2639.0	98.4	9.0	1.015					
	12	12.0	2640.4	99.8	10.6	0.944					
	13	14.0	2641.6	101.0	12.2	0.866					
	14	16.0	2642.7	102.1	13.6	0.836					
	15	18.0	2642.8	102.3	15.1	0.791					
	16	20.0	2642.8	102.3	16.5	0.754					
	17	22.0	2642.8	102.3	17.8	0.719					
	18	23.9	2642.8	102.3	19.1	0.690					
	19	26.0	2642.8	102.3	20.4	0.662					
	20	28.0	2642.8	102.3	21.5	0.637					
	21	30.0	2642.8	102.3	22.7	0.614					
	22	35.0	2642.8	102.3	25.5	0.565					
	23	40.0	2642.8	102.3	28.0	0.523					
	24	45.0	2642.8	102.3	30.4	0.488					
	25	50.0	2642.8	102.3	32.6	0.458					
	26	55.0	2642.8	102.3	34.6	0.431					
D	27	61.6	2643.4	102.8	37.1	0.401					

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	5202.0	
4		FLEX WEIGHT.....	4.500	2.764	177.5	
1		DRILL COLLARS.....	6.250	2.750	451.2	
51		PUMP OUT REVERSING SUB.....	6.000	3.000	1.0	5832.0
1		DRILL COLLARS.....	6.250	2.750	30.8	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	5863.9
1		DRILL COLLARS.....	6.250	2.750	29.9	
250		BAR CATCHER SUB	5.000	1.500	1.0	5894.0
80		AP RUNNING CASE.....	5.000	2.250	4.1	5896.3
1		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	5915.3
80		AP RUNNING CASE.....	5.000	2.050	4.1	5917.4
15		JAR.....	5.000	1.750	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	1.9	
70		OPEN HOLE PACKER.....	7.500	1.530	5.8	5932.2
18		DISTRIBUTOR VALVE.....	5.000	1.680	2.0	
70		OPEN HOLE PACKER.....	7.500	1.530	5.8	5940.0
19		ANCHOR PIPE SAFETY JOINT.....	5.000	1.500	4.3	
5		CROSSOVER.....	6.000	3.000	1.0	
3		DRILL COLLARS.....	6.250	2.750	30.8	
5		CROSSOVER.....	6.000	3.000	1.0	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	7.0	
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1	5987.0
TOTAL DEPTH					5980.0	

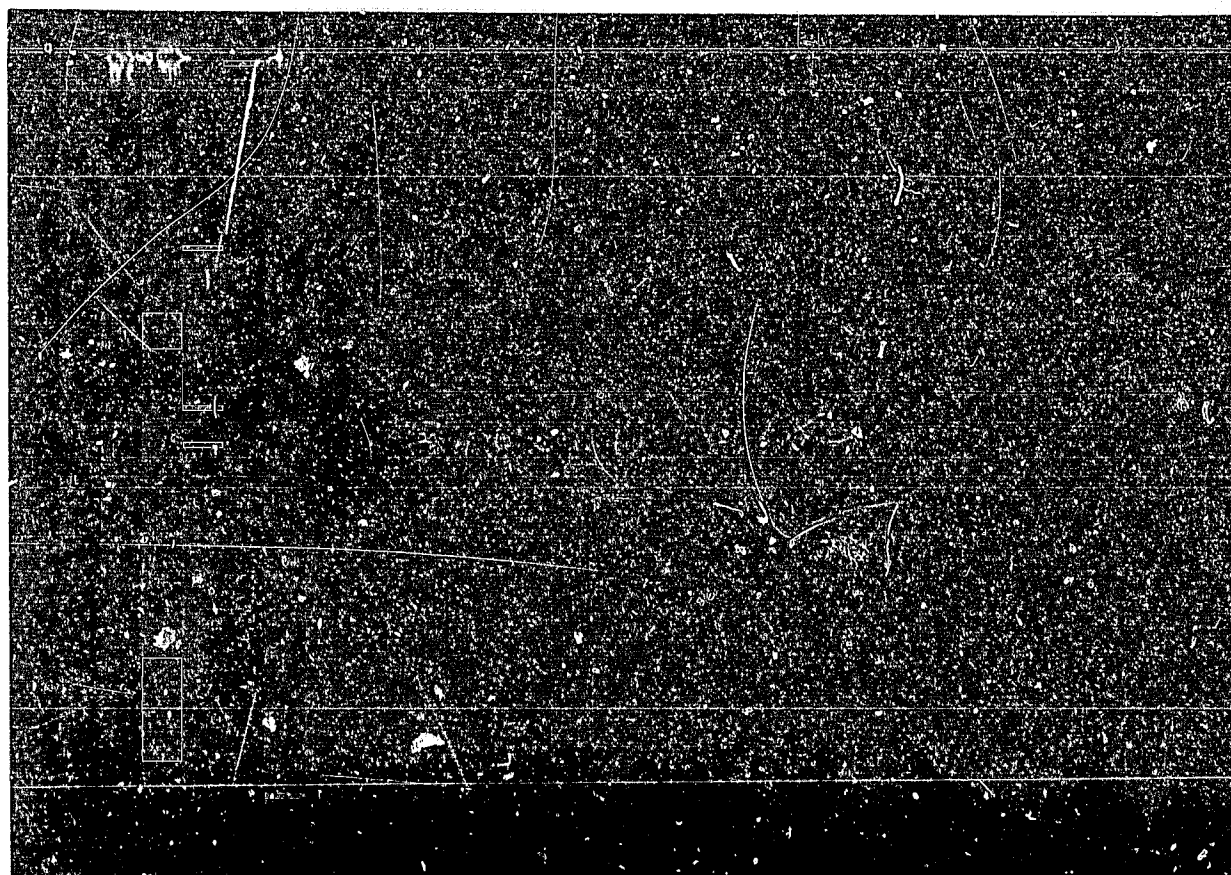
EQUIPMENT DATA



TICKET NO. 34656600
09-JUN-85
MOONBA

FORMATION TESTING SERVICE REPORT

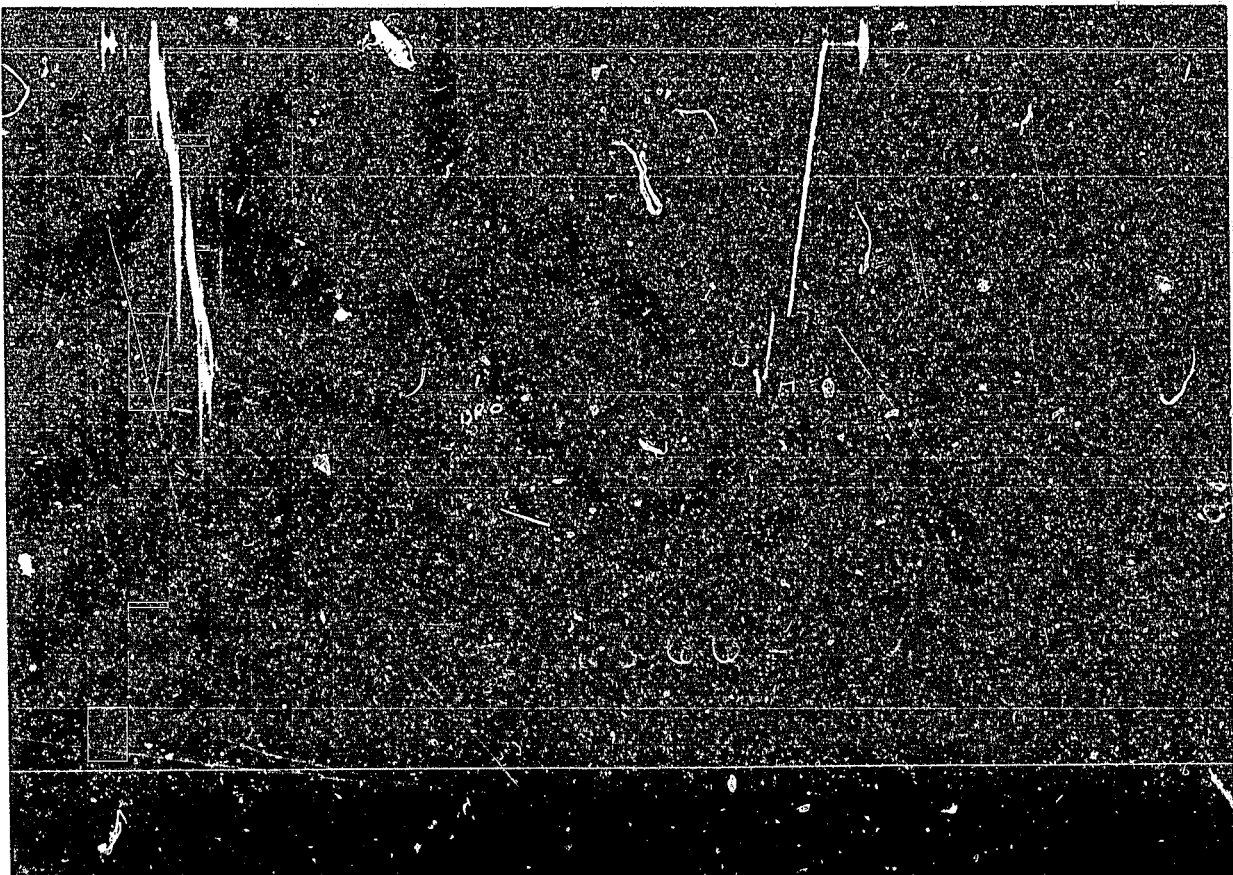
SPENDER		3		1		5398.5 - 5948.0		DELHI PETROLEUM PTY LTD.	
LEASE NAME		WELL NO.		TEST NO.		TESTED INTERVAL		LEASE OWNER/COMPANY NAME	
LEGAL LOCATION		SEE REMARKS		FIELD AREA		COOPER BASIN		COUNTRY SOUTH AUSTRALIA	
SEC. - TYP. - RNC.								STATE AUSTRALIA OR	



15

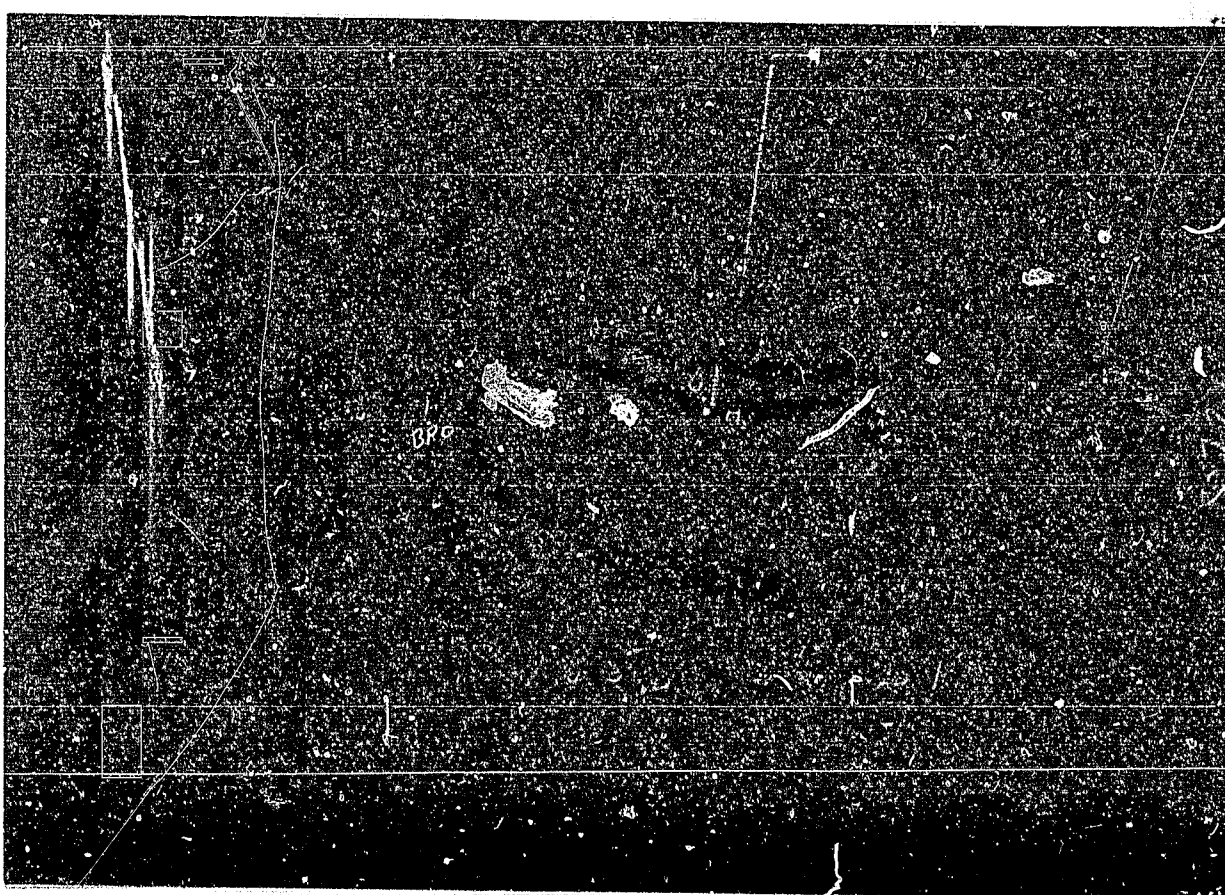
GAUGE NO: 6185 DEPTH: 5266.0 BLANKED OFF: NO HOUR OF CLOCK: 48

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW					
C	FINAL FIRST FLOW			30.0		F
D	INITIAL FIRST CLOSED-IN					
E	FINAL FIRST CLOSED-IN			60.0		C
F	INITIAL SECOND FLOW					
G	FINAL SECOND FLOW			128.0		F
H	INITIAL SECOND CLOSED-IN					
I	FINAL SECOND CLOSED-IN			1135.0		C
J	FINAL HYDROSTATIC					



GAUGE NO: 3840 DEPTH: 5388.0 BLANKED OFF: NO HOUR OF CLOCK: 48

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2427	2405.7			
B	INITIAL FIRST FLOW	1023	1012.5	30.0	26.3	F
C	FINAL FIRST FLOW	2284	2290.9			
C	INITIAL FIRST CLOSED-IN	2284	2290.9	60.0	63.2	C
D	FINAL FIRST CLOSED-IN	2378	2378.7			
E	INITIAL SECOND FLOW	2284	2294.4	128.0	126.6	F
F	FINAL SECOND FLOW	2284	2281.2			
F	INITIAL SECOND CLOSED-IN	2284	2281.2	1135.0	1133.3	C
G	FINAL SECOND CLOSED-IN	2389	2383.3			
H	FINAL HYDROSTATIC	2545	2523.6			



GAUGE NO: 8721 DEPTH: 5411.0 BLANKED OFF: YES HOUR OF CLOCK: 48

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2480	2484.8			
B	INITIAL FIRST FLOW	1235	1225.3			
C	FINAL FIRST FLOW	2333	2329.4	30.0	26.3	F
D	INITIAL FIRST CLOSED-IN	2333	2329.4			
E	FINAL FIRST CLOSED-IN	2428	2421.5	60.0	63.2	C
F	INITIAL SECOND FLOW	2344	2347.6			
G	FINAL SECOND FLOW	2333	2329.4	128.0	126.6	F
H	INITIAL SECOND CLOSED-IN	2333	2329.4			
I	FINAL SECOND CLOSED-IN	2422	2423.5	1135.0	1133.3	C
J	FINAL HYDROSTATIC	2531	2534.8			

EQUIPMENT & HOLE DATA

FORMATION TESTED: HUTTON

NET PAY (ft):

GROSS TESTED FOOTAGE: 549.5

ALL DEPTHS MEASURED FROM: KELLY BUSHING

CASING PERFS. (ft): NOT REPORTED

HOLE OR CASING SIZE (in): 7.000

ELEVATION (ft): 102.0

TOTAL DEPTH (ft): 5948.0

PACKER DEPTH(S) (ft): 5399

FINAL SURFACE CHOKE (in): 0.50000

BOTTOM HOLE CHOKE (in): 0.620

MUD WEIGHT (lb/gal): 8.60 BRINE

MUD VISCOSITY (sec):

ESTIMATED HOLE TEMP. (°F):

ACTUAL HOLE TEMP. (°F): 240 @ 5410.0 ft

TICKET NUMBER: 34656600

DATE: 2-4-86 TEST NO: 1

TYPE DST: CASED HOLE

HALLIBURTON CAMP:

MOOMBA

TESTER: C. SLAUGH

P. CORY

WITNESS: B. STEEL

DRILLING CONTRACTOR:

ATCO #4

FLUID PROPERTIES FOR
RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
	0 °F	ppm
	0 °F	ppm
	0 °F	ppm
	0 °F	ppm
	0 °F	ppm
	0 °F	ppm

SAMPLER DATA

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

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): 0 °F

GAS/OIL RATIO (cu.ft. per bbl):

GAS GRAVITY:

CUSHION DATA

TYPE AMOUNT WEIGHT

RECOVERED:

FULL TUBING STRING OF CLEAN FORMATION WATER

MEASURED FROM
TESTER VALVE

REMARKS:

LEGAL LOCATION: LAT. 28 DEG. 11' 32.7"S, LONG. 139 DEG. 51' 11.3" EAST

NOTE: A CONSIDERABLE DIFFERENCE BETWEEN THE INITIAL AND FINAL HYDROSTATIC PRESSURES ON THESE CHARTS. THIS IS DUE TO THE BRINE BEING WEIGHTED UP FROM 8.6 PPG TO 9.1 PPG FOR REVERSING OUT TUBING. WHILE REVERSING, THE PACKER WAS STILL SET FOR THE FINAL SHUT IN. THE REVERSING WAS CIRCULATED THROUGH THE IMPACT REVERSE SUB.

CLOCK STOPPED IN GAUGE #6185---NO READINGS AVAILABLE

001a

0020

TICKET NO: 4656600
CLOCK NO: 21548 HOUR: 48



GAUGE NO: 3840
DEPTH: 5388.0

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW						SECOND FLOW - CONTINUED					
B	1	0.0	1012.5			2	10.0	2292.3	-2.1		
	2	2.0	1026.6	14.2		3	20.0	2291.3	-1.0		
	3	4.0	1038.9	12.3		4	30.0	2291.3	2.0		
	4	6.0	1101.0	62.1		5	40.0	2291.3	0.0		
	5	8.0	1576.8	475.8		6	50.0	2290.1	-1.2		
	6	9.9	2283.4	708.6		7	60.0	2290.1	0.0		
	7	12.0	2286.1	2.6		8	70.0	2288.5	-1.6		
	8	14.0	2287.3	1.2		9	80.0	2288.5	0.0		
	9	16.0	2288.2	0.9		10	90.0	2287.8	-0.7		
	10	18.0	2288.3	0.2		11	100.0	2286.9	-0.9		
	11	20.0	2289.3	0.0		12	110.0	2286.9	0.0		
	12	22.1	2289.2	0.9		13	120.0	2284.8	-2.1		
	13	24.0	2290.0	1.6		F 14	126.6	2281.2	-3.7		
C	14	26.3	2290.9	0.2		SECOND CLOSED-IN					
FIRST CLOSED-IN						F	1	0.0	2281.2		
C	1	0.0	2290.9			2	1.0	2378.2	97.0	1.0	2.179
	2	1.0	2375.4	84.5	0.9	3	2.0	2378.2	97.0	2.0	1.880
	3	2.0	2376.3	85.4	1.9	4	3.1	2378.2	97.0	3.1	1.699
	4	3.0	2377.2	86.2	2.7	5	4.0	2378.2	97.0	3.9	1.591
	5	4.0	2377.2	86.2	3.4	6	5.0	2378.2	97.0	4.8	1.501
	6	5.0	2377.2	86.2	4.2	7	6.0	2378.2	97.0	5.8	1.423
	7	6.0	2377.2	86.2	4.9	8	7.0	2378.2	97.0	6.7	1.357
	8	7.1	2377.2	86.2	5.6	9	8.0	2378.2	97.0	7.6	1.301
	9	8.0	2377.2	86.2	6.1	10	9.1	2378.2	97.0	8.5	1.252
	10	9.0	2377.2	86.2	6.7	11	10.0	2378.2	97.0	9.4	1.211
	11	10.0	2377.2	86.2	7.3	12	12.0	2378.2	97.0	11.1	1.138
	12	12.0	2377.2	86.2	8.2	13	14.0	2378.2	97.0	12.9	1.075
	13	14.0	2378.0	87.1	9.1	14	16.0	2378.2	97.0	14.5	1.023
	14	16.0	2378.9	88.0	9.9	15	18.0	2378.2	97.0	16.1	0.977
	15	18.0	2379.4	88.5	10.7	16	20.0	2378.2	97.0	17.7	0.936
	16	20.1	2379.4	88.5	11.4	17	22.1	2378.2	97.0	19.3	0.899
	17	22.0	2380.0	89.0	12.0	18	24.0	2378.2	97.0	20.7	0.867
	18	24.0	2380.7	89.7	12.5	19	26.0	2378.2	97.0	22.2	0.838
	19	26.0	2380.7	89.7	13.1	20	28.1	2378.2	97.0	23.7	0.809
	20	28.0	2380.7	89.7	13.6	21	30.1	2378.2	97.0	25.2	0.784
	21	30.0	2380.7	89.7	14.0	22	35.0	2378.2	97.0	28.5	0.729
	22	35.0	2380.7	89.7	15.0	23	40.1	2378.2	97.0	31.7	0.683
	23	40.0	2380.7	89.7	15.8	24	45.0	2378.2	97.0	34.8	0.643
	24	45.0	2378.0	87.1	16.6	25	50.0	2378.2	97.0	37.7	0.608
	25	50.0	2378.0	87.1	17.2	26	54.9	2378.2	97.0	40.4	0.578
	26	55.0	2380.0	89.0	17.8	27	60.0	2378.2	97.0	43.1	0.550
	27	60.0	2380.0	89.0	18.3	28	120.1	2378.2	97.0	67.2	0.357
D	28	63.2	2378.7	87.8	18.5	29	180.1	2378.2	97.0	82.7	0.267
SECOND FLOW						30	240.0	2378.2	97.0	93.4	0.214
E	1	0.0	2294.4			31	300.0	2383.3	102.1	101.2	0.179
						32	360.0	2383.3	102.1	107.3	0.154
						33	420.0	2383.3	102.1	112.0	0.135
						34	427.5	2384.5	103.3	112.6	0.133
						35	480.0	2383.3	102.1	115.9	0.120
						36	540.0	2383.3	102.1	119.1	0.108

LEGEND:
[.] BEGIN REVERSE OUT

REMARKS:

0021

TICKET NO: 34656600

CLOCK NO: 21548 HOUR: 48



GUAGE NO: 3840

DEPTH: 5388.0

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND CLOSED IN - CONTINUED											
37	600.0	2383.3	102.1	121.8	0.099						
38	660.0	2383.3	102.1	124.1	0.090						
39	720.0	2383.3	102.1	126.1	0.084						
40	780.0	2383.3	102.1	127.8	0.078						
41	840.0	2383.3	102.1	129.3	0.073						
42	900.0	2383.3	102.1	130.6	0.068						
43	960.0	2383.3	102.1	131.8	0.064						
44	1020.0	2383.3	102.1	132.9	0.061						
45	1080.1	2383.3	102.1	133.9	0.057						
G 46	1133.3	2383.3	102.1	134.7	0.055						

LEGEND:
☐ BEGIN REVERSE OUT

REMARKS:

TICKET NO: 34556600

CLOCK NO: 23497 HOUR: 48



GAUGE NO: 8721

DEPTH: 5411.0

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	
FIRST FLOW						SECOND FLOW - CONTINUED						
B	1	0.0	1225.9			2	10.0	2337.9	-9.7			
	2	2.0	1458.7	233.4		3	20.0	2336.2	-1.7			
	3	4.0	1757.6	298.9		4	30.0	2336.2	0.0			
	4	6.0	1940.6	183.0		5	40.0	2334.6	-1.5			
	5	8.0	2080.2	139.6		6	50.0	2334.6	0.0			
	6	10.0	2174.9	94.7		7	60.0	2333.8	-0.9			
	7	12.0	2260.9	86.0		8	70.0	2332.6	-1.2			
	8	14.0	2310.6	49.7		9	80.0	2332.6	0.0			
	9	16.0	2319.1	8.5		10	90.0	2331.2	-1.4			
	10	18.0	2324.1	4.9		11	100.0	2330.5	-0.7			
	11	20.0	2326.3	2.2		12	110.0	2330.2	-0.3			
	12	22.0	2327.6	1.4		13	120.0	2329.7	-0.5			
	13	24.0	2328.5	0.9		F 14	126.6	2329.4	-0.3			
C	14	26.3	2329.4	0.9		SECOND CLOSED-IN						
FIRST CLOSED-IN						F	1	0.0	2329.4			
C	1	0.0	2329.4			2	1.0	2409.6	80.2	1.0	2.174	
	2	1.0	2405.6	76.3	0.9	1.448	3	2.1	2411.9	82.6	2.0	1.876
	3	2.0	2408.9	79.5	1.9	1.150	4	3.0	2413.0	83.6	2.9	1.720
	4	3.0	2410.9	81.6	2.7	0.985	5	4.0	2414.5	85.2	3.9	1.593
	5	4.0	2412.8	83.4	3.5	0.879	6	5.0	2415.5	86.2	4.8	1.501
	6	5.0	2414.3	85.0	4.2	0.794	7	6.1	2416.4	87.0	5.8	1.418
	7	5.9	2414.8	85.5	4.8	0.734	8	7.0	2416.7	87.4	6.7	1.360
	8	7.0	2415.5	86.2	5.5	0.678	9	8.0	2416.7	87.4	7.6	1.303
	9	8.1	2415.5	86.2	6.2	0.629	10	9.0	2417.2	87.9	8.5	1.253
	10	9.0	2416.4	87.0	6.7	0.592	11	10.0	2417.2	87.9	9.4	1.211
	11	10.0	2417.1	87.7	7.2	0.559	12	12.0	2417.6	88.2	11.1	1.138
	12	12.0	2417.2	87.9	8.2	0.503	13	14.0	2417.6	88.2	12.8	1.076
	13	14.0	2417.2	87.9	9.1	0.459	14	16.1	2418.1	88.7	14.6	1.020
	14	16.0	2417.2	87.9	9.9	0.422	15	18.0	2418.1	88.7	16.1	0.977
	15	18.1	2417.7	88.4	10.7	0.390	16	20.1	2418.3	88.9	17.7	0.935
	16	20.0	2418.8	89.4	11.4	0.364	17	22.1	2418.3	88.9	19.3	0.898
	17	22.0	2419.8	90.4	12.0	0.341	18	24.0	2418.3	88.9	20.8	0.867
	18	24.0	2420.6	91.3	12.5	0.321	19	26.0	2418.3	88.9	22.2	0.837
	19	26.3	2421.0	91.6	13.1	0.303	20	28.0	2418.6	89.2	23.6	0.811
	20	28.0	2421.0	91.6	13.8	0.287	21	30.0	2418.6	89.2	25.0	0.785
	21	30.0	2421.5	92.2	14.0	0.273	22	35.0	2418.6	89.2	28.5	0.730
	22	35.0	2421.5	92.2	15.0	0.243	23	40.0	2418.6	89.2	31.7	0.683
	23	40.0	2421.5	92.2	15.8	0.219	24	45.0	2418.6	89.2	34.8	0.643
	24	45.1	2421.5	92.2	16.6	0.199	25	50.1	2418.6	89.2	37.7	0.608
	25	50.0	2421.5	92.2	17.2	0.183	26	55.0	2418.6	89.2	40.4	0.577
	26	55.0	2421.5	92.2	17.8	0.169	27	60.1	2418.6	89.2	43.1	0.549
	27	60.0	2421.5	92.2	18.9	0.158	28	120.1	2418.6	89.2	67.3	0.356
D	28	63.2	2421.5	92.2	18.5	0.151	29	180.0	2418.6	89.2	82.7	0.267
SECOND FLOW						30	240.0	2418.6	89.2	93.4	0.214	
E	1	0.0	2347.6			31	300.0	2421.3	92.0	101.2	0.179	
						32	360.0	2423.5	94.2	107.3	0.154	
						33	420.0	2423.5	94.2	112.0	0.135	
						34	427.5	2424.7	95.4	112.6	0.133	
						35	460.0	2423.5	94.2	115.9	0.120	
						36	540.0	2423.5	94.2	119.1	0.108	

LEGEND:

[] BEGIN REVERSE OUT

REMARKS:

0023

TICKET NO: 34656600

CLOCK NO: 23497 HOUR: 48

HALLIBURTON
SERVICES

GAUGE NO: 8721

DEPTH: 5411.0

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED											
37	600.0	2423.5	94.2	121.8	0.099						
38	660.0	2423.5	94.2	124.1	0.090						
39	720.0	2423.5	94.2	126.1	0.084						
40	780.1	2423.5	94.2	127.8	0.078						
41	840.0	2423.5	94.2	129.3	0.073						
42	900.0	2423.5	94.2	130.6	0.068						
43	960.0	2423.5	94.2	131.8	0.064						
44	1020.0	2423.5	94.2	132.9	0.061						
45	1080.0	2423.5	94.2	133.9	0.057						
G 46	1133.3	2423.5	94.2	134.7	0.055						

LEGEND:

L 1) BEGIN REVERSE OUT

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH	
2		TUBING.....	2.875	2.441	5258.0	
5		CROSSOVER.....	3.750	2.500	0.7	
51		PUMP OUT REVERSING SUB.....	3.750	1.750	1.2	5260.0
7		CROSSOVER.....	3.750	2.375	0.8	
50		IMPACT REVERSING SUB.....	3.750	1.750	1.2	5262.0
5		CROSSOVER.....	3.750	2.375	0.6	
24		BAR CATCHER SUB	3.750	0.900	1.0	5264.0
20		AP RUNNING CASE.....	3.875	2.060	4.9	5266.0
5		CROSSOVER.....	3.875	2.000	1.0	
60		HYDROSPRING TESTER.....	3.875	0.620	6.6	5276.0
5		CROSSOVER.....	3.875	2.250	1.0	
5		CROSSOVER.....	3.625	2.430	1.0	
5		CROSSOVER.....	4.750	2.375	0.6	
14		EXTENSION JOINT.....	5.000	0.750	7.1	
14		EXTENSION JOINT.....	5.000	0.750	7.1	
1		CROSSOVER.....	4.750	2.250	1.0	
1		CROSSOVER.....	4.250	1.500	0.5	
3		DRILL COLLARS.....	4.750	1.500	89.2	
5		CROSSOVER.....	4.250	1.500	0.7	
5		CROSSOVER.....	3.750	2.250	0.7	
80		AP RUNNING CASE.....	3.875	2.060	4.8	5388.0
15		JAR.....	3.875	1.250	5.0	
16		VR SAFETY JOINT.....	3.875	0.750	2.5	
71		CASING PACKER.....	7.000	1.800	3.7	5398.5
5		CROSSOVER.....	3.500	1.750	0.7	
20		FLUSH JOINT ANCHOR.....	3.875	2.060	10.0	
81		BLANKED-OFF RUNNING CASE.....	3.875		4.1	5411.0
TOTAL DEPTH					5948.0	
EQUIPMENT DATA						

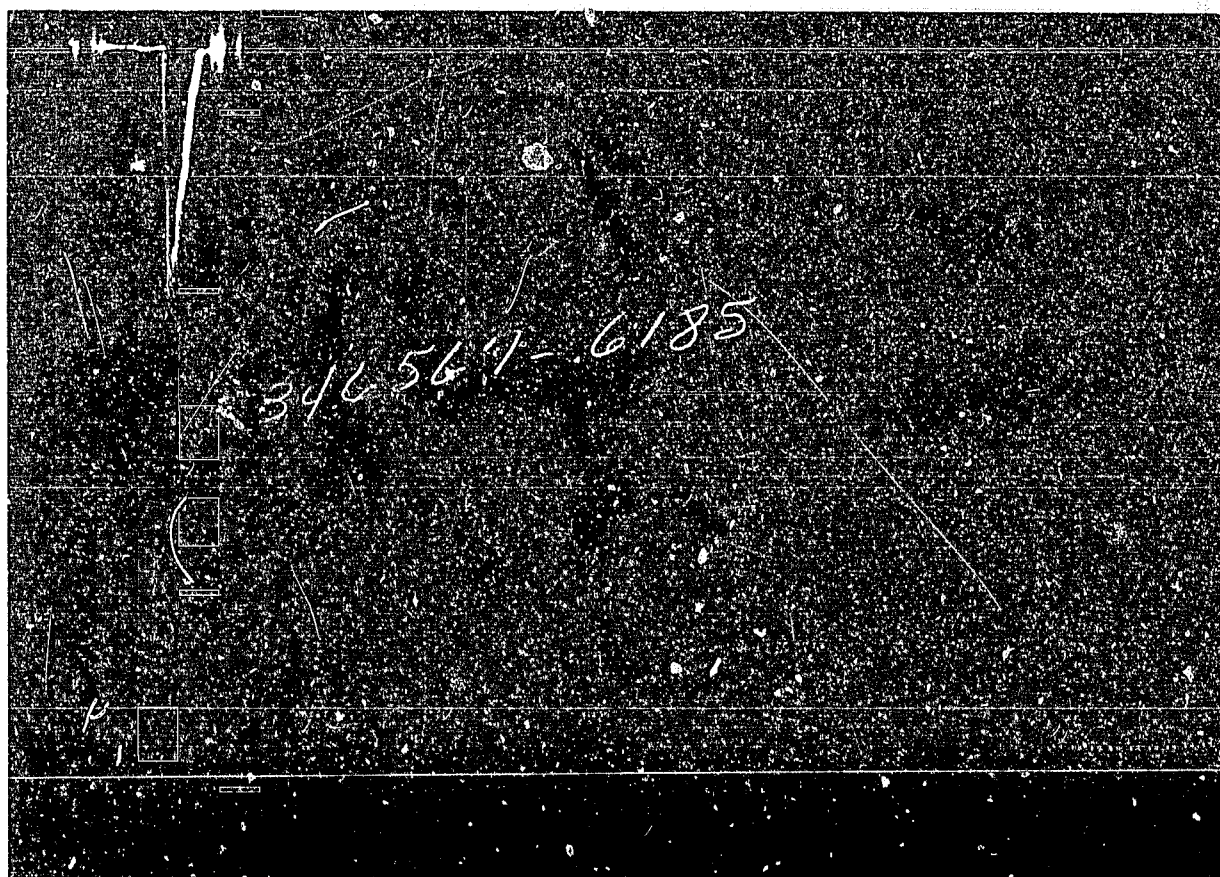
0025



TICKET NO. 34656700
22-APR-86
NOOMBA

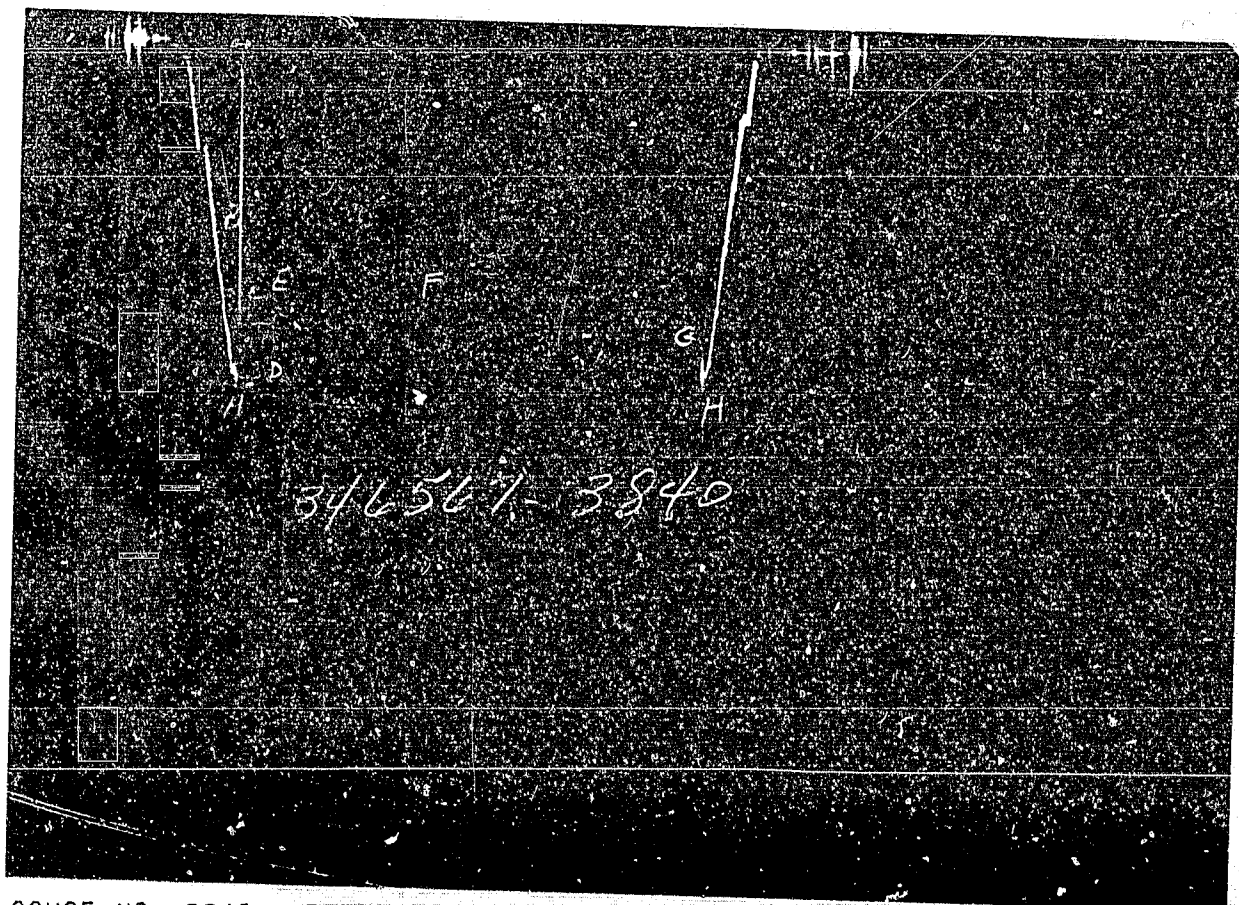
FORMATION TESTING SERVICE REPORT

SPENCER		3		2		5320.0 - 5948.0		DEIHI PETROLEUM PTY LTD.	
LEASE NAME		WELL NO.		TEST NO.		TESTED INTERVAL		LEASE OWNER/COMPANY NAME	
LEGAL LOCATION		SEE REMARKS		FIELD AREA		COOPER BASIN		COUNTRY SOUTH AUSTRALIA	
SEC. - TYP. - RING.								STATE AUSTRALIA	
								IC	



GAUGE NO: 6185 DEPTH: 5098.3 BLANKED OFF: NO HOUR OF CLOCK: 48

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC					
B	INITIAL FIRST FLOW					
C	FINAL FIRST FLOW			30.0		F
D	INITIAL FIRST CLOSED-IN					
E	FINAL FIRST CLOSED-IN			60.0		C
F	INITIAL SECOND FLOW					
G	FINAL SECOND FLOW			360.0		F
H	INITIAL SECOND CLOSED-IN					
I	FINAL SECOND CLOSED-IN			730.0		C
J	FINAL HYDROSTATIC					



GAUGE NO: 3840 DEPTH: 5309.5 BLANKED OFF: NO HOUR OF CLOCK: 48

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2489	2431.4			
B	INITIAL FIRST FLOW	2022	1512.2			
C	FINAL FIRST FLOW	1994	1988.7	30.0	29.5	F
D	INITIAL FIRST CLOSED-IN	1994	1988.7			
E	FINAL FIRST CLOSED-IN	2325	2333.6	60.0	60.2	C
F	INITIAL SECOND FLOW	1998	1995.8			
G	FINAL SECOND FLOW	1897	1904.4	360.0	361.0	F
H	INITIAL SECOND CLOSED-IN	1897	1904.4			
I	FINAL SECOND CLOSED-IN	2318	2331.0	730.0	729.3	C
J	FINAL HYDROSTATIC	2440	2435.4			

GAUGE NO: 8721 DEPTH: 5332.7 BLANKED OFF: YES HOUR OF CLOCK: 48

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2517	2459.0			
B	INITIAL FIRST FLOW	2073	1551.5			
C	FINAL FIRST FLOW	2060	2038.9	30.0	29.5	F
C	INITIAL FIRST CLOSED-IN	2060	2038.9			
D	FINAL FIRST CLOSED-IN	2360	2363.3	60.0	60.2	C
E	INITIAL SECOND FLOW	1998	2005.8			
F	FINAL SECOND FLOW	1937	1940.1	360.0	361.0	F
F	INITIAL SECOND CLOSED-IN	1937	1940.1			
G	FINAL SECOND CLOSED-IN	2346	2354.4	730.0	729.3	C
H	FINAL HYDROSTATIC	2484	2475.6			

0029

EQUIPMENT & HOLE DATA

FORMATION TESTED: BIRKHEAD

NET PAY (ft): 33.0

GROSS TESTED FOOTAGE: 628.0

ALL DEPTHS MEASURED FROM: KELLY BUSHING

CASING PERFS. (ft): 5350'-5383'

HOLE OR CASING SIZE (in): 7.000

ELEVATION (ft): 102.0

TOTAL DEPTH (ft): 5948.0

PACKER DEPTH(S) (ft): 5320

FINAL SURFACE CHOKE (in): 0.50000

BOTTOM HOLE CHOKE (in): 0.620

MUD WEIGHT (lb/gal): 9.10

MUD VISCOSITY (sec):

ESTIMATED HOLE TEMP. (°F):

ACTUAL HOLE TEMP. (°F): 230 @ 5329.0 ft

TICKET NUMBER: 34653700

DATE: 2-6-86 TEST NO: 2

TYPE DST: CASED HOLE

HALLIBURTON CAMP:
MOOMBA

TESTER: P. CORRY

WITNESS: B. STEEL

DRILLING CONTRACTOR:
ATCO RIG #4FLUID PROPERTIES FOR
RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
	0 °F	ppm
	0 °F	ppm
	0 °F	ppm
	0 °F	ppm
	0 °F	ppm
	0 °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
_____	_____	_____
_____	_____	_____

RECOVERED:

FULL STRING OF CLEAN GAS CUT OIL

MEASURED FROM
TESTER VALVE

REMARKS:

LEGAL LOCATION: LAT. 28 DEG., 11', 32.7"S; LONG. 139 DEG., 51', 11.3"E.

CLOCK ON B.T. #6185 MALFUNCTIONED - NO READINGS AVAILABLE.

0030

TYPE & SIZE MEASURING DEVICE: 6" SURFACE CERAMIC CHOKE					TICKET NO: 34656700
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPS	REMARKS
2 1 10					MADE UP TOOLS ON CATWALK AND
					LOADED GAUGES
0615					STARTED PICKING UP TOOLS
0640					RAN IN HOLE
1010					HEAD UP AND SET PACKER
1100	.5				OPENED TOOL WITH VERY STRONG BLOW
1110		100			FLUID TO SURFACE (OIL AND WATER)
1114		120			PRESSURE INCREASED
1115		120			OIL CLEARED UP TO "GAS CUT CLEAN OIL"
1140		120			CLOSED TOOL
1210		90			OPENED TOOL
1240		90			
1410		90			
1540		90			
1610		90			
1810		90			CLOSED TOOL
2 7 00					
0625					DROPPED REVERSING BAR
0628					BEGAN REVERSING
0640					FINISHED REVERSING - OPENED
					BYPASS - BROKE HEAD AND PULLED
					OUT OF HOLE
0855					TOOLS AT TABLE - BEGAN BREAKING
					OUT
0907					STOPPED TOOLS
0925					BEGAN TOOLS
1040					STARTED BREAKING DRILL COLLARS
1200					FINISHED COLLARS - STARTED
					HQVCO TOOLS
1220					STOPPED TOOLS AGAIN
1250					STARTED TOOLS AGAIN
1320					FINISHED BREAKING AND LAYING
					DOWN TOOLS

0031

TICKET NO: 34656700
CLOCK NO: 21548 HOUR: 48



GAUGE NO: 3840
DEPTH: 5309.5

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW					
B	1	0.0	1512.2		
	2	2.1	1563.8	51.6	
	3	3.9	1756.8	193.0	
	4	6.0	2026.0	269.2	
	5	8.0	2014.1	-11.6	
	6	10.0	2009.8	-4.4	
	7	12.0	2004.5	-5.2	
	8	14.0	2000.0	-4.5	
	9	16.0	1997.2	-2.8	
	10	18.0	1993.9	-3.3	
	11	20.0	1992.0	-1.9	
	12	22.0	1990.2	-1.7	
	13	24.0	1988.5	-1.7	
	14	26.0	1987.5	-1.0	
	15	28.0	1988.2	0.7	
C	16	29.5	1988.7	0.5	

FIRST CLOSED-IN					
C	1	0.0	1988.7		
	2	1.0	2279.4	290.8	1.0 1.476
	3	2.0	2282.4	293.7	1.9 1.190
	4	3.1	2286.1	297.4	2.8 1.027
	5	4.0	2288.9	300.2	3.5 0.921
	6	5.0	2291.6	303.0	4.3 0.840
	7	6.0	2293.2	304.5	5.0 0.772
	8	7.1	2295.1	306.4	5.7 0.716
	9	8.1	2297.7	309.1	6.3 0.672
	10	9.0	2298.8	311.1	6.9 0.631
	11	10.0	2300.5	313.8	7.4 0.598
	12	12.0	2303.7	315.0	8.5 0.539
	13	14.0	2306.4	317.8	9.5 0.491
	14	16.0	2309.1	320.4	10.4 0.454
	15	18.0	2311.8	322.1	11.2 0.421
	16	20.0	2312.2	323.5	11.9 0.399
	17	22.0	2313.4	324.7	12.0 0.389
	18	24.0	2315.2	326.5	13.2 0.348
	19	26.0	2316.6	327.9	13.8 0.329
	20	28.0	2318.1	329.4	14.4 0.322
	21	30.0	2319.5	330.0	14.9 0.297
	22	35.0	2322.1	333.4	16.0 0.266
	23	40.0	2324.6	335.9	17.0 0.240
	24	45.0	2326.7	338.0	17.8 0.219
	25	50.0	2330.3	341.6	18.5 0.201
	26	55.0	2331.7	343.0	19.2 0.187
D	27	60.2	2333.6	344.9	19.8 0.173

SECOND FLOW					
E	1	0.0	1995.8		

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
2	20.0	1973.5	-22.3		
3	40.0	1958.2	-15.3		
4	60.0	1949.7	-8.5		
5	80.0	1944.1	-5.6		
6	100.0	1938.2	-5.9		
7	120.0	1934.1	-4.0		
8	140.0	1929.1	-5.1		
9	160.0	1925.8	-3.3		
10	180.0	1922.6	-3.1		
11	200.0	1920.4	-2.3		
12	220.0	1918.8	-1.6		
13	240.0	1917.4	-1.4		
14	260.0	1914.8	-2.6		
15	280.0	1913.6	-1.2		
16	300.0	1909.8	-3.8		
17	320.0	1907.7	-2.1		
18	340.0	1905.1	-1.6		
F	19	361.0	1904.4	-1.7	

SECOND CLOSED-IN					
F	1	0.0	1904.4		
	2	1.0	2138.2	233.8	1.0 2.587
	3	2.0	2142.2	237.8	2.0 2.287
	4	3.0	2145.6	241.3	3.0 2.121
	5	4.0	2150.0	245.6	4.0 1.995
	6	5.0	2151.2	246.9	4.9 1.898
	7	6.0	2154.2	249.8	5.9 1.819
	8	7.0	2156.6	252.3	6.9 1.752
	9	8.0	2159.2	254.9	7.8 1.698
	10	9.1	2163.1	258.7	8.9 1.642
	11	10.0	2166.0	261.7	9.8 1.602
	12	12.0	2170.2	265.9	11.7 1.524
	13	14.0	2173.5	269.2	13.5 1.461
	14	16.0	2176.0	271.6	15.4 1.404
	15	18.0	2177.7	273.3	17.3 1.355
	16	20.0	2179.4	275.1	19.0 1.312
	17	22.0	2182.1	277.7	20.8 1.273
	18	24.0	2185.7	281.4	22.6 1.237
	19	26.0	2189.0	284.7	24.4 1.204
	20	28.0	2191.6	287.3	26.1 1.175
	21	30.0	2194.5	289.9	27.9 1.146
	22	35.0	2198.8	294.4	32.1 1.085
	23	40.0	2205.6	301.2	36.3 1.032
	24	45.0	2211.3	307.0	40.4 0.986
	25	50.0	2215.2	310.8	44.3 0.945
	26	55.0	2218.8	314.5	48.2 0.908
	27	60.0	2222.1	317.8	52.0 0.875
	28	70.0	2229.3	324.9	59.4 0.818
	29	80.0	2234.5	330.1	66.4 0.769
	30	90.0	2240.1	335.7	73.1 0.727
	31	100.0	2244.4	340.1	79.6 0.691
	32	110.0	2247.7	343.4	85.8 0.658

REMARKS:

0032

TICKET NO: 34656700

CLOCK NO: 21548 HOUR: 48



GAUGE NO: 3840

DEPTH: 5309.5

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
SECOND CLOSED IN - CONTINUED											
33	120.0	2252.4	348.1	91.8	0.629						
34	135.0	2257.8	353.5	100.3	0.590						
35	150.0	2262.5	358.2	108.4	0.557						
36	165.0	2267.2	362.9	116.0	0.527						
37	180.0	2271.3	366.9	123.2	0.501						
38	195.0	2274.7	370.4	130.1	0.477						
39	210.0	2278.0	373.7	136.5	0.456						
40	225.0	2280.7	376.3	142.7	0.437						
41	240.0	2284.0	379.6	148.6	0.418						
42	270.0	2288.7	384.3	159.6	0.388						
43	300.0	2292.7	388.3	169.7	0.362						
44	330.0	2297.0	392.7	178.9	0.339						
45	360.0	2301.0	396.7	187.3	0.319						
46	390.0	2304.2	399.8	195.1	0.301						
47	420.1	2306.8	402.4	202.4	0.285						
48	450.0	2309.8	405.4	209.1	0.271						
49	480.0	2311.5	407.1	215.3	0.259						
50	510.0	2314.1	409.8	221.2	0.247						
51	540.0	2316.9	412.5	226.6	0.236						
52	570.0	2317.9	413.6	231.7	0.227						
53	600.0	2319.9	415.5	236.5	0.218						
54	630.0	2322.0	417.6	241.1	0.209						
55	660.0	2323.5	419.2	245.3	0.202						
56	690.0	2324.7	420.4	249.4	0.195						
57	720.0	2330.7	426.3	253.2	0.188						
G 58	729.3	2331.0	426.7	254.3	0.186						

REMARKS:

0033

TICKET NO: 34856700

CLOCK NO: 23497 HOUR: 48

HALLIBURTON
SERVICES

GAUGE NO: 8721

DEPTH: 5332.7

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	
FIRST FLOW						SECOND FLOW - CONTINUED						
B	1	0.0	1551.5			2	20.0	2036.7	30.9			
	2	2.0	1573.1	21.5		3	40.0	2009.9	-26.8			
	3	4.0	1703.9	130.8		4	60.0	1996.5	-13.4			
	4	6.0	1810.6	106.7		5	80.0	1988.4	-8.1			
	5	8.0	1914.5	103.9		6	100.0	1982.2	-6.2			
	6	10.0	2007.7	93.2		7	120.0	1975.6	-6.6			
	7	12.0	2076.1	68.4		8	140.0	1971.5	-4.0			
	8	14.0	2078.3	2.2		9	160.0	1966.7	-4.9			
	9	16.0	2068.9	-9.4		10	180.0	1963.1	-3.5			
	10	18.0	2061.8	-7.2		11	200.0	1959.4	-3.7			
	11	20.0	2054.9	-6.8		12	220.0	1957.7	-1.7			
	12	22.0	2049.5	-5.5		13	240.0	1955.7	-2.0			
	13	24.0	2046.2	-3.2		14	260.0	1952.9	-2.9			
	14	26.0	2043.3	-2.9		15	280.0	1950.3	-2.5			
	15	28.0	2040.8	-2.6		16	300.0	1947.6	-2.7			
C	16	29.5	2038.9	-1.9		17	320.0	1944.8	-2.7			
						18	340.0	1942.3	-2.7			
						F	19	361.0	1940.1	-2.2		
FIRST CLOSED-IN						SECOND CLOSED-IN						
C	1	0.0	2038.9			F	1	0.0	1940.1			
	2	1.0	2258.4	219.5	1.0	1.480	2	1.0	2114.0	173.9	0.9	2.614
	3	2.0	2270.0	231.1	1.8	1.205	3	2.0	2126.1	186.0	2.0	2.288
	4	3.0	2281.2	242.3	2.7	1.038	4	3.0	2134.5	194.4	3.0	2.122
	5	4.0	2288.4	249.5	3.6	0.919	5	3.9	2140.8	200.7	3.9	2.002
	6	5.0	2293.9	254.9	4.3	0.839	6	5.0	2147.6	207.5	4.8	1.899
	7	6.0	2299.5	260.6	5.0	0.772	7	6.0	2152.7	212.7	5.9	1.820
	8	7.0	2304.6	265.7	5.7	0.716	8	7.0	2157.3	217.3	6.9	1.753
	9	8.0	2307.8	268.9	6.3	0.670	9	8.0	2162.1	222.0	7.8	1.699
	10	9.0	2312.1	273.2	6.9	0.632	10	9.0	2165.9	225.8	8.8	1.648
	11	10.0	2314.2	275.3	7.5	0.595	11	10.0	2169.6	229.6	9.8	1.601
	12	12.0	2320.1	281.2	8.5	0.540	12	12.0	2176.1	236.0	11.6	1.527
	13	14.0	2325.1	286.2	9.5	0.493	13	14.0	2182.8	242.7	13.5	1.462
	14	16.0	2328.5	289.6	10.4	0.454	14	16.0	2187.5	247.5	15.4	1.405
	15	18.0	2332.4	293.5	11.2	0.421	15	18.0	2191.5	251.4	17.2	1.358
	16	20.0	2335.2	296.2	11.9	0.394	16	20.0	2195.4	255.3	19.0	1.313
	17	22.0	2338.7	299.8	12.6	0.369	17	22.0	2198.6	258.6	20.8	1.273
	18	24.0	2341.8	302.9	13.2	0.348	18	24.0	2202.0	262.0	22.6	1.238
	19	26.0	2343.2	304.3	13.8	0.329	19	26.0	2206.1	266.1	24.4	1.204
	20	28.0	2344.5	305.6	14.4	0.312	20	28.0	2209.7	269.7	26.1	1.174
	21	30.0	2346.2	307.3	14.9	0.298	21	30.0	2213.0	272.9	27.9	1.148
	22	35.0	2349.8	310.9	16.0	0.266	22	35.0	2219.3	279.2	32.1	1.085
	23	40.0	2353.8	314.8	17.0	0.240	23	40.0	2224.9	284.8	36.3	1.032
	24	45.0	2356.7	317.7	17.8	0.219	24	45.0	2230.4	290.3	40.3	0.986
	25	50.0	2358.4	319.5	18.6	0.201	25	50.0	2235.0	294.9	44.3	0.945
	26	55.0	2360.1	321.2	19.2	0.186	26	55.0	2239.4	299.4	48.2	0.908
D	27	60.2	2363.3	324.4	19.8	0.173	27	60.0	2242.7	302.6	52.0	0.876
SECOND FLOW						28	70.0	2250.7	310.6	59.4	0.818	
E	1	0.0	2005.8			29	80.0	2257.3	317.3	66.4	0.769	
						30	90.0	2263.5	323.4	73.2	0.727	
						31	100.0	2268.6	328.5	79.6	0.691	
						32	110.0	2274.4	334.3	85.8	0.658	

REMARKS:

0034

TICKET NO: 34656700

CLOCK NO: 23497 HOUR: 48

HALLIBURTON
SERVICES

GAUGE NO: 8721

DEPTH: 5332.7

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$	REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
NEEDING CLOSED IN - CONTINUED											
3	120.0	2278.3	338.3	91.8	0.629						
14	135.0	2284.1	344.1	100.3	0.590						
3	150.0	2288.4	348.3	106.4	0.557						
30	165.0	2293.5	353.4	116.0	0.527						
1	179.9	2297.4	357.4	123.2	0.501						
30	195.0	2300.7	360.6	130.1	0.477						
30	210.0	2303.8	363.7	136.6	0.456						
4	225.0	2307.3	367.3	142.8	0.437						
41	240.0	2310.6	370.5	148.6	0.419						
4	270.0	2315.9	375.8	159.6	0.389						
4	300.1	2320.5	380.4	169.7	0.362						
44	310.0	2324.7	384.7	178.9	0.339						
40	360.0	2327.5	387.4	187.3	0.319						
40	340.0	2330.5	390.5	195.1	0.301						
41	420.0	2333.4	393.4	202.4	0.286						
40	450.0	2336.0	395.9	209.1	0.271						
40	480.0	2338.4	398.3	215.3	0.259						
50	510.0	2341.1	401.1	221.2	0.247						
51	540.0	2343.0	402.9	226.6	0.236						
52	570.0	2344.5	404.5	231.7	0.227						
51	600.0	2345.6	405.5	236.5	0.218						
54	630.0	2346.9	406.9	241.1	0.209						
55	660.0	2348.1	408.1	245.3	0.202						
56	690.0	2349.7	409.6	249.4	0.195						
57	720.0	2354.3	414.2	253.2	0.188						
G 58	729.3	2354.4	414.4	254.3	0.186						

REMARKS:

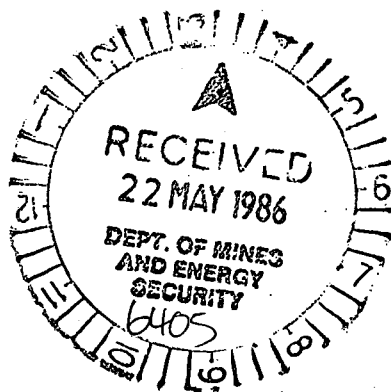
0035

TICKET NO. 34656700

		O.D.	I.D.	LENGTH	DEPTH	
✓		TUBING.....	2.875	2.441	5092.0	
✓		CROSSOVER.....	3.750	2.500	0.7	
✓		PUMP OUT REVERSING SUB.....	3.750	1.750	1.2	5092.6
✓		CROSSOVER.....	3.750	2.325	0.8	
✓		PUMP OUT REVERSING SUB.....	3.750	1.750	1.2	5094.7
✓		CROSSOVER.....	3.750	2.375	0.6	
✓		CROSSOVER.....	3.750	0.500	1.0	
✓		AP RUNNING CASE.....	3.875	2.060	4.9	5098.3
✓		CROSSOVER.....	3.875	2.000	1.0	
✓		HYDROSPRING TESTER.....	3.875	0.620	6.6	5100.3
✓		CROSSOVER.....	3.875	2.250	1.0	
✓		CROSSOVER.....	3.625	2.430	1.0	
✓		CROSSOVER.....	4.750	2.375	0.6	
✓		EXTENSION JOINT.....	5.000	0.750	7.1	
✓		EXTENSION JOINT.....	5.000	0.750	7.1	
✓		CROSSOVER.....	4.750	2.250	1.0	
✓		CROSSOVER.....	4.250	1.500	0.5	
✓		DRILL COLLARS.....	4.750	1.500	178.4	
✓		CROSSOVER.....	4.250	1.500	0.7	
✓		CROSSOVER.....	3.750	2.250	0.7	
✓		AP RUNNING CASE.....	3.875	2.060	4.9	5309.5
✓		JAR.....	3.875	1.250	5.0	
✓		VR SAFETY JOINT.....	3.875	0.750	2.5	
✓		CASING PACKER.....	7.000	2.250	3.7	5320.0
✓		CROSSOVER.....	3.500	1.750	0.7	
✓		PERFORATED TAIL PIPE.....	3.875	1.750	10.0	
✓		BLANKED-OFF RUNNING CASE.....	3.875		4.1	5332.7
		TOTAL DEPTH				5948.0

EQUIPMENT DATA

SPENCER #3 - BIRKHEAD
RESERVOIR ENGINEERING REPORT
PRODUCTION TEST, 9 - 16/2/86



Prepared by: M. Wilson
Date: April, 1986

TABLE OF CONTENTS

1. INTRODUCTION
2. CONCLUSIONS AND RECOMMENDATIONS
3. SUMMARY OF RESULTS
4. DISCUSSION
5. TABLES
 - WELL HISTORY
 - WELL DATA
 - PRODUCTION HISTORY
 - PVT & ROCK PROPERTIES
 - BUILDUP DATA
6. FIGURES
 - PRODUCTION TEST PLOT
 - TYPE CURVE
 - HORNER PLOT
 - POST-TEST PRODUCTION PLOT
 - DLL-MSFL LOG
 - SONIC LOG
 - HDT LOG
 - COMPLETION DIAGRAM
7. APPENDICES
 - A. CALCULATIONS
 - B. EXPERTEST RAW DATA

SPENCER #3 PRODUCTION TEST1. INTRODUCTION

Spencer #3 was drilled during January, 1986 as an exploration well to evaluate the hydrocarbon potential of the Patchawarra, Hutton, Birkhead and Namur formations at the crest of the Spencer structure. An open hole test in the Patchawarra Formation over the interval 5940-5990 ft KB flowed water at 618 BPD and gas at RTSTM.

Using the completion rig, cased hole DST's were performed in the Hutton and Birkhead formations. The Hutton zone produced water at 576 BPD and was suspended. The Birkhead zone, from 5350-5383 ft KB, produced oil at 1800 BPD at a FTHP of 105 psig on a 1/2" choke.

Following the well's completion, a static gradient survey was performed and on February 10, 1986 production from the Birkhead zone commenced. The well flowed at an average rate of 774 BOPD and 8.8 BWPD at a FTHP of 320 psig for 95 hours. An Expertest GRC electronic gauge with surface pressure readout was run to bottom 12 hours before the well was shut-in. The pressure buildup was then monitored for 49 hours.

This report is an evaluation of this production test and includes data from the extended production test which commenced on February 18, 1986.

SPENCER #3 PRODUCTION TEST2. CONCLUSIONS AND RECOMMENDATIONS

Spencer #3 was production tested from the Birkhead formation over the period 9-16 February, 1986. During the 95 hour flow period the zone produced at an average rate of 774 BOPD and 8.8 BWPD at a FTHP of 320 psig.

The results of the analysis have indicated an effective permeability of 121 md and an apparent skin of -2.0.

Water production during the test was mainly due to completion fluid. However, since the start of the extended production test water has been produced at very low rates from the tight silty sands below the perforations at 5383 ft KB.

The analysis of the pressure buildup data has also indicated the presence of lateral heterogeneities at approximately +300 ft from the wellbore. These discontinuities agree with geophysical and geological interpretation.

The productivity index of the Birkhead formation is estimated to be 2.3 BFPD/psi. Based on the zone's performance to date it is recommended that the current offtake rate be maintained at 650 BFPD.

SPENCER #3 PRODUCTION TEST3. SUMMARY OF RESULTS

Static Gradient Reservoir Pressure	2398.4 psia
Post Test Average Reservoir Pressure	2417.0 psia
Total Fluid Produced	3081.2 BBLS
Total Oil Produced	3046.4 BBLS
Decline in Reservoir Pressure	0 psi
Total Flow Time	94.5 hours
Total Effective Flow Time	95.9 hours
Total Shut-in Time	48.9 hours
Buildup Formation Flow Capacity	2551 md ft
Buildup Effective Permeability	121 md
Buildup Apparent Skin Factor	-2.0
Productivity Index	2.3 BFPD/psi

SPENCER #3 PRODUCTION TEST4. DISCUSSION

Following a clean-up flow from both the tubing and annulus the well flowed at a reasonably consistent rate for the last 36 hours of the production test. This is shown in Figure 1. The well was circulated with crude following the completion however, the production test produced 35 bbls of water, some of which is thought to have been completion fluid.

Production from the well over the last two months has shown an immediate though gradual increase in the water cut to 8%. This is shown in Figure 4. At the time of writing the well was producing 589 BOPD and 53 BWPD. From the log analysis, it can be inferred that water is being produced through the finely laminated, and probably discontinuous, silty sands below 5383 ft KB. The relevant log sections are shown in Figures 5-7. During drilling, no shows were observed which suggests that either the sections are water bearing or a reasonably permeable transition zone exists, allowing mud invasion. The trend in water production indicates that these laminated sections are water bearing and tight.

Pressure gauges were run into the well during the final 12 hours of the 95 hour production test. The well was subsequently shut-in for 49 hours for pressure buildup.

The pressure buildup analysis was performed using the data obtained from a GRC electronic gauge with surface pressure readout. This gauge was run in tandem with an amerada gauge. A complete comparison of data could not be made due to the failure of the amerada gauge. However, the first 12 hours of the buildup showed very close agreement between the gauges.

Analysis indicates that the effects of wellbore distortion on the pressure buildup were negligible. Figure 2 shows the log-log plot with no indication of a unit slope. The Horner plot in Figure 3 indicates that the effects of wellbore storage ceased a couple of minutes after shut-in. This was confirmed using a theoretical estimate for the time at which wellbore storage effects ceased and is shown in Appendix A.

In Figure 3, the buildup has two distinct slopes. The first slope was used to estimate a formation permeability of 121 md and an apparent skin of -2.0, indicating no damage. The second slope was extrapolated to a $P^* = 2417.0$ psia (corrected to MPOP). This value compares reasonably well with the pre-test static gradient of 2398.4 psia and 2404.0 psia, the average of the extrapolated pressures from cased hole DST#2.

The cased hole DST#2 flowed 1800 BOPD, from the same Birkhead interval, 5350-5383 ft KB, with no associated water observed. However, in lieu of the production test buildup analysis, the DST was reinterpreted to confirm the presence of reservoir heterogeneities. The DST pressure buildup clearly indicated the presence of the first slope when the earliest time data was obtained from the charts for use in the analysis. The re-interpreted DST analysis indicated a permeability of 99 md and an apparent skin of -3.3.

As mentioned previously, the Horner plot has characteristics which indicate the presence of reservoir heterogeneities. A number of possibilities have been investigated and although a quantitative analysis is not possible, geophysical evidence supports the existence of a number of faults in the Spencer #3 culmination. A theoretical estimate indicates that the nearest reservoir discontinuity exists at approximately 340 ft from the wellbore. The ratio $M_2/M_1 = 2.3$ indicates the presence of more than one fault, and together with the estimate of the distance to the nearest boundary, agrees closely with the seismic interpretation. The pressure buildup also has characteristics which indicate a lateral change in the hydraulic diffusivity. In this case, however, only a large reduction in flow capacity would support this behaviour. This is possible as evidence suggests that the formation is part of a channel deposit. In either case it is not unreasonable to presume that a combination of faulting and lateral diffusivity changes may be contributing to this pressure behaviour.

The productivity index for the well is 2.3 BFPD/psi. The offtake rate was initially set at 750 BFPD and would have resulted in a drawdown of less than 200 psi based on a PI of 4, determined from the DST analysis. At the time of this report however, the drawdown was approximately 280 psi and is satisfactory. Considering the production performance during the past 70 days the offtake rate for this well should remain at it's current target rate of 650 BFPD.

TABLE 1
WELL HISTORY

9/1/86	Well Spudded.
14/1/86	DST#1 Patchawarra (5940-5990 ft KB). Water to surface at 618 BPD.
19/1/86	Rig released.
1/2/86	Rig up service rig and circulate well with filtered 8.6 ppg brine.
3/2/86	Run CBL/VDL/GR/CCL and CET/GR - satisfactory bond between Birkhead and Hutton zones. Perforate Hutton (5421-5425 ft KB) with 4" HSC at 4 spf. Cased hole DST#1 - water to surface at 576 BPD.
5/2/86	Set bridge plug at 5415 ft KB. Perforate Birkhead (5350-5383 ft KB) with 4" HSC at 4 spf.
6/2/86	Cased hole DST#2 - produced oil at 1800 BPD at 105 psig on 1/2" choke.
7/2/86	Run tubing anchor, pump seating nipple and 2 7/8" tubing. Shoe at 5273 ft KB. Circulate well with crude. Rig released.
9/2/86	Run blind box, HUD at 5415 ft. Run Static Gradient Survey.
10/2/86	Cleanup flow from tubing and annulus.
12/2/86	Well on test at 735 BOPD on 14/64" choke.

TABLE 1
WELL HISTORY

13/2/86	Run gauges to 5320 ft KB.
14/2/86	Shut well in for buildup.
16/2/86	Perform Static Gradient Survey. End of buildup.
18/2/86	Well put on extended production test.

TABLE 2
WELL DATA

Location: Latitude : 28° 11' 32.7"S
 Longitude : 139° 51' 11.3"E

Elevation: Ground Level : 82 ft
 Kelly Bushing : 102 ft

Datum: KB to top of tubing spool : 19.5 ft

Casing Size: Surface : 9 5/8", 36#/ft, J-55 to 808 ft KB
 Production : 7", 23#/ft, J-55 to 5990 ft KB

Tubing Size: 2 7/8", 6.5#/ft, J-55 to 5273 ft KB.

P.B.T.D: 7", Float collar at 5948 ft KB

Note: H.U.D. : EZ Bridge plug at 5415 ft KB

Minimum I.D.: Pump seating nipple (I.D. = 2.29") at 5241 ft KB

Perforated Birkhead : 5350 - 5383 ft KB
Intervals: Hutton : 5421 - 5425 ft KB (suspended)

TABLE 3
PRODUCTION HISTORY

	TIME (days)	TOTAL PRODUCTION (bbls)		AVERAGE RATE	
		OIL	WATER	BOPD	BWPD
Cleanup Flow and Production Test	3.94	3046	35	774	8.8
Extended Production Test (17/2/86-30/4/86)	71.75	47029	2104	655	29.3
Current Rate (30/4/86)				589	53

MAM02/3
MDW:1e

TABLE 4
PVT AND ROCK PROPERTIES

Reservoir Pressure	= 2384 psig	- Static Gradient (9/2/86)
Reservoir Temperature	= 220°F	- Appendix B
Bubble Point Pressure	= 168 psig	- PVT Analysis
Oil Formation Volume Factor	= 1.084 RB/STB	- PVT Analysis
Oil Viscosity	= 0.8235 cp	- PVT Analysis
Oil Compressibility	= 8.56×10^{-6} psi ⁻¹	- PVT Analysis
Oil Density	= 0.745 gm/cm ³	- PVT Analysis
Residual Oil Gravity	= 49.7° API	- measured
Water Compressibility	= 3.20×10^{-6} psi ⁻¹	- estimated
Rock Compressibility	= 2.45×10^{-6} psi ⁻¹	- estimated
Total Compressibility	= 8.32×10^{-6} psi ⁻¹	- calculated
Average Porosity	= 16.2%	- Log Analysis
Average Water Saturation	= 50.2%	- Log Analysis
Pay Thickness	= 21 ft	- Log Analysis

NB: The PVT data is based on data obtained from Muteroo #1.

Hutton ???

MAM02/3
MDW:le

TABLE 5
SPENCER #3 PRESSURE BUILDUP DATA
 - ELECTRONIC GAUGE

Δt (hrs)	$\Delta t + T_p/\Delta t$	Pws @ 5320 ft KB (psig)	Pws - Pwf (psi)
0.000	-	2027.2	-
0.013	7375	2117.7	90.6
0.017	5640	2134.3	107.1
0.022	4358	2138.1	110.9
0.034	2820	2143.5	116.3
0.069	1390	2151.0	123.8
0.084	1142	2154.5	127.3
0.117	820	2159.0	131.8
0.167	575	2164.5	137.3
0.226	425	2169.0	141.9
0.284	339	2174.1	146.9
0.384	251	2180.3	153.1
0.501	192	2185.7	158.5
0.641	151	2191.4	164.2
0.791	122	2196.0	168.8
0.974	99.4	2201.8	174.6
1.174	82.7	2206.7	179.5
1.374	70.8	2211.3	184.1
1.658	58.8	2217.2	190.0
1.991	49.1	2222.7	195.5
2.412	40.7	2228.5	201.3
2.911	33.9	2234.8	207.6
3.578	27.8	2242.7	215.6
4.328	23.1	2249.1	221.9
5.081	19.9	2256.0	228.8

MAM02/3

MDW:1e

TABLE 5
SPENCER #3 PRESSURE BUILDUP DATA
 - ELECTRONIC GAUGE

Δt (hrs)	$\Delta t + T_p/\Delta t$	Pws @ 5320 ft KB (psig)	Pws - Pwf (psi)
6.272	16.3	2264.4	237.2
7.797	13.3	2272.9	245.7
9.667	10.9	2281.5	254.3
12.17	8.88	2290.2	263.1
19.79	5.84	2308.6	281.4
29.95	4.20	2324.0	296.8
45.12	3.12	2338.0	310.8
48.94	2.96	2340.5	313.3

NB: $T_p = 95.86$ hours

MAM02/3
 MDW:le

APPENDIX A
CALCULATIONS

1. STATIC PRESSURE

Use datum at MPOP's = 5367 ft KB

a. Static Gradient Survey - 9/2/86

- Data from Amerada #2 used as it agreed with DWT out reading
=> $P_{ws} = 2383.7 \text{ psig} = 2398.4 \text{ psia @ MPOP}$

b. Cased Hole DST#2 - 6/2/86

- $P^* = 2402 \text{ psia @ 5333 ft KB (bottom gauge)}$
& $P^* = 2376 \text{ psia @ 5310 ft KB (mid gauge)}$

- at MPOP, $P^* = 2413.2 \text{ (bottom)}$
& $P^* = 2394.8 \text{ psia (mid)}$

$$\Rightarrow P^*_{av} = 2404 \text{ psia @ MPOP}$$

The above static reservoir pressures show close agreement within the limits of accuracy.

MAM02/3
MDW:le

APPENDIX A
CALCULATIONS

2. PRESSURE BUILDUP ANALYSIS

The type curve shown in Figure 2 indicates effectively no wellbore storage. The beginning of the middle time region appears to commence within the first few minutes of pressure buildup.

The Horner plot, shown in Figure 3, was constructed using an effective producing time of 95.86 hours.

$$\begin{aligned}
 \text{i.e. } T_p &= \frac{\text{Cum. Prod'n}}{\text{Final Prod'n rate}} \\
 &= \frac{3046.4 \text{ bbls} \times 24 \text{ hours}}{762.7 \text{ bopd} \text{ day}} \\
 &= 95.86 \text{ hours}
 \end{aligned}$$

The actual producing time was 94.5 hours. Figure 3 has characteristics which indicate possible radial or lateral changes in transmissibility, including faults and boundaries. However, an effective permeability and apparent skin can be determined utilising the first slope in this buildup plot.

$$\begin{aligned}
 M_1 &= \frac{2285 - 2068}{5 \text{ log cycles}} \\
 &= 43.4 \text{ psi/cycle}
 \end{aligned}$$

$$\begin{aligned}
 \text{Flow Capacity, kh} &= \frac{162.6 q B U_o}{M_1} \\
 &= \frac{(162.6)(762.75)(1.084)(0.8235)}{43.4} \\
 &= 2551 \text{ md ft}
 \end{aligned}$$

$$\begin{aligned}\text{Thus, effective permeability, } k &= \frac{2551 \text{ md ft}}{21 \text{ ft}} \\ &= 121 \text{ md}\end{aligned}$$

Also, for $P_{1hr} = 2199$ psig at 5320 ft KB,

$$\begin{aligned}\text{Apparent Skin, } S &= 1.151 \left[\frac{P_{1hr} - P_{wf}}{M_1} - \log \left(\frac{k}{(\phi U_o C_t r_w^2)} \right) + 3.23 \right] \\ &= 1.151 \left[\frac{(2199 - 2027)}{43.4} - \log \left(\frac{121}{((0.162)(0.8235)(8.32 \times 10^{-6})(0.354)^2)} \right) + 3.23 \right] \\ &= -2.0\end{aligned}$$

Using an average flow rate of 774 BOPD and 8.8 BWPD and average corrected flowing bottomhole pressure (during last 24 hours of flow) of 2059 psia, the productivity index for the well is estimated, where

$$\begin{aligned}\text{P.I.} &= \frac{q_{av}}{P_r - P_{wf_{av}}} \\ &= \frac{782.8}{2398 - 2059} \\ &= 2.3 \text{ BFPD/psi}\end{aligned}$$

As a type curve match could not be performed and to ensure that the changing slope of the buildup, shown in Figure 3, is not due to anomalies related to early time behaviour, the theoretical duration of wellbore storage can be approximated by:

$$T_{wbs} = \frac{170,000 C e^{0.14s}}{kh/U_o}$$

where,

$$\begin{aligned} C &= \text{Wellbore storage constant, bbl/psi} \\ &= V_{wb} C_{wb} \text{ (for well filled with single phase fluid)} \\ &= 5370 \text{ ft} \times 0.0371 \frac{\text{bbl}}{\text{ft}} \times 8.56 \times 10^{-6} \text{ psi}^{-1} \\ &= 0.0017 \text{ bbl/psi} \end{aligned}$$

$$\begin{aligned} \therefore T_{wbs} &= \frac{(170,000)(0.0017)e^{(0.14)(-2.0)}}{(121)(21)/(0.8235)} \\ &= 0.07 \text{ hours} \end{aligned}$$

This agrees reasonably with the start of MTR observed from the Horner plot at 1.5 cycles.

The second slope in the buildup, M_2

$$\begin{aligned} &= \frac{2387 - 2184}{2 \log \text{ cycles}} \\ &= 101.5 \text{ psi/cycle} \end{aligned}$$

Now, as $M_2/M_1 > 2$, it can be assumed that the buildup is being effected by the presence of a number of reservoir discontinuities.

Using the approximation of Gray, the distance to the nearest discontinuity,

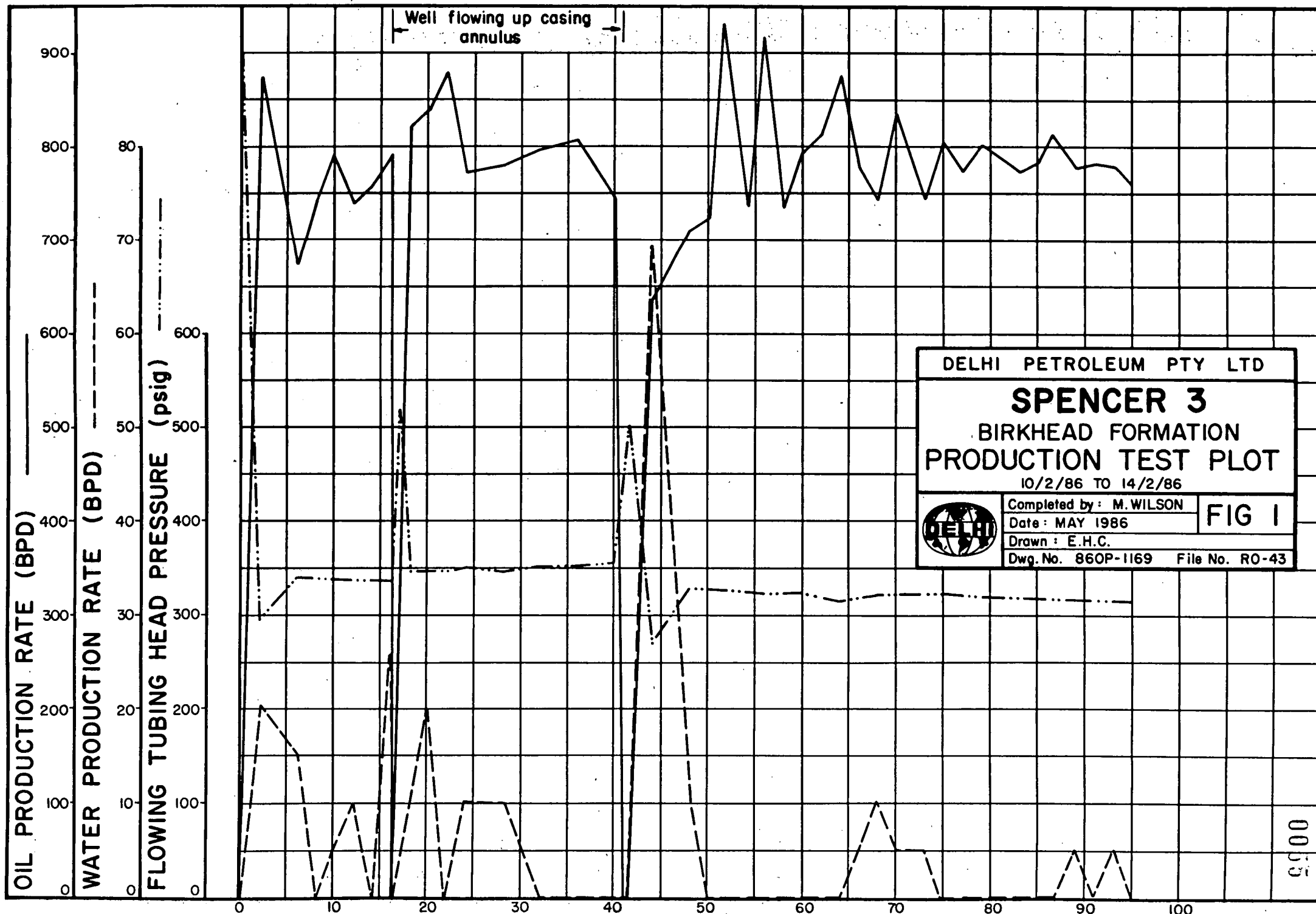
$$d = \sqrt{\frac{0.00105 (k \Delta t)}{(\phi U_o C_t)}}$$

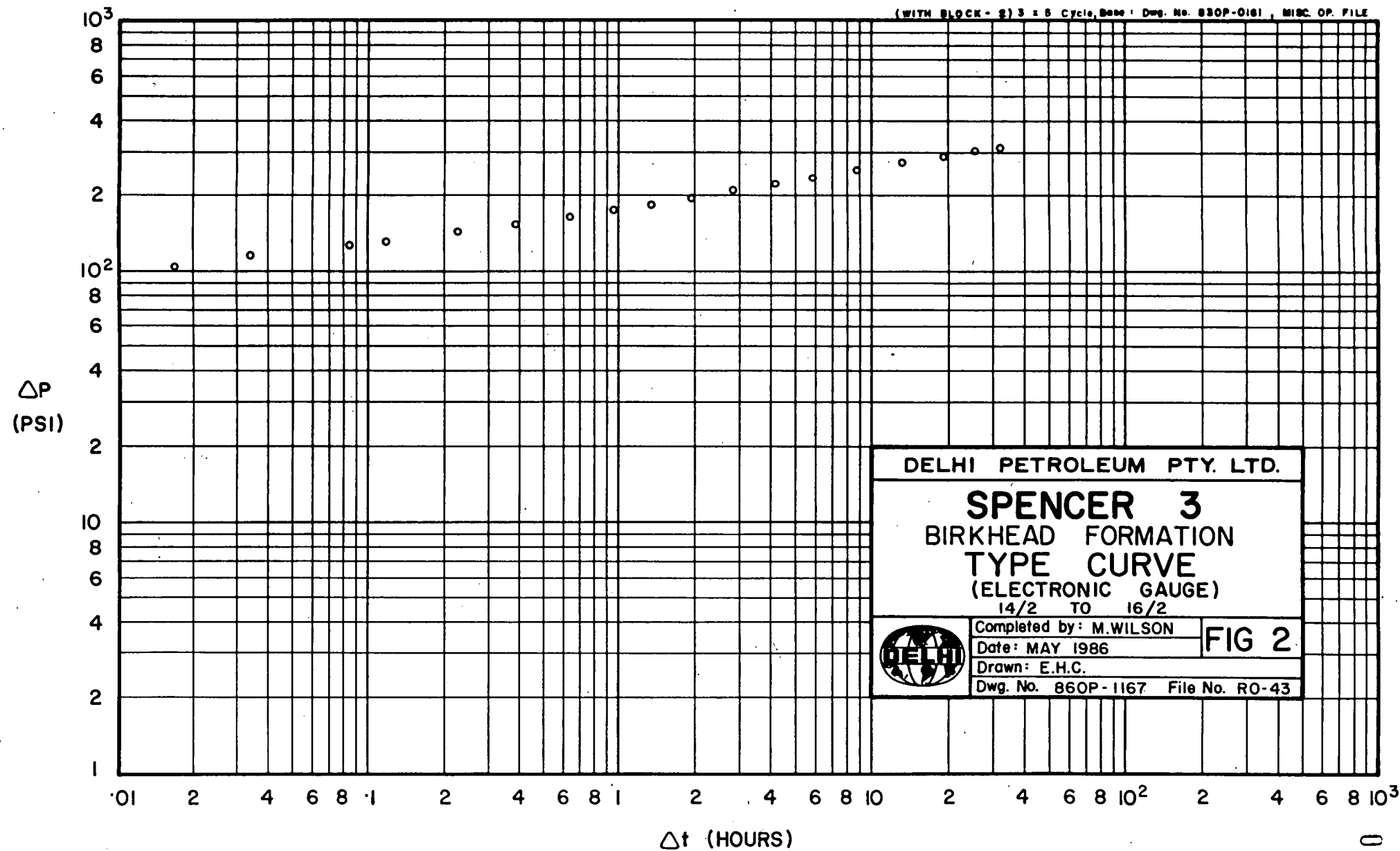
where Δt is the time at which the pressure buildup plot becomes non-linear = 1.0 hours.

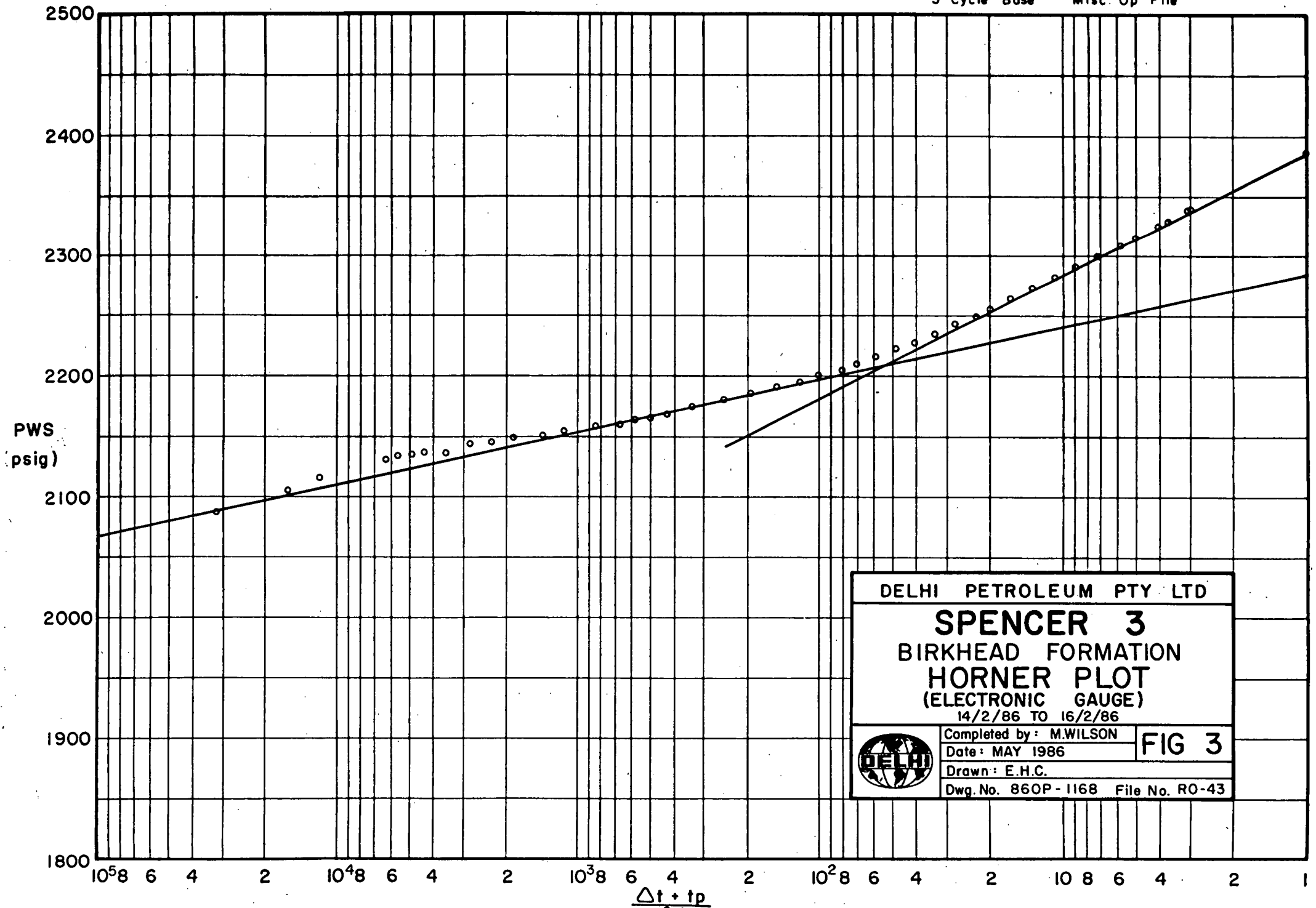
$$= \sqrt{\frac{0.00105 \left(\frac{121 \times 1.0}{(0.162)(.8235)(8.32 \times 10^{-6})} \right)}{}} \\ = 340 \text{ ft}$$

This distance generally agrees with the seismic data which indicates the possibility of many faults in the area.

Extrapolation of the second slope in Figure 3 gives $P = 2387$ psig at infinite shut-in time. When corrected to datum this gives $P^* = 2417$ psia.







DELHI PETROLEUM PTY LTD

SPENCER 3
BIRKHEAD FORMATION
HORNER PLOT
(ELECTRONIC GAUGE)

14/2/86 TO 16/2/86



Completed by: M.WILSON

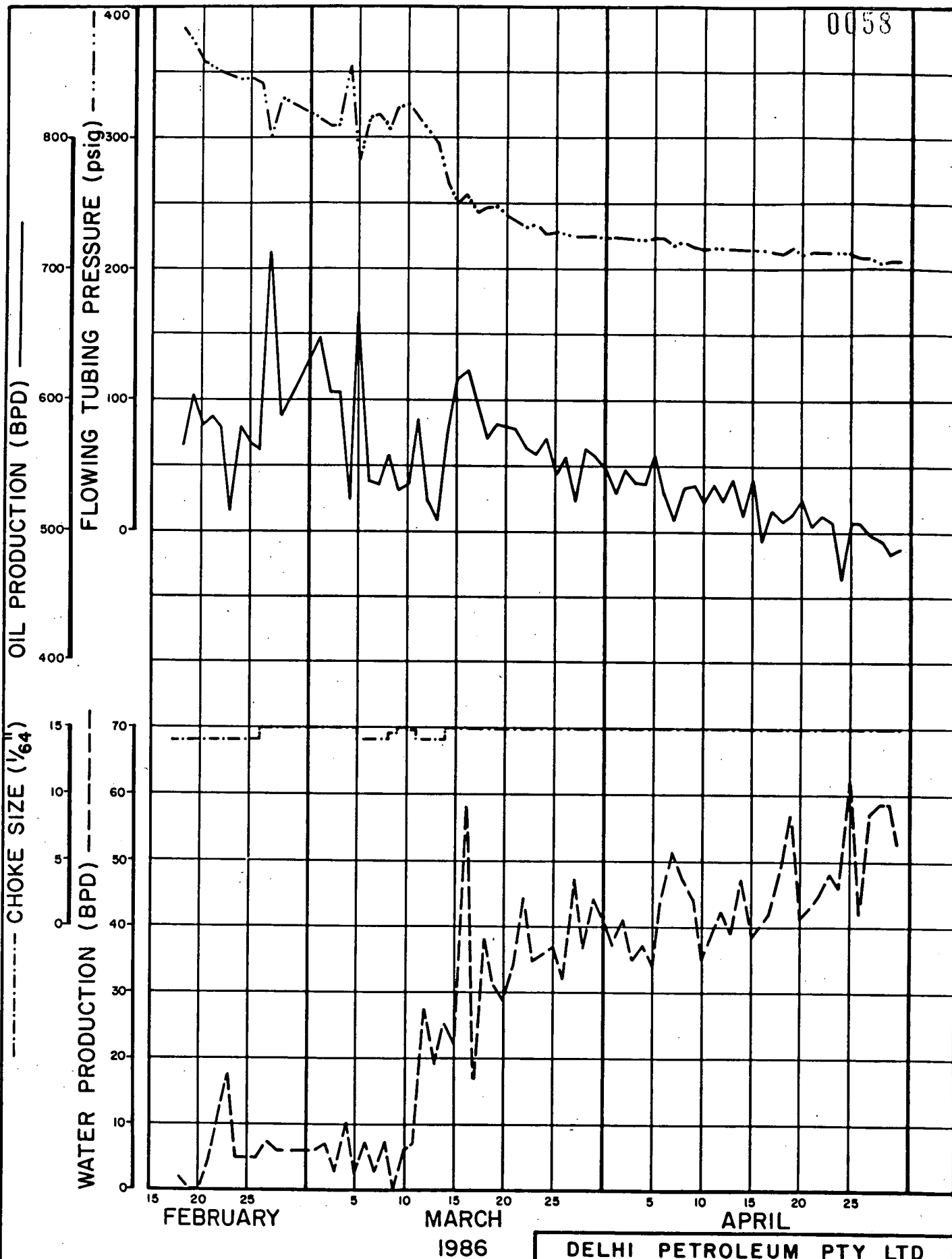
Date: MAY 1986

Drawn: E.H.C.

Dwg. No. 860P-1168 File No. RO-43

FIG 3

0058



FEBRUARY

MARCH
1986

APRIL

DELHI PETROLEUM PTY LTD

SPENCER 3

BIRKHEAD FORMATION

EXTENDED PRODUCTION TEST



Completed by: M. WILSON

Date: MAY 1986

Drawn: E.H.C.

Dwg. No. 860P-1170 File No. RO-43

FIG 4

SPENCER #3

GR-DLL-MSFL
LOG

5300

BIRKHEAD
PERFORATIONS

5350 - 5383 ft KB

5400

5500

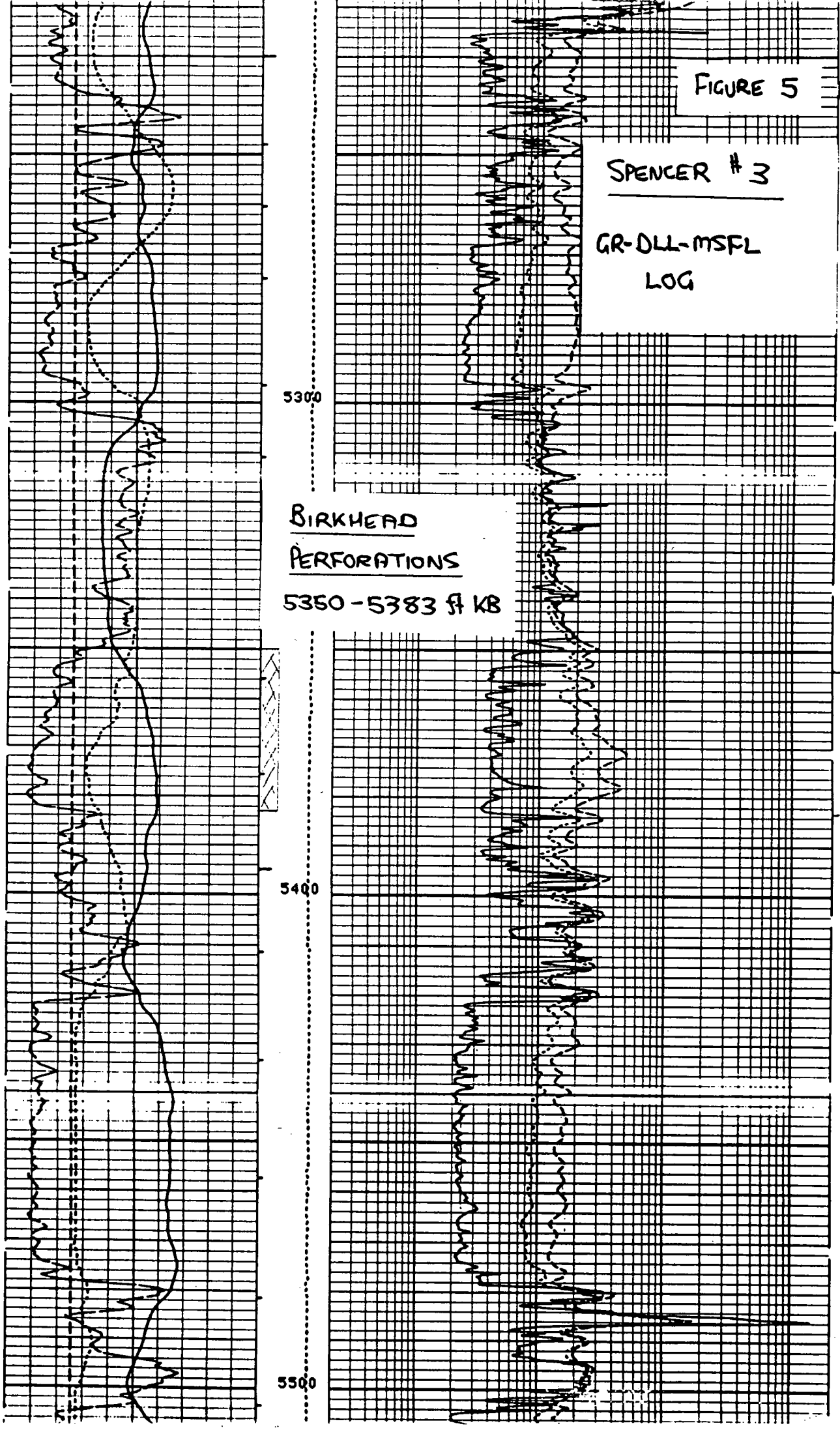


FIGURE 6

SPENCER #3

SONIC LOG

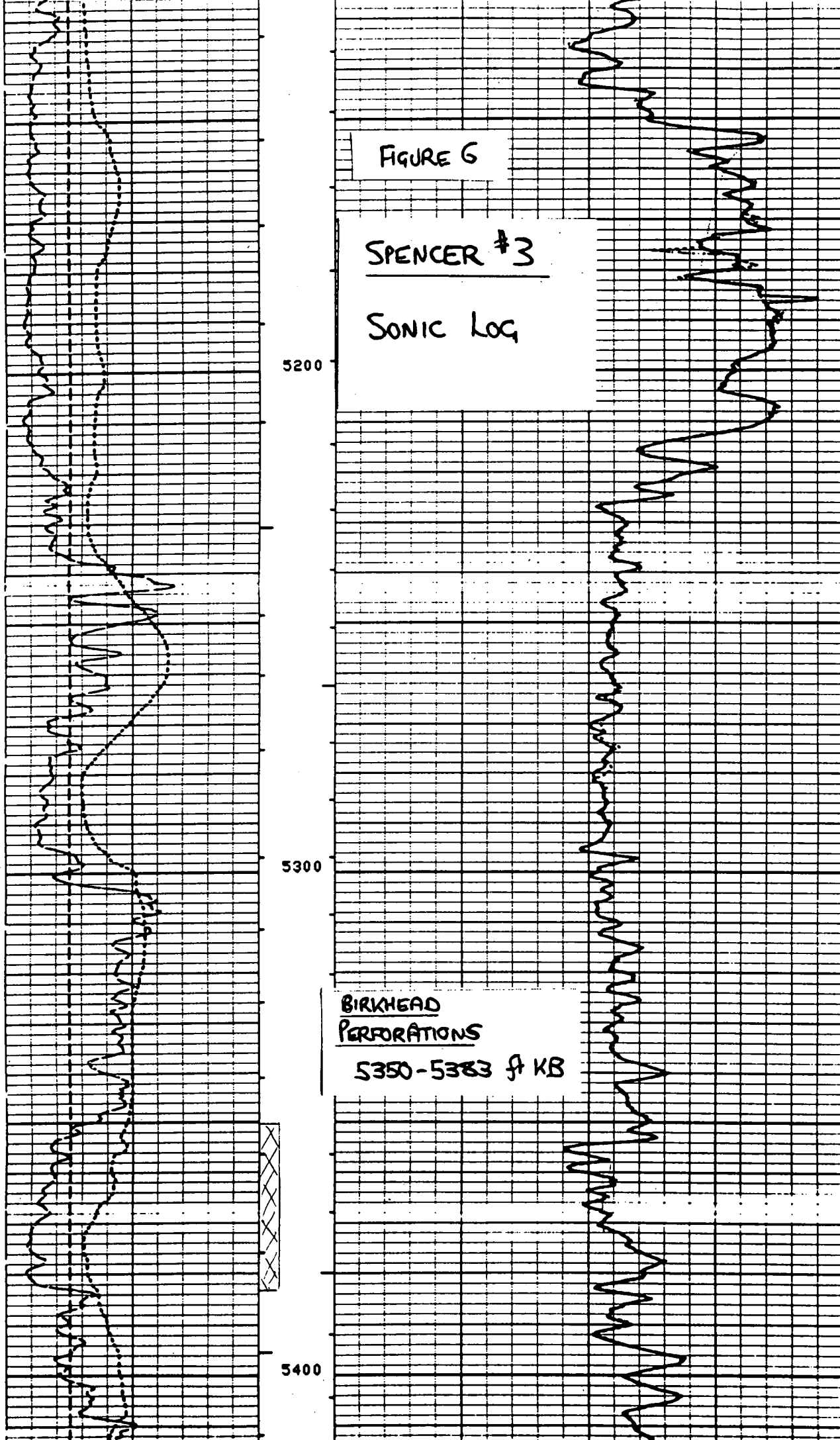
5200

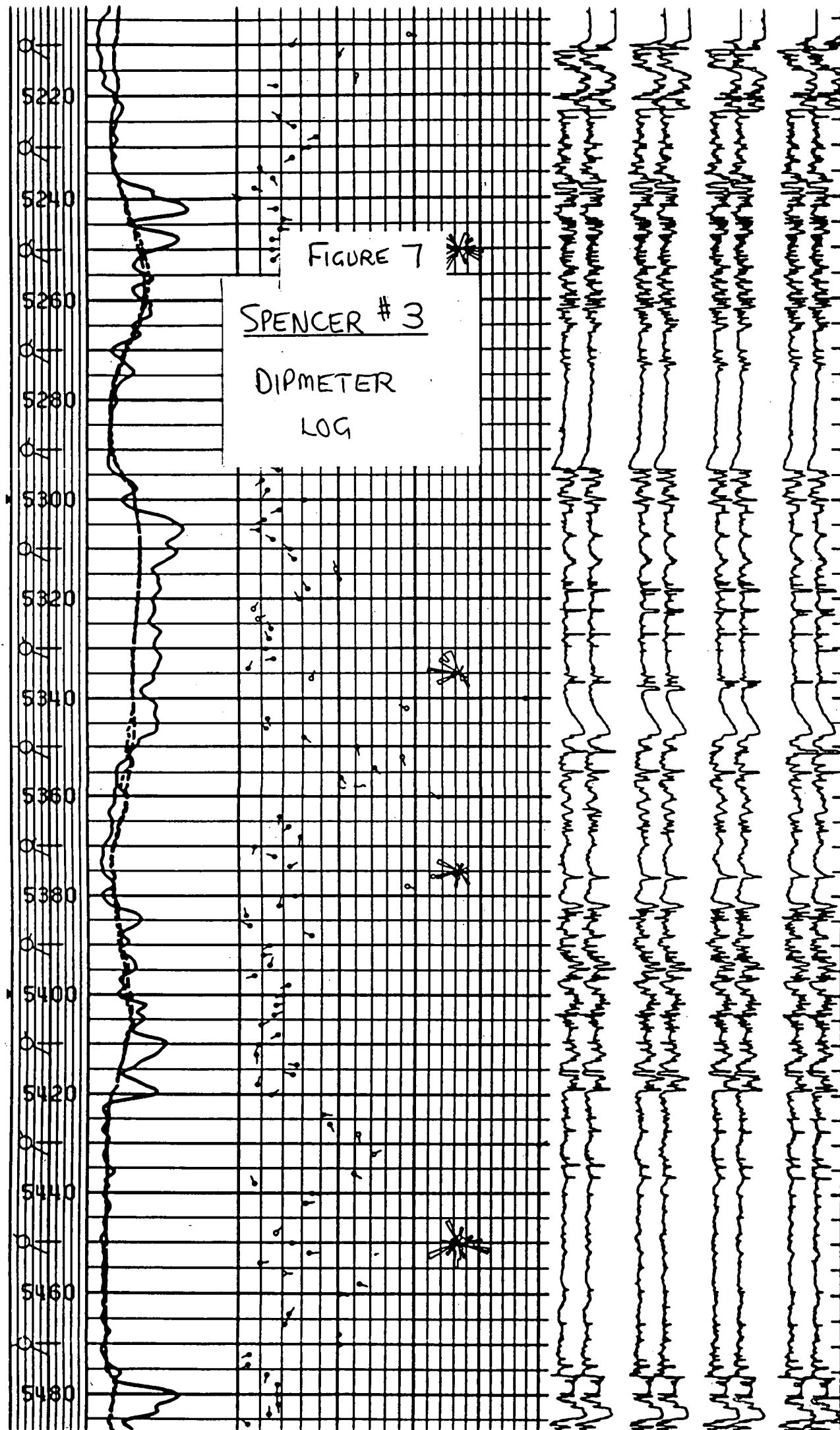
5300

BIRKHEAD
PERFORATIONS

5350-5383 ft KB

5400

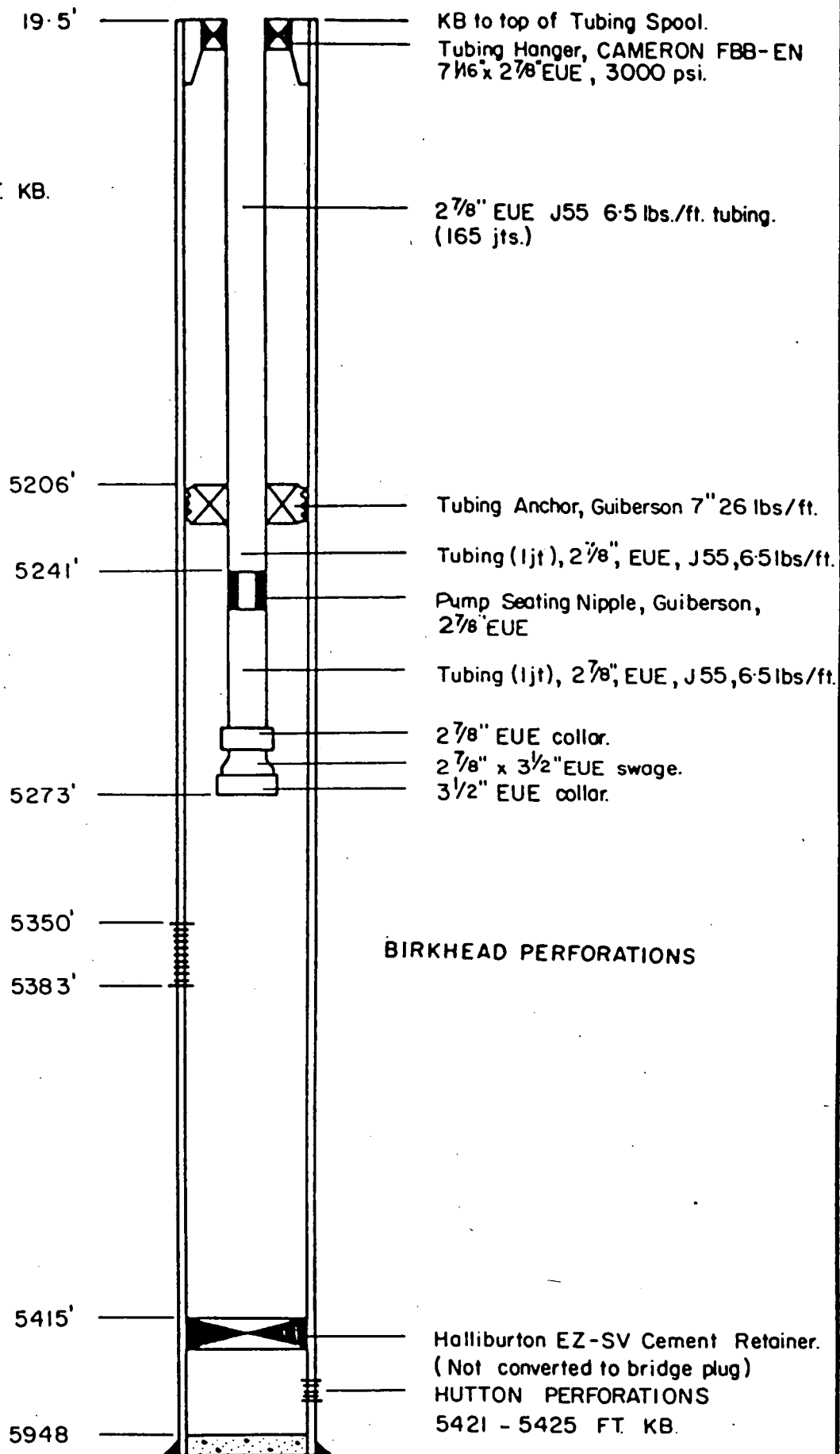




WELL:

SPENCER 3

NOTE: ALL DEPTHS FT. KB.



NOT TO SCALE	Design by: A LAHNE
Drawn by: H.K.	Date: 3/12
Dwg. No. 86OP-1139	File No. RO-43



DELHI PETROLEUM PTY. LTD.
SINGLE ZONE COMPLETION
DOWNHOLE PRODUCTION EQUIPMENT

APPENDIX B

Spencer #3
Birkhead
Flow & Build Up
9.2.86/16.2.86



WIRELINE REPORT

CLIENT DELHI PETROLEUM WELL SPENCER #3

DATE 9.2.86

PROGRAMME BLIND BOX RUN

PURPOSE OF WORK TAG BOTTOM AND TO CHECK TUBING CLEAR OF OBSTRUCTIONS.

REPORT OF WORK PERFORMED

8.2.86 RIG UP UNIT. PRESSURE TEST B.O.P.'S

9.2.86 10:00 HRS. R.I.H. WITH 1.75" BLIND BOX.

TAG BOT. @ 5430' (BRIDGE PLUG)

11:00 HRS. RIG DOWN. NO TUBING OBSTRUCTIONS.

RIG IN TEST EQUIPMENT

15:00 HRS. START STATIC GRADIENT.

17:30 HRS. FINISH GRADIENT.

17:45 HRS. LEAVE LOCATION.

Operator's Signature

WORKED PERFORMED BY M. CLEGGETT OF EXPERTEST

WELL DATA:

Tubing Size 2 7/8" FWHP - SIWHP 560 PSI

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

'X' Nipple @ - 'N'/'XN' Nipple @ - Other PUMP NIPPLE @ ?

Min. I.D. 2.000" @ PUMP NIPPLE Packer @ -

Perforated Interval: 5350' - 5383' (BIRKHEAD)



CLIENT DELHI PETROLEUM

WELL SPENCER #3

STATIC GRADIENT SURVEY

OPERATOR M. CLEGGETT

DATE 9.2.86

BOMB No. 1 DATA						BOMB No 2 DATA				DWT IN SEE BELOW DWT OUT SEE BELOW		
ELEMENT No. 56428		ELEMENT RANGE 0 - 3000 PSI				ELEMENT No. 56431		ELEMENT RANGE 0 - 3000 PSI				
RECORDER No 14620		CLOCK DATA S. NO. 1 x 3 HR				RECORDER No 14929		CLOCK DATA S. NO. 2 x 3 HR				
ENGAGE STYLUS 15:14 HRS.		DISENGAGE 17:29 HRS.				ENGAGE STYLUS 15:14 HRS.		DISENGAGE 17:29 HRS.				
PRESSURE LUBRICATOR 15:24 HRS.						BLEED LUBRICATOR 17:16 HRS.						
DATE	TIME	DEPTH '	DEFLEC- TION	PRESSURE TEMP.	GRADIENT psi/ft	DEPTH '	DEFLEC- TION	PRESSURE TEMP.	GRADIENT psi/ft	REMARKS		
9.2.86	15:24	LUB.	0.358	555.4	-	LUB.	0.359	559.4	-	10 MIN STOP.		
	15:34	R.I.H.				R.I.H.						
	15:37	1000	0.568	882.5	0.3271	1000	0.571	888.9	0.3295	5 MIN STOP		
	15:45	2000	0.780	1212.5	0.3300	2000	0.784	1220.0	0.3311	5 MIN STOP		
	15:53	3000	0.989	1537.6	0.3251	3000	0.993	1545.2	0.3252	5 " "		
	16:00	4000	1.195	1857.8	0.3202	4000	1.200	1867.6	0.3224	5 " "		
	16:07	4500	1.296	2014.8	0.3141	4500	1.302	2026.6	0.3179	5 " "		
	16:14	5000	1.421	2209.3	0.3890	5000	1.425	2218.4	0.3836	5 " "		
	16:20	5250	1.492	2319.9	0.4424	5250	1.497	2330.7	0.4492	5 " "		
	16:21	5320	1.512	2351.1	0.4454	5320	1.517	2361.9	0.4457	10 " "		
	16:32	5367	1.526	2372.9	0.4645	5367	1.531	2383.7	0.4646	15 " "		
	16:47	5400	1.534	2385.4	0.3781	5400	1.539	2396.2	0.3782	5 " "		
	16:52	P.O.O.H.				P.O.O.H.						
	17:06	LUB.	0.355	550.7	-	LUB.	0.360	561.0	-	10 " "		

GENERAL REMARKS: DWT. IN: 5 MIN 560 627
10 MIN. 561 627

DWT. OUT: 5 MIN 559 627
10 MIN 559 627

M.B.H.T. 218°F

CLIENT <u>DELHI PETROLEUM</u> WELL <u>SPENCER #3 (BIRKHEAD)</u>						 TELEPHONE (08) 354 0486 TELEX AAB7183 138 RICHMOND ROAD MARLETON SA 5033 POSTAL ADDRESS PO BOX 354 CONNARDIA SA 5033										DATE <u>8.2.86</u> PAGE No <u>1</u>			OPERATOR <u>M. CLEGGETT</u>	
DATE TIME	WELLHEAD					H.P. SEPARATOR					L.P. SEPARATOR					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBL/D	G.O.R. SCF/BBL	REMARKS	
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. =					L.P. METER RUN I.D. =									
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D					
8.2.86	RIG IN CHOKE MANIFOLD. INSPECT LEASE.																			
	RIG UP W/LINE UNIT																			
9.2.86																				
10:00	R.I.H. WITH 1.750" BLIND BOX TAG BRIDGE PLUG @ 5430'.																			
	RIG IN SEPARATOR #59, 4 FRAC. TANKS AND MANIFOLDS AND MAKE UP FLOW LINES.																			
15:00	RUN STATIC GRADIENT																			
17:30	FINISH GRADIENT																			
10.2.86																				
	CONTINUE RIGGING IN EQUIPMENT.																			
	PRESSURE TEST LINES TO SEPARATOR INLET, INCLUDING CHOKE MANIFOLD TO FULL S.I.T.P.																			
14:55	629	560		SHUT IN PRESSURES.																
15:00		START CLEANUP FLOW. FLOW TUBING THRU 16/64 VAR. CHOKE. BYPASS SEPARATOR.																		
15:30	380	197	99	16/64	0															
16:00	374	301	104	16/64	5% H ₂ O	TAKE L.P. H ₂ O SAMPLE														
16:30	348	281	105	16/64	TRACE SAND															
17:00	349	295	105	16/64	TRACE SAND															
17:30	314	280	104	16/64	0															
17:30		CHANGE CHOKE 14/64 VAR.																		

0066

CLIENT <u>DELHI PETROLEUM</u>						 TELEPHONE (08) 354 0486 TELEX AAB7183 138 RICHMOND ROAD MARLBOROUGH SA 5033 POSTAL ADDRESS PO BOX 354 CORANDILLA 5033										DATE <u>10.2.86</u> PAGE No <u>2</u>				
WELL <u>SPENCER #3</u>						OPERATOR <u>M. CLEGGETT</u>														
DATE TIME	WELLHEAD					H.P. SEPARATOR					L.P. SEPARATOR					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBL/D	G.O.R. SCF/BBL	REMARKS	
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. =					L.P. METER RUN I.D. =									
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D					
10.2.86						CLEAN UP FLOW (CONT.)														
18:00	347	325	105	14/64	0															
18:10	TRIM FLOW THRU SEPARATOR - INSUFFICIENT GAS TO OPERATE CONTROLS - BYPASS FLOW TO TANKS.																			
19:00	365	331	104	14/64	0															
21:00	371	338	104	14/64	0															
21:00	CHANGE CHOKE TO 14/64 FIXED.																			
23:00	364	337	106	14/64	0															
11.2.86																				
01:00	359	336	106	14/64	0															
03:00	355	334	106	14/64	0	TAKE L.P. OIL SAMPLE														
05:00	341	334	108	14/64	0															
07:00	343	335	106	14/64	0															
07:00	S.I.W. SWAP FLOW OVER TO CASING																			
07:15	525	518		SHUT IN PRESSURES.																
07:15		RE-OPEN WELL..		FLOWING	CASING THRU 14/64 FIXED CHOKE.															
08:00	342	342	100	14/64	0															
09:00	333	345	102	14/64	0															
11:00	329	346	104	14/64	0															
13:00	330	347	108	14/64	0															

0067

CLIENT <u>DELHI PETROLEUM</u> WELL <u>SPENCER #3 BIRKHEAD</u>						 EXPERTEST LTD WIRELINE & WELL TESTING SERVICE 136 RICHMOND ROAD MARLBOROUGH SA 9022 POSTAL ADDRESS: PO BOX 354 CONNARDILLA 9023										DATE <u>11.2.86</u> PAGE No <u>3</u> OPERATOR <u>M. CLEGGETT</u>			
DATE TIME	WELLHEAD					H.P. SEPARATOR					L.P. SEPARATOR					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBL/D	G.O.R. SCF/BBL	REMARKS
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. =					L.P. METER RUN I.D. =								
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D				
15:00	328	349	115	14/64	0	TAKE	L.P. OIL	SAMPLE											
19:00	320	345	108	14/64	0														
23:00	314	351	108	14/64															
12.2.86																			
03:00	308	352	108	14/64	0	TAKE	L.P. OIL	SAMPLE											
07:00	302	354	106	14/64	0														
08:15		S.I.W	CHANGE FLOW TO TUBING																
08:30	450	499		SHUT IN PRESSURES															
08:30		OPEN WELL		14/64		FLOW	TUBING	THRU FIXED CHOKE											
11:00	356	269	118	14/64	1% H ₂ O														
13:00	360	306	123	14/64	1.5% H ₂ O														
15:00	347	328	124	14/64	0														
17:00	346	328	124	14/64	0														
19:00	343	326	124	14/64	.5%														
21:00	342	324	124	14/64	0														
23:00	341	322	122	14/64	0														
13.2.86																			
01:00	341	323	120	14/64	1.0%														

0068

CLIENT <u>DELHI PETROLEUM</u>						 TELEPHONE (08) 354 0486 TELEX AAB7183 138 RICHMOND ROAD MARLETON SA 5033 POSTAL ADDRESS PO BOX 354 COMBUNDILLA 5033										DATE <u>13.2.86</u> PAGE No <u>4</u>			
WELL <u>SPENCER #3 BIRKHEAD</u>																OPERATOR <u>B. TICKLE</u>			
DATE TIME	WELLHEAD					H.P. SEPARATOR N/A					L.P. SEPARATOR N/A					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBL/D	G.O.R. SCF/BBL	REMARKS
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. =					L.P. METER RUN I.D. =								
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D				
03:00	340	323	120	14/64	.5%	H ₂ O													
05:00	339	324	120	"	0														
07:00	338	316	122	"	.5%														
09:00	338	321	120	"	.5%												783		
11:00	336	320	124	"	.5%	H ₂ O	.5%	EMULSION									752		
13:00	339	320	126	"	0			12:12	R.I.H.								839		
14:00	337	322	127	"	.5%	H ₂ O	START TEST										351		
16:00	336	317	127	"	1%	H ₂ O	.2%	EMULSION									747		
18:00	337	321	126	"	.5%	H ₂ O	.5%	EMULSION									803		
20:00	334	320	124	"	.5%	H ₂ O	.5%	EMULSION									773		
22:00	334	320	122	"	.5%	H ₂ O	.5%	EMULSION									803		
24:00	335	316	126	"	.5%	H ₂ O	.5%	EMULSION									804		
14.2.86																			
02:00	335	318	124	"	.5%	H ₂ O											773		
04:00	336	317	126	"	.5%	H ₂ O	.5%	EMULSION									783		
06:00	335	316	124	"	.5%	H ₂ O	.5%	EMULSION									814		
08:00	333	317	126	"	0												785		
10:00	329	317	127	"	.5%												783		
12:00	333	315	127	"	0												785		

0069

CLIENT <u>DELHI PETROLEUM</u> WELL <u>SPENCER #3 BIRKHEAD</u>						 EXPERTEST PTY LTD WIRELINE & WELL TESTING SERVICE 138 RICHMOND ROAD MARLBOROUGH SA 5033 TELEPHONE (08) 354 0488 TELEX AAB7183 POSTAL ADDRESS: PO BOX 354 CONNAROLLA 5033										DATE <u>14.2.86</u> PAGE No <u>5</u> OPERATOR <u>B. TICKLE</u>			
DATE TIME	WELLHEAD					H.P. SEPARATOR					L.P. SEPARATOR					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBL/D	G.O.R. SCF/BBL	REMARKS
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. =					L.P. METER RUN I.D. =								
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D				
14:01	334	314						S.I.W.											
14:02	441	431																	
14:03	450	442																	
14:04	452	447																	
14:05	454	449																	
14:06	457	453																	
14:11	466	458																	
14:16	480	469																	
14:21	482	474																	
14:26	487	478																	
14:31	490	482																	
14:45	498	493																	
15:01	502	499																	
15:16	510	507																	
15:31	514	512																	
15:46	519	517																	
16:00	522	521																	
17:00	539	538																	
18:00	550	550																	

0070



CLIENT DELHI PETROLEUM						DATE 14.2.86 PAGE No 6										WELL SPENCER #3 BIRKHEAD			OPERATOR B. TICKLE		
DATE TIME	WELLHEAD					H.P. SEPARATOR					L.P. SEPARATOR					TOTAL GAS RATE MMSCF/D	TOTAL LIQUID RATE BBL/D	G.O.R. SCF/BBL	REMARKS		
	CASING PSI	TUBING PSI	TEMP °F	CHOKE SIZE INS	B.S.W. %	H.P. METER RUN I.D. =					L.P. METER RUN I.D. =										
						PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D	PI PSI	HW INS. H ₂ O	TEMP °F	ORIFICE SIZE INS	FLOW RATE MMSCF/D						
19:00	556	556																			
20:17	559	561																			
22:00	564	565																			
24:00	572	572																			
15.2.86																					
02:00	579	577																			
06:00	590	589																			
10:00	596	594																			
14:00	600	601																			
18:00	604	605																			
22:00	610	609																			
16.2.86																					
02:00	613	612																			
06:00	615	616																			
10:00	620	619																			
14:00	623	623																			
15:05	621	624				R. DOWNHOLE TO BEGIN					STAT. GRAD. (S.R.O.)										
17:31	624	622				ARRIVE LUB. END TEST.															

0071

CLIENT .. DELHI PETROLEUM		 138 RICHMOND ROAD MARLESTON SA 5033 TELEPHONE (08) 354 0488 TELEFAX 354 7183 POSTAL ADDRESS PO BOX 354 COMANDILLA 5033						WELL .. SPENCER #3.. (BIRKHEAD) DATE .. 10.2.86 PAGE No .. 1 OPERATOR .. M. CLEGGETT							
TANK:— CAPACITY .. 377. BELS. SCALE .. 20.345 BELS/															

DATE TIME	ELAPSED TIME HOURS	OIL/CONDENSATE PRODUCTION						WATER PRODUCTION					REMARKS	
		METER READG	TANK DIP INCHES	TANK PROD. BELS	FLOWRATE BELS/D	CUM. PROD. BELS	OIL CONDENSATE GRAVITY *AP160F*	METER READG	TANK DIP INCHES	TANK PROD. BELS	FLOWRATE BELS/D	CUM. PROD. BELS		SALINITY PPM
10.2.86														
15:00		OPEN WELL 16/64. BYPASS FLOW TO TANKS. START CLEANUP FLOW												
15:00	0		0.25		TARE DIPS. TK. #48			5.0						
15:30	0.5		12.5	21.19	1017.12	21.19		5.0	-	-	-			
16:00	1		17.25	8.05	386.46	29.24	49.7	8.5	5.93	284.76	5.93	44600		
16:30	1.5		25.25	15.26	732.24	44.50	47.8	9.5	1.70	81.36	7.63			
17:00	2		36	18.22	874.62	62.72	47.8	9.75	0.42	20.34	8.05			
17:30	2.5		45.25	15.68	752.58	78.40	47.8	10.0	0.42	20.34	8.47			
17:30			CHANGE CHOKE TO 14/64											
18:00	3		54.75	16.10	772.92	94.50	47.8	10.0	-	-	8.47			
19:00	4		70.75	27.12	650.88	121.62	49.7	10.0	-	-	8.47	TRIM FLOW TO SEPARATOR - OIL RATE		
21:00	6		104.0	56.36	676.31	177.98	50.1	10.75	1.27	15.26	9.74	LOW. SLIGHT CHOKE BLOCKAGE - OIL RATE LOW		
21:00			CHANGE CHOKE TO 14/64 FIXED.											
23:00	8		140.5	61.87	742.41	239.85	49.7	10.75	-	-	9.74			
11.2.86														
01:00	10		179.5	66.11	793.26	305.96	49.9	11.0	0.42	5.04	10.16			
03:00	12		216.0	61.87	742.41	367.83	49.7	11.5	0.84	10.06	11.00			
03:00			1.75	CHANGE TO TK. #11				5.25				TARE DIPS		
05:00	14		39.0	63.14	757.67	430.97	49.9	5.25	-	-	11.00			
07:00	16		78.0	66.11	793.26	497.08	48.8	6.5	2.12	25.43	13.12			

0072

CLIENT ... DELHI PETROLEUM ...		 TELEPHONE (08) 354 0488 TELEX AAB7183 138 RICHMOND ROAD MARLETON SA 5033 POSTAL ADDRESS: PO BOX 354 COWANULLA 5023								WELL ... SPENCER #3 (BIRKHEAD) ... DATE ... 11.2.86 ... PAGE No ... 2 ... OPERATOR ... M. CLEGGITT ...					
TANK:— CAPACITY ... 377 BBLs ... SCALE ... 20.345 BBLs/INCH ...															

DATE TIME	ELAPSED TIME HOURS	OIL/CONDENSATE PRODUCTION						WATER PRODUCTION						REMARKS	
		METER READG	TANK DIP INCHES	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM. PROD. BBLs	OIL CONDENSATE GRAVITY "AP160F"	METER READG	TANK DIP INCHES	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM. PROD. BBLs	SALINITY PPM		
11.2.86															
07:00	16		CHANGE FLOW TO CASING. TOTAL OIL PRODUCED FROM TUBING: 497.08 BBLs												
			TOTAL H ² O PRODUCED FROM TUBING 13.12 BBLs												
07:15			RE-OPEN WELL												
08:00	17		94	27.12	867.84	524.20	49.7		6.5	-	-	13.12			
09:00	18		114.25	34.32	823.77	558.52	49.7		6.5	-	-	13.12			
11:00	20		155.5	69.92	839.03	628.44	49.2		7.5	1.70	20.34	14.82			
13:00	22		198.75	73.31	879.71	701.75	49.7		7.5	-	-	14.82			
13:00			5.5	CHANGE TO TK. #57					0.5		TARE DIPS				
15:00	24		43.5	64.41	772.92	766.16	49.9		1.0	-	10.08	15.66			
19:00	28		120.0	129.67	778.01	895.03	49.5		1.5	0.84	10.08	16.50			
23:00	32		198.5	133.06	798.35	1028.89	49.5		1.5	-	-	16.50			
23:00			0.5	CHANGE TO TK# 42					10		TARE DIPS				
12.2.86															
03:00	36		80	134.75	808.52	1163.64	49.8		10	-	-	16.50			
07:00	40		153.25	124.16	744.95	1287.80	49.6		10	-	-	16.50			
08:15	41.25		176.25	38.99	748.51	1326.79	50.1		10.75	1.27	24.41	17.77			
08:15			S.I.W. CHANGE FLOW TO TUBING. TOTAL OIL PRODUCED FROM CASING: 829.71 BBLs												
08:30			RE-OPEN WELL 14/64 FIXED CHOKE. TOTAL H ² O PRODUCED FROM CASING: 4.65 BBLs												
10:00	43		201.25						10.75						

0073

CLIENT DELHI PETROLEUM TANK:-- CAPACITY 377 BLS SCALE ... 20.345 BLS / INCH			 138 RICHMOND ROAD MARLETON SA 5033 TELEPHONE (08) 354 0488 TELEX AAB7183 POSTAL ADDRESS: PO BOX 354 COMANDILLA 5033						WELL .. SPENCER #3 DATE .. 12.2.86 PAGE No .. 3 OPERATOR .. M. CLEGGETT					
DATE TIME	ELAPSED TIME HOURS	OIL/CONDENSATE PRODUCTION						WATER PRODUCTION						REMARKS
		METER READG	TANK DIP INCHES	TANK PROD. BLS	FLOWRATE BLS/D	CUM. PROD. BLS	OIL CONDENSATE GRAVITY "AP160F"	METER READG	TANK DIP INCHES	TANK PROD. BLS	FLOWRATE BLS/D	CUM. PROD. BLS	SALINITY PPM	
12.2.86														
10:00			2.25	CHANGE	TO TK#48				3.75			TARE DIPS		
11:00	44		16.25	66.11	634.61	1392.9	50.0		8.0	7.20	69.16	24.97	0	
13:00	46		49.75	56.78	681.39	1449.68	49.0		11.25	5.51	66.11	30.48	0	
15:00	48		84.75	59.33	711.90	1509.01	51.0		11.75	.85	10.17	31.33	0	
17:00	50		120.25	60.17	722.07	1569.18	50.2		11.75	-	-	"	0	
19:00	52		166.25	77.97	935.64	1647.15	49.1		11.75	-	-	"	0	
21:00	54		202.5	61.44	737.33	1708.59	49.4		11.75	-	-	"	0	
21:00		TARE	2	TK #48	→	TK#11		TARE	6					
23:00	56		47	76.28	915.30	1784.87	48.9		6	-	-	"	0	
13.2.86														
01:00	58		83	61.02	732.24	1845.89	49.5		6	-	-	"	0	
03:00	60		122	66.11	793.26	1912.00	49.0		6	-	-	"	0	
05:00	62		162	67.80	813.60	1979.80	49.0		6	-	-	"	0	
07:00	64		205	72.89	874.62	2052.69	48.1		6	-	-	"	0	
07:30			213.5	14.41					6	-	-	"	0	
07:30		TARE	138.75	TK #11	→	TK #42		TARE	2.25					
09:00	66		168.50	50.43	778.04	2117.53	50.0		2.50	.43	5.16	31.76	0	
11:00	68		205	61.87	742.41	2179.40	50.0		3.0	.85	10.17	32.67	0	
12:10			227.5	38.14	TK# 40	→	TK# 57		3	-	-	"	0	

CLIENT DELHI PETROLEUM

TANK:— CAPACITY 377 BBLs

SCALE 1.695 BBLs/INCH



WELL SPENCER #3 BIRKHEAD

DATE 13.2.86 PAGE No 4

OPERATOR B. TICKLE

DATE TIME	ELAPSED TIME HOURS	OIL/CONDENSATE PRODUCTION						WATER PRODUCTION						REMARKS
		METER READG	TANK DIP INCHES	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM. PROD. BBLs	OIL CONDENSATE GRAVITY *AP160F*	METER READG	TANK DIP INCHES	TANK PROD. BBLs	FLOWRATE BBLs/D	CUM. PROD. BBLs	SALINITY PPM	
12:10		TARE	2.25	TK #42	→	TK#57		TARE	1.75					
13:00	70		29.5	31.36	834.00	2248.90	49.5		2.0	.42	5.09	33.09	0	12:12 R.I.H.
14:00	71		38.0	14.41	345.78	2263.31	49.5		2.25	.42	5.09	33.51	0	WITH GAUGES
16:00	73		74.5	61.87	742.41	2325.18	49.5		2.5	.42	5.09	33.93	0	
18:00	75		114	66.95	803.43	2392.13	50.1		2.5	-	-	"	0	
20:00	77		152	64.41	772.92	2456.54	50.1		2.5	-	-	"	0	
22:00	79		191.5	66.95	803.43	2523.49	50.0		2.5	-	-	"	0	
23:30			222.5	52.55					2.5	-				
23:30		TARE	2	TK#57	→	TK #48		TARE	4					
24:00	81		10.5	14.41	803.52	2590.45	49.1		4	-	-	"	0	
14.2.86														
02:00	83		48.5	64.41	772.92	2654.86	49.5		4	-	-	"	0	
04:00	85		87	65.26	783.09	2720.12	49.5		4	-	-	"	0	
06:00	87		127	67.80	813.60	2787.92	49.0		4	-	-	"	0	
08:00	89		165.25	64.83	778.01	2852.75			4.25	.42	5.09	34.35	0	
10:00	90		203.75	65.26	783.09	2918.01			4.25	-	-	"	0	
10:00		TARE	3.25	TK #48	→	TK #42		TARE	3.75					
12:00	92		41.5	64.83	778.01	2982.84			4	.42	5.09	34.77	0	
14:01	94		79	63.56	762.75	3046.40			4	-	-	34.77	0	S.I.W.

0075

SEQUENCE OF OPERATIONS

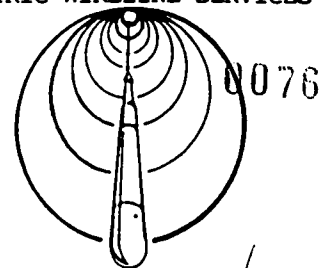
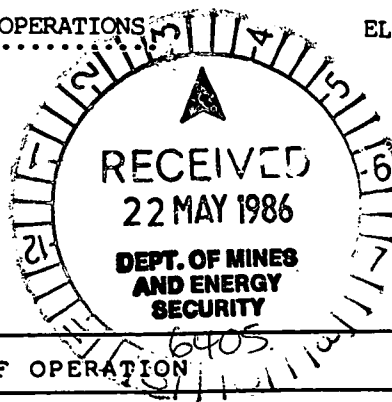
Expertest

ELECTRIC WIRELINE SERVICES

CUSTOMER:- DELHI PETROLEUM..

WELL :- SPENCER #3.....

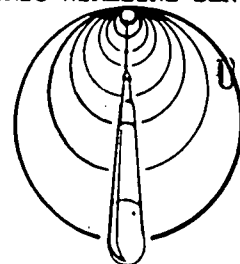
DATE :- 13th Feb 1986.....



TIME	DISCRIPTION OF OPERATION
13/2/86	
09.45	ARRIVE ON LOCATION...PREPARE EQUIPMENT
12.03	CONNECT AMERADA TO TOOL STRING (6'11" INCHES BELOW BPG.)
12.08	STAB LUBRICATOR INTO BOP'S
12.12	PRESSURE UP LUBRICATOR AND HOLD TEST
12.13	RUN IN HOLD TO 30ft KB AND MONITOR WHP.
12.26	START RECORDING WHP. (VAETRIX = 325 psig)
	NOTE :- VAETRIX TO BRADEN HEAD ZERO FEET (CHOKE MANIFOLD)
13.09	RIH
13.42	CORRELATE CCL WITH WIRELINE RE-ENTRY GUIDE
13.47	ON DEPTH @ 5320ft KB (BHP= 2031 & STABLE)
14/2/86	
07.00	CONTINUE TO MONITOR FLOWING BHP.
10.32	POWER FAILURE NO DATA RECORDED FROM 10.32 - 11.39
11.39	RESTART PROGRAM
14.01	SHUT IN WELL AT CHOKE MANIFOLD AND MONITOR BHP BUILD UP FOR 48 hrs
19.31	COMPUTER ACCIDENTLY SHUT DOWN NO DATA RECORDED FROM 19.31 - 19.54
19.54	RESTART PROGRAM
15/2/86	
03.11	POWER FAILURE (FUSE IN W/L TRUCK BLOW) NO DATA RECORDED FROM 03.11 - 04.53
04.53	RESTART PROGRAM
	NOTE:- DURING THE PRINTING OF THE MORNING REPORT, WE ENCOUNTEED ERRONIOUS PRESSURE
	READINGS WERE BEING RECORDED WHILE PRINTING MORNING REPORT, THIS
	WAS A SOFTWARE PROBLEM WHICH HAS BEEN RECTIFIED.
16/2/86	

SEQUENCE OF OPERATIONS
.....**Expertest**

ELECTRIC WIRELINE SERVICES



0077

CUSTOMER:- DELHI PETROLEUM..

WELL :- SPENCER #3.....

DATE :- 13th - 16th Feb. 1986

TIME	DISCRIPTION OF OPERATION
16/2/86	
00.01	CONTINUE TO MONITOR BHP BUILD UP
15.02	RIH
15.07	1st GRADIENT STOP @ 5400ft (DEEPEST READING)
15.17	POOH
15.19	2nd GRADIENT STOP @ 5367ft (MID POINT PERF)
15.29	POOH
15.32	3rd GRADIENT STOP @ 5320ft (HANG DEEPTH)
15.42	POOH
15.45	4th GRADIENT STOP @ 5000ft
15.55	POOH
16.01	5th GRAIENT STOP @ 4500ft
16.12	POOH
16.15	6th GRADIENT STOP @ 4000ft
16.25	POOH
16.32	7th GRADIENT STOP @ 3000ft
16.42	POOH
16.47	8th GRADIENT STOP @ 2000ft
16.57	POOH
17.06	9th GRADIENT STOP @ 1000ft
17.16	POOH
17.20	10th GRADIENT STOP @ 30 ft KB
17.35	POOH
17.38	ARRIVE IN LUBRICATOR SHUT IN WELL & BLEED DOWN LUBRICATOR
	END OF SURVEY.

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 13/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS : D/TIME = 15.00hrs.10/2/86

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 30 FT-

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
13/02/86	12:26:51	69.448	324.63	.	131.35		R.I.H. TO 30'KB
13/02/86	12:31:02	69.517	324.63	.	131.39	325	VAETRIX GAUGE
13/02/86	12:31:09	69.519	324.72	.	131.39		
13/02/86	12:31:15	69.521	324.71	.	131.39		DELTA T FROM 15.00hrs
13/02/86	12:31:23	69.523	324.65	.	131.39		10/2/86 open well
13/02/86	12:32:35	69.543	324.62	.	131.39		for flow clean up
13/02/86	12:33:35	69.560	324.62	.	131.37		
13/02/86	12:34:35	69.576	324.64	.	131.37		
13/02/86	12:35:35	69.593	324.61	.	131.37		
13/02/86	12:36:35	69.610	324.57	.	131.37	324	
13/02/86	12:37:35	69.627	324.57	.	131.37		
13/02/86	12:38:35	69.643	324.57	.	131.39		
13/02/86	12:39:35	69.660	324.61	.	131.39		
13/02/86	12:40:35	69.677	324.56	.	131.39		
13/02/86	12:41:35	69.693	324.62	.	131.39	321	
13/02/86	12:42:35	69.710	324.59	.	131.39		
13/02/86	12:43:35	69.726	324.59	.	131.40		
13/02/86	12:44:35	69.743	324.56	.	131.40		
13/02/86	12:45:35	69.760	324.56	.	131.40		
13/02/86	12:46:35	69.776	324.56	.	131.40	321	
13/02/86	12:47:35	69.793	324.54	.	131.40		
13/02/86	12:48:35	69.810	324.54	.	131.42		
13/02/86	12:49:35	69.826	324.53	.	131.42		
13/02/86	12:50:35	69.843	324.51	.	131.42		
13/02/86	12:51:35	69.860	324.53	.	131.42	321	
13/02/86	12:52:35	69.876	324.51	.	131.42		
13/02/86	12:53:35	69.893	324.51	.	131.44		
13/02/86	12:54:35	69.910	324.50	.	131.44		
13/02/86	12:55:35	69.926	324.47	.	131.44		
13/02/86	12:56:35	69.943	324.50	.	131.44	320	
13/02/86	12:57:35	69.960	324.51	.	131.44		
13/02/86	12:58:35	69.977	324.51	.	131.45		
13/02/86	12:59:35	69.993	324.49	.	131.45		
13/02/86	13:00:35	70.010	324.49	.	131.45		
13/02/86	13:01:35	70.026	324.45	.	131.45	321	
13/02/86	13:02:35	70.043	324.47	.	131.45		
13/02/86	13:03:35	70.060	324.47	.	131.45		
13/02/86	13:04:35	70.076	324.48	.	131.45		
13/02/86	13:05:35	70.093	324.42	.	131.45		
13/02/86	13:06:35	70.110	324.48	.	131.45	320	
13/02/86	13:07:35	70.126	324.48	.	131.45		
13/02/86	13:08:35	70.143	324.48	.	131.45		
13/02/85	13:47:07	70.785	1988.28	-373.62	220.79		R.I.H.
13/02/85	13:47:14	70.787	2031.69	-330.21	220.79		ON DEPTH @ 5320'KB
13/02/85	13:47:21	70.789	2031.69	-330.21	220.79		
13/02/85	13:47:58	70.800	2031.57	-330.33	220.79		DELTA P FROM ORIGINAL
13/02/85	13:48:04	70.801	2031.33	-330.57	220.79		STATIC PRESSURE OF
13/02/85	13:48:30	70.808	2031.33	-330.57	220.80		2361.9 PSIG
13/02/85	13:48:40	70.811	2031.57	-330.33	220.80		
13/02/85	13:48:46	70.813	2031.57	-330.33	220.80		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 13/02/85
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 1000FT

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
13/02/85	13:48:53	70.815	2031.81	-330.09	220.80		
13/02/85	13:49:02	70.817	2031.69	-330.21	220.80		
13/02/85	13:49:18	70.822	2031.69	-330.21	220.82		
13/02/85	13:49:25	70.824	2031.93	-329.97	220.82		
13/02/85	13:49:34	70.826	2031.46	-330.44	220.82		
13/02/85	13:49:40	70.828	2031.46	-330.44	220.82		
13/02/85	13:49:47	70.830	2031.46	-330.44	220.82		
13/02/85	13:50:05	70.835	2031.46	-330.44	220.82		
13/02/85	13:50:12	70.837	2031.81	-330.09	220.82		
13/02/85	13:50:19	70.839	2031.69	-330.21	220.82		
13/02/85	13:50:28	70.841	2031.58	-330.32	220.82		
13/02/85	13:50:34	70.843	2031.69	-330.21	220.82		
13/02/85	13:50:50	70.847	2031.69	-330.21	220.83		
13/02/85	13:50:59	70.850	2031.58	-330.32	220.83		
13/02/85	13:51:06	70.852	2031.46	-330.44	220.83		
13/02/85	13:51:12	70.854	2031.43	-330.47	220.83		
13/02/85	13:56:33	70.943	2031.45	-330.45	220.83		
13/02/85	14:01:13	71.020	2031.45	-330.45	220.87		
13/02/85	14:01:56	71.037	2031.40	-330.50	220.87		
13/02/85	14:03:15	71.054	2031.35	-330.55	220.87		
13/02/85	14:04:15	71.071	2031.34	-330.56	220.87		
13/02/85	14:05:15	71.088	2031.31	-330.59	220.97		
13/02/85	14:10:40	71.178	2031.31	-330.59			
13/02/85	14:16:48	71.280	2030.81	-331.09	220.86		
13/02/85	14:16:55	71.282	2030.75	-331.15	220.86		
13/02/85	14:22:04	71.368	2030.67	-331.23	220.86		
13/02/85	14:27:04	71.451	2030.65	-331.25	220.86		
13/02/85	14:32:04	71.535	2030.65	-331.25	220.86		
13/02/85	14:37:04	71.618	2030.70	-331.20	220.86		
13/02/85	14:42:04	71.701	2030.69	-331.21	220.86		
13/02/85	14:47:04	71.785	2030.77	-331.13	220.86		
13/02/85	14:52:04	71.868	2030.77	-331.13	220.86		
13/02/85	14:57:04	71.951	2030.77	-331.13	220.85		
13/02/85	15:02:04	72.034	2030.79	-331.11	220.85		
13/02/85	15:07:04	72.118	2030.77	-331.13	220.85		
13/02/85	15:12:04	72.201	2030.82	-331.08	220.85		
13/02/85	15:17:04	72.284	2030.84	-331.06	220.85		
13/02/85	15:22:04	72.368	2030.84	-331.06	220.84		
13/02/85	15:27:04	72.451	2030.84	-331.06	220.84		
13/02/85	15:32:04	72.535	2030.82	-331.08	220.84		
13/02/85	15:37:04	72.618	2030.80	-331.10	220.84		
13/02/85	15:42:04	72.701	2030.76	-331.14	220.84		
13/02/85	15:47:04	72.785	2030.76	-331.14	220.84		
13/02/85	15:52:04	72.868	2030.77	-331.13	220.84		
13/02/85	15:57:04	72.951	2030.75	-331.15	220.84		
13/02/85	16:02:04	73.034	2030.75	-331.15	220.84		
13/02/85	16:07:04	73.118	2029.94	-331.96	220.84		TAKE FLUID SAMPLE
13/02/85	16:12:04	73.201	2029.94	-331.96	220.84		
13/02/85	16:17:04	73.285	2030.65	-331.25	220.84		
13/02/85	16:22:04	73.368	2030.64	-331.26	220.84		
13/02/85	16:27:04	73.451	2030.63	-331.27	220.84		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 13/02/85
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 1000FT

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
13/02/85	16:32:04	73.535	2030.61	-331.29	220.84		
13/02/85	16:37:04	73.618	2030.61	-331.29	220.84		
13/02/85	16:42:04	73.701	2030.57	-331.33	220.84		
13/02/85	16:47:04	73.784	2030.59	-331.31	220.84		
13/02/85	16:52:04	73.868	2030.55	-331.35	220.84		
13/02/85	16:57:04	73.951	2030.56	-331.34	220.84		
13/02/85	17:02:04	74.035	2030.56	-331.34	220.84		
13/02/85	17:07:04	74.118	2030.54	-331.36	220.84		
13/02/85	17:12:04	74.201	2030.53	-331.37	220.84		
13/02/85	17:17:04	74.285	2030.80	-331.10	220.84		
13/02/85	17:22:04	74.368	2030.79	-331.11	220.84		
13/02/85	17:27:04	74.451	2030.79	-331.11	220.84		
13/02/85	17:32:04	74.534	2030.76	-331.14	220.84		
13/02/85	17:37:04	74.618	2030.79	-331.11	220.84		
13/02/85	17:42:04	74.701	2030.78	-331.12	220.84		
13/02/85	17:47:04	74.785	2030.79	-331.11	220.84		
13/02/85	17:52:04	74.868	2030.79	-331.11	220.84		
13/02/85	17:57:04	74.951	2030.76	-331.14	220.84		
13/02/85	18:02:04	75.035	2030.76	-331.14	220.84		
13/02/85	18:07:04	75.118	2030.73	-331.17	220.84		
13/02/85	18:12:04	75.201	2030.74	-331.16	220.84		
13/02/85	18:17:04	75.285	2030.74	-331.16	220.83		
13/02/85	18:22:04	75.368	2030.73	-331.17	220.83		
13/02/85	18:27:04	75.451	2030.69	-331.21	220.83		
13/02/85	18:32:04	75.535	2030.72	-331.18	220.83		
13/02/85	18:37:04	75.618	2030.71	-331.19	220.83		
13/02/85	18:42:04	75.701	2030.71	-331.19	220.84		
13/02/85	18:47:04	75.785	2030.69	-331.21	220.84		
13/02/85	18:52:04	75.868	2030.67	-331.23	220.84		
13/02/85	18:57:04	75.951	2030.65	-331.25	220.84		
13/02/85	19:02:04	76.035	2030.64	-331.26	220.84		
13/02/85	19:07:04	76.118	2030.64	-331.26	220.84		
13/02/85	19:12:04	76.201	2030.62	-331.28	220.84		
13/02/85	19:17:04	76.285	2030.62	-331.28	220.84		
13/02/85	19:22:04	76.368	2030.64	-331.26	220.84		
13/02/85	19:27:04	76.451	2030.59	-331.31	220.84		
13/02/85	19:32:04	76.534	2030.59	-331.31	220.83		
13/02/85	19:37:04	76.618	2030.29	-331.61	220.83		
13/02/85	19:42:04	76.701	2030.27	-331.63	220.83		
13/02/85	19:47:04	76.785	2030.25	-331.65	220.83		
13/02/85	19:52:04	76.868	2030.22	-331.68	220.83		
13/02/85	19:57:04	76.951	2030.22	-331.68	220.84		
13/02/85	20:02:04	77.034	2030.42	-331.48	220.84		
13/02/85	20:07:04	77.118	2030.45	-331.45	220.84		
13/02/85	20:12:04	77.201	2030.45	-331.45	220.84		
13/02/85	20:17:04	77.285	2030.42	-331.48	220.84		
13/02/85	20:22:04	77.368	2030.42	-331.48	220.84		
13/02/85	20:27:04	77.451	2030.45	-331.45	220.84		
13/02/85	20:32:04	77.535	2030.40	-331.50	220.84		
13/02/85	20:37:04	77.618	2030.40	-331.50	220.84		
13/02/85	20:42:04	77.701	2030.39	-331.51	220.84		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION: BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 13/02/85
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 1000FT

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
13/02/85	20:47:04	77.785	2030.39	-331.51	220.84		
13/02/85	20:52:04	77.868	2030.38	-331.52	220.84		
13/02/85	20:57:04	77.951	2030.38	-331.52	220.84		
13/02/85	21:02:04	78.034	2030.34	-331.56	220.84		
13/02/85	21:07:04	78.118	2030.32	-331.58	220.84		
13/02/85	21:12:04	78.201	2030.32	-331.58	220.84		
13/02/85	21:17:04	78.284	2030.32	-331.58	220.84		
13/02/85	21:22:04	78.368	2030.30	-331.60	220.84		
13/02/85	21:27:04	78.451	2030.29	-331.61	220.84		
13/02/85	21:32:04	78.535	2030.31	-331.59	220.84		
13/02/85	21:37:04	78.618	2030.31	-331.59	220.85		
13/02/85	21:42:04	78.701	2030.26	-331.64	220.85		
13/02/85	21:47:04	78.785	2030.28	-331.62	220.85		
13/02/85	21:52:04	78.868	2030.27	-331.63	220.85		
13/02/85	21:57:04	78.951	2030.24	-331.66	220.85		
13/02/85	22:02:04	79.035	2030.24	-331.66	220.84		
13/02/85	22:07:04	79.118	2030.22	-331.68	220.84		
13/02/85	22:12:04	79.201	2030.20	-331.70	220.84		
13/02/85	22:17:04	79.284	2030.17	-331.73	220.84		
13/02/85	22:22:04	79.368	2030.16	-331.74	220.84		
13/02/85	22:27:04	79.451	2030.16	-331.74	220.85		
13/02/85	22:32:04	79.534	2030.16	-331.74	220.85		
13/02/85	22:37:04	79.618	2030.15	-331.75	220.85		
13/02/85	22:42:04	79.701	2030.12	-331.78	220.85		
13/02/85	22:47:04	79.784	2030.11	-331.79	220.85		
13/02/85	22:52:04	79.868	2030.11	-331.79	220.85		
13/02/85	22:57:04	79.951	2030.09	-331.81	220.85		
13/02/85	23:02:04	80.034	2030.06	-331.84	220.85		
13/02/85	23:07:04	80.118	2030.03	-331.87	220.85		
13/02/85	23:12:04	80.201	2030.01	-331.89	220.85		
13/02/85	23:17:04	80.285	2030.01	-331.89	220.85		
13/02/85	23:22:04	80.368	2030.02	-331.88	220.85		
13/02/85	23:27:04	80.451	2029.99	-331.91	220.85		
13/02/85	23:32:04	80.534	2029.98	-331.92	220.85		
13/02/85	23:37:04	80.618	2029.97	-331.93	220.85		
13/02/85	23:42:04	80.701	2029.97	-331.93	220.85		
13/02/85	23:47:04	80.784	2029.95	-331.95	220.85		
13/02/85	23:52:04	80.868	2029.92	-331.98	220.85		
13/02/85	23:57:04	80.951	2029.92	-331.98	220.85		
14/02/85	00:02:04	81.034	2029.90	-332.00	220.85		
14/02/85	00:07:16	81.121	2029.90	-332.00	220.85		
14/02/85	00:12:16	81.205	2029.87	-332.03	220.85		
14/02/85	00:17:17	81.288	2029.85	-332.05	220.85		
14/02/85	00:22:17	81.371	2029.86	-332.04	220.85		
14/02/85	00:27:17	81.455	2029.83	-332.07	220.85		
14/02/85	00:32:16	81.538	2029.83	-332.07	220.85		
14/02/85	00:37:17	81.621	2029.85	-332.05	220.85		
14/02/85	00:42:17	81.705	2029.77	-332.13	220.85		
14/02/85	00:47:16	81.788	2029.77	-332.13	220.85		
14/02/85	00:52:17	81.871	2029.75	-332.15	220.85		
14/02/85	00:57:17	81.955	2029.75	-332.15	220.85		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION: BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 14/02/85
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
14/02/85	01:02:16	82.038	2029.73	-332.17	220.85		
14/02/85	01:07:16	82.121	2029.74	-332.16	220.85		
14/02/85	01:12:16	82.205	2029.74	-332.16	220.85		
14/02/85	01:17:17	82.288	2029.68	-332.22	220.85		
14/02/85	01:22:16	82.371	2029.68	-332.22	220.85		
14/02/85	01:27:16	82.455	2029.67	-332.23	220.85		
14/02/85	01:32:17	82.538	2029.67	-332.23	220.85		
14/02/85	01:37:16	82.621	2029.67	-332.23	220.85		
14/02/85	01:42:16	82.705	2029.66	-332.24	220.85		
14/02/85	01:42:47	82.791	2029.66	-332.24	220.85		
14/02/85	01:47:29	82.887	2029.93	-331.97	220.85		
14/02/85	02:02:17	83.038	2029.61	-332.29	220.85		
14/02/85	02:07:17	83.121	2029.59	-332.31	220.85		
14/02/85	02:12:16	83.205	2029.59	-332.31	220.85		
14/02/85	02:17:17	83.288	2029.54	-332.36	220.85		
14/02/85	02:22:17	83.371	2029.55	-332.35	220.85		
14/02/85	02:27:17	83.455	2029.51	-332.39	220.85		
14/02/85	02:32:16	83.538	2029.51	-332.39	220.95		
14/02/85	02:37:16	83.621	2029.51	-332.39	220.84		
14/02/85	02:42:16	83.705	2029.44	-332.46	220.84		
14/02/85	02:47:16	83.788	2029.45	-332.45	220.84		
14/02/85	02:52:16	83.871	2029.47	-332.43	220.84		
14/02/85	02:57:16	83.955	2029.44	-332.46	220.84		
14/02/85	03:02:17	84.038	2029.44	-332.46	220.84		
14/02/85	03:07:16	84.121	2029.44	-332.46	220.84		
14/02/85	03:12:17	84.205	2029.42	-332.48	220.84		
14/02/85	03:17:16	84.288	2029.39	-332.51	220.84		
14/02/85	03:22:16	84.371	2029.42	-332.48	220.84		
14/02/85	03:27:16	84.455	2029.42	-332.48	220.94		
14/02/85	03:32:17	84.538	2029.39	-332.51	220.84		
14/02/85	03:37:17	84.621	2029.41	-332.49	220.84		
14/02/85	03:42:17	84.705	2029.36	-332.54	220.94		
14/02/85	03:47:16	84.788	2029.33	-332.57	220.84		
14/02/85	03:52:17	84.871	2029.33	-332.57	220.84		
14/02/86	04:34:38	85.368	2029.23	-332.67	220.84		
14/02/86	04:39:37	85.452	2029.24	-332.66	220.84		
14/02/86	04:56:42	85.943	2029.10	-332.80	220.21		
14/02/86	04:56:52	85.946	2029.09	-332.81	220.21		
14/02/86	04:57:02	85.948	2023.01	-338.89	220.21		
14/02/86	05:02:11	86.034	2029.06	-332.84	220.21		
14/02/86	05:07:11	86.118	2029.06	-332.84	220.84		
14/02/86	05:12:11	86.201	2029.17	-332.73	220.84		
14/02/86	05:17:11	86.284	2029.16	-332.74	220.84		
14/02/86	05:22:11	86.368	2029.16	-332.74	220.84		
14/02/86	05:27:12	86.451	2029.15	-332.75	220.84		
14/02/86	05:32:11	86.534	2029.15	-332.75	220.85		
14/02/86	05:37:11	86.618	2029.10	-332.80	220.85		
14/02/86	05:57:11	86.951	2029.11	-332.79	220.86		
14/02/86	06:02:12	87.034	2029.04	-332.86	220.86		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 14/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS :

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
14/02/86	06:07:11	87.118	2029.04	-332.86	220.86		
14/02/86	06:12:12	87.201	2028.99	-332.91	220.86		
14/02/86	06:17:11	87.284	2029.03	-332.87	220.86		
14/02/86	06:22:11	87.368	2029.03	-332.87	220.85		
14/02/86	06:27:11	87.451	2028.97	-332.93	220.85		
14/02/86	06:32:11	87.534	2028.97	-332.93	220.85		
14/02/86	06:37:11	87.618	2028.93	-332.97	220.85		
14/02/86	06:42:12	87.701	2028.91	-332.99	220.85		
14/02/86	06:47:12	87.784	2028.91	-332.99	220.85		
14/02/86	06:52:11	87.868	2028.89	-333.01	220.85		
14/02/86	06:57:11	87.951	2028.91	-332.99	220.85		
14/02/86	07:02:12	88.034	2028.88	-333.02	220.85		
14/02/86	07:07:11	88.118	2028.87	-333.03	220.85		
14/02/86	07:12:11	88.201	2028.87	-333.03	220.85		
14/02/86	07:17:12	88.284	2028.84	-333.06	220.85		
14/02/86	07:22:11	88.368	2028.85	-333.05	220.85		
14/02/86	07:27:12	88.451	2025.24	-336.66	220.85		
14/02/86	07:32:11	88.534	2028.80	-333.10	220.85		
14/02/86	07:37:11	88.618	2028.80	-333.10	220.86		
14/02/86	07:42:11	88.701	2028.82	-333.08	220.86		
14/02/86	07:47:11	88.784	2028.80	-333.10	220.86		
14/02/86	07:52:11	88.868	2028.78	-333.12	220.86		
14/02/86	07:57:11	88.951	2028.78	-333.12	220.86		
14/02/86	08:02:12	89.034	2028.78	-333.12	220.86		
14/02/86	08:07:11	89.118	2028.78	-333.12	220.86		
14/02/86	08:12:11	89.201	2028.75	-333.15	220.86		
14/02/86	08:17:11	89.284	2028.74	-333.16	220.86		
14/02/86	08:22:11	89.368	2028.75	-333.15	220.86		
14/02/86	08:27:11	89.451	2028.75	-333.15	220.86		
14/02/86	08:32:12	89.534	2028.73	-333.17	220.86		
14/02/86	08:37:11	89.618	2028.74	-333.16	220.86		
14/02/86	08:42:11	89.701	2028.72	-333.18	220.86		
14/02/86	08:47:11	89.784	2028.68	-333.22	220.86		
14/02/86	08:52:12	89.868	2028.68	-333.22	220.86		
14/02/86	08:57:12	89.951	2028.65	-333.25	220.86		
14/02/86	09:02:11	90.034	2028.67	-333.23	220.86		
14/02/86	09:07:11	90.118	2028.63	-333.27	220.86		
14/02/86	09:12:11	90.201	2028.59	-333.31	220.86		
14/02/86	09:17:12	90.284	2028.59	-333.31	220.86		
14/02/86	09:22:11	90.368	2028.58	-333.32	220.86		
14/02/86	09:27:11	90.451	2028.56	-333.34	220.86		
14/02/86	09:32:11	90.534	2028.54	-333.36	220.86		
14/02/86	09:37:11	90.618	2028.56	-333.34	220.86		
14/02/86	09:42:11	90.701	2028.56	-333.34	220.86		
14/02/86	09:47:11	90.784	2028.52	-333.38	220.86		
14/02/86	09:52:12	90.868	2028.50	-333.40	220.86		
14/02/86	09:57:11	90.951	2028.53	-333.37	220.86		
14/02/86	10:02:11	91.034	2028.45	-333.45	220.86		
14/02/86	10:07:11	91.118	2028.45	-333.45	220.87		
14/02/86	10:12:11	91.201	2028.46	-333.44	220.87		
14/02/86	10:17:11	91.284	2028.44	-333.46	220.87		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 14/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS :

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
14/02/86	10:22:11	91.368	2028.43	-333.47	220.87		
14/02/86	10:27:12	91.451	2028.44	-333.46	220.87		PWR. FAILURE 10:47
14/02/86	10:32:11	91.534	2028.44	-333.46	220.87		NO DATA RECORDED
14/02/86	11:38:00	92.633	2028.30	-333.60	220.87		PROG. RESTART
14/02/86	11:38:13	92.636	2028.28	-333.62	220.87		
14/02/86	11:38:28	92.641	2028.28	-333.62	220.87		
14/02/86	11:38:35	92.643	2028.47	-333.43	220.87		DELTA TIME FROM WHEN
14/02/86	11:38:43	92.645	2028.34	-333.56	220.87		ORIG. STATIC PRESS.
14/02/86	11:43:53	92.731	2028.27	-333.63	220.87		OF 2361.9 WAS TAKEN
14/02/86	11:48:53	92.814	2028.29	-333.61	220.87		15.00 HRS 10/2/86
14/02/86	11:53:53	92.897	2028.29	-333.61	220.87		
14/02/86	11:58:53	92.981	2028.23	-333.67	220.87		
14/02/86	12:03:53	93.064	2028.26	-333.64	220.87		
14/02/86	12:08:53	93.148	2028.20	-333.70	220.87		
14/02/86	12:13:53	93.231	2028.20	-333.70	220.87		
14/02/86	12:18:53	93.314	2028.20	-333.70	220.87		
14/02/86	12:23:53	93.398	2028.14	-333.76	220.87		
14/02/86	12:28:53	93.481	2028.15	-333.75	220.87		
14/02/86	12:33:53	93.564	2028.15	-333.75	220.87		
14/02/86	12:38:53	93.648	2028.12	-333.78	220.87		
14/02/86	12:43:53	93.731	2028.12	-333.78	220.87		
14/02/86	12:48:53	93.814	2028.13	-333.77	220.87		
14/02/86	12:53:53	93.898	2028.12	-333.78	220.87		
14/02/86	12:58:53	93.981	2028.08	-333.82	220.87		
14/02/86	13:03:53	94.064	2028.10	-333.80	220.87		
14/02/86	13:08:53	94.148	2028.10	-333.80	220.87		
14/02/86	13:13:53	94.231	2028.06	-333.84	220.87		
14/02/86	13:18:53	94.314	2028.04	-333.86	220.87		
14/02/86	13:23:53	94.398	2028.02	-333.88	220.87		
14/02/86	13:28:53	94.481	2028.01	-333.89	220.87		
14/02/86	13:33:53	94.564	2028.01	-333.89	220.87		
14/02/86	13:38:53	94.648	2028.00	-333.90	220.87		
14/02/86	13:43:53	94.731	2027.98	-333.92	220.87		
14/02/86	13:48:53	94.814	2027.99	-333.91	220.87		
14/02/86	13:53:53	94.898	2027.18	-334.72	220.87		
14/02/86	13:58:53	94.981	2027.18	-334.72	220.88		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 14/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS : D/TIME = 14.00hrs. 14/2/86

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
14/02/86	14:01:02	.000	2056.58	29.40	220.88		SHUT IN WELL
14/02/86	14:01:12	.003	2089.13	61.95	220.88		DELTA P FROM
14/02/86	14:01:22	.006	2106.83	79.65	220.88		LAST FLOWING PRESS
14/02/86	14:01:32	.008	2117.74	90.56	220.88		
14/02/86	14:01:50	.013	2117.74	90.56	220.94		
14/02/86	14:01:57	.015	2132.55	105.37	220.94	431	CSG. 441
14/02/86	14:02:03	.017	2134.25	107.07	220.94		
14/02/86	14:02:12	.020	2136.19	109.01	220.94		
14/02/86	14:02:22	.022	2138.09	110.91	220.94		DELTA T FROM
14/02/86	14:02:37	.027	2138.09	110.91	220.97		SHUT IN
14/02/86	14:02:46	.029	2141.88	114.70	220.97		
14/02/86	14:02:52	.031	2142.62	115.44	220.97		
14/02/86	14:03:02	.034	2143.45	116.27	220.97	442	CSG. 450
14/02/86	14:03:12	.036	2144.33	117.15	220.97		
14/02/86	14:03:27	.041	2144.33	117.15	220.97		
14/02/86	14:03:34	.042	2146.35	119.17	220.97		
14/02/86	14:03:43	.045	2146.74	119.56	220.97		
14/02/86	14:03:52	.047	2147.35	120.17	220.97	447	CSG. 452
14/02/86	14:04:08	.052	2148.10	120.92	220.97		
14/02/86	14:04:26	.057	2148.10	120.92	220.97		
14/02/86	14:04:33	.059	2149.94	122.76	220.97		
14/02/86	14:04:39	.060	2150.17	122.99	220.97		
14/02/86	14:04:48	.063	2150.57	123.39	220.97		
14/02/86	14:04:54	.065	2150.97	123.79	220.97	449	CSG. 454
14/02/86	14:05:09	.069	2150.97	123.79	220.98		
14/02/86	14:05:18	.071	2152.27	125.09	220.98		
14/02/86	14:05:24	.073	2152.54	125.36	220.98		
14/02/86	14:05:32	.075	2152.86	125.68	220.98		
14/02/86	14:05:42	.078	2153.27	126.09	220.98		
14/02/86	14:05:58	.082	2153.27	126.09	220.99	453	CSG. 457
14/02/86	14:06:04	.084	2154.50	127.32	220.99		
14/02/86	14:06:13	.086	2154.69	127.51	220.99		
14/02/86	14:06:22	.089	2155.05	127.87	220.99		
14/02/86	14:06:32	.092	2155.45	128.27	220.99		
14/02/86	14:06:50	.097	2155.45	128.27	220.98		
14/02/86	14:07:34	.109	2158.14	130.96	220.98		
14/02/86	14:08:04	.117	2159.01	131.83	220.98		
14/02/86	14:08:34	.126	2159.94	132.76	220.98		
14/02/86	14:09:04	.134	2160.89	133.71	220.98		
14/02/86	14:09:34	.142	2160.89	133.71	220.96		
14/02/86	14:10:04	.151	2162.79	135.61	220.96		
14/02/86	14:10:34	.159	2163.65	136.47	220.96		
14/02/86	14:11:04	.167	2164.49	137.31	220.96	458	CSG. 466
14/02/86	14:11:34	.176	2165.30	138.12	220.96		
14/02/86	14:12:04	.184	2165.30	138.12	220.95		
14/02/86	14:12:34	.192	2166.90	139.72	220.95		
14/02/86	14:13:04	.201	2167.63	140.45	220.95		
14/02/86	14:13:34	.209	2168.34	141.16	220.95		
14/02/86	14:14:04	.217	2169.04	141.86	220.95		
14/02/86	14:14:34	.226	2169.04	141.86	220.91		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 14/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS :

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
14/02/86	14:15:04	.234	2170.45	143.27	220.91	469	CSG. 480
14/02/86	14:15:34	.242	2171.07	143.89	220.91		
14/02/86	14:16:04	.251	2171.70	144.52	220.91		
14/02/86	14:16:34	.259	2172.32	145.14	220.91		
14/02/86	14:17:04	.267	2172.32	145.14	220.90		
14/02/86	14:17:34	.276	2173.57	146.39	220.90		
14/02/86	14:18:04	.284	2174.11	146.93	220.90		
14/02/86	14:18:34	.292	2174.70	147.52	220.90		
14/02/86	14:19:04	.301	2175.25	148.07	220.90		
14/02/86	14:19:34	.309	2175.25	148.07	220.88		
14/02/86	14:20:04	.317	2176.36	149.18	220.88	474	CSG. 482
14/02/86	14:20:34	.326	2176.85	149.67	220.88		
14/02/86	14:21:04	.334	2177.25	150.07	220.88		
14/02/86	14:21:34	.342	2177.81	150.63	220.88		
14/02/86	14:22:04	.351	2177.91	150.63	220.85		
14/02/86	14:22:34	.359	2178.89	151.71	220.85		
14/02/86	14:23:04	.367	2179.35	152.17	220.85		
14/02/86	14:23:34	.376	2179.81	152.63	220.85		
14/02/86	14:24:04	.384	2180.25	153.07	220.85		
14/02/86	14:24:34	.392	2180.25	153.07	220.83		
14/02/86	14:25:04	.401	2181.23	154.05	220.83	478	CSG. 487
14/02/86	14:25:34	.409	2181.63	154.45	220.83		
14/02/86	14:26:04	.417	2182.03	154.85	220.83		
14/02/86	14:26:34	.425	2182.43	155.25	220.83		
14/02/86	14:27:04	.433	2182.83	155.65	220.83		
14/02/86	14:27:34	.441	2183.23	156.05	220.83		
14/02/86	14:28:04	.449	2183.63	156.45	220.83		
14/02/86	14:28:34	.457	2184.03	156.85	220.83		
14/02/86	14:29:04	.465	2184.43	157.25	220.83		
14/02/86	14:29:34	.473	2184.83	157.65	220.83		
14/02/86	14:29:04	.470	2184.26	157.08	220.79	482	CSG. 490
14/02/86	14:29:20	.472	2184.61	157.43	220.79		
14/02/86	14:29:26	.474	2184.73	157.55	220.79		
14/02/86	14:29:35	.476	2184.73	157.55	220.79		
14/02/86	14:29:42	.478	2184.85	157.67	220.79		
14/02/86	14:29:57	.482	2184.85	157.67	220.79		
14/02/86	14:30:07	.485	2185.21	158.03	220.79		
14/02/86	14:30:34	.492	2185.35	158.18	220.79		
14/02/86	14:31:04	.501	2185.70	158.52	220.79		
14/02/86	14:32:29	.524	2186.41	159.23	220.79		
14/02/86	14:33:29	.541	2186.41	159.23	220.75	493	CSG. 498
14/02/86	14:37:26	.607	2190.20	163.02	220.75		
14/02/86	14:37:34	.609	2190.20	163.02	220.75		
14/02/86	14:37:40	.611	2190.31	163.13	220.75		
14/02/86	14:37:47	.612	2190.31	163.13	220.75		
14/02/86	14:38:29	.624	2190.31	163.13	220.70		
14/02/86	14:39:29	.641	2191.39	164.21	220.70		
14/02/86	14:40:29	.658	2192.00	164.82	220.70		
14/02/86	14:41:29	.674	2192.59	165.41	220.70		
14/02/86	14:42:29	.691	2193.17	165.99	220.70		
14/02/86	14:43:28	.707	2193.17	165.99	220.66	493	CSG. 498
14/02/86	14:44:29	.724	2194.35	167.17	220.66		
14/02/86	14:45:29	.741	2194.90	167.72	220.66		
14/02/86	14:46:29	.758	2195.43	168.25	220.66		
14/02/86	14:47:28	.774	2195.97	168.79	220.66		
14/02/86	14:48:29	.791	2195.97	168.79	220.64		
14/02/86	14:49:28	.807	2197.04	169.86	220.64		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 14/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS :

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
14/02/86	14:50:28	.824	2197.53	170.35	220.64		
14/02/86	14:51:29	.841	2198.04	170.86	220.64		
14/02/86	14:52:29	.858	2198.53	171.35	220.64		
14/02/86	14:53:29	.874	2198.53	171.35	220.59		
14/02/86	14:54:28	.891	2199.50	172.32	220.59		
14/02/86	14:55:29	.908	2199.95	172.77	220.59		
14/02/86	14:56:29	.924	2200.40	173.22	220.59		
14/02/86	14:57:29	.941	2200.87	173.69	220.59		
14/02/86	14:58:29	.957	2200.87	173.69	220.55		
14/02/86	14:59:29	.974	2201.78	174.60	220.55		
14/02/86	15:00:29	.991	2202.19	175.01	220.55		
14/02/86	15:01:29	1.008	2202.65	175.47	220.55	499	CSG. 502
14/02/86	15:02:29	1.024	2203.06	175.88	220.55		
14/02/86	15:03:28	1.041	2203.06	175.88	220.49		
14/02/86	15:04:29	1.058	2203.91	176.73	220.49		
14/02/86	15:05:29	1.074	2204.33	177.15	220.49		
14/02/86	15:06:29	1.091	2204.73	177.55	220.49		
14/02/86	15:07:28	1.107	2205.13	177.95	220.49		
14/02/86	15:08:29	1.124	2205.13	177.95	220.52		
14/02/86	15:09:28	1.141	2205.97	179.79	220.52		
14/02/86	15:10:29	1.158	2206.35	179.17	220.52		
14/02/86	15:11:29	1.174	2206.72	179.54	220.52		
14/02/86	15:12:29	1.191	2207.13	179.95	220.52		
14/02/86	15:13:28	1.207	2207.13	179.95	220.50		
14/02/86	15:14:29	1.224	2207.88	180.70	220.50		
14/02/86	15:15:29	1.241	2208.24	181.06	220.50		
14/02/86	15:16:29	1.258	2208.60	181.42	220.50	507	CSG. 510
14/02/86	15:17:28	1.274	2208.97	181.79	220.50		
14/02/86	15:18:29	1.291	2208.97	181.79	220.45		
14/02/86	15:19:29	1.308	2210.17	182.99	220.45		
14/02/86	15:20:29	1.324	2210.55	183.37	220.45		
14/02/86	15:21:29	1.341	2210.89	183.71	220.45		
14/02/86	15:22:29	1.358	2211.28	184.10	220.45		
14/02/86	15:23:28	1.374	2211.28	184.10	220.42		
14/02/86	15:24:29	1.391	2211.95	184.77	220.42		
14/02/86	15:25:29	1.408	2212.32	185.14	220.42		
14/02/86	15:26:29	1.424	2212.68	185.50	220.42		
14/02/86	15:27:29	1.441	2213.00	185.82	220.42		
14/02/86	15:28:29	1.457	2213.00	185.82	220.40		
14/02/86	15:29:28	1.474	2213.71	186.53	220.40		
14/02/86	15:30:29	1.491	2214.03	186.85	220.40		
14/02/86	15:31:29	1.508	2214.36	187.18	220.40	512	CSG. 514
14/02/86	15:32:29	1.524	2214.68	187.50	220.40		
14/02/86	15:33:29	1.541	2214.68	187.50	220.37		
14/02/86	15:34:29	1.558	2215.35	188.17	220.37		
14/02/86	15:35:29	1.574	2215.64	188.46	220.37		
14/02/86	15:36:29	1.591	2215.97	188.79	220.37		
14/02/86	15:37:28	1.607	2216.27	189.09	220.37		
14/02/86	15:38:28	1.624	2216.27	189.09	220.35		
14/02/86	15:39:29	1.641	2216.91	189.73	220.35		
14/02/86	15:40:29	1.658	2217.21	190.03	220.35		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION: BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 14/02/86
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
14/02/86	15:41:29	1.674	2217.49	190.31	220.35		
14/02/86	15:42:29	1.691	2217.80	190.62	220.35		
14/02/86	15:43:29	1.707	2217.80	190.62	220.33		
14/02/86	15:44:29	1.724	2218.41	191.23	220.33		
14/02/86	15:45:29	1.741	2218.71	191.53	220.33		
14/02/86	15:46:28	1.757	2218.98	191.80	220.33	517	CSG. 519
14/02/86	15:47:36	1.776	2219.41	192.23	220.33		
14/02/86	15:48:29	1.791	2219.41	192.23	220.30		
14/02/86	15:49:29	1.808	2219.86	192.68	220.30		
14/02/86	15:50:29	1.824	2220.13	192.95	220.30		
14/02/86	15:51:29	1.841	2220.42	193.24	220.30		
14/02/86	15:52:29	1.858	2220.70	193.52	220.30		
14/02/86	15:53:29	1.874	2220.70	193.52	220.30		
14/02/86	15:54:29	1.891	2221.28	194.10	220.30		
14/02/86	15:55:29	1.908	2221.54	194.36	220.30		
14/02/86	15:56:29	1.924	2221.81	194.63	220.30		
14/02/86	15:57:29	1.941	2222.07	194.89	220.30		
14/02/86	15:58:29	1.958	2222.07	194.89	220.27		
14/02/86	15:59:29	1.974	2222.62	195.44	220.27		
14/02/86	16:00:28	1.991	2222.72	195.54	220.27	521	CSG. 522
14/02/86	16:10:43	2.162	2225.50	198.32	220.27		
14/02/86	16:15:43	2.245	2225.50	198.32	220.23		
14/02/86	16:20:43	2.328	2227.33	200.15	220.23		
14/02/86	16:25:43	2.412	2228.46	201.28	220.23		
14/02/86	16:30:43	2.495	2229.58	202.40	220.23		
14/02/86	16:35:43	2.578	2230.76	203.58	220.23		
14/02/86	16:40:43	2.662	2230.76	203.58	220.18		
14/02/86	16:45:43	2.745	2232.77	205.59	220.18		
14/02/86	16:50:43	2.828	2233.78	206.60	220.18		
14/02/86	16:55:43	2.911	2234.79	207.61	220.18		
14/02/86	17:00:43	2.995	2235.74	208.56	220.18	538	CSG. 539
14/02/86	17:05:43	3.078	2235.74	208.56	220.14		
14/02/86	17:10:43	3.162	2237.63	210.45	220.14		
14/02/86	17:15:43	3.245	2239.05	211.87	220.14		
14/02/86	17:20:43	3.328	2240.05	212.87	220.14		
14/02/86	17:25:43	3.411	2240.97	213.79	220.14		
14/02/86	17:30:43	3.495	2240.97	213.79	220.10		
14/02/86	17:35:43	3.578	2242.74	215.56	220.10		
14/02/86	17:40:43	3.662	2243.60	216.42	220.10		
14/02/86	17:45:43	3.745	2244.42	217.24	220.10		
14/02/86	17:50:43	3.828	2245.26	218.08	220.10		
14/02/86	17:55:43	3.912	2245.26	218.08	220.06		
14/02/86	18:00:43	3.995	2246.85	219.67	220.06	550	CSG. 550
14/02/86	18:05:43	4.078	2247.62	220.44	220.06		
14/02/86	18:10:43	4.161	2248.37	221.19	220.06		
14/02/86	18:15:43	4.245	2249.12	221.94	220.06		
14/02/86	18:20:43	4.328	2249.12	221.94	220.01		
14/02/86	18:25:43	4.412	2250.57	223.39	220.01		
14/02/86	18:30:43	4.495	2251.29	224.11	220.01		
14/02/86	18:35:43	4.578	2251.99	224.81	220.01		
14/02/86	18:40:43	4.661	2252.68	225.50	220.01		

EXPERTEST PTY. LTD.

PAGE 12

0089

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 14/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS :

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
14/02/86	18:45:43	4.745	2252.68	225.50	219.98		
14/02/86	18:50:43	4.828	2254.02	226.84	219.98		
14/02/86	18:55:43	4.912	2254.66	227.48	219.98		
14/02/86	19:00:43	4.995	2255.33	228.15	219.98	556	CSG. 556
14/02/86	19:05:55	5.081	2255.97	228.79	219.98		
14/02/86	19:43:14	5.704	2260.52	233.34	219.90		
14/02/86	19:43:34	5.710	2260.56	233.38	219.90		
14/02/86	19:54:17	5.888	2261.79	234.61	219.91		
14/02/86	19:54:27	5.891	2261.77	234.59	219.91		
14/02/86	20:17:17	6.272	2264.37	237.19	219.86	561	CSG. 559
14/02/86	20:17:26	6.274	2264.26	237.08	219.86		
14/02/86	20:17:32	6.276	2264.33	237.15	219.86		
14/02/86	20:17:38	6.278	2097.72	70.54	219.86		
14/02/86	20:18:01	6.284	2097.72	70.54	219.86		
14/02/86	20:18:08	6.286	2264.51	237.33	219.86		
14/02/86	20:18:14	6.288	2264.38	237.20	219.86		
14/02/86	20:18:23	6.290	2264.40	237.22	219.86		
14/02/86	20:18:29	6.292	2264.35	237.17	219.86		
14/02/86	20:23:49	6.381	2264.35	237.17	219.85		
14/02/86	20:28:49	6.464	2265.39	238.21	219.85		
14/02/86	20:33:49	6.547	2265.91	238.73	219.85		
14/02/86	20:38:49	6.631	2266.42	239.24	219.85		
14/02/86	20:43:49	6.714	2266.90	239.72	219.85		
14/02/86	20:48:49	6.797	2266.90	239.72	219.82		
14/02/86	20:53:49	6.881	2267.88	240.70	219.82		
14/02/86	20:58:49	6.964	2268.35	241.17	219.82		
14/02/86	21:03:49	7.047	2268.92	241.64	219.82		
14/02/86	21:08:49	7.131	2269.31	242.13	219.82		
14/02/86	21:13:49	7.214	2269.31	242.13	219.79		
14/02/86	21:18:49	7.297	2270.22	243.04	219.79		
14/02/86	21:23:49	7.381	2270.66	243.48	219.79		
14/02/86	21:28:49	7.464	2271.12	243.94	219.79		
14/02/86	21:33:49	7.547	2271.57	244.39	219.79		
14/02/86	21:38:49	7.631	2271.57	244.39	219.76		
14/02/86	21:43:49	7.714	2272.42	245.24	219.76		
14/02/86	21:48:49	7.797	2272.86	245.68	219.76		
14/02/86	21:53:49	7.881	2273.28	246.10	219.76		
14/02/86	21:58:49	7.964	2273.72	246.54	219.76	565	CSG. 564
14/02/86	22:11:00	8.167	2273.72	246.54			
14/02/86	23:11:00	9.167	2279.35	252.17	219.68		
14/02/86	23:21:00	9.334	2280.06	252.88	219.68		
14/02/86	23:31:00	9.500	2280.77	253.59	219.68		
14/02/86	23:41:00	9.667	2281.48	254.30	219.68		
14/02/86	23:51:00	9.834	2281.48	254.30	219.64		
15/02/86	00:01:00	10.000	2282.81	255.63	219.64	572	CSG. 572
15/02/86	00:11:04	10.168	2283.04	255.86	219.64		
15/02/86	00:21:03	10.335	2283.53	256.35	219.64		
15/02/86	00:31:03	10.501	2284.11	256.93	219.64		
15/02/86	00:41:04	10.668	2284.11	256.93	219.61		
15/02/86	00:51:03	10.835	2285.26	258.08	219.61		

EXPERTEST PTY. LTD.

PAGE 13 0090

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION: BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 15/02/86
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
15/02/86	01:01:04	11.001	2285.82	258.64	219.61		
15/02/86	01:11:03	11.168	2286.39	259.21	219.61		
15/02/86	01:21:03	11.335	2286.97	259.79	219.61		
15/02/86	01:31:04	11.501	2286.97	259.79	219.58		
15/02/86	01:41:03	11.668	2288.05	260.87	219.58		
15/02/86	01:51:03	11.835	2288.60	261.42	219.58		
15/02/86	02:01:03	12.001	2289.11	261.93	219.58	577	CSG. 579
15/02/86	02:11:03	12.168	2290.24	263.06	219.58		
15/02/86	02:21:04	12.335	2290.24	263.06	219.57		
15/02/86	02:31:03	12.501	2291.39	264.21	219.57		
15/02/86	02:41:03	12.668	2291.96	264.78	219.57		
15/02/86	02:51:03	12.835	2292.46	265.28	219.57		
15/02/86	03:01:03	13.001	2292.99	265.81	219.57		
15/02/86	03:11:04	13.168	2292.99	265.81	219.54		
15/02/86	04:53:10	14.871	2298.37	271.19	219.48		
15/02/86	05:05:00	15.066	2298.37	271.19	219.47		
15/02/86	05:05:38	15.262	2299.51	272.33	219.47		
15/02/86	05:29:49	15.610	2300.26	273.08	219.47		
15/02/86	05:37:39	15.777	2300.26	273.08	219.45		
15/02/86	06:28:08	16.452	2302.43	275.25	219.43		
15/02/86	06:38:16	16.621	2302.75	275.57	219.43		
15/02/86	06:48:16	16.787	2303.13	275.95	219.43		
15/02/86	06:58:16	16.954	2303.13	275.95	219.42		
15/02/86	07:08:16	17.121	2303.92	276.74	219.42		
15/02/86	07:18:16	17.287	2304.29	277.11	219.42		
15/02/86	07:28:16	17.454	2304.66	277.48	219.42		
15/02/86	07:38:16	17.621	2305.02	277.84	219.42		
15/02/86	07:48:16	17.788	2305.02	277.84	219.40		
15/02/86	07:58:16	17.954	2305.13	277.95	219.40		
15/02/86	08:08:16	18.121	2305.43	278.25	219.40		
15/02/86	08:18:16	18.287	2305.73	278.55	219.40		
15/02/86	08:28:16	18.454	2306.03	278.85	219.40		
15/02/86	08:38:16	18.621	2306.03	278.85	219.35		
15/02/86	08:48:16	18.788	2307.30	280.12	219.35		
15/02/86	08:58:16	18.954	2307.68	280.50	219.35		
15/02/86	09:08:16	19.121	2307.74	280.56	219.35		
15/02/86	09:18:16	19.288	2307.73	280.55	219.35		
15/02/86	09:28:16	19.454	2307.73	280.55	219.36		
15/02/86	09:38:16	19.621	2308.29	281.11	219.36		
15/02/86	09:48:16	19.787	2308.58	281.40	219.36		
15/02/86	09:58:16	19.954	2308.86	281.68	219.36		
15/02/86	10:08:16	20.121	2309.16	281.98	219.36	594	CSG 596
15/02/86	10:18:16	20.288	2309.16	281.98	219.38		
15/02/86	10:28:16	20.454	2309.72	282.54	219.38		
15/02/86	10:38:16	20.621	2310.01	282.93	219.38		
15/02/86	10:48:16	20.787	2310.29	283.11	219.38		
15/02/86	10:58:16	20.954	2310.56	283.38	219.38		
15/02/86	11:08:16	21.121	2310.56	283.38	219.41		
15/02/86	11:18:16	21.288	2311.83	284.65	219.41		
15/02/86	11:28:16	21.454	2312.18	285.00	219.41		

EXPERTEST PTY. LTD.

0091

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 15/02/86
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
15/02/86	11:38:16	21.621	2312.51	285.33	219.41		
15/02/86	11:48:16	21.787	2312.84	285.66	219.41		
15/02/86	11:58:16	21.954	2312.84	285.66	219.37		
15/02/86	12:08:16	22.121	2313.37	286.19	219.37		
15/02/86	12:18:16	22.287	2313.67	286.49	219.37		
15/02/86	12:28:16	22.454	2313.98	286.80	219.37		
15/02/86	12:38:16	22.621	2314.27	287.09	219.37		
15/02/86	12:48:16	22.788	2314.27	287.09	219.35		
15/02/86	12:58:16	22.954	2314.86	287.68	219.35		
15/02/86	13:08:16	23.121	2314.60	287.42	219.35		
15/02/86	13:18:16	23.288	2315.35	288.17	219.35		
15/02/86	13:28:16	23.454	2315.63	288.45	219.35		
15/02/86	13:38:16	23.621	2315.63	288.45	219.32		
15/02/86	13:48:16	23.788	2316.19	289.01	219.32		
15/02/86	13:58:16	23.954	2316.32	289.14	219.32		
15/02/86	14:08:16	24.121	2316.58	289.40	219.32	601	CSG 600
15/02/86	14:18:16	24.288	2316.94	289.76	219.32		
15/02/86	14:28:16	24.454	2316.94	289.76	219.31		
15/02/86	14:38:16	24.621	2317.46	290.28	219.31		
15/02/86	14:48:16	24.788	2317.48	290.30	219.31		
15/02/86	14:58:16	24.954	2317.94	290.76	219.31		
15/02/86	15:08:16	25.121	2318.22	291.04	219.31		
15/02/86	15:18:16	25.287	2318.22	291.04	219.29		
15/02/86	15:28:16	25.454	2318.68	291.50	219.29		
15/02/86	15:38:16	25.621	2318.92	291.74	219.29		
15/02/86	15:48:16	25.788	2319.15	291.97	219.29		
15/02/86	15:58:16	25.954	2319.40	292.22	219.29		
15/02/86	16:08:16	26.121	2319.40	292.22	219.29		
15/02/86	16:18:16	26.287	2319.18	292.00	219.29		
15/02/86	16:28:16	26.454	2319.31	292.13	219.29		
15/02/86	16:38:16	26.621	2319.47	292.29	219.29		
15/02/86	16:48:16	26.787	2319.66	292.48	219.29		
15/02/86	16:58:16	26.954	2319.66	292.48	219.30		
15/02/86	17:08:16	27.121	2320.01	292.83	219.30		
15/02/86	17:18:16	27.288	2320.20	293.02	219.30		
15/02/86	17:28:16	27.454	2320.38	293.20	219.30		
15/02/86	17:38:16	27.621	2320.56	293.38	219.30		
15/02/86	17:48:16	27.787	2320.56	293.38	219.30		
15/02/86	17:58:16	27.954	2320.94	293.76	219.30		
15/02/86	18:08:16	28.121	2321.49	294.31	219.30	605	CSG 604
15/02/86	18:18:16	28.287	2321.35	294.17	219.30		
15/02/86	18:28:16	28.454	2321.53	294.35	219.30		
15/02/86	18:38:16	28.621	2321.53	294.35	219.30		
15/02/86	18:48:16	28.787	2321.90	294.72	219.30		
15/02/86	18:58:16	28.954	2322.10	294.92	219.30		
15/02/86	19:08:16	29.121	2322.27	295.09	219.30		
15/02/86	19:18:16	29.287	2322.47	295.29	219.30		
15/02/86	19:28:16	29.454	2322.47	295.29	219.30		
15/02/86	19:38:16	29.621	2323.33	296.15	219.30		
15/02/86	19:48:16	29.788	2323.75	296.57	219.30		
15/02/86	19:58:16	29.954	2323.99	296.81	219.30		

EXPERTEST PTY. LTD.

PAGE 15 0092

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION: BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 15/02/86
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
15/02/86	20:18:16	30.287	2324.22	297.04	219.27		
15/02/86	20:28:16	30.454	2324.67	297.49	219.27		
15/02/86	20:38:16	30.621	2324.89	297.71	219.27		
15/02/86	20:48:16	30.788	2325.11	297.93	219.27		
15/02/86	20:58:16	30.954	2325.33	298.15	219.27		
15/02/86	21:08:16	31.121	2325.33	298.15	219.25		
15/02/86	21:18:16	31.288	2325.72	298.54	219.25		
15/02/86	21:28:16	31.454	2325.91	298.73	219.25		
15/02/86	21:38:16	31.621	2326.10	298.92	219.25		
15/02/86	21:48:16	31.787	2326.31	299.13	219.25		
15/02/86	21:58:16	31.954	2326.31	299.13	219.24		
15/02/86	22:08:16	32.121	2326.66	299.48	219.24	609	CSG 610
15/02/86	22:18:16	32.287	2326.87	299.69	219.24		
15/02/86	22:28:16	32.454	2327.06	299.88	219.24		
15/02/86	22:38:16	32.621	2327.25	300.07	219.24		
15/02/86	22:48:16	32.787	2327.25	300.07	219.22		
15/02/86	22:58:16	32.954	2327.61	300.43	219.22		
15/02/86	23:08:16	33.121	2327.79	300.61	219.22		
15/02/86	23:18:16	33.288	2327.97	300.79	219.22		
15/02/86	23:28:16	33.454	2328.15	300.97	219.22		
15/02/86	23:38:16	33.621	2328.15	300.97	219.21		
15/02/86	23:48:16	33.787	2328.50	301.32	219.21		
15/02/86	23:58:16	33.954	2328.67	301.49	219.21		
16/02/86	00:08:16	34.121	2328.83	301.65	219.21		
16/02/86	00:18:20	34.289	2329.01	301.83	219.21		
16/02/86	00:28:20	34.455	2329.01	301.83	219.22		
16/02/86	00:38:20	34.622	2329.33	302.15	219.22		
16/02/86	00:48:20	34.789	2329.51	302.33	219.22		
16/02/86	00:58:19	34.955	2329.68	302.50	219.22		
16/02/86	01:08:19	35.122	2329.84	302.66	219.22		
16/02/86	01:18:19	35.288	2329.84	302.66	219.21		
16/02/86	01:28:19	35.455	2330.15	302.97	219.21		
16/02/86	01:38:19	35.622	2330.33	303.15	219.21		
16/02/86	01:48:19	35.788	2330.47	303.29	219.21		
16/02/86	01:58:19	35.955	2330.64	303.46	219.21		
16/02/86	02:08:20	36.122	2330.64	303.46	219.20	612	CSG 613
16/02/86	02:18:20	36.289	2330.95	303.77	219.20		
16/02/86	02:28:19	36.455	2331.11	303.93	219.20		
16/02/86	02:38:19	36.622	2331.26	304.08	219.20		
16/02/86	02:48:19	36.788	2331.41	304.23	219.20		
16/02/86	02:58:19	36.955	2331.41	304.23	219.19		
16/02/86	03:08:19	37.122	2331.64	304.46	219.19		
16/02/86	03:18:19	37.288	2331.86	304.68	219.19		
16/02/86	03:28:20	37.455	2331.42	304.24	219.19		
16/02/86	03:38:19	37.622	2331.48	304.30	219.19		
16/02/86	03:48:19	37.788	2331.48	304.30	219.19		
16/02/86	03:58:19	37.955	2331.68	304.50	219.19		
16/02/86	04:08:19	38.122	2331.81	304.63	219.19		
16/02/86	04:18:19	38.288	2331.91	304.73	219.19		
16/02/86	04:28:20	38.455	2332.00	304.82	219.19		

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE: 16/02/86
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (*F)	SURFACE (PSIG)	REMARKS
16/02/86	04:38:20	38.622	2332.00	304.82	219.20		
16/02/86	04:48:20	38.789	2332.26	305.08	219.20		
16/02/86	04:58:19	38.955	2332.37	305.19	219.20		
16/02/86	05:08:19	39.122	2332.49	305.31	219.20		
16/02/86	05:18:20	39.289	2332.61	305.43	219.20		
16/02/86	05:28:20	39.455	2332.61	305.43	219.21		
16/02/86	05:38:20	39.622	2333.25	306.07	219.21		
16/02/86	05:48:20	39.789	2333.50	306.32	219.21		
16/02/86	05:58:20	39.955	2333.79	306.61	219.21		
16/02/86	06:08:20	40.122	2333.98	306.80	219.21	616	CSG 615
16/02/86	06:18:19	40.288	2333.98	306.80	219.19		
16/02/86	06:28:19	40.455	2334.30	307.12	219.19		
16/02/86	06:38:19	40.622	2334.43	307.25	219.19		
16/02/86	06:48:19	40.788	2334.60	307.42	219.19		
16/02/86	06:58:19	40.955	2334.74	307.56	219.19		
16/02/86	07:08:20	41.122	2334.74	307.56	219.18		
16/02/86	07:18:20	41.289	2335.02	307.84	219.18		
16/02/86	07:28:20	41.455	2335.17	307.99	219.18		
16/02/86	07:38:20	41.622	2335.31	308.13	219.18		
16/02/86	07:48:19	41.788	2335.44	308.26	219.18		
16/02/86	07:58:19	41.955	2335.44	308.26	219.16		
16/02/86	08:08:19	42.122	2335.75	308.57	219.16		
16/02/86	08:18:19	42.288	2335.88	308.70	219.16		
16/02/86	08:28:19	42.455	2336.01	308.83	219.16		
16/02/86	08:38:20	42.622	2336.15	308.97	219.16		
16/02/86	08:48:19	42.788	2336.15	308.97	219.16		
16/02/86	08:58:20	42.955	2336.40	309.22	219.16		
16/02/86	09:08:19	43.122	2336.54	309.36	219.16		
16/02/86	09:18:19	43.288	2336.67	309.49	219.16		
16/02/86	09:28:19	43.455	2336.80	309.62	219.16		
16/02/86	09:38:19	43.622	2336.80	309.62	219.15		
16/02/86	09:48:20	43.789	2337.06	309.88	219.15		
16/02/86	09:58:20	43.955	2337.18	310.00	219.15		
16/02/86	10:08:19	44.122	2337.30	310.12	219.15	619	CSG 620
16/02/86	10:18:20	44.289	2337.40	310.22	219.15		
16/02/86	10:28:20	44.455	2337.40	310.22	219.15		
16/02/86	10:38:19	44.622	2337.67	310.49	219.15		
16/02/86	10:48:19	44.788	2337.77	310.59	219.15		
16/02/86	10:58:19	44.955	2337.88	310.70	219.15		
16/02/86	11:08:20	45.122	2338.02	310.84	219.15		
16/02/86	11:18:19	45.288	2338.02	310.84	219.15		
16/02/86	11:28:19	45.455	2338.26	311.08	219.15		
16/02/86	11:38:20	45.622	2338.32	311.14	219.15		
16/02/86	11:48:19	45.788	2337.75	310.57	219.15		
16/02/86	11:58:19	45.955	2337.78	310.60	219.15		
16/02/86	12:08:19	46.122	2337.78	310.60	219.16		
16/02/86	12:18:19	46.288	2338.61	311.43	219.16		
16/02/86	12:28:20	46.455	2338.79	311.61	219.16		
16/02/86	12:38:20	46.622	2338.94	311.76	219.16		
16/02/86	12:48:19	46.788	2339.05	311.87	219.16		
16/02/86	12:58:19	46.955	2339.05	311.87	219.15		

EXPERTEST PTY. LTD.

PAGE 17

0094

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 16/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS :

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5320ft

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
16/02/86	13:08:19	47.122	2339.30	312.12	219.15		
16/02/86	13:18:19	47.288	2339.41	312.23	219.15		
16/02/86	13:28:19	47.455	2339.53	312.35	219.15		
16/02/86	13:38:19	47.622	2339.65	312.47	219.15		Adj Prog for Horner
16/02/86	14:03:41	48.045	2339.90	312.72	.		
16/02/86	14:05:33	48.076	2340.14	312.96	219.13	623	CSG 623
16/02/86	14:05:41	48.078	2339.38	312.20	219.13		
16/02/86	14:42:09	48.686	2340.46	313.28	219.13		
16/02/86	14:42:19	48.689	2340.40	313.22	219.13		
16/02/86	14:47:28	48.775	2340.41	313.23	219.13		
16/02/86	14:52:29	48.858	2340.46	313.28	219.13		
16/02/86	14:57:29	48.941	2340.46	313.28	219.13		
16/02/86	15:02:29	49.025	2340.54	313.36	219.13	624	RIH DEPTH=5400
16/02/86	15:05:18	49.072	2369.52	342.34	219.13		
16/02/86	15:05:34	49.076	2369.52	342.34	219.76		
16/02/86	15:07:23	49.106	2368.82	341.64	219.76		1st Gradient @ 5400'
16/02/86	15:08:16	49.121	2368.82	341.64	219.84		(Deepest Reading)
16/02/86	15:09:16	49.138	2368.62	341.44	219.84		
16/02/86	15:10:16	49.154	2368.58	341.40	219.84		
16/02/86	15:11:16	49.171	2368.58	341.40	219.87		
16/02/86	15:12:16	49.188	2368.56	341.38	219.87		
16/02/86	15:13:16	49.204	2368.55	341.37	219.87		
16/02/86	15:14:16	49.221	2368.55	341.37	219.87		
16/02/86	15:15:16	49.238	2368.56	341.38	219.87		.461
16/02/86	15:16:16	49.254	2368.54	341.36	219.87		
16/02/86	15:17:16	49.271	2368.54	341.36	219.89		POOH
16/02/86	15:19:14	49.304	2352.74	325.56	219.89		DEPTH=5367FT
16/02/86	15:19:20	49.305	2352.74	325.56	219.89		2nd Gradient stop
16/02/86	15:20:16	49.321	2352.74	325.56	220.15	625	CSG 625
16/02/86	15:21:16	49.338	2352.58	325.40	220.15		
16/02/86	15:22:16	49.354	2352.54	325.36	220.15		
16/02/86	15:23:16	49.371	2352.54	325.36	220.26		
16/02/86	15:24:16	49.388	2352.94	325.76	220.26		
16/02/86	15:25:16	49.404	2353.19	326.01	220.26		
16/02/86	15:26:16	49.421	2353.19	326.01	220.31		
16/02/86	15:27:16	49.438	2353.28	326.10	220.31		.329
16/02/86	15:28:16	49.454	2353.31	326.13	220.31		
16/02/86	15:29:16	49.471	2353.31	326.13	220.35		POOH
16/02/86	15:32:58	49.533	2337.24	310.06	220.35		3rd Gradient @ 5320'
16/02/86	15:33:11	49.536	2337.48	310.30	220.35	623	CSG 624
16/02/86	15:33:27	49.541	2337.48	310.30	219.48		
16/02/86	15:33:36	49.543	2337.40	310.22	219.48		
16/02/86	15:34:16	49.554	2337.43	310.25	219.48		
16/02/86	15:35:16	49.571	2337.43	310.25	219.34		
16/02/86	15:36:16	49.588	2337.60	310.42	219.34		
16/02/86	15:37:16	49.604	2337.64	310.46	219.34		
16/02/86	15:38:16	49.621	2337.64	310.46	219.24		
16/02/86	15:39:16	49.638	2337.74	310.56	219.24		
16/02/86	15:40:16	49.654	2337.76	310.58	219.24		
16/02/86	15:41:16	49.671	2337.76	310.58	219.18		.314
16/02/86	15:42:16	49.688	2337.82	310.64	219.18		POOH

EXPERTEST PTY. LTD.

PAGE 18

0095

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION: BIRKHEAD
 OPERATOR : C.STEVENS

DATE: 16/02/86
 TEST: FLOW-BUILD UP
 PERFORATIONS: 5350-5383ft
 COMMENTS:

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 5367FT

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
16/02/86	15:45:37	49.743	2234.77	207.59	219.18		DEPTH=5000FT
16/02/86	15:45:52	49.748	2234.77	207.59	215.92		4th Gradient Stop
16/02/86	15:46:00	49.750	2234.85	207.67	215.92	623	CSG 622
16/02/86	15:46:16	49.754	2235.08	207.90	215.92		
16/02/86	15:47:16	49.771	2235.08	207.90	215.64		
16/02/86	15:48:16	49.788	2236.50	209.32	215.64		
16/02/86	15:49:16	49.804	2236.71	209.53	215.64		
16/02/86	15:50:16	49.821	2236.71	209.53	215.41		
16/02/86	15:51:16	49.838	2236.94	209.76	215.41		
16/02/86	15:52:16	49.854	2237.01	209.83	215.41		
16/02/86	15:53:16	49.871	2237.01	209.83	215.26		.314
16/02/86	15:54:16	49.888	2237.15	209.97	215.26		
16/02/86	15:55:16	49.904	2237.17	209.99	215.26		POOH
16/02/86	16:01:43	50.012	2237.17	209.99	210.03		DEPTH=4500FT
16/02/86	16:01:53	50.015	2075.66	48.48	210.03		5th Gradient Stop
16/02/86	16:02:09	50.019	2076.37	49.19	210.03	622	CSG 623
16/02/86	16:02:25	50.023	2076.37	49.19	209.46		
16/02/86	16:02:32	50.025	2077.16	49.98	209.46		
16/02/86	16:02:41	50.028	2077.64	50.46	209.46		
16/02/86	16:02:57	50.032	2077.64	50.46	209.34		
16/02/86	16:03:16	50.038	2078.29	51.11	209.34		
16/02/86	16:04:16	50.054	2078.88	51.70	209.34		
16/02/86	16:05:16	50.071	2078.88	51.70	209.10		
16/02/86	16:06:16	50.088	2079.42	52.24	209.10		
16/02/86	16:07:16	50.104	2079.59	52.41	209.10		
16/02/86	16:08:16	50.121	2079.59	52.41	208.88		
16/02/86	16:09:16	50.138	2079.81	52.63	208.88		
16/02/86	16:10:16	50.154	2079.89	52.71	208.88		.310
16/02/86	16:11:16	50.171	2079.89	52.71	208.76		
16/02/86	16:12:16	50.188	2080.01	52.83	208.76		POOH
16/02/86	16:15:58	50.249	1919.30	-107.88	208.76		DEPTH=4000FT
16/02/86	16:16:14	50.254	1919.30	-107.88	199.96		6th Gradient Stop
16/02/86	16:16:21	50.256	1918.27	-108.91	199.96	623	CSG 623
16/02/86	16:16:30	50.258	1918.86	-108.32	199.96		
16/02/86	16:17:16	50.271	1918.86	-108.32	199.31		
16/02/86	16:18:16	50.288	1922.48	-104.70	199.31		
16/02/86	16:19:16	50.304	1923.24	-103.94	199.31		
16/02/86	16:20:16	50.321	1923.24	-103.94	198.80		
16/02/86	16:21:16	50.338	1923.90	-103.28	198.80		
16/02/86	16:22:16	50.354	1924.17	-103.01	198.80		
16/02/86	16:23:16	50.371	1924.17	-103.01	198.28		.320
16/02/86	16:24:16	50.388	1924.40	-102.78	198.28		
16/02/86	16:25:16	50.404	1924.52	-102.66	198.28		POOH
16/02/86	16:32:12	50.520	1924.52	-102.66	172.21		DEPTH=3000FT
16/02/86	16:32:19	50.522	1593.55	-433.63	172.21		7th Gradient Stop
16/02/86	16:32:28	50.524	1594.46	-432.72	172.21	623	CSG 623
16/02/86	16:32:44	50.529	1594.46	-432.72	171.63		
16/02/86	16:32:51	50.531	1596.92	-430.26	171.63		
16/02/86	16:33:00	50.533	1597.95	-429.23	171.63		
16/02/86	16:33:15	50.537	1597.95	-429.23	171.37		
16/02/86	16:33:22	50.539	1599.08	-428.10	171.37		

EXPERTEST PTY. LTD.

CUSTOMER : DELHI
 LOCATION : SPENCER #3
 FORMATION : BIRKHEAD
 OPERATOR : C. STEVENS

DATE : 16/02/86
 TEST : FLOW-BUILD UP
 PERFORATIONS : 5350-5383ft
 COMMENTS :

GAUGE 1 S/N: 63038
 GAUGE 2 S/N: 0
 GAUGE DEPTH: 3000FT

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
16/02/86	16:34:16	50.554	1601.24	-425.94	171.37		
16/02/86	16:35:16	50.571	1601.24	-425.94	170.79		
16/02/86	16:36:16	50.588	1602.92	-424.26	170.79		
16/02/86	16:37:16	50.604	1603.42	-423.76	170.79		
16/02/86	16:38:16	50.621	1603.42	-423.76	170.23		
16/02/86	16:39:16	50.638	1603.85	-423.33	170.23		
16/02/86	16:40:16	50.654	1604.05	-423.13	170.23		.334
16/02/86	16:41:16	50.671	1604.05	-423.13	169.76		POOH
16/02/86	16:42:16	50.688	1604.12	-423.06	169.76		DEPTH=2000FT
16/02/86	16:47:53	50.781	1272.22	-754.96	169.76		8th Gradient Stop
16/02/86	16:48:09	50.786	1272.22	-754.96	145.05	623	CSG 622
16/02/86	16:48:16	50.788	1262.40	-764.78	145.05		
16/02/86	16:48:25	50.790	1263.96	-763.22	145.05		
16/02/86	16:48:40	50.794	1263.96	-763.22	144.60		
16/02/86	16:48:57	50.799	1266.52	-760.66	144.60		
16/02/86	16:49:16	50.804	1266.99	-760.19	144.60		
16/02/86	16:50:16	50.821	1266.99	-760.19	143.98		
16/02/86	16:51:16	50.838	1269.15	-758.03	143.98		
16/02/86	16:52:16	50.854	1269.70	-757.48	143.98		
16/02/86	16:53:16	50.871	1269.70	-757.48	142.92		
16/02/86	16:54:16	50.888	1269.84	-757.34	142.92		
16/02/86	16:55:16	50.904	1270.08	-757.10	142.92		.115
16/02/86	16:56:16	50.921	1270.08	-757.10	142.20		POOH
16/02/86	16:57:16	50.938	1270.10	-757.08	142.20		DEPTH=1000FT
16/02/86	17:05:57	51.082	935.64	.	116.99		9th Gradient Stop @
16/02/86	17:06:13	51.087	935.64	.	116.99	622	CSG 623
16/02/86	17:06:20	51.089	928.53	.	116.99		
16/02/86	17:06:29	51.091	929.62	.	116.99		
16/02/86	17:06:45	51.096	929.62	.	116.82		
16/02/86	17:06:52	51.098	931.00	.	116.82		
16/02/86	17:07:01	51.100	931.55	.	116.82		
16/02/86	17:07:16	51.104	931.55	.	116.71		
16/02/86	17:07:23	51.106	932.94	.	116.71		
16/02/86	17:07:32	51.109	932.83	.	116.71		
16/02/86	17:08:16	51.121	932.83	.	116.50		
16/02/86	17:09:16	51.138	934.22	.	116.50		
16/02/86	17:10:45	51.162	934.86	.	116.50		
16/02/86	17:11:16	51.171	934.86	.	115.65		
16/02/86	17:12:16	51.188	935.00	.	115.65		
16/02/86	17:13:16	51.204	935.17	.	115.65		.029
16/02/86	17:14:16	51.221	935.17	.	114.98		
16/02/86	17:15:16	51.238	935.30	.	114.98		POOH
16/02/86	17:20:48	51.330	613.42	.	88.55		DEPTH=30 FT-KB SURF
16/02/86	17:20:57	51.332	614.70	.	88.55		10th Gradient Stop.
16/02/86	17:21:12	51.337	614.70	.	88.16	622	CSG 623
16/02/86	17:21:19	51.339	618.04	.	88.16		
16/02/86	17:22:16	51.354	621.49	.	88.16		
16/02/86	17:23:16	51.371	621.49	.	87.86		
16/02/86	17:24:16	51.388	623.48	.	87.86		
16/02/86	17:25:16	51.404	623.84	.	87.86		
16/02/86	17:26:16	51.421	623.84	.	87.01		

EXPERTEST PTY. LTD.

PAGE 20

0097

CUSTOMER : DELHI
LOCATION : SPENCER #3
FORMATION: BIRKHEAD
OPERATOR : C. STEVENS

DATE: 16/02/86
TEST: FLOW-BUILD UP
PERFORATIONS: 5350-5383ft
COMMENTS:

GAUGE 1 S/N: 63038
GAUGE 2 S/N: 0
GAUGE DEPTH: 30 FT-

DATE	REAL TIME	DELTA T (HRS)	B.H.P. (PSIG)	DELTA P (PSI)	TEMP (°F)	SURFACE (PSIG)	REMARKS
16/02/86	17:27:16	51.438	624.87	.	87.01		
16/02/86	17:28:16	51.454	624.98	.	87.01		
16/02/86	17:29:16	51.471	624.98	.	86.16		
16/02/86	17:30:16	51.488	625.78	.	86.16		
16/02/86	17:31:16	51.504	625.80	.	86.16		
16/02/86	17:32:16	51.521	625.80	.	85.51		
16/02/86	17:33:16	51.538	626.42	.	85.51		
16/02/86	17:34:16	51.554	626.45	.	85.51		
16/02/86	17:35:16	51.571	626.45	.	84.99		POH & SHUT IN WELL
16/02/86	17:38:30	51.625	34.84	.	84.99		BLEED DOWN LUB.



CLIENT DELHI PETROLEUM

WELL SPENCER #3

OPERATOR H. JAMES

DATE 13.2.86 - 16.2.86

SURVEY FLOW/BUILD UP 24 HR FLOW/48 HR SHUT IN USING ELECTRONIC GAUGES

TOP BOMB GFC ELECTRONIC - 63038

REC. No. N/A

CLOCK DATA N/A

MID BOMB

REC. No.

CLOCK DATA

BTM BOMB AMERADA 56431

REC. No.

CLOCK DATA 28647

ENG. SYLUS 12:00 13.2.86

DISENGAGE SYLUS 13:00 17.2.86

DWT IN 325

DWTOUT 622

MBHT

Date	Time	Cum. Time	Depth	Top Def. PSI	Mid Def. PSI	Bot Def. PSI	Remarks
13.2.86	12:26	26MIN	30'	0.208	324.7		FLOWING WELL
14.2.86	14:00	26HRS	5320'	1.308	2035.9		FINAL READING BEFORE SIN
	14:01			1.349	2099.9		
	14:02			1.361	2118.6		
	14:03			1.378	2145.1		
	14:04			1.384	2154.4		
	14:05			1.386	2157.5		
	14:06			1.388	2160.7		
	14:11			1.393	2168.5		
	14:16			1.399	2177.8		
	14:21			1.403	2184.1		
	14:26			1.406	2188.7		
	14:31			1.409	2193.4		
	14:46			1.415	2202.8		
	15:01			1.420	2210.6		
	15:31			1.427	2221.5		
	16:00			1.433	2230.8		
	17:00			1.441	2243.3		
	18:00			1.448	2254.2		
	19:00			1.454	2263.6		
	20:00			1.459	2271.4		
	22:00			1.466	2282.3		
	24:00			1.472	2291.7		
15.2.86	02:00			1.476	2297.9		
	06:00			1.484	2310.4		
	10:00			1.485	2311.9		
CHART RAN OUT DUE TO CHART HOLDER NOT BEING AT THE TOP OF THE TRACK WHEN CLOCK WAS ENGAGED.							
NOTE: AMERADA IS 6'.11" BELOW ELECTRONIC PRESSURE GAUGE.							

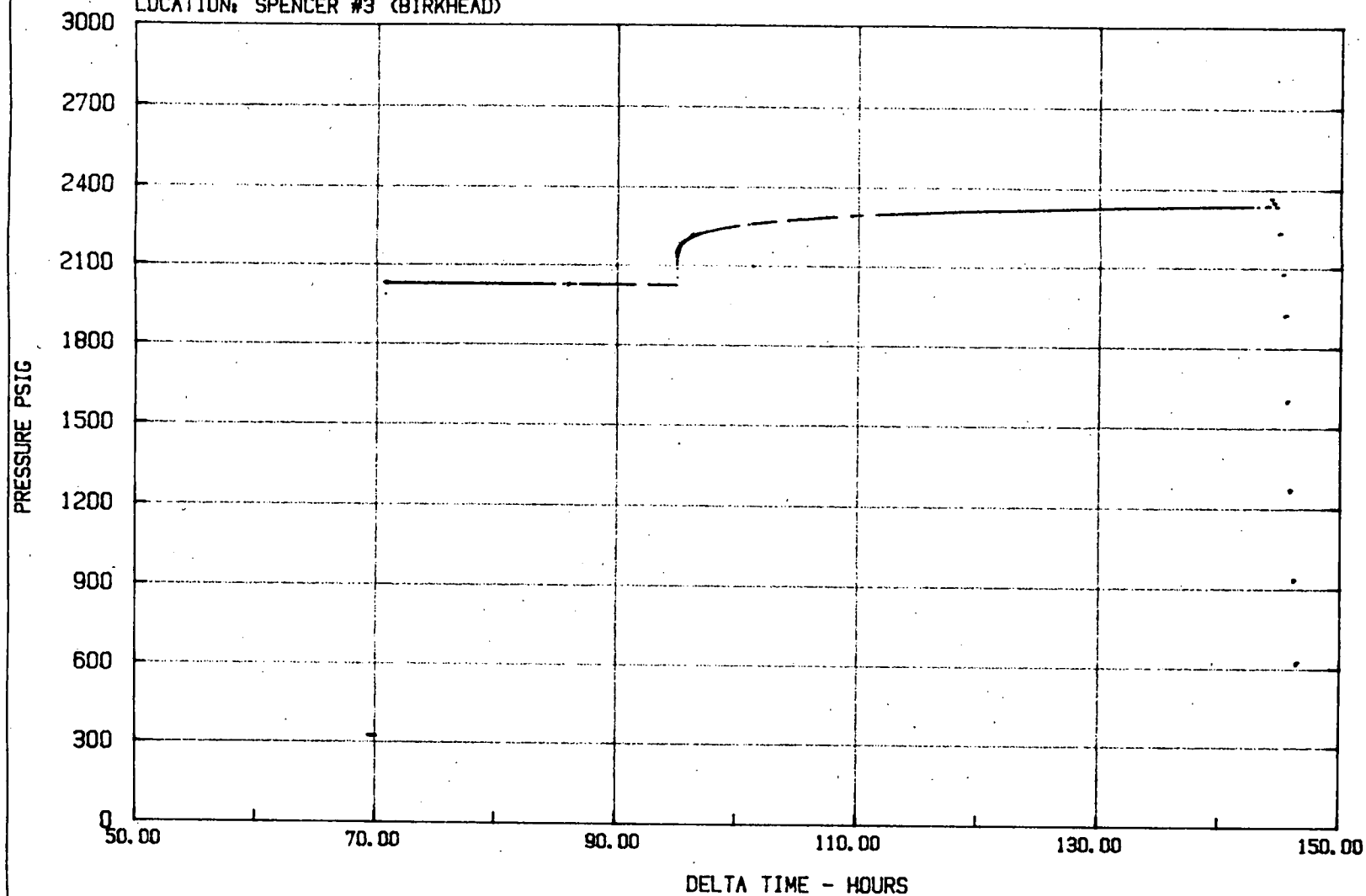
0099

EXPERTEST PTY. LTD. - LINEAR PLOT

CUSTOMER: DELHI
LOCATION: SPENCER #3 (BIRKHEAD)

STARTING DATE : 10/ 2/86

COMMENTS: D/TIME=15HR 10/2/86



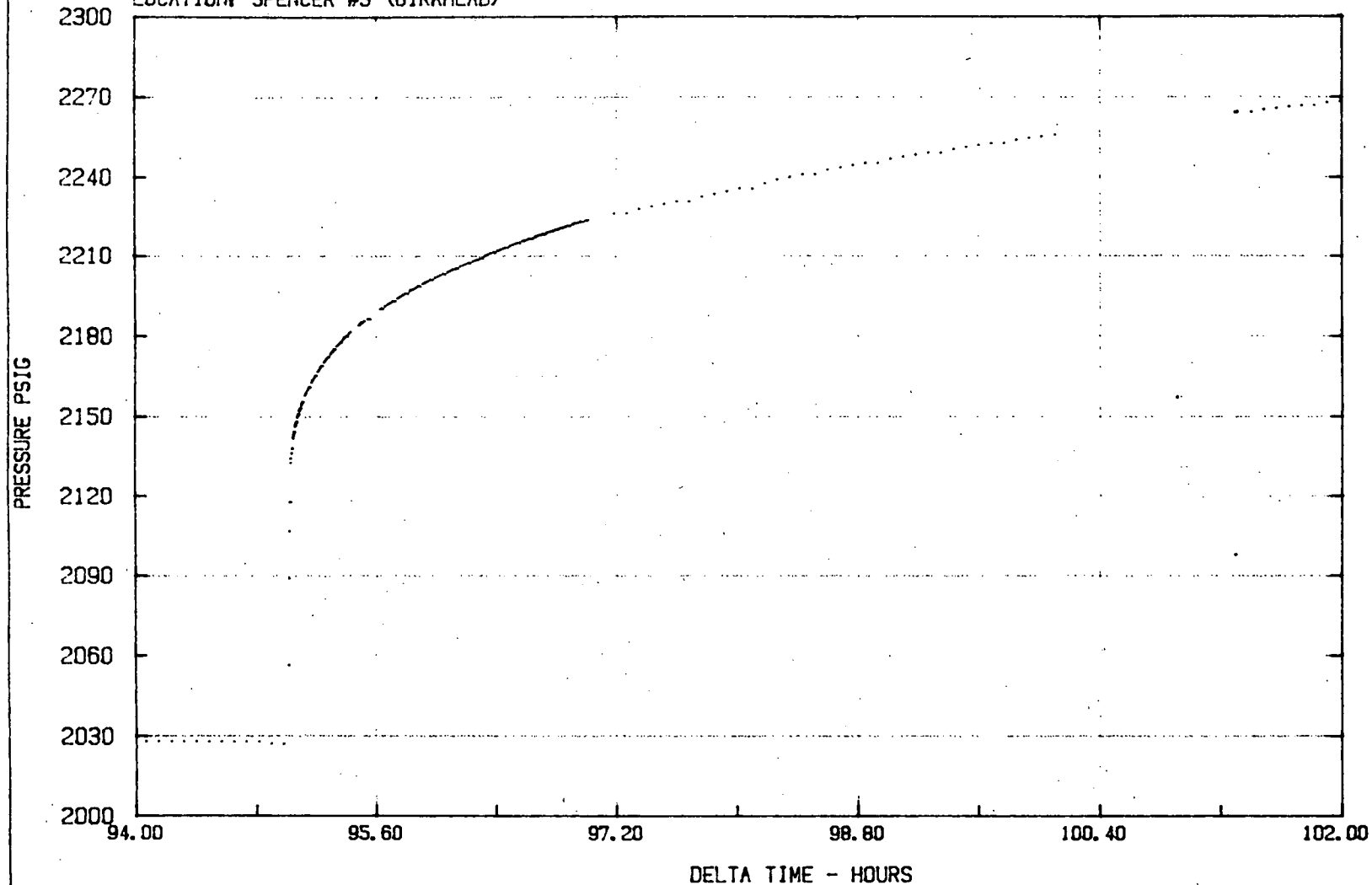
0100

EXPERTEST PTY. LTD. - LINEAR PLOT

CUSTOMER: DELHI
LOCATION: SPENCER #3 (BIRKHEAD)

STARTING DATE : 10/ 2/86

COMMENTS: D/TIME=15HR 10/2/86



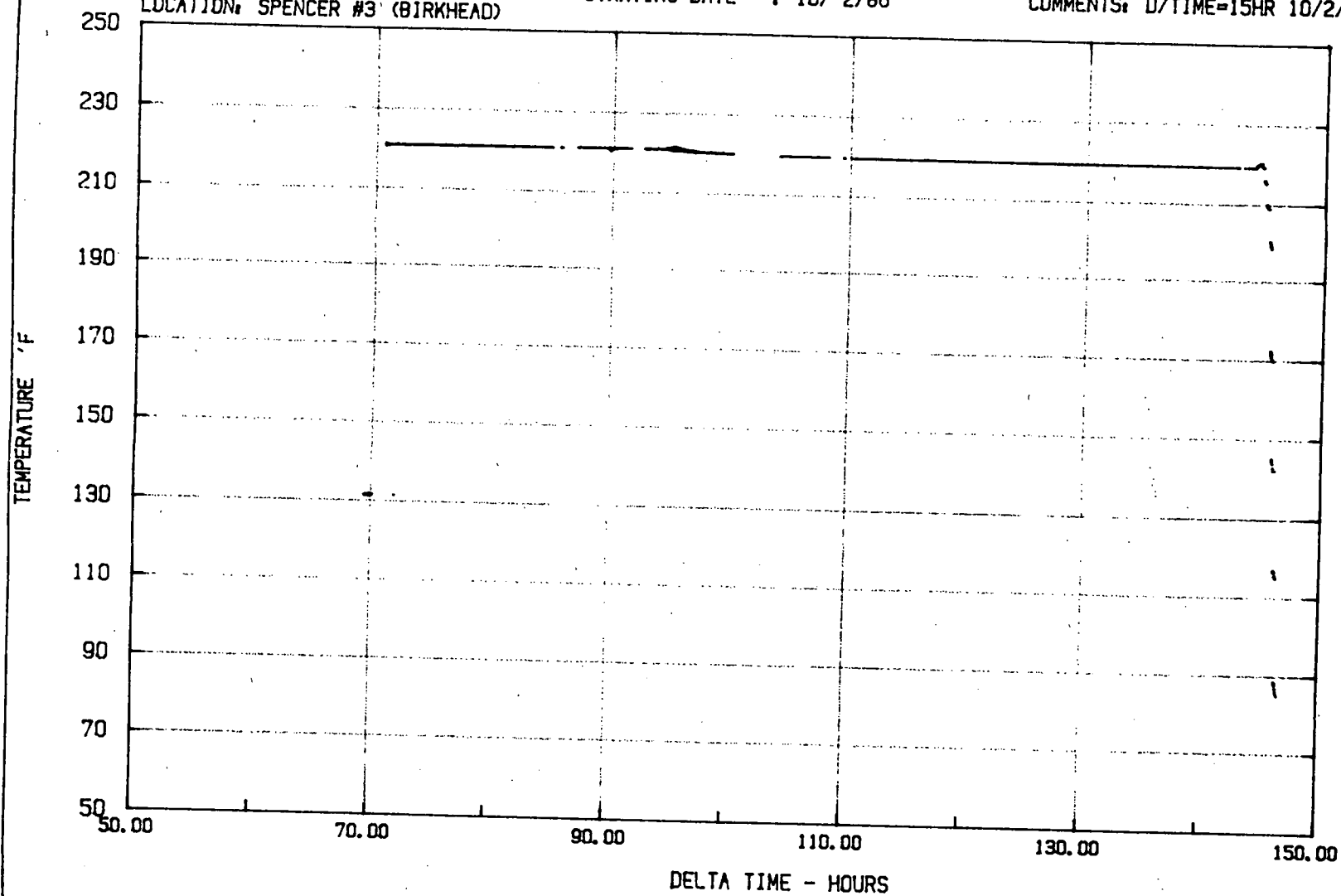
0101

EXPERTEST PTY. LTD. - LINEAR PLOT

CUSTOMER: DELHI
LOCATION: SPENCER #3 (BIRKHEAD)

STARTING DATE : 10/ 2/86

COMMENTS: D/TIME=15HR 10/2/86

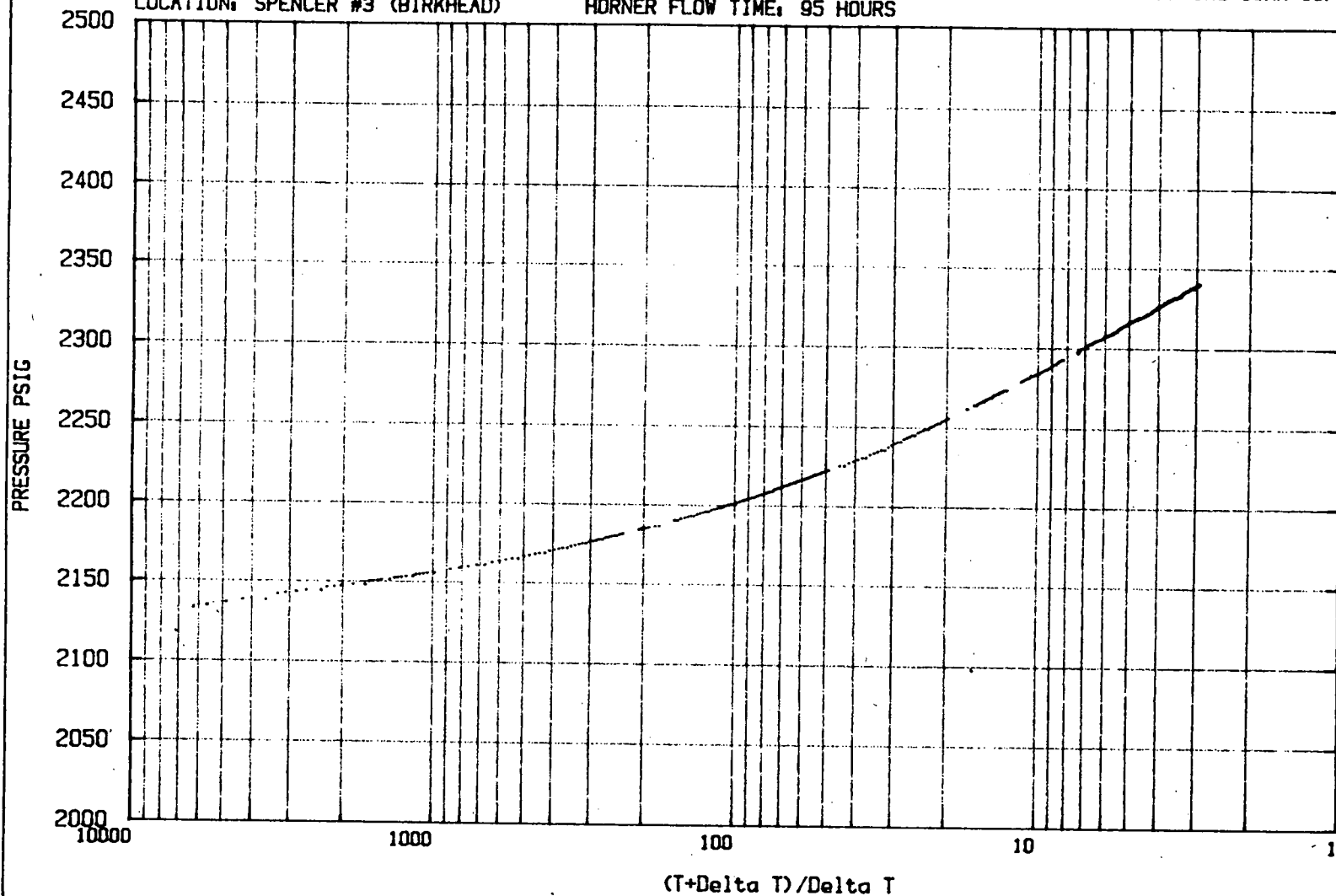


0102

EXPERTEST PTY. LTD. - HORNER PLOT

CUSTOMER: DELHI
LOCATION: SPENCER #3 (BIRKHEAD)STARTING DATE : 10/ 2/86
HORNER FLOW TIME: 95 HOURS

COMMENTS: D/TIME=15HR 10/2/86



WIRELINE REPORT

0103

CLIENT SANTOS

WELL SPENKER #3

DATE 18-2-89

PROGRAMME WORK OVER

PURPOSE OF WORK STATIC GRADIENT

REPORT OF WORK PERFORMED

1630 ARRIVE LOCATION, ADVISE COMPANY MAN
1830 RIG UP MEDIUM DUTY WIRE LINE UNIT
1856 R.I.H WITH 1.75" BLIND BOX
1912 PICK UP AT 5368' KB P.O.H
1920 ARRIVE SURFACE RECOVER TOOLS

RD
Operator's Signature

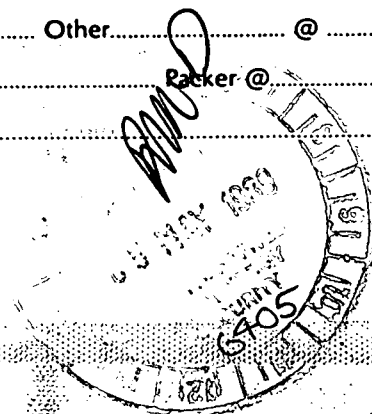
WORKED PERFORMED BY R. SARGENT

OF EXPORT TEST

WELL DATA:

Tubing Size..... FWHP..... SIWHP.....
Subsurface S.V./Landing Nipple @..... S.S.D. @.....
'X' Nipple @..... 'N'/'XN' Nipple @..... Other @.....
Min. I.D. @.....
Perforated Interval:

E1



RG

WIRELINE REPORT

0104

CLIENT SATOS

WELL SPENCER #3

DATE 21-2-89

PROGRAMME WORK OVER RIG

PURPOSE OF WORK SET PSN TEST TOOL

REPORT OF WORK PERFORMED

- 1030 ARRIVE LOCATION, ADVISE COMPANY MAN / STAND BY, RIG
STILL PULLING SUCKER RODS
- 1115 RIG UP MEDIUM DUTY WIRE LINE UNIT / STAND BY
- 1135 R.I.H WITH 2 1/2" PSN TEST TOOL, REMOVE RATCAN RAM
BLOCKS TO ENABLE TOOL TO PASS THROUGH
- 1150 TOOL HAS CLEARED RATCANS BUT EXTREMELY SLOW
PROGRESS ENCOUNTERED DUE TO FOREIGN MATER
IN TUBING 12 RATCAN RUBBER
- 1357 SET PSN AT 5231' W/L / STAND BY FOR PRESSURE TEST
- 1555 PRESSURE TEST HAS FAILED, SUSPECT TUBING HANGER
SHEAR OFF PSN P.O.H
- 1615 ARRIVE SURFACE RIG DOWN / STAND BY
- 1700 RIG UP OPEN HOLE TO RETRIEVE TEST TOOL
- 1739 R.I.H. WITH 2" SB PULLING TOOL
- 1800 LATCH PSN 5231' W/L POH
- 1830 ARRIVE SURFACE RECOVER TOOLS RIG DOWN
- 1845 DEPART LOCATION


Operator's Signature

WORKED PERFORMED BY R. SARGEANT

OF EXPORT TEST

WELL DATA:

Tubing Size FWHP SIWHP

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

'X' Nipple @ 'N'/'XN' Nipple @ Other @

Min. I.D. @ Packer @

Perforated Interval:

**EXPERT TEST**

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWANDILLA 5033

PH. (08) 354 0488 TELEX AAB7183

FAX (08) 43 7408

138 RICHMOND ROAD MARLESTON
SOUTH AUSTRALIA 5033

Tested Saturday, 18th February 1989.

CLIENT	LOCATION	FORMATION
Santos	Spencer 3	HUTTON

STATIC PRESSURE GRADIENT REPORT

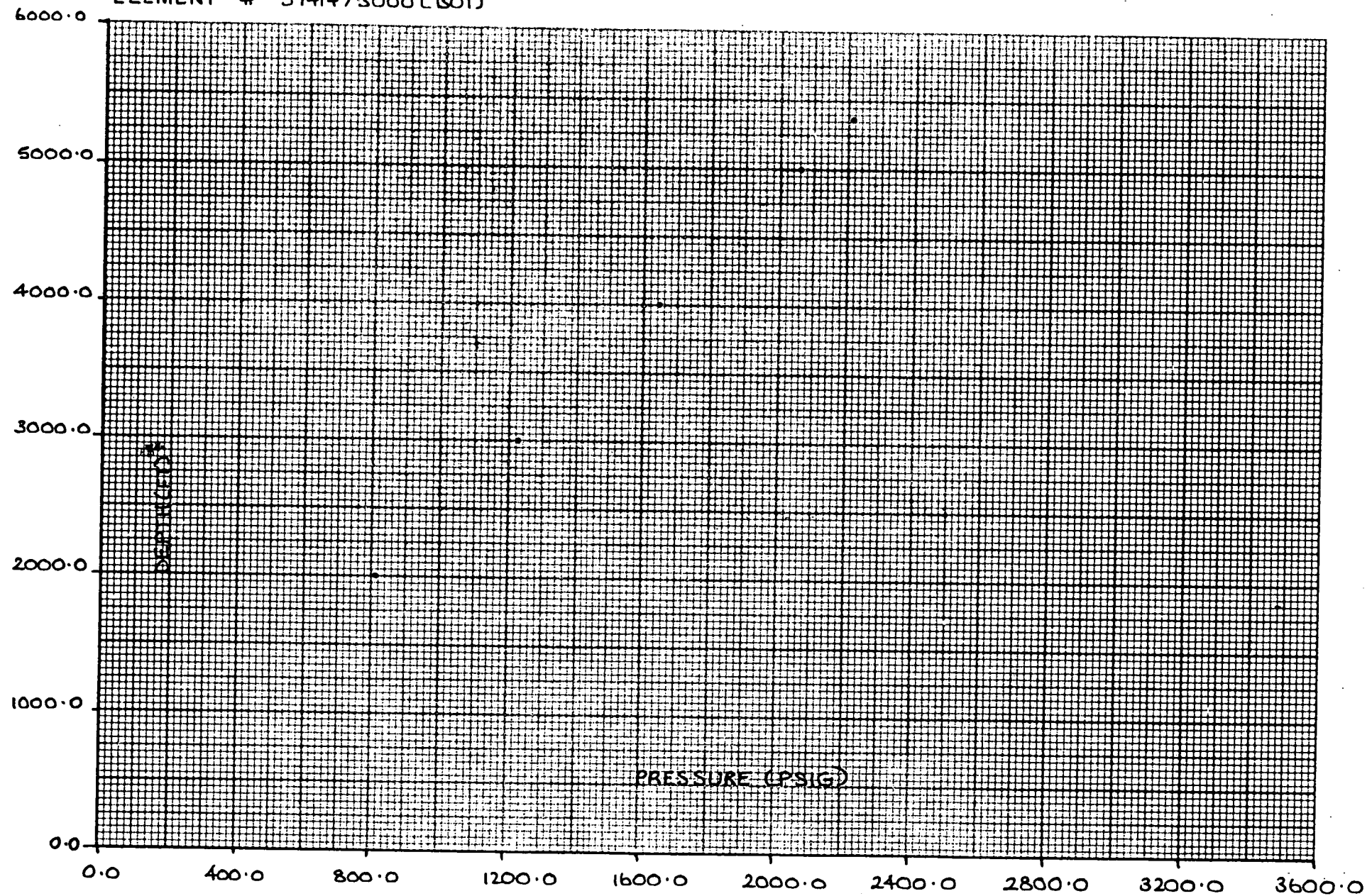
PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	62039	3000	27/ 1/89
Bottom	57414	3000	27/ 1/89

WELL DATA	
PARAMETER	VALUE
DWT In	0
DWT Out	0
Max BHT	220 f

DEPTH FT KB	TOP ELEMENT			BOTTOM ELEMENT		
	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
2000	0.5010	810.1	0.4033	0.5230	810.4	0.4057
3000	0.7600	1226.8	0.4167	0.7920	1227.3	0.4169
4000	1.0190	1643.0	0.4162	1.0620	1645.4	0.4181
5000	1.2790	2060.5	0.4175	1.3300	2060.3	0.4149
5360	1.3730	2211.5	0.4194	1.4290	2213.7	0.4259

GENERAL REMARKS

SPENCER # 3 — STATIC PRESSURE GRADIENT — 18 /2/1989
ELEMENT # 57414/3000 (BOT)



WIRELINE REPORT

CLIENT SANTOS WELL SPENCER #3 DATE 14.8.89

PROGRAMME WORK OVER

PURPOSE OF WORK

DUMBY RUN PRIOR TO GRADIENT

REPORT OF WORK PERFORMED

1630 ARRIVE LOCATION RIG UP LIGHT DUTY WIRE LINE UNIT

1740 RIG 1.75" BLIND BOX

1751 PBTD 5400' KB POH

1803 ARRIVE SURFACE PREPARE PRESSURE ELEMENTS



R. Sargeant
Operator's Signature

WORKED PERFORMED BY R. SARGEANT OF EXPERTEST

WELL DATA:

Tubing Size..... FWHP..... SIWHP.....

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

'X' Nipple @..... 'N'/'XN' Nipple @..... Other..... @.....

Min. I.D. @..... Packer @.....

Perforated Interval:

EXPERT TEST LTD

WIRELINE & WELL TESTING SERVICE

PO BOX 354 COWANDILLA 5033

PH. (08) 354 0498 TELEX AAS7183

FAX (08) 43 7408

138 RICHMOND ROAD MARLESTON

SOUTH AUSTRALIA 5033

Tested Monday, 14th August 1989.

CLIENT	LOCATION	FORMATION
Santos Ltd.	Spencer #3	Birkhead

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	62040	3000	15/ 6/89
Bottom	56432	3000	15/ 6/89

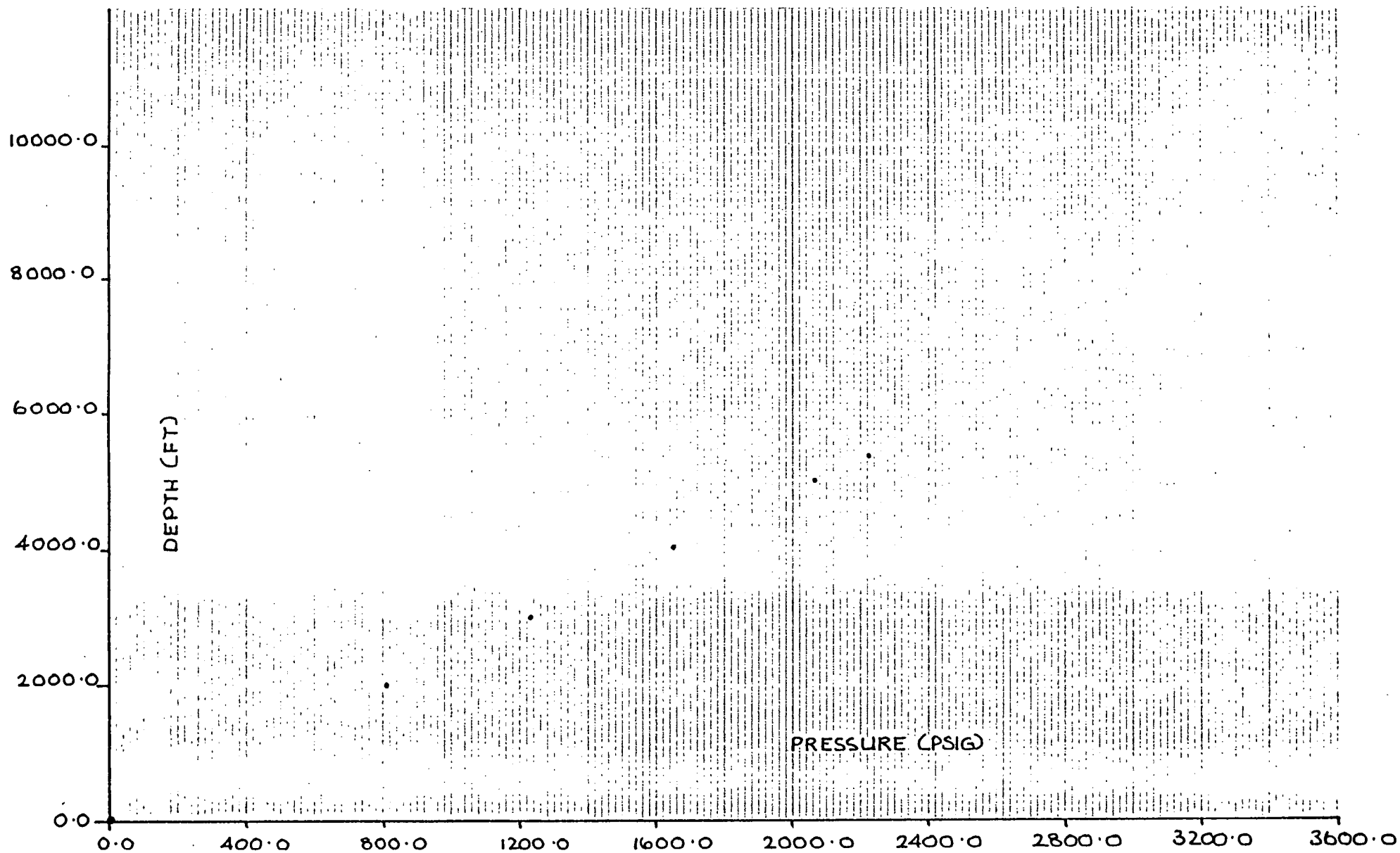
WELL DATA	
PARAMETER	VALUE
DWT In	0 Psi
DWT Out	0 Psi
Max BHT	221 F

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.			-----			
2000	0.5230	810.1	0.405	0.5320	818.1	0.409
3000	0.7960	1231.1	0.421	0.8036	1239.2	0.421
4000	1.0665	1648.5	0.417	1.0730	1657.1	0.418
5000	1.3368	2066.4	0.418	1.3425	2075.0	0.418
5367	1.4375	2222.2	0.425	1.4419	2229.1	0.420
LUB.			-----			

GENERAL REMARKS

Survey run in conjunction with work over program.

SPENCER # 3 — STATIC PRESSURE GRADIENT — 14 / 8 / 89
ELEMENT # 62040 / 3000 (TOP)



EXPERTEST PTY. LTD.



BHP/BHT GAUGE RUN DATA

CUSTOMER : SANTOS

PERFORATIONS: 5350' - 5374'

PAGE: ONE OF ONE

WELL NAME: SPENCER #3

FORMATION : BIRKHEAD

DATE: 29.3.92

TEST TYPE : STATIC GRADIENT SURVEY

OPR : R. BUCKLAND

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.	62039	28515	DNR.	DATE : 29.3.92			
ELEMENT RANGE	3000	3000		PRESSURE LUBRICATOR :	1149	Ø	Ø
RECORDING SECTION SERIAL NO.	34083	13027		RUN IN HOLE :	1159		
DATE OF CALIBRATION: @ 210°F	8.3.92	8.3.92		ON DEPTH AT : 5120' FT/M	1234	Ø	
CLOCK SERIAL NO.	2297	2180		DATE : 29.3.92			
CLOCK RANGE	3HR	3HR		PULL OUT OF HOLE :	1244		
LEAD SCREW TYPE	15	15		AT SURFACE :	1259		
				DEPRESSURE LUBRICATOR :	1310	Ø	
ENGAGE STYLUS DATE 29.3.92 TIME 11.42				MAXIMUM BHT AT 5120' FT/M = 218 °F/Ø			
DISENGAGE STYLUS DATE 29.3.92 TIME 13.13				N.B. ALL DEPTHS ARE MEASURED FROM K.B.			

DATE	TIME	REMARKS
29.3.92		
	11.42	ENG STYLUS, RIG IN TANDEM PRESSURE ELEMENTS
	11.59	R.I.H. CONDUCTING GRADIENT STOPS PER PROGRAM.
	12.34	AT DEPTH 5120' KB
	12.44	P.O.O.H
	12.59	AT SURFACE
	13.13	DISENG. STYLUS RIG DOWN BOMBS CHECK CHARTS OK
		RIG DOWN REMAINDER OF SURFACE EQUIPMENT

**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

00113

Tested Sunday, 29th March 1992.

CLIENT	LOCATION	FORMATION
Santos Ltd.	SPENCER #3	BIRKHEAD

STATIC PRESSURE GRADIENT REPORT

PRESSURE ELEMENT DATA			
POSITION	SERIAL NO.	RANGE	CALIBRATED
Top	62039	3000	8/ 3/92
Bottom	28515	3000	8/ 3/92

WELL DATA	
PARAMETER	VALUE
DWT In	0 PSIG
DWT Out	0 PSIG
Max BHT	218 F

TOP ELEMENT				BOTTOM ELEMENT		
DEPTH FT KB	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT	DEFLECTION INCHES	PRESSURE PSIG	GRADIENT PSI/FT
LUB.						
2000	0.4315	693.2	0.000	0.4490	691.7	0.000
3000	0.6995	1121.0	0.428	0.7253	1120.3	0.429
4000	1.0644	1702.4	0.581	1.0984	1699.0	0.579
5000	1.2280	1962.9	0.261	1.2683	1962.7	0.264
5120	1.2596	2013.2	0.419	1.3010	2013.5	0.423
LUB.						

GENERAL REMARKS

SPENCER # 3 - STATIC PRESSURE GRADIENT - 29/03/92.
ELEMENT # 62039 (TOP)

