

PALM VALLEY No. 2

WELL TEST REPORT

CONDUCTED: MAY 1995

PR 70-30



ONSHORE



**W.R. Arnold
September, 1995**

WRA.0140/rjw

DEPT. OF MINES & ENERGY
DO NOT REMOVE



P01007

TABLE OF CONTENTS

- INTRODUCTION
- CONCLUSIONS
- DISCUSSION
- FIGURES
- APPENDICES
 - OPERATIONS REPORT
 - PRESSURE GRADIENT
 - CALIBRATION REPORT

INTRODUCTION

A 27 day pressure buildup survey was performed on Palm Valley #2 in May/June 1995. The purpose of the test was to determine the formation properties in the producing interval to assist in the construction of a reservoir model.

CONCLUSIONS

- The producing interval in Palm Valley #2 has a flow capacity of 40 darcy-meters. Since the producing interval in Palm Valley #2 consists of an open hole section across the lower Stairway and the Pacoota P1 formations, a net height of 10 m was assumed giving a system permeability of 3970 md.
- A skin factor of -2.5 was calculated, reflecting the fractured nature of the reservoir.
- Assuming a dual porosity reservoir model, omega and lambda were determined to be 0.02, and 2.88e-09 respectively.

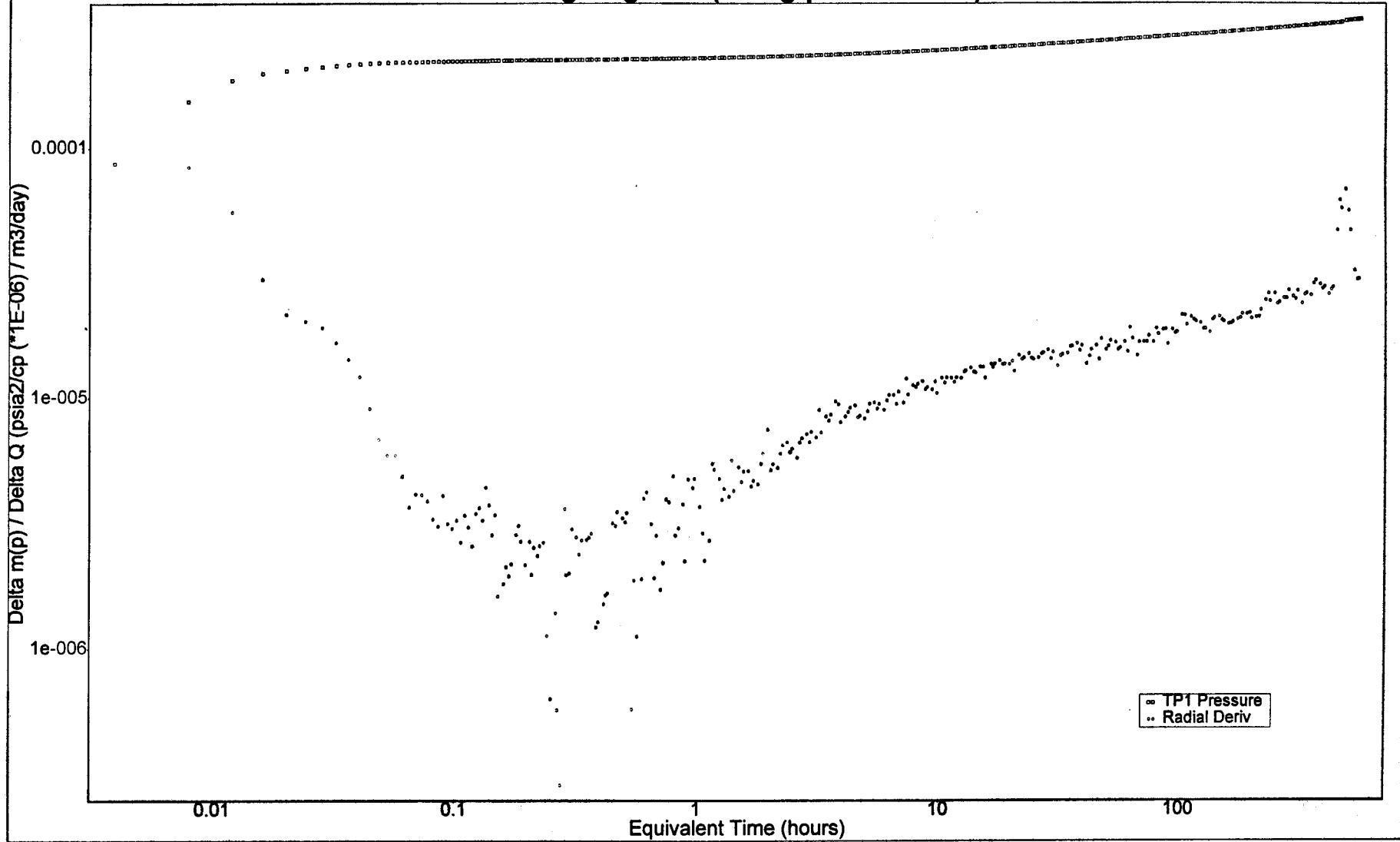
DISCUSSION

Apart from a short duration of wellbore storage early in the build up, no periods of radial flow could be determined on the log-log diagnostic plot (Figure 1). However, type curve analysis was performed.

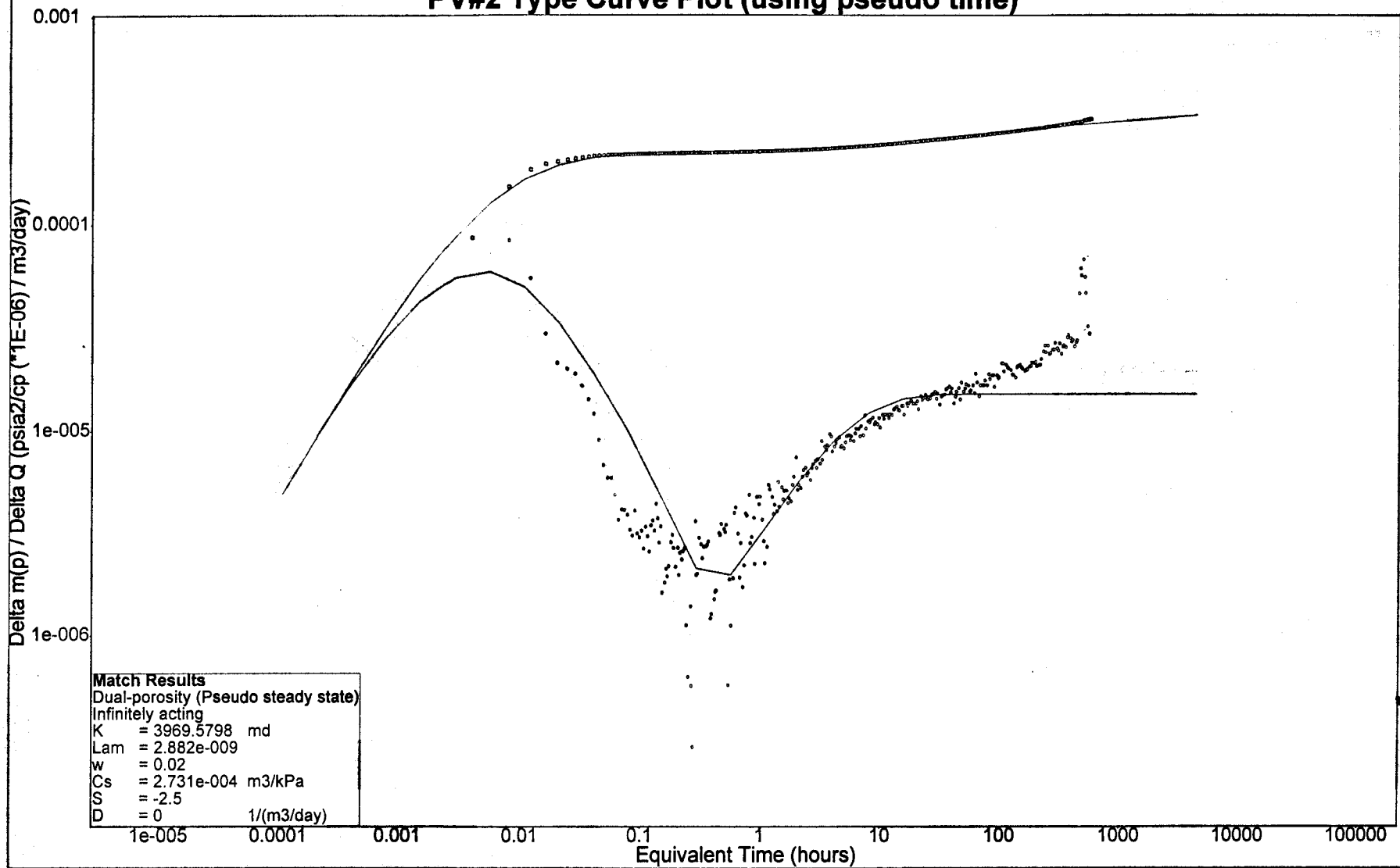
FIGURES



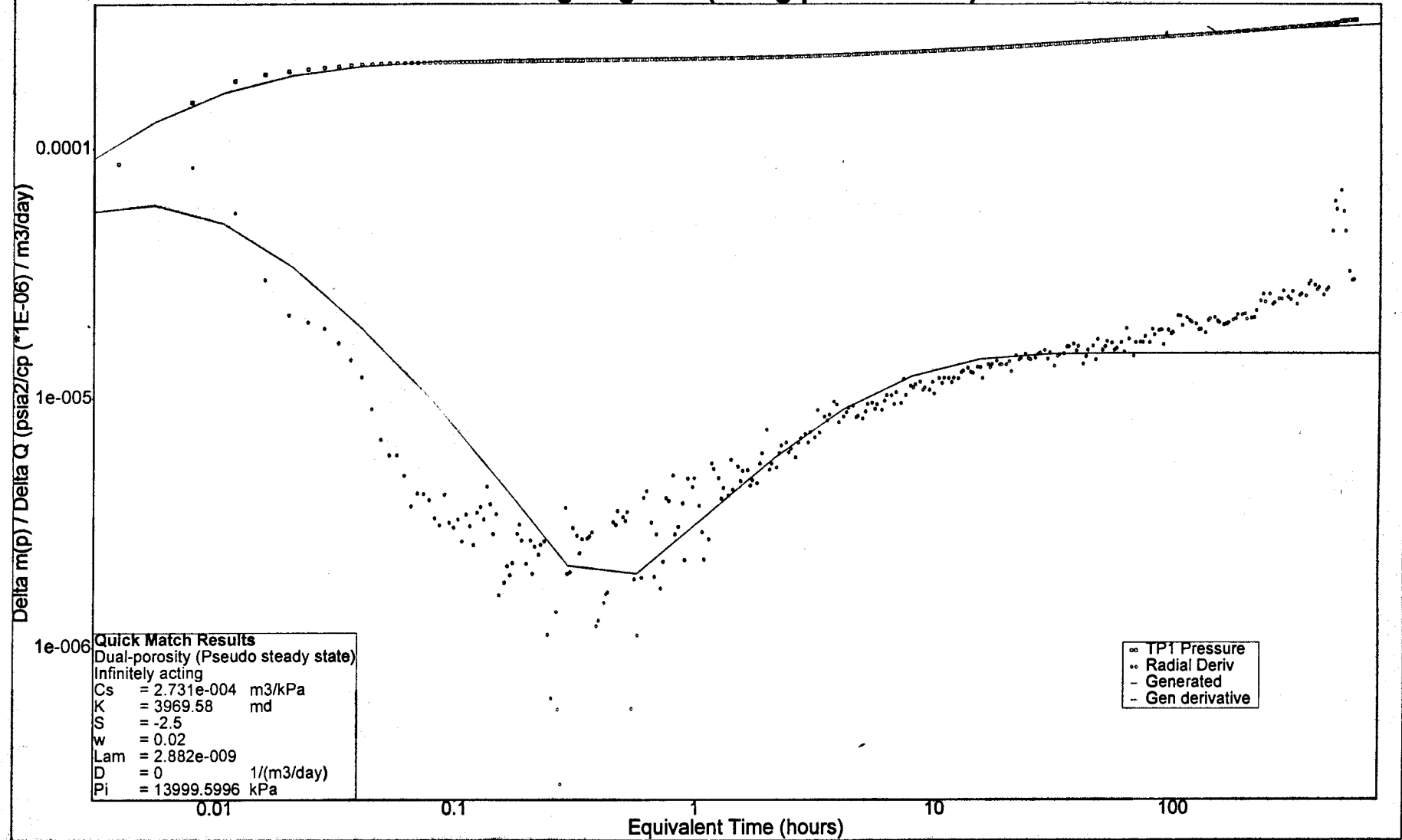
PV #2 Log-Log Plot (using pseudo time)



PV#2 Type Curve Plot (using pseudo time)



PV#2 Log-Log Plot (using pseudo time)



APPENDICES



OPERATIONS REPORT



12.05.95

1230 hrs ON LEASE - RIG UP FOR FLOWING GRADIENT

1300 hrs CONNECT BATTERY PACK TO MRO-1550 - SELF TESTED OK

1325 hrs PRESSURE UP LUBRICATOR - ALLOW GAUGE TO STABILISE
T.H.P - 9,650 kPa/FLOW RATE - 6,762 m³/h/CHOKE - 100%

1349 hrs R.I.H.

1354 hrs @ 304.8 m T.H.P. - 9,638 kPa/FLOW RATE - 6,750 m³/h

1404 hrs R.I.H.

1409 hrs @ 609.6 m

1419 hrs R.I.H.

1423 hrs @ 914.4 m T.H.P. - 9,610 kPa/FLOW RATE - 6,816 m³/h

1433 hrs R.I.H.

1437 hrs @ 1,219.2 m

1447 hrs R.I.H.

1451 hrs @ 1,524 m T.H.P. - 9,615 kPa/FLOW RATE - 6,785 m³/h

1501 hrs R.I.H.

1503 hrs @ 1,600.2 m

1513 hrs R.I.H.

1515 hrs @ 1,676.4 m T.H.P - 9,611 kPa/FLOW RATE - 6,802 m³/h

1525 hrs R.I.H.

1527 hrs @ 1,752.6 m

1537 hrs R.I.H.

29 min @ 6762 m³/h

29 min @ 6750 m³/h

28 min @ 6816 m³/h

24 min @ 6785 m³/h

24 min @ 6802 m³/h



Well Test Operations Report

Palm Valley No. 2

Flow & Build-up Tests

MRO - 1550/VAETRIX #1

Page 2

1539 hrs @ 1828.8 m T.H.P. - 9,608 kPa/FLOW RATE - 6,787 m³/h

1549 hrs R.I.H.

1550 hrs @ 1,873.0 m DATUM

13.05.95

0747 hrs T.H.P. - 9,707 kPa/FLOW RATE - 6,584 m³/h

14.05.95

1120 hrs T.H.P. - 9,715 kPa
FLOW RATE - 6,580 m³/h

1555 hrs T.H.P. - 9,696 kPa
FLOW RATE - 6,635 m³/h

1600 hrs SHUT WELL IN FOR BUILD-UP TEST

1601 hrs T.H.P. - 10,603 kPa

1602 hrs T.H.P. - 10,660 kPa

1603 hrs T.H.P. - 10,676 kPa

1604 hrs T.H.P. - 10,682 kPa

1605 hrs T.H.P. - 10,685 kPa

1610 hrs T.H.P. - 10,694 kPa

1615 hrs T.H.P. - 10,697 kPa

1620 hrs T.H.P. - 10,702 kPa

1700 hrs T.H.P. - 10,680 kPa

15.05.95

0800 hrs T.H.P. - 10,738 kPa

Well Test Operations Report

Palm Valley No. 2

Flow & Build-up Tests
MRO - 1550/VAETRIX #1

Page 3

16.05.95

0740 hrs T.H.P. - 10,780 kPa

17.05.95

0718 hrs T.H.P. - 10,784 kPa

18.05.95

0741 hrs T.H.P. - 10,820 kPa

19.05.95

0755 hrs T.H.P. - 10,820 kPa

20.05.95

0758 hrs T.H.P. - 10,846 kPa

21.05.95

0754 hrs T.H.P. - 10,831 kPa

22.05.95

0810 hrs T.H.P. - 10,840 kPa

23.05.95

0805 hrs T.H.P. - 10,869 kPa

Well Test Operations Report

Palm Valley No. 2

Flow & Build-up Tests
MRO - 1550/VAETRIX #1

Page 4

24.05.95

0800 hrs T.H.P. - 10,870 kPa

25.05.95

0745 hrs T.H.P. - 10,886 kPa

26.05.95

0800 hrs T.H.P. - 10,894 kPa

27.05.95

0843 hrs T.H.P. - 10,891 kPa

28.05.95

0800 hrs T.H.P. - 10,895 kPa

29.05.95

0805 hrs T.H.P. - 10,903 kPa

30.05.95

0800 hrs T.H.P. - 10,910 kPa

31.05.95

0840 hrs T.H.P. - 10,899 kPa



01.06.95

0825 hrs T.H.P. - 10,912 kPa

02.06.95

0805 hrs T.H.P. - 10,912 kPa

03.06.95

0830 hrs T.H.P. - 10,912 kPa

04.06.95

0750 hrs T.H.P. - 10,909 kPa

05.06.95

0805 hrs T.H.P. - 10,918 kPa

06.06.95

0840 hrs T.H.P. - 10,910 kPa

07.06.95

0748 hrs T.H.P. - 10,920 kPa

08.06.95

0740 hrs T.H.P. - 10,925 kPa

09.06.95

0725 hrs T.H.P. - 10,929 kPa

10.06.95

0749 hrs T.H.P. - 10,934 kPa

0300 hrs ON LEASE - PREPARE FOR STATIC GRADIENT
T.H.P. - 10,928 kPa

1315 hrs POOH

1318 hrs @ 1,873.0 m

1328 hrs POOH

1332 hrs @ 1,752.6 m T.H.P. - 10,920 kPa

1342 hrs POOH

1346 hrs @ 1,676.4 m

1356 hrs POOH

1400 hrs @ 1,600.2 m T.H.P. - 10,918 kPa

1410 hrs POOH

1413 hrs @ 1,524.0 m

1423 hrs POOH

1431 hrs @ 1,219.2 m T.H.P. - 10,916 kPa

1441 hrs POOH

1450 hrs @ 914.4 m

1500 hrs POOH

1507 hrs @ 609.6 m T.H.P. - 10,918 kPa \Rightarrow (1584)

1517 hrs POOH

1524 hrs @ 304.8 m

1534 hrs POOH

1546 hrs @ 0 SURFACE T.H.P. - 10,925 kPa

1600 hrs SHUT SWAB VALVE - DEPRESSURE LUBRICATOR

1605 hrs WELL BACK ON LINE INTO PLANT @ 5,500 m³/h (ANNULUS SHUT)

1625 hrs DISCONNECT BATTERY PACK FROM MRO-1550.

END OF TEST

PRESSURE GRADIENT



PRESSURE GRADIENT REPORT

PALM VALLEY No.2

Flowing Gradient - In - 12-May-95

Datum : 1,872.7 m TVD

Depth In TVD Surface (metres)	Calibrated Pressure (kPa(a))	Pressure Gradient (kPa/m)	Tubing Head Pressure (kPa (a))	Instantaneous Flow Rate (m ³ /h)
0.0	9,782		9,743	6,762
304.8	10,032	0.819	9,731	6,750
609.6	10,327	0.970		-
914.4	10,604	0.907	9,703	6,816
1,219.2	10,905	0.989		-
1,523.9	11,204	0.982	9,708	6,785
1,600.1	11,287	1.083		-
1,676.2	11,365	1.035	9,704	6,802
1,752.4	11,442	1.012		-
1,828.5	11,501	0.766	9,701	6,787
FBHP 1,872.7	11,669	3.796	9,789	6,635

Static Gradient - Out - 14-Apr-95

Depth Out TVD Surface (metres)	Calibrated Pressure (kPa(a))	Pressure Gradient (kPa/m)	Tubing Head Pressure (kPa (a))	Instantaneous Flow Rate (m ³ /h)
FSIP 1,872.7	12,911	2.646	10,928	-
1,828.5	12,794	0.920		-
1,752.4	12,724	0.862	10,920	-
1,676.2	12,659	0.965		-
1,600.1	12,585	0.867	10,918	-
1,523.9	12,519	0.885		-
1,219.2	12,250	1.019	10,916	-
914.4	11,939	0.919		-
609.1	11,659	0.941	10,918	-
304.8	11,372	0.981		-
0.0	11,073		10,925	-

Pressure Correction from Calibration :

Calibrated Pressure = MRO Pressure * 1.002947 + (-15.79)

PRESSURE GRADIENT REPORT

PALM VALLEY No.2

Flowing Gradient - In - 12-May-95

Datum : 6,145 ft TVD

	Depth In TVD Surface (Feet)	Calibrated Pressure (psi(a))	Pressure Gradient (psi/ft)	Tubing Head Pressure (psi(a))	Instantaneous Flow Rate (Mcfpd)
		1,419		1,413	5,731
	1,000	1,455	0.036	1,411	5,721
	2,000	1,498	0.043		-
	3,000	1,538	0.040	1,407	5,777
	4,000	1,582	0.044		-
	5,000	1,625	0.043	1,408	5,751
	5,250	1,637	0.048		-
	5,499	1,648	0.046	1,407	5,765
	5,749	1,660	0.045		-
	5,999	1,668	0.034	1,407	5,752
FBHP	6,144	1,692	0.168	1,420	5,624

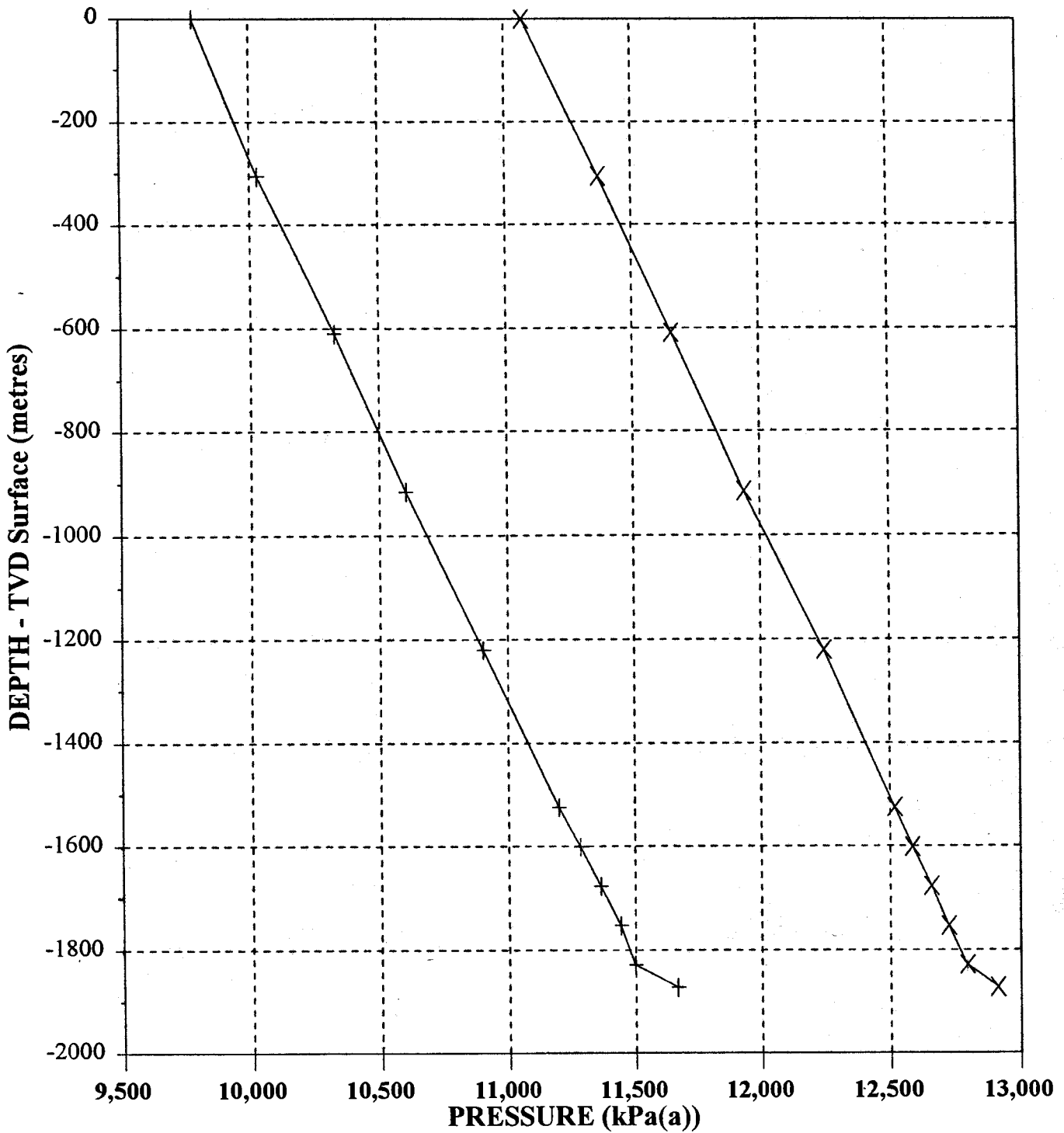
Static Gradient - Out - 14-Apr-95

	Depth Out TVD Surface (Feet)	Calibrated Pressure (psi(a))	Pressure Gradient (psi/ft)	Tubing Head Pressure (psi(a))	Instantaneous Flow Rate (Mcfpd)
FSIP	6,144	1,873	0.117	1,585	-
	5,999	1,856	0.041		-
	5,749	1,846	0.038	1,584	-
	5,499	1,836	0.043		-
	5,250	1,825	0.038	1,584	-
	5,000	1,816	0.039		-
	4,000	1,777	0.045	1,583	-
	3,000	1,732	0.041		-
	1,998	1,691	0.042	1,584	-
	1,000	1,649	0.043		-
	0	1,606		1,585	-

Pressure Correction from Calibration :

Calibrated Pressure = MRO Pressure * 1.002947 + (-2.3)

PALM VALLEY No.2 - PRESSURE GRADIENT



+ Flowing Gradient - In - 12-May-95 x Static Gradient - Out - 14-Apr-95

CALIBRATION REPORT



CALIBRATION REPORT

PALM VALLEY No.2

12 May 1995 (Before Test)

Dead Weight Test

Barometric Pressure (mb) : 915.4				
D.W.T. (kPa)	Vaetrix Gauge (kPa(g))		MRO - 1550 Gauge (kPa(g))	
	RUN 1	RUN 2	RUN 1	RUN 2
0			101	110
1,000	997	1,012	1,101	1,107
2,000	1,995	2,014	2,099	2,105
3,000	2,995	3,016	3,097	3,105
4,000	3,994	4,017	4,094	4,101
5,000	4,992	5,016	5,091	5,099
6,000	5,990	6,016	6,087	6,095
7,000	6,987	7,014	7,083	7,092
8,000	7,983	8,010	8,081	8,090
9,000	8,978	9,004	9,078	9,087
10,000	9,973	9,997	10,076	10,082
11,000	10,966	10,990	11,075	11,077
12,000	11,959	11,981	12,072	12,073
13,000	12,950	12,970	13,070	13,068
14,000	13,940	13,961	14,067	14,065
15,000	14,928	14,948	15,120	15,061
16,000	15,917	15,935	16,066	16,058
17,000	16,904	16,920	17,057	17,056
18,000	17,897	17,905	18,056	18,053
19,000	18,882	18,886	19,051	19,050
20,000	19,868	19,868	20,047	20,047

11 June 1995 (After Test)

Barometric Pressure (mb) : 914.4				
D.W.T. (kPa)	Vaetrix Gauge (kPa(g))		MRO - 1550 Gauge (kPa(g))	
	RUN 1	RUN 2	RUN 1	RUN 2
0			106	102
1,000	999	1,015	1,105	1,098
2,000	2,000	2,019	2,102	2,096
3,000	3,004	3,022	3,099	3,094
4,000	4,005	4,026	4,096	4,091
5,000	5,006	5,028	5,093	5,089
6,000	6,007	6,029	6,090	6,086
7,000	7,006	7,029	7,087	7,084
8,000	8,004	8,027	8,084	8,081
9,000	9,001	9,024	9,081	9,079
10,000	9,997	10,021	10,078	10,076
11,000	10,994	11,016	11,074	11,076
12,000	11,988	12,010	12,071	12,070
13,000	12,982	13,002	13,068	13,066
14,000	13,973	13,994	14,064	14,063
15,000	14,967	14,984	15,061	15,060
16,000	15,960	15,973	16,057	16,056
17,000	16,940	16,962	17,053	17,053
18,000	17,928	17,946	18,050	18,050
19,000	18,928	18,931	19,048	19,046
20,000	19,914	19,914	20,044	20,044

TUBING HEAD PRESSURE CALIBRATION

Measured Depth (m)	Vaetrix Pressure kPa (g)	Calibrated Pressure kPa (a)	Instantaneous Flow Rate (m ³ /h)	Instantaneous Flow Rate (Mcfpd)
0.0	9,650	9,743	6,762	5,731
304.8	9,638	9,731	6,750	5,721
609.3			-	-
914.4	9,610	9,703	6,816	5,777
1,219.2			-	-
1,524.0	9,615	9,708	6,785	5,751
1,600.2			-	-
1,676.4	9,611	9,704	6,802	5,765
1,752.6			-	-
1,828.8	9,608	9,701	6,787	5,752
1,873.0	9,696	9,789	6,635	5,624
1,873.0	10,928	10,928	-	-
1,828.8			-	-
1,752.6	10,920	11,020	-	-
1,676.4			-	-
1,600.2	10,918	11,018	-	-
1,524.0			-	-
1,219.2	10,916	11,016	-	-
914.4			-	-
609.6	10,918	11,018	-	-
304.8			-	-
0	10,925	11,025	-	-

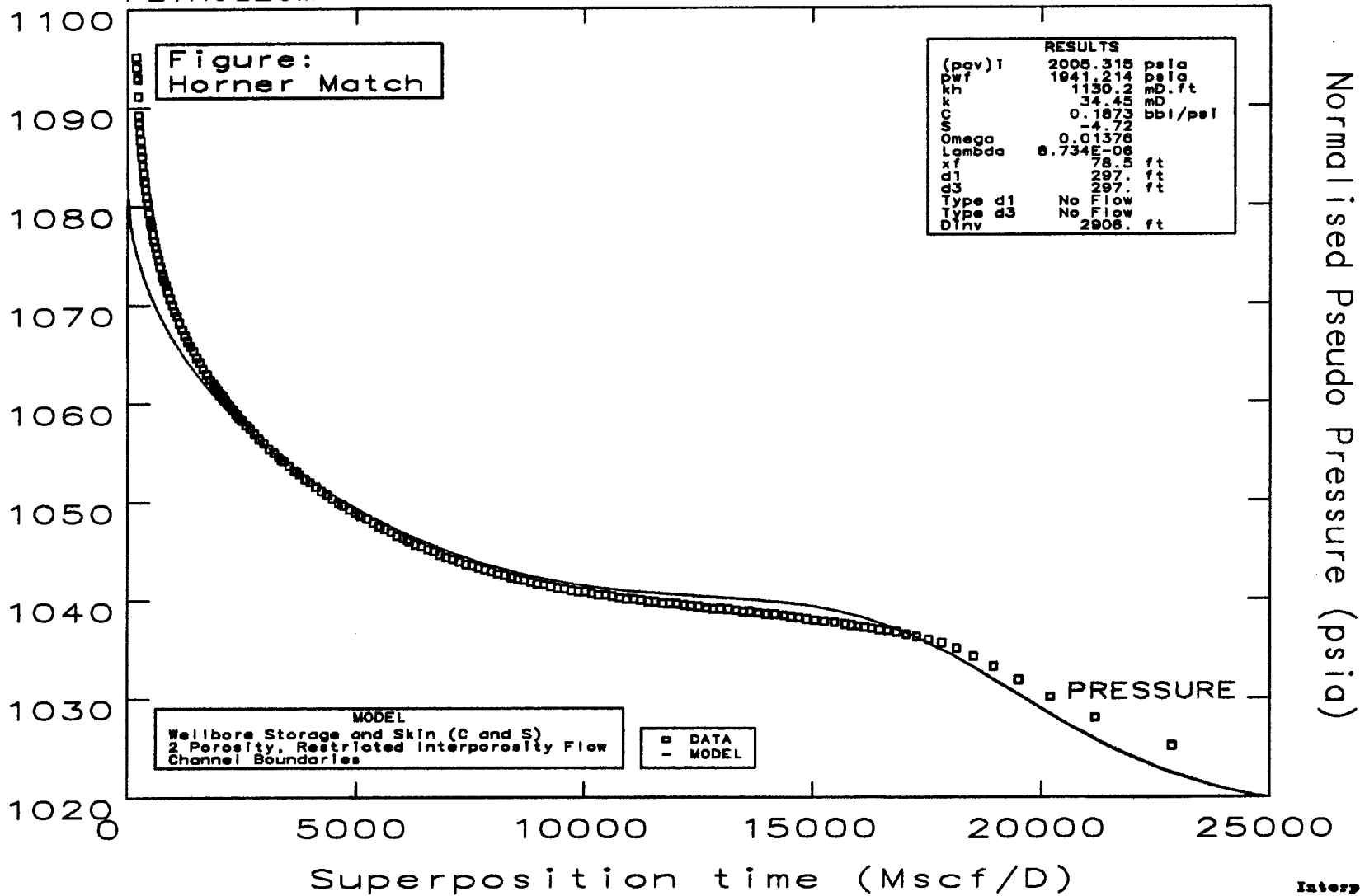
MRO GAUGE PRESSURE CALIBRATION

Calibrated Pressure = MRO Gauge Pressure * 1.002947 + (-15.79)
 (Using a linear regression)

MAGELLAN
PETROLEUM

PV 2

FLOW PERIOD 2
(Buildup)



Interpret/B

PALM VALLEY #2

**DOWNHOLE FLOW RECONFIGURATION/DRILL
COLLAR PERFORATION REPORT**



W.R. Arnold
October, 1995

WRA719.rad

TABLE OF CONTENTS

· INTRODUCTION	1
· CONCLUSIONS	1
· DISCUSSION	2
WELL PREVIOUSLY LIQUID LOADED	2
GAMMA RAY LOG	3
POSSIBLE LIQUID LIFTING INEFFICIENCY IN PALM VALLEY #9	3

FIGURES

1. PV-2 PRODUCTION
2. PRE JOB DOWNHOLE FLOW CONFIGURATION
3. POST JOB DOWNHOLE FLOW CONFIGURATION
4. DOWNHOLE COMPLETION - PALM VALLEY #2
5. DOWNHOLE COMPLETION - PALM VALLEY #9

APPENDICES

· DAILY REPORTS

ENCLOSURE

· PERFORATION/GAMMA RAY LOG

INTRODUCTION

A novel completion technique was employed during the drilling of Palm Valley #2 in February 1970. In anticipation of penetrating a significant gas flow, the 500 foot production hole section was mist drilled with a tubing completion above the drilling bottom hole assembly. Gas flows of approximately 4 MMSCFD were encountered in the lower Stairway, and upon penetration of a flow of approximately 70 MMSCFD in the top of the Pacoota P1, drilling was stopped and the well instantly completed by picking the bit off bottom, and landing the completion. A sliding sleeve just above the drilling BHA was opened, and the well was ready for production.

Palm Valley #2 has been the field's best well producing over 25 BSCF since 1983 with this original completion string; however, in early 1995 the well production rate started declining rapidly, and on one occasion died requiring a short blowdown to re-establish production. Minimum rate required to lift liquid analysis was performed, and suggested that due to the unique downhole configuration, the well was liquid loading.

Perforation operations were performed on 14 September, 1995 to attempt to improve the well's liquid lifting efficiency. By perforating the drill collar just above the non-return valve and allowing flow up through the drill collars, better lifting efficiency would be achieved due to higher flow velocity.

CONCLUSIONS

- Operational objectives were not fully achieved, yet the desired outcome was obtained. The program specified that two 15 foot perforation runs would be performed; however, after (probably during) the firing of the first gun, the gun became stuck and pulled off the wire at the cable head. The cable head, sinker bars, collar locator, and firing head were subsequently fished with slickline leaving the majority of the Enerjet strip in the well. Whereas this prevented the running of the programmed second gun, a large slug of water was lifted and production restabilised, thereby eliminating the need to perform the second gun run.

- In addition to achieving our main objective of establishing a constant production rate by eliminating liquid load up effects, an apparent "stimulation" has been achieved with production stabilizing at over 25 percent higher than the previous rate. It would seem that Palm Valley #2 was suffering from liquid loading effects for quite some time.
- Prior to perforating, a gamma ray log was acquired inside the drill collars over approximately 500 feet of previously unlogged wellbore. Due to sporadic tool noise, three logging passes were recorded and the log output was generated from the three passes.
- Based on the results of this operation on Palm Valley #2 and the current downhole configuration of Palm Valley #9, it is suspected that Palm Valley #9 may be suffering from a low liquid lifting efficiency problem. This will be looked at in close detail in the near future.

DISCUSSION

Well Previously Liquid Loaded

Analysis of the pre and post perforating production data (Figure 1) suggests that Palm Valley #2 was producing from a liquid loaded state. After perforating, the well produced back a four barrel slug of water. Gas production stabilized at a higher rate, and after producing back the initial slug, water-gas ratio (bbls water/MMSCF) restabilized at the same as before. These results suggest that the well was liquid loaded, rather than suffering a produced water lifting efficiency problem. Had this well previously unable to efficiently lift produced liquid, then an increase in water-gas ratio would have been expected with the improved downhole configuration. As this has not occurred, it is felt that the well was liquid loaded.

Of the four barrel slug of water produced immediately after perforating, approximately two barrels of this water were standing inside the drill collars before perforation, the other two barrels must have come from the borehole/drill collar annulus. This water was possibly held in irregularities in the borehole wall, suspended in low flow velocity regions, or as a standing column on the borehole bottom. Figure 2 and 3 show the well flow stream configurations before and after the perforation.

Gamma Ray Log

As stated above, a gamma ray log was acquired inside the drill collars over approximately 500 feet of previously unlogged wellbore. This log has been handed over to Martin Berry to be incorporated into the Palm Valley log data set. Preliminary inspection has shown the previously estimated formation tops were estimated to within ± 2 feet.

Possible Liquid Lifting Inefficiency in Palm Valley #9

Given the similar downhole configuration of Palm Valley #9 (Figure #5) and its current water production, it is suspected that this well may be suffering a liquid lifting efficiency/liquid loading problem. Although the downhole configuration is slightly different to that in the pre-perforation Palm Valley #2, liquid problems are a possibility. This will be looked at in detail in the near future.

FIGURE 1

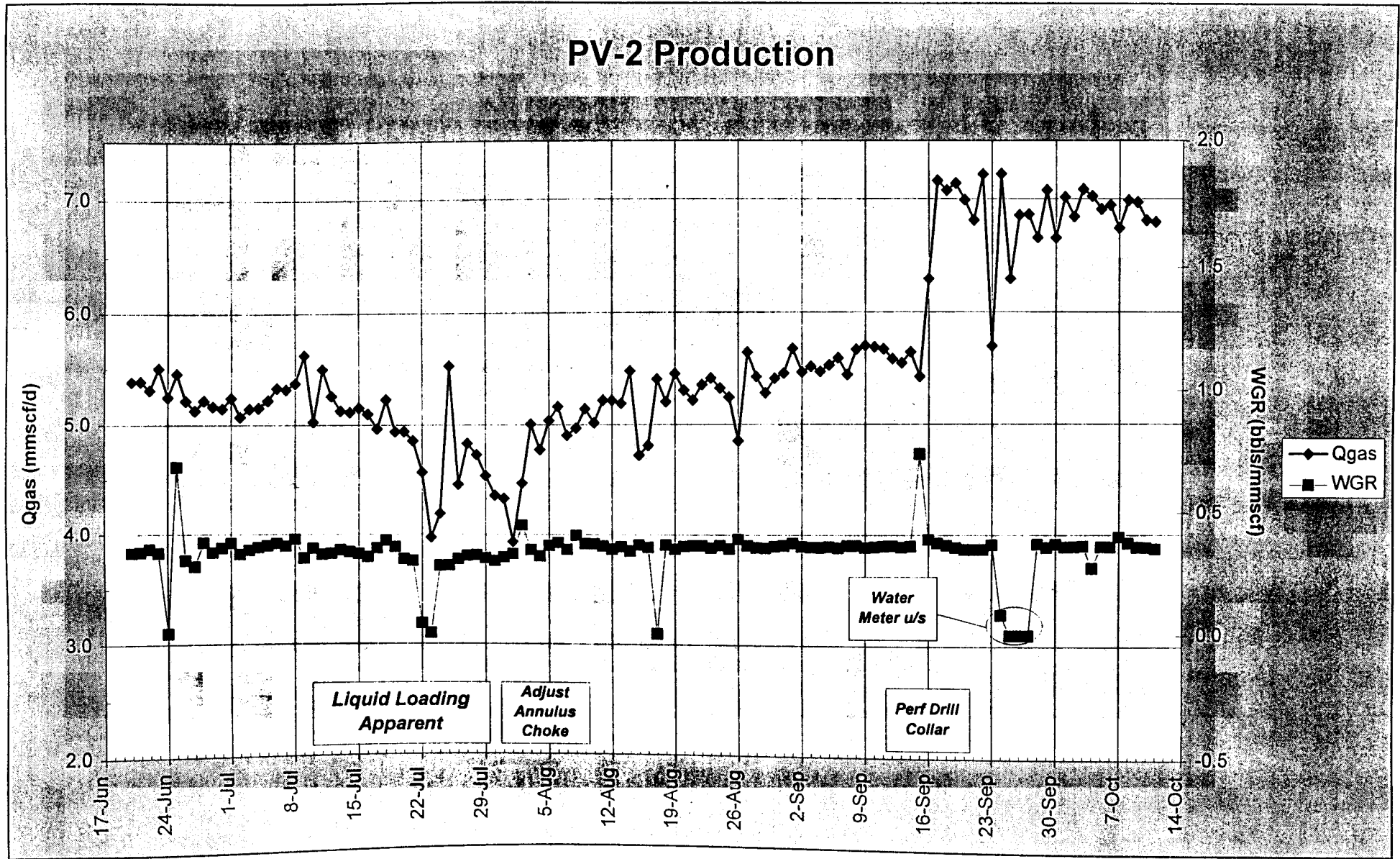


FIGURE 3

Palm Valley #2 Drill Collar Perforation Post Job Downhole Flow Configuration

Given: $Q = 1,000,000 \text{ cu ft/day}$
 $= 11.6 \text{ cu ft/sec}$

Upward vertical flow stream through
2-7/8" tubing (2.441" ID)
Flow Vel = 357 ft/sec

Upward vertical flow stream through
4-3/4" drill collars (2-1/4" ID)
Flow Vel = 357 ft/sec

Downward vertical flow stream through
6-1/8" open hole x 4-3/4" drill collar annulus
(liquid flow assisted by gravity)
Flow Vel = 94 ft/sec

(open hole diameter assumed = 6-1/2")

Downward vertical flow stream through
6-1/8" open hole x 4-3/4" drill collar annulus
Flow Vel = 94 ft/sec

(open hole diameter assumed = 6-1/2")

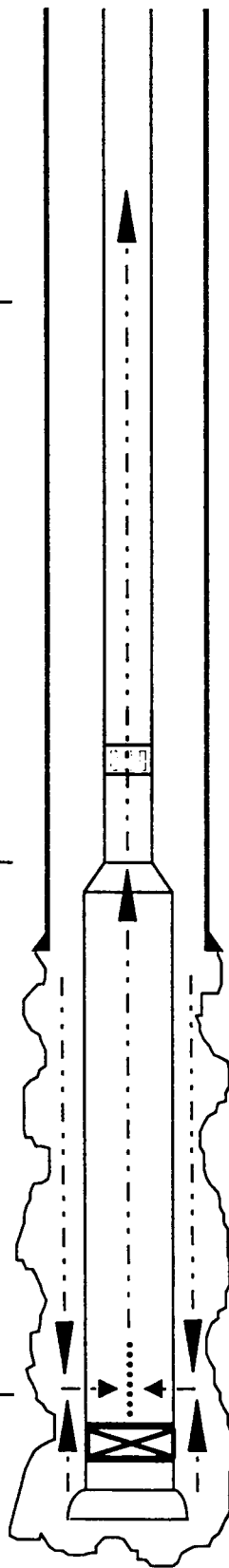


FIGURE 4

DOWNHOLE COMPLETION

Palm Valley #2

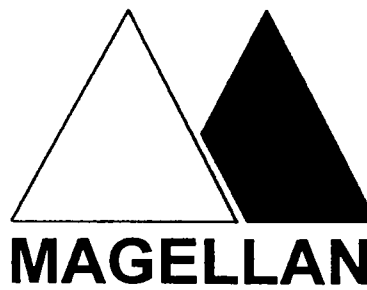


ITEM	DESCRIPTION	LENGTH (ft)	DEPTH KB (ft)	MIN. ID (in)			
1	K.B. to top of tubing spool						
2	Tubing Hanger, Cameron 'HB-A', 2-7/8" EUE x 4-1/2" top						
3	192 jts Tubing, 2-7/8" 6.5# N80 EUE						
4	Landing Nipple, Otis type 'X', 2-7/8" EUE		6045.00	2.313			
5	3 jts Tubing, 2-7/8" 6.5# N80 EUE						
6	Sliding Sleeve, Otis type 'XO' 2-7/8" EUE - CLOSED		6140.00	2.313			
7	6' Pup jt, 2-7/8" 6.5# N80 EUE						
8	Landing Nipple, Otis type 'N', 2-7/8" EUE		6149.00	2.205			
9	Cross-over swedge, 2-7/8" x 4-3/4"						
10	13 Drill Collars, 4-3/4" x 2-1/4"		6152.00				
11	Bit sub with float valve		6520.00	0.000			
12	1 Drill Collars, 4-3/4" x 2-1/4"						
13	Bit, 6-1/8" OD <i>Bit bottom</i>		6545.58				
16' Enerjet strip left in hole -- Last tagged at 6353' KB							
PERFORATION INTERVALS							
FORMATION	INTERVAL (FT / KB)	GUN:				CHARGES:	
		SIZE	TYPE	PHASE	SPF	TYPE	WT(g)
lower Stairway Horn Valley Pacoota P1	Openhole Openhole Openhole						
Drill Collars (16/Sep/95)	6501 - 6515	1-11/16	E-jets	0	6	RDX	7
REMARKS: Perforated collars above float valve, and closed sliding sleeve to improve water lifting capacity of well							
ANNULUS FLUID: annulus live and on production							
PRODUCTION CASING\HOLE: 7" 23# J55 LT&C csg to 6054' \ 6-1/8" open hole to 6559							
CALCULATED STRING WEIGHT:							
SLACK-OFF WEIGHT:							
TENSION:							
NOT TO SCALE		WELLSITE SUPERVISOR		William R. Arnold			
PROPOSED:		DATE OF INSTALLATION					
RE-COMPLETION: 18-Sep-9		DRAFTED:		DATE:			
COMPLETION: 5-Feb-70		REVISED:		DATE:			
OTHER:							

TD - 6559' KB

12:21 PM

FIGURE 5



DOWNHOLE COMPLETION

Palm Valley #9

	1	ITEM	DESCRIPTION	LENGTH (ft)	DEPTH KB (ft)	MIN. ID (in)			
	2	1	K.B. to top of tubinghead spool						
		2	Tubing Hanger, Cameron type FBB-EN						
		3	Tubing, 2-7/8" 6.5# N80 EUE						
		4	Sliding Sleeve, Baker type CMD, 2-7/8" EUE		7204.01	2.31			
		5	Tubing, 1 jt, 2-7/8" 6.5# N80 EUE						
		6	X-over, 2-7/8" EUE x DC threads		7239.74				
		7	2 x Drill Collars, 4-1/2" x 2"		7300.66 bottom				
			Fish in Hole						
		A	3 x Drill Collars, 4-1/2" x 2"		7302.14 top				
	B	Bit Sub							
	C	Tri-cone bit, 6" Hughes J3		7395.97 bottom					
		Fish is setting on a fill of carbonate chips at 7396' KB, and is filled with same up to 7308' KB							
	3	PERFORATION INTERVALS							
		FORMATION	INTERVAL (FT / KB)	GUN:				CHARGES:	
				SIZE	TYPE	PHASE	SPF	TYPE	WT(g)
		Pacoota P2	Open Hole						
	4	REMARKS: External casing packers were utilized, providing a cement free annulus from 7239.7' to TD.							
	5	ANNULUS FLUID:							
	6	PRODUCTION CASING\HOLE: 7" csg to 7324', 8-1/2" hole to TD.							
	7	CALCULATED STRING WEIGHT:							
	A	SLACK-OFF WEIGHT:							
	B	TENSION:							
	C	NOT TO SCALE		WELLSITE SUPERVISOR					
		PROPOSED:		DATE OF INSTALLATION					
		RE-COMPLETION:		DRAFTED:		DATE:			
		COMPLETION: 16-Jun-93		REVISED:		DATE:			
		ALL DEPTHS ARE MEASURED DEPTHS - THIS WELL IS DEVIATED							

PBTD - 7302' KB