



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

November 14, 1994

The Wiser Oil Company
c/o Shahara Oil Corporation
P.O. Box 3232
Carlsbad, New Mexico 88221-3232

CF 10932
R-10094

Attn: Mr. Perry L. Hughes

RE: Explanation of Calculations for Injection Pressure Increase

Dear Mr. Hughes,

Reference is made to the enclosed approved injection pressure increases on 15 wells in your Caprock Maljamar Unit. The increase is based on step rate tests conducted on six of these wells. In a previous injection pressure increase (July 1, 1994), my staff used the average of actual tests to increase the pressure on wells which were not actually tested. In this case, the differential of the low and high pressures was approximately 685 psig and the figures averaged 2306 psig. However, in the recently tested group, the differential is 850 psig. We are concerned that an average in this case (2443 psig), may not be representative of all nine additional wells which were not tested. My staff instead used a median figure of 2310 psig for the maximum allowed surface injection pressure on these wells. This is very close to the average figure used previously. We hope this will sufficiently benefit your injection program in the Caprock Maljamar Unit.

Very truly yours,

William J. LeMay
Director

WJL/BES

cc: Oil Conservation Division - Hobbs



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SANTA FE, NEW MEXICO 87505
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November 14, 1994

The Wiser Oil Company
P.O. Box 3232
Carlsbad, New Mexico 88221-3232

Attn: Mr. Perry L. Hughes

**RE: Injection Pressure Increase Caprock Maljamar Unit Waterflood
Project Lea County, New Mexico**

Dear Mr. Hughes:

Reference is made to your request dated October 10, 1994 to increase the surface injection pressure on 15 wells. This request is based on step rate tests conducted on 6 of these wells between September 20 and 28, 1994. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

You are therefore authorized to increase the surface injection pressure on the following six wells:

Well and Location	Maximum Injection Surface Pressure
Caprock Maljamar Unit Well No.35 Unit B, 24-T17S-R32E	1910 PSIG
Caprock Maljamar Unit Well No.36 Unit A, 24-T17S-R32E	2200 PSIG
Caprock Maljamar Unit Well No.49 Unit H, 24-T17S-R32E	2550 PSIG
Caprock Maljamar Unit Well No.80 Unit P, 19-T17S-R33E	2480 PSIG
Caprock Maljamar Unit Well No.91 Unit F, 28-T17S-R33E	2760 PSIG

Well and Location	Maximum Injection Surface Pressure
Caprock Maljamar Unit Well No.95 Unit J, 28-T17S-R33E	2755 PSIG
All wells located in Lea County, New Mexico.	

Additionally, based on representative data, you are authorized to increase the surface injection pressure on the following nine wells:

Well and Location	Maximum Injection Surface Pressure
Caprock Maljamar Unit Well No.48 Unit G, 24-T17S-R32E	2310 PSIG
Caprock Maljamar Unit Well No.95 Unit F, 21-T17S-R33E	2310 PSIG
Caprock Maljamar Unit Well No.62 Unit J, 24-T17S-R32E	2310 PSIG
Caprock Maljamar Unit Well No.66 Unit G, 19-T17S-R33E	2310 PSIG
Caprock Maljamar Unit Well No.74 Unit N, 24-T17S-R32E	2310 PSIG
Caprock Maljamar Unit Well No.86 Unit D, 21-T17S-R33E	2310 PSIG
Caprock Maljamar Unit Well No.97 Unit L, 27-T17S-R33E	2310 PSIG
Caprock Maljamar Unit Well No.99 Unit N, 28-T17S-R33E	2310 PSIG
Caprock Maljamar Unit Well No.102 Unit B, 33-T17S-R33E	2310 PSIG
All wells located in Lea County, New Mexico.	

Injection Pressure Increase
The Wiser Oil Company
November 14, 1994
Page 3

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,

William J. LeMay
Director

WJL/BES

cc: Oil Conservation Division - Hobbs
File: 4th Quarter PSI-X; Case File No.10932

and

SHAHARA OIL CORPORATION

RECEIVED
OCT 10 1994
OCT 10 1994
OCT 10 1994

October 10, 1994

Mr. David R. Catanach
Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: The Wiser Oil Company
Injection Pressure Increase
Caprock Maljamar Unit Waterflood Project
Lea County, New Mexico

Dear Mr. Catanach:

Administrative Order No. WFX-661 provided for the expansion of The Wiser Oil Company Caprock Maljamar Unit in the Maljamar Grayburg San Andres pool in Lea County, New Mexico. Order No. WFX-661 approved fifteen wells for injection as shown in Exhibit "A". The Wiser Oil Company requests an increase in the maximum allowable surface injection pressure on the fifteen wells shown in Exhibit "A". This request is based on step rate tests conducted on six of the subject wells during September 1994.

Following is a summary of the results of these step rates.

<u>Well Name</u>	<u>Fracture Pressure - (psi)</u>	<u>Fracture Pressure - 50 psi</u>
CMU No. 35 Unit B, Sec 24-17S-32E	1960	1910
CMU No. 36 Unit A, Sec 24-17S-32E	2250	2200
CMU No. 49 Unit H, Sec 24-17S-32E	2600	2550
CMU No. 80 Unit P, Sec 19-17S-33E	2530	2480
CMU No. 91 Unit F, Sec 28-17S-33E	2810	2760
CMU No. 95 Unit J, Sec 28-17S-33E	2805	2755
Average	2493 2360	2443

Exhibit "B" presents the data and graphical plot of rate vs. pressure for each well.

The Wiser Oil Company requests that the above listed fracture pressures minus 50 psi be applied to those listed wells and that the average fracture pressure minus 50 psi of 2443 psi be applied to the remaining nine wells listed below.

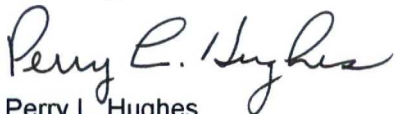
Mr. David Catanach
October 10, 1994
Page Two

<u>Well Name</u>	<u>Location</u>
CMU No. 48	Unit G, Sec 24-17S-32E
CMU No. 59	Unit F, Sec 21-17S-33E
CMU No. 62	Unit J, Sec 24-17S-32E
CMU No. 66	Unit G, Sec 19-17S-33E
CMU No. 74	Unit N, Sec 24-17S-32E
CMU No. 86	Unit D, Sec 21-17S-33E
CMU No. 97	Unit L, Sec 27-17S-33E
CMU No. 99	Unit N, Sec 28-17S-33E
CMU No. 102	Unit B, Sec 33-17S-33E

It should be noted that the average fracture pressure minus 50 psi of 2443 psi compares well to the corresponding value of 2306 psi obtained during step rate tests conducted in Phase 1 of the Caprock Maljamar Unit Waterflood Project as presented in our letter of June 13, 1994, and approved in your letter of July 1, 1994, under Division Order No. R-10094 and Case No. 10932.

Please contact me in Carlsbad at 885-5433 if additional information is required.

Sincerely,

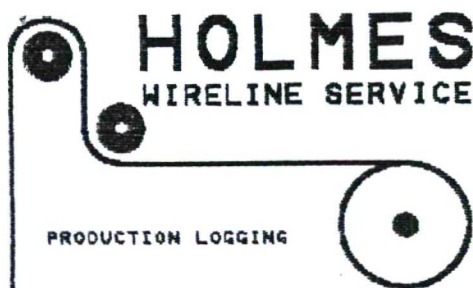


Perry L. Hughes
Agent for
The Wiser Oil Company

PLH/mp

Attachments

cc: Mr. Jerry Sexton
Hobbs OCD



Digital Data Acquisition System

COMPANY.....:THE WISER OIL COMPANY

WELL NAME/#....:CAPROCK MALJAMAR UNIT #49

FIELD.....:CAPROCK MALJAMAR

COUNTY.....:LEA

STATE...:NEW MEXICO

FILE NAME...:94090374

LOCATION.....:N/A

BLOCK.....:N/A

SECTION.:N/A

PERM. DAT.....:G.L.

ELEV....:N/A

L.M.F.:G.L.

DATE.....: 9/22/1994

TYPE SURVEY...:STEP RATE TEST

DEPTH DRILLER.:N/A

DEPTH LOGGER.:4135

WELL STATUS...:INJECTION

HOLE FLUID....:WATER

INJ. RATE.....:0 TO 2700 BPD.

PROD: OIL bpd.:N/A

WATER bpd...:N/A

GAS mcf.:N/A

MAX. REC. TEMP:86

PRESS: TUBING.:1310 TO 2941 PSI

CASING.....:0

CASING SIZE...:N/A

DEPTH.....:N/A

TUBING SIZE...:2 3/8"

DEPTH.....:4045

PACKER @.....:4045

TUBING TAIL:4045

TRUCK NO.....:104

TOOL SIZE...:1 1/2"

TOOL NO.:SIE # 1

RECORDED BY...:C. DUGGER

WITNESSED BY...:MR. W. WHITE

ENGINEER.....:MR. PERRY HUGHES

PERFORATIONS...:4145 - 4276

: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A

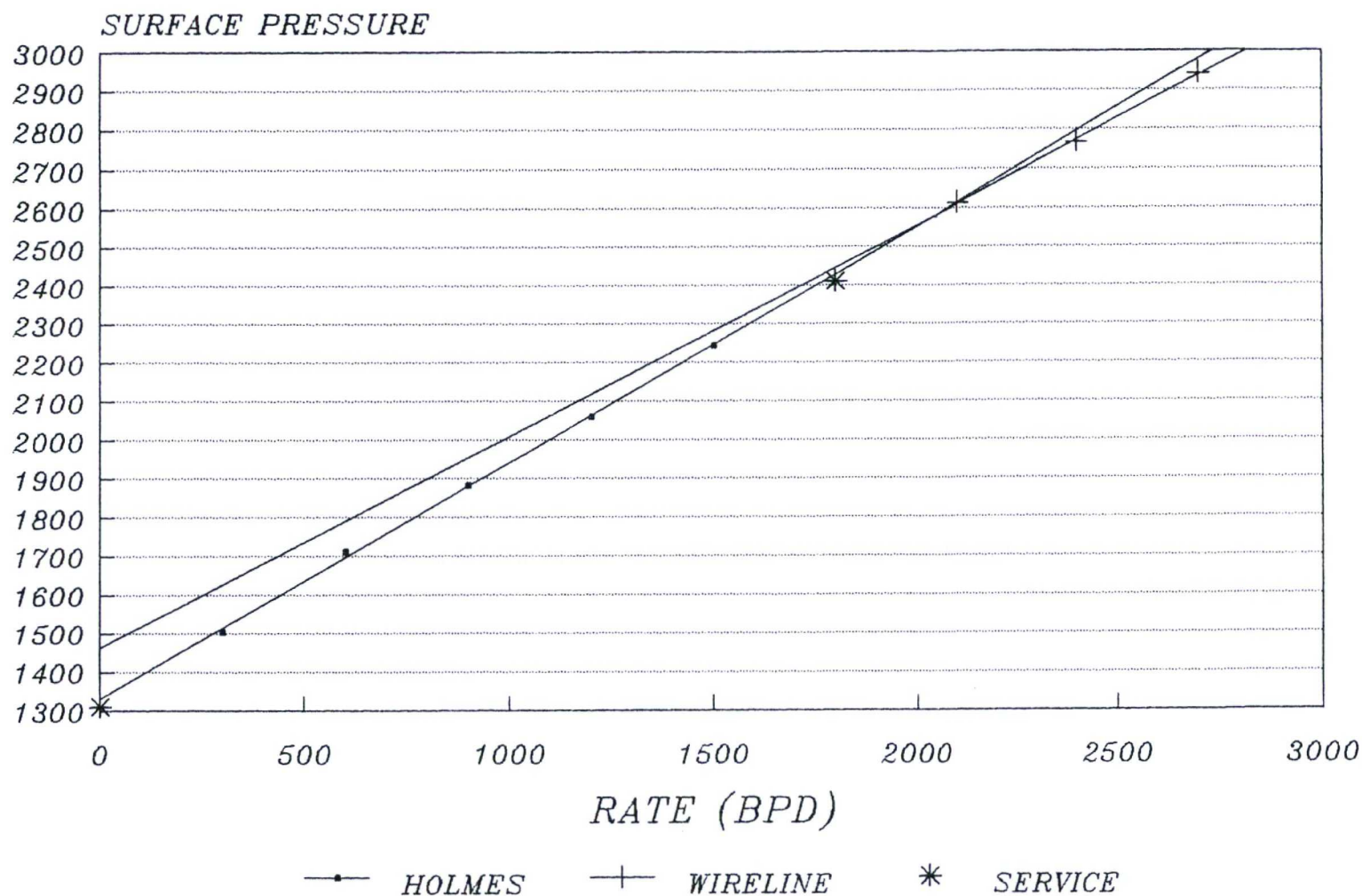
HOLMES WIRELINE SERVICE, INC.
End of Job Comments

FRACTURE AT 2000 BPD., 2600 SURF. PSI, 4145 BH. PSI

TIME	RATE	SURF. PSI	BH. PSI.
10:00	0	1310	3295
10:30	300	1503	3457
11:00	600	1711	3601
11:30	900	1881	3742
12:00	1200	2060	3877
12:30	1500	2244	4021
13:00	1800	2411	4145
13:30	2100	2613	4250
14:00	2400	2766	4360
14:30	2700	2941	4440

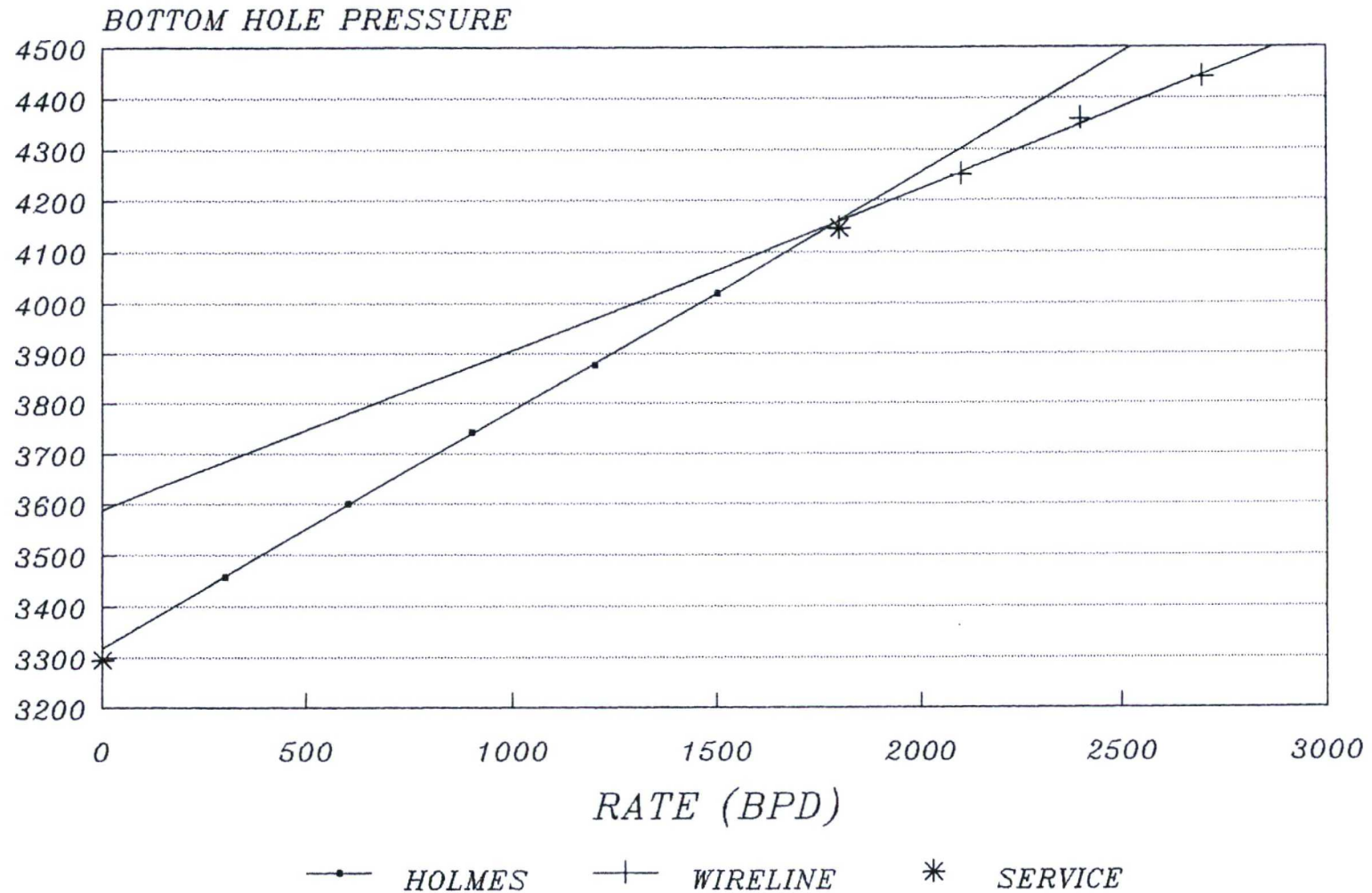
THANK YOU.

WISER OIL: C.M.U. #49

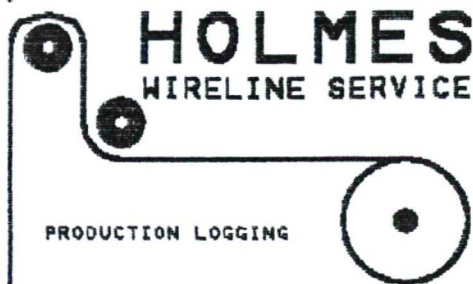


PARTING PRESSURE APPROX. 2600 SF. PSI

WISER OIL: C.M.U. #49



PARTING PRESSURE APPROX. 4145 BH. PSI



Digital Data Acquisition System

COMPANY.....:THE WISER OIL COMPANY

WELL NAME/#....:C.M.U. # 80

FIELD.....:CAPROCK MALJAMAR UNIT

COUNTY.....:LEA

STATE...:NEW MEXICO

FILE NAME...:9409037

LOCATION.....:N/A

BLOCK.....:N/A

SECTION.:N/A

PERM. DAT.....:G.L.

ELEV....:N/A

L.M.F.:G.L.

DATE.....: 9/26/1994

TYPE SURVEY...:STEP RATE TEST

DEPTH DRILLER.:N/A

DEPTH LOGGER.:4100

WELL STATUS...:INJECTION

HOLE FLUID....:WATER

INJ. RATE.....:0 TO 1600 BPD.

PROD: OIL bpd.:N/A

WATER bpd...:N/A

GAS mcf.:N/A

MAX. REC. TEMP:N/A

PRESS: TUBING.:1204 TO 2830 PSI

CASING.....:N/A

CASING SIZE...:N/A

DEPTH.....:N/A

TUBING SIZE...:2 3/8"

DEPTH.....:4008'

PACKER @.....:4008'

TUBING TAIL:4008'

TRUCK NO.....:104

TOOL SIZE...:1 1/2"

TOOL NO.:SIE # 1

RECORDED BY...:C. DUGGER

WITNESSED BY...:MR. W. WHITE

ENGINEER.....:MR. P. HUGHES

PERFORATIONS...:4108' TO 4320'

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

HOLMES WIRELINE SERVICE, INC.
End of Job Comments

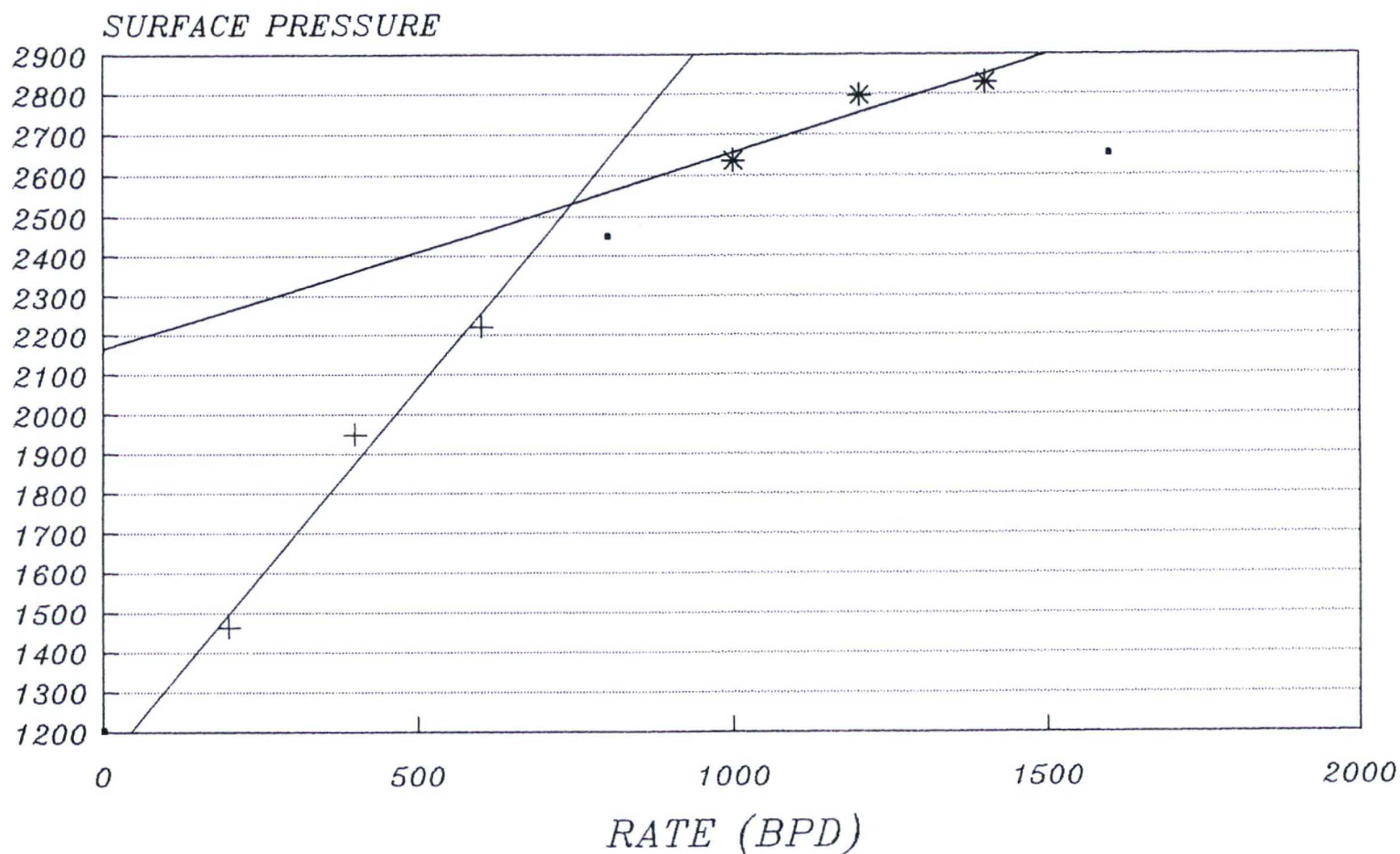
FRACTURE @ 600 BPD, 2530 SURF. PSI, 4395 BH. PSI

TIME	RATE	SURF. PSI	BH. PSI
	0	1204	3386
10:15	200	1462	3662
10:45	400	1948	3926
11:15	600	2221	4179
11:45	800	2449	4346
12:15	1000	2634	4411
12:45	1200	2795	4438
13:15	1400	2830	4446
13:19	1600	2651	4343

PUMP TRUCK RAN OUT OF WATER ON LAST STEP

THANK YOU.

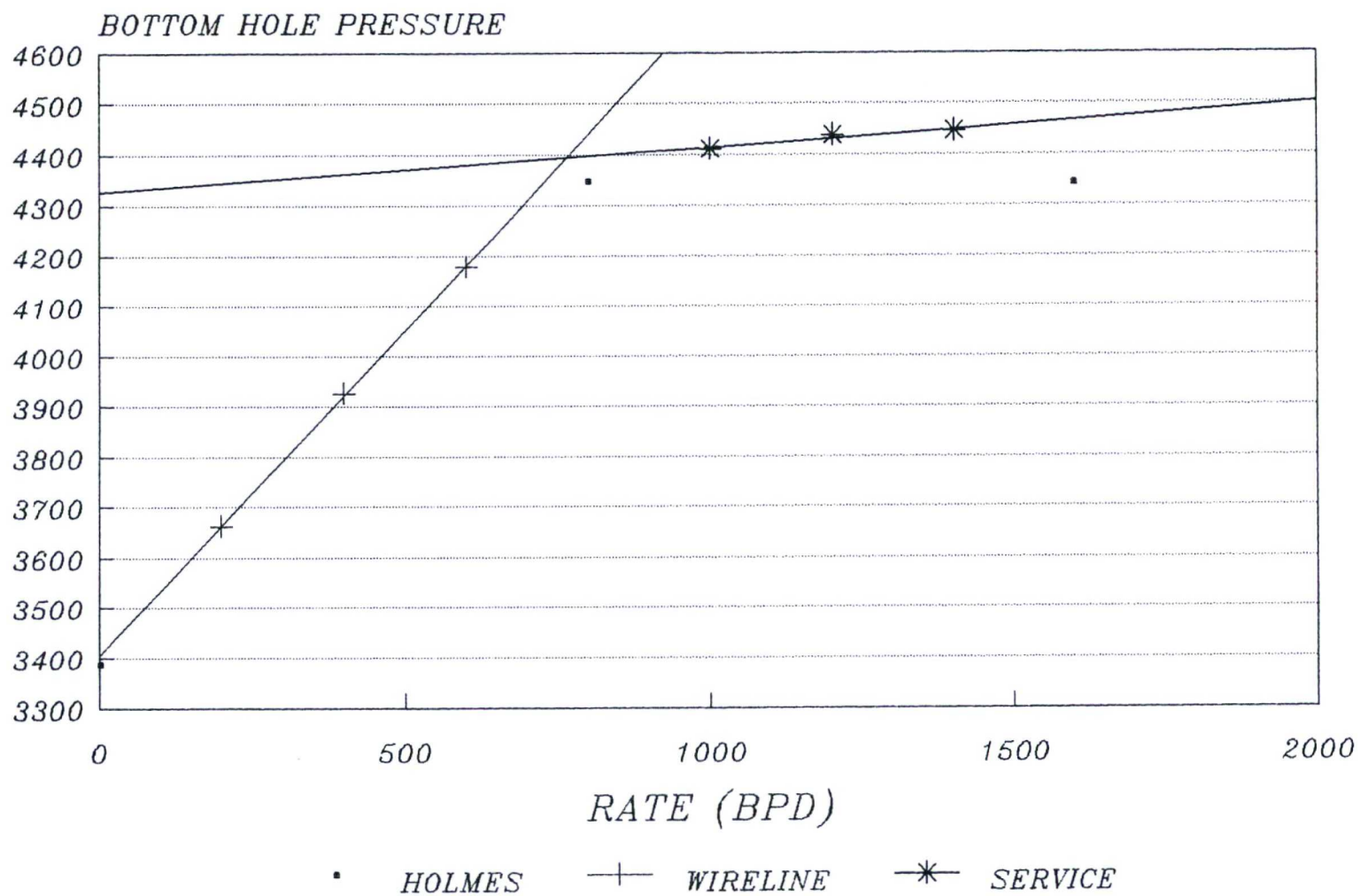
WISER OIL: C.M.U. #80



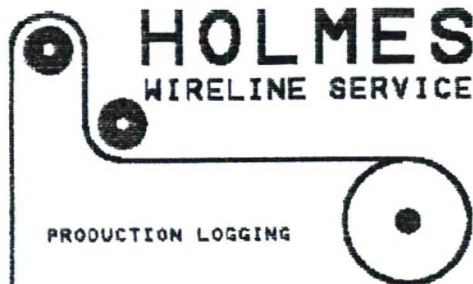
• HOLMES + WIRELINE * SERVICE

PARTING PRESSURE APPROX. 2530 SF. PSI

WISER OIL: C.M.U. #80



PARTING PRESSURE APPROX. 4395 BH. PSI



Digital Data Acquisition System

COMPANY.....:THE WISER OIL COMPANY

WELL NAME/#....:C.M.U. # 95

FIELD.....:CAPROCK MALJAMAR UNIT

COUNTY.....:LEA

STATE...:NEW MEXICO

FILE NAME...:94090380

LOCATION.....:N/A

BLOCK.....:N/A

SECTION.:N/A

PERM. DAT.....:G.L.

ELEV....:N/A

L.M.F.:G.L.

DATE.....: 9/28/1994

TYPE SURVEY...:STEP RATE TEST

DEPTH DRILLER.:N/A

DEPTH LOGGER.:4400

WELL STATUS...:INJECTION

HOLE FLUID....:WATER

INJ. RATE.....:0 TO 1400 BPD.

PROD: OIL bpd.:N/A

WATER bpd...:N/A

GAS mcf.:N/A

MAX. REC. TEMP:89

PRESS: TUBING.:1304 TO 3249 PSI

CASING.....:0

CASING SIZE...:N/A

DEPTH.....:N/A

TUBING SIZE...:2 3/8"

DEPTH.....:4308

PACKER @.....:4308

TUBING TAIL:4308

TRUCK NO.....:104

TOOL SIZE...:1 1/2"

TOOL NO.:SIE # 1

RECORDED BY...:C. DUGGER

WITNESSED BY...:MR. W. WHITE

ENGINEER.....:MR. P. HUGHES

PERFORATIONS...:4408'- 4628'

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

HOLMES WIRELINE SERVICE, INC.
End of Job Comments

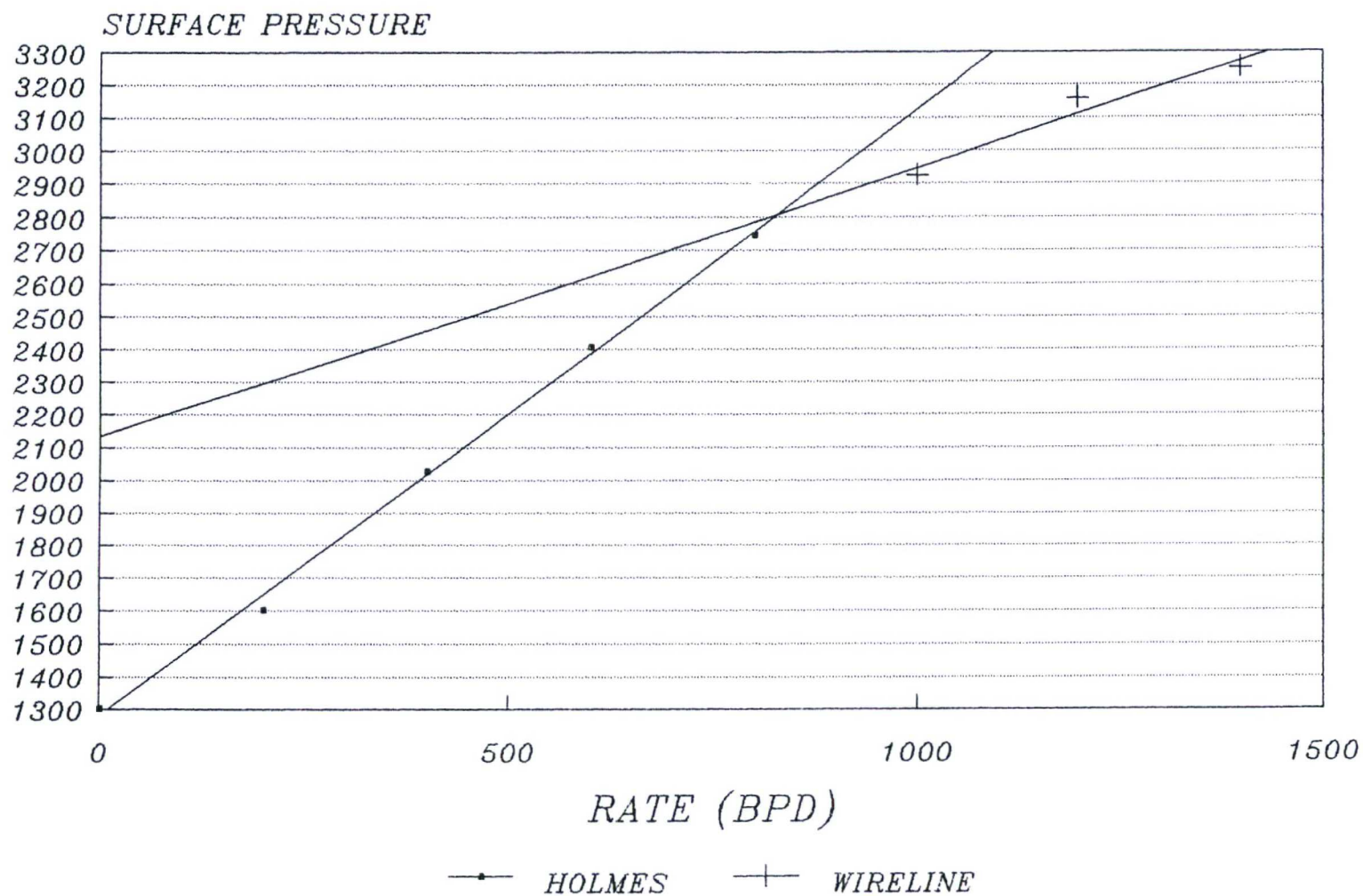
FRACTURE @ 800 BPD, 2805 SURF. PSI, 4705 BH. PSI.

TIME	RATE	SURF. PSI	BH. PSI
10:45	0	1304	3571
11:15	200	1603	3786
11:45	400	2027	4060
12:15	600	2408	4326
12:45	800	2745	4578
13:15	1000	2924	4748
13:45	1200	3155	4880
14:15	1400	3249	4961

SHUT PUMP TRUCK DOWN AT 13:30 P.M. FOR 5-10 MINS. TO REPAIR LEAK.

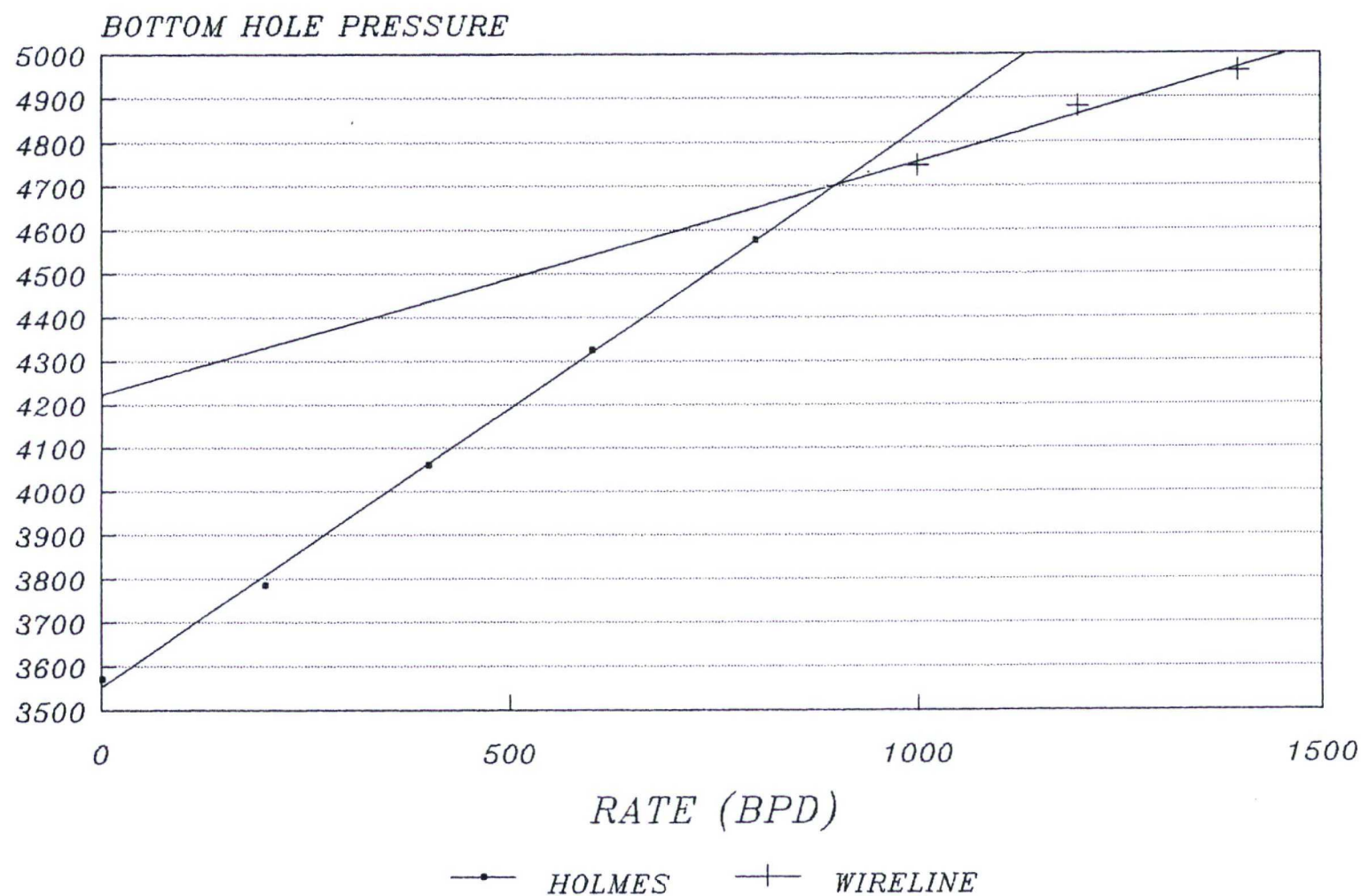
THANK YOU.

WISER OIL: C.M.U. #95

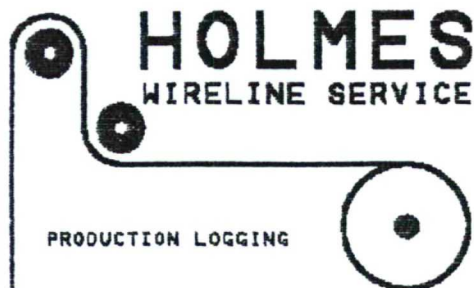


PARTING PRESSURE APPROX. 2805 SF. PSI

WISER OIL: C.M.U. #95



PARTING PRESSURE APPROX. 4705 BH. PSI



Digital Data Acquisition System

COMPANY.....:THE WISER OIL COMPANY

WELL NAME/#....:CAPROCK MALJAMAR UNIT #35

FIELD.....:CAPROCK MALJAMAR

COUNTY.....:LEA

STATE...:NEW MEXICO

FILE NAME...:9409037

LOCATION.....:N/A

BLOCK.....:N/A

SECTION.:N/A

PERM. DAT.....:G.L.

ELEV....:N/A

L.M.F.:G.L.

DATE.....: 9/20/1994

TYPE SURVEY...:STEP RATE TEST

DEPTH DRILLER.:N/A

DEPTH LOGGER.:3960

WELL STATUS...:INJECTION

HOLE FLUID....:WATER

INJ. RATE.....:0 TO 1900 BPD.

PROD: OIL bpd.:N/A

WATER bpd...:N/A

GAS mcf.:N/A

MAX. REC. TEMP:86

PRESS: TUBING.:636 - 2420 PSI

CASING.....:0

CASING SIZE...:N/A

DEPTH.....:N/A

TUBING SIZE...:2 3/8"

DEPTH.....:3879'

PACKER @.....:3879'

TUBING TAIL:3879'

TRUCK NO.....:104

TOOL SIZE...:1 1/2"

TOOL NO.:SIE # 1

RECORDED BY...:C.DUGGER

WITNESSED BY...:MR. W. WHITE

ENGINEER.....:MR. PERRY HUGHES

PERFORATIONS...:3979' - 4320'

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

: N/A

HOLMES WIRELINE SERVICE, INC.
End of Job Comments

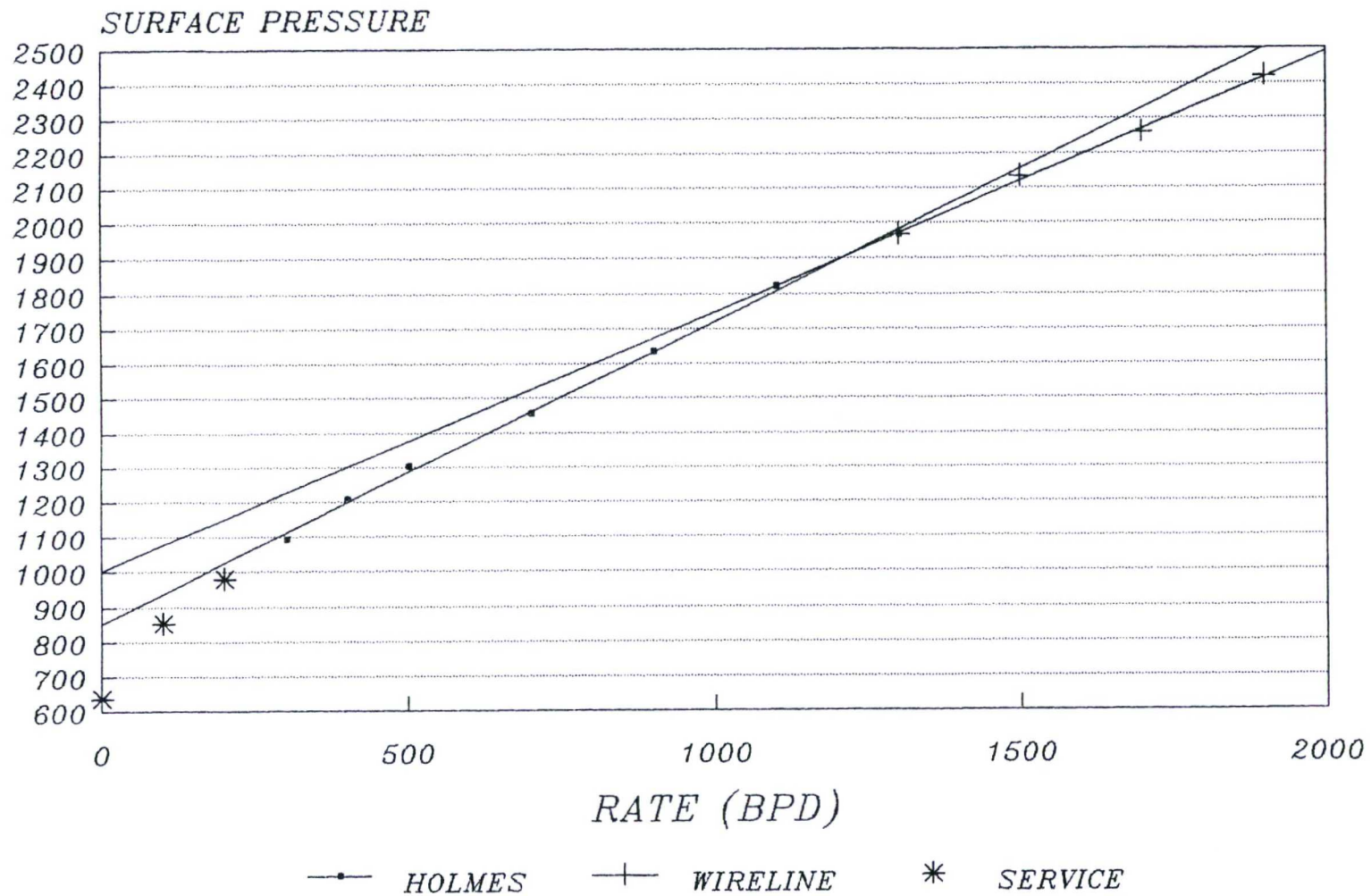
FRACTURE @ 1300 BPD, 1966 SURF. PSI, 3520 BH. PSI

TIME	RATE	SURF. PSI	BH. PSI
14:00	0	636	2424
14:30	100	853	2609
15:00	200	979	2722
15:30	300	1093	2812
16:00	400	1207	2900
16:30	500	1301	2990
17:00	700	1456	3115
17:30	900	1635	3264
18:00	1100	1822	3400
18:30	1300	1966	3520
19:00	1500	2133	3652
19:30	1700	2259	3769
20:00	1900	2420	3870

THANK YOU

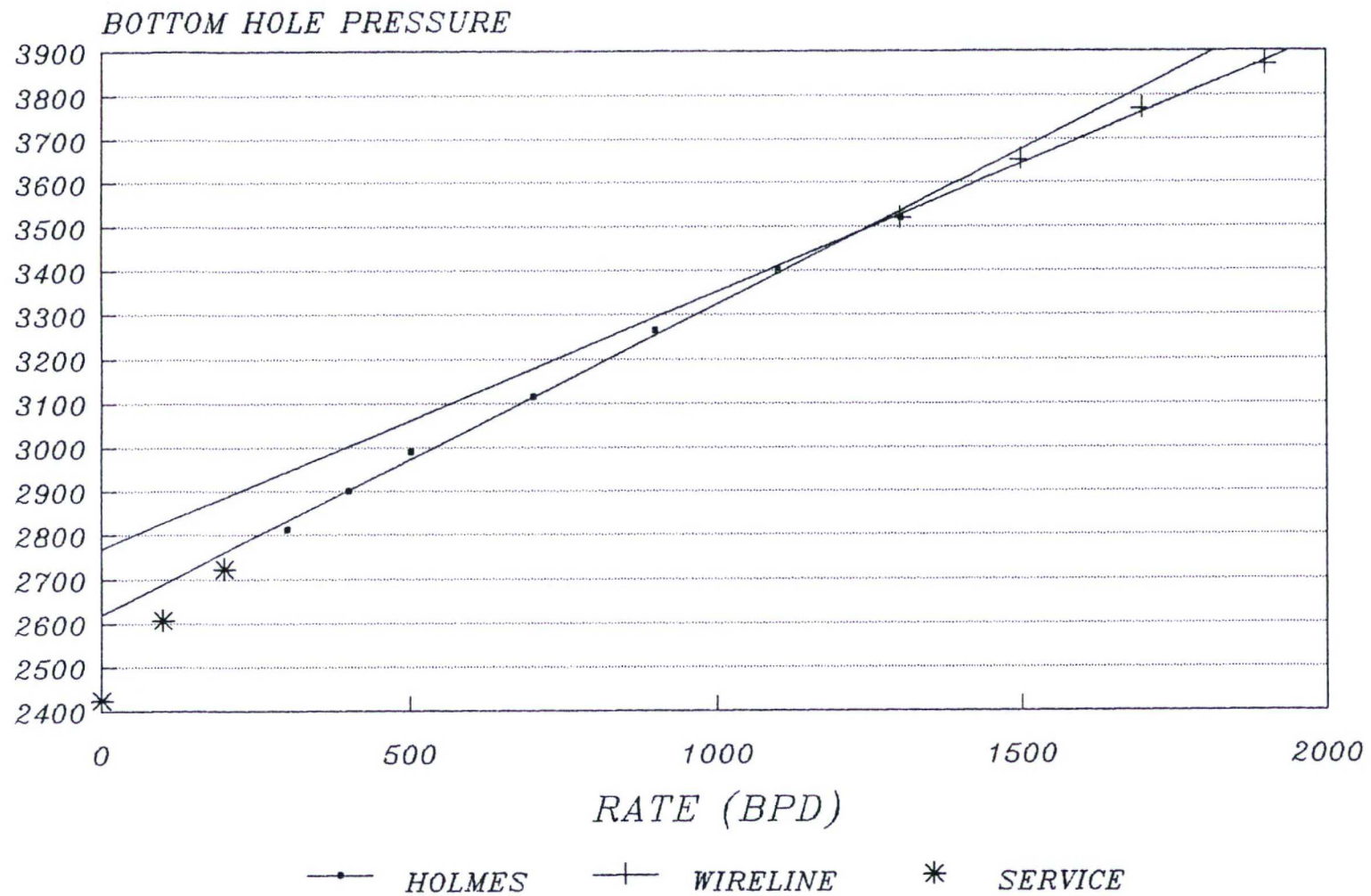
FRACTURE @ 1300 BPD, 1966 SURF. PSI, 3520 BH PSI.

WISER OIL: C.M.U. #35

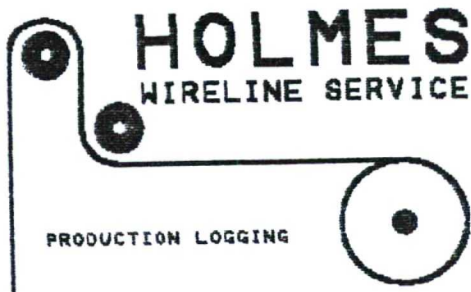


PARTING PRESSURE APPROX. 1960 SF. PSI

WISER OIL: C.M.U. #35



PARTING PRESSURE APPROX. 3520 BH. PSI



Digital Data Acquisition System

COMPANY.....:THE WISER OIL COMPANY

WELL NAME/#....:CAFROCK MALJAMAR UNIT #36

FIELD.....:N/A

COUNTY.....:LEA

STATE...:NEW MEXICO

FILE NAME...:94090373

LOCATION.....:N/A

BLOCK.....:N/A

SECTION..:N/A

PERM. DAT.....:G.L.

ELEV....:N/A

L.M.F.:G.L.

DATE.....: 9/21/1994

TYPE SURVEY...:STEP RATE TEST

DEPTH DRILLER.:N/A

DEPTH LOGGER.:4000

WELL STATUS...:INJECTION

HOLE FLUID....:WATER

INJ. RATE.....:0 TO 1400

PROD: OIL bpd.:N/A

WATER bpd...:N/A

GAS mcf.:N/A

MAX. REC. TEMP:87

PRESS: TUBING.:750 TO 2490 PSI.

CASING.....:N/A

CASING SIZE...:N/A

DEPTH.....:N/A

TUBING SIZE...:2 3/8"

DEPTH.....:3915'

PACKER @.....:3915'

TUBING TAIL:3915'

TRUCK NO.....:104

TOOL SIZE...:1 1/2"

TOOL NO.:SIE # 1

RECORDED BY...:C.DUGGER

WITNESSED BY...:MR. W. WHITE

ENGINEER.....:MR. PERRY HUGHES

PERFORATIONS...:4015' - 4327'

: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A

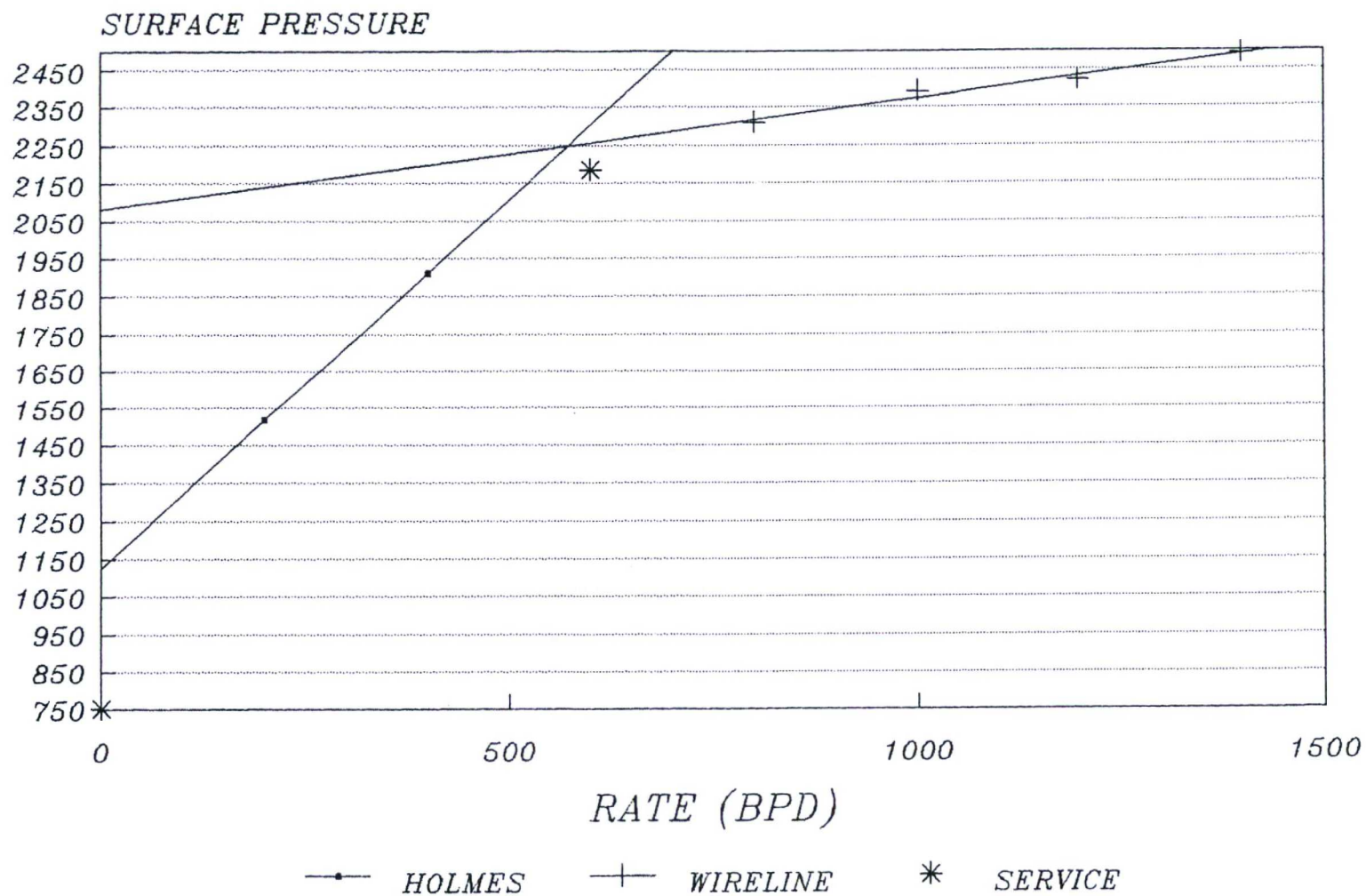
HOLMES WIRELINE SERVICE, INC.
End of Job Comments

FRACTURE @ 2183 SURF. PSI , 3911 BH. PSI. 640 BPD.

TIME	RATE	SURF. PSI.	BH. PSI.
9:30	0	750	2641
10:00	200	1580	3335
10:30	400	1910	3711
11:00	600	2183	3911
11:30	800	2306	3982
12:00	1000	2391	4030
12:30	1200	2420	4077
13:00	1400	2490	4111

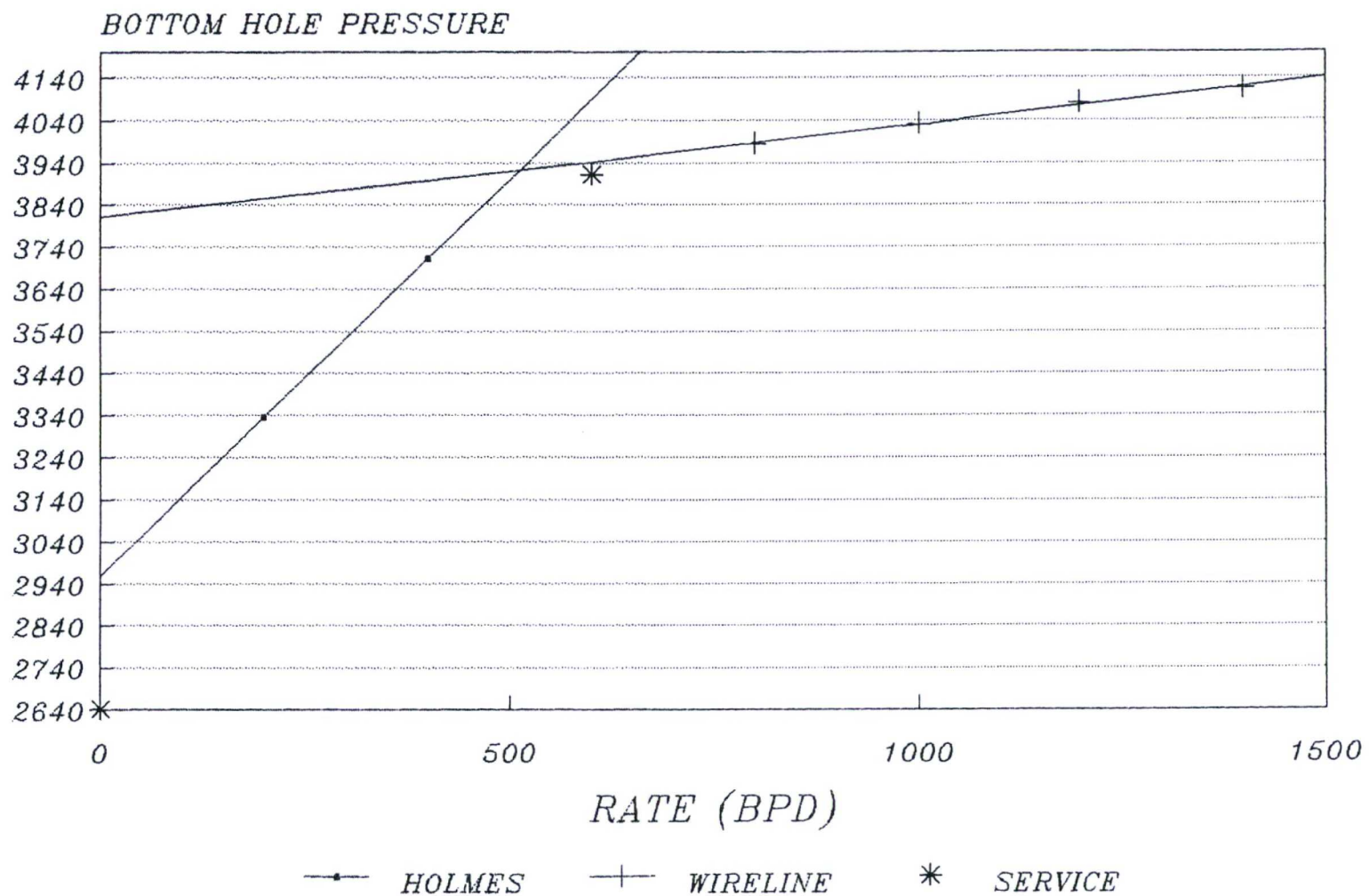
THANK YOU.

WISER OIL: C.M.U. #36

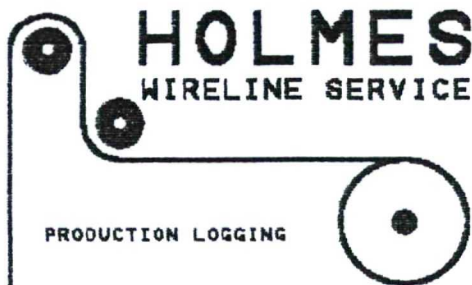


PARTING PRESSURE APPROX. 2250 SF. PSI

WISER OIL: C.M.U. #36



PARTING PRESSURE APPROX. 3915 BH. PSI



Digital Data Acquisition System

COMPANY.....:THE WISER OIL COMPANY

WELL NAME/#....:CMU # 91

FIELD.....:CAPROCK MALJAMAR UNIT

COUNTY.....:LEA

STATE...:NEW MEXICO

FILE NAME...:94090375

LOCATION.....:N/A

BLOCK.....:N/A

SECTION.:N/A

PERM. DAT.....:G.L.

ELEV....:N/A

L.M.F.:G.L.

DATE.....: 9/27/1994

TYPE SURVEY...:STEP RATE TEST

DEPTH DRILLER.:N/A

DEPTH LOGGER.:4220

WELL STATUS...:INJECTION

HOLE FLUID....:WATER

INJ. RATE.....:0 TO 1100 BPD

PROD: OIL bpd.:N/A

WATER bpd...:N/A

GAS mcf.:N/A

MAX. REC. TEMP:92

PRESS: TUBING.:1178 TO 3021

CASING.....:N/A

CASING SIZE...:N/A

DEPTH.....:N/A

TUBING SIZE...:2 3/8"

DEPTH.....:4132

PACKER @.....:4132

TUBING TAIL:4132

TRUCK NO.....:104

TOOL SIZE...:1 1/2"

TOOL NO.:SIE # 1

RECORDED BY...:C. DUGGER

WITNESSED BY...:MR. W. WHITE

ENGINEER.....:MR. P. HUGHES

PERFORATIONS...:4232 - 4468

: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A
: N/A

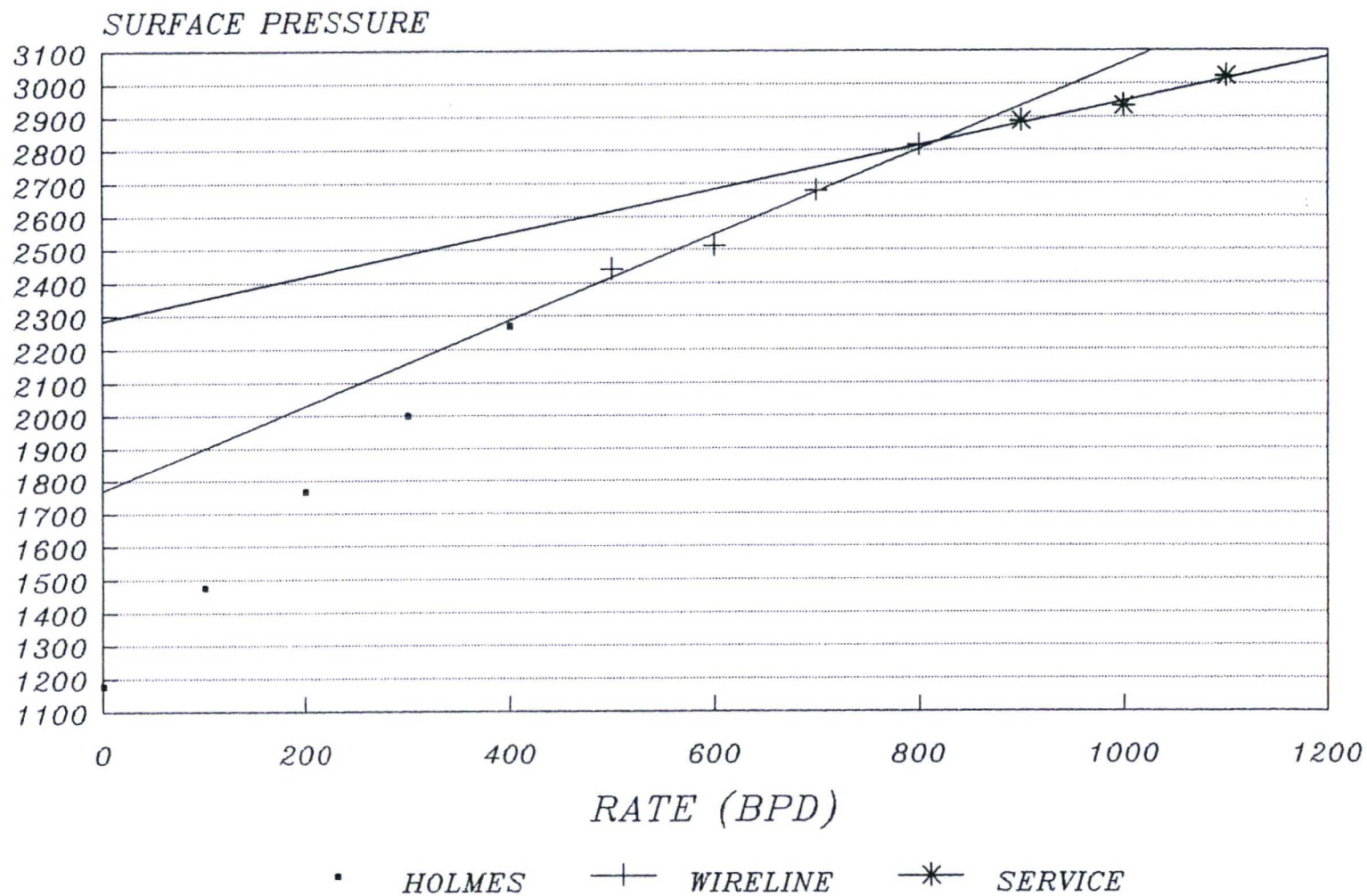
HOLMES WIRELINE SERVICE, INC.
End of Job Comments

FRACTURE @ 800 BPD, 2810 SURF. PSI, 4560 BH. PSI

TIME	RATE	SURF. PSI.	BH. PSI.
9:45	0	1178	3403
10:15	100	1477	3645
10:45	200	1767	3816
11:15	300	2001	3987
11:45	400	2271	4114
12:15	500	2440	4258
12:45	600	2511	4326
13:15	700	2678	4433
13:45	800	2815	4516
14:15	900	2889	4580
14:45	1000	2933	4621
15:15	1100	3021	4663

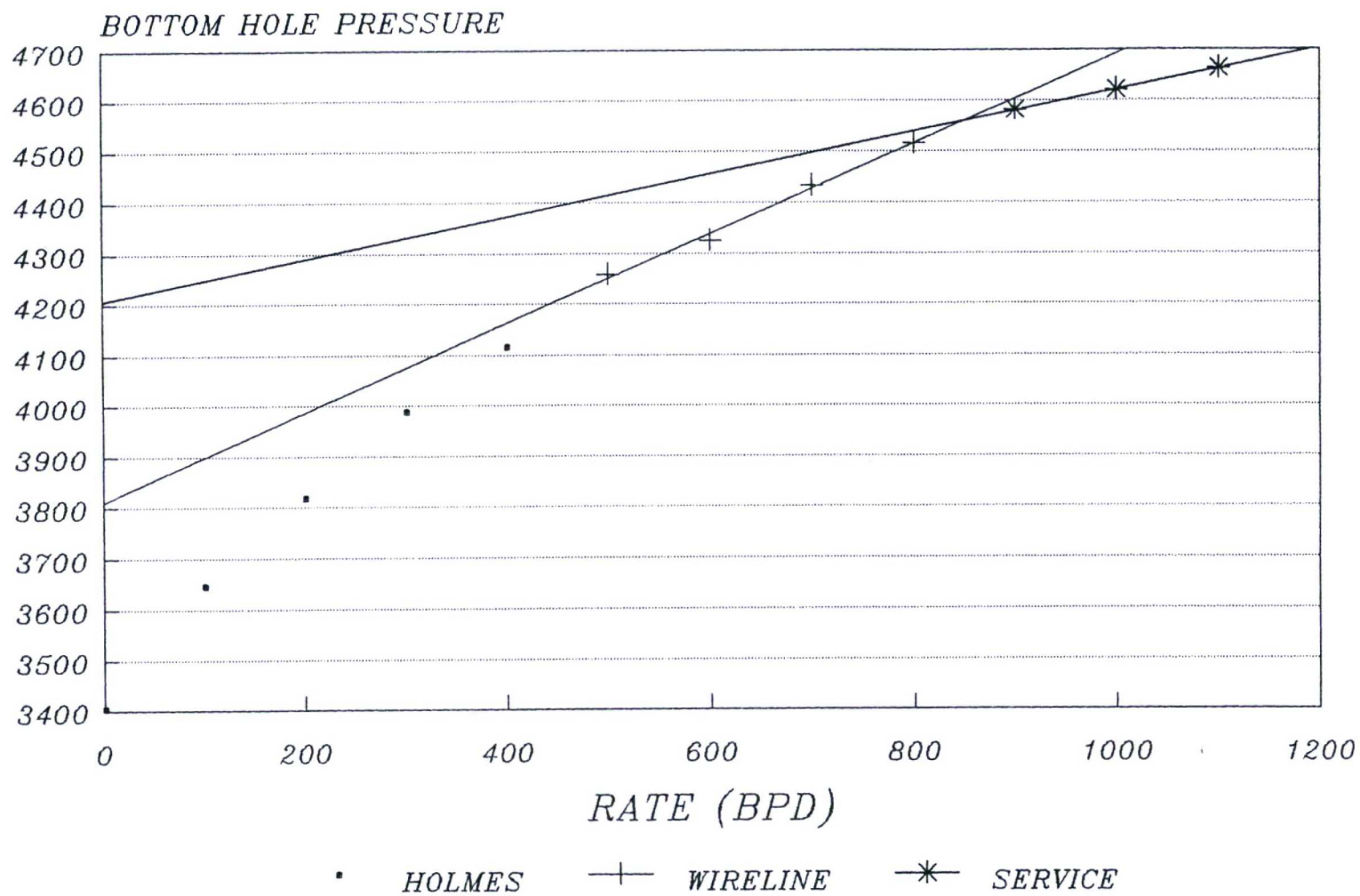
THANK YOU.

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