CASE 7074: ENSERCH EXPLORATION, INC.
FOR POOL CREATION, UNORTHODOX GAS WELL
LOCATION, AND NON-STANDARD PRORATION UNI
CHAVES COUNTY

Case initiated

CASE NO.

7074

APPLICATION,

TRANSCRIPTS,

SMALL EXHIBITS,

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

March 23, 1982

Mr. William F. Carr
Campbell, Byrd & Black
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico

Re: CASE NO. 7074
ORDER NO. R-6565-C

Applicant:

~~OCD (Enserch Exploration, Inc.)~~

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD _____
Artesia OCD x
Aztec OCD x

Other _____

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7074
Order No. R-6565-C

IN THE MATTER OF CASE 7074 BEING REOPENED PURSUANT TO THE PROVISIONS OF ORDER NO. R-6565 AND R-6565-B WHICH CREATED THE SOUTH ELKINS-FUSSELMAN GAS POOL, CHAVES COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 3, 1982, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 22nd day of March, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-6565 and R-6565-B, dated January 22, 1981 and July 28, 1981, respectively, temporary special rules and regulations were promulgated for the South Elkins-Fusselman Gas Pool, Chaves County, New Mexico.

(3) That pursuant to the provisions of Order No. R-6565 and R-6565-B, this case was reopened to allow all interested parties to present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir.

(4) That the evidence presented at this hearing establishes that said South Elkins-Fusselman is a retrograde gas condensate reservoir.

(5) That the evidence presented further established that 1,500 MCF of gas per day should be established as a maximum rate of withdrawal for wells in said pool.

(6) That continuation of said pool as a gas pool with special pool rules to provide for such production limitation will prevent waste and will not violate correlative rights.

IT IS THEREFORE ORDERED:

(1) That effective April 1, 1982, Special Rules and Regulations for the South Elkins-Fusselman Gas Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
SOUTH ELKINS-FUSSELMAN GAS POOL

RULE 1. Each well completed or recompleted in the South Elkins-Fusselman Gas Pool or in the Fusselman formation within one mile thereof, and not nearer to or within the limits of another designated Fusselman pool, shall be produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. A gas well in the South Elkins-Fusselman Gas Pool shall be permitted to produce no more than 1,500 MCF of gas per day during the effective period of these pool rules.

RULE 3. An initial shut-in pressure test shall be taken on each gas well and shall be reported to the Division on Form C-125.

RULE 4. Any well completed after the effective date of these rules shall receive an allowable only upon receipt by the appropriate Division district office of Division Form C-104, properly executed.

RULE 5. The date 7:00 a.m. April the first of each year shall be known as the balancing date, and the twelve months following this date shall be known as the gas proration period.

RULE 6. Any gas well which has an underproduced status as of the end of a gas proration period shall be allowed to carry such underproduction forward into the next gas proration period and may produce such underproduction in addition to the allowable assigned during such succeeding period. Any allowable carried forward into a gas proration period and remaining unproduced at the end of such gas proration period shall be cancelled.

RULE 7. Production during any one month of a gas proration period in excess of the allowable assigned to a well for such month shall be applied against the underproduction carried into such period in determining the amount of allowable, if any, to be cancelled.

RULE 8. Any well which has an overproduced status as of the end of a gas proration period shall carry such overproduction forward into the next gas proration period, provided that such overproduction shall be compensated for during such succeeding period. Any well which has not compensated for the overproduction carried into a gas proration period by the end of such proration period shall be shut in until such overproduction is compensated for. If, at any time, a well is overproduced an amount equaling three times its current monthly allowable, it shall be shut in during that month and each succeeding month until the well is overproduced less than three times its current monthly allowable.

RULE 9. The allowable assigned to a well during any one month of a gas proration period in excess of the production for the same month shall be applied against the overproduction carried into such period in determining the amount of overproduction, if any, which has not been compensated for.

RULE 10. The Division may allow overproduction to be compensated for at a lesser rate than would be the case if the well were completely shut in upon a showing after notice and hearing that complete shut in of the well would result in material damage to the well or reservoir.

RULE 11. The monthly gas production from each gas well shall be metered separately and the gas production therefrom shall be reported to the Division on Form C-115 so as to reach the Division on or before the 24th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the produced gas.

RULE 12. Each purchaser or taker of gas shall submit a report to the Division so as to reach the Division on or before the 15th day of the month next succeeding the month in which the gas was purchased or taken. Such report shall be filed on Form C-111 with the wells being listed in the same order as they are listed on the appropriate proration schedule.

RULE 13. Failure to comply with any provision of these rules shall result in the immediate cancellation of allowable assigned to the affected well. No further allowable shall be assigned until all rules and regulations have been complied

with. The Division Director shall notify the operator of the well and purchaser in writing of the date of allowable cancellation and the reason therefor.

RULE 14. All transporters or users of gas shall file gas well-connection notices with the Division as soon as possible after the date of connection.

IT IS FURTHER ORDERED:

(1) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY,
Director

S E A L

WELL COMPLETION DATA
ENSERCH EXPLORATION, INC
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Top of Fusselman: 6686' (-2652') KB = 4034'

Perforated Production Interval: 6741'-6745' (1 JSPF)
(5 holes)

Stimulation Treatment: 100 gallons 7½% MCA acid

Initial Potential Test:

Date of Test: 6/11/1980 (flowing)
266 bopd + 0 bwpd + 600 mcfpd
oil gravity: 59.5° API
GOR: 2256:1 scf/bbl
FTP: 1000 psig (12/64" choke)

Current Status: Flowing

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 3
CASE NO. 7073-7074
Submitted by REYNOLDS
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073 / 7074
Exhibit 3
Date 02/17/1982

PRODUCTION HISTORY (FORM C115)
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Date	Days of Production	Status	Oil (STB)	Casinghead Gas (MCF)	Water (Bbl)	GOR (SCF/Bbl)	Water Cut (%)
06/1980	6	F	1,241	2,265	0	1,825	0
07/1980	14	F	4,016	7,167	0	1,785	0
08/1980	0	F	0	0	0	-	-
09/1980	0	F	0	0	0	-	-
10/1980	0	F	0	0	0	-	-
11/1980	0	F	0	0	0	-	-
12/1980	0	F	0	0	0	-	-
01/1981	0	F	0	0	0	-	-
02/1981	0	F	0	0	0	-	-
03/1981	0	F	0	0	0	-	-
04/1981	0	F	0	0	0	-	-
05/1981	0	F	0	0	0	-	-
06/1981	0	F	0	0	0	-	-
07/1981	5	F	1,031	1,941	0	1,883	0
08/1981	24	F	5,500	12,444	0	2,263	0
09/1981	23	F	6,746	15,329	0	2,272	0
10/1981	25	F	7,013	14,709	0	2,097	0
11/1981	30	F	7,242	16,469	0	2,274	0
12/1981	31	F	7,172	16,744	0	2,335	0
Cumulative Production	158	F	39,961	87,068	0	2,179	0

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

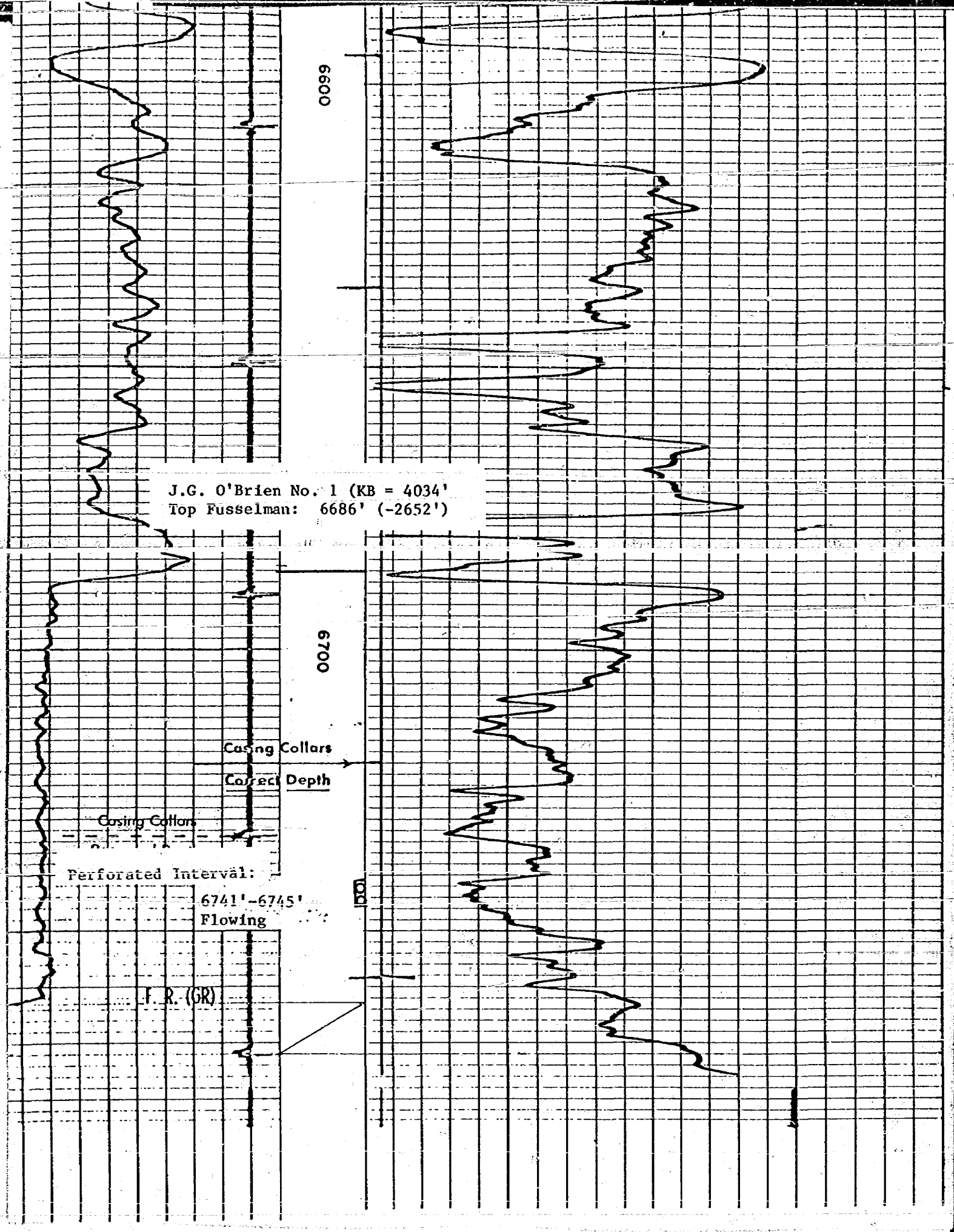
46 6690

Monthly Oil Production (STB/Month)

10^5 9 8 7 6 5 4 3 2 10^4 9 8 7 6 5 4 3 2 10^3 9 8 7 6 5 4 3 2 10^2

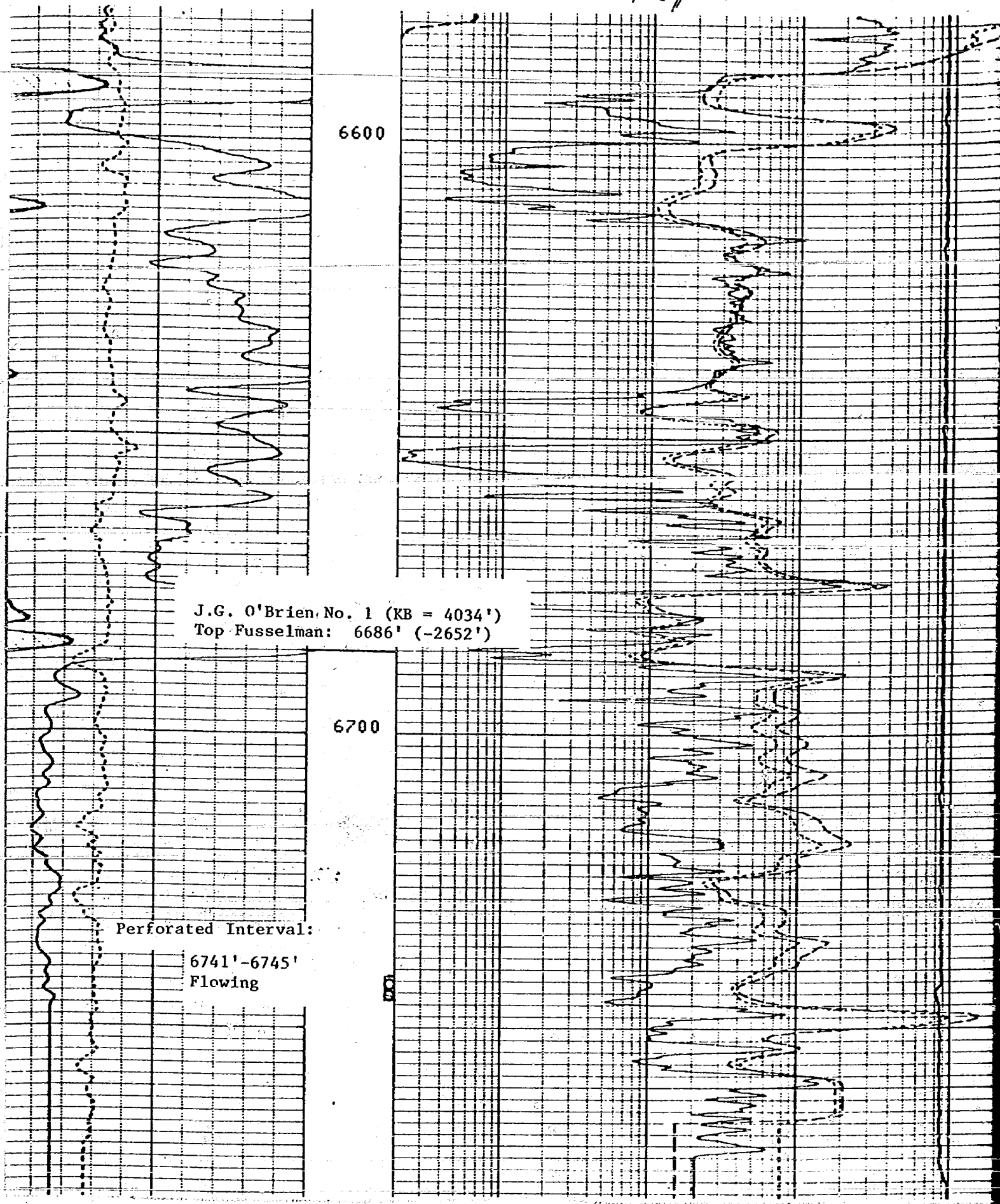
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

19 80 | 19 81 | 19 82 | 19 83 | 19 84


6600
J.G. O'Brien No. 1 (KB = 4034'
Top Fusselman: 6686' (-2652')
6700
Casing Collars
Correct Depth
Casing Collars
Perforated Interval:
6741'-6745'
Flowing
F.R. (GR)

3
3
3
3

Repeat



J.G. O'Brien No. 1 (KB = 4034')
Top Fusselman: 6686' (-2652')

Perforated Interval:

6741'-6745'
Flowing

WELL COMPLETION DATA
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Top of Fusselman: 6776' (-2761') KB = 4015'

Perforated Production Interval: 6820'-6824' (1 JSPF)
(5 holes)
6807'-6808' (4 JSPF)
(4 holes)

Stimulation Treatment: 150 gallons 7½% MCA acid

Initial Potential Test:

Date of Test: 10/4/1980 (flowing)
1541 mcfpd + 33 bcpd + 0 bwpd
condensate gravity: 60.8° API
IGR: 21.4 bbls/mmcf
FTP: 1850 psig (14/64" choke)

Current Status: Flowing

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 4
CASE NO. 7073-7074
Submitted by RENOULT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 4
Date 02/17/1982

PRODUCTION HISTORY (FORM C115)
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Date	Days of Production	Status	Gas (MCF)	Condensate (STB)	Water (Bbl)	GOR (SCF/Bbl)	Condensate Content (STB/MMCF)	Water Content (Bbl/MMCF)
10/1980	4	F	9,265	116	0	79,871	12.5	0
11/1980	0	F	0	0	0	-	-	-
12/1980	0	F	0	0	0	-	-	-
01/1981	0	F	0	0	0	-	-	-
02/1981	0	F	0	0	0	-	-	-
03/1981	0	F	124	0	0	∞	0	0
04/1981	0	F	0	0	0	-		
05/1981	0	F	0	0	0	-	-	-
06/1981	0	F	0	0	0	-	-	-
07/1981	31	F	8,864	107	0	82,841	12.1	0
08/1981	25	F	31,086	551	0	56,417	17.7	0
09/1981	23	F	51,305	579	0	88,610	11.3	0
10/1981	29	F	47,636	362	0	131,591	7.6	0
11/1981	30	F	39,659	182	0	217,906	4.6	0
12/1981	30	F	24,601	20	128	1,230,050	0.8	5
Cumulative Production	172	F	212,540	1,917	128	110,871	9.0	1

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

46 6690

Monthly Gas Production (MCF/Month)

10^5 9 8 7 6 5 4 3 2 10^4 9 8 7 6 5 4 3 2 10^3 9 8 7 6 5 4 3 2 10^2

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

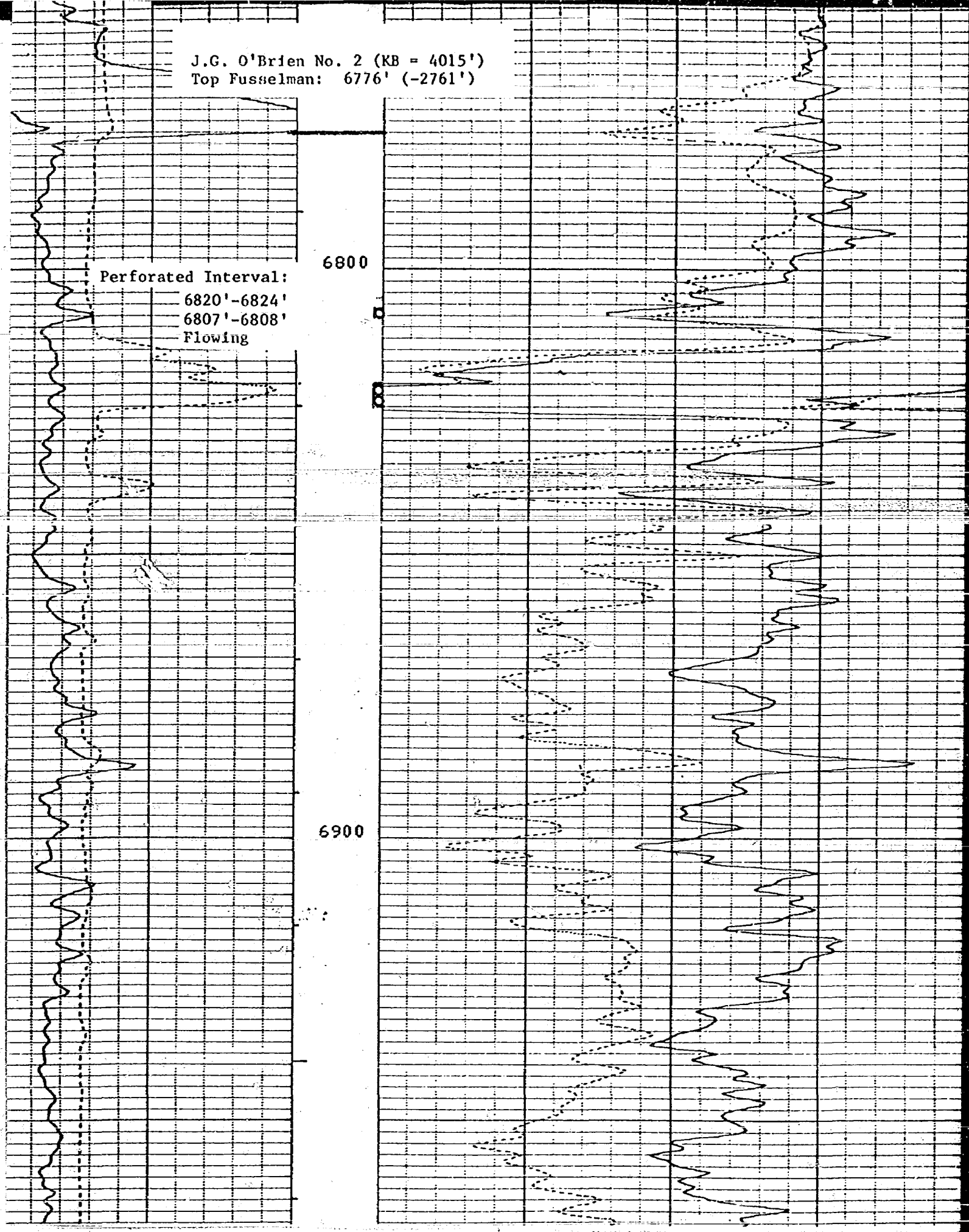
19 80 | 19 81 | 19 82 | 19 83 | 19 84

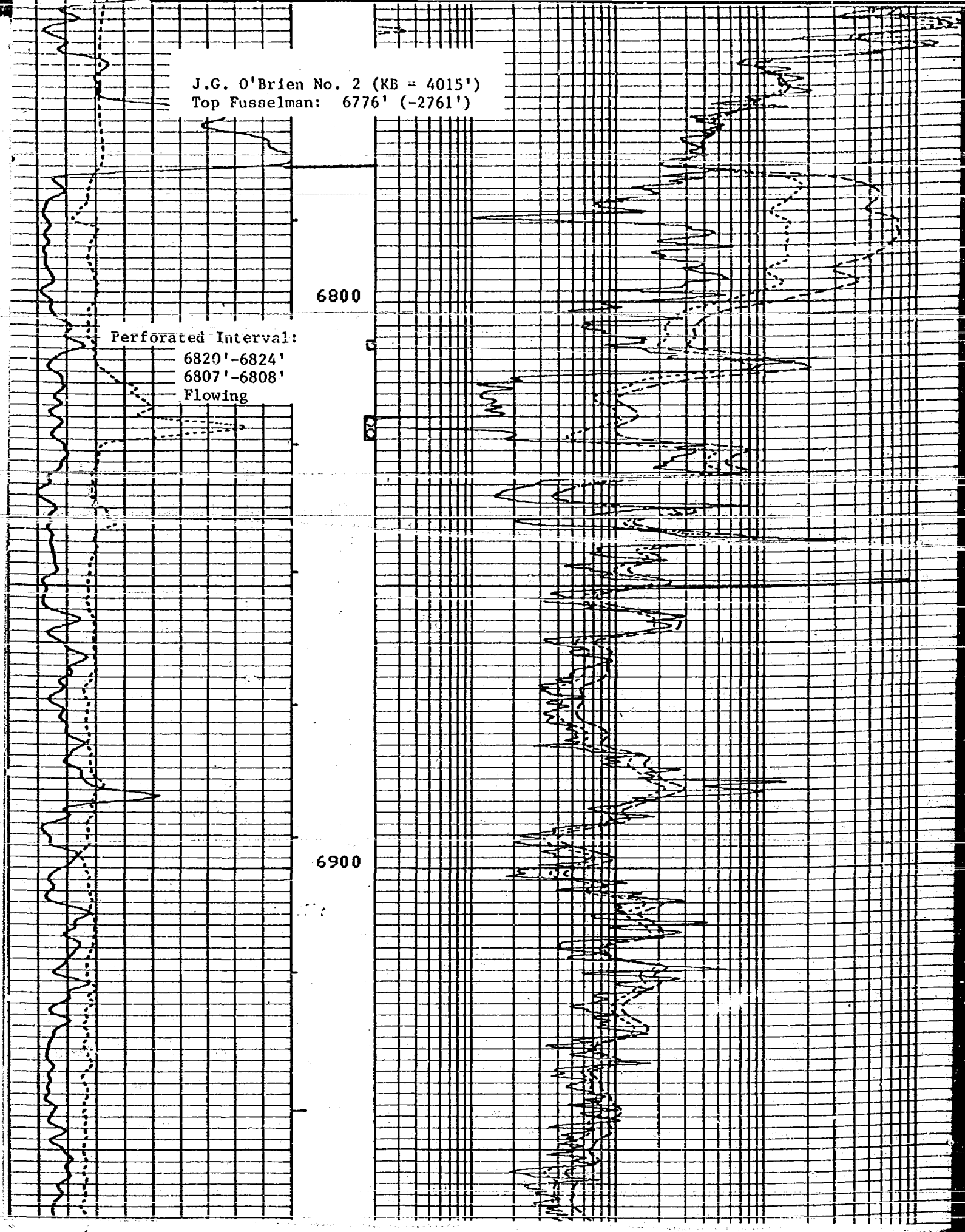
J.G. O'Brien No. 2 (KB = 4015')
Top Fusselman: 6776' (-2761')

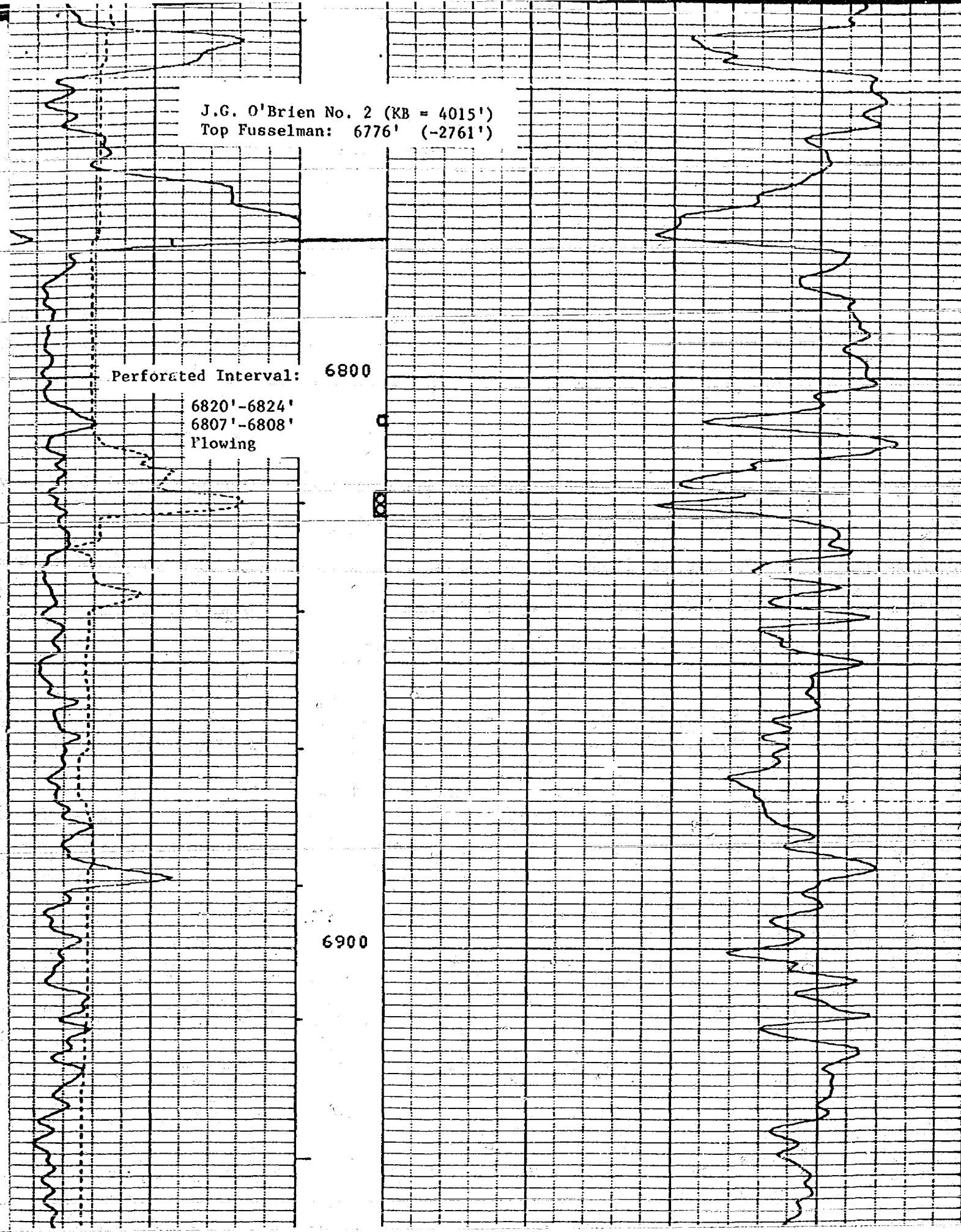
6800

Perforated Interval:
6820'-6824'
6807'-6808'
Flowing

6900




J.G. O'Brien No. 2 (KB = 4015')
Top Fusselman: 6776' (-2761')
6800
Perforated Interval:
6820'-6824'
6807'-6808'
Flowing
6900


J.G. O'Brien No. 2 (KB = 4015')
Top Fusselman: 6776' (-2761')
Perforated Interval: 6820'-6824'
6807'-6808'
Flowing
6800
6900

WELL COMPLETION DATA
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 3
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Top of Fusselman: 6750' (-2726') KB = 4024'

Perforated Production Interval: 6804'-6810' (2 JSPF) (6/25/81)
(14 holes)
6794'-6797' (1 JSPF) (7/8/81)
(4 holes)
6762'-6770' (1 JSPF) (2/3/82)
(9 holes)

Stimulation Treatment: 500 gallons 7½% MCA acid (6/26/81)
150 gallons 15% MCA acid (7/9/81)
500 gallons 7½% MCA acid (2/4/82)

Initial Potential Test:

Date of Test: 7/23/1981 (flowing)
153 bopd + 3 bwpd + 455 mcfpd
oil gravity: 57.4° API
GOR: 2974:1 scf/bbl
FTP: 925 psig (10/64" choke)

Current Status: Flowing

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 5
CASE NO. 7073-7074
Submitted by ENSERCH
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 5
Date 02/17/1982

PRODUCTION HISTORY (FORM C115)
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 3
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Date	Days of Production	Status	Oil (STB)	Casinghead Gas (MCF)	Water (Bbl)	GOR (SCF/Bbl)	Water Cut (%)
07/1981	5	F	1,237	3,725	0	3,011	0
08/1981	21	F	3,386	5,218	454	1,541	12
09/1981	15	F	3,601	5,007	1,805	1,390	33
10/1981	19	F	3,743	3,895	1,778	1,041	32
11/1981	30	F	3,866	4,426	3,924	1,145	50
12/1981	31	F	3,827	2,759	2,952	721	44
Cumulative Production	121	F	19,660	25,030	10,910	1,273	36

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 3
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

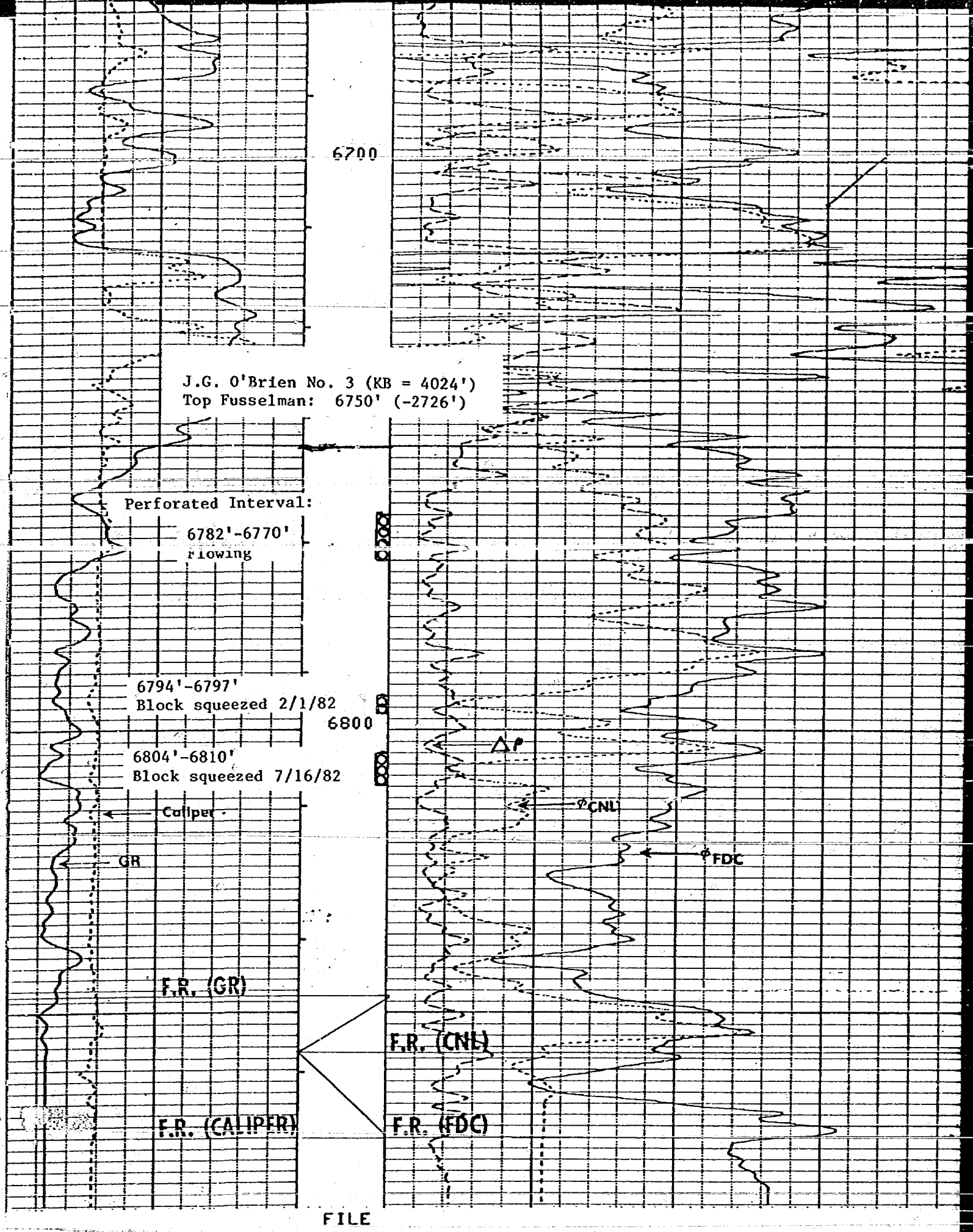
46 6690

Monthly Oil Production (STB/Month)

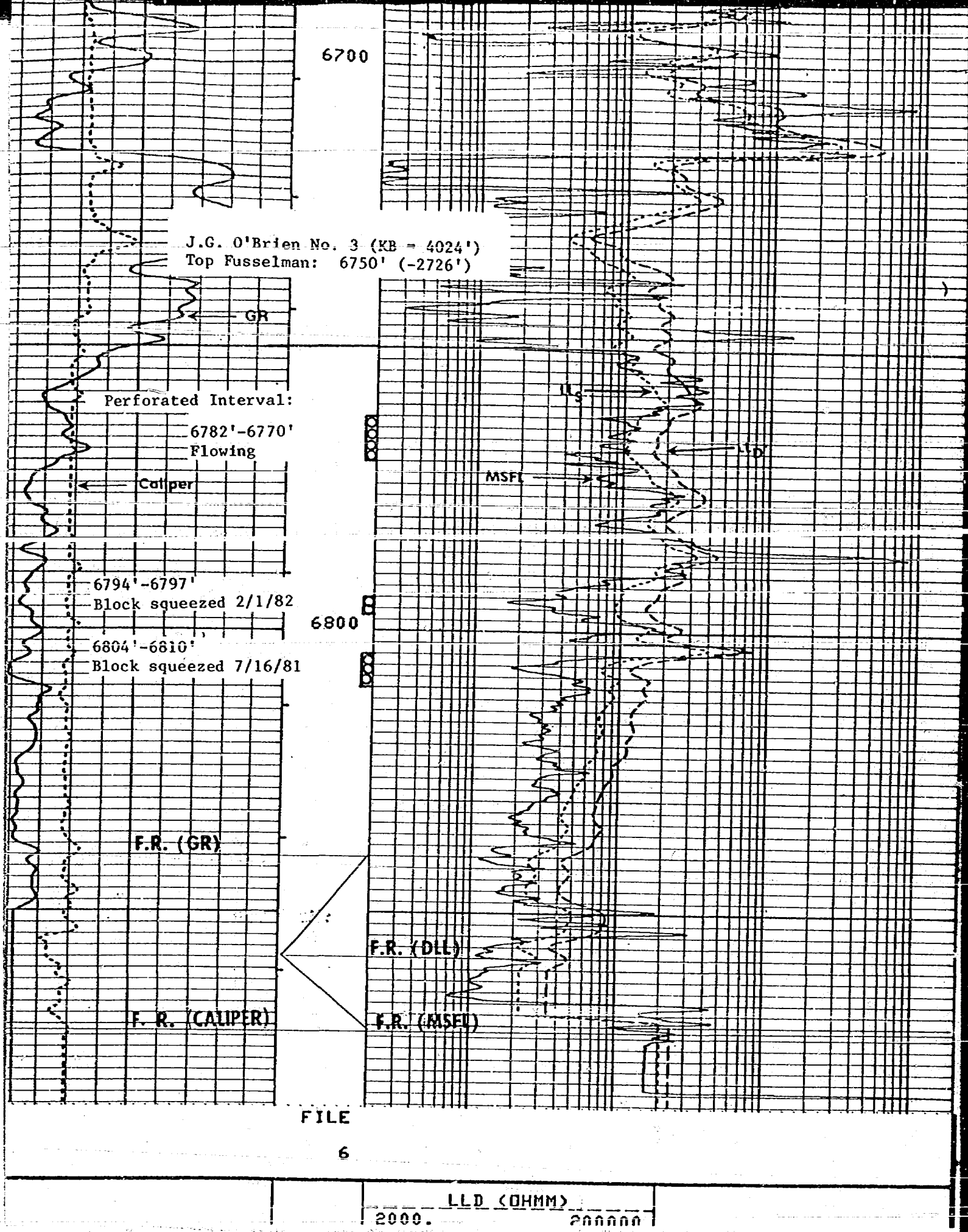
10^5 9 8 7 6 5 4 3 2 10^4 9 8 7 6 5 4 3 2 10^3 9 8 7 6 5 4 3 2 10^2

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

1980 | 1981 | 1982 | 1983 | 1984


6700
J.G. O'Brien No. 3 (KB = 4024')
Top Fusselman: 6750' (-2726')
Perforated Interval:
6782'-6770'
Flowing
6794'-6797'
Block squeezed 2/1/82
6800
6804'-6810'
Block squeezed 7/16/82
Caliper
GR
F.R. (GR)
F.R. (CALIPER)
F.R. (CNL)
F.R. (FDC)
200
ΔP
ΦCNL
ΦFDC

FILE


6700
J.G. O'Brien No. 3 (KB = 4024')
Top Fusselman: 6750' (-2726')
GR
Perforated Interval:
6782'-6770'
Flowing
Caliper
LLS
LLD
MSFL
6794'-6797'
Block squeezed 2/1/82
6800
6804'-6810'
Block squeezed 7/16/81
F.R. (GR)
F.R. (DLL)
F. R. (CALIPER)
F.R. (MSFL)
FILE
6
LLD (OHMM)
2000.
200000

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
TOTAL OIL POOL PRODUCTION
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Date	Oil (STB)	Casinghead Gas (MCF)	GOR (SCF/Bbl)
06/1980	1,241	2,265	1,825
07/1980	4,016	7,167	1,785
08/1980	0	0	-
09/1980	0	0	-
10/1980	0	0	-
11/1980	0	0	-
12/1980	0	0	-
01/1981	0	0	-
02/2981	0	0	-
03/3981	0	0	-
04/1981	0	0	-
05/1981	0	0	-
06/1981	0	0	-
07/1981	2,268	5,666	2,498
08/1981	8,886	17,662	1,988
09/1981	10,347	20,336	1,965
10/1981	10,756	18,604	1,730
11/1981	11,108	20,895	1,881
12/1981	10,999	19,503	1,773
Cumulative Production	59,621	112,098	1,880

1880.1

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 6
CASE NO. 7073-7074
Submitted by RESOULT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 6
Date 02/11/1982

1

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 1
J.G. O'BRIEN NO. 3
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

46 6690

Monthly Oil Production (STB/Month)

10^5 9 8 7 6 5 4 3 2 10^4 9 8 7 6 5 4 3 2 10^3 9 8 7 6 5 4 3 2 10^2

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

1980 | 1981 | 1982 | 1983 | 1984

DRILL STEM TEST DATA
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Test Data

Date of Test: August 18, 1980
Interval Tested: 6776'-6805'
Hole Size: 8-3/4"
Job Type: Open-Hole DST
Mud Weight: 10.1 ppg

Pressure Data

First Period	Flow:	13 mn (2421.0 psi @ 6801')
	Closed In:	47 mn (2588.9 psi @ 6801')
Second Period	Flow:	59 mn (2502.8 psi @ 6801')
	Closed In:	120 mn (2591.8 psi @ 6801')

Recovery

Drill Pipe: 5000 feet of gas (reversed)
3 bbls gas-cut mud (estimated)

Sampler: 9.7 cu. ft. dry gas at 1900 psi

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
EXHIBIT NO. 7
CASE NO. 7073-7074
Submitted by RENAULT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073 / 7074
Exhibit 7
Date 02/17/1982

--- INTERPRETATIONS AND CALCULATIONS FOR GAS WELLS ---

USING HORNER METHOD

TICKET NO. 618342

FORMATION/FLUID PROPERTIES

TEMF =	130.0 F	SPGG =	0.60	TEMPR =	1.7
PRSPR =	3.8	Z =	0.837	VISG =	0.018 cp

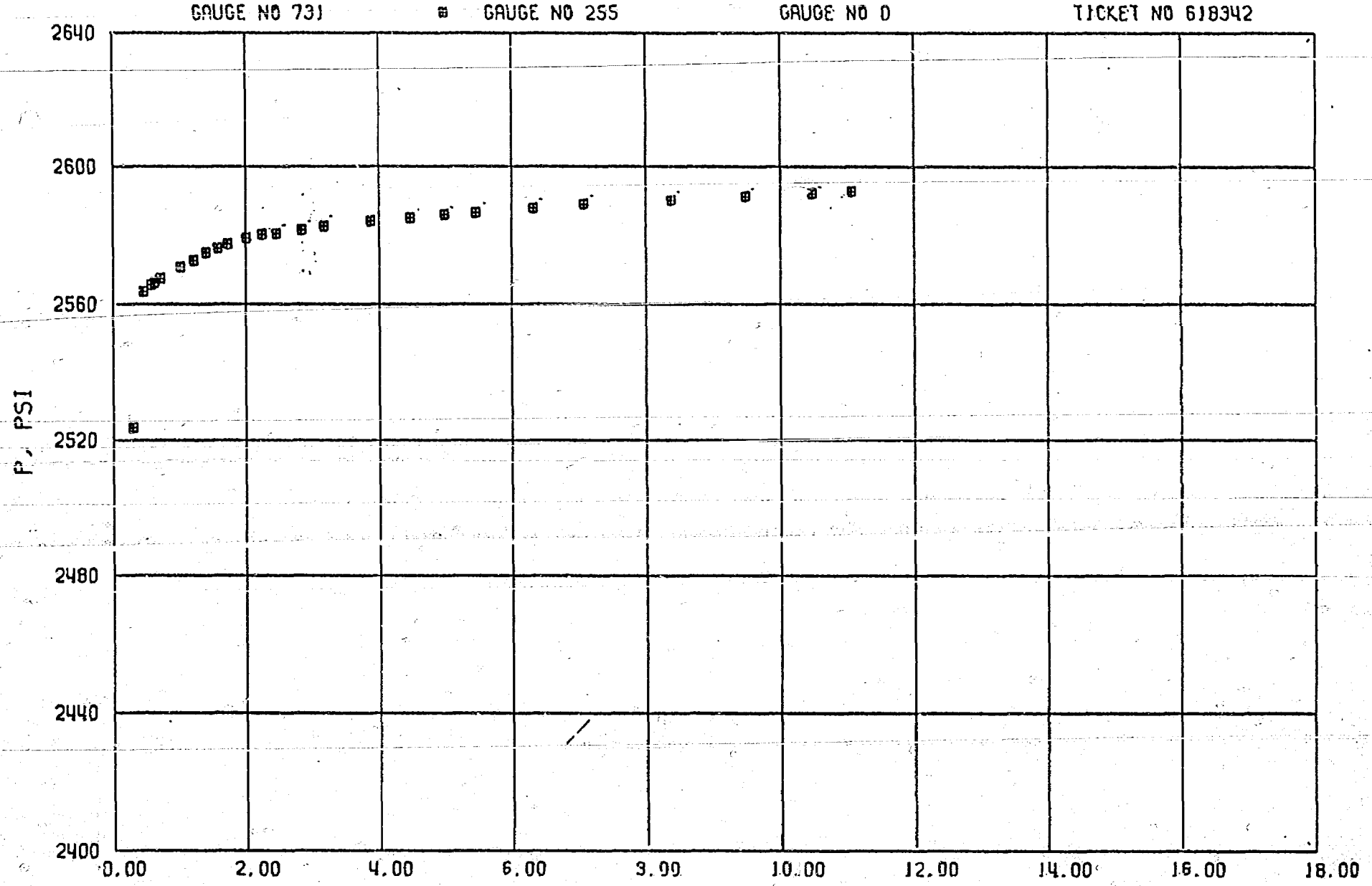
EXTRAPOLATED PRESSURE DATA

GAUGE	CIP	MCF/D	PS	P10	SLOPE
731.	1	5150.0	2604.2	2585.9	94673.1
731.	2	6171.0	2596.0	2586.3	50555.1
255.	1	5150.0	2592.5	2574.0	95910.3
255.	2	6171.0	2594.2	2581.6	65344.2

RESULTS

PARAMETER NAME		GAUGE NO. 731. FIRST	SECOND	THIRD	GAUGE NO. 255. FIRST	SECOND	THIRD
Theor. Flow Cap.	Kh	779.5	1746.9	0.0	768.1	1351.2	0.0
Avg. Permeability	K	26.878	60.238	0.000	26.485	46.592	0.000
Ind. Flow Capacity	Kh2	239.8	715.0	0.0	234.2	725.4	0.0
Damage Ratio	DR	3.250	2.443	0.000	3.279	1.963	0.000
Ind. Flow Rate, Max	OF1	39948.7	87151.8	0.0	41180.9	91419.6	0.0
Ind. Flow Rate, Min	OF2	14343.5	23190.8	0.0	14563.0	23751.8	0.0
Theor. Pot.Rate Max	OF3	129839.4	212916.5	0.0	135042.3	170272.1	0.0
Theor. Pot.Rate Min	OF4	46618.6	56656.4	0.0	47755.7	44238.6	0.0
Radius of Invest.	b	20.5	66.6	0.0	16.9	57.3	0.0
Potent. Surface	Pot.	3281.1	3262.2	0.0	3209.1	3212.9	0.0

GAUGE NO 731 ▪ GAUGE NO 255 GAUGE NO 0 TICKET NO 618342



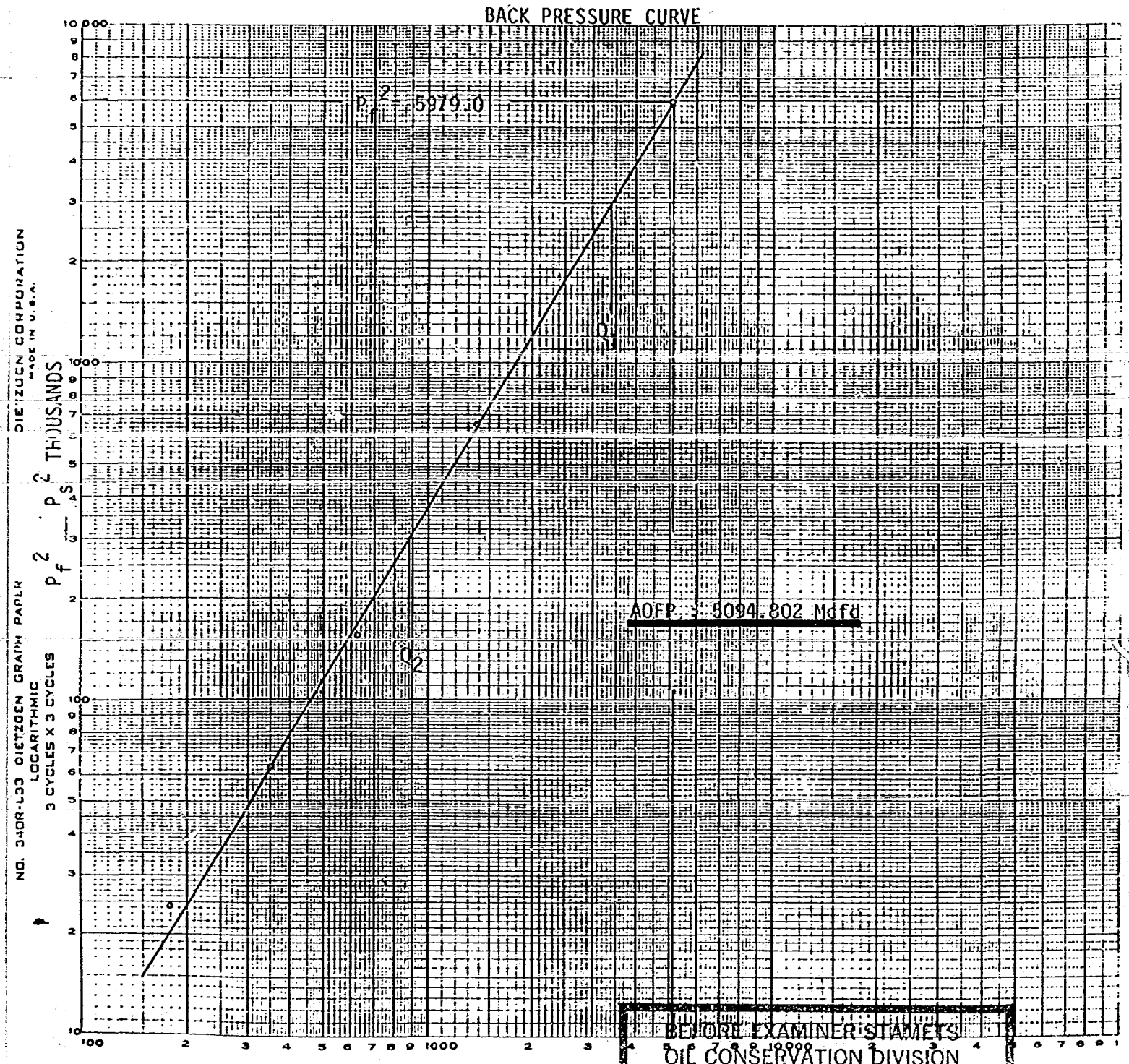
Company	:	Enserch Exploration, Inc.
Well	:	J. G. O'Brien No. 2
Field	:	South Elkins
County	:	Chaves
State	:	New Mexico
Date	:	August 20, 1981

ENSERCH EXPLORATION, INC.

Docket No. 7073 / 7074

Exhibit 8

Date 02 / 17 / 1982



Q_1 = 3396.620 ; LOG Q_1 = 3.531047

Q_2 = 877.298 ; LOG Q_2 = 2.943147

n = 0.587900

$\theta = 59.55^0$

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 8
CASE NO. 7073-7074
Submitted by BENNETT
Hearing Date 2/17/82

NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-58

Type Test: [X] Initial [ ] Annual [ ] Special — Test Date:

Company: Enserch Exploration, Inc.	Connection: K. B. Kennedy Engr.		
Pool: So. Elkins	Formation: Fusselman Gas	Unit: M	
Completion Date: 10-3-80	Total Depth: 7175	Plug Back TD: 7000	Elevation: 3998.1
Farm or Lease Name: J. G. O'Brien			
Csg. Size: 5½ / Wt.: 15.5 / d: / Set At: 7175	Perforations: From 6807 To 6808	Well No.: 2	
Tbg. Size: 2 3/4 / Wt.: 4.7 / d: / Set At: 6717	Perforations: From 6820 To 6824	Unit: M / Sec.: 30 / Twp.: 7S / Rge.: 29E	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single	Packer Set At: 6717	County: Chaves	
Producing Thru: Tubing	Reservoir Temp. °F: 132 @ 6700	Mean Annual Temp. °F: 70	Baro. Press. – P_a: 13.2
State: New Mexico			

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
6816	6816	0.8068	2.307	5.823	0.0316		X	Flange

NO.	FLOW DATA: Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	CASING DATA: Press. p.s.i.g.	Temp. °F	Duration of Flow
SI	27 hours				1867		Pkr.		
1.	2" X 1.5000"	87	1.7	114	1848	70	Pkr.	-	60 min
2.	2" X 1.5000"	95	6.3	132	1832	70	Pkr.	-	60 min
3.	2" X 1.5000"	106	18.0	132	1815	70	Pkr.	-	60 min
4.	2" X 1.5000"	140	66.0	104	1737	70	Pkr.	-	60 min
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1.	12.76	13.051	100.2	.9518	1.1133	1.012	178.6
2.	12.76	26.109	108.2	.9372	1.1133	1.012	351.8
3.	12.76	46.321	119.2	.9372	1.1133	1.012	624.1
4.	12.76	100.554	153.2	.9602	1.1133	1.012	1389.4
5.							

NO.	P_t	Temp. °R	T_f	Z
1.		USED SIMPLIFIED		
2.		SUPERCOMPRESSIBILITY		
3.		TABLES		
4.				
5.				

Gas Liquid Hydrocarbon Ratio 71.43 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 60.8 Deg.
Specific Gravity Separator Gas 0.8068 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX
Critical Pressure 662 P.S.I.A. P.S.I.A.
Critical Temperature 404 R R

P_f 2445.2 P_f^2 5979.0

NO	P_t^2	P_s	P_s^2	$P_f^2 - P_s^2$
1		2440.2	5954.6	24.4
2		2432.2	5915.6	63.4
3		2413.2	5823.5	155.5
4		2307.2	5323.2	655.8
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 9.117109$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3.666908$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 5094.802$

Absolute Open Flow 5094.802 Mcfd @ 15.025 Angle of Slope θ 59.55° Slope, n 0.5879

Remarks: BHP MEASURED WITH AMERADA RPG-3 GAUGE NO. 44534, 0-4000 RANGE

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Tefteller, Inc.	D. A. Warren, Jr.	

TEFTELLER, INC.

reservoir engineering data
MIDLAND, TEXAS

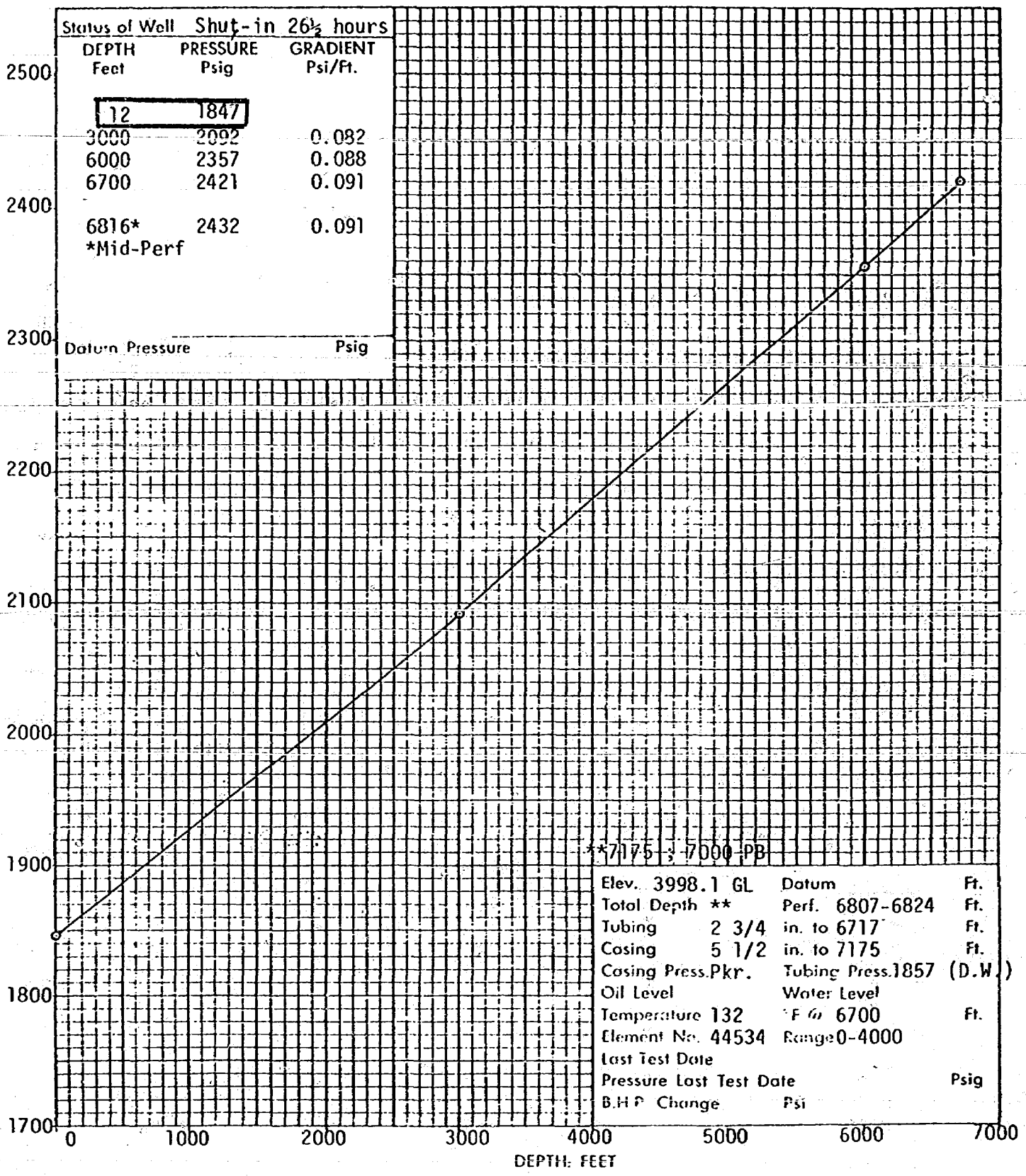
Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 2
Field SOUTH ELKINS County CHAVES State NEW MEXICO
Formation FUSSELMAN Test Date AUGUST 20, 1981

Status of Well Shut-in 26½ hours

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
12	1847	
3000	2092	0.082
6000	2357	0.088
6700	2421	0.091
6816*	2432	0.091

*Mid-Perf

Datum Pressure Psig



Elev. 3998.1 GL		Datum	Ft.
Total Depth **		Perf. 6807-6824	Ft.
Tubing	2 3/4	in. to 6717	Ft.
Casing	5 1/2	in. to 7175	Ft.
Casing Press. Pkr.		Tubing Press. 1857	(D.W.)
Oil Level		Water Level	
Temperature 132		°F @ 6700	Ft.
Element No. 44534		Range 0-4000	
Last Test Date			
Pressure Last Test Date			Psig
B.H.P. Change		Psi	

NEW-TEX LAB
P. O. BOX 1161
HOBBS, N.M. 88240

RECEIVED
OCT 28 1981
OCT 1981
CAPITAN ENERGY CORPORATION

5839
Run No.
MIDLAND PRODUCTION Run 10-13-81
Date Secured 10-08-81

CERTIFICATE OF ANALYSIS

Sample of Enserch Exploration J.G. O'Brien #1
Secured from Capitan Energy Corporation
At P. O. Box 7577
Roswell, N.M. 80202-7577
Secured by
Sampling conditions Press Time Date
Temp.
Station 10-010-01

FRACTIONAL ANALYSIS

	Percentage Composition MOL %	LIQ. %	G.P.M.
Carbon Dioxide	2.592		
Air			
Nitrogen	2.731		
Oxygen			
Hydrogen sullide			
Hydrogen			
Methane	58.656		
Ethane	16.653		4.441
Propone	13.130		3.604
Butanes			
Iso-Butane	1.939		.633
N-Butane	2.803		.881
Pentanes			
Iso-Pentane	.556		.203
N-Pentane	.415		.150
Hexanes	.206		.085
Heptanes Plus	.319		.147
Octanes			
TOTAL	100.000		10.144

Calc. Sp. Gr. 0.8991
Calc. A.P.I.
Calc. Vapor Press. PSIA
Sp. Gr.
Mol. Wt. 26.08

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M.	3.604
Butanes Calc. G.P.M.	1.514
Pentanes Plus. G.P.M.	.585
Ethane Calc. G.P.M.	4.441
RVP Gasoline G.P.M.	

B.T.U./Cu. Ft. @ 14.696 P.S.I.A.

Dry Basis	1439
Wet Basis	1414

Sulfur Analysis by Titration Gr./100 Cu. Ft.

Hydrogen Sulfide
Mercaptans
Sulfides
Residual Sulfur
Total Sulfur

Run by R. H. Hamilton Checked by Deane Simpson Approved by Deane Simpson

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
~~ENSERCH~~ EXHIBIT NO. 9
CASE NO. 7073-7074
Submitted by ENSERCH
Hearing Date 2/17/82

Additional Data and Remarks

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
~~Exhibit~~ 9
Date 02/17/1982

NEW-TEX LAB
P. O. BOX 1181
HOBBS, N.M. 88240

RECEIVED
OCT 28 1981

No. 5840
Run No.
Date of Run 10-13-81
Date Secured 10-08-81

CERTIFICATE OF ANALYSIS

MIDLAND PRODUCTION

Sample of Enserch Exploration — J.G. O'Brien #3
cured from Capitan Energy Corporation
P. O. Box 7577
Roswell, N.M. 88202-7577
Secured by
Time Date
mpling conditions Press
Temp.
Station 10-018-01

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
arbon Dioxide	2.591		
ir			
itrogen	2.731		
xygen			
ydrogen sulfide			
ydrogen			
ethane	58.458		
hane	16.520		4.406
opane	13.273		3.643
lanes			
o-Butane	1.974		.644
-Butane	2.955		.929
entanes			
o-Pentane	.591		.216
-Pentane	.433		.156
exanes	.202		.083
eptanes	.272		.125
ctanes			
OTAL	100.000		10.202

Calc. Sp. Gr. 0.9022
Calc. API
Calc. Vapor Press. PSIA
Sp. Gr.
Mol. Wt. 26.16

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M.	3.643
Butanes Calc. G.P.M.	1.573
Pentanes Plus. G.P.M.	.580
Ethane Calc. G.P.M.	4.406
RVP Gasoline G.P.M.	
B.T.U./Cu. Ft. @ 14.696 P.S.I.A.	
Dry Basis	1443
Wet Basis	1418
Sulfur Analysis by Titration Gr./100 Cu. Ft.	
Hydrogen Sulfide	
Mercaptans	
Sulfides	
Residual Sulfur	
Total Sulfur	

un by R. H. Hamilton Checked by Deane Simpson Approved by

Additional Data and Remarks

NEW-TEX LAB
P. O. BOX 1181
HOBBS, N.M. 88240

RECEIVED
OCT 28 1981

No. 5836
Date of Run 10-13-81
Date Rec'd 10-08-81

CERTIFICATE OF ANALYSIS

MIDLAND PRODUCTION

A Sample of Enserch Exploration J.G. O'Brien #2
Secured from Capitan Energy Corporation
At Box 7577
Roswell, N.M. 88202-7577
Secured by
Time Date
Sampling conditions Press
Temp.
Station 10-011-01

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	2.333		
Air			
Nitrogen	5.740		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	73.445		
Ethane	9.618		2.565
Propane	5.034		1.382
Butanes			
Iso-Butane	.745		.243
N-Butane	1.357		.427
Pentanes			
Iso-Pentane	.413		.151
N-Pentane	.378		.137
Hexanes	.309		.127
Heptanes Plus	.628		.289
Octanes			
TOTAL	100.000		5.321

Calc. Sp. Gr. 0.7650
Calc. A.P.I.
Calc. Vapor Press. PSIA
Sp. Gr.
Mol. Wt. 22.22

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M.	1.382
Butanes Calc. G.P.M.	.670
Pentanes Plus. G.P.M.	.704
Ethane Calc. G.P.M.	2.565
RVP Gasoline G.P.M.	

B.T.U./Cu. Ft. @ 14.696 P.S.I.A.

Dry Basis	1189
Wet Basis	1168

Sulfur Analysis by Titration Gr./100 Cu. Ft.

Hydrogen Sulfide	
Mercaptans	
Sulfides	
Residual Sulfur	
Total Sulfur	

Run by R. H. Hamilton Checked by Deane Simpson Approved by Deane Simpson

Additional Data and Remarks

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

ENSERCH EXPLORATION, INC.
NO. 3 J. G. O'BRIEN
S. ELKINS BUSSELMAN FIELD
CHAVES COUNTY, NEW MEXICO

DATE : 5-31-81
FORMATION : FUSSELMAN/MONTOYA
DRLG. FLUID: SALT BASE MUD
LOCATION : 1980' FNL & 1830' FWL, SEC. 31, T-7-S, R-29-E

FILE NO : 3203-1235
ANALYSTS : REINHEIMER
LABORATORY: MIDLAND, TEXAS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MAXIMUM	PERM 90 DEG	PERM VERTICAL	HE POR	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
	CORE NO. 1 6765.0-6795.0 CUT 30' REC 12'								
1	6765.0-66.0	0.15		<0.01	5.2	0.0	69.7	2.80	DOL CHTY VF BREC
2	6766.0-67.0	0.76	0.51	1.5	11.4	14.5	47.4	2.81	DOL SL/CHTY VF BREC
3	6767.0-68.0	0.90	0.38	0.75	9.0	11.7	56.3	2.80	DOL SL/CHTY VF BREC
4	6768.0-69.0	0.95	0.87	0.04	9.5	4.0	26.0	2.78	DOL CHTY BREC
5	6769.0-70.0	0.23	0.07	0.05	7.7	8.7	37.5	2.81	DOL SL/F CHTY BREC
6	6770.0-71.0	0.18	0.04	0.22	6.9	16.4	44.8	2.82	DOL CHTY BREC
7	6771.0-72.0	0.03	<0.01	<0.01	1.0	9.5	75.7		DOL VF
8	6772.0-73.0	0.11	0.04	0.06	8.3	9.8	55.4	2.82	DOL STY
9	6773.0-74.0	0.15	0.08	0.13	8.5	9.1	57.1	2.81	DOL SL/CHTY BREC STY
* 10	6774.0-75.0	0.03		0.08	5.3	8.9	78.9	2.82	DOL SL/CHTY BREC
* 11	6775.0-76.0	0.08		0.04	11.0	28.9	68.4	2.84	DOL SL/CHTY BREC
12	6776.0-77.0	0.04	0.04	0.04	14.3	23.4	29.0	2.84	DOL

* INDICATES PLUG PERMEABILITY

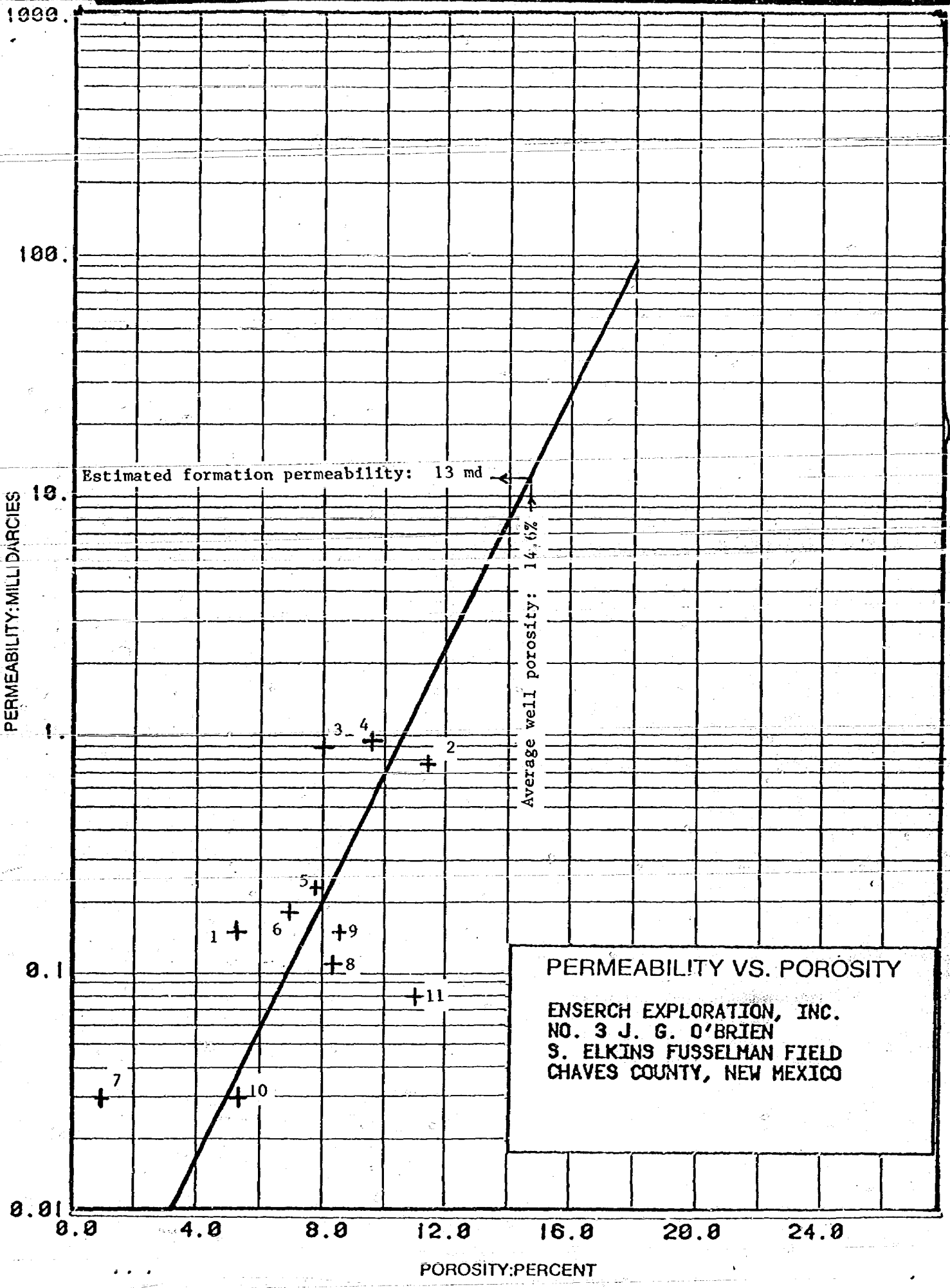
Average porosity: 8.2% (permeability cut-off: k > 0.10 md)

Lithological Abbreviations:

VF: predominately vertically fractured
SL/F: Slightly fractured
BREC: Brecciated

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 10
CASE NO. 7073 - 7074
Submitted by RENOULT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073 / 7074
Exhibit 10
Date 02/17/1982


1000.
100.
10.
1.
0.1
0.01
PERMEABILITY:MILLIDARCIES
Estimated formation permeability: 13 md
Average well porosity: 14.6%
1
2
3
4
5
6
7
8
9
10
11
0.0
4.0
8.0
12.0
16.0
20.0
24.0
POROSITY:PERCENT
PERMEABILITY VS. POROSITY
ENSERCH EXPLORATION, INC.
NO. 3 J. G. O'BRIEN
S. ELKINS FUSSELMAN FIELD
CHAVES COUNTY, NEW MEXICO

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY RNSEARCH EXPLORATION, INC. FILE NO. 3202-12359

WELL NO. 3 J. G. O'BRIEN DATE 5-31-81

FIELD S. ELKINS TUSSELMAN FIELD FORMATION TUSSELMAN/MONTOYA ELEV. 4009' GL

COUNTY CHAVES COUNTY STATE NEW MEXICO DRLG. FLD. SALT BASE MUD CORES ACC

LOCATION 1980' FNL & 1830' FWL, SEC. 31, T-7-S, R-29-E

CORRELATION COREGRAPH

VERTICAL SCALE: 5" = 100'

Total Water
PERCENT PORE SPACE
100 80 60 40 20 0

Gamma Ray
RADIATION INCREASE →
API UNITS

Permeability
MILLIDARCIES
100 10 1.0 .1

Depth Feet

Porosity
PERCENT
30 20 10 0

Oil Saturation
PERCENT PORE SPACE
0 20 40 60 80 100

6750

6800

ENSERCH EXPLORATION, INC.

Docket No. 7073 / 7074

Exhibit 11

Date 02/17/1982

PRESSURE BUILD-UP ANALYSIS
HORNER PLOT
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

$p^* = 2426 + (2 \times 39)$
$= 2504$ psi

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 11
CASE NO. 7073-7074
Submitted by ENSERCH
Hearing Date 2-17-82

$m = 2426 - 2387$
$= 39$ psi/cycle

Interval Perforated: 6741'-6745'
Date of Test: 2/3-8/1982
Formation Permeability: 4.5 md
Current Reservoir Pressure: 2504 psi
Pressured measured at 6743' (-2708')
KB = 4035'

Bottom Hole Pressure @ 6743'

2440
2420
2400
2380
2370

10^4 9 8 7 6 5 4 3 2 10^3 9 8 7 6 5 4 3 2 10^2 9 8 7 6 5 4 3 2 1

$(\Delta t + t)/\Delta t$

OIL

WELL PRESSURE ANALYSIS
West Texas District

Test Date: 2/3-8/1982 Lease: J.G. O'Brien

Formation: Fusselman dolomite Well No.: 1

Casing Size: 5½", 15.5# Field: South Elkins

Cum. Prod. Np(Bbl): 45,602 STB State: Chaves Co., New Mexico

Prod. Rate (Bbl/Day): 245

Prod. Life = 24Np/q: 4464 hours

I. Calculation of kh (md-ft) and k (md):

$$kh = \frac{162.6\ q\mu B}{m} \; ; \; k = \frac{kh}{h}$$

h = 53 ft μ = 0.13 cp

q = 245 B/D B = 1.809

m = 39 psi/cycle

$$kh = \frac{162.6 \times (245) \times (0.13) \times (1.809)}{(39)} = 240.4 \text{ md-ft}$$

$$k = \left(\frac{240.5}{53}\right) = 4.5 \text{ md}$$

II. Calculation of Skin Effect, s; and Pressure Loss Due to Skin, Δp_{skin} (psi):

$$s = 1.151\left[\frac{p_{1\,hr} - p_{wf}}{m} - \log\left(\frac{k}{\phi\mu c r_w^2}\right) + 3.23\right]$$

$$s = 1.151\left[\frac{(2367)-(2345)}{(39)} - \log\left[\frac{(4.5)}{(0.116)(0.13)(17.5 \times 10^{-6})(.229^2)}\right] + 3.23\right] = -5.43$$

$\Delta p_{skin} = (m) \times 0.87\ (s)$ $\Delta p_{skin} = (39) \times 0.87\ (-5.43) = -174$ psi

k = 4.5 md r_w = 0.229 ft

φ = 11.6 $p_{1\,hr}$ = 2367 psig

μ = 0.13 cp p_{wf} = 2345 psig

c = 17.5×10^{-6} psi^{-1} m = 39 psi/cycle

III. Calculation of Productivity Index (B/D-psi) and Flow Efficiency:

$$J_{(actual)} = \frac{q}{p^* - p_{wf}} \qquad J_{(ideal)} = \frac{q}{(p^* - p_{wf}) - \Delta p_{skin}}$$

$$J_{(actual)} = \frac{(245)}{(2504)-(2345)} \qquad J_{(ideal)} = \frac{(245)}{[(2504)-(2345)] - (-174)}$$

$J_{(actual)}$ = 1.54 $J_{(ideal)}$ = 0.74

Δp_{skin} = -174 psi p^* = 2504 psig

q = 245 B/D p_{wf} = 2345 psig

$$\text{Flow Efficiency} = \frac{J_{(actual)}}{J_{(ideal)}} = \frac{(1.54)}{(0.74)} = 2.08$$

PARAMETERS:

$$C_t = S_w C_w + S_o C_o + C_f = (0.28)(2.9\times10)^{-6} + (0.72)(6.8\times10)^{-6} + (4.6\times10)^{-6} = 17.5 \times 10^{-6}$$

P_c = 546 psia S_w = 28 %

T_c = 772 °R S_o = 72 %

BHT = 133 °F ρ_o = .741 g/cc

BHP = 2438 psia

Radius of investigation during pressure build-up:

$r_i = 0.029(kt_i/\phi\mu c_t)^{½} = 0.029(4.5 \times 98.75/0.116 \times 0.13 \times (17.5 \times 10^{-6}))^{½} = 1190$ ft (102 acres)

TEETELLER, INC
RESERVOIR ENGINEERING DATA
Midland, Texas

Well : J. G. O'BRIEN NO. 1 Page 1 of 5

Field : SOUTH ELKINS File 3-12883-BU

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA t = 4464 hrs

1982 Date	Status of Well	Time	Elapsed Time: Δt Hrs. Min.	(t+Δt)/Δt	BHP @ 6635' Psig	BHP @ 6743' Psig
2-3	Arrived on location					
"	well flowing	18:00				
"	Rigged up, instrument					
"	in lubricator	18:20				
"	Instrument @ 6635'	20:10			2319	2345
2-4	"	00:00			2318	2344
"	"	04:00			2318	2344
"	"	08:00			2318	2344
"	"	09:00			2319	2344
"	Shut-in for build up	09:00	0 00			
"	"	09:06	0 06	44,641.0	2333	2358
"	"	09:12	0 12	22,321.0	2334	2359
"	"	09:18	0 18	14,881.0	2335	2360
"	"	09:24	0 24	11,161.0	2336	2361
"	"	09:30	0 30	8,929.0	2337	2362
"	"	09:36	0 36	7,441.0	2338	2363
"	"	09:42	0 42	6,378.1	2339	2364
"	"	09:48	0 48	5,581.0	2341	2366
"	"	09:54	0 54	4,961.0	2341	2366
"	"	10:00	→ 1 00	4,465.0	2342	2367
"	"	10:30	1 30	2,977.0	2344	2369
"	"	11:00	2 00	2,232.0	2346	2371
"	"	12:00	3 00	1,489.0	2350	2375
"	"	13:00	4 00	1,177.0	2353	2378
"	"	14:00	5 00	893.8	2355	2380
"	"	15:00	6 00	745.0	2358	2383
"	"	17:00	8 00	559.0	2360	2385
"	"	19:00	10 00	447.4	2365	2390
"	"	21:00	12 00	373.0	2369	2394
"	"	23:00	14 00	319.9	2372	2397
2-5	"	01:00	16 00	280.0	2375	2400
"	"	03:00	18 00	249.0	2378	2403
"	"	05:00	20 00	224.2	2380	2405
"	"	09:00	24 00	187.0	2384	2409
"	"	13:00	28 00	160.4	2388	2413

TEETELLER, INC.
RESERVOIR ENGINEERING DATA
Midland, Texas

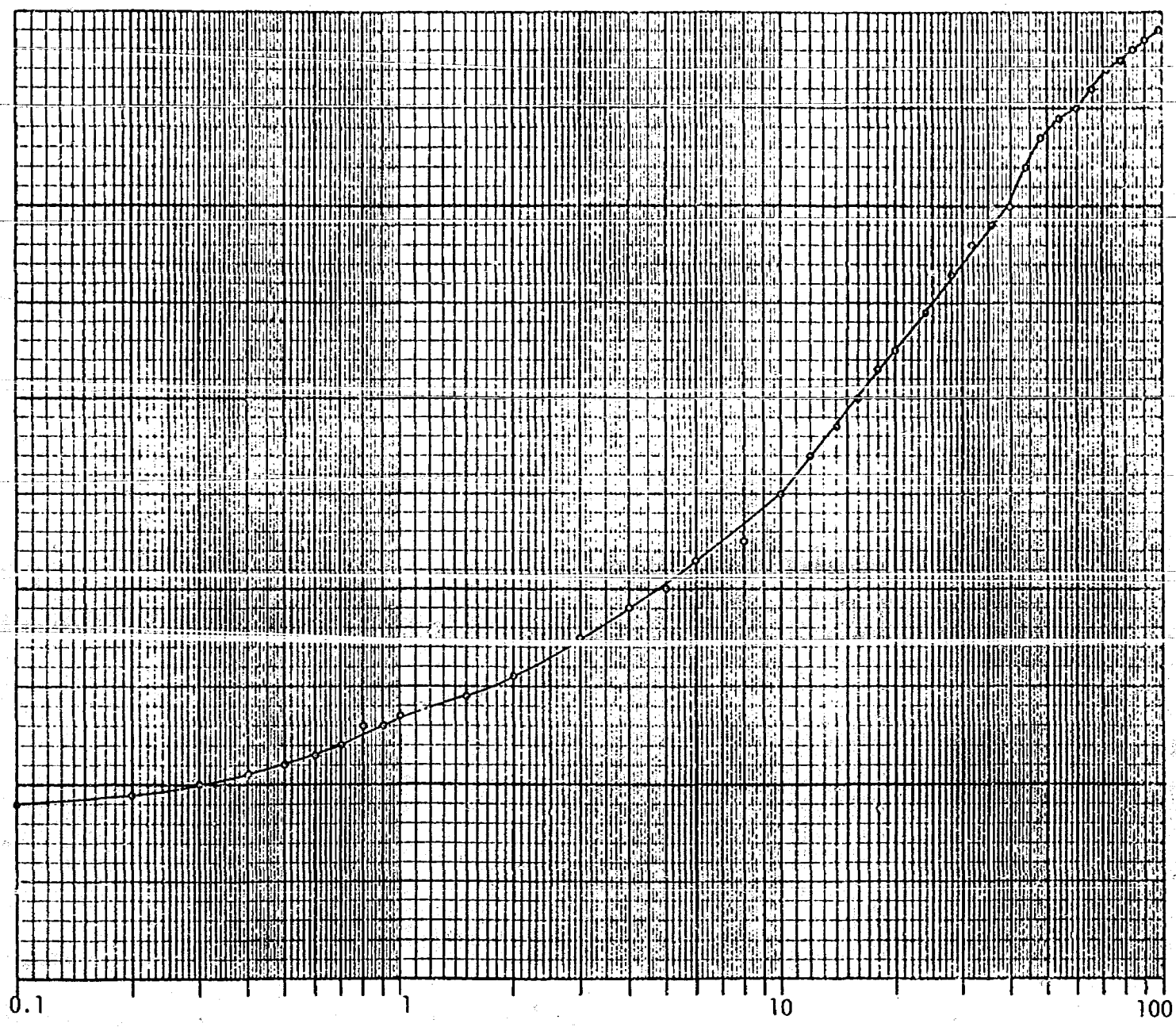
Well : J. G. O'BRIEN NO. 1

Field : SOUTH ELKINS File 3-12833-BU

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA t = 4464 hrs

1982 Date	Status of Well	Time	Elapsed Time: Δt Hrs.	Min.	(t+Δt)/Δt	BHP @ 6635' Psig	BHP @ 6743' Psig
2-5	Continued shut-in	17:00	32	00	140.5	2391	2416
"	"	21:00	36	00	125.0	2393	2418
2-6	"	01:00	40	00	112.6	2395	2420
"	"	05:00	44	00	102.5	2399	2424
"	"	09:00	48	00	94.0	2402	2427
"	"	15:00	54	00	83.7	2404	2429
"	"	21:00	60	00	75.4	2405	2430
2-7	"	03:00	66	00	68.6	2407	2432
"	"	09:00	72	00	63.0	2409	2434
"	"	15:00	78	00	58.2	2410	2435
"	"	21:00	84	00	54.1	2411	2436
2-8	"	03:00	90	00	50.6	2412	2437
"	Pulled instrument	10:00	97	00	47.0	2413	2438
"	Gradient Traverse	11:45	98	45	46.2	2413	2438

BUILD UP CURVE



EFTELLER, INC.
RESERVOIR ENGINEERING DATA
MIDLAND, TEXAS

Page 3 of 5
File 3-12883-BU

Company ENSERCH EXPLORATION, INC. Formation FUSSELMAN
Well J. G. O'BRIEN NO. 1 County CHAVES
Field SOUTH ELKIN State NEW MEXICO

EFTELLER, INC.

reservoir engineering data
MID-AND TEXAS

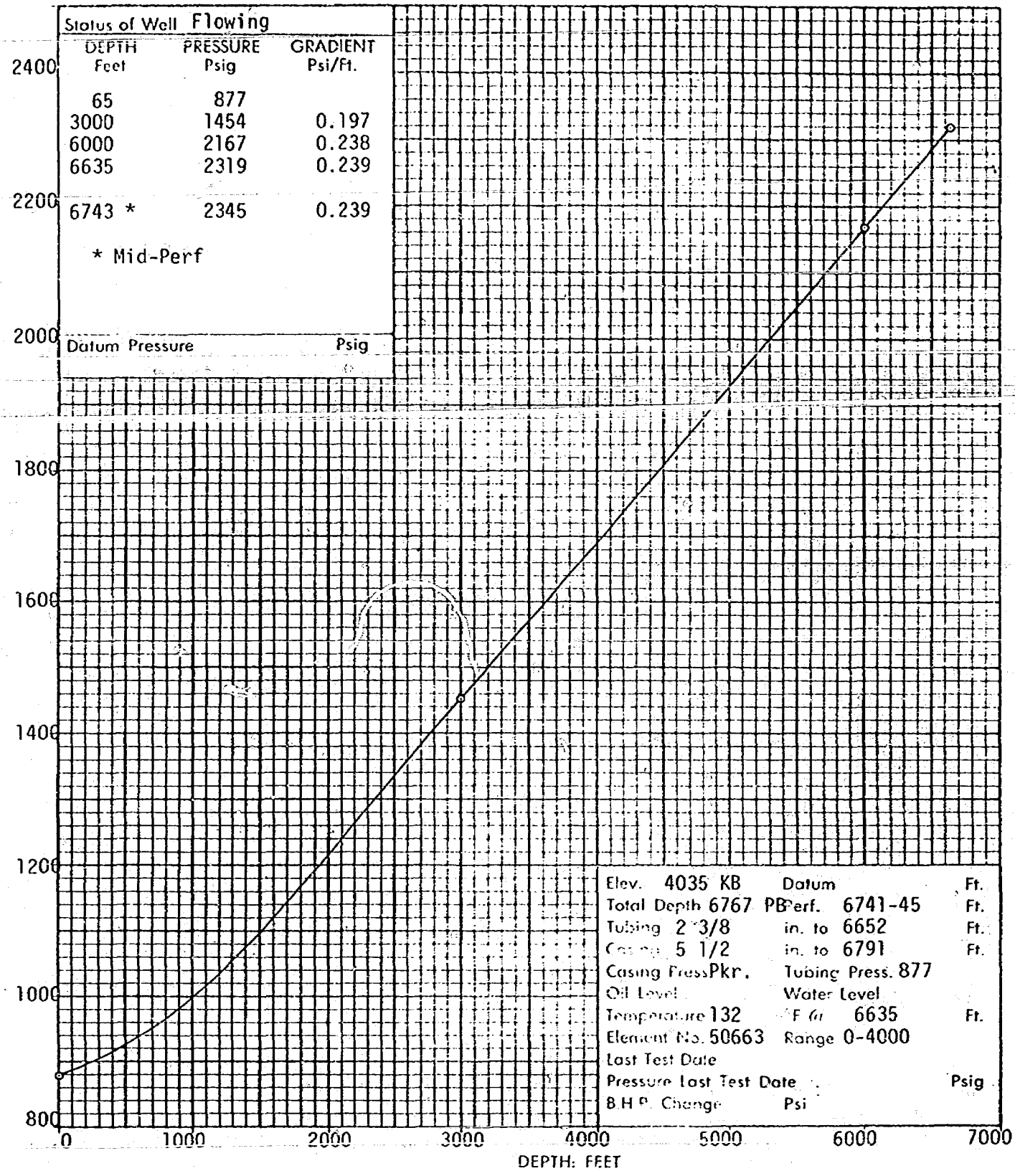
Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 1
Field SOUTH ELKIN County CHAVES State NEW MEXICO
Formation FUSSELMAN Test Date FEBRUARY 3, 1982

Status of Well Flowing

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
65	877	
3000	1454	0.197
6000	2167	0.238
6635	2319	0.239
6743 *	2345	0.239

* Mid-Perf

Datum Pressure Psig



Elev. 4035 KB Datum Ft.
Total Depth 6767 PB Perf. 6741-45 Ft.
Tubing 2 3/8 in. to 6652 Ft.
Casing 5 1/2 in. to 6791 Ft.
Casing Press. Pkr. Tubing Press. 877
Oil Level Water Level
Temperature 132 °F @ 6635 Ft.
Element No. 50663 Range 0-4000
Last Test Date
Pressure Last Test Date Psig
B.H.P. Change Psi

EFTELLER, INC.
reservoir engineering data
MIDLAND, TEXAS

File 3-12883-BU

Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 1

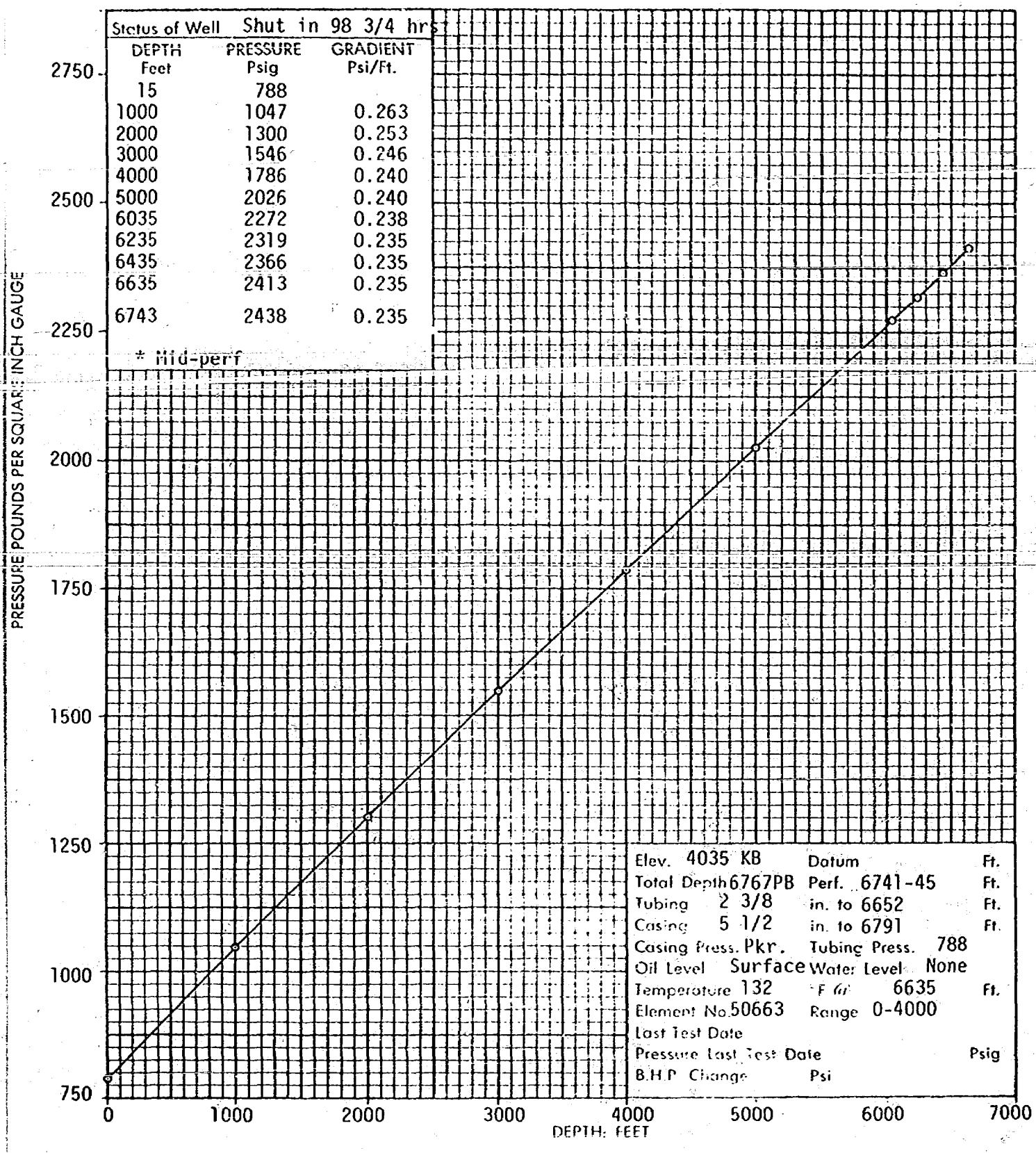
Field SOUTH ELKIN County CHAVES State NEW MEXICO

Formation FUSSELMAN Test Date FEBRUARY 8, 1982

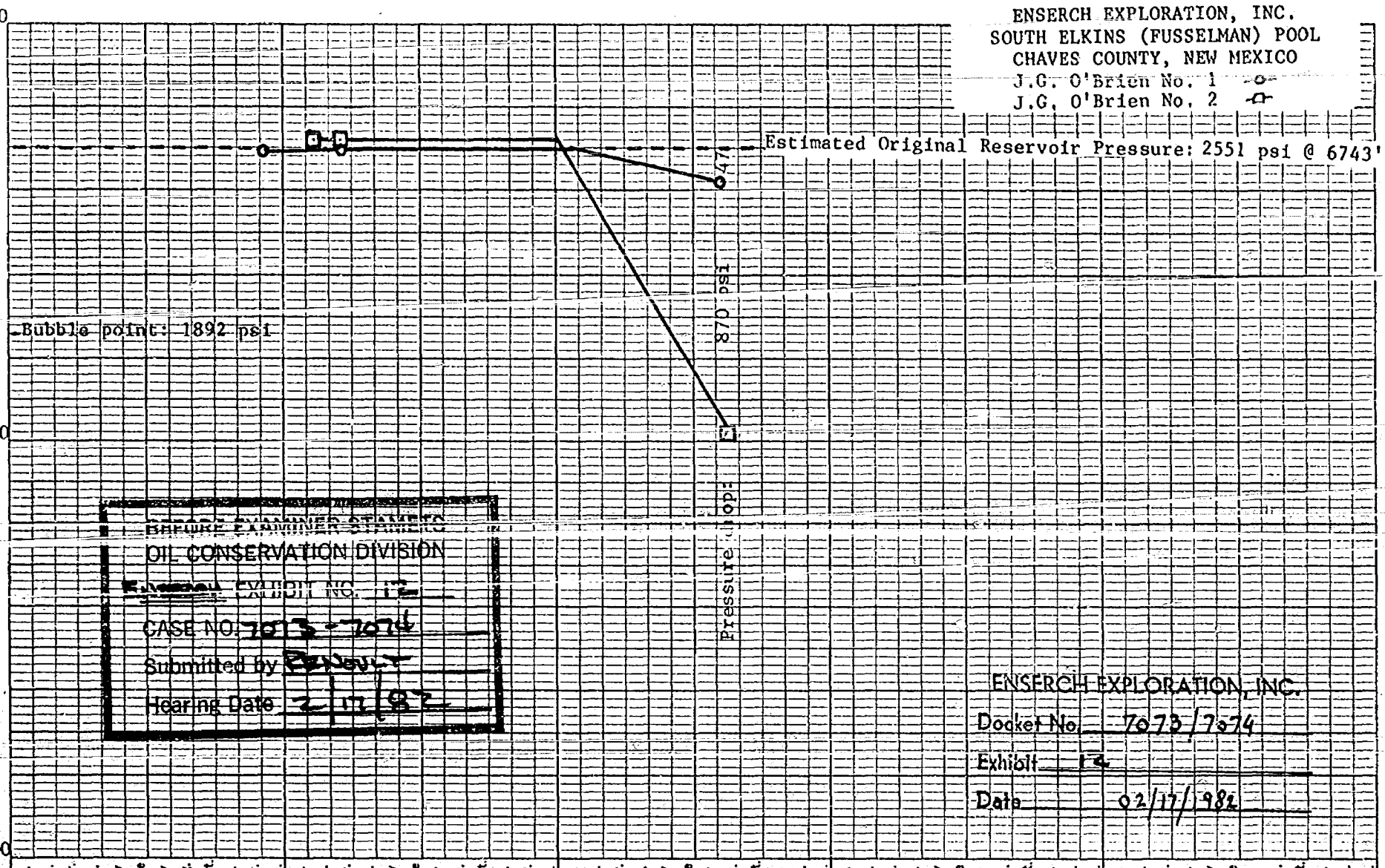
Status of Well Shut in 98 3/4 hrs

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
15	788	
1000	1047	0.263
2000	1300	0.253
3000	1546	0.246
4000	1786	0.240
5000	2026	0.240
6035	2272	0.238
6235	2319	0.235
6435	2366	0.235
6635	2413	0.235
6743	2438	0.235

* Mid-perf



PRESSURE HISTORY
ENSERCH EXPLORATION, INC.
SOUTH ELKINS (FUSSELMAN) POOL
CHAVES COUNTY, NEW MEXICO
J.G. O'Brien No. 1 -o-
J.G. O'Brien No. 2 -□-



BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 14
CASE NO. 7073-7074
Submitted by ENSERCH
Hearing Date 2-17-82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 14
Date 02/17/982

PRESSURE HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Date of Test	Test	Interval Tested	Maximum Pressure Recorded (psig @ ft)	Shut-in Time hr . mn	Estimated Reservoir Pressure (psi @ depth)	Pressure Gradient psi/ft	Cumulative Production**	
							Oil STB	Csnghd Gas MCF
5/19/80	Open Hole DST	6648'-6730'	2486 psi @ 6726'	00 . 26	N.A.	N.A.	Insignif.	Insignif.
5/19/80	Open Hole DST	6648'-6730'	2490 psi @ 6726'	02 . 34	N.A.	N.A.	Insignif.	Insignif.
6/11-16/80	Pressure Build-up	6741'-6745'*	2534 psi @ 6743'	94 . 54	2534 psi @ 6743'	.225 psi/ft	386	704
9/19/80	Static BHP	6741'-6745'*	2551 psi @ 6743'	2160. 00	2551 psi @ 6743'	.235 psi/ft	5,257	9,432
2/3-8/82	Pressure Build-up	6741'-6745'*	2438 psi @ 6743'	98 . 45	2504 psi @ 6743'	.235 psi/ft	45,602	100,240

*Perforated Interval: 6741'-6745'
**Estimated

PRESSURE HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Date of Test	Test	Interval Tested	Maximum Pressure Recorded (psig @ ft)	Shut-in Time hr . mn	Estimated Reservoir Pressure (psi @ depth)	Pressure Gradient psi/ft	Cumulative Production**	
							Gas STB	Condensate MCF
8/18/80	Open Hole DST	6776'6805'	2589 psi @ 6801'	00 . 47	-	N.A.	Negligible	Negligible
8/18/80	Open Hole DST	6776'-6805'	2592 psi @ 6801'	02 . 00	2592 psi @ 6801'	N.A.	Negligible	Negligible
8/20/80	Static BHP	6807'-6824'*	2432 psi @ 6816'	26 . 30	2432 psi @ 6816'	0.091 psi/ft	Negligible	Negligible
9/16-19/80	Pressure Build-up	6807'-6824'*	2560 psi @ 6822'	67 . 00	2560 psi @ 6822'	0.095 psi/ft	Negligible	Negligible
2/4-8/82	Pressure Build-up	6807'-6824'*	1681 psi @ 6808'	117. 45	1681 psi @ 6808'	0.450 psi/ft	240,000	2,000

*Perforated Interval: 6807'-6824'
**Estimated

CASINGHEAD GAS PRODUCTION

J.G. O'BRIEN OIL LEASE
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

CURRENT OPERATING CONDITIONS (Separator operating at 200 psi)

Average lease oil production:	11,000 STB/month
Current average GOR (Separator):	1,880 SCF/STB
Average monthly casinghead gas production:	20,680 MCF/month
Heating value:	1,530 BTU/SCF

FORTHCOMING OPERATING CONDITIONS (Separator and Vapor Recovery Unit at 10 psi)

Average lease oil production:	11,000 STB/month
Estimated average GOR (Separator) 1880 x 1.15:	2,162 SCF/month
Anticipated monthly casinghead gas production:	23,782 MCF/month
Heating value:	2,462 BTU/SCF

GAIN IN CASINGHEAD GAS PRODUCTION

Current monthly casinghead gas production:	20,680 MCF/month
Anticipated casinghead gas production:	23,782 MCF/month
Gain in casinghead gas production:	3,102 MCF/month
Heating value:	2,462 BTU/SCF
Gain in heating value:	7,637,124 BTU/month

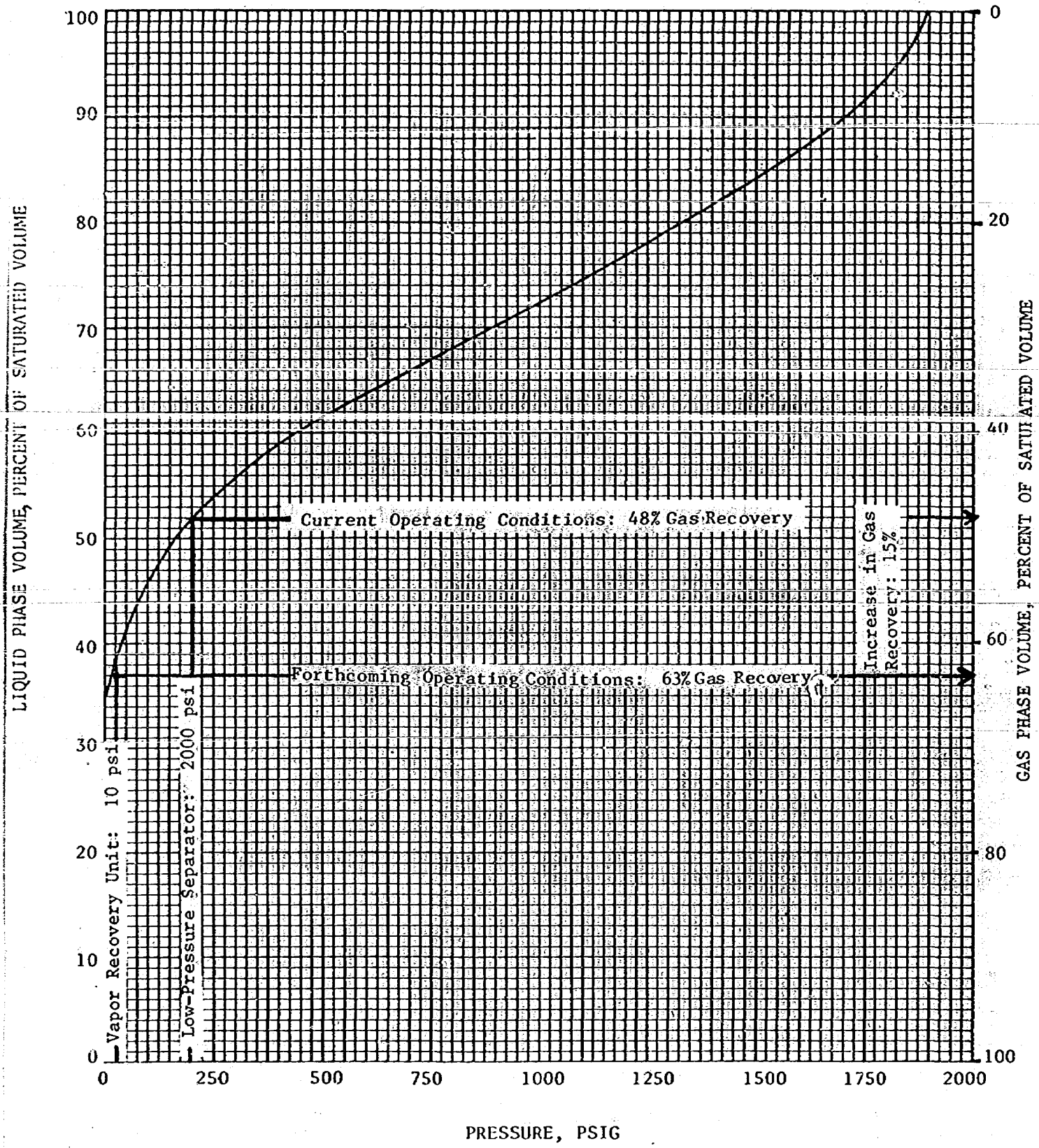
3,000

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 13
CASE NO. 7073 - 7074
Submitted by BENOIT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 13
Date 02/17/1982

VOLUME OF LIQUID PHASE AT 134°F.

Company ENSERCH EXPLORATION, INC. Formation FUSSELMAN
Well J. G. O'BRIEN NO. 1 County CHAVES
Field WILDCAT State NEW MEXICO



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80435

Well J. G. O'Brien No. 1

HYDROCARBON ANALYSES OF SEPARATOR GAS SAMPLES

Separator Conditions:	500 PSIG @ 68°F.		100 PSIG @ 68 °F.		3 PSIG @ 68 °F.		0 PSIG @ 68 °F.	
Component	Mol Percent	GPM	Mol Percent	GPM	Mol Percent	GPM	Mol Percent	GPM
Hydrogen Sulfide	0.00		0.00		0.00		0.00	
Carbon Dioxide	2.57		3.11		0.95		0.22	
Nitrogen	3.92		0.79		0.02		0.00	
Methane	71.32		45.31		6.23		2.48	
Ethane	13.09	3.570	26.27	7.164	22.48	6.131	5.59	1.525
Propane	6.70	1.880	18.33	5.144	44.37	12.450	44.83	12.580
iso-Butane	0.81	0.270	2.23	0.744	8.34	2.782	14.45	4.820
n-Butane	1.13	0.363	2.94	0.945	12.37	3.976	23.07	7.415
iso-Pentane	0.22	0.082	0.49	0.183	2.48	0.926	5.01	1.870
n-Pentane	0.16	0.059	0.34	0.126	1.77	0.654	3.25	1.201
Hexanes	0.06	0.025	0.14	0.058	0.70	0.291	0.92	0.383
Heptanes plus	0.02	0.009	0.05	0.023	0.29	0.134	0.18	0.083
	100.00	6.258	100.00	14.387	100.00	27.344	100.00	29.877

		Separator Pressure 200 psi		Separator & Vapor Recovery Unit 10 psi		
Calculated gas gravity(Air=1.000):	0.761		0.988		1.510	1.750
Calculated gross heating value (BTU per cubic foot of dry gas at 15.025 psia and 60°F.):	1230	1530	1630	2462	2527	2923

WELL COMPLETION DATA
ENSERCH EXPLORATION, INC
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Top of Fusselman: 6686' (-2652') KB = 4034'

Perforated Production Interval: 6741'-6745' (1 JSPF)
(5 holes)

Stimulation Treatment: 100 gallons 7½% MCA acid

Initial Potential Test:

Date of Test: 6/11/1980 (flowing)
266 bopd + 0 ~~bwpd~~ + 600 mcfpd
oil gravity: 59.5° API
GOR: 2256:1 scf/bbl
FTP: 1000 psig (12/64" choke)

Current Status: Flowing

by 8/10 Methane

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 3
CASE NO. 7073-7074
Submitted by RENOULT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073 / 7074
Exhibit 3
Date 02/17/1982

1

PRODUCTION HISTORY (FORM C115)
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Date	Days of Production	Status	Oil (STB)	Casinghead Gas (MCF)	Water (Bbl)	GOR (SCF/Bbl)	Water Cut (%)
06/1980	6	F	1,241	2,265	0	1,825	0
07/1980	14	F	4,016	7,167	0	1,785	0
08/1980	0	F	0	0	0	-	-
09/1980	0	F	0	0	0	-	-
10/1980	0	F	0	0	0	-	-
11/1980	0	F	0	0	0	-	-
12/1980	0	F	0	0	0	-	-
01/1981	0	F	0	0	0	-	-
02/1981	0	F	0	0	0	-	-
03/1981	0	F	0	0	0	-	-
04/1981	0	F	0	0	0	-	-
05/1981	0	F	0	0	0	-	-
06/1981	0	F	0	0	0	-	-
07/1981	5	F	1,031	1,941	0	1,883	0
08/1981	24	F	5,500	12,444	0	2,263	0
09/1981	23	F	6,746	15,329	0	2,272	0
10/1981	25	F	7,013	14,709	0	2,097	0
11/1981	30	F	7,242	16,469	0	2,274	0
12/1981	31	F	7,172	16,744	0	2,335	0
Cumulative Production	158	F	39,961	87,068	0	2,179	0

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

46 5690

Monthly Oil Production (STB/Month)

10^5 9 8 7 6 5 4 3 2

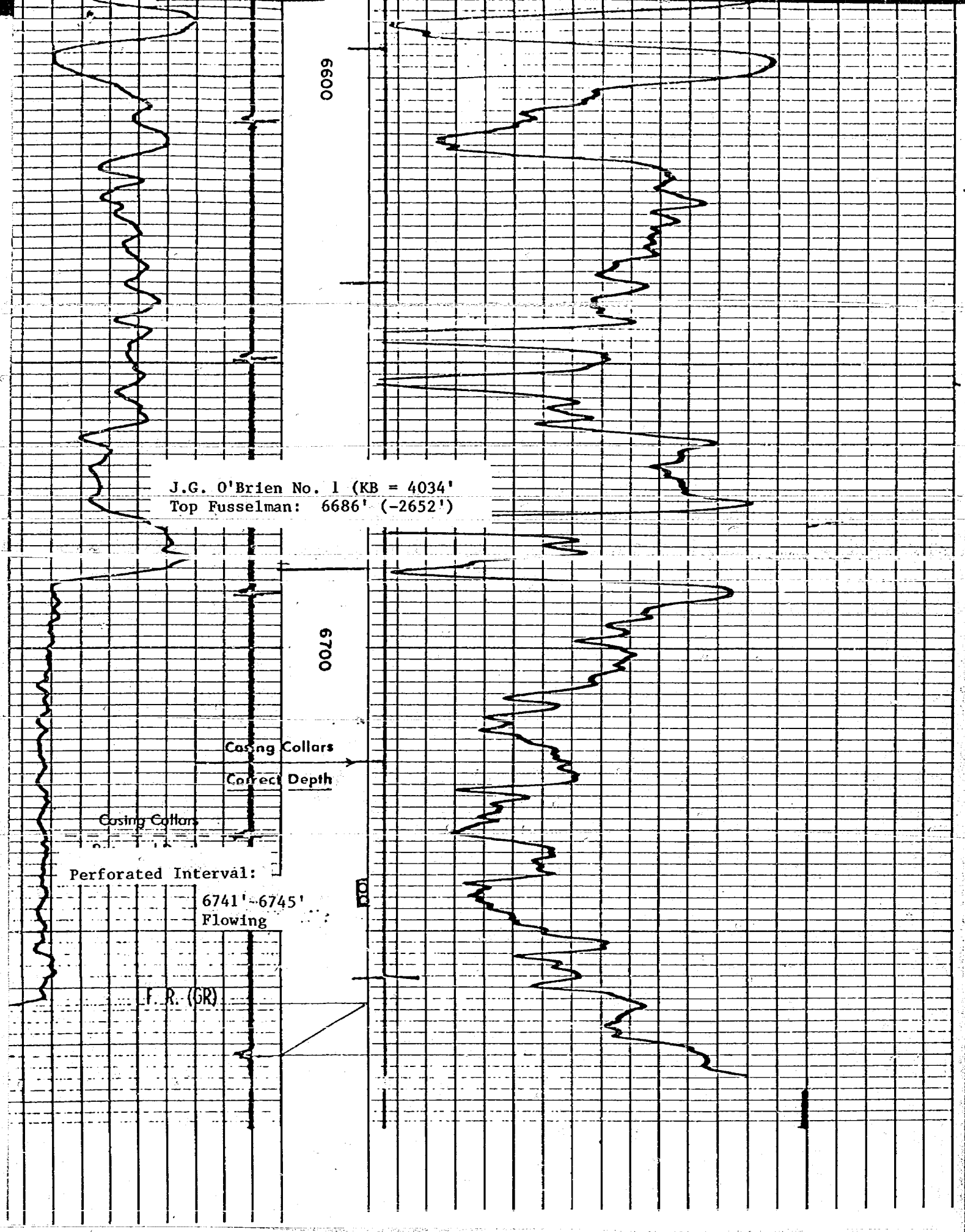
10^4 9 8 7 6 5 4 3 2

10^3 9 8 7 6 5 4 3 2

10^2

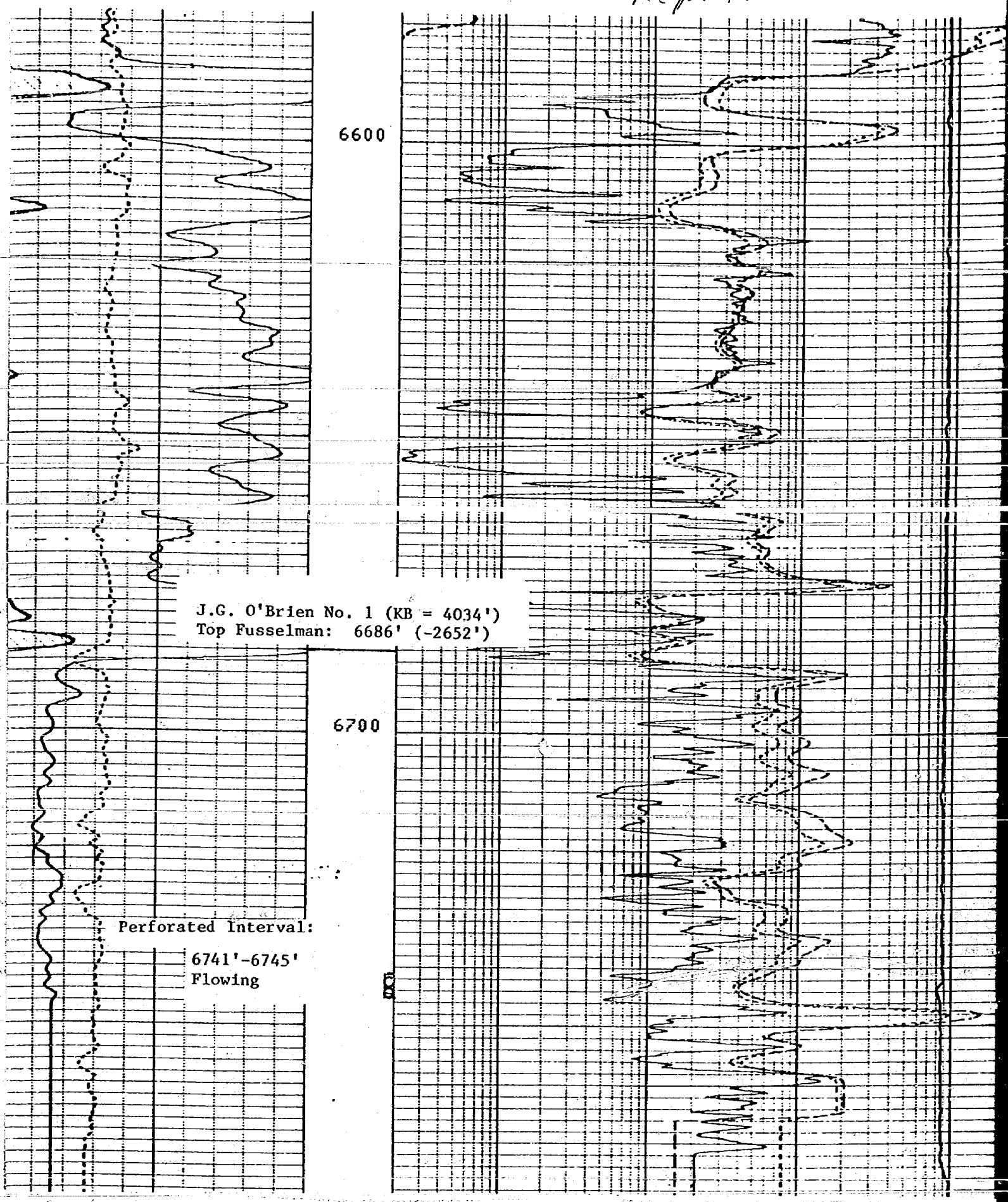
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

19 80 | 19 81 | 19 82 | 19 83 | 19 84


6600
J.G. O'Brien No. 1 (KB = 4034'
Top Fusselman: 6686' (-2652')
6700
Casing Collars
Correct Depth
Casing Collars
Perforated Interval:
6741'-6745'
Flowing
F. R. (GR)

3
3
3
3

Repeat



J.G. O'Brien No. 1 (KB = 4034')
Top Fusselman: 6686' (-2652')

Perforated Interval:
6741'-6745'
Flowing

WELL COMPLETION DATA
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Top of Fusselman: 6776' (-2761') KB = 4015'

Perforated Production Interval: 6820'-6824' (1 JSPF)
(5 holes)
6807'-6808' (4 JSPF)
(4 holes)

Stimulation Treatment: 150 gallons 7½% MCA acid

Initial Potential Test:

Date of Test: 10/4/1980 (flowing)
1541 mcfpd + 33 bcpd + 0 bwpd
condensate gravity: 60.8° API
LGR: 21.4 bbls/mmscf
FTP: 1850 psig (14/64" choke)

Current Status: Flowing

73.5% W. Thomas

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 4
CASE NO. 7073-7074
Submitted by ENSERCH
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 4
Date 02/17/1982

PRODUCTION HISTORY (FORM C115)
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Date	Days of Production	Status	Gas (MCF)	Condensate (STB)	Water (Bbl)	GOR (SCF/Bbl)	Condensate Content (STB/MMCF)	Water Content (Bbl/MMCF)
10/1980	4	F	9,265	116	0	79,871	12.5	0
11/1980	0	F	0	0	0	-	-	-
12/1980	0	F	0	0	0	-	-	-
01/1981	0	F	0	0	0	-	-	-
02/1981	0	F	0	0	0	-	-	-
03/1981	0	F	124	0	0	∞	0	0
04/1981	0	F	0	0	0	-	-	-
05/1981	0	F	0	0	0	-	-	-
06/1981	0	F	0	0	0	-	-	-
07/1981	31	F	8,864	107	0	82,841	12.1	0
08/1981	25	F	31,086	551	0	56,417	17.7	0
09/1981	23	F	51,305	579	0	88,610	11.3	0
10/1981	29	F	47,636	362	0	131,591	7.6	0
11/1981	30	F	39,659	182	0	217,906	4.6	0
12/1981	30	F	24,601	20	128	1,230,050	0.8	5
Cumulative Production	172	F	212,540	1,917	128	110,871	9.0	1

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

46 5690

Monthly Gas Production (MCF/Month)

10^5 9 8 7 6 5 4 3 2

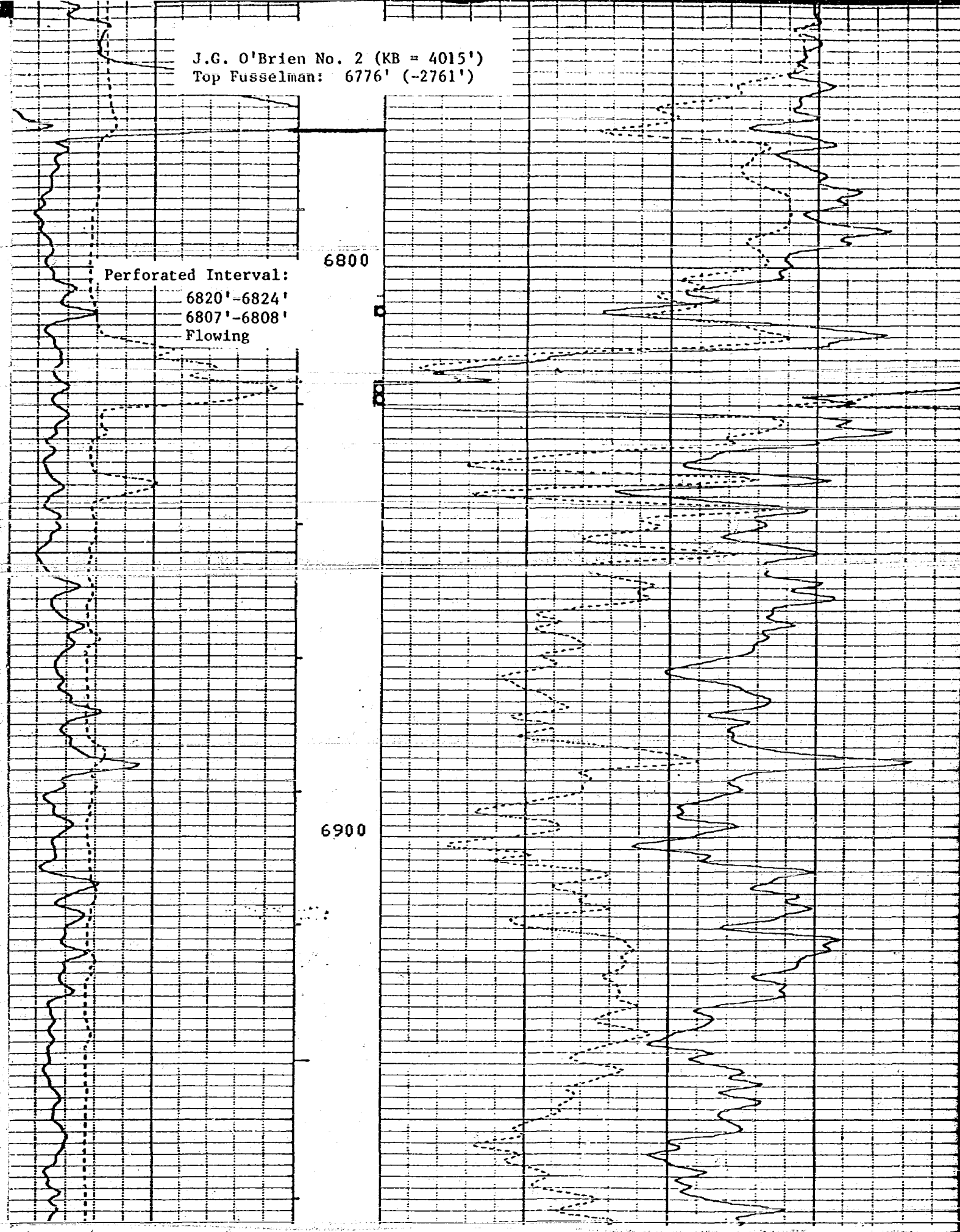
10^4 9 8 7 6 5 4 3 2

10^3 9 8 7 6 5 4 3 2

10^2

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

19 80 | 19 81 | 19 82 | 19 83 | 19 84

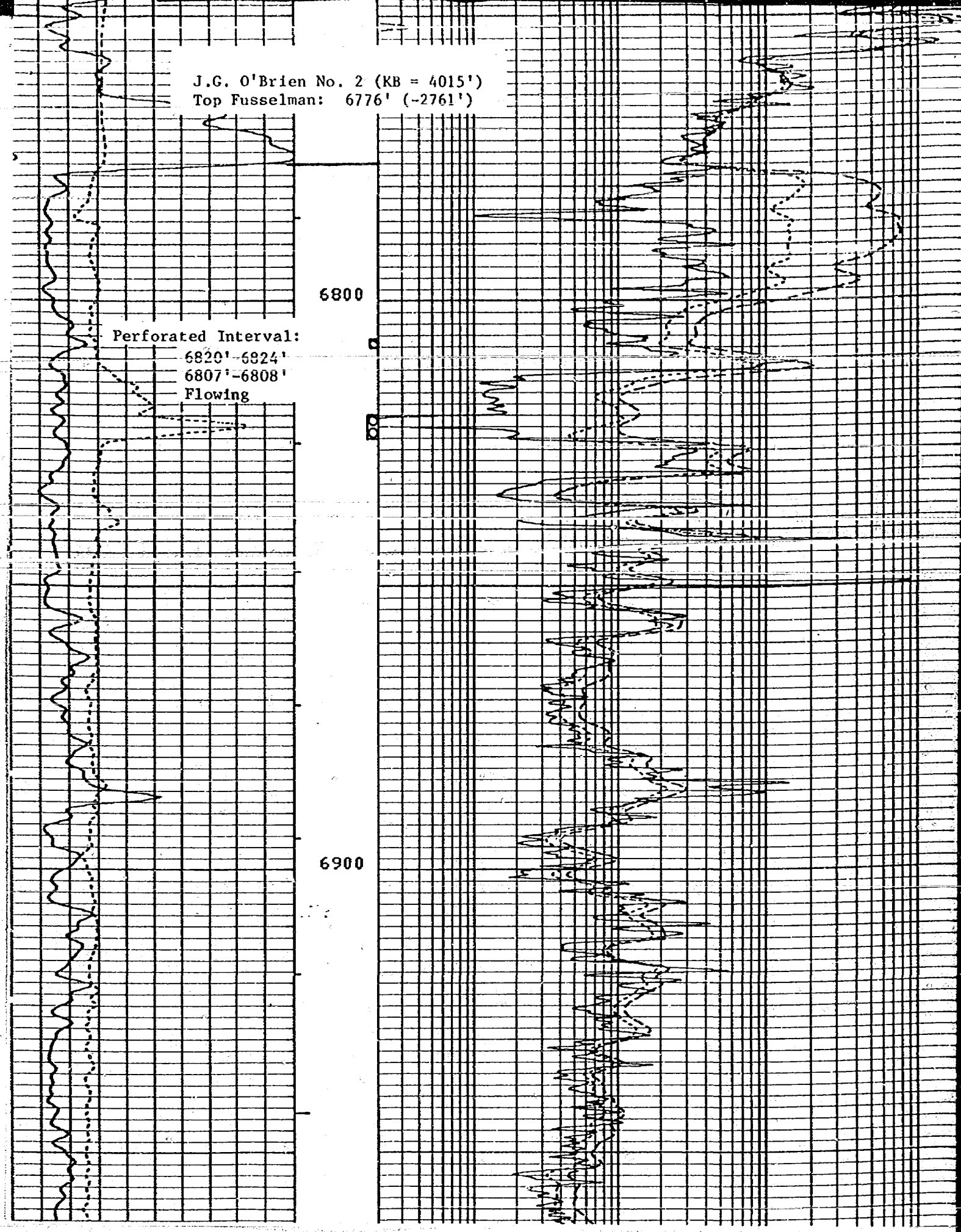

J.G. O'Brien No. 2 (KB = 4015')
Top Fusselman: 6776' (-2761')
6800
Perforated Interval:
6820'-6824'
6807'-6808'
Flowing
6900

J.G. O'Brien No. 2 (KB = 4015')
Top Fusselman: 6776' (-2761')

6800

Perforated Interval:
6820'-6824'
6807'-6808'
Flowing

6900



1

J.G. O'Brien No. 2 (KB = 4015')
Top Fusselman: 6776' (-2761')

Perforated Interval: 6820'-6824'
6807'-6808'
Flowing

6800

6900

1

WELL COMPLETION DATA
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 3
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Top of Fusselman: 6750' (-2726') KB = 4024'

Perforated Production Interval: 6804'-6810' (2 JSPF) (6/25/81)
(14 holes)
6794'-6797' (1 JSPF) (7/8/81)
(4 holes)
6762'-6770' (1 JSPF) (2/3/82)
(9 holes)

Stimulation Treatment: 500 gallons 7½% MCA acid (6/26/81)
150 gallons 15% MCA acid (7/9/81)
500 gallons 7½% MCA acid (2/4/82)

Initial Potential Test:

Date of Test: 7/23/1981 (flowing)
153 bopd + 3 bwpd + 455 mcfpd
oil gravity: 57.4° API
GOR: 2974:1 scf/bbl
FTP: 925 psig (10/64" choke)

58.5% Methane

Current Status: Flowing

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 5
CASE NO. 7073-7074
Submitted by RENAULT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073 / 7074
Exhibit 5
Date 02/17/1982

1

PRODUCTION HISTORY (FORM C115)
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 3
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Date	Days of Production	Status	Oil (STB)	Casinghead Gas (MCF)	Water (Bbl)	GOR (SCF/Bbl)	Water Cut (%)
07/1981	5	F	1,237	3,725	0	3,011	0
08/1981	21	F	3,386	5,218	454	1,541	12
09/1981	15	F	3,601	5,007	1,805	1,390	33
10/1981	19	F	3,743	3,895	1,778	1,041	32
11/1981	30	F	3,866	4,426	3,924	1,145	50
12/1981	31	F	3,827	2,759	2,952	721	44
Cumulative Production	121	F	19,660	25,030	10,910	1,273	36

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 3
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

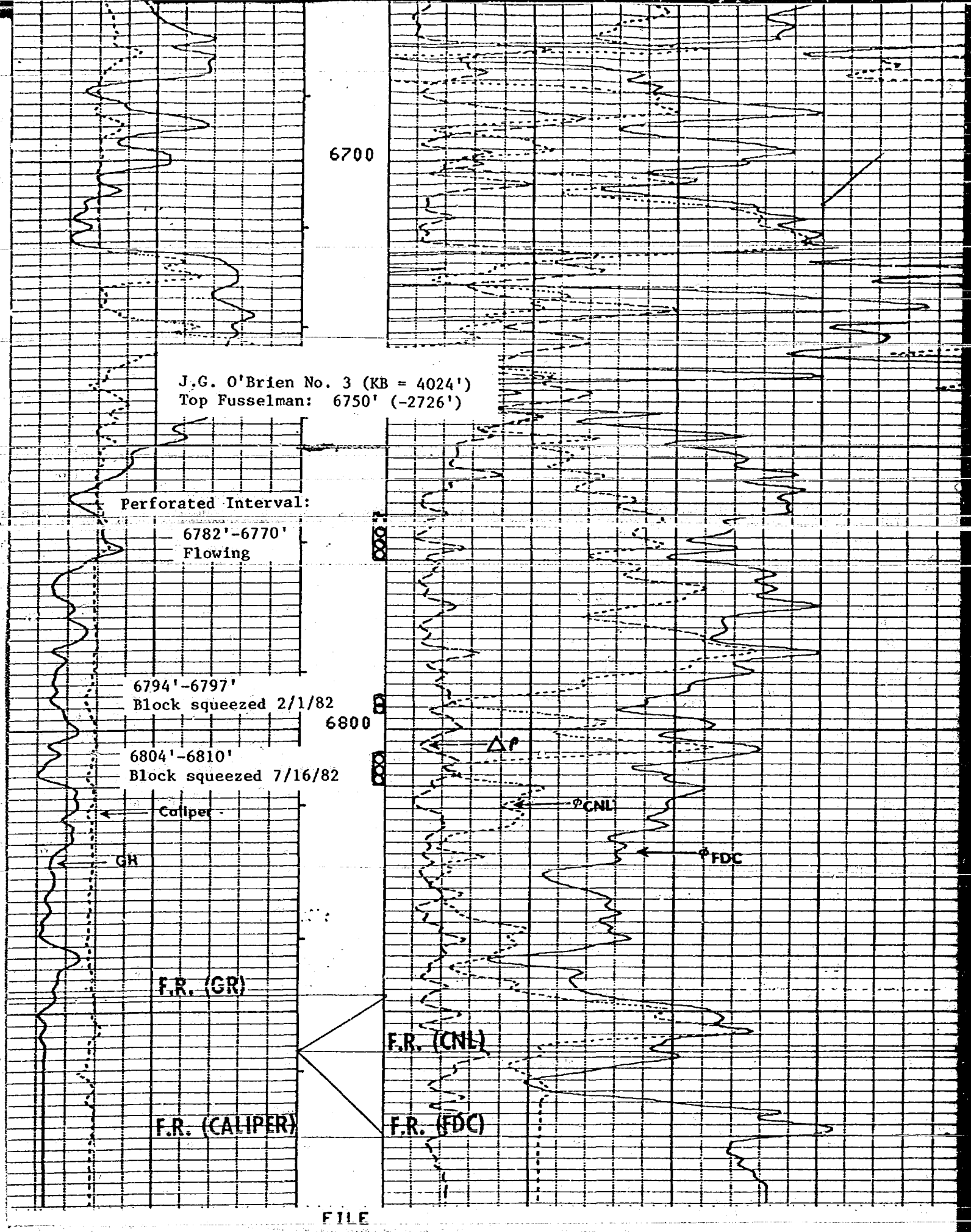
46 6690

Monthly Oil Production (STB/Month)

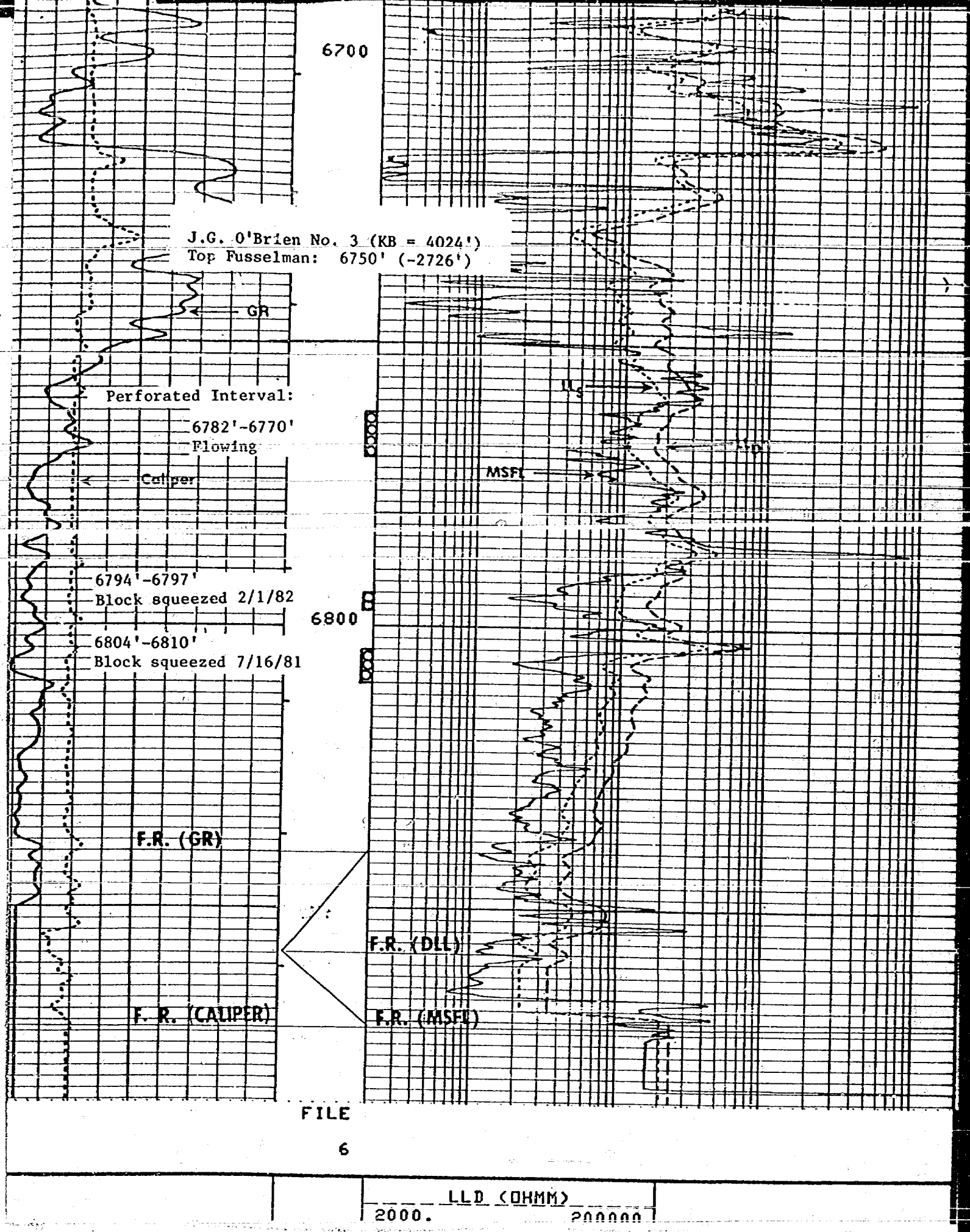
10^5 9 8 7 6 5 4 3 2
10^4 9 8 7 6 5 4 3 2
10^3 9 8 7 6 5 4 3 2
10^2

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

1980 | 1981 | 1982 | 1983 | 1984


6700
J.G. O'Brien No. 3 (KB = 4024')
Top Fusselman: 6750' (-2726')
Perforated Interval:
6782'-6770'
Flowing
6794'-6797'
Block squeezed 2/1/82
6800
6804'-6810'
Block squeezed 7/16/82
Caliper
GR
F.R. (GR)
F.R. (CALIPER)
Δρ
φCNL
φFDC
F.R. (CNL)
F.R. (FDC)

FILE


6700
J.G. O'Brien No. 3 (KB = 4024')
Top Fusselman: 6750' (-2726')
GR
Perforated Interval:
6782'-6770'
Flowing
Caliper
6794'-6797'
Block squeezed 2/1/82
6804'-6810'
Block squeezed 7/16/81
LLD
MSFL
6800
F.R. (GR)
F.R. (DLL)
F. R. (CALIPER)
F.R. (MSFL)
FILE
6
LLD (OHMM)
2000.
200000

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
TOTAL OIL POOL PRODUCTION
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Date	Oil (STB)	Casinghead Gas (MCF)	GOR (SCF/Bbl)
06/1980	1,241	2,265	1,825
07/1980	4,016	7,167	1,785
08/1980	0	0	-
09/1980	0	0	-
10/1980	0	0	-
11/1980	0	0	-
12/1980	0	0	-
01/1981	0	0	-
02/2981	0	0	-
03/3981	0	0	-
04/1981	0	0	-
05/1981	0	0	-
06/1981	0	0	-
07/1981	2,268	5,666	2,498
08/1981	8,886	17,662	1,988
09/1981	10,347	20,336	1,965
10/1981	10,756	18,604	1,730
11/1981	11,108	20,895	1,881
12/1981	10,999	19,503	1,773
Cumulative Production	59,621	112,098	1,880

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 6
CASE NO. 7073-7074
Submitted by Bellouet
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 6
Date 02/17/1982

PRODUCTION HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 1
J.G. O'BRIEN NO. 3
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

46 6690

Monthly Oil Production (STB/Month)

10^5 9 8 7 6 5 4 3 2 10^4 9 8 7 6 5 4 3 2 10^3 9 8 7 6 5 4 3 2 10^2

1 9 8 7 6 5 4 3 2 1 9 8 7 6 5 4 3 2 1 9 8 7 6 5 4 3 2 1

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

19 80 | 19 81 | 1982 | 1983 | 1984

DRILL STEM TEST DATA
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Test Data

Date of Test: August 18, 1980
Interval Tested: 6776'-6805'
Hole Size: 8-3/4"
Job Type: Open-Hole DST
Mud Weight: 10.1 ppg

Pressure Data

First Period — Flow: 13 mn (2421.0 psi @ 6801')
Closed In: 47 mn (2588.9 psi @ 6801')
Second Period — Flow: 59 mn (2502.8 psi @ 6801')
Closed In: 120 mn (2591.8 psi @ 6801')

Recovery

Drill Pipe: 5000 feet of gas (reversed)
3 bbls gas-cut mud (estimated)

Sampler: 9.7 cu. ft. dry gas at 1900 psi

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 7
CASE NO. 7073-7074
Submitted by Benoit
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073 / 7074
Exhibit 7
Date 02/17/1982

1

=== INTERPRETATIONS AND CALCULATIONS FOR GAS WELLS ===
USING HORNER METHOD

TICKET NO. 618342

FORMATION/FLUID PROPERTIES

TEMF =	130.0 F	SPGG =	0.60	TEMPR =	1.7
PRSPR =	3.8	Z =	0.837	VISG =	0.018 cp

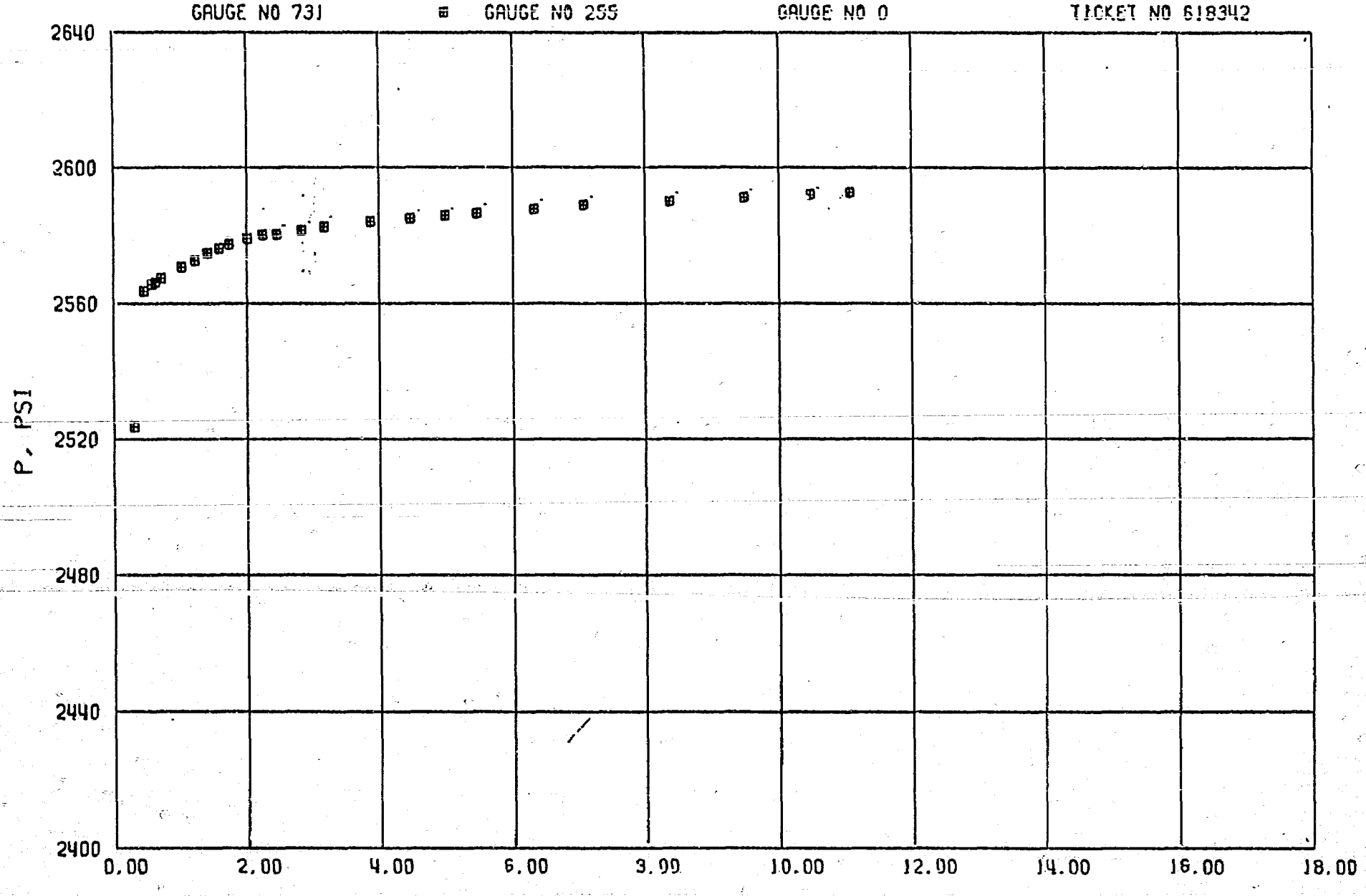
EXTRAPOLATED PRESSURE DATA

GAUGE	CIP	MCF/D	PS	P10	SLOPE
731.	1	5150.0	2604.2	2585.9	94673.1
731.	2	6171.0	2596.0	2586.3	50555.1
255.	1	5150.0	2592.5	2574.0	95910.3
255.	2	6171.0	2594.2	2581.6	65344.2

RESULTS

PARAMETER NAME		GAUGE NO. 731. FIRST	SECOND	THIRD	GAUGE NO. 255. FIRST	SECOND	THIRD
Theor. Flow Cap.	Kh	779.5	1746.9	0.0	768.1	1351.2	0.0
Avg. Permeability	K	26.878	60.238	0.000	26.485	46.592	0.000
Ind. Flow Capacity	Kh2	239.8	715.0	0.0	234.2	725.4	0.0
Damage Ratio	DR	3.259	2.443	0.000	3.279	1.863	0.000
Ind. Flow Rate, Max	OF1	39948.7	87151.8	0.0	41180.9	91419.6	0.0
Ind. Flow Rate, Min	OF2	14343.5	23190.8	0.0	14563.0	23751.8	0.0
Theor. Pot.Rate Max	OF3	129839.4	212916.5	0.0	135042.3	170272.1	0.0
Theor. Pot.Rate Min	OF4	46618.6	56656.4	0.0	47755.7	44238.6	0.0
Radius of Invest.	b	20.5	66.6	0.0	16.9	57.3	0.0
Potent. Surface	Pot.	3281.1	3262.2	0.0	3209.1	3212.9	0.0

GAUGE NO 731 ▪ GAUGE NO 255 GAUGE NO 0 TICKET NO 618342



NEW-TEX LAB
P. O. BOX 1181
HOBBS, N.M. 88240

RECEIVED
OCT 28 1981
MIDLAND PRODUCTION

No. 5840
Run No.
Date of Run 10-13-81
Date Secured 10-08-81

CERTIFICATE OF ANALYSIS

Sample of Enserch Exploration — J.G. O'Brien #3
cured from Capitan Energy Corporation
P. O. Box 7577
Roswell, N.M. 88202-7577
Secured by
mpling conditions — Press — Time — Date
Temp.
Station 10-018-01

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
arbon Dioxide	2.591		
itrogen	2.731		
xygen			
ydrogen sulfide			
ydrogen			
Methane	58.458		
hane	16.520		4.406
opane	13.273		3.643
lanes			
o-Butane	1.974		.644
-Butane	2.955		.929
entanes			
o-Pentane	.591		.216
-Pentane	.433		.156
exanes	.202		.083
eptanes	.272		.125
clanes			
OTAL	100.000		10.202

Calc. Sp. Gr. 0.9022
Calc. A.P.I.
Calc. Vapor Press. PSIA
Sp. Gr.
Mol. Wt. 26.16

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M.	3.643
Butanes Calc. G.P.M.	1.573
Pentanes Plus. G.P.M.	.580
Ethane Calc. G.P.M.	4.406
RVP Gasoline G.P.M.	

B.T.U./Cu. Ft. @ 14.696 P.S.I.A.
Dry Basis 1443
Wet Basis 1418

Sulfur Analysis by Titration Gr./100 Cu. Ft.
Hydrogen Sulfide
Mercaptans
Sulfides
Residual Sulfur
Total Sulfur

un by R. H. Hamilton — Checked by Deane Simpson — Approved by

Additional Data and Remarks

Company	:	Enserch Exploration, Inc.
Well	:	J. G. O'Brien No. 2
Field	:	South Elkins
County	:	Chaves
State	:	New Mexico
Date	:	August 20, 1981

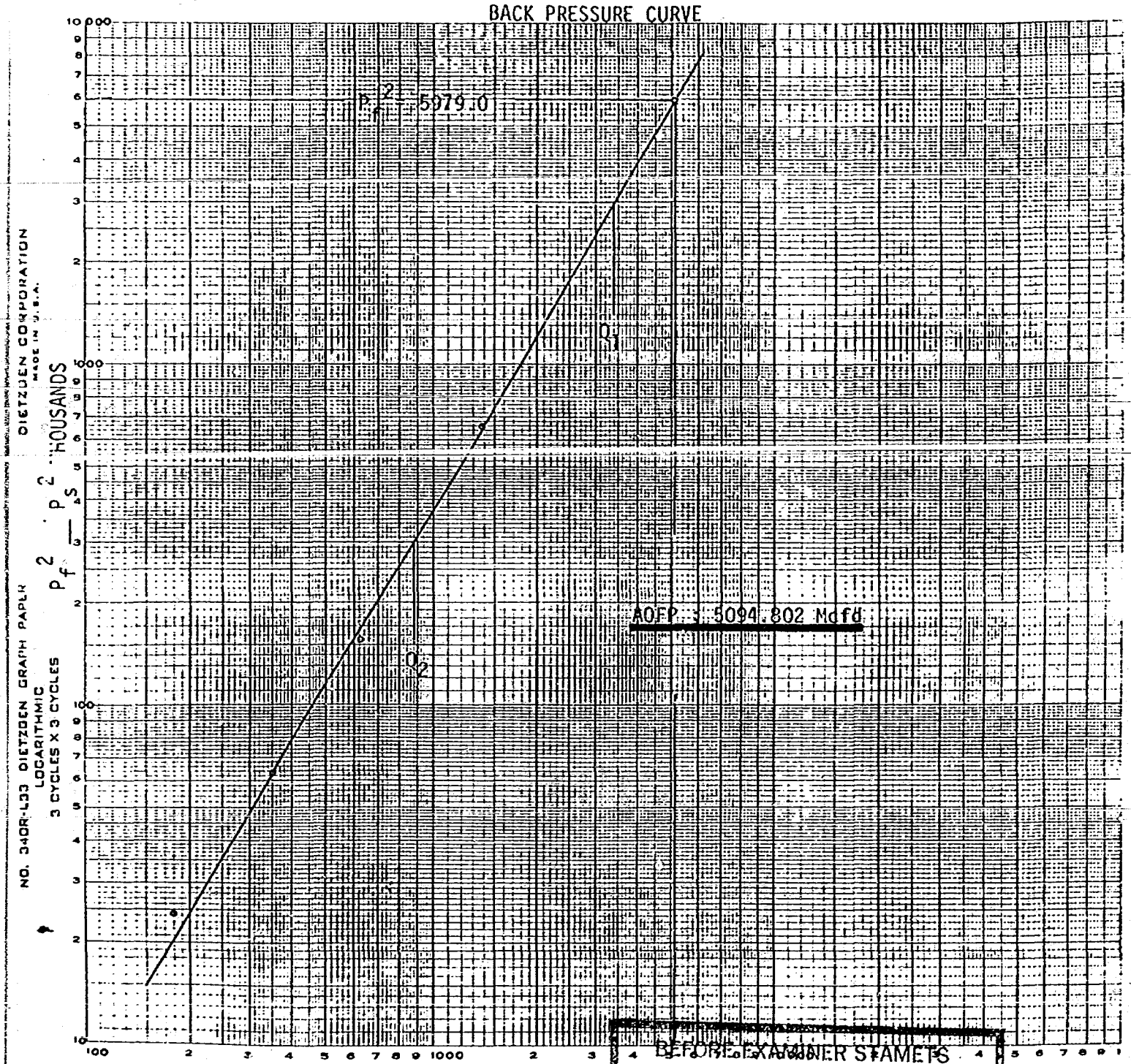
ENSERCH EXPLORATION, INC.

Docket No. 7073/7074

Exhibit 8

Date 02/11/1982

BACK PRESSURE CURVE



Q ; Mcfd

Q_1 = 3396.620 ; LOG Q_1 = 3.531047

Q_2 = 877.298 ; LOG Q_2 = 2.943147

n = 0.587900

θ = 59.55°

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 8
CASE NO. 7073-7074
Submitted by BENOULT
Hearing Date 2/17/82

NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date	
Company: Enserch Exploration, Inc.		Connection: K. B. Kennedy Engr.			
Pool: So. Elkins		Formation: Fusselman Gas			Unit: M
Completion Date: 10-3-80	Total Depth: 7175		Plug Back TD: 7000	Elevation: 3998.1	Farm or Lease Name: J. G. O'Brien
Csg. Size: 5½ / Wt.: 15.5 / d: / Set At: 7175			Perforations: From 6807 To 6808		Well No.: 2
Tbg. Size: 2 3/4 / Wt.: 4.7 / d: / Set At: 6717			Perforations: From 6820 To 6824		Unit: M / Sec.: 30 / Twp.: 7S / Rge.: 29E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 6717		County: Chaves
Producing Thru: Tubing	Reservoir Temp. °F: 132 @ 6700	Mean Annual Temp. °F: 70	Baro. Press. – P_a: 13.2		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
6816	6816	0.8068	2.307	5.823	0.0316		X	Flange

NO.	FLOW DATA: Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	CASING DATA: Press. p.s.i.g.	Temp. °F	Duration of Flow
SI	27 hours						[illegible]		Pkr.	-	
1.	2"	X	1.5000"	87	1.7	114	1848	70	Pkr.	-	60 min
2.	2"	X	1.5000"	95	6.3	132	1832	70	Pkr.	-	60 min
3.	2"	X	1.5000"	106	18.0	132	1815	70	Pkr.	-	60 min
4.	2"	X	1.5000"	140	66.0	104	1737	70	Pkr.	-	60 min
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	12.76	13.051	100.2	.9518	1.1133	1.012	178.6
2.	12.76	26.109	108.2	.9372	1.1133	1.012	351.8
3.	12.76	46.321	119.2	.9372	1.1133	1.012	624.1
4.	12.76	100.554	153.2	.9602	1.1133	1.012	1389.4
5.							

NO.	P_t	Temp. °R	T_f	Z
1.		USED SIMPLIFIED		
2.		SUPERCOMPRESSIBILITY		
3.		TABLES		
4.				
5.				

Gas Liquid Hydrocarbon Ratio 71.43 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 60.8 Deg.
Specific Gravity Separator Gas 0.8068 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX
Critical Pressure 662 P.S.I.A. ____ P.S.I.A.
Critical Temperature 404 R ____ R

P_f 2445.2 P_f^2 5979.0

NO	P_t^2	P_s	P_s^2	$P_f^2 - P_s^2$
1		2440.2	5954.6	24.4
2		2432.2	5915.6	63.4
3		2413.2	5823.5	155.5
4		2307.2	5323.2	655.8
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 9.117109$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3.666908$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 5094.802$

Absolute Open Flow 5094.802 Mcfd @ 15.025 | Angle of Slope θ 59.55° | Slope, n 0.5879

Remarks: BHP MEASURED WITH AMERADA RPG-3 GAUGE NO. 44534, 0-4000 RANGE

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Tefteller, Inc.	D. A. Warren, Jr.	

EFTELLER, INC.

reservoir engineering data
MIDLAND, TEXAS

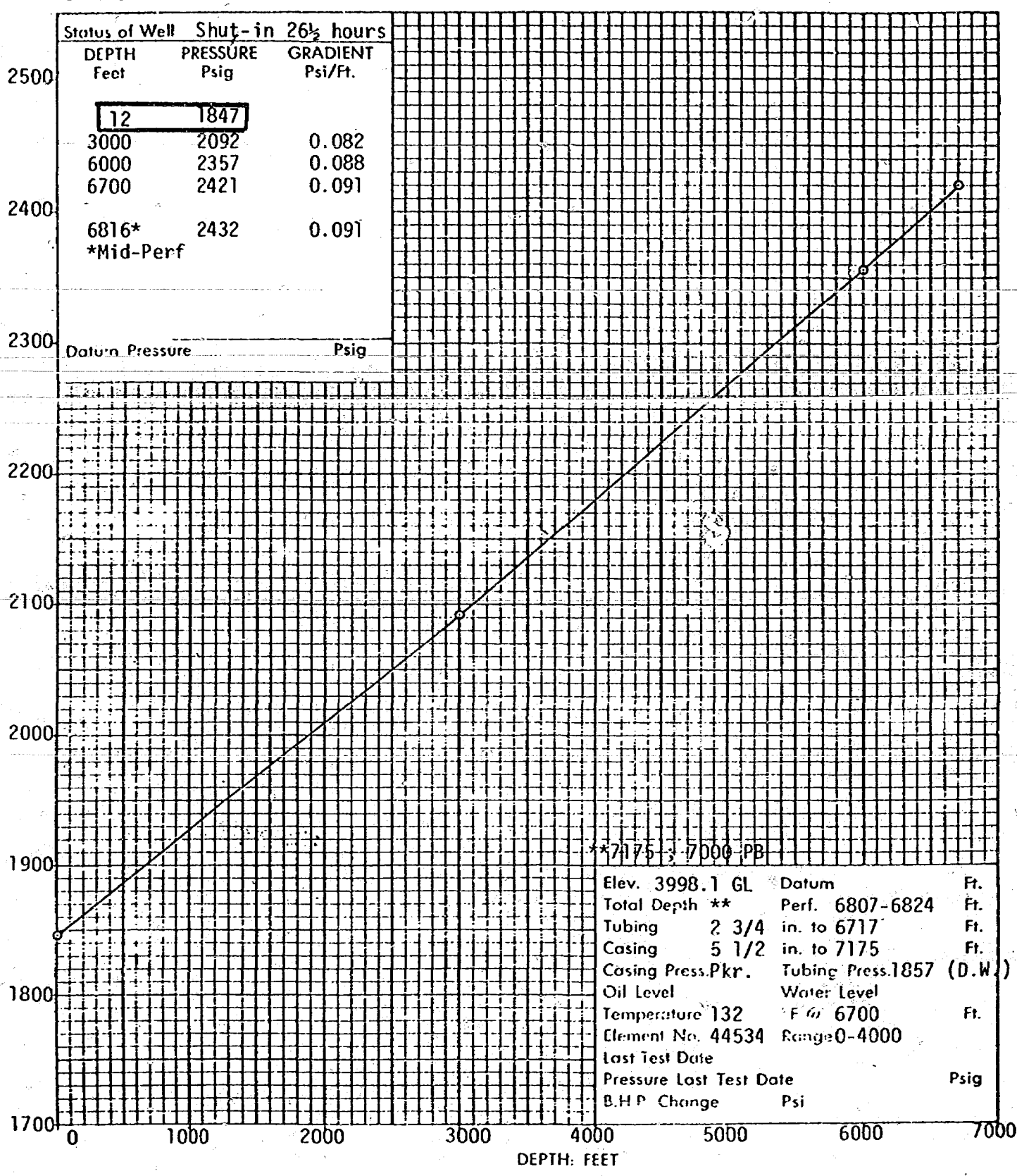
Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 2
Field SOUTH ELKINS County CHAVES State NEW MEXICO
Formation FUSSELMAN Test Date AUGUST 20, 1981

Status of Well Shut-in 26½ hours

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
12	1847	
3000	2092	0.082
6000	2357	0.088
6700	2421	0.091
6816*	2432	0.091

*Mid-Perf

Datum Pressure Psig



**7175 : 7000 PB

Elev. 3998.1 GL		Datum	Ft.
Total Depth **		Perf. 6807-6824	Ft.
Tubing	2 3/4	in. to 6717	Ft.
Casing	5 1/2	in. to 7175	Ft.
Casing Press. Pkr.		Tubing Press. 1857 (D.W.)	
Oil Level		Water Level	
Temperature 132		°F @ 6700	Ft.
Element No. 44534		Range 0-4000	
Last Test Date			
Pressure Last Test Date			Psig
B.H.P. Change		Psi	

NEW-TEX LAB
P. O. BOX 1181
HOBBS, N.M. 88240

RECEIVED
OCT 28 1981
OIL CONSERVATION DIVISION

No. 5836
Lab No.
Date of Run 10-13-81
MIDLAND PRODUCTION Received 10-08-81

CERTIFICATE OF ANALYSIS

Sample of Enserch Exploration J.G. O'brien #2
Secured from Capitan Energy Corporation
At Box 7577
Roswell, N.M. 88202-7577
Secured by
Sampling conditions Press Time Date
Temp.
Station 10-011-01

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	2.333		
Air			
Nitrogen	5.740		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	73.445		
Ethane	9.618		2.565
Propane	5.034		1.382
Butanes			
Iso-Butane	.745		.243
N-Butane	1.357		.427
Pentanes			
Iso-Pentane	.413		.151
N-Pentane	.378		.137
Hexanes	.309		.127
Heptanes Plus	.628		.289
Octanes			
TOTAL	100.000		5.321

Calc. Sp. Gr. 0.7650
Calc. Vapor Press. — PSIA
Sp. Gr.
Mol. Wt. 22.22

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M.	1.382
Butanes Calc. G.P.M.	.670
Pentanes Plus. G.P.M.	.704
Ethane Calc. G.P.M.	2.565
RVP Gasoline G.P.M.	

B.T.U./Cu. Ft. @ 14.696 P.S.I.A.

Dry Basis	1189
Wet Basis	1168

Sulfur Analysis by Titration Gr./100 Cu. Ft.

Hydrogen Sulfide	
Mercaptans	
Sulfides	
Residual Sulfur	
Total Sulfur	

Run by R. H. Hamilton Checked by Deane Simpson Approved by Deane Simpson

Additional Data and Remarks

NEW-TEX LAB
P. O. BOX 1161
HOBBS, N.M. 88240

RECEIVED
OCT 28 1981
MIDLAND PRODUCTION

Lab. No. 5839
Run No.
Date Run 10-13-81
Date Secured 10-08-81

CERTIFICATE OF ANALYSIS

Sample of Enserch Exploration — J.G. O'Brien #1
Secured from Capitan Energy Corporation
At P. O. Box 7577
Roswell, N.M. 80202-7577
Secured by
Sampling conditions Press Time Date
Temp.

Station 10-010-01

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	2.592		
Air			
Nitrogen	2.731		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	58.656		
Ethane	16.653		4.441
Propane	13.130		3.604
Butanes			
Iso-Butane	1.939		.633
N-Butane	2.803		.881
Pentanes			
Iso-Pentane	.556		.203
N-Pentane	.415		.150
Hexanes	.206		.085
Heptanes Plus	.319		.147
Octanes			
TOTAL	100.000		10.144

Calc. Sp. Gr. 0.8991
Calc. A.P.I.
Calc. Vapor Press. PSIA
Sp. Gr.
Mol. Wt. 26.08

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M.	3.604
Butanes Calc. G.P.M.	1.514
Pentanes Plus. G.P.M.	.585
Ethane Calc. G.P.M.	4.441
*RVP Gasoline G.P.M.	

B.T.U./Cu. Ft. @ 14.696 P.S.I.A.

Dry Basis	1439
Wet Basis	1414

Sulfur Analysis by Titration Gr./100 Cu. Ft.

Hydrogen Sulfide	
Mercaptans	
Sulfides	
Residual Sulfur	
Total Sulfur	

Run by R. H. Hamilton Checked by Deane Simpson Approved by Deane Simpson

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 9
CASE NO. 7073-7074
Submitted by RENOULT
Hearing Date 2/17/82

Additional Data and Remarks

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 9
Date 02/17/1982

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

ENSERCH EXPLORATION, INC.
NO. 3 J. G. O'BRIEN
S. ELKINS FUSSELMAN FIELD
CHAVES COUNTY, NEW MEXICO

DATE : 5-31-81
FORMATION : FUSSELMAN/MONTOYA
DRLG. FLUID: SALT BASE MUD
LOCATION : 1980' FNL & 1830' FWL, Sec. 31, T-7-S, R-29-E

FILE NO : 3202-1230
ANALYSTS : REINHEIMER
LABORATORY: MIDLAND TEXAS

FULL DIAMETER ANALYSIS

SAMPLE NUMBER	DEPTH FEET	PERM MAXIMUM	PERM 90 DEG	PERM VERTICAL	HE POR	OIL% PORE	WTR% PORE	GRAIN DEN	DESCRIPTION
	CORE NO. 1 6765.0-6795.0 CUT 30' REC 12'								
1	6765.0-66.0	0.15		<0.01	5.2	0.0	69.7	2.80	DOL CHTY VF BREC
2	6766.0-67.0	0.76	0.51	1.5	11.4	14.5	47.4	2.81	DOL SL/CHTY VF BREC
3	6767.0-68.0	0.90	0.38	0.75	8.0	11.7	56.3	2.80	DOL SL/CHTY VF BREC
4	6768.0-69.0	0.95	0.87	0.04	9.5	4.0	26.0	2.78	DOL CHTY BREC
5	6769.0-70.0	0.23	0.07	0.05	7.7	8.7	37.5	2.81	DOL SL/F CHTY BREC
6	6770.0-71.0	0.18	0.04	0.22	6.9	16.4	44.8	2.82	DOL CHTY BREC
7	6771.0-72.0	0.03	<0.01	<0.01	1.0	9.5	75.7		DOL VF
8	6772.0-73.0	0.11	0.04	0.06	8.3	9.8	55.4	2.82	DOL STY
9	6773.0-74.0	0.13	0.08	0.13	8.5	9.1	57.1	2.81	DOL SL/CHTY BREC STY
* 10	6774.0-75.0	0.03		0.08	5.3	8.9	78.9	2.82	DOL SL/CHTY BREC
* 11	6775.0-76.0	0.08		0.04	11.0	28.9	68.4	2.84	DOL SL/CHTY BREC
12	6776.0-77.0	0.04	0.04	0.04	14.3	23.4	29.0	2.84	DOL

* INDICATES PLUG PERMEABILITY

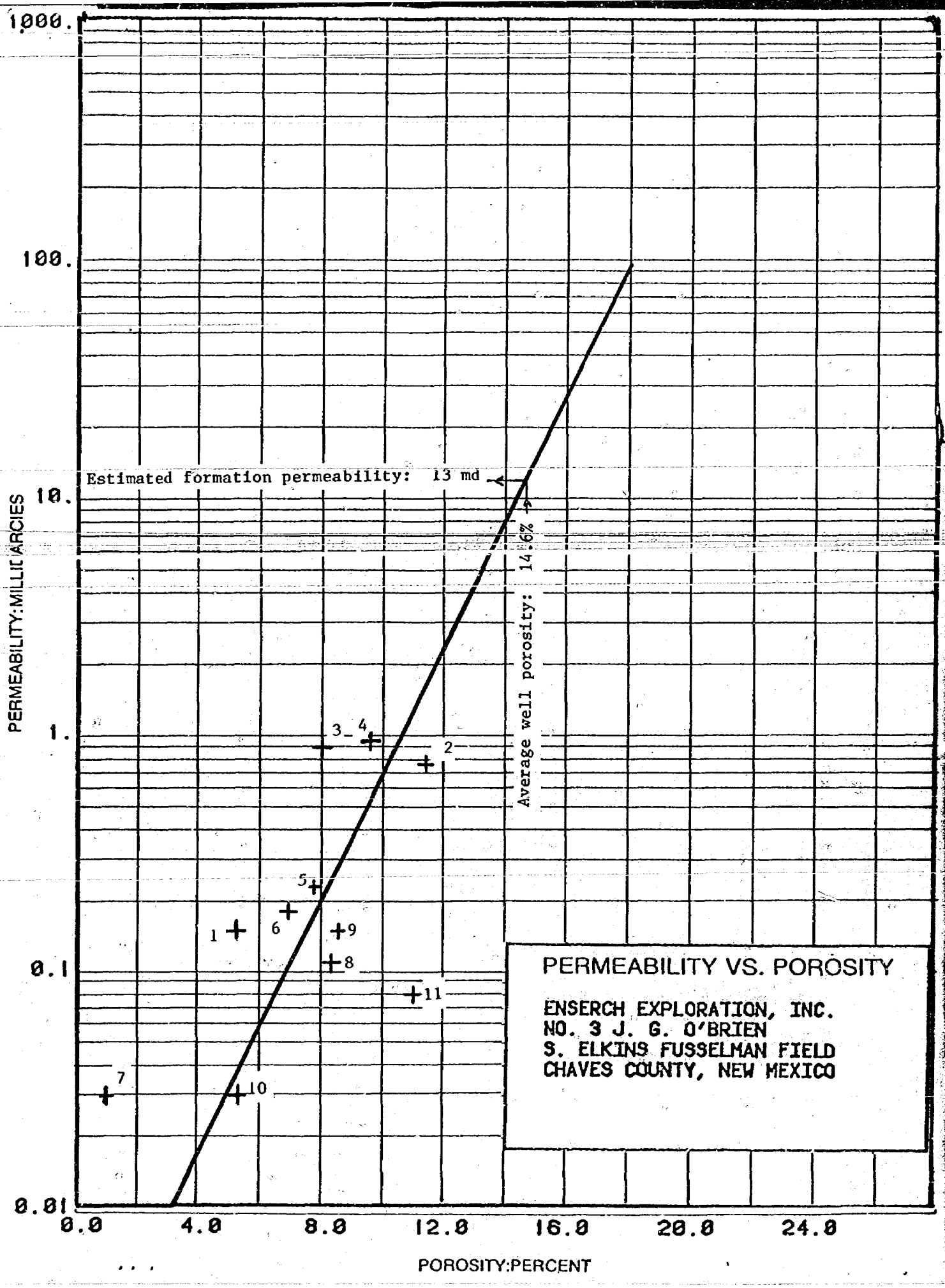
Average porosity 8.2% (permeability cut-off: k > 0.10 md)

Lithological Abbreviations:

VF: predominately vertically fractured
SL/F: Slightly fractured
BREC: Bredciated

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 10
CASE NO. 7073-7074
Submitted by BENNETT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 10
Date 02/17/1982


1000.
100.
10.
1.
0.1
0.01
PERMEABILITY:MILLIDARCIES
Estimated formation permeability: 13 md
Average well porosity: 14.6%
1
2
3
4
5
6
7
8
9
10
11
0.0
4.0
8.0
12.0
16.0
20.0
24.0
POROSITY:PERCENT
PERMEABILITY VS. POROSITY
ENSERCH EXPLORATION, INC.
NO. 3 J. G. O'BRIEN
S. ELKINS FUSSELMAN FIELD
CHAVES COUNTY, NEW MEXICO

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY RESEARCH EXPLORATION, INC. FILE NO. 3202-12359

WELL NO. 3 J. G. O'BRIEN DATE 5-31-81

FIELD S. ELKINS TUSSELMAN FIELD FORMATION TUSSELMAN/MONTOYA ELEV. 4009' GL

COUNTY CHAVES COUNTY STATE NEW MEXICO DRLG. FLD. SALT BASE MUD CORES ACC

LOCATION 1980' FNL & 1830' FWL, SEC. 31, T-7-S, R-29-E

CORRELATION COREGRAPH

VERTICAL SCALE: 5" = 100'

Total Water
PERCENT PORE SPACE
100 80 60 40 20 0

Gamma Ray
RADIATION INCREASE →
API UNITS

Permeability
MILLIDARCIES
100 10 1.0 .1

Depth Feet

Porosity
PERCENT
30 20 10 0

Oil Saturation
PERCENT PORE SPACE
0 20 40 60 80 100

8758

8800

2504 Hrs Press

ENSERCH EXPLORATION, INC.

Docket No. 7073 / 7074

Exhibit II

Date 02/17/1982

PRESSURE BUILD-UP ANALYSIS
HORNER PLOT
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

$p^* = 2426 + (2 \times 39)$
$= 2504$ psi

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. II
CASE NO. 7073 - 7074
Submitted by RENOULT
Hearing Date 2-17-82

$m = 2426 - 2387$
$= 39$ psi/cycle

Interval Perforated: 6741'-6745'
Date of Test: 2/3-8/1982
Formation Permeability: 4.5 md
Current Reservoir Pressure: 2504 psi
Pressured measured at 6743' (-2708')
KB = 4035'

Bottom Hole Pressure @ 6743'

2440
2420
2400
2380
2370

10^4 9 8 7 6 5 4 3 2 10^3 9 8 7 6 5 4 3 2 10^2 9 8 7 6 5 4 3 2 10

$(\Delta t + t)/\Delta t$

OIL

WELL PRESSURE ANALYSIS
West Texas District

Test Date: 2/3-8/1982 Lease: J.G. O'Brien

Formation: Fusselman dolomite Well No.: 1

Casing Size: 5½", 15.5# Field: South Elkins

Cum. Prod. Np(Bbl): 45,602 STB State: Chaves Co., New Mexico

Prod. Rate (Bbl/Day): 245

Prod. Life = 24Np/q: 4464 hours

I. Calculation of kh (md-ft) and k (md):

$kh = \frac{162.6\ q\mu B}{m}$; $k = \frac{kh}{h}$

h = 53 ft μ = 0.13 cp

q = 245 B/D B = 1.809

m = 39 psi/cycle

$kh = \frac{162.6 \times (245) \times (0.13) \times (1.809)}{(39)} = 240.4$ md-ft

$k = \left\{\frac{240.5}{53}\right\} = 4.5$ md

II. Calculation of Skin Effect, s; and Pressure Loss Due to Skin, Δp_{skin} (psi):

$s = 1.151\left[\frac{p_{1\text{-}hr} - p_{wf}}{m} - \log\left(\frac{k}{\phi\mu c r_w^2}\right) + 3.23\right]$

$s = 1.151\left[\frac{(2367)-(2345)}{(39)} - \log\left[\frac{(4.5)}{(0.116)(0.13)(17.5 \times 10^{-6})(.229^2)}\right] + 3.23\right] = -5.43$

$\Delta p_{skin} = (m) \times 0.87\ (s)$ $\Delta p_{skin} = (39) \times 0.87\ (-5.43) = -174$ psi

k = 4.5 md r_w = 0.229 ft

$p_{1\text{-}hr}$ = 2367 psig

μ = 0.13 cp P_{wf} = 2345 psig

c = 17.5×10^{-6} psi^{-1} m = 39 psi/cycle

III. Calculation of Productivity Index (B/D-psi) and Flow Efficiency:

$J_{(actual)} = \frac{q}{p^* - p_{wf}}$ $J_{(ideal)} = \frac{q}{(p^* - p_{wf}) - \Delta p_{skin}}$

$J_{(actual)} = \frac{(245)}{(2504)-(2345)}$ $J_{(ideal)} = \frac{(245)}{[(2504)-(2345)] - (-174)}$

$J_{(actual)} = 1.54$ $J_{(ideal)} = 0.74$

Δp_{skin} = -174 psi p^* = 2504 psig

q = 245 B/D P_{wf} = 2345 psig

Flow Efficiency = $\frac{J_{(actual)}}{J_{(ideal)}} = \frac{(1.54)}{(0.74)} = 2.08$

PARAMETERS:

$C_t = S_w C_w + S_o C_o + C_f = (0.28)(2.9\times10)^{-6} + (0.72)(16.8\times10)^{-6}\ (4.6\times10)^{-6} = 17.5 \times 10^{-6}$

P_c = 546 psia S_w = 28 %

T_c = 772 °R S_o = 72 %

BHT = 133 °F ρ_o = .741 g/cc

BHP = 2438 psia

Radius of investigation during pressure build-up:

$r_i = 0.029(kt_i/\phi\mu c_t)^{½} = 0.029(4.5 \times 98.75/0.116 \times 0.13 \times (17.5 \times 10^{-6}))^{½} = 1190$ ft (102 acres)

TEFTELLER, INC.
RESERVOIR ENGINEERING DATA
Midland, Texas

Well : J. G. O'BRIEN NO. 1

Field : SOUTH ELKINS

File 3-12883-BU

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA t = 4464 hrs

1982 Date	Status of Well	Time	Elapsed Time: Δt Hrs.	Min.	(t+Δt)/Δt	BHP @ 6635' Psig	BHP @ 6743' Psig
2-3	Arrived on location						
"	well flowing	18:00					
"	Rigged up, instrument						
"	in lubricator	18:20					
"	Instrument @ 6635'	20:10				2319	2345
2-4	"	00:00				2318	2344
"	"	04:00				2318	2344
"	"	08:00				2318	2344
"	"	09:00				2319	2344
"	Shut-in for build up	09:00	0	00			
"	"	09:06	0	06	44,641.0	2333	2358
"	"	09:12	0	12	22,321.0	2334	2359
"	"	09:18	0	18	14,881.0	2335	2360
"	"	09:24	0	24	11,161.0	2336	2361
"	"	09:30	0	30	8,929.0	2337	2362
"	"	09:36	0	36	7,441.0	2338	2363
"	"	09:42	0	42	6,378.1	2339	2364
"	"	09:48	0	48	5,581.0	2341	2366
"	"	09:54	0	54	4,961.0	2341	2366
"	"	10:00	→ 1	00	4,465.0	2342	2367
"	"	10:30	1	30	2,977.0	2344	2369
"	"	11:00	2	00	2,232.0	2346	2371
"	"	12:00	3	00	1,489.0	2350	2375
"	"	13:00	4	00	1,177.0	2353	2378
"	"	14:00	5	00	893.8	2355	2380
"	"	15:00	6	00	745.0	2358	2383
"	"	17:00	8	00	559.0	2360	2385
"	"	19:00	10	00	447.4	2365	2390
"	"	21:00	12	00	373.0	2369	2394
"	"	23:00	14	00	319.9	2372	2397
2-5	"	01:00	16	00	280.0	2375	2400
"	"	03:00	18	00	249.0	2378	2403
"	"	05:00	20	00	224.2	2380	2405
"	"	09:00	24	00	187.0	2384	2409
"	"	13:00	28	00	160.4	2388	2413

TEFTELLER, INC.
RESERVOIR ENGINEERING DATA
Midland, Texas

Well : J. G. O'BRIEN NO. 1

Page 2 of 5

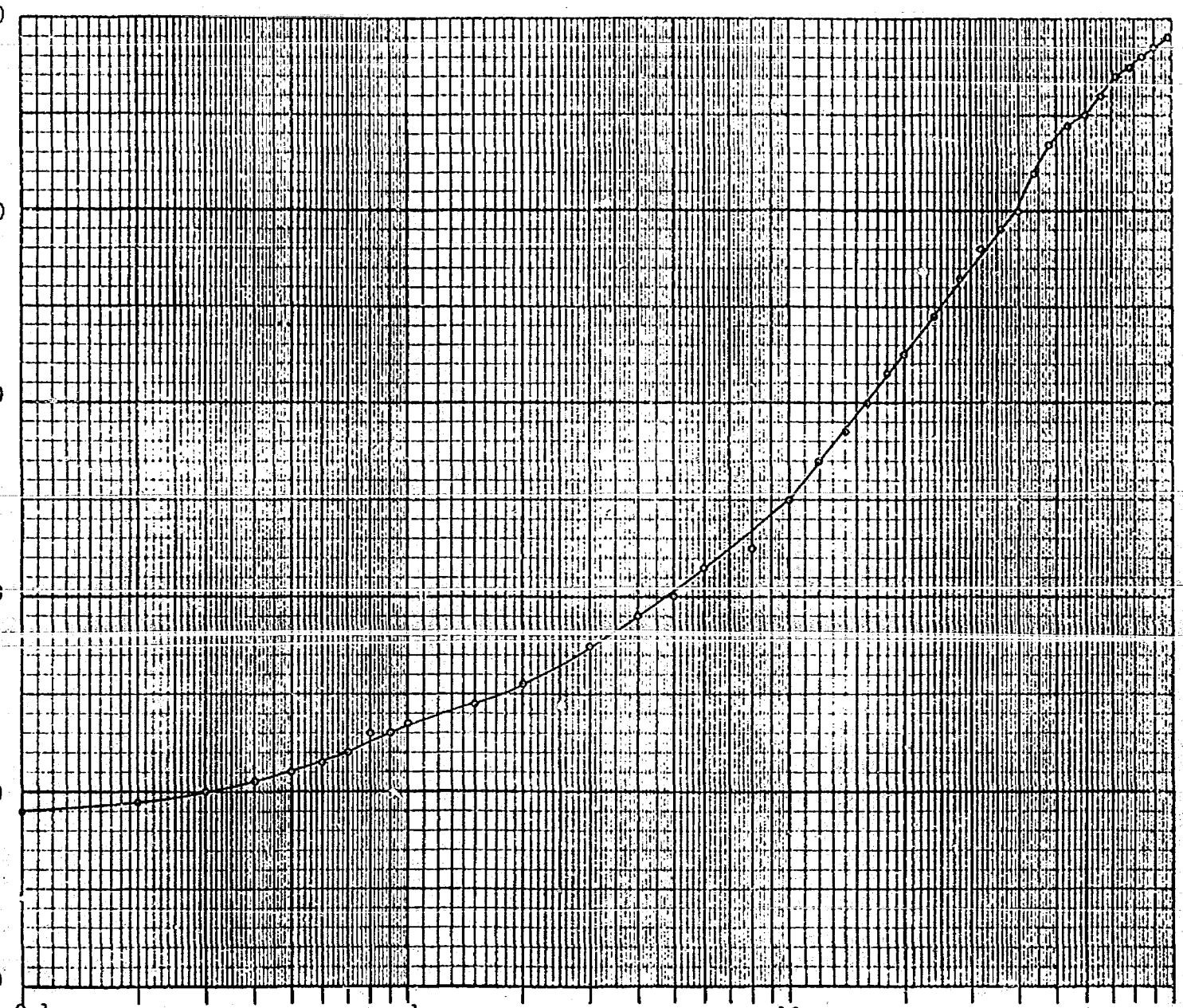
Field : SOUTH ELKINS

File 3-12833-BU

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA t = 4464 hrs

1982 Date	Status of Well	Time	Elapsed Time: Δt Hrs.	Min.	(t+Δt)/Δt	BHP @ 6635' Psig	BHP @ 6743' Psig
2-5	Continued shut-in	17:00	32	00	140.5	2391	2416
"	"	21:00	36	00	125.0	2393	2418
2-6	"	01:00	40	00	112.6	2395	2420
"	"	05:00	44	00	102.5	2399	2424
"	"	09:00	48	00	94.0	2402	2427
"	"	15:00	54	00	83.7	2404	2429
"	"	21:00	60	00	75.4	2405	2430
2-7	"	03:00	66	00	68.6	2407	2432
"	"	09:00	72	00	63.0	2409	2434
"	"	15:00	78	00	58.2	2410	2435
"	"	21:00	84	00	54.1	2411	2436
2-8	"	03:00	90	00	50.6	2412	2437
"	Pulled instrument	10:00	97	00	47.0	2413	2438
"	Gradient Traverse	11:45	98	45	46.2	2413	2438

BUILD UP CURVE



EFFELLER, INC.
reservoir engineering data
MIDLAND, TEXAS

Page 3 of 5
File 3-12883-BU

Company ENSERCH EXPLORATION, INC. Formation FUSSELMAN
Well J. G. O'BRIEN NO. 1 County CHAVES
Field SOUTH ELKIN State NEW MEXICO

TEFTELLER, INC.

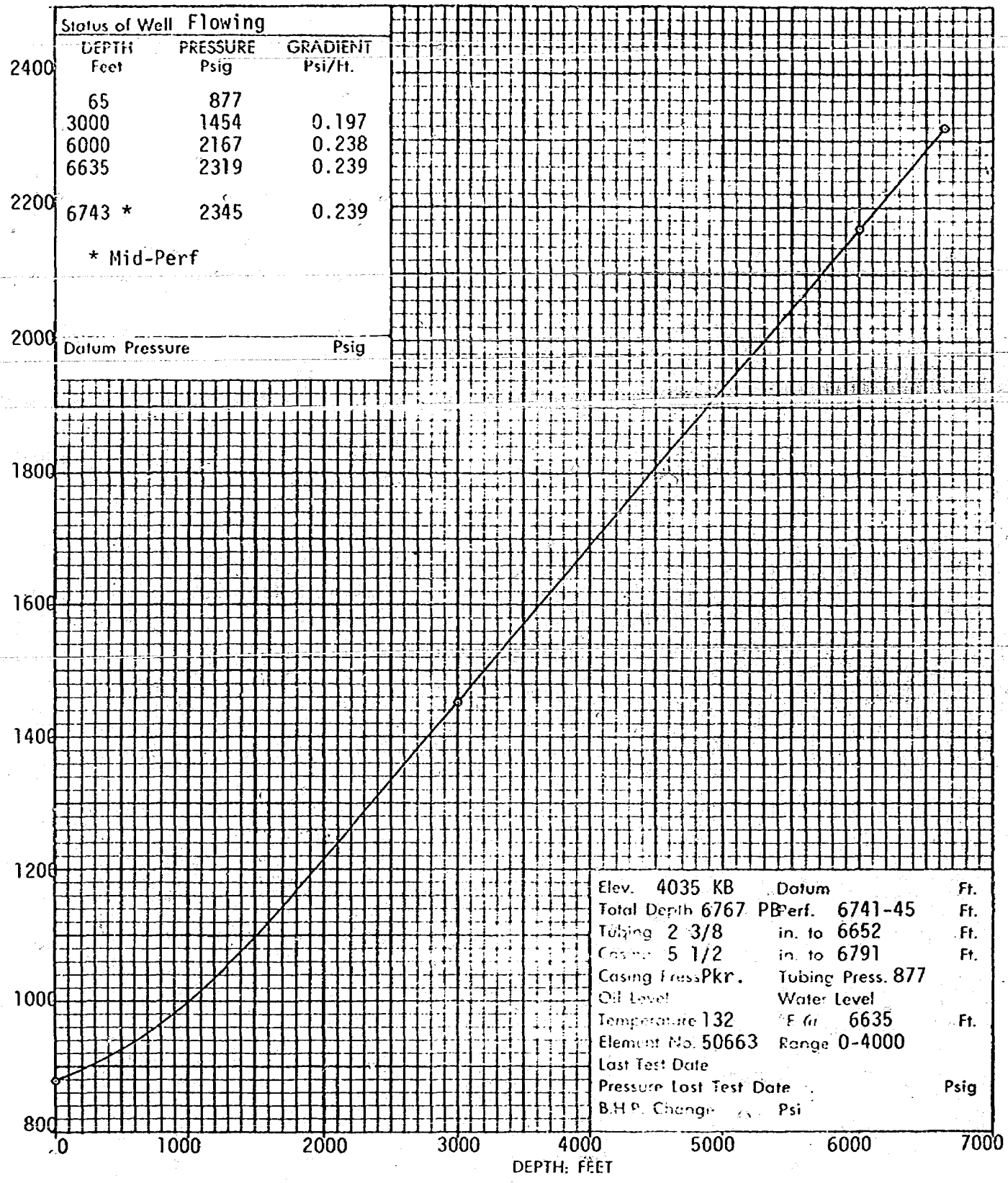
Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 1
Field SOUTH ELKIN County CHAVES State NEW MEXICO
Formation FUSSELMAN Test Date FEBRUARY 3, 1982

Status of Well Flowing

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
65	877	
3000	1454	0.197
6000	2167	0.238
6635	2319	0.239
6743 *	2345	0.239

* Mid-Perf

Datum Pressure Psig



Elev. 4035 KB Datum Ft.
Total Depth 6767 PB Perf. 6741-45 Ft.
Tubing 2 3/8 in. to 6652 Ft.
Casing 5 1/2 in. to 6791 Ft.
Casing Press. Pkr. Tubing Press. 877
Oil Level Water Level
Temperature 132 F @ 6635 Ft.
Element No. 50663 Range 0-4000
Last Test Date
Pressure Last Test Date Psig
B.H.P. Change Psi

File 3-12883-BU

TEFTELLER, INC.

Petroleum Engineering Data
MIDLAND, TEXAS

Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 1

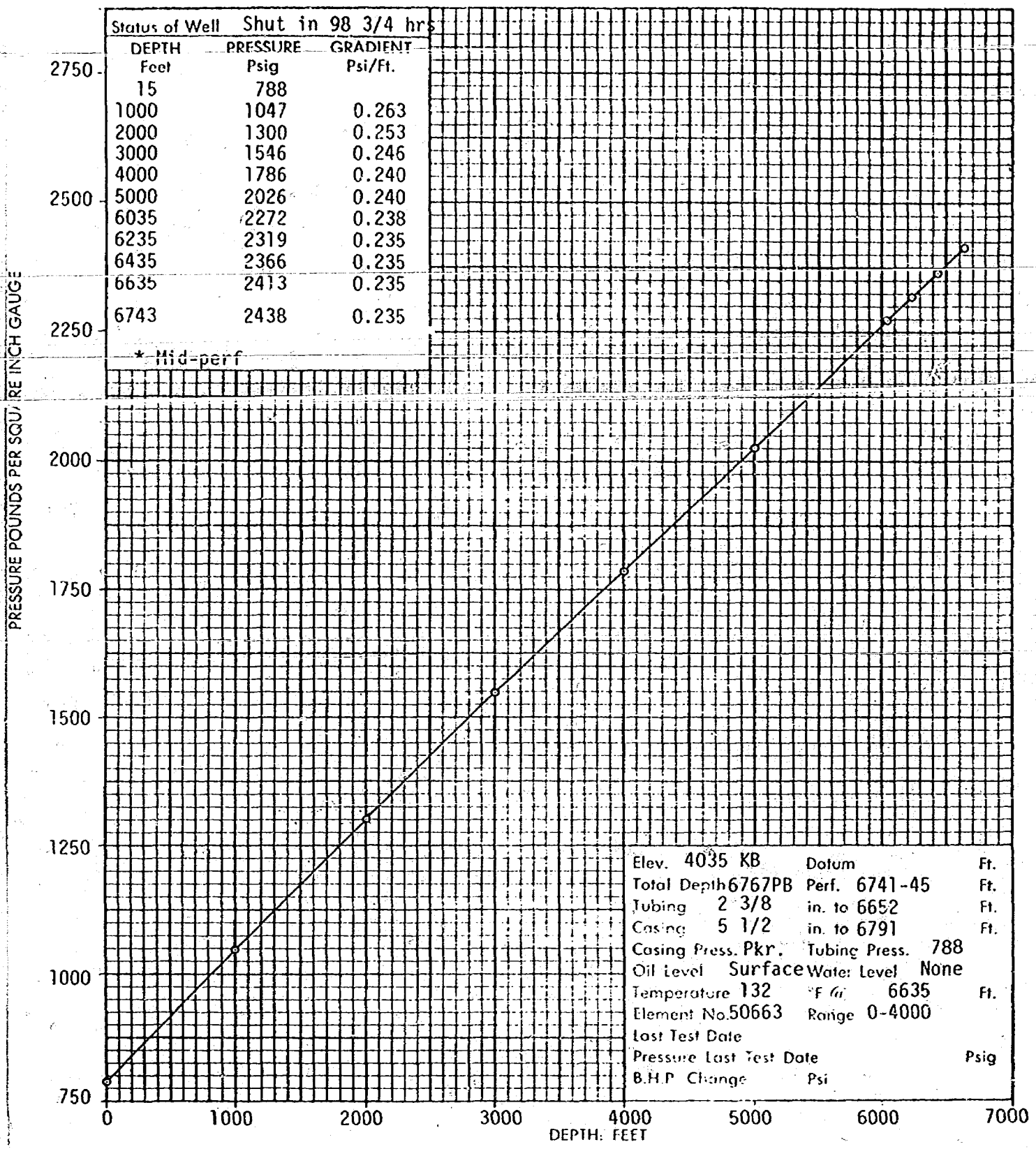
Field SOUTH ELKIN County CHAVES State NEW MEXICO

Formation FUSSELMAN Test Date FEBRUARY 8, 1982

Status of Well Shut in 98 3/4 hrs

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
15	788	
1000	1047	0.263
2000	1300	0.253
3000	1546	0.246
4000	1786	0.240
5000	2026	0.240
6035	2272	0.238
6235	2319	0.235
6435	2366	0.235
6635	2413	0.235
6743	2438	0.235

* Mid-perf



Elev.	4035 KB	Datum	Ft.
Total Depth	6767PB	Perf. 6741-45	Ft.
Tubing	2 3/8	in. to 6652	Ft.
Casing	5 1/2	in. to 6791	Ft.
Casing Press.	Pkr.	Tubing Press. 788	
Oil Level	Surface	Water Level None	
Temperature	132 °F @	6635	Ft.
Element No.	50663	Range 0-4000	
Last Test Date			
Pressure Last Test Date			Psig
B.H.P. Change		Psi	

PRESSURE HISTORY
ENSERCH EXPLORATION, INC.
SOUTH ELKINS (FUSSELMAN) POOL
CHAVES COUNTY, NEW MEXICO
J.G. O'Brien No. 1
J.G. O'Brien No. 2

Estimated Original Reservoir Pressure: 2551 psi @ 6743'

Bubble point: 1892 psi

870 psi

Pressure drop:

3000
1500
0

Estimated Reservoir Pressure @ 6743'

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 12
CASE NO. 7073-7074
Submitted by Enserch
Hearing Date 2-17-82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 12
Date 02/17/1982

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1979											
1980											
1981											
1982											
1983											

PRESSURE HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 1
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

Date of Test	Test	Interval Tested	Maximum Pressure Recorded (psig @ ft)	Shut-in Time hr . mn	Estimated Reservoir Pressure (psi @ depth)	Pressure Gradient psi/ft	Cumulative Production**	
							Oil STB	Csnghd Gas MCF
5/19/80	Open Hole DST	6648'-6730'	2488 psi @ 6726'	00 . 26	N.A.	N.A.	Insignif.	Insignif.
5/19/80	Open Hole DST	6648'-6730'	2490 psi @ 6726'	02 . 34	N.A.	N.A.	Insignif.	Insignif.
6/11-16/80	Pressure Build-up	6741'-6745'*	2534 psi @ 6743'	94 . 54	2534 psi @ 6743'	.225 psi/ft	386	704
9/19/80	Static BHP	6741'-6745'*	2551 psi @ 6743'	2160. 00	2551 psi @ 6743'	.235 psi/ft	5,257	9,432
2/3-8/82	Pressure Build-up	6741'-6745'*	2438 psi @ 6743'	98 . 45	2504 psi @ 6743'	.235 psi/ft	45,602	100,240

*Perforated Interval: 6741'-6745'
**Estimated

PRESSURE HISTORY
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Date of Test	Test	Interval Tested	Maximum Pressure Recorded (psig @ ft)	Shut-in Time hr . mn	Estimated Reservoir Pressure (psi @ depth)	Pressure Gradient psi/ft	Cumulative Production**	
							Gas STB	Condensate MCF
8/18/80	Open Hole DST	6776'6805'	2589 psi @ 6801'	00 . 47	-	N.A.	Negligible	Negligible
8/18/80	Open Hole DST	6776'-6805'	2592 psi @ 6801'	02 . 00	2592 psi @ 6801'	N.A.	Negligible	Negligible
8/20/80	Static BHP	6807'-6824'*	2432 psi @ 6816'	26 . 30	2432 psi @ 6816'	0.091 psi/ft	Negligible	Negligible
9/16-19/80	Pressure Build-up	6807'-6824'*	2560 psi @ 6822'	67 . 00	2560 psi @ 6822'	0.095 psi/ft	Negligible	Negligible
2/4-8/82	Pressure Build-up	6807'-6824'*	1681 psi @ 6808'	117. 45	1681 psi @ 6808'	0.450 psi/ft	240,000	2,000

*Perforated Interval: 6807'-6824'
**Estimated

CASINGHEAD GAS PRODUCTION

J.G. O'BRIEN OIL LEASE
SOUTH ELKINS (FUSSELMAN) OIL POOL
CHAVES COUNTY, NEW MEXICO

CURRENT OPERATING CONDITIONS (Separator operating at 200 psi)

Average lease oil production:	11,000 STB/month
Current average GOR (Separator):	1,880 SCF/STB
Average monthly casinghead gas production:	20,680 MCF/month
Heating value:	1,530 BTU/SCF

FORTHCOMING OPERATING CONDITIONS (Separator and Vapor Recovery Unit at 10 psi)

Average lease oil production:	11,000 STB/month
Estimated average GOR (Separator) 1880 x 1.15:	2,162 SCF/month
Anticipated monthly casinghead gas production:	23,782 MCF/month
Heating value:	2,462 BTU/SCF

GAIN IN CASINGHEAD GAS PRODUCTION

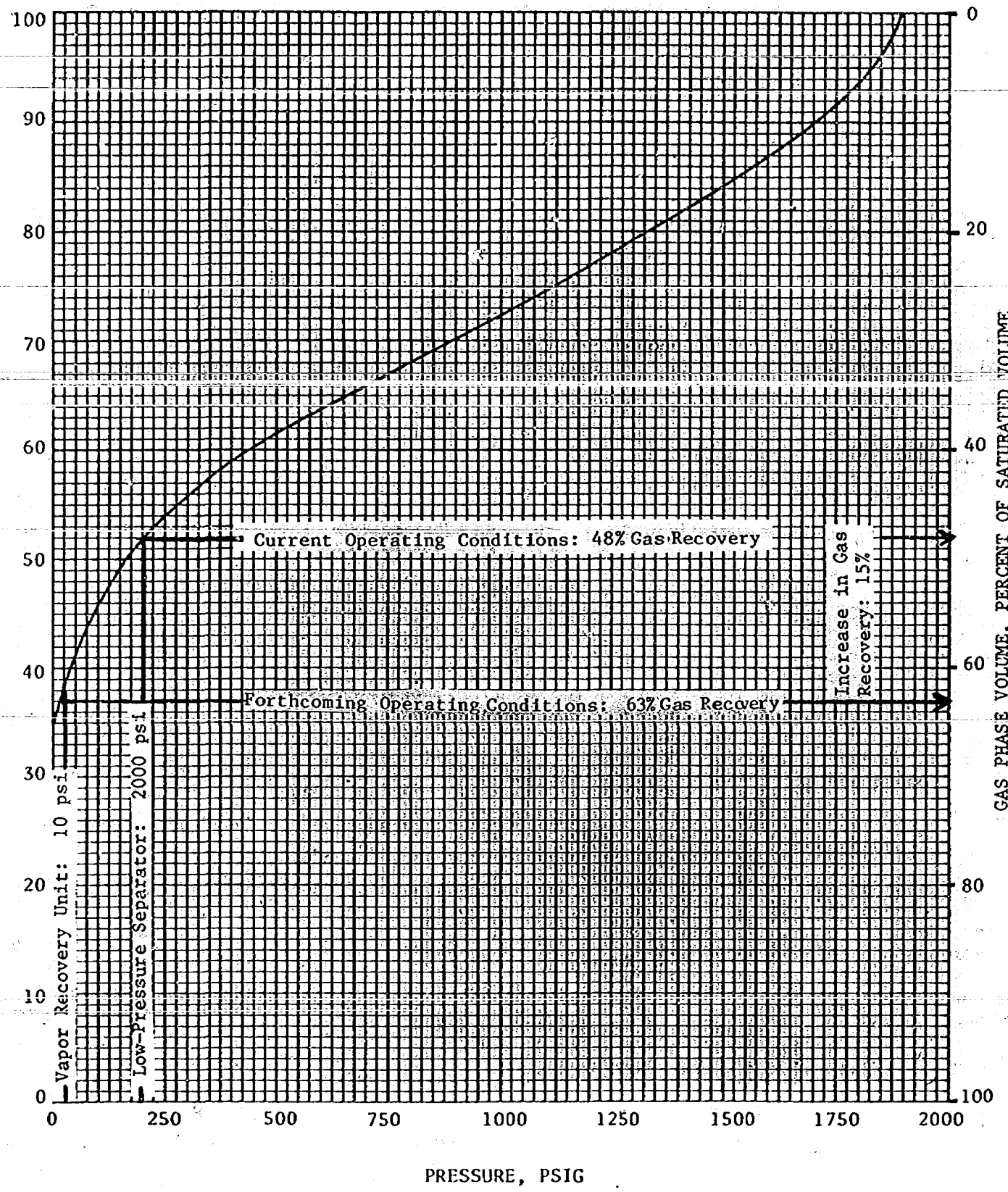
Current monthly casinghead gas production:	20,680 MCF/month
Anticipated casinghead gas production:	23,782 MCF/month
Gain in casinghead gas production:	3,102 MCF/month
Heating value:	2,462 BTU/SCF
Gain in heating value:	7,637,124 BTU/month

BEFORE EXAMINER STAMETS
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 13
CASE NO. 7073-7074
Submitted by BENOIT
Hearing Date 2/17/82

ENSERCH EXPLORATION, INC.
Docket No. 7073/7074
Exhibit 13
Date 02/17/1982

VOLUME OF LIQUID PHASE AT 134°F.

Company ENSERCH EXPLORATION, INC. Formation FUSSELMAN
Well J. G. O'BRIEN NO. 1 County CHAVES
Field WILDCAT State NEW MEXICO



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75247

File RFL 80435

Well J. G. O'Brien No. 1

HYDROCARBON ANALYSES OF SEPARATOR GAS SAMPLES

Separator Conditions:	500 PSIG @ 68°F.		100 PSIG @ 68 °F.		3 PSIG @ 68 °F.		0 PSIG @ 68 °F.	
Component	Mol Percent	GPM	Mol Percent	GPM	Mol Percent	GPM	Mol Percent	GPM
Hydrogen Sulfide	0.00		0.00		0.00		0.00	
Carbon Dioxide	2.57		3.11		0.95		0.22	
Nitrogen	3.92		0.79		0.02		0.00	
Methane	71.32		45.31		6.23		2.48	
Ethane	12.09	3.570	26.27	7.164	22.48	6.131	5.59	1.525
Propane	6.70	1.880	18.33	5.144	44.37	12.450	44.83	12.580
iso-Butane	0.81	0.270	2.23	0.744	8.34	2.782	14.45	4.820
n-Butane	1.13	0.363	2.94	0.945	12.37	3.976	23.07	7.415
iso-Pentane	0.22	0.082	0.49	0.183	2.48	0.926	5.01	1.870
n-Pentane	0.16	0.059	0.34	0.126	1.77	0.654	3.25	1.201
Hexanes	0.06	0.025	0.14	0.058	0.70	0.291	0.92	0.383
Heptanes plus	0.02	0.009	0.05	0.023	0.29	0.134	0.18	0.083
	100.00	6.258	100.00	14.387	100.00	27.344	100.00	29.877

Separator Pressure 200 psi

Separator & Vapor Recovery Unit 10 psi

Calculated gas gravity(Air=1.000):	0.761		0.988		1.510	1.750
Calculated gross heating value (BTU per cubic foot of dry gas at 15.025 psia and 60°F.):	1230	1530	1630	2462	2527	2923

CASE 7499: Application of Amoco Production Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp through Devonian formations underlying the S/2 of Section 3, Township 23 South, Range 34 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7073: (Continued from February 17, 1982, Examiner Hearing)

In the matter of Case 7073 being reopened pursuant to the provisions of Order No. R-6558, which order promulgated special rules for the South Elkins-Fusselman Pool in Chaves County, including provisions for 80-acre spacing units and a limiting gas-oil ratio of 3000 to one. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units with a limiting gas-oil ratio of 2000 to one.

CASE 7074: (Continued from February 17, 1982, Examiner Hearing)

In the matter of Case 7074 being reopened pursuant to the provisions of Orders Nos. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County. All interested parties may appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the propor rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir.

CASE 7500: Application of Read & Stevens, Inc. for an exception to the maximum allowable base price provisions of the New Mexico Natural Gas Pricing Act, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order of the Division prescribing the price allowed for production enhancement gas under Section 107 of the Natural Gas Policy Act as the maximum allowable base price if production enhancement work which qualifies under the NGPA is performed on its Hackberry Hills Unit Well No. 4 located in Section 22, Township 22 South, Range 26 East, Eddy County, New Mexico.

CASE 7485: (Continued from February 17, 1982, Examiner Hearing)

Application of Berge Exploration for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Abo formation underlying two 160-acre proration units, the first being the NW/4 and the second being the SW/4 of Section 27, Township 7 South, Range 26 East, each to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells and a charge for risk involved in drilling said wells.

CASE 7501: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating and extending certain pools in Chaves, Eddy and Lea Counties, New Mexico.

(a) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the North Caprock-Wolfcamp Pool. The discovery well is The Petroleum Corporation Landlady Well No. 1 located in Unit J of Section 8, Township 12 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 12 SOUTH, RANGE 32 EAST, NMPM
Section 8: SE/4

(b) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Morrow production and designated as the Feather-Morrow Pool. The discovery well is the Santa Fe Energy Company State UTP Well No. 1 located in Unit J of Section 21, Township 15 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 15 SOUTH, RANGE 32 EAST, NMPM
Section 21: SE/4

(c) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Abo Reef production and designated as the Garrett-Abo Reef Pool. The discovery well is the Marathon Oil Company Delmont L. Hatfield Well No. 1 located in Unit J of Section 23, Township 16 South, Range 38 East, NMPM. Said pool would comprise:

TOWNSHIP 16 SOUTH, RANGE 38 EAST, NMPM
Section 23: SE/4

ENSERCH EXPLORATION INC.

P. O. Box 4815
Midland, Texas 79704
915-682-9756

Daniel C. Renoult
District Petroleum Engineer
West Texas District
Production Division

March 10, 1982

New Mexico Department of Energy
and Minerals
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Attn: Mr. R.L. Stamets

Re: Maximum Rate of Withdrawal
Case No. 7074 - Order No. R-6565
Hearing Date: 02/17/1982
J.G. O'Brien Well No. 2
South Elkins (Fusselman) Gas Pool
Chaves County, New Mexico

Gentlemen:

Enserch Exploration, Inc. hereby requests that the J.G. O'Brien Well No. 2 located in Section 30, Township 7 South, Range 29 East, NMPM, Chaves County, New Mexico be produced at a maximum efficient rate not to exceed 1500 MCFPD. This rate limitation will represent 29.5 percent of the absolute open-flow potential of 5094.8 MCFPD for the subject well.

Evidence submitted during the hearing regarding the promulgation of permanent rules for the subject pool indicated the J.G. O'Brien Well No. 2 is indeed a gas well with an average GOR of 112,098:1 separated from the offset oil pool by a fault. Gas composition, evolution of the gas-oil ratio, and pressure history for the subject pool indicated the South Elkins (Fusselman) Gas Pool is indeed a retrograde gas condensate reservoir produced by pressure-depletion.

Based on gas deliverability and previous well history, in order to prevent economic waste and to otherwise protect correlative rights, Enserch Exploration, Inc. hereby requests that the subject J.G. O'Brien Well No. 2 be produced at a maximum efficient rate not to exceed 1500 MCFPD.

Very truly yours,

Daniel C. Renoult
District Petroleum Engineer

DCR/mh

Attachments

cc: L. Kersh
W.M. Carr

RECEIVED
MAR 12 1982
OIL CONSERVATION DIVISION
SANTA FE

PRODUCTION HISTORY (FORM C115)
ENSERCH EXPLORATION, INC.
J.G. O'BRIEN NO. 2
SOUTH ELKINS (FUSSELMAN) GAS POOL
CHAVES COUNTY, NEW MEXICO

Date	Days of Production	Status	Gas (MCF)	Condensate (STB)	Water (Bbl)	GOR (SCF/Bbl)	Condensate Content (STB/MMCF)	Water Content (Bbl/MMCF)
10/1980	4	F	9,265	116	0	79,871	12.5	0
11/1980	0	F	0	0	0	-	-	-
12/1980	0	F	0	0	0	-	-	-
01/1981	0	F	0	0	0	-	-	-
02/1981	0	F	0	0	0	-	-	-
03/1981	0	F	124	0	0	∞	0	0
04/1981	0	F	0	0	0	-	-	-
05/1981	0	F	0	0	0	-	-	-
06/1981	0	F	0	0	0	-	-	-
07/1981	31	F	8,864	107	0	82,841	12.1	0
08/1981	25	F	31,086	551	0	56,417	17.7	0
09/1981	23	F	51,305	579	0	88,610	11.3	0
10/1981	29	F	47,636	362	0	131,591	7.6	0
11/1981	30	F	39,659	182	0	217,906	4.6	0
12/1981	30	F	24,601	20	128	1,230,050	0.8	5
Cumulative Production	172	F	212,540	1,917	128	110,871	9.0	1

NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-6

Type Test: [X] Initial [ ] Annual [ ] Special — Test Date:

Company: Enserch Exploration, Inc.	Connection: K. B. Kennedy Engr.		
Pool: So. Elkins	Formation: Fusselman Gas		Unit: M
Completion Date: 10-3-80	Total Depth: 7175	Plug Back TD: 7000	Elevation: 3998.1
Farm or Lease Name: J. G. O'Brien			
Csg. Size: 5½ / Wt.: 15.5 / d: / Set At: 7175	Perforations: From 6807 To 6808		Well No.: 2
Tbg. Size: 2 3/8 / Wt.: 4.7 / d: / Set At: 6717	Perforations: From 6820 To 6824		Unit: M / Sec.: 30 / Twp.: 7S / Rge.: 29E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single	Packer Set At: 6717		County: Chaves
Producing Thru: Tubing	Reservoir Temp. °F: 132 @ 6700	Mean Annual Temp. °F: 70	Baro. Press. – P_a: 13.2 — State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
6816	6816	0.8068	2.307	5.823	0.0316		X	Flange

NO.	FLOW DATA: Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	CASING DATA: Press. p.s.i.g.	Temp. °F	Duration of Flow
SI	27 hours						1857		Pkr.	-	
1.	2"	X	1.5000"	87	1.7	114	1848	70	Pkr.	-	60 min
2.	2"	X	1.5000"	95	6.3	132	1832	70	Pkr.	-	60 min
3.	2"	X	1.5000"	106	18.0	132	1815	70	Pkr.	-	60 min
4.	2"	X	1.5000"	140	66.0	104	1737	70	Pkr.	-	60 min
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	12.76	13.051	100.2	.9518	1.1133	1.012	178.6
2.	12.76	26.109	108.2	.9372	1.1133	1.012	351.8
3.	12.76	46.321	119.2	.9372	1.1133	1.012	624.1
4.	12.76	100.554	153.2	.9602	1.1133	1.012	1389.4
5.							

NO.	P_t	Temp. °R	T_t	Z
1.		USED SIMPLIFIED		
2.		SUPERCOMPRESSIBILITY		
3.		TABLES		
4.				
5.				

Gas Liquid Hydrocarbon Ratio 71.43 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 60.8 Deg.
Specific Gravity Separator Gas 0.8068 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX
Critical Pressure 662 P.S.I.A. ____ P.S.I.A.
Critical Temperature 404 R ____ R

P_f 2445.2 P_f^2 5979.0

NO	P_t^2	P_s	P_s^2	$P_f^2 - P_s^2$
1		2440.2	5954.6	24.4
2		2432.2	5915.6	63.4
3		2413.2	5823.5	155.5
4		2307.2	5323.2	655.8
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 9.117109$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3.666908$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 5094.802$

Absolute Open Flow 5094.802 Mcfd @ 15.025 — Angle of Slope θ 59.55° — Slope, n 0.5879

Remarks: BHP MEASURED WITH AMERADA RPG-3 GAUGE NO. 44534, 0-4000 RANGE

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Tefteller, Inc.	D. A. Warren, Jr.	

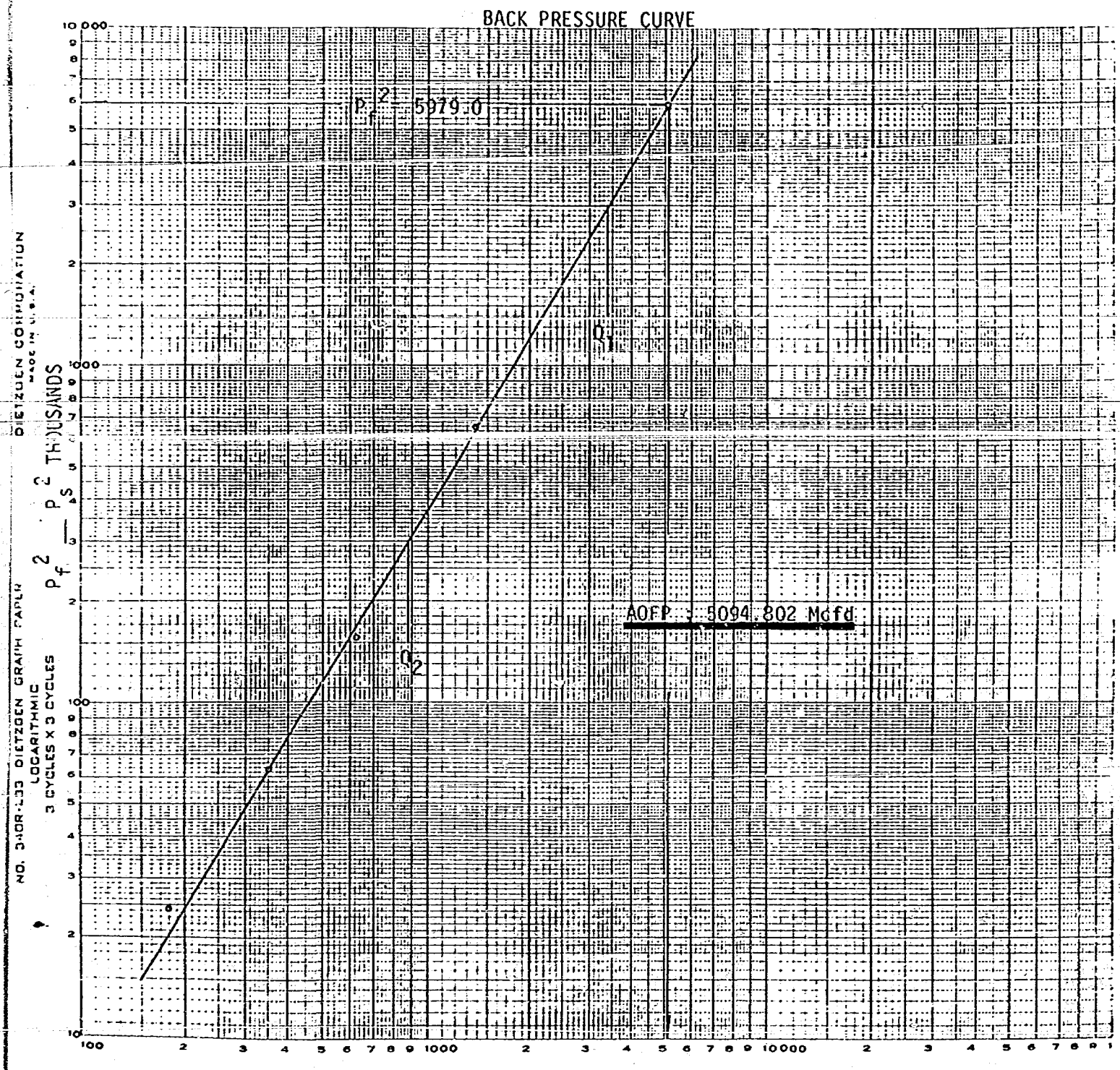
Company	:	Enserch Exploration, Inc.
Well	:	J. G. O'Brien No. 2
Field	:	South Elkins
County	:	Chaves
State	:	New Mexico
Date	:	August 20, 1981

ENSERCH EXPLORATION, INC.

Docket No. 7073 / 7074

Exhibit

Date 02/12/1982



Q_1 = 3396.620 ; LOG Q_1 = 3.531047

Q_2 = 877.298 ; LOG Q_2 = 2.943147

n = 0.587900

$\theta = 59.55^{o}$

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
3 March 1982

EXAMINER HEARING

IN THE MATTER OF:

Case 7074 being reopened pursuant to the provisions of Orders No. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County, New Mexico.

CASE 7074

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. NUTTER: Call next Case Number 7074.

MR. PEARCE: In the matter of Case 7074 being reopened pursuant to the provisions of Orders No. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County.

MR. NUTTER: Case Number 7074 has previously been heard but had to be readvertised and opened today due to an error in the Roswell newspaper.

Are there any appearances at this time in Case Number 7074?

We'll take the case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7074, heard by me on 3/3 1982.

, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
3 March 1982

EXAMINER HEARING

IN THE MATTER OF:

Case 7074 being reopened pursuant to the provisions of Orders No. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County, New Mexico.

CASE 7074

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. NUTTER: Call next Case Number 7074.

MR. PEARCE: In the matter of Case 7074 being reopened pursuant to the provisions of Orders No. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County.

MR. NUTTER: Case Number 7074 has previously been heard but had to be readvertised and opened today due to an error in the Roswell newspaper.

Are there any appearances at this time in Case Number 7074?

We'll take the case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7074, heard by me on 5/3 1982.

, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
17 February 1982

EXAMINER HEARING

IN THE MATTER OF:

Case 7074 being reopened pursuant to the provisions of Orders Nos. R-6565 and R-6565-B.

CASE 7074

and

Case 7075 being reopened pursuant to the provisions of Orders Nos. R-6566.

CASE 7075

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: William F. Carr, Esq.
CAMPBELL, BYRD, & BLACK P.A.
Jefferson Place
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

E X H I B I T S

MR. STAMETS: Call next Case 7073.

MR. PEARCE: In the matter of Case 7073 being reopened pursuant to the provisions of Order No. R-6558, which order promulgated special rules for the South Elkins-Fusselman Pool in Chaves County, including provisions for 80-acre spacing units and a limiting gas/oil ratio of 3000-to-1.

MR. CARR: May it please the Examiner, my name is William F. Carr, with the law firm Campbell, Byrd, and Black, P. A., of Santa Fe, appearing on behalf of Enserch Exploration, Inc.

We would request that this case be consolidated with the following case inasmuch as they involve adjoining acreage and the testimony will overlap.

MR. STAMETS: There being -- if there is no objection, we will call Case 7074 and consolidate these cases for purposes of testimony.

MR. PEARCE: Case 7074. In the matter of Case 7074 being reopened pursuant to provisions of Orders Nos. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County.

MR. CARR: I have two witnesses who need to be sworn.

(Witnesses sworn.)

THOMAS E. BROWN

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Will you state your name and place of residence?

A Thomas E. Brown, Midland, Texas.

Q Mr. Brown, by whom are you employed?

A Enserch Exploration, Incorporated.

Q In what capacity?

A As an Area Staff Geologist.

Q Have you previously testified before this Commission or one of its Examiners and had your credentials accepted and made a matter of record?

A Yes, I have.

Q Are you familiar with the acreage involved in each of these applications?

A Yes.

Q Are you familiar with the wells in each of the pools involved?

A Yes.

MR. CARR: Are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q Mr. Brown, will you briefly state what Enserch seeks in each of these cases?

A Enserch seeks to have the temporary field rules for South Elkins-Fusselman Pool in Chaves County be made final with 80-acre spacing for oil and 320-acre spacing for gas, and a GOR of 3000-to-1 instead of 2000-to-1, and Enserch No. 2 O'Brien Well [illegible]

Q All right, in the other case what is Enserch seeking?

Oh, that is --

A That is both.

Q All right. Now, the -- perhaps we should start by having you refer to Exhibit Number One, explain to the Examiner what this is and what it shows, and also note which of the pools is the oil pool and which is the gas pool.

A Exhibit Number One is a structure map contoured on top of the Fusselman. The scale is one inch equals 2000 feet. It's got a contour interval of 100 feet.

The wells in the oil pool are in Township 7 South, Range 29 East, in Section 31.

Enserch No. 1 O'Brien, which is 1980 from the north line, 660 from west, in Section 31, and Enserch No. 3 O'Brien, which is just to the east one standard location.

In Section 30, at 660 from the south and the west corner, is the Enserch No. 2 O'Brien, a gas well.

Q This plat also shows a fault, does it not?

A. Yes, there's a fault down to the north between Section 30 and 31. The Enserch No. 2 O'Brien is north of the fault and the Nos. 1 and 3 oil wells are south of the fault.

Q. And this also has a trace of a line of cross section for your Exhibit Number Two?

A. Yes, the structure map has line of the cross section, which will be Exhibit Two.

Q. Will you now refer to Exhibit Two and review that for Mr. Stamets?

A. Exhibit Two is a structural cross section. It's hung on a -2000 feet subsea. The vertical scale on this map is one inch equals 100 feet; the horizontal is approximately one inch equals 1000 feet.

From right to left across the section,

to the south the cross section goes from the Hamon No. 1 Salisbury Well in Section 6, through a proposed location, actually this well is drilling, the Enserch No. 4 O'Brien in Section 31, through the discovery well, the Enserch No. 1 O'Brien, in Section 31, to the No. 2 O'Brien in Section 30, to the C & K No. 1 O'Brien that's on the section line between 26 and 25 in 28 East, and to the Sinclair O'Brien, which is in Section 26.

The purpose of this cross section is to show where the perforations are in the No. 2 and No. 1 O'Brien Well, and the different section involved and the fault between them.

The No. 1 O'Brien, the discovery well, was perforated at 6741 to 45, and you can see it marked on here on the lefthand side of the center column of the log.

MR. STAMETS: Which log are we looking at here?

A. We're looking at a compensated neutron log. It was a cased hole log run, and it would be the second well in from the right side, and you can see the perforations to the left side of the borehole.

MR. STAMETS: Okay.

A. The No. 2 O'Brien, across the fault, has a -- has a different section. It includes some Missis-

sippian lime that wasn't present in the No. 1 O'Brien, and this well was perfed, as you can see, lower on the lefthand side at 6820 to 24. This well produced gas and it is lower than the oil well structurally. It produced on the upthrown side of the fault.

Q. Were Exhibits One and Two prepared by you?

A. Yes.

MR. CARR: At this time, Mr. Stamets, we would offer Gibson Exhibits One and Two into evidence.

MR. STAMETS: These exhibits will be admitted.

MR. CARR: I have nothing further of Mr. Brown on direct.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Brown, why have you drawn a fault between these two wells?

A. Well, for one thing, there's section missing upthrown on the fault and there's no Mississippian lime upthrown.

Also, there's bound to be a separation if we have gas lower than oil.

And we have some evidence through our seismic mapping that a fault exists.

Q. I notice as you move further to the left across the cross section, you have essentially the same situation to the C & K Well and no fault shown there.

A. It's a much higher well, it's probably an erosion feature over there, although there's -- there's perhaps a fault there. We're shooting new seismic in that area right now.

Q. In Section 36, 7 South, 28 East, I see a gas well identified as the General American GAO State, and it has a gas well symbol. Is that a Fusselman well, also?

A. We believe that well is completed in the Lower Pennsylvanian.

The well was quite low and really it was above the Mississippian lime pick we had in that well, so it's completed in that Lower Pennsylvanian section. The perforations on that well are roughly flat structurally with the oil well in the O'Brien No. 1.

MR. STAMETS: Any other questions of Mr. Brown? He may be excused.

MR. CARR: We call Daniel Renoult.

DANIEL C. RENOULT

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Now, Mr. Renoult, I'm going to ask you to speak slowly and clearly so Mr. Huber can clearly understand.

Will you state your name and place of residence?

A My name is Daniel C. Renoult, residing in Midland, Texas.

Q By whom are you employed and in what capacity?

A I'm employed by Enserch Exploration, Inc., as a District Petroleum Engineer.

Q Have you previously testified before this Commission or one of its Examiners and had your credentials accepted -- your credentials as a petroleum engineer accepted and made a matter of record?

A Yes, sir.

Q Are you familiar with the two pools involved in each of the cases before the Commission in this

hearing?

A. Yes, sir.

Q. And are you familiar with the wells drilled in each of these pools?

A. Yes, sir.

MR. CARR: Are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q. Will you please refer to what has been marked for identification as Enserch Exhibit Number Three, identify this, and explain what it shows?

A. Exhibit Number Three is a well completion data sheet of the Enserch Exploration, Inc., J. G. O'Brien Well No. 1. This is a discovery oil well for the South Elkins-Fusselman Oil Pool.

This well was completed through the Fusselman dolomite formation from 6741 feet to 6745 feet. The well was initially potentialed on June 11th of 1980, flowing at a rate of 266 barrels per day with a gas/oil ratio of 2256 standard cubic feet per barrels.

Fractional analysis for casing gas, casinghead gas indicated that the gas produced contains approximately 58.6 percent of methane and has a specific gravity of .9 gram per cc.

Comparison on the casinghead gas produced from the J. G. O'Brien Oil Well No. 1 differs drastically from the gas produced from the J. G. O'Brien Gas Well No. 2.

The reservoir study was conducted by CORE Laboratories, Inc., on separator gas and liquid samples collected from the subject well on June 21st of 1980.

Chromatography and fractional distillation tests were conducted at various separator conditions. This study indicated that we are dealing with a highly volatile oil having a bubble point pressure of 1892 psi and a viscosity of only .12 centipoise at bubble point pressure.

Page two and three of Exhibit Number Three give the production history of the subject well.

The subject J. G. O'Brien Well No. 1 remained shut-in for one year from July, 1980, until July, 1981, to comply with non-flare order. The well was eventually connected to Canadian Drilling Gas Line and oil and casing gas sales started July the 23rd of 1981.

The Commission ordered that a discovery allowable of 33,705 barrels of oil be assigned to the subject well to be produced by February 4th of 1983. Since effective production from the subject J. G. O'Brian Well No. 1 didn't start until July 23rd of 1981, Enserch Exproration, Inc., requests that a discovery allowable of

33,705 barrels be extended and be produced by July, of 1983.

As of December the 31st of 1981 the total cumulative production from the subject well amounts to 39,961 barrels of oil, and 87,068 Mcf of casinghead gas, yielding an average GOR of 2179-to-1.

Page number four and five of Exhibit Number Three are composed of a suite of logs run in the subject J. G. O'Brien Well No. 1.

Log evaluation indicated 53 feet of pay with an average porosity of 11.6 percent.

Q Will you now review Exhibit Number Four for Mr. Stamets?

A Exhibit Number Four pertains to the Enserch Exploration, Inc., J. G. O'Brien Gas Well No. 2.

This well is a discovery well for South Elkins-Fusselman Gas Pool. The well was completed through the Fusselman dolomite formation from 6824 feet to 6807 feet. There is 82-foot structural difference between the uppermost perforation in the J. G. O'Brien Gas Well No. 2 and the lowermost perforation in the J. G. O'Brien Oil Well No. 1, the perforations of the oil well being located higher than the perforations of the gas well.

This data and additional evidence shows reservoir separation between the South Elkins-Fusselman Oil

and Gas Pool.

The J. G. O'Brien Gas Well No. 2 was initially potentialed October the 4th of 1980, flowing at a rate of 1.5-million cubic feet of gas per day with a condensate yield of 21.4 barrels of condensate per million cubic feet of gas.

Fractional analysis for produced gas indicated 73.5 percent of methane and a specific gravity of .761 per cc.

Gas produced from the South Elkins-Fusselman Gas Pool is much lighter from the casinghead gas produced from the J. G. O'Brien Oil Well No. 1 and No. 3. This again indicates a separation between the South Elkins-Fusselman Oil and Gas Pool.

Page number two and three of Exhibit Number Four give a production history of the J. G. O'Brien Gas Well No. 2. As of December 31st of 1981 its cumulative production amounted to 212,540 Mcf of gas and only 1917 stock tank barrels of condensate.

The condensate content has decreased from 12 to approximately one barrel of condensate per million cubic feet of gas. This indicates that we are dealing with a retrograde gas condensate reservoir separated from the offset South Elkins-Fusselman Oil Pool.

The average gas/oil ratio for the J. G. O'Brien Gas Well No. 2 is above 100,000 standard cubic feet per barrels, indicating that the O'Brien Well No. 2 is indeed a gas well.

Logs run in the J. G. O'Brien Well No. 2 are attached to Exhibit Number Four.

Q Will you now review Exhibit Number Five?

A. Exhibit Number Five pertains to the Enserch Exploration, Inc., J. G. O'Brien Well No. 3, which was drilled in the South Elkins-Fusselman Oil Pool approximately 1320 feet east from the J. G. O'Brien Well No. 1.

The well is currently completed through the Fusselman dolomite formation from 6762 feet to 6770 feet. Lower perforations were cement bask squeezed because of excessive water production.

There is a 46-foot structural difference between the uppermost perforation in the J. G. O'Brien Gas Well No. 2 and the lowermost perforation in the J. G. O'Brien Oil Well No. 3, the perforations in the oil well being located higher than the perforations in the gas well.

The J. G. O'brien Well No. 3 was potentialed July the 23rd of 1981, flowing at a rate of 153 barrels oil per day.

Fractional analysis of the casinghead

gas indicated a methane concentration of 58.5 percent and a specific gravity of .91 per cubic centimeter.

This analysis shows that the casinghead gas produced from the J. G. O'Brien Oil Well No. 1 and 3 has an indentical composition and a high specific gravity.

In comparison, the gas produced from the South Elkins-Fusselman Gas Pool has a very different composition and much lower specific gravity.

Gas composition and molecular weight indicate reservoir separation.

As of December 31st of 1981 the J. G. O'Brien Well No. 3 produced 19,660 stock tank barrels of oil with an average gas/oil ratio of 1233 standard cubic feet per stock tank barrel.

Log evaluation of the attached logs indicated 90 feet of pay with an average porosity of 14.6 percent.

Q. Will you now refer to Enserch Exhibit Number Six and review this for Mr. Stamets?

A. Exhibit Number Six is a table and a graph giving a total oil and casinghead gas production since discovery of the South Elkins-Fusselan Oil Pool.

As of December 31st of 1981, 59,621 barrels of oil have been produced with an average casinghead

gas/oil ratio of 1880-to-1.

Planimeter analysis and evaluation of engineering data indicated the South Elkins is a volatile oil reservoir with a bubble point pressure of 1892 psi at reservoir conditions. Oil viscosity at reservoir conditions is very small and equal to .12 centipoise bubble point pressure.

Pressure data indicated that we are dealing with an active water drive with an initial reservoir pressure of approximately 2550 psi. Since we have an undersaturated oil system with pressures maintained by water influx, only a single liquid oil phase is present with absolutely no gas being raised and trapped in the reservoir.

Q Now, Mr. Renoult, in determining what the bubble point was, did you do that in-house or did you have someone else prepare that for you?

A The CORE Laboratories, Inc., got a fluid sample from the J. G. O'Brien Well No. 1 and conducted the PVT analysis in June, 1981.

Q And it was their report to you that established the bubble point?

A Yes, sir.

Q Will you now refer to Exhibit Number Seven?

A. Exhibit Number Seven presents a drill stem test data conducted on the J. G. O'Brien Gas Well No. 2. During this test 9.7 cubic feet of dry gas were recovered in the sample chamber.

Evaluation of the DST data indicated an initial reservoir pressure of 2592 psi for the subject well and an approximate formation permeability of 50 millidarcy.

Dry gas production during this DST confirms that the J. G. O'Brien Well No. 2 is indeed a gas well and not an oil well.

Q. Will you now review Exhibit Number Eight for Mr. Stamets?

A. Exhibit Number Eight is a 4-point back pressure test conducted on the J. G. O'Brien Gas Well No. 2. An absolute open flow potential equal to 5.1-million cubic feet of gas per day was completed, indicating that the subject J. G. O'Brien Well No. 2 is a gas well.

Q. And now will you refer to Enserch Exhibit Number Nine, identify this, and review the data contained thereon?

A. Exhibit Number Nine gives the fractional analysis of the casinghead gas produced from the J. G. O'Brien Well No. 1 and Well No. 3, and gas produced from the

J. G. O'Brien Gas Well No. 2.

Exhibit Number Nine shows the great similarity between casinghead gas produced from the J. G. O'Brien Well No. 1 and Well No. 3. The casinghead gas contains approximately 9 percent methane and has a specific gravity of .91 per cc.

In comparison, the gas produced from the J. G. O'Brien Well No. 2 contains approximately 73.5 percent of methane and has a specific gravity of .761 per cc.

This data, combined with previously submitted engineering evidence, indicates that both Fusselman pools are separated and that the South Elkins-Fusselman Gas Pool is indeed a retrograde gas condensate horizon and high gas/oil ratio oil reservoir.

Q. Mr. Renoult what acreage has been dedicated to the J. G. O'Brien No. 2 Well?

A. 308.96 acres were dedicated to the J. G. O'Brien Gas Well No. 2 as a result of variation in the USGS survey.

Q. And this is basically the west half of Section 30, is that correct?

A. It's the west half of Section 30, Township 7 South, Range 29 East.

Q. And this spacing unit has previously

been approved?

A. Yes, sir.

Q. Now would you state again what conclusions you can reach from the data you've presented concerning the general nature of the gas reservoir in the South Elkins-Fusselman Gas Pool?

A. Based on the engineering evidence submitted, the J. G. O'Brien Well No. 2 is a gas well and Enserch is requesting develop the South Elkins-Fusselman Gas Pool on 320 acre spacing.

Q. And is it your opinion that you have a retrograde condensate reservoir?

A. Yes, sir.

Q. Now, Mr. Renoult, will the remainder of your testimony relate to the oil pool?

A. Yes, sir.

Q. Will you refer to Enserch Exhibit Number Ten and review this for Mr. Stamets?

A. Exhibit Number Ten is a full diameter core analysis of the J. G. O'Brien Oil Well No. 3.

This well is the only well which was cored in the South Elkins-Fusselman Pool in Chaves County. .81 feet were recovered from 6765 feet to 6795 feet with an average porosity of 8.2 percent.

The core is described as a vertically fractured, cherty dolomite.

Using the correlation chart between porosity and permeability, presented on page two of Exhibit Number 10, it was estimated the subject pay in the subject J. G. O'Brien Well No. 3 has an average formation permeability of 13 millidarcy.

Q Will you now review Exhibit Number Eleven?

A Exhibit Number Eleven provides the pressure build-up data in the duration of the 98 hours 45 minutes test recently conducted on the J. G. O'Brien Oil Well No. 1 in February, 1982.

This test indicated the current reservoir pressure of 2504 psi at a depth of 6743 feet. This compares with an initial reservoir pressure of 2551 psi measured September 19 of 1980 after the subject well had been shut-in for approximately 90 days while awaiting a pipeline connection.

This pressure drop of 47 psi from 2551 psi to 2504 while the well produced only 35,000 barrels of oil is fairly small. It does indicate that the South Elkins-Fusselman Oil Pool is an undersaturated oil pool activated by a strong water drive.

Pressure build-up analysis indicated an average formation permeability of 4.5 millidarcy.

During the 98 hours pressure build-up test the radius of investigation was equal to 1190 feet, which corresponds to 102 acres.

The good fracture porosity and permeability combined with a strong water drive indicate the South Elkins-Fusselman Oil Pool should be developed on 80-acre spacing.

Also, as evidenced on page three of Exhibit Number Eleven, is given the flowing bottom hole pressure of the J. G. O'Brien Well No. 1. At mid-perforations the flowing bottom hole pressure was 2345 psi. This pressure is 453 psi above the bubble point pressure of 1892 psi. This indicates that absolutely no gas is liberated and trapped in the formation.

The first gas is liberated in the tubing at a depth of approximately 4098 feet.

Q Based on these calculations, one, the J. G. O'Brien No. 1 Well could drain up to 102 acres, is that correct?

A Yes, sir.

Q Now will you refer to Exhibit Number Twelve and review that?

A. Exhibit Number Twelve provides the pressure history of the South Elkins-Fusselman Oil and Gas Pool.

Pressure history of the J. G. O'Brien Well No. 1 is evidenced by the series of circles.

Pressure history of the J. G. O'Brien Well No. 2 is evidenced by the series of squares.

This exhibit shows a pressure difference of 823 psi between the J. G. O'Brien Oil Well No. 1 and the O'Brien Gas Well No. 2 as of February, 1982.

This pressure difference confirms the reservoir separation between the South Elkins-Fusselman Oil and Gas Pool.

As of February, 1982, the J. G. O'Brien Oil Well No. 1 produced approximately 35,000 barrels of oil. Reservoir pressure in the J. G. O'Brien Well No. 1 dropped by only 47 psi. This small pressure drop indicates the South Elkins-Fusselman Oil Pool is an under saturated oil reservoir. Since the reservoir pressure is above the bubble point pressure and is maintained by an active water drive, no gas is liberated and trapped in the formation.

Q. And will now you review Exhibit Number Thirteen?

A. Exhibit Number Thirteen is computed

a gain in casinghead gas production anticipated by allocating a maximum gas/oil ratio of 3000-to-1 instead of 2000-to-1 for the subject oil pool.

At this time under current operations oil is produced through a low pressure separator, with an operating pressure of 200 psi. Under these conditions the average gas/oil ratio for South Elkins Oil Pool is approximately 1808-to-1. Only 48 percent of the gas in solution is recovered at the operating pressure of 200 psi.

In the next few weeks the J. G. O'Brien oil lease will be equipped with a vapor recovery unit, operating under pressure of 10 psi. By reducing the operating pressure from 200 psi to 10 psi we are going to increase the recovery of casinghead gas from 48 percent to 63 percent of the total gas in solution.

The gas/oil ratio for the J. G. O'Brien oil lease will increase from a current value of 1880 to approximately 2160 standard cubic feet per barrel.

The forthcoming installation of a vapor recovery unit will result in a net gain of 3.1 million cubic feet of casinghead gas per month with a heating value of 7.6 million BTU.

Q So not only will you be recovering more gas but it will be a higher quality gas?

A. Yes, sir.

Q. What conclusions from the data you've presented can you draw about the South Elkins-Fusselman Pool?

A. In order to prevent the economic loss caused by the drilling of unnecessary wells, and to prevent waste and protect correlative rights, Enserch Exploration, Inc., requests permanent special rules and regulations providing for 80-acre spacing and a gas/oil ratio of 3000-to-1 be promulgated for South Elkins-Fusselman Oil Pool.

MR. STAMETS: I'm sorry, I missed the gas/oil ratio limitation.

A. Of 3000-to-1.

MR. STAMETS: Thank you.

Q. And isn't that the figure that's in the temporary rules?

A. Yes, sir.

Q. Are you also requesting that the time frame for producing this discovery allowable be extended an additional year?

A. Yes, sir.

Q. And that is just the result of the fact that you were unable to produce for a year after you received initial approval?

A. Yes, sir. The J. G. O'Brien Well No. 1

started to produce only in July, 1981.

Q. In your opinion will granting the application be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

Q. Were Exhibits Three through Thirteen prepared by you or have you reviewed them and can you testify as to their accuracy?

A. Yes, sir, I can.

MR. CARR: At this time, Mr. Stamets, we would offer into evidence Enserch Exploration, Inc., Exhibits One -- Three through Thirteen.

MR. STAMETS: These exhibits will be admitted.

MR. CARR: And that concludes our direct testimony.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Renoult, going back to the last page of the Exhibit Twelve, I see where the reservoir pressure for the gas well is shown as an estimated pressure. How -- what did you use to estimate the pressure?

A. I used a maximum recovered pressure

during the test and extended the pressure to a T + delta T over delta T recorded on the Horner Plot, in order to get an infinite pressure build-up time.

Q. Okay, so that is -- is a legitimate engineering explanation.

A. Yes, sir.

Q. So we are being asked here, in essence, to continue the special rules for the South Elkins-Fusselman Oil Pool.

Now, you are asking that in whatever way we can, that the west half of Section 30, 7 South, 29 East, be classified as a gas reservoir?

A. Yes, sir.

Q. Based on your review of this situation, is there any need to place any restriction on the production from that well?

A. No, sir.

Q. Are any wells proposed for the gas reservoir?

A. I don't believe they are. I don't believe a well is proposed at this time.

Q. As to the extension of the discovery allowable, is what you're asking for, in essence, two years from the date that the well initially went on sustained pro-

duction --

A. Yes, sir.

Q. -- to produce the discovery allowable?

A. And this was July the 27th, 1981.

Q. Was that advertised?

MR. CARR: We had some question about that yesterday. We didn't know if it would require readvertising but decided there was no harm in asking for it.

MR. STAMETS: I don't know the answer to that.

Are there any other questions of this witness? He may be excused.

Anything further in this case?

MR. CARR: Nothing further, Mr. Stamets.

MR. STAMETS: The case will be taken under advisement; cases will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193B
Santa Fe, New Mexico 87501
Phone (505) 455 7409

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7073, 7074 heard by me on 2-17 19 82

Richard L. Stamets, Examiner
Oil Conservation Division

CASE 7488: Application of Burkhart Petroleum Company for compulsory pooling, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the SW/4 NW/4 of Section 13, Township 8 South, Range 37 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 7073: (Reopened and Readvertised)

In the matter of Case 7073 being reopened pursuant to the provisions of Order No. R-6558, which order promulgated special rules for the South Elkins-Fusselman Pool in Chaves County including provisions for 80-acre spacing units and a limiting gas-oil ratio of 3000 to one. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units with a limiting gas-oil ratio of 2000 to one.

CASE 7074: (Reopened and Readvertised)

In the matter of Case 7074 being reopened pursuant to the provisions of Orders Nos. R-6565 and R-6565-B, which created the South Elkins-Fusselman Gas Pool in Chaves County. All interested parties may appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir.

CASE 6373: (Reopened and Readvertised)

In the matter of Case 6373 being reopened pursuant to the provisions of Orders Nos. R-5875 and R-5875-A, which created the East High Hope - Abo Gas pool in Eddy County, and promulgated special rules therefor, including a provision for 320-acre spacing units. All interested parties may appear and show cause why said pool should not be developed on 160-acre spacing units.

CASE 7489: Application of Curtis J. Little for designation of a tight formation, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Chacra formation underlying portions of Township 25 North, Range 6 West, containing 6,720 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.

CASE 7490: Application of Harvey E. Yates Company for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests down through and including the Atoka-Morrow formation, underlying the N/2 of Section 19, Township 8 South, Range 30 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 7491: Application of Harvey E. Yates Company for designation of a tight formation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Atoka formation underlying portions of Townships 12, 13, and 14 South, Ranges 35 and 36 East, containing 46,720 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705, said area being an eastward and westward extension of previously approved tight formation area.

CASE 7492: Application of Harvey E. Yates Company for designation of a tight formation, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Atoka-Morrow formation underlying all or portions of Townships 7, 8, and 9 South, Ranges 29,30, and 31 East, containing 115,200 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271.701-705.

CASE 7493: In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating and extending certain pools in Chaves, Eddy, Lea, and Roosevelt Counties, New Mexico.

(a) CREATE a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the East Bootleg Ridge-Morrow Gas Pool. The discovery well is Getty Oil Company Getty 15 Federal Well No. 1 located in Unit J of Section 15, Township 22 South, Range 33 East, NMPM. Said Pool would comprise:

TOWNSHIP 22 SOUTH, RANGE 33 EAST, NMPM
Section 15: S/2

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7074 (Reopened)
Order No. R-6565-B

IN THE MATTER OF CASE 7074 BEING
REOPENED PURSUANT TO THE PROVISIONS
OF ORDER NO. R-6565, CHAVES COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on July 15, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 28th day of July, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That Order No. R-6565, dated January 22, 1981, created the South Elkins-Fusselman Gas Pool comprising the W/2 of Section 30, Township 7 South, Range 29 East, NMPM, Chaves County, New Mexico, and ordered that said case be reopened in July, 1981, at which time the applicant, Enserch Exploration, Inc., should be prepared to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir.

(3) That the only well completed in the pool to date has not been connected to a pipeline and no reservoir production data is yet available.

(4) That the applicant, Enserch Exploration, Inc., should notify the Division of the date of connection of said well and a hearing should be scheduled approximately six months later to review the reservoir.

IT IS THEREFORE ORDERED:

(1) That the applicant, Enserch Exploration, Inc., shall notify the Division Director of the date of first connection to a gas pipeline of a well in the South Elkins-Fusselman Gas Pool, and a hearing shall be scheduled approximately six months later, at which time all interested parties may appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

SEAL

fd/

ENSERCH EXPLORATION INC.

P. O. Box 4815
Midland, Texas 79704
915-682-9756

Leonard Kersh
District Production Manager
West Texas District
Production Division

August 3, 1981

File Case 7074

State of New Mexico
Energy & Minerals Department
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Attn: Mr. Joe D. Ramey

Re: Case No. 7074 (Re-opened)
Order No. R-6565-B

Gentlemen:

As per Order No. R-6565-B which was entered July 28, 1981, in the above referenced case, notice is hereby given that the Enserch Exploration Inc. J.G. O'Brien No. 2 well was connected to a pipeline July 23, 1981.

Yours truly,

Leonard Kersh
District Production Manager

LK/mh

Set hearing for Feb, 1982

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

July 29, 1981

Mr. William F. Carr
Campbell, Byrd & Black
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico

Re: CASE NO. 7074 (Reopened)
ORDER NO. R-6565-B

Applicant:

(OCD) Enserch Exploration Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other Thomas Kellahin

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
15 July 1981

EXAMINER HEARING

IN THE MATTER OF:

Case 7074 being reopened pursuant to the provisions of Order No. R-6565.

CASE 7074

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. NUTTER: Call next Case 7074.

MR. PEARCE: In the matter of Case 7074 being reopened pursuant to the provisions of Order No. R-6565 which order created the South Elkins Fusselman Gas Pool in Chaves County, New Mexico.

MR. CARR: May it please the Commission, or the Examiner, Order 6565 created the South Elkins Fusselman Gas Pool in January and the order provided that six months later the case would be reopened to enable Enserch Exploration to come in and present data obtained from its J. G. O'Brien Well No. 1, particularly data showing whether or not this was a retrograde condensate reservoir.

To date the well has not been connected, and has not produced, and Enserch therefor requests that the case be continued indefinitely until six months after the J. G. O'Brien Well No. 1 first produces into a pipeline.

MR. NUTTER: Do you have any idea when it will be connected?

MR. CARR: No, sir, but we'd be -- we will notify you as soon as first sales commence, or first production commences.

MR. NUTTER: And then reopen the case six months subsequent to the first connection, then?

MR. CARR: Yes, sir.

MR. NUTTER: All right. Case Number 7074 will be continued to a date six months after date of connection of the O'Brien Well.

MR. CARR: And Enserch will notify you when they connect the well.

MR. NUTTER: All right, we'll put an order out to this effect.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7074, heard by me on 7/15 1981.

Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
15 July 1981

EXAMINER HEARING

IN THE MATTER OF:

Case 7074 being reopened pursuant to the provisions of Order No. R-6565. CASE 7074

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. NUTTER: Call next Case 7074.

MR. PEARCE: In the matter of Case 7074 being reopened pursuant to the provisions of Order No. R-6565, which order created the South Elkins Fusselman Gas Pool in Chaves County, New Mexico.

MR. CARR: May it please the Commission, or the Examiner, Order 6565 created the South Elkins Fusselman Gas Pool in January and the order provided that six months later the case would be reopened to enable Enserch Exploration to come in and present data obtained from its J. G. O'Brien Well No. 1, particularly data showing whether or not this was a retrograde condensate reservoir.

To date the well has not been connected, and has not produced, and Enserch therefor requests that the case be continued indefinitely until six months after the J. G. O'Brien Well No. 1 first produces into a pipeline.

MR. NUTTER: Do you have any idea when it will be connected?

MR. CARR: No, sir, but we'd be -- we will notify you as soon as first sales commence, or first production commences.

MR. NUTTER: And then reopen the case six months subsequent to the first connection, then?

MR. CARR: Yes, sir.

MR. NUTTER: All right. Case Number 7074 will be continued to a date six months after date of connection of the O'Brien Well.

MR. CARR: And Enserch will notify you when they connect the well.

MR. NUTTER: All right, we'll put an order out to this effect.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7074 heard by me on 7/15 1981.

Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7074
Order No. R-6565
NOMENCLATURE

APPLICATION OF ENSERCH EXPLORATION, INC., FOR POOL CREATION, AN UNORTHODOX GAS WELL LOCATION, AND NON-STANDARD PRORATION UNIT, CHAVES COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 29, 1980, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 22nd day of January, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Enserch Exploration, Inc., is the owner and operator of its J. G. O'Brien Well No. 2, located 660 feet from the South line and 660 feet from the West line of Section 30, Township 7 South, Range 29 East, NMPM, Chaves County, New Mexico.

(3) That said well was drilled as a step-out to applicant's J. G. O'Brien Well No. 1, located in the SW/4 NW/4 of Section 31 immediately to the South, which well had discovered a new Fusselman oil pool.

(4) That there is an apparent East/West trending fault separating the subject well from the aforesaid J. G. O'Brien Well No. 1, and the subject well, although structurally lower

than said No. 1 well, encountered what appears to be a gas pool in the Fusselman formation.

(5) That the best evidence available to date indicates that said Fusselman gas pool may in fact be a retrograde gas condensate reservoir, and that it is separate and distinct from the South Elkins-Fusselman Oil Pool which the Division has created and defined for the J. G. O'Brien Well No. 1.

(6) That a new Fusselman gas pool should be created and defined comprising the W/2 of Section 30, Township 7 South, Range 29 East, NMPM, for the subject well, the J. G. O'Brien Well No. 2, located in Unit M of said Section 30.

(7) That the unorthodox gas well location of said well, being 660 feet from the South line and 660 feet from the West line of said Section330, should be approved.

(8) That a 308.96-acre non-standard gas spacing and proration unit, being the W/2 of said Section 30, should be approved.

(9) That this case should be reopened in approximately six months, at which time the applicant should be prepared to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is indeed determined to be a retrograde gas condensate reservoir.

(10) That an order embodying the above findings will not cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That a new pool in Chaves County, New Mexico, classified as a gas pool for Fusselman production, is hereby created and defined with vertical limits comprising the Fusselman formation and horizontal limits as follows:

TOWNSHIP 7 SOUTH, RANGE 29 EAST, NMPM
Section 30: W/2

(2) That the unorthodox gas well location of the Enserch Exploration, Inc. J. G. O'Brien Well No. 2 at a point 660 feet from the South line and 660 feet from the West line of Section 30, Township 7 South, Range 29 East, NMPM, is hereby approved.

(3) That a 308.96-acre non-standard gas proration unit comprising the W/2 of the aforesaid Section 30 is hereby approved.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the South Elkins-Fusselman Gas Pool or in the Fusselman formation within one mile thereof and not within another Fusselman pool are hereby approved; that the operator of any well having an unorthodox location shall notify the Artesia District Office of the Division in writing of the name and location of the well on or before February 15, 1981.

(2) That, pursuant to Paragraph A. of Section 70-2-18, NMSA 1978, existing wells in the South Elkins-Fusselman Gas Pool shall have dedicated thereto 320 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 70-2-18, existing well may have non-standard spacing or proration units established by the Division and dedicated thereto.

Failure to file new Forms C-102 with the Division dedicating 320 acres to a well or to obtain a non-standard unit approved by the Division within 60 days from the date of this order shall subject the well to cancellation of allowable. Until said Form C-102 has been filed or until a non-standard unit has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the South Elkins-Fusselman Pool or in the Fusselman formation within one mile thereof shall receive no more than one-half of a standard allowable for the pool.

(3) That this case shall be reopened in July, 1980, at which time the applicant should be prepared to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is indeed determined to be a retrograde gas condensate reservoir.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E A L
fd/

CAMPBELL, BYRD & BLACK, P.A.
LAWYERS

JACK M. CAMPBELL
HARL D. BYRD
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
WILLIAM G. WARDLE

JEFFERSON PLACE
SUITE I - 110 NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87501
TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043

July 10, 1981

Mr. Joe D. Ramey
Director
Oil Conservation Division
New Mexico Department of
Energy and Minerals
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Case No. 7074: In the Matter of Case 7074 being Reopened Pursuant to the Provisions of Order No. R-6565, Which Order Created the South Elkins-Fusselman Gas Pool in Chaves County, New Mexico

Dear Mr. Ramey:

The above-referenced case is scheduled to be reopened on July 15, 1981. Order No. R-6565 was entered on January 22, 1981, and provided that this case be reopened in six months to allow the applicant, Enserch Exploration, Inc., to appear and present evidence as to the exact nature of the reservoir and, in particular, the proper rates of withdrawal therefrom if this reservoir could be shown to be a retrograde gas condensate reservoir. Enserch brought the original application in this case as a result of encountering what appears to be a Fusselman Gas Pool in its JC O'Brien Well No. 1. To date this well has not produced. Enserch, therefore, requests that this case be continued and reopened six months after first production from the JG O'Brien Well No. 1.

Your attention to this request is appreciated.

Very truly yours,

William F. Carr

WFC:lr

cc: Mr. Leonard Kersh

Dockets Nos. 23-81 and 24-81 are tentatively set for July 29 and August 12, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 15, 1981

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

ALLOWABLE: (1) Consideration of the allowable production of gas for August, 1981, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.

(2) Consideration of the allowable production of gas for August, 1981, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 7302: Application of El Paso Natural Gas Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Cheere and Mesaverde production in the wellbores of four wells to be drilled in the SE/4 and SW/4 of Section 34, Township 27 North, Range 7 West, and the SW/4 and NW/4 of Section 2, Township 26 North, Range 7 West, respectively.

CASE 7303: Application of Florida Hydrocarbons Company for surface commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the surface commingling of Morrow, Strawn, Atoka, and Wolfcamp gas produced from five wells located in Unit F of Section 10, Units G and O of Section 15, and Units A and I of Section 22, all in Township 23 South, Range 34 East, Antelope Ridge Field, after separately metering the gas produced from each well and each zone. Lease liquids would be separated out at the wellhead and the gas processed in a plant, allocating plant production back to each well on the basis of meter readings. Applicant further seeks a procedure whereby additional wells could be similarly commingled in said system.

CASE 7304: Application of Amoco Oil and Gas Company for directional drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill its Custer Well No. 1, the surface location of which is 810 feet from the North line and 2164 feet from the West line of Section 6, Township 25 South, Range 37 East, Custer Field, to a bottom hole location within 100 feet of a point 1650 feet from the North line and 660 feet from the West line of said Section 6, at a true vertical depth of approximately 12,800 feet.

CASE 7305: Application of Amoco Production Company for compulsory pooling and an unorthodox well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the W/2 of Section 34, Township 23 South, Range 28 East, to be dedicated to a well to be drilled at an unorthodox location 660 feet from the South line and 1980 feet from the West line of said Section 34. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7306: Application of Getty Oil Company for pool creation, special pool rules, and a non-standard proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Lower Pennsylvanian gas pool for its Federal 33 Well No. 1 located in Unit G of Section 33, Township 26 South, Range 33 East, and the promulgation of special rules therefor, including provisions for 640-acre spacing. Applicant also seeks approval of a 616.24-acre non-standard gas proration unit comprising Sections 33 and 34, Township 26 South, Range 33 East.

CASE 7307: Application of Mesa Petroleum Company for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all royalty interests in the Mesaverde formation underlying the W/2 of Section 23, Township 26 North, Range 6 West, to be dedicated to its Federal Well No. 12E drilled at a standard location thereon.

CASE 7308: Application of Mesa Petroleum Company for compulsory pooling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all royalty interests in the Mesaverde formation underlying the E/2 of Section 23, Township 26 North, Range 6 West, to be dedicated to its Federal Well No. 11E drilled at a standard location thereon.

CASE 7074: (Reopened and Readvertised)

In the matter of Case 7074 being reopened pursuant to the provisions of Order No. R-6565, which order created the South Elkins-Fusselman Gas Pool in Chaves County, New Mexico, to permit all interested parties to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined to be a retrograde gas condensate reservoir.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

February 13, 1981

Mr. William F. Carr
Campbell and Black
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico

Re: CASE NO. 7074
ORDER NO. R-6565-A

Applicant:

Enserch Exploration, Inc.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other Thomas Kellahin

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

CASE NO. 7074
Order No. R-6565-A

APPLICATION OF ENSERCH EXPLORATION, INC. FOR POOL CREATION, AN UNORTHODOX GAS WELL LOCATION AND NON-STANDARD PRORATION UNIT, CHAVES COUNTY, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE DIVISION:

It appearing to the Division that Order No. R-6565, dated January 22, 1981, does not correctly state the intended order of the Division.

IT IS THEREFORE ORDERED:

(1) That Order No. (3) on Page 3 of Order No. R-6565 dated January 22, 1981, is hereby corrected to read in its entirety as follows:

> "(3) That this case shall be reopened in July, 1981, at which time the applicant should be prepared to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is indeed determined to be a retrograde gas condensate reservoir."

(2) That the correction set forth in this order be effective nunc pro tunc as of January 22, 1981.

DONE at Santa Fe, New Mexico, on this 12th day of February, 1981.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY,
Director

S E A L

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

January 23, 1981

Re: CASE NO. 7074
ORDER NO. R-6565

Applicant:

Enserch Exploration, Inc.

Mr. William F. Carr
Campbell and Black
Attorneys at Law
Post Office Box 2208
Santa Fe, New Mexico

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD x
Artesia OCD x
Aztec OCD

Other Tom Kellahin

Memo

From

W. A. GRESSETT
Supervisor

To Dan Nutter

Case 7074
Attached is a copy of Form C-105
on the well.

Bill

NEW MEXICO OIL CONSERVATION COMMISSION – ARTESIA, NEW MEXICO

OCT 21 1980

O. C. D.

Docket No. 34-80

CASE 7074: Application of Enserch Exploration, Inc. for pool creation, an unorthodox gas well location, and non-standard proration unit, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Fusselman gas pool for its J. G. O'Brien Well No. 2 located at an unorthodox location 660 feet from the South and West lines of Section 30, Township 7 South, Range 29 East, to be dedicated to a 308.96-acre non-standard unit comprising the W/2 of said Section 30.

CASE 6822: (Continued from October 1, 1980, Examiner Hearing)

In the matter of Case 6822 being reopened pursuant to the provisons of Order No. R-6293 which order created the West Double X-Wolfcamp Gas Pool as a retrograde gas condensate pool and set special production limitations therein. Operator(s) may appear and present evidence to establish the true nature of the reservoir and proper rates of withdrawal therefrom.

CASE 6648: (Continued from October 1, 1980, Examiner Hearing)

In the matter of Case 6648 being reopened pursuant to the provisions of Order No. R-6124 which order promulgated temporary special rules and regulations for the North Caprock-Mississippian Pool in Lea County, New Mexico, including a provision for 160-acre spacing and a 4000 to one gas-oil ratio limitation. Operators in said pool may appear and show cause why the pool should not be developed on 40-acre spacing with a 2000 to one GOR.

CASE 7045: (Continued from October 15, 1980, Examiner Hearing)

Application of Texas Oil & Gas Corp. for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Upper Morrow production in the wellbore of its Superior Federal Com. Well No. 1 located in Unit G of Section 8, Township 20 South, Range 29 East.

CASE 7024: (Continued from October 15, 1980, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 35, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7038: (Continued from October 15, 1980, Examiner Hearing)

Application of Natura Energy Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the NE/4 NE/4 of Section 6, Township 19 South, Range 39 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

****

Docket No. 35-80

DOCKET: COMMISSION HEARING - FRIDAY - OCTOBER 31, 1980

OIL CONSERVATION COMMISSION - 9 A.M. - ROOM 205
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

CASE 7075: Application of Benson-Montin-Greer Drilling Corporation for the amendment of pool rules, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the Special Rules and Regulations for the West Puerto Chiquito-Mancos Oil Pool as promulgated by Order No. R-2565-B and amended by Order No. R-6469, to require that the locations of wells in said pool be at least 1650 feet from the outer boundary of the spacing and proration unit, and that the drilling of wells be controlled so as to allow no more than a 330-foot horizontal deviation from the surface location. Further, that the location of wells on certain specified non-standard proration units approved by Order No. R-6469 should be no closer than 660 feet to the outer boundary of the non-standard unit nor closer than 330 feet to a quarter section line or 10 feet to a quarter-quarter section line. Said specified non-standard units are the two 640-acre units in Township 24 North, Range 1 West; the two 480-acre units in Township 24 North, Range 1 East; the four 640-acre units in Township 26 North, Range 1 West; the 640-acre unit in Township 26 North, Range 1 East; and the two 640-acre units, the three 600-acre units, and the 400-acre unit, all in Township 27 North, Range 1 West. Applicant further seeks an administrative procedure whereby unorthodox locations could be approved upon receipt of written waivers from all offsetting operators being "crowded" by the unorthodox location.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Form C-105
Revised 10-1-78

RECEIVED
OCT 27 1980
OIL CONSERVATION DIVISION
SANTA FE

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [ ] Fee [X]
5b. State Oil & Gas Lease No.

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] OTHER

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

RECEIVED
OCT 8 1980
O. C. D.
ARTESIA, OFFICE

7. Unit Agreement Name:
8. Farm or Lease Name: J. G. O'Brien
9. Well No.: 2
10. Field and Pool, or Wildcat: Undesignated Fusselman

2. Name of Operator: Enserch Exploration, Inc. ✓
3. Address of Operator: P. O. Box 4815, Midland, Texas 79704
4. Location of Well: UNIT LETTER M LOCATED 660 FEET FROM THE South LINE AND 660 FEET FROM THE West LINE OF SEC. 30 TWP. 7S RGE. 29E NMPM
12. County: Chaves

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
7/24/80	8/22/80	10/3/80	3998.1' GR	3999.1'

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
7175'	7000'	NA	——→	All	

24. Producing Interval(s), of this completion — Top, Bottom, Name
6807'-08' & 6820'-24' (8 holes) Fusselman

25. Was Directional Survey Made: No

26. Type Electric and Other Logs Run
DLL, CNL-FDC, BHC Sonic, CBL

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	417'	17-1/2"	400 sx. - Circulated	
9-5/8"	36#	2744'	12-1/4"	1150 sx. - Circulated	
5-1/2"	15.5#	7175'	8-3/4"	450 sx.	

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8"	6717'	6717'

31. Perforation Record (Interval, size and number)
6807'-08', 4 holes, .43" size
6820'-24', 4 holes, .43" size

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
6820'-24'	150 gals. 7½% MCA Acid

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
9/12/80	Flowing	Shut-in

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period ——→	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio
10/4/80	24	14/64"		33	1,541	- 0 -	46,697/1

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate ——→	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)
1850#	Packer		33	1,541	- 0 -	60.8

34. Disposition of Gas (Sold, used for fuel, vented, etc.)
Flared during test

Test Witnessed By
S. D. Reed & L. D. Smith

35. List of Attachments
Deviation Record, DST Charts, Logs, Plat

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED H. F. Burnett TITLE Prod. Superintendent DATE 10/7/80

H. F. Burnett

Enserch Exploration, Inc.
J. G. O'Brien No. 1
Chaves County, New Mexico

Date of Completion:	6-11-80
Elevation (GR):	4020'
Perforated Production Interval:	6741'-45'
Date of Potential:	6-12-80
Initial Potential:	266 BO + 600 MCFG + 0 BW GOR = 2255, FTP = 1000 psig
Original Bottom Hole Pressure:	2549 psia @ 6743' 6-16-80
Oil Gravity:	59.5° API
Cumulative Production:	5255 BO 7-20-80
Current Status:	Shut-in; awaiting pipeline connection

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
Enserch EXHIBIT NO. 3
CASE NO. 7073

TEFTELLER, INC.
RESERVOIR ENGINEERING DATA
Midland, Texas

Well : J. G. O'BRIEN NO. 1 Page 1 of 4

Field : WILDCAT File 3-10722-FT&BU

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA

1980 Date	Status of Well	Time	Elapsed Time Hrs.	Min.	Daily Rate Oil B/D	Gas MCF/D	Wellhead Pressure Tbg	Csg	BHP @ 6635' Psig	BHP 674 Psi
6-11	Arrived on location									
"	shut-in	18:30								
"	Inst. in lub.	18:49								
"	Gradient Traverse									
"	Inst. @ 6635'	20:05					980	60	2510	253
"	"	20:36								
"	Open 12/64" choke	20:36	0	00						
6-12	"	00:36	4	00					2479	250
"	"	04:36	8	00					2472	249
"	"	08:36	12	00					2466	249
"	"	12:36	16	00					2462	249
"	"	16:36	20	00					2463	248
"	"	19:42	23	06					2463	248
"	"	20:36	24	00	266	600			2458	248
"	Shut-in for build up	20:36	0	00						
"	"	20:42	0	06					2475	249
"	"	20:48	0	12					2477	250
"	"	21:00	0	24					2481	250
"	"	21:12	0	36					2482	250
"	"	21:24	0	48					2483	250
"	"	21:36	1	00					2484	251
"	"	22:06	1	30					2485	250
"	"	22:36	2	00					2487	251
"	"	23:36	3	00					2491	251
6-13	"	00:36	4	00					2493	251
"	"	02:36	6	00					2497	252
"	"	04:36	8	00					2499	253
"	"	06:36	10	00					2501	251
"	"	08:36	12	00					2503	251
"	"	10:36	14	00					2504	251
"	"	12:36	16	00					2505	251
"	"	16:36	20	00					2507	251
"	"	20:36	24	00					2509	251
6-14	"	00:36	28	00					2510	251
"	"									

TEETELLER, INC.
RESERVOIR ENGINEERING DATA
Midland, Texas

Well : J. G. O'BRIEN NO. 1

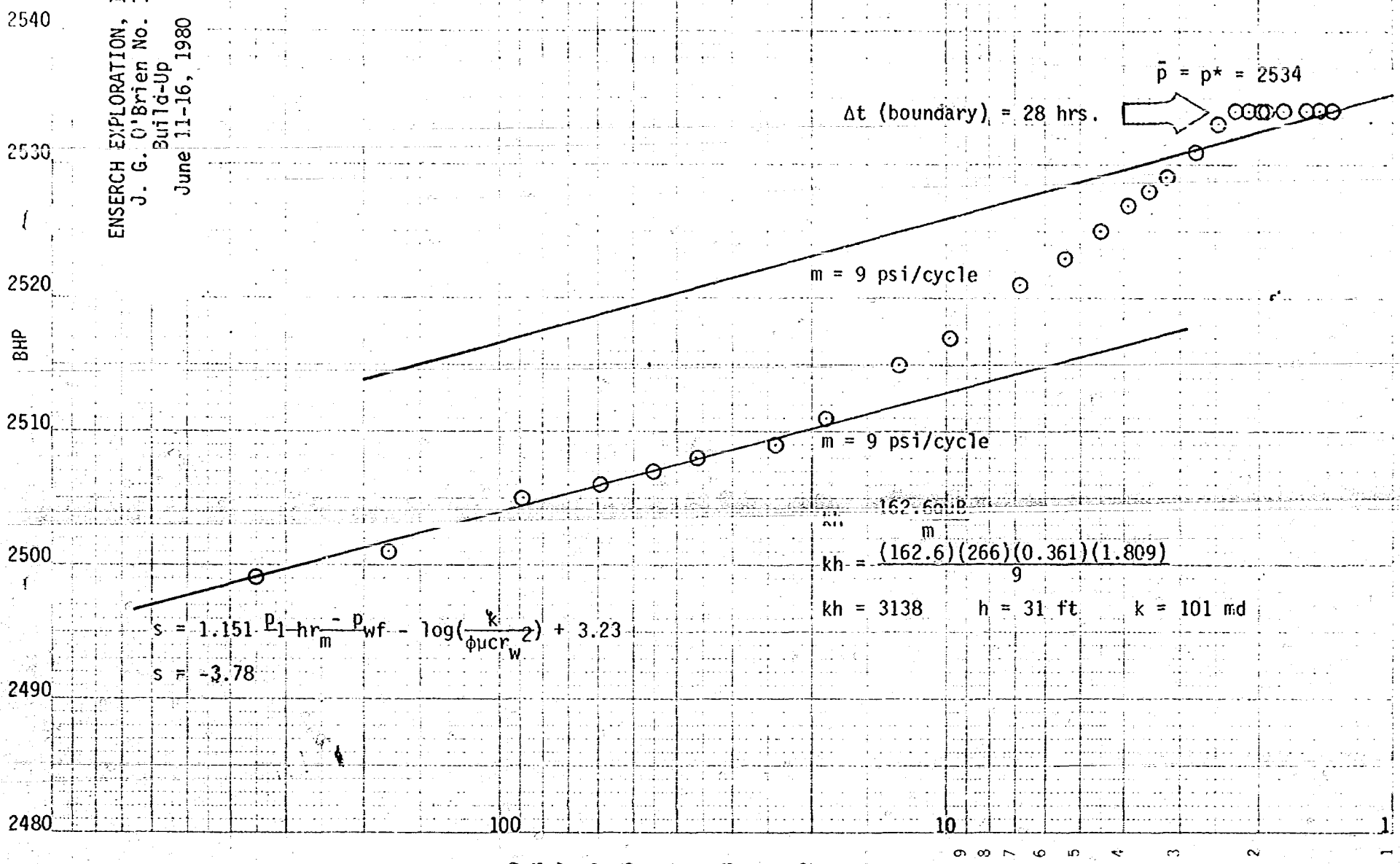
Field : WILDCAT

File 3-10722-FT&BU

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA

1980 Date	Status of Well	Time	Elapsed Time Hrs.	Min.	Daily Rate Oil B/D	Daily Rate Gas MCF/D	Wellhead Pressure Tbg	Wellhead Pressure Csg	BHP @ 6635' Psig	BHP 674 Psi
6-14	Continued shut-in	04:36	32	00					2510	2534
"	"	08:36	36	00					2510	2534
"	Pulled instrument	11:00	38	24					2510	2534
"	Inst. @ 6635'	13:18	40	42					2510	2534
"	"	20:36	48	00			1012		2510	2534
6-15	"	08:36	60	00					2510	2534
"	"	20:36	72	00					2510	2534
6-16	"	08:36	84	00					2510	2534
"	Pull instrument	18:36	94	00			1015		2510	2534
"	Off location	19:30	94	54			1015		2510	2534

ENSERCH EXPLORATION, INC.
J. G. O'Brien No. 1
Build-Up
June 11-16, 1980



SOUTH ELKINS AREA

Rsb and Bo Calculations

J. G. O'Brien No. 1

API Gravity = 59.5

Gas Gravity = 0.729

BHP = 2534 psi

Gas-Oil Ratio = 2256 SCF/STB

From SPE 6719 Paper on Fluid Productions

$$Rs = \left[\frac{(\gamma g)(p)}{56.06}\right]\left[10^{10.393\left(\frac{API}{T+460}\right)}\right]$$

$T = 133^{o}F$

$p = 2534$ psi

$\gamma g = 0.729$

$$Rs = \left[\frac{(0.729)(2534)}{56.06}\right]\left[10^{10.393\left(\frac{59.5}{593}\right)}\right]$$

$Rs = 1565$ SCF/STB

$$Bo = 1 + 4.67(Rs)10^{-4} + 0.11(T-60)\left(\frac{API}{\gamma g}\right)10^{-4} + 0.1337(Rs)(T-60)\left(\frac{API}{\gamma g}\right)10^{-8}$$

$$Bo = 1 + 4.67(1565)10^{-4} + 0.11(133-60)\left(\frac{59.5}{0.729}\right)10^{-4} + 0.1337(1565)(133-60)\left(\frac{59.5}{0.729}\right)10^{-8}$$

$Bo = 1 + 0.7309 + 0.06554 + 0.01247$

$Bo = 1.809$ RB/STB

OIL

WELL PRESSURE ANALYSIS
West Texas District

Test Date: June 11/16, 1980 — Lease: J.G. O'Brien
Formation: Fusselman — Well No.: 1
Casing Size: 5-1/2", 15.5# — Field: Wildcat
Cum. Prod. Np(Bbl): 386 — State: New Mexico
Prod. Rate (Bbl/Day): 266
Prod. Life = 24Np/q: 34.83 hrs.

I. Calculation of kh (md-ft) and k (md):

$$kh = \frac{162.6\ q\mu B}{m} \quad ; \quad k = \frac{kh}{h}$$

h = 31 ft — μ = 0.361 cp
q = 266 B/D — B = 1.809
m = 9 psi/cycle

$$kh = \frac{162.6 \times (\ 266\ ) \times (0.361) \times (\ 1.809)}{(\ 9\ )} = 3138$$

$$k = \frac{(\ 3138\ )}{(\ 31\ )} = 101 \text{ md}$$

II. Calculation of Skin Effect, s; and Pressure Loss Due to Skin, Δp_{skin} (psi):

$$s = 1.151\left[\frac{p_{1\,hr} - p_{wf}}{m} - \log\left(\frac{k}{\phi\mu c r_w^2}\right) + 3.23\right]$$

$$s = 1.151\left[\frac{(\ 2508) - (\ 2482)}{(\ 9\ )} - \log\left[\frac{(\ 101\ )}{(0.116)(0.361)(18.1 \times 10^{-6})(0.229^2)}\right] + 3.23\right] = -3.78$$

$\Delta p_{skin} = (m) \times 0.87\ (s)$ — $\Delta p_{skin} = (\ 9\ ) \times 0.87\ (-3.78) = -29.6$

k = 101 md — r_w = 0.229 ft
ϕ = 0.116 — $p_{1\,hr}$ = 2508 psig
μ = 0.361 cp — p_{wf} = 2482 psig
c = 18.1×10^{-6} psi^{-1} — m = 9 psi/cycle

III. Calculation of Productivity Index (B/D-psi) and Flow Efficiency:

$$J_{(actual)} = \frac{q}{p^* - p_{wf}} \qquad J_{(ideal)} = \frac{q}{(p^* - p_{wf}) - \Delta p_{skin}}$$

$$J_{(actual)} = \frac{(\ 266\ )}{(2534\ ) - (2482\ )} \qquad J_{(ideal)} = \frac{(\ 266\ )}{[(2534\ ) - (2482\ )] - (-29.6)}$$

$J_{(actual)}$ = 5.115 — $J_{(ideal)}$ = 3.26

Δp_{skin} = -29.6 psi — p^* = 2534 psig
q = 266 B/D — p_{wf} = 2482 psig

$$\text{Flow Efficiency} = \frac{J_{(actual)}}{J_{(ideal)}} = \frac{(\ 5.115\ )}{(\ 3.26\ )} = 1.57$$

PARAMETERS:

$C_t = S_w C_w + S_o C_o + C_f = (0.24)(2.9 \times 10^{-6}) (0.76)(16.8 \times 10^{-6}) (4.6 \times 10^{-6}) = 18.1 \times 10^{-6}$

P_c = 546 psia S_w = 24 %

T_c = 772 ^{o}R S_o = 76 %

BHT = 133 ^{o}F ρ_o = 0.741 gm/cm^3

BHP = 2549 psia

Radius of Investigation: $ri = 0.029\sqrt{\frac{kt}{\phi \mu c_t}}$ $ri = 0.029\sqrt{\frac{(101)(94.9)}{(.116)(.361)(18.1 \times 10^{-6})}}$

ri = 3261 ft.

Distance to boundary: $re = 0.029\sqrt{\frac{(101)(28)}{(.116)(.361)(18.1 \times 10^{-6})}}$ re = 1771 ft.

Since re < ri, the ri value should be discounted.

Enserch Exploration, Inc.
J. G. O'Brien No. 2
Chaves County, New Mexico

Date of Completion:	10-03-80
Elevation (GR):	3998.1'
Perforated Production Interval:	6807'-08', 6820'-24'
Date of Potential:	10-04-80
Initial Potential:	33 BO + 1541 MCFG + 0 BW GOR = 46,697, FTP = 1850 psig
Original Bottom Hole Pressure:	2575 psia @ 6822' 9-19-80
Oil Gravity:	60.8° API
Cumulative Production:	482 BO 10-05-80
Current Status:	Shut-in; awaiting pipeline connection

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. A
CASE NO. 7074

TEFTELLER, INC.
reservoir engineering data

MIDLAND, TEXAS / FARMINGTON, NEW MEXICO

P. O. Box 5247
Midland, Texas 79701

September 23, 1980

Enserch Exploration, Inc.
P. O. Box 4815
Midland, Texas 79701

Attn: Mr. Horace Burnett

Subject: Build Up Measurement and Bottom Hole Pressure Measurement
J. G. O'Brien No. 2 and
J. G. O'Brien No. 1
Wildcat Field
Chaves County, New Mexico
Our File No. 3-11067-BU&P

Gentlemen:

Attached hereto are the results of a build up measurement made on the J. G. O'Brien No. 2 from September 16 thru September 19, 1980. A bottom hole pressure measurement was conducted on the J. G. O'Brien No. 1 on September 19, 1980.

The data presented are in tabular and graphical form.

It has been our pleasure to have conducted this service for you. If we may be of further assistance, please call us at any time.

Respectfully submitted,

TEFTELLER, INC.

Farrest Tefteller

FT/lw

TEFTELLER, INC.

reservoir engineering data
MIDLAND, TEXAS

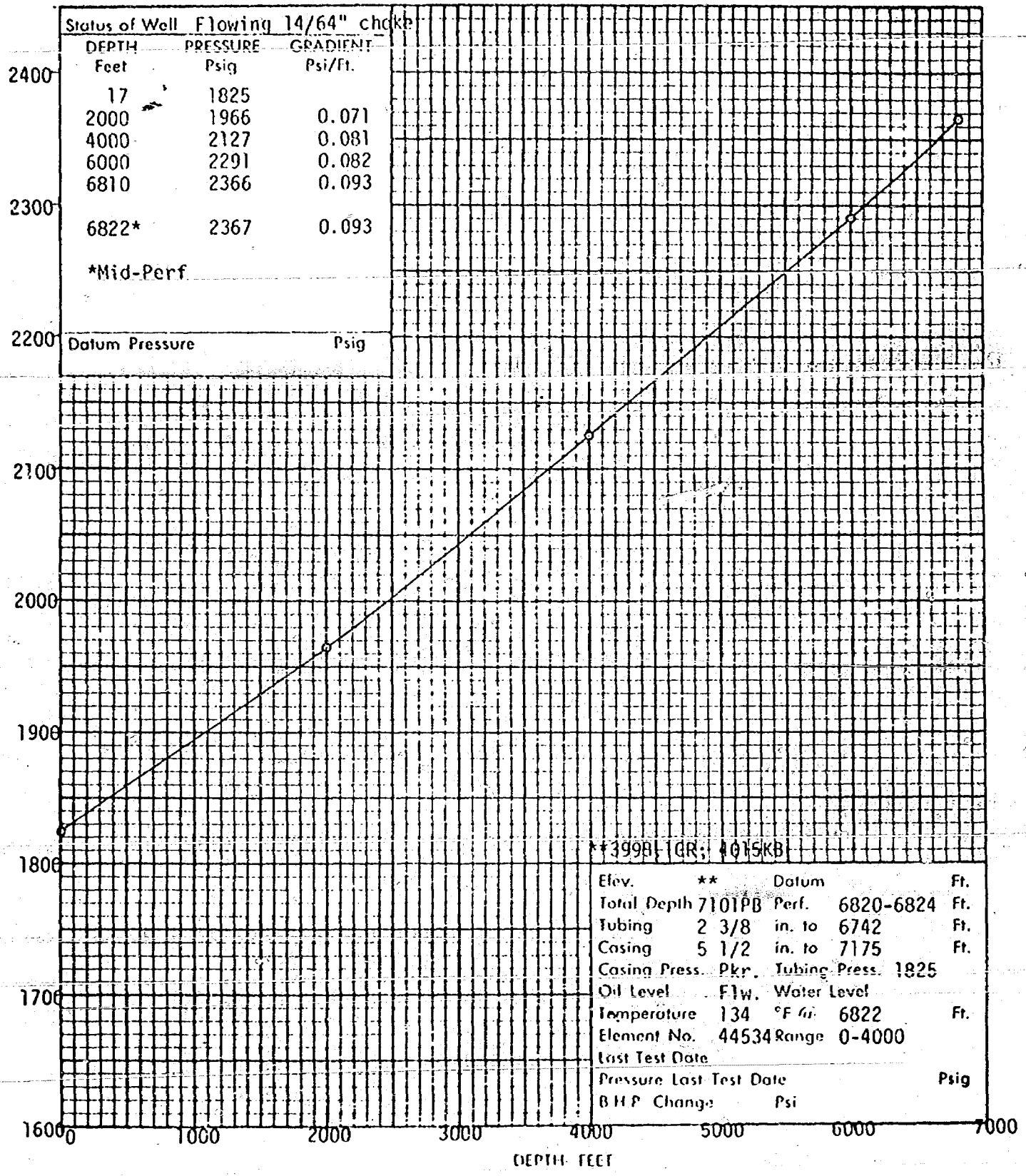
Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 2
Field WILDCAT County CHAVES State NEW MEXICO
Formation FUSSELMAN Test Date SEPTEMBER 16, 1980

Status of Well Flowing 14/64" choke

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
17	1825	
2000	1966	0.071
4000	2127	0.081
6000	2291	0.082
6810	2366	0.093
6822*	2367	0.093

*Mid-Perf

Datum Pressure Psig



**3998 GR; 4015KB

Elev.	**	Datum		Ft.
Total Depth	7101PB	Perf.	6820-6824	Ft.
Tubing	2 3/8	in. to	6742	Ft.
Casing	5 1/2	in. to	7175	Ft.
Casing Press.	Pkr.	Tubing Press.	1825	
Oil Level	Flw.	Water Level		
Temperature	134 °F @		6822	Ft.
Element No.	44534	Range	0-4000	
Last Test Date				
Pressure Last Test Date				Psig
BHP Change		Psi		

HEFTELLER, INC.

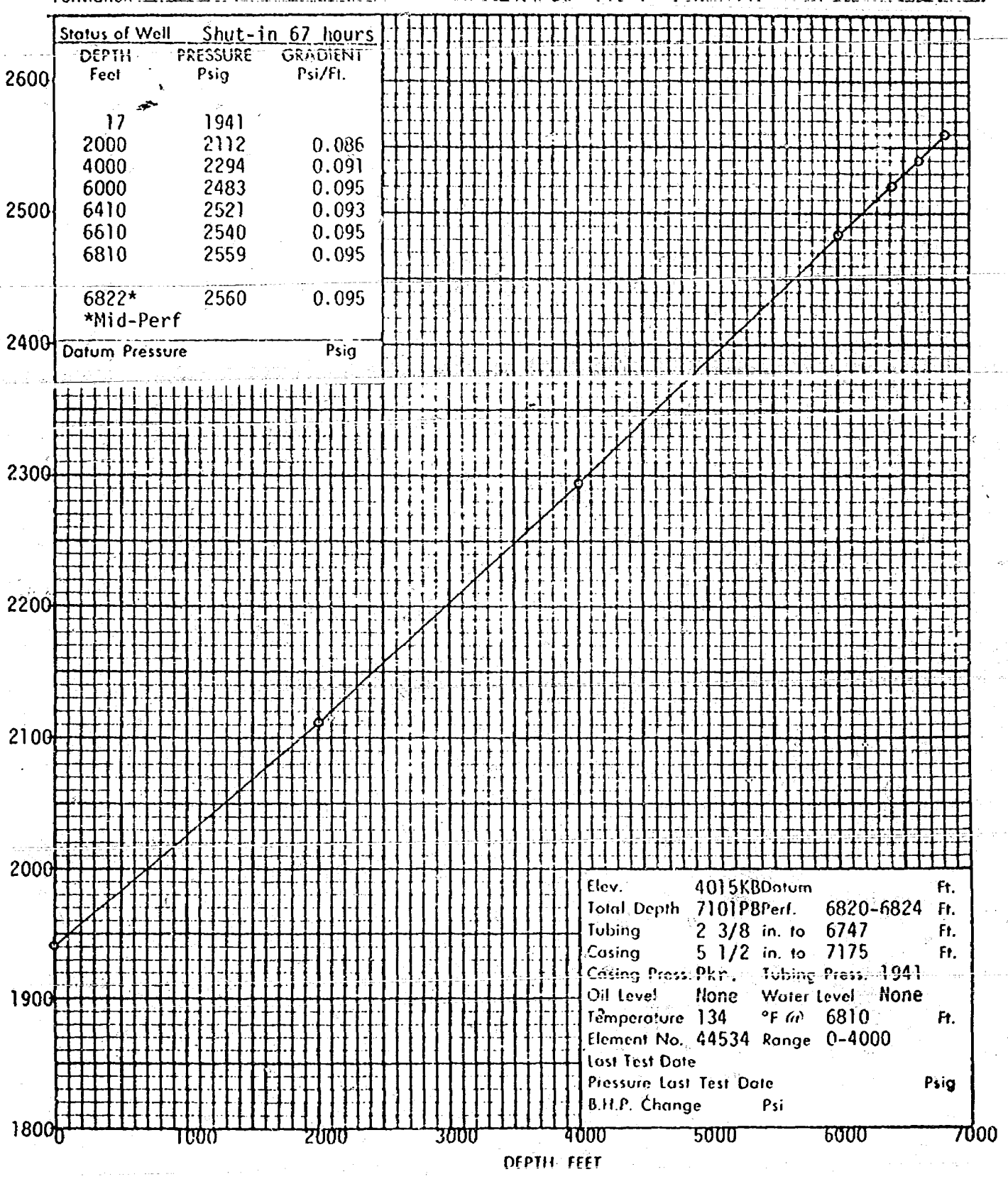
Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 2
Field WILDCAT County CHAVES State NEW MEXICO
Formation FUSSELMAN Test Date SEPTEMBER 19, 1980

Status of Well Shut-in 67 hours

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
17	1941	
2000	2112	0.086
4000	2294	0.091
6000	2483	0.095
6410	2521	0.093
6610	2540	0.095
6810	2559	0.095
6822*	2560	0.095

*Mid-Perf

Datum Pressure Psig



Elev.	4015	KB Datum		Ft.
Total Depth	7101	PB Perf.	6820-6824	Ft.
Tubing	2 3/8	in. to	6747	Ft.
Casing	5 1/2	in. to	7175	Ft.
Casing Press.	Pkr.	Tubing Press.	1941	
Oil Level	None	Water Level	None	
Temperature	134	°F @	6810	Ft.
Element No.	44534	Range	0-4000	
Last Test Date				
Pressure Last Test Date				Psig
B.H.P. Change		Psi		

Enserch Exploration, Inc.
J. G. O'Brien No. 2
Chaves County, New Mexico

Date of Completion:	10-03-80
Elevation (GR):	3998.1'
Perforated Production Interval:	6807'-08', 6820'-24'
Date of Potential:	10-04-80
Initial Potential:	33 BO + 1541 MCFG + 0 BW GOR = 46,697, FTP = 1850 psig
Original Bottom Hole Pressure:	2575 psia @ 6822' (Flowing Tubing Pressure) 9-19-80
Oil Gravity:	60.8° API
Cumulative Production:	482 BO 10-05-80
Current Status:	Shut-in; awaiting pipeline connection

BEFORE EXAMINER NUTTER
OIL CONSERVATION DIVISION
ENSERCH EXHIBIT NO. 4
CASE NO. 7074

TEFTELLER, INC.
reservoir engineering data

MIDLAND, TEXAS / FARMINGTON, NEW MEXICO

P. O. Box 5247
Midland, Texas 79701

September 23, 1980

Enserch Exploration, Inc.
P. O. Box 4815
Midland, Texas 79701

Attn: Mr. Horace Burnett

Subject: Build Up Measurement and Bottom Hole Pressure Measurement
J. G. O'Brien No. 2 and
J. G. O'Brien No. 1
Wildcat Field
Chaves County, New Mexico
Our File No. 3-11067-BU&P

Gentlemen:

Attached hereto are the results of a build up measurement made on the J. G. O'Brien No. 2 from September 16 thru September 19, 1980. A bottom hole pressure measurement was conducted on the J. G. O'Brien No. 1 on September 19, 1980.

The data presented are in tabular and graphical form.

It has been our pleasure to have conducted this service for you. If we may be of further assistance, please call us at any time.

Respectfully submitted,

TEFTELLER, INC.

Farrest Teftéller

FT/lw

EFTELLER, INC.
reservoir engineering data
MIDLAND, TEXAS

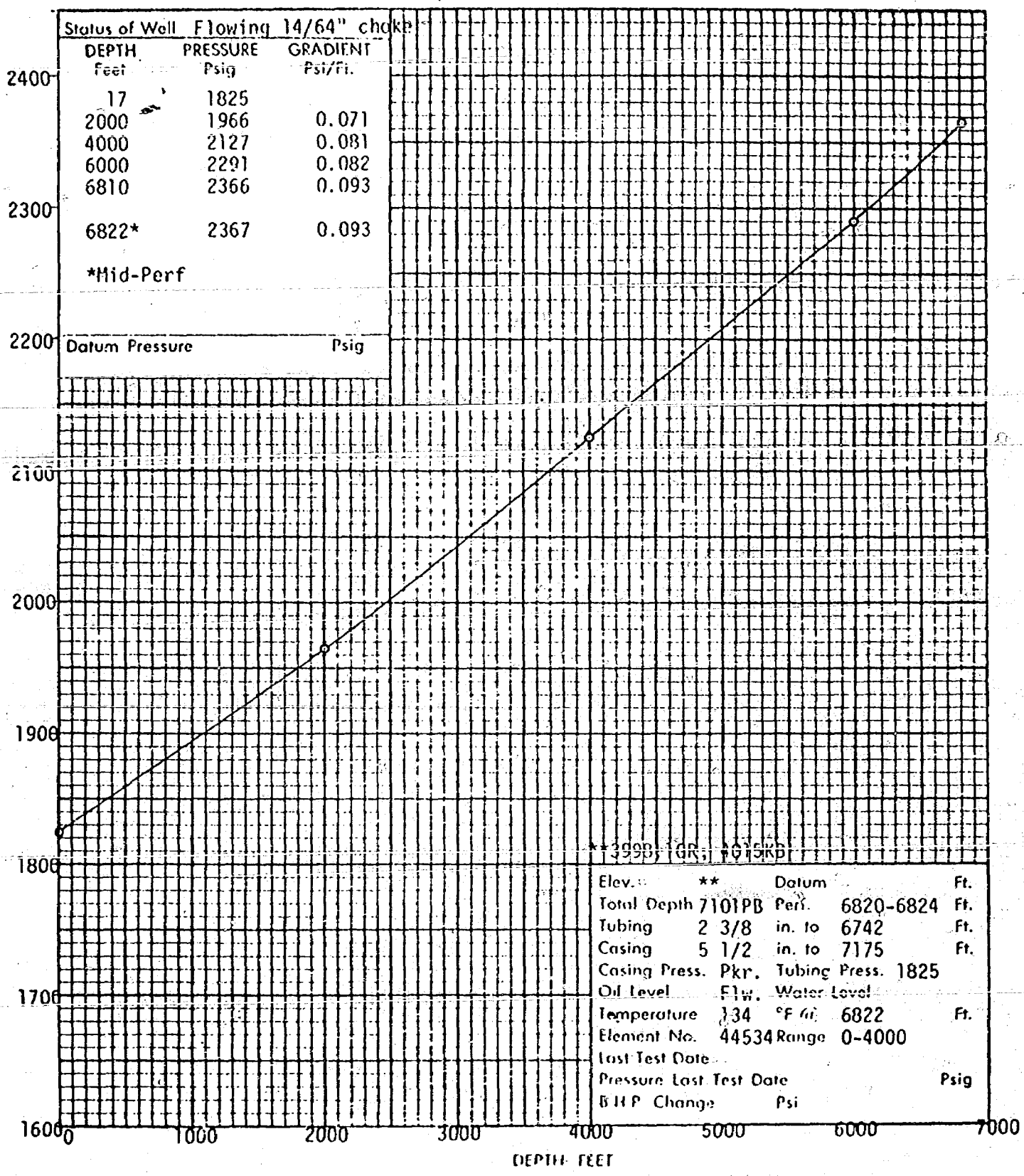
Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No. 2
Field WILDCAT County CHAVES State NEW MEXICO
Formation FUSSELMAN Test Date SEPTEMBER 16, 1980

Status of Well Flowing 14/64" choke

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
17	1825	
2000	1966	0.071
4000	2127	0.081
6000	2291	0.082
6810	2366	0.093
6822*	2367	0.093

*Mid-Perf

Datum Pressure Psig



Elev.	**	Datum	Ft.
Total Depth	7101PB	Perf.	6820-6824 Ft.
Tubing	2 3/8	in. to	6742 Ft.
Casing	5 1/2	in. to	7175 Ft.
Casing Press.	Pkr.	Tubing Press.	1825
Oil Level	Flw.	Water Level	
Temperature	134	°F @	6822 Ft.
Element No.	44534	Range	0-4000
Last Test Date			
Pressure Last Test Date			Psig
BHP Change		Psi	

EFTELLER, INC.

MIDLAND, TEXAS

File 3-11067-BU&P

Company ENSERCH EXPLORATION, INC. Lease J. G. O'BRIEN Well No 2

Field WILDCAT County CHAVES State NEW MEXICO

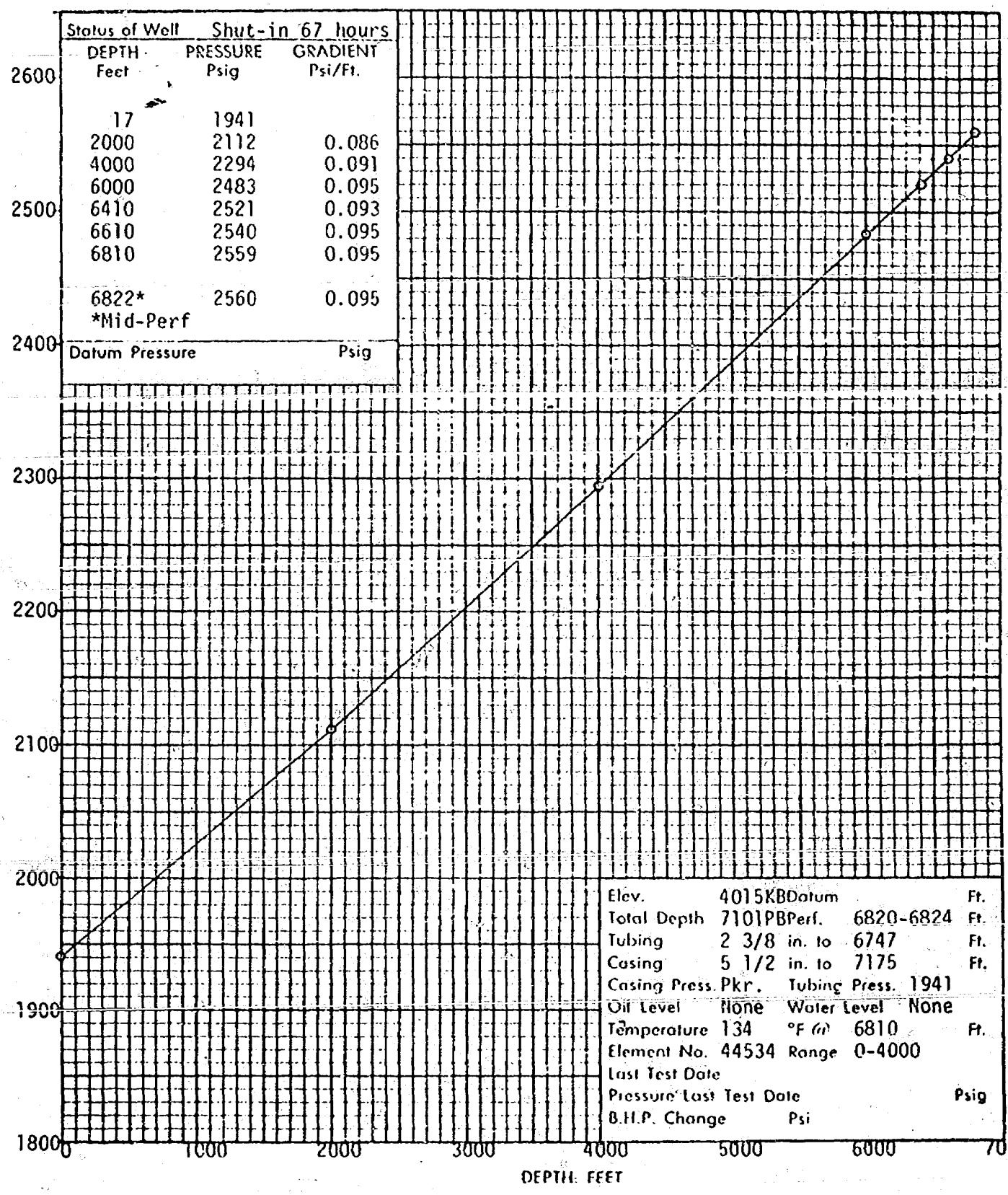
Formation FUSSELMAN Test Date SEPTEMBER 19, 1980

Status of Well Shut-in 67 hours

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
17	1941	
2000	2112	0.086
4000	2294	0.091
6000	2483	0.095
6410	2521	0.093
6610	2540	0.095
6810	2559	0.095
6822*	2560	0.095

*Mid-Perf

Datum Pressure Psig



Elev.	4015	KB Datum		Ft.
Total Depth	7101	PB Perf.	6820-6824	Ft.
Tubing	2 3/8	in. to	6747	Ft.
Casing	5 1/2	in. to	7175	Ft.
Casing Press.	Pkr.	Tubing Press.	1941	
Oil Level	None	Water Level	None	
Temperature	134	°F @	6810	Ft.
Element No.	44534	Range	0-4000	
Last Test Date				
Pressure Last Test Date				Psig
B.H.P. Change		Psi		

CASE 7074: Application of Enserch Exploration, Inc. for pool creation, an unorthodox gas well location, and non-standard proration unit, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Fusselman gas pool for its J. C. O'Brien Well No. 2 located at an unorthodox location 660 feet from the South and West lines of Section 30, Township 7 South, Range 29 East, to be dedicated to a 308.96-acre non-standard unit comprising the W/2 of said Section 30.

CASE 6822: (Continued from October 1, 1980, Examiner Hearing)

In the matter of Case 6822 being reopened pursuant to the provisons of Order No. R-6293 which order created the West Double X-Wolfcamp Gas Pool as a retrograde gas condensate pool and set special production limitations therein. Operator(s) may appear and present evidence to establish the true nature of the reservoir and proper rates of withdrawal therefrom.

CASE 6648: (Continued from October 1, 1980, Examiner Hearing)

In the matter of Case 6648 being reopened pursuant to the provisions of Order No. R-6124 which order promulgated temporary special rules and regulations for the North Caprock-Mississippian Pool in Lea County, New Mexico, including a provision for 160-acre spacing and a 4000 to one gas-oil ratio limitation. Operators in said pool may appear and show cause why the pool should not be developed on 40-acre spacing with a 2000 to one GOR.

CASE 7045: (Continued from October 15, 1980, Examiner Hearing)

Application of Texas Oil & Gas Corp. for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Atoka and Upper Morrow production in the wellbore of its Superior Federal Com. Well No. 1 located in Unit G of Section 8, Township 20 South, Range 29 East.

CASE 7024: (Continued from October 15, 1980, Examiner Hearing)

Application of Southland Royalty Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the E/2 of Section 35, Township 18 South, Range 29 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7038: (Continued from October 15, 1980, Examiner Hearing)

Application of Natura Energy Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the San Andres formation underlying the NE/4 NE/4 of Section 6, Township 19 South, Range 39 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

****

Docket No. 35-80

DOCKET: COMMISSION HEARING - FRIDAY - OCTOBER 31, 1980

OIL CONSERVATION COMMISSION - 9 A.M. - ROOM 205
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

CASE 7075: Application of Benson-Montin-Greer Drilling Corporation for the amendment of pool rules, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the Special Rules and Regulations for the West Puerto Chiquito-Mancos Oil Pool as promulgated by Order No. R-2565-B and amended by Order No. R-6469, to require that the locations of wells in said pool be at least 1650 feet from the outer boundary of the spacing and proration unit, and that the drilling of wells be controlled so as to allow no more than a 330-foot horizontal deviation from the surface location. Further, that the location of wells on certain specified non-standard proration units approved by Order No. R-6469 should be no closer than 660 feet to the outer boundary of the non-standard unit nor closer than 330 feet to a quarter section line or 10 feet to a quarter-quarter section line. Said specified non-standard units are the two 640-acre units in Township 24 North, Range 1 West; the two 480-acre units in Township 24 North, Range 1 East; the four 640-acre units in Township 26 North, Range 1 West; the 640-acre unit in Township 26 North, Range 1 East; and the two 640-acre units, the three 600-acre units, and the 400-acre unit, all in Township 27 North, Range 1 West. Applicant further seeks an administrative procedure whereby unorthodox locations could be approved upon receipt of written waivers from all offsetting operators being "crowded" by the unorthodox location.

CAMPBELL AND BLACK, P.A.
LAWYERS

JACK M. CAMPBELL
BRUCE D. BLACK
MICHAEL B. CAMPBELL
WILLIAM F. CARR

POST OFFICE BOX 2208
JEFFERSON PLACE
SANTA FE, NEW MEXICO 87501
TELEPHONE (505) 988-4421

October 10, 1980

Mr. Joe D. Ramey
Division Director
Oil Conservation Division
New Mexico Department of
Energy and Minerals
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Application of Enserch Exploration, Inc. for Gas Pool Creation, Special Pool Rules and Unorthodox Gas Well Location, Chaves County, New Mexico

Dear Mr. Ramey:

Enclosed in triplicate is the application of Enserch Exploration, Inc. in the above-referenced matter.

The applicant requests that this matter be included on the docket for the examiner hearing scheduled to be held on October 29, 1980.

Very truly yours,

William F. Carr

WFC:lr

Enclosures

cc: Mr. Leonard Kersh

BEFORE THE

OIL CONSERVATION DIVISION

NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION OF ENSERCH EXPLORATION, INC. FOR GAS POOL CREATION, SPECIAL POOL RULES AND UNORTHODOX GAS WELL LOCATION, CHAVES COUNTY, NEW MEXICO.

Case 7074

APPLICATION

Comes now ENSERCH EXPLORATION, INC., by their undersigned attorneys, and hereby makes application for an order designating a new pool as a result of the discovery of hydrocarbons in the Fusselman formation in its J.G. O'Brien No. 2 Well located in Unit M of Section 30, Township 7 South, Range 29 East, Chaves County, New Mexico and for promulgation of special pool rules, including (1) 320-acre spacing or proration units, and (2) the dedication of all of the West half of said Section 30 to the J.G. O'Brien No. 2 Well, and in support of this application would show the Commission:

1. That applicant has recently completed its J.G. O'Brien No. 2 Well in the Fusselman formation capable of producing oil and gas in paying quantities located 660 feet from the South and West lines of Section 30, Township 7 South, Range 29 East, Chaves County, New Mexico. Said well is producing through perforations from 6820 feet to 6824 feet and was potentialed as capable of producing 33 barrels of oil per day and 1541 mcf of gas per day with no produced water.

2. Applicant believes that the following described lands are reasonably proven to be productive of oil and gas in

paying quantities from the Fusselman formation and should be included in the original definition of the new pool to be created because of said discovery:

Township 7 South, Range 29 East, N.M.P.M.
Section 30: W/2

3. In order to prevent economic loss caused by the drilling of unnecessary wells, to avoid augmentation of risk arising from the drilling of an excessive number of wells and to otherwise prevent waste and protect correlative rights, special pool rules and regulations providing for 320-acre spacing units should be promulgated for the new pool.

4. Applicant further seeks an exception to the well location requirements of Oil Conservation Division Rule 104 C, II, (a) for the unorthodox location of said J.G. O'Brien No. 2 Well.

WHEREFORE, Enserch Exploration, Inc. requests that this application be set for hearing before a duly appointed Examiner of the Oil Conservation Division on October 29, 1980, that notice be given as required by law and the rules of the Division, and that the application be approved.

Respectfully submitted,

CAMPBELL AND BLACK, P.A.

By William F. Carr

William F. Carr
Attorneys for Applicant
Post Office Box 2208
Santa Fe, New Mexico 87501

BEFORE THE

OIL CONSERVATION DIVISION

NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION OF ENSERCH EXPLORATION, INC. FOR GAS POOL CREATION, SPECIAL POOL RULES AND UNORTHODOX GAS WELL LOCATION, CHAVES COUNTY, NEW MEXICO.

Case 7074

APPLICATION

Comes now ENSERCH EXPLORATION, INC., by their undersigned attorneys, and hereby makes application for an order designating a new pool as a result of the discovery of hydrocarbons in the Fusselman formation in its J.G. O'Brien No. 2 Well located in Unit M of Section 30, Township 7 South, Range 29 East, Chaves County, New Mexico and for promulgation of special pool rules, including (1) 320-acre spacing or proration units, and (2) the dedication of all of the West half of said Section 30 to the J.G. O'Brien No. 2 Well, and in support of this application would show the Commission:

1. That applicant has recently completed its J.G. O'Brien No. 2 Well in the Fusselman formation capable of producing oil and gas in paying quantities located 660 feet from the South and West lines of Section 30, Township 7 South, Range 29 East, Chaves County, New Mexico. Said well is producing through perforations from 6820 feet to 6824 feet and was potentialed as capable of producing 33 barrels of oil per day and 1541 mcf of gas per day with no produced water.

2. Applicant believes that the following described lands are reasonably proven to be productive of oil and gas in

paying quantities from the Fusselman formation and should be included in the original definition of the new pool to be created because of said discovery:

Township 7 South, Range 29 East, N.M.P.M.
Section 30: W/2

3. In order to prevent economic loss caused by the drilling of unnecessary wells, to avoid augmentation of risk arising from the drilling of an excessive number of wells and to otherwise prevent waste and protect correlative rights, special pool rules and regulations providing for 320-acre spacing units should be promulgated for the new pool.

4. Applicant further seeks an exception to the well location requirements of Oil Conservation Division Rule 104 C, II, (a) for the unorthodox location of said J.G. O'Brien No. 2 Well.

WHEREFORE, Enserch Exploration, Inc. requests that this application be set for hearing before a duly appointed Examiner of the Oil Conservation Division on October 29, 1980, that notice be given as required by law and the rules of the Division, and that the application be approved.

Respectfully submitted,

CAMPBELL AND BLACK, P.A.

By William F. Carr

William F. Carr
Attorneys for Applicant
Post Office Box 2208
Santa Fe, New Mexico 87501

BEFORE THE

OIL CONSERVATION DIVISION

NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

IN THE MATTER OF THE APPLICATION OF ENSERCH EXPLORATION, INC. FOR GAS POOL CREATION, SPECIAL POOL RULES AND UNORTHODOX GAS WELL LOCATION, CHAVES COUNTY, NEW MEXICO.

Case 7074

APPLICATION

Comes now ENSERCH EXPLORATION, INC., by their undersigned attorneys, and hereby makes application for an order designating a new pool as a result of the discovery of hydrocarbons in the Fusselman formation in its J.G. O'Brien No. 2 Well located in Unit M of Section 30, Township 7 South, Range 29 East, Chaves County, New Mexico and for promulgation of special pool rules, including (1) 320-acre spacing or proration units, and (2) the dedication of all of the West half of said Section 30 to the J.G. O'Brien No. 2 Well, and in support of this application would show the Commission:

1. That applicant has recently completed its J.G. O'Brien No. 2 Well in the Fusselman formation capable of producing oil and gas in paying quantities located 660 feet from the South and West lines of Section 30, Township 7 South, Range 29 East, Chaves County, New Mexico. Said well is producing through perforations from 6820 feet to 6824 feet and was potentialed as capable of producing 33 barrels of oil per day and 1541 mcf of gas per day with no produced water.

2. Applicant believes that the following described lands are reasonably proven to be productive of oil and gas in

paying quantities from the Fusselman formation and should be included in the original definition of the new pool to be created because of said discovery:

Township 7 South, Range 29 East, N.M.P.M.
Section 30: W/2

3. In order to prevent economic loss caused by the drilling of unnecessary wells, to avoid augmentation of risk arising from the drilling of an excessive number of wells and to otherwise prevent waste and protect correlative rights, special pool rules and regulations providing for 320-acre spacing units should be promulgated for the new pool.

4. Applicant further seeks an exception to the well location requirements of Oil Conservation Division Rule 104 C, II, (a) for the unorthodox location of said J.G. O'Brien No. 2 Well.

WHEREFORE, Enserch Exploration, Inc. requests that this application be set for hearing before a duly appointed Examiner of the Oil Conservation Division on October 29, 1980, that notice be given as required by law and the rules of the Division, and that the application be approved.

Respectfully submitted,

CAMPBELL AND BLACK, P.A.

By William F. Carr
William F. Carr
Attorneys for Applicant
Post Office Box 2208
Santa Fe, New Mexico 87501

Case _____

Application of Enserch Exploration, Inc. for Pool Creation, Special Pool Rules and Unorthodox Gas Well Location, Chaves County, New Mexico.

Applicant, in the above-styled cause, seeks creation of a new Fusselman Gas Pool for its J.G. O'Brien No. 2 Well located in Unit M, 660 feet from the South and West lines of Section 30, Township 7 South, Range 29 East, and special pool rules therefor, including a provision for 320-acre spacing. Applicant further seeks approval of the unorthodox location for said J.G. O'Brien No. 2 Well.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
29 October 1980

EXAMINER HEARING

IN THE MATTER OF:

Application of Enserch Exploration, Inc., for pool creation, temporary special pool rules, and assignment of a discovery allowable, Chaves County, New Mexico. CASE 7073

and

Application of Enserch Exploration, Inc., for pool creation, an unorthodox gas well location, and non-standard proration unit, Chaves County, New Mexico. CASE 7074

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

A P P E A R A N C E S

For the Applicant:

William F. Carr, Esq.
CAMPBELL & BLACK P. A.
Jefferson Place
Santa Fe, New Mexico 87501

For Stevens Oil Co.:

W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN
500 Don Gaspar
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

MR. NUTTER: Call Case Number 7073.

MR. PEARCE: Application of Enserch Exploration, Inc., for pool creation, temporary special pool rules, and assignement of discovery allowable, Chaves County, New Mexico.

MR. NUTTER: Mr. Carr, before we proceed on this case, you are aware there was a fatal error in the advertisement of this case in the newspaper, and we don't have jurisdiction to hear the case today.

Do you want to go ahead and present your testimony?

MR. CARR: We will present our testimony today and I understand that it will be readvertised. We also will point out that in the advertisement it reported that there were 74.24 acres available to dedicate to the well, and the actual figure is 74.28.

We incorrectly reported that to you initially.

MR. NUTTER: Well, one of the newspapers didn't include that part of it at all, anyway.

MR. CARR: Also, initially, Mr. Nutter, we'd like -- I'd like the record to reflect that we're no longer seeking pool creation, for like in the preceding case, the Division has already created the South Elkins Fusselman

Pool by Order Number R-6499, which was entered on October 22nd, 1980.

MR. NUTTER: Well, you had two of these pool creations that were already taken care of?

MR. CARR: That's right.

MR. NUTTER: Okay. This one was Order Number R-what?

MR. CARR: Order R-6499, dated October 22nd, 1980.

MR. NUTTER: And the other one was what order number?

MR. CARR: Order R-6420, dated August 24, 1980.

MR. NUTTER: Okay, do you want to go ahead and proceed with this? We'll have to withhold any order until it's been readvertised. It has been readvertised for November 12th. It will be recalled at that time.

MR. KELLAHIN: If the Examiner please, I'd like to enter my appearance, if it's appropriate at this time.

MR. NUTTER: Yes, sir.

MR. KELLAHIN: Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of Stevens Oil Company.

MR. CARR: Mr. Nutter, I intend to call

in this case the same witnesses that we previously called, and would request that the record reflect that they are qualified to testify and that they're under oath.

MR. NUTTER: The record will so show.

THOMAS E. BROWN

being called as a witness and being previously sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q. For purposes of the record, would you please state your name?

A. Thomas E. Brown.

Q. Are you familiar with the area involved in this case and with the application filed therein?

A. Yes, I am.

Q. Will you briefly state what Enserch seeks with this application?

A. We're seeking temporary field rules, 80-acre spacing, in the South Elkins Fusselman Pool.

Q. Will you refer to what has been marked for identification as Enserch Exhibit Number One, and explain to the Examiner what this is and what it shows?

A. Exhibit One is a structure map on the top of the Fusselman, which is the pay in the Enserch discovery well for this field, the Enserch No. 1 O'Brien.

All of the circled wells that we have here are wells that reached at least the Fusselman formation in the immediate area for roughly a 2-1/2 mile radius.

We have a dry hole in Section 6, the Hamon No. 1 Salsbury, and we show we've separated from that, and we have a producer in Section 31, the No. 1 O'Brien, and then there are dry holes on the northwest side of it, the Sinclair No. 1 O'Brien, and the C&K No. 1 O'Brien, both in Section 26.

MR. NUTTER: What is the No. 3 south of this No. 1 O'Brien?

A. The No. 3 is a proposed location, I don't know that it's been formally proposed --

MR. NUTTER: It's not drilling yet, anyway.

A. It's not drilling at present.

Q. There's also a trace on this exhibit which relates to a cross section that you will offer as Exhibit Two?

A. Yes, there is. The dashed line that you see on the structure map corresponds with the cross sec-

tion which will be Exhibit Two.

Q. Will you refer to that exhibit and explain to Mr. Nutter what it is and what it shows?

MR. NUTTER: While we're on that one, Mr. Brown, what's this double line running across there?

A. That double line is the road.

MR. NUTTER: I see, that's a highway. Okay. Thank you.

A. Exhibit Two is the cross section. It has the index map near the base that shows the line of the cross section.

The last well on the lefthand side, the (inaudible) No. 1 Elkins State, is some three miles north of the field and it wouldn't show up on Exhibit One.

What the cross section indicates is the pay zone in the No. 1 O'Brien Well as the Fusselman level, it shows that it does correlate with the down dip well, the Hamon No. 1 Salsbury Well, which is a dry hole, which would be on the righthand side of the cross section.

It also indicates the gas well, which is the No. 2 O'Brien.

And it shows, basically, that they're separated by a fault.

Q. Does this cross section show both horizontal

and vertical separation from the producing interval in the subject well and surrounding pool?

A. Yes, it does.

Q. And it includes the log of the subject well.

A. Yes.

Q. Were Exhibits One and Two prepared by you?

A. Yes, they were.

MR. CARR: At this time, Mr. Nutter, we would offer applicant's Exhibits One and Two into evidence.

MR. NUTTER: Exhibits One and Two will be admitted in evidence.

CROSS EXAMINATION

BY MR. NUTTER:

Q. In other words, Mr. Brown, starting at the righthand side of this cross section exhibit, you've got the dry holes down in Section 6, that Salsbury.

A. That's correct.

Q. And then the next line would be the location that you're proposing.

A. That's correct.

Q. The next one is the oil pool -- or the

oil well that we're concerned with here today in this case.

A. Yes.

Q. And the next well is this gas well, your No. 2 O'Brien, which is two locations to the north.

A. That's correct.

Q. And the oil well that's the subject of this case, and the gas well, which is two locations to the north, are separated by a fault.

A. We believe it to be a fault.

Q. So you have an oil well in one and a gas well in the other.

A. That's correct.

Q. Okay.

MR. NUTTER: Are there further questions of Mr. Brown? He may be excused.

MR. CARR: Call John Monro.

JOHN A. MONRO

being called as a witness and being previously sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Monro, are you familiar with the

application in this case and the subject area?

A. Yes, sir, I am.

Q. Will you please refer to what has been marked for identification as Enserch Exhibit Number Three and review this for Mr. Nutter?

A. Okay. Exhibit Number Three is the pertinent data sheet on the J. G. O'Brien No. 1 Well in Chaves County, New Mexico.

This exhibit is presented to show that the discovery well, Enserch's J. G. O'Brien No. 1, was completed on June the 11th, 1980, in the interval 6741 through 6745.

It was initially potentialed on June the 12th of 1980 for 266 barrels of oil and 600 Mcf of gas with a GOR at 2255 cubic feet per barrel, and a flowing tubing pressure of 1900 psig.

The maximum bottom hole pressure determined from the attached bottom hole pressure survey was 2549 psia.

The cumulative production on this well as of July the 20th of 1980, the date the well was shut-in awaiting pipeline connection, was 5255 barrels of oil. The attached bottom hole pressure analysis sheet will show the permeability to calculate out at 101 millidarcies, and skin

factor of -3.78, and a flow efficiency of 1.57.

Parameters used to arrive at these values were a porosity of 11.6 percent and a water saturation of 24 percent, and net thickness of 31 feet.

This build-up analysis will also show that the permeability barrier or a boundary has been encountered during time of investigation at a radius of 1771 feet. This can be seen on the previously presented structure map, Exhibit One, as an east/west fault running alongside the north line to Section 31.

Q. What is the reservoir drive mechanism?

A. This is a solution gas drive.

Q. All right. Is there any additional development of the pool in the immediate area?

A. No, sir.

Q. Now you talked about the distance to the boundary of this reservoir being 1771 feet. What radius of drainage would be necessary to drain 80 acres?

A. 1052.7 feet.

Q. What acreage do you propose to be dedicated to the subject well?

A. The west half of the northwest quarter of Section 31, Township 7 South, Range 29 East.

Q. And what acreage has been included in

the new pool as created by the Oil Conservation Division?

A. The entire northwest quarter of Section 31 of the same township and range.

Q. In your opinion is the acreage that you propose to dedicate to this well, has this acreage been proven productive of hydrocarbons in the Fusselman formation?

A. Yes, it has.

Q. Are you prepared to make a recommendation to the Examiner about the special pool rules for the South Elkins Fusselman Pool?

A. Yes, sir. We ask for discovery allowable to be assigned to the J. G. O'Brien No. 1. We also ask for a special Gas/oil limitation assigned to the well at 3000 cubic feet of gas per barrel; a provision for 80-acre spacing; and a well location to be within 150 feet from the center of a quarter quarter section.

Q. Do you have 80 acres to dedicate to the J. G. O'Brien No. 1 Well?

A. No, sir.

Q. And how many acres are available?

A. 74.28.

Q. Is this non-standard proration unit the result of a variation in the USGS survey?

A. Yes, sir.

Q. And you're requesting approval in this hearing for the non-standard unit?

A. Yes, sir.

Q. Upon what do you base your request for 3000-to-1 GOR?

A. Well, it's believed that what we have here is a volatile oil reservoir. The well is capable of flowing at a bubble point pressure, which is reported on the interim PDT analysis to be 1900 psig; however, we'll experience severe shrinkage at a separation facility downstream of the wellhead resulting in high produced gas/oil ratios.

In order to be flexible in designing separation stages to handle aforementioned severe flashing conditions, and since the well is capable of flowing at most efficient rate above the bubble point pressure, it becomes practical to set a special gas/oil ratio limitation at 3000 cubic feet of gas per barrel of oil produced.

Q. Mr. Monro, you're also seeking a discovery allowable. What is the calculated daily allowable with the discovery allowable for this well?

A. Okay. Calculated daily allowable including top and discovery allowable, is 268 barrels per day, and as indicated in Exhibit Three, the well will produce to within 2 barrels per day of total discovery allowable.

Q. In your opinion will granting this application avoid the drilling of unnecessary wells?

A. Yes, sir.

Q. And will it reduce the risk which would result from drilling an excessive number of wells?

A. Yes, sir.

Q. In your opinion will granting this application be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?

A. It will.

Q. Was Exhibit Number Three prepared by you?

A. Yes, sir.

MR. CARR: At this time, Mr. Nutter, we would offer Enserch Exhibit Number Three into evidence.

MR. NUTTER: Exhibit Three will be admitted in evidence.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Monro, top allowable for an 80-acre pool in this depth bracket would be approximately 222 22 barrels per day, is that right?

A. That's correct.

Q And then your uppermost perforation is at 6741. How much does that make for discovery allowable?

A 46 barrels per day, I believe.

Q Well, I mean total barrels. It would be 5 barrels times 6741. Do you have that figured out?

A No, sir, I divided it out to come up with a figure of 46 barrels per day.

Q Well, let's just multiply it out here. 6741 times 5, about 33,705, and you get 730 days to produce that.

A That's correct.

Q And --

A 731 since we encounter a leap year.

Q Got a leap year. When is leap year?

A 1980.

Q Well, we're already past leap year.

A Well.

Q You won't have a leap year in your 730 days.

A Well, I'd like one.

Q So it would be a total discovery allowable of 33,705 barrels divided by 730 added onto the 2.2, and that comes up, you calculated, at 268 barrels per day.

A Yes, sir.

Q And do you think this well is going to sustain its current productivity of 266 barrels per day for long?

A Yes, sir, I do.

Q Now this GOR, the well has been completed since June, but you say it's shut-in awaiting a pipeline connection. Is that awaiting a gas pipeline connection?

A Yes, sir.

Q You could be trucking the oil but you're subject to the no flare order, so you've got to keep it shut in.

A That's correct.

Q How long is it going to take you to get a gas connection?

A At this time we believe we might be able to get connected the latter part of January or the early part of February.

Q How far away is the nearest gas line?

A Oh, I'm not for sure. It depends on which line we get. There is two lines, one low pressure line of 250 pounds, and one at 1000 pounds.

Q How about your gas well up here in the next case, the one in Section 30? Will it produce into the high pressure line?

A. Yes, sir, it will.

Q. And this well, will it produce into the high pressure line or will you have to go to the low pressure line?

A. No, it will produce the high. We have to install a compressor.

Q. Oh, I see.

A. And it will be high grade.

Q. Sweet or sour gas?

A. No, it's sweet.

Q. Now the characteristics, it appears, of these two reservoirs are very much the same, even though they're separated by a fault. The gravity on the O'Brien 1 is 59.5. The gravity on the O'Brien No. 2 liquids is 60.8, and the bottom hole pressures are comparable. What characteristics are there between these two reservoirs?

I know I'm getting into the next case, Mr. Carr, but I've got the exhibit for the next case right here in front of me.

MR. CARR: That's quite all right.

A. Well, for the purposes --

Q. What characteristics do we have that indicate to you you've got two separate reservoirs?

A. Basically the nature of the hydrocarbons.

The well, J. G. O'Brien No. 2, which is across a fault from the J. G. O'Brien No. 1, will produce seemingly a gas condensate type of system, which essentially is a different mechanism than the -- that experienced at the J. G. O'Brien No. 1.

Q. Well, they're both producing with liquid hydrocarbons of the same gravity. You're calling one a volatile oil and you're calling the other one a condensate?

A. Well, it depends on the pressure analysis that you run. We can determine from pressure analysis as to whether we're talking about a gaseous reservoir or about a solution gas drive oil reservoir.

Q. What evidence have we got here that you've got those two situations or conditions?

A. Okay, all I have here for this particular case is the fault to show the separation between what we have as an oil well here and the gas well to the north.

Q. I don't have any evidence here to show me that you don't have two wells in the same reservoir and one located structurally higher than the other and above the gas/oil contact producing with a GOR of 46,000, whereas the other one is producing with a GOR of 2000.

A. Okay, now the gas well is down structure, I believe, from -- from the oil well, from the J. G. -- from the J. G. O'Brien No. 1.

Q In other words, the cross section would show the fault is down on the gas well side, then.

A Yes, sir.

Q And the gas well is structurally lower than the oil well.

A That's correct.

Q So this would be evidence -- this would be some evidence you don't have a gas cap on an oil well.

A That's correct.

Q Any other evidence?

A No, sir.

MR. NUTTER: Are there any other questions of Mr. Monro? He may be excused.

Do you have anything further, Mr. Carr?

MR. CARR: Mr. Nutter, I'd like to recall Mr. Brown briefly.

MR. NUTTER: Okay.

THOMAS E. BROWN

being recalled as a witness, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q Mr. Brown, I believe you've heard Mr.

Nutter question Mr. Monro concerning additional data that in fact the well that is the subject in this case and the -- which is the J. G. O'Brien No. 1, and the well which is the subject well in the next case, the J. G. O'Brien No. 2, are in fact in separate reservoirs.

Do you have any additional evidence that you can offer to show that in fact we have two separate pools?

A. The main evidence we have here, the structure and most of the production is immediately under the free Penn unconformity, which is the wigglier dashed --

Q. You're referring now to --

A. Wiggly line referred to on the cross section, Exhibit Two.

And the Enserch No. 2 O'Brien has a Mississippian lime section that is not present in the -- in the No. 1. We believe that that Mississippian lime section is present in the No. 2, because it was on the down thrown side of the fault and preserved.

MR. NUTTER: I think there's an unconformity.

A. The erosion occurred after the fault.

MR. NUTTER: This unconformity or disconformity, whichever it is.

A. That's correct. So the presence of the

Miss lime section tends to indicate it's across a fault.

MR. NUTTER: Well, this shows the evidence of the fault but is there evidence that the fault is a sealing fault between two reservoirs, as far as you're concerned geologically?

A. I can't prove it geologically.

MR. NUTTER: But we have to rely, then, on Mr. Monro's engineering testimony as to the structural position, GOR's, such as that.

A. Yes. I'd rather not testify as to the pressure information, since John Monro did that, but his pressure information did indicate a barrier between -- around 1700 feet from the No. 1 O'Brien, and --

MR. NUTTER: That was on his build-up test, you mean?

A. That's correct, and we feel that barrier is the fault. In fact, that's where it's drawn in, 1700 feet.

MR. NUTTER: I see, and it's on that build-up. When you get that break you know you've reached the outer limits of a --

A. Yes, and now, one other thing I'd like to indicate, it doesn't show on this map anywhere, but it is a complicating factor in this field.

On the north side of that road approxi-

mately running -- that road runs parallel to Railroad Mountain Dike, and we don't know if that's coming up through a fault all the way to the surface or not. We have no idea, but it would roughly parallel the fault.

MR. NUTTER: Is there other evidence of faulting in those formations along that Railroad Mountain down there, do you know?

A. I don't know of any other, because most of our evidence in other places is real shallow type.

MR. NUTTER: But Railroad Mountain does run parallel with this fault you've drawn in and right near this road here.

A. On the north side of the road.

MR. NUTTER: Okay, are there any other questions of Mr. Brown?

MR. CARR: No other questions.

MR. NUTTER: He may be excused. Do you have anything further, Mr. Carr?

MR. CARR: No other questions in this case.

MR. NUTTER: Does anyone have anything they wish to offer in Case Number 7073?

We'll take the case under advisement and call 7074.

MR. PEARCE: Application of Enserch Exploration, Inc., for pool creation, an unorthodox gas well location, and non-standard proration unit, Chaves County, New Mexico.

MR. CARR: May it please the Examiner, I'm William F. Carr, Campbell and Black, P. A., Santa Fe, appearing on behalf of the applicant.

Initially, Mr. Nutter, in the interest of saving time, I would request that the testimony of Tom Brown just offered in Case 7073 be incorporated herein by reference. His testimony in this case would be identical and the exhibits which he would offer in this case would likewise be the same.

MR. NUTTER: It appears to me that the evidence is interrlated between the two cases and we really ought to be consolidating them for purposes of testimony.

MR. CARR: We would have no objection to that and then I could call Mr. Monro to simply provide some additional testimony as to the J. G. O'Brien Well No. 2.

MR. NUTTER: That would be satisfactory. Consider these two cases consolidated, then. And all of Mr. Brown's geological testimony to both sides of the fault relates to the two pools.

And Mr. Monro is still under oath on

both cases.

JOHN A. MONRO

being called as a witness and being previously sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Monro, what is Enserch seeking with its application in Case 7074?

A. We're asking for creation of a new pool, the South Elkins Fusselman Gas Pool, an exception to the well location requirement for an unorthodox location of the discovery well, J. G. O'Brien No. 2, and approval for a non-standard proration unit.

Q. Where does the J. G. O'Brien No. 2 Well lie in respect to the J. G. O'Brien No. 1?

A. The J. G. O'Brien No. 2 is located 660 feet from the south and west line of Section 30, Township 7 South, Range 29 East, Chaves County, which would make it directly -- 2640 feet directly to the north of the J. G. O'Brien No. 1.

Q. When was the J. G. O'Brien No. 2 Well completed?

A. The J. G. O'Brien No. 2 was completed

on October the 3rd of 1980.

Q. Have you file d all forms required by the Oil Conservation Division rules concerning the completion of this well?

A. Yes, we have filed with the Commission office in Artesia, completion forms C-104 and 105 for the O'Brien No. 2 as an oil well.

Q. And is that office holding these forms pending outcome of this hearing?

A. Yes, sir.

Q. Will you please refer to what has been marked for identification as Enserch Exhibit Number A, and review the data contained therein for Mr. Nutter?

A. This exhibit is presented to show that the discovery well, Enserch -- Enserch's J. G. O'Brien No. 2, completed on October 3rd of 1980 in the interval of 6807 to 6808, and 6820 through 6824, was initially potentialed on October the 1st of '80 for 33 barrels of oil and 1531 Mcf gas, with a GOR at 36,697 cubic feet per barrel, and a flowing tubing pressure at 1850 psig. The maximum bottom hole pressure build-up survey, as per attached report, was 2575 psia.

Cumulative production on this well as of October the 5th of 1980, the date the well was shut-in awaiting pipeline connection, was 482 barrels of oil.

Attached with the exhibit are copies of Tefteller's report on flowing and shut-in gradients for the well, which indicate that the inflow and outflow gradient is that of gas and that no fluid could be detected in the wellbore during testing periods.

This in turn will lead us to determine that any oil produced must have been falling out in the form of condensate in our separator facilities downstream of the wellhead.

Therefor, we conclude that this well is, in fact, producing from a gas retrograde condensate reservoir.

Q. What acreage do you propose to dedicate to the J. G. O'Brien Well No. 2?

A. Okay, we propose to dedicate the west half of Section 30, Township 7 South, Range 29 East.

Q. Is this the acreage that you are requesting be included in the new pool?

A. Yes, sir.

Q. What is the standard spacing for a gas well in the Fusselman formation in this area?

A. 320 acres.

Q. Do you have 320 acres to dedicate to this well?

A. No, sir.

Q. How many acres do you have?

A. We have 308.96 acres.

Q. Is this non-standard proration unit also the result of a variation in the USGS survey?

A. Yes, it is.

Q. And you're requesting approval of this non-standard unit?

A. Yes, sir.

Q. Why was this well drilled at an unorthodox location?

A. All right, the well was originally drilled as an oil development well to the north of the J. G. O'Brien No. 1 on a regular location for an oil spacing, 660 feet from south and west line of Section -- of section line. However, since we have discovered that the well is in a gaseous state, and we are now asking for a gas proration unit, the location becomes unorthodox.

Q. And you're seeking approval of this location?

A. Yes, sir.

Q. Mr. Monro, in your opinion will granting this application be in the interest -- the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A. Yes, sir.

Q. Do you have a name to recommend to the Commission for the new pool?

A. Yes, sir, the South Elkins Fusselman Gas Pool.

Q. Was Exhibit A prepared by you?

A. Yes, sir.

MR. CARR: At this time, Mr. Nutter, we would offer into evidence Applicant's Exhibit A.

MR. NUTTER: Applicant's Exhibit A will be admitted in evidence.

MR. CARR: I have nothing further on direct.

CROSS EXAMINATION

BY MR. NUTTER:

Q. Mr. Monro, the pool for the O'Brien No. 1 has already been created. Was it designated as the South Elkins Fusselman Oil Pool?

A. Yes, sir, it was.

Q. And you're proposing here that this well would be approved at an unorthodox location 660 from the south and west lines of Section 30, and that it would have a non-standard 308-acre unit, being the west half of Section

30 dedicated to it.

A. Yes, sir.

MR. NUTTER: Are there any further questions of Mr. Monro?

MR. CARR: No further questions.

MR. NUTTER: He may be excused.

Do you have anything further in either of these cases, Mr. Carr?

MR. CARR: Nothing further, Mr. Nutter.

MR. NUTTER: Does anyone have anything they wish to offer in Cases 7073 or 7074?

We'll take the cases under advisement -- no, we can't.

We'll take Case 7074 under advisement.

We'll continue Case 7073 to the November 12th hearing, which is set for 9:00 o'clock a. m. at this same place. It will be readvertised and called again.

With that, we'll take the other case under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7073-7074 heard by me on 10/29 19 80.

Examiner
Oil Conservation Division

ROUGH

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 7074

Order No. R-6565

NOMENCLATURE

APPLICATION OF ENSERCH EXPLORATION, INC., FOR POOL CREATION, AN UNORTHODOX GAS WELL LOCATION AND NON-STANDARD PRORATION UNIT, CHAVES COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on October 29, 19 80, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this _____ day of January, 19 81, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Enserch Exploration, Inc., is the owner and operator of its J. G. O'Brien Well No. 2, located 660 feet from the South line and 660 feet from the West line of Section 30, Township 7 South, Range 29 East, NMPM, Chaves County, New Mexico.

(3) That said well was drilled as a step-out to applicant's J. G. O'Brien Well No. 1, located in the SW/4 NW/4 of Section 31 immediately to the South, which well had discovered a new Fusselman oil pool.

(4) That there is an apparent East/West trending fault separating the subject well from the aforesaid J. G. O'Brien Well No. 1, and the subject well, although structurally lower than said No. 1 well, encountered what appears to be a gas pool ~~gas~~ in the Fusselman formation.

(5) That the best evidence available to date indicates that said Fusselman gas pool may in fact be a retrograde gas condensate reservoir, and that it is separate and distinct from the South Elkins-Fusselman Oil Pool which the Division has created and defined for the J. G. O'Brien Well No. 1.

(6) That a new Fusselman gas pool should be created and defined comprising the W/2 of Section 30, Township 7 South, Range 29 East, NMPM, for the subject well, the J. G. O'Brien Well No. 2, located in Unit M of said Section 30.

(7) That the unorthodox gas well location of said well, being 660 feet from the South line and 660 feet from the West line of said Section 30, should be approved.

(8) That a 308.96-acre non-standard gas spacing and proration unit, being the W/2 of said Section 30, should be approved.

(9) That an order embodying the above findings will not cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That a new pool in Chaves County, New Mexico, classified as a gas pool for Fusselman production, is hereby created and defined with vertical limits comprising the Fusselman formation and horizontal limits as follows:

TOWNSHIP 7 SOUTH, RANGE ~~26~~ 29 EAST, NMPM
Section 30: W/2

(9) That this case should be reopened in approximately six months, at which time the applicant should be prepared to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is indeed determined to be a retrograde gas condensate reservoir.

(2) That the unorthodox gas well location of The Enserch Exploration, Inc., J. G. O'Brien Well No. 2 at a point 660 feet from the South line and 660 feet from the West line of Section 30, Township 7 South, Range ~~26~~ 29 East, NMPM, is hereby approved.

(3) That a 308.96-acre non-standard gas proration unit comprising the W/2 of the aforesaid Section 30 is hereby approved.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the South Elkins-Fusselman Gas Pool or in the Fusselman formation within one mile there and not within another Fusselman pool are hereby approved; that the operator of any well having an unorthodox location shall notify the Artesia District Office of the Division in writing of the name and location of the well on or before February 15, 1981.

(2) That, pursuant to Paragraph A. of Section 70-2-18, NMSA 1978, ~~contained in Chapter 271, Laws of 1969,~~ existing wells in the South Elkins-Fusselman Gas Pool shall have dedicated thereto 320 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section ~~65-3-14.5,~~ 70-2-18 existing wells may have non-standard spacing or proration units established by the Division and dedicated thereto.

Failure to file new Forms C-102 with the Division dedicating 320 acres to a well or to obtain a non-standard unit approved by the Division within 60 days from the date of this order shall subject the well to cancellation of allowable. Until said Form C-102 has been filed or until a non-standard unit has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the South Elkins-Fusselman Pool or in the Fusselman formation within one mile thereof shall receive no more than one-half of a standard allowable for the pool.

(3) That this case ~~should~~ shall be reopened in July, 1982 ~~approximately six months~~, at which time the applicant should be prepared to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is indeed determined to be a retrograde gas condensate reservoir.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year herein-above designated.

DRAFT

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

CASE NO. 7074

Order No. R-6565-A

APPLICATION OF ENSERCH EXPLORATION, INC. FOR POOL CREATION, AN UNORTHODOX GAS WELL LOCATION, AND NON-STANDARD PRORATION UNIT, CHAVES COUNTY, NEW MEXICO.

NUNC PRO TUNC ORDER

BY THE DIVISION:

It appearing to the Division that Order No. R-6565, dated January 22, 1981, does not correctly state the intended order of the Division,

IT IS THEREFORE ORDERED:

(1) That Order No. (3) on page 3 of Order No. R-6565 dated January 22, 1981, is hereby corrected to read in its entirety as follows:

"(3) That this case shall be reopened in July, 1981, at which time the applicant should be prepared to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is indeed determined to be a retrograde gas condensate reservoir."

(2) That the correction set forth in this order be effective nunc pro tunc as of January 22, 1981.

DONE at Santa Fe, New Mexico, on this _____ day of February, 1981.

Memo

1-26-81

From

W. A. GRESSETT
Supervisor

To Dan Nutter

There is an error on Page 3 of
order R-6565. see attached.

Bill

NEW MEXICO OIL CONSERVATION COMMISSION – ARTESIA, NEW MEXICO

(3) That a 308.96-acre non-standard gas proration unit comprising the W/2 of the aforesaid Section 30 is hereby approved.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the South Elkins-Fusselman Gas Pool or in the Fusselman formation within one mile thereof and not within another Fusselman pool are hereby approved; that the operator of any well having an unorthodox location shall notify the Artesia District Office of the Division in writing of the name and location of the well on or before February 15, 1981.

(2) That, pursuant to Paragraph A. of Section 70-2-18, NMSA 1978, existing wells in the South Elkins-Fusselman Gas Pool shall have dedicated thereto 320 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 70-2-18, existing well may have non-standard spacing or proration units established by the Division and dedicated thereto.

Failure to file new Forms C-102 with the Division dedicating 320 acres to a well or to obtain a non-standard unit approved by the Division within 60 days from the date of this order shall subject the well to cancellation of allowable. Until said Form C-102 has been filed or until a non-standard unit has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the South Elkins-Fusselman Pool or in the Fusselman formation within one mile thereof shall receive no more than one-half of a standard allowable for the pool.

(3) That this case shall be reopened in July, 1980, at which time the applicant should be prepared to appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is indeed determined to be a retrograde gas condensate reservoir.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY
Director

S E A L
fd/

RECEIVED
JAN 29 1981
OIL CONSERVATION DIVISION
SANTA FE

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7074 (Reopened)

Order No. R-6565-B

In the matter of Case 7074 being reopened pursuant to the Provisions of Order No. R-6565, Chaves County, New Mexico

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on July 15, 19 81, at Santa Fe, New Mexico, before Examiner DSN.

NOW, on this _____ day of July, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That Order No. R-6565, dated January 22, 1981, created the South Elkins Penn Gas Pool comprising the W/2 of Section 30, Township 7 South, Range 29 East, NMPM, Chaves County, New Mexico, and ordered that said case be reopened in July, 1981, at which time the applicant Enserch Exploration, Inc., should be prepared to appear and present evidence as to the exact nature of the reservoir and more particularly as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir

in the pool
(3) That the only well completed to date has not been connected to a pipe line and no reservoir production data is yet available.

(4) That the applicant, Eusech Exploration, Inc should notify the Division of the date of connection of said well and a hearing should be scheduled approximately six months later to review the reservoir

IT IS THEREFORE ORDERED:

(1) That the applicant, Eusech Exploration, Inc, shall notify the Division Director of the date of first connection to a gas pipe line of a well in the South Elkins-Fusselman gas Pool, and a hearing shall be scheduled approximately six months later, at which time all interested parties may appear and present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir

(2) Jurisdiction

DONE at —

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7074

Order No. R-6565-C

IN THE MATTER OF CASE 7074 BEING
REOPENED PURSUANT TO THE PROVISIONS OF
ORDER NO. R-6565 AND R-6565-B WHICH CREATED
THE SOUTH ELKINS-FUSSELMAN GAS POOL, CHAVES
COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 3, 1982, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this_____day of March, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-6565 and R-6565-B, dated January 22, 1981 and July 28, 1981, respectively, temporary special rules and regulations were promulgated for the South Elkins-Fusselman Gas Pool, Chaves County, New Mexico.

(3) That pursuant to the provisions of Order No. R-6565 and R-6565-B, this case was reopened to allow all interested parties to present evidence as to the exact nature of the reservoir, and more particularly, as to the proper rate of withdrawal from the reservoir if it is determined that said pool is producing from a retrograde gas condensate reservoir.

(4) That the evidence presented at this hearing establishes that said South Elkins-Fusselman is a retrograde gas condensate reservoir.

(5) That the evidence presented further established that ~~the pool~~ 1,500 MCF of gas per day should be established as a maximum rate of withdrawal for wells in said pool.

(6) That continuation of said pool as special pool rules do provide for ~~a gas~~ pool with such production limitation will prevent waste and will not violate correlative rights.

IT IS THEREFORE ORDERED:

(1) That effective April 1, 1982, Special Rules and Regulations for the South Elkins-Fusselman Gas Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE

SOUTH ELKINS-FUSSELMAN GAS POOL

RULE 1. Each well completed or recompleted in the South Elkins-Fusselman Gas Pool as in the Fusselman formation within one mile thereof, and not nearer to or within the limits of another designated Fusselman pool, shall be ~~spaced, drilled, operated, and~~ produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. A gas well in the ~~West Parkway-Strawn~~ South Elkins-Fusselman Gas Pool shall be permitted to produce no more than 1,500 MCF of gas per day during the effective period of these pool rules.

RULE 3. An initial shut-in pressure test shall be taken on each gas well and shall be reported to the ~~Commission~~ Division on Form C-125.

RULE 4. Any well completed after the effective date of these rules shall receive an allowable only upon receipt by the appropriate ~~Commission~~ Division district office of ~~Commission~~ Division Form C-104 ~~and C-116~~, properly executed.

RULE 5. ~~The initial balancing date shall be 7 o'clock a.m. April the first, 1954.~~ Subsequently, the date 7:00 a.m. April the first of each year shall be known as the balancing date, and the twelve months following this date shall be known as the gas proration period.

RULE 6. Any gas well which has an underproduced status as of the end of a gas proration period shall be allowed to carry such underproduction forward into the next gas proration period and may produce such underproduction in addition to the allowable assigned during such succeeding period. Any allowable carried forward into a gas proration period and remaining unproduced at the end of such gas proration period shall be cancelled.

RULE 7. Production during any one month of a gas proration period in excess of the allowable assigned to a well for such month shall be applied against the underproduction carried into such period in determining the amount of allowable, if any, to be cancelled.

RULE ~~17~~ 8. Any well which has an overproduced status as of the end of a gas proration period shall carry such overproduction forward into the next gas proration period, provided that such overproduction shall be compensated for during such succeeding period. Any well which has not compensated for the overproduction carried into a gas proration period by the end of such proration period shall be shut in until such overproduction is compensated for. If, at any time, a well is overproduced an amount equaling three times its current monthly allowable, it shall be shut in during that month and each succeeding month until the well is overproduced less than three times its current monthly allowable.

RULE ~~18~~ 9. The allowable assigned to a well during any one month of a gas proration period in excess of the production for the same month shall be applied against the overproduction carried into such period in determining the amount of overproduction, if any, which has not been compensated for.

RULE ~~19~~ 10. The ~~Commission~~ Division may allow overproduction to be compensated for at a lesser rate than would be the case if the well were completely shut in upon a showing after notice and hearing that complete shut in of the well would result in material damage to the well or reservoir.

RULE ~~16~~ 11. The monthly gas production from each gas well shall be metered separately and the gas production therefrom shall be reported to the ~~Commission~~ Division on Form C-115 so as to reach the Commission on or before the 24th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the produced gas.

RULE ~~17~~ 12. Each purchaser or taker of gas shall submit a report to the ~~Commission~~ Division so as to reach the ~~Commission~~ Division on or before the 15th day of the month next succeeding the month in which the gas was purchased or taken. Such report shall be filed on Form C-111 with the wells being listed in the same order as they are listed on the appropriate proration schedule.

RULE ~~18~~ 13. Failure to comply with any provision of these rules shall result in the immediate cancellation of allowable assigned to the affected well. No further allowable shall be assigned until all rules and regulations have been complied with. The ~~Secretary~~ Division Director shall notify the operator of the well and purchaser in writing of the date of allowable cancellation and the reason therefor.

RULE ~~19~~ 14. All transporters or users of gas shall file gas well-connection notices with the ~~Commission~~ Division as soon as possible after the date of connection.

IT IS FURTHER ORDERED: (15) Jurisdiction