MEMORANDUM IN SUPPORT OF CONVERSION OF THE STATE J-WELL NO. 1 FROM AN OIL WELL TO A GAS WELL WITH SUPPORTING ATTACHMENTS

TO: Frank Chavez, District Supervisor, Aztec OCD Ofc.

FROM: BCO, Inc.

DATE: September 12, 1988

INTRODUCTION:

The purpose of the requested conversion from an oil well to a gas well is to correct BCO, Inc.'s initial designation of this well as an oil well. The State J-Well No. 1 (J-1 Well) was drilled and completed in October 1987. The initial classification as an oil well was based on the belief that the geologic and engineering data and parameters were similar to other wells that had been drilled by BCO, Inc. in the area, although BCO was aware then that there existed permeability bars between the proposed location and other offsetting wells. In addition, the first months production had an apparent gas/oil ratio of 24.6 to 1. We now believe GOR's through December were the result of flush oil production from the Graneros which has a higher psi than the Gallup.

After producing the well for approximately six months, it became evident that the well, based on 40-acre oil spacing, was experiencing gas overproduction problems. As a result of the overproduction problems, BCO, Inc. filed its application for nonstandard oil proration unit in Case No. 9396 before the Oil Conservation Division. This application for an 80-acre proration unit was denied based on insufficient geologic and engineering data. Since the denial of the application, BCO, Inc. has conducted further studies on the J-1 Well which has established the well should be classified as a gas well instead of an oil well based on existing pool rules of the Lybrook-Gallup pool. See 1st page of attachment 11 hereto.

SUMMARY OF OPERATING PROCEDURES AND COMMENTS:

BCO, Inc. initially produced the J-1 from both the Gallup and Graneros. In June 1988, BCO isolated the Gallup and Graneros formations. The Gallup was shut in a week after being operated for some 6 months. The formation pressure never leveled off. Tefteller computed bottom hole pressures. See attachment 4.

Tools got stuck with sand when going down to test the

Graneros. BCO cut off the tools and set a bridge plug at 5880 between the Graneros and Gallup and has temporarily, and maybe permanently, abandoned the Graneros.

From October through March, the well was intermitted at least once a day to allow a piston to keep the well clear of paraffin. To prevent the well from making sand, a choke was used to restrict flow. The choke size varied but was set above size that resulted in freezing. The lowest turn on pressure was in early April of 545 psi casing pressure. This was achieved with a 22/64 choke and flowing some 23 hours a day starting in late March. We then attempted to curtail production, resulting in higher operating pressures. By July 13, the turn on casing pressure had increased to 710 psi.

The well was then set on a 14/64 choke. The intermitter operates two hours on and four hours off. This results in the well operating eight hours a day and being shut in sixteen. As a result of freezing, size was increased to 16/64 and then to 18/64. The casing turn on pressure increased to 715 psi by July 15. On July 17, it had increased to 720; on July 21 to 725; on July 24 to 730. It increased again to 735 on August 7. The turn on casing pressure has remained 735 to the date of this memo.

These operating pressures are compared to Tefteller recorded casing pressure after a 7-day shut-in of 738 psi. Our gauge registered at this time 755 psi. Our recorded turn on casing pressure of 735 should be reduced to 718 to compare to the Tefteller report. Even after making this adjustment, our "turn on" casing pressure is within 20 pounds of the final casing pressure determined by Tefteller after a 7-day shut-in! July and August production has approximated 300 MCF a day and 3.5 barrels of condensate.

The Tefteller 7-day test shows that the pressure never leveled off and continued to increase. It would appear that the actual formation pressure was not determined by the 7 day shut-in test.

It would also appear that even though marginal oil zones were perforated and fracked (see attachments 7 and 8) that excessive operating pressures have prevented significant crude oil Gallup production following the pressure test in June and setting a bridge plug above the Graneros at 5880.

"Condensate" is defined by the Commission's rules as a "liquid recovered at the surface that results from condensation due to reduced pressure or temperature of petroleum hydrocarbons existing in a gaseous phase in the reservoir."

The 5th page of attachment 4 (Tefteller's report) states: "Oil Level NIL" - "Water level 5391." This rather conclusively establishes that the fluid recovered at the surface of this well is in fact gas in the formation and condenses when the well is produced as a result of reduced pressure and temperature of the gas as the well is produced--the exact commission definition of condensate! This is

further confirmed by the liquid analysis of Core Laboratories contained in attachment 5, Tom Dugan's opinion (attachment 6), and the opinions expressed by Welex and Halliburton engineers (attachments 7 and 8).

"Condensate" is not crude oil and only "oil" is used in determining a gas-oil ratio. See 2nd page of attachment 11 for Commission's definition of gas well: "shall mean a well producing gas or natural gas from a gas pool or a well with a gas-oil ratio in excess of 100,000 cubic feet of gas per barrel of oil producing from an oil pool" (emphasis supplied).

GEOLOGIC AND PRESSURE SEPARATION OF THE J-1:

On the diagonal offsetting tract to the J-1 (SW/4 SW/4, Section 10), BCO's records show that the Dunn 1 well was drilled and open-hole logged on September 5, 1956. It was the Gallup discovery well in this area. It was shortly thereafter completed and was reasonably continuously operated until it was shut in in 1976 as uneconomical and depleted in the Gallup after some 20 years of production.[1]

The Gallup was cemented off on February 26, 1977, and the hole thereafter deepened to the Dakota. The Graneros produced marginal oil and gas and also sulphur water, the disposal of which makes said well uneconomical at today's prices. The J-1 well has no indication of sulphur. No other Graneros or Dakota well in the area produced sulphur water.

A well, owned by Unicon, is a direct offset to the J-1 being situated in the SE/4 SE/4, Section 9. It was reasonably continuously operated from 1956 into 1986, some 30 years. Production was discontinued in 1986. Its reported production prior to discontinuance of production was very marginal and I presume became uneconomical at today's prices. Its cumulative production, as shown by attachment 9 page 4, was 34,799 bbls of oil and 258,266 MCF. The Unicon Dunn 1 Gallup is a direct offset to the BCO Dunn 1 depleted Gallup well as well as the J-1. See attachment 3. A half mile to the east of the J-1 is the BCO Betty B Gallup oil well. It has operated since 1962 and is largely depleted. It has never had sufficient gas to make gas sales economical. It makes 1 1/2 barrels of oil a day and is barely producing in paying quantities at today's prices.

[1]The BCO Dunn 1 well was shut in and production discontinued on October 21, 1976. Gas was insufficient to be economic to sell. In 1976 it operated nine months (January and February and April through October) and made a total of 196 barrels, an average of some 22 barrels a producing month. See Oil and Gas Engineering Commission 1976 Annual Report, page 23. The last recorded pressures were obtained on December 13, 1976, 51 days after being shut in. According to our records, the casing pressure was 265 and the tubing pressure was 255.

The Dunn 7 is located a little more than half a mile northwest of the J-1. It has operated since 1981. We, this year, drilled the Dunn 15. Its pressures are comparable to Dunn 7. Neither have pressures anywhere in the range of the J-1. All of the offsetting wells referred to are in the Lybrook Gallup. We believe it is clear that the J-1 is producing from a pool or area that is not communicating with the Lybrook Gallup pool. If the area where the J-1 is producing from was in communication with the Lybrook Gallup, it would have also been largely depleted. We most certainly would not have had a gas allowable problem!

It is clear that no correlative rights would be affected by classifying the J-1 as a gas well and thereby allowing it to produce at proper rates and pressures, enabling the recovery of oil that is not now being produced. Such action would prevent waste and result in recovery of oil in the oil bearing zones upon reduction of operating pressures. See attachment 7 as to zones that contain oil. Also, see log attachment 12.

J-1 COMPLETION:

This well was completed by using limited entry. It has 11-0.39 (of an inch) perforations. See attachment 12 where perforations are marked. It was treated with 20 lb gelled water, foamed with a 70 quality nitrogen foam. 400,000 lbs of 20/40 sand was placed in the fractures created by an injection rate of 40 foam barrels a minute (average 3.6 bbls per minute in each 0.39 perforation). The fracture lengths are computed by Halliburton and productive capacity discussed in attachment 8. The opinion is expressed that the Mayre as shown by the log is a gas zone and the principal zone in the well. See also Welex analysis attachment 7. Halliburton, upon reviewing Tefteller report on bottom hole pressure, computed gas reserves in place for J-1. See attachment 8 page 4 of 10 799 MMCF with no oil reserves.

SUMMARY:

Tom Dugan is generally recognized as an engineer with broad experience in the Basin with all phases of exploration, development and operation of oil and/or gas wells. Mr. Dugan made a study of the J-1 and its fluid and concluded that fluid now produced contains a substantial amount of condensate and that the well is a gas well. He has stated his reasons for this conclusion.

He is supported in his conclusions by the Core Laboratories analysis (attachment 5), the Tefteller pressure study (attachment 4), the company that logged the well--Welex attachment 7, and the Halliburton engineer who worked with BCO to design the frac treatment (attachment 8).

The gas fluid ratio has reached 87 to 1. It is an understatement to note that at least some (if not all) of

this fluid is "condensate." Elimination of "condensate" from gas-oil ratio will clearly result in substantially over a 100 to 1 gas-oil ratio. The discontinuance of production from the Graneros which is an oil zone initially was responsible for low ratios of 24 to 40 to 1 that continued to mislead BCO that the J-1 was an oil well. The Graneros has an initial steep oil decline curve which together with high operating pressures resulted in increasing gas fluid ratios of some 60 to 1 in its fourth and fifth month of production. In March the ratio increased to 80 to 1 even though operating pressures were being decreased. In June pressure tests and effect of killing the well probably distorted gas ratio to 62 to 1. During this month a bridge plug was set, preventing production from Graneros.

July and August reflect gas-condensate-oil ratios attributable only to Gallup of over 85 to 1. The liquid is believed to be all or primarily condensate. Upon reducing pressures, oil should be produced. The quantity can be easily monitored by first allocating as condensate the present gas-condensate ratio of some 85 to 1. The number of barrels of condensate could be determined. All other liquids could then be allocated as oil and a gas-oil ratio computed.

CONCLUSION:

We again apologize for making our initial classification of the well as an oil well. Flush oil production from the Graneros substantially contributed to this error. Plugging the Graneros and operating only the Gallup has enabled us to identify "condensate" that changes from gas to fluid by reducing temperature and pressure upon reaching the separator at the surface.

It was only as a result of the prior limited operations of the J-1 that producing operations had not reduced pressures to extent that gas was condensing in the formation or in shut-in well bore to fluid. That no hydrocarbon fluid existed until pressures and temperatures were reduced by actual producing operations is clearly and directly established by attachment 5 as noted above. All fluid produced by the J-1 as a result of producing operations when the well is operated at high pressures is clearly and directly established to be "condensate" by the Tefteller shut-in test which established no hydrocarbon fluid was in well bore following a 7 day shut-in.

This has established that when condensate is eliminated from a gas-oil ratio that the well most clearly classifies as a gas well. We request that our amended C-102 be approved and the well correctly classified as a gas well.

We understand we will then have to apply to the Commission for approval of an unorthodox location. The J-1 is situated 820 feet from the east line. This is more than 790 and is orthodox as to this dimension. The well is located 540 feet from the north line and is unorthodox as to

this dimension. It will be established that as a result of the petroleum products line and easement, a well could not have been located in this subdivision 790 feet from the north line without encroaching on the highway right-of-way and/or products line easement with the required size of location to drill. In fact, our prepared location came to within 10 feet of the products line easement.

No correlative rights could be adversely affected because a direct offsetting well on the 40 acre tract that we were only 540 feet from has produced for over 30 years and is depleted and has not operated for some two years. See attachment 10 where Unicon consented to our first application. A high pressure zone as the J-1 cannot drain a low pressure zone that is largely depleted after some 30 years of operation. In fact, a permeability barrier has to exist and does exist or the Unicon Dunn 1 Section 9 well and BCO wells would have drained and depleted the J-1 location. BCO, prior to drilling, believed a permeability barrier existed and drilled the J-1. Pressures encountered proved the correctness of the BCO analysis.

Respectfully submitted,
BCO, Inc. by

Harry L. Bigbee
Chief Executive Officer

Index to Attachments

Attachment 1: Amended form C-102 dedicating NE¼ of Section 16 to State J-1 well executed September 9, 1988, as of October 13, 1987.

Attachment 2: J-1 well production of gas and fluid from Gallup through August 1988. August gas production computed from gas charts by BCO. Normally only a very slight adjustment required when El Paso computes.

Attachment 3: Computed elevations of top of Skelly member of Gallup formation and top of Graneros (Dakota A) with locations of wells indicated.

Attachment 4: Cover letter from Tefteller, Inc. attaching four page report on J-1 well pressures buildup and temperatures determined from June 10 to June 17. Shut-in pressure test.

Attachment 5: Consisting of four pages. Report of Core Laboratories of fluid test of J-1 fluid and test on oil derived from Betty B No. 1-15 well, the closest operating well to J-1.

Attachment 6: Letter from Tom Dugan, reflecting his conclusion that the J-1 is a gas well.

Attachment 7: Letter from Welex, stating that Mayre zone is major zone in well and is a gas zone. That a second zone from 5632-5677 is a shaley gas sand. Other perforated zones are marginal oil zones.

Attachment 8: Letter dated August 5, 1988, from Halliburton, with Log Segment attached and 10 page report including computer runs using, where applicable, Tefteller report (attachment 4).

Attachment 9: Xeroxed front page of 1987 annual report of the NM Oil and Gas Eng. Committee and xerox copy of pages relating to Lybrook Gallup production.

Attachment 10: Letter from Unicon Producing Co. (Unicon), stating no objection to BCO's nonstandard spacing and production unit for the J-1 well. BCO is the operator of all tracts adjacent to J-1-NE¼ of Section 16, excepting only Union which is lessee and operator of adjacent tract consisting of S½ SE¼ Section 9, T23N-7W.

Attachment 11: Order of Commission, providing 160 acre spacing for gas wells; 40 acres oil wells in Lybrook Gallup field. Also, definition rule of Commission defining "Condensate" and also "Gas Well."

Attachment 12: Welex J-1 Spectral Density Log. Log has perforations marked. Also, Skelly and Graneros tops and computed elevations. See 5" scale. Elevations as shown on other wells on attachment 3 were computed and tops determined as shown on attachment 12.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87

Form C-102
Revised 10-1-

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
BCO, Inc.	State J	1

Unit Letter	Section	Township	Range	County
A	16	23 North	7 West	Rio Arriba

Actual Footage Location of Well:
540 feet from the North line and 820 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
7210	Gallup	Lybrook Gallup Ext	160 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

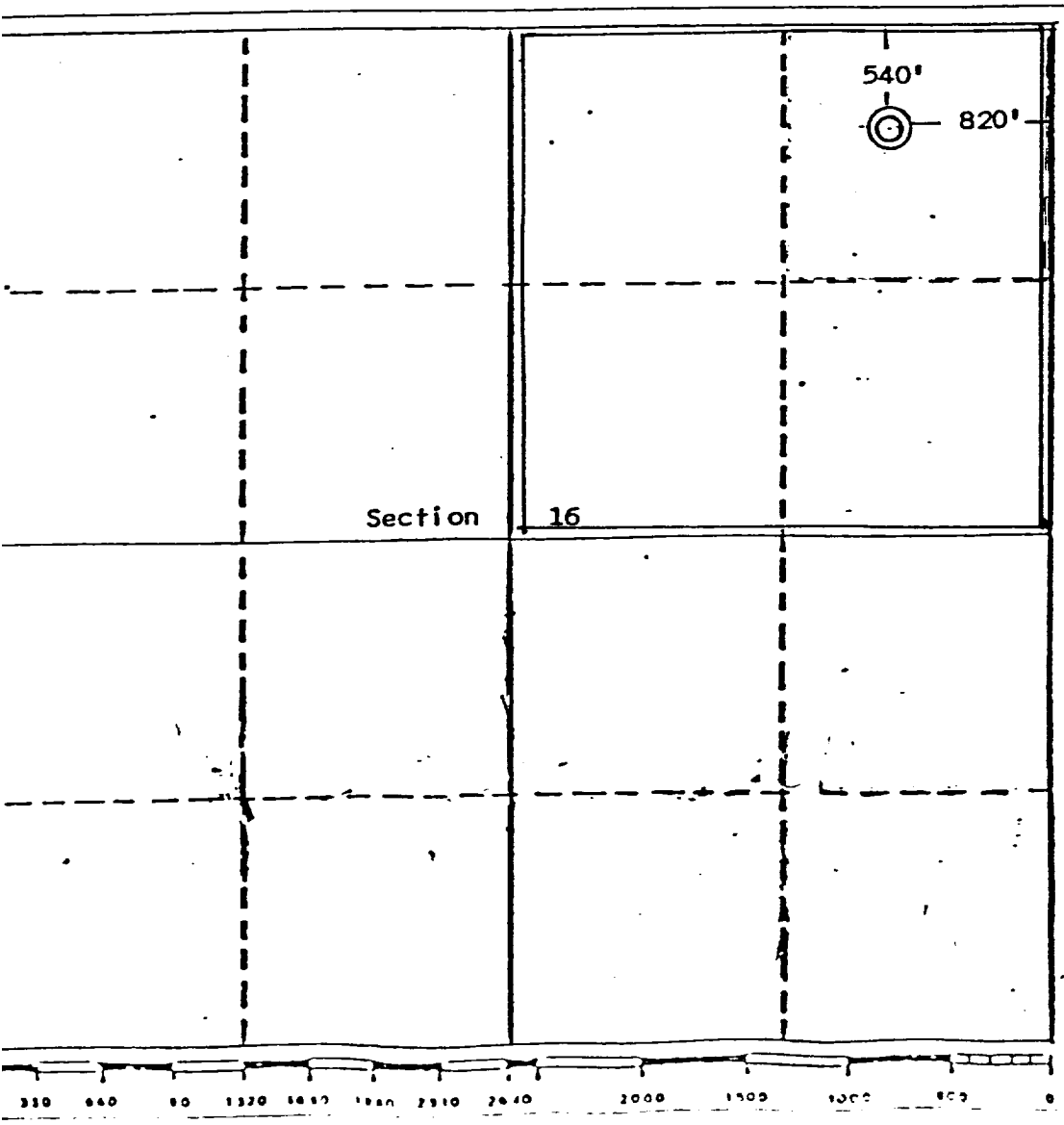
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Elizabeth B. Keeshan

Name: Elizabeth B. Keeshan

Position: Vice President

Company: BCO, Inc.

Date: September 9, 1988
as of October 13, 1987

EDGAR L. RISENHOOVER
NEW MEXICO
5979
REGISTERED LAND SURVEYOR

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: July 9, 1987

Registered Professional Engineer and/or Land Surveyor

Edgar L. Risenhoover

Certificate No. 5979

Edgar L. Risenhoover, L.

State J-1
Section 16 T 23N R 7W
540 FNL, 820 FEL

Gallup Oil & Gas Production[1]

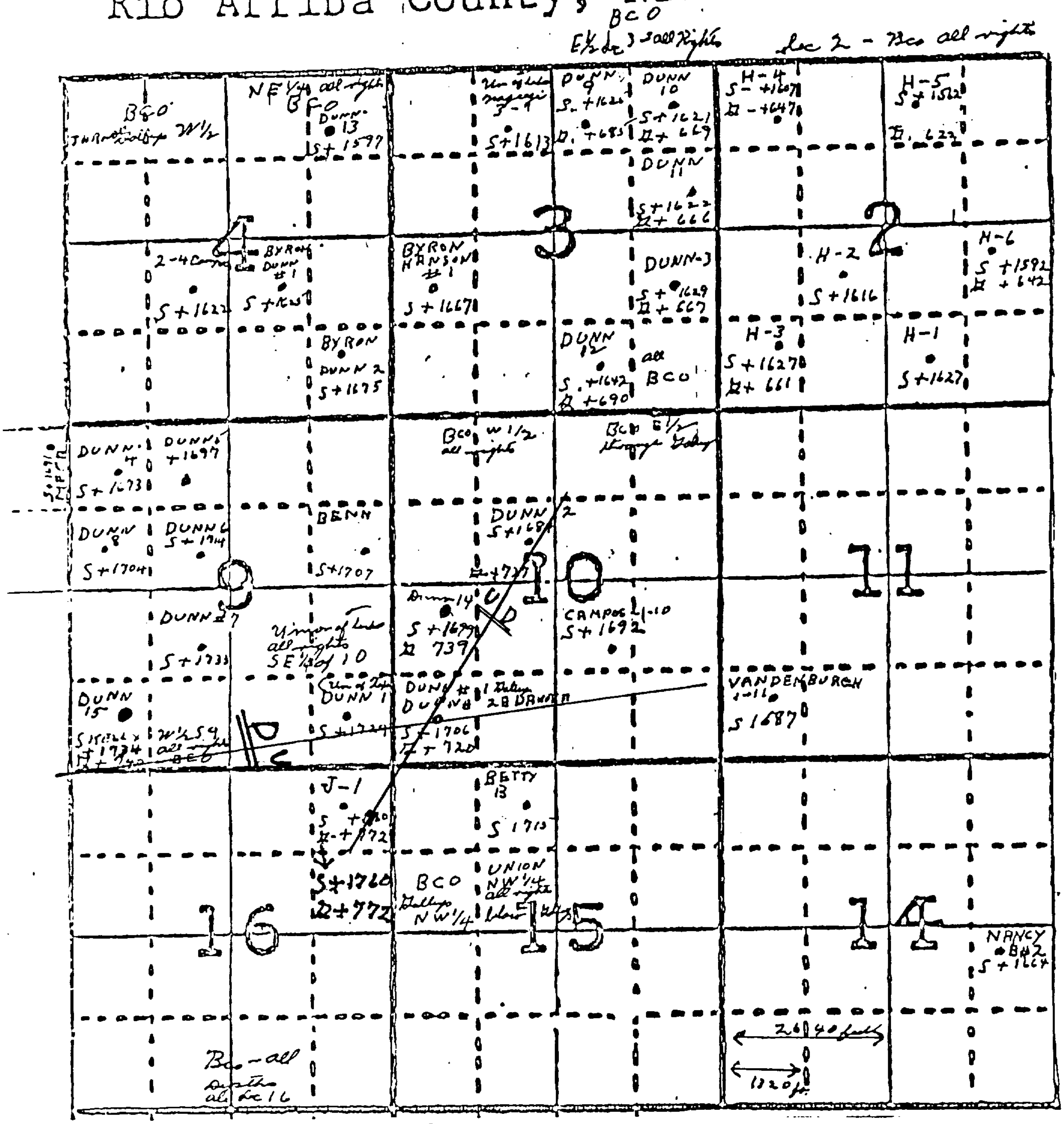
	Days of Prod.	Hydro-carbon Fluid Bbls	Gas MCF	Gas/Fluid Ratio
October 1987	17	191	4700	24.60
November 1987	30	243	9875	40.63
December 1987	31	208	8599	41.34
January 1988	31	189	11666	61.72
February 1988	29	177	11291	63.79
March 1988	31	188	15040	80.00
April 1988	30	167	12525	75.00
May 1988	31	141	10575	75.00
June 1988	20	103	6454	62.00
July 1988	31	110	9492	86.00
August 1988	31	109	9500 [E]	87.00

[1]Graneros allocation oil and gas not included. Graneros temporarily abandoned June 1988 and bridge plug set at 5880 below Gallup and above Graneros. No production from Graneros in July or August 1988.

S = Elevation top of Shelly
Ɑ = Elevation top of [illegible]
MESA - 1 - 8 T23N R7W
NE 1/4 NE 1/4 Sec 8

T.23N R.7W N.M.P.M.

Rio Arriba County, New Mexico



● DUNN 15 Subdivision M Section 9
Logged 15 June 1988
● DUNN 14 Subdivision L Section 10
Logged June 21, 1988
DUNN 13 Subdivision A Section 4
[illegible] 3, 1988

TEFTELLER, INC.
reservoir engineering data

MIDLAND, TEXAS / FARMINGTON, NEW MEXICO
GRAND JUNCTION, COLORADO

P. O. Box 5247
Midland, Texas 79704
(915) 682-5574

June 20, 1988

BCO, Inc.
135 Grant Avenue
Santa Fe, NM 87501

Attention: Mr. Art Jaramillo
for Ms. Elizabeth Keeshan

Subject: Buildup Measurement
State "J" No. 1
Lybrook (Gallup) Field
Rio Arriba County, New Mexico
Our File No. 2-19081-BU

Dear Mr. Jaramillo:

Attached hereto are the results of a bottomhole pressure buildup measurement which was conducted on the above captioned well June 10 through 17, 1988.

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,

Neil Tefteller

Neil Tefteller

NT/lw

TEPTELLER, INC.
RESERVOIR ENGINEERING DATA
MIDLAND, TX.- FARMINGTON, NM.- GRAND JUNCTION, CO.

WELL : STATE "J" NO. 1 PAGE 1 OF 4

FIELD : LYBROOK (GALLUP) FILE 2-19081-BU

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA

1988 DATE	STATUS OF WELL	TIME	ELAPSED TIME HRS. MIN.	WELLHEAD PRESSURE TBG CSG	BHP @ 5700' PSIG
6-10	Arrived on location Well flowing on 18/64" choke	09:00		538	
	Tandem instruments @ 5700'	10:00			704
	Flowing on 18/64" choke	11:00			684
		12:00			683
	Shut-in for buildup	12:00	0 00		
		12:15	0 15		722
		12:30	0 30		731
		12:45	0 45		739
		13:00	1 00		744
		13:15	1 15		748
		13:30	1 30		751
		14:00	2 00		754
		14:30	2 30		756
		15:00	3 00		759
		16:00	4 00		763
		17:00	5 00		766
		18:00	6 00		769
		19:00	7 00		772
		20:00	8 00		775
		21:00	9 00		777
		22:00	10 00		780
6-1		00:00	12 00		783
		02:00	14 00		786
		04:00	16 00		789
		06:00	18 00		792
		08:00	20 00		795
		10:00	22 00		797
		12:00	24 00		799
		14:00	26 00		801
		16:00	28 00		804
		18:00	30 00		806
		20:00	32 00		808
		22:00	34 00		810
6-12		00:00	36 00		811
		04:00	40 00		813
		08:00	44 00		816
		12:00	48 00		819
		16:00	52 00		821
		20:00	56 00		824

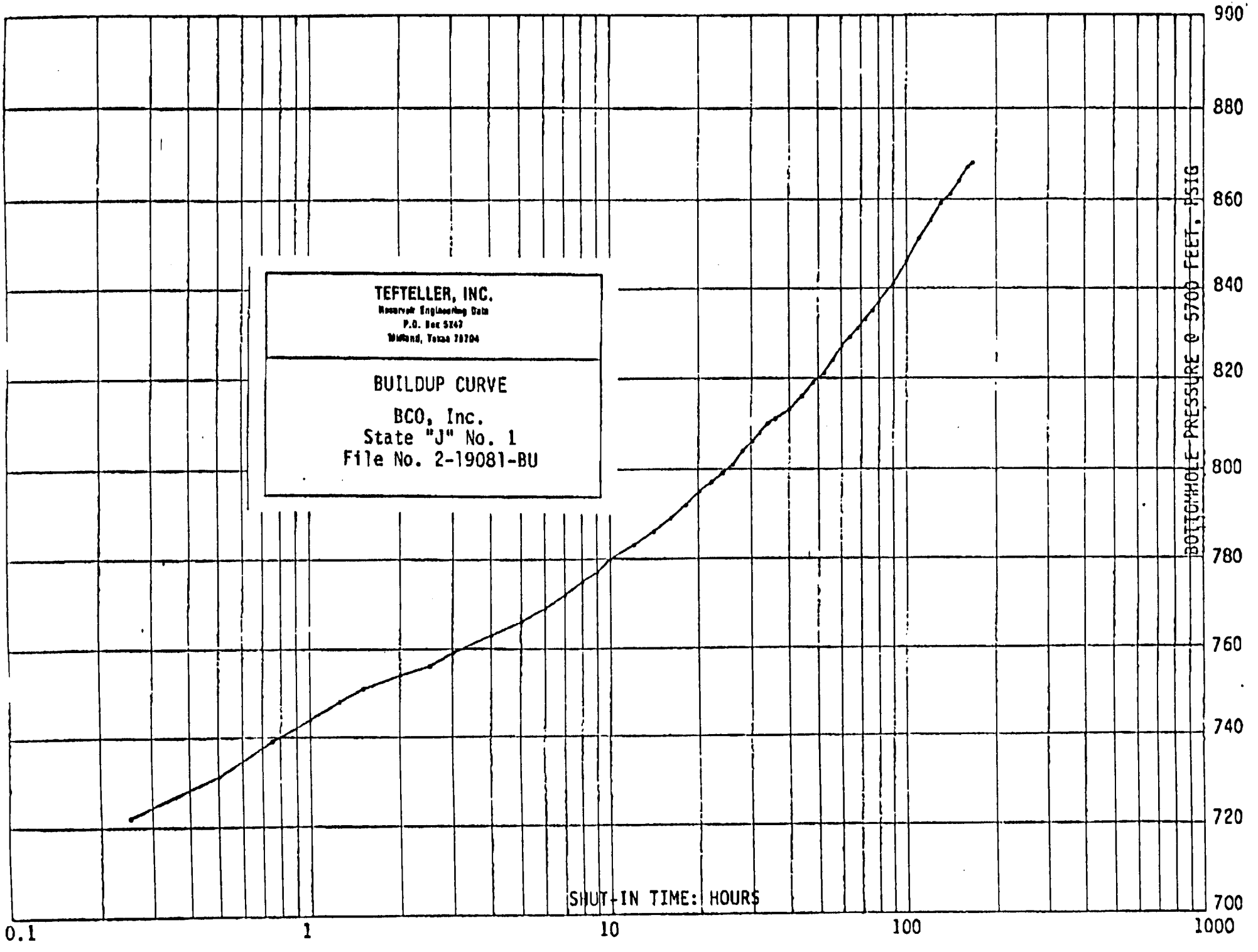
TEPTELLER, INC.
RESERVOIR ENGINEERING DATA
MIDLAND, TX.- FARMINGTON, NM.- GRAND JUNCTION, CO.

WELL : STATE "J" NO. 1 PAGE 2 OF 4

FIELD : LYBROOK (GALLUP) FILE 2-19081-BU

CHRONOLOGICAL PRESSURE AND PRODUCTION DATA

1988 DATE	STATUS OF WELL	TIME	ELAPSED TIME HRS.	MIN.	WELLHEAD PRESSURE TBG	CSG	BHP @ 5700' PSIG
6-13		00:00	60	00			827
		04:00	64	00			829
		08:00	68	00			831
		12:00	72	00			833
		16:00	76	00			835
		20:00	80	00			837
6-14		06:00	90	00			841
		16:00	100	00			846
6-15		02:00	110	00			851
		12:00	120	00			855
		22:00	130	00			859
6-16		08:00	140	00			861
		18:00	150	00			864
6-17		04:00	160	00			867
	Off bottom with instruments	09:15	165	15			868
	Gradient traverse	10:30	166	30	623	738	868


TEFTELLER, INC.
Reservoir Engineering Data
P.O. Box 5747
Midland, Texas 79704
BUILDUP CURVE
BCO, Inc.
State "J" No. 1
File No. 2-19081-BU
BOTTOMHOLE PRESSURE @ 5700 FEET, PSIG
900
880
860
840
820
800
780
760
740
720
700
SHUT-IN TIME: HOURS
0.1
1
10
100
1000

File 2-19081-BU

EFTELLER, INC.

MIDLAND, TEXAS

Company BCO, INC. Lease STATE "J" Well No. 1

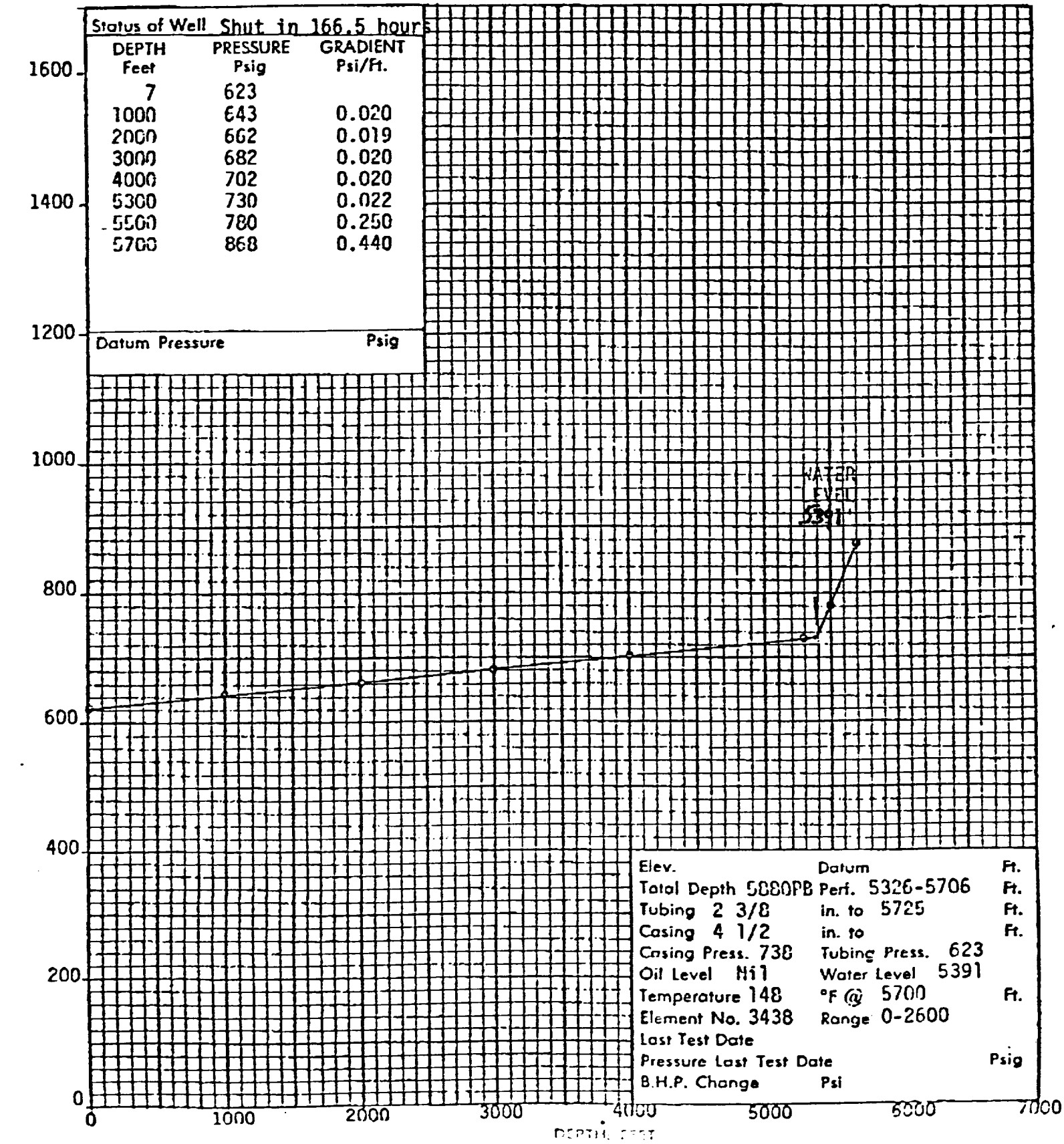
Field LYBROOK (GALLUP) County RIO ARRIBA State NEW MEXICO

Formation GALLUP Test Date JUNE 10, 1988

Status of Well Shut in 166.5 hours

DEPTH Feet	PRESSURE Psig	GRADIENT Psi/Ft.
7	623	
1000	643	0.020
2000	662	0.019
3000	682	0.020
4000	702	0.020
5300	730	0.022
5500	780	0.250
5700	868	0.440

Datum Pressure Psig



Elev.	Datum	Ft.
Total Depth 5880PB	Perf. 5326-5706	Ft.
Tubing 2 3/8	in. to 5725	Ft.
Casing 4 1/2	in. to	Ft.
Casing Press. 738	Tubing Press. 623	
Oil Level Nil	Water Level 5391	
Temperature 148	°F @ 5700	Ft.
Element No. 3438	Range 0-2600	
Last Test Date		
Pressure Last Test Date		Psig
B.H.P. Change	Psi	

Western Atlas International
A Litton Dresser Company

CORE LABORATORIES

COMPOSITIONAL ANALYSIS

for

BCO, Inc.
State J-1 and Betty "B" No. 1-15 Wells
Escrito Field
Rio Arriba County, New Mexico
File Number: ARFL-88096

Western Atlas International
A Litton Dresser Company

CORE LABORATORIES

September 3, 1988

BCO, Inc.
135 Grant Avenue
Santa Fe, New Mexico 87501

Attention: Ms. Elizabeth B. Keeshan

Subject:

Compositional Analysis
Betty "B" No. 1-15 Well and
State J-1 Well
Escrito Field
Rio Arriba County, New Mexico
File Number: ARFL-88096

Gentlemen:

On August 29, 1988 two liquid samples were collected from the subject wells by Tefteller, Inc. The samples were submitted to our Aurora laboratory for compositional analysis. Presented in this report are the results of our analyses.

As a quality check, the bubble point pressure of the State J-1 liquid sample was measured in the laboratory at ambient conditions. A summary of the quality check may be found on page one.

Extended compositional analysis of the liquid samples was measured by flash/chromatographic technique. The composition of the State J-1 and the Betty "B" No. 1-5 liquid samples in terms of mol percent and weight percent may be found on pages one and two, respectively.

Thank you for the opportunity to be of service to BCO, Inc. Should you have any questions pertaining to these test results or if we may be of further assistance, please do not hesitate to contact us at (303) 751-9334.

Very truly yours,

Matthew W. Ostrand

Matthew W. Ostrand
Reservoir Fluid Supervisor

MWO/sso
4 cc addressee

HYDROCARBON ANALYSIS OF SEPARATOR LIQUID SAMPLE

Component	Mol Percent	Weight Percent
Hydrogen Sulfide	0.00	0.00
Carbon Dioxide	0.05	0.02
Nitrogen	0.02	0.01
Methane	5.06	0.61
Ethane	3.59	0.82
Propane	6.56	2.18
iso-Butane	1.49	0.66
n-Butane	5.55	2.44
iso-Pentane	3.03	1.65
n-Pentane	4.95	2.69
Hexanes	8.00	5.07
Heptanes	13.55	9.82
Octanes	13.67	11.04
Nonanes	7.59	6.93
Decanes	5.29	5.35
Undecanes	3.34	3.71
Dodecanes	2.57	3.12
Tridecanes	2.40	3.17
Tetradecanes	1.87	2.68
Pentadecanes	1.58	2.45
Hexadecanes	1.28	2.14
Heptadecanes	1.11	1.99
Octadecanes	1.08	2.05
Nonadecanes	0.90	1.79
Eicosanes plus	5.47	27.61
	100.00	100.00

Component	Mol Percent	Weight Percent	Density, Gm/Cc @ 60°F.	°API @ 60°F.	Molecular Weight
Heptanes plus	61.70	83.85	0.8242	40.0	180
Undecanes plus	21.60	50.71	0.8839	28.4	311
Pentadecanes plus	11.42	38.03	0.9143	23.1	441
Eicosanes plus	5.47	27.61	0.9440	18.2	669

Overall density = 0.7687 gm/cc @ 0 psig and 60°F.
Overall mol weight = 132.5

Collected @ 220 psig on 8/19/88.

Laboratory bubble point pressure = 165 psig and 75°F.

File ARFL-88096
Well Betty "B" No. 1-15

HYDROCARBON ANALYSIS OF ATMOSPHERIC LIQUID

Component	Mol Percent	Weight Percent
Hydrogen Sulfide	0.00	0.00
Carbon Dioxide	0.00	0.00
Nitrogen	0.00	0.00
Methane	0.00	0.00
Ethane	0.00	0.00
Propane	0.32	0.07
iso-Butane	0.14	0.04
n-Butane	0.35	0.10
iso-Pentane	0.48	0.17
n-Pentane	1.18	0.42
Hexanes	3.33	1.38
Heptanes	8.52	4.04
Octanes	12.58	6.65
Nonanes	9.80	5.86
Decanes	8.59	5.69
Undecanes	6.24	4.53
Dodecanes	5.17	4.11
Tridecanes	5.01	4.33
Tetradecanes	4.04	3.80
Pentadecanes	3.58	3.64
Hexadecanes	2.91	3.19
Heptadecanes	2.55	2.99
Octadecanes	2.49	3.09
Nonadecanes	2.13	2.77
Eicosanes plus	20.59	43.13
	100.00	100.00

Component	Mol Percent	Weight Percent	Density, Gm/Cc @ 60°F.	°API @ 60°F.	Molecular Weight
Heptanes plus	94.20	97.82	0.8438	36.0	210
Undecanes plus	54.71	75.58	0.8745	30.2	279
Pentadecanes plus	34.25	58.81	0.8966	26.2	347
Eicosanes plus	20.59	43.13	0.9172	22.6	424

Overall density = 0.8384 gm/cc @ 0 psig and 60°F.
Overall mol weight = 202.3

dugan production corp.

September 9, 1988

BCO, Inc.
135 Grant Ave.
Santa Fe, NM 87501

Attention: Elizabeth Keeshan

Re: BCO Inc.'s State J #1 well

Dear Liz,

We are in receipt of the analysis of the two liquids performed at your request by Core Laboratories in Aurora, Colorado. One analyses is of your State "J" No. 1 and the other one is of an offset to your State "J" No. 1 well, the Betty "B" No. 1-15.

In the Craft and Hawkins text, Applied Petroleum Reservoir Engineering, they state that a gas-condensate reservoir may be approximately defined as those which produce light-colored or colorless stock tank liquids with gravities above 45°API at gas-oil ratios in the range of 5000 to 100,000 SCF/bbl. They also add that it is difficult to classify wells and the reservoirs from which they produce entirely on the basis of surface gas-oil ratios since the classification properly depends on the composition of the hydrocarbon accumulation and the temperature and pressure accumulation in the earth which widely vary. There are no easy clear cut boundaries or dividing lines within reservoirs to define distinctions. It's obvious the State "J" No. 1 isn't behaving like your other wells in the area. It is also different from what I would expect. My experience in the area is that those wells produce oil in the 38°API to 40°API range and the fact that the State "J" No. 1 is producing a fluid around 45°API is an indication that the produced fluids contains more condensate than is normally found in the area.

In reference to Core Laboratories' analysis, the sample from the State "J" No. 1 is a lighter and more volatile fluid than the oil sample taken from the direct offset, the Betty "B" No. 1-15. The fluid sample taken from the separator on the State "J" No. 1 still contained some methane and ethane and had an overall mole weight of 132.5 and an overall density of 0.7687 gm/cc, whereas, the oil sample taken from the Betty "B" No. 1-

15 which has no separator, contains no methane or ethane and had a mole weight of 202.3 and an overall density of 0.8384 gm/cc. This would indicate that the State "J" No. 1 well is producing a fluid which contains more condensate than the offsetting Betty "B" No. 1-15. It is also apparent from the analysis that the fluid from the State "J" No. 1 contains less of the heavier hydrocarbons (heptane plus to eicosanes plus) than the fluids from the Betty "B" No. 1-15 which again indicates that the State "J" No. 1 fluid contains a higher percentage of condensate than its offset, the Betty "B" No. 1-15 which contains comparatively fewer lighter hydrocarbons.

It is also interesting that during the 7-day shut-in pressure test performed by Tefteller, Inc., they recorded some water in the wellbore but the oil in the hole was "nil". Because this well, the State "J" No. 1, produces fluid at the surface, this may indicate that the fluid produced downhole is in a more gaseous phase and, when it is produced at the surface, condenses.

You mentioned that some concern has been expressed that once full production is commenced and there is a pressure reduction in the well, the GOR may be lowered to that of an oil well. It is my opinion that the well is in effect a gas well and any oil production contributed by oil bearing zones will not be significant enough to radically change the GOR.

If you have any questions, feel free to call me.

Sincerely,

Thomas A. Dugan

BW/TAD/BCO\STATE-J.1

Welex

A Halliburton Company

BCO, Inc.
135 Grant Ave.
Santa Fe, NM 87501

September 7, 1988

RE: State J No. 1
Sec. 16, T-23n, R-7w
Rio Arriba, NM

Dear Mr. Bigbee:

This is a summary of our phone conversation this morning concerning the log analysis of the above mentioned well.

The zone from 5583 - 5594 feet, perforated at 5584 and 5588 feet, exhibits typical crossover of the density and neutron porosity logs as seen in most gas sands in the San Juan Basin. I would expect this zone to make gas and to be the major zone in this well due to its high porosity. Any liquids from this zone, I feel, would be condensate.

Another zone from 5632 - 5677 feet, perforated at 5636 feet, exhibits a gas signature on the density and neutron porosity logs for a shaley gas sand. I would expect this zone to have a lower GOR and be less productive than the zone at 5583 - 5594 feet. I would also expect the GOR in this zone to be much higher than the oil zones in the well.

The other zones in the well, perforated at 5328, 5472, 5478, 5484, 5610, 5678 feet, all appear, in my openion, to be oil zones and should make crude oil.

If I may be of any further service, please feel free to contact me anytime.

Sincerely,

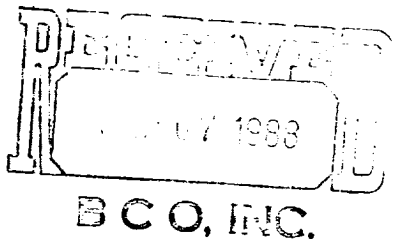
M. J. Mullen

Michael J. Mullen
Senior Sales Engineer
Farmington, NM

Post Office Box 170
Farmington, New Mexico 87499
505/325-3544

HALLIBURTON SERVICES

P. O. Box 960
Farmington, NM
August 5, 1988



Mr. Harry Bigbee
BCO
135 Grant Ave.
Santa Fe, NM

RE: J-1

Dear Mr. Bigbee,

I would like to share some of my opinions on the positive results that are being seen on the J-1. I think there are three major factors that have contributed to the success of the well. The formation characteristics, the cement zonal isolation of the sand stringers, and the size-type of frac job done.

The porosity logs are showing some formation properties that we have not seen in the Mayre formation in the Escrito-Lybrook Gallup field before. In the zone from 5580 to 5590 (Mayre) we are seeing a crossover of the neutron and density porosity tool response. This crossover is usually interpreted as having gas present in the porosity. A neutron log is a measurement of the amount of hydrogen contained in the formation. Water and oil have about the same amount of hydrogen but gas will have a lower count of hydrogen. Because of the lower concentration of hydrogen in gas, zones containing gas will indicate a low neutron porosity. The density porosity tool indicates we have about 20% porosity.

The size and type of stimulation treatment that was performed should contribute to a long productive well. Core analysis has indicated that KCL water will change the effective permeability of the formation. Water has a tendency to provide a capillary pressure in the pore throats of the formation. We have seen some water block problems in the Gallup formation before along with slow recovery of frac fluid. With an energized fluid such as we used on the J-1, we did not experience a slow recovery of the frac fluid. Some parts of the Gallup formation do experience formation damage or disintegration when contacted with water. We will see this as long as we use a water base fracturing fluid.

A pre-frac simulation indicated we should have fracture lengths from the wellbore of 1200 ft. From pressure build up analysis we

seem to have created a frac length of 890 ft. We should be able to effectively drain an eighty acre productive formation with the half frac length of 890 ft. A big factor in providing such an effective frac length was cement zonal isolation. There also seems to be a high degree of flow capacity at the wellbore. This was indicated when we tried to kill the formation with water. The formation imbibed the water and then gas cut the column producing an instant unloading of fluid at surface.

Only way I know to examine the production of the different stringers would be to run a straddle packer and swab-flow the well. A risk is involved to perform such a test;

1) The formation has produced sand at times before and has already sanded in one retrievable packer.

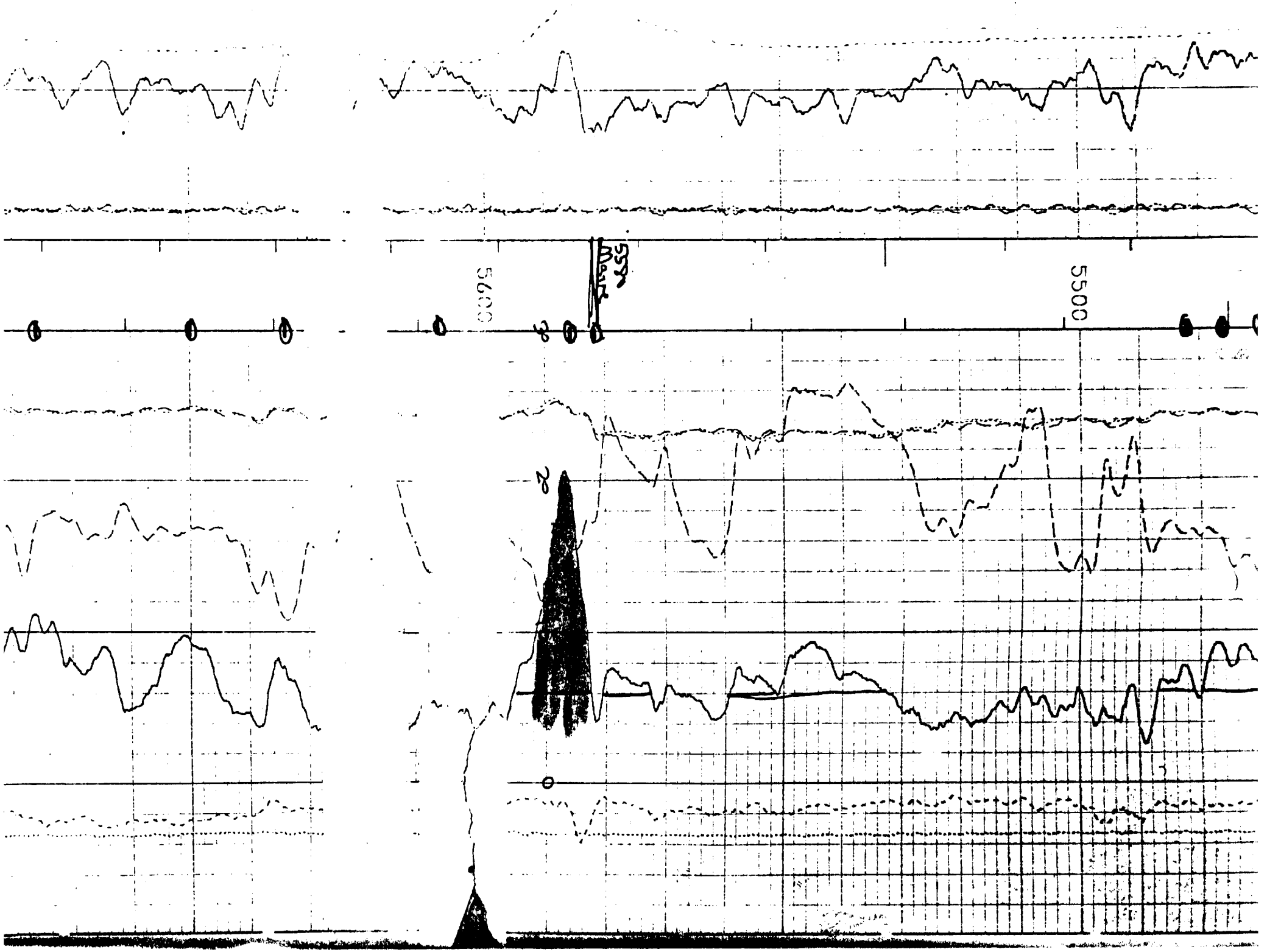
2) Water damage to formation.

3) High conductivity may produce an unsafe environment to run tubing and may need constant pressure control equipment.

The J-1 has produced information that we have not worked with before. I do not see our stimulation treatment as having contributed to the volume of gas we are producing. I think the geology has provided us with this kind of production and I do not believe we could produce this result in other wells by changing stimulation technique or perforating design.

Sincerely, CRAIG BARBER

Craig Barber


5600
5500

YPMATCH

ELL IDENTIFICATION
****

ICO
-1
YBROOK (GALLUP) FIELD
ALLUP
326-5706
-20-88
RACTURED

TEST INFORMATION
****

TEST TYPE	BUILD UP	
WELL TYPE	GAS	
FLOW TIME	8736.0	HOURS
SHUT IN PRESSURE AT TIME ZERO	683.0	PSIA
FORMATION POROSITY	0.080	
NET PAY	75.	FT
INITIAL RESERVOIR PRESSURE	1000.	PSIA
BOTTOM HOLE TEMPERATURE	148.	F
WELLBORE RADIUS	0.333	FT
L SPACING	640.	ACRES
S GRAVITY	0.650	
MOLE PERCENT OF GAS IMPURITIES:		
HYDROGEN SULFIDE	0.200	%
CARBON DIOXIDE	0.020	%
NITROGEN	0.020	%
GAS RATE	600.0	MCF/D
ORIGINAL GAS IN PLACE	10799.	MMCF

INITIAL GUESSES

FORMATION PERMEABILITY	0.048	MD
FRACTURE LENGTH	439.0	FT
FRACTURE CONDUCTIVITY	105.0	MD-FT

**** FINITE CONDUCTIVITY FRACTURE TYPE CURVE IS USED *****

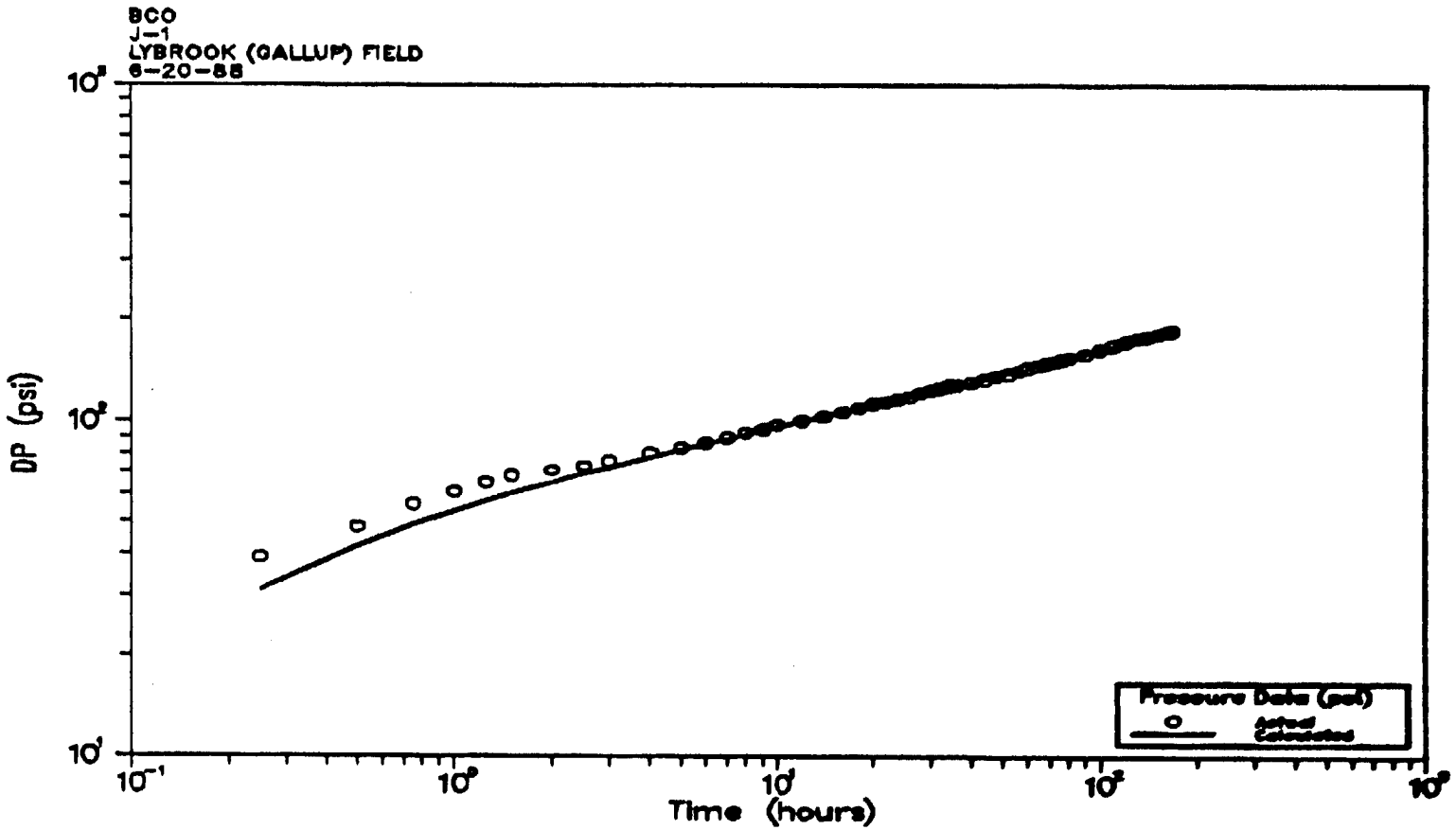
CALCULATED VALUES

FORMATION PERMEABILITY	0.044	MD
FRACTURE LENGTH	889.8	FT
FRACTURE CONDUCTIVITY	366.7	MD-FT

TIME HOURS	ACTUAL DATA PSIA	CALC. DATA PSIA	ERROR %
0.250	722.00	722.00	0.00
0.500	731.00	731.00	0.00
0.750	739.00	739.00	0.00
1.000	744.00	744.00	0.00
1.250	748.00	748.00	0.00
1.500	751.00	751.00	0.00
2.000	754.00	754.00	0.00
2.500	756.00	756.00	0.00
3.000	759.00	759.00	0.00
4.000	763.00	763.00	0.00
5.000	766.00	764.69	-0.17
6.000	769.00	768.21	-0.10
7.000	772.00	771.27	-0.09
8.000	775.00	773.99	-0.13
9.000	777.00	776.45	-0.07
10.000	780.00	778.69	-0.17
12.000	783.00	782.68	-0.04
14.000	786.00	786.18	0.02
16.000	789.00	789.32	0.04
18.000	792.00	792.17	0.02
20.000	795.00	794.78	-0.03
22.000	797.00	797.21	0.03
24.000	799.00	799.48	0.06
26.000	801.00	801.63	0.08
28.000	804.00	803.66	-0.04
30.000	806.00	805.58	-0.05
32.000	808.00	807.42	-0.07
34.000	810.00	809.18	-0.10
36.000	811.00	810.86	-0.02
40.000	813.00	814.03	0.13
44.000	816.00	816.99	0.12
48.000	819.00	819.77	0.09
52.000	821.00	822.38	0.17
56.000	824.00	824.86	0.10
60.000	827.00	827.21	0.03

TIME HOURS	ACTUAL DATA	CALC. DATA PSIA	ERROR %
64.000	829.00	829.46	0.06
68.000	831.00	831.61	0.07
72.000	833.00	833.68	0.08
76.000	835.00	835.66	0.08
80.000	837.00	837.58	0.07
90.000	841.00	842.09	0.13
100.000	846.00	846.26	0.03
110.000	851.00	850.15	-0.10
120.000	855.00	853.82	-0.14
130.000	859.00	857.29	-0.20
140.000	861.00	860.57	-0.05
150.000	864.00	863.70	-0.04
160.000	867.00	866.68	-0.04
165.250	868.00	868.20	0.02
166.500	868.00	868.55	0.06

4YH



DP vs. Time — Actual and Matched Data

NL 06/30/88

LL IDENTIFICATION
****
)
0
1
BROOK (GALLUP) FIE
LLUP
26-5706
20-88

ACTURED

ST INFORMATION
****

ST TYPE	BUILD UP	
LL TYPE	GAS	
OW TIME	8736.0	HOURS
XIMUM TEST PRESSURE	868.0	PSI
TTOM HOLE TEMPERATURE	148.0	F
S GRAVITY	0.6500	
LE PERCENT OF IMPURITIES		
HYDROGEN SULFIDE	0.20	X
CARBON DIOXIDE	0.02	X
NITROGEN	0.02	X
LCULATED VALUES		
PSEUDO-CRITICAL TEMPERATURE	370.26	R
)SEUDO-CRITICAL PRESSURE	671.44	PSIA
FOR HIGHEST PRESSURE	868.	PSI
Z FACTOR	0.912	
COMPRESSIBILITY	0.0012455	1/PSI
GAS VISCOSITY	0.013	CP
FOR AVERAGE PRESSURE	776.	PSI
Z FACTOR	0.921	
COMPRESSIBILITY	0.0013865	1/PSI
GAS VISCOSITY	0.013	CP

NL 06/30/88

LL IDENTIFICATION
****

0
1
BROOK (GALLUP) FIE
LLUP
26-5706
20-88

ACTURED

(HOUR)	SQRT DT	(T+DT)/DT	P (PSI)	DP (PSI)	M(P) +	DEL M(P)
0.0	0.0		683.0	0.	40.271	0.0
0.250	0.500	34945.00	722.0	39.	44.981	4.711
0.500	0.707	17473.00	731.0	48.	46.101	5.830
0.750	0.866	11649.00	739.0	56.	47.096	6.826
1.000	1.000	8737.00	744.0	61.	47.718	7.448
1.250	1.118	6989.80	748.0	65.	48.216	7.945
1.500	1.225	5825.00	751.0	68.	48.597	8.327
2.000	1.414	4369.00	754.0	71.	48.995	8.724
2.500	1.581	3495.40	756.0	73.	49.260	8.989
3.000	1.732	2913.00	759.0	76.	49.657	9.387
4.000	2.000	2185.00	763.0	80.	50.187	9.916
5.000	2.236	1748.20	766.0	83.	50.584	10.314
6.000	2.449	1457.00	769.0	86.	50.982	10.711
7.000	2.646	1249.00	772.0	89.	51.379	11.109
8.000	2.828	1093.00	775.0	92.	51.777	11.506
9.000	3.000	971.67	777.0	94.	52.042	11.771
10.000	3.162	874.60	780.0	97.	52.439	12.168
12.000	3.464	729.00	783.0	100.	52.836	12.566
14.000	3.742	625.00	786.0	103.	53.234	12.963
16.000	4.000	547.00	789.0	106.	53.631	13.361
18.000	4.243	486.33	792.0	109.	54.029	13.758
20.000	4.472	437.80	795.0	112.	54.426	14.156
22.000	4.690	398.09	797.0	114.	54.691	14.420
24.000	4.899	365.00	799.0	116.	54.956	14.685
26.000	5.099	337.00	801.0	118.	55.229	14.958
28.000	5.292	313.00	804.0	121.	55.650	15.380
30.000	5.477	292.20	806.0	123.	55.932	15.661
32.000	5.657	274.00	808.0	125.	56.213	15.942
34.000	5.831	257.94	810.0	127.	56.494	16.223
36.000	6.000	243.67	811.0	128.	56.634	16.364
40.000	6.325	219.40	813.0	130.	56.915	16.645
44.000	6.633	199.55	816.0	133.	57.337	17.066
48.000	6.928	183.00	819.0	136.	57.758	17.488

ANL 06/30/88

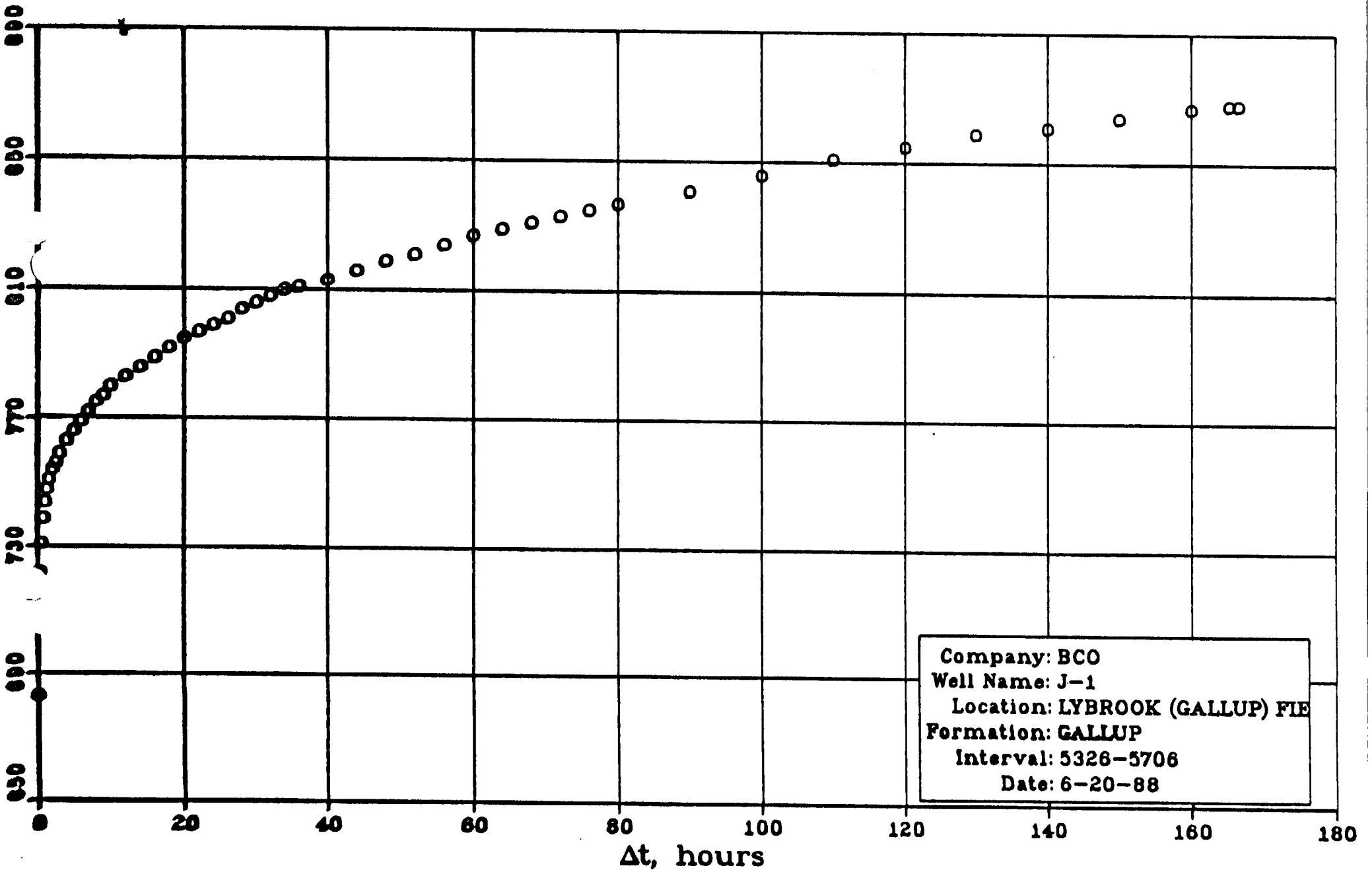
ELL IDENTIFICATION
****
CO
-1
YBROOK (GALLUP) FIE
ALLUP
326-5706
-20-88

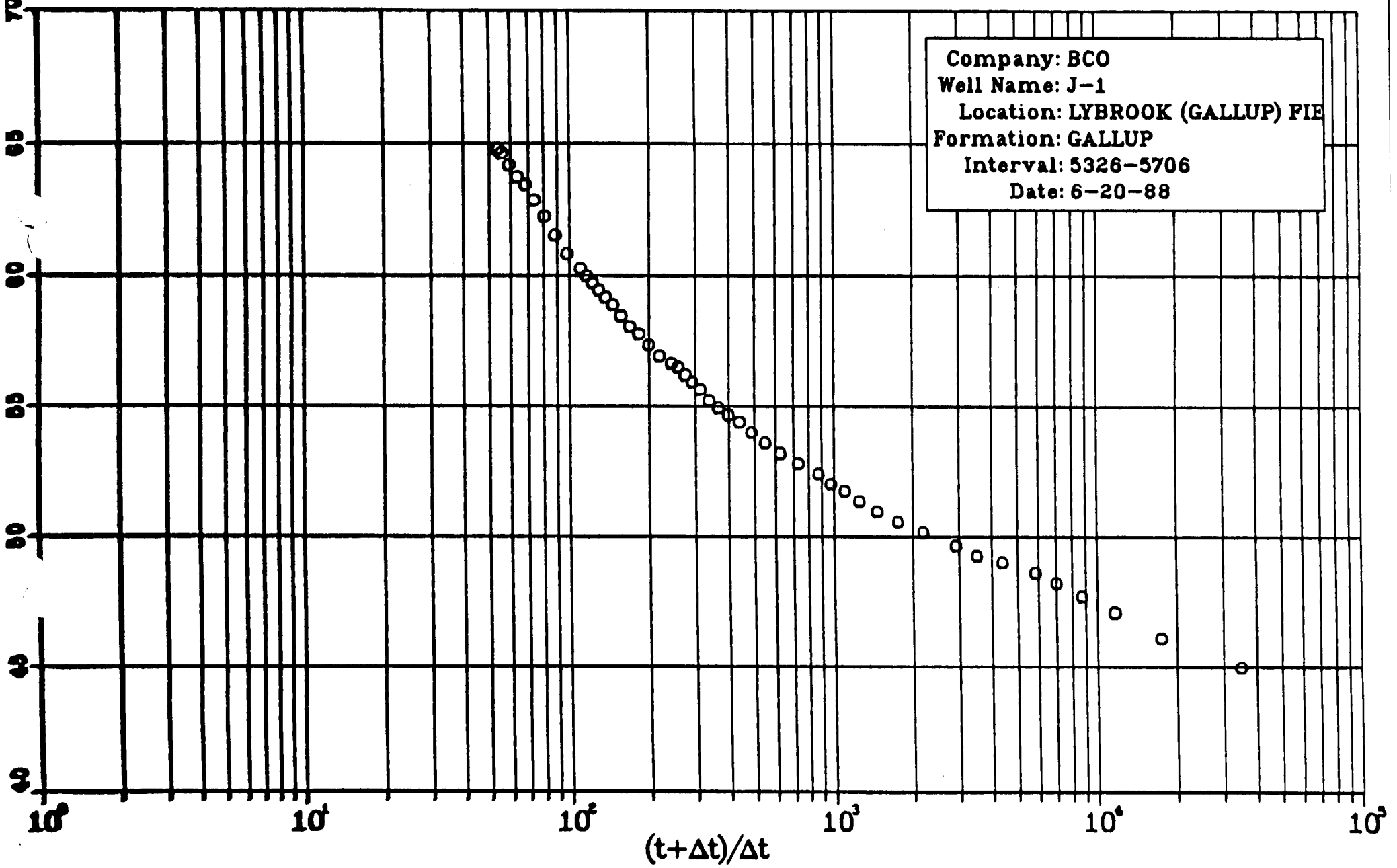
RACTURED

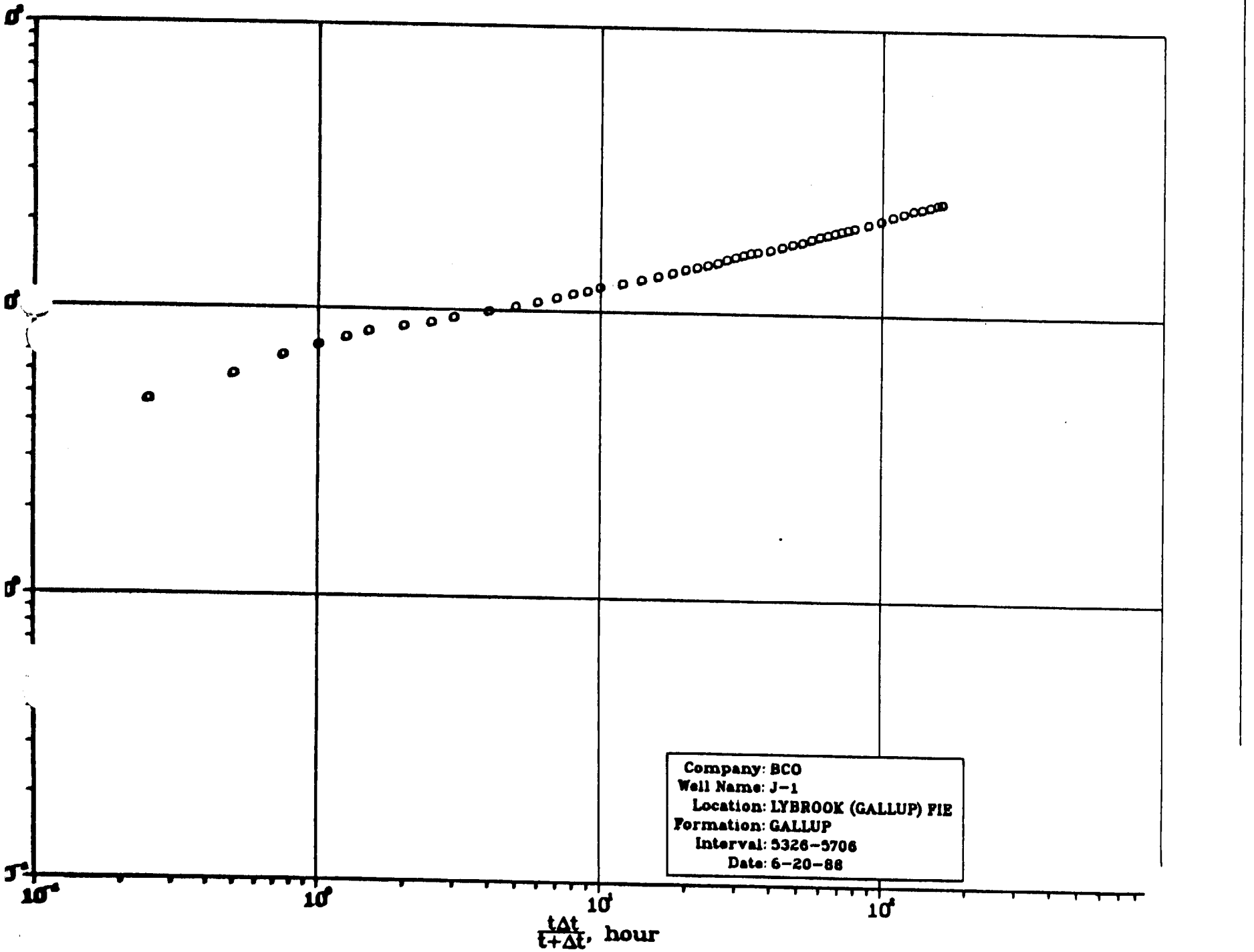
+ IN UNITS OF 'MM(SQ PSI)/CP'

(HOUR)	SQRT DT	(T+DT)/DT	P (PSI)	DP (PSI)	M(P) +	DEL M(P)
52.000	7.211	169.00	821.0	138.	58.039	17.769
56.000	7.483	157.00	824.0	141.	58.461	18.190
60.000	7.746	146.60	827.0	144.	58.882	18.612
64.000	8.000	137.50	829.0	146.	59.163	18.893
68.000	8.246	129.47	831.0	148.	59.445	19.174
72.000	8.485	122.33	833.0	150.	59.726	19.455
76.000	8.718	115.95	835.0	152.	60.007	19.736
80.000	8.944	110.20	837.0	154.	60.288	20.017
90.000	9.487	98.07	841.0	158.	60.850	20.579
100.000	10.000	88.36	846.0	163.	61.552	21.282
110.000	10.488	80.42	851.0	168.	62.263	21.992
120.000	10.954	73.80	855.0	172.	62.857	22.587
130.000	11.402	68.20	859.0	176.	63.452	23.181
140.000	11.832	63.40	861.0	178.	63.749	23.478
150.000	12.247	59.24	864.0	181.	64.194	23.924
160.000	12.649	55.60	867.0	184.	64.640	24.370
165.250	12.855	53.87	868.0	185.	64.789	24.518
166.500	12.903	53.47	868.0	185.	64.789	24.518

+ IN UNITS OF 'MM(SQ PSI)/CP'


890
850
810
770
730
690
650
0
20
40
60
80
100
120
140
160
180
Δt, hours
Company: BCO
Well Name: J-1
Location: LYBROOK (GALLUP) FIE
Formation: GALLUP
Interval: 5326-5706
Date: 6-20-88


Company: BCO
Well Name: J-1
Location: LYBROOK (GALLUP) FIE
Formation: GALLUP
Interval: 5326-5706
Date: 6-20-88
10⁰
10¹
10²
10³
10⁴
10⁵
(t+Δt)/Δt


Company: BCO
Well Name: J-1
Location: LYBROOK (GALLUP) PIE
Formation: GALLUP
Interval: 5326-5706
Date: 6-20-88
10^{-1}
10^{0}
10^{1}
10^{2}
$\frac{t\Delta t}{t+\Delta t}$, hour

RECEIVED
MAY 24 1988
BCO, INC.

ANNUAL REPORT

OF THE

NEW MEXICO OIL & GAS ENGINEERING COMMITTEE

HOBBS, NEW MEXICO

VOLUME II

Northwest New Mexico

1987

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Alamito Gallup	1
Devil's Fork	25
Dufers Point	[illegible]
Escrito Gallup	[illegible]
[illegible] Gallup	65
[illegible]	73
Undes. Gallup	96
(SJ) [illegible]	
Undes. Greenhorn	10[illegible]
[illegible]	

WELL S T R FEB MAR APRIL MAY JUNE JULY OCT NOV DEC 1987 PROD MP ACCUM

LYBROOK GALLUP GP 5N TO 6N

ALEXANDER ENERGY CORP.															
E-TON-NAH-GAH															
431 823N 7W	OIL	140	119	151	153	158	124	139	165	167	87	212	67	1682P	12940
	GAS	1135	1089	1216	1346	812	1408	1192	1059	1135	1282	1371	1397	14442	75202
	WAT	31	28	31	30	31	30	31	31	30	31	30	31	365	2524
FEDERAL 6															
22F 623N 7W	OIL											155	55	210P	3922
	GAS	190	116	135	86	54	83	85	86	83	94	246	222	1480	19819
	WAT	31	28	31								30	31	151	2215
NAT TAH E VAZZA															
1C 823N 7W	OIL	37	64	29	48	39	51	28	51	30			40	417P	8500
	GAS	1002	959	1066	1109	755	1094	1022	1042	1077	1127	1063	1036	12352	156888
	WAT	31	28	31	30	31	30	31	31	30	31	30	31	365	3315
COMPANY TOTAL	OIL	177	183	180	201	197	175	167	216	197	87	367	162	2309	25362
	GAS	2327	2164	2417	2541	1621	2585	2299	2187	2295	2503	2680	2655	28274	251909
	WAT	93	84	93	60	62	60	62	62	60	62	90	93	881	8054
BCO INCORPORATED															
BETTY B															
1C1523N 7W	OIL	49	31	48	35	60	48	44	48	48	53	48	51	5636	21915
	GAS	147	93	144	105	180	144	132	144	144	159	144	153	1689	52741
	WAT	1	1	1										3	367
CAMPOS															
1J1023N 7W	OIL	74	64	91	76	93	72	64	78	58	83	81	59	8856	77166
	GAS	935	929	1483	1618	1628	1852	1802	2277	1956	663	663	2106	17912	462530
	WAT	1	1	1	1	1	1		3			1	1	11	670
2K 423N 7W	OIL	91	109	125	92	84	147	117	104	117	107	118	122	13336	150294
	GAS	1017	744	1080	1211	1144	599	1357	1663	1201	1674	1674	1292	14656	612036
	WAT	5	7	8	5	5	4	3	4	5	3	5	5	59	565
LEASE TOTAL	OIL	165	173	216	168	177	219	181	174	175	190	199	181	2218	227460
	GAS	1952	1673	2563	2829	2772	2451	3159	3940	3157	2337	2337	3398	32568	1074566
	WAT	6	8	7	6	6	5	3	7	5	3	6	6	70	1236
DUNN															
1N1023N 7W	OIL	ZONE ABANDONED													4979
	GAS														61353
	WAT														187
2F1023N 7W	OIL	46						142	87	83	101	35	65	559P	10781
	GAS	155						478	293	281	341	119	218	1885	66531
	WAT	24						57	36	35	41	15	28	236	1943
4D 923N 7W	OIL	150	143	144	147	153	137	121	138	117	40	14	36	1360F	23264
	GAS	2079	2173	2145	2183	2335	2142	2221	2144	1744	900	210	548	20816	225388
	WAT	15	14	14	21	14	12	10	11	11	6	1	3	132	1272
5C 923N 7W	OIL	75	78	81	68	62	60	62	62	60	62	60	60	782P	13692
	GAS	1048	1064	1207	1010	946	938	1138	963	894	930	900	900	11930	122073
	WAT	6	6	7	6	5	5	5	5	5	6	5	4	65	634
6F 923N 7W	OIL	75	69	80	67	61	60	62	62	60	62	60	60	770P	12010
	GAS	1040	1048	1192	995	931	938	1138	963	894	930	900	900	11869	107385
	WAT	6	6	7	6	5	5	5	5	5	6	5	4	65	548
7K 923N 7W	OIL	198	173	201	170	182	177	177	180	172	155	126	144	2055P	25474
	GAS	2747	2629	2994	2524	2777	2767	3249	2796	2564	2325	1890	2160	31422	254297
	WAT	4	2	2	3	3	3	3	3	5	3			31	428
8E 923N 7W	OIL	58	54	54	55	57	60	62	62	60	62	60	60	704F	16073
	GAS	884	828	804	877	870	938	1138	963	894	930	998	900	10778	144087
	WAT	6	5	5	6	5	5	5	5	5	6	5	4	65	766
9B 323N 7W	OIL	218	179	193	213	210	183	198	191	184	160	137	158	2210P	19904
	GAS	2915	2613	2763	3041	3076	2744	3325	2846	2636	2306	1975	2278	32518	219809
	WAT	17	14	15	20	19	20	21	25	24	21	11	13	229	1576
10A 323N 7W	OIL	150	123	132	146	144	126	130	131	126	110	94	108	45206	15804
	GAS	2006	1795	1891	2085	2110	1890	2274	1951	1805	1584	1354	1857	22202	161482
	WAT	12	10	11	13	13	14	14	17	16	14	8	9	151	1160
11M 323N 7W	OIL	255	218	227	249	245	215	223	223	217	188	168	184	2596P	25409
	GAS	3414	3065	3251	3554	3591	3224	3904	3325	3108	2710	2306	2681	38103	267242
	WAT	20	17	18	23	22	24	25	29	28	24	13	18	258	1919
12O 323N 7W	OIL	156	158	162	140	131	142	152	140	151	125	109	119	1694F	5103
	GAS	2090	2305	2320	2125	1918	2130	2660	2087	2164	1800	1578	1714	24883	68413
	WAT	12	13	13	20	30	28	12	21	15	19	18	19	212	629
LEASE TOTAL	OIL	1381	1179	1274	1264	1245	1160	1321	1276	1230	1085	855	994	14264	172413
	GAS	18290	17512	18567	18334	18554	17711	21525	18331	16984	14756	12124	13818	206506	1689028
	WAT	122	87	92	128	116	108	157	157	149	146	81	90	1434	11054
FEDERAL A															
1E2323N 7W	OIL	47	16	48	42	26	126	118	96	92	77	83	86	857G	16134
	GAS	184	85	238	183	122	630	590	327	317	278	291	301	3548	59114
	WAT	8	3	9	7	4	32	20	19	18	18	14	14	166	595
FEDERAL B															
2212223N 7W	OIL	26	13	30	27	55	79	52	64	54	50	54	50	5546	9774
	GAS	388	186	334	391	605	167	487	436	372	700	756	700	5514	86078
	WAT	9	5	11	9	17	27	17	21	18	16	17	15	182	733
STATE H															
1O 223N 7W	OIL	36	40	48	38	42	139	373	264	248	182	181	187	1770P	26231
	GAS	780	840	930	900	930	615	1865	1848	1680	1274	1267	1309	14238	146673
	WAT	1	2	2	1	1	2	19	8	14	7	5	4	66	197
2K 223N 7W	OIL	36	40	48	37	42	139	156	132	119	91	91	93	10246	22863
	GAS	780	840	930	900	930	480	1560	924	840	637	637	651	10109	230540
	WAT	1	2	2	1	1	2	8	4	7	4	3	2	37	208
3M 223N 7W	OIL	133	129	137	132	134	126	125	133	135	123	118	122	1539F	16535
	GAS	1779	1862	1962	1884	1962	1890	2189	1982	1934	1773	1586	1757	22580	163753
	WAT	11	10	12	14	14	14	13	15	16	12	13	12	156	1124
4D 223N 7W	OIL	261	241	275	262	287	278	273	281	277	208	225	272	3132P	29045
	GAS	3491	3516	3937	3739	4203	4049	4778	4187	3551	2997	3243	3919	45610	292514
	WAT	23	21	29	28	21	22	30	34	25	23	20	22	290	1798
5B 223N 7W	OIL									277	1145	659	518	2591F	2591
	GAS									632	7303	6004	4722	18663	18663
	WAT									38	126	13	5	182	182
6I 223N 7W	OIL									948	942	614	587	3083F	3083
	GAS									6846	5302	5594	5434	23176	23176
	WAT									150	151	18	12	331	331
LEASE TOTAL	OIL	466	450	508	469	585	674	927	818	1988	2691	1880	1771	13139	100348
	GAS	6830	7878	7759	7423	8025	7034	10392	8941	15483	19286	18333	17792	134376	975319
	WAT	36	35	45	36	37	40	70	61	250	323	72	87	1062	3824
STATE J															
1A1623N 7W	OIL										191	243	208	642P	642
	GAS										4700	9875	8599	23174	23174
	WAT										34	24	5	65	65
COMPANY TOTAL	OIL	2134	1862	2124	2005	2068	2306	2643	2468	3587	4337	3362	3341	32237	548686
	GAS	27785	24627	29605	29265	30258	28137	36285	32119	36457	42208	43860	44761	407367	3860812
	WAT	182	139	167	178	180	212	267	265	440	542	214	196	2982	17874

Oil Gas Ratios

9.9 to 1

7 to 1

CONTINUED LYBROOK GALLUP

WELL S T R		JAN	FEB	MAR	MAY	JUNE	JULY	AUG	SEPT	OCT	DEC 1987 PROD MP	ACCUM	
BYRON OIL INDUSTRIES													
DUNN FEDERAL													
1J 423N 7W	OIL	31	51	38	51	28	38	21	20	23	21	50	41	413F	30082
	GAS	961	998	828	908	907	628	878	884	868	834	831	803	10312	255586
	WAT			5	15									20	79
2P 423N 7W	OIL	257	260	206	284	321	277	254	288	248	288	244	225	3244F	22848
	GAS	2088	1647	1260	4617	3757	3102	4448	4751	4759	5032	4854	3815	44C50	324471
	WAT			10										20	20
LEASE TOTAL	OIL	288	311	334	335	349	315	275	308	271	309	294	266	3657	52930
	GAS	2969	2637	2088	5525	4664	3730	5326	5635	5619	5866	5685	4618	54362	580057
	WAT			25	15									40	99
HANSJN FEDERAL															
1L 323N 7W	OIL	132	124	125	106	101	104	92	99	91	85	92	82	1231F	68878
	GAS	1440	1486	1242	1363	1359	944	1318	1326	1289	1251	1248	1207	15473	679433
	WAT														114
2N 323N 7W	OIL	97	85	131	117	120	143	125	144	140	136	131	124	1499F	11344
	GAS	1219	413	821	788	927	867	1199	1559	1401	1433	1422	795	12934	160383
	WAT														5
LEASE TOTAL	OIL	229	209	256	221	227	247	217	243	231	221	223	206	2730	80214
	GAS	2659	1899	2063	2151	2286	1811	2517	2885	2780	2684	2670	2002	28407	839816
	WAT														119
LYBROOK															
1D 423N 7W	OIL	157	144	141	147	138	126	126	124	118	114	106	82	1523F	3365
	GAS	2290	2688	2064	2611	2205	2079	2727	3134	3161	3229	2890	2205	21283	51302
	WAT														175
2I 423N 7W	OIL	393	337	326	454	436	372	363	369	320	318	234	174	4098F	8498
	GAS	719	1083	875	1253	1118	1083	1197	1320	1186	1147	1081	1040	13192	39185
	WAT		7											7	195
LEASE TOTAL	OIL	550	481	467	601	574	498	489	493	438	432	340	258	5621	11863
	GAS	3009	3771	2934	3864	3323	3162	3924	4454	4347	4376	3971	3245	44385	90487
	WAT		7											7	370
COMPANY TOTAL	OIL	1067	1001	1057	1157	1150	1060	981	1044	940	962	859	730	12008	145007
	GAS	8637	8307	7090	11540	10273	8703	11767	12974	12746	12926	12326	9865	127154	1510360
	WAT		7	25	15									47	588
COLEMAN OIL AND GAS INC.															
ANDERSON															
1K2224N 8W	OIL										308	774	589	1663P	1663
	GAS										612	1578	1205	3395	3395
	WAT										50	75	31	156	156
JACK A COLE															
MARCUS															
2F 423N 6W	OIL	96	39	33	438	264	233	151	185	163	156	114	158	2322F	3558
	GAS	398	356	322	369	623	872	825	1012	679	652	505	896	7518	24012
5E 623N 6W	OIL	176	143	151	158	176	146	147	155	146	147	124	133	1796F	4597
	GAS	4273	4727	3512	3747	3941	3995	3653	3670	3749	3812	3494	3959	46552	124206
6A 123N 7W	OIL	118	83	91	86	88	75	80	73	62	67	58	63	936F	2852
	GAS	4179	4098	3241	3802	3864	3443	3225	3238	3081	2564	2573	2276	39524	132532
7N 123N 7W	OIL	177	116	129	118	116	90	78	77	68	81	56	78	1168F	1493
	GAS	2673	2039	1545	1843	1697	1494	1400	1462	1137	936	835	1059	18140	27116
8B1223N 7W	OIL	147	87	98	86	74	65	44	69	78	74	61	67	976P	1931
	GAS	2483	2352	1951	1991	1838	1773	1172	974	1163	1383	1639	1384	20023	25009
10H3524N 7W	OIL							426	244	162	143	87	108	1162F	1162
	GAS							1331	3376	2979	2586	1864	1704	13840	13840
11N3524N 7W	OIL											1557	604	2161F	2161
	GAS											76	4484	45538	45538
LEASE TOTAL	OIL	706	468	494	870	718	611	948	823	671	668	2057	1187	10221	16554
	GAS	13927	13572	10591	11792	11963	11577	11606	13732	12708	11933	10984	15742	150127	351253
MARCUS A															
913524N 7W	OIL						1045	518	531	385	259	183	195	3028F	3028
	GAS							2819	18016	8900	7698	6141	5874	41348	41348
1G1 123N 7W	OIL						86	68	116	97	109	98	78	1248F	1852
	GAS	135	115	127	111	116	2978	2659	3665	3128	2653	2963	2677	38793	72837
1S0 123N 7W	OIL	4145	3751	3412	3519	3251	90	64	98	57	71	55	81	906F	806
	GAS	4397	17	112	72	89	3573	3877	2207	3078	3254	3389	3329	39151	44106
	WAT		2773	3622	3553	3199			10					10	10
16C1223N 7W	OIL										104	94	117	1275F	1275
	GAS	1788	1745	2436	2320	2171	2098	1994	3368	2035	1894	1856	1798	25395	30087
2233124N 6W	OIL										1739	521	341	2601F	2601
	GAS										10333	16792	16163	43288	43288
LEASC TOTAL	OIL	135	164	439	319	353	1350	722	874	565	2282	951	804	8958	9562
	GAS	10250	8269	9440	9392	8621	8649	10551	19256	17833	25832	30841	29841	187975	231646
	WAT								10					10	10
COMPANY TOTAL	OIL	841	632	933	1189	1071	1961	1670	1697	1236	2950	3008	1991	19179	26418
	GAS	24177	21841	20031	21184	20584	20226	22157	32988	29741	37765	41825	45583	328102	582919
	WAT								10					10	10
DUGAN PRODUCTION CORPORATION															
ADOBE														$	17169
1A 523N 7W	OIL													80	11124
	GAS	33	13	13	21										559
	WAT														
BALLYNALOE															
2K2523N 7W	OIL	29	130	115	129	146	179	185	131	119	114	107	30	1614P	6495
	GAS	501	910	647	1175	1428	1330	1744	1508	1652	2201	1492	850	15458	58061
	WAT	7	11	8	15	16	15	16	14	15	16	15	13	161	554
BUNDLE															
2D2724N 8W	OIL	238	194	191	179	160	76	287	167	173	174	158	167	2114F	13701
	GAS	347	334	374	340	221	255	332	338	289	383	352	322	3807	26895
	WAT	16	14	16	15	16	15	16	16	15	16	15	16	186	971
KENNY															
1B3623N 7W	OIL	295	121	124	222	295	144	158	143	132	110	102	50	1828F	2537
	GAS	3553	2314	1700	3465	3861	3211	3850	3117	2920	2626	2268	1658	33743	37320
	WAT	47	24	24	44	47	38	31	31	30	31	29	21	389	477
KINSALE															
2I2623N 7W	OIL	31			27	284	174	153	141	126	127	114	119	1296F	8399
	GAS	494	402	351	469	755	806	728	627	542	576	617	485	6652	32314
	WAT	15	13	8	14	16	15	16	16	15	16	15	16	175	742
LAVA FALLS															
1J2724N 8W	OIL	273	177	216	277	232	217	210	209	178	214	283	190	2588F	18972
	GAS	726	628	714	691	448	648	658	497	474	695	743	638	7552	55915
PHANTOM RANCH															
1F2124N 8W	OIL	211	150	222	186	169	159	153	164	146	133	157	54	1984P	5516
	GAS	404	384	480	457	329	406	398	356	330	318	374	316	4534	12396
	WAT	8	7	8	8	8	8	8	8	8	8	8	8	95	211
SAPP C															
1H 523N 7W	OIL	21	17	18	21	32	32	21	25	18	24	18	44	277F	20239
	GAS	432	359	427	502	351	483	462	470	448	505	483	522	5414	57653
2D 523N 7W	OIL	205	203	222	283	148	220	228	164	223	234	207	212	2375P	15771
	GAS	3325	3802	3404	3263	1927	3181	3323	2164	3138	3129	3044	2921	35821	144211
3D 523N 7W	OIL	20	100	92	70	78	90	56	84	65	69	48	78	950F	9412
	GAS	967	1217	1445	1299	963	1467	1401	1427	1271	1334	1163	1225	15163	78211
	WAT	16	16	16	15	13	15	16	16	15	16	15	16	183	1095
LEASE TOTAL	OIL	246	320	332	284	242	342	297	187	306	327	273	336	3502	45422
	GAS	4724	4578	5274	5064	3241	5101	5184	4061	4857	4952	4698	4668	56398	280075
	WAT	16	16	16	15	13	15	16	16	15	16	15	16	183	1095
STATE															
1E3224N 7W	OIL	92	92	83	99	78	101	87	90	87	85	94	31	1011P	66544
	GAS	967	817	971	931	738	1014	1033	957	912	915	899	543	10709	188172
COMPANY TOTAL	OIL	1915	1184	1283	1413	1508	1414	1480	1232	1259	1284	1208	977	15657	184755
	GAS	21749	18372	10546	12613	10203	12571	13929	11461	11976	12578	11435	9508	138933	701840
	WAT	189	83	80	111	116	98	103	101	98	103	97	90	1189	4609
FLAG REDFERN OIL CO															
BETTY C 31															
203124N 7W	OIL	187	85	84	135	128	105	118	104	78	103	86	105	1214P	23273
	GAS	1369	1158	1308	1290	911	1382	1332	1285	1154	984	756	1357	14236	121417
	WAT														348
3K3124N 7W	OIL	36	28	28	45	40	35	37	35	23	34	29	35	435P	6314
	GAS	316	267	302	298	210	319	307	296	267	227	176	302	3285	62208
	WAT														112
4M3124N 7W	OIL	187	84	84	136	128	105	118	103	78	103	85	105	1212P	16436
	GAS	1684	1425	1618	1587	1121	1701	1640	1581	1420	1210	931	1408	17518	110474
	WAT														760
913124N 7W	OIL	36	28	28	45	40	34	36	34	24	35	28	35	483P	7639
	GAS	148	119	134	132	93	142	137	132	118	101	78	134	1460	73893
	WAT	1	1	1	1	1	1	1	1	1	1	1	1	12	1025
6L3124N 7W	OIL	57	53	72	63	58	58	56	47	54	73		5	598P	8068
	GAS	156	148	192	183	117	181	185	189	90	202		1	1655	50295
	WAT		1		1									3	1486
COMPANY TOTAL	OIL	343	278	296	424	379	338	349	323	241	348	228	285	3832	61730
	GAS	3645	3129	3548	3490	2452	3725	3601	3483	3049	2724	1939	3351	38154	418287
	WAT	1	2	1	2	1	1	1	1	1	1	1	2	15	3703
FOUR CORNERS EXPLORATION CO.															
LYBROOK															
3M 323N 7W	OIL	170	176	78	144	113	136	120	129	128	122	126	129	1561F	2745
	GAS	1542	1435	1298	1722	1501	1541	2121	2258	2422	2863	2122	2094	23212	30954
	WAT	90	35	15	15	15	15	19	15	19	15	40	50	355	1291
4K 323N 7W	OIL	265	275	301	267	264	249	237	236	225	219	203	228	2967F	5935
	GAS	3652	2147	2728	2686	3388	2825	2840	2981	2805	2795	2699	2330	33154	54374
	WAT	3	3	3	7	7	7	7	7	7	7	7	8	73	288
COMPANY TOTAL	OIL	435	449	379	411	377	385	357	365	345	341	329	355	4528	8680
	GAS	5194	3582	4026	4408	4889	4366	4961	5240	5307	5458	5121	4424	56368	85328
	WAT	93	38	18	22	22	22	22	22	22	22	67	58	428	1577
GRACE PETROLEUM CORP.															
BEAN 9															
1M 923N 7W	OIL	61	62	18	84	79	71	69	76	71	72	72	69	904F	11715
	GAS	1382	894	54	1101	1198	1195	812	1052	1315	1250	1354	1179	12784	152096
	WAT			5										5	260

oil Gas Ratios:

10.4 to 1

22.1 to 1

3.8 to 1

6.8 to 1

9.8 to 1

WELL & T R		FEB	MAR	APRIL	MAY	JUNE	JULY		OCT	NOV	DEC 1987 PROD MP	ACCUM
CONNIE 29												
1029 24N 7W	OIL	LAST PROD. DATE 07/86									$	3519
	GAS											28639
	WAT											188
3K 29 24N 7W	OIL	18	15	18	19	17	16	13	18	23	18	9	23	199F	13989
	GAS		195	307	223	171	238	233	205	132	203	255	143	2305	88543
	WAT														267
LEASE TOTAL	OIL	18	15	18	19	17	16	13	18	23	18	9	23	199	17427
	GAS		195	307	223	171	238	233	205	132	203	255	143	2305	117182
	WAT														485
FEDERAL 12															
1D 12 23N 7W	OIL	41	37	48	37	25	49	43	37	33	34	34	33	443P	5215
	GAS	848	632	784	803	784	677	767	1027	1019	896	871	676	9496	65356
	WAT														43
GRACE FEDERAL 1															
1E 12 23N 7W	OIL	42	47	58	49	31	36	59	53	51	51	34	47	558F	7841
	GAS	754	683	745	858	325	293	631	838	892	893	907	898	8329	218398
	WAT														5
GRACE FEDERAL 6															
1K 6 23N 6W	OIL	38	31	33	23	37	32	40	38	35	33	25	36	401P	4599
	GAS	564	426	588	476	494	238	697	1021	812	575	482	439	6722	40158
	WAT														37
GRACE FEDERAL 19															
1D 19 23N 6W	OIL	LAST PROD. DATE 07/84									$	3699
	GAS														5668
MCBEE 8															
1F 7 23N 6W	OIL	59	58	62	59	60	56	53	53	53	56	54	51	671F	37814
	GAS	1231	1003	968	1257	1300	902	823	947	818	784	852	1181	11998	294748
	WAT														256
MCBEE 7															
2L 7 23N 6W	OIL	42	67	65	57	58	50	51	52	48	62	55	53	6606	6964
	GAS	212	142	186	228	239	218	388	360	339	256	207	217	2896	27355
	WAT														11
NANCY 14															
1B 14 23N 7W	OIL										11			11P	18267
	GAS														12258
	WAT														242
2E 14 23N 7W	OIL	LAST PROD. DATE 07/86									$	19494
	GAS														331
	WAT														6
LEASE TOTAL	OIL										11			11	37761
	GAS														12589
	WAT														248
ROGERS 24															
1L 24 23N 7W	OIL	33	28	23	33	28	33	31	35	23	32	30	28	357P	22542
	WAT														122
VANDENBURGH 11															
1M 11 23N 7W	OIL	178	131	158	140	141	136	130	149	134	133	217	168	1815P	126362
	GAS	1262	1003	1121	1294	1368	1189	1253	1589	1631	1425	1513	1269	15917	568132
	WAT														563
2C 11 23N 7W	OIL	LAST PROD. DATE 12/84									$	5712
	GAS														20859
	WAT														119
LEASE TOTAL	OIL	178	131	158	140	141	136	130	149	134	133	217	168	1815	132094
	GAS	1262	1003	1121	1294	1368	1189	1253	1589	1631	1425	1513	1269	15917	588991
	WAT														682
COMPANY TOTAL	OIL	512	473	475	501	476	479	489	503	471	502	530	508	5919	286851
	GAS	6245	4908	4657	6238	5879	4942	5516	7031	6958	6252	6361	5668	70647	2891315
	WAT			$											2113
GRAHAM ROYALTY LTD															
DOME FEDERAL 13															
41A 13 23N 8W	OIL	LAST PROD. DATE 07/85									$	3257
	GAS														20297
	WAT														1293
FEDERAL 3															
4J 3 23N 8W	OIL	122	111	142	148	95	162	145	113	129	133	91	48	1439F	10211
	GAS	751	635	789	905	544	911	893	894	782	893	828	964	9879	43480
	WAT	31	24	31	30	22	38	31	20	24	31	16	24	314	967
FEDERAL 6															
4J 6 23N 7W	OIL	55	38	50	62	43	50	53	86	30	51	52	44	614P	6093
	GAS	416	389	315	372	286	344	481	217	191	326	259	228	3614	29545
	WAT														187
FEDERAL 7															
1L 7 23N 7W	OIL	PLUGGING APPROVED 1987													911
	GAS														3613
	WAT														2089
FEDERAL 34															
4J 34 24N 8W	OIL	67	62	71	20		117	53	86	66	86	38	61	727F	7338
	GAS	787	746	764	827	312	1040	987	858	620	845	761	812	9359	89461
	WAT														82
FEDERAL 35															
4J 35 24N 8W	OIL	38	33	17	53	20	57	49	40	13	25	45	52	443F	3532
	GAS	368	290	131	336	208	332	524	410	278	264	283	381	3797	17994
	WAT	96	75	72	128	68	128	124	68	9	32	36	124	944	2973
STATE OF NEW MEXICO 36															
12E 36 24N 8W	OIL	124	98	128	128	88	132	135	111	131	158	129	147	1509F	11490
	GAS	479	532	492	589	335	484	448	456	525	487	465	482	5694	68022
	WAT														165
13L 36 24N 8W	OIL	58	85	65	53	58	62	64	59	52	36			546F	6358
	GAS	231	234	247	261	193	366	250	239	257	271			2549	21312
	WAT														152
14M 36 24N 8W	OIL	55	55	65	54	42	63	65	59	53	36			547F	5992
	GAS	229	235	247	248	147	334	231	219	238	253			2373	27868
	WAT														141
21C 36 24N 8W	OIL	21	14	25	21	15	22	22	18	22	26	21	24	251F	10399
	GAS	631	621	751	672	437	637	589	608	684	625	613	636	7496	87839
	WAT														124
24N 36 24N 8W	OIL	55	55	66	54	42	64	64	60	54	37	47	37	635F	9303
	GAS	356	236	248	369	234	526	345	335	349	358	833	748	4939	27484
	WAT														185
31B 36 24N 8W	OIL	67	65	98	85	59	86	89	72	86	156	85	98	990F	13889
	GAS	741	1089	1091	974	638	923	851	867	979	882	890	922	10759	96157
	WAT														221
43I 36 24N 8W	OIL	275	213	222	206	160	209	215	214	178	193	146	144	2375F	32487
	GAS	2961	3171	3162	2978	2054	2126	2979	2832	2977	2833	2366	2072	32511	168616
	WAT														336
44P 36 24N 8W	OIL	42		67	78	54				137	108	74	86	646F	8613
	GAS	479		368	665	471	1447	622	681	895	991	754	1225	7510	98535
LEASE TOTAL	OIL	699	555	736	679	518	638	654	593	713	788	582	536	7585	98532
	GAS	6107	6038	6598	6668	4501	6843	6318	6149	6304	6302	5921	6585	73831	548913
	WAT														1319
COMPANY TOTAL	OIL	971	799	1016	982	668	1024	954	918	951	995	728	741	10727	127774
	GAS	8421	8092	8597	9198	5771	9479	9120	8528	8175	8630	8002	8478	100498	751213
	WAT	127	99	103	150	90	150	155	88	33	63	52	148	1258	8758
MERRION OIL AND GAS CORPORATION															
CHAPMAN 4															
1F 29 23N 6W	OIL							5	327	219	162	134	85	938F	8996
	GAS							15	908	871	988	871	668	4225	53489
MESA OPERATING LIMITED PARTNERSHIP NM															
SOUTH BLANCO FEDERAL 6															
1A 6 23N 7W	OIL	165	169	186	146	88	96	125	65	99	186	124	113	1473P	110415
	GAS	1282	1052	1057	1220	683	983	1125	699	869	1361	1122	1232	12668	405498
	WAT	8	7	9	8	4	5	6	6	3	3			59	1011
2B 6 23N 7W	OIL	108	104	110	103	87	94	85	39	71	106	112	114	1139P	42316
	GAS	1426	1216	1138	1287	718	1175	765	496	671	982	649	688	11203	207844
	WAT	3	3	4	4	3	3	2	3	4	3			32	168
3H 6 23N 7W	OIL	136	119			23	110	123	39	85	89	103	95	922P	26157
	GAS	1329	973			268	751	679	428	569	658	781	771	7239	121223
	WAT	4	3				3	4	3	4	3			24	186
4C 6 23N 7W	OIL	108	104	147	124	87	94	106	47	85	124	124	76	1226P	20304
	GAS	1096	971	917	662	399	798	812	507	639	914	664	727	9098	93683
	WAT	3	3	5	5	3	3	3	3	4	3			35	158
LEASE TOTAL	OIL	517	496	443	373	285	394	439	190	331	425	463	398	4754	199122
	GAS	5133	4215	3112	3169	2068	3699	3381	2130	2748	4107	3136	3418	40328	829248
	WAT	18	16	16	17	10	14	15	15	15	12			150	1505
SOUTH BLANCO NAVAJO															
2F 22 24N 8W	OIL	292	278	282	287	192	312	229	249	281	283	264	236	3185P	27543
	GAS	428	187	126	213	195	302	308	314	298	334	295	278	3262	67482
	WAT	1	2	2	2	1	2	2	2	2	2			18	134
SOUTH BLANCO FEDERAL 23															
1M 23 24N 8W	OIL	304	265	291	288	202	294	263	308	211	314	279	281	3292P	29020
	GAS	420	427	415	490	313	483	400	501	389	435	382	438	5085	51977
	WAT	1	2	2	2	1	2	2	2	2	2			18	133
SOUTH BLANCO FEDERAL 25															
1K 25 24N 8W	OIL	137	133	138	147	65	101	96	106	58	92	104	104	1281P	32323
	GAS	1190	1121	1204	1194	826	1060	1057	1198	1259	973	864	651	12589	155449
	WAT	3	3	3	3	3	3	3	3	1	2	2	2	30	195
2N 25 24N 8W	OIL	138	139	161	134	67	157	150	162	178	128	162	166	1754P	31612
	GAS	828	731	804	804	482	620	669	631	735	503	626	780	8135	181350
	WAT	1	1	1	1	1	1	2	1	1	1			11	85
3M 25 24N 8W	OIL	137	151	145	158	108	154	151	150	129	178	157	138	1748P	24264
	GAS	656	588	781	581	429	575	585	596	567	634	559	749	7220	84725
	WAT	4	2	2	2	2	2	2	2	2	2			22	143
4D 25 24N 8W	OIL	258	318	257	276	167	241	124	162	177	224	226	233	2655P	28631
	GAS	928	895	1049	1063	649	681	747	719	839	841	725	1009	9936	89733
	WAT		1	1	1		1		1	1	1			7	59
5L 25 24N 8W	OIL	135	152	157	170	83	118	114	86	62	138	131	104	1450P	18478
	GAS	698	604	679	671	437	536	489	505	512	858	923	631	7535	71984
	WAT	1	1	1	1	1	1	1	1	2	3	2	2	17	105

10.1 to 1

5.9 to 1

CONTINUED LYBROOK GALLUP

WELL S T R		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT		DEC 1987 PROD MP	ACCUM
6E2524N 8W	OIL	115	130	112	121	31	84	76	104	58	69	8	78	10569P 20044
	GAS	627	581	651	619	333	579	600	649	705	761	752	446	7303 81158
	WAT	1	1	1	1		1	1	1	2	1	2	2	14 99
7F2524N 8W	OIL	96	108	112	97	52	84	94	86	57	69	78	77	10129P 19930
	GAS	980	1026	1076	1044	722	805	872	919	900	912	782	579	10710 93515
	WAT	1	1	1	1		1	1	1	1	1	2	2	12 114
LEASE TOTAL	OIL	1008	1123	1082	1123	573	939	887	856	719	898	934	892	10956 174392
	GAS	5899	5546	6164	5998	3878	4936	5019	5209	5317	5474	5233	4755	63428 677936
	WAT	10	10	10	10	7	10	10	10	10	10	8	8	113 800
SOUTH BLANCO FEDERAL 26														
1H2624N 8W	OIL	150	149	154	154	100	163	140	152	143	152	154	134	17459P 24691
	GAS	1123	908	1182	949	605	1848	2248	2290	2271	1746	1353	908	17431 107980
	WAT	2	2	2	2	1	2	2	2	2	2			19 129
2F2624N 8W	OIL	188	184	223	207	152	203	209	217	(78	192	174	188	2309P 19142
	GAS	311	556	436	688	461	650	597	347	640	679	533	527	6337 50011
	WAT	2	2	3	3	3	3	3	3	3	1			26 147
3D2624N 8W	OIL	186	123	126	147	84	185	129	138	153	180	145	150	1725P 17542
	GAS	273	487	336	648	340	525	524	347	577	807	496	508	5488 40776
	WAT	1	1	1	1		1	1	1	1	1			9 78
4C2624N 8W	OIL	163	154	158	147	108	172	195	162	153	128	145	150	1795P 17997
	GAS	615	422	313	339	271	398	479	654	516	560	499	511	5577 34915
	WAT	1	1	1	1		1	1	1	1	1			9 88
5B2624N 8W	OIL	124	128	112	114	52	143	119	178	148	132	128	109	1489P 15597
	GAS	1722	1368	1533	1733	987	1701	1349	1485	2219	1675	1283	854	17731 68400
	WAT	2	2	2	2	2	2	2	2	2	1			19 138
6A2624N 8W	OIL	148	126	138	140	63	137	141	125	106	99	128	87	1430P 17624
	GAS	1281	1073	1254	1417	862	1397	1737	1071	1330	1283	1281	754	14740 74243
	WAT	1	1	1	1		1	1	1	1	1			8 81
7G2624N 8W	OIL	158	152	166	168	76	164	118	150	128	165	154	131	1730P 15389
	GAS	1238	831	980	1104	681	1203	1283	956	1421	1713	1432	974	13818 81106
	WAT	1	1	1	1	1	1	1	1	1	1			10 64
LEASE TOTAL	OIL	1109	1018	1078	1077	637	1167	1011	1119	1010	1028	1028	941	12223 127982
	GAS	6563	5676	6634	6612	4207	7722	8217	7150	8965	8063	6877	5036	81122 457351
	WAT	10	9	11	11	7	11	11	11	11	8			100 725
SOUTH BLANCO FEDERAL 30														
1H3024N 7W	OIL	196	164	169	150	105	177	149	155	149	145	130	118	1799P 26687
	GAS	1904	1546	1756	1940	1364	1575	1693	1819	1485	1645	1528	1706	19961 161680
	WAT	2	2	2	2	1	2	2	2	2	2			19 127
SOUTH BLANCO FEDERAL 31														
1G3124N 7W	OIL	73	98	125	76	61	89	67	54	71	19			733P 10578
	GAS	771	684	752	744	577	908	744	619	674	3			6496 86269
	WAT	3	3	4	3	2	1	1	1	1	2			20 156
2H3124N 7W	OIL	72	72	61	75	60	61	49	39	50	95	117	94	845P 8942
	GAS	828	776	909	919	671	847	765	637	518	1226	1168	1212	10460 93031
	WAT	2	1	1	1	1					2			9 107
LEASE TOTAL	OIL	145	170	186	151	121	150	116	93	121	114	117	94	1578 12541
	GAS	1599	1460	1661	1683	1248	1755	1509	1256	1192	1229	1168	1212	16954 179308
	WAT	4	4	5	3	3	1	1	1	1	4			29 283
SOUTH BLANCO NAVAJO 8														
1A 523N 7W	OIL	64	65	61	58	43	84	73	93	38	54	86	57	778P 18295
	GAS	2562	2441	2837	2678	1936	2814	2272	2369	1664	2623	2584	2901	29587 352829
	WAT	7	7	7	7	4	8	9	9	8	4			74 746
2B 823N 7W	OIL	44	42	39	27	33	33	29	36	25	22	34	23	387P 6469
	GAS	1545	1277	1519	1361	1083	1769	1351	1351	1736	1642	1448	1675	17657 258638
	WAT	4	3	3	3	2	3	3	3	3	4			31 243
3H 823N 7W	OIL	66	63	59	41	33	49	29	36	37	33	51	34	511P 7023
	GAS	1231	1199	1245	1077	823	1269	1584	1567	1293	1221	1186	965	14510 108713
	WAT	6	5	5	4	3	4	3	3	3	4			38 250
LEASE TOTAL	OIL	174	150	159	126	109	166	131	163	100	111	171	114	1634 312977
	GAS	5338	4827	5598	5088	3762	5852	5207	5387	4693	5486	5058	5541	61754 772 1239
	WAT	17	13	15	14	10	15	14	15	14	12			139
SOUTH BLANCO NAVAJO 25														
1P2524N 8W	OIL	64	61	39	116	76	78	65	67	45	57	57	61	786P 12955
	GAS	1245	1184	1358	930	629	999	849	782	878	1061	929	1186	12011 95585
	WAT	2	3	3	2	2	3	3	2	2	1	1	2	28 168
2D2524N 8W	OIL	46	45	25	85	54	51	85	86	45	28	49	40	648P 11292
	GAS	809	834	1000	857	554	834	922	783	851	974	698	1035	10351 82398
	WAT	1	1	1	1	1	1	2	2	2	1	1	2	16 87
3J2524N 8W	OIL	62	45	44	142	75	76	63	86	34	28	72	61	788P 22021
	GAS	1173	1132	1322	999	647	1103	824	744	904	922	854	1140	11784 142928
	WAT	1	1	2	2	1	1	1	1	1	1	1	2	16 185
LEASE TOTAL	OIL	171	151	108	343	207	205	213	239	124	113	178	162	2214 46268
	GAS	3227	3150	3672	2786	1830	2936	2615	2289	2631	2957	2672	3381	34146 320903
	WAT	4	5	6	5	4	5	6	4	5	3	3	6	58 352
SOUTH BLANCO NAVAJO 264														
4I2624N 8W	OIL	88	94	83	116	64	94	114	99	95	102	101	62	1112P 10648
	GAS	733	427	701	581	429	575	585	596	926	1241	1088	1225	9107 71735
	WAT	1	1	1	1	1	1	1	1	1	1			10 75
SOUTH BLANCO NAVAJO 31														
1D3124N 7W	OIL	188	66	62	68	48	74	61	67	43	59	45	57	778P 12274
	GAS	775	739	757	1118	595	1568	1399	1240	1091	722	456	255	10707 98249
	WAT	1	1	1	1	1	1	5	5	5	4			25 183
2E3124N 7W	OIL	53	43	62										1538P 12815
	GAS	661	648	818										1927 116576
	WAT	1	1	1										1 57
LEASE TOTAL	OIL	141	109	124	68	48	74	61	67	43	59	45	57	928 24289
	GAS	1436	1387	1575	1118	595	1568	1399	1240	1091	722	456	255	12634 208825
	WAT	1	1	2	1	1	1	5	5	5	4			26 148
SOUTH BLANCO STATE 32														0 2142
1F3224N 7W	OIL	LAST PROD. DATE 10/84												20257
	GAS													178
	WAT													
SOUTH BLANCO STATE 32A														
4D3224N 7W	OIL	60	68	72	54	43	69	62	71	78	53	63	52	737P 8448
	GAS	864	725	772	832	530	823	745	759	722	712	623	883	8900 86679
	WAT	1	1	1	1	1	2	2	2	2	2			15 123
SOUTH BLANCO STATE 36														
1A3624N 8W	OIL	71	99	109	86	91	126	93	86	95	133	93	82	1164P 33815
	GAS	795	861	891	765	541	832	646	682	918	825	718	753	9227 164015
	WAT	7	7	8	9	6	6	6	6	8	5	1	2	73 360
2H3624N 8W	OIL	68	77	64	30	53	99	69	85	94	100	92	82	905P 23534
	GAS	814	636	687	364	423	626	809	850	797	711	719	732	8168 134023
	WAT	5	4	4	2	3	4	5	5	7	4	1	2	45 239
3G3624N 8W	OIL	60	58	64	46	35	115	78			67	78	82	730P 16479
	GAS	748	698	739	723	544	832	760	644		601	607	684	7689 94555
	WAT	5	3	4	4	2	3	6	5		4	1	2	39 201
5D3624N 8W	OIL	LAST PROD. DATE 07/86												5 18322
	GAS													65840
	WAT													135
LEASE TOTAL	OIL	191	234	237	162	179	308	277	249	189	308	255	226	2799 92358
	GAS	2357	2175	2317	1852	1530	2290	2235	2181	1715	2137	2044	2171	25004 450433
	WAT	17	14	14	15	11	15	16	16	15	13	3	6	157 944
SOUTH BLANCO STATE 36 P														
1F3624N 8W	OIL	PLUGGING APPROVED 1988												17825
	GAS													65204
	WAT													60
COMPANY TOTAL	OIL	4416	4320	4314	4318	2757	4341	3872	3852	3463	3945	4038	3625	47253 838214
	GAS	35885	31748	33700	32382	21961	34508	33313	30751	32152	34542	30552	30283	381719 6374182
	WAT	87	80	91	86	58	80	88	88	85	75	14	28	852 6788
PARKO OIL														
QUINELLA														
1D3123N 8W	OIL	5	6	28	38	32	25	28	29	24	17	26		2680P 2181
	GAS	1381	790	1515	1285	1472	1533	1713	1704	1380	1298	1257	9	15337 31381
	WAT					1	1	1	1	1	1	1		7 121
RAMSEY PROPERTY MANAGEMENT INC.														
EMILY														
1L2023N 8W	OIL	147	187	207	142	129	146	130	148	86	94	117	118	1648P 17079
	GAS	299	288	255	206	202	145	305						1628 43509
	WAT													904
LU-LU														
1D2923N 8W	OIL	225	202	233	227	218	226	228	223	213	206	190	187	2576P 25035
	GAS	382	264	328	262	259	185	390	767	916	811	757	648	5969 51456
	WAT													474
3M2923N 8W	OIL	197	184	203	174	192	177	181	151	167	171	169	181	2147P 16163
	GAS	162	152	167	145	159	140	143	128	132	135	134	144	1733 13202
	WAT													218
4P2923N 8W	OIL	148	167	180	167	166	166	150	145	160	157	147	151	1896P 12337
	GAS	183	218	236	218	215	210	188	188	262	197	184	189	2420 15376
	WAT													79
SJ2923N 8W	OIL	99	23	28	101	95	103	96	69	73	98	96	101	972P 6868
	GAS	77	31	39	134	126	133	124	87	95	116	121	129	1212 8678
	WAT	23	8	13	26	25	26	18	20	21		13	8	201 354
LEASE TOTAL	OIL	621	576	644	649	671	670	655	588	613	624	600	620	7551 66403
	GAS	804	667	768	759	799	668	845	1154	1345	1259	1196	1118	11334 88912
	WAT	23	8	13	26	25	26	18	20	21		13	8	201 1125
LULU														
2L2923N 8W	OIL	164	156	165	156	145	154	159	158	150	142	122	145	1835P 18828
	GAS	127	99	108	86	86	61	130						689 23680
	WAT		21	8										29 195
COMPANY TOTAL	OIL	934	919	1016	967	945	978	944	888	849	868	839	883	11034 95510
	GAS	1230	944	1131	1053	1047	874	1268	1154	1345	1259	1196	1118	13663 156101
	WAT	23	29	21	26	25	26	18	20	21		13	8	230 2378
JESSIE STANLEY														
CHAPMAN														
1M2023N 8W	OIL	48	28	13	28	15	21	181	19					278P 49982
	GAS	631	185	128	259	139	196	937	83					2549 129044
	WAT													375
UNION TEXAS PETROLEUM CORPORATION														
BUSH														
1P 923N 7W	OIL													8P 34799
	GAS													258266
	WAT													121

5,2 to 1

1,6 to 1

CONTINUED LYBROOK GALLUP

WELL S T R			FEB	MAR	APRIL	MAY	JUNE	JULY		SEPT	OCT	NOV	DEC 1987	PROD	ACCUM
LYBROOK 8 11 30Z3N 8W	OIL	LAST PROD. DATE 05/86													4523
	GAS														6836
	WAT														85
MAGGIZZI FEDERAL 3 8C 32Z3N 7W	OIL	389	497	508	390	441	413	366	363	327	304	342	256	4706	15333
	GAS	8057	3910	6626	4482	3431	1934	2269	1653	1690	1881	1461	3308	36730	73823
	WAT					5		4	3	16	29	37	36	129	235
COMPANY TOTAL	OIL	389	497	508	390	441	413	366	363	327	304	350	256	4806	54655
	GAS	8057	3910	6626	4482	3431	1934	2269	1653	1690	1881	1461	3308	36730	337965
	WAT					5		4	3	16	29	37	36	129	421

MANY ROCKS GALLUP

Gas oil Ratio 6.2 to 1

average of Gas oil Ratios all 11 operators in Lybrook Gallup is 8.1 to 1

Unicon Producing Company

BCO Inc
Exhibit 2
Case 9396

1330 Post Oak Boulevard
P. O. Box 2120
Houston, Texas 77252-2120
(713) 623-6544

June 7, 1988

The Jones Firm
215 Lincoln Avenue
Santa Fe, New Mexico 87504-2228

Attention: Arturo L. Jaramillo,
Attorney at Law

Re: Application of BCO, Inc. for Non-Standard
Spacing and Proration Unit for the
State J-1 well located in the
N/2 NE/4 of Section 16-23N-7W,
Rio Arriba County, New Mexico
Our Area: Escrito
Our Lease No.: NM-2140

Dear Mr. Jaramillo:

In response to your letter dated May 13, 1988 concerning the captioned application, Unicon Producing Company has no objection to BCO's non-standard spacing and proration unit for the captioned well.

Yours truly,

UNICON PRODUCING COMPANY

Ralph B. Latchaw, Jr.
Senior Landman

RBL:gw
00166.DOC

May 13, 1988

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Elizabeth Williams
Mr. Ralph Latchaw
Union Texas Petroleum Company
1330 Post Oak Boulevard
Houston, Texas 77252-2120

RE: Application of BCO, Inc., for an Order Dedicating Additional Acreage and Forming a Non-Standard Spacing and Proration Unit for State J-1 Well;

Dear Ms. Williams and Mr. Latchaw:

Enclosed please find a copy of the Application of BCO, Inc., for the Dedication of Additional Acreage and Formation of a Non-Standard Spacing and Proration Unit relating to the State J-1 Well, Sec. 16, T23N, R7W, NMPM, Rio Arriba County, New Mexico which was filed this date with the Oil Conservation Division.

PLEASE TAKE NOTICE THAT this Application shall come on for hearing before the Oil Conservation Division on Wednesday, June 8, 1988 at 9:00 a.m. Pursuant to Rule 1207, as amended, of the Rules and Regulations of the division, this shall constitute actual notice to Union Texas Petroleum as an offset operator in the SW/4 of Section 9, T23N, R7W, Rio Arriba County, New Mexico, concerning the application and scheduled hearing date.

I would ask that you please notify me in advance of the hearing date if Union Texas has any objection to the relief sought in the application. Your response to this inquiry would be appreciated.

Very truly yours,

THE JONES FIRM

By

ARTURO L. JARAMILLO

ALJ:yfg

Enclosure

cc: BCO, Inc.

O RUSSELL JONES (1912-1978)

JAMES E SNEAD
JERRY WERTHEIM
M J RODRIGUEZ
JOHN WENTWORTH
STEVEN L TUCKER
ARTURO L JARAMILLO
PETER V CULBERT
JAMES G WHITLEY III
FRANCIS J MATHEW

MARTHA VAZQUEZ
NANCY R LONG
WILLIAM D WINTER
ELIZABETH WOLDMAN

ATTORNEYS AT LAW

5 LINCOLN AVENUE SANTA FE, NEW MEXICO 87504-2228 • P.O. BOX 2228 • (505) 982-0011 • TELECOPIER (505) 984-0846

LYBROOK-GALLUP POOL
Rio Arriba County, New Mexico

Order No. R-2267-A, Abolishing the Temporary Operating Rules Adopted in Order No. R-2267, August 1, 1962, for the Lybrook-Gallup Pool, Rio Arriba County, New Mexico, September 8, 1964.

Application of Val R. Reese & Associates, Inc. for the Creation of a New Oil Pool and for Special Pool Rules, Rio Arriba County, New Mexico.

CASE NO. 2575
Order No. R-2267-B

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 o'clock a.m. on August 5, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 8th day of September, 1964, the Commission, a quorum being present, 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 Commission has jurisdiction of this cause and the subject matter thereof.

(2) That by Order No. R-2267, dated June 21, 1962, temporary Special Rules and Regulations were promulgated for the Lybrook-Gallup Oil Pool, Rio Arriba County, New Mexico, establishing 320-acre gas proration units and 80-acre oil proration units for a one-year period.

(3) That by Order No. R-2267-A, dated August 16, 1963, said temporary Special Rules and Regulations were continued in full force and effect for an additional one-year period.

(4) That pursuant to the provisions of Order No. R-2267-A, this case was reopened to allow the operators in the subject pool to appear and show cause why the Lybrook-Gallup Oil Pool should not be developed on 160-acre gas proration units and 40-acre oil proration units.

(5) That the evidence concerning the reservoir characteristics of the Lybrook-Gallup Oil Pool and the effectiveness of the temporary Special Rules and Regulations promulgated by Order No. R-2267 does not establish that said pool can be efficiently and economically drained and developed on 320-acre gas proration units and 80-acre oil proration units.

(6) That to afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the gas and oil in the pool, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, the Lybrook-Gallup Oil Pool should be developed on 160-acre gas units and 40-acre oil units.

IT IS THEREFORE ORDERED:
(1) That the Special Rules and Regulations governing the Lybrook-Gallup Oil Pool promulgated by Order No. R-2267 are hereby abolished.

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

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

SOUTH CROSSROADS-DEVONIAN POOL
Lea County, New Mexico

Order No. R-2284, Adopting Operating Rules for the South Crossroads-Devonian Pool, Lea County, New Mexico, August 1, 1962.

Application of Hill & Meeker for Special Rules and Regulations for the South Crossroads-Devonian Pool, Lea County, New Mexico.

CASE NO. 2594
Order No. R-2284

ORDER OF THE COMMISSION

BY THE COMMISSION: This cause came on for hearing at 9 o'clock a.m. on June 28, 1962, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly adopted by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 17th day of July, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, and being fully advised in the premises,

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

(2) That the applicant, Hill & Meeker, seeks the promulgation of special rules and regulations for the South Crossroads-Devonian Pool, Lea County, New Mexico, including a provision for 80-acre oil proration units.

(3) That the evidence presented at the hearing of this case establishes that the South Crossroads-Devonian Pool can be efficiently and economically drained and developed on 80-acre proration units.

IT IS THEREFORE ORDERED:
(1) That Special Rules and Regulations for the South Crossroads-Devonian Pool are hereby promulgated as follows, effective August 1, 1962.

SPECIAL RULES AND REGULATIONS
FOR THE
SOUTH CROSSROADS-DEVONIAN POOL

RULE 1. Each well completed or recompleted in the South Crossroads-Devonian Pool or in the Devonian formation within one mile of the South Crossroads-Devonian Pool, and not nearer to nor within the limits of another designated Devonian oil pool, shall be spaced, drilled, operated and prorated in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well completed or recompleted in the South Crossroads-Devonian Pool shall be located on a unit containing approximately 80 acres, which consists of any two contiguous quarter-quarter sections of a single governmental quarter section. For purposes of these Rules, a unit consisting of between 79 and 81 surface contiguous acres shall be considered a standard unit.

RULE 3. Each well projected to or completed in the South Crossroads-Devonian Pool shall be located within 150 feet of the center of either quarter-quarter section in the 80-acre unit; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the 80-acre unit.

RULE 4. For good cause shown, the Secretary-Director may grant an exception to Rule 2 without notice and hearing where an application has been filed in due form, and where the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Lands Survey, or where the following facts exist and the following provisions are complied with:

RULE 0.1 DEFINITIONS (Rule Number Adopted and Definitions Readopted, Order No. R-6869, January 7, 1982; as Amended by Order No. R-8001, September 23, 1985, and Order No. R-8335, November 10, 1986.)

(Numbering system of the definition section of the Commission's rules and regulations abolished by Order No. R-1957, Effective May 1, 1961.)

ADJUSTED ALLOWABLE shall mean the allowable production a well or proration unit receives after all adjustments are made.

ALLOCATED POOL is one in which the total oil or natural gas production is restricted and allocated to various wells therein in accordance with proration schedules.

ALLOWABLE PRODUCTION shall mean that number of barrels of oil or standard cubic feet of natural gas authorized by the Division to be produced from an allocated pool.

AQUIFER (As Added by Order No. R-6702, July 1, 1981) shall mean a geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

BACK ALLOWABLE (As Amended by Order No. R-39, December 15, 1950; Deleted by Order No. R-98-A, June 24, 1952; Reinstated by Order No. R-354, August 28, 1953) shall mean the authorization for production of any shortage or underproduction resulting from pipeline prorationing.

BARREL shall mean 42 United States Gallons measured at 60 degrees Fahrenheit and atmospheric pressure at the sea level.

BARREL OF OIL shall mean 42 United States Gallons of oil, after deductions for the full amount of basic sediment, water, and other impurities present, ascertained by centrifugal or other recognized and customary test.

BOTTOM HOLE OR SUBSURFACE PRESSURE shall mean the gauge pressure in pounds per square inch under conditions existing at or near the producing horizon.

BRADENHEAD GAS WELL shall mean any well producing gas through wellhead connections from a gas reservoir which has been successfully cased off from an underlying oil or gas reservoir.

CARBON DIOXIDE GAS shall mean noncombustible gas composed chiefly of carbon dioxide occurring naturally in underground rocks.

CASINGHEAD GAS shall mean any gas or vapor or both gas and vapor indigenous to and produced from a pool classified as an oil pool by the Division. This also includes gas-cap gas produced from such an oil pool.

COMMISSION shall mean the Oil Conservation Commission.

COMMON PURCHASER FOR NATURAL GAS shall mean any person now or hereafter engaged in purchasing from one or more producers gas produced from gas wells within each common source of supply from which it purchases.

COMMON PURCHASER FOR OIL shall mean every person now engaged or hereafter engaging in the business of purchasing oil to be transported through pipe lines.

COMMON SOURCE OF SUPPLY see Pool.

CONDENSATE shall mean the liquid recovered at the surface that results from condensation due to reduced pressure or temperature of petroleum hydrocarbons existing in a gaseous phase in the reservoir.

CONTIGUOUS shall mean acreage joined by more than one common point, that is, the common boundary must be at least one side of a governmental quarter-quarter section.

CONVENTIONAL COMPLETION (As Added by Order No. R-1957, May 1, 1961) shall mean a well completion in which the production string of casing has an outside diameter in excess of 2.875 inches.

CORRELATIVE RIGHTS shall mean the opportunity afforded, as far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of the oil or gas, or both, in the pool, being an amount, so far as can be practically determined, and so far as can be practicably obtained without waste, substantially in the proportion that the quantity of recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool, and for such purpose to use his just and equitable share of the reservoir energy.

CUBIC FOOT OF GAS OR STANDARD CUBIC FOOT OF GAS, for the purpose of these rules, shall mean that volume of gas contained in one cubic foot of space and computed at a base pressure of 10 ounces per square inch above the average barometric pressure of 14.4 pounds per square inch (15.025 psia), at a standard base temperature of 60 degrees Fahrenheit.

DEEP POOL shall mean a common source of supply which is situated 5000 feet or more below the surface.

DEPTH BRACKET ALLOWABLE (As Added by Order No. R-4348, September 1, 1972) shall mean the basic oil allowable assigned to a pool and based on its depth, unit size, or special pool rules, which, when multiplied by the market demand percentage factor in effect, will determine the top unit allowable for the pool.

DIVISION (As Added by Order No. R-5709, April 15, 1978) shall mean the Oil Conservation Division of the New Mexico Energy and Minerals Department.

DUAL COMPLETION (Amended by Order No. R-316, April 30, 1953, and Deleted by Order No. R-1957, May 1, 1961.)

EXEMPTED AQUIFER (As Added by Order No. R-6702, July 1, 1981) shall mean an aquifer that does not currently serve as a source of drinking water, and which cannot now and will not in the foreseeable future serve as a source of drinking water because: (1) it is hydrocarbon producing; (2) it is situated at a depth or location which makes the recovery of water for drinking water purposes economically or technologically impractical; or, (3) it is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption.

FIELD means the general area which is underlaid or appears to be underlaid by at least one pool; and field also includes the underground reservoir or reservoirs containing such crude petroleum oil or natural gas, or both. The words field and pool mean the same thing when only one underground reservoir is involved; however, field unlike pool may relate to two or more pools.

FRESH WATER (to be protected) includes the water in lakes and playas, the surface waters of all streams regardless of the quality of the water within any given reach, and all underground waters containing 10,000 milligrams per liter (mg/l) or less of total dissolved solids (TDS) except for which, after notice and hearing, it is found there is no present or reasonably foreseeable beneficial use which would be impaired by contamination of such waters. The water in lakes and playas shall be protected from contamination even though it may contain more than 10,000 mg/l of TDS unless it can be shown that hydrologically connected fresh ground water will not be adversely affected.

GAS LIFT shall mean any method of lifting liquid to the surface by injecting gas into a well from which oil production is obtained.

GAS-OIL RATIO shall mean the ratio of the casinghead gas produced in standard cubic feet to the number of barrels of oil concurrently produced during any stated period.

GAS-OIL RATIO ADJUSTMENT shall mean the reduction in allowable of a high gas-oil ratio unit to conform with the production permitted by the limiting gas-oil ratio for that particular pool during a particular proration period.

GAS TRANSPORTATION FACILITY shall mean a pipe line in operation serving gas wells for the transportation of natural gas, or some other device or equipment in like operation whereby natural gas produced from gas wells connected therewith can be transported or used for consumption.

GAS WELL (As Amended by Order No. R-4226, Effective April 1, 1972) shall mean a well producing gas or natural gas from a gas pool, or a well with a gas-oil ratio in excess of 100,000 cubic feet of gas per barrel of oil producing from an oil pool.