

NEW MEXICO OIL CONSERVATION COMMISSION

CASE NO. 2355 (Reopened)
Bluitt-Wolfcamp Gas Pool
Roosevelt County, New Mexico

H. L. Brown, Jr.

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Spacing Units
Bluitt-Wolfcamp Gas Pool
Roosevelt County, New Mexico
August 28, 1985

BEFORE EXAMINER STOSHER	
OIL CONSERVATION DIVISION	
EXHIBIT NO.	1
CASE NO.	2355

INTRODUCTION

In the matter of Case 2355 being reopened to investigate spacing units for the Bluitt-Wolfcamp Gas Pool in Roosevelt County, New Mexico, it is the opinion of H. L. Brown, Jr. that the current 320 acre spacing units should not be changed. We have based our conclusions on the following: uniform pressure drawdown throughout the field, estimated ultimate well stream recovery, and a previous study of infill drilling the Bluitt (Wolfcamp) Field. Data obtained from engineering studies by Osborn & Uhl, Inc. having effective data of January 1, 1981, and an update study having an effective date of January 1, 1985, were used to formulate the opinions expressed for this case.

HISTORY

The Bluitt (Wolfcamp) Field was discovered with the completion of the H. L. Brown, Jr., Federal Well No. 1 in October, 1959. Development of the field had continued from 1959 through 1982, with 13 gas wells having been completed in the main Wolfcamp Reservoir. Twelve of these wells are operated by H. L. Brown, Jr., and one well has recently been sold by Sun Exploration Company. As of January 1, 1985, 319,915 barrels of condensate and 16,882,976 MCF of gas had been produced from the Bluitt (Wolfcamp) Field.

FINDINGS

The estimated original reservoir pressure was 2900 psig at a datum level of -4000'. The H. L. Brown, Jr. wells were subjected to long term pressure build-up tests during the months of July and August, 1980. Using these pressures the isobaric map presented on Figure 2 was constructed by Osborn & Uhl, Inc. The isobaric map was pore volume weighted to determine the average reservoir pressure of 2115 psig as of July, 1980. Figure 3 is an isobaric map prepared from build up pressures taken September, 1984.

When the two isobaric maps are compared, similarities in isobar shapes can be seen and general reservoir pressure decline can also be observed to have been essentially uniform over the entire reservoir. This study of the reservoir pressure depletion showing good pressure communication between wells, indicates no undrained areas within the reservoir boundary.

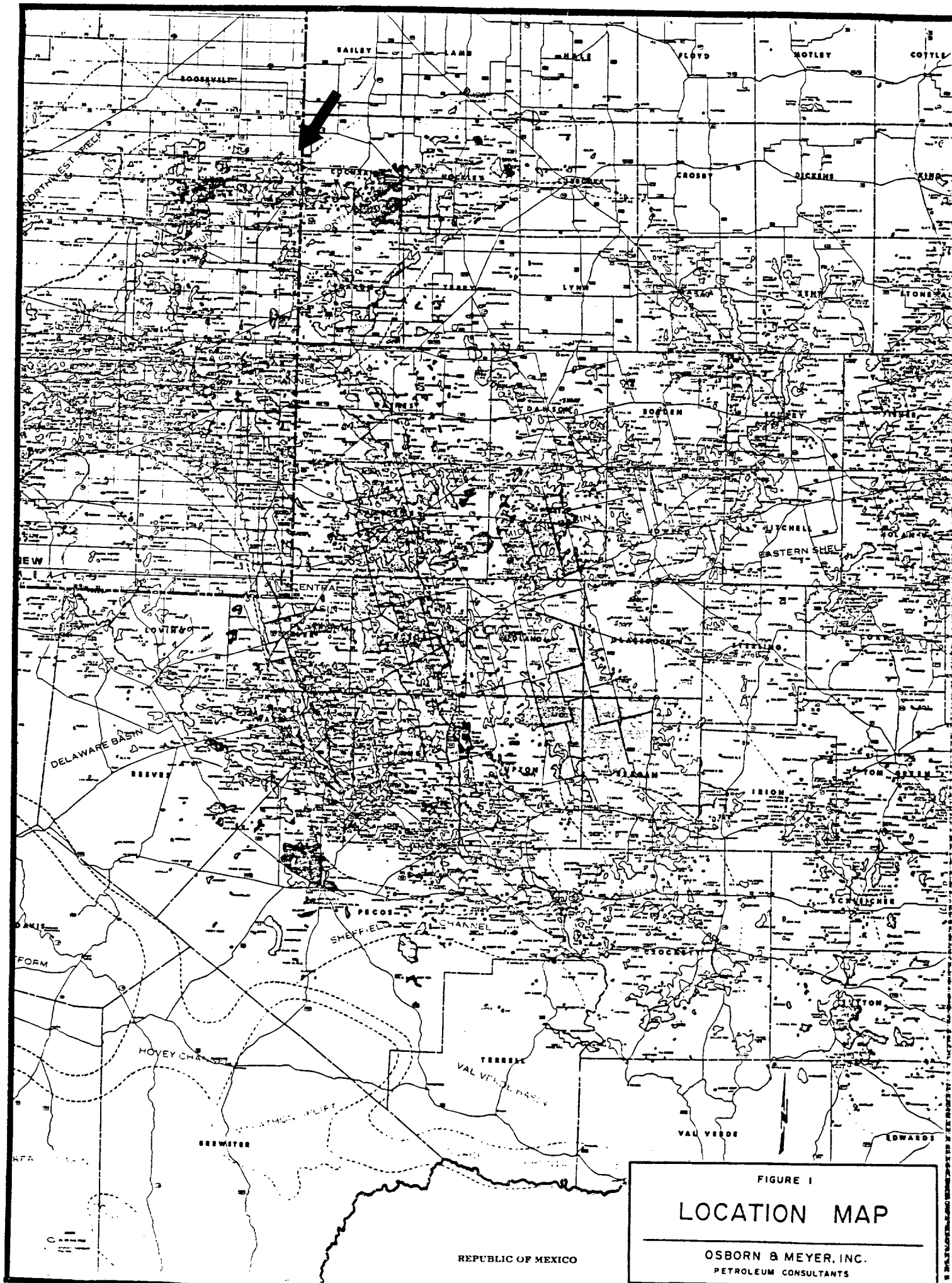
Well stream gas initially in-place was determined to be 40,448,000 MCF for the Bluitt (Wolfcamp) Field. This volume was determined from a plot of reservoir pressure divided by compressibility factor (P/Z) versus cumulative well stream production. This relationship is presented on Figure 4. Ultimate well stream recovery from this reservoir is projected to be 35,356,000 MCF by Osborn & Uhl's updated study. This constitutes a recovery of 87.4 percent of well stream calculated to be initially in-place. Projected production performance from the updated study is shown by Table I.

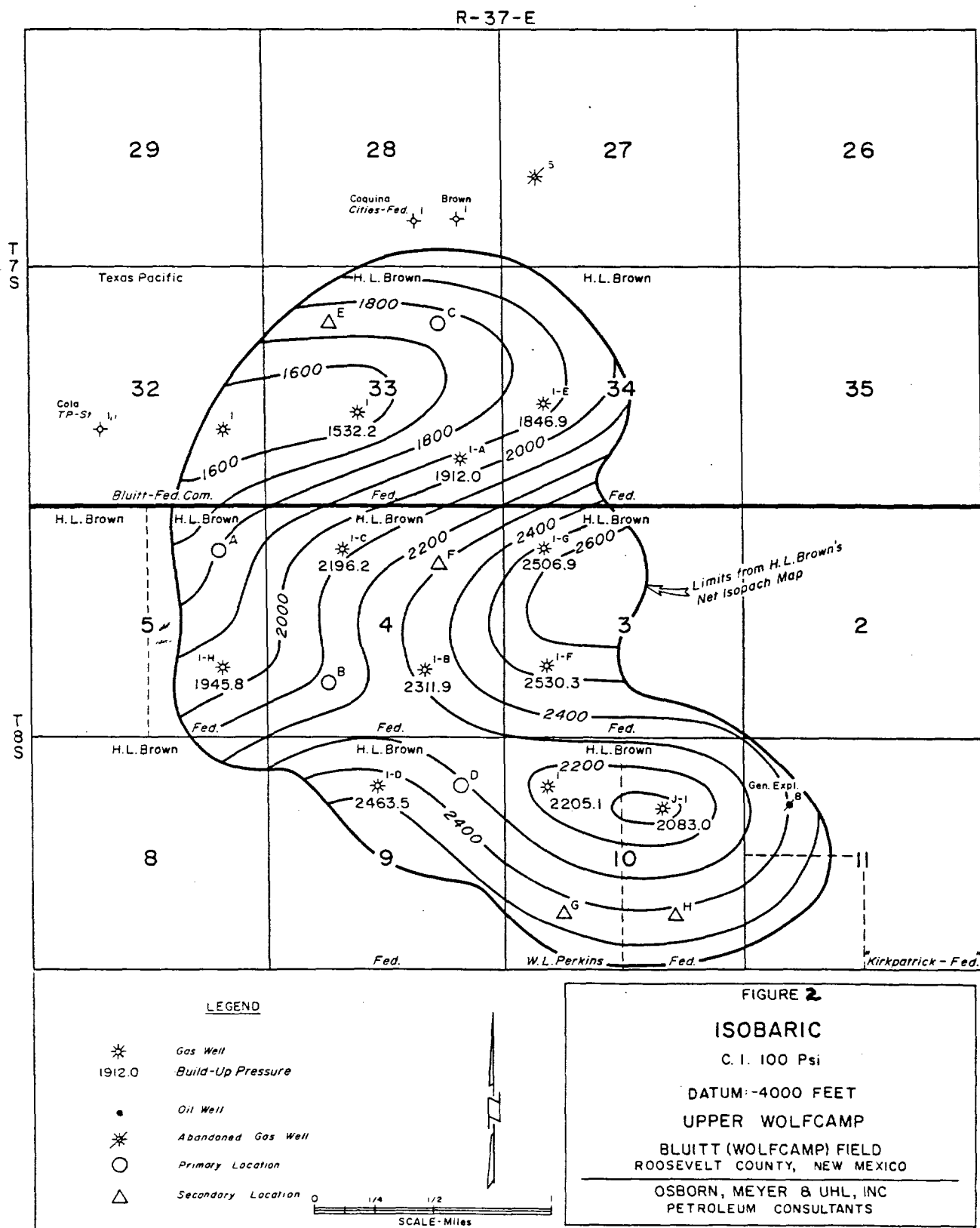
An economic evaluation was made by Osborn & Uhl, Inc. to infill drill the Bluitt (Wolfcamp) Field in their first engineering study (January 1, 1981). The economic comparisons presented in Table II show the case of infill drilling to yield a cash flow of \$1,306,128 less than that described for the case of continued current operations. Even though more reserves were generated from the case of infill drilling over the time period allotted, the increase in reserves was not sufficient to offset the capital expenditure required plus the increase in operating costs. Locations for the proposed infill drilled wells are shown by Figure 2 to be on 160 acre spacing units.

Economic calculations for this 1981 comparison were based on the following: Condensate price - \$40.00 per barrel escalated at 8.0 per cent per year to \$75.00 per barrel and constant thereafter; Gas price - \$2.23 per MCF escalated at 8.0 per cent per year to \$10.00 per MCF and constant thereafter; Operating costs - \$9015.00 per well per year escalated at 8.0 per cent per year until the limiting value of gas price was reached and remained constant thereafter; and last, Drilling and completion costs - \$500,000 per well. Present product prices are \$23.00 per barrel of condensate and \$2.93 per MCF. A situation of no escalation, which would be more indicative of today's oil and gas markets, would prove the infill drilling program even less attractive.

CONCLUSIONS

Based on studies made by the independent engineering consulting firm of Osborn & Uhl, Inc. for H. L. Brown, Jr. on the Bluit (Wolfcamp) Field, it is our opinion the reservoir is currently being drained efficiently and economically by the present 320 acre spacing units. The uniform pressure drawdown indicates drainage of the entire reservoir. Infill drilling will not add sufficient reserves to offset the capital costs associated with adding additional wells, nor will it add significantly to the projected recovery factor of 87.4 per cent of well stream gas initially in-place. We respectfully request that the current 320 acre spacing units remain in effect for the Bluit (Wolfcamp) Field based on these facts.





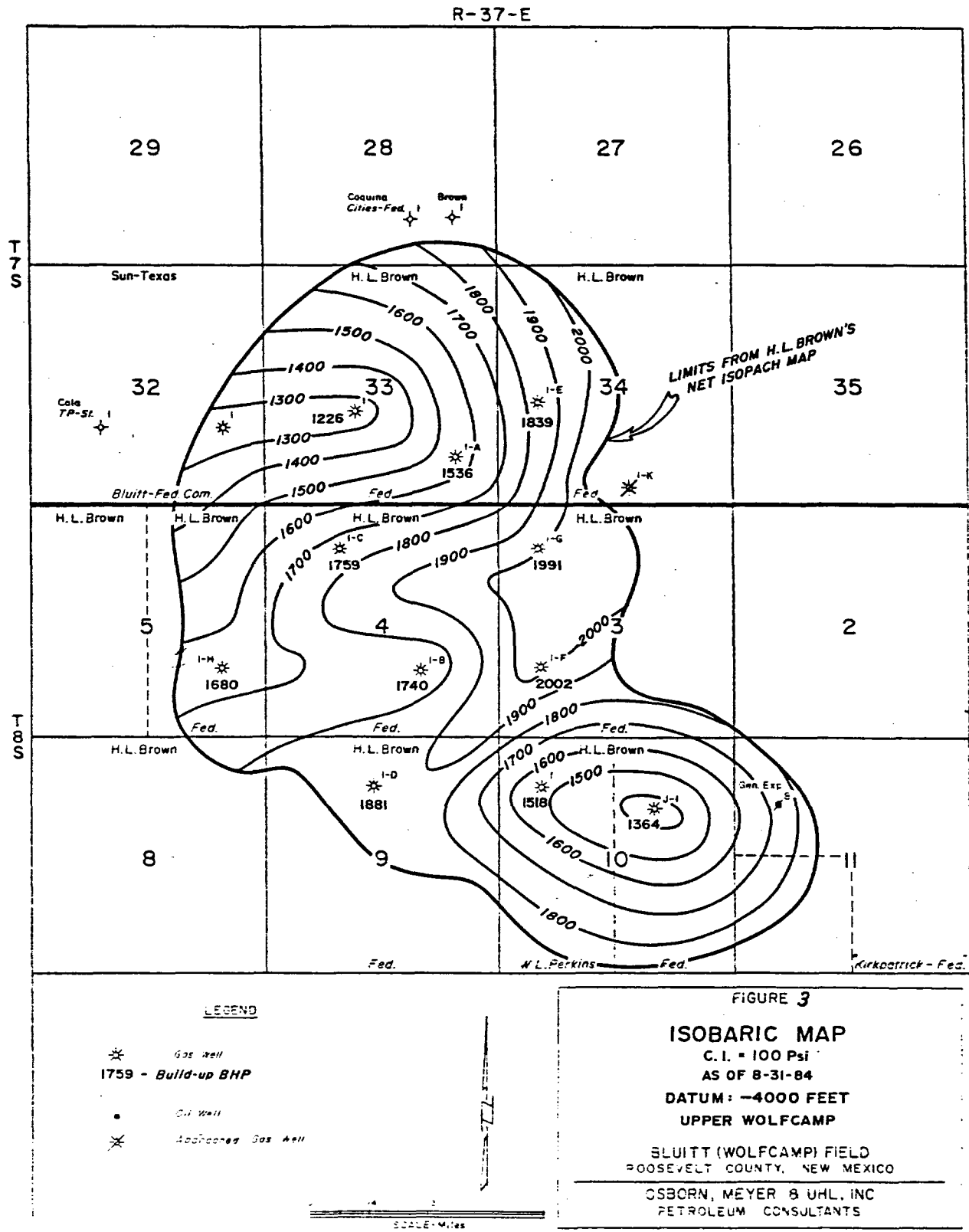


Figure 3

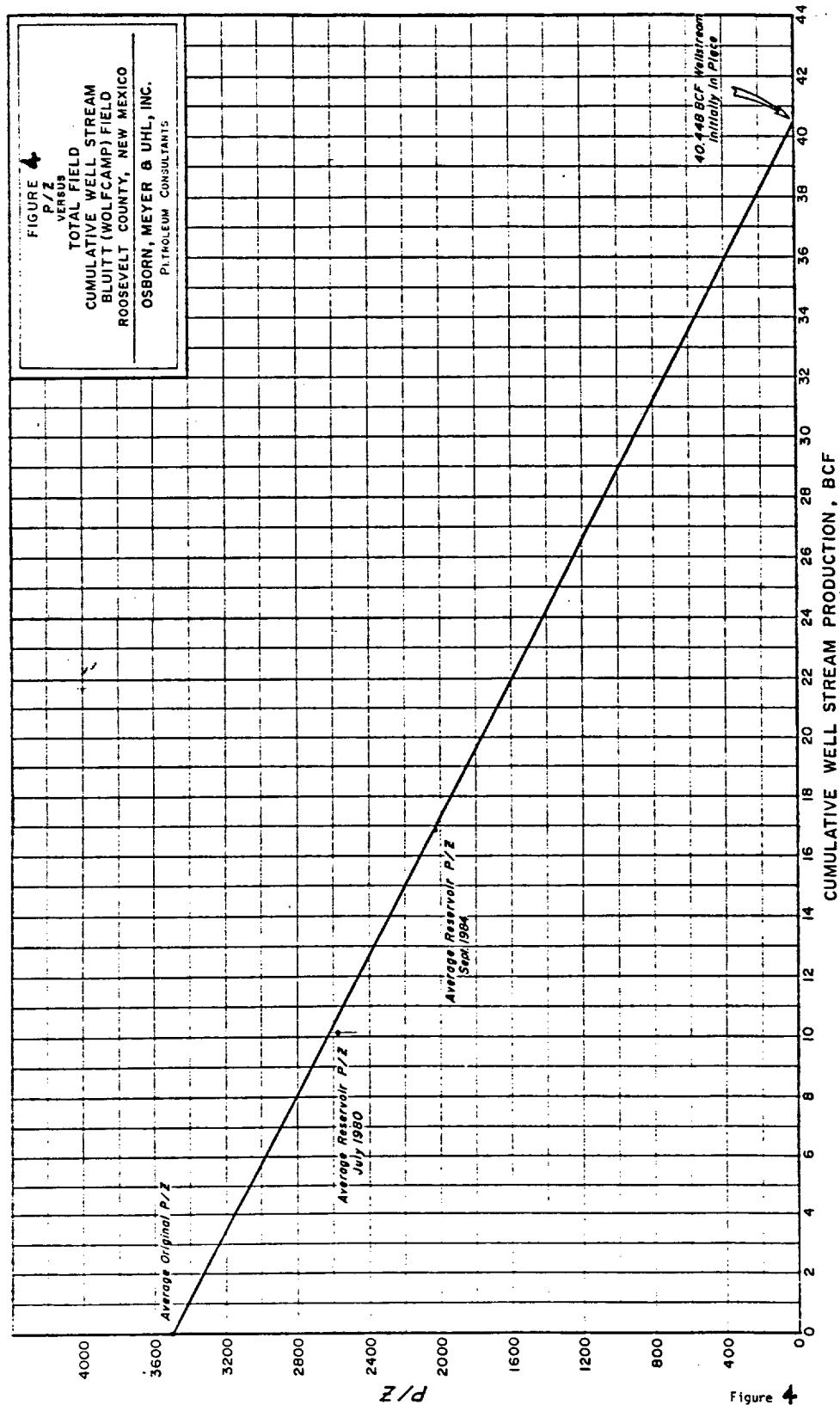


Figure 4

TABLE I.

PROJECTED PRODUCTION PERFORMANCE

FROM JANUARY 1, 1985

TOTAL FIELD

BLUITT (WOLFCAMP) FIELD

ROOSEVELT COUNTY, NEW MEXICO

YEAR	OIL-BBLS		GAS-MCF		GOR MCF/BBL
	ANNUAL	CUMULATIVE	ANNUAL	CUMULATIVE	
		319925		16882976	
1985	16651	336576	1145167	18028143	68.775
1986	17309	353885	1209923	19238066	69.901
1987	15434	369319	1093082	20331148	70.823
1988	13873	383192	993575	21324723	71.619
1989	12561	395753	907892	22232615	72.279
SUB-TOTAL	75828		5349639		
REM. LIFE	166061	561814	12589398	34822013	
TOTAL RESERVES	241889		17939037		

TABLE II.

COMPARISON OF RESERVES AND ECONOMIC CASES

BLUITT (WOLFCAMP) FIELD

ROOSEVELT COUNTY, NEW MEXICO

as of January 1, 1981

	WITHOUT INFILL DRILLING	WITH INFILL DRILLING	DIFFERENCE WITH - WITHOUT
RESERVES			
Gas, Gross MCF	14,731,356	17,043,650	+ 2,312,294
Net MCF	2,110,311	2,332,576	+ 222,265
Condensate, Gross Bbls.	144,533	164,944	+ 20,411
Net Bbls.	20,472	22,438	+ 1,966
Future Producing Life, Years	50	50	—
No. Wells	11	19	+ 8
ECONOMICS (NET TO EVALUATED INTEREST)			
Cash Flow Before F.I.T., \$	10,066,857	8,760,723	- 1,306,128
Present Worth @ 15 Pct, \$	1,946,633	1,756,303	- 190,330
Operating Cost and Ad Valorem Tax, \$	2,264,017	3,060,168	+ 796,151
Capital Investment, \$	—	662,668	+ 662,668