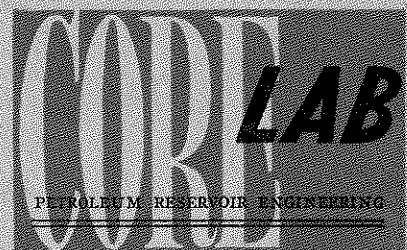


BIRD-SHEEDY-KEAS
HOHN SHAW #1
LINN, KANSAS



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS
May 12, 1965

REPLY TO
1810 N. W. 4TH ST.
P. O. BOX 7128
OKLAHOMA CITY, OKLA.

Bird -Sheedy- Keas
4975 East 26th Street
Tulsa, Oklahoma

Subject: Core Analysis
John Shaw No. 1 Well
Linn County, Kansas
CLI File No. CP-10-1331

Gentlemen:

Samples were selected for analysis from a diamond core taken in the John Shaw No. 1 Well. The measured data reported on the accompanying coregraph was determined in the Wichita laboratory.

Fine to medium grained, slightly shaly sandstone analyzed from 681 to 693 feet has residual oil saturations indicative of gas productivity.

Bartlesville sandstone between 693 and 707.5 feet has residual fluid saturations indicative of oil productivity.

Average core analysis data and estimates of recoverable oil are presented on the summary page of this report.

We appreciate this opportunity of serving you and trust these data will aid the preliminary evaluation of this well.

Yours very truly,

CORE LABORATORIES, INC.



J. G. Evertson, Jr.
District Manager

JGE:jc

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

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Well John Shaw #1

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Bartlesville 681-93			
FEET OF CORE RECOVERED FROM ABOVE INTERVAL	12	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	62.6
FEET OF CORE INCLUDED IN AVERAGES	11	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCY	50	OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-Feet	550	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT	22.0	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	7.2	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

FORMATION NAME AND DEPTH INTERVAL: Bartlesville 693-707.5			
FEET OF CORE RECOVERED FROM ABOVE INTERVAL	14	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	32.9
FEET OF CORE INCLUDED IN AVERAGES	14	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE (e)	28
AVERAGE PERMEABILITY: MILLIDARCY	45	OIL GRAVITY: °API (e)	29
PRODUCTIVE CAPACITY: MILLIDARCY-Feet	630	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT	21.3	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL (e)	1.05
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	36.7	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	1132

Calculated maximum solution gas drive recovery is 137 barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is 527 barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

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