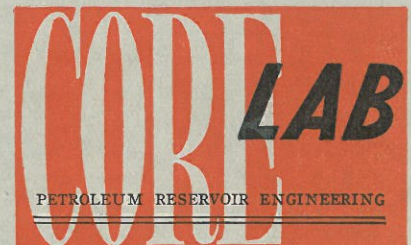


CORE ANALYSIS REPORT

FOR

K-K DRILLING COMPANY
WILLIS NO. 1-A WELL
CHANUTE FIELD
NEOSHO COUNTY, KANSAS

EXTRA



CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

April 20, 1965

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

K-K Drilling Company
Box 556
Chanute, Kansas
Att: Mr. Kenneth Keas

Subject: Core Analysis
Willis No. 1-A Well
Chanute Field
Neosho County, Kansas
CLI File No. CP-10-1319

Gentlemen:

Bartlesville formation analyzed from the recovered sand phase between 868.5 feet to 920 feet has residual fluid saturations indicative of oil productivity.

The interval 868.5 to 920 feet has 28 feet of productive sand over 1 millidarcy - with an average permeability of 8.3 millidarcys and an average porosity of 17.2 per cent.

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

We are pleased to have this opportunity of serving you.

Yours very truly,

CORE LABORATORIES, INC.



J. G. Evertson, Jr.
District Manager

JGE:jc

7CC: Addressee

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

Page 1 of 1 File CP-10-1319

Well Willis No. 1-A

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: BARTLESVILLE 868.5-920			
FEET OF CORE RECOVERED FROM ABOVE INTERVAL	33	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	45.3
FEET OF CORE INCLUDED IN AVERAGES	28	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE (e)	35
AVERAGE PERMEABILITY: MILLIDARCYS	8.3	OIL GRAVITY: °API (e)	34
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	233	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT	17.2	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL (e)	1.05
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	21.4	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	826

Calculated maximum solution gas drive recovery is 129 barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is 540 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:			
FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCYS		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-FEET		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		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.)

(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.

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc., and its officers and employees assume no responsibility and make no warranty or representation as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.