

CORE ANALYSIS REPORT
FOR
GLEN RUPE
CASE NO. 2 WELL
EDWARDS COUNTY, KANSAS





CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

COMPANY GLEN RUPE FILE NO. CP-1-6450
 WELL CASE NO. 2 DATE 10-4-67 ENGRS. BOYLE
 FIELD _____ FORMATION KANSAS CITY ELEV. 2202' KB
 COUNTY EDWARDS STATE KANSAS DRLG FLD. WATER BASE MUD CORES DIAMOND
 LOCATION _____ REMARKS _____

COMPLETION COREGRAPH

These analyses, opinions or interpretations are based on observations and material 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 representations 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.

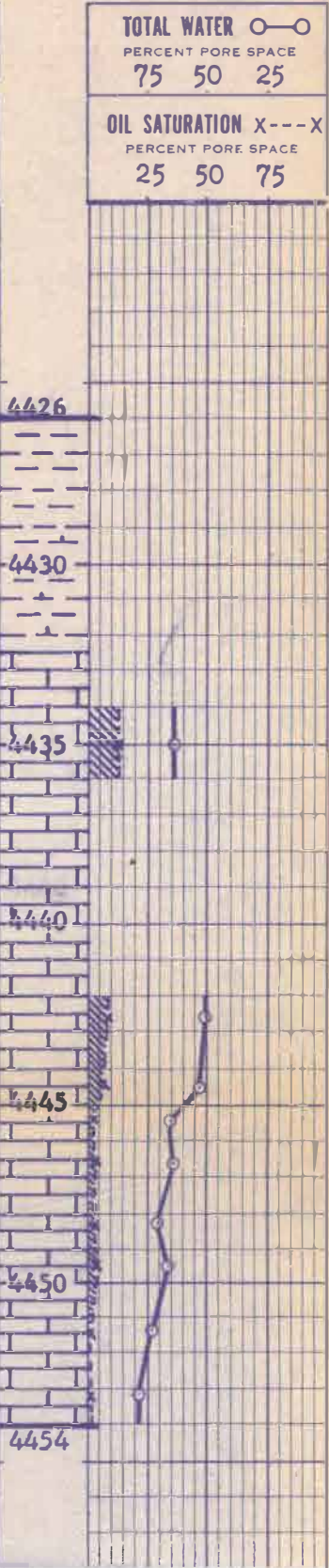
SAND		LIMESTONE		CONGLOMERATE		CHERT		ANHYDRITE	
SHALE		DOLOMITE		OOLITES					

SAMPLE CHARACTERISTICS F=Fractured L=Laminated FG; MG; CG=Type Grain Size S=Styolitic V=Vuggy
 PROBABLE PRODUCTION O=Oil W=Water G=Gas T=Transitional

TOTAL WATER —
 PERCENT PORE SPACE
 75 50 25
 OIL SATURATION ——
 PERCENT PORE SPACE
 25 50 75

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY, MD. * = Horizontal Perm Plug		POROSITY %	RESIDUAL SATURATION % PORE SPACE		PERMEABILITY — MILLIDARCY		POROSITY —— PERCENT	
		MAX	90°		OIL	TOTAL WATER	100	50	20	10

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY, MD. MAX	PERMEABILITY, MD. 90°	POROSITY %	RESIDUAL SATURATION % PORE SPACE OIL	RESIDUAL SATURATION % PORE SPACE TOTAL WATER	PERMEABILITY MILLIDARCY 100	PERMEABILITY MILLIDARCY 50	POROSITY PERCENT 20	POROSITY PERCENT 10
WHOLE CORE ANALYSIS										
1	4434.0-36.0	107.4	<0.1	2.4	13.8	64.2				
2	4442.0-43.7	51.6	50.7	17.0	8.4	50.1				
3	43.7-44.9	7.3	6.3	14.4	7.1	53.2				
4	44.9-46.0	3.7	3.5	11.7	1.4	65.5				
5	46.0-47.3	21.9	21.7	17.5	3.7	63.0				
6	47.3-49.0	16.4	13.7	15.4	3.7	70.5				
7	49.0-50.4	15.3	13.5	13.7	4.3	65.2				
8	50.4-52.2	91.9	46.1	18.5	1.8	73.3				
9	52.2-54.0	7.5	0.2	4.2	0.5	79.3				



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

October 5, 1967

REPLY TO
8 N. W. 42ND ST.
OKLAHOMA CITY, OKLA.
73118

Glen Rupe
222 Brown Building
Wichita, Kansas 67200

Subject: Core Analysis
Case No. 2 Well
Edwards County, Kansas
CLI File No. CP-1-6450

Gentlemen:

Diamond coring equipment and water base mud were utilized to core the Case No. 2 Well between 4426 and 4454 feet. The stained interval was preserved at the well-site and transported to the Oklahoma City Laboratory for full-core analysis. The resulting data is presented in tabular and graphical form on the accompanying Coregraph.

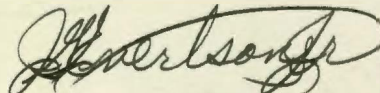
Kansas City limestone from 4442 to 4454 feet exhibits decreasing residual oil values and increasing total water saturations, suggesting an oil-water transition zone and that a water free completion would be difficult. Perforation should be confined to the upper portion of this interval to minimize the water-cut.

Average core analysis data and calculation of recoverable oil are presented on page one of this report for the interval 4442 to 4444.9 feet.

We appreciate this opportunity of serving you.

Yours very truly,

CORE LABORATORIES, INC.



J. G. Evertson, Jr.
District Manager

JGE:sh
7cc: Addressee

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

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Well CASE NO. 2

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Kansas City 4442.0-4444.9

FEET OF CORE RECOVERED FROM ABOVE INTERVAL	2.9	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	51.4
FEET OF CORE INCLUDED IN AVERAGES	2.9	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	(e) 45
AVERAGE PERMEABILITY: MILLIDARCYB	MAX. 90 ^o 33.3	OIL GRAVITY: °API	(e) 44
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	MAX. 90 ^o 96 94	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT	15.9	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	1.28
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	7.9	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	530

Calculated maximum solution gas drive recovery is 123 barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is 433 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: MILLIDARCYB		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.

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