

CONTINENTAL OIL COMPANY

DEVELOPMENT AND RESEARCH DEPARTMENT

PRODUCTION RESEARCH DIVISION

CNG

TECHNICAL SERVICE REPORT

ADDRESS INQUIRY TO:

J. J. REYNOLDS, DIRECTOR

REPORT NO.: 2-56

JANUARY 31, 1956

SUBJECT: CORE ANALYSIS REPORT - CONTINENTAL OIL COMPANY,
A. E. KINDBLADE NO. 7 WELL, GRABER FIELD,
MC PHERSON COUNTY, KANSAS

AS STATED IN PRELIMINARY REPORT NO. 352-55 THE SIMPSON SAND AT THIS WELL IS INTERSPERSED WITH FINE GRAINED MATERIAL CARRYING WATER. AN ADJUSTMENT WAS MADE FOR THIS CONDITION WHEN ESTIMATING NET EFFECTIVE PAY. INTERSTITIAL WATER SATURATIONS WERE ESTIMATED FROM IWS VERSUS PERMEABILITY DATA FROM HUXMAN WELLS 12 AND 13; DATA OBTAINED ON THE SUBJECT WELL VERIFIED THIS ESTIMATE. WEIGHTED AVERAGE RESULTS WERE:

NET EFFECTIVE PAY	6.2 FEET
POROSITY WEIGHTED AVERAGE	12.94 %
IWS	22.0 %
PRIMARY RECOVERABLE OIL*	971 BBLs/ACRE
	157 BBLs/ACRE/FT

*IN PLACE ASSUMING A 20% RECOVERY
FACTOR

THE FINE GRAINED WATER SATURATED SECTION IN THE PAY ZONE WOULD BE EXPECTED TO PRODUCE A LIMITED WATER CUT. THE ZONE CORED BELOW 3428' IS ALL WATER PRODUCTIVE.

IN ORDER TO ILLUSTRATE THE VARIATION IN WATER CUT WITH COMPLETION DEPTH, PERCENT WATER CUTS WERE APPROXIMATED FROM CONDUCTIVE CAPACITIES AND EFFECTIVE THICKNESS FOR EACH FOOT INTERVAL. THIS OBVIOUSLY REQUIRED A NUMBER OF OVERSIMPLIFICATIONS. VALUES ARE THEREFORE ONLY INTENDED TO SHOW THE DIFFICULTY OF COMPLETING FOR WATER FREE PRODUCTION IN THIS ZONE.

COMPLETION WAS AT TD 3640' WITH 5 1/2" CASING AT 3459'. THE PERFORATED INTERVAL 3416'-3427' GAVE AN INITIAL POTENTIAL OF 163 BARRELS OIL AND 32 BARRELS OF WATER PUMPING.



F. R. CONLEY

CORE ANALYSIS GROUP SUPERVISOR

FRC-WNE

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CONTINENTAL OIL COMPANY

CORE ANALYSIS REPORT

CORE SUMMARY

OPERATOR <u>CONTINENTAL OIL COMPANY</u>	REPORT DATE <u>1-31-56</u>	LABORATORY No. <u>CNG</u>
WELL <u>A. E. KINDBLADE No. 7</u>	PRELIMINARY REPORT TO <u>JOHN A. QUEEN</u>	
FIELD <u>GRABER</u>	ON <u>10-4-55</u>	
COUNTY <u>Mc PHERSON</u> STATE <u>KANSAS</u>	REFERENCE ELEVATION <u>1493' RB</u>	
LOCATION <u>Sec. 20 - T21S - R1W</u>		

CORE RECORDS

DATE CORED		9-25-55					
CORE No.		1					
TYPE OF CORE		DIAMOND					
FORMATION		SIMPSON SD					
INTERVAL CORED: FROM	FEET	3415					
To	FEET	3430					
RECOVERED	FEET	15					
ANALYZED	FEET	15					
TYPE DRILLING MUD		CHEMICAL					
WEIGHT	#/ GAL	9.7					
VISCOSITY	MARSH SEC.	44					
WATER LOSS	CC/30 MIN	10					
PH		9.9					
CHLORIDES	PPM						
REPORTED OIL GRAVITY	°API	28.9					

AVERAGES (PERMEABLE FOOTAGE ONLY)

FORMATION		SIMPSON SD					
INTERVAL AVGD.: FROM	FEET	3415					
To	FEET	3430					
PRODUCTIVE (2)	FEET						
NON-PRODUCTIVE	FEET						
CORE LOSS	FEET						
PROBABLE PRODUCTION							
POROSITY	%	12.3					
PERMEABILITY - HORIZ.	MD.	128					
SATURATION:							
RESIDUAL OIL	% PORE SP.	13					
RESIDUAL WATER	% PORE SP.	73					
VACANT	% PORE SP.	14					
I.W.S. (3)	% PORE SP.	22					

WELL COMPLETION DATA

COMPLETED AT TD 3460', 5 1/2" CASING AT 3459',
PERF. 3416'-3427', IP 163 BARRELS OIL AND
32 BARRELS WATER PUMPING.

(DRILLING WIRE 10-21-55)

CONTINENTAL OIL COMPANY

CORE ANALYSIS REPORT

RESULTS OF LABORATORY TESTS

OPERATOR CONTINENTAL OIL COMPANY WELL A. E. KINDBLADE No. 7 LABORATORY No. CNG

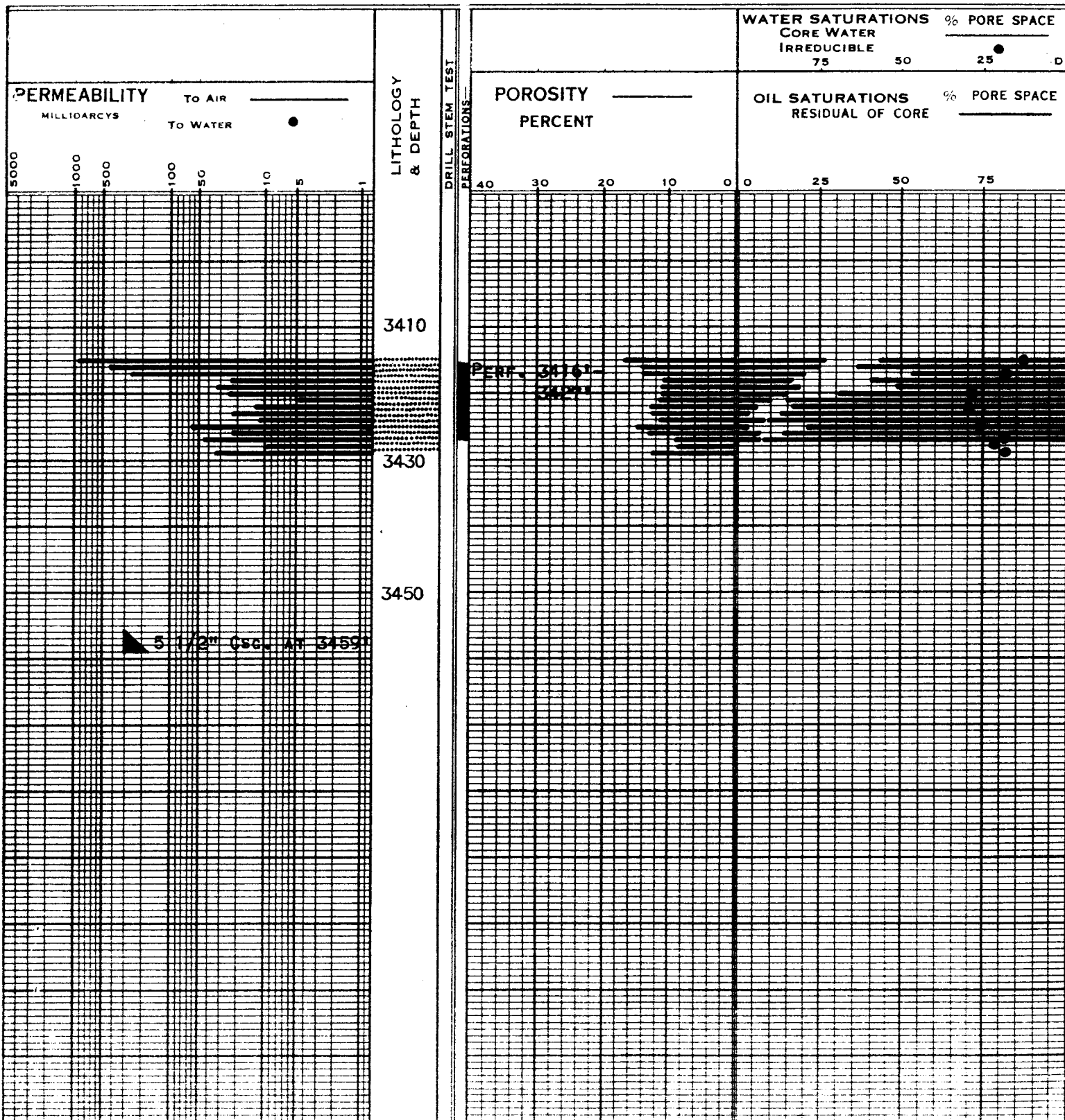
SAMPLE NO.	DEPTH FEET	POROSITY %	PERMEABILITY TO AIR MILLIDARCY (1)		SATURATION % PORE SPACE				NET PAY FT.	PROBABLE PRODUCTION (2)	ESTIMATED ACCUMULATED % WATER CUT
			HORIZONTAL	VERTICAL	OIL	WATER	VACANT	(I.W.S. (3))			
SIMPSON SAND											
1	3415	16.7	965	1121	26	57	17	13	1	OIL PLUS WATER CUT	0
2	3416	14.1	403	536	25	64	11		1		0
3	3417	14.0	258	266	20	47	33	18	0.8		3
4	3418	10.7	23	27	16	60	24		0.5		4
5	3419	11.1	32	60	19	51	30		0.8		4
6	3420	11.2	24	14	15	69	16	29	0.5		5
7	3421	11.6	4.7	1.8	10	85	5		0.6		5
8	3422	12.9	14	2.6	6	84	10	30	0.5		5
9	3423	12.9	22	15	3	87	10		0.1		6
10	3424	11.6	11	2.0	8	91	1		0.1		7
11	3425	14.9	62	63	3	79	18	26	0.0	WATER	10
12	3426	13.2	22	2.2	7	86	7		0.0	OIL	11
13	3427	8.4	43	45	8	92		19	0.3	WATER	12
14	3428	8.5	9.3	4.7				21	0.0		13
15	3429	12.2	32	31				19	0.0		14
*APPROXIMATED FROM EFFECTIVE PAY THICKNESS AND CONDUCTIVE CAPACITIES ASSUMING EQUAL EFFECTIVE PERMEABILITIES TO OIL AND WATER.											

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| <p>(1) "—" INDICATES 'LESS THAN'</p> <p>(2) PROBABLE PRODUCTION IF COMPLETELY ISOLATED</p> <p>(3) IRREDUCIBLE INTERSTITIAL WATER SATURATION. VALUES MARKED BY AN ASTERISK (*) ARE LABORATORY DETERMINATIONS.</p> <p>(4) EQUIVALENT SODIUM CHLORIDE.</p> | <p>(D) DISINTEGRATED</p> <p>(NF) NO FLOW</p> <p>(NCF) NO COMMERCIAL FLOW</p> <p>(NS) NO SAMPLE OR NO SEALED SAMPLE</p> <p>(NA) NO ANALYSIS</p> |
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CONTINENTAL OIL COMPANY COREGRAPH

OPERATOR CONTINENTAL OIL COMPANY WELL A. E. KINDBLADE No. 7 LABORATORY No. CNG
FIELD GRABER REFERENCE ELEVATION 1493' RB MUD CHEMICAL
FORMATION SIMPSON SAND



CONTINENTAL OIL COMPANY PRODUCTION LABORATORY

IRREDUCIBLE WATER — PERMEABILITY

FIELD GRABER STATE KANSAS
FORMATION SIMPSON SAND

WELL A. E. KINDBLADE No. 7 LAB. NO. CNG

○ OIL SAND
● WHITE SAND

1,000

PERMEABILITY (MILLIDARCS)

100

10

1

IRREDUCIBLE WATER

COPY BOOK COMPANY, INC. PRINTED IN U.S.A.



4. 11.226 1 DIVISIONS PER INCH (70 DIVISIONS) BY FOUR 2 1/2 INCH CIRCLES RATIO RULING

