COMPANY EUREKA DRILLING

WELL BATES #4

LOCATION 550' N SL & 350' E WL SW/4 30-25-9E

COUNTY GREENWOOD

STATE KANSAS

KANSAS CORES

PETROLEUM RESERVOIR ENGINEERING

CORE ANALYSIS

Kansas Cores

PETROLEUM RESERVOIR ENGINEERING

WICHITA, KANSAS

COMPANY Eureka Drilling DATE 10-11-66

WELL Bates #4 ANALYST IS

FIELD

COUNTY Greenwood STATE Kansas

PERMEABILITY MILLIDARCYS O—O

200 150 100 50 0

POROSITY—% X—X

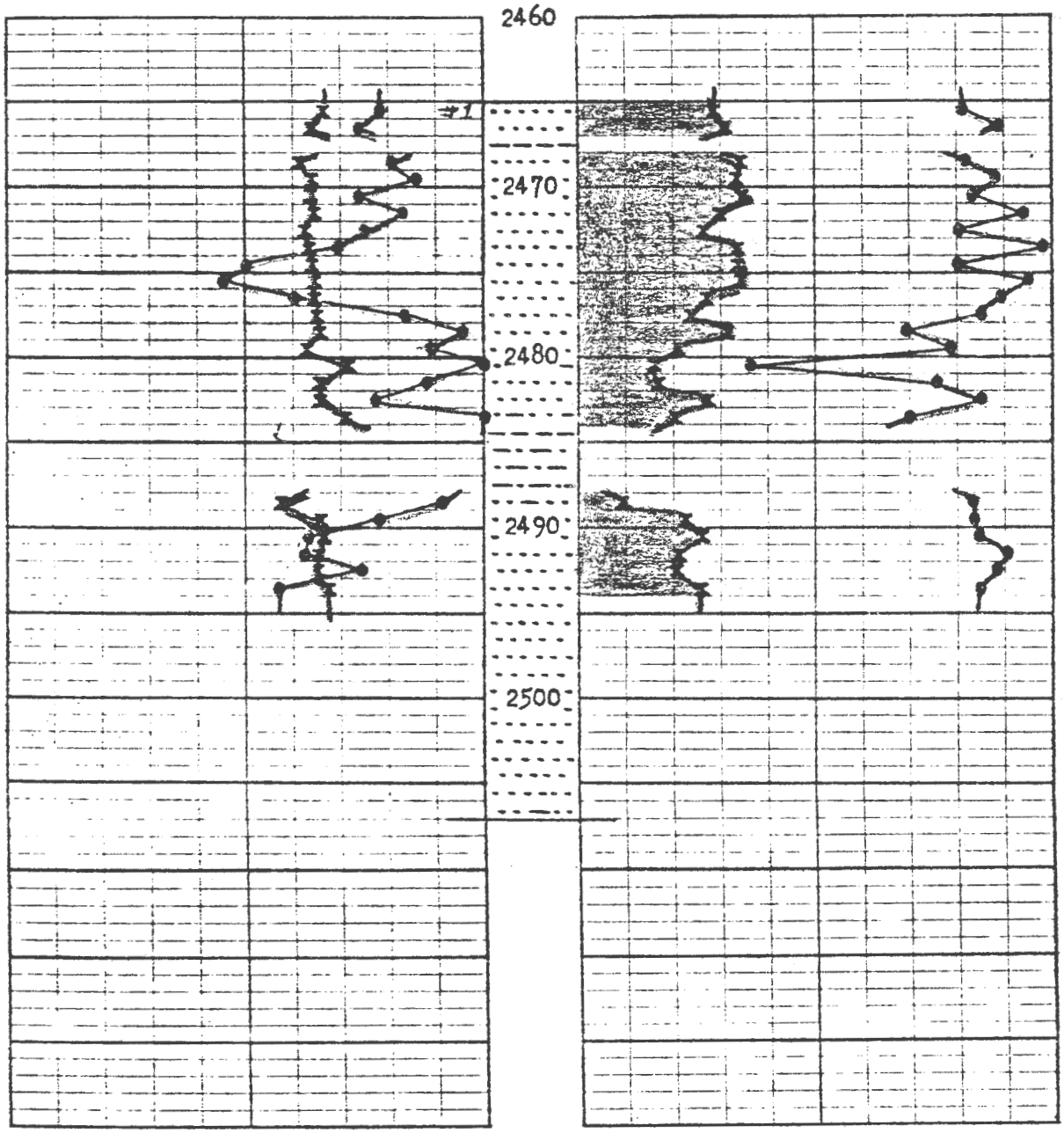
20 10 0

CONNATE WATER % SATURATION O—O

0 70 60 50 40

OIL % PORE SATURATION X—X

0 10 20



Kansas Cores
PETROLEUM RESERVOIR ENGINEERING
CORE ANALYSIS
1026 NORTH LIGHTNER
WICHITA, KANSAS 67208

Oct. 11, 1966

Re: CORE ANALYSIS REPORT
Eureka Drilling Company
Bates #4
Greenwood County
Kansas

Eureka Drilling Co.
P.O. Box 157
Hamilton, Kansas

Gentlemen:

The cores from your well, Bates #4, Greenwood County, Kansas have been analysed for permeability, porosity, and residual saturation of oil and water. The data will be found tabulated on the following pages and indicated on the coregraph. The data averages and recovery figures will be found at the end of this report.

The following is a short discussion of the section cored and analysed.

2465' to 2479' - Oil Productive

The Bartlesville encountered at this depth was composed of a fine grained friable brown sand with good oil saturation throughout. The permeabilities are average for this part of the field, and the porosities are good. The water percentages are well in line for oil production. The water contact was found at 2479' with a permeable sand below, especially below 2488'. A good, commercial well can be expected from this zone.

Yours very truly,

KANSAS CORES

Ivan L. Stuber

Attachments
cc: 4 copies to Eureka Drlg. Co., Hamilton, Kansas

Re: CORE DESCRIPTION
Eureka Drilling Co.
Bates #4
Greenwood County
Kansas

CORE #1 2465' to 2507' Cut 42' Rec. 42'

2465--67 Soft fine grained light brown friable sand: Good stain & oder

2467--68 Hard grey shale, few streaks sand: Stain in few streaks

2468--78 Soft friable brown fine grained light brown sand, few very thin blue quartzitic sand laminations in part: Good stain and oder

2478--80 Soft fine grained friable sand with few thin blue quartzitic and silty sand streaks: Good slightly streaked stain

2480--81 Silty sand and black shale laminations with some friable brown sand laminations: Streaked stain

2481--83 Soft fine to medium grained friable brown sand: Good stain and oder

2483--84 Tight silty green sand with streaks brown silty sand: Streaked stain, bleeding oil

2484--85 Hard grey shale

2485--88 Green shale with few silty sand and sandy shale laminations: Some streaked bleeding oil

2488--89 Hard fine grained brown sand with some silty green shale streaks; Bleeding oil in streaks

2489--2506 Soft brown friable fine to medium grained sand, few thin black shale laminations in part: Good stain and oder, bleeding oil

2506--07 Same sand as above with some lignitic and carbonaceous sand bottom 6": Bleeding oil

Kansas Cores

PETROLEUM RESERVOIR ENGINEERING
WICHITA, KANSAS 67208

WELL Bates #4 COUNTY Greenwood STATE Kansas

COMPANY Eureka Drilling DATE 10-11-66 FILE No S-694

FIELD TYPE CORES Diamond ANALYST IS

ANALYSIS DATA AND INTERPRETATIONS

SAMPLE No	DEPTH	PERMEABILITY MILLIDARCYS HORIZONTAL	PERMEABILITY MILLIDARCYS VERTICAL	POROSITY %	SATURATION WATER % PORE SPACE	SATURATION OIL % PORE SPACE	PROBABLE PRODUCTION	REMARKS
1	2465 66	53.8	44.6	16.5	39.6	14.4	Oil	
2	2466 67	68.9	61.5	18.8	35.5	15.3	Oil	
3	2468 69	49.1	40.7	19.5	39.2	16.6	Oil	
4	2469 70	34.1	20.6	18.3	36.3	16.6	Oil	
5	2470 71	67.3	58.9	18.6	38.7	17.2	Oil	
6	2471 72	45.5	26.5	18.3	33.6	14.7	Oil	
	2472 73	68.5	62.3	19.1	39.9	13.0	Oil	
8	2473 74	78.2	60.7	18.5	30.6	16.4	Oil	
9	2474 75	125	120	18.3	40.2	16.2	Oil	
10	2475 76	135	120	18.2	32.6	16.2	Oil	
11	2476 77	105	100	18.5	35.4	13.1	Oil	
12	2477 78	44.2	21.6	18.1	38.0	11.6	Oil	
13	2478 79	11.1	8.1	17.6	45.3	15.4	Oil	
14	2479 80	26.7	7.6	18.8	40.6	10.1	Water	
15	2480 81	0.0	0.0	14.7	62.0	8.2	No Perm	
16	2481 82	27.3	19.6	17.3	42.2	8.8	Water	
17	2482 83	56.1	48.6	17.6	37.5	14.0	Water	
18	2483 84	0.0	0.0	14.8	44.7	10.1	Water	
19	2488 89	23.6	14.8	21.2	38.1	4.5	Water	
	2489 90	54.7	42.7	17.0	38.4	11.9	Water	
21	2490 91	93.6	88.4	17.2	38.0	13.2	Water	
22	2491 92	93.0	82.6	18.5	34.4	10.7	Water	
23	2492 93	64.7	45.8	17.8	36.0	10.2	Water	
24	2493	105	100	16.3	37.9	12.6	Water	

Kansas Cores

PETROLEUM RESERVOIR ENGINEERING
WICHITA, KANSAS

Eureka Dolg
Bates 4
30-25S-9E

DATA AVERAGES AND OIL RECOVERY FIGURES

DEPTH	2464'-2479'
FEET OF PRODUCTION FORMATION OF SECTION ANALYZED	13
AVERAGE PERMEABILITY IN MILLIDARCYS	68.1
AVERAGE POROSITY, PER CENT	18.3
AVERAGE TOTAL WATER % OF PORE SPACE	37.3
AVERAGE RESIDUAL OIL % OF PORE SPACE	15.1
AVERAGE CONNATE WATER CALCULATED % OF PORE SPACE	29.8
ESTIMATED FORMATION VOLUME FACTOR — USED IN CALCULATING RECOVERABLE OIL	1.20
PRODUCTIVE CAPACITY — PRODUCTIVE FEET X AVERAGE PERMEABILITY IN MILLIDARCYS	886
RECOVERABLE OIL BY WATER DRIVE — BBLS. PER ACRE FOOT	498
RECOVERABLE OIL BY GAS EXPANSION — BBLS. PER ACRE FOOT	299*

*From original bottom hole pressure to zero