- - - - - - - - - - - - - - - - - - H e a d e r D a t a - - - - - - - - - - - - - - - - -

Log # Owner:CONTINENTAL OIL CO. St:MO Cnty:BATES
026300 NW NW NE TRS: S24 T38N R32W
Alias: Lat.:
Type well:Exploratory Hole (Mineral Prospect) Long.:
Type log: S Quad:UNKNOWN
Driller: Date: /
Driller Liscense #: Confidential:Y Release Dt.08/1969
Logger:WELLS Date:08/1969

Elev.: 820 Elev.S Yield: 0 SWL:(a) H20 @:
T.D.: 220 base: DrDwn: 0 SWL:(b)

Bedrock at: 0 Samples saved:Y Int. cored: 0 to 0
Top Fm.:CHEROKEE GROUP
Bot Fm.:CHEROKEE GROUP
Problems:
Remarks:
More:CORE TEST #3

- - - - - - - - - - - - - - - S t r a t i g r a p h y D a t a - - - - - - - - - - - -

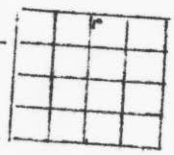
Log #:026300

Top	Base	Name	--Lith-- Pr	Sc	Mn	Minerals Pri	Oc	Sec	Oc	Mnr	Oc
0	220	CHEROKEE GROUP	SH	SD			0		0		0

Printed on 05/16/94 at 11:29:32.

215' S of Cntrl NL
& 195' E

drillers log



County Bates 215' FNL, 195' FWL
sec 24 twp 38 rge 32

owner Conoco elev 820 MGS# 26,300 spl

farm Crabb, Charles No. 1 TD 220 fm@TD ____ shows oil*
(Conoco Core Hole #3)

status ____ date completed ____

remarks: *reported in "sample description" in Bates #1 folder in correspondence file. Also core analysis report on porosity etc.

00008

13-234-S
REV. 6-1-51

TABLE IV

CONTINENTAL OIL COMPANY

CORE ANALYSIS REPORT

RESULTS OF LABORATORY TESTS

OPERATOR Continental Oil Company WELL Charles Crabb #1 LABORATORY No. HBU

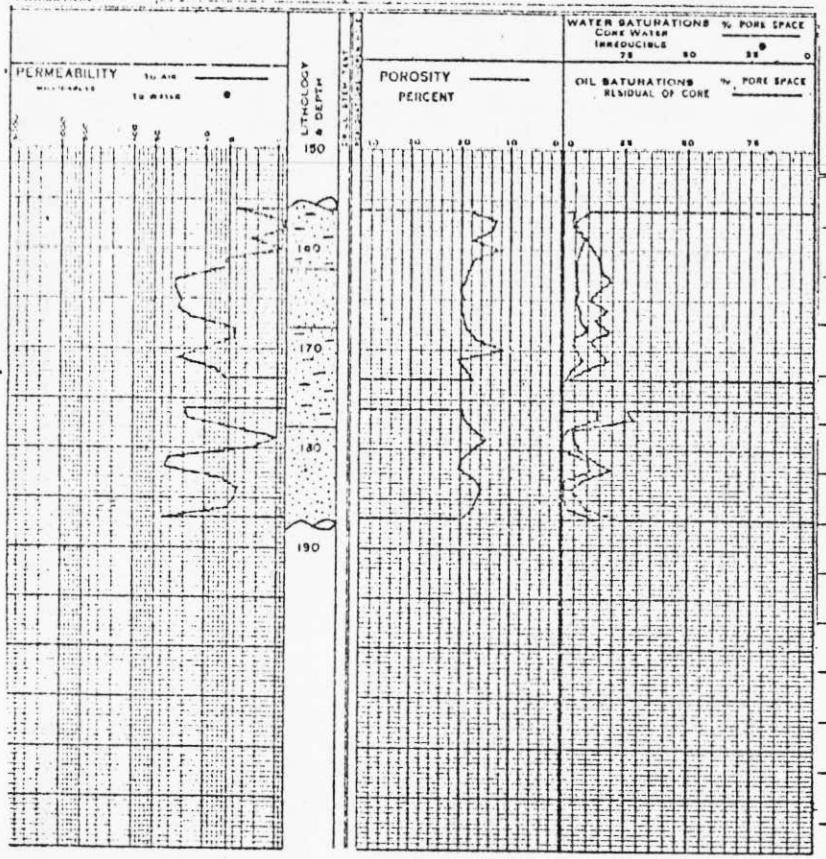
SAMPLE NO.	DEPTH FEET	POROSITY %	PERMEABILITY TO AIR MILLIDARCYS (1)		SATURATION % PORE SPACE				SALINITY OF CORE WATER 1000 PPM (4)	PROBABLE PRODUCTION (2)	Sand Grain Density
			HORIZONTAL	VERTICAL	OIL	WATER	VACANT	I.W.S.(3)			
1	156	19.9	3.9	1.2	5	89	6				2.68
2	157	13.0	<.1	<.1	3	96	1				2.64
3	158	13.9	0.2	<.1							2.75
4	159	17.9	2.7	0.7	8	92	0				2.70
5	160	11.7	<.1	<.1							2.73
6	161	17.1	5.6	1.1	6	85	9				2.69
7	162	18.3	6.4	5.0	6	85	9				2.70
8	163	19.4	25	4.4	6	81	13				2.69
9	164	20.1	27	17	6	86	8				2.68
10	165	19.8	22	11	5	89	6				2.68
11	166	20.0	24	13	7	82	11				2.67
12	167	19.7	17	11	7	87	6				2.68
13	168	19.0	4.3	1.0	10	80	10				2.69
14	169	17.2	4.3	0.2	3	89	8				2.69
15	170	11.7									2.76
16	171	20.4	24	16	8	82	10				2.68
17	172	19.6	8.7	8.1	4	91	5				2.68
18	173	17.9	5.9	3.1	1	99	0				2.68
19	176	19.8	19	11	14	74	12				2.68
20	177	19.7	18	10	14	72	14				2.68
21	178	17.4	4.4	2.6	3	97	0				2.71
22	179	14.6	0.9	0.5	0	95	5				2.70
23	180	17.7	2.6	1.4	0	93	7				2.71
24	181	20.0	33	26	10	87	3				2.67
25	182	20.2	37	24	11	81	8				2.68
26	183	17.0	6.7	3.7	1	92	7				2.69
27	184	15.9	3.8	1.6	1	96	3				2.69
28	185	16.4	4.1	2.8							2.70
29	186	17.4	5.3	2.7	2	91	7				2.70
30	187	20.0	39	24	13	77	10				2.70

(1) "—" INDICATES 'LESS THAN'
(2) PROBABLE PRODUCTION IF COMPLETELY ISOLATED
(3) IRREDUCIBLE INTERSTITIAL WATER SATURATION.
(4) EQUIVALENT SODIUM CHLORIDE.

(D) DISINTEGRATED
(NF) NO FLOW
(NCF) NO COMMERCIAL FLOW
(NS) NO SAMPLE OR NO SEALED SAMPLE
(NA) NO ANALYSIS

CONTINENTAL OIL COMPANY
COREGRAPH

OPERATOR CONOCO WELL CHARLES CRABB No.1 (C.T. No. 3) LABORATORY No. HBU
FIELD REFERENCE ELEVATION B25 MUD WATER
FORMATION



DETAILED GEOLOGIC DESCRIPTION

COLOR	% COMPOSITION: SENSITIVE CLAYS	OTHER CLAYS	QUARTZ	FELDSPAR	CALCITE	DOLOMITE				COMPETENCY	CEMENT	% VISIBLE POROSITY: INTERCRYSTALLINE OR GRANULAR	PIN POINT	COMOLDIC	VUGULAR	FRACTURE	FOSSILS	FRACTURE: ROUGH (UNEVEN)	SPLINTERY	BLOCKY	CONCOIDAL	SEDIMENTARY STRUCTURE (BEDDING)
Lt.-M.Gy.										Hard	Clay-Silica	10-	5					x				Thn. bdd. Lent. & X-bdd.
M.-Lt.Olv.Gy										M.Hard	Silica	20-	5					x				Mas.
Lt.-M.Gy.										Hard	Clay-Silica	10-	5					x				Thn.Bdd.Lent. & X-bdd.
M.Lt.Gy.										M.Hard-Hard	Calc.-Silica	20						x				Mas.

Bates Co.
Oil & Gas

On the following wells Continental Oil Company releases to the Missouri Geological Survey to be used in their open files for public inspection the electric logs, sample descriptions, core analysis, and samples.

William Ashley No. 1
#1 Core Test
Joe Crabb No. 1
#2 Core Test
Charles Crabb No. 1
#3 Core Test
Claypool No, 1
#4 Core Test
D. Jantz No. 1
#5 Core Test
M. Harmon No. 1
Bore Hole #6
Pottorf No. 1
R. Linn No. 1
Core Test #8
B. Yoos No. 1
Core Test #9
Leist No. 1
Core Test #10

Robert C. Bushy

Robert C. Bushy
Division Geologist
Continental Oil Company

SAMPLE DESCRIPTION

Continental Oil Company
#1 Charles Crabb (Core Hole #3)
215' FNL, 195' FWL, Sec 24-38N-32W
Bates County, Missouri

Elev: 820

0 - 1	Soil
1 - 6	Cherty gravel
6 - 9	Blue soft shale
9 - 10	Gray fine grained sand lense - water bearing
10 - 12	Gray shale
12 - 12½	Coal seam
12½ - 17½	Gray shale
17½ - 20	Black limey shale
20 - 22	Gray shale
22 - 23	Light gray shale
23 - 28½	Light tan cherty limestone
28½ - 29	Gray dense shale
29 - 29¾	Black to gray shale
29¾ - 30½	Black limy & pyritic shale w/limestone streaks
30½ - 34	Black slaty shale
34 - 35	Dark gray shale
35 - 44	Gray shale
44 - 51	Light gray silty to fine sandy shale w/thin sand lenses
51 - 51½	Gray sandy pyritic limestone
51½ - 58	Light gray shale
58 - 70	Dark Gray shale
70 - 73	Alternating layers of gray and black shale
73 - 92	Gray slightly laminated shale w/thin strks silty brn sand
92 - 100	Alternating layers gray and dark gray shale
100 - 116½	Dark gray shale
116½ - 119½	Black slaty shale w/scattered pyrite
119½ - 128	Gray shale
128 - 132	Light gray shale w/dark gray shale streaks
132 - 155	Gray fine to silty sandy laminated shale gradually increasing to a sand (from 151 quite sandy)
155 - 156	(Circ) Light gray fine-med subangular grained sand w/slight bleeding oil
Core #1	156 - 170.6
156 - 161	Light gray, fine subangular grained sand w/particles of mica and gray-green shale & thin black shale stringers, w/some slight stain & bleeding & faint odor when freshly broken; good bleeding streak from 156.5 - 156.7.
161 - 168	Light gray and some pink medium subangular grained sand w/ particles of mica and gray-green shale - some slight stain & odor when freshly broken.
168 - 170.3	Sand as above with some trace free oil, stain & slight odor w/paper thin black shale stringers
170.3 - 170.6	Light gray fine grained dense sand with some black shale

Continental Oil Company
#1 Charles Crabb (Core Hole #3)
Sec 24-38N-32W, Bates Co, Mo.

Core #2	170.6 - 189.3
170.6 - 171.5	Light gray fine grained dense sand w/black shale
171.5 - 174	Light gray medium subangular grained sand with very slight bleeding of oil under microscope
174 - 176.5	Light gray fine subangular grained sand, dense, with black shale stringers
176.5 - 181	Light gray medium subangular grained sand, microscopic bleeding @ top & grad decreasing to asphaltic material @ base
181 - 187	Light gray medium to coarse subangular grained very slightly micaceous and gray-green shaly sand - appears to be flushed with fresh water
187 - 189.3	Light gray to gray coarse subangular black shaly sand - flushed
189.3 - 196	Light gray shaly sand as above
196 - 197	Gray shale
197 - 199	Light gray coarse very sandy shale - show of free oil in samples
199 - 203	Gray fine sandy shale
203 - 208.5	Gray fine sandy chalky sand
208.5 - 215	Gray medium to coarse subangular grained sand w/trace poor show free oil
215 - 220	Gray shale

RTD 220'

13-254-8
REV. 6-1-51

(3)

PRELIMINARY

CONTINENTAL OIL COMPANY

CONFIDENTIAL

RCB

Report No. 365-64-121-3

CORE ANALYSIS REPORT

RESULTS OF LABORATORY TESTS

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Missouri Thermal Recovery Project

OPERATOR Continental Oil Company WELL Charles Crabb #1 LABORATORY No. [illegible]

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R. J. Cavanaugh
Test Engineer

C. F. Knutson
Reservoir Geology Group Supervisor
Formation Evaluation Section

RJC-DSG
Copies to:
MHD-HM-LPT-PRW-JND-JTG-JEL-HCW

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