

CORE ANALYSIS RESULTS

SHELL OIL COMPANY

CARSON UNIT NO. 12X-13

CARSON FIELD 613-25N-12W

SAN JUAN COUNTY, NEW MEXICO

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering

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DALLAS, TEXAS

SHELL OIL COMPANY
 CARSON UNIT 12X-13
 CARSON FIELD
 SAN JUAN COUNTY

FORMATION : PICTURED CLIFFS
 DRLG. FLUID: WATER BASE MUD
 LOCATION : SEC. 13-T25N-R12W
 STATE : NEW MEXICO

DATE : 6-4-77
 FILE NO. : RP-3-2811
 ANALYSTS : ET
 ELEVATION: 6379' KH

CONVENTIONAL CORE ANALYSIS

SAMP. NO.	DEPTH	PERM. TO HORZ.	AIR (MD) VERTICAL	POR. FLD.	FLUID SATS.		GR. DNS.	DESCRIPTION
					OIL	WATER		
1	1187-88	0.74		18.8	0.0	84.6	2.65	SS LT GRY VFG CLY/FL
2	1188-89	1.1		14.5	1.4	86.2	2.65	SS LT GRY VFG CLY/FL CARB LAM
3	1189-90	0.57		15.4	0.6	89.0	2.67	SS LT GRY VFG TR/CLY
4	1190-91	9.0		14.8	0.7	88.5	2.65	SS LT GRY VFG CLY/FL TR CARB MAT
5	1191-92	6.5		17.3	0.0	83.2	2.64	SS GRY VF-FN CLY/FL SLI CARB SLI SHLY
6	1192-93	5.6		16.7	0.0	82.0	2.65	SS GRY VF-FN CLY/FL
7	1193-94	11		16.3	1.2	87.1	2.65	SS GRY VF-FN CLY/FL SLI CARB
8	1194-95	2.0		16.5	2.4	79.4	2.48	SS GRY VF-FN CLY/FL V/CARB
9	1195-1197							SHALE-NO ANALYSIS
10	1197-98	0.41		13.8	0.0	87.7	2.65	SS GRY VFG CLY/FL
11	1198-99	16		23.4	0.0	67.5	2.63	SS GRY VF-FN SLI CLY
12	1199-00	30		22.3	0.0	70.0	2.63	SS GRY VF-FN TR CLY
13	1200-01	36		20.9	0.0	75.6	2.63	SS GRY VF-FN SLI CLY
14	1201-02	78		21.6	0.0	78.2	2.63	SS GRY VFG SLI CLY
15	1202-03	24		19.2	0.0	74.5	2.65	SS GRY VFG CLY/FL
16	1203-04	44		21.8	0.0	78.0	2.64	SS GRY VF-FN SLI CLY
17	1204-05	0.51		19.6	0.0	79.1	2.65	SS GRY VF-FN CLY FL SLI CALC
18	1205-06	0.01		4.4	0.0	93.2	2.64	SS GRY VFG CALC
19	1206-07	<0.01		3.7	0.0	94.6	2.64	SS GRY VFG CALC
20	1207-08	<0.01		2.7	0.0	92.6	2.64	SS GRY VFG CALC
21	1208-1210							LOST CORE-NO RECOVERY
22	1210-11	3.2		19.5	0.0	88.2	2.65	SS GRY VF-FN SLI CLY
23	1211-12	70		20.4	0.0	85.8	2.63	SS GRY VF-FN SLI CLY
24	1212-13	92		21.6	0.0	72.7	2.64	SS GRY VF-FN SLI CLY
25	1213-14	114		20.4	0.0	80.4	2.63	SS GRY VF-FN SLI CLY

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 representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

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CONVENTIONAL CORE ANALYSIS

SAMP. NO.	DEPTH	PERM. TO AIR (MD)		POR. FLD.	FLUID SATS.		GR.		DESCRIPTION
		HORZ.	VERTICAL		OIL	WATER	DNS.		
24	1214-15	19		18.3	0.0	85.2	2.64		SD GY VF-FG CLY/FL
25	1215-16	28		18.1	0.0	82.9	2.65		SD GY VF-FG CLY/FL
26	1216-17	37		20.6	0.0	84.0	2.67		SD GY VF-FG CLY/FL
27	1217-18	59		20.0	0.0	79.0	2.66		SD GY VF-FG CLY/FL
28	1218-19	9.0		17.9	0.0	86.6	2.73		SD GY VF-FG CLY/FL
29	1219-20	5.9		16.3	0.0	87.1	2.73		SD GY VF-FG CLY/FL
30	1220-21	1.3		17.5	0.0	85.1	2.67		SD GY VFG CLY/FL
31	1221-22	0.46		15.0	1.3	82.7	2.62		SD GY VF-FG CLY/FL ABNT CARB MAT
	1222-1223								COAL & SHALE - NO ANALYSIS

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COMPANY SHELL OIL COMPANY FIELD CARSON FILE RP-3-2811
WELL CARSON UNIT 12X-13 COUNTY SAN JUAN DATE 6-4-77
LOCATION SEC. 13-T25N-R12W STATE NEW MEXICO ELEV. 6379' KB

CORE-GAMMA CORRELATION

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VERTICAL SCALE: 5" = 100'

CORE-GAMMA SURFACE LOG

(PATENT APPLIED FOR)

GAMMA RAY

RADIATION INCREASE

COREGRAPH

TOTAL WATER

PERCENT TOTAL WATER

80 60 40 20 0

PERMEABILITY

MILLIDARCY

100 50 10 5 1

POROSITY

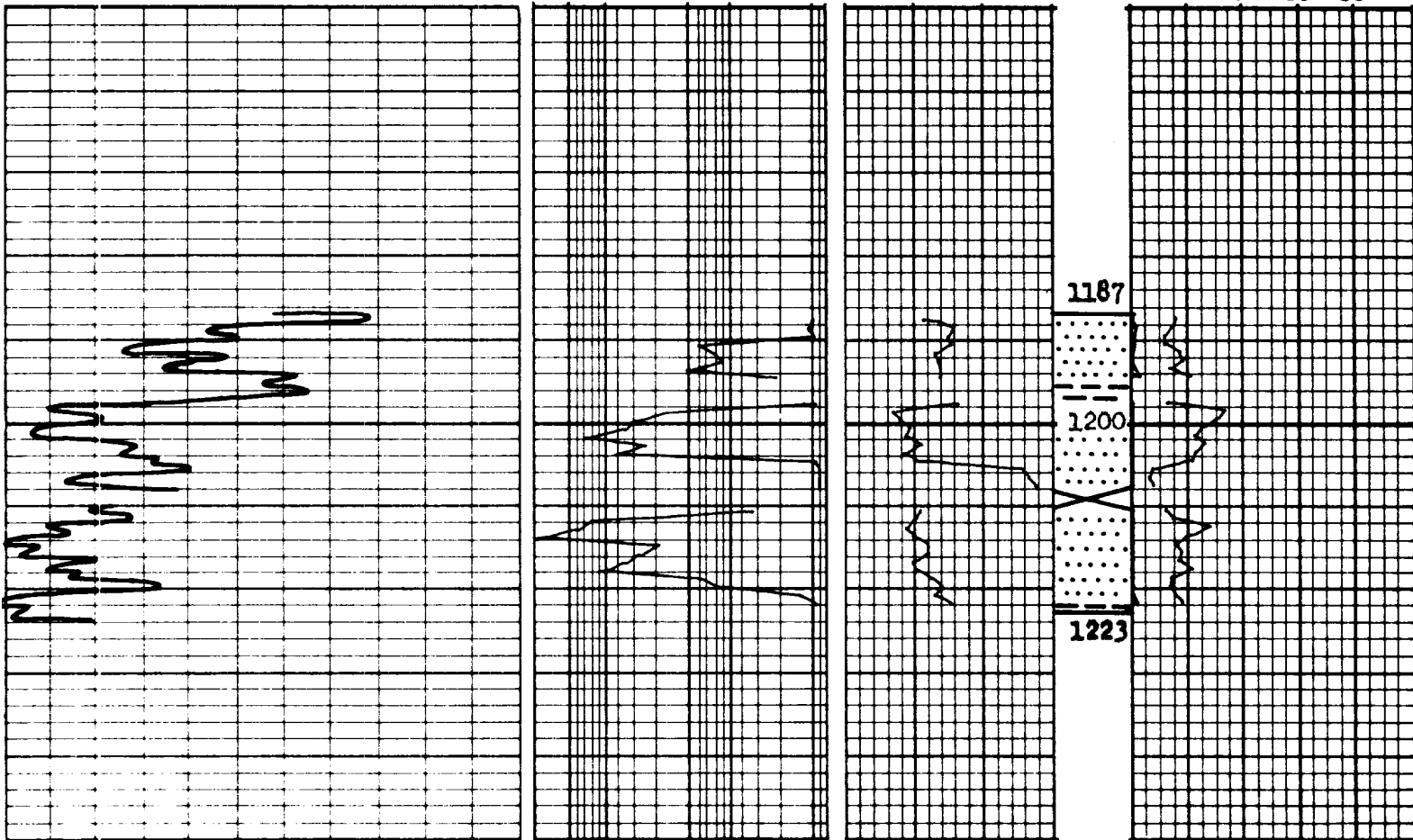
PERCENT

20 10 0

OIL SATURATION

PERCENT PORE SPACE

0 20 40 60 80



INTERPRETATION OF DATA

1187.0-1222.0 Feet - Intervals analyzed believed to be water productive.

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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