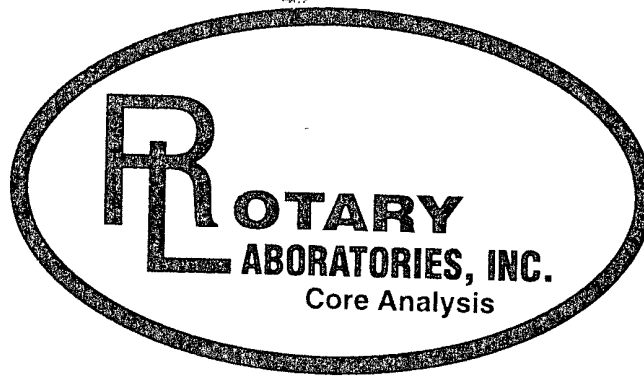




Rotary Sidewall Core Analysis Report

For

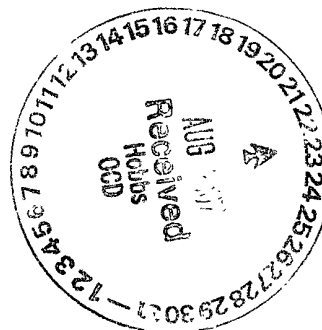
API # 30-025-38348

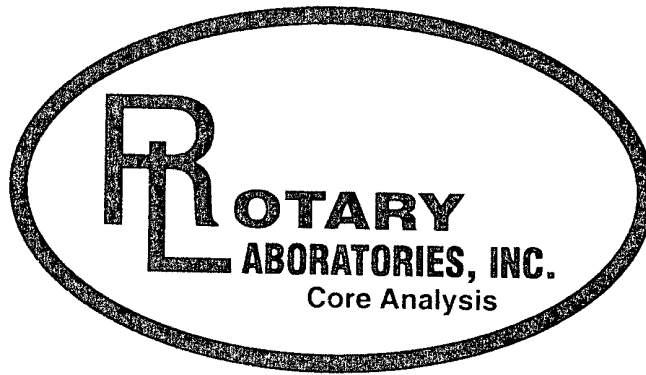
Sec-24, T-17s, R-32e

PATTERSON PETROLEUM LP

COOPER 24 FED COM # 2

LEA COUNTY, NEW MEXICO





CORE ANALYSIS PROCEDURES

FOR

PATTERSON PETROLEUM LP

COOPER 24 FED COM # 2

LEA COUNTY, NEW MEXICO

The Rotary Sidewalls were delivered to Rotary Laboratories, Inc.

Gases from the Sidewalls were measured by Hot Wire Chromatography and reported in Gas Units.

A brief Lithological Description of the Sidewalls was recorded.

A description of the Fluorescence of the Sidewalls was recorded.

Ultraviolet Light Photographs were taken of the Sidewalls for a permanent record.

Natural Light Photographs were taken of the Sidewalls for a permanent record.

Composite Photographs of the Sidewall End Trims were taken under Natural and Ultraviolet Light.

The Sidewalls were extracted utilizing the Dean Stark method.

The fluids were measured by the Dean Stark method.

Porosities were measured in a Boyle's Law Porosimeter utilizing Helium.

Permeabilities were measured in a Hassler Sleeve Permeameter utilizing Nitrogen at 300 psi confining pressure.

Test samples of a known permeability were measured before and after the Sidewall permeabilities were measured.

ROTARY SIDEWALL CORE ANALYSIS

PATTERSON PETROLEUM LP
COOPER '24' FEDERAL COM # 2
LEA COUNTY, NEW MEXICO

A.P.I. NUMBER : 30-025-38348
FIELD : Leamex Morrow West
LOCATION: 1650' FSL, 810' FEL,
Section 24, T-17-S, R-32-E

FILE NO. : 070526-1
DATE : May 29, 2007
ANALYSTS : WH, SB, PK, JR

DEAN STARK EXTRACTION

SAMPLE NO.	DEPTH ft	GRAIN DENSITY	POROSITY %	PERM mD	SATURATIONS Sw	So	GAS UNITS	FLUORESCENCE %	LITHOLOGY
1	5,420.0	2.83	9.6	0.735	13.8	27.7	209	90	Brt yl-dl yl Dol tn-brn mod-ssltly sc ppp-sml vug foss
2	5,430.0	2.83	6.9	0.101	11.6	22.9	243	60	Brt yl-dl yl Dol tn-brn mod-ssltly sc ppp-sml vug foss
3	5,446.0	2.71	12.8	3.729	46.2	29.6	23	40	Brt yl-dl yl Dol tn-brn mod-ssltly sdy sc ppp-vug foss
4	5,849.0	2.79	2.7	0.030	60.2	18.2	60	20	Brt yl-bl Dol tn-brn dns sltly
5	5,850.0	2.82	3.6	0.115	75.8	6.9	5	20	Yl-bl Dol tn-brn dns sltly tr anhy frac
6	5,851.0	2.85	7.8	0.508	38.6	43.2	7	70	Yl-bl Dol tn-brn sltly tr ppp tr anhy
7	5,852.0	2.85	5.8	0.099	32.8	38.0	22	70	Brt yl-bl Dol tn-brn sltly tr ppp tr anhy
8	6,022.0	2.85	10.4	2.430	52.5	32.9	8	60	Yl-bl Dol tn-brn sltly sdy tr ppp tr anhy
9	6,025.0	2.87	15.8	10.477	71.9	4.2	12	20	Yl-bl Dol tn-brn mod-ssltly sdy tr ppp tr anhy
10	11,552.0	2.70	7.5	tbfa	11.4	4.4	98	30	DI yl-yl Ls tn-brn sltly sdy tr ppp foss frac
11	11,562.0	2.71	10.0	tbfa	21.4	9.5	177	60	DI yl-yl Ls tn-brn mod-ssltly sdy sc ppp foss frac
12	11,564.0	2.71	11.4	tbfa	39.8	12.8	148	70	DI yl-yl Ls tn-brn mod-ssltly sdy sc ppp foss frac
13	11,566.0	2.72	11.6	2.891	40.9	20.2	136	90	DI yl-yl Ls tn-brn mod-ssltly sdy sc ppp foss
14	11,568.0	2.72	8.1	0.291	29.0	16.8	94	80	DI yl-yl Ls tn-brn mod-ssltly sdy sc ppp foss frac
15	11,600.0	2.80	17.7	tbfa	23.4	13.6	85	90	DI yl Ls tn-brn mod-ssltly sdy sc ppp foss
16	11,602.0	2.77	26.9	tbfa	50.5	17.6	398	90	DI yl Ls tn-brn mod-ssltly sdy sc ppp foss
17	11,604.0	tbfa	tbfa	tbfa	tbfa	tbfa	166	90	DI yl Ls tn-brn mod-ssltly sdy sc ppp foss
18	11,606.0	2.70	6.7	tbfa	44.6	3.7	120	10	Yl-bl Ls brn-dk brn-gy mott mod slty foss sty



ROTARY SIDEWALL CORE ANALYSIS

PATTERSON PETROLEUM LP
COOPER '24' FEDERAL COM # 2
LEA COUNTY, NEW MEXICO

A.P.I. NUMBER : 30-025-38348
FIELD : Leamex Morrow West
LOCATION: 1650' FSL, 810' FEL,
Section 24, T-17-S, R-32-E

FILE NO. : 070526-1
DATE : May 29, 2007
ANALYSTS : WH, SB, PK, JR

DEAN STARK EXTRACTION

SAMPLE NO.	DEPTH ft	GRAIN DENSITY	POROSITY %	PERM mD	SATURATIONS Sw	So	GAS UNITS	FLUORESCENCE %	LITHOLOGY
19	11,622.0	2.71	3.4	0.026	40.2	3.6	28	10	Yl-bl Ls brn-dk brn-gy mott mod slty tr ppp foss sty
20	11,624.0	2.74	5.4	0.096	30.8	Tr	80	Tr	Yl-bl Ls brn-dk brn-gy mott mod slty tr ppp foss sty
21	11,633.0	2.75	7.5	tbfa	29.0	Tr	75	Tr	Yl-bl Ls brn-dk brn-gy mott mod slty tr ppp foss frac sty
22	11,634.0	* 2.65	10.8	2.197	65.9	13.3	1	90	Brt yl Ss opaq-tn-brn vf-crsgr rnd-ang ssity tr Cht
* This depth is suspect. The data and rock type more closely match the sand at 12950'.									
23	11,636.0	* 2.65	9.9	1.057	58.3	14.9	1	90	Brt yl Ss opaq-tn-brn vf-crsgr rnd-ang ssity tr Cht frac
* This depth is suspect. The data and rock type more closely match the sand at 12950'.									
24	12,950.0	2.66	10.2	0.860	50.3	15.9	3	90	Brt yl Ss opaq-tn-brn vf-crsgr rnd-ang ssity tr Cht frac
25	12,952.0	2.66	10.9	tbfa	46.5	14.4	2	90	Brt yl Ss opaq-tn-brn vf-crsgr rnd-ang ssity tr Cht frac
26	12,955.0	2.65	8.2	1.586	72.3	0.0	9	0	cont Ss opaq-tn-brn-gy mott vf-crsgr rnd-ang ssity tr Cht frac
27	12,958.0	2.54	2.0	0.204	26.2	0.0	285	0	Cht opaq-bl-dk brn dns mod-ssity sc sty tr pyr
28	12,967.0	2.68	3.9	tbfa	44.9	0.0	14	0	Cht opaq-bl-brn dns mod-ssity tr pyr
29	13,436.0	2.64	4.4	tbfa	80.2	0.0	13	0	Cht opaq-bl-gy dns mod-ssity sty
30	13,437.0	2.65	2.6	tbfa	30.0	0.0	0	0	Cht opaq-bl-gy dns mod-ssity sty
31	13,441.0	2.65	0.9	0.016	23.4	0.0	0	0	Cht opaq-bl-gy dns ssity sty
32	13,446.0	2.60	2.4	tbfa	14.8	0.0	10	0	Cht opaq-bl-gy dns ssity sty
33	13,448.0	2.71	9.0	tbfa	29.0	0.0	0	0	Tr cont Ss opaq-tn-gy vf-crsgr rnd-ang ssity scalc tr Cht frac
34	13,486.0	2.72	10.7	tbfa	26.6	0.0	2	0	Tr cont Ss opaq-tn-gy vf-crsgr rnd-ang ssity scalc tr Cht frac
35	13,488.0	2.71	9.1	tbfa	39.4	0.0	1	0	Tr cont Ss opaq-tn-gy vf-crsgr rnd-ang ssity frac
36	13,490.0	2.68	7.5	0.108	62.5	0.0	5	0	Tr cont Ss opaq-tn-gy vf-crsgr rnd-ang ssity tr Cht frac



ROTARY SIDEWALL CORE ANALYSIS

PATTERSON PETROLEUM LP
COOPER '24' FEDERAL COM # 2
LEA COUNTY, NEW MEXICO

A.P.I. NUMBER : 30-025-38348
FIELD : Leamex Morrow West
LOCATION: 1650' FSL, 810' FEL,
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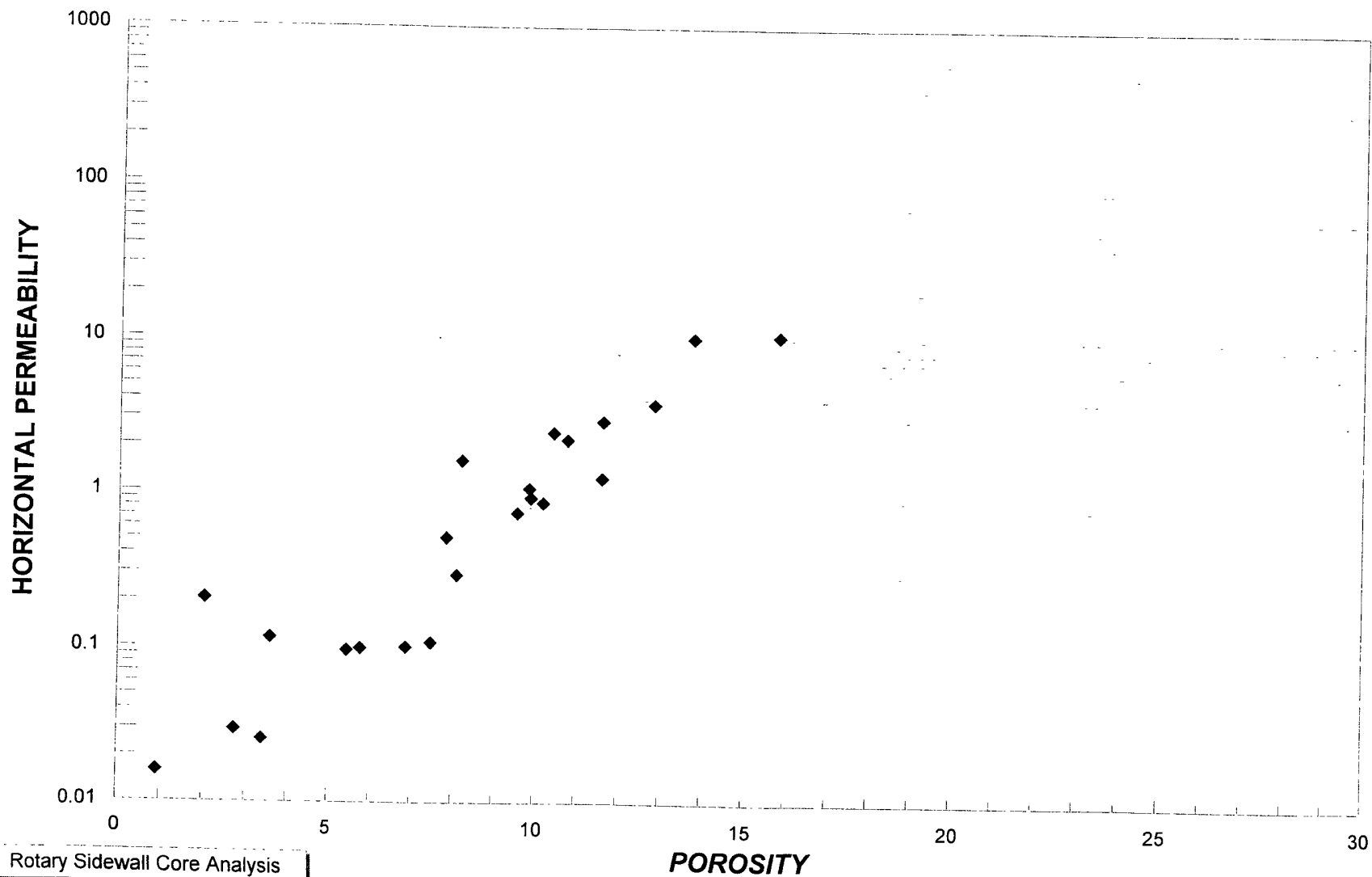
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DEAN STARK EXTRACTION

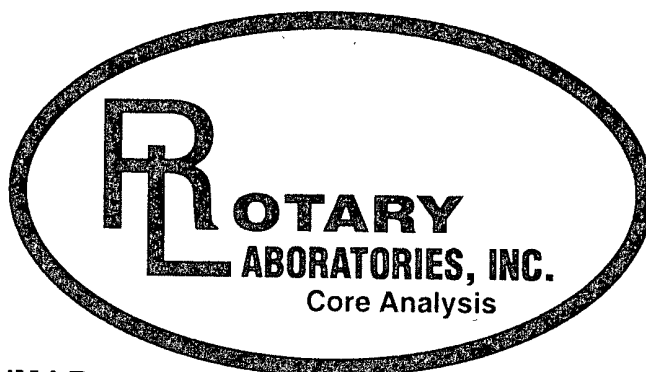
SAMPLE NO.	DEPTH ft	GRAIN DENSITY	POROSITY %	PERM mD	SATURATIONS Sw	So	GAS UNITS	FLUORESCENCE %	LITHOLOGY
37	13,494.0	2.67	11.8	tbfa	43.3	0.0	9	0	Tr cont Ss opaq-tn-brn vf-crsgr rnd-ang ssity scalc frac
38	13,596.0	2.65	13.8	10.120	46.3	0.0	5	0	Tr cont Ss opaq-tn-brn vf-crsgr rnd-ang ssity scalc frac
39	13,602.0	2.66	11.6	1.241	54.0	7.0	9	90	Br t yl-dl yl-grn Ss opaq-tn-brn vf-crsgr rnd-ang ssity scalc frac
40	13,603.0	2.65	11.8	tbfa	36.0	3.8	11	90	Br t yl-dl yl-grn Ss opaq-tn-brn vf-crsgr rnd-ang ssity scalc frac
41	13,604.0	2.66	9.9	0.922	50.0	4.6	4	90	Br t yl-dl yl-grn Ss opaq-tn-brn vf-crsgr rnd-ang ssity scalc
42	13,616.0	2.65	8.7	tbfa	38.9	6.5	1	90	Br t yl-dl yl-grn Ss opaq-tn-brn vf-crsgr rnd-ang ssity scalc



PATTERSON PETROLEUM LP
COOPER '24' FEDERAL COM # 2



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PATTERSON PETROLEUM LP
COOPER '24' FEDERAL COM # 2
06/04/2007

QUALITY CONTROL RERUN DATA

Sample No.	GRAIN DENSITY		POROSITY		<i>k</i> standard Test Sample	PERMEABILITY	
	original	reruns	original	reruns		original	reruns
1					2.617	0.735	0.729
3	2.713	2.714	12.85	12.91			
6	2.851	2.849	7.84	7.77			
9						10.477	10.232
11	2.710	2.711	10.00	10.05			
19						0.026	0.025
21	2.751	2.754	7.51	7.60			
24	2.665	2.667	10.18	10.24			
25	2.661	2.659	10.88	10.81			
27	2.539	2.538	2.03	1.99		0.204	0.197
29	2.642	2.640	4.39	4.31			
32	2.604	2.603	2.36	2.33			
33	2.715	2.716	9.02	9.04			
38	2.650	2.652	13.78	13.83			
39						1.241	1.218
41					2.620	0.922	0.926
42	2.650	2.649	8.73	8.70			

LITHOLOGICAL ABBREVIATIONS

Anhydrite (-ic)	anhy, anhyd	Filled	fd	Poor	pr
Anhydrite inclusion	A/I	Fine (-ly)	f, fnly	Pyrite	pyr
Bentonite (-ic)	bent	Fluorescence	flu	Quartz (-itic)	qtz
Black (-ish)	blk, blksh	Fossil (-iferous)	foss	Red (ish)	rd, rdsh
Bleeding Oil	B/O	Fracture	frac	Round	rnd
Brecciated	brec	Fragments	frag	Residual Oil	So
Bright	brt	Friable	fri	Residual Water	Sw
Brittle	brit	Fusulinid	fus	Sample	Spl
Broken	brkn	Gilsonite	gil	Sandstone	Ss
Brown	brn	Gold	gld	Sandy	sdv
Buff	bf	Good	gd	Scattered	sc
Calcite (-ic)	calc, calctc	Grain (-s)	gr	Shaley	shy
Calcareous	calc	Granular	gran	Shale	sh
Carbonaceous	carb	Gray	gy	Shale parting	s/p
Cement	cmt	Green	grn	Silt (-y)	slt, slty
Chalk (-y)	chk, chky	Gypsum	gyp	Siliceous	sil
Chert	cht	Hair line(frac)	hl	Slight (-ly)	sli, s
Clay	cl	Halite	hal	Small	sml
Clear	clr	Inclusion	incl	Spotted (-y)	sp
Coal	c	Laminations (ated)	lam	Stringer	strgr
Coarse	crs	Large	lrg	Stylolite (-itic)	sty, styl
Conglomerate	cgl	Light	lt	Sucrosic	suc
Consolidated	consol	Limestone	ls	Sulphur	su
Contaminated	contam	Limey	lmy	Tan	tn
Crinoid (-al)	crin, crinal	Lithology	lith	Too broken	tbfa
Cross-bedded	x-bd	Medium	m	(for Analysis)	
Crystal (-line)	Xl, xln	Mineral Fluorescence	mf	Thin	thn
Dark	dk	Moderate	mod	Trace	Tr
Dense	dns	Mudcake	m/c	Very	v
Diameter	dia	No Show	N/S	Vertical	vert, vt
Dolomite (ic)	dol, dolm	Oolite (-itic)	ool	Vug (-gy)	vug
Dull	dl	Pale	pl	Well	wl
Faint	fnt	Permeability	Perm, K	White	wht
Fair	fr	Pin-Point Porosity	ppp	Yellow	yl

