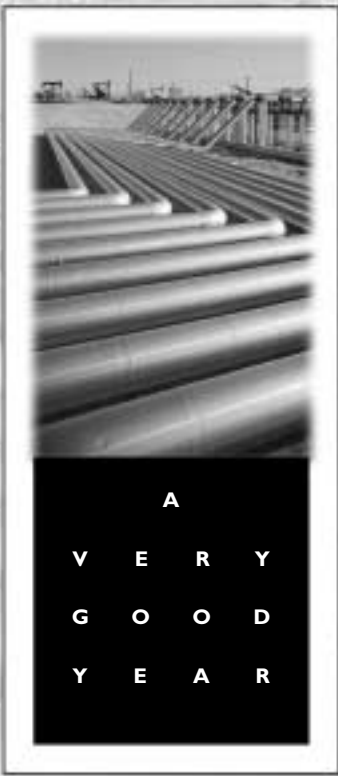
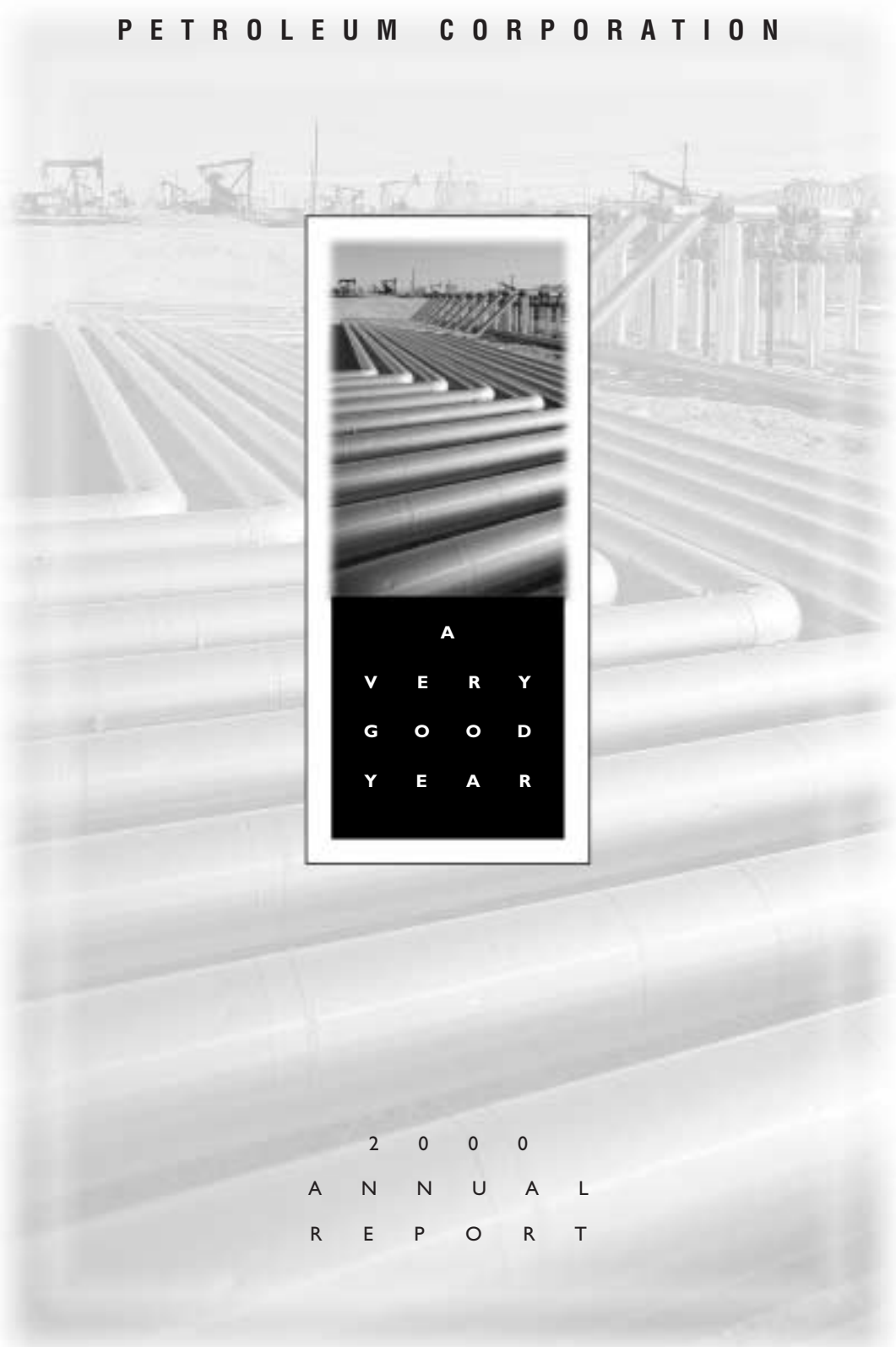




PARALLEL

PETROLEUM CORPORATION



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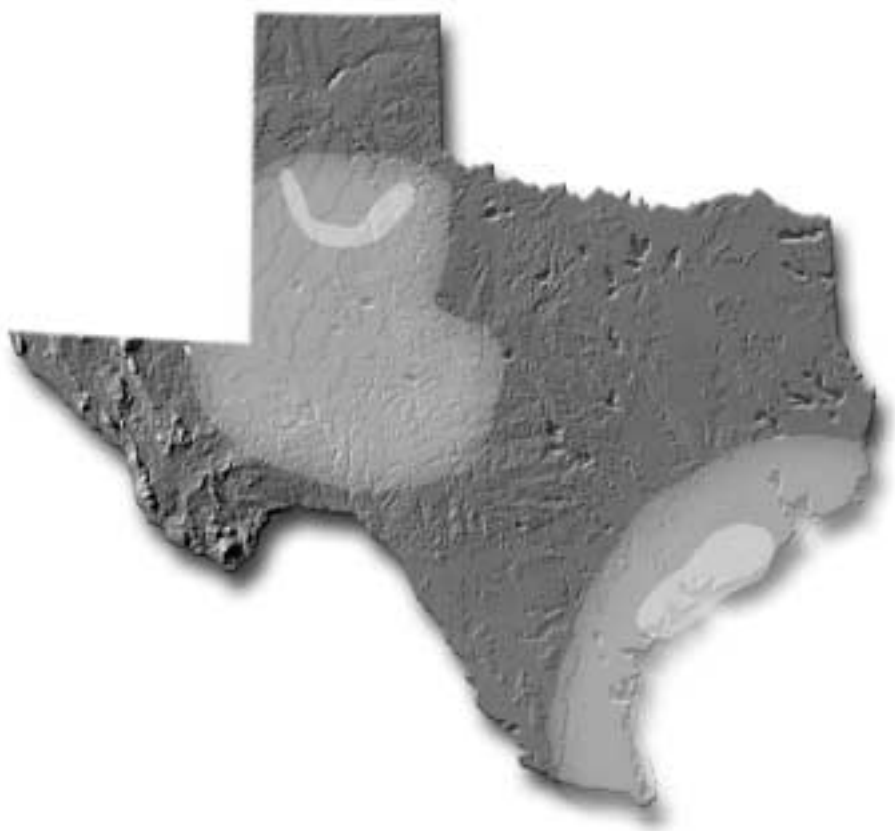
R E P O R T

Parallel Petroleum Corporation

is an independent energy company
headquartered in Midland, Texas.

Our operations focus on
exploratory and developmental
drilling and producing property
acquisitions in two primary areas;
the onshore Gulf Coast area of
South Texas and the Permian Basin
of West Texas. Our common stock
is traded on the Nasdaq Stock
Exchange under the symbol "PLLL".
Our Internet address is
www.parallel-petro.com.

Core Area of Operations



Five Year Highlights

Year ended December 31,

1996

1997

1998

1999

2000

Financial Data (000s)

Oil sales	\$ 4,836	\$ 3,484	\$ 2,316	\$ 2,836	\$ 4,770
Gas sales	9,332	9,130	6,686	6,138	12,365
Total revenues	\$ 14,168	\$ 12,614	\$ 9,002	\$ 8,974	\$ 17,135
Total operating expenses	\$ 6,945	\$ 7,968	\$ 24,057	\$ 10,174	\$ 9,530
Net income	\$ 4,331	\$ 2,744	\$ (12,996)	\$ (2,450)	\$ 5,977
Net cash earnings	\$ 9,788	\$ 7,826	\$ 4,627	\$ 4,280	\$ 11,717

Weighted average shares outstanding-basic	14,957	17,863	18,301	18,549	20,332
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Total assets	\$ 38,098	\$ 49,855	\$ 46,565	\$ 43,264	\$ 46,456
Long term debt	\$ 8,521	\$ 12,183	\$ 18,036	\$ 15,966	\$ 12,428
Stockholders' equity	\$ 24,718	\$ 29,119	\$ 25,725	\$ 25,800	\$ 31,168

Per Basic Share

Revenues	\$ 0.95	\$ 0.71	\$ 0.49	\$ 0.48	\$ 0.84
Net income	\$ 0.29	\$ 0.15	\$ (0.73)	\$ (0.16)	\$ 0.26
Net cash earnings	\$ 0.65	\$ 0.44	\$ 0.25	\$ 0.23	\$ 0.58
Total assets	\$ 2.55	\$ 2.79	\$ 2.54	\$ 2.33	\$ 2.28
Long term debt	\$ 0.57	\$ 0.68	\$ 0.99	\$ 0.86	\$ 0.61
Stockholders' equity	\$ 1.65	\$ 1.63	\$ 1.41	\$ 1.39	\$ 1.53

Operations

Production					
Oil (Bbl)	221,499	175,246	185,474	163,696	165,137
Gas (Mmcf)	3,655	3,383	3,275	2,709	2,822
Bbl equivalent	830,649	739,111	731,454	615,115	635,440
Mmcf equivalent	4,984	4,435	4,388	3,691	3,813

Average sales prices					
Oil (Bbl)	\$ 21.83	\$ 19.88	\$ 12.49	\$ 17.32	\$ 28.88
Gas (Mcf)	\$ 2.55	\$ 2.70	\$ 2.04	\$ 2.27	\$ 4.38
Bbl equivalent	\$ 17.06	\$ 17.07	\$ 12.31	\$ 14.59	\$ 26.96

Per EBO

Average production costs	\$ 3.23	\$ 4.29	\$ 3.33	\$ 3.83	\$ 4.88
Operating margin	\$ 13.20	\$ 11.65	\$ 8.98	\$ 10.76	\$ 22.08
Depletion	\$ 4.47	\$ 5.29	\$ 8.07	\$ 8.30	\$ 8.18

Reserves

Oil (Mbbbls)	1,641	1,894	1,724	1,008	974
Gas (Mmcf)	32,554	30,548	26,021	17,284	15,686
Bbl equivalent	7,067	6,985	6,061	3,889	3,588
Bcf equivalent	42,400	41,912	36,365	23,332	21,530
SEC @ 10% pretax present value (000s)	\$ 67,016	\$ 46,420	\$ 26,823	\$ 25,499	\$ 90,950

Year-end pricing

Oil (\$/Bbl)	\$ 23.93	\$ 17.00	\$ 10.50	\$ 24.75	\$ 26.83
Gas (\$/Mcf)	\$ 3.29	\$ 2.71	\$ 2.00	\$ 2.20	\$ 10.41

Dear Investor:

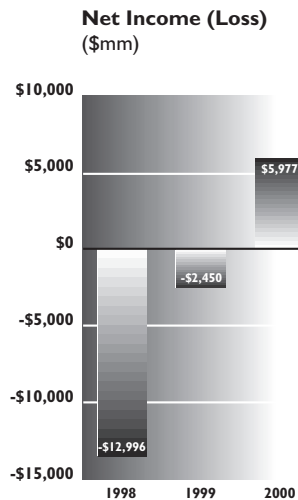
Last year was a good year for the oil and gas industry, and for your company.

Financial results were exceptional. We achieved record results — net income of \$6.0 million and net cash earnings of \$11.7 million. These improved results were reflected in our stock price. After a yearly low of \$1.00 in 1999, the stock price reached a yearly high of \$4.69 in 2000.

And, by all accounts, it looks like 2001 will be another good year.

NEW TECHNOLOGY

In February 2001, we entered into a strategic exploration alliance with Chroma Energy, a privately held company based in Houston, Texas. Under the terms of the agreement, we have exclusive access to Chroma Energy’s proprietary pattern recognition and visualization software, ImageGenetics™, in the Texas counties of Victoria, Jackson and Wharton Counties, onshore the Gulf Coast.

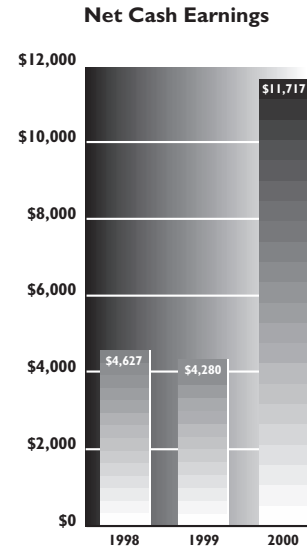


Chroma Energy’s pattern recognition technology can quickly explore massive volumes of 3-D data to develop a play concept, generate leads and qualify prospects. This patented technology has its roots in the biological sciences. The software is based on technology similar to that used to search the repetitive patterns in the hierarchical structure of DNA. Chroma Energy recognized the potential of this process to unravel complex seismic data sets and developed and patented the ImageGraphics™ software.

Quoting Peter Duncan, chief operating officer of Chroma Energy, “What Chroma does is define a new set of attributes that are data derived and made up of snippets of the data itself — just like the biological snippets used to analyze DNA — and look for patterns of those attributes and then textures of those patterns.”

Sounds complicated? Maybe, but based on Chroma Energy’s initial review of just one of our data sets, we are excited about the value this process can add to our existing 3-D databases, without major capital expenditures. Chroma Energy has identified 26 new Frio and Yegua leads from this one data set, leads that were previously unidentifiable using traditional interpretation methods. Six of the 15 Frio leads have been qualified as natural gas prospects and upgraded to drillable status.

Again, using this same data set, we are going to evaluate possible Yegua leads and also examine potential Frio oil reservoir leads. Typically, oil reservoirs do not exhibit the same visible charac-



teristics, such as AVO (amplitude versus offset) that natural gas reservoirs do. We are hopeful that this technology will reveal certain identifiable characteristics of oil-prone reservoirs.

EXPLORATION AND PRODUCTION

We continue to focus our operations in two core areas: the Yegua/Frio/Wilcox Gas Trend, onshore the Gulf Coast of South Texas, and the Permian Basin of West Texas (primarily through our interest in First Permian). We believe we can create greater value for our stockholders by being an important player in a few central areas.

The key to our exploration program is our large proprietary 3-D seismic database covering 810 square miles in the prolific multi-pay Yegua/Frio/Wilcox trend, data that we acquired from 1994 - 1999. This seismic library is proprietary in the sense that only Parallel and its working interest partners have access to the data, and, most importantly, Parallel is the only partner with an interest in all of the 22 projects. With seismic data processing methods continually improving, we believe this data library has an indefinite

shelf life and could yield new generations of prospects for many years.

Using this proprietary seismic database, we have generated a diversified, balanced multi-year prospect inventory ranging from lower risk/moderate impact to higher risk/higher impact prospects, including 12 Wilcox natural gas prospects. With the cost of seismic acquisition activities paid for, we are now able to allocate most of our capital expenditure funds to data interpretation and drilling and leasing activities.

GROWTH STRATEGY

Our growth strategy centers on three primary components:

Yegua/Frio Drilling Program

The Yegua/Frio/Wilcox Gas Trend, in our opinion, ranks among the top domestic exploration areas at this time. Since 1994, we have concentrated our exploration efforts in this area and have participated in the drilling of 143 gross wells and achieved a 71% drilling success rate, as of December 31, 2000.

For 2001, we have budgeted \$5.0 million to participate in the drilling of 20 Frio wells and 10 Yegua wells.

Wilcox Drilling Program

We completed a regional Wilcox study on our 22 projects in the Yegua/Frio/Wilcox Gas Trend last year and identified at least 12 high impact prospects, which resulted in our Wilcox 3-D Gas Project. We have leased approximately 30,000

acres in connection with the project, in which we own an approximate 50% working interest.

Recent Wilcox drilling successes by other oil and gas companies, both updip and on strike with our acreage, support our geological and geophysical models. This activity, in our opinion, has decreased the risk of the Wilcox Project and enhanced its potential value. Successful recent Wilcox drilling activity includes the Speaks Southwest Field, Lavaca County, which is updip to our acreage, and the Bonus Southwest (Wharton County) and Mission Valley (Victoria County) Fields, which are on trend with our acreage. Additional Wilcox wells are scheduled to be drilled by other companies that are also on strike and in the vicinity of our acreage.

We believe the risk associated with drilling for deep Wilcox gas

reserves has decreased primarily because of:

1. **the use of 3-D seismic,**
2. **improved methods of drilling, completion and fracture stimulation techniques, and, of course,**
3. **more favorable economics resulting from strong natural gas prices.**

For 2001, we have budgeted \$3.0 million, net to our interest, to drill Wilcox prospects.

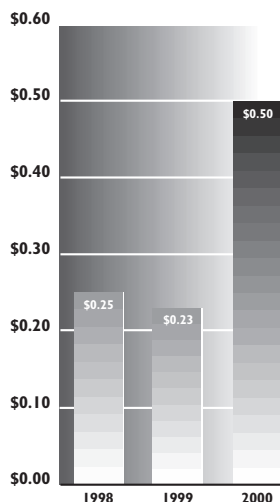
First Permian, LLC Drilling Program

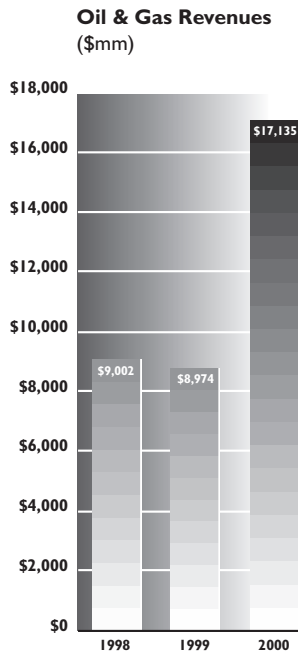
First Permian is a limited liability company of which we own 30.675%. Privately held, First Permian is headquartered in Midland, Texas. Its exploitation and production activities are focused primarily on oil producing properties in the Permian Basin of West Texas.

First Permian was formed in June 1999 to acquire the Permian Basin oil and gas assets of Fina Oil and Chemical Company.

First Permian's properties are considered among the best in the Permian Basin. The majority of the properties produce from shallow producing intervals — well depths range from 2,500 feet to 7,500 feet — and include the San Andres, Glorietta and Clearfork formations. These are mature, long-lived reserves with low decline rates, a predictable production profile and successful secondary and tertiary recovery programs in place and field-tested. Proved undeveloped potential is significant, with more than 450 low risk infill locations identified that will require minimal capital expenditures to exploit.

Net Cash Earnings Per Diluted Common Share





For the year 2001, First Permian has budgeted approximately \$18.0 million to continue drilling low-risk, infill wells and conduct major remedial and workover activities, an increase of approximately 33% when compared with its \$13.5 million budget implemented in July 2000. The majority of the 2001 budget will be spent to drill approximately 94 infill wells, primarily on the Southeast Westbrook and North Robertson Units, for recompletions, workovers and facilities upgrades and for secondary and tertiary activities.

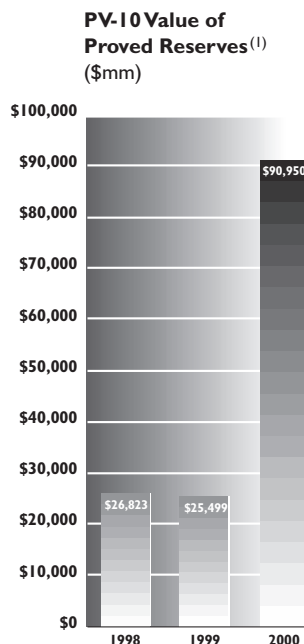
A GENERAL LOOK AT THE INDUSTRY

Although our interest in First Permian, which is primarily oil-producing, provides us with reserve diversity, Parallel's reserves and production are primarily natural gas.

The high natural gas prices of 2000 were due to a number of factors, including an increase in demand of

approximately 1.0 Tcf over 1999 levels, which was related in part to the strong economy in 2000 and the return of cold weather in late 2000. Supply problems in California for natural gas-fired electricity generation have contributed to high natural gas prices.

For the next few years, we believe the U.S. will face constrained natural gas supplies and deliverability. The devastating effect of low oil prices in 1998-1999 and the resultant slash in exploration and production budgets caused the U.S. to lose about 10% of its domestic oil production and also helped contribute to current tight natural gas supplies. While production of natural gas rose last year, production increases trailed demand by approximately 0.5 Tcf. With natural gas demand expected to increase by more than 30% in the next decade, this bodes well for continued favorable natural gas prices.



(1) Discounted at 10% before federal income taxes

The Energy Information Administration projects that wellhead natural gas prices this winter will average about \$6.10 per Mcf, more than two and one half times the price of the previous winter season, and that the annual average wellhead price in 2001 is projected to be about \$5.00 per Mcf compared with \$3.60 per Mcf in 2000. Since natural gas accounted for 78% of our total production in 2000, these forecasts are favorable.

OUTLOOK

We face numerous opportunities and challenges in the year ahead. Independent producers have grown in their importance and we expect this trend to continue. Currently, independents account for 85% of the wells drilled in the U.S. and produce 40% of the oil and 65% of the natural gas.

Cash flow is strong and debt is at its lowest level since 1997. Financially strong, we believe the company has the right prospects at the right time — and the patience to exploit them in the best interests of the stockholders.

We appreciate your support and faith and look forward to sharing continued success with our stockholders and employees.

Sincerely,

Donald A. Cambridge
Chairman of the Board

Laurel Johnson
President

CORPORATE INFORMATION

Stock Price Data (per share)

	Quarter	High	Low
1999	First	\$1.87	\$1.00
	Second	\$2.34	\$1.25
	Third	\$3.00	\$1.75
	Fourth	\$2.53	\$1.37
2000	First	\$4.19	\$1.59
	Second	\$3.00	\$1.75
	Third	\$4.69	\$2.56
	Fourth	\$4.69	\$3.00

Board of Directors

Thomas R. Cambridge, Chairman of the Board
President, Cambridge Production, Inc.

Larry C. Oldham
President, Parallel Petroleum Corporation

Dewayne E. Chitwood
President, Wes-Tex Holdings, LLC

Ernest R. Duke
President, Mustang Mud, Inc.

Charles R. Pannill
Oil and Gas Consultant

Officers

Thomas R. Cambridge, *Chief Executive Officer*
Larry C. Oldham, *President*

Employees

Eric A. Bayley, *Manager of Engineering*
Rebecca A. Burrell, *Manager of Accounting*
Diane C. DePrang, *Accountant*
Rhonda L. Keller, *Manager of Investor Relations*
John S. Rutherford, *Manager of Land*
Cynthia D. Thomason, *Accountant*
Cynthia L. Williams, *Receptionist*

INVESTOR INFORMATION

Corporate Headquarters

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Midland, Texas 79701
915.684.3727
Fax: 915.684.3905
www.parallel-petro.com

Independent Auditors

KPMG LLP
Midland, Texas

Legal Counsel

Lynch, Chappell and Alsup
Midland, Texas

Shareholder Assistance

Communication concerning the transfer of shares, lost certificates, duplicate mailings or change of address notifications should be directed to the transfer agent.

Computershare Trust Company, Inc.
P.O. Box 1596
Denver, Colorado 80201-1596
303.986.5400

Annual Meeting

Our annual stockholders' meeting will be held at 3:00 p.m. Central time on Wednesday, June 20, 2001, at the Amarillo Club, 600 S. Tyler, Amarillo, Texas.

Common Stock

Parallel Petroleum's common stock is traded on the Nasdaq Stock Exchange (symbol: PLLL). As of March 31, 2001, there were approximately 3,064 stockholders of record.

Additional Information

A copy of Parallel's Form 10-K and other publications are available at no charge upon request. Direct requests to:

Investor Relations
Telephone: 915.684.3727
Fax: 915.684.3905