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FINDING OIL AND GAS: THE ROLE OF LARGE
INTEGRATED COMPANIES RELATIVE TO THE REST
OF THE INDUSTRY

EXECUTIVE SUMMARY

This study was undertaken to compare the exploration activities and expenditures and the resulting hydrocarbon discoveries of large integrated U.S. oil companies with those of the rest of the industry in which independent, or non-integrated, producers are the dominant factor. The conclusions here are broadly similar to the ones we reached in our 1976 study, "The Role of Major Oil Companies and Independent Producers in Domestic Exploration Activities"; only the specific numbers on which those conclusions are drawn have changed.

Here, as in the 1976 report, PIRINC has compiled information from questionnaires sent to a selected group of large companies. A list of the 26 companies responding to the questionnaire, the "PIRINC Group," is attached. In 1980, the PIRINC Group accounted for approximately 60% of U.S. petroleum liquids production (6.3 million barrels per day, or MM B/D) and approximately 50% (10.1 trillion cubic feet, or TCF) of U.S. natural gas production. They also held more than 60% of U.S. liquid petroleum and natural gas reserves.

The large integrated companies constituting the PIRINC Group:

- Drilled 11% of the exploratory wells, and 16% of all wells completed in the U.S. in 1979 and 1980;
- Drilled wells which were 36% deeper than the U.S. average during this period;
- Found oil or gas in 83% of all wells, compared to 69% for the rest of the industry, and found oil or gas in 49% of all exploratory wells, compared to 46% for the rest of the industry over the two years;
- Contributed 43% of the U.S. oil and gas reserve additions due to exploratory drilling from 1978-80;
- Added reserves per well at a rate more than twice the U.S. average;
- Accounted for 60% of total U.S. oil and gas exploration expenditures and 58% of total development expenditures for the period 1976-1980;
- Increased its total exploration and development expenditure by 54% from 1979 to 1980 compared to a 23% increase for the U.S. industry as a whole; and
- Accounted for 63% of all U.S. oil reserves and 58% of all U.S. natural gas reserves at the end of 1980 but registered a decline of 8% in oil reserves and 7% in gas reserves from 1978 to 1980 while the rest of the industry had an increase of 3% and a decrease of 0.4% respectively.

Thus, as shown in the attached graphs, the companies in the PIRINC Group drilled a small share of all wells but accounted for a disproportionately large share of total U.S. exploration and development expenditures. They also found more oil and gas per well than the Independents. However, their oil and gas reserves declined while those of the rest of the industry did not.

As in our 1976 report, it is important to point out that all segments of the industry contribute to maximizing the reserve base. Because corporations are not similarly situated, they reach different decisions on exploration activity. A marginal prospect to one company may appear a good prospect to another. One company may prefer to invest limited capital in developing reserves already booked, while another may prefer to invest in further exploration. In addition, some companies routinely do more geological and geophysical testing, leaving the actual drilling to be done by another company.


The large integrated companies dominate exploration activity in such high cost, high risk "frontier" areas as Alaska and the east and west coast offshore plays. In the 1978-80 period the wells drilled in these areas have not contributed any significant reserve additions. The Majors are also clearly the dominant factor in the most promising new onshore area in the Lower 48-- the Western Overthrust Belt. The characteristics of this particular geological feature are apparently more complex, the risk greater and the drilling cost higher than in most older U.S. onshore areas.

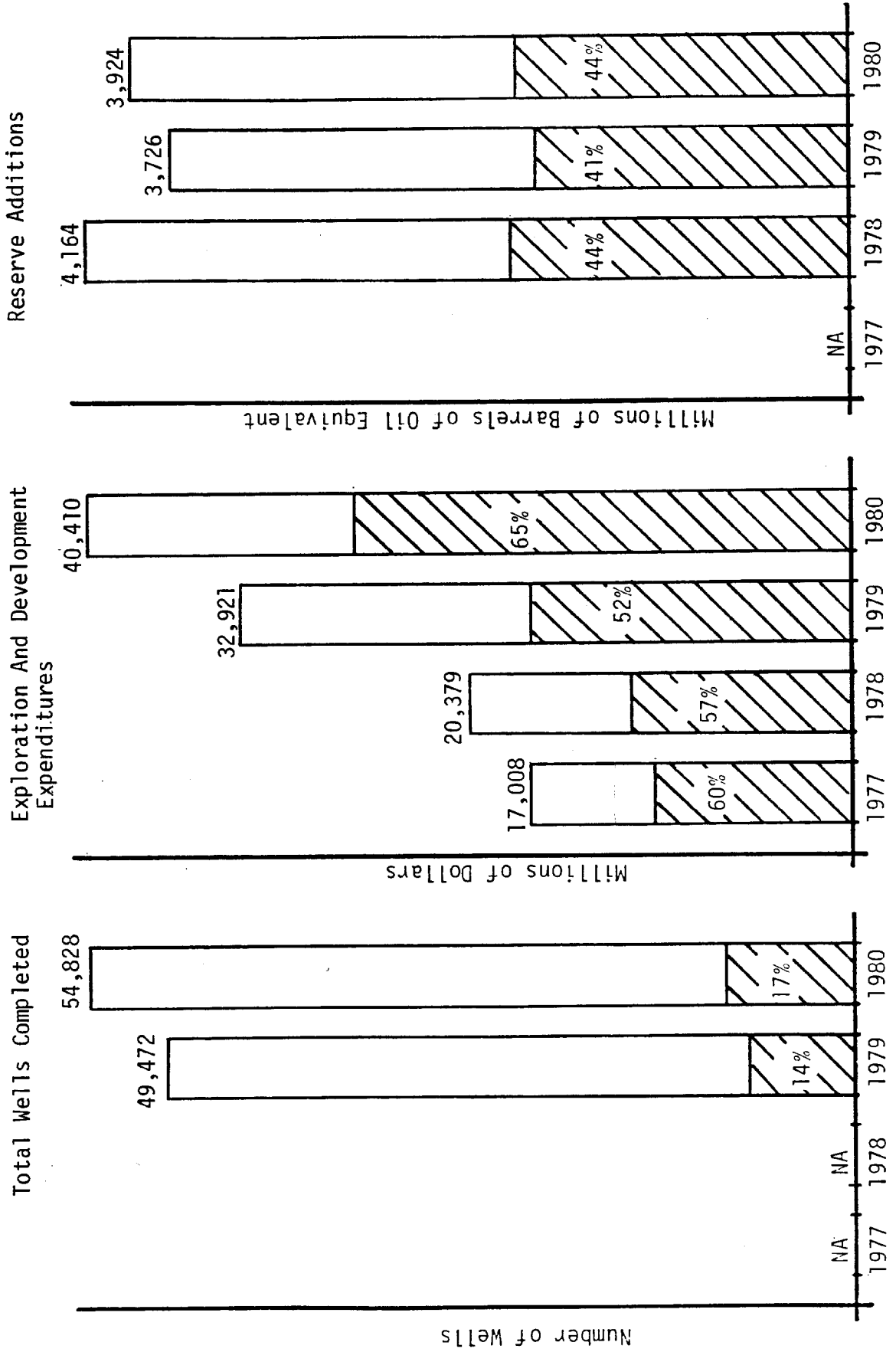
Hence, it is not surprising that the PIRINC Group found more than twice as much oil and gas per well drilled as the industry as a whole and that the Group's average cost per exploratory well drilled was more than four times the U.S. average. Likewise, the indicated increase in oil reserves by the Independents, while

those of the PIRINC Group dropped, is a reflection of this differing exploratory emphasis. The increase of the former was due primarily to upward revisions of reserves in previously discovered oil deposits. This suggests that the Independents have continued to concentrate their efforts in the traditional producing regions which apparently still contain substantial untapped oil deposits. The sharp oil price increases of the last several years have made the development of these deposits more attractive. From a national point of view, however, the identity of the discoverer of oil or gas is of course irrelevant. The only relevant consideration for public policy is the assurance that all possible incentives for exploration exist and that no disincentive is imposed on any group of producers.

SUMMARY FIGURE 1

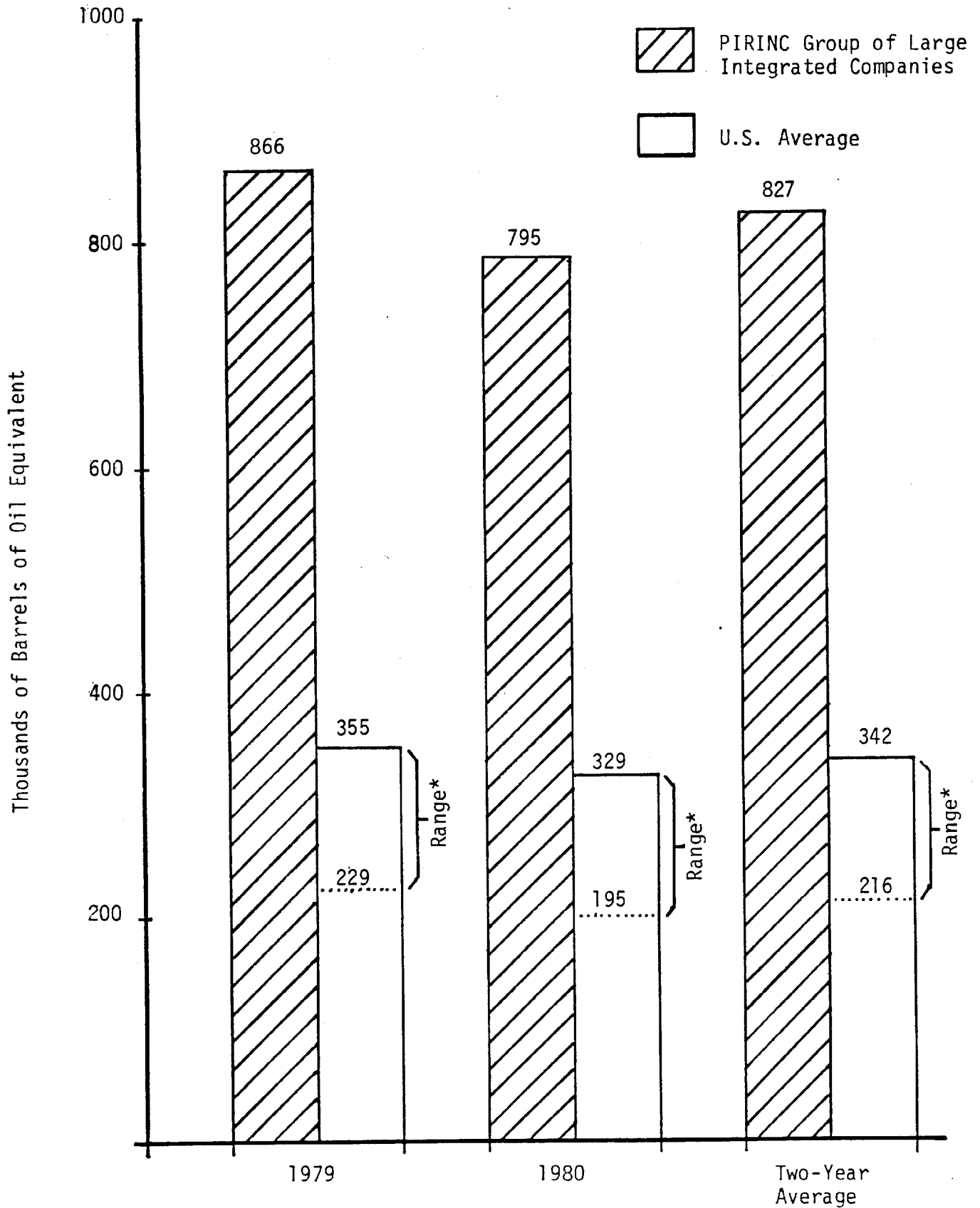
TOTAL U.S. EXPLORATION AND DEVELOPMENT ACTIVITIES
1977-1980

 PIRINC Group of Large Integrated Companies



SUMMARY FIGURE 2

RESERVE ADDITIONS PER EXPLORATORY WELL
1979-1980



*See Appendix III of this report.

PIRINC GROUP: Respondents to Questionnaire

Amerada Hess Corporation	Marathon Oil Company
American Petrofina, Inc.	Mobil Corporation
Atlantic Richfield Company	Murphy Oil Corporation
Champlin Petroleum Company	Pennzoil Company
Cities Service Company	Phillips Petroleum Company
Conoco, Inc.	Shell Oil Company
Diamond Shamrock Corporation	Standard Oil Co. of California
Exxon Corporation	Standard Oil Co. (Indiana)
El Paso Company	Standard Oil Co. (Ohio)
Getty Oil Company	Sun Company Inc.
Gulf Oil Corporation	Tenneco, Inc.
Kerr-McGee Corporation	Texaco Inc.
Louisiana Land & Exploration Company	Union Oil Co. of California

Did not respond

Coastal Corporation
Husky Oil Company