UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

A selected and annotated listing of petroleum atlases, maps, and map sources

by

Jannette Sharp Wesley[1]

Open-File Report 86-262

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.

[1] Denver, Colorado

1986

CONTENTS

A selected and annotated listing of
petroleum atlases, maps, and map sources.
by
Jannette Sharp Wesley

The intention of this listing is to provide a compilation of maps, atlases, and map sources, that feature petroleum. It is organized by first annotating reference books that locate maps and map sources. Sections on atlases, individual maps, professional societies, and commercial sources follow. Items with international coverage are listed first and followed by items with U.S. coverage only. U.S. and Canadian government sources are entered last.

REFERENCES ON MAPS AND MAP SOURCES

International:

Bergquist, W. E., Tinsley, E. J., Yordy, Laura, and Miller, R. L., 1981, Worldwide directory of national earth-science agencies and related international organizations: U.S. Geological Survey Circular 834, 87 p.

The directory gives the addresses of governmental earth science agencies and major international organizations concerned with earth sciences throughout the world. Code letters indicate the functions of the agencies, two examples are: C=cartography, R=minerals and petroleum regulation.

A directory of societies in earth science, 1985, Geotimes, v. 30, no. 8, p. 8-17.

Every August, Geotimes publishes this listing. It is, therefore, a current listing of addresses and societies for the United States and the world. Since the list is not annotated and is in alphabetical order, it is most helpful as a source for updating addresses.

G. K. Hall & Co., 1983, Bibliographic guide to maps and atlases: Boston, Mass., G. K. Hall & Co., 559 p. (annual publication).

These annual guides list the maps and atlases catalogued by the Research Libraries of the New York Public Library and the Library of Congress for the previous year. Entries are in dictionary card catalog order by subject, author, and geographic location. Petroleum is a subject entry in this book. Annotations are selectively included.

Geocarte Information, 1984- , SGN/DIG, B.P. 6009, 45060 Orleans Cedex, France, Bureau de Recherches Geologiques et Minieres (quarterly publication).

Geocarte Information is a comprehensive country by country compilation of maps in the field of earth sciences. Published quarterly this periodical provides, when available, the information for each country as follows: 1. a bibliography of general geologic literature, 2. useful addresses, 3. a summary of topographic maps (with index maps), 4. a general geographic map, 5. a general geologic map. Regular reports on new maps published world-wide are also provided. All cartographic information, even that published in theses, periodicals and some unpublished sources are included. (Information for this abstract was extracted from a publisher's advertisement, the actual item was not examined).

Kister, K. F., 1984, Kister's atlas buying guide: general English-language world atlases available in North America: Oryx, 236 p.

This guide to atlases heads the Library Journal's April 15, 1985, list of recommended reference books for 1984. Kister reviews, gives full bibliographic citations, and evaluates the content and map quality of 105 atlases. Atlases mentioned in this book are world atlases for general use and are not specifically related to oil and gas. Detailed advice for making informed choices is presented. Appendixes in the book list major sources of map and atlas reviews, articles on cartographic evaluation procedure and techniques, North American publishers and distributors, and out-of-print map and atlas dealers.

Maps available, 1967-1986, Episodes.

"Maps available" was a regular feature in Episodes formerly Geological Newsletter (1967-1985). Maps for one or two countries are listed by subject. This bibliography is historical as well as current and lists all kinds of geological and topological maps. Petroleum maps are listed for the petroleum producing countries. Index maps are sketched for maps that are part of a series. The December 1984 issue of Episodes, vol. 7, no. 4, p. 63, indexes the countries reviewed by the magazine since 1967.

Ward, D. C., Wheeler, M. W., and Bier, R. A., Jr., 1981, Geologic reference sources: a subject and regional bibliography of publications and maps in the geological sciences, Metuchen, N. J., Scarecrow Press, Inc., 2nd ed., 560 p.

This is a standard reference book for geological librarians. It is arranged in three sections: general, subject, and regional. References to maps are in the regional section. Selected entries are annotated and a complete bibliographic citation is given.

Winch, Kenneth L., 1974, International maps and atlases in print: London, Bowker Publishing Co., Ltd., 864p.

The book lists over 700 maps and atlases in print in 1974. Under each geographic area, references are arranged by region, country, and subject. A good index map for each series is included. This book has been the standard buying guide to maps and atlases for the English-speaking world.

United States:

Documents Index, 1983, Guide to USGS geologic and hydrologic maps: McLean, Va., Documents Index, 644 p. (Supplement published in 1984).

This reference book lists over 7,200 thematic maps published by the U.S. Geological Survey through December 1981. It is indexed by area-subject, subject-area, and geographic coordinates. Many maps are annotated, and detailed coordinates are listed for each map.

U.S. State Surveys, 1985, Geotimes, v. 30, no. 8, p. 17-18.

Every August, Geotimes publishes this list of State Geological Surveys. Each listing includes the official name of the Survey, the state geologist, and the current address and phone number. Most states publish maps which are important to petroleum exploration or to the general knowledge of petroleum resources.

COMPUTERIZED BIBLIOGRAPHIC DATABASE SUPPLIERS FOR MAP REFERENCES

American Geological Institute (AGI)
5205 Leesburg Pike
Falls Church, Va. 23041
(203) 379-2480 or -2479
(800) 336-4764 (outside Virginia)

The GEOREF database is a bibliographic file searchable by computer. Coverage is primarily of journal literature. About 6% to 7% of the entries reference maps. Records include a complete bibliographic citation and index terms. References to serials, books, government documents, and theses, will occasionally indicate if sketch maps are included with the regular text. GEOREF is also searchable by the document type map. The database corresponds to several printed indexes the principal ones are the Bibliography and Index of Geology (1969-present) and the Bibliography and Index of North American Geology (1961-1970).

University of Tulsa
Information Services Department
Harwell Hall
600 South College Avenue
Tulsa, Oklahoma 74104
(918) 592-6000, ext. 2295

The TULSA database corresponds to the printed Petroleum Abstracts. Both are produced by the Information Services Division of the University of Tulsa. The majority of this file covers the petroleum literature from 1965 to date. A file of oil and gas field names and geographic locations was added to search the literature dating from 1920 to 1965. TULSA is searchable by the document type maps.

ATLASES

International

Bally, A. W., ed., 1983, Seismic expression of structural styles, a picture and work atlas: Tulsa, Oklahoma, American Association of Petroleum Geologists, AAPG Studies in Geology Series no. 15, 3 vols.

A picture and work atlas for the geologist who needs to gain a greater appreciation of reflection seismology. Reflection profiles and their structural interpretations were selected from a variety of basins around the globe, both on-shore and off-shore to illustrate four basic subject areas of

structural geology: 1. Primary structures, structures which are not noticeably deformed. 2. Soft-sediment tectonics or gravity induced tectonics. 3. Tectonics of compressional provinces, e.g. folded belts. 4. Strike-slip tectonics. This is the first comparative atlas of seismic lines to be published. It is a valuable teaching aid.

Economic Commission for Asia and the Far East, 1970, Energy atlas of Asia and the Far East: New York, United Nations, 25 p.

This atlas includes maps supplied by the member countries for all types of energy resources at the end of 1968: oil, gas and coal fields, oil refineries, electric power generating stations, potential hydroelectric sites, high voltage electric power lines and pipelines. Not all countries in the region are included. Statistics for 1967 on annual consumption and generating capacity are also included.

Environmental Monitoring and Support Laboratory, Remote Sensing Division and Monitoring Operations Division, 1977, Western energy/environment monitoring atlas: interagency energy/environment research and development program report: Las Vegas, Nevada, U. S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory EPA-6001-7-77-047a, 30 p.

Geographic coverage is for the United States and Canada. Maps are satellite images of the western United States. Western power and fuel plants, proposed and present plants, strip mines, geothermal resource areas, national weather stations, and regional air and water quality are shown.

United States:

Cuff, D. J. and Young, W. J., 1980, The United States energy atlas: New York, New York, The Free Press, 416 p.

The latest edition of this atlas is 1985. The atlas covers both nonrenewable and renewable energy resources, including oil and gas. The atlas is mostly text but is copiously illustrated with statistical tables, graphs, maps, photographs and diagrams. The maps summarize state and regional information relevant to cumulative production, remaining recoverable resources, reserves for individual reservoirs, undiscovered recoverable oil and gas in place, oil in place by reservoir rock, types of traps, recovery rates from known reservoirs by state, estimated ultimate recovery, enhanced recovery potential, pipelines, refinery

receipts by PAD district, areas with potential for unconventional gas e.g. Western tight gas sands and Appalachian shales, interstate shipments, states with net receipts and with net deliveries, terminals for LNG imports, deposition of crude oil from Alaska, routes for Alaskan gas and crude oil.

Galloway, W. E., Ewing, T. E., Garrett, C. M., Tyler, N., and Bebout, D. G., 1983, Atlas of major Texas oil reservoirs: Austin, Tex., University of Texas, Bureau of Economic Geology, 139 p.

Probably the most useful atlas now available for the areas covered. Maps on structure, stratigraphy, fluid contacts, depositional systems, and isopach are featured. Cross sections and geologic columns are also represented. Statistical information on reservoir properities, porosity, API gravity, initial reservoir pressure and temperature, initial gas-oil ratio, cumulative production and projected ultimate recovery are presented.

Gries, R. R. and Dyer, R. C., 1985, Seismic exploration of the Rocky Mountain region: Denver, Colo., Rocky Mountain Association of Geologists and the Denver Geophysical Society, 300 p.

Seismic lines across the major basins and producing provinces of the Rocky Mountains are interpreted to show structural styles, seismic stratigraphy, and regional basin configurations.

Mallory, W. W., ed., 1972, Geologic atlas of the Rocky Mountain region: Denver, Colo., Rocky Mountain Association of Geologists, 331 p.

This classic atlas has been recently reprinted. It includes correlation charts, paleogeography and paleoenvironment maps, and isopach and lithofacies maps for each group of rocks mapped. An index of the oil and gas basins is included; a plastic master overlay sheet showing counties is provided.

United States Geological Survey, 1970, The National atlas of the United States: Washington, D. C., USGS, 417 p.

Each map focuses on subjects of national importance. Topics of importance to the oil and gas industry are the manufacturing of petroleum and coal products, oil and natural gas pipelines, organic fuel deposits, oil shale and tar sand deposits, oil and gas fields, tectonic features, and federal land status. Some of the other topics covered include

climate, agriculture, administration, business, geology, history, land forms, mapping and charting, mineral and energy resources, soils, transportation, and water.

MAPS

World

Congres Geologique International, Commission de la Carte Geologique du Monde, Sous-Commission de la Carte Tectonique du Monde (International Geological Congress, Commission for the Geological Map of the World), 1964, Carte tectonique internationale de l'Europe (International tectonic map of Europe): Moscow, Nedra, the Congres Geologique International, scale 1:2,500,000, 16 map sheets, color.

A 360 page French and English text entitled, Explanatory note to the International tectonic map of Europe edited by A. A. Bogdanoff, M. V. Mouratov, N. S. Schatsky, gives a detailed explanation of geologic settings. A useful map for the exploration geologist illustrates sediment thicknesses and age of sedimentary cover, and salt domes for the entire world.

Coury, A. B., Hendricks, T. A., and Tyler, T. F., 1978, Map of prospective hydrocarbon provinces of the world: U. S. Geological Survey Miscellaneous Field Studies Map MF-1044 A-C, scale 1:20,000,000, 3 map sheets.

This is the standard reference work for the sedimentary basins of the world. This map is the only one on an equal-area base; this makes it possible to compare areas of basins in the Arctic to basins near the equator.

PennWell Maps, 1984, World sedimentary basins: Tulsa, Okla., PennWell Publishing Co., scale 1:27,500,000, 1 map sheet, color.

This map locates and names the basins. The map projection is Mercator and therefore the relative sizes of the basins are distorted, making this map unsuitable for geological research that requires comparison of basin sizes and the planimetry of areas.

St. John, Bill, compiler, 1980, Sedimentary basins of the world: Tulsa, Oklahoma, American Association of Petroleum Geologists, scale 1:40,000,000, 1 map sheet, + 23 p. text, color.

All basins are named on the map, lines are drawn from the name of the basin to the basin. Basins are keyed as nonproductive and productive from giant oil and gas fields to subgiant oil and gas fields. The text lists field names and oil and gas production for each field by country and by basin.

Individual countries

AFRICA

Choubert, G. and Faure-Muret, A., 1969, Carte tectonique internationale de l'Afrique (International tectonic map of Africa): Paris, France, UNESCO-ASGA, scale 1:5,000,000, 9 map sheets, 54 p. text [French and English].

A compilation of tectonic maps of countries and continents. Maps that give subsurface information on sediment thickness and the age of sedimentary cover, as this one does, are rare. This map also defines salt domes. Both of these features are useful for the exploration geologist who needs to locate likely petroliferous areas. The first map compilation to subdivide the Precambrian according to geochronologic data based on radiometric results. Other features on the map are major fault zones, volcanism, and a bibliography included in the text.

Offshore, Mista Drafting Co., 1981, Concession map of West Africa: Houston, Tex., Offshore, Mista Drafting Co., scale 1:2,825,000, 1 map sheet, color.

A map showing and naming oil and gas fields. Well locations and concessions by owner are depicted. Cumulative oil production summary of data by country is given. Information for this map was supplied by Petroconsultants.

ARGENTINA

Ludwig, W. J., Carpenter, G., Houtz, R. E., Lonardi, A. G., Rios, F. F., 1978, Sediment isopach map, Argentina continental margin and adjacent areas: AAPG, no scale given, 1 map sheet.

Five basins are named and their areal extent depicted.

ASIA

Bhandari, L. L., Raju, A. T. R., Datta, A. K., and Chaube, A. N., 1975, Oil and natural gas map of Asia, 2nd ed., rev. : Bangkok, Thailand, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), scale 1:5,000,000, 4 map sheets, color.

This is one of several excellent reference and research maps that the United Nations has published. Thicknesses of sedimentary rocks, areas with significant hydrocarbons, crystalline rocks, faults, and volcanoes are represented. Production from various oil and gas fields are symbolized on the map. Refineries, pipelines, towns, and railroads are also mapped.

The United Nations Economic Commission for Asia and the Far East (ECAFE), 1962, Oil and natural gas map, Asia and the Far East: E.C.A.F.E, scale 1:5,000,000, 4 map sheets.

Oil and gas fields are named and identified with a symbol indicating producing capacity. Sediments are classed and thicknesses are also shown. Pipelines for oil and gas are also represented. The sediments could have been described in more detail; these representations are largely generalizations. The projection used is the Lambert conical orthomorphic.

AUSTRALIA

Australia Bureau of Mineral Resources, Geology and Geophysics, 1979, Petroleum and oil shale, in BMR Earth Science Atlas of Australia: Canberra, Australia Bureau of Mineral Resources, Geology and Geophysics, scale 1:10,000,000, 2 map sheets, color.

A useful general reference map with an explanatory text written for non-geologists. Some of the more significant fields are discussed. Oil and gas field names but not the outlines are included. The age of the more significant fields is shown as a graph. Another graph summarizes reserves of oil and gas. Additional information includes refineries, pipelines, towns, railroads, volcanoes and faults.

Australia Bureau of Mineral Resources, Geology and Geophysics, Department National Development and Energy, 1981, Petroleum exploration and development titles: Canberra, Australian Bureau of Mineral Resources, Geology, and Geophysics, scale 1:5,000,000, 1 map sheet, + 69 p. text, blue line.

This map is one representative of a continuously updated series. It shows Australia's states, water drainage, and major cities. Areas subject to all types of authorities: permits, licenses, and leases regardless of the specific names given to them by the various states and territories. The expiration date of the current tenue is given. The map is accompanied by an explanatory text, "Key to petroleum exploration and development titles."

BRAZIL

Kumar, N., Leyden, R., Caravallo, J., and Francisconi, 1979, Sediment isopachs, continental margin of Brazil: AAPG, no scale given, 1 map sheet.

Isopach contours are given in kilometers; the information used to draw these contours came form single channel seismic reflection profiles. Additional geological information includes bathymetric contours and areal extent of basement outcrops. Ship tracks of the vessels which supplied the single channel seismic reflections are indicated.

CANADA

Geological Survey of Canada, 1982, Oil pools of western Canada: Geological Survey of Canada Map 1559A, scale 1:1,013,760, 2 map sheets, color.

A superb cartographic product which includes a cross section, tabulated data on recoverable reserves of selected pools or fields and selected references. Oil fields are depicted and named.

CHINA

Asian Research Service, 1984, China's hydrocarbon potential: Hong Kong, Asian Research Service Current Data Map: China, scale 1:150,000,000, 1 map sheet, color.

A small scale reference map. A table summarizes types of basins, basin sediments and geologic age. Companies that have contracted for offshore areas are identified. Oil production and refining capacity are represented.

Chen, Cheng-siang, 1979, Oil and gas map of China, 1979: Petroleum News Southeast Asia, Ltd., scale 1:8,000,000, 1 map sheet, color.

This is useful as a wall map for general reference. Oil and gas fields are named and located by symbols which indicate approximate production per 1000 metric tons. Major pipelines, refineries and their approximate capacity, oil ports, provinces, major cities, and connecting railways are labeled.

EUROPE

Cook, Hammond, and Kelly, 1982, The Oilman, European oil and gas map: London, England, MacLean Hunter Ltd., scale 1:2,250,000, 1 map sheet, color.

Updated annually, a map with many advertisements on either side of the map border. Oil and gas fields are illustrated and named. Pipelines and concessions are shown.

Noroil Publishing House, 1983, North Western European continental shelf: Stavanger, Norway, Noroil Publishing House, scale 1:1,700,000, 1 map sheet, color.

Prepared for Den Norske Credit Bank by Kirkegt. 21, Oslo 1, Norway, by Noroil Publishing House. The map is easy to read. Bathymetry is shown by gradient tints from white to dark blue. Lease tracts and oil and gas fields are illustrated. Oil companies that own the concessions are named on each leased tract. Pipelines are shown.

Schoneich, H. (Bearbeiter), 1980, Das Erdgas-verbund system in Europa (The oil and gas pipeline system in Europe): [Hannover, Niedersaches Landesant fur Bodezorschung, Hannover, scale 1:9,500,000, 1 map sheet.

Oil and gas pipelines are named and drawn in red on a pale blue and white background. Major cities are clearly depicted. A useful map for seeing the European pipeline network, including parts of the U.S.S.R.

United Nations, 1972, International map of natural gas fields in Europe: Berlin, Germany, Committee on Gas, and Bundesanstalt fur Bodenforschung, scale 1:2,500,000, 9 map sheets, color.

Basins and gas fields are illustrated and named. Fields are shown to be producing or depleted, data on reserves of natural gas are presented,. Well locations and sediment thicknesses also are illustrated.

Offshore Promotional Services Limited, 1979, Ireland and western approaches, oil and gas activity and concessions map, 1979: Maidenhead, Berkshire, England, scale 1:1,000,000, 1 map sheet, color.

Portrays onshore geology by use of color coded age. Names of oil and gas fields, well locations, pipelines, and concessions, concession owners and bathymetry are shown. There are some advertisements around the borders.

JAPAN

Ida, Kazuyoshi and Yasumuro, Yutaka, 1959, Distribution map of oil and gas fields in Japan: Geological Survey of Japan, scale 1:2,000,000, 1 map sheet, color.

History of crude oil and natural gas production and consumption is presented in graphs. Possible and probable productive areas, Cenozoic and Cretaceous sedimentary rocks and basement areas, are color coded. Triangles depict oil and gas production. Fields are named as part of larger areas.

Yazaki, Kiyotawa, 1976, Distribution of oil and gas fields in Japan (including offshore areas): Geological Survey of Japan, scale 1:2,000,000, 1 map sheet.

This map updates the 1959 map. Diagrams on the map illustrate cumulative production by province. The map colorfully portrays prospective areas, sedimentary basins, and areas covered by thin Cenozoic sediments. Areas covered by pyroclastics, shallow basement areas, oil and gas fields, pipelines, proposed pipelines, and structural features, plus the location of exploratory wells are all illustrated. Oil and gas fields are named and outlined. Insert maps include the following: 1. Akita and Yamagata Perfecture, 2. Nigata Perfecture, and 3. Ryuku Islands. An excellent map with much usefull information.

MIDDLE EAST

GEOprojects, 1980, The Oxford map of Arabia, Kuwait, Saudi Arabia, Bahrain, Qatar, Sultanate of Oman, United Arab Emirates, Yemen Arab Republic, People's Democratic Republic of Yemen: Beirut, Lebanon, GEOprojects, scale 1:3,000,000, 1 map sheet.

This attractive reference map shows highways, pipelines, and names and approximate locations of oilfields.

Graham and Trotman Ltd., 1980, Business map of the Arab world: London, United Kingdom, Graham and Trotman Ltd., 3rd ed. (rev.), scale 1:8,865,000, 1 map sheet, color.

Pipelines and oil and gas fields are shown, some are named. Oil refineries, airports, and ports are indicated with symbols. Mauritania, Algeria, Morocco, Libya, Egypt, Sudan, Saudi Arabia, and Somalia are covered.

Gulf Publishing Company, 1978, The Middle East and eastern Mediterranean: Houston, Texas, Gulf Publishing Co., scale 1:3,300,000, 1 map sheet.

A reference and topographic map illustrating the names and locations of the oil and gas fields and the location of pipelines, airports, and tanker terminals.

PennWell Maps, 1983, Middle East oil and gas: Tulsa, Oklahoma, PennWell Maps, scale 1:4,500,000 and 1:1,600,000, 1 map sheet, color.

Outlines and names oil and gas fields. Pipelines are shown. There is an enlarged map of the Arabian-Persian Gulf region. Key names of oil and gas fields, pipelines, oil refineries, gas processing plants and petrochemical plants are represented.

NORTH SEA

British Petroleum Company, Ltd., 1982, License areas - North Sea and N. W. Europe continental shelf: London, England, British Petroleum Co., scale 1:1,700,000, 1 map sheet.

This is one of many maps available for the North Sea; it is unique in that a table on giving estimated reserves and date of the initial production is included by field. Concession blocks, names of concession holders, well locations, pipelines, outlines and names of fields are also illustrated.

Offshore Promotion Services Ltd., 1979, North Sea and European continental shelf, oil and gas activity and concession map: Maidenhead, Berkshire, England, scale 1:1,000,000, 1 map sheet, color.

The large scale makes this map easily and clearly understood. Pipelines are drawn out, well locations are plotted, fields are outlined and named. Concessions are plotted out and labeled. Geologic age onshore is shown in vivid color.

UNITED STATES

Frezon, S. E., Finn, T. M., 1983, Location and names of basins in the conterminous United States: U.S. Geological Survey Open-File Report 83-919.

This map shows the areal extent of sedimentary basins of the United States as named by the U.S. Geological Survey.

Frezon, S. E., Finn, T. M., and Lister, J. H., 1983, Total thickness of sedimentary rocks in the conterminous United States: U.S. Geological Survey Open-File Report 83-920.

Some of the information on this map is not available from any other source. There are some gaps in our knowledge of the subsurface, this map reflects those gaps and yet it is such a complete synthesis of the information now available that it would be helpful to any exploration geologist.

Smith, Donald, 1977, Oil and gas production map of the United States: Denver, Colorado, Terra Graphics, scale 1:3,168,000, 1 map sheet.

A wall map usefull for quick reference. The scale is too small for field names. Oil and gas fields, sedimentary basins, and basement rock are all clearly presented. Counties, township and ranges help identify exact field and basin locations. Basins are named on the map.

UNITED STATES - OFFSHORE

PennWell Maps, 1983, Texas Gulf Coast oil and gas: Tulsa, Okla., PennWell Publishing Co., scale 1:500,00, 1 map sheet, color.

This map shows the offshore concession areas as a grid. Concessions are numbered and the owners are noted. Oil and gas fields are shown for onshore and offshore areas. Field names are provided for oil fields with over 200 million barrels of production and for gas fields with over 1.2 trillion cubic feet of production. Inactive fields are also shown. Oil discoveries, gas discoveries, and oil and gas discovery wells are symbolized. Crude oil, natural gas, and product pipelines are all illustrated and numbered by operator. Oil refineries, gas processing plants, and petrochemical products are named by company and city. Tanker ports, single-well plat platforms, multi-well platforms, and a pump/compressor station are also noted. Texas railroad districts and county boundaries are outlined.

Stanley, M. F. and Evans, R. W., 1983, Map of Texas Gulf Coast and continental shelf showing natural gas pipe lines: Houston, Texas, Transcontinental Gas Pipe Line Corporation, Transco Exploration Partners LTD, scale 1:500,000, 1 map sheet, color.

The map colorfully illustrates Transco's natural gas pipelines as well as oil and gas fields, onshore and offshore. A grid of the offshore lease tracts shows the owners and the amount paid but not the dates the leases expire for each tract. These maps are updated and reissued after every other lease sale and are a reliable reference source.

Transcontinental Gas Pipe line Corporation, Transco Exploration Company, 1982, Map of New Jersey area and Baltimore Canyon showing natural gas pipe lines: Houston, Texas, Transco Companies Inc., scale 1:400,000, 1 map sheet, color.

The map illustrates Transco's pipelines, the offshore lease tracts, amount paid for tracts and companies that own specific tracts. Well locations and dry holes are illustrated. Bathymetry is shown.

Transcontinental Gas Pipe Line Corporation, Transco Exploration Company, 1980, Map of North Atlantic showing Georges Bank area: Houston, Texas, Transco Companies Inc., scale 1:400,000, 1 map sheet, color.

The map illustrates Transco's pipelines, the offshore lease tracts, amount paid for tracts and companies that own specific tracts. Well locations and dry holes are illustrated. Bathymetry is shown. This map will not be updated due to lack of activity in this area.

Transcontinental Gas Pipe Line Corporation, Transco Exploration Partners, Ltd., 1984, Map of south Louisiana and continental shelf showing natural gas pipe lines: Houston, Texas, Transco Energy Company and Subsidiaries, scale 1:400,000, 1 map sheet, color.

The map illustrates Transco's pipelines, the offshore lease tracts, amount paid for tracts and companies that own specific tracts. Well locations and dry holes are illustrated. Bathymetry is shown.

Transcontinental Gas Pipe Line Corporation, Transco Exploration Partners Operating Company, 1983, Map of western and central (Texas and Louisiana) Gulf of Mexico showing natural gas pipe lines and crude oil pipe lines: Houston, Texas, Transco Energy Company, scale 1:760,320, 1 map sheet, color.

This is a combination of the Texas and Louisiana maps listed above at a reduced scale, the same data is shown.

Transcontinental Gas Pipe Line Corporation, Transco Exploration Company, 1980, System map showing gas supply and sales area: Houston, Texas, scale 1:2,500,000, 1 map sheet, color.

The offshore is marked off into numbered lease tracts. Tracts which are leased are labeled with the company name of the lease holder, the amount paid for the lease, month and year the lease expires, and well locations. Bathymetry is indicated with contour lines. Map coverage is of the Atlantic Coastal Plain from Maine to Florida and from the Gulf Coast of Florida to Texas.

Tucholke, B. E., Houtz, R. E., and Ludwig, W. J., 1982, Maps of sediment thickness and depth to basement in the western North Atlantic ocean basin: Tulsa, Oklahoma, American Association of Petroleum Geologists, scale 1"=1°, 2 map sheets and 16p. text, color.

The text documents the sources of data and technique of mapping used in the map. The isopach map of sediments and depth to basement map are in color. A useful map to identify basins.

Individual states

ALABAMA

Geological Survey of Alabama, 1981, Oil and gas fields in Alabama: University, Alabama, Geological Survey of Alabama, scale 1:500,000, 1 map sheet, black and white.

The areal extent of oil and gas fields is shown. Fields and counties.

ALASKA

Ehm, Arlen, compiler, 1983, Oil and gas basins map of Alaska: Fairbanks, Alaska, Alaska Division of Geological and Geophysical Surveys Special Report 32, scale 1:2,500,000, 1 map sheet, color, Albers Equal Area proj.

Each sedimentary basin is named and contoured. Cross sections and seismic profiles are shown for each basin. Sedimentary sequences are identified on the cross sections. Faults and significant wells are located.

Munger, A. H., ed., 1985, Munger map book: California--Alaska, oil and gas fields: Los Angeles, California, various scales, 1 spiral bound volume.

This atlas is issued every May 15th, updated to March 1st of the same year. Oil, gas and geothermal fields on and offshore in California and Alaska are shown. Well locations, current drilling activity, and dry holes are depicted. The 1985 edition has eighty pages of wildcat areas.

CALIFORNIA

California Division of Oil and Gas, 1981, Energy map of California: California Division of Oil and Gas, scale 1:1,000,000, 1 map sheet, color.

Oil and gas pipelines and oil and gas fields are illustrated and named. Sedimentary basins are shaded but not named. Also shown are shipping lanes, refineries, geothermal power plants, fossil fuel generating plants, nuclear power plants and hydroelectric plants.

COLORADO

Scanlon, A. H., 1983, Oil and gas fields map of Colorado: Denver, Colorado Geological Survey Map Series 22, scale 1:500,000, 1 map sheet, color.

The areal extent of sedimentary basins and of Precambrian rocks exposed at the surface are drawn. Oil and gas fields are outlined and named. The producing formations for each field are named and listed by geologic time to the side of the map. Pipelines, refineries and plants are illustrated. References are included.

MAPCO, INC., 1979, Oil and gas development maps of Colorado: Denver, Colorado, MAPCO Diversified Inc., 56 maps, 1 index map, and 1 correlation chart with producing horizons for Utah, Montana, Wyoming, Colorado, New Mexico, Nebraska, and Kansas, black and white.

Each map has a township and range grid on which all the well locations including dry holes and producing wells are shown.

ILLINOIS

Meents, Wayne F., 1977, Oil and gas industry in Illinois, 1977: Illinois State Geological Survey, scale 1:500,000, 1 map sheet.

Oil and gas fields are shown but not named. Oil and gas pipelines are shown and named. Oil refineries and underground storage are located.

INDIANA

Carpenter, G. L. and Sullivan, D. M., 1976, Map showing oil, gas, and gas storage fields in Indiana: Indiana Geological Survey Miscellaneous Map no. 21, scale 1:500,000, 1 map sheet, color, Lambert Conformal Conic Proj.

The areal extent of oil and gas fields is shown and they are named. A township and range gride is used. Gas storage sites and underground storage sites for liquified petroleum gas are also shown.

KANSAS

Paul, S. E., Li-Hue Chang, and Burt, Sarah, 1982, Oil and gas fields in Kansas: Kansas Geological Survey Map M-17, scale 1:500,000, 1 map sheet, color.

Oil and gas fields are colored and named on the map. Also keyed in are underground natural gas storage areas and shallow gas reservoirs.

KENTUCKY

Schwalb, H. R., Wilson, E. N., and Sutton, D. G., 1976, Oil and gas map of Kentucky: Lexington, Kentucky Geological Survey, University of Kentucky Series X, 1971, scale 1:250,000, 4 map sheets (folded), color.

Oil and gas fields are outlined, shaded, and named. Pool data consisting of name, name of producing formation, approximate depth of formation, county, coordinates, discovery date, date abandoned, and date revived is listed on the map. Faults are shown. Ten subsurface sections are included. Oil producing zones are identified on the cross section and specific pool names are referenced to coordinate this information.

LOUISIANA

Louisiana Geological Survey, 1981, Oil and gas map of Louisiana: Department of Natural Resources, scale 1:380,160, 1 map sheet, color.

A superior format to most state maps, well outlined county boundaries. Producing and depleted oil and gas fields are named and coded by color. Pipelines, refineries, gasoline plants, carbon black plants and secondary recovery and/or pressure maintenance plants are shown. A printed index, "Resources information series no. 3," accompanies this map.

Louisiana Geological Survey, 1981, Offshore Louisiana oil and gas map: Department of Natural Resources, scale 1:380,160, 1 map sheet.

A sister map to the "Oil and gas map of Louisiana." The scale of these maps is unusual and a scientist may want to work with a map with a more acceptable scale like the Transco maps.

Louisiana Geological Survey, 1980, Parish atlas of Louisiana oil and gas fields: Louisiana Geological Survey Folio Series no. 4, 64p, black and white.

A map for each parish showing areal extent of oil producing and depleted oil and gas fields, and wildlife management areas. All parish maps are of a uniform scale, 1:250,000, and include a township and range gride. A generalized geologic map that depicts the location of salt domes and parish boundaries is included. A composite columnar section of Louisiana is also included.

MISSISSIPPI

Mississippi State Oil and Gas Board, 1984, Oil and gas map of Mississippi: The Board, scale 1:870,000, 1 map sheet.

Refineries, salt domes, oil and gas pipelines, and oil and gas fields are named and numbered. The one drawback of this map is that the scale is odd therefore making it a difficult task for the researcher to use. The Mississippi Bureau of Geology publishes the map, Economic Minerals map of Mississippi, which is at a scale of 1:500,000, it shows but does not name the oil and gas fields.

Mississippi State Oil and Gas Board, 1985, Oil and gas field maps of Mississippi, year ending December 31, 1984: Jackson, Mississippi, Mississippi State Oil and Gas Board, scale varies, 126p., black and white.

Updated annually this atlas locates oil and gas well locations on a township and range gride. Drilling units and claim boundaries are outlined and identified. Drilling depth is given for selected fields. Issued as a companion volume to the Mississippi oil and gas production annual report.

MISSOURI

Netzler, Bruce W., 1978, Oil and gas fields of Missouri: Missouri Department of Natural Resources, Division of Geology and Land Survey OFM 81-54-OG, scale 1:500,000, 1 map sheet, blue line.

Western Missouri and the St. Louis area are depicted. Pools are outlined and named on the map. Abandoned gas and oil pools and producing oil pools are graphically distinguished.

MONTANA

Cole, G. A., Berg, R. B., Cromwell, V. A., and Sonderegger, J. L., compilers, 1982, Energy resources of Montana: Montana Bureau of Mines and Geology Geologic Map 28, scale 1:500,000, 2 map sheets.

An attractive set of maps prepared in cooperation with the U. S. Geological Survey. The areal extent of Tertiary sediments, the Permian Phosphoria Formation, and the Precambrian are shown. Oil and gas fields, pipelines, coal deposits, possible coal deposits, oil shale, uranium, and thorium are all depicted.

NEBRASKA

Nebraska Geological Survey, 1981, Nebraska deep well and oil-gas field location map: Lincoln, Nebraska Geological Survey, scale 1:500,000, 1 map sheet, blue line.

Oil fields, stratigraphic tests and well locations for oil and gas and for dry holes are shown. The map is updated every 4 to 6 months.

NEVADA

Garside, J. L. and Schilling, J. H., 1977, Wells drilled for oil and gas in Nevada through 1976: Nevada Bureau of Mines and Geology Map 56, scale 1:1,000,000, 1 map sheet and supplement.

Each well is located, named and the completion date and total depth are given. "List of wells drilled for oil and gas 1 January 1977 through the present" is included.

NEW MEXICO

U.S. Geological Survey and New Mexico Bureau of Mines and Mineral Resources, 1981, Energy resources map of New Mexico: U.S. Geological Survey Miscellaneous Investigation Series I-1327, scale 1:500,000, 1 map sheet.

Pipelines and oil and gas fields are shown in color. Age of producing formations are noted. Precambrian outcrops and igneous intrusions are also illustrated. Selected references are listed.

NEW YORK

Peterson, J. C. and Van Tyne, A. M., 1979, Oil and gas fields in New York -- as of July 1978: [Albany, New York], New York State Museum and Science Service, Geological Survey, Alfred Oil and Gas Office, and Washington, D. C., U. S. Department of Energy, Eastern Gas Shales Project series no. 102, scale 1:250,000, 2 map sheets, blue line.

The valuable feature of this map is that in addition to outlining and naming the oil and gas fields, the producing formations of these fields and pools are also labeled. The large scale allows for more detailed attention to the smaller pools.

NORTH DAKOTA

North Dakota Geological Survey, 1981, Oilfields in North Dakota: North Dakota Geological Survey, scale 1:500,000, 1 map sheet and 1 sheet listing names of oil and gas fields and pools, blue line.

Counties and oil and gas fields are outlined and names on a township and range guide of the state.

OHIO

Ohio Department of Natural Resources, Division of Geological Survey, 1981, rev. from 1974 map, Oil and gas fields of Ohio (including underground storage areas): Ohio Geological Survey, scale 1:500,000, 1 map sheet, color.

Fields are numbered and named, discovery dates, average depth, and producing strata are listed for each field. Liquified petroleum and natural gas underground storage areas are named, dated and their formation and depth are given. A representation of the geologic rock column and a composite gamma ray neutron log are shown for the state. A good map, printed on good paper. The back of the map gives location and depth of wells by county.

OKLAHOMA

Burchfield, M. R., 1985, Map of Oklahoma oil and gas fields: Norman, Oklahoma Geological Survey Map GM-28, scale 1:500,000, 1 map sheet, color.

The areal extent of oil and gas fields is shown on a township and range guide. Each field is numbered and named. A selected number of abandoned fields is shown and labeled. Information on this map is based on current production.

Oklahoma Oil Maps, Inc., 1984, State of Oklahoma pool and dry hole map for 1984: Oklahoma City, Oklahoma, Oklahoma Oil Map Inc., scale 1:338,000, 1 map sheet, blue line.

This maps show locations for producing and abandoned wells, field names, and the areal extent of pools, along with a township and range grid. Information on this map is based on current production, historical information, and individual well locations.

PENNSYLVANIA

Harper, J. A., Laughrey, C. D., and Lytle, W. S., 1982, Oil and gas fields of Pennsylvania; Commonwealth of Pennsylvania, Topographic and Geologic Survey Map 3, scale 1:250,000, 2 map sheets, color.

This map includes names and locations of oil and gas fields, names and drillers terms for producing formations and sources of data.

TEXAS

St. Clair, A. E., Evans, T. J., and Garner, L. E., 1981, Energy resources of Texas, 1976: Austin, The University of Texas, Bureau of Economic Geology, scale 1:1,000,000, 1 map sheet, color.

The areal extent of oil and gas fields and basins is indicated. Names and well locations for oil and gas fields are not given. Pipelines, electric power plants, uranium, coal and potential geothermal resources are illustrated. Bibliographic citations for sources of data are listed.

UTAH

Brown, K. W. and Ritzma, H. R., 1982, Oil and gas fields and pipelines of Utah: including the thrust belt area of southwestern Wyoming: Utah Geological and Mineral Survey Map 61, scale 1:750,000, 1 map sheet, color.

Sedimentary basins and oil and gas fields are outlined and named.

VIRGINIA

Le Van, D. C., and Harris, W. B., 1971, Mineral resources of Virginia: Virginia Division of Mineral Resources, scale 1:500,000, 1 map sheet, color.

Oil and gas fields are shown but not named.

WEST VIRGINIA

Cardwell, D. H. and Avary, K. L., 1982, rev., Oil and gas fields of West Virginia: showing structural axes and depths to producing zones: West Virginia Geological and Economic Survey, scale 1:250,000, 2 map sheets, color.

The odd scale of this map allows for more detail than is usual in state maps of oil and gas fields. Faults and thrust faults are shown. The areal extent of oil and gas fields is shown. Fields are numbered and named by number. A cross section is included. The map accompanies the report 'Oil and gas fields of West Virginia,' no. MRS-7.

WYOMING

Stephenson, T. R., Ver Ploeg, A. J., and Chamberlain, L. S., 1984, Oil and gas map of Wyoming: Geological Survey of Wyoming Map Series 12, scale 1:500,000, 1 map sheet, color.

The areal extent of oil and gas fields, sedimentary basins, the thrust belt, oil shale bearing strata and Precambrian rock exposed at the surface are shown on a township and range grid. Fields are named and the producing formations of each field identified by age and name of formation. Refineries, gas processing plants, and pipelines are shown and named. A structural index map insert and selected references are included.

PROFESSIONAL SOCIETIES INVOLVED IN PUBLISHING OIL AND GAS MAPS

International:

American Association of Petroleum Geologists
P.O. Box 979
Tulsa, Okla. 74101
(918) 584-2555

The maps produced by the American Association of Petroleum Geologists (AAPG) are usually of good quality and variety. The AAPG Bulletin regularly includes maps. Products include the seismic line series of the Southern Gulf of Mexico and the Blake Continental Margin, with accompanying text and interpretive material. AAPG also publishes map packages for the Commission for the Geological Map of the World. These map packages include tectonic and metamorphic maps and the Geologic World Atlas which consists of 22 map sheets at a scale of 1:10,000,000. Another global study is "Sedimentary basins of the world" by Bill St. John. "Seismic expression of structural styles: a picture and work atlas" edited by A. W. Bally is a widely acclaimed three-volume set that interprets seismic stratigraphy around the globe. Four map sets for the Argentine and Brazilian continental margin include information on baythymetry, sediment thickness, magnetic anomalies, and gravity anomalies. Brian E. Tuchoke and others have prepared maps of sediment thickness and depth to basement in the western North Atlantic ocean basin. Map are accompanied by a sixteen page text. The long awaited "Correlation Of Stratigraphic Units of North America" (COSUNA) charts are available through AAPG. Sixteen COSUNA charts offer stratigraphic correlation of rock units in the United States by region.

Geological Society of America
P.O. Box 9140
Boulder, Colo. 80301
(303) 447-2020

Geological Society of America (GSA) has many fine geologic cross maps and sections for selected areas in the United States. Bathymetric maps of the parts of the Pacific and Atlantic ocean and bouguer gravity maps of inland waters are presently available. GSA publishes a publications catalog which indexes and describes each product.

United States:

Interstate Oil Compact Commission
900 Northeast 23rd Street
P.O. Box 53127
Oklahoma City, Oklahoma 73152
(405) 525-3556

The Interstate Oil Compact Commission, in association with State oil and gas agencies, publishes an annual directory of State oil and gas agencies. Many of these agencies publish oil and gas maps.

Society of Exploration Geophysicists
P.O. Box 3098
Tulsa, Oklahoma 74101
(918) 743-1365

SEG publishes the "Gravity Anomaly Map of the United States: exclusive of Alaska and Hawaii" (1982) at a scale of 1:2,500,000. Gravity values for onshore and offshore areas are covered. The digital files of the U.S. Defense Mapping Agency were the primary source of information for this map.

COMPANIES INVOLVED IN PUBLISHING OIL AND GAS MAPS

International:

Geo Center
Geo Katalog, 2 v. annual.
D7000 Stuttgart 80 Vaihingen
Honigwiesen Str 25
Postfach 80 08 30
Germany

Geo Center is an international map selling firm which publishes a two volume annual catalog, Geo Katalog, containing entries in German. Aeronautical charts are included. Advertisements for commercial map publishers are indexed.

Geoscience Resources
2990 Anthony Road
Burlington, North Carolina 27216-2096
(800) 742-2677

Geoscience Resources has a large inventory of geological and petroleum maps including U.S. and foreign maps available from many different sources, state surveys, USGS, and foreign map sources are included. A catalog of their products is available.

Gulf Publishing Company
Book Division
P.O. Box 2608, Dept. AR
Houston, Texas 77001
(713) 520-4444

Gulf Publishing Company has released a geologic map of China, scale 1:4,000,000. They also publish six Asian oil and gas maps for onshore and offshore areas. Gulf also puslishes the Ocean Margin Drilling Program Regional Atlas Series by the Joint Oceanographic Institutions, Inc. These atlases show information on bathymetry, gravity, magnetics, tectonics, and geology; cross sections and seismic reflection sections are included. Atlases range from 20 to 50 pages in length and are of uniform size. Coverage will eventually include all continental ocean margins.

Offshore Promotional Services Ltd.
Maidenhead, Berkshire, England
Telephone: Maidenhead (0628) 73133
Telex: 848717

Products portray oil and gas activity and concessions in the North Sea, English Channel, Irish Sea and western approaches to England, and the Norwegian Sea. Maps show geology, names of fields, well locations, pipelines, concession owners, areal extent of concessions, and bathymetry. Their maps are distributed by PennWell in the United States.

PennWell Maps
P.O. Box 21288
Tulsa, Okla. 74121
(918)663-4225

PennWell sells pipeline maps, oil and gas field maps, basin maps, and a map of the principal structural features of Oklahoma. The coverage is primarily of the world and the United States, but some regional coverage of the United States and foreign areas is also available. PennWell distributes two atlases: the "North Sea and north 62^{o} atlas" published by Oilfield Publishers Ltd. and "Ryder's standard geographic reference: satelite photo atlas of the U.S."

Petroconsultants Ltd.
P.O. Box 228
1211 Geneva 8
Switzerland
Telephone 368811

Petroconsultants publishes weekly, monthly, semi annual, and annual reports and maps of every geographic region in the world except for the continental United States. Concessions, well locations, drilling rigs, and production and reserve information are provided. Field reports include maps showing well locations, structure contours, and some cross sections.

Robertson Research (U.S.) Inc.
16730 Hedgecroft, Suite 306
Houston, Tex. 77060-3697
(713) 445-4587

This company produces regional reports, maps, and atlases for selected regions. These documents can consist of a simple geological study or a detailed evaluation of hydrocarbon potential. The reports are a source of information not readily available elsewhere. The tectonic map of Trinidad and Tobago is the only map available without having to purchase an extensive regional study.

Scientific and Medical Publications of France
16 East 34th Street (7th Floor)
New York, New York 10016
(212) 683-4441
Telex: 645772

Scientific and Medical Publications of France markets French cartographic products. The geologic maps are international in coverage but the majority of maps included are for France and Africa. Tectonic maps, sedimentary basin maps, and geothermal maps for onshore and offshore areas are listed in their catalog. The Geologic Atlas of the World at a scale of 1:10,000,000, consisting of 22 sheets with a 1980 publication date, is also distributed by this firm.

Telberg Book Corp.
Geologic Map Service
P.O. Drawer N
Sag Harbor
Long Island, N.Y. 11963
(516) 725-0780

This corporation issues an annual catalog containing an extensive inventory of foreign maps. Selected entries are annotated. Telberg Book Corp. is used by many as their only source of foreign maps.

United State Map Service, Inc.
102 East Cleveland
Lafayette, Colorado
(303) 443-4501

The United States Map Service company does not print a catalog of their inventory. They distribute maps from state and federal government sources. Foreign travel maps, maps in Telberg's catalog, maps from Rand McNally and the American Map Corporation are also available through this distributor. Types of maps available include all USGS maps, advanced prints, open-file reports; all NOAA maps, wall maps, raised relief maps and globes. They will also research the existence and availability of any cartographic product.

United Nations
c/o UNIPUB
P.O. Box 1222
Ann Arbor, Mich. 48106
Toll Free 800-521-8110

Good map coverage is provided of oil, natural gas, and tectonics, especially for Europe and Asia. Maps are usually issued as part of a set, allowing for a scale large enough to contain much useful information. The maps illustrate sedimentary rocks, and their thickness, oil and gas fields, faults, volcanoes, oil and gas refineries, pipelines, towns, and railroads. UNIPUB distributes publications from UNESCO and from many international organizations, such as Canada Map Office, Commission for Geological Map of the World, National Mapping, and World Meteorological Organization.

United States:

Cambe Map Division
1809 Louisiana
Houston, Tex. 77002
(713) 757-0309

Regional structure maps of the Texas and Louisiana Gulf coast are available. These maps include oil and gas well locations, land and lease ownership, and historical information. The maps are strip maps and are available at a scale of 1"=4,000'.

Geological Mapping Services
616 South Boston, Suite 401
Tulsa, Okla.
(918) 585-5070

Geological Mapping Services has developed a data base with well history information which is supplemented and checked by their geologists. Using a computer program they can produce many maps for Oklahoma of stratigraphic horizons or simple base maps with well locations. Two specialized areas covered by maps are the 'D' Sandstone Isolith and the 'J' Sandstone Isolith.

GEOMAP Company
1100 GEOMAP Lane
Plano, Tex. 75074
(214) 578-0571

This company produces reference maps at various scales, featuring subsurface structure, age of producing reservoirs, pay horizons, and field locations. Some products are wall-size maps of selected areas, while others are blue-line prints or films that are produced and updated monthly.

IntraSearch, Inc.
Greenwood Plaza
5351 South Roslyn Street
Englewood, Colo. 80111
(303) 741-2020

IntraSearch offers photogeologic mapping, some is custom mapping, of the principal sedimentary basins in the Western United States, Appalachian States, and selected areas of Alaska, Australia, North Africa, South America, Southeast Asia, and Italy. Structural interpretations are featured. Mylar-reproducible films and hand painted maps are available in any desired scale.

Mapco Diversified, Inc.
P.O. Box 1891
Denver, Colo. 80201
(303) 572-0711

Mapco publishes plat books, 11"x17", for selected states. The plat books are updated bi-monthly. Maps show the land net, locations and total depth of wells and field names. Regional and State oil and gas production maps include fields, basins, uplifts, basement rocks, and township and range. Basin maps that show production and one-degree quadrangle maps with well locations and field names are also available.

Munger Oil Information Service Inc.
P.O. Box 45738
9800 S. Sepulveda Blvd., Suite 723
Los Angeles, Calif. 90045-0738

Munger publications are updated annually. Their most popular product is the atlas of California and Alaska, which includes a page or more for each oil, gas, and geothermal field, along with approximately 80 pages of wildcat areas showing locations of current drilling wells, producers, and dry holes. Ten different scales are used throughout the map book. Wall-size exploration maps for California and Alaska

are issued quarterly to show new drilling onshore and offshore in each State. Also published are wall-size wildcat maps of Arizona, Nevada, and Oregon.

Petroleum Information Corp.
P.O. Box 2612
Denver, Colo. 80201
(303) 740-7100

Petroleum Information Corporation stocks numerous printed maps and can produce computer-generated maps for special orders. Geographic coverage is of the United States and the Gulf of Mexico. Maps include well locations, dry holes, total depth, name of deepest formations penetrated, structure contours, oil and gas field names, producing horizons, principal surface owners, basin names, land net, longitude, latitude, major water features, roads, and towns.

Terra Graphics
1915 Clarkson St.
Denver, Colo. 80218
(303) 534-2090

Terra Graphics offers maps for the United States, selected regions, and some basins. The maps illustrate producing formations, major tectonic features, basement rock outcrops, oil and gas fields, names and locations of pipelines, county lines and names, and township and range grids.

Tobin Research, Inc.
P.O. Box 2101
San Antonio
Texas 78297
(512) 223-6203

Tobin prepares base maps with well postings for special orders.

Transcontinental Gas Pipe Line Corporation (TRANSCO)
2800 Post Oak Road
P.O. Box 1394
Houston, Tex. 77251
(713) 439-2000

Transco offers maps of their natural gas pipelines, both onshore and offshore, for the Atlantic coastal plain and the Gulf Coast. These maps include oil and gas fields, pipeline routes, and lease tracts and owners, as well as amount paid for the lease, well locations, and bathymetry.

CANADIAN AND U.S. GOVERNMENT SOURCES

Energy Resources Conservation Board
640 Fifth Avenue SW
Calgary, Alberta T2P 3G4
(403) 297-8311
Telex 03-821717

The Energy Resources Conservation Board publishes an annual catalog of their publications, maps, services, and computer services. Most maps are blueline prints, sepia prints are available at five times the cost for special requests. A full color map of oil and gas fields, pipelines, refineries, and operating plants is available at a scale of 1:1,250,000 and 1:2,500,000. Included in their catalog are pipeline maps, coal maps, and geological maps for producing horizons of each province in Alberta. Oil sand maps, subsurface pressure maps, and a map of the Alberta Electrical System are also available.

Geological Survey of Canada
601 Booth Street
Ottawa, K1A 0E8

The Geological Survey of Canada publishes maps for onshore areas only. Maps include surface geologic maps, geology maps, structural geologic maps, and geomorphology maps. Seismic reflection profiles and colour magnetic anomaly maps. Tectonic Assemblage Map of the Canadian Cordillera and Adjacent Parts of the U.S. of A." by H.W. Tipper, G.J. Woodsworth and H. Gabrielse, map 1505A, at a scale of 1:2,000,000, is available. Maps are also published as part of their open-file series, the catalogs published by the Survey index these maps.

Hydrographic Chart Distribution Office
Department of Fisheries and Oceans
1675 Russel Road, P.O. Box 8080
Ottawa, Ontario, Canada K1G 3H6
(613) 998-4931, -4932, -4933
Telex 053-4228
Cable (MARSI-OTT)

The Hydrographic Chart Distribution Office has maps and charts of the offshore. Bathymetry and morphology maps describe the shape of the sea floor. Surficial geology maps describe sea-floor materials. Gravity and magnetic fields are mapped by means of contours. Nautical charts and sailing instructions are also published by this agency. Three index

maps are available; they are entitled: 1. Catalogue of Geoscientific Publications, 2. Catalogue of Nautical Charts and Related Publications, Atlantic Coast, and 3. Pacific Coast. Map series include Bathymetric maps in scales of 1:2,000,000 or in 1:1,000,000; Natural Resource maps, scale 1:250,000; General Bathymetric Chart of the Oceans (GEBCO) world wide coverage, scale for 1:10,000,000 Mercator proj. and 1:6,000,000 for Polar Stereographic projection.

National Cartographic Information Center (NCIC)
U.S. Geological Survey
507 National Center
Reston, Va. 22092
(703) 860-6045

NCIC has seven additional offices around the country to serve the public's cartographic needs. NCIC answers inquiries about maps and cartographic information available from more than twenty-five government agencies and many private sources. NCIC sells the following map data products: advance prints, out-of-print map reproductions, land-use and land-cover maps, slope maps, digital terrain maps, orthophotoquads, Landsat images, and many more products including microfiche, microfilm, and color slides. NCIC can also research inquires concerning cartographic products using their own files or by contacting other agencies and locating the needed maps or information from them.

U.S. Geological Survey
Eastern Distribtuion Branch
1200 South Eads Street
Arlington, Va. 22202
(for maps east of the Mississippi)

Western Distribution Branch
Box 25286, Federal Center
Denver, Colo. 80225
(for maps west of the Mississippi)

Alaska Distribution Section
New Federal Building-Box 12
101 Twelfth Avenue
Fairbanks, Alaska 99701
(for Alaska maps)

Open-File Services Section
Western Distribution Branch
U.S. Geological Survey
Box 25425, MS 306
Denver, Colo. 80225
(303) 236-7476

The U.S. Geological Survey has many maps and map series that are useful in the petroleum industry. The oil and gas investigation chart series is useful for geologic studies of selected regions when studying hydrocarbon potentials. Topics include borehole gravity surveys--important information in determining porosity and density of the rocks. Stratigraphic correlations, distribution of rock types, and biostratigraphic studies are also researched for these charts. The oil and gas investigation maps are of selected geographic regions where oil and gas production has already taken place or is likely to take place. Every map in this series would be of use to an exploration geologist. The Miscellaneous Field Studies map series occasionally includes maps of interest to the petroleum industry such as the "Map of prospective hydrocarbon provinces of the world" by A. B. Coury, T. A. Hendricks, and T. F. Tyler, MF-1044. Open-File reports are available only through the Open-file Services Section of the Survey. Open-file reports include many maps of unlimited variety, some of which are useful for the oil and gas industry. Two maps by S. E. Frezon are in this series, and they update the sedimentary basins and the total sediment thickness of sedimentary rocks in the United States.