EMD
NEWSLETTER
THE AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS

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An EMD Report

Tar Sands, Heavy Oil Projects Hurt by Oil Prices, Recession

By T.R. LENNOX
Tar Sands Councillor

Tar sands and heavy oil both suffered major setbacks in the early 1980s because of stabilized world oil prices and the major worldwide recession.

In Canada, inter-governmental tussels and the high cost of development contributed to the shelving of two major projects:

Alsands, a tar sands mining project projected to produce 140,000 barrels of synthetic crude a day, and Esso Cold Lake, an insitu oil sand project designed to recover 140,000 barrels of synthetic crude a day.

In the United States, the federal government Synfuels project in the support of commercial scale tar sands projects never seemed to get off the ground.

Experimental projects are being funded — but nowhere near the level projected in the late 1970s.

In Venezuela, there is a surplus of light oil, and production has been shut-in. Consequently the large scale development of the Orinoco tar sands, started in the mid-1970s, has been put on hold.

In the last six months within Canada, there has been renewed interest in tar sands with increased activity in many areas, and two major projects are now under construction. This resurgence is the result of several factors:

— Fiscal arrangements with the federal and provincial governments have improved;
— There is an awareness that smaller scale projects have fewer environmental and socio–economic problems;
— A modular approach such as at Esso's Cold Lake project (9,500 barrels a day modules) can be geared quickly to market conditions and an overall reduction in the financial risk;
— The immense scale of the U.S. road upgrading program has produced a ready market for lightly processed bitumen.

Esso is expanding its Cold Lake Leming pilots to a commercial scale steam stimulation project by adding the first 19,000 barrel a day module to increase daily production to 33,000 barrels. As warranted, they can add 9,500 barrels a day modules in a relatively short time.

B.P. and Petro–Canada are expanding their Wolf Lake steam stimulation pilot in Cold Lake to a 7,000 barrels a day facility.

Other companies are examining the economics of expanding pilot projects to commercial scale projects and reviving old projects. They include Amoco Canada at Elk Point, Shell Canada at Peace River and Union Canada at Buffalo Creek.

Petro–Canada is expected to approach the Canadian government within a month to discuss a scaled–down tar sand mining project with a capacity of 50,000 to 75,000 barrels a day. Shell, however, is pessimistic that a reduced scale Alsands project could be economic at this time.

Two interesting questions come out of the increased activity. First, the economics of scaled–down insitu projects appear to be attractive, whereas it is unclear if this concept can be used for tar sands mining projects which have a much larger infrastructure to support.

Secondly, will an upgrader finally be built in Canada to support the numerous projects that are likely to start up? Such a facility is required to upgrade the bitumen to a more valuable product than road tar.

The dreams of very large multi-billion dollar tar sands and oil sands projects were quashed in the early 1980s, to be replaced by more conservative ventures in the mid-1980s reflecting the times and new economics.

The effects of cancelling the Alsands and Cold Lake projects on the Canadian oil industry and economy were tremendous, but it forced companies to re–examine the scale of projects and the economics of modular development and the governments to be more flexible with respect to fiscal arrangements.

EMD Nominations Received

Nominations have been received for the election of 1984–86 officers for the Energy Minerals Division, American Association of Petroleum Geologists. There are two candidates for vice president/president–elect and two candidates for councillor in each section — Rocky Mountain, Mid–Continent, Eastern and Pacific.

The EMD constitution permits all members to vote for section councillors from all sections, not just the section they are in.

Following is a brief profile on each of the candidates to help you in making your decision.

A brief profile on the current president–elect, Norbert E. Cygan, also is included.

President–Elect Profile

Norbert Cygan (AC'56) is senior staff geologist, exploration training, for Chevron USA in Denver. He assumed the position in 1982.

He holds B.S. (1954), M.S. (1956) and Ph.D. (1962) degrees in geology from the University of Illinois.

Cygan was a geology instructor at Ohio Wesleyan University from 1956–59 and during the summers of 1956–61 was a visiting lecturer for the University of Illinois field camp in Sheridan, Wyo.

He joined Standard Oil Co. of Texas, Houston, in 1962 as a geologist and paleontologist and later worked as a geologist for Standard in Midland, Texas. From 1969–72, he was division stratigrapher for Chevron Oil Co. in Houston and during much of that time also served as a geology instructor at the University of Houston.

In 1972 he moved to Chevron offices in Denver, where he has been senior geologist, minerals staff; district supervisor, Chevron Resources Co.; and assistant manager, domestic minerals division.

VICE PRESIDENT

Goodell

Palmer

PHILIP C. GOODELL is a native Texan and received his undergraduate education at Yale University. He obtained his Ph.D. in geology at Harvard University.

He is an associate professor at the University of Texas at El Paso where he has been employed since 1975.

He has served as president of the AAPG affiliated El Paso Geological Society, has served the Southwest Section and national association on various committees.

In 1980, he organized and coedited AAPG Studies in Geology # 13 entitled "Uranium in Volcanic and Volcaniclastic Rocks," published by the Energy Minerals Division.

In 1983 he coedited a field conference guidebook published by the El Paso society entitled "Geology and Mineral Resources of North–Central Chihuahua, Mexico."

Goodell serves on the EMD as the Nuclear Minerals Commodity chairman and is an associate editor of the AAPG BULLETIN.

JAMES E. PALMER is a coal and petroleum geologist with more than 25 years experience in coal, oil and research exploration and development work. Palmer received his B.S. and M.S. degrees in geology from the University of Illinois, Urbana, and obtained his Ph.D. in geology and mining engineering from the School of Mines and Metallurgy, University of Missouri–Rolla.

He is president of Sigma Consultants, Matoon, Ill.

Palmer was a senior member of the Coal Section of the Illinois State Geological Survey with the rank of geologist and is a specialist in mapping coal fields, uses of geophysical logs in evaluating coal beds and oil–bearing strata and the interpretation of depositional environments of coal–bearing strata.

He was employed by the U.S. Geological Survey for many years where much of his work involved the mapping of coal reserves of the southeastern part of the Illinois Basin.

Palmer also is the author of numerous maps and publications relating to the geology of coal and petroleum. He was chairman of the Coal Resources and Reserves Committee, Coal Division, Geological Society of America from 1978–81.

He currently is councillor, Eastern Section, Energy Minerals Division, American Association of Petroleum Geologists.

Thematic Conference Slated April 16–19

The Third Thematic Conference "Remote Sensing for Exploration Geology" has been scheduled April 16–19 in Colorado Springs, Colo.

The industry–oriented conference will consist of papers, poster sessions, short courses and commercial and non–commercial exhibits.

Among topics for discussion are hydrocarbon exploration, mineral exploration, geobotanical exploration, regional exploration models and remote sensing, data integration, image processing techniques and applications and state–of–the–art of remote sensing and future systems.

For more information and registration materials contact:
Remote Sensing Center/Environmental Research Institute of Michigan
Box 8618
Ann Arbor, Mich. 48107

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Councillor Races Shape Up

ROCKY MOUNTAIN

Kottlowski

Glass

FRANK E. KOTTLOWSKI is director and senior geologist of the New Mexico Bureau of Mines and Mineral Resources. He holds three degrees from Indiana University in geology, structural geology and economic geology.

He was publications councillor, Energy Minerals Division of AAPG, and a former editor and associate editor for the AAPG. Kottlowski received the Distinguished Service Award in 1981 and was a district representative for the AAPG.

He also served on the Computer Coding Committee, Stratigraphic Correlations Comittee and currently serves on the Publications Committee and Membership Committee. He also served as vice president of the Association of American State Geologists.

Kottlowski has published several papers on petroleum and energy minerals geology on New Mexico and surrounding areas.

GARY B. GLASS is state geologist and director of the Geological Survey of Wyoming and received his B.S. in geology from Bucknell University, and a M.S. in geology from Lehigh University.

He is a commissioner on the Wyoming Oil and Gas Conservation Commission, lectures in geology at the University of Wyoming where he offers a course on Geology of Solid Fuels. Glass also is a member of the Editorial Board of Elsevier's "International Journal of Coal Geology."

Glass started as coal geologist with the Pennsylvania Geological Survey in 1967, became staff coal geologist with Geological Survey of Wyoming in 1971 and became deputy director with Geological Survey of Wyoming in 1978.

PACIFIC SECTION

GERALD E. (JERRY) MARRALL is senior geologist, International Division, Union Oil Co. of California in Los Angeles. He holds a B.S. and M.S. from the University of Wisconsin.

Marrall joined Union Oil Co. of California in 1952 as geologist/special exploration group and has worked as geologist/Union Oil of Spain, Canary Islands; geologist/U.O.D.C., Sydney & Toowoomba, Australia; regional geologist, Toowoomba, Australia; staff geologist, L.A.; Etosha Petroleum, director of exploration, Southwest Africa; regional exploration manager, Minerals, Casper, Wy. and chief geologist/Uranium, L.A.

He has served on the Membership Committee of the AAPG, Deputy Program Chairman and was a delegate from L.A. Basin Geological Society.

Marrall

Platt

JEREMY BRUFF PLATT is project manager, Energy Resources Program, Energy Analysis and Environmental Division, for Electric Power Research Institute in Palo Alto, Calif.

He holds an A.B. in geological sciences from Harvard and a M.S. in geology from Stanford.

At Electric Power, Platt is responsible for managing research projects by outside organizations on uranium, oil, gas and coal geology, resource assessment, availability and supply. He also is responsible for research projects on regional utility fuel markets and utility fuel procurement and planning methods.

He is a member of the Program Review Panel, U.S.G.S., Branch of Coal Resources and a member of AAPG EMD Nuclear Fuels Committee.

Platt has published various papers on uranium resource assessment and geology among other publications.

MID–CONTINENT

Werts

Brady

LARRY L. WERTS is vice president, marketing and planning for Transworld Drilling Co., Oklahoma City, Okla. He holds a B.S. in geology from Monmouth College, Monmouth, Ill.

He began his career with the Atomic Energy Commission in 1954 as Geologist, Field Exploration for Uranium in Grand Junction, Colo.

He since has held positions with Tidewater Oil Co. (now Getty Oil Co.), Kerr–McGee Corp., senior geologist, Mineral Exploration in Tucson, Ariz., district geologist, Mineral Exploration, Farmington, N.M., and regional exploration manager, Uranium and Base Metal Exploration, Albuquerque, N.M.

LAWRENCE L. BRADY is chief geologist, Mineral Resources Section of Kansas Geological Survey in Lawrence, Kan.

He holds a B.S. in geology from Kansas State University, and a M.S. and Ph.D. in geology from the University of Kansas.

Brady has published several articles on local deposits, including stratigraphy, resources, trace elements and reclamation problems — mainly in Kansas; Pennsylvanian stratigraphy in eastern Kansas; non–metallic mineral resources; mine–hazard problems in the old

EMD's 1984 Meet Slated

The 1984 Annual Meeting of the Energy Minerals Division will be held in conjunction with the Rocky Mountain Section meeting in Salt Lake City, Utah, Aug. 26-29.

The meeting — "Energy and More in '84" — will include a full agenda of technical, social and field activities.

Technical sessions will present information on coal, geothermal, oil shale/tar sand and uranium resources.

Emphasis will be on resource appraisal and development in the Rocky Mountain region. A short course also will be held.

For more information contact:
O. Jay Gatten, General Chairman, EMD
North American Exploration, Inc.
Box 348
Kaysville, Utah 84037

Tri–State mining district; Permian copper deposits in south central Kansas; experimental flume studies of heavy mineral segregation; stratigraphy and petrology of the Morrison Formation (Jurassic) in eastern Colorado.

EASTERN

AUREAL T. CROSS is professor of geology and professor of botany and paleobotany at Michigan State University, East Lansing, Mich.

He received his M.S. and Ph.D. from the University of Cincinnati and a post–doctoral research appointment as fellow in geology by the National Research Council for coal research in the Appalachians.

He worked briefly for the U.S. Bureau of Mines Central Experiment Station, Pittsburgh, Pa. He was geologist for the Ohio Geological Survey part time; coal geologist for the West Virginia Geological and Economic Survey; senior research engineer and research group supervisor with Pan American Petroleum Corp. Research Center.

Cross

Schutz

Cross has published more than 50 articles, three books and about 100 abstracts on paleobotany, palynology, coal geology, sedimentation and stratigraphy.

DONALD F. SCHUTZ is president of Teledyne Isotopes and has overall responsibility for products, services and research in environmental radioactivity monitoring, thermoluminescent dosimetry, sodium iodide crystal manufacture, radiological waste disposal, nuclear fuel analysis, geochronometry and isotope geochemistry.

He received his Ph.D. in geology at Yale.

Schutz is engaged in the technical direction and marketing of TeleTrace, a subsurface fluid tracing procedure offered to the petroleum industry to enable it to obtain more meaningful data in secondary and enhanced recovery operations.

He is chairman of the Radiation Safety Committee and is responsible for the Quality Assurance Program of the company.

Schutz has held various positions of responsibility including vice president of the company in charge of the Westwood Laboratories.

Group Seeks Statistics for Exploration

(The Geosat Committee is an organization of companies that are involved in geological and geophysical exploration and engineering, the development of minerals and energy resources, and are supportive of the development of geological remote sensing equipment and support systems.)

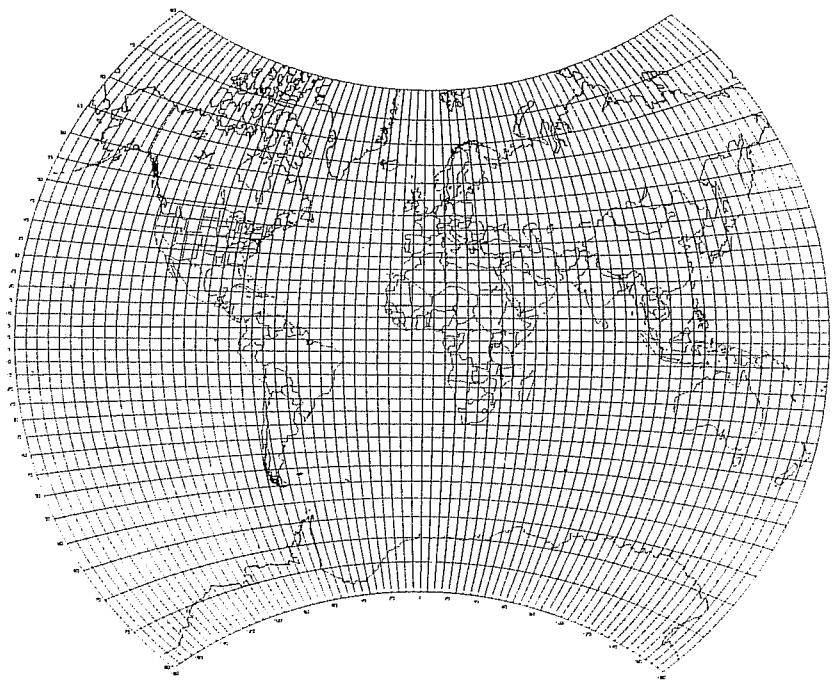
By FREDERICK B. HENDERSON III, Ph.D.
President, Geosat Committee

The Geosat Committee is conducting a survey which will statistically indicate the geographical areas of the world considered by the geological community as the most important for non–renewable resource exploration during the next decade.

We urgently request that anyone who is likely to need geological data from satellite systems, whether to remain commercially competitive during the next decade or for academic research, participate in this survey, which is completely confidential.

Indicate by marking on the map 50 or fewer grid units showing geographical areas of prime importance for nonrenewable resource exploration and development over the next 10 years, including offshore and oceanographic areas.

1. Name of country_____
2. Check one: Private sector___; Government___; Academia___; Other (specify)___.
3. Scenes selected are organization's preference___; or individual's preference___.
4. Check interests: Oil/gas___; Minerals___; Engineering/environment___; Other (specify)___.
5. Annual financial gross of your organization: Less than $1 million___; $1–100 million___; $100 to $1 billion___; over $1 billion___.
6. Does your organization currently use satellite data? Yes___, No___.
7. A: Approx. number of scenes purchased per year
   Computer compatible tapes (CT)___.
   Hardcopy (prints, positives, etc.)___
   B: Does your organization participate in tape swapping? Yes___, No___.
8. What would you prefer to purchase in the future? CCT's___, Hardcopy___.
9. Which of the following new products would you buy at full commercialized cost with no government subsidy (mark more than one if applicable).
   a)___ 30–meter spatial resolution
   b)___ 10–meter spatial resolution
   c)___ Improved spectral coverage (TM bands)
   d)___ Stereo coverage
   e)___ Synthetic aperture radar (SAR)



Clip out this page, with map, and questionnaire, and mail it to: The Geosat Committee, 153 Kearny, Suite 209, San Francisco, California, USA, 94108. Phone 415/981–6265. Telex 910–372–2043.