



# THE ENERGY MINERALS GEOLOGIST

*Newsletter of THE ENERGY MINERALS DIVISION  
of the American Association of Petroleum Geologists*

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## THE ENERGY MINERALS GEOLOGIST

For a few years EMD published newsletters and then stopped. With this issue EMD begins a new publication to inform its members of its programs, activities, and news. Special EMD articles will still be published occasionally in the AAPG Explorer. EMD President Towse has bullied Vice President Friedman into writing the first 2 issues. The V. P. will appreciate help from the membership. Write to him as follows: Samuel A. Friedman, Oklahoma Geological Survey, Energy Center N-131, 100 East Boyd St., Norman, Okla. 73019.

## 6/89--ELECTION RESULTS

Vice-Pres./Pres.-Elect--Samuel A. Friedman (Oklahoma Geol. Survey); Secretary-Treasurer--Sandra C. Feldman (Bechtel-San Francisco); Canada Councillor--E. E. (Ned) Gilbert (Univ. of Calgary); Circum-Pacific Councillor--Michel T. Halbouty (Michel T. Halbouty Energy); Gulf Coast Councillor--Charles G. Groat (Louisiana Geological Survey); Southwest Councillor--Thomas Beard (Consulting).

## 2/90--COUNCIL CHANGES

President Towse has appointed Mel C. Erskine as Councillor of the Pacific Section, replacing John H. Spotts, who has retired from Chevron Resources. We have been informed that the Circum-Pacific Section has been dissolved, and therefore, the EMD Council has one seat less.

10/89--EXECUTIVE COMMITTEE MET in Reno, Nevada and covered 13 agenda topics. Some of the more interesting results are (1) liaison will be maintained by President Towse with the Geothermal, Oil Shale,

Tar Sands, Nominations, and Outreach Committees. Vice Pres. Friedman will maintain liaison with the Coal, Coalbed Methane, and Conventions Committees, while Secretary-Treasurer Feldman will maintain liaison with the Nuclear Minerals, Remote Sensing, Education, and Publications Committees; (2) Friedman will produce 2 formal, reactivated, and very interesting newsletters; (3) evaluated the Nominating Committee's recommendations of candidates for EMD Council; (4) Secretary-Treasurer Feldman will revise the EMD membership brochure; (5) reviewed plans and made recommendations for chairmen and programs for EMD at the 1990-San Francisco, 1991-Dallas, and 1992-Calgary AAPG annual conventions.

REVIEWING RECENT EMD MEETINGS, the Vice President noted that 65 (mostly oral) and (some) poster papers were presented at 9 EMD sessions at 6 annual or biennial AAPG meetings in 1989, including the national meeting in San Antonio in April and 5 sectional meetings. No EMD papers were given at the SW Section meeting. Of the 65 total number presented in 1989, 32% were given at the national meeting, 32% at the Rocky Mountain Section meeting in Albuquerque in October, 22% at the Eastern Section in Bloomington in September, 6% at the Mid-Continent Section in Oklahoma City in October, 3% at the Gulf Coast Section in Corpus Christi in October, and 2% at the Pacific Section in Palm Springs in May. Analyzed by EMD Commodities, 35% of these papers were on coal, 17% were on coal-bed methane, 15% nuclear, 14% minerals management, 11% remote sensing, 3% geothermal, 3% oil shale, and 2% tar

sands. Thus more than half (52%) of the papers were on coal or coal-bed methane. EMD thanks Gary W. Hart, General Chairman, Leonard Dionisio, Jr. and John V. Hogan, Technical Program Co-Chairmen, and Louis M. Ford, President of the Mid-Continent Section, for including an EMD session for the first time.

**12/89 MEMBERSHIP IN EMD WAS 1806**, compared to 1,992 in 12/83 and 995 in 12/78. EMD contains more than 5% of the total AAPG membership of 35,969. AAPG members may join EMD simply by requesting it of AAPG headquarters and sending in \$5.00 for Student and Junior and \$10.00 for Active and Associate members. Isn't that easy?

**10/89 WORLD DEVELOPMENTS IN energy minerals** was presented in 4 highly informative papers, published in the AAPG Bulletin, volume 73/10B, October, 1989. Unfortunately Part B is not covered by our combined dues, and not many EMD members shelled out the extra \$17.50 for the entire issue, although it is worth the money to many people and corporations. Because many past and present EMD Councilors believe these annual Energy Mineral summaries are the most important EMD publications, your editor is reprinting the abstracts of these articles, with permission of AAPG, as follows:

**DEVELOPMENTS IN COAL IN 1988**, by S. A. Friedman, R. W. Jones, C. G. Treworgy, K. C. Ashton, and J. A. Aylsworth

In 1988, 6,109 United States mines in 26 states produced a record 948.8 million (short) ton of coal, an increase of 0.2% from a revised 930.9 million tons produced in 1987. Of this coal, the Eastern coal province produced 47.3%, the western coal provinces (Northern Great Plains, Rocky Mountain, Pacific Coast, and Alaska) produced 32.2%, the Interior coal province produced 14.7%, and the Gulf coal province produced 5.8%.

For the first time, Wyoming led the United States by producing 163.6 million tons of coal. Kentucky ranked second with 161.2 million tons, West Virginia was third with 144.9 million tons, Pennsylvania was fourth with 71.8 million tons, and Illinois was fifth with 59.9 million tons.

In rank, the total U.S. coal production was 0.4% anthracite, 65.3% bituminous, 25.4% subbituminous,

and 8.9% lignite. By age, 62% was Pennsylvanian, 30% was Tertiary, and 8% was Cretaceous.

Large-scale lignite production was started for the first time at 1 mine in Arkansas.

The increase in coal production and the decrease in the number of coal mines indicates increased coal-mining efficiency in the United States in 1988. A major factor in this greater efficiency was large-scale surface mining of increased quantities of lignite and subbituminous coal in the western and Gulf coal provinces, where coal commonly contains less than 1% sulfur.

In Canada in 1988, 29 mines produced 70.5 million MT of coal, a record high and an increase of 15.6% from 1987. The 3 western provinces (Alberta, British Columbia, and Saskatchewan) accounted for 94.3% of Canada's coal production. In rank 54.6% was bituminous, 28.2% subbituminous, and 17.2% lignite.

**DEVELOPMENTS IN GEOTHERMAL RESOURCES, 1983-1988**, by P. M. Wright

Hydrothermal resources, one of the several types of geothermal resources, are being actively developed on a world wide basis. Other types of geothermal energy--geopressed, hot dry rock, and magma--remain uneconomic but show considerable promise for the future. Technical problems and low energy prices inhibit the development of each of the 4 geothermal types. Geothermal energy is used both for generation of electricity and for direct-heat applications. Use of geothermal energy is desirable because it is an environmentally clean, utility-compatible source of energy that directly displaces the need for more nuclear plants and frees petroleum for other important uses.

Current worldwide hydrothermal generating capacity is about 5,457 electrical megawatts (MWe) in 18 countries, with the United States accounting for 2,609 MWe of the total. Current worldwide direct uses of hydrothermal energy amount to about 10,000 thermal megawatts (MWt).

Geothermal development in the United States currently is depressed due to comparatively low energy costs and a temporary excess in electrical generating capacity. Because of these factors as well as lack of adequate technology, only a small portion of the known hydrothermal resource base can be used economically today.

**DEVELOPMENTS IN OIL SHALE IN 1988**, by C. F. Knutson et al

Oil shale development continued at a slow pace in 1988. The continuing interest in this commodity

is demonstrated by the 188 oil shale citations added in 1988 to the U.S. Department of Energy database, and the 122 oil shale papers presented at 2 major oil shale symposia held during 1988.

## **DEVELOPMENTS IN URANIUM IN 1988,**

by William L. Chenoweth

Low prices, imports, and political uncertainties continued to plague the United States uranium industry in 1988. As a result, the Secretary of Energy declared the domestic industry to be nonviable for the fourth straight year. Uranium exploration expenditures in the United States continued at a low level. In 1988, an estimated \$21 million was spent on uranium, including 3.0 million ft of surface drilling. This drilling was done mainly in production areas and in areas of recent discoveries.

Production of uranium concentrate increased slightly in 1988, when 13.5 million lb of uranium oxide (U<sub>3</sub>O<sub>8</sub>) were produced, a 4% increase from 1987. Uranium produced from solution mining, mine water, and as the byproduct of phosphoric acid and copper production accounted for about 49% of the total production in the United States. At the end of 1988, only 4 uranium mills were operating in the United States.

For the fifth consecutive year, Canada was the world's largest producer and exporter of uranium. The United States-Canada Free Trade Agreement, ratified in December, will allow Canadian uranium to be sold to American utilities without import restrictions. During 1988, production began at the Olympic Dam deposit in South Australia. United States uranium production is expected to increase slightly in 1989, as new solution mining projects begin.

## **1990 MEETINGS**

March 11-13, Southwest Section-AAPG, Wichita Falls, TX.

June 3-6, Annual Convention-AAPG, San Francisco, CA. See AAPG convention announcement pamphlet and the Explorer for details. 5 EMD sessions (3 oral and 2 poster) will feature 39 papers (20 remote sensing, 8 geothermal, 6 general, 3 coal-bed methane, 1 coal, and 1 tar sands. One geothermal paper involves remote sensing, one general paper involves coal-bed methane, and one general involves geothermal. Two additional papers of interest to EMD members (1 tar sands and 1 coal-bed methane) were scheduled somehow in 2 regular AAPG sessions. Humph!

The Division's annual business meeting will take place 1:00-3:30 p.m., Sunday, June 3, in Sunset C-D in the San Francisco Marriott.

The EMD luncheon will be served at 12 noon Wednesday, June 6, followed by presentation of EMD awards. And then--

President Don Towse will introduce the former Director of the Lawrence Livermore Laboratory, Dr. Edward Teller, who will speak on "Science, Energy, and America's Future". (Reserve your seat early. More than 100 tickets have been sold as of March 5.)

## **EMD SHORT COURSE, REMOTE SENSING**

for OIL EXPLORATION, Saturday, June 2, 8:00 a.m.-5:00 p.m. through Sunday, June 3, 8:00 a.m.-3:00 p.m., presented by Floyd F. Sabins (Chevron Oil Field Research Co.)

**EMD FIELD TRIPS. TRIP 1, Coso Geothermal Area, Saturday, June 2, 7:00 a.m.-6:00 p.m. Leaders: Mel C. Erskine, (Consultant), James L. Moore and Ken Fox (Calif. Energy Co.), and Carl F. Austin (China Lake Naval Weapons Center).**

**EMD TRIP 2, Ground Water Contamination Project: Investigation, Remediation, Demonstration; Lawrence Livermore National Laboratory, Friday, June 8, 8:00 a.m.-5:30 p.m. Leader: Bern J. Qualheim (LLL)**

EMD Convention Vice Chairman & EMD Technical Program Chairman Mel C. Erskine reminds us to sign up for the course and the trips by April 20, the pre-registration deadline. See the AAPG annual convention announcement for full details about all these EMD activities.

If you would like to visit the Ione lignite deposit and surface mine, Saturday, June 2, contact Sam. Friedman (Oklahoma Geological Survey) immediately.

Eastern Section-AAPG annual meeting, Sept. 10-12, 1990, London, Ontario, Canada.

Rocky Mountain Section-AAPG annual meeting, Sept. 16-19, 1990, Denver.

EMD Council meets Sept. 19.

Gulf Coast Section-AAPG annual meeting, Oct. 17-19, 1990, Lafayette, Louisiana.

#### EMD BOOTH TO ATTRACT NEW MEMBERS

For the first time there will be an EMD BOOTH in the exhibit hall (of the Moscone Convention Center). The EMD brochure, revised by EMD Secretary-Treasurer Sandra Feldman, will be available at the booth for all conventioners. The brochure will help to explain the purpose, function, and activities of the Division. Volunteers to staff the booth should contact EMD President Don Towse (415-422-6438).

#### 2/26/90 EMD COUNCIL MET IN TULSA

and discussed, among other things, raising EMD dues to provide funds with which to develop EMD programs in the Sections. A rebate to the Sections for this purpose would be based on EMD membership in each Section. New money from the proposed dues increase would not be distributed automatically to the Sections, but would have to be included in the EMD budget annually.

The President will appoint a committee to listen to the response of the EMD membership, to consider this idea, and to report to the EMD Council on June 3.

Meanwhile the Vice President is to formulate an EMD budget and report it to the EMD Council at the June 3, 1990 meeting in San Francisco.

#### 2/26/90 EMD COUNCIL APPROVES SLATE

of candidates for 1990-92, as submitted by Nominating Committee Chairman and Immediate Past President Jeremy Platt. The candidates have also been approved by AAPG Executive Committee. The candidates are:

##### Vice President/President Elect (1990-91)

Douglas C. Peters (U.S.B.M.)

Carl J. Smith (W.Va.G. & E. Survey)

##### Councillor, Eastern Section (1990-92)

William A. Bragonier (Rochester and Pittsburgh Coal Co.)

Donald D. Carr (Indiana G. S.)

##### Councillor, Mid-Continent Section (1990-92)

R. Vance Hall (Ground Water Technology, Inc.)

John A. Taylor (Independent)

##### Councillor, Pacific Section (1990-92)

Melville C. Erskine, Jr., (Consulting Geologist)

Frank Pruett (Consultant)

##### Councillor, Rocky Mountain Section (1990-92)

John M. Mercier (Cyrus Coal)

John W. Shomaker (John W. Shomaker, Inc.)

Although space in THE ENERGY MINERALS GEOLOGIST is limited, please send your comments and information for possible inclusion in the next issue to the Editor, Samuel A. Friedman (address is on page 1).

This issue was produced with the advice of the EMD Council and in spite of the complaints of the EMD President.