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The Professional GEOLOGIST

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COVER - Drillers from Warren George, Inc., at a site in Flushing Meadow Park, Queens, New York. Photo by Barry A. Schwartz, CFC-0002 - article on page 5.

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Drillers William Watters and Thomas O'Brien of Jersey Boring and Drilling Co. (JBD) are contracted to the City of New York, Department of General Services, for specialized subsurface exploration. Split spoon sampler can be seen in foreground on "mud tub" trough.

Photo by Barry A. Schwartz, CFC-0002.
a geologist/inspector for the Department of General Services,
Subsurface Exploration Section, City of New York.
Engineering Geology In The City Of New York

Barry A. Schwartz, CFC-0002, Engineering Geologist
Department of General Services, Division of Design and Construction Management

A little-known unit of the City of New York Department of General Services, the Subsurface Exploration Section (SES), performs vital engineering geology services for the majority of the City's agencies.

According to Lawrence Ebbot, SES Chief, and Michael Greenman, SES Deputy Chief, "The Section was created in September, 1939, in response to design errors caused by faulty subsurface information which resulted in millions of dollars in cost overruns for a New York City courthouse. Until that time, all test borings were done by consultants hired by the then Department of Public Works. The City then decided to create their own investigative branch to insure the reliable collection of subsurface data. The Department of Public Works has evolved through the years into the Municipal Services Administration and then the Department of General Services. With the formation of other agencies to design and construct specific types of projects such as sewers, roads, and pollution control plants, SES has continued to assist by performing the necessary geologic investigations."

In over 50 years, SES has done over 2,500 projects totalling approximately 1.5 million linear feet. Virtually all parts of New York City have been investigated with borings up to 500 feet deep.

The field engineering geologists follow strict guidelines and procedures, as outlined in the Manual of Boring Inspection and Visual Soil and Rock Analysis of the Subsurface Exploration Section, NYCDGS.

Before a new water and sewer lines can be installed, or before a new city-owned building is erected, soil and/or bedrock samples must be taken. Samples are carefully analyzed and evaluated for bearing-load capacity. This is achieved by first determining the percentage of sand, silt, clay, and gravel in each sample, in accordance with the Burmeister System and the Building Code of the City of New York. In addition, soils are classified using the Unified Soil Classification System. Then, a comparison is made with the blow counts (6 per inches of penetration of a split spoon sampler) to establish values for each type of soil. For example, a sample containing 60% fine-to-coarse sand, 20% silt, and 20% gravel would be assigned the symbol "SM" and classified as a "6-65" material. For a "6-65" material, the minimum blows per foot (of a 2-inch spoon driven by a 140-lb. hammer dropped 30 inches) is 30. If the blow counts were 42-50-63, then this material would have a bearing pressure between 9 and 11 tons per square foot (from the formula 1/10 × N, where N is the number of spoon blows per foot). If the blows were 2-10-7, this would indicate the sample is below the standards of a "6-65" material, which allows 3 to 6 tons per square foot. The N values are not completely dependent on blows. Limits are set for each class.
As needed, SES also performs permeability tests in the field, under the supervision of one of the field geologists.

One of the functions of the field engineering geologist is to act as a public relations specialist. Very often, the sight of a drill rig pulling up in front of someone’s home or business is enough to send the owner screaming into the street. Once the perturbed citizen has quieted, and is told that the operation commencing will lead to the improvement of local drainage, the citizen usually becomes thankful that, "finally something is being done about the flooding around here." Although SES has the right to drill wherever it is the safest and most convenient (that is, away from overhead and buried utility lines), they try not to infringe upon private property. Even the drill rig operators are quite courteous and thorough in their clean-up after a boring is completed. The mud (bentonite clay) used in the drilling procedure, along with the mound of soil that accumulates, are thoroughly washed away.

The types of soil encountered in the City, and the site conditions and locations, are varied enough to keep the engineering geologist interested and alert. The real "treat" comes when bedrock coring is necessary, especially in Manhattan and The Bronx. This is when one has a chance to examine fresh rock, otherwise rarely encountered. Since the bedrock on New York City is varied—serpentinite, occasional Triassic red beds, gneiss, marble, with associated intrusions and mineralogy—one has the opportunity to put his or her knowledge of igneous and metamorphic petrology into play.

The job of the engineering geologist in and for the City of New York is rather rewarding, professionally and psychologically. Personally, I find it to be a rather unique position, that is, to be employed as a field geologist within the borders of a metropolis such as New York City.

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William G. Dixon, Jr., CPG-3659

This article is aimed at geologists outside the field of engineering geology to give them examples of situations that can occur when geologists interact professionally with architects and engineers. Those in the field are welcome to read on to keep me honest. My education, during the late 1950s, had been slanted toward petroleum exploration, but after graduation the petroleum industry was in a slump, and I "took the road less traveled." As a consequence of that swing in the economic cycle, my work experience has been varied and has included aspects of engineering geology, hydrogeology, and environmental geology.

Architects and engineers need information from geologists with respect to where a structure or facility meets the ground. The amount of information needed is directly proportional to the size of the project and the complexity of the local geologic conditions. If architects or engineers and their clients have a fixed budget for subsurface investigations which is expended before all the necessary information is obtained, they may, later on, receive some expensive surprises. If a structure is not designed to accommodate local, natural constraints, the construction costs and long-term maintenance costs may be higher than necessary.

Most projects of medium to large size usually go through feasibility and planning phases prior to the design phase, each with an exploration program of increasingly narrow focus. In a step-wise progression of this sort, areas that need additional exploration are more likely to be discovered than if there is only one mobilization of equipment for a small number of borings. Small or low budget projects may suffer from insufficient attention to the subsurface. For example, an architect stopped the only soil boring being made for a multi-story addition to a hospital in Chicago at a depth of 60 feet because that was the limit of the exploration budget. The material at that depth was glacial till. Bedrock was near the surface several blocks to the southwest. Point-bearing steel piles, with an estimated length of 60 feet, were selected as the type of foundation. When the first pile didn't fetch up at 60 feet, an additional boring was made which encountered bedrock at 96 feet. As the job progressed, subsequent pile lengths ranged from 95 to 110 feet. Later on, it was discovered that the project was located on the south side of a buried bedrock valley which was shown on a map of the bedrock topography published 5 years earlier.

In another example, a small complex of low-rise buildings to house a small foundry was built on spread footings. Two of the building had deep basements. The geologic sequence from the ground surface down was approximately 10 feet of glacial till, containing thin isolated lenses of sand and gravel and approximately 4 feet of massive lacustrine silt, underlain by fine to medium lacustrine sand. The ground water in the sand was under artesian pressure, and the piezometric surface for the ground water in the sand was up near the middle of the silt. One basement excavation was dug to near the base of the silt. The silt fractured due to hydrostatic uplift of the ground water in the sand; the excavation filled with about 6 to 12 inches of water; and the silt, which had been relatively compact, became loose. The contractor attempted to de-water the excavation with a sump pump to no avail. A well point system was installed which pulled the water level down sufficiently to tighten up the silt and provide a dry, stable, working surface. The other basement was deeper and extended into the saturated sand. A hand auger probe was made on the accessible side of the pit to determine the length of sheet piling needed to extend through the sand and into the underlying till to support the sides of the excavation. The sheet piling, driven on the opposite side of the pit, kicked out because the sand was thicker there and it was necessary to install longer, heavier, sheet piling. The loose sand was then over-excavated and replaced with compacted crushed stone, and the pit was de-watered with a sump pump. If the architect/engineer had raised the buildings up enough to keep the basements above the silt, the construction could have been accomplished more easily and the owners long-term, sump pump operating costs could have been reduced.

Involvement with architects and engineers has strongly influenced my opinion that states should license geologists so as to protect the health, safety, and welfare of the public from
natural hazards and other geologic conditions which could be potentially harmful or dangerous if not properly recognized. Architects and engineers (as well as landscape architects and land surveyors) are licensed in most, if not all, of the 50 states, and geologists are licensed in about 16 states. In Illinois (where there is no licensure act for geologists), the managers of most of the geotechnical and environmental consulting firms are registered engineers. In a consulting firm controlled by registered professional engineers, those employees that are ineligible for professional registration, such as geologists, chemists, and biologists, are at a disadvantage in the firm with regard to authority, status, and compensation. This, however, is a side issue in the debate over professional registration for geologists. The only valid reason for registration is for the protection of the public health, safety, and welfare.

Both of the construction examples cited above occurred in the late 1950s, and it is hoped that architects and engineers are becoming more aware of the necessity for adequate geologic information in siting projects, for more flexible exploration budgets, and for more attention to both the short-term and long-term economic ramifications that geologic conditions can impose on a project.

As Ruth Terzaghi said in an address to a joint meeting of the Association of Engineering Geologists and the Geotechnical Division of the American Society of Civil Engineers in Chicago several years ago, "When Mother Nature built the earth she didn't follow ASTM."*

Mining Mission To Argentina

World Trade Center Denver and the United Nations Industrial Development Organization have announced joint sponsorship of a mining investment mission to Argentina in August.

According to Karin Millett of the World Trade Center, "Argentina is engaged in privatization initiatives and has enacted laws guaranteeing the same opportunities to local and foreign investors."

Under current laws, there are no restrictions on full ownership by a foreign company and no restrictions on repatriation of profits or capital," Millett said.

Minerals available include gold, silver, copper, lead, zinc, lithium, and borates. Industrial rocks/minerals are granite, marble, talc, and kaolin.

Anyone interested in joining the mission may obtain more information by calling Millett at (303) 592-5364.

* California MINING - Vol. XVII No. IV June 1992

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EG&G GEOMETRICS
Changing Roles Of The Geologist And Engineer

V. Rajaram, CPG-4520
PRC Environmental Management, Inc., Rolling Meadows, Illinois

The geologist and engineer have, traditionally, worked together to exploit natural resources for the benefit of humans. The mineral geologist defined the location and grade of the ore body based on his knowledge of geologic processes and painstaking field exploration. The mining engineer worked with this information to determine the most economical means of getting it out of the ground. The mineral processing engineer and metallurgist devised methods to concentrate the mineral and reduce it to a useful product. The petroleum geologist worked in a similar manner with the petroleum engineer and chemical engineer to exploit deep reservoirs and increase our standard of living.

I had the opportunity of working with geologists from Ernest Lehmann and Associates for three years. I enjoyed a good working relationship with geologists who explored for minerals, and I developed mining and reclamation plans. We then worked together to determine the economic viability of the project under several scenarios so that the client could make an informed decision about investing time and money. Such a harmonious working relationship minimizes risk, encourages capital investment in long-term natural resource exploration projects, and benefits society.

The global economy and the ability to move natural resources over large distances economically has drastically reduced the demand for mining and petroleum geologists and engineers. The passage of environmental laws in the mid-1970s created a large demand for professionals to investigate the environmental impact of waste disposal and to clean up our soil, water, and air. Traditionally, geologists were not registered with state agencies, and hence, were not organized to handle the large amount of environmental work. Civil engineers, who had an established record of dealing with the public on infrastructure projects, were accepted by state and federal agencies as qualified environmental professionals. Civil, geological, and geotechnical engineers handled a majority of the environmental investigations, and the design and implementation of cleanup projects. This resulted in friction between engineers and geologists since engineers were making the geologic interpretations for which geologists are trained. It also resulted in delays to environmental projects from the battle of experts in administrative hearings and courts.

In the 1980s, several states realized the need for geologists in conducting environmental investigations. The AIGP established working groups on the issue of registration of geologists and assisted states that were formulating laws to regulate the geologic profession. Engineering firms hired geologists to assist them in environmental investigations. All these efforts have resulted in better solutions to environmental problems and in the public acceptance of these solutions.

I feel that AIGP should continue to work with the state agencies in registering geologists and enhancing the status of geologists in the environmental arena. State agencies will establish their own standards for registering geologists; however, AIGP should make significant efforts to gain acceptance by the various states of AIGP membership as a minimum requirement for geologist registration. This will ensure that there is uniform quality of geologists working on environmental projects, and the public will be well served. It will also lead to reciprocity of registration among the various states, just as engineers now enjoy. If state agencies establish examination requirements, AIGP should work with them in drafting questions and should offer members a review course for such examinations. The Society of Mining Engineers has been providing this service for the past four years.

The spirit of cooperation between engineers and geologists that existed prior to the 1970s is now returning. The task of creating innovative solutions to clean up our environment, and preventing further damage to our environment is an ongoing one. Engineers and geologists should continue working together, complementing each other's area of expertise to perform this important task. Universities, professional organizations such as the AIGP and Society of Mining Engineers, and training institutions can foster this communication between engineers and geologists.
The Geologist And The Engineer

James Hadley Williams, CPG-0374, Director, and
Brian J. Swenty, Chief Engineer,
Missouri Division of Geology and Land Survey,
Missouri Department of Natural Resources, Rolla, Missouri

Several years ago, along the flooded Rhone River between Switzerland and France, the only bridge safe for the river crossing was a Roman structure built some two thousand years earlier. One of the more costly mistakes made by individuals, professions, and civilizations is the failure to retain or to use the knowledge and insight of those who have gone before us. Perhaps some excuses are acceptable. One that is not, however, began in earnest more than 100 years ago; the separatism of the geologist and the engineer. The matter becomes even more deplorable when one sees an attitude, now abandoned by most labor unions, still exists in parts of the United States where job descriptions are guarded with extreme jealousy. That jealousy puts one profession down as a technician and the other profession as one of wooden soldier performance. The result diminishes the value of both professions and does the public great harm. Fortunately, that attitude historically has not been widespread in Missouri.

Let's go back to the Rhone River for a moment. Why was the old Roman bridge usable and the "modern" bridges either washed out or not accessible? Likely, a number of circumstances contributed to this. The Romans realized that bridges and other transportation routes had to be stoutly built and had to rest on firm foundations. Writings still remain that show the Romans incorporated such concepts including comments on geologic matters. As recently as the early 1800's, William Smith, one of the founders of geology, made a successful and productive mix of geology and engineering. Whose fault is it that these two professions worked closely together 2000 years ago, but the same is not true today? All indications are that both the engineer and the geologist have an equal share of the blame.

The separation of engineering and geology begins at the university level. Young people are introduced to geology and earth sciences in grade school, but few understand the meaning of the term "engineering". Most university geology departments are located in the School of Arts and Sciences while engineering departments can be found in Schools of Mines and Metallurgy and Schools of Engineering. A common argument in academic circles today is whether engineering students receive enough training in liberal arts and sciences. Perhaps society has constructed a wall between the geology and engineering professions by requiring too much specialization in universities at the bachelors degree level.

Few would argue that geology is the most diverse of all the sciences. Some facets of the profession require a geologist who is capable of observation and experimentation in the greatest of detail and record keeping with meticulous descriptions. Many geologic answers cannot be obtained in the laboratory by measuring the properties of natural materials. Many geological reports, prepared carefully and recorded in extensive language and calculations, still do not conclude with an absolute answer. That can be frustrating to the engineer, who must use the information to make sound design decisions for construction. Geologic mapping, sampling, measuring, and other work that is required to determine earth properties are sometimes misconstrued as technician-level activities when viewed from a distant office. This contributes to a misunderstanding of the two professions.

With regard to professional engineers, the litigious society in which we live demands that engineers take precautions in the design and analysis of facilities used by the public. It is the opinion of many professional engineers that this has led to a decline in innovative practices. A close look at the insurance industry indicates that liability insurance rates for design professionals have continued to skyrocket over the past several years. The American Society of Civil Engineers (ASCE) recently published a booklet concerning the quality of constructed projects. It was an attempt to describe the responsibilities of the engineer, owner, and contractor in project design, management, and construction. This effort was prompted by recent building failures such as the Hyatt Regency Hotel collapse in Kansas City. Although the report was criticized by some, it was lauded by many as an attempt...
to define responsibility while promoting cooperation. This leads to the question, "Should the engineering and geological professions also publish a technical paper on the responsibilities of the engineer and geologist?"

Many times the scope of work of the two professions overlap. For instance, the design and construction of earth and concrete dams requires knowledge of the underlying geologic strata, the stress strain behavior of the rock, the permeability of the rock, the characteristics of the valley alluvium and colluvium material, the location of ground water, and the estimated distribution of seepage through the foundation after the reservoir is complete. The owner of the project is best served by a team of engineers and geologists who cooperate and collaborate on the field data and design of the foundation. In many cases, grouting is required, and the success of the grouting program dictates the design. Simply drawing a line between the bedrock and the base of the core trench doesn't differentiate the responsibilities of the two professions. Yet many owners want a professional to be responsible for the engineering and construction of the project as well as the geologic aspects of the design. This is one of the many reasons why geologists are now registered in fourteen states and certified in three others. If problems develop after construction is complete, the refined art of "finger-pointing" begins. Is it any wonder why many professionals cannot agree when they are forced to analyze data under the shadow of lawsuits?

How are these two professions, once in harmony and now split as if by continental drift, going to be knitted back together as a cohesive force in the interest of public welfare and safety? To a considerable extent, that is happening today. It has happened at Missouri's Division of Geology and Land Survey (DGLS) for the past fifty years. The DGLS staff represents a mix of professions today, but that was not the case fifty years ago. At that time, the staff consisted primarily of geologists, and their work included determining proper casing and sealing depths for engineers designing public water supplies, examining dam sites with engineers, and evaluating quarry sites. The State Geologist was an ex-officio member of the State Highway Department and provided advice and recommendations relative to highway planning and construction. Geologists were equal in the professional world in that department until that position was considered unnecessary. A few years later, the highway geologists were officially named technicians. This diminished role of the highway geologist may soon change due to the increasing emphasis on environmental impacts.

Perhaps one of the finest examples of blending the two professions for one goal was the work of Karl Terzaghi, the father of soil mechanics. The principles of investigation and analyses that he developed find their origin in both geology and engineering. Soil mechanics is a classic example of a discipline that is concerned with both the processes of formation of materials and the properties of those materials as related to construction. It is recognized as a link between geology and engineering. It is the greatest of good fortune for both the engineer and the geologist that Terzaghi was able to place engineering principles into the work of the geologist while recognizing that geologic concepts must also prevail. It is for this very reason that geologists and engineers must carry on this tradition of cooperation.

Many consulting firms and federal agencies use matrix management techniques with their technical personnel. They develop multi-discipline teams of engineers, geologists, geophysicists, biologists, and other scientists for site selection and evaluation, feasibility studies, and preliminary analysis. The present economic climate in this country mandates a high degree of care in the analysis and design of projects. Public funds are dwindling and the demand for those funds is highly competitive. It is certainly time to set aside any preconceived notions or jealousies between geologists and engineers. The standard of care used by attorneys and judges to evaluate the performance spirit of cooperation between the professions that both can continue to serve the public in a competent manner.

MINING IN THE COMMONWEALTH

EXCERPT FROM JULY 3-10, 1992

FOREIGN ACCESS TO RUSSIAN RESOURCES MAY BE RESTRICTED

The Russian government is currently reviewing amendments to the law on mineral resources passed February 21. The amendments stipulate the "general process" through which foreign firms can gain access to Russian mineral resources, the leader of the parliamentary Committee on International Affairs and Foreign Economic Relations, Sergei Tsypakov, announced. Tsypakov said the "general process" must protect the rights of Russian firms exploiting mineral resources by placing them in a more profitable position than their foreign competitors. Tsypakov said many nations, including the U.S., have legislation restricting the use of mineral resources by foreign firms.

In its current edition, the Russian law on mineral resources grants foreign and Russian firms equal access to republican minerals resources.

1-303-825-1510

The MINING IN THE COMMONWEALTH report is available for subscription. Call John Duncan at (303) 825-1510.
1872 Mining Law: Time for Clarification and Affirmation

Richard E. Blubaugh, Vice President
Environmental and Government Affairs, Atlas Corporation

Comment
Motivated mainly by two political forces, many people are trying to make a case against the 1872 Mining Law using such slogans as "It is too old"; "Mining companies get the gold, the public gets the shaft"; and, "The law does not protect the environment." One force wants to eliminate mining on public lands, the other to extract all profits for the "public good". Both forces have used misinformation, distortion of facts, and sensationalism as tactics to manipulate public perception.

It is time to clarify the issues regarding the Mining Law and affirm its basic tenets. These tenets have helped the mining industry develop and become a fundamental component in America's economic health. The age of the Mining Law is not the issue, its effectiveness is. The public isn't getting the shaft when the industry creates thousands of jobs and generates billions in tax revenues. The Mining Law does not address environmental issues because other legislation already does that effectively. The Mining Law does provide the framework and incentive for development of the West's natural resources, development that only private enterprise can successfully accomplish. This success plays an important role in the economic well-being and high standard of living enjoyed by Americans today.

The age of the Mining Law has nothing to do with its effectiveness. The Constitution and Bill of Rights are older than the Mining Law, yet they remain the foundation of this country. Furthermore, the law has been updated by supplemental acts, court decisions, administrative remedies, and environmental legislation. The hard-rock mining industry operates under rules comparable to other natural-resource extractive industries.

Two of the major points in the argument that the public is shortchanged by the Mining Law are the lack of royalties and fees for metals produced from public lands; and the patenting of public lands for $2.50 to $5 an acre.

The hard-rock mining industry is unique in the nature of its international markets and the fact that no end user stands ready to absorb the added costs of royalties and holding fees. American mining companies spend billions of dollars on exploration, capital development, and new technology, at great risk, only to be subject to fluctuations in mineral prices and public policy. The public benefits both through the revenues generated from hard-rock mining and the end products of mined commodities. Mining operations create high-paying jobs that generate tax revenues for the states and counties. Millions of dollars are spent in local communities, creating jobs and generating additional revenue. States receive revenue from sales, property, mine production, and severance taxes. A recent study by the accounting firm of Coopers and Lybrand and the law firm of Davis, Graham and Stubbs, entitled "Economic Impact of Mining Law Reform", reports that, under the two legislative proposals in Congress, twelve western states would experience a $1.5 to $3.8 billion loss in economic activity each year. This loss vastly exceeds the fees that would be generated by this legislation.

Patenting is the most emotional issue involved - largely as a result of misinformation, public-relations slogans, and the sensationalizing efforts of certain sectors of the media. With the large capital expenditures required by the industry, patenting provides the security of title critical for mineral development. Analysis of the costs for patenting public land shows actual costs, including those associated with exploration efforts, feasibility studies as well as the actual filing process, average about $17,000 an acre. The $2.50 to $5 often quoted is simply the filing fee, only one of the associated expenses. Patent applications are not considered by the government unless discovery and economic recovery of the natural resource is demonstrated.

The mining industry has expressed a willingness to see the issue of patenting modified, provided there is firm assurance of the right to use the surface and develop the minerals. The industry does not object to paying fair market value for the surface estate at the time of patenting, provided there are prompt and fair procedures for determining such value and the process of mine development is not unreasonably delayed. Many companies would consider a government repurchase agreement. Patenting alone is not sufficient reason to demand major reform of the Mining Law.

To argue that the Mining Law does not address environmental issues is to discount the vast array of other legislation passed in the last 20 years that is applied to the industry. The environmental laws and rules of this country, and of the states in which operations occur, apply as strictly to metal mining as they do to coal, oil, or gas. On public lands the National Environmental Policy Act, the Clean Air Act, the Clean Water Act, the Resource Recovery and Conservation Act, the Federal Land Policy and Management Act, and many others are applied to hard-rock mining operations. Also, each state has developed environmental legislation...
that is applied to hard-rock mining. Permitting efforts are both lengthy and costly. Today it can take two to four years and cost about four percent of total capital costs. During operations, environmental-related costs run between 10 and 15 percent of total production costs. Under today's environmental rules, development is not an unquestioned right and can be denied.

It is time the public hears the facts and ignores the rhetoric. Our legislators need to strive for an objective perspective, one that acknowledges the benefits of the hard-rock mining industry and corrects misconceptions. It is time for those who have any involvement at all or any interest in the public lands to take a closer look at the issues and to understand them better. We need to preserve the Mining Law because, through its basic principles, we can ensure that the hard-rock mining industry will continue to play a vital role in national security, in the country's economy, and in helping to avoid reliance upon foreign sources for metals.

Richard E. Blubaugh, Vice President, Environmental and Governmental Affairs, Atlas Corp., Republic Plaza, Suite 3150, 370-17th Street, Denver, CO 80202.

Minerals Exploration Coalition, May 1992

Editor's Note: For more information on the status of the 1872 Mining Law in Congress see Ted Mullin's "Today In Washington" column on page 19.

Summary of the Executive Committee Meeting of April 11, 1992

Mark L. Reinhardt, CPG-7111
AIPG Advisory Board Representative to the Executive Committee

The Executive Committee of AIPG met on April 11, 1992 at AIPG Headquarters in Arvada, Colorado.

President Daniel N. Miller, Jr. called the meeting to order at 8:00 a.m. with all Executive Committee members present. Guests present for portions of the meeting were: Gary Mitchell, Russ Slayback, Ed Nuhfer, Steven Sonnenberg, and Logan MacMillan.

The Secretary's Report given by Bob Merrill showed 3,800 active members and 4,344 total Institute members as of March 1, 1992. The 116 applications received in the first quarter of 1992 represent a 15% increase over 1991. Section bylaws were approved for Virginia and Colorado. Fifteen Sections are still operating under the model bylaws since their submittals are past due.

Dale Reese's Treasurer's Report indicated that the Institute's financial condition has improved somewhat over the previous year. The committee voted to adopt a final budget based upon the actual 1992 dues payments.

The Editor's Report was submitted by Tom Jones. Tom stated that advertising revenue in the first quarter was up 270%. The large number of high quality papers and articles caused the Environmental Geology and the Mining Geology issues each to be expanded into a two-part series.

In his report, President Dan Miller discussed his many trips to various sections and the concerns expressed by those sections. He also discussed possible modifications to the dues procedure.

Bill Knight gave the headquarters' Report including the status of registration efforts in various states. Kentucky was successful in passing a registration bill. Washington was not successful.

Wisconsin is working on a bill. AIPG is opposed to specially registration as it has been proposed. There was discussion of sections that are relatively dispersed and inactive, and possible methods to remedy that situation.

The Executive Committee then went into executive session to discuss special case applications and an ethics case. When the Committee returned to the regular meeting, it dealt with various Committee business and other items as follows:

AIPG opposition to multi-discipline certifications was reaffirmed.

Russ Slayback reported on the status of the 1993 Annual Meeting in Springfield, Massachusetts. It will be held at "a jewel of a hotel", the Sheraton Monarch Place on the Connecticut River. There will be a trip to Mystic Seaport. The meeting will be held during the mid-October "foliage season".

Frank Turek reported on the 1994 Annual Meeting in Flagstaff. It will be held at Little America with a trip to the Grand Canyon.

The Executive Committee voted to publish A Citizen's Guide To Geologic Hazards, edited by Ed Nuhfer.

AIPG will offer members access to a group life and health insurance plan. Information will appear in upcoming issues of TPG.

Frank Turek's National Geologists Examination Committee is working with the Association of State Boards of Geology on a National Geologists Examination.

The Executive Committee received a report from Headquarters' Committee and voted to accept one minor changes to personnel policies.

Russ Slayback is organizing a large, complex group of subcommittees to deal with Governmental Affairs.

Rick Obernolte will prepare the summary of the July Executive Committee Meeting.
# Pre-Registration Form

**GEOLOGICAL REASON**

**A BASIS FOR DECISIONS AFFECTING SOCIETY**

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<tr>
<th><strong>AIPG 1992 Annual Meeting</strong></th>
<th><strong>FIELD TRIPS:</strong></th>
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<tbody>
<tr>
<td>September 27-30, 1992—Lake Tahoe, Nevada</td>
<td>Field Trip No. 1 (1989 Loma Prieta Earthquake) (350 per person)</td>
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<td>Field Trip No. 2 (Waste Disposal) (250 per person)</td>
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<td>Field Trip No. 3 (Comstock Contamination &amp; Cleanup) (165 per person)</td>
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<td>1. Rights and Responsibilities of the Practicing Geologist Pre-Registration $80, On-Site $100</td>
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<td>2. Preparation for the California Registration Exam Pre-Registration $325, On-Site $375</td>
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<td>3. Water Resource Management/Mining (includes 4-day field trip) Pre-Registration $585</td>
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<th><strong>MEETING REGISTRATION:</strong></th>
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<tr>
<td>AIPG Members</td>
<td>Guest/Spouse Trip No. 1 (Lake Tahoe Rim) $</td>
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<td>Spouse Trip No. 2 (Virginia City/Carson City) $</td>
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<td>Guest/Spouse Trip No. 3 (Reno Tour and Gaming Academy) (45 per person)</td>
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<td>Guest/Spouse Trip No. 4 (Lake Tahoe Dinner Cruise) $</td>
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<td>Banquet (Roman theme) (48 per person)</td>
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**Note:** All trips subject to minimum/maximum registration.

Return form with payment (checks payable to AIPG Nevada Section) to:

Jonathan G. Price
1992 AIPG Annual Meeting
Nevada Bureau of Mines and Geology, Mail Stop 178
University of Nevada, Reno
Reno, Nevada 89557-0088

You need not register for the meeting to attend field trips or workshops/short courses.
AGI's Millings Speaks To Congress
In Support Of NSF For FY '93 Budget

Introduction

My name is Marcus E. Milling. I am Executive Director of the American Geological Institute (AGI), a nonprofit federation of 19 geoscientific and professional associations that represent about 60,000 geologists, geophysicists, and other earth scientists.

AGI provides information services to geoscientists, serves as a voice for shared interests in our profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in mankind's use of resources and interaction with the environment.

I appear before you today to testify in support of the FY 1993 budget request of the National Science Foundation (NSF). I will focus my remarks on geoscience research and education activities sponsored by the NSF, but first I would like to address the overall NSF budget.

Vital Role of the National Science Foundation

The National Science Foundation is one of America's most valuable assets for nurturing and mobilizing our resources in scientific research and education. A commitment to sustained investment in scientific research and education is necessary to promote economic growth, improve the competitiveness of American industry, and create new jobs for American workers.

American preeminence in science and technology cannot be taken for granted. Many of our competitors in Europe and Asia are rapidly increasing their rate of investment in basic and applied research.

In recent years, Congress and the President have taken steps to redress past underfunding of the National Science Foundation. Presidents Reagan and Bush announced initiatives to double the budget of the NSF, first by FY 1992 and now, under a revised timetable, by FY 1994. In 1988, Congress overwhelmingly passed a five-year NSF authorization bill that reinforced the commitment to double the NSF budget by FY 1992. I urge the Congress to honor that commitment by fully funding the FY 1993 NSF budget request of $3.03 billion.

I am pleased that the NSF budget request continues to emphasize support of individual investigators, who are the backbone of our nation's research system. I encourage the NSF to continue increasing its efforts in science education and human resources.

Geoscience Research and Education

These are times of great challenge and opportunity for the geosciences. Global climate change, natural disasters, energy resources, and water-supply issues are reported daily by the news media. When it comes to appropriations for geoscience research and education, nothing less than the survival of our way of life and our planet are at stake.

Geoscience research and education are essential to help understand and resolve practical problems including: the location and extraction of energy, mineral, and water resources; the environmental consequences of human activity and waste disposal; and the prediction of earthquakes, volcanic eruptions, and winter storms.

Our national investment in geoscience research and education continues to pay enormous dividends. For example, the U.S. Geological Survey reports that the successful prediction of the 1991 eruption of Mt. Pinatubo in the Philippines saved thousands of lives and billions of dollars in U.S. military equipment.

The NSF Directorate for the Geosciences supports research in geological, oceanographic, and atmospheric sciences. It is the main source of federal support for geoscience research conducted at U.S. universities. The NSF Directorate for Geosciences plays a major role in U.S. Global Change Research Program, and provides critical opportunities for individual investigators to participate in the program.

The budget request for the NSF Directorate for Geosciences is $472.4 million, an increase of $68.0 million, or 16.8 percent, over the FY 1992 current plan. The budget request maintains support for many core geoscience research programs and expands support in several critical areas, including hydrology, environmental research, and the U.S. global Change Research Program. I urge Congress to fund fully the FY 1993 budget request for the NSF Directorate for Geosciences. This is a modest investment in the future of our nation and our planet.
STATE NET

US 23452
AGENCY: Dept. of the Treasury
TOPIC: FINANCIAL INSTITUTIONS
SUMMARY: Establishes temporary procedures governing the availability of environmental information on projects of multilateral development banks.
AGENCY CONTACT: Priscilla Coburn, Off. of Multilateral Development Banks, Dept. of the Treasury, 1500 Pennsylvania Ave., NW, Washington, DC 20220, (202)260-0765
CITATION: 31 CFR 26
EFFECTIVE DATE: 6/10/92
COMMENT DEADLINE: 7/1/92

US 23516 & 8 17
AGENCY: Envr. Prot. Agency
TOPIC: ENVIR. PROT. & POLLUTION CNTRL
SUMMARY: Undertakes the following actions with regard to the Clean Water Act regulatory program: (1) modifies the definition of "discharge of dredged material," (2) clarifies the placement of fillings considered to result in a discharge of fill material, & (3) clarifies that prior converted croplands are not water of the U.S.
PROPOSAL DATE: 6/16/92
COMMENT DEADLINE: 8/17/92

US H 4905
AUTHOR: Eckart
TOPIC: ENVIR. PROT. & POLLUTION CNTRL
SUBTOPIC: SOLID WASTE
SUMMARY: Regulates the disposal of waste associated with the exploration, development, & production of crude oil & natural gas.
STATUS: 4/14/92 INTRODUCED

US H 5276
AUTHOR: Taulhn
TOPIC: ENVIR. PROT. & POLLUTION CNTRL
SUBTOPIC: SOLID WASTE
SUMMARY: Amends the Solid Waste Disposal Act to prohibit the Administrator of the EPA from listing used oil & affilative materials as a hazardous waste under that Act, requires the Administrator to establish cost effective management standards for generators, transporters, & recyclers of used oil, conserves a valuable resource, & reduces the amount of lead in used oil fuels.
STATUS: 5/26/92 INTRODUCED

US S 2866
AUTHOR: Dominick
TOPIC: ENERGY
SUBTOPIC: ENERGY ISSUES - GENERAL
SUMMARY: Establishes a program to be known as the "ADEPT" Program, for the provision of pharmaceutical assistance in the deployment of energy & energy-related environmental practices & technologies.
STATUS: 6/18/92 INTRODUCED

DE H 556
AUTHOR: Amick
TOPIC: BUSINESS & CORPORATIONS
SUBTOPIC: SPECIFIC INDUSTRIES, OCCUPATIONS
SUMMARY: Relates to professional engineers.
STATUS: 6/3/92 INTRODUCED

FL H 171 h & FS L 92 h
AUTHOR: Davis & Kripatrick
TOPIC: ENERGY
SUBTOPIC: OIL, GAS, PETROLEUM
SUMMARY: Creates the Natural Gas Transmission Pipeline Siting Act to establish a certification process for siting natural gas transmission pipelines; provides legislative intent; provides definitions; provides powers & duties of the Dept. of Environmental Regulation; provides applicability, certification, & exemptions; provides for applications & specifies pipeline corridor requirements; provides for appointment of a Hearing Officer.
STATUS: 6/1/92 INTRODUCED

IL 4929
AGENCY: Dept. of Prof. Regulation
TOPIC: BUSINESS & CORPORATIONS
SUMMARY: Requires submission of a complete work history by an applicant who submits a current Council Record & Certification of Verification from the Natl. Council for Engineering Examiners to obtain licensure by endorsement in Illinois.
AGENCY CONTACT: Jean A. Courney, Dept. of Professional Regulation, 320 W. Washington, 3rd Floor, Springfield, IL 62786, (217)785-0800
CITATION: 69 IAC 1380.280, 300
PROPOSAL DATE: 6/19/92
COMMENT DEADLINE: 8/5/92

IN 2334
AGENCY: Solid Waste Management
TOPIC: ENVIR. PROT. & POLLUTION CNTRL
SUMMARY: Establishes technical standards & corrective action requirements for owners & operators of underground storage tanks.
AGENCY CONTACT: Dept. of Environmental Management, 105 S. Meridian St., Indianapolis, IN 46202
CITATION: 329 IAC 9
PROPOSAL DATE: 6/1/92
COMMENT DEADLINE: 6/22/92

IN 2344
AGENCY: Board of Reg. for Land Surv.
TOPIC: BUSINESS & CORPORATIONS
SUMMARY: Concerns land surveyors; makes numerous technical changes.
AGENCY CONTACT: Gov't Center North, 100 N. Senate Ave., Rm. 1061, Indianapolis, IN 46202
CITATION: 685 IAC 1-1-1, 1-1-2.1, 1-2-2, 1-3-1, 1-3-3.1, 1-4-1, 1-4-2, 1-4-3
PROPOSAL DATE: 6/1/92
COMMENT DEADLINE: 6/22/92

LA HCR 249
AUTHOR: Akio
TOPIC: RES. MGMT. & PRESERVATION
SUBTOPIC: LAND
SUMMARY: Directs the Dept. of Transportation & Development, the Dept. of Environmental Quality, the Dept. of Health & hospitals, the Dept. of Wildlife & Fisheries, & the Dept. of Economic Development to assist & cooperate with the Wetlands Foundation in obtaining & gathering data & information & issuing permits & licenses as may be necessary in conducting wetlands research.
STATUS: 6/1/92 INTRODUCED

MA H 5733
AUTHOR: O'Sullivan
TOPIC: POLITICS & GOVT.
SUBTOPIC: STATE & FED ELECTED & APPD OFFICIALS - EXEC BRANCH
SUMMARY: Relates to the duties of the State Geologist.
STATUS: 5/29/92 INTRODUCED

MT H 60
AUTHOR: McCulloch
TOPIC: ENERGY
SUBTOPIC: COAL ENERGY
SUMMARY: Imposes a surtax on the coal gas proceedings tax, the local government severance tax on oil and gas, and the oil and gas net proceeds tax on new production; limits each surtax to 1 year; allocates the additional revenue to the general fund.
STATUS: 7/13/92 INTRODUCED

NJ S 985
AUTHOR: Dimon
TOPIC: RES. MGMT. & PRESERVATION
SUBTOPIC: SPECIFIC INDUSTRIES, OCCUPATIONS
SUMMARY: Exempts certain projects from Freshwater Wetlands Protection Act.
STATUS: 6/2/92 INTRODUCED

NY A 11830
AUTHOR: Committee on Rules
TOPIC: BUSINESS & CORPORATIONS
SUBTOPIC: SPECIFIC INDUSTRIES, OCCUPATIONS
SUMMARY: Extends the scope of practice to allow land surveyors who meet certain educational & experience requirements to perform certain site & land planning functions that require the application of engineering principles.
STATUS: 6/1/92 INTRODUCED

NC S 1156
AUTHOR: Blackman
TOPIC: RES. MGMT. & PRESERVATION
SUBTOPIC: WATER SUPPLY & PRESERVATION
SUMMARY: Allows closed-loop groundwater remediation systems.
STATUS: 6/3/92 INTRODUCED

OK SCR 90
AUTHOR: Williams & Bagley
TOPIC: RES. MGMT. & PRESERVATION
SUBTOPIC: WATER SUPPLY & PRESERVATION
SUMMARY: Recommends that development of a statewide groundwater management plan give consideration to the effects on current owners & users of groundwater resources.
STATUS: 6/29/92 INTRODUCED

PA H 2813
AUTHOR: Steelman, et al.
TOPIC: REAL ESTATE & CONSTRUCTION
SUBTOPIC: REAL ESTATE - MISC
SUMMARY: Amends the Floodplain Management Act; requires that sellers of land provide buyers with a floodplain notification.
STATUS: 6/2/92 INTRODUCED

TN 2160
AGENCY: Board of Architectural & Engineering Examiners
TOPIC: BUSINESS & CORPORATIONS
SUMMARY: Relates to rules of professional conduct; relates to applications & examination fees for engineers, engineers-in-training, architect, landscape...
The Geoenvironmental Forum Approves AAPL’s Request For Membership

The Geoenvironmental Forum, a consortium of professional organizations who joined forces to establish and uphold the standards of care and performance in the geoenvironmental field approved AAPL’s request for membership on March 23, 1992.

Professional groups represented in the Forum are the American Association of Petroleum landmen (AAPL), Association of Ground Water Scientists and Engineers (ACWSE), American Institute of Professional Geologists (AIPG), The Association of Engineering Firms Practicing in the Geosciences (ASFE), Association of Engineering Firms Practicing in the Geosciences (ASFE), Association of Engineering Geologists (AEG) and HWAC/an association of engineering and science firms practicing in hazardous waste management.

The following resolution was passed by the Forum and unanimously approved by each association that is a member of the Forum

RESOLUTION

WHEREAS The Geoenvironmental Forum was established to provide a medium through which involved professional and technical organizations identify standards of practice and guidelines for professional qualifications in the rapidly evolving geoenvironmental field, and

WHEREAS The American Society for Testing and Materials (ASTM) is developing standards which will specify the elements and methodology to be used in Level 1 PSAs, and

WHEREAS The Geoenvironmental Forum has established that engineers, geologists, and other technical professionals are well suited for the performance of Level 1 PSAs, and

WHEREAS there exist effective mechanisms for the certification/registration/licensure of engineers, geologists and other technical professionals,

NOW THEREFORE, BE IT RESOLVED that The Geoenvironmental Forum:

- believes that Level 1 PSAs should be performed to a defined standard by or under the direction of individuals competent in the required disciplines;
- is opposed to cross-discipline certification/registration/licensure of individuals performing Level 1 PSAs;
- believes that existing Level 1 PSAs cross-discipline individuals or company-wide certification programs do not provide the public with assurance that those registered or certified will perform their services in such a manner as to protect public health, safety, welfare and the environment, and;
- recommends and encourages the development of programs to certify individuals on the basis of their qualifications within the disciplines of their practice, such as registration/certification/licensure of engineers, geologists, and other technical professionals.
TODAY IN WASHINGTON

F. B. "Ted" Mullin, CPG-1716

The big noise today is the new Rahall Amendment (or substitute) to his Bill H.R. 918 to do away with The Mining Law of 1872. The Bill was scheduled for mark-up on June 24, 1992. Rahall wants to discharge the Subcommittee and get the Bill before the whole Committee on Interior and Insular Affairs where he has the votes to get the Bill approved. He did, and it was. Now it goes to the full House of Representatives where it is expected to pass early in July.

Here is a brief summary of the Interior and Insular Affairs 6/24 markup session of the Rahall Bill:

Amendment in Nature of a Substitute to H.R. 918
The "Mineral Exploration and Development Act of 1991"

Members In Attendance
Miller (D-CA)
Murphy (D-PA)
Vento (D-MN)
Byron (D-MD)
Richardson (D-NM)
Owens (D-UT)
Johnson (D-SD)
Hoagland (D-NE)
Rahall (D-WV)
Williams (D-MT)
Gejdenson (D-CN)
Darden (D-GA)
DeFazio (D-OR)
Jontz (D-IN)
Abercrombie (D-HA)
Young (R-AK)
Lagomarsino (R-CA)
Marlenee (R-MT)
Rhodes (R-AZ)
Smith (R-OR)
Thomas (R-WY)
Taylor (R-NC)
Allard (R-CO)
Vucanovich (R-NV)

Summary Of Committee Action
Rahall (D-WV) asked the Committee to discharge H.R. 918 from the Subcommittee on Mining. Chairman Miller (D-CA) agreed and the Committee voted by voice. When it appeared that the Bill would be discharged, Marlenee (R-MT) asked for a recorded vote. The Bill was discharged from the subcommittee by a recorded vote.

After several hours of discussion and five amendments, Miller (D-CA) asked the committee to adopt the amendment as amended. The substitute, with Vento’s amendment precluding mineral activity in conservation system units, DeFazio’s 8% royalty on gross production, and Owen’s exemption of due diligence and rental fees for small miners, passed by voice vote.

Then Miller asked the committee to report the amendment in nature of a substitute as amended to the House. The action was agreed to in a recorded vote in which Campbell, Logomarsino, Marlenee, Smith, Thomas, Vucanovich, Williams, and Young, among others, voted "no".

Members Opening Remarks
Rahall (D-WV) said that he was not anti-mining, but that it was time to get serious about reforming the Mining Law. Young (R-AK) said that if the Bill passed, it would not be signed into law by the President; that it was a Bill that would "socialize the industry." He said the Bill was a "turkey". Vucanovich (R-NV) opposed Rahall’s amendment and said that Rahall never attempted a markup in subcommittee and then completely rewrote Title II of the Bill which contains unsuitability reviews of all federal lands and provisions for citizen suits. Jontz (D-IN) complemented Rahall for the number of field hearings that he had held. He said that Rahall’s amendment accommodated the suggestions most often heard about the Bill as introduced: changes in the diligence requirements; specificity in the reclamation standards; and changes in the land management planning provisions. Logomarsino (R-CA) opposed Rahall’s amendment saying it "goes too far, too quickly." He said it would cause off-shore mining and cost jobs. Johnson (D-SD) said he would have preferred to let the subcommittee process work. He asked for reasonable reclamation standards and opposed DeFazio’s amendment for a royalty. Williams (D-MT) said, while he supports mining law reform, the amendment completely overhauls how we do mining, and the members of the committee did not have enough time to review it. He called the suitability provisions "RARE III". He said the committee action was "slam dunking" another part of the process: his constituents hadn’t had time to analyze the effects of the amendment, either. Marlenee (R-MT) opposed the amendment and said it meant more jobs going out of the country. He reminded the members that the Mining Law had been amended at least 36 times in the past 119 years. He also said it would raise the prices of strategic minerals and eliminate small miners. DeFazio (D-OR) said that dramatic reforms in the law are necessary and supports a royalty from hardrock mining. He also opposes foreign-owned companies mining on federal lands. Smith (R-OR) said that "the siege of the west continues" and that most of the states have reclamation standards that make the ones in the Bill unnecessary. Vento (D-MN) spoke in favor of the Bill and of the need for revenue to come back to the government. Thomas (R-WY) spoke about the need for the continuation of access, self-initiation, secure tenure, and patenting and opposed the amendment. Chairman Miller (D-CA) supported the bill and said that the minority had had two weeks to review the amendment and had not offered any amendments.
Discussion And Amendments

Vento (D-MN) offered an amendment to direct the Secretaries of the Interior and Agriculture to take all necessary steps to prevent mining-related activities within conservation system units that could have adverse impact on resources or values of such areas. The amendment passed after a recorded vote. DeFazio (D-OR) offered an amendment of no less than 8% royalty on the gross income from the production of "...locatable...and associated minerals...or mineral concentrates." The amendment passed after a recorded vote in which Rahall voted along with Lagomarsino, Marlenee, Richardson, Smith, Thomas, Vucanovich, and Young opposed it. DeFazio (D-OR) offered a second amendment to preclude "...foreign individuals or corporations, partnerships associations, joint-stock companies, business trusts, or unincorporated organizations controlled by foreign individuals from locating or holding mining claims." The amendment failed with Rahall, Vucanovich, and Richardson opposing it. Jontz (D-IN) offered an amendment to change the due diligence provisions in the amendment in nature of a substitute to ensure that people could pay diligence fees rather than carrying out surface-disturbing activities. Jontz's substitute is similar to the Bush administration's proposal for holding fees of $100 per year for existing claims. The amendment was defeated in a recorded vote in which Marlenee, Rahall, Rhodes, Richardson, Smith, Thomas, Vento, Vucanovich, Thomas, Young, and Miller voted "no". Thomas (R-WY) "seminar from the Chairman" concerning the inaction by the minority. This title contains provisions dealing with unsuitability reviews for mineral activities: provisions for public participation, administrative hearings, and citizen suits; exhaustive analysis and processes for permit applications; and highly specific reclamation standards. A heated discussion of the amendment followed: Rahall in vehement opposition; Vucanovich in support; Jontz in opposition; Williams concerned that the unsuitability reviews creates "RARE III"; Miller in opposition. The amendment failed in a recorded vote.

Owens (D-UT) offered an amendment to waive either diligent development expenditures or minimum rental requirements for small miners holding 5 claims or less, and less than 200 acres. This was a provision of H.R. 918 as introduced. The amendment passed by a voice vote.

Meanwhile on the Senate Side

Senator Bumpers (D-AR) is revising his Bill S-433. On July 1, the Committee of Energy and Natural Resources met with Johnston (D-LA), Bumpers (D-AR), Ford (D-KY), Conrad (D-ND), Akaka (D-HI), Wallop (R-WY), Hatfield (R-OR), Domenici (R-NM), Murkowski (R-AK), Burns (R-MT), Craig (R-ID), and Garn (R-UT) attending. Johnston asked if the committee wanted to discuss revisions of S-433, Bumpers compromise amendment now or later. After some discussion, Johnston asked the members to look at the Bill between now and the next mark-up session near the end of July.

The Committee also amended the Geothermal Steam Act of 1970 with a Bill which requires a moratorium on leases for geothermal resources within 15 miles of Yellowstone National Park and calls for another study by the NPS, FS, and the USGS on the impact of geothermal development in the area around the Park.

Commentary

It is easy for the oil and gas industry to pass H.R. 918 off as "something that won't affect us", however - how much copper does the oil and gas industry use? Platinum? Natural Zeolites? Barite? Bentonite? The minerals industries are creating a major foundation for the Gross National Product of the U.S. Unfortunately, they (the industry) have not wised up to the fact that there is power in alliances. I see no evidence that the furniture industry is actively supporting the petroleum industry or that the railroad industry is actively supporting the mining industry. What about the television industry? Where is their support for the mining industry? TV sets are not made and distributed without minerals - to say nothing about the electricity to power them. The extractive minerals industries are losing the race.

AIPG is not doing the job - why worry about professionalism if there are no jobs for geologists in the extractive industries. The Government Affairs Committee cannot do the job alone. An organization is only as strong as its members. You must speak out to your Congressional Delegation.

There seems to be an urge to form alliances with European, South American, and other geologic groups outside the United States while neglecting the opportunities to establish alliances in the U.S. which could help the minerals industries and thus provide more jobs for geologists at home. AIPG should be forming partnerships with the A.I.Ch.E. and other similar engineering associations, establishing communications.
with labor unions who rely on natural resources for their well being - teamsters, steelworkers, UAW, etc. Congress doesn't seem to want to listen. We will have to educate those who help control the vote.

**NOW MORE GRIST FROM THE FEDERAL REGISTER MILL**

**Vol. 57, No. 110, (6-8-92)**

Department of Labor. 29 CFR parts 1910 and 1926. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite. FINAL RULE. Page 24310. OSHA lifts the Administrative stay, and amends the revised asbestos standards to remove nonasbestiform tremolite, anthophyllite and actinolite from their scope.

**Vol. 57, No. 114, (6-12-92)**

Department of Labor - OSHA - 29 CFR part 1910. Air Contaminants - Proposed Rule. This covers permissible exposure limits for the maritime, construction, and agriculture industry sectors. Substances covered range from abate to zirconium compounds.


Q. What do NOAA, IGAC, IGP, NARE, APARTE, NOWES, OMNET, OSSE, TOGA, GEWEX, WOCE, JGOFs, ACCP, AND ARCSS have in common?

A. These acronyms all occur in 2 paragraphs of NOAA’s FY 92 Program Priorities. It has to be a new record of some kind.

Public Land News has an interesting note this month. The Interior Department Inspector General (IG) says that BLM should charge more for the use of federal lands for geophysical exploration. The IG says the Federal Land Policy and Management Act requires fair market value to be charged and that the “Fed” is losing up to $25 million per year.

They recommend that BLM charge a $500 filing fee for any geophysical exploration permit.

To obtain the report, Onshore Geophysical Exploration Program, BLM Report No. 92-1-828 - Contact Betty Foyes at (202) 208-4356.*

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**AGU Special Report**

**Volcanism and Climate Change**

Volcanic eruptions are capable of modifying Earth’s climate more significantly than scientists previously believed. Recent evidence suggests that volcanic emissions play a crucial role in modifying global temperatures and damaging Earth’s protective ozone layer.

"Volcanism and Climate change," a special report published by the American Geophysical Union, presents new data on the dramatic effects major volcanic eruptions have on Earth’s atmosphere. This report was released at a press conference on Monday, May 18, 1992.

Speaking at the press conference was Stephen Self of the University of Hawaii, Richard Turco from the University of California at Los Angeles, James Hansen of the NASA Goddard Institute for Space Studies, Alan Robock from the University of Maryland, Michael Rampino of New York University, and Haraldur Sigurdsson from the University of Rhode Island.

"Volcanism helped create Earth’s atmosphere, and continues to modify it," comments Turco, "but not until recently have we been able to ascertain how the climate is affected by a volcanic eruption."

For more information contact Charles Blue, AGU (202) 939-3212.*

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**AUGUST 1992 • The Professional Geologist 21**
EXECUTIVE DIRECTOR’S COLUMN

William V. Knight, CPG-0153

It has been said that "there is nothing new under the sun." This month, we have a guest column by one of our Members. It is written from the perspective of a geologist in the engineering and environmental fields of practice. But, it will ring some familiar bells for those in other fields, especially petroleum and mining geology, who have been the innocent recipients of the wrath of clients victimized by the unethical conduct of some other "consultant".

Professionalism Vs Profit
A GUEST COLUMN BY

John H. Gray, CPG-7127

Geology in general is well-known for a plethora of technical jargon, photographs, graphs, and cross-sections. I propose that there is another aspect that is equally important to professionals such as ourselves—profit. My comments come from experience in the private sector and most recently as a self-employed professional. I am one of those individuals who has worked hard to be the best professional I know how and to be successful in business. I love this profession with all of its good and bad.

The sometimes difficult task of balancing a business is often over-weighted in the direction of making money rather than being concerned with the reality of peoples' needs. We all know that survival is truly dependent on a certain monetary compensation for our work effort. Those who have been or now are self-employed are, it seems though, always a little closer to their businesses. They feel more quickly the pain and joys of business related decisions. It is my belief that it also makes them more aware of the need for a "humanity factor" in dealing with clients.

The real concern, however, is that over the past decade, the "take the money and run" mentality has become far too prevalent among a minority of consultants. Like profit nomads in the night, speculators in every business have been known to ride into town, to offer quick fix solutions for a large fee and then disappear a few weeks or months later. The glitter style of the consultant and his impressive hardware touted during the exchange can be impressive to the needy and uninformed. The ever popular environmental science is an example where this scenario has become all too common. This practice makes very fast money for some, but can unfortunately leave the industry, in general, with a tarnished image. The band-aid approach to geotechnical and wake of the aftermath remain problems which must be resolved by those of us who live in the communities long-term and are totally dedicated to the clients' needs.

Ours is a profession which, thankfully, has arisen from an embryonic subdiscipline of engineering, to a broad spectrum of major earth sciences and environmental-minded dedicated specialists with a conscience. It is the responsibility of each of us to give more than just the 100 percent a client needs. We must give professionalism and humanity to the cause.

One guiding light upon which I focus each day is that it does not pay to collect great successes (money) and leave while the clients are still scratching their heads. We must strive ever harder as we plod through those muddy fields and bad weather to remember that the real objective is to educate and inform the client; be problem solvers, not contributors. Over-selling a job to a client when the work is truly not needed would seem criminal and detrimental to the industry. Success is not attainable when your client does not understand where they have gone wrong, what services they are purchasing from professional consultants and where the next step should take them on the road to blissful reconciliation of their problems.

The real bottom line issue is how to analyze the client’s problems, organize their needs and assets for mobilization to the solution and to inventory for them their options based upon costs, legal restrictions and liabilities. The answer, I believe, is for each of us to take adequate time to fully digest the package which comes with the client and his project. Get in touch with their needs, information, and most of all, make them feel ownership in the analysis and resolution of project deficiencies. Give them responsibilities and focal points in the process. It has been our experience that where the client perceives a value return for the time and effort expended, payments in monetary terms and gratitude are close behind. This equates to a client who will most importantly recommend our services to others. Success and compensation should not precede, but rather follow a job well done.

Mr. Gray is Vice President/Geologist, G2 Associates, Inc., Gresham, Oregon.

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Pipelines, Environment and Geology -- Revisited

Jeffrey R. Keaton, CPG-6343

The April 1992 issues of The Professional Geologist carried an article by William V. Knight and Daniel N. Miller, Jr., entitled "Pipelines, Environment And Geology". I take exception to this article on two points. First, I object to misinformation about the Kern River Pipeline. Second, I find the general tone of the article to be naive.

The article notes that "Recognition of the geologic conditions [along pipeline alignments] can be significant in four ways. First, they indicate construction conditions or constraints which affect the economics of the project. Second, they indicate conditions which may pose a threat to, or enhance, the pipeline's future integrity. Third, they may suggest the existence of an archeological [sic] site to be avoided. Fourth, they may suggest the presence of economically significant resources such as petroleum and other mineral deposits.'

The article further states, 'An outstanding example of a lost opportunity in one of the most highly mineralized areas of the world is the Kern River gas pipeline recently constructed from southwestern Wyoming to central California. While a large number of biologists, archaeologists [sic] and paleontologists were employed on the "spreads", there was reported to have been no geological input of the type described in this paper either in the design or the construction of the line.'

I am mystified at the statement "...there was reported to have been no geological input..." Geologists employed by Sergent, Hauskins & Beckwith; Dames & Moore; and Golder Associates had extensive involvement in the environmental issues of siting, preparing information presented to the Federal Energy Regulatory Commission. Sergent, Hauskins & Beckwith was retained to provide engineering geology and geotechnical engineering services for the design of the Kern River Pipeline from January 1990 through 1991; I served as the Project Manager.

The following two paragraphs are the abstract from a 39-page paper I wrote entitled Engineering geology for design of the Kern River Pipeline in Southwestern Utah. This paper will be published in October 1992 in the Utah Geological Association Publication 21.

Engineering -- geologic evaluations of conditions, many of which constitute some form of natural hazard along the alignment of the proposed Kern River Pipeline, were conducted to provide a basis to 1) reduce the risk of damage to the pipeline which could result in a threat to public safety, 2) reduce the owner's exposure to loss of pipeline function (i.e., economic loss), and 3) comply with mitigation measures required by the Federal Energy Regulatory Commission (FERC) as part of the project Final Environmental Impact Statement (FEIS). The FERC developed 156 measures to mitigate environmental impacts related to the proposed pipeline. Of these, 17 pertained to geology and geotechnical engineering. Specific scientific and engineering studies were conducted to address design issues related to avalanches, volcanic eruptions, fault ruptures, liquefaction, slope instability, hydrocompaction, subsidence, springs, shallow ground water, and stream crossings.

Avalanche, volcanic eruption, liquefaction, slope instability, hydrocompaction, and subsidence processes, and springs and shallow ground water were found to represent insignificant hazards to a buried, high-strength pipeline in southwestern Utah for a variety of reasons, and little in the way of special design provisions were warranted. Quaternary faults were crossed at three locations in southwestern Utah in a way intended to reduce the risk of damage in the event of a future surface rupture event. Streams were evaluated for scour and lateral-bank migration hazards associated with the 100-yr flood event.

During construction, geologists employed by Sergent, Hauskins & Beckwith made visits to selected areas where design-related issues needed to be resolved. We did not provide continuous geologic observations of the construction operations. Nonetheless, clearly geological input of the first two of the four types described by Knight and Miller was used extensively in the siting and design of the Kern River Pipeline. Environmental constraints posed a significant problem worthy of mention. We encountered a classic Catch-22 during our investigation for design of the pipeline. Prior to issuing a Certificate for Construction, the FERC required engineering design
information at crossings of active fault traces verifying that the future fault displacement would not over-stress or rupture the pipeline. The BLM would not allow significant ground-disturbing activities along the alignment until FERC had issued the Certificate. We wanted to excavate trenches across suspected active fault traces to develop information needed for design, but were constrained for environmental reasons (primarily desert tortoise habitat). Our recommendations were based on the best possible surface observations and a good deal of conservatism. We recommended that the fault trace locations be verified during construction in the open ditch.

The third type of geological input mentioned by Knight and Miller is the identification of anomalous materials and conditions which may suggest the existence of an archaeological site to be avoided. Professional archaeologists, approved by the Bureau of Land Management (BLM), were hired by Kern River to conduct the required archaeological investigations. Suggesting that geologists should have input into the archaeological studies may be appropriate as a peripheral result of environmental and engineering-geologic studies. However, a similar statement could be made that professional archaeologists or biologists hired for environmental studies on pipelines should look for anomalous conditions which may suggest the existence of geologic hazards or exploitable mineral resources.

The fourth type of geological input mentioned by Knight and Miller is the identification of potentially exploitable resources. They note 'Myriad examples exist of deposits which could have been found by properly qualified geologists on 'spreads', logging, sampling, and photographing all of the excavations.' They cite an open-pit uranium development, a magnetic iron deposit, and a clay deposit. They further note that "Spread" geologists also are inexpensive, while offering potential for high return." In view of their comment that the Kern River Pipelines passes through 'one of the most highly mineralized areas of the world', I suspect they believe that another Bingham Canyon sulfide ore body could have been exposed in the pipeline construction ditch, but was not discovered because properly qualified geologists did not log, sample, and photograph all of the 676 miles of six-foot-deep Kern River Pipeline ditch. I offer two relevant comments regarding the potential for discovering a major exploitable resource in a shallow construction ditch.

**Extent of Exposure** The Construction easement for the pipeline was 75 to 150 feet wide; the construction ditch was about eight feet wide and six feet deep. The alignment was selected through an involved process over a period of about five years. The alignment in many places was parallel to or within existing energy corridors, mostly overhead, high-voltage electrical transmission lines. Most of the ditch was in alluvial, colluvial, or lacustrine sediments of late Quaternary age. Where bedrock was encountered in the ditch, such as in the crossing of the Wasatch Range, the rock is generally well exposed in the area. Although the extent and quality of exposures in construction excavations can be superior to natural exposures, I am confident that the information obtained from the ditch could have been obtained from the natural exposures without the urgency associated with the pace of construction activities.

**Who Benefits?** The Kern River Gas Transmission Company is not a resource company, it is a transportation company. It does not own any natural gas, any more than a freight hauling company owns the automobiles, basketballs, or cattle in its trailers. Does it make sense for a transportation company to hire exploration geologists? If a transportation company and the regulatory agencies believe that continuous geologic observations during construction are not needed, how can the officials of the transportation company justify the expense of "spread" geologists when the regulatory agencies demand that "spread" archaeologists and "spread" biologists be present during the construction operations. Contrary to Knight and Miller, the transportation company does not view "spread" geologists as 'inexpensive'. But even so, the geologist that would be needed on site during construction is skilled at recognizing landslides, active faults, and potential erosion problems, rather than economic geology. Should the transportation company pay for logging and sampling for mineral potential? Who should pay for assays? Perhaps an alternative would be for mining company geologists or professors of economic geology to observe construction ditches in each spread. Then any exploitable resources would be discovered by exploitation companies rather than transportation companies. The Kern River Pipeline was constructed in eight "spreads" over a period of more than one year. Parts of construction ditch excavations were exposed for a period of probably ten months. Committing at least four geologists for a period of ten months to observe a six-foot deep ditch through calcite-cemented alluvial fan deposits, or Lake Bonneville sediments with the water table at a depth of three feet would be difficult to justify for 'the potential to yield a highly significant return'.

Geologists certainly need to be part of a multi-disciplinary team working on major transportation projects. Engineering geologists were extensively involved in the siting and design of the Kern River Pipeline, and were involved to a limited extent in the construction. However, I believe it is naive to suggest that geologists can add to the income of a transportation company by discovering exploitable resources.
AUTHORS' REPLY

Dr. Keaton's description of the geological work performed on the Kern River pipeline is impressive. It is apparent that he and his colleagues carried out their tasks in a most competent and professional manner --- within the confines of their assignment. Space limitations prevent our commenting on each of his points. Suffice to say that we are grateful to him for providing such a compelling illustration and documentation of the point we tried to make in our essay. That is, that owners, planners and contractors too often are afflicted with such single-minded tunnel vision and absence of foresight and imagination that they cannot see the forest for the trees. The result is failure to recognize and exploit related opportunities which projects present and to overcome the perceived obstacles to their realization. Past experience with the parents of the Kern River line, Williams Companies and Tenneco, had led us to expect more. Our intent was to identify potential employment opportunities for geologists and to encourage them to be more aggressive in developing them. The archaeologists and field biologists certainly have, as they strikingly demonstrated in this project.

COLORADO SECTION NEWS

David M. Abbott, Jr., CPG-4570, AIPG Colorado Section Secretary

The Colorado Section Discovers Some Political Muscle

Political activity primarily revolving around a proposed change in organizational status of the Colorado Geological Survey dominated the first six months of 1992 for the Colorado Section. A bill proposing the reorganization of Colorado's Department of Natural Resources would have had the effect of eliminating the Colorado Survey's independence and stature. The Section vigorously opposed this bill through the combined efforts of the Section Board, its lobbyist, and many individual members from around the state who took the time to call or write their legislators and to attend and testify at various legislative hearings. These efforts succeeded in exempting the Colorado Survey from the Department of Natural Resources' reorganization for 1992 and the appointment of an advisory committee to report to the legislature on the appropriate organizational place and stature of the Colorado Survey. Other political activities of the Section involved exempting geologists from a bill to regulate investment advisors (you all know that fractional undivided interests in oil and gas or other mineral rights---like mines---are securities don't you) and planning for a debate for Colorado's U.S. Senate candidates this fall.

The points of these activities to the national membership are:

1. If a section and its membership get involved in the legislative process, they can have a significant impact.

2. AIPG's tax status, which allows political activity, allows Sections to take the lead on political issues which other, scientifically based organizations cannot do nor are they as inclined to do so.

3. AIPG's members represent all parts of the geologic community so that members can testify that I'm a petroleum geologist, I'm in the mining business, I'm a consulting environmental geologist, I'm a professor of geology, etc. This breadth has an impact.

4. Our purpose in organizing the debate of senatorial candidates is to provide a forum when the subject of debate will be issues of interest to the geological community. What are the candidates' views on oil and gas leasing, changing the Mining Law, the impact of environmental laws on human activities like drilling and mining, should real estate appraisers or geologists be opinioning on the value of mineral rights, etc.? Regardless of your particular views on these issues, we feel it is important that you know the candidates' views so that you can be a more informed voter.

5. These activities take time and effort. But they also are creating a vitality and interest in the Section which has been missing since the days of the oil boom. Becoming more politically active in a manner which represents the geologic community in your state may be a way to revitalize your section and AIPG as a whole.
Uncovering Hidden Jobs

This article is a continuation of the series on Job Search Techniques. In previous months, I discussed an overall approach to a job search and how to construct a resume. In the current article, I will discuss how to uncover hidden jobs through a technique called networking.

Leading outplacement firms estimate 70% to 80% of all available jobs are found through personal contacts. Furthermore, only about 5% of jobs appear in publically available resources such as newspaper advertisements.

My own career experiences reinforce the above statistics. I found my first job, as a then recent M.S. Graduate, through contact with one of my brother's associates. My second job was through a search firm. My third resulted from a meeting with an industry association. The fourth came from a lead uncovered at a volunteer activity.

Clearly, if we are to be successful in our job searches we need to have methods for uncovering jobs that are hidden from readily available public sources. The method I will discuss here is called networking. In a general sense, networking is a process for people helping people in a defined area of need. In a job search, your network will start with everyone you know.

Many of us feel we do not know enough influential people. While this might be true, the networking approach will enable us to overcome this lack by defining, utilizing and extending our present contacts.

To do your networking, follow the ten steps listed below:

1. **List every organization to which you belong or could easily and logically join.** Includes professional organizations, alumni associations, fraternities and sororities, honorary societies, volunteer organizations, religious organizations, neighborhood groups, civic clubs, etc.

2. **Make lists of everyone you know.** Includes friends, relatives, associates, former associates, co-workers, former co-workers, professors, fellow students, university alumni, neighbors, and members of organizations listed above, etc. Brainstorm with a friend to extend your list. Sometimes a seemingly unlikely contact will know someone who knows someone, etc.

3. **Make lists of relevant people and targeted companies from industry directories.** The AIG Annual Membership Directory is an excellent resource for this type of information. If, for example, you want to find a job in Environmental Geology, turn to the list of geologists working in this specialty (pages 138 to 141). Addresses, telephone numbers, and company affiliations for these persons may then be found in the alphabetical listings.

4. **Make telephone calls to initiate contact and set-up appointments.** Prioritize your lists from the sources in steps 1, 2, and 3. Start telephoning from your prioritized lists. If your contact is local, make appointments for informational interviews. Indicate that you will not ask the network contact for a job but that you would appreciate about 20 minutes for information and advice.

5. **Conduct informational interviews.** The purpose of the informational interview is to uncover hidden job leads by involving the network contact for specific job leads. Asking for a job will tend to close the mind and "shutdown" the imagination of the contact. Whereas, actively involving the imagination of the network contact in your job search will lead to new ideas as to how and where to apply your skills. These ideas will ultimately lead to job leads.

While not asking for a job may initially seem illogical, experience has shown that network contacts will mention any jobs of which they are aware, including those within their own organization. When job leads are mentioned, take the information, but continue the informational interview.

Develop a list of questions you will ask in your informational interviews. Some example questions are: a) How did you happen to become a geologist working in...?, b) What part of your work do you enjoy the most?, c) The least?, d) Would you give me your opinion on my resume?, 3) What advice do you have for where I could apply my skills?

From each network contact, try to obtain names and telephone numbers of at least three others. By this method, you will increase your contacts in a branching method. This branching will help you contact people who will be very influential in your job search.

You may wish to get business cards printed to leave with your informational contacts. Cost is generally very low for a basic business card which includes name, job specialty, address, and telephone number. In addition, highlights of your qualifications
could be printed on the back of the card.

6. Write follow-up, thank you notes. Always write a thank-you note to your network contact. This step is not only proper etiquette, it is also practical as an additional reminder for obtaining additional job leads, information, etc. A hand-written note will suffice. Be sure to include your telephone number.

7. Extend your network from names obtained in informational interviews and telephone calls. Follow-up on information ideas, and job leads from primary sources listed in step 5. Make telephone calls as in step 4, then conduct informational interviews as in step 5 with persons whose names you have obtained.

Be bold in your networking. Sometimes a very important person is amazingly easy to reach. It is estimated we are only 3 to 4 levels of contact from anyone person in the United States of America and 6 to 7 from any person in the world.

Continue this chain of branching contacts until you uncover the job you want.

8. Focus on job leads you have uncovered. When you uncover a job lead, initiate contact by telephone and/or submittal of your resume and cover letter. Assertively and pleasantly follow-up to schedule interviews. Telephone to see if you can supply additional information.

9. Use your network to obtain information about organizations you interview for a job. Prior to a job interview, be sure to conduct research on the organization of interest. It is essential that you obtain this organizational information to convey the sincerity and depth of your interest and to assist in evaluation of job offers. The network you are developing will be useful for obtaining this information.

Extensive information on organizations is also available in large public libraries.

10. After you find a job, keep your network active. Spend time each week keeping in touch with contacts you have developed and with organizations you have joined. Staying in contact with others is essential in long-term management of your career for future direction and transitions between jobs.

As a final step, be willing to help others in return for the help you are receiving.

In next month’s column, I will discuss job interviews.

Tom Warren, CPG-7833, from Golden, Colorado, now works as a career and outplacement consultant.

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September 13-18, 1992. Symposium on Doktorites: From Process and Models to Porosity and Reservoirs, Banff, Alberta. Contact: Mrs. Pat Latham, Faculty of Extension, University of Alberta, Edmonton, Alberta, Canada T6G 2G4, Ph.: (403) 492-5038, Fax: (403) 492-1762.

September 17 & 18, 1992. Common Practices in Western US Surface Hardrock Mines - An Operators' Conference, Reno, NV. Contact: Meetings Department, SME, P.O. Box E25002, Littleton, CO 80162, Ph.: (303) 973-9550, Fax: (303) 979-3461.


October 12-16, 1992. Unconventional Hydrocarbon Sources Problems of Exploration and Production, St. Petersburg, Russia. Contact: Secretariat of Organizing Committee, VNIGNI, Liteiny, 39, St. Petersburg, 191104, RUSSIA, Ph.: (812) 272-3677, Fax: (812) 272-3787.


October 13-15, 1992. FOCUS Conference on Eastern Regional Ground Water Issues, Newton, MA. Contact: NGWA, P.O. Box 182039, Dept. #017, Columbus, OH 43218-2039, Ph.: (614) 761-1711.

October 16-22, 1992. Interdisciplinary Approaches In Hydrology and Hydrogeology, Portand, OR. Contact: Helen Klose, AIL, 3410 University Ave., S.E., Minneapolis, MN 55414, Ph.: (612) 379-1030.

October 28-28, 1992. International Conference on Extractive Metallurgy of Gold and Base Metals, Kalgoorlie, WA, Australia. Call for papers. Contact: Dr. V. N. Misra, Conference Chairman, Kalgoorlie Metallurgical Laboratory, P.O. Box 881, Kalgoorlie, WA 6430, Australia, Ph.: (090) 220 120, Fax: (090) 912 762.


November 4-6, 1992. Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection, and Restoration, Houston, TX. Contact: NGWA, P.O. Box 182039, Dept. #017, Columbus, OH 43218-2039, Ph.: (614) 761-1711.


February 23-26, 1993. International Erosion Control Association, Indianapolis, IN. Call for papers. Contact: Jerald S. Fifield, IECA Program Chair, Hydro-Dynamics, Inc., P.O. Box 1327, 19039 E. Plaza Drive, Parker, CO 80134, Ph.: (303) 841-0377, Fax: (303) 841-6386. Abstract deadline: July 1, 1992.

March 14-17, 1993. AAPG/SVG International Congress and Exhibition, Caracas, Venezuela. AAPG Convention Dept., P.O. Box 579, Tulsa, OK 74101-0979.


April 17-20, 1993. SEeG Conference '93, Integrated Methods In Exploration and Discovery, Denver, CO. Call for papers and posters. Contact: SEeG Conference '93, P.O. Box 571, Golden, CO 80402, USA, J. Alan Coope, Ph.: (303) 892-6534 or (303) 7911-7231 or Richard L. Nielsen, Fax: (303) 279-3118.


May 5-8, 1993. Protecting the Earth: Challenges to Science and Technology, Congress Center East of Köln Messe. Contact: Köln Messe, Messe- und Ausstellungs-Oes.m.b.H. Köln, Messeplatz 1, Postfach 21 07 60, W-5000 Köln 21, Ph.: +02 21/821-0, Fax: +02 21/821-2574.


May 17-21, 1993. International Coalbed Methane Symposium, Birmingham, AL. Contact: Dan A. Thompson, The University of Alabama, College of Continuing Studies, Box 870388, Tuscaloosa, AL 35487-0388, Ph.: (205) 348-6222.


June 24-25, 1993. ASTM Symposium on Analysis of Soils Contaminated with Petroleum Constituents, Atlanta, GA. Contact: Symposium Chairman Tracey O' Shay, Gordon and Lawton, P.O. Box 80072, Austin, TX 78727-0072, Ph.: (512) 475-2302. Abstract deadline: June 25, 1992.


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WANTED

AIPG needs quality articles for future issues of The Professional Geologist. Members are encouraged to submit articles or call Headquarters and recommend individuals who should be asked to submit articles. Photographs enhance articles and make great TPG covers. Be sure to send photographs when possible with your articles or send your favorite photograph for consideration as the cover for a future TPG issue.

Editorial Calendar

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<td>Feb., 1993</td>
<td>Ethics and Standard of Practice</td>
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The Professional Geologist
AIPG · Editor
7828 Vance Drive, Suite 103
Arvada, CO 80003

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MEMBERS IN THE NEWS

Glenn Blumstein, CPG-6531, of Oklahoma City, Oklahoma, has formed GLB Exploration, Inc. Glenn will assume responsibilities of President of the firm, which will engage in the drilling and acquisition of oil and gas properties in Oklahoma and Texas.

Martin O. Klein, CPG-8188, has joined the H2M Group as Groundwater Resources/Hydrogeology Section Supervisor in the industrial services department. Martin has more than eight years of experience in geology, hydrogeology, ground and surface water quality analyses, ground water flow and contaminant transport modeling, solid and hazardous waste management and environmental assessment.

Jeannie Fisher Mallick, CPG-7540, has joined Pohlman and Associates Inc. Houston, Texas, as Geological Associate. Formerly with Pogo Producing Company, Ms. Mallick will draw on 12 years of experience as an explorationist in the Gulf of Mexico and her expertise in the operation of interpretative workstations to plan and implement technical solutions to exploration and exploitation problems. She will be a contributing author to the Pohlman Report series of workstation publications including Review of Geoscience Workstation Technology, Workstation Analysis Series, and Workstation Market Review. Active in professional societies, Ms. Mallick serves on the AIPG Texas Application Screening Committee, has twice been selected as a member of the Houston Chapter of the AAPG House of Delegates, serves as the Secretary for the Houston Geological Society 1992-93, and was the Assistant Convention Manager and Convention Manager of the Houston Geotech ‘89 and ’90 respectively.

Daniel N. Miller, Jr., CPG-0064, to relocate IWO Exploration in the Raleigh/Chapel Hill, Research Triangle Area, North Carolina in October. He is presently Director, International Archive of Economic Geology, University of Wyoming and President of the American Institute of Professional Geologists.

Executive Director’s Itinerary
(subject to change)

The Executive Director is visiting various Sections, agencies, campuses, and other organizations. He is talking, listening, and exchanging information and ideas. Members are encouraged to attend these meetings whenever and whenever possible. His itinerary for the next several months, as presently scheduled, is:

Aug. 20: Louisiana Section Executive Committee, Baton Rouge, LA
Sep. 11: Univ. of Northern Colorado, Greeley, CO
Sep. 27-30: AIPG Annual Meeting, Lake Tahoe, NV
Oct. 5: Geoenvironmental Forum, Long Beach, CA
Oct. 17: American Institute of Hydrology, Portland, OR
Oct. 20: Colorado Section, Denver, CO
Oct. 21-23: Ohio Section and campuses, Cincinnati, Dayton, and Columbus, OH
Oct. 24-28: Geological Society of America, Cincinnati, OH
Nov. 13-14: Association of State Boards of Geology, Portland, OR
Dec. 9-10: Louisiana Section and campuses, Baton Rouge and Lafayette, LA
Jan. 23: AIPG Executive Committee, Arvada, CO

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APPLICATIONS RECEIVED – (June 27, 1992 - July 27, 1992)

Applicants for certification must meet AIPG's standards as set forth in its Bylaws on education, experience, competence, and personal integrity. If any Member has any factual information as to any applicant's qualifications in regard to these standards, whether that information might be positive or negative, please mail that information to Headquarters within thirty (30) days. This information will be circulated only so far as necessary to process and make decisions on the applications.

Full Membership


BOLLANN, Dennis D. 420 South North Drive, Denver, CO 80237. Sponsors: Mark A. Fluton, R. Lee Tucker, Michael J. Smith.

NEW MEMBERS

ADAMS, Charles E., C.PG-8529 7565 Quartz Stewt, Golden, CO 80403, (303) 436-3326

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WILLIAMS, Jack E., C.PG-8527 1526 South Avenue, Battlecreek, MI 49010, (517) 961-5032

NEW CANDIDATES FOR CERTIFICATION

GANNON, J. Michael, CFC-0033 2118 Rosemont Drive, Coralville, IA 52241, (319) 354-3040

AIPG Membership Totals

As of 07/31/91

Active 3,953

Affiliates 26

TOTALS 4,383

As of 07/31/92

Active 3,959

Affiliates 42

TOTALS 4,511
SAVE $40
TIME’S RUNNING OUT!!!

Lake Tahoe, Nevada
AIPG 29th Annual Meeting
September 27-30, 1992

AUGUST 15TH IS THE DEADLINE FOR PREREGISTRATION.

To assure your spot on the field trips get your preregistration form in TODAY! A preregistration form is included on page 15 of this issue. For more information check your May issue of TPG or contact Jonathan G. Price at (702) 784-6691, Fax (702) 784-1709.

CLEARLY THE BEST -- Covering the California/Nevada border, Lake Tahoe has beautiful scenery, exciting nightlife, and year round recreation. At 22 miles wide, 12 miles long, and 1,645 feet deep, it's the largest alpine lake in North America. -Photo Lake Tahoe Visitors Authority