Volume 28, Number 12 - November, 1991

The Professional GEOLOGIST

A publication of
The American Institute of Professional Geologists

WANTED - YOU

AIPG needs quality articles for future *Professional Geologist* issues. 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.

The editorial calendar is:

TOPIC	DEADLINE
Environmental Geology - Part 2	December 1, 1991
Mining Geology	February 1, 1991
AIPG Annual Meeting - Lake Tahoe, Nevada	April 1, 1992
Geologists and Engineers	June 1, 1992
Geoscience Education, Continuing Education and Careers	August 1, 1992
Government and the Geologist	October 1, 1992
Geologic Hazards	December 1, 1992
Petroleum Geology	February 1, 1993

Send your article and/or photograph **TODAY** to:

The Professional Geologist
AIPG - Editor
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FEATURES

[Do to the tremendous response to our request for environmental related articles, AIPG will have two issues featuring Environmental Geology. Part 2 will be in the January, 1992 issue. As a result the TPG Editorial Calendar has changed, see inside cover.]

COVER - Florida Geology Survey

The Winter Park, Florida, sinkhole began to collapse May 8, 1981, Within a few days it had grown to about 350 feet in diameter and 100 feet deep. At top is a destroyed municipal swimming pool; at right is a street that was mostly eroded away; at bottom are several businesses and parking lots that were extensively damaged. The rectangular, white roof of a pick-up camper that was swallowed can be seen below the rim at the lower right. The top of a large oak tree floats in the center of the ponded water, just before it was devoured.

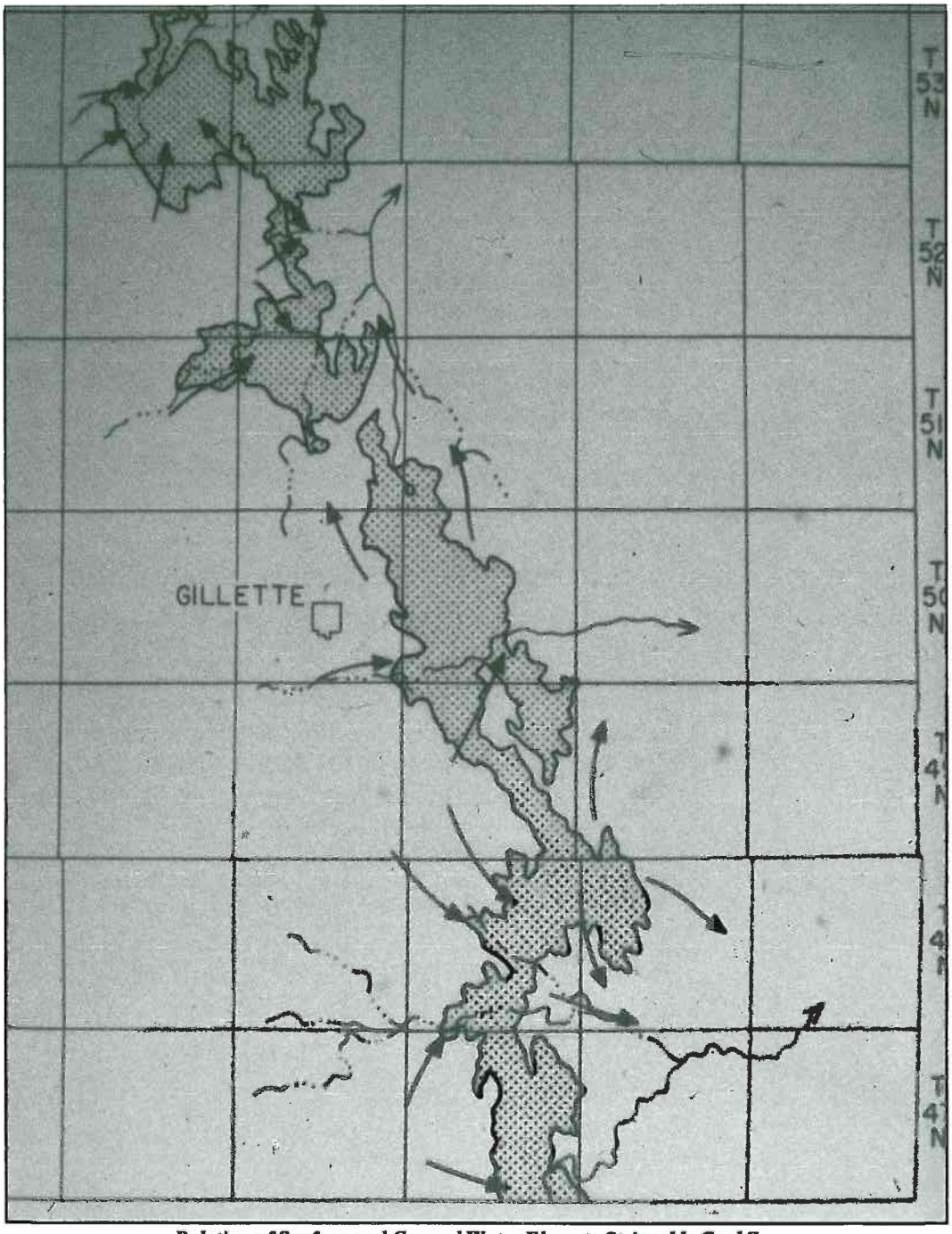
DEPARTMENTS

The purpose of AIPG is to strengthen the geological sciences as a profession with all reasonable actions, to establish professional qualifications, to certify those qualifications to the public, and to evaluate continuously the ethical conduct of its members. Further, the Institute establishes ethical standards to protect the public and geological sciences from nonprofessional practices, monitors governmental and other activities affecting the geological sciences, and communicates with the public.

SPECIAL REPORT

ENVIRONMENTAL GEOLOGY

PART 1



Relation of Surface and Ground Water Flows to Strippable Coal Zone

Photograph provided by **Lawrence O. Anna**, CPG 3978

Environmental Geology - Serving the Private Sector

Christopher D. Tower, CPG 7321

Environmental geology can be broadly defined to encompass most of the geologic sciences and their related professional activities. A practical and core concept of environmental geology, as it is currently practiced, is that the demand for such work is created by requirements of law. This concept narrows the field of environmental geology and impacts the manner in which it is practiced. The following discussion will explore how that concept impacts providing consulting services to private clients in this field.

What is it?

To the extent that geologic sciences have historically involved the study of natural and man-modified environments, environmental geology has existed since the beginning of earth-related science. However, the term "environmental geology" has a current connotation that narrows its general meaning and limits its tenure to the most recent decades. In this discussion, ***environmental geology will mean the application of geologic sciences to the characterization and solution of environmental problems caused by man's modifications to the earth.*** As a field of study it requires the integrated use of many scientific disciplines including geology, hydrogeology and chemistry; its effective application also requires knowledge of industrial processes, business practices, environmental legislation, and legal procedures.

Who Pays for it?

Most people, including scientists, pursue an occupation or business endeavor in order to make a profit. Accordingly, it is worthwhile to explore the economic incentives associated with the practice of environmental geology. Funding for such work generally arises from one of three sources: the private sector, state and/or federal agencies, and research institutions. The private sector includes nearly all industrial activity, such as manufacturing, natural resources exploration and production, and financial services. A large portion of environmental geologic work is funded by the private sector, which has a strong profit motive. Although state and federal agencies and research institutions have different mandates, much of their funding is derived from environmental legislation.

Environmental expenditures are typically made by the private sector if:

- there is a direct economic incentive,
- there is an indirect incentive such as enhancing corporate image, or
- there is a requirement of law.

Direct economic incentives generally arise from the opportunity to reduce existing environmental liabilities and associated future costs by making a current expenditure. These liabilities and costs exist as a direct result of current laws and regulations, and for most clients, represent costs of doing business that reduce profits. Indirect incentives often rely on promotional activities to capitalize on small environmental expenditures that are publicly perceived as beneficial. Because much public opinion regarding the environment is expressed in current legislation, there often are legal implications associated with indirect incentives. Accordingly, most environmental geologic work funded by the private sector is motivated by requirements of law.

Implications

The core concept that environmental geology exists primarily as a result of laws and regulations has significant implications with respect to consulting practice. There are four major implications. First, the science is caught up in an inherently adversarial process where opposing views often compete in win-lose situations. This is judged as unfortunate by many with scientific training, but it is a natural consequence of our legal system. Second, sensitive business issues are typically involved, such as proprietary processes and information, financial data, and civil/criminal liabilities. Third, environmental geologic work can quickly become a high-stakes game for a client, with limited upside and large downside potentials. Fourth, the consultant must walk a tightrope, maintaining his technical integrity while progressing along a legally-proscribed path toward the goal of successfully and cost-effectively solving the client's problem.

How to do it

What skills and knowledge do you need to effectively practice environmental geologic work is derived from requirements of law.

1) Science - You must know your disciplines well; that is ultimately why you are chosen.

2) Integrity - Your integrity as a third party technical expert is essential to your client and yourself.

3) Client Insight - You must have the ability to determine your client's operating requirements, business conditions, and private agendas. Without this information it is difficult to effectively perform technical work that is useful to your client.

4) Working Knowledge of Legal Processes - There are many legal procedures that affect and control aspects of your work. Many of them, such as attorney-client privilege and the discovery process, are foreign concepts to technically-trained individuals. Nonetheless, your basic understanding of them is vital so that you may prove and protect the validity of your work.

5) Ability to Work with Attorneys - This is an acquired skill that increases your overall effectiveness (although exercising it may occasionally raise your blood pressure).

6) Current Regulations - The scientific principles used to practice environmental geology do not change from day to day or when the practitioner crosses political boundaries. However, the maze of applicable regulations and armies of agency personnel responsible for their implementation do change rapidly with time and upon crossing local or state boundaries. You must maintain current knowledge of these regulations because they can significantly impact your work.

7) Accept Your Limitations - Environmental geologic work rarely creates increased profits for a client. You must accept that the best you can do for clients in most instances is to cut their losses.

8) Limit Your Potential Liability - There are substantial but manageable risks for the consultant associated with many environmental geologic assignments. These risks or liabilities arise from others relying on your work and conclusions; they include issues such as financial losses associated with failing to detect contamination at a site being purchased and personal injury claims related to inadequately characterizing site health/safety concerns. Be aware of and minimize them; your are of no use to your client or yourself if you are crippled by avoidable risk.

An experienced environmental geologist can provide valuable services and advice to clients by integrating knowledge of science and business conditions with legal constraints while resolving significant environmental issues. His role as pilot through the environmental mine field is increasingly vital not only to the industrial client, but to the public as well. After all, it is the public that ultimately pays for environmental programs.•

Geological Investigations in Environmental Studies

Billy Caldwell, CPG 7464

When a Phase I Environmental Site Assessment (E.S.A.) is required, much of the research is purely geological in nature. It is true that a study of all available City, State and Federal data is also necessary, but this study will deal with the geological research during an environmental investigation. The main geological information needed for each assessment report will be described in the following paragraphs.

Maps play a very important role in environmental research. For proper site assessment work, **Aerial, Flood Plain, Geological, Soil, Topographic** and **Water Maps** of the report vicinity are required.

Aerial Maps of prior years reveal what was on the report property or adjacent land in the past. This is especially important if it can be proven that the site property was pasture or farmland prior to it's present status. This usually verifies a lack of major contamination unless abundant fertilizers, pesticides or herbicides were used on crops.

Flood-Plain Maps are also needed in geological assessment work. Of utmost importance are the National Flood Insurance Program's Flood Insurance Rate Maps (FIRM). It is vital that an assessment report document the relationship of the report property to the flood-plain.

Geological Maps are of great importance in locating the distribution of strata on or near the report site. It is necessary to know the nature and regional dip of the formations in the report vicinity, plus the location and trend of all faults. The distance and direction to the nearest surface outcrop of an aquifer is also needed plus the depths to ground water. If the report property outcrop formation is an aquifer, available ground water can be very shallow (5 ft. - 25 ft.). This water can easily be contaminated by surface pollution or underground sewage lines. A knowledge of the surface and subsurface rocks will help determine what future drilling or testing might be required to verify if ground water contamination is present. **Water Maps** are invaluable in this research. On these maps, usually available from State sources, one locates the nearest water wells and their relationship to the report property. The depth and nature of the nearby wells should be recorded in the site assessment report. It also needs to be determined if these water wells could be by nearby contamination or pollution.

Soil Maps, such as those usually available from the U.S. Soil Conservation Service, allow us to identify the type soil at the report property. If the soil is porous and permeable, then nearby spills, leaks, etc. can migrate (laterally) toward the property. This is especially so if the pollution area slopes downward (surface or subsurface) toward the report acreage. Expanding clays, such as montmorillonite, must also be documented in the final report to alert owners to include special construction measures in future buildings. Some soils would hinder and others benefit migration of septic line sewage and other contamination. Leaking petroleum storage tanks are of great concern on adjacent property with porous soils. Many of the above porous soils are located directly above massive sandstone or clastic formations.

Topographic Maps reveal elevations, location of the pipelines, slopes of the surface, drainage patterns of nearby streams, road locations, buildings, etc. It is of utmost importance to know if hazardous materials would normally wash or migrate toward a report site. On this map, we can also locate the drainage or stream direction and its relationship to the report property and nearby contaminated areas. Lab samples must be collected in an exact directional relationship to known contamination. Recording the longitude and latitude to the nearest degree, minute and second is also important for ordering certain government publications and maps.

Materials other than maps, such as various publications, are also needed to seek out all the geological data possible for site assessment work. It is suggested that a checklist of information be researched and recorded for each site assessment report. A summation of the data needed for each project is as follows:

Geology (Miscellaneous)

1. Past and present geological history of site
2. Location and relationship of the property to nearby fluvial concerns
3. Flood-Plain location and relationship to site
4. Geological hazards (landslides, earthquakes, etc.)
5. Geological stability of the region
6. Possible pollution of report property by unsafe rivers, streams, etc.
7. Contamination of nearby streams by report vicinity pollution
8. Lab testing of suspicious soil, rock or water on or near the report acreage.

Ground Water

1. Ground and subsurface location of nearby aquifers
2. Depth to shallowest water and major nearby water producing zones
3. A chemical check of water from wells on the property
4. Lab tests should be conducted on surface and ground water samples if nearby pollution problems are discovered.
5. Examination of records to determine if the water has been examined by City or State agencies.
6. Position of sewage lines in relationship to water wells
7. Location of any nearby natural springs

Soil

1. Exact identification of soil at report property
2. Nature and description of the site soil or soils
3. Physical, chemical and engineering properties of soil, if available
4. List of best uses for report acreage soil

5. Identification of the presence of harmful minerals (expanding clays, etc.)
6. General porosity and permeability of site soils
7. List of plants that grow well in the report property soil

Rock Formations

1. Identify rock outcrop at the report site
2. Nature and description of the strata
3. Radiation or Radon checks, if needed
4. Geological stability of surface strata (slides, etc.)
5. Location and history of all known faults
6. Presence and identification of harmful elements such as lead, mercury, etc.
7. Possible economic value of surface and subsurface minerals
8. Geological cross section across the report property
9. General porosity and permeability of the site area rock, especially if septic systems are involved
10. List problems, if present, for excavations, basements, dwellings, etc. to benefit builders

Additional

1. Earthquake potential for region
2. Identify geological hazards in the area
3. Oil, gas, mineral potentials
4. Location of wetlands
5. Endangered species or wildlife effects
6. On site documentation of terrain and observed problems
7. An examination for discolored or distressed vegetation on the property
8. Former use of property (from aerial photographs, city directories or 50 year title search)

Each Environmental Site Assessment report should include the above geological research. In addition, ***all information available for the last 50 years concerning the report region must be collected, studied and summarized.*** If contamination or pollution of any type is found, it must be recorded in the report. Then, in light of all the geological research, testing and information, surmise how this affects the report property. ***If the research work is exact and complete, the result will be an Environmental Site Assessment that leaves no stone unturned.***•

Geo-Environmental Registration and Certification Programs

Robert V. Colangelo, President, The Green Corporation

An Evaluation of the Current State of the Environmental Database Information Industry

[The Green Corporation conducted an evaluation of the environmental database industry. The following general conclusions apply to most or all of the companies surveyed during our evaluation. Services and products offered by the companies are summarized in the table.]

Information provided by the database companies is used by a wide range of publics. These include; Environmental consultants to supplement the record/document review of a Phase I Environmental Property Assessment, Attorneys and lending institutions as a preliminary screening tool to identify potential environmental risk, and Business as a forecast tool to identify environmental market segments and sales trends.

Less than 15 companies exist which provide some type of environmental data service. The six companies in evaluation were selected because they were in business as of 1989, provide reports for a minimum of one entire state, and advertise their services on a frequent basis. The growth pains associated with this new industry, which is self-regulated and undergoing rapid development, have raised questions concerning the comprehensive nature of the data, and nation-wide availability of reports supplied by the companies. All the companies interviewed are in various stages of development. They reported to be adding employees, increasing geographic coverage, and adding new databases and records to their system.

The content and format of reports vary greatly and need improvement to be user friendly. Reports are offered in one of three categories: The Map Based Report, The Zip Code Search and A Site Specific Report. The Map Based Report presents a plot of identified records within a certain search distance from the target site. The Zip Code Report presents a listing of all identified environmental records within the specified zip code. The Site Specific Report lists all identified compliance and enforcement records for the specified site.

A number of companies provide additional services for an additional fee. The services include the supply of current and historic Sanborn fire insurance maps, aerial photographs, and topographic maps. A few companies provide title search capabilities for a limited area. Most companies provide reports within 2-5 working days, or within 24 hours for an additional fee. The standard method of delivery is the postal service. However, reports can be sent by FAX or next-day service. Only one company has the availability of an on-line computer service allowing immediate access.

The data stored in the computer system can be accessed and sorted by a number of parameters. The use of a site address is most reliable and consistent for identifying site specific records. The zip code parameter is dependable for identifying records within a defined search distance from the target site.

Only one third of the companies interviewed carried an Errors and Omissions insurance policy. The disclaimer regarding the use of the information should be read carefully, and the ability to collect on a policy needs to be evaluated.

All companies claim to have a strict quality control/quality assurance program for checking original data against the data entered into the database system. ***The original data is not scrutinized and therefore can be questionable.*** The data stored in the original government database records were collected for internal agency use and was not intended to be used for property transfers. The quality and consistency of the original data varies greatly and should be questioned by the end user.

Environmental information companies have carved a niche in the environmental market. They provide a centralized source of government collected environmental information in an expedient manner. ***As environmental information companies continue to refine their database collection systems and as government agencies become more efficient in their collection, management and dispersal of information, all users will benefit.***•

Florida's Environmental Geology Reports

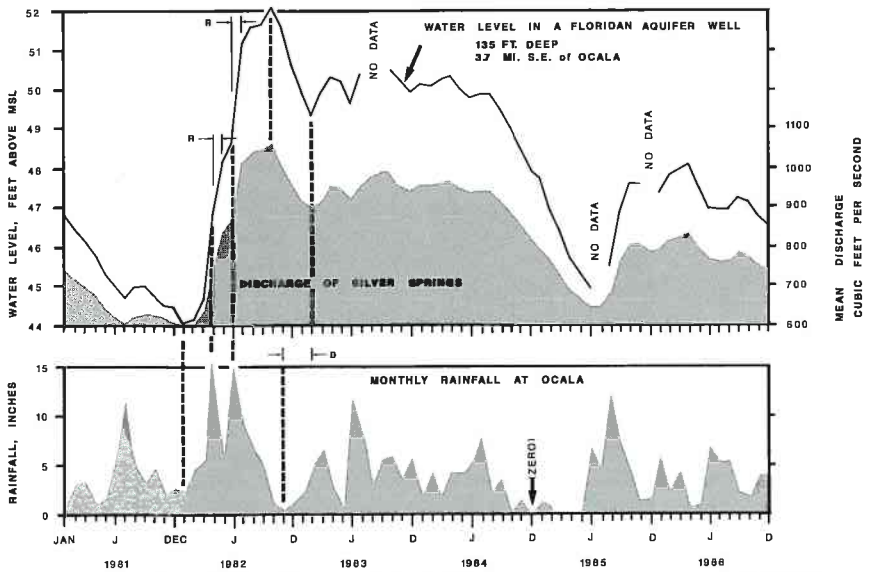
Ed Lane and **Ronald W. Hoenstine**
Florida Geological Survey

An understanding of Florida's environment has become a major focal point of public policy. In part, this interest and concern has developed through ***increased public awareness of the fragility and importance of the environment, its relationship to the state's economy, and its effect on the quality of life and health.*** Also, Florida's phenomenal population growth, nearly 900 new residents each day, mostly in existing urban areas, is projected to make it the country's third most populous state by the turn of the century. Such rapid urban growth places unusual stresses on the environment due to the demands of energy, construction, transportation, water supplies, and waste disposal. Florida's environment is directly influenced by its surface and near-surface geology, which can be characterized as a relatively thin, surficial veneer of sand, silt, and clayey sand overlying extensive limestone and sand and gravel aquifer systems.

Drainage well in a sinkhole that is used to control flooding by diverting urban runoff into the shallow limestone aquifer.

The Florida Geological Survey has responded to this concern by interpreting, summarizing, and publishing available scientific data and cultural information in a series of special environmental reports that target specific high-growth urban areas in Florida. These reports integrate cultural, climatological, geological, and hydrological data to illustrate the importance geology plays in land-use planning. ***Graphics are used to present data in a format that can be readily used by the public, scientists, planners, water managers, and public policy makers.***

The most recent publications in this series of environmental reports cover the cities of Ocala and Gainesville, which are experiencing rapid urban growth. Primarily discussing site-specific environmental geology and hydrology, these ***reports include background information on the study area's geomorphology and geologic history in a language understandable to local officials, planners, policy makers, and the general public.***



Graphs showing relationships among rainfall, groundwater levels in the Floridan aquifer system, and discharge of Silver Springs, all in the Ocala area.

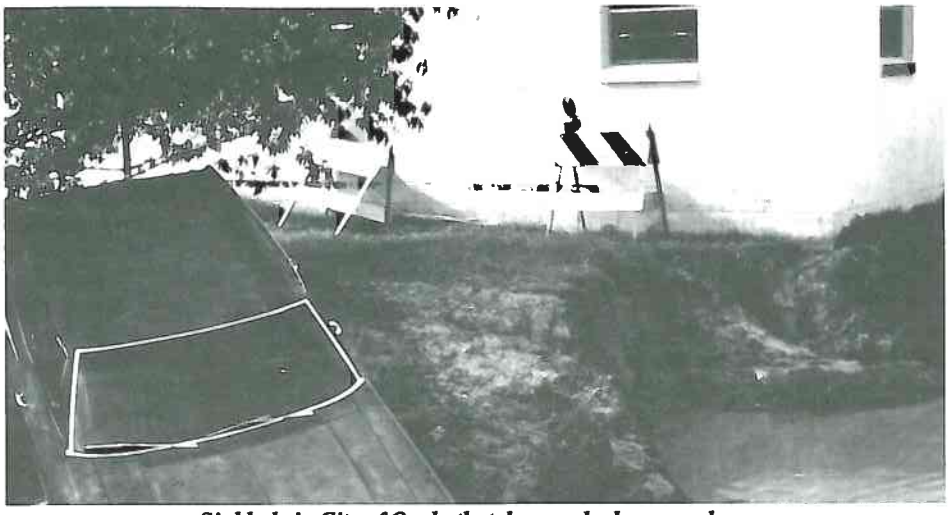
A major emphasis of these reports is a discussion of topics related to the study area's water resources. Key topics include: climate, geology, surface water and groundwater, aquifer systems, karst, water quality and usage, land usage patterns, environmental hazards, and solid waste disposal practices. Specifically, the hydrologic cycle, surface water, and underlying fresh water aquifer systems are analyzed in detail to establish a framework and general understanding of the fragile nature and importance of these irreplaceable natural resources to the area's growth. Recommendations for future protection of these resources are also presented.

The climate section includes graphics showing rainfall data, both seasonal and long-term historical. An examination of the area's lithologic and stratigraphic units establishes the geological framework for the reports. The definition and descriptions of local aquifer systems are placed in perspective relative to the local geology. In order to place the urban study area in proper context, a county-wide explanation of surface and ground-water resources is provided, including major streams, lakes, and springs.

Karst phenomena, which are ubiquitous in Florida, is an important segment of each report, and includes definitions and descriptions of local karst features, and shows their intimate relationship to local geology and water resources. Karstitification provides easy, and rapid, access to the aquifer by rainwater and any entrained contaminants. Urbanization increases the types and amounts of contaminants to the

aquifer, as well as concentrating runoff so that the natural filtering action of soil overburden is bypassed. Potential threats to ground-water quality due to urbanization include improperly installed septic tanks and drain fields, leaking petroleum storage tanks, drainage wells, and improper landfilling practices.

Providing environmental geology data in a format understandable to a variety of users results is a two-fold benefit. First, it illustrates the important relationships between geology and environmental quality. Second, it stresses the overall significance of the geologist in both environmental protection and problem solving.•



Sinkhole in City of Ocala that damaged a house and car.

Environmental Regulation...Compliance and You

Larry P. Coen
Certified Hazardous Materials Manager

Environmental regulation and corporate compliance have virtually become household words in today's American family. Very few people have more than a cursory understanding of RCRA, CERCLA, transportation and other key hazardous materials legislation, but ***practically everyone knows enough to be dangerous. In fact, the lack of knowledge has done more to hinder sound environmental science implementation than any other single contributing factor.***

The most challenging step I have ever taken in my career as a geologist has been my current position as the supervisor of the Leaking Underground Storage Tank Unit for the Missouri Department of Natural Resources. When a new law is passed, the implementing agency must provide interpretation of the law in order to write the resulting regulations. Implementation of the law becomes an expensive proposition for the regulated community. Most owners want to comply but only to the smallest extent possible. Any additional compliance is just throwing away profits.

Decisions must be made concerning how clean is clean. Leaking UST cleanup levels have been established in Missouri through a lot of comparative research with other state's standards. Today, Missouri maintains a petroleum cleanup standard which is attainable, fair and risk based. Total Petroleum Hydrocarbon soil cleanup levels vary from 50 to 500 parts per million (ppm) depending upon the environmental setting. Benzene, Toluene, Ethylbenzene and Xylene standards likewise vary from 0.5 to 10 ppm in soil. Groundwater cleanups are about ten times as stringent.

In addition, site characterization guidelines have been established so that important information is not disregarded as the site is evaluated. Today, Missouri has identified over 1600 leaking UST sites and these are being investigated with six (yes, just 6) personnel. We anticipate that we will eventually approach about 5000 sites. Yet we have a self-imposed commitment to review submittals and respond within two weeks.

In Missouri, our greatest frustration is not the work load, but the constant problems caused by misinformation, ignorance of the law and a lack of understanding by various factions of the public. The regulated community constantly pushes to see cleanup levels relaxed. Private citizens want to see sites cleaned up to non-detect levels. Our task as protectors of public safety and groundwater is to provide that protection without completely bankrupting the nation's businesses.

Lawmakers are prone to represent either side of this issue depending upon which of their constituents command their attentions. As regulators, we may be asked to turn a blind eye to one issue, to reevaluate our position on another issue, explain to a state lawmaker why one of their constituents went bankrupt after a cleanup and predict enforcement outcomes to various public interest groups.

Regulators must provide quite a balancing act to keep the special interest groups at bay. Private citizens would not care if the regulated community all went bankrupt, but when their favorite product goes up in price, even a few cents, the outcry is deafening. The regulated community would not clean up after themselves without being forced to do so. The degree of regulation becomes the issue between the regulated community and their private citizen neighbors. Other factions of society often take sides in this issue and refuse to acknowledge all the facts which must be considered in context with the problem. No one wants a cleanup or a disposal site in their neighborhood, but everyone wants to enjoy the finest fruits of technology. We just forget that technology includes hazardous chemicals, hazardous operations and a resulting waste stream.

As environmental scientists, we have a role to play in passing along enough information, understanding and public awareness to bring both sides of these issues together. Private citizens must be made to understand that a waste stream is an inevitable part of today's products. The regulated community must be made to honor our basic right to clean air, clean water and clean soil. There is a point of balance, but it will take some work to get us there.•

Acid Drainage vs. Construction

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Although environmental acidification from atmospheric deposition is a high priority concern, ***acid drainage (AD) due to weathering of freshly exposed rocks rich in sulfide minerals continues to be a significant environmental problem.*** When rocks of this character are encountered during mining or in construction projects special handling is warranted to avert or minimize adverse impacts, especially upon water quality.

Pyrite polymorphs, iron sulfides (FeS-FeS_2), are the principal contributors to AD. Oxidation of these minerals by the atmosphere and/or water can produce acidity which alone may be toxic, but increased acidity also mobilizes potentially toxic trace metals. Precipitates of ferrous and ferric oxyhydroxides, commonly referred to as "yellowboy", are the telltale signs that aqueous systems have been affected by the weathering of these acid-producing materials.

Consensus among researchers is that the acidity (H^+) arises during the weathering of iron disulfide minerals through the following chemical reactions (Barnes and Romberger, 1968; and Stumm and Morgan, 1981):

$$FeS_2\ (2) + 7/2O_2 + H_2O = Fe^{2+} + 2SO_42- + 2H^+ \quad (1)$$

$$Fe^{2+} + 1/4\ O_2 + H^+ = Fe^{3+} + 1/2\ H_2O \quad (2)$$

$$Fe^{3+} + 3H_2O = Fe(OH)_3\ (s) + 3H^+ \quad (3)$$

$$FeS_2\ (s) + 14\ Fe^{3+} + 8H_2O = 15Fe^{2+} + 2SO_42- + 16H^+ \quad (4)$$

AD production is further exacerbated by the fact that reaction 2 can be biologically catalyzed by various ubiquitous acidophilic bacteria. Reactions 3 and 4 are then perpetuated by the production of ferric iron.

In most mining cases the potential for AD is known in advance and waste rock and tailings are handled accordingly. However, mainly due to the fact that site studies normally focus upon the physical quality of materials rather than upon their chemical quality, construction projects present a different scenario. In many construction activities, encountered sulfidic rock constitutes a portion of the total volume of material that may have to be utilized in construction. One case is disposal and the other is a case of special handling in order to abate pollution. An advantage of construction projects over mining is that project design can often be altered to avert the acid-producing material, or more drastically, if the project is not critical to societal needs, it can be abandoned. On the other hand, mining strategic resources is often justifiable on the basis of benefits exceeding mining and reclamation costs.

Research concerning mitigation of AD problems has been focused primarily on the mining industry, and other than in cases of road construction related to these industries, the handling of acid-producing material disturbed during construction has only begun to arouse concern. Earliest cases were after-the-fact when AD had, in an obvious manner through fish kills and the like, adversely impacted the aqueous environment; however, increasing awareness of the potential for this problem has shifted concerns to earlier stages in site investigations.

Pyrite and related sulfide minerals are ubiquitous in earth materials, albeit certain rock types tend to have higher average concentrations than others. Aside from the anomalous concentrations of sulfides constituting ore deposits, the most problematic association of iron disulfide minerals exists with sedimentary rocks or their metamorphic equivalents, such as carbonaceous shale or argillite. These rocks commonly contain mineral assemblages with little or no capacity for producing alkalinity. The pyrite (or more commonly the polymorph, marcasite) is usually finely disseminated throughout the rock, and in a form very vulnerable to acid generating reactions.

Coarse textured sedimentary rocks low in alkaline-producing mineral content, like most quartzose sandstone, may also contain concentrations of sulfide minerals capable of creating AD, especially when they are associated with sulfidic argillaceous rocks. In the early stages of addressing the AD problem it was a common fallacy among the non-geologic community (construction engineers) that only dark colored rocks had the propensity to generate AD. As a result much light colored sandstone and siltstone not duly considered potentially deleterious surprisingly produced AD. Therefore, it is important that all earth materials be considered suspect. ***Geologic literature review during site characterization should look for potential problems, thus permitting development of pans for thorough site specific exploration.***

Several case histories exemplify the necessity for qualitative and quantitative evaluation of construction materials. In one case the high cost of after-the-fact mitigation is reflected, in another case the problem is still running rampant, and in another case communication between geologists and engineers has resulted in a program that predicts and safely handles acid-producing material (Byerly, 1990).

Halifax Airport Case

In 1982 construction activities began at the Halifax International Airport, located approximately 23 miles north of Halifax, the provincial capitol of Nova Scotia, Canada and in an outcrop belt of highly fractured and pyritic Meguma Slate. Besides pyrite the slate contains concentrations of Al, Fe, Mn, Co, Ni, Pb, and As, all potential contaminants capable of mobilization by AD. The potential for AD through the disturbance of these slates had not been an apparent environmental concern in the past, but runway construction along with other developments at the airport, revealed the deleterious nature of the rock.

Construction of the new runway required excavation of about 295,000 cubic yards of pyritic slate. Part was used as runway fill and the remainder was placed in a waste pile adjacent to the runway. Following construction the runway underdrains and the waste pile began to discharge large volumes of AD containing high concentrations of trace metals threatening a prime Atlantic salmon fishery, the Shubenacadie River.

A temporary lime treatment facility costing about $500K was placed into operation and a cap was placed over the waste pile. The cap costing about $800K consisted of 2.5 feet of clay (glacial till) and 0.5-foot of topsoil. Secondary to the AD treatment was disposal of nearly 35,000 cubic yards of lime sludge generated by the treatment facility. Estimated operational cost for the lime treatment plant was about $240K per year. The above costs do not reflect additional costs that would be necessary to dewater and solidify the accumulated sludge (Worgan, 1987).

It is highly probable that had the AD problem associated with the Meguma Slate been predicted long ago, the airport would have been sited elsewhere. Subsequent to this incident all future construction in Meguma Slate belts requires an Initial Environmental Evaluation that is reviewed by Environment Canada.

U.S. 48 At Lake Louise

Embankments for the U.S. 48/U.S. 219 interchange ramps in Maryland were constructed of pyritic materials; however, this was not discovered until about 9 years following construction when it was recognized that a nearby lake, Lake Louise, was adversely impacted by AD produced in the embankments.

The effectiveness of the mitigation techniques used on this project have not yet been fully evaluated; however, a water analysis report several months following completion of a wetland treatment pond, indicated "dramatic" reductions in aluminum and sulfate.

Georgia Cases

Two road construction projects involve situations where problems were not initially recognized as cases of AD, but instead were considered cases of soils incapable of supporting vegetation. However, at the same time it was noted that there was excessive corrosion of corrugated metal pipes used in the drainage system of a constructed fill. In both cases the mitigation efforts included: application of tons of lime to the areas where no grass was growing; addition of topsoil; addition of tons of lime to the soil blanket; sowing grass in the normal manner with heavy application of straw mulch; and planting pine seedlings.

Evaluation of these sites more than 10 years following the mitigation efforts, suggested that the techniques used had not been effective. Bare areas still exist on slopes and in the highway median and the fill slope at one site is deeply gullied, culverts have been totally corroded out, and leachate at the slope tow has pH values between 3 and 4. Mere top-dressing slopes composed of sulfidic material with amendments, topsoil, and vegetation are not effective.

Tellico Plains - Robbinsville Highway Project

As a result of inadvertent impacts caused during early phases of this road the need for AD preventive and abatement strategies became paramount for successful road completion. The problems of preventing AD in the setting of this road in the mountains of the Blue Ridge are probably as challenging as any type of problem involving the handling of acid-producing materials. Geophysical surveys and rock analyses have been used to identify sulfide mineral problem areas, volumes of sulfidic materials are estimated, and sites are identified where the sulfidic material can be encapsulated within specially designed fills. Although the techniques used have been proven effective, research for improvements continues.

Predictive measures include: literature review, geologic mapping, Induced Polarization or Self-Potential geophysical surveys, and rock analyses. The rock analysis is an acid-base accounting method that characterizes the acid potential based on sulfur content and neutralization potential based upon the presence of alkaline minerals (Sobek, et al, 19_). Abatement has been accomplished by various means. Special handling, treatment, and encapsulation have proven to be successful in highway construction; however, various forms of bactericides have also been used with a degree of success.

References

Barnes, H.L. and Romberger, 1968, Chemical aspects of acid mine drainage, Journal of the Water Pollution Control Federation, vol. 40, No. 3, Part 1, pp. 371-384.

Byerly, D.W., 1990, Guidelines for handling excavated acid-producing materials, U.S. Department of Transportation, DOT FHWA-FL-90-007, 82 p.

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Stumm, W. and Morgan, J.J., 1981, Aquatic Geochemistry, John Wiley & Sons, New York, 780 p.

Worgan, J., 1987, Acid mine drainage in reactive slates, "The Halifax Airport case", Proceedings, Acid Mine Drainage Seminar/Workshop, Environment Canada, En 40-11-7/1987, pp. 127-135.•

New Five-Year Plan

The annual update of the DOE *Environmental Restoration and Waste Management Five-Year Plan* (FY 1993-1997), newly submitted to Congress by Secretary Watkins, reviews past accomplishments, outlines future commitments, and "demonstrates the value of consolidating DOE's environmental restoration and waste management programs," the Secretary said. The report was unveiled at Headquarters on September 5 by Leo P. Duffy Director, Office of Environmental Restoration and Waste Management. The Executive Summary (19 pages), and the full report (750 pages) will be available shortly through Public Information Offices and reading rooms at major DOE installations and the Office of Environmental Restoration and Waste Management (EM-2.1), DOE Headquarters, Washington.•

Arizona Conference

The Annual Meeting of the Arizona Conference of AIME will be held December 8-9, 1991, at the Doubletree Hotel, Tucson, Arizona.

For more information contact: Meetings Department, SME, P.O. Box 625002, Littleton, CO 80162, or call (303) 973-9550 or FAX (303) 979-3461.•

Environmental Impact of Hazardous Waste in East Tennessee Karst

Cynthia R. Coron, President, Nikah Resource Consultants,
Assistant Professor, Geology, East Tennessee State University

Two toxic waste dumps, located within Bumpass Cove in eastern Tennessee, were recently declared State Superfund hazardous waste sites and are currently candidates for Federal remediation. The Bumpass Cove landfill was operated during the 1970's under a sanitary landfill permit, but was known to have accepted hazardous industrial waste. Drums containing metal sludges and other hazardous materials were buried illegally at the Fowler Mine site, when the incinerator located nearby could not meet permitting requirements. Both sites are located in the center of the community and directly impact the community and the environment. Hazardous leachate is known to be leaking from both sites, potentially contaminating surface streams, springs and groundwater from which local residents derive their drinking water.

Bumpass Cove Landfill - present day surface, looking northeast toward Buffalo Mountain.

The Hydrogeology of Bumpass Cove

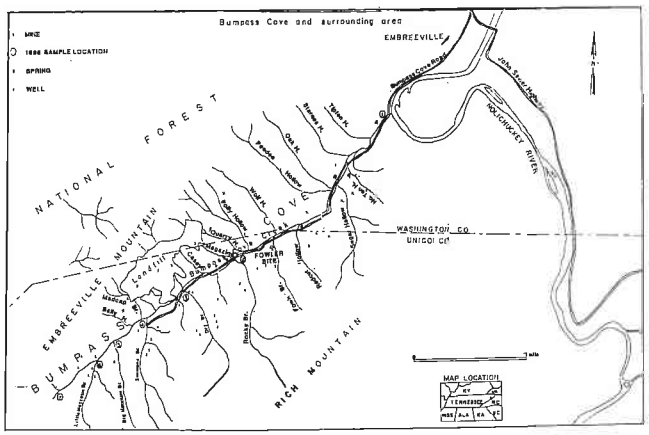
Bumpass Cove is underlain by a thrust fault-bounded syncline of less resistant Cambrian age Shady Dolomite (valley) and older clastic units of the Erwin and Hampton Formations which make up the ridges. The Shady Dolomite in the cove is well-jointed and, in places, severely fractured and brecciated, particularly along the complexly deformed southeastern flank where the Shady hosts zinc-lead mineralization. The rocks in the cove and on Embreeville and Rich Mountains are part of a great sheet overthrust northwestward for miles to lie on the Cambro-Ordovician Knox Formation. The Shady Dolomite exhibits prominent karst features and has undergone extensive weathering, producing crevices and pinnacles infilled with up to 200 feet of clay residuum. Drilling results indicate that the most intense solutional weathering and, consequently, the largest portion of groundwater flow is concentrated along the contact of the Shady Dolomite with the relatively impermeable Erwin Quartzite (Rodgers, 1948; Moss, 1990). In addition to producing solution features in the carbonates, weathering has remobilized metals from the substrate and concentrated oxidized ores of iron, zinc, lead and manganese in the residual clay. The presence of these deposits testifies to the involvement of the shallow water table with bedrock, and indicates that groundwater must have flowed through the residuum.

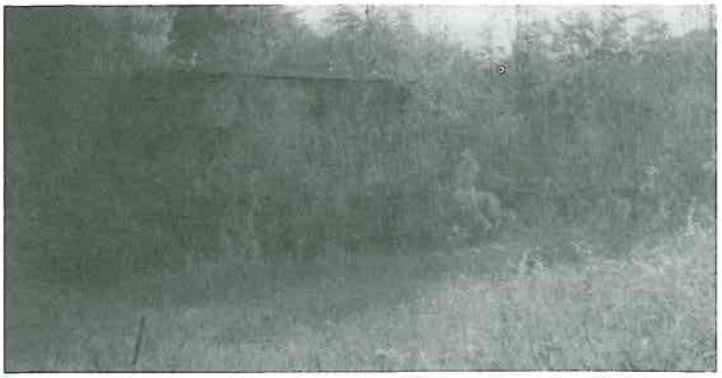
Numerous clay and gravel terraces exist at different elevations within the cove. These are interpreted as valley floor and/or floodplain remnants of Bumpass Cove Creek, which flows northeastwardly through the center of the cove. Benches ranging in distribution from 420 to 370 feet above the creek's present course are associated with the largest of the supergene manganese bodies. Benches at lower elevations near 160 ft. host oxidized zinc and lead ores. The Fowler toxic dump site is also located on this terrace. Areal drainage consists of a series of washes and streams which flow down both ridge flanks and across these benches into the valley-centered Bumpass Cove Creek.

The residents in the cove rely primarily upon springs and shallow wells for their water supply. The majority live on the lower terrace level and the springs and wells from which they obtain their water drain through this valley floor alluvium which is fed from discharge of the Shady Dolomite aquifer. Groundwater flow tends to follow Bumpass Cove Creek 3 miles northeasterward to its point of debouchement into the Nolichuckey River. Given the high relief and large hydraulic head of the area karst, Bumpass Cove Creek would not be expected to act as a discontinuity to groundwater flow (Moss, 1990). Springs and wells on both sides of the creek (and residential wells on the opposite side of the creek from the landfill and dump sites) should show hydrologic connections. Within a four mile radius of the Bumpass Cove sites, the primary producing aquifers are dolomites belonging to the Honaker and Knox Formations, both of which exhibit prominent karst features. Due to the extensive folding and faulting in the area, these units would have to be considered interconnected aquifers.

Hazardous Waste Sites and Contamination

Both the Bumpass Cove Landfill and the Fowler Site dump were located in areas extensively mined from the turn of the century on. Mine workings included hydraulic pits, horizontal addits and vertical shafts. In choosing the fill sites, the implications of the hydrogeology and the negative impact on the residential community were basically overlooked in favor of convenience. The landfill was implemented in 1971 without much site preparation (indications are that the addits and shafts were not filled in); no impermeable liners were installed and no provisions were made for leachate collection. Mine tailings were not removed and were used in place of soil as a fill cover. Monitor wells were not installed until 1977. Dumping at the Fowler Site was illegal and, consequently, secret and utilized the old mine workings.





Abandoned mill building at Fowler Mine/Hazardous Waste site.

During the 1977 drilling, the presence of porous gravel layers at the base of the landfill was established (EMPE, 1977). Sample recovery problems with several holes indicated other boulder/pebble layers and, possibly, caving at the site. Water levels within these wells averaged 32 feet. Drilling at the Fowler site showed an average water level of 17 feet. (Moss, 1990)

SW gat at Fowler Site showing posted Superfund warning sign and proximity of toxic dump to surface drainage.

The presence of supergene mineralization and the mining operations in the cove have contributed to high background levels of iron, lead, zinc and manganese. Sampling of five locations (3 on the Nolichuckey River, 1 above the landfill, 1 at the confluence of Bumpass Cove Creek with the river) by the Tennessee Department of Public Health in 1979 indicated concentrations of lead of less than 5 ppb and 33 ppb zinc above the landfill site. Maximum zinc concentration occurred where the creek and river meet, registering 62-104 ppb; lead concentration was less than 5 - 20 ppb. Sampling in 1988 (Coron and Rowe, unpublished data) at the same locale showed concentrations of 117 ppb zinc and 702 ppb lead. In addition, the 1988 program sampled all surface streams flowing into Bumpass Cove Creek and the creek itself. Results indicated lead and zinc concentrations in streams adjacent to old mine sites but upstream from the landfill to be moderately elevated above an average background level of 10 ppb. Samples ranged from 0.4 ppb to 67 ppb zinc and from 7 ppb to 92 ppb lead.

Spring and well sampling in 1990 by the Tennessee Division of Superfund showed parallel trends in heavy metal concentrations with excessively high levels of lead (1,051,000 ug/l) and zinc (13,941,00 ug/l) at the Fowler drum site. Metals not found in significant concentrations in any of the ore bodies/mines (including copper, nickel, arsenic, cadmium, mercury, selenium, silver, barium, chromium, and cyanide) show concentration peaks in springs and wells at or near the Fowler site. Levels elevated 3 times to 700 times background of cyanide (3x), cadmium (3x), copper (5x), zinc (7x) and nickel (700x) occur in wells and a spring on the opposite side of Bumpass Cove Creek, immediately below the landfill. Similar anomalies occur with respect to organic and inorganic toxins like trichlorethylene; elevated concentrations of these compounds have been sampled from shallow and deep wells, springs and surface streams, a number of which are used as sources of drinking water for the cove's residents (Moss, personal communications, 1991).

To date, one well and one spring across from the landfill have been abandoned. Waterlines connecting Bumpass Cove and the nearest city water supply are still under construction. The responsibility for cleaning up the landfill is still being debated at the State and Federal level. Ingress to both Fowler and the landfill sites has been restricted with metal gates, but foot, horse and jeep traffic still occur.

The connections between the Shady aquifer in Bumpass Cove and the Honaker-Knox aquifers outside the confines of the cove needs to be investigated. The increase in lead and zinc concentrations measured from

Pond infilling old hydraulic pits and shafts at abondoned Tennessee Zinc and Lead Co. Mines; pond is across the stream viewed in (3), adjacent to the Fowler drum site. View is north to Embreeville Mountain. Bumpass Cove Landfill is 1500 feet away on opposite side of Bumpass Cove Creek into which lake drains.

Richard Sams (Project Manager for Nikah Resource Consulants) and Kent Burdick, left, (Graduate student at East Tenn. State Univ.) pointing to drainage pipe effluent from mountain stream draining into pond.

1979 to 1988 may indicate that hazardous leachate from the sites is moving slowly into groundwater or that complex flowpaths within the aquifer result in slow transport of leachate down gradient.Dye tracing studies to answer some of these questions and to further delineate the area of contamination are planned for 1992.

References Cited

EMPE, 1977, Compliance Program for Wasteplex, Inc.:Bumpass Cove: EMPE Report.

Moss, T.A., 1990, Bumpass Cove Geologic/Groundwater Assessment: Bumpass Cove Landfill (#86501), Bumpass Cove/Fowler (#86502): Tenn. Div. Superfund Report, 8p.

Rodgers, J., 1948, Geology and Mineral Deposits of Bumpass Cove, Unicoi and Washington Counties, Tennessee: Tenn. Div. Geology, Bull. 54, 77p.

Tennessee Dept. of Public Health, 1979, Nolichuckey River and Bumpass Cove Creek, Unicoi - Washington County, Tennessee Intensive Survey in Response to Formal Complaint by Concerned Citizens for Jonesboro Water: Tenn. Dept. Public Health, Div. Water Quality Control, Knoxville Basin Office Report, 124p.•

$30 Per Barrel Oil-From-Coal?

In an effort to reach the $30 per barrel mark for making liquid petroleum substitutes from coal, DOE is asking Amoco Oil Co., Hydrocarbon Research Inc., and Canadian Energy Development Inc. to join a 2-year research effort to apply new cost-cutting technologies.

DOE also has selected the M. W. Kellogg firm to build a "generic" small-scale, coal-to-liquids engineering facility at the Pittsburgh Energy Technology Center to test and improve coal liquids processes emerging from the research program.

The facility to be built by Kellogg will be adaptable to a wide range of process designs and will be able to process up to 90 kilograms (200 pounds) of coal per day. the unit is scheduled to be available in 1993.•

Water Publication Available

Subject indexes to the proceedings of the five years of Outdoor Action Conferences on Aquifer Restoration, Ground Water Monitoring, and Geophysical Methods and the six years of Petroleum Hydrocarbons and Organic Chemicals in Ground Water conferences are now available in a single 22-page volume from the National Water Well Association (NWWA).

More than 730 papers from both series of conferences have been indexed by subject. Each listing includes the title, authors, year of publication and page number in the original volume.

The Petroleum Hydrocarbons conference proceedings subject index includes sections on prevention of ground water contamination, microbial degradation, detecting and delineating underground spills, monitoring program design and implementation, and control of subsurface hydrocarbon vapors. NWWA and the American Petroleum Institute have co-sponsored the petroleum hydrocarbons conferences since 1984.

Subject Indexes to Petroleum Hydrocarbons and Outdoor Action (Catalog No. K798) is available from the NWWA Bookstore by sending complete payment of $9.25 ($7.50 to NWWA members), plus $3 for handling and shipping, to: Bookstore, P.O. Box 182039, Dept. 017, Columbus, Ohio 43218. Credit card orders may be telephoned to (614) 761-1711.•

FROM WASHINGTON...

F. B. (Ted) Mullin, CPG 1716

Here is the latest news on the proposal (H.R. 918) to change the current Mining Law.

Congresswoman Barbara Vucanovich (R-NV), the ranking minority member on the Subcommittee on Mining and Natural Resources of the Committee on Interior and Insular Affairs, does not want the present law revised. She admits some minor changes may be needed to prevent some abuses, but that the major changes proposed in H.R. 918 would be a disaster for the mining industry.

Vucanovich is urging the mining industry to continue their commitment to the present law and to keep the heat on Congress. She believes we ..."must convince enough members that the country is best served by a job-producing, tax-paying, domestic mining industry that can compete globally while adhering to state and federal environmental laws."

She believes the Mining Subcommittee will be by-passed because supporters of the H.R. 918 fear a tie vote. Several scenarios are possible. However, due to the full agenda in Congress and the fact they will probably adjourn before Thanksgiving the issue will be on hold until after January.

Congresswomen Vucanovich is urging all Mining Industry people and AIPG members to sell their Congressmen on defeating H.R. 918. The key Congressmen to target are: Larry Larocco - Idaho, Pat Williams - Montana, Bill Richardson - New Mexico, Tim Johnson - South Dakota, Rich Lehman - California, and Ben Campbell - Colorado.

She stated that it was expected that Mr. Rahall would by-pass the Mining Subcommittee in order to break a tie vote. This action would bring the proposal before the full Interior Committee where the 49 members can act on the proposal. The legislation would be marked up as an "amendment-in-the-nature-of-a-substitut e" of the original text of H.R. 918.

Jim Zoia of Congressman Rahall's staff has stated that we can expect a $5.00 per acre rental where performance of $3.50 per acre of diligent development would be credited toward the rental. This proposal has the favor of the environmental groups because it satisfies their desire to reduce unnecessary assessment work while requiring at least $30 per claim to go into the Federal coffers. Also, Chairman Miller has stated that he will attach a provision for a production royalty.

She stresses the need not to be fooled by efforts to impose a royalty on hardrock mineral production so 40 cents of every royalty dollar made from leasing act minerals will go into the Reclamation Trust Fund in the Federal Treasury. "That's Reclamation as in 'Bureau of Reclamation'...not in 'Mining" reclamation," she warns.

It's time for a grassroots effort to defend mining in Congress unless we want Latin America to take over the industry. Importing metals rather than accessing public lands will be disastrous to our Country and to many AIPG members. **AIPG members must act now to contact these six Congressmen and urge the defeat of H.R. 918.**•

U.S. S 1762 AUTHOR: Johnston
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: MINERALS AND MINING
SUMMARY: Amends the Minerals Leasing Act.
STATUS: 9/26/91 INTRODUCED. To SENATE Committee on ENERGY AND NATURAL RESOURCES.

U.S. S 1805 AUTHOR: Brown
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: WATER SUPPLY AND PRESERVATION
SUMMARY: Amends the Federal Water Project Recreation Act and authorizes the Secretary of the Interior to manage the land resources of Federal reclamation projects.
STATUS: 10/03/91 INTRODUCED. To SENATE Committee on ENERGY AND NATURAL RESOURCES.

U.S. H 3385 AUTHOR: Hopkins
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: MINERALS AND MINING
SUMMARY: Amends the Surface Mining Control and Reclamation Act of 1977 to assist small surface coal mine operators.
STATUS: 9/24/91 INTRODUCED. To HOUSE Committee on INTERIOR AND INSULAR AFFAIRS.

U.S. H 3421 AUTHOR: Applegate
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: MINERALS AND MINING
SUMMARY: Amends the Minerals Leasing Act to provide for the continuation of certain leases on mineral estates upon the vesting of a present interest of the United States to such mineral estates.
STATUS: 9/26/91 INTRODUCED. To HOUSE Committee on INTERIOR AND INSULAR AFFAIRS.

U.S. H 3491 AUTHOR: Geidenson
TOPIC: ENERGY
SUBTOPIC: LAND
SUMMARY: Amends the Low-Level Radioactive Waste Policy Amendments Act of 1985 to remove class C waste from the low-level program.
STATUS: 10/03/91 INTRODUCED. Jointly to HOUSE Committees on INTERIOR AND INSULAR AFFAIRS and ENERGY AND COMMERCE.

U.S. H 3492 AUTHOR: Gilchrest
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: LAND
SUMMARY: Improves the administration of Federal permits for activities in wetlands.
STATUS: 10/03/91 INTRODUCED. Jointly to HOUSE Committees on PUBLIC WORKS AND TRANSPORTATION and MERCHANT MARINE AND FISHERIES.

U.S. H 3523 AUTHOR: Ridge
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: LAND
SUMMARY: Provides for the protection and preservation of wetlands property held by the Resolution Trust Corporation.
STATUS: 10/08/91 INTRODUCED. To HOUSE Committee on BANKING, FINANCE AND URBAN AFFAIRS.

U.S. H 3578 AUTHOR: Brown
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: LAND
SUMMARY: Conducts a study of the environmental research basis for wetlands delineation.
STATUS: 10/17/91 INTRODUCED. To HOUSE Committee on SCIENCE, SPACE AND TECHNOLOGY.

U.S. 17124 AGENCY: DOI/OSM and Enforcement
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: Amends the Ohio regulatory program under the Surface Mining Control and Reclamation Act. Revises three Ohio administrative rules and one section of the Ohio Revised Code to be consistent with the corresponding Federal regulations regarding the extraction of coal incidental to the extraction of other minerals.
AGENCY CONTACT: Mr. Richard J. Seibel, Director, OSM Reclam. and Enforcement, Columbus Field Office, 2242 S. Hamilton Rd., Rm 202, Columbus, OH 43232 (614) 866-0578.
CITATION: 30 CFR 935
PROPOSAL DATE: 05/22/91
COMMENT DEADLINE: 10/25/91
MESSAGE: REOPENING OF COMMENT PRD [56FR 186 P 48470]

U.S. 20305, 20306, 20307 AND 20308
AGENCY: (20305) DOI/Fish and Wildlife Serv.
(20306) DOA/Soil Conserv. Serv.
(20307) DOD/Dept. of the Army/Corps of Eng.
(20308) EPA
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: Request public comment on proposed revisions to "Federal Manual for Identifying and Delineating Jurisdictional Wetlands" (1989 Manual), an interagency document adopted January 10, 1989; The 1989 Manual provides guidance for identifying and delineating wetlands for various purposes, including determining wetlands under the jurisdiction of the Clean Water Act section 404 regulatory program.
AGENCY CONTACT: Michael Fritz, EPA (202) 245-3913
CITATION: 50 CFR Chapters I and IV
PROPOSAL DATE: 08/14/91
COMMENT DEADLINE: 12/14/91
MESSAGE: EXTENSION OF COMMENT PRD [56FR 200 P 51868]

U.S. 20634 AGENCY: DOI/OSM Reclam. and Enforcement
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: Proposes to amend the Ohio permanent regulatory program under the Surface Mining Control and Reclamation Act of 1977. The amendment was initiated by Ohio and is intended to revise one rule in the OH Admin. Code to delete the provision that reclamation operations conducted without a coal mining permit cause or are likely to cause significant imminent environment harm.
AGENCY CONTACT: Mr. Richard J. Siebel, Dir., OSM Reclam. and Enforcement, Columbus Field Office, 2242 S. Hamilton Rd., Rm 202, Columbus, OH 43232 (614) 866-0578.
CITATION: 30 CFR 935
PROPOSAL DATE: 09/13/91
COMMENT DEADLINE: 10/15/91

U.S. 20784 AGENCY: DOT/Res. and Spec. Prog. Admin.
TOPIC: ENERGY
SUMMARY: Revises the definition of the term "gathering line" so that the beginning and end of a gas gathering line are clearly described. The points where a gas gathering line begins and ends are confusing under the current definition.
AGENCY CONTACT: Cesar DeLeon, Res. and Spec. Programs Admin., U.S. Dept. of Transp., 400 7th St. SW, Washington, DC 20590 (202) 366-1640.
CITATION: 49 CFR 192
PROPOSAL DATE: 09/25/91
COMMENT DEADLINE: 11/25/91

U.S. 20788 AGENCY: DOI/OSM Reclam. and Enforcement
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: The Office of Surface Mining Reclam. and Enforcement (OSM) is revising the definition of "previously mined area" and by clarifying the requirements governing off-site coal preparation plants. OSM is taking this action as a result of two U.S. District Court decisions affecting OSM's permanent program regulations.
AGENCY CONTACT: Suzanne Hudak, OSM, U.S. DOI, 1951 Constitution Ave. NW, Washington, DC 20240 (202) 208-2700.
CITATION: 30 CFR 701 and 785
PROPOSAL DATE: 09/25/91
COMMENT DEADLINE: 11/25/91
MESSAGE: EXTENSION OF COMMENT PRD [56FR 200 P 51861]

U.S. 20964 AGENCY: DOI/OSM Reclam. and Enforcement
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: Announces receipt of a proposed amendment to the AR permanent regulatory program under the Surface Mining Control and Reclam. Act of 1977 (SMCRA). Consists of revisions to Arkansas' regulations concerning the covering of coal and acid-and toxic-forming materials by backfilling and grading operations.
AGENCY CONTACT: James H. Moncrief, Director, Tulsa Field Office, OSM Reclam. and Enforcement, 5100 E. Skelly Dr. #550, Tulsa, OK 74135 (918) 581-6430.
CITATION: 30 CFR 904
PROPOSAL DATE: 10/10/94
COMMENT DEADLINE: 11/12/91

U.S. 21068 AGENCY: DOI/BLM
TOPIC: POLITICS AND GOVERNMENT
SUMMARY: Proposes to regulate surface disturbing activities on public lands resulting from operations under the Mining Law of 1872.
AGENCY CONTACT: Bob Anderson, BLM Deputy Dir. for Mineral Res., Federal Bldg., 2800 Cottage Way, E-2841, Sacramento, CA (916) 978-4735.
CITATION: 43 CFR 3800
PROPOSAL DATE: 10/23/91
COMMENT DEADLINE: 01/03/92

CO 2029 AGENCY: Board of Health
TOPIC: ENVIRON. PROTECTION AND POLLUTION CONTROL
SUMMARY: Concerns the Colorado Hazardous Waste Management Program and hazardous waste permit fee schedule.
AGENCY CONTACT: Secretary, Board of Health, Department of Health, 4210 E 11th Ave., Denver, CO 80220.
CITATION: 6 CCR 1007 Hazardous Waste Management Program; permit fee schedule
PROPOSAL DATE: 03/10/91
HEARING DATE: 11/20/91
MESSAGE: HEARING DATE RECEIVED

CO 2216 AGENCY: Dept. of Natural Res./Div. of Water Res.
TOPIC: ENVIRON. PROTECTION AND POLLUTION CONTROL
SUMMARY: Creates within the Div. of Water Res. Regulations new Office of State Engineer's Rules and Regulations, including Board of Examiners of Water Well Construction and Pump Installation Contractors Rules and Regulations. Implements the independent water quality authority of the Office of the State Engineer and identifies responsibility for implementing standards and classifications for discharges other than point source discharges to surface water; for adopting applicable points of compliance for activities that result in discharge to state waters other than surface waters in consultation with both the Water Quality Control Comm. and the Div. of Water Res. Regards substitute supply/augmentation plans involving recharge to ground water.
AGENCY CONTACT: Carol Powell, Div. of Wtr Res., 1313 Sherman St., Rm 828, Denver, CO (303)866-3581.
CITATION: 2 CCR 402 Senate Bill 89-181 Rules Water Quality Authority for the Office of the State Engineer
PROPOSAL DATE: 09/10/91
HEARING DATE: 10/28/91, prehearing 10/10/91

FL S 25 AND FL S 4 p AUTHOR: Gardner
TOPIC: ENVIRON. PROTECTION AND POLLUTION CONTROL
SUBTOPIC: HAZARDOUS AND TOXIC WASTE - NON-NUCLEAR
SUMMARY: (S 25) Relates to hazardous waste; prohibits, without exception, the disposal of hazardous waste through an injection well.
(S 4 p) Prohibits, without exception, the disposal of hazardous waste through an injection well.
STATUS: (S 25) 9/30/91 PREFILED.
(S 4 p) 10/18/91 PREFILED.

FL H 213 p AUTHOR: Graham
TOPIC: LAW AND JUSTICE
SUBTOPIC: CIVIL LIABILITY
SUMMARY: Requires attorney's certification that claim has merit as prerequisite to filing action for professional negligence against professional engineer, land surveyor, architect, or landscape architect, provides exceptions, and provides for the failure to obtain consultation and file the certificate is grounds for dismissal of action.
STATUS: 9/30/91 INTRODUCED. To HOUSE Committee on JUDICIARY and APPROPRIATIONS.

FL S 218 p AUTHOR: Yancey
TOPIC: BUSINESS AND CORPORATIONS
SUBTOPIC: SPECIFIC INDUSTRIES, OCCUPATIONS
SUMMARY: Requires a plaintiff's attorney in a professional negligence action against a professional engineer, land surveyor, architect, or landscape architect to file a certificate of reasonable and meritorious cause before filing the action, provides exceptions and provides for dismissal of an action if a certificate is not properly filed, and provides immunity from civil liability for certain employers.
STATUS: 10/22/91 PREFILED.

FL 9534 and 9535 AGENCY: Dept. of Prof. Reg./Board of Prof. Eng.
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: (9534) Sets forth and summarizes the committees of the Board of Professional Engineers.
(9535) Relates to certification examinations for engineers.
AGENCY CONTACT: Angel Gonzalez, Executive Director, Board of Professional Engineers, Northwood Centre, 1940 N. Monroe St., Tallahassee, FL 32399-0750.
CITATION: (9534)FAC 21H-18.004 (9535) FAC 21H-21.003
PROPOSAL DATE: 10/11/91
COMMENT DEADLINE: 11/01/91

IA 2324 AGENCY: Environmental Protection Commission
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUMMARY: Adopts new section concerning the registration of groundwater professionals; requires a person who provides subsurface soil contamination and groundwater consulting services or who contracts to perform or supervise remediation or corrective action services at leaking underground storage tank sites to meet certain minimum standards and register with the Department of Natural Resources.
AGENCY CONTACT: Keith Brideson, Iowa Department of Natural Resources, 900 E. Grand Ave., Des Moines, IA 50319-0034 FAX (515)281-8895.
CITATION: 134 IAC
PROPOSAL DATE: 09/18/91
COMMENT DEADLINE: 11/04/91
HEARING DATE: 10/22/91/ 10/23/91, 10/24/91
ADOPTION DATE: 08/28/91
EFFECTIVE DATE: 08/28/91
MESSAGE: EMERGENCY RULE, SIMULTANEOUSLY PROPOSED FOR PERMANENT ADOPTION.
AIPG NOTE: Recognizes AIPG CPG.

MD 3478 AGENCY: Dept. of Nat. Res./Energy and Coastal Zone Admin.
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUMMARY: Revises the requirements of a permit application for experimental practices and for mining operations on prime farmlands; clarifies that underground mining may not be conducted beneath or adjacent to public buildings or facilities and authorizes the Bureau of Mines to suspend mining under or adjacent to public buildings or facilities if subsidence causes material damage; revises the eligibility and liability of an applicant for the Small Operators Assistance Program.
AGENCY CONTACT: Anthony F. Abar, Director, Maryland Bureau of Mines, 69 Hill St., Frostburgh, MD 21532, (301) 689-4136.
CITATION: COMAR 08. 13. 09, .03, .13, .17, .28, .31-.34 Surface coal Mining and Reclam. under Federally Approved program.
PROPOSAL DATE: 10/18/91
COMMENT DEADLINE: 11/19/91
HEARING DATE: 10/24/91

MI H 3284 AUTHOR: Bullard
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: LAND
SUMMARY: Allows municipalities to issue construction permits for wetlands.
STATUS: 10/23/91 INTRODUCED. To HOUSE Committee on CONSERVATION, RECREATION, AND ENVIRONMENT.

MI S 522 AUTHOR: Wartner
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: LAND
SUMMARY: Prohibits local wetland ordinances.
STATUS: 9/26/91 INTRODUCED. To SENATE Committees on NATURAL RES. AND ENVIRONMENTAL AFFAIRS.

MN 1057 AGENCY: Pollution Control Agency
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUMMARY: Relates to Ground Water and Solid Waste. Relates to the Minnesota Environmental Response and Liability Act.
AGENCY CONTACT: Allen Dotson, Minnesota Pollution Control Agency, Ground Water ad Solid Waste Div., 520 Lafayette Rd., St. Paul, MN 55155-3898 (612) 296-7735.
CITATION: CODIFIED
PROPOSAL DATE: 10/14/91
COMMENT DEADLINE: 11/18/91

MO 3924 and MO 3929 AGENCY: Dept. of Natural Resources
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUMMARY: (3924) Sets forth the requirements that a surface mine operator must meet to protect the environment and restore the surface-mined land by setting standards for post-mining land use, backfilling and grading, sediment and water management control, protection of adjacent properties and time extension criteria.
(3929) Defines certain terms used for surface mining of minerals.
AGENCY CONTACT: Charles A. Stiefermann, Director Staff, Missouri Clean Water Comm., P.O. Box 176, Jefferson City, MO 65102.
CITATION: 10 CSR 40-10. 040, .050
PROPOSAL DATE: 08/01/91
DATE WITHDRAWN: 08/19/91
MESSAGE: PROPOSED RULE WITHDRAWN

MO 3999 AGENCY: Dept. of Natural Resources
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUMMARY: Concerns permit and performance requirements for industrial mineral open pit and in-stream and gravel operations; includes: requirements for permit application, requirements for surface mine operators to obtain permit from the land Reclamation Commission, bonding requirements, permit review process, inspection authority and right of entry, enforcement procedures, hearings and informal conferences procedures, requirements for filing an annual reclamation status report, definitions for certain terms used for surface mining of minerals.
AGENCY CONTACT: Ed Sadler, Staff Director, Land Reclam. Program, P.O. Box 176, Jefferson City, MO
CITATION: 10 CSR 40-10. 010, .020, .030, .040, .050, .060, .070, .080, .090, .100
PROPOSAL DATE: 08/19/91

MT 1600 AGENCY: Dept. of Health and Envir. Sci.
TOPIC: ENERGY
SUMMARY: Relates to the Leaking Petroleum Storage Tank Compensation Program.
AGENCY CONTACT: Jean Riley, Executive Director, Petroleum Tank Release Compensation Board, 1740 N. Montana Ave., Helena, MT 59620.
CITATION: [UNCODIFIED] Leaking Petro. Storage Tank Comp Pgm
PROPOSAL DATE: 08/19/91
COMMENT DEADLINE: 10/07/91

MT 1624 AGENCY: Board of Health and Envir. Sci.
TOPIC: ENVIRON. PROTECTION AND POLLUTION CONTROL
SUMMARY: Deals with permits for owners and operators of hazardous waste.
AGENCY CONTACT: Roger Thorvilson, Dept. of Health and Envir. Sci., Cogwell Bldg., Capitol Station, Helena, MT 59620
CITATION: ARM 16. 44. 103, .105- .106, .109, .114- .116, .118., .123-.124, .202, .61 0, .901-.902, .911, Rule I.
PROPOSAL DATE: 09/12/91
COMMENT DEADLINE: 10/10/91
HEARING DATE: 10/07/91

NC 1880, 1881 and 1882 AGENCY: Dept. of Envir., Health & Nat. Res.
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUMMARY: (1880) Relates to sedimentation control commission organization; relates to buffer zones adjacent to a lade or natural watercourse. Relates to land-disturbing activities. Relates to 25 year storms as relates to watershed conditions.
(1881) Relates to erosion and sediment control; relates to basic control objectives, storm water outlet protection, existing uncovered areas, and approval of erosion control plans; provides for buffer zone requirements.
(1882) Relates to sedimentation control civil penalties; relates to stop work orders.
AGENCY CONTACT: Mell Nevils, Div. of Land Res., P.O. Box 27687, Raleigh, NC 27611 (919) 733-4574.
CITATION: (1880)15A NCAC 4A .0005 (1881) 15A NCAC 4B .0006 thru .0025, nonsequential (1882) 15A NCAC 4C .0007.
PROPOSAL DATE: 09/30/91
COMMENT DEADLINE: 10/20/91
HEARING DATE: 11/05/91

NH 2147 AGENCY: Dept. of Envir. Serv./Water Supply and Pollution Control Div.
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: Requires consulting engineers who wish to provide services in the fields of public water supply and pollution control to governmental subdivisions that utilize State of federal financial assistance, to be prequalified by the Division of Water Supply and Pollution Control and appear on a State roster of prequalified engineers.
AGENCY CONTACT: William Read, Supervisor, Support Services Section, Wastewater Engineering Bureau, Water Supply and Pollution Control Div., Dept. Env. Serv., 6 Hazen Dr., Concord, NH 03302-0095.
CITATION: Chapter Env-Ws 600 Selection of Consulting Eng.
PROPOSAL DATE: 09/20/91
COMMENT DEADLINE: 10/21/91
HEARING DATE: 10/23/91

NH 2154 AND 2155 AGENCY: Dept. of Envir. Serv./Water Mgmt. Div.
TOPIC: ENVIRONMENTAL PROTECTION AND POLLUTION CONTROL
SUMMARY: (2154) Specifies standards for the siting, permitting, and performance of solid waste facilities; revises and clarifies the rules to more accurately reflect agency intent and to correct typos and cross-references; facilitates solid waste management by decreasing certain set-back distances for certain limited permit facilities and by adjusting the infectious waste storage requirements to accommodate persons who generate small quantities of such waste.
(2155) Specifies permitting and procedures for solid waste facilities; clarifies language, corrects cross-references, extends the time for submission of certain information and aligns with other associated rule changes; adds certain facilities to the list of those eligible for a permit-by-rule, eliminates the application fee for certain facilities, and adjusts the operation fee for certain facilities.
AGENCY CONTACT: Gretchen Rule, Enforcement Coordinator, 6 Hazen Dr., Concord, NH 03301, (603) 271-3503.
CITATION: (2154) Env-Wm 2107.02(e), .02(k), Env-Wm 2402.01(b), 2507.03(b) (10), 2508.02(b), 2508.02(c), 2508.02(1), 2604.02, .03, 2607.02(a). (2155) Env-Wm 301.03, 307.02(g), 307.03, 307.05(g), 315.02(a), 315.06(a), 315.07(d), 315.09(a)(2), 316.01, 316.02(b)(6), 316.06g.
PROPOSAL DATE: 10/04/91
COMMENT DEADLINE: 11/15/91
HEARING DATE: 11/12/91

NM 168 AGENCY: Oil Conservation Div.
TOPIC: ENERGY
SUMMARY Proposes alternate methods for measuring and reporting gas production from low capacity wells.
AGENCY CONTACT: Jami Bailey, Oil Conserv. Div., Santa Fe, NM
CITATION: Rules 403 and 1110
PROPOSAL DATE: 09/30/91
HEARING DATE: 10/10/91

LOST MEMBER

The member listed below has moved and mail is being returned to the AIPG National Office. If you have moved recently or if you know the current address of the "lost" individual, please send an update of address change to:

AIPG
7828 Vance Drive, Suite 103
Arvada, CO 80003
or call (303) 431-0831 - (303) 431-1332 FAX

Lost Member:
Robert H. Dunn
7315 Inglecliff Drive
Dallas, TX 75230

OH H 539 AUTHOR: Jones
TOPIC: ENERGY
SUBTOPIC: OIL, GAS, PETROLEUM
SUMMARY: Requires a county auditor or county board of revision, upon request, to make available to the holder of a royalty interest in an oil or gas well the documents in their possession relating to the valuation and assessment of the royalty interest for the purpose of real property taxation.
STATUS: 10/23/91 INTRODUCED.

OH 3385 AGENCY: Envir. Protection Agency
TOPIC: ENVIR. PROTECTION AND POLLUTION CONTROL
SUMMARY: Regards the requirements for permits to operate Class I fluid waste injection wells; maintenance schedules and plans for operational safeguards.
AGENCY CONTACT: Envir. Protection Agency; Columbus, OH
CITATION: ORC 3745-34-50 to -62; 3745-34-01, -08, -27, -38.
PROPOSAL DATE: 07/01/91

OH 3402 AGENCY: Department of Health
TOPIC: ENERGY
SUMMARY: Relates to general prohibitions in license application procedures for Radon testers, mitigation specialists, and mitigation contractors; license application review process; criteria for licensure; denial, suspension, or revocation of licenses; standards of conduct for Radon testers, mitigation specialists, and mitigation contractors; application, criteria, and standards for approval of Radon testing and mitigation courses.
AGENCY CONTACT: Peter Van Runkle, 466-4882
CITATION: [To be Codified] 9 rules - radon testers
PROPOSAL DATE: 07/30/91

OH 3441 AGENCY: State Board of Eng. and Surveyors
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: Relates to the registration of certification by endorsement, reciprocity or temporary certification, endorsement, examination, registration and annual renewal fees.
AGENCY CONTACT: Herman Stolle, 77 S. High St., 16th Fl., 43266-0314 (614) 466-8948.
CITATION: [To be Codified] 2 rules - registration
PROPOSAL DATE: 09/09/91

OR 7910 AGENCY: Div. of State Lands
TOPIC: POLITICS AND GOVERNMENT
SUMMARY: Establishes standards and guidelines for local governments to develop wetland inventories which can be incorporated into the Statewide Wetland Inventory and used in the development of Wetland Conservation Plans.
AGENCY CONTACT: Janet Morian, Div. of State Lands, 775 Summer St. NE, Salem, OR 97310, (503) 378-3805.
CITATION: UNCODIFIED, Lands, Div. of State/Wetlands
PROPOSAL DATE: 10/01/91

OR 7985 AGENCY: Dept. of Fish and Wildlife
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: Relates to the administrative rules for the review of proposed chemical process mining operations for the purpose of developing conditions for fish and wildlife habitat protection.
AGENCY CONTACT: Gail McEwen, Dept. of Fish and Wildlife, P.O. Box 59, Portland, OR 97207 (503) 229-5400 ext. 422.
CITATION: OAR 635-420
PROPOSAL DATE: 10/01/91
COMMENT DEADLINE: 10/30/91
HEARING DATE: 11/13/91

PA H 2001 AUTHOR: Wright
TOPIC: REAL ESTATE AND CONSTRUCTION
SUBTOPIC: REAL ESTATE - MISC.
SUMMARY: Requires radon testing and notification for sale of residential property. Imposes administrative penalties. Imposes powers and duties on the Department of Environmental Resources.
STATUS: INTRODUCED. To HOUSE Committee on CONSUMER AFFAIRS.

PA H 2112 AND PA H 2113 AUTHOR: Birmelin
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: MINERALS AND MINING
SUMMARY: (H 2112) Amends the Noncoal Surface Mining Conservation and Reclamation Act. Exempts from licensing and permitting a person who mines a certain quantity of flagstone.
(H 2113) Amends the Clean Streams Law. Exempts from permits and fees persons who mine a certain quantity of flagstone.
STATUS: 10/22/91 INTRODUCED. To HOUSE Committee on CONSERVATION.

SC 934 AGENCY: Land Res. Conserv. Comm.
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: Establishes the procedure and minimum standards for a statewide uniform program for stormwater management and sediment reduction with the option of being operated locally, for land disturbing activities that require a permit, establishes the procedure for local governments or conservation districts to apply for program component delegation, and encourages management of stormwater and sediment on a watershed basis.
AGENCY CONTACT: SC Land Res. Comm., 2221 Devine St., Columbia, SC 29201.
CITATION: SCAC 72-300 thru 316
PROPOSAL DATE: 09/27/91
HEARING DATE: 10/31/91

TX 8873 AGENCY: Water Commission
TOPIC: ENVIR. PROTECTION AND POLLUTION CONTROL
SUMMARY: Concerns interim standards for owners and operators of hazardous waste storage, processing, or disposal facilities; concerns permitting standards for owners and operators of hazardous waste storage, processing, or disposal facilities in order to conform to the federal rules by clarifying which regulations have been adopted by reference.
AGENCY CONTACT: Sally Jo Hahn, Legal Div., TX Water Comm., P.O. Box 13087, 1700 N. Congress Ave., Austin, TX 78711-3087, (512) 463-8069.
CITATION: 31 TAC 335.112, .152
PROPOSAL DATE: 09/13/91
COMMENT DEADLINE: 10/13/91

TX 8962 AGENCY: State Board of Reg. for Prof. Eng.
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: Concerns foreign degrees; concerns expirations and renewals.
AGENCY CONTACT: Charles E. Nemir, Executive Director, Texas State Board of Reg. for Prof. Eng., P.O. Drawer 18329, Austin, TX 78760 (512) 440-7723.
CITATION: 22 TAC 131.92, 131. 134
PROPOSAL DATE: 09/20/91
COMMENT DEADLINE: 10/20/91

TX 9060 AGENCY: Railroad Commission
TOPIC: ENERGY
SUMMARY: Concerns requirements for approval and certification of expanded enhanced oil recovery projects to receive a tax incentive.
AGENCY CONTACT: Railroad Comm. of TX, Austin, TX (512) 463-6941.
CITATION: 16 TAC 3.50
PROPOSAL DATE: 10/11/91
ADOPTION DATE: 08/20/91
EFFECTIVE DATE: 10/04/91
EXPIRATION DATE: 02/01/92
MESSAGE: EMERGENCY RULE, SIMULTANEOUSLY PROPOSED FOR ADOPTION.

UT 3646 AGENCY: DONR/Div. of State Lands and Forestry
TOPIC: ENERGY
SUMMARY: Enables the division director offer the land withdrawn for lease of oil, gas and hydrocarbon after consultation with the Division of Oil, Gas and Mining and Utah Geological Survey.
AGENCY CONTACT: Jerry W. Mansfield, Div. of State Lands and Forestry, Dept. of Nat. Res., 3 Triad Ctr #400, Salt Lake City, UT 84180-1204.
CITATION: R 632 -20 -38
PROPOSAL DATE: 09/01/91
COMMENT DEADLINE: 10/01/91

UT 3679 AGENCY: DNR/Oil, Gas and Mining
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: Describes the steps one needs to take advantage of the exemption described in 40-10-3(18) U.C.A. concerning exemption from regulation if coal extraction is incidental to the mining of other minerals; adds definitions to clarify the use of certain terms in the Utah Coal Regulatory Program; Utah's primacy in the coal regulatory area depends on these changes to maintain the Utah program as no less effective than the Federal coal Regulatory Program.
AGENCY CONTACT: Ron Daniels, Oil, Gas and Mining, Dept. of Nat. Res., 3 Triad Ctr #350, Salt Lake City, UT 84180-1203 (801) 538-5340.
CITATION: R 614 -106 -100 TO -900
PROPOSAL DATE: 10/01/91
COMMENT DEADLINE: 10/31/91
HEARING DEADLINE: 10/24/91

WA 7854 AGENCY: Dept. of Ecology
TOPIC: RESOURCE MGMT. AND PRESERVATION
SUMMARY: Adopts a revised shoreline master program into the state master program.
AGENCY CONTACT: Department of Ecology, Olympia, WA
CITATION: WAC 173-19-220
PROPOSAL DATE: 09/18/91
ADOPTION DATE: 09/04/91
EFFECTIVE DATE: 10/05/91
MESSAGE: RULE ADOPTED

WA 7897 AGENCY: Department of Licensing
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: Regulates the engineering and land surveying professionals; amends fees as required by 1991 amendment to chapter 18. 43 RCW (chapter 19, Laws of 1991) and clarifies description of fees; two new fees are added to offset cost of performing described function, implements staggered renewal of corporations and partnerships.
AGENCY CONTACT: Alan E. Rathbun, P.O. Box 9649, Olympia, WA 98507.
CITATION: WAC 196 -26 -020, 030
PROPOSAL DATE: 10/02/91
COMMENT DEADLINE: 10/22/91
HEARING DATE: 10/23/91

WI A 588 AUTHOR: Medinger
TOPIC: REAL ESTATE AND CONSTRUCTION
SUBTOPIC: REAL ESTATE DEVELOPMENT
SUMMARY: Relates to control of erosion from construction sites of one-family and 2-family dwellings, grants rule-making authority and provides an exemption from rule-making procedures.
STATUS: 10/16/91 INTRODUCED. To ASSEMBLY Committee on ENVIRONMENTAL RESOURCES, UTILITIES AND MINING.

WI S 281 AUTHOR: Committee on Leg. Council
TOPIC: AGRICULTURE
SUBTOPIC: AGRICULTURAL PRODUCTS
SUMMARY: Relates to the management of priority watersheds, issuance of orders related to nonpoint source pollution, establishes performance standards for drainage districts, and construction site erosion control.
STATUS: 10/01/91 INTRODUCED. To SENATE Committee on URBAN AFFAIRS, ENVIRONMENTAL RESOURCES, UTILITIES AND ELECTIONS.

WI S 291 AUTHOR: Jauch
TOPIC: RESOURCE MANAGEMENT AND PRESERVATION
SUBTOPIC: LAND
SUMMARY: Relates to wetlands specialist positions for the Department of Natural Resources and makes an appropriation.
STATUS: 10/08/91 INTRODUCED. To SENATE Committee on URBAN AFFAIRS, ENVIRONMENTAL RESOURCES AND ELECTIONS.

WV H 207 b and WV S 2 b
AUTHOR: Chambers (H 207) and Burdette (S 2 b)
TOPIC: UTILITIES AND APPLIANCES
SUBTOPIC: UTILITIES - GENERAL
SUMMARY: (H 207)Permits the Public Service Commission to establish a program to encourage the use of natural gas in new technologies, including natural gas vehicles; provides that the sale of natural gas by nonutilities for certain purposes not be regulated by the Public Service Commission.
(S 2 b) Relates to permitting the Public Service Commission to establish a program to encourage the use of natural gas in new technologies, including natural gas vehicles; provides that the sale of natural gas by nonutilities for certain purposes not be regulated by the public service commission.
STATUS: (H 207)9/30/91 INTRODUCED. To HOUSE Committee on GOVERNMENT ORGANIZATION.
(S 2 b) 10/01/91 INTRODUCED. To SENATE Committee on JUDICIARY.

AIPG 1992 ANNUAL MEETING

LAKE TAHOE, NEVADA
September 27 - 30, 1992

GEOLOGIC REASON
A BASIS FOR DECISIONS AFFECTING SOCIETY

The American Institute of Professional Geologists is sponsoring this symposium, open to all geologists, at its 1992 Annual Meeting to be held at Caesar's Tahoe Hotel and Convention Center. Each half-day theme session will consist of invited speakers, a panel discussion, with questions from the audience, and poster sessions with both volunteered and invited contributions. Topics include:

Modeling Geological Phenomena - from ore reserves to acid rain to global warming

Role of the Geologist in Predicting Earthquakes - geotechnical investigations in the West, East, and in between

Role of the Geologist in Siting and Cleaning Up Waste - including what should be done with nuclear waste, municipal garbage, and mine tailings

Geological Common Sense Regarding Environmental Hazards - from asbestos to radon to water and air quality

Management of Federal Lands - wilderness issues; new leasing, claim, and reclamation policies and laws; plus impacts of endangered species on geologists and their professions.

If you would like to present a poster on your work in one of these areas, please submit an abstract (listing title of presentation, your name, affiliation, address, and 150 to 250 words of text) by no later than **June 15, 1992**. Upon acceptance, by July 31, your abstract will be published in the symposium program.

For information on registration, exhibiting, or presenting a poster, please contact:

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

Telephone: (702) 784-6691

FAX: (702) 784-1709

As part of the AIPG symposium there will be post-meeting short courses on the Rights and Responsibilities of the Professional Geologist and on Preparation for the California Registration Exam plus pre- and post-meeting field trips. Non-AIPG members are encouraged to participate.

Insignia Items Survey Results

Earlier this year we solicited your opinions on expanding the range of insignia items for sale to Members and non-Members. Listed below in descending order of popularity, are the eleven items which received the most votes. (the last three tied).

We are now seeking the most attractive sources for these items and evaluating their relative feasibility.

If you have any suggestions for illustrations or wording which you would like to see on these items, please send them in. Suggested wording already offered includes: "AIPG", "Reduce Air Pollution-Outlaw Volcanos", "Orogeny Tech Mountaineers", "Stop Global Warming - Restore the Pleistocene", "Friends of the Holocene" and "The Devonian was Fishy". Suggested illustrations include the AIPG seal, dinosaurs, brachiopods, mountains, and maps. All entries must be free of existing copyrights and will become the property of AIPG. If one which you submit is used within a year after submittal, you may be entitled to one free item on which it is used. In case of duplications, only the entry bearing the earliest postmark will receive the free item. Suggestions may be submitted by Members and non-Members, alike, and may be offered at any time. However, we ask that this survey be returned as soon as possible so that we may move forward with this.

1. Tee shirts
2. Baseball caps
3. Mugs
4. Sweat shirts
5. Golf shirts
6. Tote bags
7. Paperweights
8. Key chains
9. Steins
10. Cube note pads
11. Letter openers

Comments:_____

Mail to:

AIPG
7828 Vance Drive, Suite 103
Arvada, CO 80003

Executive Director's Itinerary
(subject to change)

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

Nov. 16:	**Association of State Boards of Geology, Little Rock, AR**
Nov. 19:	**Permian Basin Section of SEPM, Midland, TX**
Dec. 4 - 6:	**North West Mining Association, Spokane, WA**
Jan. 19:	**AGI Advocacy Committee, Alexandria, VA**
Jan. 25:	**AIPG Executive Committee, Arvada, CO**
Feb. 21 - 22:	**Oklahoma Section, Tulsa, OK**
Feb. 24 - 27:	**Society of Mining, Metallurgy and Exploration, Phoenix, AZ**
Mar. 4 - 7	**Council of Engineering & Scientific Society Executives, Tucson, AZ**
Mar. 23:	**Geoenvironmental Forum, Washington, DC**
Apr. 11:	**AIPG Executive Committee, Arvada, CO**

APPLICATIONS RECEIVED

(as of October 31, 1991)

Applicants for certification must meet AIPG's standards as set forth in its Bylaws on education, experience and 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

ADAMS, Charles R.,
7665 Quartz St., Golden, CO 80403. Sponsors: Scott Winters, Jeff Heines, John Ivey.

BAILEY, Henry,
5145 Stonewall Dr., Houston, TX 77023. Sponsors: Lloyd Hatfield, Alfred Berroteran, Robert Semands.

BARNER, Wendell L.
1405 Van Voorhis Rd., Morgantown, WV 26505. Sponsors: Kenneth C. Thomson, Jim Ackerman, Jim Rigg.

BAUER, James,
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3292 E. Rd., Clifton, CO 81520. Sponsors: David R. Smuin, James S. Marshall, Kim M. Woynowskie.

GORDON, Howard J.,
3695 Silver Plume Lane, Boulder, CO 80303. Sponsors: John H. Rathbone, William A. Sirnta, Sam Koster.

GRAHAM, James E.,
9171 Rosewood Ln. N., Maple Grove, MN 55369. Sponsors: Kenneth P. Olson, Gil Gabanski, Kevin Miller.

GROUT, C. MacDonald,
RD3, Box 28, Jones Rd., Gouverneur, NY 13642. Sponsors: Severn P. Brown, C. Ervin Brown, David B. Dill.

KEMP, Jack D.,
222 Old Bluefield Rd., Princeton, WV 24740. Sponsors: Ronald H. Mullennex, Doug Henderson, Bob Hills.

KIRBY, Michael J.,
12115 Breezy Meadow Dr., Stafford, TX 77477. Sponsors: Dean Ayres, Gregg Martinez, David Floyd.

KNYFD, Edmund, Jr.,
132 Lee St., 2nd Fl., Elmwood Park, NJ 07407. Sponsors: Mindy Sayres, Ron Naman, Jim Meine.

LUCKEY, Frederick J.,
32 Thompson St., Apt. 3, New York, NY 10013. Sponsors: Lance Richman, Jeff Josephson, John Laird.

MC CREERY, Scott L.,
1518 Corbett, Lansing, MI 48910. Sponsors: Gary Dannemiller, George Kunkle, Dale E. Egner.

MC GUIRE, Robert H.,
4208 Glen Ridge Dr., Arlington, TX 76016. Sponsors: Paul A. Chandler, William Higgs, Forrest Terrell.

MIDOLO, Bruce A.,
428 Ryland Ct., Centerville, OH 45459. Sponsors: Charles M. McCulloch, Rick Boone, Todd Gates.

MITCHELL, Judith A.,
8811 Lockhaven, Dallas, TX 75238. Sponsors: Robert Richter, Janell Edman, Nancy Hall.

PATTERSON, Sharon L.,
3214 Timberlark, Kingwood, TX 77339. Sponsors: David K. Davies, Dean Ayres, Robert Reynolds.

PEARSON, Mark F.,
2416 Pine, Billings, MT 59101. Sponsors: Lewis Teal, Patrick Dunlavy, Terry Grotbo.

POPE, Clifton W., Jr.,
8090 Allison Place, Arvada, CO 80005. Sponsors: Robert Garvin, Dale Creek, Randy Bassett.

ROBINSON, Andrew P.,
110 Maple Dr., Evans, WV 25241. Sponsors: Eric Denemark, Theodore J. Hall, Patrick P. Riley.

SCHLEGEL, Michael G.,
4900 Hillandale Ave., Anchorage, AK 99516. Sponsors: Daniel R. Young, Kerry L. Campbell, Michael Abrams.

SHAPARD, Thomas C.,
1312 N. Richardson #7, Roswell, NM 88201. Sponsros: Chuck Brewer, Dale Lubinski, Gary Pointer.

WALDNER, Jerald L.,
13563 Avista Dr., Tampa, FL 33624. Sponsors: Gloria A. DePaolis, Steven M. Myers, Neal Larson.

WIECKOWSKI, Anna,
656 West Spruce, Ravenna, OH 44266. Sponsors: Dennis S. Edwards, Alan H. Coojan, Paula M. Pritz.

Candidate for Certification

JOHNSEN, William P.,
16160 15th Ave. N., Plymouth, MN 55447. Sponsors: John Donovan, Keith Benker.

NEW MEMBERS

BENVEGNA, John, CPG-8276, Norwalk, CT

COLANGELO, Robert V., CPG-8277. Park Ridge, IL

COZZI, Andrew M., CPG-8278, Roselle Park, NJ

DOLCE, Barbara A., CPG-8279, Rochelle Park, NJ

DULA, Philip, CPG-8280, Olathe, KS

FINDLAY, Marcia A., CPG-8281, Chalfont, PA

GERHARDT, Daniel J., CPG-8282, Houston, TX

HORTER, Dawn L., CPG-8283, Morganville, NJ

JOHNSON, James C., CPG-8284, St. Paul, MN

KITTREDGE, Christopher J., CPG-8285, Watertown, MA

LEONARD, Katherine E., CPG-8286, Cazenovia, NY

MAYNARD, Gregory B., CPG-8287, Reno, NV

MOORE, James T., CPG-8288, Plainsboro, NJ

ROCHE, Michael G., CPG-8289, St. Charles, IL

SHOTWELL, James D., CPG-8290, Austin, TX

SMITH, Michael A., CPG-8291, Littleton, CO

WHETSTONE, Kenneth N., CPG-8292, Englewood, CO

WYGANT, Glenn T., CPG-8293, Amberst, NY

DE ANGELIS, James A., CPG-8294, Ansonia, CT

NEW STUDENT AFFILIATE

HUFF, Raymond H., SA-0010, 6325 South Alta Avenue, #28, Whittier, CA 90601.

AIPG Membership Totals

	As of 10/31/90	As of 10/31/91
Active	3,824	3,914
Retired	532	512
Affiliates	30	29
TOTAL	**4,386**	**4,455**