

DEPARTMENT OF MINES AND MINERAL RESOURCES



annual report
FY 1997-1998

by

H. Mason Coggin
Director



STATE OF
ARIZONA

59

August 15, 1998

Honorable Jane D. Hull, Governor
State of Arizona
1700 West Washington
Phoenix, AZ 85007

Dear Governor Hull:

The Annual Report of the Arizona Department of Mines and Mineral Resources for the Fiscal Year 1997/98 is herein submitted in compliance with A.R.S. Section 27-106.

The Arizona Department of Mines and Mineral Resources was authorized under ARS §27-101.01 and given the directive to promote the development of the mineral resources of this state through technical and educational processes including field investigations, public seminars, publications, conferences, mineral displays and by providing mining, metallurgical and other technical information and assistance to prospectors, operators of small mines, the mineral industry and to all others interested in the mineral resources of this state.

The Duties of the Department defined in § 27-102 are as follows:

- Promote the development of the mineral resources and industry of this state by participating in conferences, seminars, forums, speaking engagements, public news media and other functions necessary to achieve its objectives.
- Conduct studies of the economic problems of prospectors and operators of small mines for the purpose of assisting in their solution and investigate their properties to assist in development.
- Maintain:
 - An information bank and library of mineral and mining information, including books, periodicals, films, videotapes and individual mine files.
 - Underground mine map repository files, mining district data and an archive of mine data.
 - A mineral museum as the state depository for collecting, cataloging and displaying mineral specimens of various ores, gemstones, lapidary material and other valuable mineral specimens.
- Provide quality mining data, evaluation and assistance relating to mineral development to the legislature and other state and county agencies.
- Make surveys of potential economic mineral resources and conduct field and other investigations which may interest capital in the development of the state's mineral resources.
- Serve as a center of mining information for this state in matters relating to its mineral resources and monitor current mining and exploration activities.

- Publish and disseminate information and data necessary or advisable to attain its objectives. The director may establish reasonable fees for publications.
- Cooperate with the State Land Department to encourage mining activity on state lands.
- Cooperate with the Corporation Commission in its investigations and administration of laws relating to the sale of mining securities.
- Cooperate with the Bureau of Geology and Mineral Technology and deliver to the bureau problems which the field work of the department shows to be within the scope of the activities of the Bureau.
- Cooperate with federal and other agencies in matters related to developing mineral resources in this state.
- Oppose congressional acts favoring reciprocal or duty free imports of foreign minerals.
- Use its authority in other ways to assist in more extensive exploration and development of the mineral resources of the state.

A board of governors was established by § 27-103 to consist of five members who shall be appointed by the governor. The term of each member shall be five years, one term to expire January 31 each year. Upon expiration of the term of a member, a successor shall be appointed for a full term of five years. A member may continue to serve until a successor is appointed and qualified. Appointment to fill a vacancy resulting other than from expiration of term shall be for the unexpired portion of the term only. Members of the board shall receive no compensation for their services.

The officers of the board shall be a chairman, vice-chairman, and secretary who shall be selected and appointed by the board. The office of the board shall be maintained with the department's main office. Regular meetings of the board shall be held quarterly, and special meetings may be called by the chairman or a majority of the members.

The Duties and powers of the board are to:

- Establish field offices as it deems necessary.
- Prescribe the number of field and office assistants.
- Formulate the program and policies of the department.
- Adopt rules and regulations for government of the department.
- Purchase necessary office equipment and rent or lease necessary office space.
- Accept gifts, bequests or legacies of real or personal property, or any other contribution, financial or otherwise, for use in accordance with the direction of the donor, or in the absence of an express direction, to be disposed of for the best interests of the state.
- Accept from the federal government or its agencies monies made available to the state for the purposes of this article.
- Enter into cooperative agreements with the federal government and its agencies or with any mining agency created by the law of any state for the purpose of carrying out this article.

Under the terms of § 27-106 the board shall transmit to the governor, not later than August 15 each year, an annual report of the activities of the department during the preceding fiscal year, which shall include the quarterly reports of the director and a complete financial statement. The report shall be printed and made available to each member or member-elect of the legislature and to the public.

I sincerely hope that you will find this report in order and will involve the Department and the Museum in your decision making duties.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Mason Coggin', with a long, sweeping horizontal line extending to the right.

by H. Mason Coggin for
William Miller, Chairman, Board of Governors

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

**ANNUAL REPORT
FISCAL YEAR 1997-1998**

by
H. Mason Coggin, Director

BOARD OF GOVERNORS

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Nyal J. Niemuth - Mining Engineer
Ann Turney - Admin. Assistant
Diane Bain - Editor
Marianne Charnauskas - Secretary

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Glenn Miller - Curator
Susan Celestian - Cur. of Education
Alice Rosenfeld - Tour Guide
Ann Baker - Tour Guide
Shirley Cote - Tour Guide

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NEW MINES IN PROGRESS

The following new production projects are operating, permitting, exploring, financing or in feasibility. Shaded projects will be new or renewed production from nonproducing properties. Bold is new information this quarter.

MINE	COM.	COMPANY	ACTIVITY
Ajo New Cornelia Pima County	Cu, Au, Ag, Mo	PHELPS DODGE	Scheduled to reopen in 2000 for 11 years at 135 mm lb/yr Cu and 25k oz Au. Investment of \$238 million and 400 new jobs. SUFFERING PERMITTING PROBLEMS.
Bagdad Yavapai County	Cu	CYPRUS	20 year expansion approved in 97.
Bisbee- Cochise County	Cu	PHELPS DODGE	Drilling and feasibility. No announcement on reopening.
Carlota Gila County	Cu	CARLOTA	Sierra Club, Mineral Policy Center and the Audubon Society have filed a lawsuit against the U.S. Forest Service protesting the acceptance of the Carlota EIS. Yet another needless delay.
Copper Creek Pinal County	Cu, Au, Ag	AMT - INTL.	Continued exploration and feasibility in 1998.
Copperstone UG LaPaz County	Au	ROYAL OAK	Blocked out U/G reserve rumored to be for sale. Several companies are interested.
Cyclopic Mohave County	Au	NEVADA PACIFIC	Seeking funding in a down market.
Florence Pinal County	Cu	BHP	In situ reserves estimated at 321 mm tons @ 0.34% Cu. Startup insitu slated for January 1998. Rumor has permitting delayed.
Johnson, Zonia, Emerald Isle VanDyke	Cu	ARIMETCO	Bankruptcy under chapter 11. Summo has acquired interest in Johnson Camp.
Miami Gila County	Cu	CYPRUS	EIS accepted decision 2/98.
Mineral Park Mohave County	Cu	EQUATORIAL RESOURCES	SX/EW insitu leach pilot. NEW OWNER.
Mission Pima County	Cu	ASARCO	Working.
Mohave Project Mohave County	Au, Ag	COMBINED METALS	???
Morenci Greenlee County	Cu	PHELPS DODGE	Expanded and working
Pinto Valley Gila County	Cu	BHP	447 people laid off in early 1998 and operations suspended.
Ray Pinal County	Cu	ASARCO	Major producer starting major expansion.
Rosemont Pima County	Cu	ASARCO	Opening of mine planned in the next two decades.
Sacaton Pinal County	Cu	ASARCO	Additional reserves available
Safford Graham County	Cu	PHELPS DODGE	Permitting in Progress
San Manuel U/G	Cu	BHP	BHP San Manuel suffering on metal price

Pinal County			
San Manuel O/P Pinal County	Cu	BHP	BHP will reopen and expand the San Manuel O/P by mining to the 1415, their first grizzly level, new production in 1999.
Santa Cruz Pinal County	Cu	ASARCO etal.	Closed by current political administration.
Silver Bell Pima County	Cu	ASARCO/MITSUMI	New production now on stream.
Superior Mine Pinal County	Cu	BHP	A MAJOR HIGH GRADE COPPER DISCOVERY SEE STORY.
Tohono Pinal County	Cu	CYPRUS	Company claims that it closed mine. Mine tells us that stripping was suspended but production continues
United Verde Yavapai County	Zn	PD & COMINCO	COMINCO cut back on exploration and evaluation. Mine now open on two levels.
Yarnell Yavapai County	Au	BEMA GOLD	APP approved and EIS is out. Lawsuits filed by Environmentalists. .

TOP EVENTS OF FISCAL YEAR 1997-98

DEPARTMENT SUED BY INTERNATIONAL PRECIOUS METALS.

In the lawsuit filed by IPM (International Precious Metals) against the Department, Judge Donald F. Daughton ruled in favor of the plaintiff, IPM, finding ADMMR had exceed its statutory duty by opining.

It is the Court's judgment that the Department does not have the statutory authority to publicly predict the likelihood of success or economic viability of a particular mining operation, to opine as to the value of stock in a mining company, or to give out financial investment advise. Judge Daughton also ruled that the State will not be required to pay IPM's attorney fees.

The Department became involved with the BRX property when asked to investigate by the Toronto Stock Exchange. On March 30, 1994 Nyal Niemuth sampled the property attempting to corroborate the company's claims of platinum and gold. The samples, which were delivered to an Arizona-registered assayer, reported nil platinum and gold.

In the original Notice of Claim, filed April 28, 1997, IPM asked fro \$25 million in punitive damages from the Department and from Mason Coggin, Director, and Nyal Niemuth, Mining Engineer, personally, for "libel, slander, intentional interference with prospective economic advantage, and injurious falsehood." IPM also site the "intentional and malicious nature of the conduct of Coggin and Niemuth" when the Department failed to corroborate their claims of high platinum and gold values. IPM alleged the Department "refused to acknowledge that IPM's independent and credible test results prove them wrong. "IPM did not proceed with these claims in court but rather only sought to enjoin the Department from acting outside its statutory authority.

Concerns have been expressed in the media that this ruling may impair the Department's and other agencies' ability to protect the public and provide information. The Department was billed and paid court costs of \$2,000.

IPM stock was subsequently withdrawn from trading by NASDAQ and the Canadian Dealing Network (CDN). Trading was suspended then dropped by the major Canadian Markets three years ago. The only place the stock is still quoted is three brokers making a market in IPM's common shares and these are Taurus Capital Markets Limited, Cannacord Capital Corp. and W.D. Latimer Co. Limited.

In July 1998 IPM filed for Bankruptcy protection under Chapter 11.

IPM FALLOUT I

Several projects have developed as a result of the IPM lawsuit and the Department's involvement.

The Director met with Vernon Nichols, esq. at the department in his capacity of representing Lavoy Adams of Red Mountain Mining Company in Red Mountain vs U.S. Power Systems Inc. Red Mountain is mining sand, gravel and rock from their surface estate. The minerals have been severed and US Power Systems has mining claims over the area that Red Mountain has mined. They claim that Red Mountain owes them for the very high grade gold and platinum that they claim for the property. Power Systems is claiming a special type of assay is necessary to see the gold and platinum values. They claim that the methods that everyone else is using are inadequate.

IPM IMPACT II

Several things are happening in Arizona where suspected bogus assay reports for gold recovery processes are being used to bilk investors out of millions of dollars. Apparently the believers in these techniques must be pure of heart. Otherwise they will not be able to see the emperor's new clothes or the gold, silver platinum and other metals that these witchcraft assayers can produce.

IPM IMPACT III

The department has answered many calls concerning a gold placer occurrence just off I - 10 north of Willcox. The promoters of the property are claiming unusually high values of placer gold near the confluence of Gold Gulch and Railroad Gulch in Cochise County. The values claimed are much higher than anything ever reported from the area before and the site does not have an extensive production history. The Department has not visited the site and has not verified the reported results and yardages. The Department information on this property is sparse. The Department has identified a need for a good manual for gold placer evaluation in Arizona. Department personnel are quite leery of commenting on this property because of the recent IPM rulings

IPM IMPACT IV

Several Desert Dirt type companies have sprung up across Arizona, California, Nevada and Utah. All of these companies share the following commonalties:

1. They claim their particular share of desert dirt contains uncommonly high values in gold and platinum.
2. They claim that the values do not manifest themselves in ordinary fire assays but require special techniques before they are detectable.

3. They are working on a method of extracting these values but do not have all of the problems solved.
4. They claim chain of custody sampling for their ores using a third party.
5. If they can, they have involved a well-recognized consulting firm to become involved in their project to do something other than take independent samples and deliver them to a recognized and reputable metallurgical laboratory or assayer.
6. They show supporting geological reasoning why the gold and platinum values should be in any formation that they happen to hold claims on.
7. The same unregistered assayers, geologists and engineers are involved in finding unbelievable assay values.

EXPLORATION EXPENDITURES OFF WORLD WIDE BUT UP IN THE USA

A Nevada Division of Minerals survey of 49 gold exploration companies predicts worldwide mining exploration expenditures will decline ten percent this year while domestic exploration will increase by 15 percent. As reason for this he sites the following in decreasing order of importance:

1. Existence of favorable geology
2. Uncertainty of permitting time frames
3. Length of permitting time frames
4. Uncertainty over Mining Law reform
5. Commodity prices
6. Announcements of new discoveries and expansions
7. Wilderness study areas
8. Changes in foreign mining laws
9. Federal claim maintenance fees.

DIRECTOR ATTENDS MINING HALL OF FAME

The Director was a special guest at the National Mining Hall of Fame in Leadville, Colorado on September 6, 1997. The banquet honoring inductees was chaired by Karl Ellers, Master of Ceremonies, who introduced Dr. Thomas V. Falkie who introduced the following nominees: Paul Wheeler Allen the retired operational executive of Cyprus Mines who led Cyprus Mines to a position of leadership in the industry. He was responsible for Cyprus acquiring or reopening the Pima Mine south of Tucson, the Old Dick/New Bruce underground mine, Mount Goldsworthy iron mine in Western Australia and the expansion of Badgad Copper in Arizona; Joseph Rosenblatt, formerly of EIMCO Corp., brought the EIMCO corporation into prominence by his development of the rocker arm mucking machine "12B" and developing the disk and drum filters to separate solids from water. He also led the company into the field of environmental equipment. Arthur Fay Taggart made extractive metallurgy a science. He taught at Yale and wrote a Handbook of Ore Dressing, and a Handbook of Mineral Dressing based on his visits to mills all over the world. Joseph Toy 1808-1897 introduced the safety fuse into blasting practice throughout the world. Prior to the safety fuse, black powder charges were ignited by burning trails of powder, kerosene wicks and squibs. Joseph Wharton 1826-1909 developed the zinc and nickel mines in the United States. John Benjamin Zadra was the developer of the carbon adsorption process for the recovery of precious metals. The electrowinning cell that he developed is still called the Zadra cell and is responsible for the recovery of most of the gold from gold ores at the present time.

Dr. Duane Smith, Professor of History and Southwest Studies, Fort Lewis College gave an excellent talk on the mining history in Leadville and surrounds. The event was attended by 320 people.

AMERICANS USE METALS AND MINERALS

According to the USGS the average American will use the following minerals and metals in a years time.

Mineral	Usage in Pounds	
Stone	10,841	Mined in Arizona
Sand & Gravel	8,220	Mined in Arizona
Cement	742	Mined in Arizona
Clays	326	Mined in Arizona
Salt	404	Mined in Arizona
Iron ore	603	Formerly mined in Arizona; resources remain
Bauxite	93	
Copper	23	Mined in Arizona
Lead	13	Recovered at some Arizona copper mines
Zinc	12	Recovered at some Arizona copper mines
Manganese	6	Formerly mined in Arizona; resources remain
Crude petroleum	7,520	Produced in Arizona
Coal	7,581	Mined in Arizona
Natural gas	8,164	Produced in Arizona
Uranium	0.25	Mined in Arizona
Other metals	10	Mined in Arizona
Other nonmetals	1,203	Mined in Arizona
Totals	45,761	

Included as "other metals" are antimony, cadmium, gold - (mined in Arizona), indium, molybdenum - (mined in Arizona), nickel, platinum group metals - (recovered from copper refinery slimes), silver - (mined in Arizona), tin, titanium and tungsten among others. ref. Mining Week Sep. 15, 1997,

MINING FOUNDATION OF THE SOUTHWEST HALL OF FAME

At a well-attended Fifteenth Annual Awards Presentation on December 6, at the Westin La Paloma in Tucson, the Mining Foundation of the Southwest inducted James R. Moffett, John van Nostrand Dorr, Frederick Leslie Ransome, Hugo T. Tummett and Spencer Rowe Titley into the American Mining Hall of Fame. The Colorado School of Mines was inducted as the Industry Partnership Award.

James Moffett Chairman and CEO of the Freeport-McMoRan Copper and Gold Inc. was born in 1938 in Louisiana and received a Bachelor of Science degree from the University of Texas at Austin in 1961. He worked as a consulting geologist until he and two associates founded McMoRan Oil & Gas Co. which developed oil and gas interests and ventured into copper, gold and silver mining in Irian Jaya, Indonesia where they have developed a world class metals deposit. Moffett was introduced by Milt Ward of Cyprus.

Joh Van Nostrand Dorr, 1872-1962 was born in Newark, New Jersey in 1872 and worked for Thomas A. Edison in his early years. He later graduated from Rutgers in 1894. He later worked for several mining companies in Colorado and the Black Hills where he became familiar with mining and milling. In the ensuing years he developed several new filters and labor saving devices for the mining industry.

Frederick Leslie Ransome 1868 to 1935 was born in Greenwich, England and emigrated to San Francisco in 1870. He obtained a Ph.D. in geology from the University of California and

instructed there and at Harvard. He joined the USGS in 1897 and became the author of many important geologic reports on most of the Arizona mineral deposits. He also prepared geologic reports for the location of Hoover Dam and other civil works.

Hugh T. Dummett, the 1997 Medal of Merit recipient received a BS from the University of Witwatersrand in Johannesburg and started his career as an exploration geologist in 1965. He was largely responsible for the diamond discovery by BHP in the Northwest Territories and has led BHP through the acquisition of base and precious metals and coal around the world.

Spencer Rowe Titley the 1997 Medal of Merit Recipient has been a professor of geology for nearly 50 years at the University of Arizona. He, in collaboration with others, authored a series of books on copper porphyry deposits that unraveled the mystery of these formations and in so doing probably illuminated the path for several important discoveries.

COPPER IMPACT AT \$ 9.647 BILLION IN 1997

The Leaming Report is out and states the Economic Impact of the Arizona Copper Industry in the State of Arizona is \$9.647 billion including the combined direct and indirect impacts. Other facts on the copper industry show that 12,600 employees of the copper industry produced 1,368,514 tons of copper with a cash value of \$3.131 billion dollars. The copper mines paid \$132,000 million in taxes to state and local governments, spent \$1.292 billion with Arizona businesses for products, goods and services and gave \$647.546 million to Arizonans in wages, salaries and personal incomes. Leaming, George F., Ph.D. "The Economic Impact of the Arizona Copper Industry 1996," Western Economic Analysis Center, Marana, Arizona April 1997.

DEPARTMENT HELPS CITY FIND FRIENDLY ROCKS

Ken Phillips, ADMMR's Chief Engineer, assisted Mark Lamm of Phoenix Parks, Recreation and Library Department and four landscape architects from Himeji, Japan find sources of landscape rock for Phoenix's evolving Japanese Peace Garden. Himeji is Phoenix's sister city in Japan. Together the two cities are building a peace garden in Phoenix at Margaret Hance Park (I-10 Deck). The garden will include a tea house, koi pond, water fall, stepping stones, stone pathways, stone bridges, and a mixture of local plants and traditional Japanese plants that can tolerate Phoenix's climate.

Rock for landscape use must meet both aesthetic and technical qualifications. Rocks used in Japanese gardens are traditionally beige to dark gray and dark brown. Natural weathered rocks are strongly preferred over crushed or broken rocks. Water-worn pebbles are preferred for exposed aggregate concrete and for ground cover over materials such as crushed or decomposed granite. Masonry, although seldom used, is typically done with naturally rounded and weathered pieces.

With Ken Phillips as their guide, the landscape architects toured three stone yards in Maricopa County and numerous quarry sites in Yavapai County. The tours allowed the Japanese architects to become familiar with Arizona rocks and their typical geologic settings in Arizona. The primary purpose of the Department's involvement was to provide technical and economic information related to rock material that may be used in the peace garden. Hundreds of tons of landscape rock will be used in the garden. Additionally the architects were introduced to Arizona rock materials that can be exported to Japan for gardens and landscaping.

WORKING FOR THE MINES

According to the University of Arizona's Eller Graduate School of Management, College of Business and Public Administration in their publication Arizona, Economy (Jan. 1998 p. 21) the total number of miners in Arizona is 15,200 more or less. This number comes from SIC codes and does not necessarily include those people reported as working in the construction industry who are actually mining. The Department of Mines and Mineral Resources claims 18,400 employees working for mining companies and that figure comes from adding the number of employees that they report in their Active Mines Directory. The mine inspector uses 16,601, a number he derives from his annual report. There are probably an additional 60,000 people whose jobs depend on the mining industry indirectly. These are the people who provide goods and services and even some government employees in county, state and federal governments.

The U of A report also shows that miners work an averaged of 18.89 hours per week. This was the highest weekly employment for non farm industries.

PHILOSOPHY BY PORPHYRY PETE

Porphyry Pete, a nome de plumb for Frank J. Tuck, a former Statistician for the Department of Mines and Mineral Resources, was a column carried by the Pay Dirt in the 1950's. Some of the witty sayings are still appropriate for today's mining industry. Here are a few that still sting:

"Leaving minerals in the ground as a possible storehouse of metal for future use is not conservation. It takes too long to get them out in an emergency. Mines should be kept in active operation and the finished metal then stockpiled."

"A severance tax is usually an additional levy directed toward a single industry, and to that extent is a discriminatory. A severance tax should be an alternative for, not an addition to, a property tax."

"Louis Cates developed the system of mining that made Ray the first copper mine in the world to produce 8000 tons or more of ore per day by caving methods."

1997 ARIZONA MINERAL PRODUCTION				
in Thousands of metric tons unless otherwise stated.				
Mineral	1997 Value	Quantity	1996 Value	Quantity
Clays				
Bentonite	W	W	W	W
Common	104	W	91	W
Copper ³	1,230	2,930,000	1,240	2,980,000
Gemstones	NA	3,220	NA	2,360
Gold ³ kilograms	W	W	1,740	21,800
Iron oxide pigments, MT	W	W	W	W
Sand and gravel:				
Construction	40,400	197,000	41,900	199,000
Industrial	319	3,220	323	2,890
Silver ³ MT	159	22,300	188	31,300
Stone, Crushed	6,100	38,000	6,800	40,600
Other ⁴	XX	325,000	XX	308,000
Total	XX	\$3,520,000	XX	\$3,580,000

3. Recoverable content of ores, etc.

4. Other includes the combined value of cement, gypsum (crude), lime, molybdenum, perlite (crude), pumice and pumicite, salt, stone (dimension sandstone), and values indicated by W.

FOREST ROAD CLOSURE PROTEST

Every American should feel "ripped off" by the U.S. Forest Service's announcement to reduce about 373,000 miles of roads in the National Forests by half, over the next ten years. This affects your rights to explore Arizona, visit old mines, go four-wheeling, picnic, camp or prospect in the National Forests. Having your rights to access the public lands suddenly taken from you should be upsetting. Would you be upset if the government took away your right to drive across a state line without a permit or perhaps say anything about the way our government is being run or take away your right to own private property. Perhaps we have become so jaded that we don't care. Leading the charge for this subjection of your rights are various environmental groups who make it clear that they want to keep the American public out of the American forests. This time they have gone too far. Just listen to what they put in the Road-Ripper's Handbook. "The most insidious of all effects of roads is the access they provide to humans and their tools of destruction. Let's face, it the vast majority of humans do not know how to behave in natural environments. Fearful of experiencing nature on its own terms, they bring along chain saws, ATVs, guns, dogs and ghetto-blasters. They harass virtually every creature they meet, and leave their mark on every place they visit. The more inaccessible we can keep our remaining wild acres to these cretins, the safer and healthier these areas will be. Those humans who respect the land are willing to walk long distance. If this is an 'elitist' attitude, so be it; the health of the land demands restriction on human access and behavior." Burkhart, Barry, Road-closure plan is too restrictive, The Arizona Republic, Phoenix 3/22/98

In addition the Forest Service intends to suspend all road construction and reconstruction in and around roadless areas of the National Forests. This moratorium will expire in 18 months. It effects all roads in roadless areas greater than 5,000 acres or more and roadless areas greater than 1,000 acres if they are contiguous to designated wilderness areas or components of the National Wild and Scenic Rivers System.

The Forest Service has not consulted with Congress or local governments on this issue but have decided to act unilaterally across the country. If you feel that your rights are being taken and want to comment to the Forest Service write to Gerald Coghlan, Acting Director, Engineering Staff, Forest Service, USDS, POB 96090, Washington, D.C. 10090-6090. If you want your rights restored you may want to send a copy of your letter to your congressional delegation in Washington, D.C.

COURTS BAR BABBITT'S BONDING

Secretary of the Interior Bruce Babbitt, lost in the case "Northwest Mining Association v. Babbitt," when the U.S. District court struck down the Bureau of Land Management's bonding regulation and remanded it to the agency. In the case the Northwest Mining Association was joined by the Arizona Mining Association and the Nevada Mining Association in claiming that the rule was invalid because it violated the notice and comment requirement basis and proposed requirements of the Administrative Procedure Act. They also claimed that it Violated the

Regulatory Flexibility Act because BLM certified that the rule would not have a significant economic impact on small entities without using the proper definition of "small entity." The U.S. Small Business Administration also filed an amicus curia brief in the case in favor of the Mining Associations.

The court ruled that "...BLM's certification ..was without observance of procedure required by law...The court ... grants NWMA's motion for summary judgment." This is the first time that the court has used the RFA to overturn an agency regulation. We hope that this becomes a rule rather than an exception. It would cause other agencies to reconsider how it takes away the rights of the people. Mining Week, May 25, 1998

MINING SUMMIT

The Director attended a Mining Summit at the State Capitol with J.D. Hayworth and Arizona Mine Inspector, Douglas Martin and representatives from AMA, BHP, ASARCO, Phelps Dodge, Yarnell Mining Company, Carlota, AMIGOS and Phelps Dodge. State and federal agencies represented at the summit included the EPA, Corps of Engineers, Game and Fish, Fish and Wild Life, State Lands, DEQ, Dept. of water resources, BLM and Forest Service. Of the several environmental organizations invited only the Sierra Club representative showed. They did not take advantage of the opportunity to talk. The principal issue discussed was how to expedite permitting for mining projects. All of the companies and agencies represented were given an opportunity to talk about the permitting process. One reoccurring theme was the problem of "citizens suits" where one individual, with a lawsuit and one sympathetic judge, could shut down entire industries and cost thousands or even hundreds of thousands of jobs. Other issues discussed were the time it takes to get permits and the frivolous complaints that suck up large amounts of time and money with the only objective of delaying or preventing the project. All parties realize that neither justice nor the environment are served in these complaints.

MINING HALL OF FAME IN PHOENIX OCT. 11, 1998

The National Mining Hall of Fame will hold its 11th Annual Induction Banquet on Sunday, Oct. 11, 1998, which coincides with the opening day of the NMA's Mining Convention. The 6:30 PM induction banquet will be held in the Pointe Hilton Resort on South Mountain. Six leaders of the mining industry will be enshrined in the National Mining Hall of Fame in Leadville, Co. Dr. Thomas V. Falkie, chairman of the Board of Governors, will conduct the induction ceremonies. His is also president and CEO of Berwind Natural Resources Corporation in Philadelphia. Reservations for the event can be made by calling (719) 486 1229 or faxing (728) 486-3927.

MINING HISTORY ASSOCIATION MEETS IN BISBEE

The Mining History Association held their annual conference in Bisbee, Arizona. The Director, together with Carrie Gustavson of the Bisbee Mining and Historical Museum and Gary Dillard of Prism Productions, were the site coordinators for this meeting and made arrangements for accommodations, meals, conference rooms and a field trip to Cananea. About 130 people attended this event. Membership of the Mining History Association is about 33% mining engineers, geologists and industry professionals, 33% academic historians including history professors, and about 33% museum people who deal at least in part with mining.

CAPITOL CHAPTER PFUSA GROWS IN MEMBERS AND STRENGTH

A chapter of People for the West, (now People for the USA), was started one year ago and meets regularly at the Arizona Department of Mines and Mineral Resources on the first Thursday of each month in the class room at 7:00 PM. The purpose of this group is to provide an open forum where interested people can hear a variety of speakers from government, industry and other organizations that will change the way public and private lands are administered in the United States. Over the last twelve months they have had a variety of speakers presenting programs from the BLM, the Legislature, the Forest Service, ADEQ's ombudsman, People for the USA and the Navigable Rivers Program. Membership has grown from the initial five to over sixty paid members. Well over 300 people receive meeting notices. If you are interested in preserving your rights to the 87% of Arizona that is publicly held, this is an organization where your interest and input can be used. Contact H. Mason Coggin, Director, at (602) 255-3795 if you have any questions.

MUSEUM UNABLE TO FILL POSITIONS

Over the last two quarters the Museum has been trying to fill two positions for Tour Guide but have not been able to find applicants with the required talents and experience. Among other things tour guides at the museum are required to give lectures to student visitors, prepare exhibits, instruct visitors, identify mineral and provide information about the Museum and the Department of Mines and Mineral Resources..

SAN MANUEL MINE RESCUE TEAM GETS BELATED AWARD

At noon on September 10th the Arizona Mine Emergency Association presented a special award of recognition to Larry Burgess, Team Leader for the San Manuel Mine Rescue Team at the San Manuel Underground Training center at the San Manuel mine. The plaque was presented by David Hamm and H. Mason Coggin, members of the Board of Directors, on behalf of the Arizona Mine Emergency Association. BHP hosted the meeting which also awarded the San Manuel Mine Rescue team with a second place award they won in the National Mine Rescue Competition in Roswell, New Mexico last spring. The presentation of the award was delayed after a dispute at this MSHA sponsored and MSHA judged event. BHP's San Manuel Team is to be congratulated for their effort.

DIRECTOR SERVES AS MARICOPA AIME CHAIRMAN

For the second time in 25 years the Director served as Chairman of the Maricopa Section of the Society for Mining, Metallurgy & Exploration. He succeeds Al Lee who chaired the section for several years. Other officers included Terry Jensen of Horizon Environmental who served as Vice Chairman. Bruce Nave, continue for his third year as Program Chairman where he did a phenomenal job of bringing industry leaders to the Section for programs. Chuck Nolan headed up the Education Committee a position he has also held for many years. The Secretary/Treasurers position, the most important and demanding in any organization, was held by Carol A. O'Brien who has held this position since 1988. She is responsible for writing and sending out the news letters and meeting announcements, lining up the meeting place, taking the money and paying the expenses. She hasn't improved in the last decade she has excelled. The Maricopa Section is most fortunate to have had Carol O'Brien as its secretary.

REPORTS

NONFUEL RAW MINERAL VALUE OFF IN 1996

Largely because of the lower copper prices the value of Arizona's nonfuel mineral fell off substantially in 1996 in spite of increased production. Draft production statistics from the US Geological Survey gives the following:

1996 MINERAL PRODUCTION (USGS DRAFT REPORT)

Dollars in thousands

	1995		1996	
	Quantity	Value	Quantity	Value
Clays (000) Metric tons	119	449	129	454
Copper (000) Metric tons	1,170	3,560,000	1,230	2,930,000
Gemstones	NA	3,230	NA	4,010
Gold Kilograms	1,920	23,900	2,100	26,300
Iron Oxide pigments	68	90	w	w
Sand and Gravel				
Construction (000) Metric tons	40,100	201,000	41,900	220,000
Industrial (000) Metric tons	334	2,910	332	3,310
Silver Metric tons	220	36,400	240	40,900
Stone	5,520	32,600	5,600	33,600
Combined value of cement, clays (bentonite), gypsum, lime, molybdenum, perlite, pumice, pumicite, salt, and stone,	xx	331,000	xx	274,000
TOTAL		4,190,000		3,530,000
\$ in millions				
We have noted several areas where not all of the production has been reported. These estimates do not reflect forward sales by the producers.				

ARIMETCO SELLS OFF MINES

Airmetco, operating under the protection of chapter eleven in the bankruptcy court, is offering to sell some of its mining properties. Included in the mix are the Johnson Camp in Cochise County which is an operating copper mine with heap leach and SX/EW with 40,000 lb/day copper electrowinning capability. The open pit property has some reserves and is fully permitted on 1,500 acres of patented mining claims.

The oxide copper project near Bagdad, in Yavapai County, Arizona on 722 acres of patented mining claims with 2,400 acres of unpatented claims is also for sale. The property is claimed to contain 45 mm tons of 0.33% copper reserves with a potential for an additional 40 mm tons. Permitting is near completion for a heap leach with a SX/EW plant.

Airmetco has perhaps the largest reserve of diatomaceous earth in Arizona on their 3,120 acres of unpatented mining claims about 30 miles NE of Tucson, Arizona and across the San Pedro River from BHP's San Manuel mill and smelter complex.

The company also intend to sell their 12,000 lb/day SX/EW copper plant in Mohave County, Arizona with 154 acres of patented claims. The open pit oxide mine and heap leach are fully permitted.

CARLOTA COPPER EIS APPROVED

After nearly five years Carlota Copper Mine's EIS has been approved by the Tonto National Forest pending several modifications. This is only the second new open pit copper mine to gain approval since 1979. The battle for approval was hard fought. Several environmental groups had aligned themselves against the project although the vast majority of the people who object to the project were not certain of their ground or even where the project was located. Most of the anti-mine sentiment was carried on by groups who disseminated their version of project formation anywhere they could find an audience. Many of the neighbors who were complaining about the project, own private property adjacent to the National Forest that contains the project. Their properties are fenced and some of them are posted with no trespassing signs that prevent the public from accessing these public lands. They also claim that their marginal wells, which generally dry up during dry spells, will also go dry.

Some permits are still preventing Carlota from becoming Arizona's newest copper mine, however. The 404 permit administrated by the Army Corps of Engineers has not been issued. This permit governs dredging on American water ways and was intended to cover only navigable waterways. Somehow the Corps has extended this authority to every water way that may have carried water at some time in the past or may carry water at some time in the future.

This mine will bring an annual payroll of about \$10 million dollars to the area and will replace some of the 350 some odd jobs that were lost when the Magma mine at Superior was shut down last year.

ANOTHER LAWSUIT TO STOP CARLOTA

The Sierra Club, the Mineral Policy Center and the Audubon Society have filed a lawsuit against the U.S. Forest Service to prevent the Carlota Copper Company from mining its copper deposit between Miami and Superior, Arizona. Although these organizations have had plenty of opportunity to comment and raise concerns during the public meetings where these concerns have been studied, addressed and mitigated in the Environmental Impact Statement, representatives of these organizations are still trying to scuttle the project. This comes on the heels of a 400-plus worker lay off by BHP in the adjacent Pinto Valley Operation and, a year earlier the curtailment of production from the Magma mine at Superior with the layoff of about 200 workers. The issue here is copper production and it has become obvious that the environmental organizations involved want to reduce the nation's ability to produce copper for the country's demands. On the average, every person in the United States will consume about 25 pounds of copper each year in electrical motors, wiring, plumbing, lighting and sophisticated electronic equipment.

The environmental groups claim that Pinto Creek is the subject of their concerns and that the Carlota operation may disturb its pristine riparian habitat. Pinto Creek for most of the year is a dry stream bed with an occasional green pool of mossy water. Until the recent concerns of the environmental groups the creek was seldom visited. Access to the creek and the forest surrounding the creek is largely controlled by private property. Some of these property holders have horses and considered the adjacent Forest Service Lands to be their private riding range. Realizing that they might have to share this area with a mining company was the initial concern of these residents who called in the environmental groups for assistance.

The Carlota deposit is not a new mine located in a new and pristine area. It is located along Pinto Creek where copper and other minerals have been mined for well over one hundred and thirty years. This deposit is just one of many that been mined in the state and Arizona produces about 2/3 of the copper produced in the United States.

It is time to end these frivolous citizen lawsuits against government. Most of the members of the organizations filing the suit do not live in the immediate area; in fact only a very small percentage even live in Arizona. Most of the members of these groups belong to three or more environmental groups. That way they can claim a much larger number of members when addressing the U.S. Congress and state agencies.

CARLOTA CLOSES CONSTRUCTION OFFICE

Because of the long and unpredictable delays in getting the required permits from governmental agencies, the constant barrage of barriers created by a few environmental groups and the recent drop in copper prices, Cambior has decided to close its Miami construction office. The closure of this office will result in loss of only six jobs at the present time. The company will continue to push for completion of the permitting process and will evaluate other potential investment opportunities from its Miami Office.

This comes as a blow to Gila County and the state of Arizona. If the permits could have been obtained in a reasonable and timely manner the operation would have been producing copper and providing jobs for about 300 local residents directly, and another 100 indirectly. With the increased payroll the area would have replaced some of the jobs that were recently lost in the closure of the Superior operations by BHP. Further reductions by BHP and Cyprus Miami are always a possibility when the copper price drops below \$1.00 as it has done in recent months. Only 3% of the lands in Gila County are privately held and county revenue depends heavily on the production from the mines to provide services.

Permitting for the operation was started six years ago and has been dragging on ever since. Government and Carlota have been pointing fingers at each other for the delays but, it is obvious that Carlota has bent over backward to comply with every request of government in the permitting process. One of the most onerous things was the requirement by the EPA for Carlota to buy a tract of productive ranch or farm land; take it out of production and give it to the Nature Conservancy. If industry tried this it would be consider extortion. How does the federal government get away with acquiring land for their favorite nonprofit organization through blackmail and coercion?

Charles Bazan of the Tonto National Forest was contacted for a comment concerning the Carlota closing and stated that "we must make every effort to ensure that mining of Carlota would not be an environmental mistake."

There has been mining and mining related disturbance in Pinto Creek for over 100 years. There have been spills of tailings, solutions and ground water seeping into Pinto Creek over this time and yet the area is considered pristine by environmental groups. These seem to want it both ways and by whining, they seem to be getting it for now. In complying with governmental request in their EIS, Carlota has agreed to correct many of the situations. Environmental attitudes however, seem to change quickly and radically when environmental requirements restrict industry's ability to produce the good or jobs that society wants.

SILVER BELL DEDICATION

ASARCO Incorporated and Mitsui & Co., Ltd. dedicated their new solvent extraction/electrowinning plant at the Silver Bell Mine on July 16, 1997. The newly completed plant will extract and produce about 18,000 tons of copper annually as 99.999% pure copper cathodes through electrowinning from copper-bearing solutions. This will complete a five year restarting program to leach some of the Silver Bell deposit that had not been mined in previous years. Operations were suspended at Silver Bell thirteen years ago with the loss of about 300 jobs and the major support for several communities in the area including Tucson and Marana. The \$70 MM facility includes a novel plan for mining and leaching the deposit and the solvent extraction plant is the most modern of its kind in Arizona. Increased efficiency of the new operation will require only 150 people but will have an annual payroll of \$6.3 MM. ASARCO and their partner expect the mine to operate for about 30 years.

Silver Bell has a history of about 137 years of production. It was one of the early mines operated by the Development Company of America who built a smelter at SASCO and a railroad to the town early in the century. ASARCO acquired an interest in the property in 1915. They started working the property as an open pit with a flotation mill in 1954. Isbell Construction Company had the original contract to mine the property and many of the old time Isbell people remember fondly the close knit community of Silver Bell when the mine started.

ASARCO MISSION GETS PRELIMINARY APP

The Arizona Department of Environmental Quality has made formal notice that it intends to issue an individual Aquifer Protection Permit to ASARCO Mission's No. 4 Tailing Facility located near Sahuarita, Arizona in Pima County. The facility is necessary for their mining operation and will receive tailings in slurry form from the Mission Complex concentrators. The capacity shall be approximately 309 million tons and hold about 30 years of tailings.

ROSEMONT

The Pima County Board of Supervisors met in the Tucson Community Center to hear testimony and vote on a resolution asking the Forest Service not to approve ASARCO's request for a land swap. Although the action by the Board of Supervisors would have little effect and little weight with the Forest Service it would allow ASARCO to treat the property as private property. Offered in return for the property requested by ASARCO are some inholdings the Forest Service will be happy to have. The meeting was attended by about 500 people. Speakers from both sides were asked to stand and give testimony for about 3 minutes each. Representatives from both sides were selected and many others ignored. After about one hour of testimony the Board voted on the issue but ended in a tie (two in favor and two against). The final vote however was held over until a fifth and final board member could be appointed in the future. Her vote will be the deciding vote on this issue. Defeat of the resolution would show support for the Rosemont Mine.

MINING TOWN FALLS INTO MINE

The town too tough to die is slipping into a hole according to the media and some of the locals, but the truth, as of July 26th, was a small "sag" in one of the back streets behind the Rose Tree Inn where an area about 50 feet in diameter was sagging about 18 inches. The "sag" was probably caused by a leaking water main and perhaps a sewer line that was runs through the sag. A leak at this point would have weakened the rock that had supported the area for years and the

"sag" has accelerated. Mine Inspectors and mine contractors have been called in to consult on the matter and consequently the area of the sag has been roped off. It was interesting how quickly the media jumped on the non event. There has been a lot of mining in Tombstone and some of it extends under the town. The town was built to serve the mine and should have died off with the mine, however, it has lived on as "the town too tough to die" for several decades. This is not the first time Tombstone has had some subsidence and it most likely will not be the last. A large surface area slid into the million dollar stope about one block away some five years back. After a month of horror stories about how the entire town was in danger of falling into the hole and how the town should be evacuated for the safety of the residents and the tourist, they brought in some dump trucks and filled the hole. Nothing more happened until the present time.

Several Tombstone aficionados have been trying to schedule a bull and bear fight and a revival for the town.

COPPER

PHELPS DODGE ELECTS WHISLER PRESIDENT AND COO

J. Steven Whistler has been elected president and chief operating officer of Phelps Dodge Corporation. Douglas C. Yearley will continue his post as chairman of the board, president and chief executive officer of the company. Whistler will take on increased operating responsibilities while Yearley will concentrate on continued strategic growth of the company. Whisler, 43, joined Western Nuclear, in 1976 and has led a succession of positions with Phelps Dodge. He was elected to the position of vice president and general counsel for the corporation in 1987 and senior vice president in 1988.

MORENCI PHELPS DODGE CORP. SETTLES TRIBAL WATER DISPUTE

Phelps Dodge Corp has agreed to pay the /San Carlos Apache tribe \$25,000 per month for the use of its reservation lands to settle a long-running water rights dispute recently. The tribe and Phelps Dodge have been battling over water that Phelps Dodge has been diverting from the Black River to its copper mine at Morenci for the last six years. Under the new agreement, the San Carlos Apaches will lease about 14,000 acre feet of water to the company for an initial payment of \$5 million and about \$1 million per year. Phelps Dodge will pay all costs to operate, maintain and replace the pumping and transmission equipment used by the mine and the Tribe has agreed to dismiss a damage claim brought in Tribal Court against the company for past damages. The resolution will be an expensive one for Phelps Dodge. Yahoo!, Reuters Finance 5/21/97

CLIFTON SMELTER STACK DISMANTLED

The stack of the old Arizona Copper Company at Morenci came down last February. For many decades it dominated the skyline of Clifton and let everyone driving on the Coronado Trail know that Clifton is a mining town. For others it was a symbol of industry and jobs in a remote rural community that wouldn't be there if it were not for the mine. Although the smelter had been idle for a number of years it was one of the identifying feature for Clifton and a symbol of the towns mineral producing heritage. Now the state's largest copper producing area doesn't have a smelter stack anywhere in Arizona.

PHELPS DODGE TRANSFERS APP FOR SANCHEZ COPPER

The Phelps Dodge Corporation has received notice from the Arizona Department of Environmental Quality that the Aquifer Protection Permit for AZCO Mining Inc. at the Sanchez Copper Project Site has been transferred to the Sanchez Copper Project Site, Phelps Dodge Mining Company - Safford District.

MORENCI BREAKS BELT

On December 23, 1997 a belt carrying eight inch and smaller material at Phelps Dodge Morenci collapsed at the point where the belt cuts across Arizona Highway 191. The 2 1/2 mile conveyor collapsed at a point where it spans the highway in one continuous 185 foot span. The loss of this conveyor belt caused the company to search out other means of transportation of the ore to the mill. Repair of the conveyor will be complete in 30 to 45 days.

ARIZONA MINING MAKES GOOD USE OF THE LAND

Preliminary information from the Arizona Mining Association shows that mining makes a high return per acre. The total acres disturbed by Arizona copper mining in 1996 are 163,200. This land produces 1,368,514 tons of copper in 1997 with a direct economic impact on Arizona of \$ 3.131 billion and a combined direct and indirect impact of \$ 9.647 billion. Each acre thus has an annual impact of nearly \$60,000.

RE COPPER TUBING

Charles Wood, Sun Systems, Inc., Scottsdale, inquired about sources of copper tubing. His firm builds solar water heaters and use a 4" diameter tube in the system. His current source, Mueller, makes a tubing that fails easily. He inquired about a US producer that might use Arizona mined copper.

The Copper Development Association at (800)-232-3282 (CDA-DATA) was contacted and referred to their western representative, Jim Weflin, at (760)-944-7420. Jim's number was passed to Charles Wood. Jim Weflin explained that most tubing manufacturers use primarily scrap copper. Copper tubing is made with phosphorus copper which is 99.96% Cu and 0.04% P. KAP

SAN MANUEL TOUR

Together with State Legislators, Officials of the State Mine Inspector's Office and Nyal Niemuth, Mason Coggin and Eric Nordhausen toured the 2615 level of the San Manuel Copper Mine, the San Manuel Open Pit Oxide Mine, the San Manuel SX-EW plant and the San Manuel production shafts hoist house. Applicable Pinal AZMILS numbers are 577A and 744

The following are some notes from the visit:

- BHP is the world's largest non government producer of copper
- BHP produces 11 % of the world's copper.
- BHP controls 40 % of the world's copper concentrate.
- The San Manuel Mine is North America's largest underground mine.
- Current average sulfide ore grade is 0.611 % Cu.
- Current average oxide ore grade is 0.589 % Cu.
- Current cash production cost for the combined sulfide and oxide ores is \$0.91 /lb Cu.
- Current San Manuel employment is 2300.

- BHP's Arizona operations spend \$616,000,000 on supplies, power, this is 75-80 % of their expenditures.
- The expenditures are divided as follows:
- San Manuel Operations \$243,000,000
- Corporate Operations 70,000,000
- Pinto Valley Operations 132,000,000
- Superior Operations 16,000,000
- Smelter, refinery, rod plant 156,000,000
- Current San Manuel production is 20,000,000 pounds of copper per month.
- Plan 24,000,000 pounds of copper per month by May 1998.
- Ton of ore per day is planned at 60,000 by May 1998.
- Costs are scheduled to be \$0.78 per pound by May 1998.
- The Arizona Industrial Commission's "8 hour law" limits the total amount of time a worker can be underground to 8 hours portal-to-portal (or collar-to-collar) hours in 24 hours. Underground transportation time to the work face, set up time, lunch time, etc. limits the actual underground working time to between 4 and 5 hours. BHP claims that both management and labor desire to have the law changed to allow 10 hour days.

This law was enacted by the Arizona Legislature in 1998. There is no additional cost to the company and the workers will work a shorter work week for the same pay. A majority of the workers drive over one hour each way to and from work and would have one less round trip commute per week. However, the average hourly production for the miners will increase.

During the same trip the solvent extraction and electrowinning plant was toured. The plant is running at 50 percent capacity on leach solution from the insitu leaching operations under the south and east side of the idle open pit. BHP is considering a restart of the open pit which will intersect the old underground portion of the mine. KAP

AMT FEASIBILITY STUDY COMPLETE

AMT International Mining Corporation has announced the completion of a positive feasibility study with respect to the development of Phase 1 of the Copper Creek copper deposits located approximately 45 miles northeast of Tucson. A copy of the feasibility study has been delivered to BHP Copper (BHP) for review, which when approved by BHP, together with BHP's acceptance of expenditures of more than the required U.S. \$3.0 million on the BHP portion of the property, fulfills AMT's commitment to earn a 50% joint venture ownership interest in BHP's Copper Creek properties. Their estimates for production are 100 million pounds of copper annually from shallow sulfide deposits based on a mining rate of 10,000 tons per day at a cash cost of \$0.48 per pound and 200 million pounds of copper per year based on mining 36,000 tons of ore per day at a cash cost of \$0.33.

The Copper Creek Project is comprised of five contiguous properties covering approximately 6,000 acres. These properties include the joint venture property with BHP, a joint venture property with Phelps-Dodge Corporation, a 100% AMT-owned staked federal claims property, a purchase option on the 780 acre homestead ranch property and a prospecting permit on state lands.

Phase 1 of the Copper Creek project involves the open-pit mining of the Old Reliable surface leachable deposit and the underground mining of the shallow sulfide ores of the Childs-Aldwinkle and the Creek breccia deposits. The surface leachable ore will be heap leached and processed at an SX-EW plant to be constructed by AMT on its ranch property. The shallow sulfides will be mined using blast hole stoping methods and the ore pre-concentrated by means of heavy media separation and thereafter treated by a flotation plant to be constructed at AMT's ranch property.

The Phase I feasibility study, which is based on total minable reserves of 11.4 million tons averaging 1.3% copper (2.9 million tons of leachable reserves at 0.93% total copper and 8.5 million tons of sulfide reserves at 1.42% total copper) and is derived from information obtained from over 100 drill holes, confirmed positive economics at a production rate of 2,000 tons per day of leachable material and 5,000 tons per day of underground sulfides for an average annual production rate of 55 million pounds of copper at cash costs of approximately US \$0.54 per pound (all costs except financing). The total estimated pre-production capital cost of placing the Phase I shallow sulfide reserves into production is US \$40 million. The capital cost of placing the leachable reserves into production is estimated at US \$12 million, which is expected to be funded from future cash flow.

Phase II of the project involves the delineation of further leachable reserves on the total 6,000 acre property as well as increasing sulfide production to approximately 10,000 tons per day, resulting in 100 million pounds of annual copper production.

Phase III involves the continued exploration and development of known and indicated large hybrid porphyry copper systems, commencing at a depth of approximately 2,000 feet below the surface. Exploration, including 44 diamond drill holes completed to date, suggest the presence of multiple large tonnages of hybrid porphyry copper systems on the Copper Creek property having the potential for copper grades averaging in excess of 0.9%, not including credits for contained molybdenum, gold and silver. The mineral resource delineated by AMT to date is 301 million tons at 0.75% copper grade. This includes 80 million tons in the indicated category, and 221 million tons in the inferred resource category, as defined in the Australian Code. Pre-feasibility engineering has been carried out using 60% of these geological resources at 0.9% copper grade to produce over 200 million lb. of copper per year.

The Phase I feasibility study has been completed to industry standards for reserves, plant infrastructure and mine design as well as economic evaluation with the assistance and review of independent consulting firms including: The Winters Company (permitting, flotation plant design, environmental issues and economic evaluation); Western States Engineering (engineering design and cost estimation for the heavy media separation plant and the leaching project); Mountain States R&D International (metallurgical testing and flow sheets); Cella Bar Associates (roads, water and power); BLM Engineering (mine planning) and Golder Associates (rock mechanics). The feasibility results were then reviewed and audited by The Winters Company as to mineral resources and ore reserves and Behre Dolbear & Company Inc. as to mining, infrastructure and processing.

On March 20, 1998, AMT International Mining Corporation announced the subscription of 7.4 million common shares of their stock to former warrant holders which added \$9.3 MM to the company's treasury. This cash infusion enables AMT to significantly add shareholder value by

accelerating its exploration and development programs. AMT is in an advanced stage of exploration and development of the properties it holds options on in Copper Creek Arizona and Manitoba in Canada. They have also acquired the remaining BHP interests in the project.

CORPORATE CHANGES AT PHELPS DODGE

Tim Snider has been elected to serve as Phelps Dodge Corporation's vice president and will retain his position as vice president of Arizona Operations of Phelps Dodge Mining Company. Snider is the former president of Phelps Dodge Morenci, Inc. After joining Phelps Dodge in 1970 at the Copper Queen Branch in Bisbee, Arizona he served in various capacities for the company in Tyrone, Hidalgo, Morenci and Candelaria. He is a graduate of Northern Arizona University.

Phelps Dodge Mining Company has named Jerry M. McCarty vice president. He will continue to oversee accounting, budgeting and financial controls for the mining division. Also promoted were H. M. Conger, to President, Phelps Dodge Morenci. R. Hunter White has been promoted to the position of General Manager of operations and John C. Galassini has been named General Manager of technical services. John Broderick has been promoted to president of, Phelps Dodge Ajo, Inc. and general manager of Phelps Dodge Safford, Inc. John H. Zamar has been appointed General Manager of Phelps Dodge Ajo operations and Duane N. Sexton assumes new responsibilities as Project Manager.

MINING COMPANIES CLEAN PINAL CREEK

Under an agreement with the Arizona Department of Environmental Quality, Cyprus Miami Mining Corp., BHP Copper, Inc. and Inspiration Consolidated Copper Company will complete and pay for a cleanup of Pinal Creek in Gila County. The effort will:

- Complete 100% of the remediation in Pinal Creek and conduct source control at the site.
- Bring their operations into compliance with the federal Clean Water Act.
- Reimburse the State for past costs
- Pay a penalty of \$600,000 for historical violations

DEQ Director Russell Rhodes is quoted as saying "The cooperation by the (Pinal Creek Group) since 1990 has been nothing short of exemplary," when he announced the settlement on Aug 22.

In a separate action the Pinal Creek Group has filed an action under the CERCLA and the Water Quality Assurance Revolving Fund against Newmont, ARCO, Occidental, Phelps Dodge and Hecla, all former operators in the district, to pitch into the cleanup. They claim that these companies who have either operated in the district or acquired companies who had operated in the district, were the real polluters and should help pay for the cleanup. Phelps Dodge and Hecla have already made a settlement with the Pinal Creek Group.

Phelps Dodge is the former owner and operator of the Old Dominion Copper Mine, Hecla acquired the interests of Ranchers Exploration and Development Company that operated the Blue Bird Mine. ARCO acquired the interests of the Anaconda Corporation that may have had an interest in the Inspiration operations, Occidental acquired an interest in the Van Dyke property which had a small production and some of Miami Copper's (City Service Corp.) operations.
Arizona Capitol Times Aug. 29, 1997

HELPS DODGE LAYS OFF AT CHINO

On the heels of BHP's announcement to lay off 440 employees at Pinto Valley last quarter as a result of lower metal prices, Phelps Dodge has announced the reduction of operations at Chino from 430,000 TPD to 300,000 TPD although they plan to continue full scale operations at their mill and smelter.

PINTO VALLEY SPILL

BHP Copper Co.'s Pinto Valley Mining Division was reportedly dumping waste rock on its Number 2 tailings pond, (an operation which should have stabilized the tailings) when the dam inadvertently broke, resulting in an unauthorized discharge into Pinto Creek. BHP immediately initiated a program of constructing temporary discharging facilities, impoundments, staging areas, berms, cut-off dams, storm water runoff ponds and diversion ditches as per instructions of the ADEQ. After the fact they had to submit an APP allowing the operation. The-after-the fact permit will close public comment on March 5th. ADEQ Notice of Decision to Issue a Temporary Individual Aquifer Protection Permit, Feb. 4, 1998

BHP MAKES MAJOR DISCOVERY

In what may well be the first and most important discovery of a totally new copper deposit in Arizona in several years, BHP announced the discovery of the Superior Porphyry near the mine at Superior that they closed in 1996. The deeply buried deposit is under post mineral rocks, and was first intersected by five holes that were drilled in 1995 and 1998 from the underground workings. The initial holes were inclined latterly and downward from underground workings. Later holes were drilled from the surface. All of the holes have significant intercepts of greater than 1% copper and all of the holes have terminated in ore. The longest intercept today is 1,004 feet with an arithmetic mean grade of 1.75% copper and 0.029% molybdenum. The last 619 feet assayed 2.18% copper and 0.028% molybdenum. The dimensions are not completely defined but the deposit is at least 1500 feet high, 2100 feet long and 600 feet wide. The top of the deposit is approximately one mile below the surface. The existing infrastructure at Superior cannot support mining the deposit. Preliminary studies indicate the deposit may be amenable to conventional bulk tonnage, mining and flotation methods. *BHP Memorandum May 7, 1998.*

Word has been received that BHP has shut off the pumps at Superior and is allowing the mine to fill with water. One rumor has BHP investigating the scenario where the ore would be crushed and belted to the now under-used Pinto Valley Mill in Pinto Creek.

BHP CLOSES PINTO CREEK AND LAYS OFF 447

The layoff will be effective at 3:00 PM Wensday Feb. 25. This represents about 75% of Pinto Valleys working force. Company spokesmen said the layoff would last at least two months. During this period the laid off employees will receive normal pay and full benefits. The company will also offer help in writing resumes and relocation. This comes to an area where 85% of the jobs are related to copper mining.

SANTA CRUZ UPDATE

Following President Clinton's line item veto of funding for the Santa Cruz In Situ Copper Mining Research Project in October of 1997 the Joint Venture started shut down procedures. This consisted of continued pumping to remove copper-bearing leach solutions until mid-February. As the acid and pregnant solutions were removed without replacement, the solutions began to lose

their acidity and the entrained metals were precipitated. A closure plan for the property is being developed by the private partners. Cost of the closure could reach \$500,000 and will be shared by federal and private funding.

In spite of the early closure the project had many successes; thirty-five thousand pounds of copper were produced, the environment was protected and the technical success of the project was demonstrated. It did not run long enough to test the economic viability of the operation and as a result both government and industry were losers.

A decision to go forward with a mining method that is environmentally nondestructive, inherently safe and creates nothing but good will have to wait until the demand for copper or a change in administration brings it back again.

JABA AND VALERIE JV ON EAST SILVER BELL

Jaba Inc. and Valerie Gold Resources Ltd. have signed a letter of intent to participate in a joint venture on JABA's East Silver Bell property that calls for the spending of \$4 million in exploration, paying JABA \$401,696 and completing at least 4,000 feet of reverse circulation or diamond drilling. Upon completion of the expenditure Valerie may earn an additional 10% interest in the venture bringing their total interest up to 70% if they can produce a bankable feasibility study, arrange production financing and pay JABA \$5 million. The companies are currently performing Induced Polarization survey lines across the property to further define a chalcocite-blanket in what they describe as a copper porphyry deposit system. The property is not too far from ASARCO's Silver Bell operation currently in production in Pima County, AZ. The Mining Record March 11, 1998

OLD RELIABLE AND ZONIA PHOTOS AT THE DEPARTMENT

Albert St. Peter got a big bang out of his career as an explosives engineer with E.I. duPont de Nemours Co., Inc. and then as a consultant to industry. Two of the blasts that he engineered at the Old Reliable March 9, 1972 and then the Zonia blast two years later were touted to be the largest non-nuclear blast in the world. Photos of the blasts were recently donated to the Arizona Department of Mines and Mineral Resources by Virginia St. Peter.

The blast consumed 4 million pounds of explosives and broke about 4 million tons of copper-bearing ore. Ranchers Exploration and Development Company who shared control of the project with duPont hoped to insitu leach about 30 million pounds of copper from the project and recover it by iron precipitation. This novel approach was considered futuristic at the time and won industry wide interest as a potentially low cost way to produce copper. One of the things that made the blast possible and attracted Ranchers to the project was the existing workings in this breccia pipe from 1953 and 54 when the deposit had been prepared for block caving. A haulage level and a grizzly level had been developed but the actual undercutting and block caving had never taken place. The property had been explored and considered by scores of companies in the intervening years but it had not been mined. The forward-looking Ranchers company saw this as an opportunity and after several months of study and acquiring rights to the property they planned the blast. All that was needed to make this the largest coyote tunnel blast in the free world was about 1000 feet of new adit at the top of the deposit, a few short drifts in the bottom and lots of explosives.

After the blast Ranchers simply dozed a few control benches across the top of the property, built a precipitation launder and started leaching. All went well for the first few months and Ranchers was rewarded with an attractive payback. Problems did occur in the last half of the planned life of the project when it became apparent that the lower half of the rubbleized mass had lost its permeability and the leach solutions were not dissolving all of the copper that they should be leaching from these lower reaches of the deposit. The project was stopped when it would no longer support the cost of leaching and precipitating. The surface was recovered and a new visitor to the area would hardly know the site was ever mined.

The Old Reliable and the large number of other intrusive breccias in the area are currently being explored by AMT International who has blocked out a large reserve of copper mineralization that could easily become the next major Arizona copper mine to be pressed into production. The new deposit would be mined by underground methods.

Planning for a 4-million-ton blast at the Zonia was announced in early in 1973 when the McAlester Fuel Company announced their plan to drill 300,000 feet of 9" hole an average of 250 feet. When the blast was detonated on April 19th, 4,140,000 pounds of explosives shattered the rock in the designated area, picked them up for a heartbeat then dropped them in a pile of rubbleized material. Dozing and leaching in place followed for a short period of time. The operation had moderate success for several months before McAlester suspended operations. Since 1975 there have been several attempts to purchase the Zonia and restart operations. This property still has a largely unexplored area and an excellent opportunity to greatly expand reserves under new prices and new technology. This novel method of fracturing rock for insitu leaching has not been repeated although it apparently contained the seeds for success.

PRECIOUS METALS

YARNELL EIS IS OUT

The Bureau of Land Management has released the Environmental Impact Statement for the Yarnell Mining Company and public hearings and comments have been started. Now that the clock is ticking Yarnell will have to answer, address and mitigate all of the public comments that have been submitted at public hearings and the 32 cent appeals that have been sent through the US mail. So far the objections over the project have ranged from frivolous to ridiculous and are designed for no other purpose than to delay the project and run up the costs of permitting. For example, concerns have been expressed about "What if the project is attacked by terrorists?" "The mine will release the Janta virus into the atmosphere." and "Why can't they mine somewhere else?"

MACKAY RECOGNIZES NEED FOR U/G MINING KNOWLEDGE

The Mackay School of Mines in Nevada has recognized a growing trend toward underground gold mining as surface deposits are being mined. Currently the state of Nevada has 13 underground mines and more are seen for the future. They are intensifying their focus with programs on underground mining, including the Burrus Mining Laboratory, as a means to give students first hand experience.

WORLD SILVER DEMAND INCREASES BY 803 MILLION OUNCES

The Silver Institute gave the first indication that the demand for silver increased by 803 million ounces in 1997 and predicted an increase in the current silver production rate of 515.9 mm ounces to 571.7 by the year 2000. The gap between production and industrial demand has been widening since 1995 and is increasing steadily. The article also stated that only 17 percent of the world's silver production, comes from primary silver, production the rest comes, as byproduct from the copper, lead and zinc industries. At the present time industrial, photography and jewelry/silverware each consume between 200 and 300 ounces. Industrial demands have been increasing over the last three years. The Nevada Miner Feb. 1998.

LA COLORADA WINS PRELIMINARY APP APPROVAL

Glenn Burkhardt, a small hard rock miner, has won a long battle with ADEQ to get a decision to issue an Aquifer Protection Permit for his LaColorada Minerals, Heap Leach Facility some 30 miles south of Tucson in Section 12, Township 20 South, Range 10 East G&SRB&M of Arizona. The operation will recover silver and some gold. The permit will be the end of a long hard battle between Burkhardt and ADEQ. It took the assistance of several engineers, ADEQ's Ombudsmen and a great deal of patience by everyone involved to resolve all the issues to get the permitting process this far. Congratulations everyone. We hope the rest of the permitting issues will be relatively easy to get.

WESTLEY MINES ANNOUNCES SAMPLING RESULTS

Westley Mines reports they have recently concluded an extensive sampling and geological program on the Millennium property located in Mohave County, Arizona with some interesting results. They claim gold mineralization in a Tertiary-age volcanic rock in numerous assays carrying .2 to 2.0 grams per ton in gold. They feel that the low gold silver ratio and several other factors suggest a gold deposit similar to Viceroy's Castle Mountain deposit.

PLATINUM GROUP METALS

World production for platinum group metals has remained fairly constant for the last five years at 280,000 kilograms of platinum, palladium, and other platinum group metals. Of this the United States is credited with less than 2,000 kilograms of platinum and 6,100 grams of palladium. This estimate for the United States includes estimated production from the Stillwater Complex in Montana. The recognition that a very small amount of these metals is a byproduct from gold-copper mining was excluded. U.S. G. S. Mineral Industry Surveys Platinum-Group Metals July 1997.

U.S. NAVY MILL GETS PRELIMINARY APP

The U.S. Navy Mill, located five miles east of Skull Valley in T13N, R3W Section 19 has received notice from the Arizona Department of Environmental Quality of its decision to issue an individual aquifer protection permit. The permit will allow the mill to operate three tailing impoundments and a custom mill facility. The facility included loading, crushing, separating and gravity flotation of custom ore. The source or potential sources of the ore were not discussed. ADEQ PN No. 41-97AZAP 7/9/97

ADDWEST ADDS RESERVES

Addwest Minerals International, as the company is now called, is listed on the Vancouver Stock Exchange through the reverse takeover of Alina International. The company has closed their Mohave County Gold Road Mining in spite of an announcement last year that it had increased its

proven and possible gold reserves at the Gold Road mine by 17%. This was the result of adding 77,000 tons of 0.27 opt gold ore to its total reserves of 556,000 tons grading 0.234 opt. At the current production rate of 40,000 oz per year this mine was an important contributor to Arizona's gold production. Cash operating costs for the operation were estimated at \$219 per ounce. Addwest has also picked up the Moss, Golden Zone and Alaska projects. Closure of the mine has resulted in the loss of 90 well paid jobs as underground miners.

INDUSTRIAL MINERALS

ARIZONA CEMENT

The State of Arizona produced and shipped 2.43 million tons of Portland cement in 1997. This equates to approximately 16 MM tons of concrete used in new construction.

RMC INDUSTRIES INVESTIGATES BRUCITE DEPOSIT IN AZ

Bob McCreless of RMC Industries, PO Box 270941, Ft. Collins, CO 80527 (970) 223-7790 called to say his company is considering the Brucite deposits in Time Gulch near Bull Head City, Arizona. The deposit is located on BLM lands. HMC

HARBORLITE'S PATENT APPLICATION

Barney Oldfield, Geologist and Mineral Examiner for the US Forest Service reported that their final report on an economic discovery on Harborlite's perlite claims at Superior has been completed and the report recommends the claims for patent. At projected production rates they have at least a 50 year reserve. A few days after this announcement we were informed by the US Forest Service that patenting of the claims was not imminent nor probable.

DUNBAR STONE PLANS QUARRY

Dunbar has submitted a Plan of Operations to the Chino Valley Ranger District to quarry sandstone from the Golden Buck Placer Claim located in T.19N., R.1E. Sec. 11 on National Forest land. The plan calls for the removal of sandstone from 3 existing quarries at a rate of 50 to 70 tons per week and processing it by hand using wedges and mauls. The plan includes reclamation and seeding of the disturbed area. AZ Clearinghouse 1/19/98

REQUEST FOR DECORATIVE STONE SAMPLES

Keller Materials of Dallas, Texas called looking a library of decorative stone samples from the various mines and quarries throughout the state. We don't have one but it is certainly a good idea. The caller said that many of the eastern state's geology and mining agencies maintain such a library. *[The four different limestones from Iowa would make a very interesting collection!!!]*
KAP

MICA MULE TO WALK AGAIN MAYBE

Rick Erman reported that his company's, MDI (Minerals Development, Inc.) owner, Mike Smith has been approached by Floyd Bleak to become involved in the Mica Mule Mine. He said Floyd Bleak reports the deposit contains "book mica worth \$43.00 per pound." The mica industry was discussed. Rick was invited to come in and read about mica and the industries that use it and to check some price guides for recent price data. **KAP**

VALUES OF COUNTY SAND AND GRAVEL DEPOSITS

The Department has been asked by several potential customers if current sand and gravel market might be good enough for the County to offer some potential sand and gravel land in Cave Creek Wash to possible bidders. The ground is adjacent to State Land held and operated by Wheeler Construction. KAP

INDUSTRIAL SAND

A caller wanted to discuss the value of industrial sand for well packing and cementation. We usually talk about the data from the US Bureau of Mines. Now that the Bureau is gone and the USGS has taken over the data gathering process they have not had as much time to spend guaranteeing all producers are canvassed and responded and in verifying the information collected. Assumptions and averages thus made may be inaccurate. In 1995 there was no industrial sand reported as produced in Arizona even though Arizona Silica Sand was in production as usual. KAP

SWANSEA MINERALS PRODUCING PIGMENTS

John Challinor reported his company, Swansea Minerals, is still producing micaceous iron oxide pigments from tailings at the Swansea Mine. John discussed MIO, magnetite and some interesting ramifications, including some information from a contact in Mexico who reports to be shipping 50,000 tons of MIO to France annually. KAP

GARDEN STATE STONE SOLD TO FRED PERRY

Shirley Robertson, Superintendent of Sales for Western States Stone in Ashfork reported that their Garden State Stone yards have been sold. Whitey Webster passed away in 1996 and his wife, Eldena passed away in 1997. Fred Perry, a Webster brother-in-law is the primary corporate officer and is located in Phoenix. The primary contact for stone materials quarried by Western States Stone is now at their plant in Ashfork. KAP

ZEOLITES

A visitor to the Department reports that he is starting a zeolite mineral business in Scottsdale, Arizona. He reports they will be mining 14 different zeolite minerals at his property in Mohave County. KAP

IMCA STONE HAS MOVED

IMCA Stone is now at 3511 East Broadway, Phoenix, Arizona. Their phone is unchanged at (602) 894-5551. They have not yet finished their show room. Aubrey Odom has retired as President and has been replaced by David Corey who divides his time between Phoenix and IMCA in Dallas, Texas. The best contact for possible new stone sources is Allen Aubrey in Dallas. IMCA has several acres of polished stone on a one acre site. It is always inspiring to see giant polished slabs from around the world. KAP

KILUEA CRUSHERS MAKES CUT STONE

Bill Nichols brought in samples of sawed stone from his company's Picacho and Jomax quarries. The best is what he calls Santa Fe Beige. It is a hard, reddish-purple, high silica rhyolite which takes an excellent polish. He also had samples of his "Apache Pink" from his Picacho Quarry and Desert Mauve from his Jomax Quarry. KAP

PERLITE

A Los Alamos, New Mexico caller wanted information on perlite and possible markets. He raises capital and is considering raising venture capital for a group that wants to develop a perlite mining operation in Mohave County. He explained his current lack of knowledge about perlite or any industrial mineral. Perlite was discussed in general, as were generalities about the potential for a deposit in Western Arizona. Some information on perlite was assembled and sent to the caller. He is also interested in raising money for any type of legitimate business venture. KAP

BARITE

Bob Languth and Mr. Matovich came into the Department to discuss filler-extender grades of barite. Mr. Matovich, President of Northwest Mining Industries and Matovich Mining Industries Ltd., of Northport, Washington was interested in barite deposits that might produce white ground barite for filler uses. He previously operated a south coast Texas Aggregates company for the same commodity. KAP had recently suggested a property in Gila County as a good place to look for these materials in Arizona. It is believed the property was reclaimed, but that only two of the four known pods of barite were mined. Specimens of barite from the deposit were examined in the Museum's collection. He was impressed by the "dings" on the specimens that show how white a ground product would be in spite of the rose color of the massive specimen. KAP

ROACH AND BAKER

Carol O'Brian reported, in response to questions about mines listed on the State Revenue Department's centrally assessed mine property list, that Roach and Baker are the owners of the Luke Salt Deposit, [Maricopa AzMILS 412] mined by Morton Salt in Glendale. KAP

CLEMENTINE, WHITE PEAK, PRINCE OF ARIZONA MINES

Several people have come in to review the files on these properties. They are included within a large land position recently acquired by a developer in a trade with the Federal Government for a small acreage near Saguaro National Monument near Tucson. There is a concern about possible hazards or abatement costs for old underground workings and the Lakeshore heap leaching project at the Clementine KAP. This is a property that should never have been traded out of the public domain. The BLM received only a small portion of land that had no mineral potential and little value for anything other than subdivision. It was already surrounded by subdivision on three sides. Now it is just a vacant lot in the middle of the city. HMC

UNITED METRO (FORMERLY OF SUPERIOR COMPANIES)

Don Fisher reported that his new position with United Metro will be in business development. United Metro will be interested industrial mineral development opportunities in addition to sand and gravel. His fax number is 602-220-5345. His initial interest is in expansion markets for gypsum from the Winkelman Gypsum Mine. KAP

RE SALE OF PEABODY COAL

A writer from *Coal Daily* called for information on coal production and quality in Arizona. He explained that Pacific Corp, an owner of power plants in the western United States is attempting to acquire the parent company of Peabody Coal; and that Salt River Project (SRP) has objected because their Navajo Power Plant is fed by Peabody coal from one of Peabody's largest mines, Kayenta. SRP will soon be competing with Pacific Corp for electricity customers and they are concerned that Pacific Corp would control a significant part of their fuel supply. KAP

MILDRED PEAK PROPERTY

Richard Boulay of Marum Resource called to find out the area of their holdings for their Mildred Peak Property. He explained that the Jupiter is on the northern end of the property and the Gold Bullion [Banes in AZMILS] is on the south west corner of the property. The holdings are a mix of BLM and State lands.

He reported he is moving to Arizona for the winter and will continue work on the property. He has been doing his surface sampling by gravity concentrating, then assaying the concentrates. He mentioned a sandstone member to the east of the core of the property that was very anomalous in copper and silver. KAP

CUSTOM BOULDERS

Heather L. Webster, 8038, W. Dahlia Drive, Peoria, Arizona 85381-9020 was in to learn about possible sources of decorative stone. She explained that she works for Sam Schippers, d.b.a. **Custom Boulders**, Tonopah, Arizona 602-531-3678 and that they produces landscape boulders and gravels from an old gold mine near the Vulture Mine.

She explained that they sell individual boulders and crushed, screened material. She referred to the rock as red andesite boulders and pink rhyolite crushed rock. They reportedly have in excess of 30,000 tons of washed, certified safe, leach rock from an old gold cyanide leaching operation she called the L W Mine (which is not in AZMILS.)

STAUFER'S OMYA DIVISION JOINS SUPPLIERS OF CALCIUM CARBONATE

Pluess Stauffer's Omya division is reported to have purchased the Queen Creek Limestone deposit in Pinal County near Superior. The deposit supplies high quality white marble to Minerals Development Incorporated Superior Marble crushing and screening plant in the community of Queen Creek. Omya is a major producer of calcium carbonate for the filler-extender and chemical industries. They mark the entry of the third major producer of calcium carbonate into Arizona. Specialty Minerals (formerly Pfizer Minerals) and Georgia Marble have established them selves in Arizona in the last eight years.

WHITE VULCAN MINE A NEW PROJECT

The Coconino National Forest will begin a scoping for the White Vulcan Mine expansion of their pumice mining operation on the east side of the San Francisco Peaks near Highway 89. The mine furnishes materials to stone wash products in the garment industry. The Forest Service hopes to complete their Alternatives and Analysis by September 97. Fred Trevey the Forest Supervisor is the responsible official and Chip Cartwright is the regional forester. If you have comments regarding the desirability of this project please contact Ken Jacobs, Lands Staff (520) 526-0866.

OWENS CORNING ACQUIRES WESTERN FIBERGLASS AT ELOY

Owens Corning Fiberglass has acquired the four fiberglass insulation manufacturing plants owned by Western Fiberglass including the plant in Eloy. Western Fiberglass will continue to operate under that name. Owens Corning has expressed an interest in finding Arizona sources of supply for the plant's raw materials. All raw materials are currently shipped into Arizona.

TAILINGS TURNED INTO CONSTRUCTION MATERIALS

Enviro-Crete Products of Phoenix, AZ (602) 955-9615 may have a solution for copper mine tailings. They simply mix the material with a few other products and turn it into an amazingly strong light weight concrete block material. In the process which if finally cooked in an

autoclave the materials swell to about three times their original volume to make a foam like block. It high porosity gives the material superior insulating properties and cuts back on the amount of structural strength requirements for any supporting structures. Being lighter, many more block can be laid in a day. It can be cut with a saw, chopped with an ax and will hold a nail. Electricians can use a router to cut out channels for electrical cables and carpenters can simply saw out a larger window if one is needed. Most the structures will be stuccoed on the outside and dry walled on the inside. All in all the material has great potential as a construction material.

MINING LAW AND ENVIRONMENTAL ISSUES

MINING GENERATES \$524 BILLION IMPACT ON US ECONOMY

The domestic mining industry had a combined direct and indirect impact on the economy of the United States of nearly \$524 billion in 1995, according to a study by the Western Economic Analysis Center in Marina, Arizona. The study entitled "Everything Begins With Mining - Mining and the American Economy, shows that mining has an importance in the economy disproportionate to its size.

AMIGOS ANNUAL MEETING

ASARCO's Executive Vice President, Frank McAllister was the keynote speaker at AMIGOS annual meeting at the Phoenix Zoo Pavilion on June 13th. Congressman John Shadegg was on hand to accept the fourth annual Copper Scissors Award for his work in Washington on behalf of taxpayers. AMIGOS President Bob Humphrey of J.R. Kennedy Company passed the gavel to Lynn Thomas of Pioneer Equipment. Also recognized at the meeting was State Senate Majority Leader Mark Spitzer, Senate President Linda Burns and House Speaker Don Aldridge.

BABBITT TAKES AIM ON MINERS

Secretary of the Interior Bruce Babbitt, is still trying to effect legislation to reform the 1872 Mining Law. His ploy is still to call a media event and present the facts as he and the Clinton Administration sees them. Richard L. Lawson, President and CEO of the National Mining Association says these tactics "Publicity stunts are a poor substitute for effective public policy." Representative Don Young (R-AK), Chairman of the House Committee on Resources, said Babbitt is relying "on theatrics and photo ops" in an effort to blame Congress for the Clinton Administration's refusal to submit reasonable mining reform. This approach has not produced results. If the administration is serious about reforming the mining law they should be willing to submit a reasonable bill and be prepared to negotiate terms. The Secretary is trying to use propaganda to pass legislation. If he is successful in misleading the public with a diatribe of misstatements, distorted facts and downright lies it will eventually lead to tyranny. Mining Week, May 19, 1997.

BABBITT TAKES RIGHTS-OF-WAY

On January 22, 1997, Bruce Babbitt, YKWHI, issued a memorandum to the assistant secretaries of Fish and Wildlife, Land and Minerals Management, Indian Affairs, Water and Science setting forth a new policy that can be used to revoke established rights-of-ways (ROW's) in the West. By instruction the agencies to ignore the authority granted by RS 2477 this will leave many electric transmission lines, water lines, irrigation canals, trails, roads and pipelines without legal access across public lands. Also to be taken away are our access to the public lands for

prospecting, grazing, mineral collecting, hunting and other recreational uses. This action by Bruce Babbitt reverses all previous policies regarding ROW's.

ESA REFORM FIZZLES

H. R. 478, the federal Flood Prevention & Family Protection Act, a major test for ESA reform, was pulled from consideration by the author, Richard Pombo, after Rep. Sherewood Boehlert (R-NY) blocked the bill with the help of 54 other GOP votes. Liberty Matters New Service, May 19, 1997

PROPERTY RIGHTS BILLS

Two bills, S. 709 and H.R. 1534 were introduced into the Congress to expedite the landowner's ability to file a takings claim against the federal government. Orin Hatch (R-UT) announced April 30 that he intends to reintroduce his "Omnibus Property Rights Act of 1997" All of these bills will be beneficial to private property owners. Liberty Matters News Service May 19, 1997

MINING FOUNDATION NEWS

The Mining Foundation of the Southwest has elected new officers, William H. Wilkinson is the new president of the Foundation, Milton Evans, is vice president, Thomas Lyle Taylor will be co-chairman and Susan F. Wick will continue as secretary treasurer for the group. Herbert E. Welhener has been appointed Chairman of the Hall of Fame banquet which will be held Saturday December 6 at La Paloma. New Board members includes Dr. William H. Drescher, Jane Eppinga and Evert Smith.

DEQ GIVES HELP TO SMALL BUSINESS

The Arizona Department of Environmental Quality (DEQ) has initiated a Compliance Assistance Program (CAP) aimed at small business; businesses so small that they cannot afford to have an on-staff environmental regulations expert or even hire a consultant. Initially the program will help businesses determine whether or not they need a permit. Although it is designed to help dry cleaners, auto repair shops, body shops, print shops and mobile home parks it may also assist some of the smaller mining companies.

THE WESTERN GOVERNORS TAKE ON ABANDONED MINE CLEANUP

The Department of Interior and the National Mining Association approached the Western Governors last year to join forces to expedite the cleanup of abandoned mines in the West. The governors have agreed to focus on the following elements.

- resolving legal, policy, and programmatic barriers to abandoned mine cleanup;
- developing model memoranda of understanding to included joint cleanups
- increase on-the-ground funding for cleanups and
- exploring creation of an on-line database of cleanup technologies.

MULTILATERAL AGREEMENT ON INVESTMENT TO OVERRIDE STATE RULES

The proposed Multilateral Agreement on Investment (MAI) could override state rules and affect state sovereignty in a number of areas including state investment incentives; economic, land use, environmental regulations, and local preference politics. The agreement is being negotiated by the world's richest nations. The Paris-based Organization for Economic Cooperation and Development has been negotiating for our country since its 1995 organization. The 29 nation

members are would commit signatories to liberalizing and guaranteeing fair treatment of foreign investments. State sovereignty became the issue during the most recent negotiations.

UTAH COUNTIES CHALLENGE MONUMENT

All of Utah's 29 counties and school lands agencies initiated separate lawsuits challenging President Clinton's declaration of 1.7 million acres of the Grand Staircase-Escalante area as a national monument. The suits argued that Clinton exceeded his authority under the 1906 Antiquities Act and violated environmental laws, and asks the federal court to overturn the designation.

The administration's action halted plans for development of a large underground coal mine by Andalex Resources on the Kaiparowits Plateau. Utah representative Chris Cannon said that "When he designated the monument, President Clinton ignored the law, ignored the facts and ignored the people of Utah." The lawsuit argues the president went beyond the scope of the Antiquities Act by using the law "to effect the preservation of wilderness" when only Congress may declare wilderness areas. Mining Week June 30, 1997.

MINING HISTORY ASSOCIATION HOLDS BISBEE CONFERENCE

The Mining History Association (MHA) held their annual conference at Houghton in Michigan's Upper Peninsula Copper Country over June 4, 5, 6 and 7th. About 100 attendees visited some of the mine sites, smelters and processing plants dating from the 1840s. One and one half days of interesting papers included many on the mining industry in the area. The highlight of the conference for many was the one day bus tour covering several old copper mining towns, plants and shipping points on the Keweenaw Peninsula. The conference is always an entertaining and educational experience. It also provides an opportunity for old friends to catch up. Next year the Association Plans to hold their Conference in Bisbee.

MHA is dedicated to preserving mining history. Membership represents many nations. About one third of the members are miners, geologists and engineers, one third professional historians and one third museum curators and directors. Membership dues are \$25.00 per year and the Association can be joined by sending your name and address with a check for \$25.00 per year to the Mining History Association at POB 150300 in Denver, CO 80215. Membership includes quarterly newsletters, the Annual Journal and information on the annual conference.

FONSI FOR SAGUARO NATIONAL PARK LAND EXCHANGE.

The BLM has released its finding of no significant impact (FONSI) and environmental assessment (EA) for the proposed Saguaro National Park exchange. The lands involved the exchange of 711 acres of land near the Saguaro National Park in Pima County for 4,322 acres of lands in Maricopa County between Sun City and Lake Pleasant Regional Park. The offered lands will be incorporated into the Saguaro National Park without an opportunity to prospect or mine. Fee simple title, with mineral rights, to 4,322 acres of lands now open to mineral location. The new owner LLC is a real-estate developer and it is very unlikely that the lands will ever again be open to mineral location. This land has produced gold, silver, lead, zinc, quartz, feldspar and mica in the past and has been productive in the last ten years. There is a great potential for additional production from this property. The net result to Arizona will be the loss of over 5,000 acres of prospectable lands in Maricopa and Pima Counties without compensation to the American People for the minerals these lands contain. If Secretary Babbitt can claim that patenting of a mining

claim at a cost of perhaps \$50,000 per acre is a Christmas gift how does he feel about this transaction. He is trading 711 acres of land near a park for 4,322 acres of lands and exceptional mineral rights to a housing developer. And no cash will change hands. The Saguaro National Park was created by Presidential Proclamation 2032 back in 1933 to preserve and protect the exceptional grown thereon and it has been growing ever since. Most of the Tucson Mountains and a few good mines were added in 1961 by Presidential Proclamation 3439, and the Saguaro National Park Establishment Act of 1994. The area has potential for deposits of copper, molybdenum, gold and silver. That potential is now locked away in a park and an additional 4,322 acres of once productive mining lands will also be locked up forever. The last day to comment by mail to Bill Childress at BLM Phoenix Field Office, 2015 West Deer Valley Road, Phoenix, Arizona 85027 is July 10, 1997.

HOUSE EXCLUDES FUNDS TO PURCHASE NEW WORLD MINE

The House Interior Appropriations Subcommittee excluded the \$65 million wanted by the Clinton Administration to purchase the New World Mine. Representative Ralph Regula (R-OH), chairman of the House Interior Appropriations Subcommittee, cited the costs that would be incurred and observed that 30% of America is already owned by the federal government. He said the nation had higher priorities and cited the maintenance backlog at national parks, forests, wildlife refuges.

The implications of this are many and dramatic. It is a slap in the face for President Clinton who wanted to pay the miners for not mining, the environmentalists who thought the whole thing was a done deal, the company who was in the process of exploring for a new property, the exploration industry who was looking at government as a lucrative market without ever having to blast a rock and us the consumers who would have to look elsewhere for a source of gold. But most of all government will have to figure out how to spend the money they would have spent for the mine and how to spend all of the tax dollars the mine would have created. Now Yellowstone won't have a bunch of new acres to ignore and their focus can be directed to getting more fish in Yellowstone River for the bears to eat. Mining Week June 23, 1997

ESA DOES NOT PROTECT ENDANGERED SPECIES

According to a study by the National Wilderness Institute (NWI) the Endangered Species Act (ESA) has failed its mission to recover or protect endangered species. The study revealed that:

- Numerous species were incorrectly diagnosed as endangered or threatened with extinction.
- The law created a unique definition of species unrelated to standard biological terminology
- The criteria for listing does not require conclusive data showing a true species faces extinction.

The study further disputes the success of the recovery program and claims that recovery of some species may be in spite of government action. It charges that some cases claimed as a success actually showed there was little improvement. That study shows that 18 of the 22 cases claimed for reclassified from endangered to threatened actually had to reclassified because of data error. Mining Week, June 23, 1997.

MSHA TRAINING SCHEDULE

The Arizona Mine Inspector offers courses for MSHA training and instructors as required by federal law 47.10 30CFR Ch. 1(7-94) for both underground and open pit experienced and inexperienced miners. The program is mandated by MSHA and funded through a state's grant program. There is no cost for the program, however there is a \$60 fee to cover materials.

Trainers Bob Zache and Mike McQuinston are coordinated through Dee Smith at (602) 542-4628.

Most classes are open to the public but the sessions fill up quickly and reservations are required. Classes include Statutory Rights of Miners, Respiratory Devices, Transportation & Communication, Emergency Procedures, Ground Control, Electrical Hazards, Health and Safety, Hazard Recognition, Explosives, First Aid/CPR, Fire Safety, Accident Prevention, Mine Site Specific, Barricading, Self Rescue/Respirators, Accident Prevention, Clean Up and Housekeeping, Mine Gases, Roof & Ground Control, Explosives, Ventilation, Escapeways, and MSHA Instructor Certification Training Classes are offered on a regular basis around the state.

The Mine Inspector also offers class for special requests such as Cyanide Safety, Abandoned Mines, Transportation of Explosives, Mine Rescue, Mobile Equipment Safety, Chemical Safety and Training plans. These classes can be arranged by special order. To arrange for a class or to join an existing one please contact Dee Smith in the Mine Inspector's Education & Training Division (602) 542-5971

BLM SOLICITORS RESTRICT PATENTS

In addition to all the other things that Washington is doing to miners the latest rulings by BLM's solicitors will allow patent to only one mill site claim for each lode or placer claim. They also want mining companies to use other forms of getting title to lands for waste and tailings storage sites such as transfers and exchanges. The action coming through the BLM office was signed by Bruce Babbitt. A great number of miners will be filing lawsuits. BLM has been granting title to mill sites as needed for waste storage since the duties of patenting mining claims was vested in that agency. This was an obvious slap at the mining industry by the present administration.

BLM PAYS ARIZONA GOVERNMENTS \$9.6 MM PILT

The Bureau of Land Management actually pays Arizona and its political subdivision for keeping approximately 27.5 mm acres off the state tax rolls. The payment is called a PILT (payment in lieu of taxes) and is called for by a 1976 act of Congress. The payments are made to state and local governments that have Federal land within their jurisdictions. Recipients of the PILT were all of Arizona's 15 counties. Some of the criteria for the decision on who gets what and how much, are inflation, population, and the per acre value of the land. They apparently value the land at \$1.29\$ to \$0.17 per acre. Now that we know what they think the land is worth the so called \$5.00 per acre for patenting a mining claims sounds like a great deal for the Federal government..

In stark contrast to the Federal government that has tied up 76% of the land in Arizona, the Arizona mining industry operates on less than one quarter of one percent of the land in this state and delivers to the state and local government a total of \$132 million dollars. Included in this amount is \$48.5 million in property taxes.

INACTIVE MINE INVENTORY NEEDED

There is a great disparity between the number of inactive or abandoned mines estimated by various agencies and for very good reasons. First of all is the definition of what constitutes an abandoned mine and how it should be counted. Is a mine one opening or can it be several interconnected workings developed to extract ore from a single source? Does it have to have

previous production or can it be a prospect pit that never amounted to any thing more than a single 6 foot pit? Should it be located by Township Range and Section which is fixed on the ground or should it be located by UTM's Grid or some other method? Does every state agency which claims jurisdiction need its own numbering and identification system? All of this is going on and it is causing much confusion.

The Arizona Mine Inspector is estimating 125,000 abandoned mines while the BLM has estimated 90,000 on just the land that it administrates in Arizona. The term abandoned also needs to be defined. The Mine Inspector makes their estimate by projection from the lands they have already inventoried for the US Forest Service. The inventoried lands were highly mineralized. The AZMILS (Arizona Mineral Industry Location System) study which was performed for the US Bureau of Mines by the Arizona Department of Mines and Mineral Resources from published data and USGS topographical maps, identified less than 30,000 mines in the entire state. The Arizona Department of Environmental Quality has made a number of different estimates covering a great range of numbers. State Land, Game and Fish and a host of Federal agencies also need and deserve an accurate and complete inventory.

There is a justified fear of old mines but, some mines or prospects are not as dangerous as the average bathroom or kitchen. There are a number of people who have made an objective of climbing through every old working they can find. Some have become quite skilled at recognizing hazards and avoiding them. The knowledge of what constitutes a hazard however should never be left to the inexperienced as it will nearly always result in a disaster. Some of these old workings are not as dangerous as a natural cave and should not be reclaimed or reworked. Not all old mines are abandoned and some mine owners consider these old workings as an asset on the property. They are used to store water and other materials and some have become habitat for a number of wild creatures. Probably very few old workings have any adverse environmental effects. In fact the environmental effects of many old mines are probably a great plus for the environmental in establishing permanent water and shelter.

Old mines are certainly a boon to prospectors and geologists. These windows into the earth show good prospecting knowledge and most of them identify a mineralized vein or area. From studying the dumps around these old workings an exploration geologist or prospector should be able to define the type of mineralization in the area and make opinions as to whether additional work in the area is justified or where it should be focused. The loss of this information by filling and reclaiming the workings may result in more environmental disruption as more exploration will be required to replace the information loss.

A complete and accurate mine inventory for Arizona is needed. The Arizona Mine Inspector has identified the need and has established some criteria for the data base that will be valuable to other agencies. Most of his work was done with grant funds from the Bureau of Land Management and other Federal Agencies. This inventory for all of the federal and state lands needs to be completed before any attempts are made to reclaim the existing workings.

SBA PROVIDES INFORMATION FOR SMALL BUSINESSES

The Small Business Administration (SBA) is distributing materials that may be useful for companies that qualify as "small entities" (generally 500 or fewer employees for mining companies) under the Small Business Regulatory Enforcement Fairness Act of 1996 (SMREFA).

The National Ombudsman, along with 10 Regional Small Business Regulatory Fairness Boards, was created by Congress to receive information from small entities around the country regarding federal regulatory enforcement actions.

The Materials included are:

A letter from the national Ombudsman describing the SBREFA provisions dealing with the Ombudsman.

A map and listing of the 10 Regional Small Business Regulatory Fairness Boards' locations and members.

A suggested news column by SBA.

A federal agency appraisal form

A summary of SBREFA entitled "Your Rights to Regulatory Fairness."

Comments received from the appraisal forms ultimately will be used in a report to Congress to evaluate the performance of federal agencies.

For more information, contact the national Ombudsman at 888/REG-Fair (734-3247) or www.sba.gov/regfair Mining Week Sep. 2, 1997

PERMITTING ASSISTANCE OFFERED BY DEQ

Doug Sawyer, Ombudsman, for the Arizona Department of Environmental Quality (DEQ) is offering to help small miners and others get permits from the DEQ such as the APP, 401, and air quality permits. He would like to set up a series of workshops with the people from ADEQ who will be reviewing permits and those people trying to get permits. The objective is to help small miners who are interested in operating in the state. Doug is a geological engineer who has spent a lot of time working for consulting firms who have put together permit applications for industry. If you would like to set up a conference in your area please contact Doug Sawyer at (602) 207-4248 or 1 (800) 234-5677.

STATE LAND AND AG REVIEWS AIR FORCE TAKING OF MINERAL RIGHTS

The State Land Department is reviewing a large taking of land by the Barry Goldwater Air Force Range to assess the value of the mineral rights contained in these lands. What the condemnation of the state lands within the Range does is to take land away from the State of Arizona and Return it to the Federal Government. On the surface this appears to be only the exchange of lands between two forms of government but, in this case the lands are taken away from the access and benefit of the people of the state of Arizona and give to the Air Force where they will be locked away forever. The extent to which these lands may be used to produce our future mineral needs will never be determined because these lands are locked away from the citizens of Arizona and the Federal Government has thrown away the key. Now there is another large tract of sections taken away from Arizona and given to the Federal Government.

FOREST SERVICE CATCHES HELL FOR ROADLESS PROPOSAL

The US Forest Service's proposal to discontinue road building in some roadless areas of federal forests ran into opposition in congress when several key Republicans as the Congress started reviewing the proposal. The agency has extended the public comment period on the proposal, and has planned 25 public meeting in Washington, D.C. and 16 states. In general the proposal would stop all road building efforts in certain roadless areas of national forest for up to 18 months. They would then of course ask for an indefinite extension of this policy. The policy was initially designed to protect and preserve only a few areas but would soon be extended to all forest service properties. This is an obvious a step toward withdrawing all national forests from

commercial development, removing all pretenses of multiple or beneficial use, prevent ranching, mining and logging and to strand forever those parcels of private lands that are located within the national forest. Most of the support for the plan was coming from Democratic legislators from metropolitan areas who are active on forest service scene and environmentalist who would like to see all public lands withdrawn from public use.

The Republican opposition comes from senators and representatives who represent large rural districts where the forest service controls large portions of their states and these lands have been used as multiple use lands. Only 13% of the lands in the state of Arizona for example are privately held and the people of this state must use government controlled lands to support the population of the state.

MINING LAW REFORM AGAIN IN CONGRESS

There is a renewal of bipartisan support in Congress for Senate Bill 1102 which was introduced last July to reform the 1872 Mining Law. The bill, sponsored by Larry Craig (R-Idaho), Senators Harry Reid and Richard Bryan of Nevada and other western senators is touted to be a "fair and reasonable bill." It starts off by being called the Mining Law Reform Act of 1997 and has the official title as "A bill to amend the mining laws to provide a reasonable royalty from mineral activities on federal lands, to specify reclamation requirements for mineral activities on federal lands, to create a state program for the reclamation of abandoned hard rock mining sites on federal lands, and for other purposes." There is nothing new in this bill. We have heard all the terms and the arguments before.

ENVIRONMENTALISTS SUE LAND DEPARTMENT

Apparently the Arizona Land Department rejected the offer of environmental and bird hunting groups to lease state grazing lands for the purpose of cutting it out of production and letting the grass become a blazing problem as it dries out in the summer. Embroiled in a suit in the Maricopa County Superior Court representatives of the Arizona Center for Law in the Public Interest, Forest Guardians and the Western Gamebird Alliance have sued the State Land Department for refusing their applications. The groups claim they would have paid the State Land Department three to five times as much as the ranchers who pay \$2.50 per head per month but then admitted that they did not intend to run stock on the land. The article in the Capitol Times did not talk about the total payment to the State, only the per head of livestock per month cost. It compared the \$2.50 per head per acre per month to \$6.00 in Colorado and Washington but did not talk about the amount of feed and fat each head of cattle would have available to them and how much more the cattle would gain per month in Washington or Colorado than in Arizona.

NEW OFFICERS FOR THE MINING FOUNDATION OF THE SOUTHWEST

Martin C. Kuhn was recently elected President of the MFSW. He is a Colorado School of Mines graduate and holds a PhD in metallurgy. Presently he is the, President of Western States Engineering, Principle of the Mining Advisory Group LLC, and Director of Netwest Development Corporation in Tucson. He also serves as the Director of the Arizona Conference of AIME and Chairman of the Arizona Section Mining and Metallurgical Society of America.

Dr. William H. Drescher will serve as Vice President and Chairman of the Membership Committee, and Susan F. Wick will continue as secretary/treasurer. The Foundation continues to grow and provide support for mining-related issues.

ARIZONA OMBUDSMAN CITIZENS' AIDE (a place of last resort)

Here is a place where you can go for help if you are being unfairly beaten up by a state agency. The Arizona Ombudsman - Citizens' Aide has been organized by the legislature to "make government more responsive to the people of Arizona." If you are having problems with a state agency and feel that they have exceeded their authority perhaps you should call on the services of the Arizona Ombudsman - Citizens' Aide. They will discuss your complaint with you in confidence. They can provide information you need to solve the problem yourself or they will investigate your complaint and act as a helpful mediator in negotiating a solution. The ombudsman is not an advocate who will automatically take your side in a conflict. Their job is to consider the question in an impartial and objective way. If they decide that you have been wronged by a state agency they will work with you and the agency to find a fair solution. If they decide you have no complaint they will tell you why. The Ombudsman has no authority to change rules, regulations, policies or procedures but they can encourage an objective and problem solving report with the agency. If they are not able to work out a solution with the agency they will make a formal report of their findings and recommendations to the legislature, the governor and the public. Using the Ombudsman should be a last resort. They won't investigate your complain until you have exhausted all other forms of recourse without success. There are some things the Ombudsman cannot do. They are a part of state government and cannot accept complaints between individuals, companies or organizations, federal, county or local government. They don't deal with universities or community colleges, elected officials, advisors, legislature or its staff or the judicial branch of government. They can be reached at (602) 277-7292 or 1-800-872-2879 or drop into their office at 3737 N. 7th St. Ste 209, Phoenix, AZ 85014

ADVOCACY

The Department, by legislation, is required to serve as an advocate for Arizona's mining industry particularly the small miners and prospectors. During the fiscal year the Department was an advocate at the following functions:

FABULOUS 4TH

Since the Arizona Mining and Mineral Museum was moved to its new location in 1994 the Department has opened the Museum for the City of Phoenix Fabulous 4th Celebration on the Capitol Mall. In these celebrations the Museum was opened for a select group of VIP's and performers. Dinner for the VIP party was catered by Monti's and soft drinks and water were provided by Kalill Bottling Works. The VIP's included staff and volunteers from the City of Phoenix and the sponsors of the event. The activity has taken up large amounts of Museum staff and volunteer time. Although the attention and participation was great fun for the participants the Museum suffered a lot of wear and tear and the Department was not reimbursed for the staff time and expenses of the Department. The VIP party was moved for the 1998 program to the Courts Building across Washington Street.

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

The Arizona Department of Environmental Quality (ADEQ) has been a major stumbling block to getting new mines permitted in Arizona and in keeping the old ones operating. The Department is always been available for consultation by phone or visit with ADEQ employees and the Director of the Agency has visited with Director Rhodes of ADEQ. We have attempted to smooth the road to permitting by providing information and working with individual miners and prospectors when ever asked to participate. The Department has responded to Acquirer Protection Permit Applications whenever requested and has testified at the various public meetings and hearings. During the last fiscal year we have been particularly active as follows:

On Jan. 15, 1998 The Director met with the ADEQ, ombudsman Doug Sawyer and Small Miner, Glenn Burkhardt in Tucson on the LaColorada project in Santa Cruz County. Burkhardt has received a permit on his silver operation largely through the efforts of the Department of Mines and Mineral Resources.

Mr. Sawyer, ADEQ Ombudsman, was invited to be the speaker at the Maricopa Section of AIME, the Capitol Chapter of People for the USA, The Phoenix Roadrunners Prospectors Club and several other organizations through the efforts of the Department. This has turned out to be a very fortunate association.

During the year ADMMR lost a strong contact between the Department and ADEQ with the loss of Mike Maier and ADEQ staff member in Tucson. Mr. Maier was a former employee of Coe and Van Loo Consulting Engineer and a co-author of "Pit Slope Caving" with Mason Coggin and Dr. Richard Rush in 1976.

ARIZONA GEOLOGICAL SOCIETY

The Department participates in the Arizona Geological Society's programs and meeting. Whenever possible Department employees will attend meetings and field trip organized by the society and has presented program in the past. Budget and time constraints have prevented the

desired level of participation in this Tucson-based Society. Their regular meetings are the first Tuesday of each month and they have generally lined up speakers for an entire year.

ARIZONA MINE INSPECTOR

The Department has maintained a contact and cooperation with the Arizona Mine Inspector and his staff that has been beneficial to both agencies. The Mine Inspector has provided the Department with opportunities that would be difficult to obtain except by an elected official of State Government. The Mine Inspector has included the Director in several social functions and introduced him at several political rallies to support his candidacy for re-election.

One item in particular was a trip to San Manuel when the Director, Ken Phillips, Nyal Neimuth, and Eric Nordhausen joined the Mine Inspector and several members of the Arizona Legislature in visiting the San Manuel Mine of BHP. A special bus was hired for the trip.

The Director has also supported Mr. Martin's re-election campaigns in Phoenix, Tucson and Globe with personnel appearances and advocacy statements.

SOCIETY OF MINING ENGINEERS

The Department has been active in the Society of Mining Engineers for several since creation of the Department in 1939. Several of the staff members of the Department have held offices in the Society and the Director has traditionally held a seat on the Board of Directors of SME's Arizona Conference as a Director at Large. The Director still holds the position and also served as Chairman of the Arizona Section for the last fiscal year.

The Maricopa Section holds monthly meeting in September, October, November, January, February, March, April and May. Traditionally speakers to the Section have been members of industry or government that have had an impact on the Arizona Mining Industry. This year speakers included Doug Sawyer, ombudsman for the Arizona Department of Environmental Quality, Dick Richards and Leon Munyan representing World Marketing Alliance on individual investing, Suzanne Pfister "Surviving the Slings and Arrows of Public Participation," Richard Travis, "Restarting Ajo," "ASARCO Mining Company," and Dr. Donald Burt Ph.D. of ASU with a talk about Peru,

The Director has also attended several meetings of the Tucson Section where he was also a scheduled speaker in preceding years. At these Tucson Meetings the Director was acknowledged by various members for their work in exposing the International Precious Metals Company for which they won an injunction from an Arizona Court barring them from talking about the value of their stock or the possibilities of their claim to a platinum and gold discovery in the dirts of Arizona's deserts.

The subject was again discussed at the Arizona Conference of AIME held at the Double Tree Inn in Tucson on December 7th and 8th of 1997 by several attendees. The Arizona Conference of AIME was attended by Nyal Neimuth and Mason Coggin. Keynote Speaker Rep. J. D. Hayworth described the refunding of the Santa Cruz Project.

Arizona Mining Association

The long standing association between the Department and the Arizona Mining Association continued during the fiscal year. The Director was invited to attend the annual Board luncheon at the Sheraton El Conquistador in Tucson and their annual legislators reception at the Phoenix Country Club in Phoenix.

The Director is starting to formalize a long standing association between the Mining Associations Education Committee and the Museum Curator to partnership on a class room teachers' program to inform teachers and students about society's need and use of minerals.

ARIZONA MINE EMERGENCY ASSOCIATION

The Arizona Mine Emergency Association has been formed by the Arizona Mine Inspector, several mining companies and mining contractors to provide the necessary mine rescue equipment and personnel to comply with the requirement of the Mine Safety and Health Administration. The Director has served on the Board of Directors of this organization for six years.

During the year the Board of Directors has held meetings at the Phelps Dodge Safety Building in Bisbee and toured the Copper Queen Mine Tour which has become a member of the organization. The board presented a special award of recognition to Larry Burgess, team leader for the San Manuel Mine Rescue Team for winning a second prize in the National Mine Rescue Competition. The Board Meeting was held at the San Manuel Underground Training center at the San Manuel mine. BHP hosted the meeting. The presentation of the award had been delayed after a dispute with the MSHA's judges was overruled after the event. Other meetings were held in Jerome, Oatman, Phoenix and Prescott.

AMIGOS (ARIZONA MINING INDUSTRY GETS OUR SUPPORT)

The Department has courted a friendship with AMIGOS since its formation in the 1970's. This association of mining industry suppliers and consultants has become a major advocate of Arizona Mining and their Director, Sydney Hoff-Hay, serves on the Board of Governors for the Department. During the years the Director has attended and participated in several events including the following:

Feb. 27, 1998, AMIGOS Face to Face with Gene Consaulus VP and GM of Cyprus Bagdad at the Arizona Country Club.

Mar. 20, 1998, Annual Meeting for the AMIGOS at Old Tucson. Tim Snyder was the Key Note Speaker and Representative Kolbe received the Copper Sissors Award.

ARIZONA MINING AND MINERAL MUSEUM FOUNDATION

The Mineral and Mining Museum Foundation, originally the A.L. Flagg Foundation has been an active supporter of the Mining and Mineral Museum. The foundation which hold an annual Flagg Mineral show at Mesa Community College holds meetings during the fall, spring and winter in the classroom at the Museum. During the year they have had several mineral shows and have done considerable work in preparing exhibits for the museum and in providing new materials and information. They have also contributed heavily for the Museum's new television microscope. During the year the Foundation has started a program of organizing and maintaining their own collection and providing this information to the Museum staff. Cooperation between the Foundation and the Department has been excellent during the year.

PEOPLE FOR THE USA

Members of the Board of Governors has suggested that local chapter of People for the West (Now People for the USA) should be organized by the Department since they share some of the same objective as small miners. The Capitol Chapter of People for the West was organized and has had an increasing membership now standing at about 70 members. The organization meets on the first Thursday of each month and the format is to have a speaker who will talk about issues facing public land users and private property holders. They also held a legislative dinner in the Museum for their favorite Arizona Legislators.

US DEPARTMENT OF INTERIOR BUREAU OF LAND MANAGEMENT

The Bureau of Land Management has been very cooperative in including the Department in its programs for the lands under their jurisdiction in Arizona. They have invited the Department to participate in their public hearings and asked us to be one of the speakers at their seminar for prospectors and miners at the BLM Training Center. Unfortunately the Director was not able to participate due to an illness. The Director was able to attend the Grand opening for the BLM's Public Lands Center on May 8, 1998. He was also able to attend and write letters to the BLM concerning the Yarnell Mine EIS, and an abandoned mines hearing on June 18, 1997

ARIZONA BOOK PUBLISHERS ASSOCIATION

In order to improve the quality of publications for the Department and expand on the agencies ability to raise money by selling its publications the Director had the Department Join the Arizona Book Publishers Association in 1994. The Association is a trade organization of authors, publishers, distributors, book manufacturers, printers, book stores and others who are interested the business of writing, publishing and selling information. The Director has taken an active part in this organization and has served on various boards and committees. He was elected president of the Association in June 1998.

Last year he served on the Glyph Awards Committee which held a banquet at the Airport Holiday Inn on June 21, 1997. Awards were given away for several categories including best book, best design, best cover, best of subject and several others. Entertainment was provided by several local talents. Winning one of the awards will help sell books and that is what the association is all about.

In addition to the Glyph Awards Committee, the Director attended all of the meetings, which are held on the last business day of each month, one dozen committee meetings, the book fair and one of their short courses. The regular meetings have included programs on Tax and Marketing Tips, What Publishers Must Have from Authors, The Best of Publishing University, Book Expo America, How a Good Index Can Sell More Books, Award Winning Book Cover Design, Strategic Planning for Success, Don't Market From Your Desk! Hitting the Road to Sell Books and Book Fulfillment Survey.

ADVOCACY STATEMENTS

The Director and several members of the staff have been speaking to public audiences throughout Arizona and getting recognition at functions. During the last quarter department personnel have been involved in the following advocacy statements:

June 5, 1997 Mining History Association Annual Convention, Houghton, Mich.

- June 16, 1997 6:00 PM The Director received a \$500 check from the Arizona Treasure Hunters Association for the Arizona History Rendezvous
- June 18, 1997 Ken Phillips presented a program to two groups of 11 middle school and junior high school teachers on mineral resources used in making common home construction and repair items.
- June 21, 1997 ABPA Awards Banquet at the Holiday 44th St. and Washington beginning at 6:30 PM. The Director was invited to read a poem that he had written for the occasion.
- June 27, 1997 Arizona Mine Emergency Association meeting at the Phelps Dodge safety building in Bisbee. All of the Board Members were present.
- July 16, 1997 The Director attended Asarco's dedication of their Silver Bell Mine Solvent extraction/electrowinning plant at 11:30 AM at the mine site.
- July 17, 1997 "Gold Placer Equipment" was the subject of a talk by H. Mason Coggin to the Arizona Road Runners Prospectors Club at the 12th St. and Indian School at 7:00 PM.
- July 22, 1997 The Director attended the Ray Land Exchange open house scooping meeting at the Mesa Community Rendezvous Center 201 N. Center Street. About 20 people attended the meeting. The most serious comments were about the trails and roads that would be lost across the selected lands if the exchange were granted. The trails could be rerouted.
- July 23, 1997 The Director attended the Phoenix Fabulous 4th lunch 12:00 to 1:00 at the Arizona Club 37th floor 201 N. Central Ave. and received the poster for our efforts over the 4th of July.
- Aug. 6, 1997 The Director spoke to about 40 members of the Mesa Gold Diggers at their monthly meeting about "Life in the underground, The life of a miner."
- Aug. 9, 1997 Leaverites get together at Rock Springs Cafe at 6:00 PM
- Aug. 15, 1997 Arizona Cowboy Poet's Gathering "Some things never change" A three day event. The Director participated as a scheduled artist and recited and sold some mining poetry.
- Sep. 26, 1997 The Director and Gary Spraggans met with Forest Service representatives at the Prescott National Forest Office in Prescott to discuss Mr. Spraggans appeals concerning his mining plan on the Fat Jack Mine in Yavapai.
- Dec. 6, 1997 The Director attended the Mining Foundation of the Southwest's American Mining Hall of Fame Banquet at the Westin LaPaloma
- Dec. 11, 1997 Meet with Paul Hansen et al. 926-2051 for a video tape interview about Destination Tombstone after 3:00 PM.
- Jan. 9, 1998 Rockazona Gem and Mineral Show Jan. 9, 10 & 11 from 8:00 AM to 4:00 PM. Several members of the staff and volunteers will have booths at this event.
- Feb. 17, 1998 The Japanese Friendship Garden Stone Selection Committee will meet at the Department to tour the museum and visit with the staff and officers. Ken and Mason met with Takeshi Hirose, Nozomu Ohkita, Minoru Shuto, Koichi Hara, and Masako Takiguchi for about one hour. The subject was rocks for the garden.
- May 4, 1998 The Director met with Bernadette Heath to examine maps of Arizona showing the relative position of roads in Arizona and the mining districts they serve. Mrs. Heat is planning a series of articles about Arizona's roads for Arizona Highways during the year 2000.

WESTERNERS INTERNATIONAL

The Director has been a member of Westerners International for several years. Westerners International is an association dedicated to the preservation of Western History. Over the last two years the Director has been the Sheriff of the Phoenix Corral. Duties of the Sheriff include setting up program and acting as the Chairman for the organization. The Phoenix Corral has about 120

members of which 50 to 80 attend the First Wednesday night meeting at the Beef Eaters Phoenix. The new Sheriff Kathleen Garcia will serve in October.

During the year the Phoenix Corral had the following programs: Aug. 26, 1997, The Director organized a special event for the Phoenix and Scottsdale Corral of Westerners, First Families and anyone else interested in Arizona History. June Polly Rosenbaum and Rose Mofford "Women in Arizona Politics" and "Governors I have known," Oct. Mr. Bill Fedderson, "History of Professional Baseball in Arizona." Ron and Mildred Hooper, "Zane Gray under the Mogollon Rim." Dec. 3, Brian Sandwich "Hanging of Eva Dugan" Feb. Judy Martin, "Arizona Walls If Only They Could Speak" Mar. Ruth Ann Brown "Autoharp Irish Songs and Melodies" Apr. Lloyd Clark "Here's Looking at You" May Debra Dodds, "Pioneer Living History Museum"

ADMMR BOARD MEETINGS

The Department Board had seven meetings during the year. The following is a schedule of those meetings:

Sep. 17, 1997, 1st Quarterly Meeting at the Department.
Dec. 19, 1997, 2nd Quarter board meeting in the Conference Room
Mar. 12, 1998, 3rd Quarterly Meeting at the Department
Jun. 11, 1998, 4th Quarter meeting in the Conference Room
Aug. 6, 1997, Special Board Meeting at the Governor's Regulatory Review Council
July 16, 1997, Special Board meeting at the Department
Aug. 22, 1997, Special board meeting to discuss the IPM with the Board of Governors.

FIELD TRIPS

The following field trips were conducted by Department personnel in 1998:

July 26, 1997, Cochise, The Director inspected the subsidence at Tombstone and delivered maps of the underground workings to Hollis Cook of AZ Parks.
Aug. 19, 1997, Pinal, Ken Phillips toured the Western Fiberglass insulation plant in Eloy.
Aug. 20, 1997, Ken Phillips traveled to the Shipley dolomitic limestone deposit in Mohave, Co.
Aug. 28, 1997, LaPaz, Ken Phillips visited KH and Asso. research pilot mill facility at Aguila.
Aug. 28, 1997, LaPaz, Ken Phillips visited the Department of Defense manganese ore stockpile at Wenden in La Paz County
Aug. 28, 1997, Greenlee, Trip to Morenci for the Director, Board Chairman Bill Miller and Delbert Lewis, President of Media America Corporation.
Sep. 10, 1997, Pinal, The Director visited Biosphere 2 which is about one mile south of the Little Hill Mine.
Sep. 10, 1997, Pinal, The Director visited with Dave McGee, President of the Little Hill Mines, Inc. of Oracle.
Sep. 10, 1997, Pinal, With the permission of Glenn Zinn, President of AMT International Mining Company, the Director visited the Bunker Hill Mining District
Sep. 27, 1997, Yavapai, The Coalition Field Trip was scheduled to Mingus Mountain for banded Red jasper and Hematite. Contact Ralph Graves at (520) 284-1270 Bring Lunch.
Nov. 21, 1997, Maricopa, Ken Phillips traveled to the AZ Oxides plant and office.
Nov. 22, 1997, Pinal, The Museum Curator took a group of 42 teachers from around the state to ASARCO's Ray/Hayden complex.

- Dec. 2, 1997, Pima, The Director visited Karchner Cavern as an unbiased mining type with the State Mine Inspector and members of other state agencies.
- Dec. 4, 1997, Yavapai, Ken Phillips visited the Phoenix Cement Plant' operation and Chemical Lime's operations in the Verde Valley
- Jan. 7, 1998, Pinal , Trip with Bill Miller for 8:00 AM to meet Hank Chamberlain and at their gold recovery process mill off County Club on way to Collidge
- Jan. 17, 1998, Maricopa, Foundations Annual Tailgate Show at Mesa Community College. The Director attended.
- Jan. 22, 1998, Cochise, Trip to Tombstone, Bisbee & Mission with the Sun Lakes Rock Gem and Silver Club.
- Jan. 25, 1998, Cochise, The Director inspected the subsidence at Tombstone.
- Jan. 30, 1998, Maricopa, The Director met with Board Chairman Bill Miller for a few minutes then toured the MAC Communications Center on North 7th Ave.
- Feb. 12, 1998, Maricopa, Ken Phillips is scouting around for a place to take the Japanese visitors to look at rocks with personality.
- Feb. 17, 1998, Maricopa, The Japanese Friendship Garden Stone Selection Committee with Ken Phillips visited the Red Mountain and Apache Stone Yard
- Feb. 18, 1998, Maricopa, The Japanese Friendship Garden Stone Selection Committee with Ken Phillips visited Sedona and several rock quarries along the way.
- Feb. 19, 1998, Maricopa, The Japanese Friendship Garden Stone Selection Committee with Ken Phillips and Mason Coggin visited other stone yards and quarries in the area of Turkey Track and other pits.
- Feb. 26, 1998, Maricopa , The Director Visited the Pioneer Museum with Jennifer Simmons and Debra Dodds.
- Mar. 2, 1998, Pinal, Magma with Ken Bennett and Ken Phillips. We went about 1/2 mile underground in the 500 adit and the Never Sweat Tunnel.
- Mar. 2, 1998, Pinal, Field trip to Reymert with Ken Phillips and Mason Coggin. There were several mineral collectors working in the old pit area.
- Mar. 2, 1998, Maricopa, Ken Phillips and Mason Coggin visited the Rock Resources, Inc. yard at 15815 N. Frank Lloyd Wright Blvd. in Scottsdale
- Mar. 2, 1998, Pinal, Mason Coggin and Ken Phillips visited briefly with Leroy Lucero at the Superior Perlite Plant.
- Mar. 6, 1998, Maricopa, Maricopa Lapidary Society Gem and Mineral Show at the North Mountain Preserve
- Apr. 3, 1998, Cochise, The Director visited Airmetco's Johnson Camp operation and found the plant operator working.
- Apr. 3, 1998, Cochise, The Director visited the site of a sampling operation at the confluence of Monk Creek and I-10. (T12S R27E Sec. 29 SW)
- Apr. 3, 1998, Cochise, The Director visited with Don Riggs at his sand and gravel operation in Dos Cabezas.
- May 2, 1998, Greenlee 4, Field Trip, The 1998 SME Environmental Division Arizona Conference Spring Meeting will meet at the Morenci Motel Banquet Room 8:00 AM
- May 3, 1998, Pima, Ajo with Mary Estes There is an opportunity to turn the Greenway House into a Mineral Discovery
- May, 15, 1998, Mohave, Gold Road workings with J. McBride, Tour of the Mohave County Historical Society, Trip to Chloride and Mineral Park.
- May, 16, 1998, Mohave, Mohave County Historical Society was visited by the Director and Dr. James McBride

May 16, 1998, Mohave, The Director and Dr. James McBride drove around the old Duval Mineral Park Operation.

May 16, 1998, Mohave, The Director and Dr. James McBride visited the Tennessee mine at Chloride. There does not appear to be any new activity at this site.

May 17, 1998, La Paz, The Director visited the Parker Historical Society where Jim McBride gave a talk on the History of Mining in Arizona.

SPEECHES, SEMINARS AND SPECIAL PROGRAMS

During the year staff and volunteers at the Department gave the following talks and seminars:

Jan. 15, 1997, , Douglas Duffy, "Polishing minerals," at Trailer Village Gem and Mineral Club

Apr. 12, 1997, Susan Celestin, West Phoenix Literacy Counsel At Chris-Town Mall

May 15, 1997, Glen Miller, "Copper Mining And The Importance Of Mining" Challenger Elementary

May 16, 1997, Susan Celestin, " Rocks And Minerals & Their Uses" Phoenix Library - Palo Verde Branch.

May 16, 1997, Susan Celestin, National Science Olympiad. Served As The Fossil Event Supervisor;

June 13, 1997, , H. Mason Coggin, "Cowboy Miner Poetry" for AMIGOS at the Phoenix Zoo

Jun. 18, 1997, Glen Miller, "Executive In Residence Day" The Curator Presented A 3 Hour Programs To Teachers On "Teaching About Rocks, Minerals, And Mining In Elementary Schools" ASU West's

June 18, 1997, , Ken Phillips , "Mineral Resources in Home Construction" to 4-H campers.

June 20, 1997, H. Mason Coggin, "Trail Dust" at the Back Door with others.

Jul. 17, 1997, , H. Mason Coggin, "Gold Placer Equipment" for the Arizona Road Runners Prospectors Club

Aug. 6, 1997, , H. Mason Coggin , "Life in the underground," to the Mesa Gold Diggers

Sep. 8, 1997, , Ken Phillips, "What are Rocks used for?" to the Maricopa Lapidary Society.

Sep. 9, 1997, , H. Mason Coggin, "Miners Houses " to the Motorola Gem and Mineral Club in Mesa

Sep. 12, 1997, , H. Mason Coggin, Gila Valley Poets Friday and Saturday and Sunday a great program for a friendly audience

Oct. 5, 1997, H. Mason Coggin, "How We Use Rocks" 3& 4th grade students in Spartanberg, South Carolina

Oct. 17, 1997, H. Mason Coggin, Superstition Mountain Gathering of Cowboy Poets. Apache Junction, AZ

Oct. 21, 1997, H. Mason Coggin, "Gold Mining in Africa" for the Arizona Prospectors Association

Oct. 24, 1997, H. Mason Coggin, "How We Use Rocks" Desert Palm Elementary 4th Grade students

Oct. 25, 1997, Glen Miller and Susan Celestin, "Magnificent Minerals" With AMA for teachers

Nov. 1, 1997, H. Mason Coggin, "Trail Dust" for Judy Martin Book Signing

Nov. 3, 1997, H. Mason Coggin, "Life in the Underground" Phoenix City Library lecturer hall

Nov. 6, 1997, Ken Phillips, "What do we use that for" and "Where do we mine that" for People for the USA

Nov. 8, 1997, H. Mason Coggin, "Life in the Underground" to MSA Mineral Symposium at the Phoenix Civic Center Plaza

Nov. 12, 1997, Susan Celestin, Speech To Earth Science Classes- Deer Valley H. S.

Nov. 14, 1997, H. Mason Coggin, with others, "Trail Dust "Fountain Hills Men's Club

Nov. 20, 1997, H. Mason Coggin, "How We Use Minerals" Morada School 4th grade near Chandler and Rural

Nov. 21. 1997, H. Mason Coggin, "Cowboy/ Miner Poetry" at the Gilbert School Board

Nov. 25, 1997, Nyal Niemuth, "Maps and Map Reading" for the Leaverites

Nov. 28, 1997, H. Mason Coggin, "The Tabotachi Mine Sonora, Mexico" to the Sonora Commissions Mining History Seminar in Hermasillo, Sonora, Mexico

Dec. 6, 1997, Glen Miller and Susan Celestin, "Hands-On Geology In The Park"

Dec. 14, 1997, H. Mason Coggin, "Cowboy Christmas" at Deer Valley Free Methodist Church with Trail Dust.

Dec. 17, 1997, H. Mason Coggin, and others, "Trail Dust" at Los Olivos Senior for Maricopa Lapidary Society

Dec. 19, 1997, H. Mason Coggin, and others, "Trail Dust" Simons Consulting Company at Bowens

Jan. 2, 1998, H. Mason Coggin, "Cowboy Poetry" and Master of Ceremonies for the Little Buckaroo's Rodeo at the Fair Grounds.

Jan. 2, 1998, H. Mason Coggin, "Trail Dust Rendezvous" at the Back Door Stage.

Jan. 3, 1998, H. Mason Coggin, "Life in the Underground" for the Sun City Poetry Society

Jan. 5, 1998, H. Mason Coggin, "Introduction" Superstition Mountain Treasure Hunters group Judy Martin book signing

Jan. 7, 1998, H. Mason Coggin, "Northern Lights" a Robert Service Shoot out between H. Mason Coggin and Ray Jones at the Phoenix Westerners

Jan. 19, 1998, H. Mason Coggin, "Life of a Miner" for the Sun Lakes Rock Gem and Silver Club

Jan. 24, 1998, H. Mason Coggin, "The Prospector" for a special mining program for Dolan Ellis' Arizona Folklore Preserve

Jan. 26, 1998, H. Mason Coggin, "Life in the Underground" for the Peoria Public Library

Jan. 26, 1998, Susan Celestin, Programs To 2nd Graders At Horizon Elementary School

Feb. 5, 1998, H. Mason Coggin, Cochise Cowboy Poetry and Music Gathering at Sierra Vista a four day event.

Feb. 12, 1998, Diane Bain, "Collecting Rocks and Minerals" Cochise Kindergarten

Feb. 16, 1998, H. Mason Coggin, "Mining in Arizona" for the Copper Trails Chapter of People for the West in Kerney

Feb. 19, 1998, H. Mason Coggin, "Mining in Arizona" for the Maricopa Section of SME

Feb. 21, 1998, H. Mason Coggin, "Life in the Underground" Apache Junction Stew Cook

Feb. 26, 1998, H. Mason Coggin, "Gold Mining in Arizona" for the Dons Club at

Mar. 14, 1998, Glen Miller and Susan Celestin, "Magnificent Minerals" for teachers from Valley And State.

Mar. 16, 1998, H. Mason Coggin, "What we use rock for" Steve Millam's Earth Science Class, Phoenix Christian High School

Mar. 17, 1998, H. Mason Coggin, "Life in the Underground" Oak Creek Gem and Mineral Society

Mar. 19. 1998, Nyal Neimuth, "Land Status and Mineral Rights" for the Phoenix Roadrunners

Mar. 21, 1998, H. Mason Coggin, "Our Public Lands" for the Superstitions Mountain Gold Show at the Apache Junction High School

Mar. 25, 1998, Ken Phillips, "Arizona's Mining Industry" for the Shriners' Hiram Club

Mar. 28, 1998, Glen Miller, "Teaching Science To Students With Special Needs" Phoenix Library

Mar. 28, 1998, H. Mason Coggin, "Trail Dust" at Fiddler's Dream

- Mar. 28, 1998, Nyal Niemuth, "Legal Issues of Producing Mineral from the Public Domain" at the Arizona Mineral Symposium.
- Apr. 2, 1998, H. Mason Coggin, "Mining in Bisbee" for 20-25 Bisbee Westerners.
- Apr. 4, 1998, H. Mason Coggin, "Bruce Kiskaddon" Arizona Book Festival at Deck Park
- Apr. 4, 1998, H. Mason Coggin, "Bruce Kiskaddon" book signing at Barnes and Noble just off I-10 and Ray Road. He was introduced as the Director of the Arizona Department of Mines and Mineral Resources
- Apr. 7, 1998, H. Mason Coggin, "Bruce Kiskaddon" book signing at Barnes and Noble in Scottsdale, introduction as Director of the Arizona Department of Mines and Mineral Resources.
- Apr. 8, 1998, H. Mason Coggin, "Bruce Kiskaddon" book signing at Barnes and Noble in Peoria introduction includes Director of the Arizona Department of Mines and Mineral Resources.
- Apr. 14, 1998, Nyal Neimuth, "Rock and Mineral Identification" Tucson Chapter of ASMOA
- Apr. 15, 1998, H. Mason Coggin, "Copyright Protection" at Barnes & Noble Book Fair in Scottsdale
- Apr. 17, 1998, H. Mason Coggin, "Gold Dust" at the Back Door Stage with others
- Apr. 18, 1998, Glen Miller and Susan Celestin, "Hands-On Geology In The Park"
- Apr. 18, 1998, H. Mason Coggin, *The Director Announced at the Arizona Hardrock Drilling Contest in Miami, Arizona.*
- Apr. 25, 1998, H. Mason Coggin, "Bruce Kiskaddon" Barnes and Nobel at Arrowhead Center introduction as Director of the Arizona Department of Mines and Mineral Resources.
- Apr. 28, 1998, H. Mason Coggin, "A Miner and a Mineral Collector" Scottsdale Gem and Mineral Society
- May 10, 1998, H. Mason Coggin, "Trail Dust" at Pioneer Museum.
- May 11, 1998, H. Mason Coggin, "A Miner and a Specimen Collector" at Rockhounds West in Sun City
- May 11, 1998, H. Mason Coggin, "History of Mining in Arizona" with emphasis on information resources for the Family History Society at the Tempe Community Center.
- May 22, 1998, H. Mason Coggin, "Arizona History" at Cocopaha Middle School
- May 28, 1998, H. Mason Coggin, "Gold Mining" Ecotech Agricultural School
- May 31, 1998, H. Mason Coggin, "Mining Poems" for a Doug Martin program in Tucson

SPECIAL EVENTS, EXHIBITS AND PROGRAMS

THE BORAS HEADFRAME AND HOIST HOUSE FROM BISBEE

During the F.Y. considerable work was done to this outside exhibit including setting of the cages and replacing the guides of the headframe. The APS crane was used to move and reset the locomotive and set cages. Several rocker dump cars were purchased from the Bisbee Salvage Company and used to assist in the interpretation of the exhibit. Foundations were dug and the concrete was poured for the hoist house and sample shack.

The Department and the Director was recognized at the Bisbee Council of Arts and Humanities Annual Dinner at the Turquoise Valley Country Club in Naco, Arizona. The Director was introduced to the 170 attendees and as a consultant on one of their recent exhibits.

The Director and Janice Coggin were guest of Dolan and Rose Ellis at the Arizona Folklore Preserve in Ramsey Canyon on Jan. 24, 1998 for a dinner and private program with the Ellis' and Fred Thomas an old Bisbee miner.

On Jan. 30, 1998, The Director attended the Anniversary Celebration of the Arizona Historical Society at the new Museum on 1300 N. College where he was recognized for his service in assisting the Bisbee Council on Arts and Humanities. About 150 people participated in the program.

OTHER SPECIAL EVENTS

- Jan. 13, 1998, PFW set up for 105 people at a legislative luncheon. 3:00 PM. I will be at Days Inn Coliseum at 7:00 PM for the legislative council meeting in the class room.
- Jan. 14, 1998, PFW Legislative dinner at 6:00 PM to set up. Line up help to move the chairs and table downstairs after the program. Introduce legislators.
- Feb. 21, 1998, 7th Annual Family Day and Prospector Show with the Arizona Prospector's Association at the Museum drew about 160 people into the Museum where they heard stories about gold prospecting, panned for gold and metal detected for coins and nuggets.
- Feb. 28, 1998, The Director will participated in a field day at Apache Junction and was responsible for panning demonstrations an other things.
- Mar. 1, 1998, The Director assisted Elaine Schrader's group in their panning and metal detecting programs at the Lost Dutchman Days in Apache Junction.
- Mar. 8, 1998, The Director attended the Don's Trek and was recognized in one of the information centers.
- Mar. 14, 1998, Nyal Niemuth, Bill and Diane Bain will be hosting a Indonesian Affair to show slides of their trip to Bali, Jaya and Sumatra last summer. This has become an annual bash for most Department Employees.
- Mar. 25, 1998, Department of Education Poetry Judging at the Museum all day.
- Mar. 28, 1998, Sixth Annual Minerals in Arizona Symposium, the Arizona Mineral and Mining Museum Foundation is sponsoring this event for the eight time.
- Apr. 7, 1998, The Director attended a Mining Summit with J.D. Hayworth, 10:00 AM 1st floor conference room at the capital building where the problems of permitting mining properties was discussed with several mining companies and several state and federal agencies. In attendance were the representatives of AMA, BHP, ASARCO, Phelps Dodge, Yarnell mining company, Carlota, AMIGOS and Phelps Dodge. State and federal agencies represented at the Summit were EPA, Corps of Engineers, Game and Fish, Fish and Wild Life, State Lands, DEQ, Dept. of water resources, BLM and Forest Service. The issue of how to expedite permitting was presented by both sides. One reoccurring theme was the damage done by citizens suits where one individual with a law suit could shut down entire industries and cost thousands or even hundreds of thousands of jobs. Other issues discussed were the time it takes to get permits and sometimes frivolous complaints that suck up large amounts of time and money.
- Jun. 18, 1997, "Physical Properties of Minerals & Mineral Identification, "Bag'um and Tag'um" (a hands-on activity where teachers are given a bag full of "stuff" and taught the mineral composition of each object), and gold panning; Chapman University.
- Jul. 15, 1998, Urban Systemic Initiative. The Education Curator provided training to 12 teachers about how minerals are used in our everyday lives and how to use the Museum as a resource to improve science teaching

UPCOMING EVENTS

Date Event, Location, Comments

- Jun. 2, 1998, The Director will address the Glendale Kachina Rotary meeting about Mining in Arizona at 12:00 Noon. They meet at Manuel' about 5700 W. Peoria. Contact Dick Martin at 931-9257
- Jun. 2, 1998, AGS Meeting in Tucson Micael McGuire, City of Tucson's Focus on water quality Program. Make reservations by phone (520) 770-3500.
- Jun. 3, 1998, Westerners will meet at C.J.'s Studio for their annual BBQ Dinner and Cowboy poetry and singing entertainment. I have lined up Sue Harris to attend and present an hour program \$50.00.
- Jun. 4, 1998, PFW at the Museum John Atkins, a candidate to the state legislature as representative from District 22 will talk about mining laws, Business & Industry and small industries that are hurt by the actions of governmental agencies. Pho. 602 153 0526
- Jun. 4, 1998, Meet with Carrie and Mary Bird for the Smithsonian Exhibits Dept. about a Mining Exhibit 2-5 PM and again for dinner at 7-9
- Jun. 5, 1998, Meet with Carrie, Mary Bird and the committee from 8:30 to 11:00 AM about a Mining Exhibit
5-6 PM Book Signing for Sally Zanjani at the Museum
- Jun. 6, 1998, Mining History Association Annual Conference in Bisbee, AZ. Roots of the C&A among other stories. Field Trip to Cananea, a four day event.
- Jun. 6, 1998, Take a bus load of Mining Historian to Cananea, Mex for an all day field trip about 50 people. 7:00 Am to 7:00 PM.
- Jun. 12, 1998, Meeting of the Arizona -Mexico Section to talk about Critical Mining Issues Friday June 12, 9:00 AM in the Ritz Carlton Hotel Phoenix, AZ Contact Marko Andrino (602) 542-1346
- Jun. 15, 1998, A training session with the Governor's Office of Stratigic Planning and Development for our agency. Ann will confirm the meeting, time and place. Call Traci at 542-5381
- Jun. 17, 1998, Arizona State Capitol Museum "Jay Ziemamm will talk about "Kartchner Caverns" 11:45 AM
- Jun. 24, 1998, Final Meeting, 10:00 AM at the Phoenix Center 1202 N. Third St. Phoenix 85004, Call Brian Slutsky - Chairman 262-4633.
- Jun. 30, 1998, The Arizona State Parks Heritage Fund Historic Preservation Grants are due today. We are working with the Foundation to find funds for collecting and preserving mineral specimens.
- Jul. 1, 1998, Emergency Meeting, 10:00 AM at the Phoenix Center 1202 N. Third St. Phoenix 85004, Call Brian Slutsky - Chairman 262-4633.
- Jul. 2, 1998, Ken Phillips will talk to the Maricopa County 4 H camp about "Why Everybody Needs Rocks and Minerals"
- Jul. 3, 1998, In the Museum - State Holiday Independence Day
- Jul. 4, 1998, It appears that the VIP program will be at the Courts Building Patio this year and the Museum will not be involved in any of the programs this year.
- Jul. 9, 1998, Ken Phillips will talk to the Maricopa County 4 H camp about "Why Everybody Needs Rocks and Minerals"
- Jul. 9, 1998, Don Campbell, a board member for what we remember as the CAP, will talk to the Capitol Chapter of People for the USA at 7:00 about how the Secretary of the Interior

wants to give half of the CAP's Colorado River Water Appropriation to California via the Native Americans.

- Jul. 14, 1998, David F. Myrick will be here to autograph his book "Railroads of Arizona Vol. IV" 3 to 7 PM in the Museum. We need to
- Jul. 16, 1998, Ken Phillips will talk to the Maricopa County 4 H camp about "Why Everybody Needs Rocks and Minerals"
- Jul. 29, 1998, Ken Phillips will talk to the Maricopa County 4 H camp about "Why Everybody Needs Rocks and Minerals"
- Aug. 6, 1998, Meet with the Mine Inspector and his crew for a weekend in at Camp Office in the Woods at Workman Creek. Contact 602 542-5971 for additional information three days.
- Aug. 13, 1998, Arizona Gathering of Cowboy Poets at Prescott for three days. The director will be an invited artist and will host two day time sessions.
- Aug. 19, 1998, Talk to the History for Lunch Bunch at the Arizona Capital Museum for 40 minutes about the "Life of A Miner" Shekel 255-2110
- Sep. 4, 1998, The Director at Westerners in Sierra Vista at 6:30 Location to be announced for "Roots of the C&A" Call Betty Bernhime 520 458 2006 or (602) 515-5447 wk
- Sep. 7, 1998, In the Museum - State Holiday Labor Day
- Sep. 10, 1998, 49th Highway Geology Symposium at Prescotttonian Hotel. Sep. 10. 14, 1998. Calling for papers on engineering geology for highway geological problems. See Blackstone 255 7368 255 .
- Oct. 11, 1998, 11 th Induction Banquet for the Mining Hall of Fame at the Pointe Hilton Resort on South Mountain in Phoenix, AZ 6:30 p.m followed by dinner,
- Oct. 12, 1998, In the Museum - State Holiday Columbus Day
- Nov. 11, 1998, In the Museum - State Holiday Veterans Day
- Nov. 14, 1998, National Trails Symposium in Tucson from the 14th to the 17th
- Nov. 26, 1998, In the Museum - State Holiday Thanksgiving Day
- Dec. 25, 1998, In the Museum - State Holiday Christmas Day
- Jan. 21, 1999, Arizona Arts Congress at the Museum

MUSEUM ACTIVITIES

DONATIONS

About 110 thank you letters were sent for items donated to the Department in F.Y. 1997-98. Some of these letters were for multiple items including mineral specimens, artifacts and materials for the archives. Items that were unique to Arizona or of unusual beauty were accessed into the permanent collections, duplicates or items specifically donated for the purpose were placed for sale in the gift shop. Some materials were archived and some were used in teachers kits and some were given away as instructional materials. A listing of some of the larger items is given below:

- The Mineral and Mining Museum Foundation donated \$3,250 to purchase a trinocular microscope, microvideo camera and monitor. They also donated a large collection of Red Cloud Wulfenite to be accessed into the permanent collection and sold in the gift shop.
- Arizona Mining Association donated 2 microscopes, 4 hot plates, 20 hand lenses, 20 goggles, 5 goniometers, 20 stereo glasses, 2 boxes of watch glasses, miscellaneous chemicals, and a pair of polarizing filters for the education programs.

- The Arizona Prospectors Association donated a dust collector for the carpenter shop and \$365.00.
- APS printed 2000 copies of our Teacher Kit Book.

MINERALS IN SOCIETY PROGRAM

The Museum and the Arizona Mining Association have created a "Minerals in Society" Seminars and Academies which are supported and funded by the Arizona Mining Association to train students and teachers to identify and demonstrate important scientific applications involved in the extraction and production of copper; to outline the environmental, technological, and economic issues relating to the extraction and production of copper; to relate their knowledge of the "mine to market" concept to other examples from their community; to discuss the role mining has played in Arizona's history, discuss the importance of Arizona's copper mining industry to the state's economy; to identify the technology used in the mining industry; to discuss the major uses of copper and their overall importance to our lives; to demonstrate their understanding of Arizona geology, copper mining and processing, and the economic impact of the copper industry on Arizona's history, its people, its environment, and its future and to develop a learning log to maximize understanding. Participants are moved from their "novice concept" to the "target concept" of "mine to market" by a variety of instructional methods.

In this program Glen Miller, Museum Curator, and Dr. Larry McBiles of the Arizona Mining Association have presented programs for the following schools.

COLLECTION

The museum staff and volunteers worked on the long anticipated project for reorganizing and deaccession of items in the cataloged collection. To date "A" through "Q" items have been laid out on a table, sorted for disposition and stored alphabetically. The items that are put aside on the first pass will be reviewed by Dr. Ray Grant and the museums staff to make a final decision on their desposition. Specimens selected for removal will be used in the education collection, traded, given to educational institutions or sold. Proceeds from the sale will be used to upgrade the collection. When completed this program will provide a cataloged collection housed in appropriate storage cabinets, where they can be accessed for study and exhibits.

During this period museum staff continued to work on the long anticipated project of reorganizing and deaccession of inappropriate items from the cataloged collection. So far staff has worked through the "R" "B", "C", "D", "E", "F" and are up to gypsum In the "G" minerals. When this project is finished the cataloged collection will be stored alphabetically.

EXHIBITS

During the year several exhibit cases were cleaned and re-lamped. The collections in these cases were re-worked and re-labeled. In connection with this work the collection catalogue was checked and corrected. The cleaning and re-labeling of display cases continues.

Museum volunteer, Charlie Connell completed construction of a display stand and mounted a 600-lb. slab of Coconino sandstone containing tracks from Laoporis Noble a forenrrner of the dinosaurs. Interpretative labels were added to the display New labels were also put on the large meteorite (Stand 85) and the petrified wood at the magnifying light. Three case in the Senate Building were also cleaned and re-labeled.

The Museum has started a micromount collection and to date, 2,110 micromounts have been added to this collection.

LAPIDARY SHOP

Under the supervision of Douglas Duffy, Volunteer Shop Forman, the Lapidary shop has been cleaned, new machinery installed and a firmer system of shop moitoring has been initiated. During F.Y 97-98 over 500 paid hours of machine time and 900 hours of volunteer time were Mr. Duffy has offered extended courses in Lapidary art requiring 10 house of instruction and his instructed 36 students in Lapidary.

Early in 1997 he brought in equipment and started instructing in silversmithing. Over the year he has instructed 18 students in a 12 hour silversmithing course.

The Laipdary shop has contributed about \$1,000 in lapidary and silver mechandise to the gift shop. The cost basis for this material in lapidary equipment and supplies is small.

OUTSIDE EXHIBITS

During the Fiscal Year the Museum placed exhibits at the following functions:

- Arizona State Fair;
- Bisbee Gem and Mineral Show
- Bisbee League of Cities and Towns meeting in Tempe
- H. Mason Coggin's exhibit at the Mineralogical Society of Arizona
- H. Mason Coggin's minerals and artifacts exhibit at Sun Lakes
- Maricopa County Fair
- Maricopa Lapidary Gem and Mineral Show;
- Mingus Mountain Gem and Mineral Show;
- Mohave Middle School - a long term loan
- MSA Gem & Mineral Show.
- Phoenix Gem and Mineral Show (Maricopa Lapidary Society)
- Pima County Fair
- Scottsdale Gem and Mineral Show.
- The Director acted as a technical consultant on an exhibit entitled "Old Miners were Tough" for the Bisbee Mining Museum.
- Tucson Gem and Mineral Show
- Verde Valley Gem and Mineral Show.

SCHOOL INSTRUCTION

Since the schools aren't comming to the museum the museum has started an educational outreach program. As a result of the Museum Curator working with the 4th grade level at different schools, other grade levels and schools around the state became interested in our program and asked for presentations. This lead to presentations for different grade levels, second grade at Abia Judd Elementary School in Prescott and, fourth grade, at Park Meadows Elementary School, Deer Valley School District Phoenix. The following is list of the activity at each of the schools:

AZTEC ELEMENTARY

Nov. 4, 1997--1st curriculum planning

Dec. 2, 1997--2nd curriculum planning

Jan. 2, 1998-- *"Physical Properties of Minerals and Mineral Identification"*
 Jan. 13, 1998-- *"Physical Properties of Minerals and Mineral Identification"*
 Jan. 14, 1998-- *"Mining Industry and My Experiences"*
 Jan. 16, 1998-- *"Field trip to the Gila River Bottom"*
 Feb. 10, 1998-- *"How to use a Geologic Map"*
 Feb. 10, 1998-- *"Rock identification."*

CAPITOL ELEMENTARY SCHOOL (Phoenix, Arizona)

Apr. 23, 1998-- First and second grade teachers meeting;
 Apr. 27, 1998-- "From Earth to Metal Labs"
 May 1, 1998-- "Milling and Floatation Labs"
 May 4, 1998-- "Floatation and Leaching Lab"
 May 8, 1998-- "Floatation Lab"
 May 21, 1998-- "floatation and leaching lab"

DEL RIO ELEMENTARY SCHOOL (Chino Valley, Arizona)

Oct. 1, 1997 - curriculum planning with teachers
 Oct. 13, 1997-- "Physical Properties of Minerals and Mineral identification."
 Oct. 21, 1997 -- "Kick-off field trip to Bagdad"
 Oct. 1, 1997-- "Curriculum Planning"
 Oct. 13, 1997-- "Physical Properties of Minerals and Mineral Identification"
 Oct. 21, 1997-- "Field Ttrip to the Bagdad mine"
 Feb. 2, 1998-- "Milling, Floatation, and Leaching Labs"
 Feb. 3, 1998-- "Discussion of Careers in Mining" and "How to use a Geologic Map"

PARK MEADOWS ELEMENTARY SCHOOL (Phoenix, Arizona)

Sep. 26, 1997 -- Curriculum Planning With Teachers
 Nov. 14, 1997 -- "Field Trip To The Museum"
 Nov. 17, 1997-- "Physical Properties Of Minerals And Mineral Identification"
 Nov. 18, 1997-- "Physical Properties Of Minerals And Mineral Identification"
 Nov. 19, 1997-- "Physical Properties Of Minerals And Mineral Identification"
 Feb. 24, 1998-- "Physical Properties Of Minerals And Mineral Identification"
 Mar. 3 & 4, 1998 -- "Field Trips To Bagdad Mine"
 Mar. 23, 1998 - "Education In Action"
 Sep. 26, 1997 - "Curriculum Planning" With Teachers
 Nov. 14, 1997 - "Kick-Off Field Trip To The Museum"
 Nov. 17, 1997 - "Physical Properties Of Minerals And Mineral Identification"
 Nov. 18, 1997 - "Physical Properties Of Minerals And Mineral Identification."
 Nov. 19, 1997 - "Physical Properties Of Minerals And Mineral Identification"

SIERRA VISTA ELEMENTARY SCHOOL (Phoenix, Arizona)

Apr. 20, 1998-- Curriculum Planning With Teachers
 Apr. 28, 1998-- Curriculum Planning
 May 6, 1998-- "Physical Properties Of Minerals"
 May 11, 1998-- "Differences Between Rocks And Minerals"
 May 12, 1998-- "Whole Class Presentations And Training."

FOOTHILLS ELEMENTARY SCHOOL (Phoenix, Arizona)

Feb. 11 & 12, 1999-- Mining Process, Uses Of Minerals, And Physical Properties

Mar. 20, 1998-- Environmental Issues Related To Mining.

Nov. 24, 1997 - Curriculum Planning.

GRANITE MOUNTAIN MIDDLE SCHOOL (Prescott, Arizona)

Oct. 14, 1997-- "Curriculum Planning"

Oct. 25, 1997 -- "Kick-Off Field Trip To Bagdad Mine"

Nov. 25, 1997-- "Kick-Off Field Trip To Bagdad Mine"

ABIA JUDD ELEMENTARY SCHOOL (Prescott Arizona)

Sep. 30, 1997 -- Curriculum Planning

Oct. 3, 1997 -- Staff "Physical Properties Of Minerals And Mineral Identification"

Oct. 8, 1997 -- "Physical Properties Of Minerals And Mineral Identification

Oct. 15, 1997 -- Follow Up "Mineral Identification"

Oct. 22, 1997 -- Peer Staff Training "Lab Activities"

Oct. 29, 1997 -- "Milling And Flotation Labs"

LITCHFIELD ELEMENTARY SCHOOL

The Museum staff hosted a trip for students, teachers and parents to the River Bottom where they conducted training on rock and mineral identification and the mineral processing labs, which were developed through the Minerals in Society program. Parents served as mentor teachers. The introduction to rocks, minerals, and mining ended with a field trip to the Bagdad mine. One-hundred and eighty students, not counting parents, made two trips using two 48 passenger buses. In May, as a final activity, the 4th graders toured the Museum and presented Museum staff with products they developed as a result of their experience.

SPECIAL AWARD

The Museum and the Arizona Mining Association received an award from Park Meadows Elementary School District officials which reads "The AMA and the Arizona Mineral Museum have presented Park Meadows Elementary School with \$1,500, as well as supplies and materials valued at the same amount, to develop and implement an integrated unit on copper mining in the sixth grade classrooms. Dr. Larry McBiles, AMA and Glenn Miller, Arizona Mining and Mineral Museum, have provided many hours of in-service training to facilitate this learning experience for teachers and students.

TEACHERS KITS

The Museum continued in its program of distributing teachers kits of minerals and mineral information to students and teachers in Arizona.

In FY 97-98 917 Teacher Kits were given out and 70 Teachers Kits were sold to the Indiana Mineral Aggregates Association.

In addition special collections and materials were provided for the following teachers, schools and educational groups in Arizona:

Paul Myers Yuma school district, Patty Sepp of Young Scholars Home School, Arizona Fossils to Red Mountain High School, Arcadia Neighborhood Learning Center, Lakeview Elementary School, Starlight Park Elementary School, Wilson School, Foothills Elementary

School, Aztec Elementary School, Yuma School District, Jeny Taylor of Santa Maria Middle School, Round Valley intermediate School in Springerville, Majorie Briles and Glenda Morris of Carmichael School, Sierra Vista, Janna Riggs of Wilcox High School, Jan Mathis, of Cibique High School, Babrielle Riel of Xcavier College Prep., Phoenix, Nancy Byer of Sts, Simon and Jude, Phoenix, Liz Lukiasse of St. Jerome, in Phoenix, Ron Schmidt of Larry C. Kennedy School, Randy Scheef, Kyrene del Sereno School and Diana Williamson of Desert Sands Middle School.

Samples of southwestern rocks and minerals were also sent to children in New Jersey for a Museum that burned down and the videos 'Common Ground' and Partnerships' were given to Susan Regan, of St. Theresa's School and 3 bags with samples of Arizona soils were sent to Garfield School in Cedar Rapids, IA.,

VISITATIONS

During the year attendance at the Museum was as follows:

General
Students

VOLUNTEER PROGRAM

In F.Y. 1997-1998 the museum received 10,018 hours of volunteer time

MUSEUM SCHOOL VISITORS

The following schools and organizations have visited the Museum:

ABC Alternative, Abia Judd Elementary, Acacia Elementary, Adult groups, AG's meeting in Classroom, Altaloma Elementary, Amigo Preschool, Anderson Jr. HS, Apollo H.S. , Arcadia Learning Center, Arrendondo Elem., Aztec, Ball Charter School, Barcelona Elem., Barry Elementary,, Bellaire Elementary, Bicentennial Elementary, Bicentennial North Elementary, Bicentennial South Elementary, Black Mt. Elementary, Boulder Creek Elementary, Bridges to Independence, Bring a child to work group, Brownies, Butler Elementary, C.O. Greenfield Elementary, Camelback Desert Elementary, Campfire, Capitol Elementary, Capitol School, Carl Hayden HS, Chaparral Elementary, Chapman University Teachers Workshop, Cherokee Elementary, Cheyenne Elementary, Childtime, Christ Lutheran School, Christown YMCA, Church Group, Clarendon Elementary, Conely Elementary, Copper Canyon Elementary, Copper Creek Elementary, Crane Junior High, D.C. Lincoln Elementary, Deer Valley High School, Del Rio Elementary, Desert Gardens, Desert Palms Elementary, Desert Springs, Dobson Montessori , Dragonfly Charter, East Valley High School, Ecotech, Edison Elementary, Eduprize Charter, Emmanuel Lutheran, Erie Elementary, Esperanza Elementary, Fit & Fun Education Center, Flagstaff Middle School, Florence Elementary, Foundation Meeting, Four Peaks Elementary, Fowler Elementary, Freestone Rehabilitation, Gateway H.S., GCC, Gencroft Care Center, Genesis Academy, Gilbert Elementary, Girl Scouts, Glencroft Care Center, Glendale American School, Glendale Community College, Glendale Family Development Center, Glendale H.S. Pre-algebra, Goldduchst Elementary, Greater Hope of Glendale, Greenbrair Elementary, Hawthorn Elementary, Heatherbrae Elementary, Herrera Elementary, Holiday Park Elementary, Home School, Hope Elementary, Hopi Elementary, Horizon Charter School, Horizon Elementary, Humphrey Elementary, Ironwood Elementary, J. B. Sutton Elementary, Jacobson Chandler Elementary, John F. Long Elem., John Jacobs Elementary , Johnson Elementary, Kachina Country Day School, Kennelworth Elementary, Khaisa Montessori, Kindercare, Knox Elementary, Kyrene

de la Paloma Elementary, Kyrene de Las Brisas, Kyrene de Los Labos, La Petite Academy, Landmark, LaPetite Academy, Learn & Play Preschool , Learning Works, Leaverites, Lee Kornegay Elementary, Liberty elementary, Light & Christian School, Litchfield Elementary, Littleton Elementary, Longview Elementary, Lookout Elementary, M.O. Bush, Madison Rose Lane Elem., Marc Center, Maricopa Elementary, Mariposa elementary, Martin Luther Elementary, Maryland Elementary, McCormick Preschool , Mensendick Elementary, Mercury Mine Elementary, Mirage Elementary, Mitchell Elementary, Mohave Middle School, Monte Vista Elementary, Montessori School, Morada School, Most Holy Trinity, NaZvajo Elementary, Neely Elementary, Nevitt Elementary 140. Eduprize Charter School, New Foundation, New Life Home Educators, NFL Y.E.T. Academy, Northwest Christain School, Northwest Community Christian, Omega Headstart , P.T.Coe Elementary, Palm Lane elementary, Paloma, Palomino Elementary, Paradise Valley Christian School, Park Meadows Elementary, Patterson Elementary, People to People , Peoria Elementary, Peralta Elementary, Phoenix Christian H.S., Phoenix Country Day School, Phoenix Day School for the Deaf, Phoenix First, Pioneer Elementary, Red Mesa Elementary, Richard E. Miller, Rim Country Middle School, Roosevelt Jr. High, Rosalinda Elementary, SAGE Charger School, Saguaro Hills Christian School, Sahuaro Elementary, Sandpiper elementary, Santa Fe Elementary, Scott Libby Elementary, Scottsdale Foundation for Handicapped, Sequoia Elementary, Sequoya elementary, Sevilla Elementary, Sierra Vista Elementary, Simis Elementary, Sine Elementary, Sirrine Elementary, Soctt Libby Elementary, Solano Elementary, Southwest Studies Meeting, Spitalny, Spitalny elementary, Squaw peak Elementary, St Thomas School, St. Agnes School, St. Matthews School, Starlight Park Elementary, Sun Lakes Rock & Gem Club, Sunland Elementary, Sunridge Elementary, Sunrise Elementary, Sunset Elementary, Sweetwater Elementary, Swquoya elementary, T.G. Barr Elementary, Taft Elementary, Tavan Elementary, Tempe Christian School 12-15,, Tempe Home School, Tempe Montessori, Tereract, Tesseract Elementary, Tolleson High School, Tonolea, Towne Meadows Elementary, Trevor Browne H.S., Tvetta Ellis School, USI, Valley Cathedral School, Valley of the Sun School, Villa Montessori , Village Home School, Wagonner Elementary, Walter Douglas Elementary, Webelos, Westside Headstart, Whispering Wind Elementary, William C. Jack Elementary, Wilson Elementary, Wilson Primary, Yavapai Elementary, YMCA, Young Elementary, Zuni Elementary

EARTH SICENCE CLUBS

Over 4,073 club members attended meetings at the Museum during this Fiscal Year These included the following clubs and oragnizations:

Arizona Prospectors Association Meeting, Arizona Treasure Unlimited MeetingBead SocietyBottle Club, Carvers Meeting, Civil Air Patrol, Coalition Meeting, Maricopa Lapidary, Mineralogical Society of Arizona, and People for the USA -Capitol Chaper

MEDIA EVENTS

Sep. 1, 1997, Mining and the Department got a nice write up in the Santa Cruz Valley Sun a periodical serving Green Valley, Nogales, Sahuarita, Tubac, Sonoita, Patagonia, Rio Rico, Elgin, Arivaca, Amado, Tumacacori and Corona de Tucson in an issue featuring Metals, Miners and Minerals.

Sep. 24, 1997, The Mining and Mineral Museum was written up in the Foothills Newspapers of Cave Creek with a nice article on the minerals and things to see at the Museum.

- Sep. 24, 1997, September 24, 1997 The Department and the Museum were the feature article in the Sentinel Winds a Foothills Sentinel Extra on September 24, 1997. The article described the activities of the Department and some of the Museum exhibits.
- Nov. 1, 1997, The Mining and Mineral Museum, Rose Mofford and her collection were the subject of a an article in the Phoenix Magazine of November 1997. The article also listed the Museum's address and hours of operation.
- Nov. 1, 1997, The IPM Suite and was written up by the National Law Journal in an article entitled 'Gold in Arizona Desert? Don't Ask State Officials' by Cynthia Scanlon
- Nov. 3, 1997, Glenn Miller and his educational program at the Abia Judd Elementary School in Prescott was the feature story in the Daily Courier of Prescott, Arizona
- Nov. 7, 1997, Richard From Channel 5 interviewed the Director and Joe Mikitish in the Museum about the IPM case.
- Nov. 10, 1997, The IPM Suite and was written up by the National Law Journal in an article entitled 'Gold in Arizona Desert? Don't Ask State Officials' by Cynthia Scanlon
- Nov. 13, 1997, Jeana Bombersbach of Channel 3's Good Morning Arizona interviewed Rose Mofford in the Mofford Gallery of the Arizona Department of Mines and Mineral Resources. Also present were about one dozen children from Desert Gardens Elementary School. The interview will air on Thursday morning at 7:10 AM Nov. 20 and again on Sunday Nov. 23rd.
- Dec. 1, 1997, Channel 5 interviewed H. Mason Coggin, Nyal Neimuth and Joe Mitikish about the recent court decision by Arizona Superior Court Judge Doughton. Present at interview was Joe Mikitish from the Arizona Attorney General's Office. The program aired on Dec. 1, 1997.
- Feb. 18, 1998, The Director appeared on KXAM 1310 radio show from the Mine Shaft Restaurant in Cave Creek. Program host Bob Booze Bell and David Jones.
- Apr. 10, 1998, Meeting with Kevin Ryan, Bill and Diane Bain of AZ Outdoor Journal to talk about an article on Gold Panning in Arizona 2:00 PM.
- Apr. 21, 1998, Meeting with the Fullers at their house to talk about the Documentary on the History of Mining in Arizona.
- May 19, 1998, The Director was interviewed on Winslow's radio by Bob Hardy on a program honoring People for the USA.
- Jun. 1, 1998, A very nice article about mining in Arizona was published by the Foothills Journal concerning mining in Arizona.

SME MEETINGS

Tucson Section 2nd Wed. ex. Jul. and Dec. Ramada Inn-University. call Rammie at (520) 388-7051

Southwestern New Mexico 1st Thurs. Feb. Apr. Sep. & Nov. Tisha M. Clark (505) 538-760

Pinal Mountain Section 3rd Tues. ex. Ju, Jl, Au. & Dec. in Globe or Miami Ken. Brusoe (520) 473-7454

Morenci Section 2nd Tues. ex. Jan. Jun., Jly, and Aug. at the Clifton Elks James Davis, (520) 865-4521

Grand Canyon Section 2nd Fri. Feb., Apr., Jun, Aug, Oct., and Dec. Tom Bender (520) 633-2241

Maricopa Section 3rd Thurs. except, Jun, Jly, Aug. and Dec. Carole O'Brian (602) 945 4630

MINING COMPETITIONS

City and State	Date	Name	Contact
Globe, AZ	Apr. 17, 18 & 19, 1998	Boom Town Spree	CC 1-800-804-5623
Creede, CO	Jul. 4 & 5, 1998	Days of 92	CC 1-800-327-2102
Bisbee, AZ	Jul. 4	4th of July	CC 520 432 5421
Idaho Springs, CO	Jul. 18 & 19, 1998	Mining Competition	CC 303 567 4382
Tonapah, NV	Jul. 24, 25 & 26, 1998	Jim Buttler Days	CC 702 482 3558
Leadville, CO	Aug. 7, 8 & 9	Boom Days	CC 719 658 2374
Ouray, CO	Aug 21, 22 & 23	Mining Competition	CC 970 325 4746
Eureka, NV	Sep. 5, 1998	Burly Gulch Days	
Pahrump, NV	Sep. 19, 1998	Monster Mining Comp.	BG 702 727 6950
Beatt, NV	Sep. 26, 27 & 28	Harvest Festival	CC 702 553 2424
Carson City, NV	Oct. 31, 1998	World Hand Steeling	CC 702 883 2565

PUBLICATIONS

DEPARTMENT PUBLICATIONS

- Phillips, K.A., N. J. Niemuth, and D.R. Bain, **Active Mines in Arizona - 1998**, Directory 46, November 1997.
- Coggin, H. Mason, *Annual Report, Arizona Department of Mines and Mineral Resources*, Aug. 1997.
- Rosenfeld, Alice, *Earth Science Clubs*, 1998-99, Circular 79, May 1998
- Phillips, K.A. , N.J. Niemuth and Diane Bain. **Arizona's Mining Update - 1998**, Circular No. 77, November 1997
- Phillips, K. A, N.J. Niemuth, and D. Bain Circular No. 71, "**Arizona's Mining Update-1997**", Jan. 1997
- Coggin, H. Mason, Circular No. 58, "**Assayers and Assay Office in Arizona**" July 1997
- Greeley, Mike, Circular No. 59, "**Mining Scams**", Revised March, 1997,
- Baine, Diane and Nyal Niemuth Circular No. 73, "**Amendment to the BLM Surface Management Requirements**" March 1997
- Rosenfeld, Alice, Circular No. 74, "**Arizona Gem Shows**" 1997-98
- Rosenfeld, Alice, Circular No. 75, "**Earth Science Clubs**, 1997-98
- Reference Book List 1997 "**Suggested references for the Arizona prospector and mineralogist**"
- Walter Peck, Doug Duffy, Shirley Cote, April 1997 Open File Report 97-15, **The Art of Making a Cabochon**,
- Bain, Diane, Editor, *Arizona Mineral Resource* No. 16, June 1997
- Bain, Diane, Editor, *Arizona Mineral Resource* No. 17, Jan. 1998
- Bain, Diane, Editor, *Arizona Mineral Resource* No. 15, Oct.. 1997
- Bain, Daine, Editor, *Arizona Mineral Resource*, No. 18, March 1998
- Bain, Diane, Editor, *Arizona Active Mines Maps*, 1998, 1:1,000,000.

OUTSIDE PUBLICATIONS

- Nations, J. Dale and Ken Phillips, **The Mining and Minerals Cluster in Arizona: (An Analysis for the Strategic Economic Development Vision for the Arizona -Sonora Region)** for the Strategic Economic Development Vision for the Arizona Sonora Region, Bureau of Business and Economic Research, Northern Arizona University, Flagstaff, AZ, Nov. 24, 1997.

- Neimuth, Nyal, USGS *Minerals Information Summary Arizona*, 1998 under the cooperative agreement with the USGS.
- Coggin, Mason and Janice, *Cowboy Poetry, Classic Rhymes by Bruce Kiskaddon*, Cowboy Miner Productions, Phoenix, Arizona, 1998
- Coggin, H. Mason, "Granite Mountain Shaft Fire, Butte, Montana," *Collectors' Mining Review*, Fall, 1997 Issue No. 5, 1997, p. 18
- Coggin, H. Mason, "Gold Hunt," *Arizona Outdoor Journal*, pending
- Niemuth, Nyal, "97 Exploration Review," *Mining Engineering*, May, 1998
- Coggin, H. Mason, "Tabotacachi, Mina de Plata," in the *Simposio de nuestra Sociedad Sonorense de Historia*, A.C., Five Hundred Years of Mining in Northern Mexico. Published early 1998
- Coggin, H. Mason and Keith Halsey, *A. L. Flagg's Southwest: A Photographic Essay, The Mining History Journal*, Third Annual, Denver, 1996
- Coggin, H. Mason, Roots of the Calumet and Arizona, *The Collector's Mining Review* issue No. 3, Reno, NV, Spring 1997
- Phillips, K. A. and J. Dale Nations, *Strategic Economic Development Vision for the Arizona-Sonora Region Mining and Minerals Cluster*, Northern Arizona University, Flagstaff, July 1997

OUTSIDE PUBLICATIONS IN PROCESS

Together with Mike Canty of Tucson, Mike Greeley of Washington, D.C. and Director H. Mason Coggin, *Volume III of the History of Mining in Arizona* is taking shape and should be in print for the Arizona Mining Hall of Fame banquet and induction celebration in December. The new volume will be published by the Mining Foundation of the Southwest.

The Arizona State Historic Preservation Office has contracted with the Department to perform a major contextual study on the *History of Copper Mining in Arizona*. The study should be completed in the year 2000 and plans have been made to publish at least part of the study.

TRY THESE WEBSITES

www.arizonatax.org Arizona Tax Research Association

www.artscomm@primenet.com Arts Education Updates from AZ Commission on the arts.

www.azamigos.org AMIGOS

www.azcu.org ARIZONA MINING ASSOCIATION

www.benet.net.au/miningho.hum Mining home page

www.bullion.org.za/ South Africa Chamber of Mines

www.copper.org/services/homepage.htm Copper Page

www.geocities.com/Tokyo/Towers/8411/surv.html Geological Survey Departments

www.geology.uiggm.nsc.ru/eng1/links.htm Earth Science Links

www.goldinstitute.com/

www.info-mine.com/ Info-mine mining company profiles

www.jei.umd.edu/agi/agi.htm

www.libertymatters.org LIBERTY MATTERS

www.mediafinder.com Mining Voice of the National Mining Association

www.mine-quarry.com

www.miningusa.com/educat~1/educat.htm --- Mining Education Page

www.sba.gov/regfair Small Business National Ombudsman

www.state.az.us/gs/ags/index.htm Arizona Geological Society
www.state.az.us/gs/index.htm Arizona Geological Survey
www.state.nv.us/busi__industry/mineral/mineral.htm Nevada Division of Minerals
www.uic.com.au/ Uranium Information Center
www.uky.edu/KSG/coal/webcoal/pages/coal13.htm Coal Information

DONATIONS FOR THE ARCHIVES

Fred Hohne, a well known mining engineer and geologist, donated an extensive collection of books, articles and reports including a large collection of information on insitu leaching of uranium. Some of this information will not be available for several years.

Pay Dirt, Bruce Rubin, editor of PayDirt has donated a large collection of publications and periodicals from PayDirts's basement. These will be used to fill out the Department's collection of publications. There were also several files on ASMOA and the Department as well as files from Charles Willis and Mrs. Moore.

Ed & Marge Kennedy, allowed the Department to copy their file on the Stodddard and other properties. The information was collected by several mining companies over a period of years. It was added to the Stonewall Mine file for Yavapai County. They would like to sell the property which consists of patented mineral rights and unpatented claims.

Virginia St. Peter, donated photographs of the blasts at Old Reliable and Zonia to the Department. Allen St Peter was the blasting consultant on both jobs and used his life long experience with the Dupont Corporation to design and effect the blasts.

Mrs. H. Myles Jacob, has donated a collection of information, photographs and the complete annual reports of the Inspiration Consolidated Copper Company for the Department's files. Included in this collection are some wonderful old photographs of Inspiration, Claypool and Miami. Myles Jacob was the Chief Executive Officer of Inspiration until his retirement. There is enough information here for an interesting and accurate history of Inspiration.

Joe Arrendale donated three boxes of books

Ron Blackstone has donated a set of Geophysics from 1978 to 1989

Arizona Mine Emergency Association donated two McCay self contained breathing apparatus for mine rescue.

BHP San Manuel Safety Department donated two McCay self contained breathing apparatus for mine rescue.

Les Presmyk donated a set of miscellaneous mining publications.

ATTENTION CLAIMANTS

Mining claim rental fees are due in the Bureau of Land Management state office by

August 31

Claim holders owning part or all of 10 claims or less may qualify for a waiver from rental fees. Applications for the waiver are also due by the same date.

BOARD OF GOVERNORS

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Arizona Department of Mines & Mineral Resources
1502 West Washington
Phoenix, Arizona 85007

Address Correction Requested

Mineral Resource

MINING NEWS

Carlotta Gets EIS - Finally

After many frustrating years Cambior U.S.A.'s Carlotta property near Miami has been granted its EIS by the Forest Service. Permits from the Army Corps of Engineers and the Environmental Protection Agency are still needed before construction begins.

Carlotta, the first major new mine in Arizona in 20 years, is expected to produce 900 million pounds of copper and employ 300 workers. The mine will consist of 3 open pits and will process by heap-leach and SX-EW.

Cyprus Miami Expansion EIS

The Draft Environmental Impact Statement for the Cyprus Miami Leach Facility Expansion Project has been released by the Bureau of Land Management and the Tonto National Forest. The proposed actions would increase the life of the Cyprus Miami operations from 16 to 20 years depending on the alternatives selected.

The EIS calls for recovering as much of the identified resource as possible and operating in an economic manner. It will maintain the work force of approximately 950 people and continue to use the existing facilities. This property has been in production for nearly 90 years.

Mission Gets Preliminary APP

The Arizona Department of Environmental Quality has made formal notice that it intends to issue an individual Aquifer Protection Permit to Asarco's Mission No. 4 Tailings facility near Sahuarita, Arizona in Pima County. The facility is necessary for their mining operation and will receive tailings in slurry form from the Mission Complex concentrators. The capacity will be approximately 309 million tons and hold about 30 years of tailings.



Do you need this information in an alternative format? Please call the Department office at 255-3791.

Arizona Department of Mines & Mineral Resources, 1502 W. Washington, Phoenix, AZ 85007
602-255-3791, toll-free in Arizona 1-800-446-4259
H. Mason Coggin, Director

Addwest Adds Reserves

Addwest Minerals International is listed on the Vancouver Stock Exchange through the reverse takeover of Alina International. In recent months it has increased its proven and possible gold resources at the Gold Road mine by 17 percent. This was the result of adding 77,000 tons of 0.27 opt gold ore to its total reserves of 556,000 tons grading 0.234 opt. At the current production rate of 40,000 oz per year this mine is an important contributor to Arizona's gold production. Cash operating costs for the operation are estimated at \$219 per oz of gold.

Silver Bell

Asarco, in its joint venture with Misui & Co., has completed the construction of its new \$70 million SX/EW operation at their Silver Bell Mine, 40 miles northwest of Tucson. The facility has a capacity of 36 million pounds of copper per year at an estimated cost of \$0.50 per pound and an expected life span of 30 years.

Silver Bell's history goes back to the 1700's when Spanish padres worked the area for silver. By the 1860s the site was in production. Asarco acquired Silver Bell in 1915, the company's first Arizona property.

NEW PUBLICATIONS

Circular No. 71, *Arizona Mining Update-1997*, K.A. Phillips, N.J. Niemuth, and D. Bain, Jan., 1997

Circular No. 59, *Mining Scams*, Revised, March, 1997

Circular No. 73, *Amendment to the BLM Surface Management Requirements*, March, 1997

Circular No. 74, *Arizona Gem Shows 1997-98*, Alice Rosenfeld

Circular No. 75, *Earth Science Clubs*, 1997-98, Alice Rosenfeld

Open File Report 97-15, *The Art of Making a Cabochon*, Walter Peck, Doug Duffy, Shirley Cote, April, 1997

TSE Calls For Standards in Assays

After the Bre-X debacle destroyed a large portion of the junior resource company stock market and made raising capital for new mines and exploration almost impossible, the Toronto Stock Exchange and the Ontario Securities Commission have formed a task force to examine the need to set standards for mining and exploration companies. Hopefully this will result in an investment atmosphere that will prevent another Bre-X.

Private Land Shrinking

Only 13 percent of the land in Arizona is privately owned according to the latest compilation by the Arizona Farm Bureau Federation. Previously it was held that 17 percent of Arizona was privately owned. This quantity has been degraded by the purchase of private property by the Heritage Fund for the Game and Fish Commission and the State Parks Board. The federal government also buys land for game refuges and tribal land settlements. Cities and municipalities also acquired private property in the dedication of parks, water retention basins and open space. Tax revenues are directly effected because of the loss in property and sales tax revenues from the land and the products they produce. Arizona's lands are held as follows:

Private	13%
Indian Reservations	27.2
BLM	19.5
Forest Service	15.3
State Lands	12.9
National Parks	4.2
Department of Defense	3.7
Fish & Wildlife	2.4
Other Public Lands	1.3

Arizona Farm Bureau News, May, 1997

USA Gets Its Power From Coal

Electric power is the backbone of industrial activity in the United States, and coal is the backbone of electric power according to Richard Lawson, president of the National Mining Association. Approximately 55 percent of the electrical power produced in the United States comes from burning coal. World wide energy consumption is projected to reach 562 quadrillion Btu in 2015. Most of this will come from coal. Consumption is projected at 2.3 billion short tons over the next 20 years.

Mining Week May 12, 1997

Amigos Annual Meeting

Asarco's Executive Vice President, Frank McAllister, was the keynote speaker at AMIGOS annual meeting at the Phoenix Zoo Pavilion on June 13th. Congressman John Shadegg was on hand to accept the fourth annual Copper Scissors Award for his work in Washington on behalf of taxpayers. Amigos' President Bob Humphrey of J.R. Kennedy Company passed the gavel to Lyn Thomas of Pioneer Equipment. Also recognized at the meeting was State Senate Majority Leader Mark Spitzer, Senate President Linda Burns, and House Speaker Don Aldridge. Another year of growth and expansion is expected for Amigos.

National Science Olympiad

Susan Celestian, Curator of Education, was one of the event supervisors for the 1997 National Science Olympiad that took place at North Carolina State University in Raleigh, NC in May of this year. The annual event is a nation-wide competition for young scientists to showcase their achievements over the year. They compete in 28 events and 6 trial events. Susan supervised the fossil division. The Department is proud to have a staff member participate in this prestigious national event.

Tailings to Construction Material?

Enviro-Crete Products of Phoenix may have a use for copper flotation mill tailings in the manufacture of aerated autoclaved concrete. Tailings are mixed with other ingredients and processed to make strong, light-weight cementitious blocks.

The process involves mixing, filling molds, and allowing chemical reactions to proceed such that raw materials swell to three times their original volume. The expanded mixture is then treated in an autoclave to make a hard foam-like block. The finished block's high porosity gives the material insulating properties. Its light weight reduces strength requirements for any supporting structures. Light weight and large block size improve the efficiency of construction labor. It can be cut with a saw, chopped with an ax, and will hold a nail. Electricians and plumbers can use a router to cut out channels for cables and plumbing. Typical housing applications will be stuccoed on the outside and dry walled on the inside. Svanholm International of Rhode Island has also announced plans to build an aerated autoclaved concrete block manufacturing plant in central Arizona.

Mining History

The Mining History Association (MHA) held their annual conference at Houghton in Michigan's Upper Peninsula Copper Country in June. About 100 members visited some of the mine sites, smelters and processing plants dating from the 1840s. The highlight of the conference for many was the one day bus tour covering several old copper mining towns, plants and shipping points on the Keweenaw Peninsula. Next year the Association Plans to hold their Conference in Bisbee.

MHA is dedicated to preserving mining history. The membership represents many nations. About one third of the members are miners, geologists and engineers, one third professional historians and one third museum curators and directors. Membership dues are \$25.00 per year and the association can be joined by sending your name and address with a check for \$25.00 per year to the Mining History Association at POB 150300 in Denver, CO 80215. Membership includes quarterly newsletters, the Annual Journal and information on the annual conference.



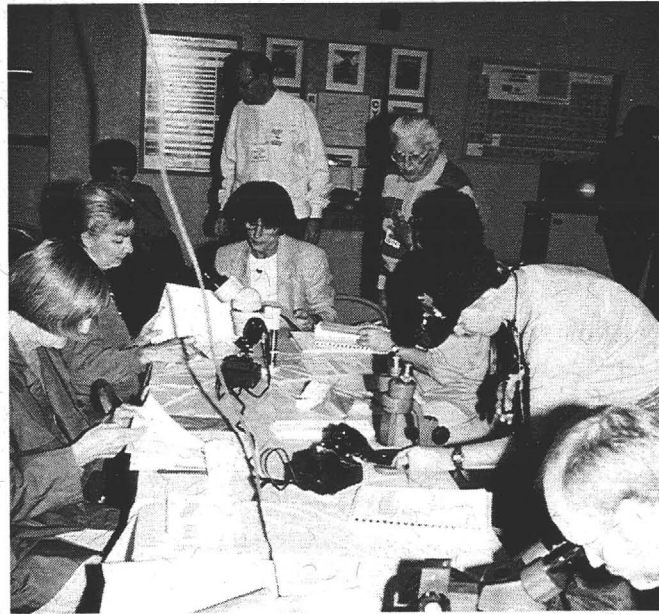
Phelps Dodge's Morenci Hydrometallurgical Division is utilizing a Process Information Management System (PIMS) to streamline processes and optimize flow rates. Dynamic information can be shown in a variety of graphic formats. The electrowinning tankhouse is shown at left.

Morenci Copper Review

Call for Mining Papers

The Mining History Association is calling for papers for their annual conference to be held in Bisbee, Arizona over the week of June 4,5,6 & 7. Submittals should be original work on the history of mining, particularly Arizona and the Southwest. They should cover some facet of the history of finance, technology, mining districts, commodities, mining laws, labor, mining camps and societies, management or safety.

The presentations should be about 20 minutes. Graphics and slides are encouraged. Proposals are due by October 1. An abstract should be available by December 1st and final drafts will be due on or before March 1, 1998. Selected papers will be published in the association's annual journal. Proposal letters should be sent to Erik C. Nordberg, MHA Bisbee 98, Post Office Box 552, Houghton, Michigan 94931.



URBAN SYSTEMIC INITIATIVE

Curator Glenn Miller and Education Curator Susan Celestian provided training to local teachers on minerals and science this summer. The next seminar will be "Geology in the Park" on December 6. These workshops are co-sponsored by the Arizona Mining Association.

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INTERNATIONAL PRECIOUS METALS

In the lawsuit filed by IPM (International Precious Metals) against the Department, Judge Donald F. Daughton ruled in favor of the plaintiff, IPM, finding ADMMR had exceeded its statutory duty by opining.

It is the Court's judgment that the Department does not have the statutory authority to publicly predict the likelihood of success or economic viability of a particular mining operation, to opine as to the value of stock in a mining company, or to give out financial investment advice. Judge Daughton also ruled that the State will not be required to pay IPM's attorney fees.

The Department became involved with the BRX property when asked to investigate by the Toronto Stock Exchange. On March 30, 1994 Nyal Niemuth sampled the property attempting to corroborate the company's claims of platinum and gold. The samples, which were delivered to an Arizona-registered assayer, reported nil platinum and gold.

In the original Notice of Claim, filed April 28, 1997, IPM asked for \$25 million in punitive damages from the Department and from Mason Coggin, Director, and Nyal Niemuth, Mining Engineer, personally, for "libel, slander, intentional interference with prospective economic advantage, and injurious falsehood." IPM also cited the "intentional and malicious nature of the conduct of Coggin and Niemuth" when the Department failed to corroborate their claims of high platinum and gold values. IPM alleged the Department "refused to acknowledge that IPM's independent and credible test results prove them wrong." IPM did not proceed with these claims in court but rather only sought to enjoin the Department from acting outside its statutory authority.

Concerns have been expressed in the media that this ruling may impair the Department's and other agencies' ability to protect the public and provide information.



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H. Mason Coggin, Director

COPPER IMPACT AT \$ 9.647 BILLION

The Learning Report* is out and states the economic impact of the Arizona copper industry on the State of Arizona is \$9.647 billion, including the combined direct and indirect impacts. Other figures on the copper industry show that 12,600 employees of the copper industry produced 1,368,514 tons of copper with a cash value of \$3.131 billion. The copper mines paid \$132 million in taxes to state and local governments, spent \$1.292 billion with Arizona businesses for products, goods, and services and paid \$647.546 million to Arizonans in wages, salaries, and personal incomes.

*Learning, George F., Ph.D. "The Economic Impact of the Arizona Copper Industry 1996," Western Economic Analysis Center, Marana Arizona April 1997, available from the Arizona Mining Association, 602-266-4416.

COPPER CREEK

AMT International Mining Corporation announced in October the completion of a positive feasibility study at Copper Creek, 45 miles northeast of Tucson. The project is comprised of properties joint ventured with BHP and Phelps Dodge.

Phase I of the 3-phase feasibility study examined open-pitting leachable reserves at Old Reliable and underground mining sulfide ores at Childs Aldwinkle and Creek breccias. Data from over 100 drill holes identified 11.4 million tons averaging 1.3 percent copper. Estimated capital costs for production would be \$52 million.

MISSION GETS PRELIMINARY APP

The Arizona Department of Environmental Quality has made formal notice that it intends to issue an individual Aquifer Protection Permit to ASARCO Mission's No. 4 tailing facility located near Sahuarita in Pima County. The facility is necessary for their mining operation and will receive tailings in slurry form from the Mission Complex concentrators. The capacity will be approximately 309 million tons and hold about 30 years of tailings.

HELVETIA

The Pima County Board of Supervisors met in the Tucson Community Center to hear testimony and vote on a resolution asking the Forest Service not to approve ASARCO's request for a land swap. Although the action by the Board of Supervisors is believed to have little effect or weight with the Forest Service, the exchange would allow ASARCO to treat the property as private property. Offered in return for the property requested by ASARCO are some inholdings the Forest Service would be happy to have. The meeting was attended by about 500 people.

PLUESS STAUFER

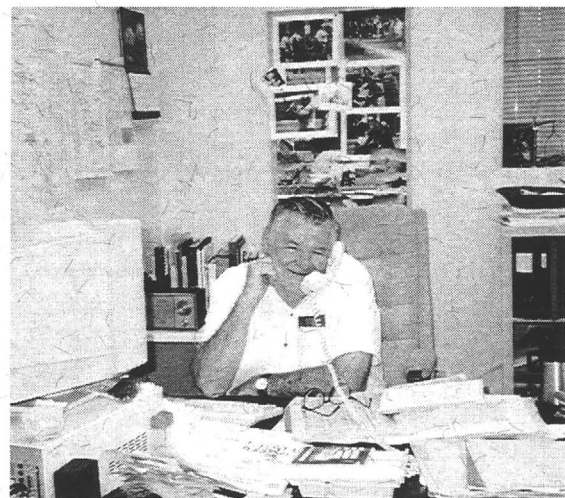
Pluess Stauffer's Omya division is reported to have purchased the Queen Creek Limestone deposit in Pinal County near Superior. The deposit supplies high quality white marble to Minerals Development Incorporated Superior Marble crushing and screening plant in the community of Queen Creek. Omya is a major producer of calcium carbonate for the filler-extender and chemical industries. This marks the entry of a third major producer of calcium carbonate into Arizona. Specialty Minerals (formerly Pfizer Minerals) and Georgia Marble have established operations in Arizona during the last eight years.

U.S. NAVY MILL GETS PRELIMINARY APP

The U.S. Navy mill, located 5 miles east of Skull Valley has received notice from the Arizona Department of Environmental Quality of its decision to issue an individual aquifer protection permit. The permit will allow the mill to operate 3 tailing impoundments and a custom mill facility. The facility includes loading, crushing, separating and gravity flotation of custom ore. The source or potential sources of the mill feed were not discussed.

OWENS CORNING

Owens Corning Fiberglass has acquired the 3 fiberglass insulation manufacturing plants owned by Western Fiberglass including the plant in Eloy. Western Fiberglass will continue to operate under that name. Owens Corning has expressed an interest in finding Arizona sources of supply for the plant's raw materials. All raw materials are currently shipped into Arizona.



MARICOPA AIME ELECTS OFFICERS

For the second time in 27 years H. Mason Coggin, ADMMR Director, will serve as Chairman of the Maricopa Chapter of the Society for Mining, Metallurgy and Exploration. He succeeds Al Lee who has chaired the section for several years. Terry Jensen of Horizon Environmental will serve as Vice Chairman and Bruce Nave will continue his third year as Program Chairman where he has done a phenomenal job of bringing industry leaders to AIME for programs. Chuck Nolan will head up the Education Committee where he has also done a fine job for many years. Carol O'Brien has held down this position since 1988! The Maricopa Section is indeed fortunate to have Carol.

WHITE VULCAN MINE

The Coconino National Forest is evaluating a plan of operation for Tufflite, Inc.'s planned White Vulcan expansion. The pumice operation is located east of the San Francisco Peaks. The mine furnishes pumice for light weight aggregate materials that provide light weight, high strength, and thermal and noise insulation properties, and also supplies pumice to the garment finishing industry.

Ken Jacobs, Coconino National Forest, Peaks Ranger District hopes to complete the Alternatives and Analysis by September, 1997. If you have comments regarding the desirability of this project please contact Ken Jacobs, Lands Staff (520) 526-0866.

MUSEUM NEWS

MUSEUM EXHIBITS

The cleaning and re-labeling of display cases continues. As this work progresses, the cases are also re-lamped as needed and the collection archives verified and corrected. Some of the new displays installed include Dinosaur Fossils, Minerals of Ajo, Energy Resources of Arizona, Fossil Classification, and Arizona Fossils. The Museum has responded to increased interest in fossils since the release of the movie, *Jurassic Park*.

NEW MINERAL MUSEUM AT PEARCE - SUNSITES

The Sunsites Gem and Mineral Club has their own mineral museum with the curator living on the premises. If you are planning to be in the area and want to tour the museum call (520) 384-2619 and request a tour and directions on how to reach the museum.

7TH ANNUAL FAMILY DAY

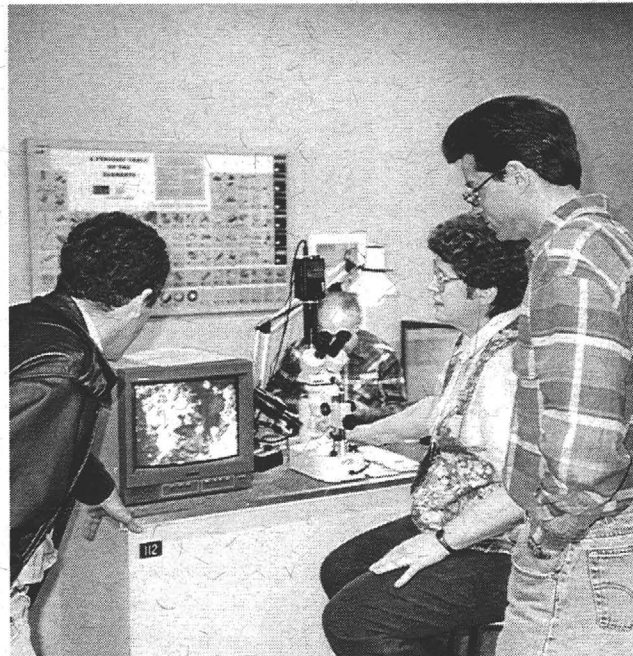
Let the seasoned prospectors tell you where the gold really is. The 7th Annual Family Day and Prospectors Show will be held on Saturday, February 21, 1998 from 11:00 am to 4:00 pm at the Museum.

This fun-filled event, co-sponsored by the Arizona Prospectors Association, features hands-on activities for all ages. There will be gold panning, metal detecting, prospecting equipment demonstrations, lapidary demonstrations, and jewelry making. Readers Theater presentation by actors from the Actors Guild and Community Theater will be provided. Admission to the event is free. There is a small fee for participation in some of the activities.



Bon Appetite

The famous "Banquet of Rocks" was donated to the Museum this year by the Arizona Mineral and Mining Foundation. The display was collected over a period of 35 years by Arless and Margaret Nixon. The 300-piece collection will be used as a specialty exhibit until a secure area can be built to display it.



Shirley Coté demonstrates the Museum's trinocular microscope with video camera attachment to visitors during Arizona Prospectors and Family Day at the Museum.

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Mineral Resource

Japanese Peace Garden

In February Ken Phillips, ADMMR's Chief Engineer, assisted Mark Lamm of Phoenix Parks, Recreation and Library Department and four landscape architects from Himeji, Japan find sources of landscape rock for Phoenix's evolving Japanese Peace Garden. Himeji is Phoenix's sister city in Japan. Together the two cities are building a peace garden in Phoenix at Margaret Hance Park (I-10 Deck). The garden will include a tea house, koi pond, water fall, stepping stones, stone pathways, stone bridges, and a mixture of local plants and traditional Japanese plants that can tolerate Phoenix's climate.

Rock for landscape use must meet both aesthetic and technical qualifications. Rocks used in Japanese gardens are traditionally beige to dark gray and dark brown. Naturally weathered rocks are strongly preferred over crushed or broken rocks. Water-worn pebbles are preferred for exposed aggregate concrete and for ground cover over materials such as crushed or decomposed granite. Masonry, although seldom used, is typically done with naturally rounded and weathered pieces.

With Ken Phillips as their guide, the landscape architects toured three stone yards in Maricopa County and numerous quarry sites in Yavapai County. The tours allowed the Japanese architects to become familiar with Arizona rocks and their typical geologic settings in Arizona. The primary purpose of the Department's involvement was to provide technical and economic information related to rock material that may be used in the peace garden. Hundreds of tons of landscape rock will be used in the garden. Additionally the architects were introduced to Arizona rock material that can be exported to Japan for gardens and landscaping.

Copper Problems

With copper prices down (late February US Producer Cathode price of 77.34 cents/lb compared to the 1997 average of 107 cents) and inventories up, Arizona's copper executives have been forced to make some tough decisions and suspend marginal production.

- BHP laid off 447 miners from the sulfide portion of Pinto Valley in February.
- Asarco has put plans for Rosemont on hold.
- Cyprus will be suspending 60 million pounds of production at Sierrita and Bagdad.
- Phelps Dodge announced it may reduce output and make selective cutbacks while keeping a close eye on cash flow.
- Permitting delays coupled with the drop in copper prices have caused Cambior to close its Miami construction office for the Carlota project. Carlota had been expected to generate 300 jobs.



Architects and members of the Japanese Friendship Garden Committee visit the West Verde drainage near Clarkdale to see native stones in place. Clockwise from left, Ohkito Nozomu, Shuto Minoru, Hara Koichi, and Masako Takiguchi. Photo courtesy of Mark Lamm.



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H. Mason Coggin, Director

Arizona Cement

The State of Arizona produced and shipped 2.43 million tons of Portland cement in 1997. This equates to approximately 16 million tons of concrete used in new construction.

Harborlite's Patent Application

Barney Oldfield, Geologist and Mineral Examiner for the US Forest Service, reported that the final report on Harborlite's perlite claims at Superior has been completed and it recommends the claims for patent. At projected production rates they have at least a 50-year reserve.

Unlike the metals mining sector which often consider ore deposits with as little as 3-5 years of reserves; the industrial minerals mining sector generally considers deposits with less than 25 years of reserves as unacceptable.

People for the USA

by H. Mason Coggin

On January 14 approximately 70 members of People for the West converged on the Capitol to visit with their legislators and representatives. After a day of discussions that included the PFW players singing the National Anthem for the opening of the Senate. The Senate members recognizing PFW for their many members and their good work in maintaining the traditional values of rural Arizona. The PFW and about 25 legislators attended a reception at the Arizona Mining and Mineral Museum. Refreshments were served, Skelly Boyd and H. Mason Coggin provided western entertainment after a very informative speech by Dr. William Bickle from the University of Arizona.

The Capitol Chapter of People for the USA meets at 7:00 pm at the Department on the first Thursday of each month. Speakers for the meetings include heads of various state agencies involved with mines and mining permits. Speakers for 1998 have included Michael Foster the Ombudsman for Private Property Rights with the Arizona Legislature, and Dennis Wells, commissioner of the State Land Department. Coming in March Ron Anderson of Fennemore Craig and the Honorable Doug Martin, Arizona Mine Inspector in April.



Do you need this information in an alternative format? Please call the Department at 255-3795.

Mining and Minerals Cluster

Dale Nations, Northern Arizona Geology Department and Ken Phillips, ADMMR Chief Engineer, have collaborated on writing *The Mining and Minerals Cluster in Arizona: An Analysis for the Strategic Economic Development Vision for the Arizona-Sonora Region* for the Strategic Economic Development Vision for the Arizona Sonora Region, Bureau of Business and Economic Research, Northern Arizona University, Flagstaff. An abstract of the 112-page report will be available from the Department.

BLM Permitting Seminar

The Bureau of Land Management is sponsoring a seminar entitled *The Permitting of Small Mining Operations in Arizona* on Monday, March 23. Topics will include: notices, plans of operation, 3715 filings, aquifer protection permits, 404 permits, 401 State certifications, and others. A question registry will run concurrently at breaks and lunch. The seminar is free by pre-registration. The deadline for pre-registration is March 13. For more information call 602-417-9349.

NEW DONATIONS

- **Pennebaker Collection.** The Arizona files of E.N. Pennebaker are now available to the public. The donation was contingent upon the information being withheld until two years after his death. Pennebaker's long geological career involved many Arizona copper properties.
- **Fred Hohne.** This mining engineer and geologist, long associated with Wyoming Minerals Co., has donated an extensive collection of books, articles and reports. The Arizona uranium deposits data will not be available until 2000.
- **Pay Dirt.** Bruce Rubin, editor of Pay Dirt, has donated a large collection of publications and periodicals. It includes several files on ASMOA and files from Charles Willis and Mrs. Moore.
- **Margaret and Edward Kennedy,** the owners of the Stonewall Mine near Mayer in Yavapai County have allowed the Department to copy the recent exploration information generated on the property by ACNC.

Donations continued

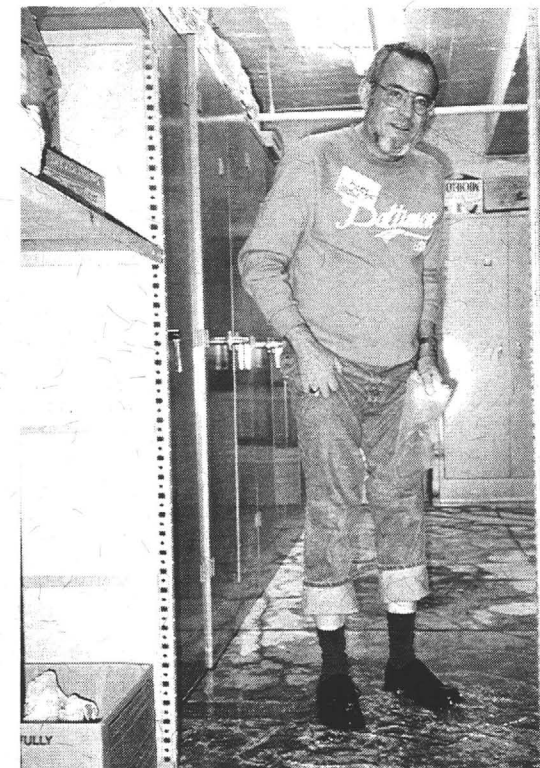
- **Virginia St. Peter.** Photographs from the record large blasts at the Old Reliable and Zonia have been added to the Department's photo archives.
- **H. Myles Jacob Collection.** Included in this collection are wonderful photographs of Inspiration, Claypool, and Miami. Jacob was the Chief Executive Officer of Inspiration until his retirement.

MUSEUM NEWS

Mineral Symposium

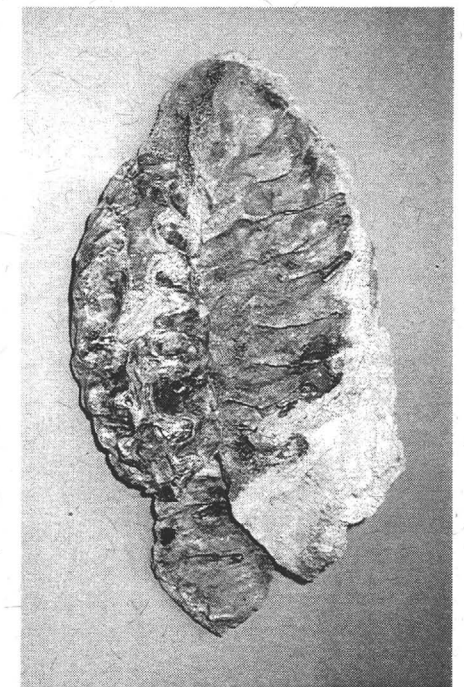
The Sixth Annual Mineral Symposium, sponsored by the Arizona Mineral and Mining Foundation and the Department will be held Saturday, March 28 at the Museum.

This year's sessions will feature talks by Anna Domitrovic, Vince Vozza, Nyal Niemuth, Les Presmyk, Jim McGlasson, and Ray Grant. The registration fee of \$30 (\$25 for Foundation members) includes a catered lunch, refreshments, and program abstracts. Contact Susan Celestian at the Museum for more information.



El Niño Strikes the Museum

Jerry Myers inspects the water level in the basement during the February rains. The water was pumped out with little damage to the collection or storage cabinets.



MAMMOTH MOLAR

This impressive mammoth tooth and jaw fragment were uncovered during overburden removal at the Grace Chabazite mine near Bowie in Cochise County. Ted and Dan Eyde, owners of GSA Resources Inc., donated the fossil to the Museum. Susan Celestian, Curator of Education, stabilized the fragment in a three-day process utilizing a low viscosity bonding agent. Celestian reports that, "as received, the tooth was in a stable condition, but the bone was quite fragile and friable."

Vertebrate fossils are uncommon from the San Simon valley. It is unknown how this mammoth correlates to other mammoth species found in the state. The jaw was buried in Holocene gravels overlying Pleistocene sediments. Brad Archer of the ASU Geology Department estimates the age to be between 10,000 to 25,000 years.

The mine where the specimen was found produces the zeolite chabazite used as cation exchange media, specialty adsorbent, deodorizer, and in RAD waste treatment for adsorbing Cs¹³⁷ and Sr⁹⁰.

The Museum plans to expand the fossil display to accommodate this exciting new addition. The Museum is grateful for public-spirited companies like GSA Resources and always welcome donations of fossils and mineral specimens.

SME Meetings

Society for Mining, Metallurgy, and Exploration, Inc. Tucson Section, meets the 2nd Wed. of each month except July and Dec. at the Ramada Inn-University. Contact: Rammie - (520) 388-7051

Southwestern New Mexico Section, meets the 1st Thurs. during Feb., Apr., Sept., and Nov. Contact: Tisha M. Clark - (505) 538-760

Pinal Mountain Section, meets the 3rd Tues. of each month except June, July, Aug., and Dec. in Globe or Miami. Contact: Ken Brusoe (520) 473-7454

Morenci Section, meets the 2nd Tues. of each month except Jan., June, July, and Aug. at the Clifton Elks. Contact: James Davis - (520) 865-4521

Grand Canyon Section, meets the 2nd Fri. of each month except Feb., Apr., June, Aug., and Dec. Contact: Tom Bender (520) 633-2241

Maricopa Section, meets the 3rd Thurs. of each month except June, July, Aug. and Dec. Contact: Carole O'Brien - (602) 945-4630

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MINING NEWS

BHP Makes Major Discovery

BHP Copper has announced discovery of the Magma Porphyry near Superior. It is the first new major copper discovery announced in Arizona for many years. The deeply buried deposit is under post-mineral rocks and was first intersected by drill holes from the underground workings of BHP's Magma mine at Superior in 1995. All of the holes drilled have significant intercepts of greater than 1 percent copper.

The first three were long holes that were inclined laterally and downward from the underground workings. The latest holes were deep, steeply inclined holes drilled from the surface in 1998. The longest intercept is from one of the surface holes; assays of drill core from the bottom 1,004 feet yielded arithmetic mean grades of 1.75 percent copper and 0.029 percent molybdenum, and the last 619 feet of that interval assayed 2.18 percent copper and 0.028 percent molybdenum.

The dimensions of the Magma Porphyry deposit are still incompletely defined, but it is at least 1,500 feet high, 2,100 feet long, and 600 feet wide. The top of the deposit is approximately one mile beneath the surface. The existing infrastructure at Magma is not suitable to exploit the new deposit, but the results of preliminary studies indicate that the deposit may be amenable to conventional bulk tonnage, underground mining methods, and flotation processing. At the end of the quarter, exploration drilling had ceased. The Magma mine remains on a care-and-maintenance status and BHP was evaluating options for future exploration.

Court Strikes Down BLM Requirement

The Bureau of Land Management's bonding requirement on hard rock mining has been struck down by the U.S. District Court for the District of Columbia. The portion of the bonding requirement effected by the ruling are those involving less than 5 acres of disturbance. The rule required all bonds to be submitted with a Professional Engineer's certification of reclamation costs.

*Arizona Department of Mines & Mineral Resources, 1502 W. Washington, Phoenix, AZ 85007
602-255-3791, toll-free in Arizona 1-800-446-4259
H. Mason Coggin, Director*

The Arizona and Nevada Mining Associations joined the Northwest Mining Association in the case *Northwest Mining Association v. Babbitt*, claiming that the BLM bonding rule was invalid.

Of the court's decisions, Luara Skaer, Executive director of the Northwest Mining Association said, "This is a great day for small miners, the mining industry and the citizens of the United States. The legal process worked to protect America's small business community. The court's decision sends a clear message to federal agencies that they must follow the laws enacted by Congress, or their rules will be set aside."

The Arizona BLM State office does not know if this means that bonds already paid by miners under this regulation will be returned. The Department recommends requesting a refund if a bond was paid under section 302(b) of the Federal Land Policy and Management Act, 43 U.S.C. Sec 1732(b) requirements from the appropriate field office.

Harborlite's Patent Application

In our enthusiasm to spread good news we erroneously reported completion of the final report recommending patent be issued for some of Harborlite's perlite claims at Superior. The report is only preliminary and subject to additional levels of review before its acceptance and the possible eventual issue of a patent. We wish Harborlite good luck in obtaining those patents.

Gold Road Mine Closed

Addwest Minerals Inc. announced the closing of the underground Gold Road mine in Mohave County on June 26. Gold Road produced over 30,000 ounces of gold last year at their 500 ton-per-day CIP mill. Addwest estimated they had 3 years of reserves remaining totaling 524,000 tons grading 0.23 ounces at the end of 1996. If the price of gold increases substantially, it is conceivable the mine will be reopened. Gold Road was the only operating gold mine in Arizona.

Arizona Mineral Production - 1997 ¹		
Thousand metric tons unless otherwise noted		
Commodity	Quantity	Value
Clay	withheld	withheld
Copper	1,230	\$2,930,000,000
Gemstones	NA	2,360,000
Gold	withheld	withheld
Sand and gravel	40,719	200,220,000
Silver	159	22,300,000
Stone, crushed	6,100	38,000,000
Other ²	NA	325,000,000
Coal (tons)	11,723	279,000,000 ³
TOTAL		\$3,796,880,000
¹ USGS preliminary figures		
² Includes cement, lime, gypsum, molybdenum, perlite, salt, dimension stone, and the withheld values		
³ ADMMR estimate		

Yarnell EIS is out

The Bureau of Land Management has released the draft Environmental Impact Statement for the Yarnell Mining Company and the public hearings and comment period has started. Yarnell received their Acquirer Protection Permit from the water quality division of the AZ Dept. of Environmental Quality in June. Now that the clock is ticking Yarnell will have to address, answer, and mitigate all of the public comments submitted at public hearings and through the mail. So far the objections over the project seem to be designed more to delay the project than to address real concerns. Nevertheless, assertions that the project will release a virus or become the target of a terrorist attack must still be addressed.

Forest Service Road Closures

Every American should be concerned by the U.S. Forest Service's announcement to reduce the 373,000 miles of roads in the National Forests by half over the next 10 years. This affects our right to explore Arizona,

visit mines, go four-wheeling, picnic, camp, and prospect in the National Forest.

In addition, the Forest Service intends to suspend all road construction in roadless areas of the National Forests for 18 months. It affects all roads in roadless areas greater than 5,000 acres or more and roadless areas greater than 1,000 acres if they are contiguous to designated wilderness areas or components of the National Wild and Scenic Rivers System.

The Forest Service did not consult Congress or local governments on this issue, but has decided to act unilaterally across the country. If you feel your rights are being taken and want to comment to the Forest Service write to: Gerald Coghlan, Acting Director, Engineering Staff, Forest Service, USDS, POB 96090, Washington, D.C. 10090-6090. You may want to send a copy of your letter to your congressional delegation in Washington, D.C.

Exploration Targets

Of possible interest to prospectors, Phelps Dodge announced in January that the four metals on which they will be focusing their exploration activity are copper, gold, nickel, and zinc.

The Northern Miner 1/19/98

Arizona Ombudsman Citizen's Aide

If you are being treated unfairly by a state agency, the Arizona Ombudsman - Citizen's Aide has been organized by the legislature to "make government more responsive to the people of Arizona."

They will discuss your complaint with you in confidence and provide information to solve your problems, or investigate your complaint and act as a helpful mediator in negotiating a solution. The ombudsman will not automatically take your side in a conflict. Their job is to consider the question in an impartial and objective way. If they decide that you have been wronged by a state agency, they will work with you and the agency to find a fair solution. If they decide you have no valid complaint, they will tell you why.

They can be reached at (602) 277-7292 or 1-800-872-2879. You may visit their office at 3737 N. 7th St., Ste. 209, Phoenix, AZ 85014.

Peabody Western Coal Sold

Peabody Western Coal Company's parent company, Peabody Group, became an independent, privately held company when it was acquired by Lehman Merchant Banking Partners. The sale makes Peabody the world's largest private sector coal company and one of the top ten U.S. power-marketing firms.

Peabody mines coal in Arizona at the Black Mesa and Kayenta mines on land leased from the Navajo and Hopi Nations. Coal ranks second only to copper in economic importance in the state, with a production of 11,723,000 metric tons in 1997.

MUSEUM NEWS

Geology in the Park

Glenn Miller, Curator, and Susan Celestian, Curator of Education, participated in a workshop for teachers held at Papago Park. The event was co-sponsored by the Department and the Arizona Mining Association. Subjects included field geology, mapping, and aerial photography.



Lucky fourth grade students got an unexpected treat when Forrest Dougherty visited the Museum recently and agreed to do part of his Will Rogers performance for the classes.

National Science Olympiad

Susan Celestian, Curator of Education, was one of the event supervisors for the 1998 National Science Olympiad that took place in Grand Rapids, Michigan in May of this year. The annual event is a nation-wide competition for young scientists to showcase their achievements over the year. Susan supervised the fossil event. The Department is proud to have a staff member participate in this prestigious event.

Publications

Two new publications of interest to mineral collectors are now available. The circulars are \$.25 each if mailed.

C79 EARTH SCIENCE CLUBS - 1998-99, Includes rockhound, lapidary, and prospecting organizations.

C80 ARIZONA GEM SHOWS - 1998-99, Includes date, location, sponsoring group, and contact person for 25 gem shows.



Do you need this information in an alternative format? Please call the Department at 255-3795.