

39TH ANNUAL REPORT
FOR
FISCAL YEAR 1977-1978



DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

PHOENIX, ARIZONA

JOHN H. JETT
DIRECTOR



STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007

602/271-3791

October 31, 1978

Honorable Bruce Babbitt
Governor of Arizona
State House
Phoenix, Arizona 85007

Dear Governor Babbitt:

In accordance with ARS 27-106, we are pleased to submit the annual report of the Department of Mineral Resources and the Arizona Mineral Museum. The report covers the Department's and the Museum's activities for 1977-1978. A complete financial statement and the Director's Quarterly Reports are included, all as required by ARS 27-106.

The mining industry's basic role in society is to provide vital, raw materials that are necessary for our present quality of life, balanced with an equitable evaluation of society's other needs.

It is the Department's responsibility to encourage interest and investment in Arizona's mineral resources. New mineral discoveries can result in new operations providing increased employment opportunities and an expanded tax base.

It is the intent of the Department of Mineral Resources to meet all responsibilities in fulfilling its prime obligation to "aid in the promotion and development of the mineral resources of the State." This will be done in harmony with the changing and expanding goals of society.

Respectfully,

BOARD OF GOVERNORS,
DEPARTMENT OF MINERAL RESOURCES
ARIZONA MINERAL MUSEUM

Curtis J. Ritter, Chairman
Curtis A. Jennings, Vice Chairman
Richard C. Cole, Secretary
Ed Peplow
Thomas A. Clary

BOARD OF GOVERNORS

Curtis J. Ritter - Chairman - Kirkland
(Term expires January 31, 1980)

Curtis A. Jennings - Phoenix
Vice Chairman
(Term expires January 31, 1979)

Richard C. Cole - Pinetop
Secretary
(Term expires January 31, 1983)

Thomas A. Clary - Miami
(Term expires January 31, 1982)

Ed Peplow - Tempe
(Term expires January 31, 1981)

STAFF PERSONNEL

Phoenix Office - Mineral Building, Fairgrounds - 271-3791

John H. Jett.	Director
Ann Turney.	Administrative Assistant
Glenn Miller.	Field Engineer
Ken A. Phillips	Field Engineer
Cliff Hicks	Mineral Resources Specialist
Bonnie Hein	Bookkeeper/Secretary
Aleta Phillips.	Secretary
Virginia Griesmer	Secretary
William H. Hammers.	Custodian

Tucson Office - Room 208, State Office Building - 882-5399

Gerald W. Irvin	Mining Engineer
Mike Greeley.	Mining Engineer

Mineral Museum - Mineral Building, Fairgrounds - 271-3791

Arthur W. Bloyd	Curator
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ARIZONA MINERAL PRODUCTION - 1977

According to preliminary figures from the U.S. Bureau of Mines, the value of Arizona's mineral output was \$1,581,082,000.00. This is an 8% decrease from 1976. Copper production dropped below 1,000,000 tons, a decrease of approximately 10%. It is interesting to note that molybdenum production, a by-product of copper mining increased. Gold production decreased but silver production had a significant increase in ounces produced and dollar value.

Minerals produced, other than as a by-product of copper mining or the energy minerals, include clay, gem stones, gypsum, lead, lime, pumice, stone, zinc, asbestos, cement, feldspar, fluorspar, iron ore, mica, perlite, salt, and tungsten. These minerals had a value of \$139,841,000.00. Values not included in these figures are, sand and gravel at \$46,000,000.00, gold at \$14,245,000.00 and silver at \$31,362,000.00.

DEPARTMENT'S ACTIVITIES

A proposal three-year master plan was presented to the Board of Governors the first part of the fiscal year. The year was spent emphasizing the implementation of the plan. Resignations, illness, and previously committed special projects were serious handicaps to full implementation of the first phase. However, sufficient data was accumulated to point out some weakness in the proposal plan. It will be rewritten and modified. One of the most successful projects in the proposed plan was the establishing of Mineral Resources Conferences. They have been held in nine areas and have been extremely well received by the local people. Some prospectors have driven up to 100 miles each way to attend a conference. Twenty-seven conferences were held with 648 attendees. This number will be doubled in the next fiscal year.

The Department's engineers are taking an aggressive role in encouraging prospecting for nonmetallic minerals and metallic minerals other than copper. Many of these minerals can be found in the outlying areas of the State away from the two large urban areas. This encouragement is provided by conducting prospecting and educational seminars at the Department's Mineral Resources Conferences. Conferences were held in Safford, Globe, Bisbee, Douglas, Tombstone, Payson, Prescott, Quartzsite, Congress and Bouse. Nonmetallics presently being mined in Arizona include feldspar, asbestos, salt, fluorspar, silica, high purity quartz, mica, hydrafrac sand, bentonite,

limestone, gypsum, decorative stone, scoria, perlite, dolomite and diatomaceous earth.

In addition to Mineral Resources Conferences, ASMOA meetings were attended with some engineer participation. One engineer was assigned to work part time on the former Arizona Bureau of Mines County Index series of mineral properties. The project created interest with the U.S. Bureau of Mines. As a result they asked the Department to submit a request for a federal grant to work on this project as part of their Mineral Industry Location System (MILS). A proposal was submitted.

The mining library was enlarged by engineer reports, abstracting, purchase of technical books and periodicals. Several small donations and a very large generous contribution of maps, books, periodicals and property reports from Mr. E. A. Pennebaker of Scottsdale. An additional small personal library was contributed by Mrs. Leonard Klein.

The Mineral Museum was the recipient of over one ton of various minerals to be used to make Teacher Educational Kits. Applications were made for CETA assistance. Two laborers were eventually supplied to the Museum. They were used to make miscellaneous repairs and the Teachers Learning Kits. The Curator presented a weekly series of evening lectures on mineral identification. Two valuable mineral collections were donated to the Museum along with a large petrified log. A small dry washer was put on display.

The Board of Governors was quite active on the Department's behalf. Mr. Clary participated in all of the Globe Mineral Resources Conferences. Mr. Peplow made presentations to technical organizations. Mr. Jennings attended legislative budget hearings and made presentations. Mr. Ritter assisted in publicizing the Prescott Mineral Resources Conferences and also set up the opportunity for the Department to present mineral programs to interested groups.

One area of extreme concern to the Department is the large numbers of out of State (some Arizona) telephone calls and visitors wanting information on a "gold" and other precious metal mine in which they have made an investment. The majority of these did not appear to be good sound investments. Unfortunately most of the contacts were made "after the fact." However, we did reach a great number of people and provided them with some technical assistance to help them make a decision.

Details of the Department's activities can be read in Quarterly Reports which are part of this Annual Report. The Department is guided by statutory duties and the objective set out in the three year master plan. A summation of the activities resulting from these guidelines are as follows:

1. Encourage interest and investment in Arizona Mineral Industry by enhancing the possibility of new ore discoveries. New ore discoveries result in new operations providing increased employment opportunities and an expanded tax base.
2. Supplement individual effort with technical assistance.

3. Provide commodity, geological, economical, statistical, quasi-legal, historical and current data on specific areas and properties relative to prospecting, exploration, mining, processing and marketing.
4. Facilitate cooperation between people, companies and governmental agencies.
5. Function as a central clearing house for all mining and mineral resources data.
6. Contribute to development of an economically sound mineral industry with proper balance between economic, social and land use consideration.
7. Accommodate population growth in centers of activity.
8. Encourage and aid private enterprise, corporate and individual, in their search for minerals and the ensuing development and marketing.
9. COMPETE AN IN-DEPTH INVENTORY OF ARIZONA'S SUB-SURFACE RESOURCES.
10. Make all Arizona citizens aware that final judgement on the value of public lands cannot be made until the sub-surface has been thoroughly explored for its resources and that this must be recognized in trying to use the lands in a way that will optimize its future contribution.

A very specialized technical staff is required to work in these areas and they must spend considerable time adding to their own knowledge in order to more effectively work in these areas. The Department is fortunate in having such a staff.

STATISTICS - 1977 - 1978

Includes Tucson Office

Office visitors	2,322
Telephone contacts.	7,548
Field interviews.	65
Mine visits	54
Technical meetings	40
School tours. 150	6,840
Club meetings 49	982
Mineral indentification	470
Curator programs. 28	3,250
Museum attendance	43,804
Field trip data	983
Mineral kits.	299
Mine files used by public	1,830
Reproduction of files for public.	3,988
Reference books used by public.	439

PUBLICATIONS

Publications for the fiscal year included:

Directories - Exploration Companies Active in Arizona; Directory of Active Mines In Arizona; Directory of Earth Science Clubs in Arizona; Directory of State, County and Federal Agencies in Arizona for Mining and Mineral Resources; Directory of Consulting Mining, Metallurgical, Geophysical, and Geological Engineers, Geologists, and Authorized BLM Mineral Surveyors Registered and Residing in Arizona.

Information Circulars - Pertinent Data for New or Prospective Mining Operations in Arizona; List of Available Publications; Arizona Land Ownership Status; Possible Buyers of Gold and Silver; Characteristics of Common Uranium Minerals; Arizona Registered Assayers and Assay Offices; Patenting a Mining Claim; Book Lists.

Reports - Arizona Industrial Minerals Mineral Report No. -2; Department's 38th Annual Report; Laws and Regulations Governing Mineral Rights in Arizona; Laws and Regulations Governing Mineral Rights in Arizona Supplement; Profile of Arizona's Copper Industry; Arizona Land Status and Ownership Determination.

Miscellaneous - Press Releases; Book Lists; Meeting Posters; Meeting Postcards; Treasurer Hunt Sheets (3 sets); Spectroscope Analysis Sheets; Specimen Work Sheets for the Mineral Museum; Class Field Trip Information with Map; Mineral Museum General Information with Map; Desert Survival Safety Rules; Leave Slips; Museum Activities.

RECEIPTS AND EXPENDITURES

A Statement of Expenditures is attached. Personal funds and Employee Related funds returned to the State Treasurer were \$16,783.22 due to resignations of employees. The large In-State Travel fund returned, represents the monies reserved for an engineer's travel who has a grievance filed against the Department.

One thousand seventy-eight dollars and fifteen cents was deposited to the General Fund of the State. These were receipts from the sale of publications (\$611.56), and reproduction charges (\$466.59).

Donations to the Mineral Museum during Fiscal Year 1977-1978 totaled \$179.00.



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ACTIVITIES REPORT FOR THE FIRST QUARTER

FISCAL YEAR 1977 - 1978

The Department initiated a program of conducting Mineral Resource Conferences in areas of mineral interest and activity. Meetings were held in Bisbee, Safford, Prescott, Quartzsite, Payson, and Bouse. The meetings will be continued and also established in other areas. In addition to this meeting, ASMOA meetings were attended in Tucson and Congress Junction.

Other meetings attended included Northern Arizona Council of Governments (2), 208 Water Quality Control, Mohave County Board of Supervisors (Advisory on custom mills), Governor's Commission on Arizona Environment (2), Interagency Energy Planning Office, Financial Advisory Committee to JLBC Financial Analyst, Office of Surface Mining (Department of the Interior), Roadless Areas (RARE II) (2), Arizona Conference AIME Directors, Maricopa AIME, Cocopai Resource Conservation District (presented programs on mineral resources), Honeywell Earth Science Club (presented program), and Paradise Hills Lions Club (presented program).

Assistance provided to Governmental units (in addition to ones previously listed), include: Pima County Assessor's Office, Arizona Motor Vehicle Department, Maricopa County Parks and Recreation Office, Office of Water Supply (Washington, D.C.), Department of Revenue, Mesa Chamber of Commerce, Department of Energy, Fuel Resource Division, U.S. Bureau of Mines, Luke Air Force Base, Arizona Tax Appeal Board, Social Services Department, Albany, New York, U.S. Department of Agriculture Soil Conservation Services, Consultants to Maricopa County, and Federal Trade Commission.

News media assistance included Arizona Magazine, Phoenix Magazine, Phoenix Gazette, Arizona Daily Star, Tucson Daily Citizen and American Metal Market.

Some of the out-of-State companies assisted include: American Diatomite Company of Minnesota, R.C.I., Inc. of California, Wyoming Minerals, Denver office, SOHIO of New Mexico, Utah Power and Light, of Utah, Southern California Edison of California, Searth Petroleum from Texas, Ralph M. Parsons Company of California, Callahan Mining Company from Connecticut, Grover Construction Company from Colorado, C.F. and I. Corporation from Colorado, El Paso Energy Resources from Texas, Hilton Construction Company from Colorado and Lucky Mae Uranium from New Mexico. Other out-of-State contacts included New Jersey, California, Colorado, Michigan, Washington, Oregon and Texas. These lists are not complete since we do not attempt to keep official records of this type.

The engineers discussed 72 separate mines and/or claim groups with prospectors and visitors. A list is attached. Three hundred seventy-eight (378) other mine files were retrieved for study, along with fifty-two other references.

Among the various minerals discussed with the engineers were coal, silver, tungsten, uranium, pipestone, feldspar, scheelite, platinum, diatomaceous earth, pumice, mica, agate, fluorspar, perlite, vermiculite, cobalt, gold, thorium, nickel, platy talc, gold tellurides, rare earths, pyrophyllite, and hematite.

Technical discussions with prospectors, miners, and others, included:

1. Leaching of gold, silver, uranium, and copper ores.
2. Prospecting for uranium, gold, silver, tungsten, rare earths, and minerals, in general.
3. Buyers of ores, many including tungsten and uranium.
4. Lands with minerals and surface rights severed.
5. Milling and recovery of gold.
6. Cyaniding Black Sands.
7. Electrostatic separation of gold.
8. CEQ Report on Hard Rock Mining in Public Lands.
9. Dry gold washers.
10. County taxation of unpatented mining claims.
11. Milling schedule.
12. Sewage treatment sludge as a fuel.

FIELD ACTIVITY NOTED

Geophysical work near Florence Junction, Camp Verde Salt Mine becoming popular collecting area, operating plan filed with Forest Service for bentonite mine, tungsten mill being erected near Cherry, exploration activity near Jerome, claim locating continues in Alamo Lake area, a company studying manganiferous gold and silver deposits near Wenden, heavy prospecting in Young area, test work on gold and silver leaching Blue Bird, field checked for uranium in Preacher Canyon area, development work on gold placer Rich Hill area, development work on mica in Black Canyon City area, additional 20,000 acres located and/or leased by major oil firm for uranium, claim staking near Monte Cristo, silver mine activity near Kingman, copper mine exploration west of Black Canyon, uranium northeast of Cave Creek, dewatering of old copper mine, numerous small placer operations on Lynx Creek, machinery being erected on Jack Pot placer, claim activity in Mazatzal.

Foreign company developing large tungsten mine, tailings of former zinc mine being leached for gold-silver, small mills being erected near Turkey Creek area and Swiss Bell. Two major oil companies leased land near Crown Point, leach and carbon stripping plant at Pope, contract drilling for uranium near Old Abe, foreign firm drilling for uranium near San Simon, major company staking claim few miles east of Casa Grande, gold mine north of Phoenix optioned by out-of-country firm. Two reconnaissance radiometric ground surveys conducted for uranium.

PROSPECTS AND MINE DISCUSSIONS

The following properties were discussed with the Department's engineers: Sundad, Silver Dallas, Rob Roy, Rattler Claims, Abe Lincoln, Castle Dome area, Monte Cristo, By Bananna, Muggins Mountains Area, Swiss Bell, Pope, Denver mine area, Gladiator, Savoy, Snowdrift, Rich Hill Placers, Little Pan Placers, Upshot Mine, B.D. Mine and Mill, Mica Giant, Uranium Pit Claims, Killgore, Lydia, Little Bit More, Little Pan, Crosley, King Benjamin, Stella Maris, Ervin 5, Bond G Claim, Swastica, Copper Chief, Gold Queen, BARR-4, Apache Vanadium, Zonia, Snyder, Executive Enterprise, Montana, Plata Y Oro, Glove, Middlemarch, Rex Towne Mill, Phillips, Calvello, Vekol, Commonwealth, Goodenough, Sonorena, Control Morning Star, Maudina, Deer, Mark Twain, Eles Springs, Great American, Ellsworth, Bodie, Venezia, Golden, Aster, Altuda, Victoria, Lookout, Tuscombia, Little Daisy, Goldclift, Humbug, Harquahala, Jack Pot, Renegade and Blue Bird group.

MINERAL MUSEUM

The following listed clubs use the Museum on a regular basis for meetings: Micromounters, Paleontology Society of Arizona, Arizona Prospectors Association, Mineralogical Society of Arizona, and The Stoneagers. The Arizona Recreational Prospectors Association and the Flagg Foundation use the facilities on an intermittent basis. There are other clubs that use the Museum on an occasional basis.

The two Prospector Associations had Forest Service Representatives and a member of Senator DeConcini's staff, speak to them on Wilderness and Roadless Areas. Both groups were almost vociferous in their defense of "no more withdrawals of Public Lands."

A display was exhibited at the Arizona Association of Earth Science Clubs' Annual Meeting in Pinetop.

Cataloguing, indexing, cross-referencing and labeling continued on stock material.

An office and drafting room were established on the balcony for mineral resource use.

Teachers' kits, student kits and mailing kits of minerals were made. This involves hand breaking the material to size, labeling, making boxes, typing cards and lists, and assembling.

Paper work was initiated to obtain two CETA workers. They will be used in painting, moving mineral specimens and storage cabinets, and general maintenance.

The Curator personally applied ten gallons of roofing material to stop numerous roof leaks in the building.

Volunteers for the State Fair were solicited. Forty-two will assist.

A project was started to sort, divide, and classify old stock material. They will be classified as Museum specimens, study specimens, teachers' kits, student minerals, and mailing specimens.

The Curator presented a mineral identification program. From this meeting, a weekly group was organized and is meeting.

The Curator of the Mineral Museum in Bonn, Germany, spent considerable time visiting.



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ACTIVITIES REPORT FOR THE SECOND QUARTER

FISCAL YEAR 1977 - 1978

Mineral Resources Conference Meetings continued with meetings being held in Globe, Payson, Prescott, Quartzsite and Bouse. ASMOA meetings were also attended. Conferences will continue at listed locations. Additional meetings are being planned for Phoenix, Bisbee-Douglas area, Mammoth-Winkelman area, and Tombstone. Once established, other areas will be developed. At this time, meetings are being held once every two months, but a shortage of travel and postage funds may reduce the frequency to three-month intervals. However, the attendees at the Conferences want monthly meetings.

Programs were presented to Arizona Prospectors Association, Globe Lions Club, and Paradise Valley Lions Club.

In addition to ASMOA and Mineral Resources Conferences, other meetings attended by the Director or Staff, included AIME Board meeting (Tucson Section and State Council of Sections), SMEA regular meetings and State-ment Planning Meeting, Special meeting with Arizona Mining Association, BLM, Forest Service and the Department, AIME Annual Conference, Finance Advisory Committee and two field engineers attended a mining seminar at the University of Arizona.

Other agencies and governmental entities that requested some form of assistance from the Department, included Better Business Bureau, Four Corners Regional Commission, Department of Commerce Trade and Development Group, Florida Securities Division, Arizona Corporation Commission Securities Division, Department of Energy, Western Interstate Energy Board, U.S. Forest Service, State Land Department, Mohave County Board of Supervisors, Maricopa County Planning Office, Bureau of Land Management (Arizona Strip District and State offices), U.S. Bureau of Mines, Arizona Water Commission, Tonto National Forest and a Senate office.

News media asking for data included Engineering and Mining Journal, and four major newspapers.

A map was prepared for the U.S. Bureau of Mines' Liaison Officer to present to a RARE II Forest Service meeting held in California. The map indicated past mineral activity and mineral belt trends.

A large donation of books was accepted and picked up for the Department. Mr. Pennebaker, a consultant, is retiring and will have additional items, including equipment for the Department.

A field engineer accompanied investigators from the Arizona and Florida Securities Divisions, to look at a property. A second proposed mining project was analyzed for the Securities Division for a possible exemption.

Pioneer Village requested services of a field engineer to solve an adobe clay problem.

Numerous meetings were held on Perlite and an expanding plant. There is an existing non-operating plant available.

The mining index project at the Bureau of Geology and Mineral Technology is continuing on a one day a week basis. A field trip to Mohave County was made for additional data. Phelps Dodge Corporation and U.S. Bureau of Mines, have offered to let the Department research their files on this project.

Testimony was given at a Hearing on possible changes to the 1872 Mining Law.

The OEPAD project is still using one of the engineer's time intermittently, with the Luke Air Force Base Mineral Survey taking priority. Phelps Dodge Corporation and the U.S. Bureau of Mines in Denver permitted our engineer to research their files for this project. The Air Force has reimbursed the Department for travel expenses.

The White Mountain Apache Indian Tribe wants assistance in making a mineral survey. We anticipate starting this project in the fourth quarter.

One of the Department's engineers provided assistance to the Fort Verde State Park.

The Department is supporting the Oil and Gas Commission and the Arizona Bureau of Geology and Mineral Technology on a proposed mapping project. The end product would result in maps that would be of assistance in prospecting.

Assistance was provided to visitors from Colorado, California, Oregon, Texas, Oklahoma, New Mexico, Washington, D.C., Germany, Louisiana, New York City, Canada and Washington.

More than thirty different mineral products were discussed. More than sixty file properties were discussed with the engineers. An additional 509 mine files were used by the public. Eighty-two reference books and other reference material was used by the public. 1,526 copies of data was made for the public.

MINERAL MUSEUM

Eleven club meetings, forty-four schools and eight Curator programs were the special activities for the quarter. In addition, the Curator presented seven programs away from the Museum. The programs were presented in Safford, Sun City, Apache Junction, Mesa, Wickenburg, Scottsdale and Phoenix.

There is a tremendous amount of repair work, rock-breaking work, specimen kit-making work and remodeling work being planned. A CETA employee is being provided to the Department with a second one becoming available soon.

More than one ton of specimen material was donated to the Museum to be used to provide students and educators with specimens and/or mineral kits. A mine car placed in front of the Museum is used for specimens for the public to have. Other donations included the Kratz Collection valued at over \$13,000.00, and a petrified log about 30" in diameter and 30" long.

Specimens were loaned to the Secretary of State's office for display. Five cases have previously been filled with specimens in the Arizona House of Representatives.

The Curator and a field engineer hiked to the Amethyst mine north of Phoenix. They assisted the operators in developing a mining, processing, transportation and marketing plan.

The Curator attended a mineral show in Tucson. Forty-two volunteers assisted during State Fair time.



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SUPPLEMENTAL INFORMATION FOR THE
SECOND QUARTER NOT INCLUDED IN QUARTERLY REPORT

Minerals discussed included -

Uranium, lead, zinc, gold, silver, beryl amethyst, corundum, tungsten, high purity quartz, silica, copper, feldspar, vermiculite, radioactive granite, fire agate, clay, coal, limestone, manganese, gypsum, soapstone, molybdenum, pegmatites, asbestos, hematite, tuff, graphite, rare earths and platinum.

Technical discussions with prospectors, miners, and others, included -

1. Specifications for yellow cake.
2. Evaluation of gypsum deposits for shipping to West Coast.
3. Testing vermiculite for popping qualities and establishing grades.
4. Surveying uranium mills for custom ores and developing specifications.
5. Establishing gold mill in Yavapai County.
6. Outlets for beryl ores.
7. Claims in Sierra Ancha Roadless area.
8. Uranium prospecting, milling leaching and mining.
9. Placer operations and heap leaching of gold.
10. Copper leaching.
11. Testing and development of new placer machines.
12. Tungsten milling and marketing.
13. Gold recovery from Black Sands.
14. Sealing leach pads and tailing ponds.
15. Establishing Rock wool plant in Arizona and slag source for feed.

16. Custom ore sources for pod leach silver operation.
17. Claim inspections for validity contest hearings.
18. Claim visits for locating and development assistance.
19. Abandoned mines for growing mushrooms.

PROSPECTS AND MINE DISCUSSIONS

PROPERTIES

Ash Peak, Cyprus Mill, Middlemarch Mine, Bonita Tungsten, Pope Mine, Muggins Mountains Area, Elisio Springs Mine, Herget Turquoise, Brich Mine, Poor Bob Mine, Oro Blanco area, Octave Mine, Brush group, Esmeralda No. 1 Prospect, Borianna Mine, Four Sisters, Bonanza San Juan Tungsten, Lydia group, Four Peak Amethyst, Apache Limestone, Monte Cristo Pegmatite, Beaverock group, Copper Queen Mine, Joe Bush Mine, Buckeye Apache Mine, Abe Lincoln Mine, Mett Mine, Del Pasco Mine, Aplington Placers, Pelican Mine, Gold Nugget Claim, Flying Dutchman Claim, Gold Berg, Lookout Mine, Mary G. Mine, Variegated Peacock Claim, Kofa Mill Tailings, Black Mesa, Three Musketeers Tungsten Mine, Golden Wonder, Black Butte, White Hills Mine, Betty Lee, Frisco, Venture, Santa Nino Mine, Lone Star Claims, Foursome Gold Claims, Mildren, Stepps, Iowa, Lazy Boy, Fortuna, Atlas Mine, Denver Mine, Billy Bruno, Big Bloom, Old Baily District, and Harquahala Tails.

ENGINEERS' TIME BREAKDOWN

Estimated - Does not include
engineer working for OEPAD.

<u>Activity</u>	<u>1st Qtr.</u>	<u>2nd Qtr.</u>
Office Visitors	32%	36%
Mineral Reports	4	2
Field Work	23	19
Mail - Administrative	19	5
Research	9	24
Reports	1	2
Miscellaneous	10	9
Meetings	2	3



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ACTIVITIES REPORT FOR THE THIRD QUARTER
FISCAL YEAR 1977-1978

Emphasis was placed on the Mineral Resources Conferences this quarter. Not as much was accomplished as had been anticipated due to two of the Phoenix engineers not being available for this activity. A decision was made to do some further geologic work on the Luke Air Force Base Project. This will add considerable value to the final report.

Two Mineral Resources Conferences were held in Safford. The first meeting was held in January. Small miners-prospectors from Safford, Duncan, Clifton, Morenci and Silver City, New Mexico, attended. A brief history of the Department was given and the purpose of the mineral resources conferences was explained. Further presentations were made on the Bureau of Land Management's recording procedures, map requirements, uranium (demand, prospecting and minerals), proposed State and Federal legislation affecting the minerals industry, and a discussion of tungsten.

The second meeting discussion included proposed legislation, mineral commodities as they relate to the independent prospector, major company interest in prospecting, basics of information gathering processes by prospectors and value of geologic reports.

One mineral resources conference was held in Quartzsite in January. Proposed repeal of the 1872 Mining Law, State proposed legislation, and a lecture on how to recover gold from black sands was presented. A March conference was cancelled due to illness of the field engineer.

A mineral resources conference was held in Bouse in January. The agenda was identical to Quartzsite. The March Bouse meeting was also cancelled.

The Payson conference was held in February. Proposed legislation was discussed. A lecture was presented on uses and limitations of radiation detectors for uranium prospecting and blow-pipe tests for uranium. The Department's Geiger and Scintillation Counters were used. Uranium mineral specimens from the Museum were used. The program established for April included having a U.S. Bureau of Mines' representative discuss the Bureau's assessment of the mineral potential in wilderness areas. Also to be included is the first of a series of programs on gold -- the mineralogy, geology and processing.

Two conferences were held in Globe. The February conference was a review of proposed legislation and Bureau of Land Management regulations. A U.S. Bureau of Mines' representative explained the Bureau's wilderness assessment program. A program on uranium geology, study of specimens from the Museum and uses of radiation equipment for prospecting were also given.

The second conference in March was a review of proposed legislation, program on solution mining of uranium, and mining and exploration activities of the Wyoming Mineral Corporation.

Work was done to hold April meetings in Douglas, Tombstone and Prescott, in addition to meetings in the areas previously mentioned. Work is beginning to establish meetings at Arizona College of Technology and at Camp Verde. Other area conferences will be developed next fiscal year.

Hearings were held on the agency's proposed 1978-79 Budget by the Subcommittees (House and Senate). Board of Governor's Member Curtis Jennings, and the Director, attend the Hearings. Board Member Peplow was the main speaker at a Maricopa Section of AIME meeting. Other meetings attended by the Director and engineers included: Annual AIME (Denver), Tucson and Maricopa Sections of the AIME; Phelps Dodge Annual Phoenix meeting; State Personnel Commission Pay Practices Study Group; Governor's Commission on Arizona Environment; National Legislatures' Conference, Copper Queen Mine dedication, BLM ceremonies to present its new Director, Tonto Forest officials on RARE II program, Financial Advisory Committee to the Joint Legislative Budget Committee, WAIME-Phoenix, BLM on Bill Williams area withdrawal, NASA Ertz demonstration on mapping program, SMEA discussion of Forest Service proposals, Kofa and Cabeza Prieta withdrawals, and numerous hearings on proposed State legislation.

Programs were presented to six classes consisting of over 500 students at Greenway High School, and a presentation was made to a large Phoenix supply house to educate its staff on mining. Other programs were arranged for rockhound clubs, YMCA, Rotary and Arizona Society of Professional Geologists. Board Member Peplow will be the featured speaker at the latter's April meeting.

Meetings were held with Mr. Pennebaker. He donated his library and some mine reports to the Department.

State agencies assisted included: Land Department, Department of Economic Security, Parks, Office of Economic Planning and Development, and the Securities Division of the Corporation Commission. Federal agencies assisted included: U.S. Bureau of Mines (Phoenix, Denver and Washington), National Park Service, Soil Conservation Service, Department of Energy, Luke Air Force Base, and the Army Corps of Engineers. Other agencies included Mohave County Board of Supervisors, Western Interstate Energy Commission, Maricopa County Assessor's office and NACOG 208 Water Study.

High school students were interviewed for possible work in the Department, under the CETA program. The program was dropped. However, we do have two CETA employees as laborers in the Mineral Museum.

Work continued on the County Index Series one day per week.

In addition to the usual discussions of various minerals, prospecting and processing, more unusual activities included discussing coal with an aircraft company, buyer for an existing mica plant, sale of feldspar mine as producer of feldspar and high purity quartz, uranium mill data summary, lapidary material evaluations, manufacturing mineral thermal insulation, grinding zeolites, copper precipitate availability to custom buyers, and cyaniding plants.

A Gold and Silver Buyers List, List of Registered Assayers and Assay Offices in Arizona, and an information sheet on Spectroscopy Analysis, were worked up and printed. List of Publications, Land Status Determination, Museum Information sheets and Museum Treasure Hunt sheets were all reprinted.

A financial state is attached. There are no large, unusual deviations. The General Operating Fund balance does appear to be low. This is due to non-anticipated (or budgeted) expenditures for termite treatment and unusual air conditioning repairs. A request will be made to transfer funds from Capital Goods and Employee Related accounts to pay for the unexpected expenses.

MINERAL MUSEUM

Sixteen club meetings, forty-five school groups and four Curator programs were the special activities for this quarter. In addition, the Curator presented eight programs in Phoenix, Mesa, Tucson, Superior and Scottsdale. At all of the programs, except the one at Superior, mention was made of Federal and State legislation affecting minerals. The program at Superior was presented over a six-hour period to 938 students.

The Curator attended the Bullhead City Rock and Gem Show. A trip was made to the Ray mines and specimens were collected for the Museum and materials obtained for teachers' kits. In-house maintenance involved a new roof on a storage shed and application of 15 gallons of roof cement and webbing to the main building. (The Curator is a former contractor).

A display was loaned to the Arizona Prospectors Association. Another display was set up in the Capitol Lobby for three days.

The making of teachers' kits, labeling, identifying and cataloging of specimens continued.

The Leisure World Rock and Lapidary Club donated \$25.00 cash to the Museum.



STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007

602/271-3791

ACTIVITIES REPORT FOR THE FOURTH QUARTER
FISCAL YEAR 1977-1978

Mining Engineer Glen Walker resigned after being off on three months sick leave. He will be replaced by Glenn Miller and a new Mineral Resources Specialist will be recruited and should be appointed in early July. As a result, Mineral Resource Conferences were not held in the Western part of the State. Mineral Resources Conferences were held in Safford, Globe, Payson, and Prescott.

The Department has received a great amount of assistance from Board Member Mr. Tom Clary with our conferences. He has worked on publicity, programs and assisted at meetings. His participation is much appreciated.

Board Member Mr. Ed Peplow presented a talk to the Arizona Geological Society. The Director presented a program at the Prescott AIME. Other programs were presented to three schools in Tucson, Congress ASMOA, Lions Club, a church club, Hawthorn School, Northeast YMCA, and Old Pueblo Lapidary Club.

A meeting was held with Sharlot Hall Museum (Prescott) officials to arrange for a mineral collection evaluation and a future display of minerals for their mining museum.

The Curator led a field trip of 33 vehicles (100 people) to Duquesne area for mineral collecting.

A donation of technical books was received from Mrs. Leonard Kline and a mineral collection from Mr. Ben Cody, Jr.

The Curator attended a meeting of the Bolo Tie Society that resulted in a special program on the Museum being presented on KOOL-TV.

Other meetings attended include: Maricopa AIME, Governors Commission on Arizona Environment, Tucson AIME, BLM (new Director), GAO (Washington), on why National Minerals Policy not implemented, BLM Wilderness Inventory Workshop, Rocky Mountain Ground Water Conference, Governors Budget Meetings and the Pacific Southwest Minerals Industry Conference.

A small dry washer was put on display in the Museum.

Work continued one day a week on the County Index of Mine Properties Project. This project could be greatly accelerated. A proposal was worked up and submitted to the U. S. Bureau of Mines to do a MILS (Minerals Industry Location System) project for Arizona. This work is the first phase of the County Index Series Project. The proposal was submitted to do the entire state in three years or less.

The Department will work with the Arizona Council of Engineering Societies and their sponsorship of a Science Fair for high school students. The project will be displayed at the State Fair in October and November.

Other agencies requesting assistance from the Department included National Park Service, Securities Division of Corporation Commission, Department of Transportation, Prescott Historical Society, DPS Crime Lab, Oil and Gas Commission, Department of Revenue, U.S.B.M., U.S.G.S., and Attorney General's Office.

State Legislative hearings were attended and progress reports written on proposed legislation affecting mining. Testimony was provided on the Energy Office Bill and the Mill Tailings Bill.

A second CETA worker was appointed to do labor work in the Museum. The Department signs have been repainted. Other painting and building repair is being done. Teacher kits are being made with a target of 300 sets before school starts.

Surplus funds due to vacancy savings were used to employ temporary secretarial help. They were used in both the Tucson and Phoenix Offices.

A mineral occurrences map was drafted for the USBM to be used in a joint project.

Various minerals and commodities discussed with the public included: uranium, barite, gold, turquoise, silver, coal, iron, iron sulfate, tungsten, asbestos, gypsum, perlite fly ash, pumice, zeolites, copper, antimony graphite, molybdenum, bentonite, diatomite, and wulfenite..

Included in the out of state contacts made with the Department were requests from: United Bank of Denver; International Business Promotion-California; UOCO-Salt Lake City, Utah; Coal Outlook-Washington, D. C.; Ranchers Exploration-Albuquerque, New Mexico; Parsons Jurdens-Pasadena, California; Werth and Associates-Los Angeles, California; Gila River Study; Utah International-Reno, Nevada; Bendix Corporation-Grand Junction, Colorado; Detroit, Michigan; Morgantown, West Virginia;

Technology Services Corporation-Santa Fe, New Mexico; USBM-Denver, Colorado; USGS-Washington, D. C.; Anglo American Group, Australia.

Special project discussion included: perlite popping plants (using industrial waste gases), gypsum mine in strip country with on site wallboard plant, targets for exploration projects (including large scale gold placer), possible joint venture operations, mediation of a problem between Forest Service and prospector, mineral thermal insulation, 25 tpd mill in Sunflower District, a proposed custom mill in Eastern Arizona, tuff for cat litter, gypsum for soil supplement, crystalline quartz, boundary line conflicts, sampling to uncover potential fraud, and flagstone.

Long discussions were held with a major eastern iron and steel company that is interested in iron in the southwest. A rare earth processing and manufacturing facility was visited. Raw feed presently comes from Australia. The company encourages prospecting in Arizona for rare earths.

Several field trips were made to run a scintillometer grid survey of potential uranium deposits.

General discussions included such subjects as mine taxation, property evaluation, surface use of land with several minerals, Forest Service regulations, mine start up regulations, mine contracting, right of way across property to reach mining claims, gold and silver recoveries, tungsten and non-metallic mineral marketing, various types of prospecting and many old individual mine properties.

A complete list of publications and a statement of expenditures is attached. Funds were transferred from Capital Outlay and Employee Related Expenditures to offset non-anticipated repairs.

STATEMENT OF EXPENDITURES THRU JUNE 30, 1978 - FISCAL YEAR 1977-1978

7-11-78

Revised 7-12-78

	1977-1978 <u>Appropriation</u>	Spent Thru Fourth Quarter <u>June 1977-1978</u>	Unspent Balance Fourth Quarter <u>Allotment</u>	Unspent Balance 1977-1978 <u>Budget Year</u>
PERSONAL SERVICES	\$ 196,200.00			
Director		\$ 24,927.73		
Mining Engineers (4)		72,606.99		
Geologist		4,309.04		
Mineral Resources Specialist		13,166.53		
Curator		14,558.96		
Administrative Assistant		12,106.99		
Secretary III		9,051.61		
Secretary II (2)		15,490.81		
Typist II		1,653.02		
Custodian		8,999.47		
Tour Guides		7,926.58		
		<u>\$ 184,797.73</u>	\$ 11,402.27	\$ 11,402.27
EMPLOYEE RELATED	\$ 37,300.00	\$ 31,919.05	\$ 5,380.95	\$ 5,380.95
TRAVEL - In State	\$ 10,000.00	\$ 9,306.84	\$ 693.16	\$ 693.16
TRAVEL - Out of State	\$ 1,300.00	\$ 1,274.91	\$ 25.09	\$ 25.09
OPERATING EXPENDITURES	\$ 20,879.77			
Utilities		\$ 4,025.10		
Office Supplies		1,996.89		
Field Supplies		522.55		
Printing		1,665.24		
Subscriptions		675.50		
Postage		1,705.00		
Telephone		2,917.30		
Technical/Reference Books		773.91		
Maintenance & Repairs (Occupancy)		2,302.32		
Maintenance & Repairs (Equipment)		631.40		
Housekeeping Supplies		504.67		
Print Shop Materials		89.94		
Advertising		117.57		
Conference Expenses		196.00		
Insurance		1,100.00		
Rent		1,500.00		
Miscellaneous		92.37		
		<u>\$ 20,815.76</u>	\$ 64.01	\$ 64.01
CAPITAL OUTLAY - Equipment	\$ 3,420.23	\$ 3,420.23	\$ -0-	\$ -0-
TOTAL	\$ 269,100.00	\$ 251,534.52	-----	\$ 17,565.48