

Directory of Active Mines In Arizona 1992

Incorporating Sand & Gravel Operations

THE ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

The objective of the Department is to promote the development of Arizona's mineral resources. This is accomplished through technical research, field investigations, compilation of information into a mineral occurrence data base, and disseminating information through publications, personal contacts, and seminars.

The Department's mining engineers and geologists assist mining and exploration companies, prospectors and others interested in Arizona's minerals with mineral processing, mineral land acquisition, exploration, mine development, financing, government regulations, and marketing.

The Department is a service agency and does not regulate, tax, or require any type of registration. The agency provides assistance that is tailored to meet the diverse needs of the public. The following is a partial list of services that the Department offers:

- Maintain a site specific data base of unpublished reports and maps that includes 4,000 mine files and indexes of 10,000 computerized Arizona mineral occurrences.
- Maintain an information bank and library of mineral and mining information including a mine map library (hard copy and microfilm), government publications, periodicals, and unpublished master and doctorate theses.
- Gather and disseminate information on commodities and markets.
- Suggest target areas for exploration activity.
- Suggest properties for acquisition and development.
- Assist individuals and companies in their dealings with State regulatory agencies to facilitate their mining and exploration activity.
- Produce publications in the form of mineral reports, annual directories, technical reports, annual mineral industry surveys and information circulars. These include *Laws and Regulations Governing Mineral Rights in Arizona*, *Directory of Active Mines in Arizona*, *Manual for Determination of Status and Ownership of Arizona Mineral and Water Rights*, and others. A current listing of the Department publications is available upon request.
- Maintain the Arizona Mining and Mineral Museum.



Arizona Department of Mines and
Mineral Resources

**ARIZONA DEPARTMENT OF MINES
AND MINERAL RESOURCES**

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by K.A. Phillips, R.R. Beard, N.J. Niemuth, and D.R. Bain

Department of Mines and Mineral Resources

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State of Arizona
Fife Symington, Governor

Phoenix, Arizona
December, 1991

LAKE HAVASU CITY
MOHAVE CONCRETE & MATERIALS
INC. - Hwy. 95 N., Lake Havasu City, AZ
86403, 764-2226.

MAMMOTH
FRED CLARK TRUCKING CO., INC. -
P.O. Box 116, 104 Main, Mammoth, AZ
85618, 487-2232.

MAYER
DOWNSTREAM MINING GRAVEL
PRODUCTS - Mayer, AZ 85618, 632-9672.

NOGALES
ABESMATERIALS - Rio Rico Rd., Nogales,
AZ 85628, 281-4471.

J.D.'S SAND & GRAVEL INC. - 559 Ruby
Rd., P.O. Box 35, Nogales, AZ 85628, 281-
9449.

PADILLA SAND & GRAVEL - River Rd.,
Nogales, AZ 85628, 287-8831.

THE TANNER COMPANIES - 147 S. Rio
Rico, Industrial Park, Nogales, AZ 85621,
281-9669.

PAGE
GENERAL ROCK & SAND - P.O. Box 237,
Industrial Park, Page, AZ 86040, 645-3289.

KOCJAN ASSOCIATES, INC. - P.O. Box
3748, Industrial Park, Page, AZ 86040, 645-
2297.

PARKER
THE TANNER COMPANIES - Riverside
Dr., Parker, AZ 85344, 669-9251.

PAULDEN
PAULDEN SAND & ROCK REDI-MIX -
Div. Dunbar Stone Co. Inc., P.O. Box 403,
Paulden, AZ 86334, 636-2500.

PAYSON
PAYSON CONCRETE & MATERIALS,
INC. - P.O. Box 448, Aero Dr., & McLane,
Payson, AZ 85541, 474-2231.

STAR VALLEY GRANITE &
MATERIALS - Star Valley, HCR Box 43B,
Payson, AZ 85541, 474-9396.

PRESCOTT
EARTH PRODUCTS - 7001 2nd St., Prescott
Valley, AZ 86314, 772-6446.

YAVAPAI MATERIALS, INC. - P.O. Box
814, Near Airport - Hwy. 89, Prescott, AZ
86301, 445-7305.

RIMROCK
B AND B MATERIALS - Rimrock, AZ
86335, 567-5702.

SAFFORD
CKC MATERIALS DIVISION - Airport
Rd., Safford, AZ 85546, 428-3423.

SCARBOROUGH SAND & GRAVEL - 920
E. Stratton Dr., Safford, AZ 85546, 428-3138.

W.A. MORRIS SAND & GRAVEL &
CON., INC. - Bowie Hwy., Safford, AZ
85546, 428- 1371.

ST. JOHNS
FRANCIS DAY & SONS - P.O. Box 157, St.
Johns, AZ 85936, 337-2121.

SHOW LOW
A & A READY MIX, INC. - N. 6th St., Show
Low, AZ 85901, 537-5757.

JOY T. PEARCE CONSTRUCTION INC.
- P.O. Box 2049, Hwy. 260, Show Low, AZ
85901, 537-7454.

SIERRA VISTA
DESERT CONCRETE CO. - P.O. Box 430,
Haws Substation Rd., Sierra Vista, AZ 85635,
378-2321.

DREESZEN GRAVEL CO. - P.O. Box 661,
Hwy 92, Sierra Vista, AZ 85635, 378-9443.
SIERRA READY MIX CO. - P.O. Box 111,
North Ave., Sierra Vista, AZ 85635, 458- 4343.

SNOWFLAKE
BRIMHALL SAND & ROCK & BLDG.
MATERIAL - P.O. Box 750, Hwy. 77,
Snowflake, AZ 85937, 536-4226.

SPRINGERVILLE
RUE HALE PIPELINE SERVICE - 611 S.
Voight St., P.O. Box 221, Springerville, AZ
85938, 333-4483.

TAYLOR
HATCH CONSTRUCTION & PAVING -
Hwy. 77, Taylor, AZ 85939, 536-7213.

REIDHEAD SAND & ROCK, INC. - P.O.
Box 7, Paper Mill Rd., Taylor, AZ 85939,
536-4519.

WICKENBURG
RED-E-MIX CONCRETE CO. - 286 1/2 N.
Frontier, Box 12, Wickenburg, AZ 85358, 684-
7248.

WICKENBURG CONCRETE &
MATERIALS - P.O. Box 516, U.S. Hwy. 60,
Wickenburg, AZ 85358, 684-3335, 684-3402.

WILLCOX
HAMILTON SAND & GRAVEL - Hamilton
Rd., RR 1 Box 1350, Willcox, AZ 85643,
384-2582.

WILLCOX ROCK & SAND - 770 S. Cochise
Ave., P.O. Box 156, Willcox, AZ 85643, 384-
2181.

YUMA
ARIZONA SAND & GRAVEL - 1401 Atlan-
tic Ave., Yuma, AZ 85364, 344-5577.

GRATE SAND & GRAVEL CO. - 12326 E.
8, Yuma, AZ 85365, 344-1145.

J & F SAND & GRAVEL - Ave 24E and 9th
St., Yuma, AZ 85364, 342-3654.

THE TANNER COMPANIES - 2088 E. 20th
St., Yuma, AZ 85365, 782-9267.

AVONDALE
WESTERN SAND & ROCK - 4405 S. Litchfield Rd., Avondale, AZ 85338, 932-1391.

BENSON
COCHISE MATERIALS, INC. - County Rd., P.O. Box 910, Benson, AZ 85602, 586-3421.

BISBEE
EADS CONSTRUCTION & REDI-MIX - Hwy. 92, Bisbee, AZ 85603, 432-4121.

BUCKEYE
WESTERN SAND & ROCK - 815 N. 1 Ave., Buckeye, AZ 85326, 386-2401.

BULLHEAD CITY
SUNWARD MATERIALS, 2500 Pass Canyon Rd., Bullhead City, AZ 86430, 754-3121.

THOMPSON READY MIX - P.O. Box 9, Bullhead City, AZ 86430, 754-2535.

W.M.K. TRANSIT MIX CO. - P.O. Box 31, Bullhead City, AZ 86430, 763-3887.

CAMP VERDE
SUPERIOR COMPANIES - Hayfield Draw, Camp Verde, AZ 85322, 567-2244.

CASA GRANDE
TEE PEE SAND & GRAVEL - S. Trell Rd., Casa Grande, AZ 85222, 836-3879.

THE TANNER COMPANIES - 2500 W. Peters Rd., Casa Grande, AZ 85222, 836-8705.

CHINO VALLEY
DUNBAR STONE CO. - Hwy. 89 & 6N, Chino Valley, AZ 86323, 636-2500.

COOLIDGE
CENTRAL ARIZONA MATERIAL - Hwy 287, Coolidge, AZ 85228, 723-5719.

THE TANNER COMPANIES - Attway Rd. at Hwy. 287, Coolidge, AZ 85228, 723-5851.

COTTONWOOD
SUPERIOR READY MIX - Hwy. 279, P.O. Box 308, Cottonwood, AZ 86326, 567-2244.

VALLEY CONCRETE & MATERIALS - 820 E. Hwy 89-A, P.O. Box 634, Cottonwood, AZ 86326, 634-4259.

DOUGLAS
MADDUX & SONS, INC. READY MIX - 1927 Pan American, P.O. Box 1077, Douglas, AZ 85608, 364-7564.

DUNCAN
OAKCREEK CONTRACTING INC. - S. 4th, Duncan, AZ 85534, 359-2722.

FLAGSTAFF
LITTLE B MINING CO., INC. - 5600 N. Dodge, Flagstaff, AZ 86004, 526-5571.

THE TANNER COMPANIES - 5400 E. Empire Ave., Flagstaff, AZ 86001, 526-5250.

GILA BEND
WESTERN SAND & ROCK - P.O. Box 679, Stout Road, Gila Bend, AZ 85337, 683-2251.

GLOBE
GUZMAN CONSTRUCTION - P.O. Box 3100, Superior-Globe, Globe, AZ 85501, 425-5775.

HOLBROOK
BLACKROCK CONSTRUCTION - Perkins Valley Rd., P.O. Box 789, Holbrook, AZ 86025, 524-6159.

HUACHUCA CITY
ALLISON ROCK & SAND INC. - P.O. Box 5065, Oak Drive, Huachuca City, AZ 85616, 456-1521.

HUACHUCA CONCRETE INC. - Mustang Rd., P.O. Box 5086, Huachuca City, AZ 85616, 456-1600.

KINGMAN
DESERT CONSTRUCTION INC. - 4490 N. Hwy. 66, Kingman, AZ 86401, 757-2213.

KINGMAN REDI-MIX - Mohave Airport Dr., Kingman, AZ 86401, 757-7446.

THE TANNER COMPANIES - 1685 Kiowa Bl., Kingman, AZ 855-7210.



Haulage drift, Gold Prince Mine, Cochise County.

Directory of Active Mines in Arizona

1992

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It is acknowledged that there are additional mines not listed that are in an exploration, evaluation, or part-time development phase. There are others where production is on an intermittent basis that are not listed. The report is dependent on the cooperation of government agencies, private industry, and individuals who voluntarily provide information on their projects and activities.

The directory is arranged alphabetically by company name. Each listing includes corporate addresses, mine name and location, operation description, and key personnel. The listing for the sand and gravel operations include name, address, and phone number. The area code for all Arizona phone numbers is 602.

SAND AND GRAVEL OPERATIONS

MARICOPA COUNTY

A&A MATERIALS INC. - 10333 E. McDowell Rd., Scottsdale, AZ 85257, 990-0557.

A&B SILICA - 3015 S. 19th Ave., Phoenix, AZ 85041, 254-5863.

ABC SAND & ROCK - 5401 N. 119th Ave., Glendale, AZ 85307, 935-1677.

ACI-ARIZONA CRUSHERS INC. - P.O. Box 9129, 21001 N. 7th St., Phoenix, AZ 85024, 242-5143.

AJAX SAND & GRAVEL - 5026 S. 51st Ave., Laveen, AZ 85339, 237-3232.

ARIZONA CRUSHING CO - 650 W. McKellips Rd., Mesa, AZ 85201, 835-0207.

ARIZONA'S QUALITY GRANITE - 7401 W. Villa Rita, Peoria, AZ 85345, 869-0635.

AZTEC MATERIALS - 3250 E. Lehi Rd., P.O. Box 928, Mesa, AZ 85211, 892-0501.

CALMAT COMPANIES - P. O. Box 52012, Phoenix, AZ 85072, 254-8465.

CENTRAL ARIZONA MATERIALS - 9699 E. Hwy 287, Coolidge, AZ 85228, 649-0244.

CHANDLER READY MIX - 235 East Baseline, P.O. Box 928, Mesa, AZ 85211, 892-0501.

CORNERSTONE MATERIALS INC. - 3617 N. Gilbert, P.O. Box 1402, Mesa, AZ 85211, 969-2921.

FT. MCDOWELL SAND & GRAVEL CO. - P.O. Box 17150, Fountain Hills, AZ 85268, 837-2358.

HARPER SAND & ROCK - 7200 S. 115th Ave., Tolleson, AZ. 85353, 932-2767.

KILAUEA CRUSHERS INC., - P.O. Box 5385, Glendale, AZ 85312, 843-1888.

MESA MATERIALS INC. - 3410 N. Higley Rd., Mesa, AZ 85205, 830-1521.

MESA SAND & ROCK INC. - 2246 N. Country Club Dr., Mesa, AZ 85201, 964-1773.

PHOENIX REDI-MIX COMPANY - 3635 S. 43rd Ave., Phoenix, AZ 85009, 272-2637.

PIONEER SAND CO. - 5851 W. Broadway Rd., Phoenix, AZ 85043, 233-2971.

RAINBOW ENTERPRISES - 7665 W. Deer Valley Rd., Peoria, AZ 85345, 434-5314.

RED MOUNTAIN MINING - 4250 N. Power Rd., Mesa, AZ 85205, 832-3390.

SALT RIVER SAND & ROCK - P. O. Box 728, Mesa, AZ 85211, 990-1987.

SAND SPECIALTIES, INC. - 5570 N. Bush Highway, Mesa, AZ 85205, 832-2120.

SMITH SAND & GRAVEL - 34420 Old Black Canyon Highway, Black Canyon City, AZ 85324, 374-5448.

SUPERSTITION CRUSHING - 2400 S. Meridian Rd ., Queen Creek, AZ 85242, 987-9468.

SUN LAND SAND & GRAVEL - 6950 W. Southern, Laveen, AZ 85339, 237-3210.

SUN STATE ROCK & MATERIAL - P.O. Box 1340, Sun City, AZ 85372, 848-8911.

SUNWARD MATERIALS, 2625 S. 19th Ave., Phoenix, AZ 85009, 253-2505.

THE TANNER COMPANIES (United Metro Div.) - P.O. Box 52124, Phoenix, AZ 85072, 220-5000.

TREASURE CHEST MINING - 8620 N. Hwy. 88, Apache Junction 85220, 983-1606.

TRI-CITY REDI MIX - P.O. Box 148, 2128 E. 1st St., Tempe, AZ 85281, 967-7597, 968-2180.

UNION ROCK & MATERIALS CORP. - P.O. Box 8007, 2800 S. Central Ave., Phoenix, AZ 85066, 276-4211.

WESTERN SAND & ROCK - P.O. Box 65, 4405 S. Litchfield Rd. Avondale, AZ 85323, 932-1391.

PIMA COUNTY

ACE SAND & GRAVEL - 1011 W. Silverlake Rd., Tucson, AZ 85713, 622-1869.

ACME SAND & GRAVEL - 7707 E. 22nd St., Tucson, AZ 85710, 296-6231.

AGGREGATE MATERIALS - 2165 N. Rita Rd., Tucson, AZ 85747, 325-1611.

B & R MATERIALS - P.O. Box 18138, 4200 S. Harrison Rd., Tucson, AZ 85731, 298-2371.

CALMAT OF ARIZONA - P.O. Box 418, Rillito, AZ 85654, 574-0054.

CHURCHMAN SAND & GRAVEL - 4250 River Rd., Tucson, AZ 85718, 325-1611.

DILLON SAND & GRAVEL - Catalina, AZ, 622-5586.

DOWNEY L.A. & SONS SAND & ROCK - 11600 E. Poorman Rd., Tucson, AZ 85747, 886- 2315.

GRANITE CONSTRUCTION CO.-4115 E. Illinois, P. O. Box 27557, Tucson, AZ 85726, 748-8000.

ORBAN EXCAVATING INC. - 10800 E. Irvington, Tucson, AZ 85730, 296-0381.

PANTANO MATERIALS - 10851 E. Nebraska, Tucson, AZ 85706, 886-1511.

SAN XAVIER ROCK & MATERIALS - 3895 N. Business Center Dr., Tucson, AZ, P.O. Box 551, Cortaro, AZ 85652, 293-6833.

THE TANNER COMPANIES - At Orange Grove, 6601 N. Casa Grande Hwy., Tucson, AZ 85743, 744-3222.

VALLEY ROCK & SAND CO. - 10700 E. Irvington Rd., Tucson, AZ 85730, 296-1733.

STATEWIDE

AJO

JIMBUSH READY MIX - 1015 N. Cameron, Ajo, AZ 85321, 387-6250.

APACHE JUNCTION

CASHWAY CONCRETE & MATERIALS - 3695 S. Meridan Rd., Apache Junction, AZ 85220, 830-5600.

ASH FORK

DUNBAR STONE COMPANY, INC. - 901 Lewis Ave., P.O. Box 246, Ash Fork, AZ 86320, 637-2592.

VLS MINERALS INC.

Wilson Mine T3N, R20W, Sec. 14
P.O. Box 3658, Quartzsite, AZ 85546 - Phone 619-922-1286 - Employees: 2 - Underground gold mine - Gravity recovery plant.
President Dan Pawlowski
Mine Manager Rodney Frisby

WESTERN ARIZONA ROCK PRODUCTS INC.

Aztec Quarry T7S R12W Sec. 28
P.O. Box 27019, Albuquerque, New Mexico 87125 - Phone (505) 880-5314 - local address, P.O. Box 178, Dateland, AZ 85333 - Phone 454-2253 - Employees: 9 - Granite quarry for railroad ballast - Crushing and screening plant - Located between Aztec and Dateland south of I-8 and the Southern Pacific Railroad - Material used in Arizona and California.
Plant Manager Larry Lunsford
Office Manager Patt i Wipple

WESTERN GYPSUM

Snowflake Gypsum Mine T41N R13W Sec. 25
130 E. 200 North, P.O. Box 850, St. George, UT 84770
Phone (801) 628-3916 - Employees: 10 - Open pit gypsum mines, Primary and secondary crushing, screening plant - Producing gypsum for cement industry, agriculture, fertilizer industry, functional fillers, and water treatment. Markets in California and Arizona.
President Don Cecala
Mine Superintendent Tracy Cannon
Asst. Mine Superintendent Aaron Rasmussen

WESTERN ORGANICS INC.

Salome Gypsum Mine T5N R11W Sec. 30
P.O.Box 6876, Phoenix 85005 - Plant located at 27th Avenue and Lower Buckeye Road in Phoenix - Employees: 100 - Open pit gypsum mine operated by contractors - Gypsum for agricultural and horticultural uses, bagged and bulk - Used directly and in blends - Markets in western United States.
President J. D. Porter
Vice President/Operations Manager D. C. Porter
Sales Manager Dennis Reynolds
Office Manager Adrian Cluff

WESTERN STATES STONE COMPANY

2830 Grand Ave., Phoenix, AZ 85017 - Phone 253-2018.
President C. E. Webster
Ashfork Plant T21N R2W Sec. 3
Quarries
P.O. Box 316 - Ash Fork, AZ 86220 - Phone 637-2542 - Employees: 40 - Quarries located in Coconino, La Paz,

Maricopa, Mohave, and Yavapai Counties - Stone processing facility in Ashfork - Commercial and decorative building stone marketed locally, out of state, and exported.
Superintendent Ismah Albright

YELLOW HAIR TRADING AND MINING

Sleeping Beauty Mine T1N R14E Sec. 12
P.O. Box 111, Globe, AZ 85502 - Phone 425-7625 or 425-0446 - Employees: 40 - Produces turquoise under contract with Magma Copper Company - Sorts, grades, and processes turquoise for worldwide distribution.
President & Co-owner W. H. Preston
Vice President & Co-owner Monty Nichols
Secretary-Treasurer & Co-owner Cheryl Preston
Sales Ed Wheeler

ARIZONA'S MINERAL INDUSTRY

Arizona continues to rank as the Nation's leading mineral producer. The value of mineral production in the State last year was in excess of \$3.3 billion (see table, p. 2) . As it has since 1910, Arizona leads the Nation in copper production. A total of 2.158 billion pounds of copper was produced in 1990, 62% of the U.S. total. Arizona also ranks first in the Nation in mined gemstone production and is among the leaders in the production of molybdenum, silver, pyrite, and perlite. There are over 92 mines active, excluding sand and gravel operations, producing the above mentioned metals plus 17 industrial mineral commodities. The mining industry directly employs over 12,500 people. Estimates on development expenditures exceed \$100 million.

Space allows only a brief description of some aspects of the industry here. The Department may be contacted for further information. In August, 1991 the Department moved to new facilities at 1502 West Washington. Department hours are weekdays from 8:00 - 5:00. Publication lists are available upon request.

COPPER

The dominant trend in the State's copper industry during 1990 was the continued modernization of the industry's infrastructure in order to lower production costs. An important part of this process has been the widespread deployment of solvent extraction electrowinning (SX-EW) technology. This process produces cathode grade copper, which is directly marketable, from low cost leach solutions obtained from oxide ores or mine dumps.

Copper prices declined 9 cents to \$1.22/lb in 1990, but this decrease was offset by increased production resulting in a slight increase in value produced.

Cyprus Minerals Company

Cyprus Minerals Company's activity in Arizona, since its spin-off from AMOCO in 1985, has been characterized by aggressive expansion. Increased production and acquisition of new copper properties in the last few years have made Cyprus the Nation's second largest producer of copper. A good part of that increased production has come from their Arizona operations.

The Cyprus Miami facilities near Globe include the open pit copper mines, a concentrator that is on stand-by, an SX-EW plant, a smelter and

acid plant, an electrolytic refinery, and a rod plant. The smelter has a capacity to handle 450,000 tons of concentrates per year. This smelter allows Cyprus, for the first time, to smelt most of its own concentrates, reducing the company's dependence on short term smelting contracts. The planned expansion of the smelter to 650,000 tpy of concentrates will make Cyprus self sufficient in smelter capacity. The rod plant at the same complex has a 265 million pound per year capacity that allows the company additional flexibility in providing copper to its customers. Over 115 million pounds of copper cathodes are produced annually at the Miami dump-and heap-leach and SX-EW operation.

Cyprus Sierrita, south of Tucson, consists of the Sierrita and the Esperanza open pit copper molybdenum mines, a 100,000 ton per day concentrator, a dump-leach SX-EW plant, a ferromolybdenum plant, and a rhenium plant.

At Cyprus Twin Buttes, in Pima county, the oxide ore is leached, while the sulfide ore is processed at the nearby Sierrita plant.

Four million pounds of copper are produced each year by in-situ leaching at the Cyprus Casa Grande operation in Pinal County. Additionally, the Casa Grande plant has a roasting capacity of 150,000 tons of copper concentrate annually. Refurbishing of the roasters at this facility has

enabled a portion of the Sierrita mines's concentrates to be processed into cathode copper.

Asarco

Asarco operates the Ray, Mission, and Silver Bell mines, along with a copper smelter located at Hayden, Arizona.

In 1989 Asarco announced plans to invest \$54 million in a new SX-EW plant at Silver Bell, northwest of Tucson. The facility will be capable of producing 18,000 tons of copper cathode annually.

The Mission complex consists of the Pima, Eisenhower, and Mission mines that feed the Mission Mill. The Pima mine was purchased from Cyprus and the Eisenhower mine from Anamax in 1985. These pits have been combined to form the present Mission mine complex. In an effort to become less dependent on outside feed for its smelters, Asarco expanded production from the Mission super pit by 46 percent. The \$13.1 million project increases copper concentrate production by 95,000 tons to a total of 300,000 tons per year. Additional grinding capacity and new flotation cells were added, combined with a computer analysis system for flotation data.

In 1988 Asarco purchased the Pima Mill at the Mission complex, renamed it the Mission South Mill and completed its modernization. When running at full capacity by the end of 1991 total mill capacity for the Mission complex will be 59,000 tpd.

In November of 1986, Asarco purchased the Ray mine in central Arizona from Kennecott. The Ray operation employs over 700 people and consists of an open pit mine, concentrator, SX-EW plant, and a smelter that is idle. following the purchase, Asarco modified the SX-EW plant, which allows Asarco to process low-grade sulfide dump solutions by solvent extraction, replacing copper precipitate production. Copper production at Ray totaled over 240 million pounds last year. Asarco is in the process of building an additional mill at Ray, a 60,000 tons per day portable in-pit crusher, and a 20,000 ton per day concentrator.

MINERAL PRODUCTION
IN ARIZONA - 1990

COMMODITY	QUANTITY	VALUE
Nonfuel ¹		
Clay (tons)	140,162	\$2,318,000
Copper (pounds)	2,157,790,000	2,657,649,000
Gemstones ²		3,300,000
Gold (troy ounces)	160,756	62,191,000
Sand & gravel (tons)	27,915	92,166,000
Silver (troy ounces)	5,562,164	26,836,000
Stone-crushed (tons) ^e	5,500,000	13,500,000
Other ³		218,190,000
Fuel		
Coal (tons) ⁴	12,600,000	250,000,000
Uranium (pounds) ⁵	1,250,000	12,000,000
TOTAL		\$3,338,150,000

1/ Nonfuel figures from U.S. Bureau of Mines
2/ ADMMR estimate
3/ Cement, gypsum, lime, molybdenum, perlite, pumice, salt, sand & gravel (industrial), dimension & specialty stone
4/ Source: Peabody Coal
5/ Source: Energy Fuels
e/ U.S. Bureau of Mines estimate

Magma Copper Company

Magma became an independent company separate from Newmont Mining Corporation in March, 1987. Composed of two divisions, their operations primarily include San Manuel, the largest underground copper mine in the Nation, and Pinto Valley, an open pit copper-molybdenum mine.

In addition to being the Nation's largest underground metal mining operation, San Manuel includes a 62,000 ton per day concentrator, an open pit copper oxide mine with associated heap-leach and SX-EW plant, an 1,000,000 ton per year smelter with acid plant, and an electrolytic refinery and rod plant. The San Manuel unit

STUTENROTH MILLING & MANUFACTURING

Stutenroth Mill T7S R7E Sec. 8
7611 W. Cornman Road, Casa Grande, AZ 85222 - Phone 836-5568 - Employees: 2 - Custom gravity mill - 50 TPD capacity - All types of ore - Located eight miles southeast of Casa Grande.
Owner-Operator Archie Stutenroth

SUPERIOR COMPANIES

100 W. Coolidge, Phoenix, AZ 85006 - Phone 230-9300 - Employees: 70.
President Archer V. Shelton
Vice President, Administration Mary Kessler
Vice President, Finance Don Fischer
Camp Verde Gypsum T13N R5E Sec. 11
P.O. Box 308, Cottonwood, AZ 86326 - Phone 567-3854 - Gypsum quarry four miles southeast of Camp Verde - Supplies gypsum to Phoenix Cement Company Plant at Clarkdale - Also used for agricultural and horticultural uses. General Manager - Verde Valley
Operations Ed Davidson
Maintenance Supervisor Randy Austin
Foreman Bruce McDonald
St. Johns Limestone T12N R29E Sec. 4
P.O. Box 2777, St. Johns, AZ 85936 - Phone 337-4529 - Limestone quarry 5 miles southeast of St. Johns - Provides limestone for coal plant gas scrubbing.
Superintendent Efram Chavez
Winkelman Gypsum T6S R16E Sec. 27
P.O. Box 327, Winkelman, AZ 85292 - Phone 357-7002 - Gypsum Quarry - Gypsum for Arizona Portland Cement Plant at Rillito.
Superintendent John Nevitt

SUPERLITE BLOCK COMPANY

P.O. Box 23163, 4150 W. Turney, Phoenix, AZ 85063 - Phone 269-3561.
President Max Graves
Darling Cinder Pit T21N R9E Sec. 2
P.O. Box 30956, Flagstaff, AZ 86003-0956 - Phone 526-5499 - Employees: 5 - Open pit mine east of Flagstaff - Volcanic cinders used to make building block at Phoenix and Mesa plants.
Mine Superintendent Terry Mitchell

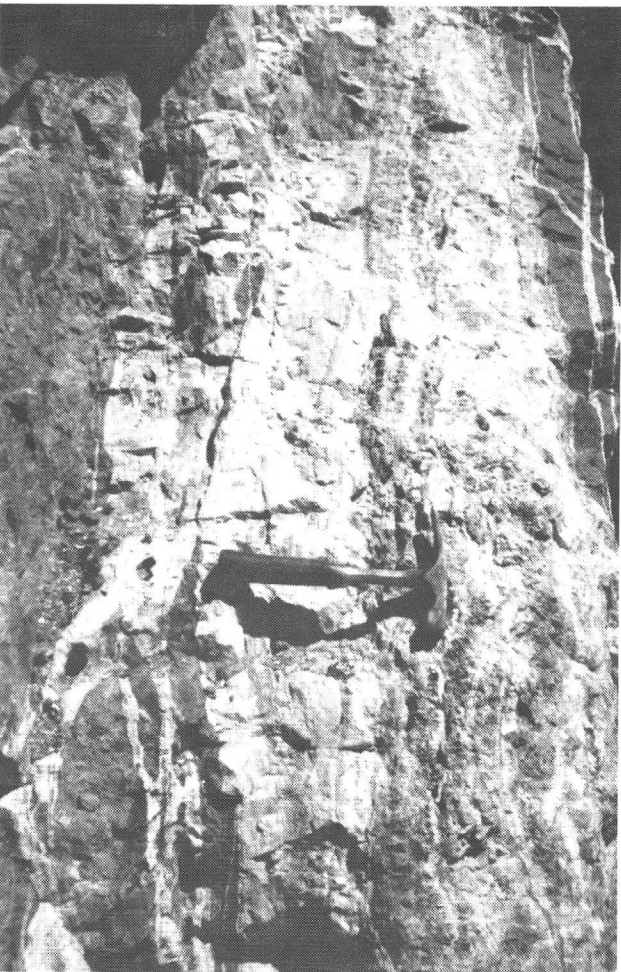
UOP

115 N. Fifth Street, Suite 401, Grand Junction, CO 81501
Phone (303) 245-7957.
Senior Mining Engineer Jim Kirchner
Bowie Chabazite Operations T11S R28E & T11S R29E

Open pit mines operated by independent contract mining company - Chabazite used for specialty adsorbants - Shipped out of state for further processing.

UNITED DESSICANTS
United Catalyst, Inc.

Corporate Headquarters - P.O. Box 32370, Louisville, KY 40232 - Phone (502) 634-7200 - Processing plant c/o United Dessicants, 101 Christine Drive, Belen, NM 87002 - Phone (505) 864-6691.
Cheto No. 1 T21N R29E Sec. 23
Employees: 10 - Located approximately six miles southeast of Sanders in northeastern Arizona - Surface strip bentonite mine - Seasonal operation by mining contractors - Used in catalysts and in production of desiccants.
Vice President (Louisville) Bill Monin
General Manager (Belen) George Klett
Technical Director (Belen) Mathew Rix



Multi-stage precious metal vein, Oatman area, Mohave County.

Senior Vice President and Executive Vice
President Phelps Dodge Mining P. J. Ryan
Phelps Dodge Mining Company
2600 N. Central Ave., Phoenix, AZ 85004-3014 - Phone 234-8100.
Vice President & General Manager J. L. Madson
Vice President Engineering Services R. W. Rice
Controller, Phelps Dodge Mining R. G. Peru
Director, Employee Relations S. L. Marcus
Manager, Employee Relations D. E. Brooks
Assist. Director, Materials Management C. R. Jennings
Traffic Manager J. Sheridan
Western/US Exploration
P.O. Box 50427, Tucson, AZ 85703-1427 Phone 792-4981.
Manager, US Exploration D. E. Ranta
Manager, Western Exploration Office . . J. D. Forrester
Exploration and Development Group
2600 N. Central Ave., Phoenix, AZ 85004-3014 - Phone 234-8100.
Senior Vice President A. L. Lawrence
United Verde Mine T16N R2E Sec. 22
Inactive copper mine - Located at Jerome - Phone 634-2622.
Agent Andrew Peterson
Copper Queen Branch T23S R24E Sec. 15
Highway 92, Bisbee, AZ 85603 - Phone 432-3621 -
Employees: 34 - Mine dump leaching - Copper precipitation plant.
Area Supervisor J. H. Zamar
Morenci Branch T4S R29E Secs. 3, 4, 5, 8, 9, 10, 15,
16, 17, 21, 22 & 23
4521 State Hwy. 666, Morenci, AZ 85540 - Phone 865-4521 - Employees: 1950- Open pit copper mine - Two concentrators (one with molybdenum circuit) - Total capacity 100,000 TPD - 650,000 TPY smelter with 2,400 TPD acid plant (inactive) - 340 million pound per year solvent extraction-electrowinning plant.
Manager J. G. Clevenger
Assistant Manager W. S. Chen
Superintendent of Mines M. J. Allen
Superintendent of Concentrators . . . R. I. Pennington
Superintendent SX-EW A. J. Broderick, Jr.
Mechanical and Electrical Supt. J. B. McBiles
Chief Engineer A. R. Edwards
Chief Geologist F. J. Menzer
New Cornelia Branch T12S R6W Secs. 23, 26, 27
Ajo, AZ 85321 - Phone 387-7451 - Employees: 24 - Open pit copper mine - 30,000 TPD concentrator with molybdenum circuit - 190,000 TPD smelter with acid plant - All inactive.
Plant Superintendent J. L. Armstrong

PHOENIX CEMENT COMPANY

Phoenix Office
2501 W. Behrend, P.O. Box 43740, Phoenix, AZ 85080 -
Phone 264-0511 - Employees: 11.

President James E. Carmichael
Sales Manager Pete Kuehner
Clarkdale Quarry & Plant T16N R2E Sec. 11
P.O. Box 428, Clarkdale, AZ 86324 - Phone 634-2261 -
Employees: 130 - Quarry and plant two miles northwest of Clarkdale - 630,000 TPY - Cement used for building industry - Marketed in Arizona, New Mexico, Utah, and Nevada.
V.P. Operations/Plant Manager John B. Conway
Assistant Plant Manager/Maintenance . . Joe D'Avignon
Assistant Plant Manager/Engineering . . Tom Gibbons
Industrial Relations Manager Cliff Ayres
Controller Meg Slanski
Purchasing/Stores Frank Contreras
Environmental Engineer Bernie Ott

PINAL GYPSUM CORP.

White Cross Mine T7S R17E Sec. 31
P.O. Box 99, Coolidge, AZ 85228 - Phone 723-3131 -
Employees: 12 - Quarry four miles north of Mammoth -
Used for agricultural gypsum.
President Orin Benton
Vice President (Operations) James Bechtel
Sales Manager Jerry Higginbothan

QUEENSTAKE RESOURCES USA INC.

Gold Prince T14S R27E Sec. 22
P.O. Box 217, 241 S. Haskell Suite 102, Willcox, AZ 85644
- Phone 384-4337 - Employees - 6 - Located 17 miles southeast of Willcox - Underground gold mine - Producing gold bearing silica flux for copper smelter.
President Gordon Gutrath
Mine Superintendent Alfred Voirin

REPUBLIC GOLDFIELDS INC.

Congress Mine T10N R6W Sec. 23
P.O. Box 361, Congress, AZ 85332 - Phone 427-3393 -
Employees: 85 - Located 16 miles northwest of Wickenburg -
Underground gold mine - 350 TPD CIP mill.
General Manager Fred Smith
Chief Engineer Matt Christian
Mine Geologist Robert Prevost
Exploration Geologist Scott Petzel
Mill Superintendent Colin Kirkpatrick
Metallurgist Jim Weatherby
Maintenance Chief Al Roscigno
Chief Electrician Lowell Hatfield
Personnel and Safety Chief John Lemiueux
Purchasing Agent Dana Leghorn

produced approximately 265,000,000 pounds of copper in 1989.
A financing package was part of the deal by which Newmont Mining divested itself of most of the ownership of Magma Copper. A \$225 million project was completed to modernize the smelter and bring it into compliance with the Environmental Protection Agency's air quality standards and expand the SX-EW facility. The Kalamazoo mine, which is the down faulted portion of the San Manuel ore body, is in the process of development. Additional research and development is also being carried out by in-situ leaching of the deep portion of the oxide ore deposit whose copper would otherwise be uneconomic to recover.
The Pinto Valley division includes an open pit mine, a flotation plant, and leaching facilities. Processing of a 35 million ton mountain of tailings, left from the less efficient milling activity at Miami between 1911-35, is underway. The tailings are hydraulically mined with acidic water at the rate of 1,000 gallons per minute under a pressure of 300 pounds per square inch. The resulting slurry is then pumped to a thickening tank. From there, the aqueous solution containing the dissolved copper is sent to the on-site SX-EW plant. The tailings are used to fill an old open pit, reclaiming the 220 acres at the existing tailings site.
Rehabilitation of the underground Magma Mine at Superior was completed and production commenced in September, 1990. The planned production rate of 1500 tpd of ore should be achieved in 1991. Concentrates are shipped to the smelter at San Manuel.

Phelps Dodge Corporation

Phelps Dodge, active in the State since 1880, ranks first in copper production in Arizona and the Nation. The State's largest copper mine and flagship of the Phelps Dodge operations is Morenci. This giant produced over 670,000,000 pounds of copper in 1990, representing over 30% of the State's copper production. Recent expan-

sion and modernization efforts included construction of a \$90 million SX-EW facility that consists of three SX units and one electrowinning tank house. An annual production of 170,000 tons of copper per year makes this the largest SX-EW facility in the country. Other improvements include introduction of in-pit crushers and conveyors that deliver crushed ore to the concentrator, eliminating the need for rail haulage. With reserves of nearly a billion tons, Morenci will continue to be a world class producer well into the next century.
Another famous Phelps Dodge copper camp, the Copper Queen at Bisbee, is currently a small leach producer of precipitate copper. Phelps Dodge has also been drilling on their Cochise deposit located adjacent to and north of the Lavender Pit at Bisbee. Results announced to date indicate a resource of 170 million tons of 0.5 percent copper as sulfides, apparently amendable to leaching. A test heap leach is currently underway to determine extraction rates and quantities.
In addition to the major copper companies, Arimetco started SX-EW production at Johnson Camp and Oracle Ridge Mining Partners started concentrate production at Oracle Ridge.

COAL

Coal ranks second to copper in economic importance in the State. Over 12,600,000 tons of coal, with an estimated value of \$250 million, are mined annually from the Kayenta and Black Mesa mines. Surface mining is done on reservation land leased from the Navajo and Hopi Tribes by Peabody Coal. Peabody is the Nation's largest coal producer and the Kayenta mine in north-eastern Arizona is their largest operation.
The coal deposits occur on Black Mesa, a prominent structural basin feature of the Colorado Plateau, in the Cretaceous Wepo Formation. Peabody Coal has 35-year leases on 64,858 acres. Mining and reclamation proceed at the same rate; approximately 500 acres annually.
The Kayenta mine, employing over 700 people, is located in central Navajo County. The coal from the Kayenta mine is carried by conveyer

belt 15 miles to storage silos. From there it is transported by automated trains to the Salt River Project's Navajo Generating Plant 80 miles away. The Black Mesa mine produces about 4.5 million tons annually. Here, coal is powdered and mixed with water prior to transport by the world's longest, and the Nation's only, coal slurry pipeline. The 272-mile journey to the power plant at Laughlin, Nevada takes three days.

The Peabody operations at Black Mesa are model reclamation programs. As an area is mined, the topsoil is removed and stored. After mining is completed, the topsoil is returned and the land is contoured. The resultant reclaimed land surface, used for grazing, is more productive than the original land.

GOLD

The Cyprus Copperstone open pit mine remained Arizona's largest gold producer with production of over 100,000 ounces. At the beginning of 1991 reserves were 3.2 million tons averaging 0.069 oz/ton, sufficient to extend mining till 1993. Malartic Hygrade U. S. Inc. operator of the Congress mine changed its name to Republic Goldfields Inc. during 1991. Operation of the company's new 350 TPD CIP mill is expected to produce in excess of 30,000 ounces annually.

Magma Copper Company's newly created gold division acquired the recently closed McCabe mine. Two major changes were made prior to the restarting operations. The mining method was changed from shrinkage stopes using chute loading to shrinkage stopes using drawpoint mucking to accommodate the wet, sticky nature of the ore. The mill was changed from a cyanide leach to flotation, producing a sulfide concentrate containing gold and copper for processing at the San Manuel smelter.

Fischer Watt Gold Co. Inc. drove a decline on the small, but high grade Mystic property. Following favorable results a gravity plant is being constructed to treat the ore.

Bema Gold Corporation acquired Norgold Resources to acquire its principal asset the Yar-

nell mine. The deposit, containing approximately 275,000 ounces, is expected to reach production in late 1992 as an open pit heap leach operation.

URANIUM

Lower uranium prices (NUEXCO spot price \$8.40/lb. as of 11-91) continue to negatively influence this industry segment. Energy Fuels Nuclear Inc., the State's only producer, continues to develop the Arizona One deposit while the Hermit, Kanab North, and Pine Nut mines remain on standby.

INDUSTRIAL MINERALS

Although copper accounts for 2/3 of the State's mineral production by value, mining in Arizona continues to be a diversified activity. Industrial minerals mined in the State last year include calcium carbonate as limestone and marble for mineral filler and as raw material for lime and cement plants, bentonite for bleaching and clarifying of edible oils, sand and gravel for construction aggregate, tile and brick clay, salt, cinders, pumice for laundry uses and light weight aggregate, zeolites for molecular sieves, stone, perlite for filters, gypsum for wall board and agriculture, silica flux, pyrite and micaceous hematite for pigment, and hydrofrac sand. Although sand and gravel lead this industrial mineral group, both in volume and value of production, many market niches exist for the specialized industrial mineral producer. One example of this is the current popularity of "stone washed" jeans. Pumice used for scouring the denim is mined near Flagstaff by Arizona Tufflite and near Williams by Mountain Mining. The tremendous range in employee and capital requirements for the industrial minerals commodities vary widely enough to accommodate a family-run operation such as Arizona Tufflite, as well as large corporate producers.

Chemstar Lime operates the largest lime plant west of the Mississippi River at Nelson near Peach Springs. Their lime plant with two rotary kilns is rated at 1800 tons of lime per day and

ORACLE RIDGE MINING PARTNERS

Oracle Ridge Mine T11S R16E Sec. 16
P.O. Box 7, San Manuel, AZ 85631 - Phone 576-1412, - Employees: 55 - Underground copper, gold, silver mine - Located 25 miles northeast of Tucson - Column flotation mill - 850 TPD - Ships concentrates to custom smelter.
General Manager Tom Olsen
Mine Manager Ron Johnson
Controller Wally Buckley
Purchasing Manager Art Mitchell
Maintenance Foreman Troy Black

OUTLAND RESOURCES INC.

Shipley Pit T25N R10W Sec. 28
Taylor Pit T22N R17W Sec. 26
McConnico Pit T20N R17W Sec. 5
Hackberry Pit T23N R13W Secs. 19 & 20
2260 E. Andy Devine, PO Box 4105, Kingman, 86402 - Phone 753-1444 - FAX 753- 1444 (call first) - Employees 4 (plus contracted services) - Produces dolomite-limestone, quartz, feldspar, onyx, and natural colored aggregates. Used for landscape, gemstones, chemical materials, fillers, and special aggregate. Sold in Arizona, Nevada, and California.
President Patti Lewis
Vice President Charlie Starkebaum

PEABODY COAL COMPANY

Flagstaff Office
1300 S. Yale, Flagstaff, AZ 86001 - Phone 774-5253 - Employees: 80.
President Dennis L. Stevenson
General Supervisor, Operations Sil Perla
Director of Human Resources L. W. Bennett
Director of Engineering Frank Farnsworth
Division Materials Manager Merle Hendricks
Controller Rich Armstrong
Manager, Quality Control Charles J. Stenftenagel
Manager, Reclamation Wayne E. Hilgedick
Black Mesa Mine T35N R18E Sec. 5
P.O. Box 605, Kayenta, AZ 86033 - Phone 677-5040 - Employees: 400 - Surface coal mine - Located approximately 30 miles southwest of Kayenta.
Mine Superintendent Lewis Allan Gough
Assistant Superintendent Rick Contratta
Safety Supervisor Pete Craig
Kayenta Mine T36W R18E Sec. 9
P.O. Box 606, Kayenta, AZ 86033 - Phone 677-5008 - Employees: 700 - Surface coal mine - Located 30 miles southwest of Kayenta.
Mine Superintendent Joe Johnson
Assistant Superintendent Robert D. Boone
Safety Supervisor Pete Craig



Sampling a pyrite/chalcopyrite vein, 1050' level, McCabe Mine.

**PFIZER
Specialty Minerals Division**

Santa Rita Quarry T18S R15E Sec. 15
Sahuarita, AZ, 1-800-255-5832 - Employees: 20- Located 15 miles southeast of Sahuarita - White marble quarry - Crushed and/or ground for landscape, functional filler, and chemical uses - Raymond roller mills - Sizing and bagging plant - Markets in Arizona and southwestern United States.
Site Manager Carlos Cardadeiro

PHELPS DODGE CORPORATION

Corporate Headquarters
2600 N. Central Ave., Phoenix, AZ 85004-3014 - Phone 234-8100.
Chairman of the Board and President . . . D. C. Yearley
Senior Vice President and President Phelps Dodge Mining Company J. S. Whisler

Vice President/General
Manager Operations Tom L. Jordan
Vice President Marketing & Sales Brian Disbury
Manager Smelting J. D. McCain
Manager Refinery/Rod Casting Ralph Juvera
Pinto Valley Mine T1N R14E Sec. 20
P.O. Box 100, Miami, AZ 85539 - Phone 425-7611 -
Employees: 620 - Open pit copper-molybdenum mine -
63,000 TPD concentrator - Dump leach - Solvent extraction
- electrowining plant - In-situ leach - Tailings reclaim leach
- Solvent extraction electrowining plant.
Vice President/General Manager K. Lee Browne
Manager Mining Operations Charles D. O'Coynce
Manager of Miami Unit
Leaching/SX-EW Robert V. Wasanock
Manager of Concentrator
Operations Jack D. Conklin
Magma Mine T1S R12E Sec 35
P.O. Box 37, Superior, AZ 85273 - Phone 689-2444 -
Employees: 275 - Underground copper mine - 3300 TPD
concentrator.
General Manager John H. Dorsey
Mine Superintendent Doug Nelson
Mill Superintendent Clifford D. Nelson

MAGMA GOLD LTD.
Subsidiary of Magma Copper Company

McCabe Mine T13N R1E Sec 30
P.O. Box 460, Humboldt, AZ 86329 - Phone 632-5165 -
Employees: 101 (includes 12 employees of the underground
mine contractor) - Underground mine - 600 TPD flotation
mill (operating 7 days, 7 days off) - Produces sulfide con-
centrate containing copper and precious metals.
General Manager Errol O. Anderson
Mine Superintendent Richard Pape
Senor Engineer William Hawes
Mill Group Leader Steve Recio
Purchasing Agent Larry Waugh
Manager of Accounting John T. Perry
Human Resources & Safety Ronald M. Plantz

MINERALS RESEARCH AND RECOVERY, INC.

Ajo Plant and Slag Stockpile T12S R6W Sec. 23
Tucson Office and Plant, 4565 S. Palo Verde, Suite 203,
Tucson, 85714 - Phone 748-9362 - Ajo Plant and New
Cornelia Copper Smelter Slag Stockpile, Highway 85, Ajo,
85321 - Phone 387-5310 - Employees 54 - Processess
copper smelter slag for roofing granules, abrrassives, filtra-
tion media, nuclear shielding, and ship balast - Markets in
Arizona and exported.
President Manjit Chopro
Plant Manager (Ajo) Joe Fanning, Sr.
Plant Manager (Tucson) Micheal Vick

MORTON SALT DIVISION
Morton International

Southwest Salt Mine T2N R1W Sec. 2
13000 W. Glendale Ave., Glendale, AZ 85307 - Phone
247-3000 - Employees: 32 - Solution mining via wells -
Solar evaporation of brines - Produces salt for water sof-
teners, domestic, agricultural, and industrial use -Under-
ground solution cavities are used for propane and butane
storage.
Plant Manager Gary McFarlin

MOUNTAIN VIEW MINING, INC.
Chem-Stone, Inc.

2015 W. Mountain View, Phoenix, AZ 85021 - Phone
997-2013 - Employees: 60 - Pumice treatment plant -
Produces specialized ready to use pumice for the garment
industry.
President David L. Bellaire
Dead Eye Mines T21N R2E Secs. 4, 16
South Fourth Street, P.O. Box 783, Williams, AZ 86046 -
Phone 997-2013 - Pumice mine - Open pit mining of spe-
cialized pumice - Sizing plant.
Operations Manager Joe Brouder

NATIONAL GYPSUM COMPANY

Gold Bond Building Products Division
P.O. Box 20863, Phoenix, AZ 85036 - Phone 258-9321 -
Employees: 100 - Wallboard plant - Wallboard joint cement
plant.
Plant Manager H. E. Skelley
Office Manager J. C. Cassidy
Joint Cement Plant Manager Nick Tuhus
Feldman Quarry T6S R16E Sec. 27
Star Route, Box 3990, Winkelman, AZ 85292 - Phone
357-7180 - Employees: 8 - Open pit gypsum mine located
12 miles south of Winkelman - Gypsum used in plaster
board.
Quarry Superintendent Dennis Mackovjak

NORD PERLITE COMPANY

Chicago Pit (AKA Nord Sil-Flo Pit) T2S R12E Sec. 16
Box 127, Superior, AZ 85273 - Phone 689-5631 -
Employees: 10 - Plant at Superior, 45438 North Silver King
Road, north of railroad track - Open pit perlite mine located
two miles southwest of Superior - Major markets are in
Louisiana, Illinois, Wyoming, Pennsylvania, Texas, and
Indiana - Filter aid used in filtering pharmaceuticals, chemi-
cals, sugar, and beverages.
President Terence Lang
General Manager Andres Vaska
Production Manager Sam Cooper
Plant Manager Louis R. Lucero

supplies lime to many of the State's copper mines
along with other users throughout the West. They
operate a second smaller plant near Bisbee.

Georgia Marble, a major producer of filler
grade limestone with mines in Wyoming and the
southeastern United States, acquired family
owned and operated Andrada Marble Company
near Tucson. They have announced plans to ex-
pand both production capacity and product lines.

Pfizer Minerals division acquired Calcium
Products of Arizona's Santa Rita Quarry and
marble filler mill. Pfizer has announced plans to
upgrade the plant and expand capacity.

The Arizona Department of Mines and
Mineral Resources project to survey and quantify
consumption of industrial minerals in Arizona's
market area continues. The object of this project
is to encourage exploration, development, and
production of industrial mineral deposits in
Arizona that can supply southwestern United
States and northern Mexico markets.

GEMSTONES

Arizona is the leading state in the value of
mined gemstones in the United States. Ap-
proximately \$2.8 million worth of commercial
gemstone production is reported for Arizona an-
nually. Turquoise, peridot, and petrified wood
account for most of the value, with amethyst,
chrysocolla, azurite, malachite, fire agate, and
apache tears making up the remainder.

Turquoise, a hydrous phosphate of aluminum
and copper, is the leading gemstone produced in
Arizona. Prized for its color, turquoise is the
traditional gemstone used in Southwestern
American Indian jewelry. It is mined as a by-
product at a number of Arizona porphyry copper
deposits. The best quality material is sold by the
piece, and the remainder sold or processed for sale
by weight.

Peridot is the gem variety of the mineral
olivine. The translucent green material comes
from the Peridot Mesa area of the San Carlos
Apache Indian Reservation east of Globe.
Arizona material is suitable for faceting and is of
the finest quality in the world. Occurring in

Quaternary basalt, the olivine is mined by shallow
drilling and blasting of productive zones followed
by hand breaking, screening, and sorting.

Petrified wood, although occurring in nearly
every state, is best known as an Arizona gem
material. Petrified wood is a fossil in which a
mineral material, usually silica, has replaced the
original cellular structure of the wood. Petrified
wood occurs in all Arizona counties, but that
occurring in Navajo and Apache counties in the
Triassic Chinle Formation of northeastern
Arizona supplies nearly all of the gem market.
Commercial production comes only from private
lands.

RECREATIONAL PROSPECTING

Rockhounding continues to be a popular
recreational activity in the State. The resultant
impact on the Arizona tourism industry is hard to
determine, but undoubtedly is significant. The
gem show in Quartzsite, for example, is the
largest in the world, drawing in excess of a
hundred thousand visitors. The prestigious Tuc-
son Gem And Mineral Show attracts visitors and
dealers from around the world. More than 20
additional gem shows are held in the State annual-
ly and 61 organized earth science clubs are cur-
rently active.

Gem material collected by the rockhound hob-
byist is not included in the official reported
gemstone production, but it is likely that rock-
hound production is higher than the reported mine
production. A portion of rockhound-collected
material goes directly into collections, but much
of it is sold privately or at gem shows.

Gold panning as a recreational activity has
seen increased interest in the last few years. Per-
haps this can be linked to interest generated by
tourists and the current popularity of outdoor
recreational activities. A Department publication,
Gold Panning in Arizona, is available to provide
information to the general public on this subject.

COMPANY LISTING

The following list is arranged alphabetically by company name. To locate a specific mine use the index on page 20.

A. F. BUDGE (MINING) LTD.

UVX T16N R2E Sec. 23
P.O. Box 938, Jerome, AZ 86331 - Phone 634-9034 - Employees: 13 - Located at Jerome - Underground mine producing gold and silver bearing flux for copper smelter. General Manager Ronald R. Short
Mine Superintendent Pete Flores
Mine Geologist John McKenny
Foreman Cundo Jauregui

ALANCO LTD.

Office
14555 N. Scottsdale Road, Suite 200, Scottsdale, AZ 85260 - Phone 991-8540.
Chairman of the Board Richard Jones
President Kevin Jones
Vice President Larry Kersey
ARMCO Custom Mill T20S R22E Sec. 21
Located 4 miles east of Tombstone on Charleston Road - Custom milling facility - Gravity, flotation, and CCD circuits.

ANASAZI COMPANY

Anasazi Stoneyard T4N R4E Sec. 14
Rattlesnake Quarries T20N R1E Sec. 19
Sidewinder Quarries T23N R2W Sec. 36
7486 E. Adobe Drive, Scottsdale, AZ 85255 - Phone 585-9882 - Employees: 20 - Operates flagstone quarries in Coconino County - Fabrication yard in Scottsdale - Marketed in United States and Asia.
Owner Grady Dawe
Mining Supervisor Neil Cowie

APACHE STONE DIVISION Halquist Stone Co. Inc.

Mayer Onyx Quarry T12N R1E Sec. 22
Blue Bell Schist Quarry T11.5N R1E Sec. 24
Rainbow Schist Quarry T12N R1E Sec. 23
22040 N. 21st Ave., Phoenix, AZ 85027 - Phone 267-8658 - Employees: 9 (including contractors) - quarries located near Mayer - Onyx marble quarry - Schist quarries - Landscape boulders, building and dimension stone - Marketed throughout the United States and exported.
President Perry Halquist
Manager Wayne Evans
Sales Pat Graham

ARIMETCO INTERNATIONAL INC.

6245 E. Broadway, Suite 350, Tucson, AZ 85711, Phone 745-8882.
President H. Roy Shipes
Vice President John Bracale
Johnson Mine T15S R22E Sec. 26
Phone 586-2241. Employees: 46 - Open pit copper mine - Heap and dump leaching - Solvent extraction electrowinning plant - Capacity 30,000 lb. copper per day.
Van Dyke T1N R15E Sec. 5
P.O. Box 747, Miami, AZ 85539, Phone 473-2421. In-situ leach-solvent extraction electrowinning feasibility studies underway.

ARIZONA PORTLAND CEMENT COMPANY

State Sales Office
2400 N. Central, Suite 308, Phoenix, AZ 85004 - Phone 271-0069.
Senior Vice President Vaughn S. Corley
Vice President, Sales Craig Starkey
Rillito Plant & Quarry T12S R11E Sec. 26
P.O. Box 338, Rillito, AZ 85654 - Phone (Tucson) 622-3503 - Employees: 144 - Limestone quarry 5 miles from plant - Cement - Annual capacity 1,100,000 tons cement - Longest conveyor transport system in state.
Plant Manager Tom Brosnan
Plant Chemist J. Boyett
Plant Engineer John Frye
Plant Electrician Russell Hawks
Personnel Manager Fran Young
Quarry Supervisor Chuck Hansen
Purchasing Agent Tom Follett

ARIZONA SILICA SAND COMPANY

Houck Silica Sand T22N R29E Sec. 29
P.O. Box 108, Houck, AZ 86506 - Phone 688-2602 - Employees: 18 - Open pit mine - Plant south of Houck - Hydrafrac sand for oil well treatment - Markets include New Mexico and California - Abrasives and mold sand - Markets in Arizona and New Mexico - Bagged and bulk products available.
President Robert D. Fisher
General Manager James Burkewitz
Foreman Ralph Nelson

of Quijotoa - Gold placer operation - Wet gravity concentration - Capacity 500 yards/week - Expansion underway.
Project Manager Jack Otani

GSA RESOURCES INC.

P.O. Box 509, Cortaro, AZ 85652 - Phone 297-4330 - Employees: 16 (including contractors).
President Ted H. Eyde
Vice President Daniel T. Eyde
Product Manager J. Micheal Canty
Lyles Mine T13N R6W Secs. 11, 12
Open pit clay mine located west of Kirkland - Hectorite clay - Used as viscosifiers and thickeners in pharmaceuticals and cosmetics.
Grace Chabazite Mine T12S R29E Secs. 1, 2, 12
Open pit mine located 13 miles north of Bowie - Chabazite - U sed for cation exchange media and specialty adsorbants and deodorizers - Shipped out of state for further processing.
Burro Creek Clay T14N R10W Sec. 7
Open pit clay mine located 8 miles southwest of Bagdad along Burro Creek - Saponite clay - Shipped out of state for manufacture into viscosifiers for industrial lubricants and coatings.

HARBORLITE CORPORATION

Superior Perlite T2S R12E Sec. 9
P.O. Box 960, Superior, AZ 85273 - Phone 689-5723 - Employees: 9 - Plant located 2 miles west of Superior on Silver King Mine Road south of railroad track - Open pit perlite - Two mines, located 2 miles southwest of Superior - Markets in Florida, California, Michigan, and Wyoming - Used in filtering for pharmaceuticals, chemicals, sugar, and beverages - Also used as agricultural fertilizer carrier.
Plant Manager Bill Smith
Assistant Manager Bob Farmer

HARLEY GRAY STONE COMPANY

Flagstone Quarries
P.O. Box 323, Paulden, AZ 86334 - Phone 636-2436 (Prescott 445-8253 or 445- 3028) - Employees: 10 - Quarries located 8 miles northeast of Drake - Flagstone, cut stone - Marketed locally, throughout the United States, and exported.
Owner Harley Gray
Owner Carl Gray

HUDMAN STONE

M C Canyon Quarries T19N R1E Sec. 23
9640 W. Picture Rocks Road, Tucson, AZ 85743 - Phone 622-6008 - Employees: 10 - Quarries located 8 miles

northeast of Drake - Flagstone for decorative use - River run and surface flagstone for building use.
General Manager Roger Hudman

KESSON & KESSON

1201 E. Marshall, Phoenix, AZ 85014 - Phone 277-9883 - Employees: 12.
Owner David Kesson
Copper Hill Mine T1N R15E Sec. 15
Silica flux for copper smelters - Northwest of Globe.
Magma Limestone T1S R12E Sec. 35
Limestone for San Manuel lime plant - East of Superior.

LITTLE HILL MINES INC.

Gold Hill Mine T10S R15E Sec. 5
P.O. Box 332, Oracle, AZ 85623 - Phone 896-2245 - Employees: 5 - Open pit mine - Located 6 miles southwest of Oracle - Copper bearing silica flux for copper smelter.
President Dave McGee
General Superintendent Dan Perham

McKUSICK MOSAIC

Weary Lode Mine T1S R15E Sec. 22
Route 1, Box 35-D, Globe, AZ 85501 - Phone 425-5051 or 425-8428 - Employees: 3 - Surface clay mine located 5 miles south of Globe - Used for tile and wind chimes, cosmetic additives, sealant, and slip glazing material.
Owners Robert & Charmion McKusick
Co-owner Kathleen Condit

MAGMA COPPER COMPANY

Corporate Headquarters
7400 N. Oracle Rd, Tucson, AZ 85704- Phone 575-5600
President and CEO J. Burgess Winter
San Manuel Mine T8S R16E Sec 34, 35
P.O. Box M, San Manuel, AZ 85631 - Phone 385-3100 - Employees: 2151 - Underground copper-molybdenum mine - 62,000 TPD concentrator - Open pit oxide mine - In-situ leaching - Heap Leaching - Solvent extraction-electrowinning plant.
General Manager Francisco E. Durazo
Manager Sulfide Mining Hendrick W. Seamey, Jr.
Manager Oxide Mining, Leaching
& SX-EW Douglas R. McGregor
Superintendent Concentrator Gerald R. Brunskill
Magma Metals Company
San Manuel Smelter T9S R17E Sec 32
P.O. Box M, San Manuel, AZ 85631 - Phone 385-3100 - Employees: 1217 - 1,000,000 TPD flash smelter - 3000 TPD acid plant - 300,000 TPD electrolytic refinery - 180,000 TPD continuous cast rod plant.
President John F. Champagne

HC 37 Box 500, Kingman, AZ 86401 - Phone 565-2226 - Employees: 14 - Open pit copper-molybdenum mine & 15,000 TPD concentrator - On standby - Dump leach - Precipitation plant operating - Located 16 miles north of Kingman.
Superintendent G. H. Veach
Plant Supervisor Joey Matthews

CYPRUS GOLD COMPANY
Cyprus Copperstone Gold Corp.

Copperstone T6N R20W Sec. 12
P.O. Box AI, Parker, AZ 85344 - Phone (619) 665-9261 - Employees: 115 (Includes 60 Morrison-Knudsen contract miners) - Located 12 miles north of Quartzsite - Open pit gold mine - Cyanide agitation leach - Rated capacity 2,850 TPD.
Resident Manager George R. Burns
Plant Superintendent Kurt G. Markola
Administrative Supervisor Mark A. Browning
Mine Superintendent Jay L. Cupp
Geologist Graham L. Kelsey
Senior Mine Engineer Joe F. Hatrick
Mill Maintenance Supervisor Emmett P. Sours
Operation Supervisor Gary R. Eastham
Human Resource & Safety Supervisor Susan P. Fullmer

DUNBAR STONE COMPANY

Dunbar Stone Plant T21N R2W Sec. 3
P.O. Box 246, Ash Fork, AZ 86320 - 901 Lewis - Phone 637-2592 - Employees: 63 - Quarries in Coconino, Maricopa, Mohave, and Yavapai Counties - Flagstone, marble and schist - Stone processing plant in Ashfork - Marketed in and out of state.
President G. E. Dunbar
Vice President W. B. Dunbar
Maintenance Superintendent Ron Dunbar
General Manager Witt Randall

ENERGY FUELS NUCLEAR INC.

P.O. Box 36, Fredonia, AZ 86022 - Phone 643-7321
Manager Mining Operations Roger Smith
Arizona One T36N R5W Sec. 22
Employees: 40 - Located 45 miles southwest of Fredonia - Underground uranium mine - Sinking shaft through March 1992.
Mine Superintendent John Stubblefield
Kanab North T38N R3W Sec. 17
Employees: 35 - Located 25 miles southwest of Fredonia - Underground uranium mine - Developed - On Standby.
Hermit T38N R4W Sec. 17
Located 30 miles southwest of Fredonia - Underground uranium mine - Developed - On standby.
Pine Nut T36N R4W Sec. 21

Located 45 miles southwest of Fredonia - Underground uranium mine - Developed - On standby.
Canyon T29N R3E Sec. 20
Located 45 miles north of Williams - Underground uranium mine - Development awaiting regulatory approval.

ENGELHARD CORPORATION
Chemical Division

Cheto No. 2 T21N R29E Sec. 23
Box 155, Sanders, AZ 86512 - Phone 688-2468, FAX 688-2485 - Employees: 11 - Located 6 miles southeast of Sanders - Surface strip bentonite mine - Primary use is in filters and catalysts, also used in agriculture and desiccants - Shipped overseas and to Mississippi for processing.
General Superintendent Gary McDonald

FISCHER WATT GOLD CO. INC.

Mystic T10N, R1W, Sec. 12
114 West Tucker, Kingman, AZ 86401 - Phone 753-1622
Employees: 12 - Located 20 miles northwest of Phoenix - Underground gold mine - 200 TPD gravity mill.
Mine Superintendent Joe Stocks
Mill Superintendent H. Mason Coggin

FLAGSTAFF CINDER SALES INC.

Wildcat Hill Pit T21N R8E Sec. 9
Old Highway 66 East, P.O. Box 2415, Flagstaff, AZ 86003 - Phone 526-0801 - Employees: 7 - Located 1.5 miles east of Flagstaff - Cinder quarry - Used for aggregate, landscaping, and construction materials.
President and General Manager Bob Olivier
Sec./Treasurer
Sales and Office Manager Mary Lou Olivier

GEORGIA MARBLE COMPANY INC.

Andrada Marble Quarry T17S R16E Sec. 21
4901 E. Drexel Road, Tucson, AZ 85706 - Phone 574-1414 - Employees: 11 - Mine site located 17 miles southeast of Tucson - Open pit marble mine - Used for calcium feed additive, plastering material, decorative stone, roofing material - 3,000 TPM - New crushing and grinding plant under construction.
Division Manager Larry Mattison
General Manager Russell Strobbridge
Office Manager Lillian Cruz

GOLDEN GREEN PLACER MINING
PARTNERSHIP

Devils Wash T15S R2E Sec. 2
HCR Box 840-A, Sells, AZ 85634 - Phone 361-2310- Employees: 4 - Located approximately 1.5 miles southwest

ARIZONA TUFFLITE INC.

Crown Claims T23N R7E
More Sand, Moon Sand T23N R7E Sec. 24
White Vulcan T23N R8E Sec. 19
2432 W. Peoria, Suite 1081, Phoenix, AZ 85029 - Phone 931-3682 - Glendale yard located at 6856 W. Orangewood, Glendale - Employees: 18 - Mines located 12 miles north of Flagstaff - Pozzolan pumice quarries - 6000 yards/month - Used in making lightweight redimix and block - Large size material used in the preparation of "stone washed blue jeans" and in horticultural preparations - Marketed in and out of Arizona.
President C. T. Morgan
Vice President/Mine Manager (Flagstaff) Ed Morgan
Secretary/Treasurer Clay Morgan
Orders and Transportation Marleen Bustamante

ASARCO INCORPORATED

Tucson Office
1150 N. 7th Avenue, P.O. Box 5747, Tucson, AZ 85703 - Phone 792-3010.
Southwestern Mining Department
General Manager T. E. Scartaccini
Assistant to General Manager D. F. Skidmore
Accounting Manager G. H. Myers
Chief Environmental Engineer P. J. Maley
Mining Department/Corporate Office
Assistant to Vice President A. D. Coumides
Chief Geologist S. A. Anzalone
Mineral Beneficiation Department
Director D. E. Crowell
Chief Metallurgist T. D. Henderson
Exploration Department
Manager, Western U.S.A W. L. Kurtz
Manager, Southwestern US Division J. D. Sell
Acid Sales Department
National Sales Manager G. P. Gillen
Governmental Affairs
Manager, State Legislative Affairs R. E. Quick
Safety Department
Director of Safety - Mining B. G. Brumbaugh
Director of Safety - Smelting R. Maxwell
Mission Mine T16S R12E Sec. 36
Box 111, Sahuarita, AZ 85629 - West Pima Mine Road - Phone 791-2920 - Employees: 745 - Open pit copper mine - Two concentrators: Mission and South with a total rated capacity of 59,000 TPD.
Manager John D. Low
Operations Manager J. B. Lichtenhan
Mine Manager S. L. Lakosky
Chief Engineer B. M. Williams
Senior Geologist R. B. Cummings
Chief Chemist C. A. Cunningham
Senior Metallurgist J. P. Reynolds

Maintenance Manager H. E. Hughes
Mill Manager, Mission C. A. Carroll
Mill Manager, South S. D. Lawrence
Accounting Manager D. J. Hoffman
Industrial Relations Manager J. F. Coxon
General Electrical Supervisor J. B. Barton
Safety Administrator R. E. Jordan
Environmental Engineer A. T. Cooper
Ray Mine & Concentrator T3S R13E Sec. 10
Hayden Concentrator & Smelter T5S R15E Sec. 11
P.O. Box 8, Hayden, AZ 85235 - Phone 356-7811 - Employees: 1403 - Open pit copper mine - Dump leach - Heap leach - Solvent extraction-electrowinning plant - Two concentrators: Ray rated at 30,000 TPD and Hayden rated at 31,000 TPD - Smelter capacity 720,000 TPY and 1600 TPD acid plant.
General Manager B. K. Malone
General Manager K. R. Morano
Manager, Ray Operation R. L. Gagliano
Manager, Hayden Operation D. C. Himmeseote
Mine Manager R. E. Thompson
Smelter Manager Joe Wilhelm
Personnel Administrator Joyce L. Morris
Accounting Manager J. T. O'Neil
Purchasing Agent Bob Henry
SX-EW Manager L. A. Davis
Technical Services Superintendent N. A. Gambell
Ray Concentrator Manager S. A. McGee
Hayden Concentrator Manager G. L. Lubers
Electrical Manager, Ray J. L. Weller
Electrical Manager, Hayden G. T. Coryell
Maintenance Manager, Ray Bill Pyle
Maintenance Manager, Hayden Hugh Alexander
Support Manager J. W. Murphy
Financial Manager J. T. O'Neal
Human Resources Director W. E. Burrell
Purchasing Manager K. C. Newman
Chief Engineer S. F. Johnson
Safety Director Warren Traweek
Division Geologist Edward John
Silver Bell T12S R8E Sec.11
Marana, AZ 85653 - Phone 622-6751 - Employees: 19 - Open-pit copper mine - 11,000 TPD concentrator - On standby - Dump leach & precipitation plant operating.
Mill Manager D. J. Duncan
Accounting Manager A. J. Robles

BLASER CORPORATION

Blaser Stoneyard T16N R2W Sec. 22
Black Cat Quarries T22N R1W Sec. 17
Grindstone 1 & 2 T20N R1E Sec. 34
Lower Cedar Tank Quarry T22N R2W Sec. 2
Yellow Wasp No. 2 T22N R1W Sec. 9
Government Canyon Quarry T19N R2E Sec. 34
Little Rock Quarry T22N R2W Sec.24

North Highway 89, Chino Valley, AZ 86323 - Phone 636-4454 - Employees: 40 - Processes, saws, and cuts Arizona flagstone and sandstone as flagging, dimension stone and tiles - Marketed nationwide and exported to foreign countries.
President Donald Blaser
Vice President W. Larry Blaser
Secretary/Treasurer - Mgr. Operations . . . Dayle Blaser
Orders Marcia Stewart

BUILDING PRODUCTS COMPANY

Phoenix Plant
4850 W. Buckeye Road, Phoenix, AZ 85043 - Phone 272-5576 - Clay mining by contractor - Plant consumes clay to produce extruded sewer pipe and roofing tile.
Plant Manager Vern Hamner
Mine Consultant Don Morris
Rim Quarry T11N R19E Sec. 30
Clay mine located 10 miles southwest of Clay Springs.
New River Slate Quarry T7N R3E Sec. 5
Slate quarry located approximately 6 miles northeast of New River.
Dewey Ranch #2 T14N R1E Sec. 15
Clay mine located approximately 6 miles north of Dewey.

CHEMGOLD INC.

Picacho Mine California
1891 Rail Avenue, P.O. Box 2015, Yuma, AZ 85366 - Phone 783-1891 - Employees: 55 - Open pit gold mine located 24 miles north of Yuma in California - Open pit mine - Heap leaching - Carbon adsorption - Desorption - Electrowinning - Annual production 17,000 oz. gold.
Chairman Chester F. Millar
President A. Dan Rovig
Vice President & General Manager C. Kevin McArthur
Operations Superintendent Brian R. Young
Metallurgist Jesus Arrizon

CHEMSTAR LIME

2800 N. 44th St., Suite 400, Phoenix, AZ 85008 - Phone 955-5711.
President Dave Reilly
Vice President, Manufacturing & Engineering Larry Warney
Vice President, Marketing Bob Derks
Vice President, Industrial Sales Bob Plains
District Sales Manager John Reaney
Chief Engineer Bill McCandlish
Manager, Technical Services Starr Curtis
HiCal Operations Manager Ed Barry
Materials Manager Mike Pinnau
Distribution Manager John Mc Mullan
Transportation Manager Chris Bruskes

Nelson Quarries & Plant T25N R10W Sec. 25
P.O. Box 370, Peach Springs, AZ 86434 - Phone 769-2271
- Employees: 74 - Limestone quarry - Lime plant with two rotary kilns rated at 1800 tons of lime per day.
Plant Manager Mike S. Eliason
Production Superintendent Bill Schoof
Maintenance Superintendent Mark Phillips
Quarry Superintendent Pat Terbilcox
Plant Buyer Danny Roberts
Shipping/Transportation Coordinator Joe Fuentes
Douglas Quarry & Plant T24S R26E Sec. 7
Route 1, Box 110, Douglas, AZ 85607 - Phone 364-2429 - Employees: 60 - Quarry and plant located at Paul Spur - 3 lime kilns - Plant capacity rated at 1000 tons of lime per day.
Plant Manager Jerry Young
Production & Maintenance Superintendent Richard Anderson
Quarry Superintendent vacant
Production Services Superintendent Don Williams

CLINTON - CAMPBELL CONTRACTING INC.

Phoenix Brick Yard
1814 S. 7th Ave., Phoenix, AZ 85007 - Phone 258-7158 - Employees: 96.
President Frederic Campbell
Plant Superintendent Don Campbell
Tolleson Mine T1N R1E Sec. 3
Clay pit located on 84th Avenue north of Van Buren - Used in manufacture of structural clay products.
Pantano Clay Pits T16S R17E Secs. 21, 26, 27, 28, 35
Clay pits located 25 miles southeast of Tucson (North of Interstate 10 - 2 miles northwest of the Pantano Interchange) - Clay used in the manufacture of structural clay products.

CYPRUS COPPER COMPANY
(A subsidiary of Cyprus Minerals Company)

P.O. Box 1126, Green Valley, AZ 85622 - Phone 628-4000.
Cyprus Sierrita Corp.
Sierrita T18S R12E Secs. 7, 8, 9, 10, 16, 17
Twin Buttes T18S R13E Sec. 5
P.O. Box 527, Green Valley, AZ 85622 - Phone 791-2950 and 625-4800 - Employees: 1130 plus 50 Triple Nichol Inc. contract employees - Sierrita, Esperanza and Twin Buttes open pit copper-molybdenum mines - 95,000 TPD concentrator - The inactive Esperanza open pit - 17,500 TPD concentrator - Ferromolybdenum plant - Rhenium plant - Oxide leach, solvent extraction - electrowinning plant - Dump leach, solvent extraction - electrowinning plant - Located 30 miles south of Tucson.
Vice President & General Manager . . . Gene Consalus
Manager, Administration Mark Wilson
Manager, Mining D. L. Prahl
Manager, Metallurgical Processing M. H. Khan
Manager, Human Resources Craig Patrick

Plant Manager Bob Comstock
Mine Superintendent Leon Hardy
Oxide Superintendent Ramon Hernandez
Cyprus Miami Mining Corp.
Miami T1N R14E Sec. 24, 25, 26, 35
P.O. Box 4444, Claypool, AZ 85532 - Phone 473-7150 - Employees: 1000 - Open pit oxide copper mine - Dump leach - Solvent extraction - electrowinning plant - 120,000 TPY Smelter - Acid plant - Electrolytic refinery - 100,000 TPY continuous rod plant - 24,000 TPD concentrator is inactive.
Vice President & General Manager . . Dennis Mortensen
Manager, Technology Ken Larson
Manager, Mining Operations John Fenn
Manager, Smelter/Rod Plant Operation Al Tittes
Manager, Plant Operations Howard Bardwell
Manager, Human Resources Chuck Rising
Manager, Administration Randy Hoffman
Superintendent, Leaching Operations and Solvent Extraction Gerald F. Fountain
Superintendent, Tankhouse Mark Peabody
Superintendent, Plant Services John C. Lorenzen
Superintendent, Rod Plant Luis Constandse
Superintendent, Metallurgical Control Eric Selley
Superintendent, Environmental Services . . Bob Ressler
Superintendent, Smelter Operations Don Nelson
Superintendent, Smelter Maintenance . . . Scott Vandela
Superintendent, Smelter Technical Services Rex Henderson
Superintendent, Smelter Resource Recycling Larry Le Compte
Materials Management Hugo Schriewer
Cyprus Bagdad Copper Corp.

Bagdad T14N R9W Sec. 4
P.O. Box 245, Bagdad, AZ 86321 - Phone 633-2241 - Employees: 728 - Open pit copper-molybdenum mine - 71,000 TPD concentrator - Dump leach-solvent extraction-electrowinning plant.
Vice President & General Manager . . Harry W. Cosner
Manager, Administration R. J. Cunningham
Manager, Mining Kent Watson
Manager, Plant Operations G. G. Granger
Manager, Community Services D. L. Mead
Manager, Human Resources J. S. Bush
Manager, Safety Joe Mortimer
Cyprus Casa Grande Corp.
Casa Grande T10S R4E Sec. 25
P.O. Box C-9, Casa Grande, AZ 85222 - Phone 623-1539 - Employees: 179 - In- situ leach copper mine - Roast Leach - Solvent extraction-electrowinning plant - Acid plant - Located 32 miles south of Casa Grande.
Vice President and General Manager . . Ronald Kellner
General Manager Rana Medhi
Administrative Manager Robert Moon
Manager of Metallurgy John Kline
Mine Superintendent Kermit Behnke
RLA Supervisor Sam Yang
Material Management/Cost Coordinator . . . Joe Smith
SX-EW Quality Assurance Supervisor . . . Troy Pool
RLA Quality Assurance Supervisor Dave Hamby
Maintenance Supervisor Donald Berdine
Human Resources Superintendent Jim Lewis
Chief Metallurgist Dave Shade
SX-EW Superintendent Jim Garvey
Cyprus Mineral Park Corp.
Mineral Park T23N R17W Sec. 19



Morenci's electrowinning tankhouse.