

Service/News

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New publications

NMBMMR

***Bulletin 11, Part III**—The mines and mineral resources of Dona Ana County, by K. C. Dunham, reprinted 1980 from original 1935 text, 82 p., 5 pls., 11 figs. \$6.00

USGS

BULLETINS

B 1485—Factors that localized uranium deposition in the Dakota Sandstone, Gallup and Ambrosia Lake mining districts, McKinley County, New Mexico, by C. T. Pierson and M. W. Green, 1980, 31 p.

The controlling factors include 1) the presence of a source of uranium (believed to be the underlying, uranium-bearing solutions from the Morrison Formation), 2) the accessibility to the Dakota Sandstone of uranium-bearing solutions from the Morrison Formation, 3) the presence and favorable distribution of permeable host sandstone beds and impermeable carbonaceous shale beds in the Dakota Sandstone, and 4) the presence in host beds of a reductant in the form of bedding-plane laminations and small trash pockets of carbonaceous material.

PROFESSIONAL PAPERS

P 1129-A-1—Shorter contributions to geochemistry, 1979. Part B, Contributions of major and minor elements to soils and vegetation by the coal-fired Four Corners Power Plant, San Juan County, New Mexico, by H. L. Cannon and V. E. Swanson, 1980 (separate chapters not available).

MISCELLANEOUS FIELD STUDIES MAPS

MF-900-1—Map showing anomalous tungsten and gold distribution in stream-sediment concentrates, Hillsboro and San Lorenzo quadrangles exclusive of the Black Range Primitive Area, Sierra and Grant Counties, New Mexico, by K. C. Watts, H. V. Alminas, J. M. Nishi, and W. C. Crim, 1978, scale 1:48,000.

MF-1175—Geologic map of the Victorio Mountains, Luna County, southwestern New Mexico, by C. H. Thorman and Harold Drewes, 1980, scale 1:24,000

MF-1183-C—Distribution and abundance of fluoride in stream-sediment concentrates, Silver City 1° by 2° quadrangle, Arizona and New Mexico, by K. C. Watts and J. R. Hassemmer, 1980, scale 1:250,000

NTIS

PB 160 864—Water resources data for New Mexico, water year 1978-1979, 688 p.

PB-80-177 900—Experimental salinity alleviation at Malaga Bend of the Pecos River, Eddy County, New Mexico, by J. S. Havens and D. W. Wilkins, 1979, 71 p.

THESES

Levinson, A. R., 1979, Depositional environments of the shales and coals of the Dakota Sandstone and adjacent units of the San Juan Basin, Colorado, and New Mexico: M.S. thesis, Bowling Green State University, 125 p.

Open-file reports

USGS

79-1526—Depths of channels in the area of the San Juan Basin regional uranium study, New Mexico,

Colorado, Arizona, and Utah, by M. E. Cooley, 68 p., scale 1:250,000

79-1549—Land use and land cover and associated maps for Albuquerque, NW, New Mexico, lat. 35° 30' to 36°, long. 107° to 108°, scale 1:100,000

80-50—The water table in the High Plains aquifer in 1978 in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, by E. G. Gutentag and J. B. Weeks, scale 1:2,500,000

80-230—Geologic map of the northern part of Sierra Cuchillo, Socorro and Sierra Counties, New Mexico, by Florian Maldonado, scale 1:24,000

80-254—Leasable mineral and waterpower land classification map of the Clifton quadrangle, Arizona, New Mexico, compiled by D. A. DeCicco, E. D. Patterson, and G. S. Yamamoto, scale 1:250,000

80-255—Leasable mineral and waterpower land classification map of the Clovis quadrangle, New Mexico, Texas, compiled by D. A. DeCicco and E. D. Patterson, scale 1:250,000

80-256—Leasable mineral and waterpower land classification map of the El Paso quadrangle, Texas, New Mexico, compiled by D. A. DeCicco and E. D. Patterson, scale 1:250,000

80-257—Leasable mineral and waterpower land classification map of the Las Cruces quadrangle, New Mexico, Texas, compiled by D. A. DeCicco and E. D. Patterson, scale 1:250,000

80-332—A compilation of hydrologic data before and during highway construction in parts of Tijeras Canyon, New Mexico 1972-1978, by J. D. Hudson, 79 p.

80-374—Preliminary geologic map of the Mora River area, Sangre de Cristo Mountains, New Mexico, by E. H. Baltz and J. M. O'Neill, scale 1:24,000

80-382—Mineral resources of the Pecos Wilderness and adjacent areas, Santa Fe, San Miguel, Mora, Rio Arriba, and Taos Counties, New Mexico, by U.S. Geological Survey, U.S. Bureau of Mines, and New Mexico Bureau of Mines and Mineral Resources, 1980, 117 p., 6 map sheets, scale 1:48,000

80-408—Water-resources investigations of the U.S. Geological Survey, New Mexico district, fiscal year 1979, by R. R. White and W. K. Dein, 78 p.

80-492—Leasable mineral and waterpower land classification map of the Silver City quadrangle, New Mexico, Arizona, compiled by D. A. DeCicco, E. D. Patterson, and R. D. Morgan, scale 1:250,000

80-493—Leasable mineral and waterpower land classification map of the Douglas quadrangle, Arizona, New Mexico, compiled by D. A. DeCicco and E. D. Patterson, scale 1:250,000

80-494—Leasable mineral and waterpower land classification map of the Fort Sumner quadrangle, New Mexico, compiled by D. A. DeCicco and E. D. Patterson, scale 1:250,000

80-495—Leasable mineral and waterpower land classification map of the Tucumcari quadrangle, New Mexico, Texas, compiled by D. A. DeCicco and E. D. Patterson, scale 1:250,000

80-496—Leasable mineral and waterpower land classification map of the Dalhart quadrangle, Texas, New Mexico, Oklahoma, Colorado, Kansas, compiled by D. A. DeCicco, E. D. Patterson, and K. M. Robinson, scale 1:250,000

80-671—Preliminary aeromagnetic map of the Pecos area, New Mexico, scale 1:62,500

New projects

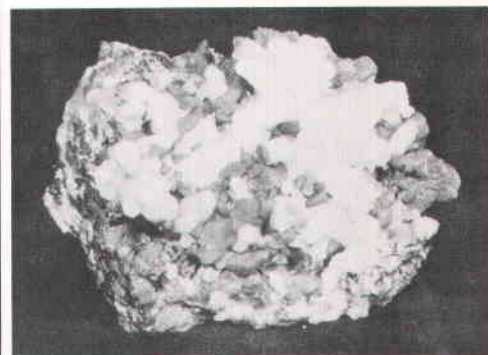
USGS

9590-02695—Palynology of the uranium-bearing Triassic rocks of the Colorado Plateau, by L. I. Doherty. A study of well-preserved fossil plants, pollen, and spores in the Chinle Formation of several hundred square miles of the Colorado Plateau. Preparation of an open-file report with photographic documentation is to be the preliminary step in the establishment of a biostratigraphic zonation from the Triassic. Completion date 1980.

9590-02696—Lacustrine paleoclimate records, by J. P. Bradbury. Collection of varved and other lacustrine sediment sequences in various parts of the United States so that their paleoclimatic record can be intensively studied to produce a high-resolution Holocene climatic record. Completion date 1981.

9590-02702—Chronostratigraphy of mid-Cretaceous hydrocarbon source rocks, Western Interior, by W. A. Cobban. A study of the faunal successions in the mid-Cretaceous black shale and carbonate sequences at critical localities in the eastern half of the Western Interior and the relationships of these rocks to the black shale and sandstone sequences farther west. Will formulate a detailed faunal zonation of these oil- and gas-producing Cretaceous rocks that will also aid in perfecting the biostratigraphic framework for rocks of this region. Completion date 1982.

New Mexico's minerals



CHALCOPYRITE, CuFeS_2 , WITH QUARTZ. HIDALGO COUNTY, NEW MEXICO

Crystal system: tetragonal. Hardness: 3½-4.

Specific gravity: 4.1-4.3. Fracture: brittle.

Color: brass yellow; streak greenish black.

Specimen pictured: 7 x 6 cm.

Chalcopyrite is a widely occurring mineral in sulfide ore deposits and is an important ore of copper. Because of its yellow color, chalcopyrite is known as "fool's gold"; it was commonly mistaken for gold by inexperienced prospectors. Chalcopyrite commonly occurs with sphalerite (ZnS); galena (PbS); dolomite ($\text{CaMg}(\text{CO}_3)_2$), calcite (CaCO_3); and quartz (SiO_2). Chalcopyrite is the major primary copper mineral in porphyry copper deposits such as the deposit mined in Chino pit, Santa Rita, New Mexico. The name is derived from the Greek "chalco" meaning brass and "pyrite" meaning fire.

Photo by Mark R. Leo

Abstracts

OIL AND GAS EXPLORATION WELLS IN PEDREGOSA BASIN, by Sam Thompson III, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM; J. C. Tovar R., Petroleos, Mexicanos, Chihuahua, Chih.; and J. N. Conley, Independent Geologist, Tulsa, OK, 1980. Reprinted from American Association of Petroleum Geologists Bulletin, May 1980.

In the Pedregosa Basin and adjoining areas covering 49,500 sq mi in southeastern Arizona, southwestern New Mexico, northwestern Chihuahua, and northeastern Sonora, 37 petroleum exploration wells have penetrated Paleozoic and/or Precambrian rocks. Several shows of oil and gas have been reported, but no commercial production has been found to date. Many of the wells have been drilled on basin-and-range uplifts where reservoirs tend to be flushed with meteoric water. The best remaining prospects lie below the deeper parts of graben valleys where preservation of petroleum is more likely.

The highest ranking objective of the region is in Upper Pennsylvanian-Lower Permian rocks at the margin of the Alamo Hueco Basin where shallow-marine dolostone reservoirs are juxtaposed to deep-marine, organically rich, limestone and mudstone source rocks. A regional isopach and facies map of the Pennsylvanian shows that the basin axis trends generally southeastward from southern Hidalgo County, New Mexico, across the Ascension-Villa Ahumada area of Chihuahua. Several other petroleum-exploration objectives are indicated in the Paleozoic and Mesozoic rocks.

GENETIC STRATIGRAPHY AND PROVENANCE OF THE BACA FORMATION, NEW MEXICO, AND EAGER FORMATION AND MOGOLLON RIM GRAVELS OF ARIZONA, by S. M. Cather, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM, and B. D. Johnson, Marathon Oil Co., Casper, Wyo. Paper presented at 1980 Conference of the American Association of Petroleum Geologists in Denver, Colorado.

The Baca Formation of New Mexico and the Eager Formation and Mogollon Rim gravels of Arizona consist of an Eocene-early Oligocene sequence of claystone, mudstone, sandstone, and conglomerate that crops out in discontinuous exposures along an east-west-trending belt from Socorro, New Mexico, to Show Low, Arizona. The maximum exposed thickness is approximately 1,200 ft.

The outcrop belt transects the southern portion of the east-west-trending Baca-Eager Basin. The basin is bounded on the north by the Defiance and Zuni uplifts, on the south by the Mogollon highland of Arizona and New Mexico, and on the east by the Sierra-Sandia uplift. These uplifts were the primary sources of sediments in the basin. Measurement of maximum clast size, counts of gravel lithology, and studies of thin sections and paleocurrents were used to determine source areas and sediment dispersal patterns. Southward tilting and erosional stripping of the northern portion of the basin resulted from uplift of the Colorado Plateau in Miocene-Pliocene time.

A depositional model consisting of a braided alluvial plain-meanderbelt-lacustrine facies tract is presented. □

MINING REGISTRATIONS (JANUARY 2 TO MARCH 18, 1980)

State Mine Inspector 2340 Menaul N.E. Albuquerque, N.M. 87107

Date and operation	Operators and owners	Location
1-28-80 coal	Operator—Kaiser Steel Corporation, P.O. Box 1107, Raton, NM 87740, phone: 455-5531; Gen. Mgr.: E. D. Moore Property owner—Kaiser Steel Corporation, P.O. Box 58, Oakland, CA 94604	Colfax Co., sec. 31, T. 31 N., R. 22 E., private land
2-10-80 uranium	Operator—Teton Exploration and Drilling Co., P.O. Drawer A-1, Casper, WY, phone: 307-265-4102; Person in charge: Charles Ernst, 1510 Berryhill, Milan, NM, phone: 287-4221 Property owner—United Nuclear Homestake Partners, P. O. Box 98, Grants, NM 87020	McKinley Co.; Grants mineral belt; sec. 23, T. 13 N., R. 9 W.; private land
2-14-80 iron, copper	Operator—Sierra Blanca Milling and Processing Co., Box 2943, Ruidoso, NM 88345, phone: 257-9062; Gen. Mgr.: Michael Hansen Property owner: Sierra Blanca Milling and Processing Co., Box 2943, Ruidoso, NM 88345	Lincoln Co.; almost all sec. 15, Tps. 5, 6, 7 S., Rs. 11, 12, 13 E.; pit in sec. 15, T. 5 S., R. 12 E.; private, state, and federal land
2-14-80 gold, silver	Operator—H and H Minerals, Box 1359, Silver City, NM 88061; Gen. Mgr.: Robert L. Holliday Property owner—Doug Hanson, Duncan, AZ 85534	Hidalgo Co.; sec. 1, T. 22 S., R. 17 W.; federal land
2-15-80 uranium	Operator—Teton Exploration and Drilling Co., P.O. Drawer A-1, Casper, WY, phone: 307-265-4102. Person in charge: Tony Thompson, 1510 Berryhill, Milan, NM, phone: 287-4221 Property owner—Sohio Natural Resources, 6001 Marble NE, Albuquerque, NM 87106	Valencia Co.; Grants mineral belt; sec. 14, T. 11 N., R. 5 W.; private land
2-18-80 gold, silver	Operator—Ira Holliday, Box 206, Truth or Consequences, NM 87901; Gen. Mgr.: Robert L. Holliday, Box 1359, Silver City, NM 88061 Property owner—Doug Hanson, Duncan, AZ 85534	Grant Co.; sec. 6, T. 22 S., R. 16 W.; Gold Hill district; federal land
3-3-80 uranium	Operator—Farris Mines, Inc., Box 687, Grants, NM 87020, phone: 287-4858; Gen. Mgr.: Jerry F. Farris Property owner—Conoco Inc., 1041 Mesa Blvd., Grants, NM 87020	McKinley Co.; sec. 24, T. 17 N., R. 13 W.; Crownpoint mining district; private land
3-10-80 silver	Operator—Donald A. McGhee and Co., Box 700, Lordsburg, NM 88045, phone: 542-9381; Gen. Mgr.: Donald A. McGhee Property owner—Donald A. McGhee	Hidalgo Co.; secs. 17, 18, 19, 20, T. 23 S., R. 21 W.; federal land
3-10-80 silver, gold	Operator—Summit Minerals, Inc., Box W, Duncan AZ 85534, phone: 602-359-2835; Gen. Mgr.: D. E. Hanson Property owner—Summit Minerals, Inc.	Grant Co.; sec. 2, T. 16 S., R. 21 W.; Steeplerock mining district; private land
3-17-80 mill	Operator—Southwest Mineral Corporation, 25388 San Jacinto #201, Hemet, CA 92343, phone: 714-925-7758; Supt.: Ramon Bencomo, US-380-US-54 intersection, N.E. corner, Carrizozo, NM, phone: 648-2372 Property owner—L.M. and M., Inc., 271 Autumnwood, Thousand Oaks, CA	Lincoln Co.; sec. 2, T. 6 S., R. 10 E.; White Oaks district; federal land Ores milled: iron ore; no custom milling
3-17-80 magnetite	Operator—Southwest Mineral Corporation 25388 San Jacinto #201, Hemet, CA 92343; Person in charge: Ramon Bencomo, Carrizozo, NM, phone: 648-2372 Property owner—Ed Bottenilli and William K. Hargis	Socorro Co.; secs. 15, 17, 22, 23, 24, 25, 26, T. 5 S., R. 7 E., Jones district; federal land
3-17-80 barite	Operator—Ranger Industries, Inc., P.O. Box 602, Socorro, NM 87801, phone: 835-3729; Gen. Mgr.: Gregory N. Patulea Property owner—Jarrett Mining Co., 2985 Broadmoor Valley Rd., Colorado Springs, CO 80906	Socorro Co.; sec. 34, T. 5 S., R. 5 E.; Hansonburg district; federal land
3-17-80 coal	Operator—Cactus Industries, Inc., P.O. Box 602, Socorro, NM 87801, phone: 835-3729; Gen. Mgr.: Gregory N. Patulea Property owner—Rozier Sanchez, 7612 Palo Duro NE, Albuquerque, NM 87110	Socorro Co.; sec. 9, T. 5 S., R. 2 E.; Carthage district; private land
3-18-80 copper	Operator—UV Industries, Inc., Box 406, Hanover, NM 88041, phone: 534-2225; Gen. Mgr.: R. C. Weagel Property owner—Sharon Steel Corp., 6917 Collins Ave., Miami, FL 33141	Grant Co.; sec. 4, T. 17 S., R. 12 W.; Central district; private land
3-18-80 mill	Operator—UV Industries, Inc., Box 406, Hanover, NM 88041, phone: 534-2225, Gen. Mgr.: R. C. Weagel Property owner—Sharon Steel Corp., 6917 Collins Ave., Miami, FL 33141	Grant Co.; sec. 4, T. 17 S., R. 12 W.; Central district; private land Ores milled: copper; no custom milling

(TO BE CONTINUED NEXT ISSUE)

Drillers Association advisory group invites membership

The Technical Support Group (TSG) of the New Mexico Water Well Association, an affiliate of the National Water Well Association, is seeking additional members. The purpose of the TSG is to provide technical assistance to

Association members by helping them locate water-resource experts in the state. TSG membership is open to anyone involved with technical aspects of water resources in New Mexico and willing to respond to occasional requests for assistance. There are no dues but members must consent to being listed in the TSG directory. If interested, send name, af-

filiation, address, phone number, and specialty to Dr. William J. Stone, Technical Support Group Chairperson (New Mexico Bureau of Mines and Mineral Resources, Campus Station, Socorro, NM 87801) or Elmer D. Martinez, Technical Support Group Secretary (Controls for Environmental Pollution, Inc., P.O. Box 5351, Santa Fe, NM 87502).

New books

STUDIES IN WESTERN ARIZONA, edited by J. P. Jenney and Claudia Stone, published by Arizona Geological Society, Tucson, Arizona 85717, 338 p., soft cover, \$15.00 each, postpaid.

Though this volume deals with the part of Arizona farthest from New Mexico, much of the geology it describes is related to or has significance in interpreting New Mexico's geology.

The book contains 16 articles dealing with the geochronology, structural geology, stratigraphy, aeromagnetism, areal geology, and geomorphology of western Arizona. Of particular interest is a compilation of over 170 previously unpublished K-Ar dates from southwestern Arizona and adjacent areas, papers on Laramide thrusting in west-central and southwestern Arizona, a paper on geochronology and listric normal faulting in the Vulture Mountains, and papers on Precambrian geology of the Bradshaw and Hualapai Mountains, including a discussion of massive sulfide environments of the west-central Hualapai Mountains. It also includes the geologic road log for the 1979 Arizona Geological Society spring field trip to the Yuma area and contains an index of theses and dissertations concerning Arizona geology done at the three Arizona universities through December 1979.

1980 HENRY MOUNTAINS SYMPOSIUM, published by Utah Geological Association, P.O. Box 11334, Salt Lake City, Utah 84147, hard cover, \$45.00 plus \$4.50 postage.

This volume focuses on the laccolithic structure of this classic region. The principal papers by Charles B. Hunt contain much of the information in his long-out-of-print U.S. Geological Survey Professional Paper 228. About 25 other papers cover: stratigraphy, principally the Triassic, Jurassic, and Cretaceous Systems; fluvial processes; porphyry weathering; archaeology; vegetation; mineral deposits, especially uranium, vanadium and coal; oil-impregnated sandstone; and petroleum geology. A road log covers a 3-day field trip, and the volume contains a colored geologic map in a pocket. □

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