

Service/News

Starred items (*) available from New Mexico Bureau of Mines and Mineral Resources

Announcements

Industrial minerals forum to meet

The 17th annual meeting of the Forum on the Geology of Industrial Minerals will be held in Albuquerque May 12-15, 1981. "The Industrial Minerals and Rocks of the Southwest" is the theme of the conference. Three field trips will be held in connection with the meeting: one to the Carlsbad potash mines, another to north-central New Mexico, and a third to the U.S. Gypsum perlite operation near Grants. Write or call: Mark Logsdon, Registration Chairman, 17th Annual Forum on the Geology of Industrial Minerals, New Mexico Bureau of Mines and Mineral Resources, Campus Station, Socorro, New Mexico 87801 (505/835-5334).

Uranium geology and exploration course

A three-day short course in uranium geology and exploration is to be offered in Houston, Texas, on June 17-19, 1981, by R. H. De Voto of the Colorado School of Mines. The course covers a) the geochemistry and geology of uranium, b) the mechanisms important in the generation of anomalous uranium concentrations, c) the many geologic environments favorable for the formation of economic and sub-economic uranium deposits, d) the geology and geochemistry of the principal uranium districts of the world, and e) exploration techniques and programs. Registration fee: \$350. For information regarding the course, contact Uranium Geology Inc., 675 Estes St., Lakewood, Colorado 80215.

Utah Geological Association 1982 field trip

The Utah Geological Association 1982 field trip and guidebook will cover the Overthrust Belt of Utah, with particular emphasis on the Overthrust in central and southern Utah. The field trip will consider the geologic relationships in central Utah and is scheduled for September 20-22, 1982. The trip will be led by Doug Sprinkel of Placid Oil Company, Salt Lake City, Utah, and Irv Witkind of the U.S. Geological Survey, Denver, Colorado. The guidebook editor is Dennis Nielson of the Earth Science Laboratory, University of Utah Research Institute, Salt Lake City, Utah. Additional details on the field trip and a call for papers for the guidebook will be announced at a later date.

Abstracts

GSA

PROTEROZOIC KOMATIITES FROM THE SANGRE DE CRISTO MOUNTAINS, NORTH-CENTRAL NEW MEXICO, by William F. Wyman, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM 87801

Peridotitic komatiites of Proterozoic age have been documented in only a few scattered locations throughout the world. The ultramafic locations rocks of New Mexico are believed to be the first Proterozoic (1.7-1.8 b.y.) komatiites identified in the United States, and only the second occurrence of such rocks described in North America.

The ultramafics contain between 19 and 27 wt. percent MgO, low TiO₂ (<0.50 wt. percent), SiO₂ (<45 wt. percent), Na₂O and K₂O (both 0.9 wt. percent), and have CaO/Al₂O₃ ratios of greater than 0.8. These rocks consistently plot within the peri-

dotitic komatiite field on chemical variation diagrams described in the literature. Trace metal ratios are also consistent with this interpretation as is the presence of selected quench textures. The komatiitic rocks are interbedded with high-Mg tholeiites (now amphibolites) and minor mafic meta-sedimentary rocks, and appear to be part of an extensive middle Proterozoic volcano-sedimentary terrane that is collectively called the Pecos greenstone belt. An extrusive origin for many of the komatiitic rocks is suggested by pillowlike structures, polyhedral jointing, relict flow banding, cumulus textures, and chilled margins. The chilled margins exhibit skeletal tremolite (after clinopyroxene) in a matrix of chlorite. The chlorite probably represents devitrified glassy material originally formed during quenching. Spinifex textures have not yet been found. The remaining ultramafic units are believed to be hypabyssal equivalents of the flows based primarily on whole-rock geochemistry and the lack of extrusive textures.

New publications

Earthquake catalog available

Earthquake catalog of northern New Mexico is a quarterly publication prepared by Los Alamos National Laboratory, Los Alamos, New Mexico. It is a summary of earthquakes located in northern New Mexico that have been detected by the Los Alamos seismic array. Data are presented in the form of tables and epicenter maps with a brief explanatory text. In the first issue, earthquakes are listed from September 1973 through December 1979. The following issues list earthquakes in quarterly presentations. Issues are available free of charge by contacting Joyce Wolff, MS 676, Los Alamos National Laboratory, P.O. Box 1663, Los Alamos, NM 87545, or by calling Group G-7, (505) 667-7165.

Mineral waste stabilization publication

PAPERS PRESENTED AT 1980 MEETING AND FIELD TRIP, MINERAL WASTE STABILIZATION LIAISON COMMITTEE, by Corale L. Brierley (compiler), 1981, New Mexico Bureau of Mines and Mineral Resources, 140 p.

Includes papers on minerals environmental technology research, OSM permit baseline environmental data, phosphate research, impact of hydrology on mine waste stabilization, use of saline ground water for reclamation in the San Juan Basin, effects of endomycorrhizae on shrub and grass growth in the Southwest, revegetation management-soil microbiological interactions, revegetation tests at a uranium mill site, and reclamation at the Climax, Urad, and Henderson mines in Colorado.

NMBMMR

*Circular 171—Earthquakes in New Mexico, 1849-1977, by Allan R. Sanford, Kenneth H. Olsen, and Lawrence H. Jaksha, 1981, 20 p., 3 tables, 3 figs., 1 appendix. Discusses the seismicity of New Mexico and its relation to major physiographic provinces and local geologic conditions within each province. Earthquake data analyzed are 1) felt shocks before 1962 with maximum intensities of V or greater and 2) instrumentally located shocks with local magnitudes of 1.5 or greater for the period 1962-1977.

Reports of felt shocks are almost exclusively from the Rio Grande rift, whereas the instrumental epicenters are distributed throughout the state. \$3.00

*Circular 178—Pennsylvanian crinoids from Sangre de Cristo and Sacramento Mountains of New Mexico, by Harrell L. Strimple, 1980, 16 p., 2 pls., 2 tables, 2 figs. Discusses twelve species representing eight genera of inadunate crinoids reported from Lower and Middle Pennsylvanian strata of New Mexico. Two new species are proposed: *Diphucrinus santafeensis* n. sp. and *Aglaocrinus sutherlandi* n. sp. \$3.00

*Memoir 38—Geology and mineral technology of the Grants uranium region 1979, compiled by C. Rautman in cooperation with 83 authors, 1980, 400 p., 66 tables, 483 figs. The continued expansion of national energy programs has resulted in new growth and exploration in the Grants uranium region. This volume contains 45 papers and expanded papers plus four abstracts, all given at the 1979 Grants Uranium Symposium, Albuquerque, New Mexico. \$18.00

*Hydrologic Report 5—Ground water in the Sandia and Northern Manzano Mountains, New Mexico, by Frank B. Titus, 1980, 66 p., 3 tables, 22 figs. Shows the relationship between geology and ground-water availability in the Sandia and northern Manzano Mountains; the study is not designed to give quantitative answers but describes availability and quality of ground water in the aquifers. \$7.00

USGS

CIRCULARS

Circular 828—Future supply of oil and gas from the Permian Basin of west Texas and southeastern New Mexico, a report of the Interagency Oil and Gas Supply Project, U.S. Department of the Interior and U.S. Department of Energy, 1980, 57 p.

This interagency report is the first resulting from a projected series of pilot studies on methods to estimate the future supply of oil and gas from the United States. The Permian Basin was selected as an example of a mature producing basin. The future supply is estimated in terms of depth increments and price. Mean values of undiscovered oil and gas suggest that about 95 percent of the oil and 83 percent of the gas originally contained in the basin may already have been found.

MISCELLANEOUS INVESTIGATIONS SERIES

MI-1220—Geologic map of the Steins quadrangle and the adjacent part of the Vanar quadrangle, Hidalgo County, New Mexico, by Harald Drewes and C. H. Thorman, 1980, scale 1:24,000

MI-1226—Leasable mineral and waterpower land classification map of the Raton 1° by 2° quadrangle, New Mexico and Colorado, compiled by D. A. DeCicco, E. D. Patterson, and G. A. Lutz, 1980, lat. 36°-37°, long. 104°-106°, scale 1:250,000 (1 inch = about 4 mi), sheet 24 by 36 inches (supercedes Openfile Rept. 78-724)

PROFESSIONAL PAPERS

P-1192—The Upper Cretaceous (Turonian) ammonite family Coliopoceratidae Hyatt in the western interior of the United States, by W. A. Cobban and S. C. Hook, 1980, 28 p., 21 pls.

Three species each of the genera *Hoplitoides* and *Coliopoceras* and one species of the new genus *Herrickiceras* are described and illustrated. Intraspecific variation, lineage, and geographic distribution are treated. Most of the western interior specimens are from New Mexico, and all specimens illustrated in the report are from there.

OIL AND GAS INVESTIGATIONS CHARTS

OC-109—Effect upon borehole-gravity data of salt structures typical of the WIPP site (northern Delaware Basin), Eddy County, New Mexico, by J. W. Schmoker, 1980, 1 sheet

NEW TOPOGRAPHIC MAPS

- *Bassett Lake, 1980, lat. 32°, long. 105°45', scale 1:24,000, contour interval 20 and 10 ft
- *El Paso Draw, 1980, lat. 32°22'30", long. 105°37'30", scale 1:24,000, contour interval 20 and 10 ft
- *Owl Tank Canyon East, 1980, lat. 32°7'30", long. 105°45', scale 1:24,000, contour interval 20 and 10 ft
- *Sixteen Canyon, 1980, lat. 32°22'30", long. 105°30', scale 1:24,000, contour interval 20 ft
- *Stockard Well, 1980, lat. 32°15', long. 105°30', scale 1:24,000, contour interval 20 ft
- *Stone Well, 1980, lat. 32°15', long. 105°37'30", scale 1:24,000, contour interval 20 ft

REVISED TOPOGRAPHIC MAPS (PHOTO REVISION)

- *Abeytas, 1952, revised 1979, lat. 34°22'30", long. 106°45', scale 1:24,000, contour interval 20 and 10 ft
- *Becker, 1952, revised 1979, lat. 34°22'30", long. 106°30', scale 1:24,000, contour interval 20 ft
- *Farmington North, 1952, revised 1979, lat. 36°45', long. 108°7'30", scale 1:24,000, contour interval 20 and 10 ft
- *Gallegos Trading Post, 1963, revised 1979, lat. 36°30', long. 108°, scale 1:24,000, contour interval 10 ft
- *Horn Canyon, 1965, revised 1979, lat. 36°37'30", long. 108°, scale 1:24,000, contour interval 20 and 10 ft
- *Hugh Lake, 1965, revised 1979, lat. 36°30', long. 108°7'30", scale 1:24,000, contour interval 10 ft
- *La Plata, 1963, revised 1979, lat. 36°52'30", long. 108°7'30", scale 1:24,000, contour interval 20 ft
- *Mitten Rock, 1965, revised 1979, lat. 36°30', long. 108°52'30", scale 1:24,000, contour interval 20 ft
- *Sand Spring, 1966, revised 1979, lat. 36°37'30", long. 108°52'30", scale 1:24,000, contour interval 20 ft
- *Sulphur Spring, 1966, revised 1979, lat. 36°37'30", long. 108°37'30", scale 1:24,000, contour interval 20 ft
- *Table Mesa, 1966, revised 1979, lat. 36°30', long. 108°37'30", scale 1:24,000, contour interval 20 ft
- *The Hogback North, 1966, revised 1979, lat. 36°37'30", long. 108°30', scale 1:24,000, contour interval 20 ft
- *The Hogback South, 1966, revised 1979, lat. 36°30', long. 108°30', scale 1:24,000, contour interval 20 ft
- *Tome, 1952, revised 1979, lat. 34°37'30", long. 106°37'30", scale 1:24,000, contour interval 10 ft
- *Tome NE, 1952, revised 1979, lat. 34°37'30", long. 106°30', scale 1:24,000, contour interval 20 and 10 ft
- *Vequita, 1952, revised 1979, lat. 36°52'30", long. 108°7'30", scale 1:24,000, contour interval 10 ft

New Mexico Energy & Minerals Department

New Mexico geothermal institutional handbook, by George Scudella and Dennis Fedor, 1980, 67 p.

New Mexico Energy Institute

Geothermal resources of New Mexico, compiled by C. A. Swanberg, 1980, scale 1:500,000, 1 sheet

Includes data on thermal springs and wells (surface and bottom-hole temperatures), low-temperature geothermal waters, known geothermal resource areas, and heat flow in the Rio Grande rift area.

Map available free of charge from: New Mexico Energy Institute at New Mexico State University, Box 3EI, Las Cruces, NM 88003

New Mexico State Engineer

Basic Data Report—Hydrologic maps and data for Santa Fe County, New Mexico, by W. A. Mourant, prepared in cooperation with the USGS, 1980, 180 p., 3 tables, 4 figs.

Sandia National Labs

SAND 80-7096—Seismicity in the area of the Waste Isolation Pilot Plant (WIPP), by Allan Sanford, Scott Sandford, Tim Wallace, Larry Barrows, Joel Sheldon, Roger Ward, Steven Johansen, and Linda Merritt, 1980

U.S. Department of Agriculture, Soil Conservation Service

The Desert Project soil monograph—soils and landscapes of a desert region astride the Rio Grande valley near Las Cruces, New Mexico, by L. H. Gile and R. B. Grossman, 1979, 984 p.

This publication is a companion volume to *Soils and geomorphology in a basin-and-range area of southern New Mexico*, by L. H. Gile, J. W. Hawley, and R. B. Grossman, in preparation as NMBMMR Memoir 39; expected publication date is mid-1981.

U.S. Department of Energy

Rept. DE-AC21-78M—San Juan Basin report—early Tertiary geology, coal, and the potential for methane recovery from coal beds in Colorado and New Mexico, by Judy Lent, 1980, 131 p., 12 tables, 40 figs., 4 appendices, 12 maps in pockets

Includes indexes of water-resources investigations in Colorado, 1977, water resources investigations in New Mexico, 1978; USGS Prof. Paper 676—Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado, by J. E. Fassett and J. S. Hinds, 1971, second printing 1977, 76 p.; and USGS Bulletin 1481—Bibliography of geology and hydrology, San Juan Basin, New Mexico, Colorado, Arizona, and Utah, by A. F. Wright, 1979, 123 p.

GLQ-005(80)—National uranium resource evaluation, Raton quadrangle, New Mexico and Colorado, by B. E. Reid, G. B. Griswold, L. C. Jacobsen, and R. H. Lessard, NMBMMR, prepared for U.S. Department of Energy, Grand Junction office, under contract no. DE-AC13-76GJ01664 and Bendix Field Engineering Corporation, sub-contract no. 78-123-E, 1980, 83 p., 11 tables, 3 figs., 28 pls., 7 appendices

For sale by Bendix Field Engineering Corporation, Technical Library, P.O. Box 1569, Grand Junction, CO 81502

Open-file reports

NMBMMR

- *120—The geology of the west-central Magdalena Mountains, Socorro County, New Mexico, by S. A. Bowring, 1980, 135 p., 1 table, 14 figs., map \$28.00
- *121—Documentation for computerization of geothermal activity in New Mexico, by N. H. Mizell, 1980, 27 p. \$5.40
- *122—Geology of the Precambrian rocks of the Lemitar Mountains, by Virginia McLemore, 1980, 207 p., 19 tables, 15 figs., 3 maps \$44.40
- *123—Geology of the Squaw Peak area, Magdalena, by M. A. Donze, 1980, 131 p., 21 figs., map \$27.20
- *124—Late Cenozoic freshwater Mollusca of New Mexico: an annotated bibliography, by D. W. Taylor, 1980, 51 p. \$10.20
- *125—Petrology, diagenesis, and genetic stratigraphy of the Eocene Baca Formation, Alamo Navajo Reservation and vicinity, Socorro County, New Mexico, by Steven Cather, 1981, 263 p., 7 tables, 75 figs., 2 appendices, map \$53.60

*126—Overview of geology as related to environmental concerns in New Mexico, by J. W. Hawley and D. W. Love, 1981, 39 p. \$7.80

*128—Geology of the Gallinas Peak area, Socorro County, New Mexico, by T. Matthew Laroche, 1981, 152 p., maps \$32.40

*129—Geology of the Sawmill Canyon area of the Magdalena Mountains, Socorro County, New Mexico, by Susan Roth, 1981, 96 p., 2 maps \$21.20

*135—Geology of the Water Canyon-Jordan Canyon areas, Socorro County, New Mexico, by Ward Sumner, 151 p., 1 map \$32.20

*136—Geology of the northeastern Datil Mountains, Socorro and Catron Counties, New Mexico, by Richard W. Harrison, 1981, 146 p., 2 maps \$31.20

USGS

80-214—Report to United States Department of the Interior, Geological Survey, on recommendations for abandonment of the Wills-Weaver mine and mine shafts, Carlsbad, New Mexico, by Golder Associates, 1980, 446 p., 17 oversized sheets

80-259—Land use and land cover and associated maps for Hobbs, Texas, New Mexico, lat 32° to 33°, long 102° to 104°, scale 1:250,000

80-260—Land use and land cover and associated maps for Clovis, Texas, New Mexico, lat 34° to 35°, long 102° to 104°, scale 1:250,000

80-261—Land use and land cover and associated maps for Brownfield, Texas, New Mexico, lat 33° to 34°, long 102° to 104°, scale 1:250,000

80-264—Land use and land cover and associated maps for Tucumcari, New Mexico, Texas, lat 35° to 36°, long 102° to 104°, scale 1:250,000

80-564—Planning report for the southwest alluvial basins (east) regional aquifer-system analysis, parts of Colorado, New Mexico, and Texas, by D. W. Wilkins, W. B. Scott, and C. A. Kaehler, 1980, 43 p. Microfiche \$3.50, paper copy \$5.50

80-753—Annual water-resources review, White Sands Missile Range, New Mexico, 1980, by R. R. Cruz, 28 p.

80-788—Geologic map and sections of the Sonsela Butte 4 SE quadrangle, Apache County, Arizona, and San Juan and McKinley Counties, New Mexico, by V. P. Byers, 1980, 1 over-size sheet, scale 1:24,000. Microfiche \$.50, paper copy \$3.50

80-817—Bibliography of reports by USGS personnel pertaining to underground nuclear testing and radioactive waste disposal at the Nevada Test Site and radioactive waste disposal at the WIPP site, New Mexico, January 1, 1979, to December 31, 1979, 1980, by V. M. Glanzman, 23 p.

80-928—Late Cenozoic physiographic evolution of the Ocate volcanic field, north-central New Mexico, by J. M. O'Neill and H. H. Mehnert, 58 p.

80-995—Aeromagnetic map of the Buck Robinson Peak area, Arizona and New Mexico, 1980, 1 over-size sheet, scale 1:62,500

80-997—Aeromagnetic map of the Little Dog-Pup Canyon area, New Mexico, 1980, 1 oversized sheet, scale 1:62,500

80-1099—Regional geology and Cenozoic history of Pecos region southeastern, by George Bachman, 1980

80-1128—Aeromagnetic map of the southern part of the Silver City 1° by 2° quadrangle, Arizona and New Mexico, 1980, 4 oversized sheets, scale 1:62,500

80-1162—Occurrence of tungsten in the Sangre de Cristo Range near Santa Fe, New Mexico: Possible stratabound scheelite peripheral to favorable settings for volcanogenic massive-sulfide deposits, by R. H. Moench and M. S. Erickson, 1980, 23 p.

80-1226—Overburden geochemistry of the U.S. Bureau of Land Management experimental coal mining reclamation site at Ojo Encino, northeast McKinley County, San Juan Basin, New Mexico, by

T. K. Hinkley, J. R. Herring, K. S. Smith, and J. G. Boerngen, 1980, 21 p.

Microfiche \$3.50, paper copy \$2.50

80-1254—Overburden geochemistry of U.S. Bureau of Land Management experimental coal mining reclamation site at Kimbeto, southeastern San Juan County, San Juan Basin, New Mexico, by T. K. Hinkley, J. R. Herring, K. S. Smith, and J. C. Boerngen, 1980, 26 p.

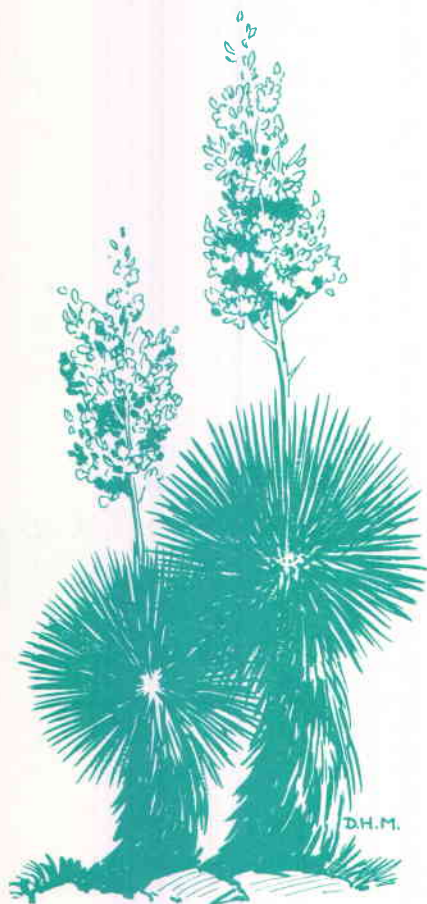
Microfiche \$3.50, paper copy \$3.25

80-1289—Coal test drilling for the De-Na-Zin Bisti area, San Juan County, New Mexico, by R. W. Wilson and R. W. Jentgen, 1980

New projects

USGS

9350-02975—Ore deposits and geochemistry of late magmatic environment, by P. Modreski, R. B. Taylor, and S. Ludington. To study the physical and chemical processes that are active in the late magmatic-hydrothermal environment and to relate these processes to the development of ore deposits. Experimental work in the laboratory will investigate chemical systems defined in the course of field investigations. Objectives include studies of 1) the molybdenum-bearing high-silica rhyolite system (Ludington), with field study near Questa, New Mexico, and laboratory work using Reston facilities, and 2) silver (cobalt?) system (Modreski), with field studies in cooperation with the Challis CUSMAP project, Idaho. An important objective of this project is to develop experimental capability for conducting investigations into the geochemistry of hydrothermal systems at the Denver center. □



Yucca (Yucca elata).

MINING REGISTRATIONS

(MARCH 21, 1980 TO DECEMBER 29, 1980)

State Mine Inspector

2340 Menaul N.E.

Albuquerque, NM 87107

Date and operation	Operators and owners	Location
3-21-80 coal	Operator—Consolidation Coal Co., 3535 E. 30th St., Farmington, NM 87401; Gen. Mgr.: Marcus A. Wiley, 2115 Tierra, Farmington, NM 87401, phone: 327-6426 Property owner—Navajo Nation, Window Rock, AZ 86515	San Juan Co.; sec. 25, T. 25 N., R. 16 W.; Navajo land
3-25-80 gold mill	Operator—H and H Minerals, Box 1359, Silver City, NM 88061; Person in charge: Robert L. Holliday Property owner—Robert L. Holliday	Grant Co.; sec. 31, T. 21 S., R. 16 W.; Gold Hill district; private land Ores milled: gold and silver; no custom milling
3-25-80 coal	Operator—Arroyo Mines, Inc., Star Route, Box 16-B, Bernalillo, NM 87004, phone: 867-3594; Gen. Mgr.: Jack A. Lawrence Property owner—Albert J. Firchau, P.O. Box 65, Monroe, WA	Sandoval Co.; sec. 16, T. 17 N., R. 2 W.
3-31-80 silver	Operator—Suncity Mining Co., 1501 N. Gilbert Rd., Mesa, Arizona 85203, phone: 602-834-9102; Gen. Mgr.: Gene Phipps, Winston, NM 87943, phone: 894-2741 Property owner—unlisted	Sierra Co.; sec. 21, T. 10 S., R. 9 W.; federal land
4-4-80 gold	Operator—Aragon Recovery Systems, Box 171, Truth or Consequences, NM 87901; Gen. Mgr.: Gene B. Stowe, 503 Wyona #22, Truth or Consequences, NM 87901, phone: 894-2087 Property owner—unlisted	Sierra Co.; secs. 5, 6, T. 10 S., R. 5 W.; federal forest land
4-7-80 silver, gold	Operator—Warner-Gulch Mining Co., Box 861, Carrizozo, NM 88301; Gen. Supt.: Charlie Ward, 3724 W. Bonanza Road, Las Vegas, NV 89107 Property owners—Frank Reich, Carl B. Nigh, Don Jarcho, 1900 S. Susan, Santa Ana, CA 92704; Charlie Ward, 3724 W. Bonanza Road, Las Vegas, NV 89107; Chuck Truax, P.O. Box 861, Carrizozo, NM 88301; Arvil Mims, 7914 Wishing Well, Las Vegas, NV 89119	Lincoln Co.; secs. 25, 26, 36, T. 5 S., R. 12 E.; federal land
4-16-80 uranium	Operator—AMIRAN Co., Ltd., 10013 Club Ct. NW, Albuquerque, NM 87114, phone: 897-4787; Gen. Mgr.: Arjang Safiri Property owners—Johnny and Harry Desiderio	McKinley Co.; sec. 26, T. 13 N., R. 10 W.; Grants mining district; Indian allotted land
4-25-80 uranium	Operator—Cobb Nuclear Corp., 313 Washington SE, Albuquerque, NM 87108; Gen. Mgr.: Richard Stevenson, Box 1340, Grants, NM 87020, phone: 287-7474 Property owner—Cobb Nuclear Corp.	McKinley Co.; sec. 12, T. 14 N., R. 10 W.; Ambrosia Lake district; private land
5-5-80 mill	Operator—G.L.G. Development Corporation, 13101 Preston Rd., Suite 300, Dallas, TX 75240; Gen. Mgr.: Glen E. Stevenson, Star Route 2, Box 62B, Socorro, NM 87801 Property owner—Claude Wallace, Magdalena, NM 87825	Socorro Co.; private land; 3 mi E and ½ mi S of Magdalena Ores milled: barite, silver, lead; does custom milling
5-5-80 uranium	Operator—Lloyd Scott Drilling, 1205 California NE, Albuquerque, NM 87110; Person in charge: J. E. Straka, 5341 Wyoming Blvd. NE, Albuquerque, NM 87109, phone: 821-7192 Property owner—Union Carbide Corp., P.O. Box 1029, Grand Junction, CO 81501	Sandoval Co.; secs. 4, 9, 16, T. 13 N., R. 6 E.
5-13-80 gold, silver	Operator—Cochise Mining, Box 271, Glenwood, NM 88039, phone: 539-2322; Gen. Mgr.: Hugh Bearup Property owner—Cochise Mining	Catron Co.; secs. 15, 16, T. 10 S., R. 19 W.; Cooney mining district; private land
5-18-80 gold, silver	Operator—Tayopa Mining Co., Inc., 320 W. A Street, Lordsburg, NM 88045, phone: 542-9525; Gen. Mgr.: Jimmie LeRoy Jones Property owner—Jimmie LeRoy Jones, 1812 Mesquite, Lordsburg, NM 88045	Hidalgo Co.; secs. 1, 36, T. 22 S. R. 17 W.; Gold Hill mining district; federal land
5-19-80 mill	Operator—Aragon Recovery Systems, P.O. Box 171, Truth or Consequences, NM 87901; Gen. Mgr.: Gene Stowe Property owners—Richard Drappo, 2248 N. Bush Hwy., Mesa, AZ 85205; Frank Foster, 10714 E. Mercury Dr., Apache Junction, AZ 85220; Jerry Longford, P.O. Box 171, Truth or Consequences, NM 87901; Dave Pierce, 1000 Pershing, Truth or Consequences, NM 87901; George Brown, 1616 Greenwood Ave., Roswell, NM 88201; Gene Stowe, 3710 E. Arbor Circle, Mesa, AZ 85206; Dave Cavan, 11015 N. Montrose Way, Scottsdale, AZ 85254; John Conner, 4244 N. Desert Crest, Scottsdale, AZ 85253	Sierra Co.; secs. 5, 6, T. 10 S., R. 5 W.; Monticello mining district; federal land
5-29-80 lead	Operator—Mulberry Mining Company, Box 66, Cliff, NM 88028; Gen. Mgr.: David Norris; phone: 535-2194 Property owners—David Norris and Stephen McCauley	Grant Co.; sec. 20, T. 19 S., R. 16 W.; private land
6-5-80 gold, silver lead, copper barite	Operator—The Pan American Trust, P.O. Box 134, Socorro, NM 87801, phone: 835-1500; Gen. Mgr.: A. Lynn Lindholm Property owner—Leased from Henry Papa, Magdalena, NM 87825	Socorro Co.; secs. 5, 6, 7, 8, T. 3 S., R. 3 W.; private land
6-6-80 mill	Operator—Cobb Nuclear Corporation, 313 Washington SE, Albuquerque, NM 87108; Supt.: Willie Chavez, Box 623, Magdalena, NM 87825, phone: 854-2761 Property owner—Cobb Nuclear Corporation	Socorro Co.; sec. 2, T. 3 S., R. 4 W.; Magdalena mining district; federal land Ores milled: lead, zinc, copper, gold, silver, tungsten; does custom milling

MINING REGISTRATIONS (continued)

Date and operation	Operators and owners	Location
6-6-80 lead, zinc, copper, gold, silver, tungsten	Operator—Cobb Nuclear Corporation, 313 Washington SE, Albuquerque, NM 87108; Supt.: Willie Chavez, Box 623, Magdalena, NM 87825, phone: 854-2761 Property owner—Cobb Nuclear Corporation	Socorro Co.; secs. 6, 7, 12, T. 3 S., Rgs. 3, 4 W.
6-9-80 silver, lead	Operator—Triple S Development Corporation, 3110 El Pifion SW, Albuquerque, NM 87105, phone: 877-8395; Gen. Mgr.: Dale H. Carlson Property owner—Triple S Development Corp.	Sierra Co.; secs. 18, 19, 23, 24, T. 13 S., Rgs. 8, 9 W.
6-20-80 copper	Operator—J. D. Dutton, Inc., P.O. Box 829, Olympia, WA 98507; Gen. Mgr.: Dave Gayman, 421 E. Main (P.O. Box 2899), Farmington, NM 87401, phone: 325-9500 Property owner—Sharon Steel Corp., Mining Division, 19th Floor University Club Bldg.; 136 E. South Temple, Salt Lake City, UT 84111	Grant Co.; sec. 4, T. 17 S., R. 12 W.
6-24-80 potash	Operator—Paslay Construction, Industrial Park, P.O. Box 1137, Carlsbad, NM 88220, phone: 885-3157; Gen. Mgr.: John Paslay Property owner—Amax Chemical Corp., P.O. Box 279, Carlsbad, NM 88220	Eddy Co.; sec. 9, T. 19 S., R. 30 E.
7-9-80 copper, molybdenum	Operator—Quintana Minerals Corporation, P.O. Drawer 472, Truth or Consequences, NM 87901, phone: 895-5317; Person in charge: Milton W. Hood Property owner—The Copper Flat Partnership, P.O. Drawer 472, Truth or Consequences, NM 87901	Sierra Co.; secs. 26, 35, T. 15 S., R. 7 W.
7-9-80 uranium	Operator—Teton Exploration 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.; sec. 13, T. 13 N., R. 9 W.
8-7-80 uranium	Operator—Kerr-McGee Nuclear Corp., New Mines Div., Ambrosia Lake, Grants, NM; Gen. Mgr.: Morris Worley, Kerr-McGee Center, Oklahoma City, OK, phone: 405-270-2638; Person in charge: Frank E. Peters (same address and phone as above); Others: John H. Swales, Supt., Ambrosia Lake, Grants, NM, phone: 287-8382; Scott L. Hanson, Safety Dir., 1131 Mt. Taylor, #114, Grants, NM, phone: 287-8332 Owner—Mrs. Floyd Lee, Grants, NM	McKinley Co.; 1 mi north of mile marker 107 on NM-53 north; sec. 17
8-7-80 lead, zinc	Operator—Hillside claims, Farris mines, Box 687, Grants, NM 87020; Person in charge: Jesse (Jack) Cox, same address Owners—Jerry F. Farris, Merle D. Burns, same address	Socorro Co.; sec. 22, T. 3 S., R. 3 W.; Silver Mountain mining district; turn left at Water Canyon road, approximately 3 mi, turn right on access road Minerals: lead and zinc; federal land
8-11-80 silver, gold, copper	Operator—Silver Bar Mining Co., Inc., Box 97, Winston, NM; Gen. Mgr.: Ira M. Young (same address as above), phone: 336-4534, 894-2422 Owner—Silver Bar Mining Co., Inc. (same address and phone as above)	Sierra Co.; sec. 19, T. 11 S., R. 9 W.; from town of Chloride due west approximately 12 mi up Chloride Creek
8-11-80 mill	Operator—Silver Bar Mining Co., Inc., Box 97, Winston, NM; Gen. Mgr.: Ira M. Young (same address as above), phone: 336-4534, 894-2422 Owner—Silver Bar Mining Co., Inc.	Sierra Co.; sec. 21, T. 11 S., R. 8 W., Black Range, Chloride mining district; private land; Custom milling: no. Ores milled: silver, gold, copper
8-19-80 mill	Operator—Chem Tech Inc., P.O. Box 86, Winston, NM 87943; Gen. Mgr.: Harold V. Killgore (same address), phone 894-3155; Others: Paul A. Killgore, David N. Killgore (same address) Owner—Priscilla Howe, 315 East Logan, Emporia, Kansas	Sierra Co.; sec. 22, T. 10 S., R. 9 W.; NM-52 to Turkey Creek road, follow for approximately 6 mi to old town of Grafton: mill is located about ½ mi south of Grafton. Ores milled: gold, silver
8-25-80 gold	Operator—Sierra Blanca Milling, Box 838, Carrizozo, NM; Billy D. Thomas, 400 Hull Rd., Ruidoso, NM, phone: 257-5022; Person in charge: Michael Henson, 11th & "C" Ave., Carrizozo, NM, phone: 648-2114; Others: Jerry Kenyon, Albuquerque, NM, phone: 292-8440	Lincoln Co.; north from Carrizozo on NM-54, 24 mi, Ancho turnout, turn right, proceed 11 mi to cattleguard, turn right, go 1 ½ mi to large trailer
8-25-80 mill	Operator—Sierra Blanca Milling and Processing, P.O. Box 2943, Ruidoso, NM, phone: 257-9062; Gen. Mgr.: Billy D. Thomas, same address, phone: 257-5022; Others: Michael Henson, Box 838, Carrizozo, NM, phone: 648-2114	Lincoln Co.; sec. 22, T. 5 S., R. 12 E.; Jicarilla mining district; Custom milling: no. Ores milled: placer gravels
8-28-80	Operator—Teton Exploration Drilling, P.O. Drawer A-1, Casper, WY; Gen. Mgr.: Victor Magnus (same address as above); Person in charge: Charles Ernst, 1510 Berryhill, Milan, NM, phone: 287-4221; Others: Duane Roe, P.O. Drawer A-1, Casper, WY, phone 207-265-4102	McKinley Co.; sec. 17, T. 15 N., R. 12 W.; Grants mineral belt mining district; private land
9-8-80	Operator—Thomas Const. Mines, 116 Victoria St., Silver City, NM; Gen. Mgr.: David Watson, 637 Peyton Bldg., Spokane WA, phone: 504-747-0708; Person in charge: Angel Castillo, 116 Victoria St., Silver City, NM 88061	Catron Co.; sec. 29-30, T. 10 S., R. 19 W.; Cooney mining district; federal land

Field study tours, Desert soil-geomorphology project

Field study tours will be held in October 1981 at the Desert Soil-Geomorphology Project Area in southern New Mexico. This project, informally termed the Desert Project, refers to a study of soil and landscape evolution conducted by the Soil Conservation Service from 1957 to 1972. Research at the Desert Project, which encompasses a 400-sq-mi area astride the Rio Grande valley, was carried out in cooperation with the Agricultural Experiment Station and the Department of Agronomy at New Mexico State University in Las Cruces.

Two 4-day study sessions, for 40 participants each, will be held during the weeks of October 12-16 and 19-23, 1981. Each session will start with registration and orientation lectures from 2-5 p.m. on Monday and will end Friday noon. Field study tours will be held from 8:00 a.m. to 5:00 p.m. Tuesday, Wednesday, and Thursday, and from 8:00 a.m. to 12 noon on Friday. The studies will be conducted at 22 Desert Project study sites where detailed soil-geomorphic investigations have been carried out.

Fundamentals in soil classification, soil morphology, soil genesis, and soil-geomorphic relations as they pertain to arid and semiarid regions will be stressed. Soils of a number of great groups in the Entisols, Aridisols, Mollisols, and Vertisols will be studied in the field. They will be illustrated in large trenches and arroyo exposures, some of which extend through several kinds of soils and illustrate soil boundaries. Diagnostic horizons of the new classification system will be emphasized. A new Desert Project Guidebook is being prepared for these and subsequent study tours. The tours will be led by Leland H. Gile and John W. Hawley.

A list of accommodations and rates will be furnished so that participants can make their own housing arrangements. Estimated fees, including box lunches, drinks, transportation, and the guidebook, will be approximately \$50.00 per student and \$100.00 per professional; additional copies of the guidebook may be obtained at \$25.00 each. Those wishing to register for one of these sessions should contact Dr. John W. Hawley, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM 87801.

Storrie Lake (continued from p. 25)

the United States first came into contact. Approximately 65 mi west, Santa Fe was established in 1610 by the Spanish as the capital of the new "Kingdom of New Mexico." The Santa Fe Trail (1821-1879) was the link with the East and its Anglos (English-speaking Americans). One of the main branches of the trail passed through the Storrie Lake area, and to the north and east, ruts of wagon wheels are still seen at many places. The trail passed

south through the present-day Las Vegas area and turned west through the southern foothills of the Sangre de Cristo Mountains. The trail went through two passes in The Creston, Puerto del Norte and Puerto del Sur (the North and South Gateways, now traversed by NM-283 and US-84-US-85, respectively).

Las Vegas (the Meadows), originally Nuestra Señora de los Dolores de Las Vegas (Our Lady of Sorrows of the Meadows), was not settled until 1833, principally because the site was vulnerable to Indian attack. Once established, the town prospered from the trade brought in by the trail.

During the Mexican War, General Stephen W. Kearny invaded New Mexico to occupy the land for the United States. He arrived in Las Vegas on August 15, 1846, and there officially proclaimed that "all lands formerly in the northern provinces of Mexico are now part of the United States of America." He then moved on to Santa Fe and passed through Puerto del Norte (also known as Kearny's Gap) approximately 1/2 mi south of Kearny's Knob, a small prominence that rises slightly above the foothills of the Sangre de Cristos.

The arrival of the Americans stimulated migration and trade on the Santa Fe Trail and brought prosperity to the young town. After the Santa Fe Railway replaced the trail in 1879, commerce increased to such a degree that Las Vegas became one of the larger cities in the New Mexico Territory (which included Arizona at that time).

About 17 mi northeast of Storrie Lake are the ruins of Fort Union (1850-1880). The only significant Civil War campaign in New Mexico was waged by the Confederates, whose goal was to capture this fort and gain access to the Colorado gold fields. In 1862 a force of Texas Volunteers swept up the Rio Grande valley and captured all settlements as far north as Santa Fe. The Texans moved east and were met at Apache Canyon, approximately 17 mi from Santa Fe, by a combined force of Colorado Volunteers and Army regulars from Fort Union. The Colorado Volunteers destroyed the Texan's supply train and forced them to withdraw, thus ending hostilities in the Territory for the remainder of the war.

During its rapid growth, Las Vegas became a typical wild-west town, with hellions like Billy the Kid, Bat Masterson, and Doc Holliday drifting through ahead of the slow advance of law and order.

More peaceful days followed. The area was the setting for at least two silent films in the early 1900's, one starring Tom Mix, and several modern films in the last decade, including *The Evil* which starred Richard Crenna and was set in Montezuma. The Storrie Lake Irrigation Project helped produce excellent vegetable crops that were shipped throughout the nation between 1922 and 1945. Subsequently, lack of adequate water forced abandonment of vegetable farming. The area is now primarily cattle country and the lake is used to irrigate grain fields used for duck and geese feed on the Las Vegas National Wildlife Refuge. □

—Waldemere Bejnar (revised 1980)

MINING REGISTRATIONS (continued)

Date and operation	Operators and owners	Location
9-15-80 uranium mill	Operator—James Hamilton Const. Co., P.O. Drawer 1287, Silver City, NM 88061; Gen. Mgr.: Bill Hopwood, same address, phone: 388-1546; Gen. Supt.: Charles Hamilton, P.O. Box 249, Grants, NM 87020	Valencia Co.; sec. 24, T. 12 N., R. 11 W., Grants mining district; private land; 6 mi west of Grants, NM on US-66
9-15-80 copper mill	Operator—James Hamilton Const. Co., P.O. Drawer 1287, Silver City, NM 88061; Gen. Mgr.: Bill Hopwood, same address, phone: 388-1546; Gen. Supt.: Louis Wood, same address, phone: same	Grant Co.; sec. 32-33, T. 17 S., R. 12 W.; Central mining district; private land; SE 1/4 sec. 32, NW 1/4 sec. 33, SW 1/4 sec. 33
9-18-80 silver	Operator—Mon Jeu Mining & Minerals, Inc., P.O. Box 404, Ruidoso, NM 88345; Gen. Mgr.: Fred M. Sweeney, P.O. Box 124, Ruidoso, NM 88345, phone: 257-2774; Person in charge: same; Others: Sam J. Nunnally, P.O. Box 404, Ruidoso, NM; Guy M. Bowers, P.O. Box 1498, Ruidoso, NM; Hugh L. Johnston, P.O. Box 36, Ruidoso, NM Owners—same as the four people listed above	Lincoln Co.; sec. 31, T. 10 S., R. 13 E., Eagle Creek mining district; 1/2 mi up Krause Canyon off NM-532 (Sierra Blanca ski run road); federal land
9-25-80	Operator—Black Hawk Consolidated Mines, Box 2518, Silver City, NM; Gen. Mgr.: Trevor Harder, same address, phone: 388-2914; Person in charge: same; Gen. Supt.: Gene Galassini, Arenas Valley, NM, phone: 538-2095 Owner—Black Hawk Consolidated	Grant Co.; Bullard's Peak; mile marker 100 through gate to Saddle Rock Canyon, always turn left, 6 mi from US-180; private land
9-30-80 mill	Operator—Pilot Research and Experimental Laboratory, Oro Quay Filter Sands Co., 9213 Bellehaven NE, Albuquerque, NM 87112; Gen. Mgr.: Arnold Berget, phone: 298-4555, same address Owner—Richard T. Berget, same address	Santa Fe Co.; sec. 30, T. 12 N., R. 7 E.; New Placers mining district; federal land
10-1-80 mill	Operator—Hickland mine, Triple S Development Corporation, 3110 El Pinon SW, Albuquerque, NM 87105; Gen. Mgr.: Joe Glines, 310 Morgan St., Truth or Consequences, NM 87901; Other officials: Dale Carlson, President; George Rector, Vice-President; Judy Carlson, Secretary, same address Owner—Triple S Development Corporation	Sierra Co.; sec. 14, T. 13 S., R. 9 W.; Hermosa mining district; National Forest Road 157 south from Winston to Hermosa, then turn down Palomas Creek; sulfide lead-zinc-silver. Capacity: 5-10 TPD; federal land
10-7-80 mill	Operator—Tayopa mill, Tayopa Mining Co., 320 West "A" Street, Lordsburg, NM, phone: 542-9614; Supt.: Jimmie LeRoy Jones, 1812 Mesquite, Lordsburg, NM, phone: 542-9515; Others: Paul de Caciño, 7101 E. Lakeside Dr., Tucson, AZ, phone: 602-790-9461 Owner—Southern Pacific Railroad	Hidalgo Co.; sec. 32, T. 22 S., R. 18 W.; 320 W. "A" Street, Lordsburg, NM; Ores: gold and silver. Capacity: 20 tons; private land
10-11-80 silver	Operator—Triple S Development Corp., 3110 El Pinon SW, Albuquerque, NM; Gen. Mgr.: Joe Glines, 310 Morgan St., Truth or Consequences, NM, phone: 894-3858; Others: Dale Carlson, President; George Rector, Vice-President (same address)	Sierra Co.; sec. 14, T. 13 S., R. 9 W.; Hermosa mining district; National Forest Road 157 south from Winston to Hermosa, turn down Palomas Creek to the mine (camp); federal land
10-22-80 uranium	Operator—Churchrock mine, Teton Exploration Drilling, P.O. Drawer A-1, Casper, WY; Gen. Mgr.: Victor Magnus, same address as above; Gen. Supt.: Duane Roe, same address as above, phone: 307-265-4102; Person in charge: Joe Prendergast (DUR 2000), 1510 Berry Hill, Milan, NM Owner—Teton Exploration Drilling, P.O. Drawer A-1, Casper, WY	McKinley Co.; sec. 17, T. 16 N., R. 16 W.; Grants mineral belt; from Grants, I-40 west to McGaffey exit, service road west approximately 5 mi, turn right on Churchrock road 8 mi, mine is on left hand side; private land
10-22-80 copper, silver	Operator—Black Hawk, ID No. 2901839, Black Hawk Mining Co., P.O. Box 101, Truth or Consequences, NM 87901; Gen. Mgr.: Kenneth E. Wittie, 4218 S. 7th, Abilene, TX 79605; Person in charge: Don Fingado, 300 Coal, Truth or Consequences, NM; Other officials: Mr. J. J. Finley, Eastland, TX Owner—M. Francis Wittie and others, 4218 South 7th, Abilene, TX 79605	Sierra Co.; S-Z, T. 11 S., R. 9 W.; Black Range (Apache) mining district; public national forest; turn west at NM-52 mileage marker 49 (3/4 mi north of Winston) and follow Dry Creek Road 6 mi to mine. Minerals: copper, silver
10-80 gold, silver	Operator—Little Granite, Brammell Construction Co., General Delivery, Winston, NM; Gen. Mgr.: William Buchmeier, General Delivery, Winston, NM Owners—Larry Brammell, Gainesville, TX; Sam McGill, Bowie, TX; Frank Turley, Mesa, AZ	Sierra Co.; sec. 21, T. 10 S., R. 9 W.; Carpenter 3 mining district; 1 mi north on state road to Turkey Creek, follow road 8 mi to end of road Minerals: gold and silver; federal land
11-5-80 uranium	Operator—Ruby mine #3, Teton Exploration Drilling, P.O. Drawer A-1, Casper, WY; Gen. Mgr.: Victor Magnus, same address, phone: 307-265-4102; Person in charge: Charles Ernst (DUR1000), 1510 Berryhill, Milan, NM, phone: 287-4221; Gen. Supt.: Duane Roe, P.O. Drawer A-1, Casper, WY Owner—Western Nuclear Corp., P.O. Box 899, Thoreau, NM 87323	McKinley Co.; sec. 17, T. 15 N., R. 12 W.; Grants mineral belt; north on NM-56 from Thoreau, NM, to Smith Lake (10 mi); underground; 2 vent shafts (#25-2-east BH, #25-3-west BH); private land
11-10-80 gold	Operator—Melba 1-7, Missouri Resources, Lone Pine, CA (lessers); Gen. Mgr.: Don Reynolds, 170 Vista, Santa Fe, NM, phone: 983-3952; Person in charge: George Aguilar, Gen. Del., Socorro, NM (1110 Evergreen) Owner—George Aguilar, 1110 Evergreen, Socorro, NM; Ross Marring, Box 1141, Espanola, NM 87532	Socorro Co.; secs. 1, 2, 3, 10, 11, 12, T. 9 S., R. 6 W.; south of Socorro to Nogal Canyon, west to Springtime to south end of San Mateo Mtn. off the Monfiedro road; San Jose mining district; gold; private land
11-17-80 gold, silver	Operator—Baldy mine, Look Mining, Box 273, Blanding, UT 84511; Gen. Mgr.: Tim Perkins, same address, phone:	Socorro Co.; secs. 17, 18, 19, T. 3 S., R. 3 W.; Magdalena mining district ap-

MINING REGISTRATIONS (continued)

Date and operation	Operators and owners	Location
	678-2755; Person in charge: Kelly Shumway, same address and phone; Gen. Supt.: Tim Perkins Owners—Resources America Inc., 228 Park Ave., Suite J, Winter Park, FL 32790	proximately 12 mi north of Magdalena on Mt. Baldy, turn right at Water Canyon campground to Northfork Canyon, mine approximately 4 mi from campground; 4-wheel drive road; underground; drift; gold, silver; federal land
11-19-80 lead, zinc, copper	Operator—BR, Ree-Co Minerals Inc., 2527 Virginia NE, Suite G, Albuquerque, NM 87110; Gen. Mgr.: Oliver Reese, same address, phone: 293-1520; Gen. Supt.: Bert Bakke, same address and phone Owner—Ree-Co Minerals Inc., same address	Sierra Co.; secs. 26, 27, 34, 35, T. 16 S., R. 8 W.; Tierra Blanca mining district; from Royal John, travel east by road 7 mi to corrals with metal barn; from barn, travel by horseback 4 mi on only trail ENE to mine; sulfide works; underground; federal land
11-19-80 silver, gold	Operator—Mines of Cooney mining district, Challenge Smelting and Refining Co., P.O. Box 1220, Deming, NM 88030; Gen. Mgr.: R. C. Manning, 701 W. Pine, Deming, NM; Supt.: same; Others: Tom O'Donnell, Mogollon, NM 88034 Owner—R. C. Manning, 701 W. Pine, Deming, NM	Catron Co.; T. 10 S., R. 19 W.; Cooney mining district; 1 mi west of Mogollon, NM; silver and gold; federal land
11-21-80 metal	Operator—Molycorp No. 1 & 2 shafts, Gulf States Inc., P.O. Box 856, Freeport, TX; Person in charge: Pat Samford, P.O. Box 349, Questa, NM, phones: 776-8467, 586-0445; Others: Jimmy Lowery, Angel Fire, NM	Taos Co.; approximately 4 mi east of Questa by NM-38; private land
11-21-80 metal	Operator—Weyler Construction Co., P.O. Box 628, Salt Lake City, UT 84110; Gen. Mgr.: Kent Wheelwright, same address, phone 801-521-7030; Person in charge: Fred Riggs, P.O. Box 679, Questa, NM, phone 505-586-0521; Gen. Supt.: Richard Miller, same address and phone Owner—Molycorp	Taos Co.; T-Questa; 3 mi west of Molycorp on NM-38; private land
11-21-80 metal	Operator—Molycorp, C.D.K. Contracting, South Behrend, Farmington, NM, phone: 327-5168; Gen. Mgr.: Walter Bump, same address, phone: 632-8209; Person in charge: Bruce Jeffrey, P.O. Box 607, Questa, NM, phone: 586-0068; Gen. Supt.: Sid Moore, same address, phone: 586-0067; Other official: David Eastwood, c/o C.D.K., South Behrend, Farmington, NM Owner—C.D.K. Contracting, P.O. Box 20350, San Antonio, TX 78286	Taos Co.; 4 mi east of Questa; private land
11-21-80 metal	Operator—Molycorp No. 1 & 2 shafts, Industrial Co. of Steamboat Springs, Box 9056, Steamboat Springs, CO 80477; Gen. Supt.: Wendell Hines, same address, phone: 586-0064 Owner—Union Oil Co.	Taos Co.; 4 mi east of Questa, NM by NM-38; private land
11-21-80 metal	Operator—Molycorp No. 1 & 2 shafts, New Mexico Steel Erectors, Ranken Dr., Albuquerque, NM, phone: 345-5582; Gen. Mgr.: Sam Santos, same address; Person in charge: Troy Hamblin	Taos Co.; 4 mi east of Questa, NM by NM-38; private land
11-24-80 uranium	Operator—Mining Unlimited, Inc., 1215 Randolph Road, Farmington, NM 87401; Gen. Mgr.: Earnest Bowen, 1215 Randolph Rd., Farmington, NM, phone: 327-2914; Others: John Elliott, Les Nunn, both of Farmington, NM Owner—Mining Unlimited, Inc.	Valencia Co.; secs. 6, 15, T. 12 N., R. 9 W.; Mt. Taylor mining district; uranium pit; 6.5 mi north of Milan (first cattle guard north of Homestake mill on right), turn right on dirt road, cross the third guard and turn left, 2½ mi, then turn left again and follow bladed road to mine; federal land
11-27-80 copper, silver, gold	Operator—Silver Reef, Southwest Resources Inc., Gen. Del., Lordsburg, NM; Gen. Mgr.: Ray Schultze, 415 S. Nickel, Deming, NM, phone: 546-3893; Person in charge: David Aker, 201 Cleveland, Central, NM, phone: 537-2376 Owner—Douglas Henry, Hillsboro, NM	Hidalgo Co.; secs. 11, 12, 13, 14, 23, 24, 25, 34, 35, 36, T. 24 S., R. 19 W.; Leitendorf mining district; underground—decline; 5 mi south of Lordsburg, NM, off Animas Road, 1 mi east; state land
11-27-80 silver, silicon	Operator—Silver Dollar, Southwest Resources Inc., Gen. Del., Lordsburg, NM; Gen. Mgr.: Ray Schultze, 415 S. Nickel, Deming, NM, phone: 546-3893; Person in charge: David Aker, 201 Cleveland, Central, NM Owner—Marshal Kuykendahl, Lordsburg, NM	Grant Co.; sec. 33, T. 19 S., R. 16 W.; Burro Mtns. mining district; 9 mi west of NM-90 at Tyrone mine, proceed westerly towards Thompson Canyon; underground—decline; federal land
11-30-80 barite, metallic ores	Operator—Jack Frost, G.L.G. Development Corp., 5757 Alpha Rd., Suite 600, Dallas, TX 75240; Foreman: Lloyd Parnell, Gen. Del., San Acacia, phone: 835-3673; Person in charge: Glen E. Stevenson, Star Route 2, Box 62B, Socorro, NM, phone: 835-0219; Gen. Supt.: Art Murphy, P.O. Box 63, Socorro, NM 87801, phone: 854-2511 Owner—Claude Wallace, P.O. Box 22, Magdalena, NM	Socorro Co.; sec. 19, T. 2 S., R. 3 W.; Kelly mining district; turn north on forest service access road no. 354, drive approximately 1.6 mi, turn left and drive approximately .4 mi to mine site, private land. Minerals: barite, metallic ores
12-29-80 metal	Operator—Tyrone mine, James Hamilton Const. Co., P.O. Drawer 1287, Silver City, NM; Gen. Mgr.: Louis Wood, same address, phone: 388-1546; Person in charge: Jim Bailey, same address, phone; Gen. Supt.: Jim Bailey; Safety Supt.: Jerry Smith, same address, phone	Grant Co.; secs. 14, 23, T. 19 S., R. 15 W.; Burro Mountain mining district; NM-92 south of Silver City to Tyrone mine exit; copper. Works: surface; private property

(TO BE CONTINUED NEXT ISSUE)

Important Upper Cretaceous ammonite found in New Mexico

Neocardioceras juddii (Barrois and Guerne), a small ornate Upper Cretaceous ammonite (fig. 1) that was originally described from the Paris Basin in France, has been found by S. C. Hook (New Mexico Bureau of Mines and Mineral Resources) and W. A. Cobban (U.S. Geological Survey, Denver) at 13 localities in southwest New Mexico.

Recent investigations of mid-Cretaceous (Albian-Turonian) stratigraphy and ammonite faunas in England and France by W. J. Kennedy and C. W. Wright (Oxford University) and J. M. Hancock (King's College) have revealed the importance of *N. juddii* in international correlation. The species occurs in the Plenus Marls of the Paris Basin and at the base of the Middle Chalk of England as well as in age-equivalent rocks in Germany and Czechoslovakia. The Plenus Marls have been assigned to the uppermost Cenomanian by some authors and to the lowermost Turonian by others. In southwest New Mexico, *Neocardioceras juddii* occurs in the upper part of the Bridge Creek Limestone Member of the Colorado Formation in the Cooke's Range and in the Big and Little Burros and has been assigned an early Turonian age by Hook and Cobban (New Mexico Bureau of Mines and Mineral Resources, Circ. 180).

In England, *N. juddii* occurs in nodules and pebbles overlying a hardground that contains the widely distributed *Sciponoceras gracile* fauna of late Cenomanian age. Of considerable interest is the mode of preservation of the *N. juddii* fauna in New Mexico, where the specimens are partly phosphatized, are encrusted by epifauna, show evidence of erosion and reworking, and immediately overlie concretionary limestone beds that contain the *S. gracile* fauna.

Neocardioceras juddii has also been found by Hook and Cobban at one locality in Trans-Pecos Texas in the Chispa Summit Formation and by J. I. Kirtland (Museum of Northern Arizona) at one locality at Black Mesa, Arizona, in the Mancos Shale.

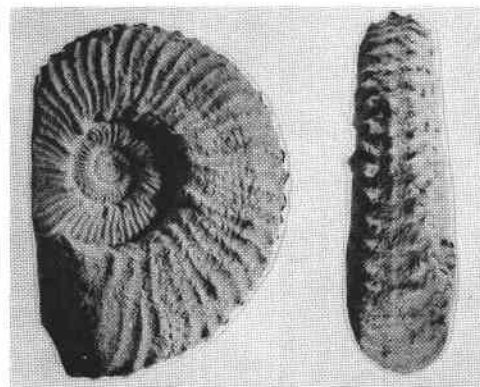


FIGURE 1—*NEOCARDIOCERAS JUDDII* (BARROIS AND GUERNE), NATURAL SIZE, from U.S. Geological Survey Mesozoic locality D10114, Greenhorn Limestone Member, Colorado Formation, Cooke's Range, New Mexico.

Nonfuel mineral production in New Mexico

—U.S. Bureau of Mines, Denver, CO, prepared January 16, 1981

The estimated value of New Mexico's non-fuel mineral production was \$807 million in 1980. Copper and potash, the leading mineral products, provided about 82 percent of the nonfuel mineral value, followed in order by molybdenum, silver, cement, sand and gravel, perlite, and others. The increased value of potash is primarily responsible for the increase in the total value of the state's mineral production. Preliminary 1980 production figures place New Mexico as the nation's first-ranking potash producer, second as a copper producer, and fourth as a molybdenum producer.

Quintana Minerals Corp. and Philbro Mineral Enterprises, Inc. announced plans to construct a 15,000-ton-per-day flotation mill to concentrate ore from an open-pit porphyry copper ore body in the Copper Flat area, northeast of Hillsboro. Regular production, scheduled to begin in early 1982, is expected to recover about 40 million lbs of copper, 1 million lbs of molybdenum, 12,000 oz of gold, and 350,000 oz of silver in concentrates per year for a period of 12–15 yrs. About 250 persons will be employed. Kennecott Minerals Co. broke ground for a new 37,000-ton-per-day concentrator near their Chino mine at Santa Rita. The new \$300 million copper concentrator will be 7 mi away from the present concentrator and will come on stream the second or third quarter of 1983. The project is a joint venture with Mitsubishi Corp. of Japan. Exxon Minerals Co. began development of a copper property at Pinos Altos northwest of Santa Rita. Mining permits from the Environmental Protection Agency and New Mexico Environmental Improvement Division are still required.

Ellen Hunt Flowers and Black Range Mining Corp., a subsidiary of Gold Fields Mining Corp., formed a partnership to explore the St. Cloud mineral group in the Chloride (Apache)

mining district in Sierra County. The St. Cloud is on a multiple-banded quartz vein, containing copper (mostly bornite), free gold, and silver. The St. Cloud had been worked in the 1880's or 1890's, but not since.

Barite of America produced barite at an open-pit mine near Hatch and began development of an underground mine on the east side of the Florida Mountains, southeast of Deming. In the fall of 1980, the company laid off 11 people from the mine at Hatch and the mill near Deming until problems in extracting the barite from its impure ore can be solved.

NONFUEL MINERAL PRODUCTION IN NEW MEXICO, prepared by U.S. Bureau of Mines, January 1981

Mineral ¹	1979		1980/preliminary	
	Quantity	Value (thousands)	Quantity	Value (thousands)
Clays ² thousand short tons	74	\$124	40	\$80
Copper (recoverable content of ores) metric tons	164,281	336,934	155,261	346,232
Gem stones	NA	180	NA	175
Gold (recoverable content of ores) troy ounces	22,976	7,065	11,760	7,212
Gypsum thousand short tons	251	3,244	208	3,005
Lead (recoverable content of ores) metric tons	43	49	1	1
Manganiferous ore (5–35 percent Mn) short tons	33,152	W	31,148	629
Mica (scrap) thousand short tons	17	W	W	W
Peat do	2	40	2	44
Perlite do	588	14,874	544	14,721
Potassium salts thousand metric tons	2,005	228,776	2,035	314,423
Pumice thousand short tons	604	3,550	542	3,898
Sand and gravel do	7,141	18,245	4,900	15,500
Silver (recoverable content of ores) thousand troy ounces	W	W	1,274	27,400
Stone:				
Crushed thousand short tons	2,589	6,743	2,600	7,400
Dimension do	20	117	17	105
Combined value of barite, carbon dioxide, cement (portland and masonry), fire clay, helium (high purity) (1980), lime, molybdenum, salt, vanadium, zinc, and items indicated by symbol W	XX	74,507	XX	65,857
Total	XX	694,448	XX	806,682

NA Not available. W Withheld to avoid disclosing company proprietary data; value included in "Combined value" figure. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Excludes fire clay; value included in "Combined value" figure.

