

New publications

NMBMRR

***Bulletin 116**—Fresh-water molluscs from New Mexico and vicinity, by D. W. Taylor, 1987, 51 pp. \$6.00

Nine new species of molluscs from New Mexico are described: four from Arizona, two from Utah, and five from Texas, with redescrptions of two more from New Mexico and Texas. They all are narrowly localized species of actually or potentially endangered-species status. Geological significance of these species lies in the drainage history of the region. They conform to previous geological interpretations in showing that they evolved in separate drainages of Pliocene or older times, which have been united into the present stream systems.

***Bulletin 117**—Geology of Carlsbad Cavern and other caves in the Guadalupe Mountains, New Mexico and Texas, by C. A. Hill, 1987, 180 pp., 9 maps. \$15.00

The origin of Carlsbad Cavern and other caves in the Guadalupe Mountains has been one of the great mysteries of speleogenesis. Geomorphically, Guadalupe caves bear little resemblance to other great cave systems of the world, which are thought to have formed by carbonic-acid dissolution at the water table. This book is the result of a lengthy investigation that has utilized observational, stratigraphic, geochemical, and isotopic-dating techniques. It is divided into two parts—speleogenesis and mineralogy. The author attempts to answer questions about the origin of the caves and specifics of their mineralogy: Why are Guadalupe speleothems so large? Why are they so profuse? Why is there so much popcorn-like decoration in the caves? Why is there an abundance of carbonate speleothems but relatively few sulfate speleothems? Why are most of the speleothems dry and inactive? The work is profusely illustrated, including 16 pages of color photography.

***Bulletin 121**—Coal deposits and facies changes along the southwestern margin of the Late Cretaceous seaway, west-central New Mexico, compiled by G. H. Roybal, O. J. Anderson, and E. C. Beaumont, 1987, 82 pp. \$10.00

Four days of roadlogs (from Albuquerque to Phoenix via the San Juan Basin) and eight invited papers were compiled in this volume for the 100th annual meeting of the Geological Society of America in Phoenix, Arizona. The route of the field trip goes through areas with excellent exposures of the lower two-thirds of the Late Cretaceous coal-bearing sequences and their marine counterparts, showing the facies relationships along the transgressive-regressive shoreline in the southern San Juan Basin. Several stops are included to look at these sequences and discuss their depositional environments. The coal mines visited (Lee Ranch, McKinley, and Fence Lake No. 1) are different in both size and method of operation, a reflection of the extent of the coal resource and the quality characteristics of the coal.

***Guidebook**—Guidebook to the Socorro area, New Mexico, compiled by V. T. McLemore and M. R. Bowie, 1987, 75 pp. \$10.00

Three roadlogs to interesting areas near Socorro are carefully laid out with concise direc-

tions, geologic information, and easy-to-follow maps. Included are trips to Blue Canyon, Sedillo Hill, Arroyo del Tajo (see pictographs on p. xx), and Bosque del Apache. This volume, although written for the annual meeting of the Clay Minerals Society, could readily be used as a scenic trip of the Socorro area. Historical information and a glossary are presented in a way that does not interfere with following the roadlogs, and three technical articles are provided at the end for more in-depth reading.

USGS

CIRCULARS

975—The conterminous United States mineral assessment program—background information to accompany folio of geologic and mineral-resource maps of the Silver City 1°x 2°quadrangle, New Mexico and Arizona, by D. H. Richter, B. B. Houser, K. C. Watts, D. P. Klein, W. N. Sharp, Harald Drewes, D. C. Hedlund, G. L. Raines, and J. R. Hassemer, 1987, 22 pp.

995—USGS research on mineral resources; program and abstracts 1987, edited by J. S. Sachs, 1987, pp. 2-4, 16-17, 38-39.

GEOLOGIC QUADRANGLE MAPS

GQ-1592—Geologic map of the Hard Ground Flats quadrangle, McKinley County, New Mexico, by A. R. Kirk and R. S. Zech, 1987, scale 1:24,000.

GQ-1594—Geologic map of the Big Rock Hill quadrangle, McKinley County, New Mexico, by A. R. Kirk and R. S. Zech, 1987, scale 1:24,000.

MISCELLANEOUS FIELD STUDIES MAPS

MF-1496-D—Surface to subsurface cross sections showing correlation of the Dakota Sandstone, Burro Canyon(?) Formation, and upper part of the Morrison Formation in the Chama-El Vado area, Chama Basin, Rio Arriba County, New Mexico, by J. L. Ridgley, 1987, 2 sheets.

MF-1976—Geologic map of the O Bar O Canyon East quadrangle, Catron County, New Mexico, by D. H. Richter, 1987, scale 1:24,000.

MISCELLANEOUS INVESTIGATIONS SERIES MAPS

I-1310-D—Aeromagnetic map of the Silver City 1° by 2° quadrangle, New Mexico and Arizona, by D. P. Klein, 1987, lat. 32° to 33°, long. 108° to 110°, scale 1:250,000.

I-1705—Geologic and structure contour map of the Springer 30' by 60' quadrangle, Colfax, Harding, Mora, and Union Counties, New Mexico, by G. R. Scott, 1986, lat. 36° to 36°30', long. 104° to 105°, scale 1:100,000, 2 sheets.

I-1777—Chaco Culture National Historical Park—interpretive geology of the Chaco area, northwestern, New Mexico, by J. W. Mytton and G. B. Schneider, 1987, lat. 36° to about 36°05', long. 107°52'30" to 108°, scale 1:24,000.

PROFESSIONAL PAPERS

1333—An approach for appraising the accuracy of suspended-sediment data, by D. E. Burkham, 1985, 18 pp. (reprint).

1400-D—Digital simulation of ground-water flow in the High Plains aquifer in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, by R. R. Luckey, E. D. Gutentag, F. J. Heimes, and J. B. Weeks, 1986, 57 pp.

WATER-RESOURCES INVESTIGATIONS

WRI-86-4063—Machine-readable files developed for the High Plains regional aquifer-system analysis in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, by C. F. Ferrigno, 1986, 23 pp.

WRI-87-4015—Ground-water flow and shallow-aquifer properties in the Rio Grande inner valley south of Albuquerque, Bernalillo County, New Mexico, by K. D. Peter, 1987, 29 pp.

Other publications

Beauheim, R. L., 1987, Analysis of pumping tests of the Culebra Dolomite conducted at the H-3 hydropad at the Waste Isolation Pilot Plant (WIPP) site: Sandia Laboratories, SAND 86-2311.

Boyd, F. M., and Kreitler, C. W., 1986, Hydrogeology of a gypsum playa, northern Salt Basin, Texas: Texas Bureau of Economic Geology, University of Texas (Austin), RI 158, 37 pp.

Caldwell, K. R., 1987, Depositional history and paleotectonic implications of the Pennsylvanian-Permian Sangre de Cristo Formation, northern New Mexico: University of Texas (Dallas), unpublished M.S. thesis.

Chaturvedi, Lokesh, editor, 1987, The Rustler Formation at the WIPP site—report of a workshop on the geology and hydrology of the Rustler Formation as it relates to the WIPP project: New Mexico Environmental Improvement Division, EEG-34, 70 pp.

Chitale, J. D., 1986, Study of petrography and internal structures in calcretes of west Texas and New Mexico: Unpublished Ph.D. dissertation, University of Texas Tech (Lubbock), 107 pp.

Chronic, Halka, 1987, Pages of stone—geology of western national parks and monuments; The Desert Southwest: The Mountaineers, v. 3, 168 pp.

Clarkson, Gerry, and Reiter, Marshall, 1987, The thermal regime of the San Juan Basin since Late Cretaceous times and its relationship to San Juan Mountains thermal sources: Journal of Volcanology and Geothermal Research, v. 31, pp. 217-237.

Collins, E. W., and Luneau, B. A., 1986, Fracture analyses of the Palo Duro Basin area, Texas Panhandle and eastern New Mexico: Texas Bureau of Economic Geology, University of Texas (Austin), GC 86-6, 39 pp.

Dutton, A. R., and Orr, E. D., 1986, Hydrogeology and hydrochemical facies of the San Andres Formation in eastern New Mexico and the Texas Panhandle: Texas Bureau of Economic Geology, University of Texas (Austin), RI 157, 58 pp.

Dutton, A. R., and Simpkins, W. W., 1986, Hydrogeochemistry and water resources of the Triassic Lower Dockum Group in the Texas Panhandle and eastern New Mexico: Texas Bureau of Economic Geology, University of Texas (Austin), RI 161, 51 pp.

Dutton, S. P., 1986, Organic geochemistry of the Pennsylvanian and Lower Permian, Palo Duro Basin, Texas: Texas Bureau of Economic Geology, University of Texas (Austin), GC 86-5, 28 pp.

Fassett, J. E., 1986, The nontransferability of a Cretaceous coal model in the San Juan Basin of New Mexico and Colorado; in Lyons, P. C. et al. (eds.), Paleoenvironmental and tectonic controls in coal-

forming basins of the United States, pp. 155–171.

Fassett, J. E., and Rigby, J. K., Jr., editors, *The Cretaceous–Tertiary boundary in the San Juan and Raton Basins, New Mexico and Colorado*: Geological Society of America, Special Paper 209, 200 pp.

Hansley, P. L., 1987, Petrologic and experimental evidence for the etching of garnets by organic acids in the Upper Jurassic Morrison Formation, northwestern New Mexico: *Journal of Sedimentary Petrology*, v. 57, no. 4, pp. 666–681.

Haug, A., Kelley, V. A., LaVenue, A. M., Pickens, J. F., 1987, Modeling of ground-water flow in the Culebra Dolomite at the Waste Isolation Pilot Plant (WIPP) site—interim report: Sandia Laboratories, SAND 86–7167.

Hill, C. A., and Forti, Paolo, 1987, *Cave minerals of the world*: National Speleological Society, Huntsville, Alabama, 239 pp.

Kelley, K. C., 1987, Palynological investigation of

the Moreno Hill Formation (Upper Cretaceous), west-central New Mexico: Michigan State University, unpublished M.S. thesis, 117 pp.

Lowenstein, T. K., 1987, Post burial alteration of the Permian Rustler Formation evaporites, WIPP site, New Mexico—textural, stratigraphic, and chemical evidence: New Mexico Environmental Improvement Division, EEG–36, 54 pp.

Mack, G. H., 1987, Mid-Cretaceous (late Albian) change from rift to retroarc foreland basin in southwestern New Mexico: *Geological Society of America Bulletin*, v. 98, pp. 507–514.

Manley, C. R., and Fink, J. H., 1987, Internal textures of rhyolite flows as revealed by research drilling: *Geology*, v. 15, pp. 549–552.

Marshall, D. H., 1987, Reducing sediment sampling frequency at streamflow gaging station Rio Grande at Otowi Bridge near San Ildefonso, New Mexico; in Glysson, G. D. (ed.), *Proceedings of the advanced seminar on sedimentation*, August 15–19, 1983, Denver, Colorado: U.S. Geo-

logical Survey, Circular 953, pp. 4–6.

Meinert, L. D., 1987, Skarn zonation and fluid evolution in the Groundhog mine, Central mining district, New Mexico: *Economic Geology and the Bulletin of the Society of Economic Geologists*, v. 82, no. 3, pp. 523–545.

Ohl, J. P., and Eveleth, R. W., 1987, The mineral industry of New Mexico; in *Minerals yearbook 1985—area reports—domestic*: U.S. Bureau of Mines, v. II, pp. 393–407.

Pearson, F. J., Jr., Kelley, V. A., Pickens, J. F., 1987, Preliminary design for a sorbing tracer test in the Culebra Dolomite at the H–3 hydropad at the Waste Isolation Pilot Plant (WIPP) site: Sandia Laboratories, SAND 86–7177.

Rupert, M. G., 1986, Structure and stratigraphy of the Klondike Hills, southwestern New Mexico: New Mexico State University, unpublished M.S. thesis, 138 pp., 2 sheets.

Whitney, Gene, and H. R. Northrop, 1987, Diagenesis and fluid flow in the San Juan Basin, New Mexico—regional zonation in the mineralogy and stable isotope composition of clay minerals in sandstone: *American Journal of Science*, v. 287, no. 4, pp. 353–382.

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Summary of New Mexico state taxes on natural resource production as of July 1, 1987

compiled by James M. Barker, New Mexico Bureau of Mines and Mineral Resources

Commodity	Tax	Rate and base
Potash	Resource	0.50% of taxable value
	Processor; Service*	0.125% of taxable value
	Severance	2.5% of taxable value
Molybdenum	Resource	0.333% of taxable value
	Processor; Service;	0.125% of taxable value
	Severance*	
Other taxable resources (except potash and molybdenum)	Resource; Processor; Service*	0.75% of taxable value
Copper	Severance	0.50% of taxable value
	Service; Processor (until 7–1–88)	0.25% of taxable value (then 0.75% of taxable value)
Gold, silver	Severance	0.20% of taxable value
Lead, zinc, molybdenum, manganese, thorium, rare-earth, and other metals	Severance	0.125% of taxable value
Clay, gravel, gypsum, sand, pumice, and other nonmetals	Severance	0.125% of taxable value
Coal: surface underground	Severance	\$1.081 per ton
	Severance	\$1.043 per ton
Uranium	Resource	0.75% of taxable value
	Severance	3.5% of 50% of sales price
Oil, carbon dioxide	Severance	0.0375 of taxable value
Natural gas	Severance	\$0.163 per 1,000 cu ft or 0.0375 of taxable value, whichever is higher except new wells (after May 1, 1987) at 0.0375 only
Oil, gas, and carbon dioxide	School Ad valorem production	0.315 of taxable value Many rates (certified annually on September 1 to Taxation and Revenue Department)
Oil, gas, geothermal energy, carbon dioxide, coal, and uranium	Conservation	0.0019 of taxable value
	School	0.0315 of taxable value
Gas and hydrocarbons incidental to processing	Natural gas processor	0.0045 of taxable value

*Subject to only one of these taxes at a time. Data source: Taxation and Revenue Department, P.O. Box 2308, Santa Fe, New Mexico 87504–2308 (505/827–2700). For information about severance and resource taxes contact Ana Perea (505/827–0809); for oil and gas taxes contact Michael Holden (505/827–0805).

Open-file reports

NMBMMR

- *216—Phase-II recharge study at the Navajo mine based on chloride, stable isotopes, and tritium in the unsaturated zone, by W. J. Stone, 1986, 244 pp. \$48.80
- *263—Organic geochemical analyses of the Gulf Oil Co. No. 1 Chaves–State U well (Chaves County), Marathon Oil Co. No. 1 Mesa Verde Ranch well (Otero County), Southern Production Co. No. 1 Cloudcroft Unit well (Otero County), and outcrop samples from the Sacramento Mountains, New Mexico, by R. A. Jacobson, W. C. Sweet, and M. R. Williams, 1984, 19 pp. \$3.80
- *264—Organic geochemical analyses of the Virgle Landreth No. 1 Panhandle, Virgle Landreth No. 1 Panhandle A, and Sun Oil Co. No. 1 Bingham State wells, Socorro County, New Mexico, by D. G. Van Delinder, 1977, 20 pp. \$4.00
- *265—Vitrinite reflectance analyses of the Great Western Drilling Co. No. 1 Hospah–Santa Fe (McKinley County), Continental Oil Co. No. 1 South Dulce (Rio Arriba County), El Paso Natural Gas Co. No. 50 San Juan Unit 29–5 (Rio Arriba County), and Pan American Petroleum Corp. No. 1 Pagosa Jicarrilla (Rio Arriba County) wells, New Mexico, by J. A. Russell, 1979, 8 pp. \$1.60
- *266—Total organic carbon analyses of the Texaco Inc. No. 1 Howard Major (Sandoval County), Tenneco Oil Co. No. 1 Pah (San Juan County), Claude Huckleberry No. 1 Federal (Catron County), Reese and Jones No. 1 Tecolote (Valencia County), and Shell Oil Co. No. 1 Laguna Wilson Trust (Bernalillo County) wells, New Mexico, by C. R. Dellenback, 1979, 12 pp. \$2.40
- *267—Geochemical evaluation of the James P. Dunigan No. 1 Santa Fe well, McKinley County, New Mexico, by W. G. Dow, 1982, 30 pp. \$6.00
- *268—Geochemical analysis of the Brinkerhoff Drilling Co. No. 1 Cabezon Government (Sandoval County), Great Western Drilling Co. No. 1 Hospah–Santa Fe (McKinley County), Mag-

nolia Petroleum Corp. No. 1 Hutchinson Federal (Sandoval County), Union Oil Co. of California No. 1 M-13 USA (Sandoval County), Sun Oil Co. No. 1 Navajo Lands (San Juan County), Apache Corp. No. 1 Foshay (San Juan County), Shell Oil Co. No. 113-17 Carson Unit (San Juan County), Skelly Oil Co. No. 1 Navajo O (San Juan County), Texaco Inc. No. 1 Navajo AL (San Juan County), Amerada Petroleum Corp. No. 1 Navajo Tract 20 (San Juan County), and Delhi Oil Corp. No. 4 Ute (San Juan County) wells, New Mexico, by J. E. Keal, 1982, 120 pp. \$24.00

*269—Organic geochemical analyses of the Chace Oil Co. No. 1 Piñon Unit well, Santa Fe County, New Mexico, by P. H. Spatz, 1985, 22 pp. \$4.40

*270—Crude-oil and source analyses of the Gila Exploration Co. No. 1 Hogan State well, McKinley County, New Mexico, by D. G. Van Delinder, 1986, 14 pp. \$2.80

*271—Crude-oil analyses of samples from the Hospah (Dakota, Gallup), Media-Entrada, Chaco Wash (Menefee), and two undesignated (Gallup) fields, McKinley County, New Mexico, by D. G. Van Delinder, 1986, 25 pp. \$5.00

*284—Hydrocarbon source-rock evaluation of Continental Oil Co. No. 1 Mores-Duran well, sec. 14, T23N, R17E, Mora County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 13 pp. \$2.60

*285—Hydrocarbon source-rock evaluation of Continental Oil Co. No. 1 Maxwell Land Grant well, sec. 11, T28N, R22E, Colfax County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 12 pp. \$2.40

*286—Hydrocarbon source-rock evaluation of Odessa Natural Gas Corp. No. 3 W. S. Ranch well, sec. 24, T29N, R19E, Colfax County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 12 pp. \$2.40

*287—Hydrocarbon source-rock evaluation of Pure Oil Co. Red Hills No. 1 well, sec. 32, T25S, R33E, Lea County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 20 pp. \$4.00

*288—Hydrocarbon source-rock evaluation of Sun Oil Co. No. 1 San Augustine well, sec. 29, T3S, R9W, Catron County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 15 pp. \$3.00

*289—Hydrocarbon source-rock evaluation of Continental Oil Co. No. 1 Federal Land Bank 2 well, sec. 2, T24N, R36E, Union County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 12 pp. \$2.40

*290—Hydrocarbon source-rock evaluation of Transocean Major No. 1 well, sec. 27, T4N, R6W, Socorro County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 14 pp. \$2.80

*291—Hydrocarbon source-rock evaluation of Tenneco Oil Co. No. 1 Federal well, sec. 35, T1S, R13W, Catron County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 14 pp. \$2.80

*292—Hydrocarbon source-rock evaluation of Transocean No. 1 Turner well, sec. 21, T3N, R9W, Catron County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 11 pp. \$2.20

*293—Hydrocarbon source-rock evaluation of Transocean Henderson No. 1 SFPRR well, sec. 35, T1N, R6W, Socorro County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 13 pp. \$2.60

*294—Hydrocarbon source-rock evaluation of Texaco Inc. No. 1 Cruz well, sec. 14, T29N, R36E, Union County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 12 pp. \$2.40

*295—Hydrocarbon source-rock evaluation of Refiners Petroleum No. 1 White Ridge well, sec. 17, T6N, R3W, Valencia County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 15 pp. \$3.00

*296—Hydrocarbon source-rock evaluation of Cambridge and Nail SFP No. 1 well, sec. 19, T4N, R9W, Catron County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 15 pp. \$3.00

*297—Hydrocarbon source-rock evaluation of Marshall Drilling Co. No. 1 Beal-Miller well, sec. 3, T15N, R19W, McKinley County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 12 pp. \$2.40

*298—Hydrocarbon source-rock evaluation of EPNG Elliott State well, sec. 36, T19N, R2W,

Sandoval County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 14 pp. \$2.80

*299—Hydrocarbon source-rock evaluation of Transocean No. 1 State 2111 well, sec. 12, T2N, R18W, Catron County, New Mexico, by G. S. Bayliss and R. R. Schwarzer, 1987, 14 pp. \$2.80

*301—Geochemical analyses of hydrocarbons, cuttings, and cuttings headspace gas, Mar Oil and Gas No. 1 Estes well, Torrance County, New Mexico, by Brown & Ruth Laboratories, Inc., GeoChem Laboratories, Inc., and Precision Service, Inc., 1987, 37 pp. \$7.40

Topographic maps

USGS

DMA (scale 1:50,000)

	yr.	lat.	long.	contour (m)
Abo	1984-86	34°15'	106°15'	20
Ancho	1982	33°45'	105°30'	20
Becker	1983-86	34°15'	106°30'	20
Capitan	1982	33°30'	105°30'	20
Engle	1982-86	33°	107°	20
Forrest	1983	34°45'	103°30'	20
La Joya 4	1984-86	34°	106°30'	20
Melrose	1983	34°15'	103°30'	10 2.5
Turkey Ridge	1984-86	34°	106°	20
Upham	1982-86	32°45'	107°	20

INTERMEDIATE (scale 1:100,000)

	yr.	lat.	long.	contour (m)
*Clifton (AZ-NM)	1972-86	33°	109°	50
*Rock Point (AZ-NM-UT-CO)	1982-86	36°30'	109°	50
*Ruidoso (BLM; two editions)	1982-84	33°	105°	50
*Santa Fe (BLM; two editions)	1982-86	35°30'	105°	50
*Vaughn (BLM; two editions)	1978-84	34°30'	105°	—

PROVISIONAL (scale 1:24,000)

	yr.	lat.	long.	contour (ft)
*Abreu Canyon	1983-87	36°37'30"	105°	40
*Ash Mountain	1983-86	36°45'	105°7'30"	40 20
*Baldy Mountain	1983-87	36°37'30"	105°7'30"	40
*Caliente Canyon South	1983-86	36°45'	104°45'	20
*Casa Grande SW	1983-86	36°45'	104°52'30"	20
*Cimarron	1983-87	36°30'	104°52'30"	40
*Cimarron SE	1983-87	36°30'	104°45'	20
*Coyote Mesa	1983-87	36°22'30"	104°52'30"	20
*Dawson	1983-87	36°37'30"	104°45'	40
*House Canyon	1983-87	36°37'30"	104°52'30"	40
*Miami NE	1983-87	36°22'30"	104°45'	10
*Tooth of Time	1983-87	36°22'30"	105°	40
*Touch-me-not Mountain	1983-87	36°30'	105°7'30"	40
*Ute Park	1983-87	36°30'	105°	40
*Van Bremmer Park	1983-86	36°45'	105°	20

REVISED (complete revision; scale 1:24,000)

	yr.	lat.	long.	contour (ft)
*Duncan (AZ-NM)	1983-86	32°37'30"	109°	20 10
*Round Mountain (AZ-NM)	1983-86	32°30'	109°	20

REVISED (limited revision; scale 1:24,000)

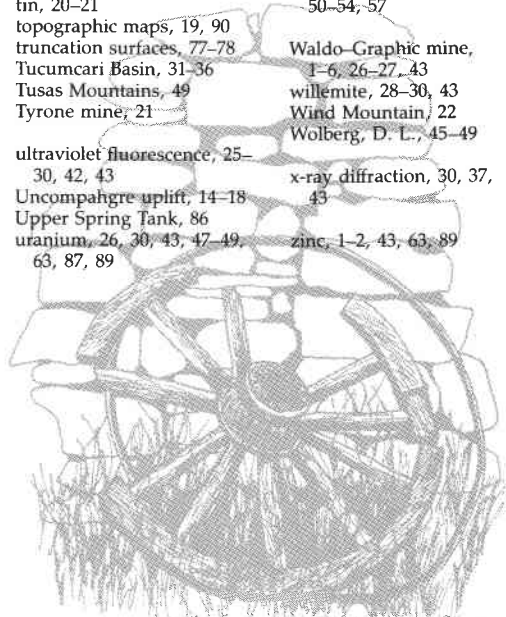
	yr.	lat.	long.	contour (ft)
*Caliente Canyon N (NM-CO)	1962-83-86	36°52'30"	104°45'	20
*Casa Grande (NM-CO)	1962-83-86	36°52'30"	104°52'30"	20
*The Wall (NM-CO)	1962-83-86	36°52'30"	105°7'30"	40
*Vermejo Park (NM-CO)	1962-83-86	36°52'30"	106°	20

REVISED (photo revision; scale 1:24,000)

	yr.	lat.	long.	contour (ft)
*Grady SW	1971-87-87	34°45'	103°22'30"	10
*Ragland	1971-87-87	34°45'	103°37'30"	10

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Call for papers New Mexico Geological Society

The New Mexico Geological Society will hold its 1988 fall field conference in the Deming–Lordsburg area of southwestern New Mexico. The trip will be in four-wheel-drive vehicles to the Florida Mountains, the Little Hatchet Mountains, the Animas Mountains, and areas lying in between.

You are invited to submit articles about research or commercial projects in southwestern New Mexico or southeastern Arizona. Papers on any geologic specialty are welcome, as well as articles about biology, history, soils, etc. The guidebooks of the society are diverse and include a wide variety of topics about a given area.

The conference will be run from New Mexico State University with most of the personnel in charge of the conference from that institution. Dr. Jerry Mueller will be general chairman and the editors will be Drs. Greg Mack and Tim Lawton. They can be contacted at the Dept. of Earth Sciences, Box 3AB, NMSU, Las Cruces, NM 88003, 646–2708.

The managing editor of the guidebook is Dr. Spencer Lucas of the University of New Mexico. He is in charge of dealing with UNM press. He can be reached at the Dept. of Geology, UNM, Albuquerque, NM 87131, 277-3726.

If you would like to submit a paper please contact Mack, Lawton, or Lucas. Dr. Lucas can provide the style manual and the guidelines. We would like to have completed manuscripts by February 1988.

—William E. King

MINING REGISTRATIONS

Mining registrations submitted from April 24, 1987, through the present will be published in the next issue. Publication of these registrations was suspended while the State Mine Inspector, Desi Apodaca, moved into his new Socorro offices. He can be contacted c/o New Mexico Tech, 93 Workman Hall, Socorro, NM 87801, (505) 835-5460.

New Mexico Bureau of Mines and Mineral Resources staff notes

Anniversaries of staff who have had five or more years of service from September through November 1987 were: Jacques Renault, 23; Lynn Brandvold, 22; George Austin, Bill Stone, Jamie Robertson, and Sam Thompson, 13; John Hawley, 11; Bob North and Barbara Popp, 9; and Ron Broadhead, 6. Steve Cather joined us as a Field Economic Geologist; his first projects are the Table Mountain and Silver Creek 7 $\frac{1}{2}$ quadrangles. Paul Bauer also will join us as a Field Economic Geologist as soon as his dissertation is completed; his first project is the Trampas 7 $\frac{1}{2}$ quadrangle. Mark Bowie left for San Francisco; Mike Goble left for New Jersey; Kevin Cook and Sylveen Robinson-Cook left for Michigan; Cindie Salisbury left for Albuquerque. Our Geotechnical Information Center Supervisory Committee is Bob Eveleth, Orin Anderson, Jim Barker, Bob North, Jamie Robertson, and Gretchen Roybal.

Sam Thompson attended the Mexican Geological Society field trip to see Paleozoic rocks in northern Chihuahua. George Austin and Jim Barker went to the BLM Potash Forum in Carlsbad; Lynn Brandvold represented us at the Water Quality Control Commission meeting; John Hawley, Dave Love, and George Austin attended Waste Management Society meetings. Chuck Chapin is on the National Academy of Science Rio Grande-Baikal Rifts research project, a cooperative project with the Russian Academy of Science. Chuck attended the Penrose Conference on "Metamorphic core complexes" in Elko. NMBMMR's Superconducting Super Collider report was sent to Washington a week early due to the efforts of Gary Johnpeer, Danny Bobrow, Sylveen Robinson-Cook, Don Barrie, Joe Kelliher, and Deborah Shaw. Virginia McLemore gave a talk titled "Uranium and radon in New Mexico" to the Environmental Improvement Division and the Energy, Minerals, and Natural Resources Department in Santa Fe. The Society of Economic Geologists' *Reviews in economic geology*, Volume 3, edited by Jamie Robertson with help from Carol Hjellming, is titled "Exploration geochemistry: design and interpretation of soil surveys." John Hawley and Rick Lozinsky presented their progress report on "Hydrogeologic and geophysical framework of the Mesilla Basin in southern New Mexico and western Texas" to the U.S. Geological Survey.

Mike Harris' final report on his pyrite project with Sandia Labs was completed in August. Bob North's talk to the El Dorado Gold Prospectors Association was on "Services of NMBMMR"; Bob set up a mineral display at the San Juan County Mineral Show. Lynn Brandvold, Mike Harris, Barbara Popp, and Ruben Archuleta made several trips

to Grand Junction to pick up chemicals and equipment donated by Umetco.

Dave Love attended meetings of the New Mexico Geographic Information Council; Deborah Shaw attended the Association of Earth Science Editors meeting; Ron Broadhead represented NMBMMR at the New Mexico Oil and Gas Association sessions. Gary Johnpeer, Danny Bobrow, and Don Barrie attended the Association of Engineering Geologists meeting, where Danny gave a talk on the New Mexico Superconducting Super Collider site. John Hawley and Bill Stone participated in the Ogallala Symposium in Lubbock; Bill's talk was titled "Natural recharge of the Ogallala aquifer through playas and other non-stream channel settings, east-central New Mexico" and John's talk was "The Ogallala Formation in eastern New Mexico." Bureau attendees on the New Mexico Geological Society field trip near Clayton were Richard Chamberlin, Dave and Jane Love, Jim Barker, Ron Broadhead, Virginia McLemore, Norma Meeks, and Bob North. Bob Eveleth, Bob North, and Mike Goble participated in the Denver Gems and Minerals Show; Bob North's talk at the show was the "History and geology of the San Pedro gold mine."

Orin Anderson and Frank Kottowski went to the Rocky Mountain Section meeting of the American Association of Petroleum Geologists (AAPG); Orin's talk there, written with Don Wolberg, was "Economics of coal-production cyclicity, with special reference to New Mexico." Frank Campbell attended the Coal Technology Conference in Charleston. George Austin represented NMBMMR at the Central Region AASG/USGS Cluster in Denver. John Hawley attended the New Mexico Environmental Roundtable, and Frank Kottowski attended the New Mexico Section meeting of the American Institute of Professional Geologists in Albuquerque. George Austin, Bob Eveleth, and Frank Kottowski attended the New Mexico Mining Association meeting, and Frank participated in the Board of Directors session. John Hawley and Dave Love discussed the Quaternary geology of the Espanola Basin during the Friends of the Pleistocene Rocky Mountain fall field trip in northern New Mexico.

The Clay Minerals Society meeting was held at New Mexico Tech October 17-22. George Austin served as General Chairman; Jim Barker served as Registration Chairman; Virginia McLemore was Field Trips Chairman; Jacques Renault was Exhibits and Posters Chairman. Additional help was given by Richard Chamberlin, Mike Harris, Ron Broadhead, Bob Weber, John Hawley, Annette Carroll, Lois Devlin, Dave Love, Bob North, Lynn Brandvold, Don Wolberg, Barbara Popp, Gretchen

Roybal, Kim Birdsall, Rueben Crespin, Albert Baca, Irean Rae, Manuel Vasques, Joe Gibbens, Norma Baca, Zana Wolf, Chris McKee, and Norma Meeks. Mark Bowie and Virginia McLemore's paper at the conference was titled "Clay mineralogy of selected sedimentary and volcanic rocks, Socorro County, New Mexico."

There was much NMBMMR staff participation in the national Geological Society of America meeting in Phoenix. Gretchen Roybal, Orin Anderson, and Ed Beaumont led the coal geology field trip and compiled the guidebook, NMBMMR Bulletin 121, which includes road logs and papers by the three leaders, as well as by Frank Campbell and Bill Stone. Richard Chamberlin, Lois Devlin, and Jane Love managed NMBMMR's exhibit. Talks given at the meeting included Chuck Chapin and Ione Lindley's "Potassium-metasomatism of rocks of diverse initial composition by saline, alkaline basin brines"; "Evolution of the Rio Grande rift: an outline" by Chuck Chapin, Steve Cather, and Bill McIntosh; "Prediagenetic sedimentary fractionation of andesitic volcanoclastic detritus in a semiarid climate: an example from Eocene Datil Group, New Mexico" by Steve Cather; "The Hopewell Lake gold district, Tusas Mountains, New Mexico" by Isaac Boadi, Dave Norman, and Jamie Robertson; "Preliminary correlations between geothermal and hydrologic data from the San Juan Basin, New Mexico" by Marshall Reiter and Fred Phillips; "Geothermal studies of the southern periphery of the Colorado Plateau in west-central New Mexico" by Jeffrey Minier and Marshall Reiter; "Late Cenozoic evolution of basins and valleys in the southern Rio Grande rift" by John Hawley and Mike Machette; "Structure, stratigraphy, and depositional history of the Albuquerque Basin, central New Mexico" by Rick Lozinsky; and "Climatic, tectonic, and geomorphic factors affecting late Cenozoic development of tributaries of the Rio Grande from the Colorado Plateau" by Dave Love. Attending the technical sessions were Don Wolberg, Jacques Renault, and Frank Kottowski.

Don Wolberg went to the National Academy of Science meeting in Washington, D.C., to help finalize the "Paleontological collecting" report. Don also went to Lawrence, Kansas, to transfer fossils and to attend Jean Hall's thesis defense. Don talked in Roswell on fossil hunting in the San Juan Basin. Ron Broadhead gave a talk to the Rocky Mountain Association of Geologists in Denver on the Tuccumcari Basin, and he presented his paper on "Petroleum exploration targets in frontier areas of New Mexico" to the Four Corners Geological Society in Farmington.

The 2 x 2 x 4-ft polished block of Apache Golden Vein (Pennsylvanian limestone) procured by Jim Barker from New Mexico Travertine Company for the "We the Peoples 200" monument committee was placed in the "Fountain of Freedom Constitution Monument" in Philadelphia. The polished block of limestone represents New Mexico in this monument, which commemorates 200 years of the USA Constitution.

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