

Information Series 21

**Bibliography and  
Index of  
Colorado Geology  
1983**

**by  
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### SERIALS LIST

- AAPG Bulletin.** [Tulsa, OK: American Association of Petroleum Geologists].
- AAPG Explorer.** Tulsa, OK: American Association of Petroleum Geologists, 1979-.
- Abstracts of Reports - International Congress on Organic Geochemistry.** [s. 1.: s. n.].
- Abstracts with Programs - Geological Society of America.** Boulder, CO: Geological Society of America.
- Agric. Water Manage.** Agricultural Water Management. Elsevier Scientific Publishing Company, Amsterdam.
- Alpine Karst Newsletter.** [Great Falls, MT: s. n.], 1975-1976.
- Am. Quat. Assoc., Natl. Conf., Abstr.** American Quaternary Association, National Conference, Abstracts.
- American Journal of Botany.** Lawrence, KS: Botanical Society of America, 1914-.
- American Journal of Science.** New Haven, CT: Kline Geology Laboratory, Yale University, 1880-.
- Analytical Chemistry (Washington, DC).** Washington, DC: American Chemical Society, 1948-.
- Annals of the Association of American Geographers.** Washington, DC: Association of American Geographers.
- Application of Computer Methods in the Mineral Industry.** New York, NY: Society of Mining Engineers of American Institute of Mining, Metallurgical and Petroleum Engineers, Inc.
- Arctic and Alpine Research.** Boulder, CO: Institute of Arctic & Alpine Research, University of Colorado, 1969-.
- ASTM Special Technical Publication = American Society for Testing and Materials Special Technical Publication.** Philadelphia, PA: American Society for Testing and Materials, 1911-.
- Der Aufschluss.** Heidelberg: Vereinigung der Freunde der Mineralogie und Geologie, 1950-.
- Boreas.** Oslo: Universitetsforlaget, 1972-.
- Brigham Young University Geology Studies.** Provo, UT: Brigham Young University, Department of Geology, 1954-.
- Bulletin - Geothermal Resources Council.** Davis, CA: Geothermal Resources Council.
- Bulletin - Kansas, State Geological Survey.** Lawrence, KS: Kansas Geological Survey, University of Kansas, 1913-.
- Bulletin - Royal Society of New Zealand.** Wellington: The Royal Society of New Zealand, 1910-.
- Bulletin - Utah Geological and Mineral Survey.** Salt Lake City, UT: Utah Geological and Mineral Survey, Utah Department of Natural Resources, 1974-.
- Bulletin of the Association of Engineering Geologists.** Dallas, TX: Association of Engineering Geologists.
- Canadian Geotechnical Journal = Revue Canadienne de Geotechnique.** Ottawa, ON: National Research Council of Canada, 1963-.
- Chemical Geology.** Amsterdam: Elsevier Scientific Publishing Company, 1966-.
- Cinther.** [Denver, CO: Colorado Grotto].
- The Coal Miner.** Vancouver, BC: Western Miner Press, Ltd., 1976-.
- Colorado Geological Survey Open-File Report.** Denver, CO: Colorado Geological Survey.
- Colorado School of Mines Quarterly.** Golden, CO: Colorado School of Mines.
- Contributions from the Museum of Paleontology.** University of Michigan. Ann Arbor, MI: Museum of Paleontology, University of Michigan.
- Contributions to Geology.** Laramie, WY: University of Wyoming, 1962-.

- Contributions to Mineralogy and Petrology.** Heidelberg - New York: Springer International, 1966-.
- COSPAR Plenary Meet., Program Abstr.** COSPAR (Committee On Space Research) Plenary Meetings Program and Abstracts.
- E & MJ, Engineering and Mining Journal.** New York, NY: McGraw-Hill.
- Earth Science.** Falls Church, VA: American Geological Institute, 1981- ; [formerly published by Richard M. Pearl, 1955-1981].
- Earth Sciences History.** Troy, NY: History of the Earth Sciences Society, 1982-.
- Earth Surfaces Processes and Landforms.** Chichester-New York: John Wiley & Sons, 1980-.
- Earthquake Notes.** Atlanta, GA: Seismological Society of America, Eastern Section by the Printing and Photographic Center of the Georgia Institute of Technology, 1929-.
- Economic Geology and the Bulletin of the Society of Economic Geologists.** Lancaster, PA: Economic Geology Publishing Company.
- Esti NSV Teaduste Akadeemia Toimetised, Keemia-Geoloogia.** Tallin: Akademiya Nauk Estonskoy SSR.
- The Engineering Geologist.** [Boulder, CO]: Geological Society of America, Engineering Geology Division.
- Eos, Transactions, American Geophysical Union.** Washington, DC: American Geophysical Union.
- Freiberg, Forschungsh., Reihe C.** Freiburger Forschungshefte, Reihe C. Bergakademie Freiberg, Leipzig.
- Geobios.** Lyon: Universite de Lyon, 1968-.
- Geochimica et Cosmochimica Acta.** Oxford: Pergamon Press, 1950-.
- Geologic Quadrangle Map - U. S. Geological Survey.** Washington, DC: U. S. Geological Survey.
- Geological Society of America Bulletin.** Boulder, CO: Geological Society of America, 1890-.
- Geological Survey Bulletin (Washington).** Reston, VA: U. S. Geological Survey, 1949-.
- Geological Survey Circular.** Reston, VA: U. S. Geological Survey, 1950-.
- Geological Survey Professional Paper.** Washington, DC: U. S. Department of the Interior, Geological Survey, 1902-.
- Geological Survey Water-Supply Paper (Washington).** Reston, VA: U. S., Department of the Interior, Geological Survey, 1908-.
- Geology (Boulder).** Boulder, CO: Geological Society of America, 1973-.
- Geology Series - Kansas Geological Survey.** Lawrence, KS: Kansas Geological Survey, 1975-.
- Geophysics.** Tulsa, OK: Society of Exploration Geophysicists, 1936-.
- Geothermal Energy.** Reseda, CA: Geothermal World Corporation, 1973-.
- Geo/2.** University Park, PA: National Speleological Society.
- Ground Water.** Urbana, IL: National Water Well Association, Ground-Water Technology Division.
- Ground Water Monitoring Review.** Worthington, OH: Water Well Journal Publishing Co., 1981-.
- Guidebook - New Mexico Geological Society.** Socorro, NM: New Mexico Geological Society, 1950-.
- Hydrologic Investigations Atlas.** Washington, DC: U. S. Geological Survey, 1954-.
- Information Series - Colorado Geological Survey.** Denver, CO: Colorado Geological Survey, Department of Natural Resources, State of Colorado, 1976-.
- Int. Assoc. Hydraul. Res., Congr., Proc.** International Association for Hydraulic Research -- Association Internationale de Recherches Hydrauliques, Congress, Proceedings.
- International Journal of Rock Mechanics and Mining Sciences.** Oxford-New York: Pergamon Press, 1964-1973.
- Jewelry Making Gems & Minerals.** Mentone, CA: Gemac Corporation.
- JGR, Journal of Geophysical Research. B.** Washington, DC: American Geophysical Union, 1978-.
- Journal of Geological Education.** Lawrence, KS: National Association of Geology Teachers, 1951-.
- Journal of Mammalogy.** Lawrence, KS: American Society of Mammalogists, 1919-.
- Journal of Paleontology.** Tulsa, OK: Society of Economic Paleontologists and Mineralogists, 1927-.
- Journal of Sedimentary Petrology.** Tulsa, OK: Society of Economic Paleontologists and Mineralogists, 1931-.
- Journal of the Geological Society of London.** London: Geological Society of London, 1971-.

- Journal of the Geotechnical Engineering Division.** New York, NY: American Society of Civil Engineers, Geotechnical Engineering Division, 1974-.
- Journal of the Hydraulics Division.** New York, NY: American Society of Civil Engineers, Hydraulics Division, 1956-.
- Journal of the International Association for Mathematical Geology.** New York, NY: Plenum Publishing Corporation, 1969-.
- JPT. Journal of Petroleum Technology.** Dallas, TX: American Institute of Mining, Metallurgical and Petroleum Engineers.
- LA - Los Alamos Scientific Laboratory.** Los Alamos, NM: Los Alamos Scientific Laboratory.
- Lapidary Journal.** San Diego, CA: Lapidary Journal, Inc., 1947-.
- LPI Technical Report.** Houston, TX: Lunar and Planetary Institute, 1981-.
- Map Series - Colorado Geological Survey.** Denver, CO: Colorado Geological Survey.
- Metals Week.** New York, NY: McGraw-Hill, Inc.
- Mineralogical Magazine.** Oxford: Mineralogical Society, 1969-.
- The Mineralogical Record.** Bowie, MD: Mineralogical Record, Inc., 1970-.
- Mines Magazine.** Denver, CO: Colorado School of Mines Alumni Association, 1932-.
- Mining Year Book (Denver).** Denver, CO: The Colorado Mining Association and Affiliated Organizations, published in cooperation with The Mining Industrial Development Board, State of Colorado, 1933-.
- Miscellaneous Investigations Series - U. S. Geological Survey.** Washington, DC: U. S. Geological Survey.
- The Mountain Geologist.** Denver, CO: The Rocky Mountain Association of Geologists.
- NASA Conference Publication.** Washington, DC: U. S. National Aeronautics and Space Administration, Scientific and Technical Information Office, 1977-.
- National Bureau of Standards Special Publication.** Washington, DC: National Bureau of Standards, 1968-.
- Nature (London).** London: Macmillan Journals, 1869-.
- Newsletter - Rocky Mountain Association of Geologists.** Denver, CO: Rocky Mountain Association of Geologists, 1957-.
- Occasional Paper - Colorado, University, Institute of Arctic and Alpine Research.** Boulder, CO: University of Colorado, Institute of Arctic and Alpine Research.
- The Oil and Gas Compact Bulletin.** Oklahoma City: Interstate Oil Compact Commission, 1955-.
- Oil and Gas Journal.** Tulsa, OK: PennWell Publishing Co., 1910-.
- Oil Shale Symposium Proceedings.** Golden, CO: Colorado School of Mines Press, 1977-.
- Open-File Report (United States Geological Survey. 1978).** Reston, VA: U. S. Geological Survey.
- Palaeogeography, Palaeoclimatology, Palaeoecology.** Amsterdam: Elsevier Scientific Publishing Company, 1965-.
- Plateau.** Flagstaff, AZ: Museum of Northern Arizona.
- Proceedings - Ground Water Management Districts Association. (U. S. ) Conference. [s. 1.: Ground Water Management Districts Association].**
- Proceedings - North American Paleontological Convention. [s. 1.]: North American Paleontological Convention.**
- Proceedings - Symposium on Rock Mechanics.** New York, NY: American Institute of Mining, Metallurgical and Petroleum Engineers.
- Proceedings of the International Meeting on Organic Geochemistry.** Chichester-New York, etc.: John Wiley & Sons Limited.
- Proceedings of the West Virginia Academy of Science.** Morgantown, WV: West Virginia Academy of Science, 1924-.
- Public Information Circular - Geological Survey of Wyoming.** Laramie, WY: Geological Survey of Wyoming.
- Quality of Water, Colorado River Basin. [Washington, DC]: Department of Interior.**
- Quaternary Research (New York).** New York, NY: Academic Press, 1970-.
- Remote Sensing of Environment.** New York, NY: Elsevier, 1968-.
- Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado.** Denver, CO: Colorado Geological Survey, Department of Natural Resources, State of Colorado, 1977-.
- Rock & Gem.** Encino, CA: Behn-Miller Publishers, Inc., 1971-.

- Rock Magnetism and Paleogeophysics.** Tokyo: Rock Magnetism and Paleogeophysics Research Group in Japan, 1973-.
- Rocks and Minerals.** Washington, DC: Heldref Publications.
- Rocky Mountain Paleogeography Symposium.** Denver, CO: Society of Economic Paleontologists and Mineralogists, Rocky Mountain Section.
- Science.** Washington, DC: American Association for the Advancement of Science, 1883-.
- Shale Shaker.** Oklahoma City, OK: Oklahoma City Geological Society.
- Soil Science Society of America Journal.** Madison, WI: Soil Science Society of America, 1976-.
- Special Publication - Colorado Geological Survey.** Denver, CO: Colorado Geological Survey, Department of Natural Resources, State of Colorado, 1969-.
- Special Publication - Geological Survey of India.** Calcutta: Geological Survey of India, 1980-.
- Technical Papers of the American Congress of Surveying and Mapping, Fall Technical Meeting.** Falls Church, VA: American Congress on Surveying and Mapping, 1980?-.
- Tectonophysics.** Amsterdam: Elsevier Scientific Publishing Company, 1964-.
- Transportation Research Record.** Washington, DC: Transportation Research Board, Commission on Sociotechnical Systems, National Research Council, National Academy of Sciences, 1974-.
- U. S. Geol. Surv., Geophys. Invest. Map.** U. S. Geological Survey, Geophysical Investigations Map. Reston, Virginia.
- U. S. Geol. Surv., Misc. Field Stud. Map.** U. S. Geological Survey, Miscellaneous Field Studies Map. Reston, Virginia.
- U. S. Geol. Surv., Oil Gas Invest. Charts.** U. S. Geological Survey, Oil and Gas Investigations Charts. Reston, Virginia.
- Water Quality Series (Logan).** Logan, UT: Utah Water Research Laboratory, College of Engineering, Utah State University, 1978-.
- Water-Resources Investigations.** [Reston, VA]: U. S. Geological Survey, 1972-.
- Water Resources Research.** Washington, DC: American Geophysical Union, 1965-.
- Water Science and Technology.** Oxford-New York: Pergamon Press.
- Water Supply & Management.** Oxford-New York: Pergamon Press, 1977-.
- Water/Engineering & Management.** Des Plaines, IL: Scranton Gillette Communications.
- Western Oil Reporter.** Denver, CO: Hart Publications, 1966-.
- World Oil.** Houston, TX: [IRM, Inc., etc.], 1947-.

## BIBLIOGRAPHY AND INDEX OF COLORADO GEOLOGY

### BIBLIOGRAPHY

- Abrams, G. A.; Moss, C.; Martin, R. A.; et al.** Principal facts for gravity stations in parts of Grand, Clear Creek, and Summit counties, Colorado: Open-File Report (United States Geological Survey, 1978), 12 p., sketch maps, 3 ref., 1982. (Rep. No. 82-0950) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Adams, D. B.** see Patt, R. O.
- Adams, Dee Briane** see Turk, John T.
- Adams, Marilyn J.** Cimarron Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 122-125, illus. (incl. sketch map), 2 ref., 1983.
- Adams, V. Dean** see Baker, Lawrence A.
- Addison, Richard; and Brechtel, Charles E.** The rehabilitation of Colorado's historic Carlton gold mill: in Papers presented at the 85th national western mining conference (Monarchi, J. L., chairperson), Mining Year Book (Denver), Vol. 1982, p. 95-103, 2 tables, 1982.
- Afifi, Abdulkader M.** Precambrian geology of the Iris area, Gunnison and Saguache counties, Colorado: Master's, 1981, Colorado School of Mines, Golden, CO.
- Ahmed, Usman; Kelkar, Sharad M.; and Schatz, John F.** Mini frac; an aid to formation in-situ stress and permeability measurements: in Proceedings of the 24th U.S. symposium on rock mechanics; theory, experiment, practice (Mathewson, Christopher C., editor; et al.), Proceedings - Symposium on Rock Mechanics, Vol. 24, p. 319-326, illus. (incl. 3 tables), 10 ref., 1983.
- Albert, Karl** see Brink, Carl
- Albright, J. N.** see Searls, C. A.
- Allen, Hank** see Gray, Jack D.
- Allen, Michael Steven.** An evaluation of stream sediment and heavy mineral concentrate geochemistry as aids in geologic mapping and mineral exploration in northern Colorado: 244 p., Master's, 1982, Queen's Univ., Kingston, ON, Canada.
- Alley, William M.** Ground water for oil-shale development, Piceance Basin, Colorado: Ground Water, Vol. 21, No. 4, p. 456-464, illus. (incl. 1 table, sketch map), 23 ref., August 1983.
- Allingham, J. W.** see Narten, P. F.
- Allison, Dennis A.** Deer Trail Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 144-147, illus. (incl. sketch map), 2 ref., 1983.
- Allison, Dennis A.** Sooner Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 472-475, illus. (incl. isopach map), 2 ref., 1983.
- Allmendinger, Richard W.; Brewer, J. A.; and Brown, L. D.** Structural control of Rocky Mountain Front; COCORP profiles across Laramie Mountains [abstr.]: in Association round table; 1981 AAPG annual convention with divisions; SEPM/EMD/DPA; technical program summaries and abstracts (Anonymous), AAPG Bulletin, Vol. 65, No. 5, p. 889, May 1981.
- Alonso, Carlos V.** see Borah, Deva K.
- Ambles, A.; Djuricic, M. V.; Djordjevic, L.; et al.** Nature of kerogen from the Green River Shale based on the character of the products of a forty-step alkaline permanganate oxidation: in Advances in organic geochemistry, 1981 (Bjoroy, M., editor; et al.), Proceedings of the International Meeting on Organic Geochemistry, Vol. 10, p. 554-560, illus. (incl. 2 tables), 16 ref., 1983. (A Wiley Heyden publication).
- Anderson, B. M.** Effects of processed oil shale on the element content of *Atriplex canescens*: Open-File Report (United States Geological Survey, 1978), 18 p., illus. (incl. 3 tables, sketch map), 14 ref., 1982. (Rep. No. 82-1051) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver,



- CO, United States.
- Anderson, David L.** see McCullough, M. Bruce
- Anderson, J. R.** see Goodknight, C. S.
- Andreu, Joaquin; Labadie, John W.; and Burns, Alan W.** Optimal stream-aquifer system management: *in* Proceedings of the Conference on water and energy technical and policy issues (Kilpatrick, Fritz, editor; *et al.*), Am. Soc. Civ. Eng., New York, NY, United States, p. 578-586, illus., 9 ref., 1982.
- Andrews, E. D.** Entrainment of gravel from naturally sorted riverbed material: Geological Society of America Bulletin, Vol. 94, No. 10, p. 1225-1231, illus., 27 ref., October 1983.
- Andrews, John T.; Birkeland, P. W.; Kihl, R.; et al.** Holocene lake sediments from subalpine and alpine lakes, Colorado Front Range; baseline studies [abstr.]: *in* 95th annual meeting, The Geological Society of America (Braunstein, Jules, chairperson; *et al.*), Abstracts with Programs - Geological Society of America, Vol. 14, No. 7, p. 433, August 1982.
- Andrews, John T.; Nichols, H.; Short, S. K.; et al.** Alpine lake-sediment studies, Front Range, Colorado; a contribution to the Long-Term Ecological Research (LTER) Program [abstr.]: *in* Character and timing of rapid environmental and climatic changes (Markgraf, Vera, chairperson; *et al.*), Am. Quat. Assoc., Natl. Conf., Abstr., Vol. 7, p. 61, 1982. Seventh biennial conference of the American Quaternary Association.
- Andrews, Sarah** see Ethridge, Frank G.
- Angino, E.** see Zeller, E. J.
- Anonymous.** Channel change workshop; Problem Number 1, Yampa River, Colorado; Problem Number 2, Poplar Creek, California; Problem Number 3, Elk River, Kansas: *in* Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction (Simons, Daryl B., editor; *et al.*), p. 263-347, illus. (incl. sketch maps). September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Anonymous.** Timetable -- parameters for Chevron's Clear Creek shale project disclosed: E & MJ, Engineering and Mining Journal, Vol. 182, No. 12, p. 35-37, 1981.
- Anonymous.** Paraho development studies could lead to commercial retort by 1984: E & MJ, Engineering and Mining Journal, Vol. 182, No. 12, p. 39-42, 1981.
- Anonymous.** More moly cutbacks were announced by Amax: Metals Week, Vol. 53, No. 41, p. 3, 1982.
- Anonymous.** Southeastern Piceance Basin, western Colorado: Grand Junction Geol. Soc., Grand Junction, CO, United States, 97 p., illus. (incl. sects., geol. sketch map), 1982. Grand Junction Geol. Soc. field trip, Sept. 25-26, 1982; individual papers are cited separately.
- Anonymous.** Gold veins of the Granite District, Chaffee and Lake Counties, Colorado [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 7-8, 1982 [1983].
- Anonymous.** Ore emplacement in the Schwartzwald mine, Jefferson County, Colorado [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 35, 1982 [1983].
- Anonymous.** Central Region [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 92-93, 1982 [1983].
- Anonymous.** Colorado [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 93-94, 1982 [1983].
- Anonymous.** Competitors for Pacific steam coal markets: The Coal Miner, Vol. 7, No. 3, p. 18-23, 1982.
- Anonymous.** Caves of the Southwest: *in* Great American show caves (Weaver, H. Dwight, editor), Natl. Caves Assoc., McMinnville, TN, United States, p. 21-22, illus. (incl. sketch map), 1982.
- Anonymous.** Exxon shelve the most advanced oil shale project in the US: E & MJ, Engineering and Mining Journal, Vol. 183, No. 6, p. 33-41, 1982.
- Anonymous.** Cathedral Bluffs to submit plan for smaller shale project: E & MJ, Engineering and Mining Journal, Vol. 183, No. 12, p. 11, 1982.
- Anonymous.** Loan guaranties sought to renew oil shale project: E & MJ, Engineering and Mining Journal, Vol. 184, No. 2, p. 9, 1983.
- Applegate, J. K.** see Searls, C. A.
- Archer, Allen W.; and Hattin, Donald E.** Trace fossils in Upper Cretaceous shales of the Greenhorn and Niobrara cyclothems [abstr.]: *in* Abstracts of the proceedings of the 93rd annual meeting of the Geological Society of America (Thomas, William A., chairperson), Abstracts with Programs - Geological Society of America, Vol. 12, No. 7, p. 380, August 1980.
- Archer, Allen W.; and Hattin, Donald E.** Analysis of Upper Cretaceous trace-fossil assemblages, U. S. Western Interior [abstr.]: *in* AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), AAPG Bulletin, Vol.

66, No. 5, p. 543-544, May 1982.

- Armbrustmacher, Theodore J.** Geologic occurrence and resource potential of thorium in the Wet Mountains area, Custer and Fremont counties, Colorado; an update [abstr.]: *in* Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 190, February 1981.
- Armbrustmacher, Theodore J.** Mineral deposits associated with alkaline intrusive complexes; examples from Wyoming, Colorado, Montana, and California [abstr.]: *in* Genesis and exploration of metallic and nonmetallic mineral and ore deposits of Wyoming and adjacent areas (extended abstracts) (Hausel, W. Dan, editor; *et al.*), Public Information Circular - Geological Survey of Wyoming, Vol. 19, p. 23, 1983. Joint conference of the Geological Survey of Wyoming, Wyoming Geological Association, and the University of Wyoming, Department of Geology and Geophysics; annual spring conference.
- Armbrustmacher, Theodore J.; and Hedge, Carl E.** Genetic implication of minor-element and Sr-isotope geochemistry of alkaline rock complexes in the Wet Mountains area, Fremont and Custer counties, Colorado: *Contributions to Mineralogy and Petrology*, Vol. 79, No. 4, p. 424-435, illus. (incl. 8 anal., 3 tables, geol. sketch map), 41 ref., 1982.
- Armstrong, Jerry D.** Peace Pipe and Sidewinder fields: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 372-381, illus. (incl. struct. map), 1983.
- Arthur, M. A.; Kauffman, E. G.; Scholle, Peter A.; et al.** Geochemical and paleobiological evidence for the submarine spring origin of carbonate mounds in the Pierre Shale (Cretaceous) of Colorado [abstr.]: *in* 95th annual meeting, The Geological Society of America (Braunstein, Jules, chairperson; *et al.*), Abstracts with Programs - Geological Society of America, Vol. 14, No. 7, p. 435, August 1982.
- Arthur, M. A.; Scholle, Peter A.; Pollastro, R. M.; et al.** Geochemical and sedimentologic indicators of depositional environments and diagenetic trends in the Niobrara Formation (Upper Cretaceous), Colorado and Kansas [abstr.]: *in* Geological Society of America, 94th annual meeting, Abstracts with Programs - Geological Society of America, Vol. 13, No. 7, p. 398-399, September 1981.
- Arthur, M. A.** *see also* Pollastro, R. M.
- Ashe, S. J.** *see* Lindsey, D. A.
- Ashe, Sandra J.** *see* Lindsey, David A.
- Averett, Walter R.** *see* Beyth, Michael
- Avis, Loren E.** Left Hand Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 286-289, illus. (incl. isopach map), 3 ref., 1983.
- Baars, D. L.; and Stevenson, G. M.** Subtle stratigraphic traps in Paleozoic rocks of Paradox Basin [abstr.]: *in* Association round table; 1981 AAPG annual convention with divisions; SEPM/EMD/DPA; technical program summaries and abstracts (Anonymous), AAPG Bulletin, Vol. 65, No. 5, p. 892-893, May 1981.
- Baars, D. L.; and Stevenson, G. M.** Paleotectonic control of Pennsylvanian sedimentation, Paradox Basin [abstr.]: *in* AAPG Rocky Mountain Section meeting (Anonymous), AAPG Bulletin, Vol. 67, No. 8, p. 1329-1330, August 1983.
- Babcock, J. W.** *see* Lindemann, J. W.
- Babcock, R. N.** *see* Hobbs, R. G.
- Bader, J. W.** Section A-A', subsurface correlations of some Upper Cretaceous and Tertiary rocks from the Cherokee Ridge, Wyoming, to the southeast flank of the Sand Wash Basin, Colorado: Open-File Report (United States Geological Survey, 1978), 2 sheets, sects., 1983. (Rep. No. 83-0362) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Bader, J. W.; Gill, J. R.; Cobban, W. A.; et al.** Biostratigraphic correlation chart of some Upper Cretaceous rocks from the Lost Soldier area, Wyoming, to west of Craig, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1548, 1 sheet, chart, chart, 1983.
- Bailey, Mark H.** Bedrock geology of western Taylor Park, Gunnison County, Colorado: Master's, 1979, Oregon State Univ., Corvallis, OR. 1030 m.y.; 1700 m.y.
- Baker, Donald R.; Cuddihee, John L.; and Pearson, Daniel B.** Thermal effects on sedimentary organic matter and recognition and mapping of subjacent igneous plutons, Ruby Range, Colorado [abstr.]: *in* Association round table; 1981 AAPG annual convention with divisions; SEPM/EMD/DPA; technical program summaries and abstracts (Anonymous), AAPG Bulletin, Vol. 65, No. 5, p. 893, May 1981.
- Baker, Lawrence A.; and Adams, V. Dean.** Predicted limnology of the proposed Ridges Basin Reservoir: Water Quality Series (Logan), Vol. 82-01, 115 p., illus. (incl. 65 tables), 160 ref., April 1982.
- Baldrige, W. S.; Bartov, Y.; and Kron, A.** Tectonics of the Jemez and Morenci lineaments

- and their relationship to the origin and evolution of the Rio Grande Rift: *in* Geological Survey of Israel current research 1980 (Bogoch, Ron, editor), Geol. Surv. of Israel, Jerusalem, Israel, p. 81-86, illus. (incl. geol. sketch map), 1 p. ref., 1981.
- Baldwin, Thomas D.** see Warren, Peter
- Balog, S. H.** see Bolivar, S. L.
- Barker, C. E.** see Arthur, M. A.
- Barnes, Ivan** see Presser, T. S.
- Barnes, T. E.** Orebody modeling; the transformation of coordinate systems to model continuity at Mount Emmons: *in* 17th application of computers and operations research in the mineral industry (Johnson, Thys B., editor; *et al.*), Application of Computer Methods in the Mineral Industry, Vol. 17, p. 765-770, illus. (incl. 1 table), 3 ref., 1982.
- Barreiro, Barbara A.; Cameron, Maryellen; and Cameron, Kenneth L.** A lead isotope study of mid-Tertiary ignimbrites and lavas from the Sierra Madre Occidental, Chihuahua, Mexico [abstr.]: *in* 95th annual meeting, The Geological Society of America (Braunstein, Jules, chairperson; *et al.*), Abstracts with Programs - Geological Society of America, Vol. 14, No. 7, p. 439, August 1982.
- Barrett, R. K.** see Bell, J. R.
- see Ruckman, A. C.
- Bartels, E. R.** see Hills, F. Allan
- Bartlett, John D.** Holster-Bugle fields: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 238-243, illus. (incl. sketch map, sect.), 1983.
- Bartov, Y.** see Baldridge, W. S.
- Barvenik, Matthew J.** see Cadwgan, Richard M.
- Batory, Bruce L.** Analysis of the lacustrine sediments of the Creede Formation, Mineral County, Colorado: 120 p., 3 plates, map, Master's, 31 ref., 1981, New Mexico Inst. of Min. & Technol., Socorro, NM.
- Bazrafshan, Khosrow.** Geology and economic geology of the Upper Cunningham Gulch, Southeast Silverton, Colorado: Master's, 1981, Wichita State Univ., Wichita, KS.
- Beams, Robert J.** Greenwood Topeka Trend fields: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 214-221, illus. (incl. sect., sketch map), 1983.
- Bean, D. W.** see Schumm, Stanley A.
- Becker, Herman F.** New plant structures from the Triassic Dolores Formation in southwestern Colorado [abstr.]: *in* Abstracts of papers to be presented at the Interdisciplinary meeting of the Canadian Botanical Association and the Botanical Society of America at the University of Alberta (Starr, Richard C., president), American Journal of Botany, Vol. 58, No. 5, Part 2, p. 467-468, June 1971.
- Been, Josh M.** see McCarthy, Kevin P.
- Belcher, Robert C.** Quantitative analysis and digital processing of potential field data from the Rio Grande Rift, Colorado and New Mexico [abstr.]: *in* Workshop on the Rio Grande Rift; crustal modeling and applications of remote sensing (Blanchard, Douglas P., editor), LPI Technical Report, Vol. 81-07, p. 35-36, 1982.
- Bell, J. R.; Barlett, R. K.; and Ruckman, A. C.** Geotextile earth reinforced retaining wall tests; Glenwood Canyon, Colorado: *in* Proceedings of the 33rd annual highway geology symposium; engineering geology and environmental constraints (Hynes, Jeffrey L., editor), Special Publication - Colorado Geological Survey, Vol. 22, p. 147-167, illus. (incl. 5 tables, sketch map), 16 ref., 1983.
- Bell, Mark W.; Pacer, John C.; and Roberts, Eugene H.** Drilling-mud emanometry, a new technique for uranium exploration [abstr.]: *in* Association round table; 1981 AAPG annual convention with divisions; SEPM/EMD/DPA; technical program summaries and abstracts (Anonymous), AAPG Bulletin, Vol. 65, No. 5, p. 898, May 1981.
- Bellatti, John T.** A field investigation comparing conventional compressional-wave, converted-wave, and horizontally-polarized shear-wave reflections: Master's, 1981, Colorado School of Mines, Golden, CO.
- Benedict, James B.** Prehistoric man and climate; the view from timberline: *in* Quaternary studies; selected papers from IX INQUA congress (Suggate, R. P., editor; *et al.*), Bulletin - Royal Society of New Zealand, Vol. 13, p. 67-74, illus. (incl. sketch map), 45 ref., 1975. 10,000-300 years b.p.
- Benedict, James B.** Soft-sediment deformation by rock glaciers, Indian Peaks wilderness area, Colorado Front Range [abstr.]: *in* Character and timing of rapid environmental and climatic changes (Markgraf, Vera, chairperson; *et al.*), Am. Quat. Assoc., Natl. Conf., Abstr., Vol. 7, p. 68, 1982. Seventh biennial conference of the American Quaternary Association. 4405-2905 years b.p.
- Bergstresser, Thomas James.** Foraminiferal biostratigraphy and paleobathymetry of the Pierre Shale, Colorado, Kansas and Wyoming: 351 p., Doctoral, 1981, Univ. of Wyoming,

- Laramie, WY. available from: Univ. Microfilms. Cretaceous.
- Beyth, M.; and McInteer, Carlotta.** Resource evaluation using hydrogeochemical and stream sediment reconnaissance data: in Geological Survey of Israel current research 1980 (Bogoch, Ron, editor), Geol. Surv. of Israel, Jerusalem, Israel, p. 17-21, illus. (incl. geol. sketch map), 1981.
- Beyth, Michael; Broxton, David; McInteer, Carlotta; et al.** Analysis of stream sediment reconnaissance data for mineral resources from the Montrose NTMS quadrangle, Colorado: LA - Los Alamos Scientific Laboratory, Vol. 8329, 95 p., 7 tables, geol. map 1:250,000, geochem. maps 1:250,000, 23 ref., June 1980. (Rep. No. GJBX-218(82)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program.
- Bickford, M. E.; and Van Schmus, W. R.** Origin of middle Proterozoic granitic and rhyolitic rocks in the Midcontinent region of North America [abstr.]: in Geological Society of America, 94th annual meeting, Abstracts with Programs - Geological Society of America, Vol. 13, No. 7, p. 410, September 1981.
- Bickford, M. E.** see also Boardman, S. J.
- Bieniewski, T. M.** see Gallimore, D. L.
- Bigarella, Laertes P.** Potential methane drainage using hydro fracturing, Carbondale coal field, Pitkin County, Colorado: Master's, 1981, Colorado School of Mines, Golden, CO.
- Billings, Patty; and Kalliokoski, J. O.** Alteration and geologic setting of the Golden Wonder Mine, western San Juan Mountains, Colorado [abstr.]: in 95th annual meeting, The Geological Society of America (Braunstein, Jules, chairperson; et al.), Abstracts with Programs - Geological Society of America, Vol. 14, No. 7, p. 443-444, August 1982.
- Billings, Patty** see also Kirk, A. R.
- Billo, Saleh M.** Carbonate petrology of the Fort Hays Member, Niobrara Formation, Boulder County, Boulder, Colorado: The Engineering Geologist, Vol. 18, No. 1, p. 3, sketch map, 5 ref., June 1983.
- Blodeau, Sally W.** see Costa, John E.
- Birkeland, P. W.; and Burke, R. M.** Quantitative data for an alpine soil chronosequence, Colorado Front Range [abstr.]: in Character and timing of rapid environmental and climatic changes (Markgraf, Vera, chairperson; et al.), Am. Quat. Assoc., Natl. Conf., Abstr., Vol. 7, p. 70, 3 ref., 1982. Seventh biennial conference of the American Quaternary Association.
- Birkeland, P. W.** see also Andrews, John T.
- Birman, Joseph H.** Some questions on Piceance Basin hydrology: in Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 149-154, 26 ref., 1982.
- Bishop, Robert E.; and Soetrisno, Hadi P.** Paleface Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 362-365, illus. (incl. isopach map), 1983.
- Bisque, Ramon E.** New geochemical technique used in the Denver Basin: Western Oil Reporter, Vol. 40, No. 6, p. 23-26, June 1983.
- Blackburn, W. H.** see Vance, R. K.
- Blanchard, Douglas P.** Workshop summary: in Workshop on the Rio Grande Rift; crustal modeling and applications of remote sensing (Blanchard, Douglas P., editor), LPI Technical Report, Vol. 81-07, p. 5-7, 1 table, 1982.
- Blanchard, Douglas P. (editor).** Workshop on the Rio Grande Rift; crustal modeling and applications of remote sensing: April 21-23, 1980, Houston, TX, United States. LPI Technical Report, Vol. 81-07, 54 p., illus., 1982. Individual papers are cited separately.
- Blatt, Harvey** see Childers, David W.
- Blattner, J. L.; and Rasmuson, B. D.** Water-level records for the northern High Plains of Colorado, 1978-82: Open-File Report (United States Geological Survey, 1978), 31 p., 1 table, sketch maps, 1982. (Rep. No. 82-0573) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Blattner, J. L.; and Rasmuson, B. D.** Water-level records for the northern High Plains of Colorado, 1979-83: Open-File Report (United States Geological Survey, 1978), 37 p., illus. (incl. 1 tables, sketch map), 1983. (Rep. No. 83-0253) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Bliss, J. D.** Colorado; basic data for thermal springs and wells as recorded in Geotherm: Open-File Report (United States Geological Survey, 1978), 176 p., 8 ref., 1983. (Rep. No. 83-0429) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Blodgett, Robert H.** Clastic lacustrine sedimentation in Triassic of southwestern Colorado [abstr.]: in Association round table; 1981 AAPG annual convention with divisions; SEPM/EMD/DPA; technical program summaries and abstracts (Anonymous), AAPG

Bulletin, Vol. 65, No. 5, p. 904, May 1981.

- Blodgett, Robert H.** Depositional environments of the Upper Triassic Dolores Formation, Southwest Colorado [abstr.]: in Abstracts with programs 1983; Geological Society of America; Rocky Mountain Section 36th annual meeting; Cordilleran Section 79th annual meeting (Anonymous), Abstracts with Programs - Geological Society of America, Vol. 15, No. 5, p. 285, March 1983.
- Boardman, S. J.; and Bickford, M. E.** U-Pb geochronology and petrology of Proterozoic volcanic and plutonic rocks in central Colorado [abstr.]: in 95th annual meeting, The Geological Society of America (Braunstein, Jules, chairperson; et al.), Abstracts with Programs - Geological Society of America, Vol. 14, No. 7, p. 446, August 1982.
- Boehmke, John R.; LaBounty, James F.; Sartoris, James J.; et al.** Limnology of Mt. Elbert Forebay; 1978-1979: 21 p., illus. (incl. 15 tables), 8 ref., March 1982. (Rep. No. REC-ERC-82-6) available from: U. S. Dep. Int. Bur. Recl., Eng. Res. Cent., Denver, CO, United States.
- Boler, F. M.; Klein, D. P.; and Kleinkopf, M. D.** Bouguer gravity map of the Pueblo 1 degrees by 2 degrees Quadrangle, south-central Colorado: Miscellaneous Investigations Series - U. S. Geological Survey, I-1419-A, 1 sheet, gravity surv. map 1:250,000, 1982.
- Bolivar, S. L.; and Balog, S. H.** Multiple uses of multiple integrated data sets [abstr.]: COSPAR Plenary Meet., Program Abstr., Vol. 24, p. 76, 1982. 1. Symposium on remote sensing and mineral exploration; National case histories based on activities of IGCP Project 143.
- Bolivar, Stephen L.** Kimberlites; a petrologist's best friend: Earth Science, Vol. 35, No. 3, p. 15-18, illus. (incl. sketch maps), 1982.
- Bond, Marc A.** An integrated geophysical study of the Shaw Warm Spring area, San Luis Valley, South-central Colorado: Master's, 1981, Colorado School of Mines, Golden, CO.
- Bookstrom, Art** see LeAnderson, Jim
- Borah, Deva K.; Alonso, Carlos V.; and Prasad, Shyam N.** Routing graded sediments in streams; applications: Journal of the Hydraulics Division, Vol. 108, HY12, p. 1504-1517, illus. (incl. 2 tables), 18 ref., December 1982.
- Borman, R. G.** Predevelopment and 1980 water table in the northern High Plains of Colorado; and water-level changes, predevelopment to 1980, and 1975 to 1980: Hydrologic Investigations Atlas, HA-0670, 1 sheet, hydrogeol. maps, 1983.
- Borman, R. G.; and Meredith, T. S.** Geology, altitude, and depth of the bedrock surface beneath the Ogallala Formation in the northern High Plains of Colorado: Hydrologic Investigations Atlas, HA-0669, 1 sheet, hydrogeol. map 1:500,000, 1983.
- Borscheil, T. F.** see Sinha, K. P.
- Boudette, Eugene L.** see Craig, Lawrence C.
- see Dickinson, Kendall A.
- Bowles, C. G.** see McCarthy, Kevin P.
- Bowles, C. Gilbert** see McCarthy, Kevin P.
- Bowles, D. S.** see Malone, R. F.
- Bowman, Patricia A.; and Foster, Donald I.** Baseline/Krauthed fields area: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 28-37, sketch map, sect., 1 ref., 1983.
- Boyles, J. Michael; and Scott, Alan J.** Upper Cretaceous shelf sandstones, northwestern Colorado; migrating sand-ridge model [abstr.]: in Association round table; 1981 AAPG annual convention with divisions; SEPM/EMD/DPA; technical program summaries and abstracts (Anonymous), AAPG Bulletin, Vol. 65, No. 5, p. 905, May 1981.
- Boyles, J. Michael; and Scott, Alan J.** A model for migrating shelf-bar sandstones in upper Mancos Shale (Campanian), northwestern Colorado: AAPG Bulletin, Vol. 66, No. 5, p. 491-508, illus. (incl. 2 tables, strat. cols., geol. sketch maps), 61 ref., May 1982.
- Boyles, J. Michael; and Scott, Alan J.** Comparison of wave-dominated deltaic deposits and associated sand-rich strand plains, Mesaverde Group, Northwest Colorado [abstr.]: in AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), AAPG Bulletin, Vol. 66, No. 5, p. 551-552, May 1982.
- Boyles, J. Michael** see also Scott, Alan J.
- Braddock, W. A.** see Pearson, R. C.
- Bradley, S. D.; and McCallum, M. E.** Lower crustal granulite facies and related xenoliths from Colorado-Wyoming state line kimberlite [abstr.]: in Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 192, February 1981.
- Brechtel, Charles E.** see Addison, Richard
- Brewer, J. A.** see Allmendinger, Richard W.

- Brickey, M.** *see* Abrams, G. A.
- Bridges, Dan.** Leadville Limestone, Colorado; Laramide-Tertiary subsurface solution vs Paleozoic karst solution [abstr.]: Newsletter - Rocky Mountain Association of Geologists, March 1982, p. 7, March 1982.
- Bridges, L.** *see* MacDonald, H.
- Brink, Carl; Albert, Karl; and Hausel, W. Dan.** Stream sediment exploration sampling for kimberlite in Colorado-Wyoming, and techniques of diamond extraction [abstr.]: *in* Genesis and exploration of metallic and nonmetallic mineral and ore deposits of Wyoming and adjacent areas (extended abstracts) (Hausel, W. Dan, editor; *et al.*), Public Information Circular - Geological Survey of Wyoming, Vol. 19, p. 40-41, 1 ref., 1983. Joint conference of the Geological Survey of Wyoming, Wyoming Geological Association, and the University of Wyoming, Department of Geology and Geophysics; annual spring conference. Poster session.
- Brogan, J. Philip.** Buscadero Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 88-91, illus. (incl. sketch map), 2 ref., 1983.
- Brogan, J. Philip.** Cavalry Field (Morrow): *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 100-103, illus. (incl. sketch map), 4 ref., 1983.
- Brogan, J. Philip.** Cavalry Field (Mississippian): *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 104-107, illus. (incl. sketch map), 3 ref., 1983.
- Brooks, Tom.** Hydrology and subsidence potential of proposed coal-lease tracts in Delta County, Colorado: Water-Resources Investigations, 32 p., 1983. (Rep. No. 83-4069) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Brown, L.; and Golombek, M.** Paleomagnetic evidence for tectonic rotation of the Colorado Plateau and Rio Grande Rift, New Mexico [abstr.]: *in* 95th annual meeting, The Geological Society of America (Braunstein, Jules, chairperson; *et al.*), Abstracts with Programs - Geological Society of America, Vol. 14, No. 7, p. 453, August 1982.
- Brown, L. D.** *see* Allmendinger, Richard W.
- Brown, R. R.** *see* Meyer, R. F.
- Broxton, David** *see* Beyth, Michael
- Brune, Robert H.; Hays, David; Sixta, David P.; et al.** Comparison of sign-bit and conventional seismic recording in eastern Colorado [abstr.]: *in* Abstracts of papers presented at the 52nd annual international SEG meeting (Anonymous), Geophysics, Vol. 48, No. 4, p. 422-423, April 1983.
- Brune, Robert H.** *see also* Sixta, David P.
- Bryan, Alan.** A museum of quality: Lapidary Journal, Vol. 36, No. 10, p. 1772, illus., January 1983.
- Budding, K. E.; and Lawrence, V. A.** Geochemical analyses of rock, stream-sediment, and heavy-mineral concentrate samples collected from the Spanish Peaks Wilderness Study Area, Huerfano and Las Animas counties, Colorado: Open-File Report (United States Geological Survey, 1978), 26 p., 4 tables, sketch map, 3 ref., 1983. (Rep. No. 83-0391) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Buelow, K. L.** *see* Heasler, H. P.
- Burger, J. A.** *see* Goodknight, C. S.
- Burke, R. M.** *see* Birkeland, P. W.
- Burlingame, A. L.** *see* Gelpi, Emilio
- Burns, Alan W.** *see* Andreu, Joaquin
- Burt, Donald M.** Acidity-salinity diagrams; application to greisen and porphyry deposits [abstr.]: *in* 93rd annual meeting of the Geological Society of America, Abstracts with Programs - Geological Society of America, Vol. 12, No. 7, p. 396, August 1980.
- Butler, David.** Recorded seismicity of Colorado [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 20, 1981.
- Byrne, John P.** Earthquake emergency preparedness: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 37, 1981.
- Cadigan, R. A.** Mineralization and other geologic factors related to the Morrison Formation in particular the northern two-thirds of the Colorado Plateau region; basic data and factor-analysis results: Open-File Report (United States Geological Survey, 1978), 176 p., illus. (incl. 6 tables, sketch maps), 25 ref., 1982. (Rep. No. 82-1130) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.

- Cadwgan, Richard M.; Barvenik, Matthew J.; Ehrenfried, Albert D.; et al.** Improving monitoring efficiency of deep wells: *in* Proceedings of the Symposium on practical ground-water monitoring considerations for the mining industry (U. S., National Water Well Association), Ground Water Monitoring Review, Vol. 3, No. 1, p. 110-118, illus. (incl. 2 tables), 4 ref., 1983.
- Cain, Patrick J.** see Senseny, Paul E.
- Caine, Nel.** Water and sediment flows in the Green Lakes Valley, Colorado Front Range: *in* Ecological studies in the Colorado alpine (Halfpenny, James C., editor), Occasional Paper - Colorado, University, Institute of Arctic and Alpine Research, Vol. 37, p. 13-22, illus. (incl. 2 tables), 38 ref., 1982.
- Callahan, Gary D.** see Senseny, Paul E.
- Cameron, Kenneth L.** see Barreiro, Barbara A.
- Cameron, Maryellen** see Barreiro, Barbara A.
- Campbell, Angus M.** see Dickinson, Kendell A.
- see Hills, F. Allan
- Campbell, John A.; Franczyk, Karen J.; Lupe, Robert D.; et al.** Cortez Quadrangle, Colorado and Utah: 65 p., econ. geol. maps 1:500,000, geochem. maps 1:500,000, 129 ref., September 1982. (Rep. No. PGJ/F-051(82)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- Campbell, John A.; Franczyk, Karen J.; Lupe, Robert D.; et al.** Moab Quadrangle, Colorado and Utah: 68 p., illus., econ. geol. maps 1:500,000, geochem. maps 1:500,000, 132 ref., September 1982. (Rep. No. PGJ/F-056(82)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- Carlson, Robert J.** Arroyo Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, illus. (incl. sketch map), 2 ref., 1983.
- Carpenter, Kenneth** see Lockley, Martin G.
- Carpenter, Robert H.** Interpretation of water sample analyses, Waunita Hot Springs area, Gunnison County, Colorado: *in* Geothermal resources assessment of Waunita Hot Springs, Colorado (Zacharakis, Ted G., editor), Special Publication - Colorado Geological Survey, Vol. 16, p. 26-30, 2 tables, 1 ref., 1981. (Rep. No. DOE/ET/28365-14) available from: U. S. Dep. Energy, United States.
- Carrara, P. E.** see Hansen, W. R.
- see Rowley, P. D.
- Carson, Xanthus.** Rockhounding in the Colorado Rockies: *Rock & Gem*, Vol. 7, No. 9, p. 20-26, illus., September 1977.
- Carson, Xanthus.** Turquoise chief mine: *Rock & Gem*, Vol. 7, No. 3, p. 24-28, 30-31, illus., March 1977.
- Carten, Richard B.** see Graaskamp, Garret W.
- Cascia, Malvin C.** see Dutcher, Russell R.
- Casella, V. R.; Fleissner, J. G.; and Styron, C. E.** Secular equilibrium of radium in Western coal: *in* Atomic and nuclear methods in fossil energy research; proceedings of the American Nuclear Society conference (Filby, Royston H., editor; et al.), Plenum Press, New York, NY, United States, p. 473-479, illus. (incl. 1 table, sketch map), 12 ref., 1982.
- Cashion, W. B.** Descriptions of four stratigraphic sections of parts of the Green River and Uinta formations in the eastern Uinta Basin, Uintah County, Utah, and Rio Blanco County, Colorado: Open-File Report (United States Geological Survey, 1978), 44 p., sects., sketch maps, 9 ref., 1983. (Rep. No. 83-0017) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Chang, N. Y.; and Makarechi, Houman.** Effects of gradation on dynamic shear modulus of granular soils at small strains: *in* Proceedings; Third international earthquake microzonation conference; Vol. II (Sherif, Mehmet, editor), U. S. Natl. Sci. Found., Washington, DC, United States, p. 945-956, illus. (incl. 4 tables), 9 ref., June 1982.
- Chang, N. Y.; Yeh, S. T.; and Kaufman, L. P.** Liquefaction potential of clean and silty sands: *in* Proceedings; Third international earthquake microzonation conference; Vol. II (Sherif, Mehmet, editor), U. S. Natl. Sci. Found., Washington, DC, United States, p. 1017-1032, illus. (incl. 4 tables), 23 ref., June 1982.
- Chappell, Willard R.** Environmental and health consequences of shale oil production in the USA: *Journal of the Geological Society of London*, Vol. 137, Part 5, p. 571-574, 2 tables, 4 ref., July 1980. (Including thematic set of papers on geology and health). With discussion.
- Chenoweth, William L.** The vanadium-uranium deposits of the East Rifle Creek area, Garfield County, Colorado: *in* Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 79-81, illus. (incl. sketch map), 3 ref., 1982.

- Chenoweth, William L.** The Hayden Survey in the Elk Mountains: *in* Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 95-97, illus., 1982.
- Childers, David W.; and Blatt, Harvey.** Diagenesis of feldspar in the Mintrun Formation (Pennsylvanian) of Colorado [abstr.]: *in* Geological Society of America, 93rd annual meeting, Abstracts with Programs - Geological Society of America, Vol. 12, p. 401, August 1980.
- Childs, Douglas K.** Running Creek Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 450-455, illus. (incl. isopach maps), 2 ref., 1983.
- Chitombo, Gideon** *see* Montazer, Parviz
- Christopherson, K. R.; Nervick, K. H.; and Heran, W. D.** Audio-magnetotelluric and telluric profiling studies in the Shaw Warm Springs region, Colorado: Open-File Report (United States Geological Survey, 1978), 16 p., illus. (incl. geol. sketch map), 3 ref., 1981. (Rep. No. 81-0958) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Chuan, R. L.** *see* Sedlacek, W. A.
- Cipra, J. E.** *see* Kornblau, M. L.
- Clark, J. A.** The prediction of hydraulic fracture azimuth through geological, core, and analytical studies: *in* Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 107-114, illus. (incl. geol. sketch map), 11 ref., 1983. SPE/DOE 11611.
- Clark, R. F.** *see* Lindsey, D. A.
- Clark, Reino F.** *see* Lindsey, David A.
- Clarkson, Gerry** *see* Reiter, Marshall
- Claypool, George E.** *see* Arthur, M. A.
- Coalson, Edward; Duey, Herbert; and Kellogg, Harold E.** Greater Douglas Creek area: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 184-213, illus., 2 ref., 1983.
- Cobban, W. A.; and Hook, S. C.** Mid-Cretaceous molluscan biostratigraphy and paleogeography of south-western part of Western Interior, United States [abstr.]: *in* North American paleontological convention III; abstracts of papers (Anonymous), Journal of Paleontology, Vol. 56, Suppl. to No. 2., p. 6, March 1982.
- (Part II of III).
- Cobban, W. A.** *see also* Bader, J. W.
- Cochran, B. J.; Minges, D. R.; Jarrett, R. D.; et al.** Rainfall-runoff data from small watersheds in Colorado, October 1977 through September 1980: Open-File Report (United States Geological Survey, 1978), 754 p., 4 tables, sketch maps, 17 ref., 1982. (Rep. No. 82-0873) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Cochran, Dale M.** *see* Robinson, Charles S.
- Cockerham, Kirby, Jr.** Vernon Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 504-507, illus. (incl. struct. map), 6 ref., 1983.
- Coe, Barbara A.** Industrial market opportunities for geothermal energy in Colorado: Special Publication - Colorado Geological Survey, Vol. 20 (DOE/ID/12018-12), 66 p., illus. (incl. 17 tables, sketch maps), 39 ref., April 1982.
- Coe, Barbara A.; and Zimmaman, Judy.** Colorado Geothermal Commercialization Program; geothermal energy opportunities at four Colorado towns; Durango, Glenwood Springs, Idaho Springs, Duray: 60 p., illus. (incl. tables, geol. sketch maps), 80 ref., January 1981. (Rep. No. DOE/ID/12018-8) *available from*: NTIS, Springfield, VA, United States.
- Coe, Barbara A.** *see also* Meyer, Richard T.
- Cokendolpher, James C.; and Cokendolpher, Jean E.** Reexamination of the Tertiary harvestmen from the Florissant Formation, Colorado (Arachnida; Opiliones; Palpatores): Journal of Paleontology, Vol. 56, No. 5, p. 1213-1217, illus., 21 ref., September 1982.
- Cokendolpher, Jean E.** *see* Cokendolpher, James C.
- Colbert, Edwin Harris.** Dinosaurs of the Colorado Plateau: Plateau, Vol. 54, No. 2-3, 48 p., illus. (incl. sketch maps), 8 ref., 1983.
- Cole, R. D.; Daub, G. J.; and Weichman, B. E.** Geology of the Horse Draw nahcolite and oil-shale mine, Piceance Creek basin, Colorado: *in* Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 15-28, sects., strat. cols., sketch maps, 14 ref., 1982.
- Cole, Rex D.; and Weston, L. K.** Second day; Road log from Glenwood Springs to Rifle via New Castle: *in* Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 35-44, 33 ref., 1982.



- Collier, J. D. (investigator).** Uranium in granites, southwest Colorado [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 34, 1982 [1983].
- Collins, D. L.** see Patt, R. O.
- Colman, Steven M.; McCalpin, James; and Ostenaar, Dean A.** Morphology of fault scarps in the Rio Grande Rift, Colorado, as an indicator of age of faulting [abstr.]: in Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 34-35, illus., 3 ref., 1981.
- Colman, Steven M.** see also Kirkham, Robert M.
- Colorado Department of Natural Resources, Mined Land Reclamation Division.** Their silent profile; inactive coal and metal mines of Colorado; Volume 1, The Colorado Inactive Mine Reclamation Plan; Volume 2, County resource volume: Colo. Dep. Nat. Resour., Mined Land Reclam. Div., Colo., United States, variously paginated, illus. (incl. tables, plates), February 1982.
- Colorado Division of Mines, Department of Natural Resources.** A summary of mineral industry activities in Colorado; Part 1, Coal: Colo. Div. Mines, Dep. Nat. Resour., Denver, CO, United States, 24 p., 1981.
- Colorado River Board of California.** California's stake in the Colorado River: 28 p., illus. (incl. tables, sketch map), August 1979. available from: Colo. River Board Calif., Los Angeles, CA, United States.
- Condie, Kent C.; and Martell, Charles.** Early Proterozoic metasediments from north-central Colorado; metamorphism, provenance, and tectonic setting: Geological Society of America Bulletin, Vol. 94, No. 10, p. 1215-1224, illus. (incl. 10 anal., geol. sketch map), 25 ref., October 1983.
- Connors, R. A.** see Weiland, E. F.
- Cooke, Cynthia.** Ancient landscapes: Lapidary Journal, Vol. 36, No. 9, p. 1484-1485, 1488, illus. (incl. sect., sketch maps), December 1982.
- Cooper, James E.; and Evans, W. Scot.** Ammonium-nitrogen in Green River Formation oil shale: Science, Vol. 219, No. 4584, p. 492-493, 5 anal., 2 tables, 21 ref., February 4, 1983.
- Cordell, Lindrith.** Extension in the Rio Grande Rift: JGR. Journal of Geophysical Research, B, Vol. 87, No. 10, p. 8561-8569, illus. (incl. 1 table), 53 ref., October 10, 1982.
- Cordell, Lindrith; Keller, G. R.; and Hildenbrand, T. G.** Complete Bouguer gravity anomaly map of the Rio Grande Rift, Colorado, New Mexico, and Texas: U. S. Geol. Surv., Geophys. Invest. Map, GP-0949, sheet, gravity surv. map 1:1,000,000, 1982. Supersedes Open-file report 78-958.
- Costa, John E.** Paleohydraulic reconstruction of flash-flood peaks from boulder deposits in the Colorado Front Range: Geological Society of America Bulletin, Vol. 94, No. 8, p. 986-1004, illus. (incl. 6 tables, sketch map), 101 ref., August 1983.
- Costa, John E.; and Bilodeau, Sally W.** Geology of Denver, Colorado, United States of America: Bulletin of the Association of Engineering Geologists, Vol. 19, No. 3, p. 261-314, illus. (incl. 10 tables, sketch maps, block diag.), 130 ref., August 1982.
- Costin, L. S.** Static and dynamic fracture behavior of oil shale: in Fracture mechanics techniques for ceramics, rocks, and concrete (Freiman, S. W., editor; et al.), ASTM Special Technical Publication - American Society for Testing and Materials Special Technical Publication, Vol. 745, p. 169-184, illus. (incl. 4 tables), 16 ref., October 1981.
- Covlin, R. J.** see Fast, C. R.
- Cox, Kathleen L.; and Kaltenbacher, Kathy.** Radar Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 410-413, illus. (incl. struct. map), 1 ref., 1983.
- Cox, L. E.** see Gallimore, D. L.
- Cox, Roy L.** The ground-water impacts of underground coal mining in the Somerset coal field, Delta and Gunnison counties, Colorado [abstr.]: in Summaries of papers presented at Tech Education Program during 1982 International Expo (Anonymous), Ground Water, Vol. 21, No. 2, p. 22, April 1983. International Water Well Expo, NWWA's Ground-Water Technology Division Education Program.
- Crabb, James A.** Soil survey of Weld County, Colorado; northern part: U. S. Dep. Agric., Soil Conserv. Serv., Washington, DC, United States, 145 p., illus. (incl. 11 tables; soils maps 1:24,000; colored soils map 1:380,160), 5 ref., August 1982. (Publ. in coop. with Colo. Agric. Exp. Stn.).
- Craig, G. S.** see Kuhn, Gerhard
- Craig, Lawrence C.; Hail, William J., Jr.; Luft, Stanley J.; et al.** Craig Quadrangle, Colorado: 107 p., illus. (incl. 11 tables; econ. geol. maps 1:500,000; geochem. maps 1:500,000), 128 ref., September 1982. (Rep. No. PGJ/F-017(82)) available from: Bendix Field Eng. Corp., Tech. Lib., Grand Junction, CO, United States. National Uranium Resource

- Evaluation Program; includes microfiche.
- Craig, Lawrence C.; Hail, William J., Jr.; and Luft, Stanley J.** Vernal Quadrangle, Colorado and Utah: 109 p., illus. (incl. 10 tables; econ. geol. maps 1:500,000; geochem. maps 1:500,000), 114 ref., September 1982. (Rep. No. PGJ/F-026(82)) *available from*: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche; includes section on Interpretation of stream-sediment and hydrochemical data by Robinson, Keith; Irvin, J. J. and Dubiel, R. F.
- Crandall, Thomas M.** *see* Hills, F. Allan
- Crawley, Richard A.** Sandstone uranium deposits in the United States; a review of the history, distribution, genesis, mining areas, and outlook: 57 p., illus. (incl. sketch maps), 68 ref., March 1983. (Rep. No. GJBX-15(83)) *available from*: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program.
- Crelling, John C.** *see* Dutcher, Russell R.
- Crisler, K.** *see* Zeller, E. J.
- Crock, J. G.; Raymond, W. H.; and Lichte, F. E.** Major, minor, and trace elements in samples from the Wheeler Wilderness Study Area, Colorado, as determined by inductively coupled argon plasma-atomic emission spectrometry: Open-File Report (United States Geological Survey, 1978), 26 p., 54 anal., 8 tables, 8 ref., 1983. (Rep. No. 83-0405) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Crouch, Marshall C., III (editor).** Oil and gas fields of Colorado-Nebraska and adjacent areas 1982: Rocky Mt. Assoc. Geol., Denver, CO, United States, 791 p., 2 plates, geol. map, illus. chart, 1983. In two volumes; individual papers are cited separately.
- Crowley, K. D.** Large-scale bed configurations (macroforms), Platte River basin, Colorado and Nebraska; primary structures and formative processes: Geological Society of America Bulletin, Vol. 94, No. 1, p. 117-133, illus. (incl. 1 table, sketch maps), 48 ref., January 1983.
- Crowley, Pat** *see* Pansze, Art
- Crowther, H. G.** *see* Osterkamp, Waite R.
- Cuddihee, John L.** *see* Baker, Donald R.
- Cudnick, R.** *see* Hustrulid, W.
- Cuffey, R. J.; Kim, K. C.; Smith, D. K.; et al.** Latest Oligocene insects from the Creede Caldera in southwestern Colorado: Proceedings - North American Paleontological Convention, Vol. 3, p. 119-123, 1 plate, sketch map, 32 ref., 1982.
- Cumella, Stephen P.** Relation of Upper Cretaceous regressive sandstone units of the San Juan Basin to source area tectonics: *in* Mesozoic paleogeography of the West-Central United States (Reynolds, Mitchell W., editor; *et al.*), Rocky Mountain Paleogeography Symposium, Vol. 2, p. 189-199, illus. (incl. 1 table, block diags., sects., sketch maps), 19 ref., 1983.
- Curtis, R. E., Jr.** *see* Osterkamp, Waite R.
- Daddow, P. D.** *see* Kuhn, Gerhard
- Daly, C.** *see* Morel-Seytoux, Hubert J.
- Dana, George F.** *see* Knutson, Carroll F.
- Daniels, Robert P. Haswell Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 234-237, illus. (incl. sketch map), 4 ref., 1983.
- Daniels, Robert P. Salt Lake Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 456-459, illus. (incl. struct. map), 4 ref., 1983.
- Darrow, Arthur C.; and Krusi, Alan P.** Geologic investigations of the seismic hazards associated with the Golden Fault, Colorado [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 32, 1981.
- Daub, G. J.** *see* Cole, R. D.
- Daub, Gerald J.** Stratigraphy and geology of some coal mines along the North Fork of the Gunnison River, Somerset coal field, Colorado: *in* Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 69-77, illus. (incl. strat. col., geol. sketch map), 14 ref., 1982.
- Daub, Gerald J.** *see also* Goodknight, Craig S.
- Davis, Donald G.** Spring Cave flowstone dated: Cinther, Vol. 23, No. 8, p. 2-3, 1981.
- Davis, J. L. DeNova Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 152-155, illus. (incl. sketch map), 3 ref., 1983.
- Davis, J. L. Red Lion Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky

- Mt. Assoc. Geol., Denver, CO, United States, p. 422-425, illus. (incl. sketch map), 2 ref., 1983.
- Davis, Thomas L.** Influence of Transcontinental Arch on Cretaceous listric-normal faulting, west flank, Denver Basin [abstr.]: in AAPG Rocky Mountain Section meeting (Anonymous), AAPG Bulletin, Vol. 67, No. 8, p. 1333-1334, August 1983.
- Dayvault, R. D.** see Goodknight, C. S.
- Dayvault, Richard D.; Luttrell, Mark D.; Goodknight, Craig S.; et al.** Excursion 1; Road log from Marble to Lead King Basin and Crystal: in Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 13-26, illus. (incl. sect., sketch maps), 1982.
- de Rojas, Isabel.** Stratigraphy of the Mowry Shale (Cretaceous), western Denver Basin, Colorado: Master's, 1980, Colorado School of Mines, Golden, CO.
- Dean, W. E.; Pitman, J. K.; and Harrach, G. H.** Geochemical and mineralogical analyses of U. S. Geological Survey oil-shale core CR-2, Piceance Creek basin, Colorado: Open-File Report (United States Geological Survey, 1978), 93 p., illus. (incl. 1500 anal., 9 tables, sketch map), 3 ref., 1981. (Rep. No. 81-0596) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Decker, E. R.** see Heasler, H. P.
- Dehaan, R. W.** see Hendricks, D. W.
- Dellechiaie, Frank.** A hydrogeochemical comparison of the Waunita Hot Springs, Hortense, Castle Rock and Anderson Hot Springs: in Geothermal resources assessment of Waunita Hot Springs, Colorado (Zacharakis, Ted G., editor), Special Publication - Colorado Geological Survey, Vol. 16, p. 31-38, 3 tables, 1 ref., 1981. (Rep. No. DOE/ET/28365-14) available from: U. S. Dep. Energy, United States.
- Demou, S.** see Sinha, K. P.
- Desborough, G. A.; Ludington, S.; and Sharp, W. N.** Redskin Granite: a rare-metal-rich Precambrian pluton, Colorado, USA: Mineralogical Magazine, Vol. 43, No. 332, p. 959-966, 4 anal., 1 table, geol. sketch maps, 29 ref., December 1980.
- Dessenberger, N. C.** see Johnson, R. C.
- Dexter, J. J.** see Goodknight, C. S.
- Dexter, James J.** see Goodknight, Craig S.
- Deyo, A. E.** see Whittig, L. D.
- Dick, Jay D.** see Meyer, Richard T.
- Dickinson, K. A.; and Hills, F. A.** (investigators). Oligocene volcanic rock-a source of epigenetic uranium in central Colorado [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 35-36, 1982 [1983].
- Dickinson, K. A.** see also Hills, F. A.
- Dickinson, Kendall A.; Hills, F. Allan; Boudette, Eugene L.; et al.** Pueblo Quadrangle, Colorado: 109 p., illus. (incl. 4 tables; econ. geol. maps 1:500,000; geochem. maps 1:500,000), 169 ref., September 1982. (Rep. No. PGJ/F-075(82)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- Dickinson, Kendall A.** see also Hills, F. Allan
- Dickson, R. E.** see Goodknight, C. S.
- Dimarco, Michael J.** Petrology of the Deer Peak volcanic rocks, Colorado [abstr.]: in 16th annual meeting, South-central Section, The Geological Society of America, with Texas and Kansas-Oklahoma chapters of the National Association of Geology Teachers (Anonymous), Abstracts with Programs - Geological Society of America, Vol. 14, No. 3, p. 110, February 1982.
- Dimelow, T. E.** see Witherbee, L. J.
- Djordjevic, L.** see Ambles, A.
- Djuricic, M. V.** see Ambles, A.
- Dodge, Harry W., Jr.** see Hills, F. Allan
- Doefler, J. T.** see Gibbs, J. W.
- Dolson, John.** Comanche Creek Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 126-129, illus. (incl. sketch map), 3 ref., 1983.
- Dolson, John.** Hombre Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 244-247, illus. (incl. sketch map), 1983.
- Dolson, John.** Depositional environments and reservoir properties, Lonetree Field, southern Denver Basin, Colorado [abstr.]: in AAPG Rocky Mountain Section meeting (Anonymous), AAPG Bulletin, Vol. 67, No. 8, p. 1335, August 1983.
- Dolson, John** see also Miyazaki, Brent
- Donnell, J. R.** see Ellis, Margaret

- Donnell, John R.** Tongues of the Green River and Uinta formations in the Piceance Creek basin: *in* Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 29-37, illus. (incl. sketch maps), 20 ref., 1982.
- Donnelly, Denis** *see* Pell, Kynric
- Dorscher, Marianne** *see* Foley, Duncan
- Dott, Robert H., Jr.** *see* Kocurek, Gary
- Doveton, John H.** *see* Klahn, Louis J., Jr.
- Dowdeswell, Julian A.** Relative dating of late Quaternary deposits using cluster and discriminant analysis, Audubon Cirque, Mt. Audubon, Colorado Front Range: *Boreas*, Vol. 11, No. 2, p. 151-161, illus. (incl. 10 tables, sketch map), 1 p. ref., 1982.
- Dreschhoff, G.** *see* Zeller, E. J.
- Driese, Steven George.** Sedimentology, conodont distribution, and carbonate diagenesis of the upper Morgan Formation (Middle Pennsylvanian), northern Utah and Colorado: 289 p., Doctoral, 1982, Univ. of Wisconsin, Madison, WI. *available from:* Univ. Microfilms.
- Driver, N. E.** *see* Williams, Richard S., Jr.
- Drouillard, E. K.** **West Fork Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 522-525, illus. (incl. struct. map), 2 ref., 1983.
- Duba, A.** *see* Piwinski, A. J.
- Dubiel, Russell F.** *see* Dickinson, Kendall A.
- *see* Hills, F. Allan
- Duey, Herb.** **Blue Gravel Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 70-73, illus. (incl. sketch map), 2 ref., 1983.
- Duey, Herb.** **Great Divide Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 180-183, illus. (incl. sketch map), 1983.
- Duey, Herb** *see also* Martinez, C.
- Duey, Herbert** *see* Coalson, Edward
- Dula, William F.** *see* Dickinson, Kendall A.
- *see* Hills, F. Allan
- Durane, B.** *see* Vandenbrooks, M.
- Dutcher, Russell R.; Crelling, John C.; and Cascia, Malvin C.** Petrography and fluorescence properties of bituminous coals of the Spanish Peaks region, Colorado: *in* Proceedings; Fifth symposium on the geology of Rocky Mountain coal, 1982 (Gurgel, Klaus D., editor), Bulletin - Utah Geological and Mineral Survey, Vol. 118, p. 179-186, illus. (incl. 2 tables, sketch map), 17 ref., May 1982.
- Duval, J. S.** *see* Pitkin, J. A.
- Eatough, M. O.** Mineralogic and petrologic overview of core samples from the Dept. of Energy's Western Gas Sands Project Multiwell Experiment, Piceance Basin, Colorado: *in* Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 445-448, illus., 4 ref., 1983. SPE/DOE 11764.
- Ebling, J. L.** *see* Elliott, J. G.
- Ehrenfried, Albert D.** *see* Cadwgan, Richard M.
- Eimon, Paul.** Exploration for epithermal gold and silver deposits; the epithermal model: *in* The First international symposium on small mine economics & expansion; papers (Anonymous), Miller Freeman Publ., San Francisco, CA, United States, 15 p., illus. (incl. sects.), 29 ref., 1981.
- Eimon, Paul.** The Creede mining district; history and overview: *in* Field trip notes; Creede mining district, San Juan volcanic province, Colorado (Lindemann, J. W., editor; *et al.*), Denver Reg. Explor. Geol. Soc., Denver, CO, United States, p. 2-10, sect., geol. sketch maps, 1981.
- El Rabaa, M. A.** *see* Wadood, A.
- Elias, S. A.** Paleoenvironmental interpretation of bark beetle fossils from two high altitude sites in the Colorado Rockies: Proceedings - North American Paleontological Convention, Vol. 3, p. 153-157, 1 table, 1 plate, sketch map, 28 ref., 1982.
- Elias, S. A.** Paleoenvironmental interpretations of Holocene insect fossil assemblages from the La Poudre Pass site, northern Colorado Front Range: *Palaeogeography, Palaeoclimatology, Palaeoecology*, Vol. 41, No. 1-2, p. 87-102, illus. (incl. 1 table, sketch map), 16 ref., February 1983.
- Elliott, J. G.; Jarrett, R. D.; and Ebling, J. L.** Annual snowmelt and rainfall peak-flow data on selected foothills region streams, South Platte River, Arkansas River, and Colorado River basins, Colorado: Open-File Report (United States Geological Survey, 1978), 90 p., illus. (incl. 1 table, sketch maps), 25 ref., 1982. (Rep. No. 82-0426) *available from:* U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver,

- CO, United States.
- Ellis, M. S.; and Hopeck, J. T.** Geologic map of parts of Bitter Creek Well, Harley Dome, Westwater 4 SE, and Westwater 4 SW quadrangles, Colorado and Utah, showing coal beds in Dakota Sandstone and adjacent rocks: Open-File Report (United States Geological Survey, 1978), 1 sheet, geol. map 1:50,000, 1982. (Rep. No. 82-0741) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Ellis, Margaret; Freeman, V. L.; Donnell, J. R.** (investigators); *et al.* Coal correlation in the Carbondale quadrangle, Colorado [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 17, 1982 [1983].
- Epis, R. C.** *see* Wobus, R. A.
- Ernst, Robert P.** Granite and rhyolite relationships of the Lake City Caldera area, Hinsdale County, Colorado: 60 p., site loc. map 1:50,000, Master's, 16 ref., 1981, Eastern Wash. Univ., Cheney, WA.
- Ethington, Raymond L.** *see* Repetski, John E.
- Ethridge, Frank G.; Sunada, D. K.; Tyler, Noel;** *et al.* Field, model, and computer simulation study of some aspects of the origin and distribution of Colorado Plateau-type uranium deposits: Open-File Report (United States Geological Survey, 1978), 56 p., illus. (incl. 2 tables, sketch maps), 39 ref., 1982. (Rep. No. 82-0589) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Ethridge, Frank G.; and Ziegler, John R.** Poncho Field; Cretaceous "J" Sandstone stratigraphic traps; Denver Basin, Colorado [abstr.]: *in* AAPG Rocky Mountain Section meeting (Anonymous), AAPG Bulletin, Vol. 67, No. 8, p. 1336, August 1983.
- Ethridge, Frank G.** *see also* Tyler, Noel
- Eugster, Hans P.** Climatic significance of lake and evaporite deposits: *in* Climate in Earth history (U. S., National Research Council, Geophysics Study Committee), Natl. Acad. Press, Washington, DC, United States, p. 105-111, illus. (incl. sketch map), 68 ref., 1982. (Studies in geophysics).
- Evans, David D.** *see* Kirr, James N.
- Evans, Robert James.** High temperature simulation of petroleum formation: 190 p., Doctoral, 1982, Univ. of Rhode Island, Kingston, RI. *available from*: Univ. Microfilms.
- Evans, Stanley H., Jr.** *see* Herr, Randy G.
- Evans, W. C.** *see* Presser, T. S.
- Evans, W. Scot** *see* Cooper, James E.
- Fast, C. R.; Holman, G. B.; and Covlin, R. J.** The application of massive hydraulic fracturing to the tight Muddy "J" Formation, Wattenberg Field, Colorado: JPT. Journal of Petroleum Technology, Vol. 29, No. 1, p. 10-16, illus. (incl. 7 tables), 3 ref., January 1977.
- Feinman, Jerome.** Recent progress in the development of OXY's oil-shale project: *in* Symposium papers; synthetic fuels from oil shale II (Tarman, Paul B., chairperson; *et al.*), Inst. Gas Technol., Chicago, IL, United States, p. 161-174, illus. (incl. 3 tables), 11 ref., March 1982.
- Felmlee, J. Karen** *see* Dickinson, Kendell A.
- Fentress, George H. Sodbuster Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 468-471, illus. (incl. sketch map), 3 ref., 1983.
- Ferguson, D. A.** *see* Thompson, R. W.
- Ferraro, Paul.** Water quality management issues of concern to the Colorado Department of Health: *in* Proceedings of an international symposium on Oil shale; the environmental challenges II (Petersen, Kathy Kellogg, editor), Colo. Sch. Mines Press, Golden, CO, United States, p. 29-37, 1982.
- Ferrigno, C. F.** *see* Luckey, R. R.
- Fisenne, I.** *see* Sedlacek, W. A.
- Fitterman, D. V.** Self-potential surveys near several Denver Water Department dams: Open-File Report (United States Geological Survey, 1978), 58 p., illus. (incl. sketch maps), 8 ref., 1983. (Rep. No. 83-0302) *available from*: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Flanigan, V. J.** *see* Pearson, R. C.
- Fleissner, J. G.** *see* Casella, V. R.
- Floran, R. J.; Prinz, Martin; Hlava, P. F.; et al.** Mineralogy, petrology, and trace element geochemistry of the Johnstown Meteorite; a brecciated orthopyroxenite with siderophile and REE-rich components: *Geochimica et Cosmochimica Acta*, Vol. 45, No. 12, p. 2385-2391, illus. (incl. table), 23 ref., 1981.
- Flores, Richard J.** *see* Lindsey, David A.
- Foley, Duncan; and Dorscher, Marianne.** Tables of co-located geothermal resource sites and BLM wilderness study areas: 132 p., tables, 22 ref., November 1982. (Rep. No. DOE/ID/12079-88) *available from*: U. S. Dep.

- Energy, Washington, DC, United States. Univ. Utah Res. Inst., Earth Sci. Lab., Salt Lake City, UT.
- Ford, Jon R.** Influence of Precambrian shear zones on Paleozoic rocks in southeastern Colorado [abstr.]: *in* Energy impact on the future (Anonymous), AAPG Bulletin, Vol. 67, No. 8, p. 1324, August 1983. AAPG Mid-Continent Section meeting.
- Ford, Suzann H.** see Dickinson, Kendall A.
- Foster, Donald I.** see Bowman, Patricia A.
- see Rhode, David R.
- Foster, Lee** see Narten, P. F.
- Franczyk, Karen J.** see Campbell, John A.
- Freeman, V. L.** see Ellis, Margaret
- Fried, Jonathan** see Searls, C. A.
- Friedman, Irving; and Gleason, Jim.** Deuterium content of lignin and of the methyl and OH hydrogen of cellulose: *in* Carbon Dioxide Effects Research and Assessment Program; proceedings of the International meeting on stable isotopes in tree-ring research (Jacoby, Gordon C., editor), p. 50-55, illus., 1 ref., December 1980. (Rep. No. CONF-7905180) (Rep. No. A39) available from: NTIS, Springfield, VA, United States.
- Friedman, J. D.; and Simpson, S. L.** Lineaments and geologic structure of the northern Paradox Basin, Colorado and Utah: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1221, 2 sheets, struc. map 1:250,000, 1980. Reprint.
- Frison, George C.** see Walker, Danny N.
- Froidevaux, R.; and Journel, A. G.** Prediction of local ore recoveries and ore-waste ratios at the Silver Bell uranium mine: Journal of the International Association for Mathematical Geology, Vol. 14, No. 6, p. 645-660, illus. (incl. 2 tables, sketch maps), 7 ref., December 1982.
- Fuller, R. H.** see Naten, R. W.
- Galay, V. J.** Yampa River: *in* Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction (Simons, Daryl B., editor; et al.), p. 21-28, illus. (incl. sketch map), September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Gallagher, J. R. L.** see Nelson, C. E.
- Gallegos, E. J.** Identification of new steranes, terpanes, and branched paraffins in Green River Shale by combined capillary gas chromatography and mass spectrometry: Analytical Chemistry (Washington, DC), Vol. 43, No. 10, p. 1151-1160, illus. (incl. 1 anal.), 18 ref., August 1971.
- Gallimore, D. L.; Hues, A. D.; Palmer, B. A.; et al.** The spectrochemical determination of beryllium and lithium in stream sediments: LA - Los Alamos Scientific Laboratory, Vol. 7824, 16 p., illus. (incl. 5 tables), 5 ref., November 1979. (Rep. No. NTIS) available from: Springfield, VA, United States.
- Gallup, Marc Richmond.** Osteology, functional morphology, and palaeoecology of Coloraderpeton brilli Vaughn, a Pennsylvanian aistopod amphibian from Colorado: 226 p., Doctoral, 1982, Univ. of California, Los Angeles, CA. available from: Univ. Microfilms.
- Gandera, W. E.** Plateau Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 386-389, illus. (incl. struct. map), 10 ref., 1983.
- Garde, R. J.** Studies on the morphological characteristics of the Yampa River: *in* Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction (Simons, Daryl B., editor; et al.), p. 29-46, illus. (incl. 3 tables, sketch map), 6 ref., September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Garrison, James R., Jr.; and Goldstein, Arthur G.** Non-collisional late Paleozoic deformation of southern North America [abstr.]: *in* American Geophysical Union; 1981 fall meeting, Eos, Transactions, American Geophysical Union, Vol. 62, No. 45, p. 1038, November 10, 1981.
- Gary, Sam, Jr.** Beacon Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 38-41, illus. (incl. sketch map), 3 ref., 1983.
- Geissman, John W.** see Graaskamp, Garret W.
- Geldon, A. L. (investigator).** Ground water in Raton basin, Las Animas County [abstr.]: *in* Geological Survey research 1982. Geological Survey Professional Paper, Vol. 1375, p. 93-94, 1982 [1983].
- Gelpi, Emilio; Wszolek, Patricia C.; Yang, Esther; et al.** Milligram scale automatic preparative gas-liquid chromatography of the steranes and triterpanes isolated from Green River Formation oil shale: Analytical Chemistry (Washington, DC), Vol. 43, No. 7, p. 864-869, illus. (incl. 4 anal.), 12 ref., June 1971.
- Genasci, Gail A.** see Wayman, Cooper H.

- Geothermex.** Waunita Hot Springs, Colorado geothermal prospect reconnaissance evaluation and recommendations: *in* Geothermal resources assessment of Waunita Hot Springs, Colorado (Zacharakis, Ted G., editor), Special Publication - Colorado Geological Survey, Vol. 16, p. 17-25, 14 ref., 1981. (Rep. No. DOE/ET/28365-14) available from: U. S. Dep. Energy, United States.
- Gerhard, Walter F.** **Irondale Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 248-255, illus. (incl. isopach maps), 4 ref., 1983.
- Gibbs, J. W.; and Doefer, J. T.** Hydrologic data for urban storm runoff in the Denver metropolitan area, Colorado: Open-File Report (United States Geological Survey, 1978), 570 p., illus. (incl. 380 tables; map), 9 ref., 1982. (Rep. No. 82-0872) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Gibbs, Julie F.** **Maudlin Gulch Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 338-345, illus. (incl. struct. map, sect.), 5 ref., 1983.
- Gibbs, William Kirk, Jr.** Geology and geochemistry of uranium mineralization in rhyolites of the Nellie Creek area, Hinsdale County, Colorado: Master's, 1981, Colorado School of Mines, Golden, CO.
- Gill, J. R.** see Bader, J. W.
- Gingerich, Philip D.; and Haskin, Richard A.** Dentition of early Eocene *Pelycodus jarrovii* (Mammalia, Primates) and the generic attribution of species formerly referred to *Pelycodus*: Contributions from the Museum of Paleontology, University of Michigan, Vol. 25, No. 17, 10 p., illus. (incl. 2 tables), 13 ref., December 31, 1981.
- Giudice, P. M.** Ore geology of the central Amethyst Vein area, Creede, Colorado: *in* Field trip notes; Creede mining district, San Juan volcanic province, Colorado (Lindemann, J. W., editor; *et al.*), Denver Reg. Explor. Geol. Soc., Denver, CO, United States, p. 29-42, illus. (incl. sects., block diag.), 1981. 4-2 m.y.
- Gladney, E. S.** see Sedlacek, W. A.
- Gleason, Jim** see Friedman, Irving
- Godfrey, R. D.** see Witherbee, L. J.
- Gognat, Timothy A.** see Shurr, George W.
- Goldstein, Arthur G.** see Garrison, James R., Jr.
- Golombek, M.** see Brown, L.
- Goodknight, C. S.** Intermediate-grade uranium resource assessment project for part of the Maybell District, Sand Wash Basin, Colorado: 25 p., illus. (incl. sketch maps; geophys. surv. map 1:25,000), 10 ref., April 1983. (Rep. No. GJBX-12(83)) available from: U. S. Dep. Energy, Grand Junction Off., Grand Junction, CO, United States. National Uranium Resource Evaluation Program.
- Goodknight, C. S.; Ludlam, J. R.; Burger, J. A.; et al.** Uranium anomalies in Wyoming and parts of adjacent states: 11 p., illus. (incl. geochem. maps 1:500,000), 4 ref., December, 1982. (Rep. No. GJBX-3(83)) available from: Bendix Field Eng. Corp., Grand Junction, CO, United States. With appendices; National Uranium Resource Evaluation Program.
- Goodknight, Craig S.; Graham, William C.; Daub, Gerald J.; et al.** First day; Road log from Delta to junction of Colorado 133 and Gunnison County Road 3 via Hotchkiss, Somerset, and McClure Pass: *in* Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 1-12, illus. (incl. 1 table), 1982.
- Goodknight, Craig S.** see also Dayvault, Richard D.
- Gordon, J. I.** see Stright, D. H., Jr.
- Graaskamp, Garret W.; Geissman, John W.; and Carten, Richard B.** Paleomagnetism and aspects of structural deformation of the Red Mountain intrusive complex (Urad/Henderson molybdenum deposits), Empire, Colorado [abstr.]: *in* Geological Society of America, Rocky Mountain Section, 36th annual meeting; Cordilleran Section, 79th annual meeting, Abstracts with Programs - Geological Society of America, Vol. 15, No. 5, p. 297, March 1983.
- Graf, William L.** Mining and channel response: *Annals of the Association of American Geographers*, Vol. 69, No. 2, p. 262-275, illus. (incl. 2 tables, sketch map), 34 ref., June 1979.
- Graham, William C.** see Goodknight, Craig S.
- Grand Junction Geological Society.** Field trip to Dunton and Rico areas: *Grand Junction Geol. Soc., Grand Junction, CO, United States*, 8 p., geol. sketch map, 1962. Field trip held on July 21-22, 1962.
- Granger, H. C.** see Green, M. W.
- Granger, Harry C.** see Dickinson, Kendall A.
- see Hills, F. Allan
- Granica, M. P.** see Johnson, R. C.
- Grauch, R. I.** see Weiland, E. F.

- Gray, Jack D.; and Allen, Hank.** Bison and Linton fields: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 54-60, illus. (incl. sketch map), 1983.
- Greaves, Melvin J.** Scale-up of the Paraho process for retorting oil shale: *in* Symposium papers; synthetic fuels from oil shale II (Tarman, Paul B., chairperson; et al.), Inst. Gas Technol., Chicago, IL, United States, p. 323-343, illus., March 1982.
- Green, M. W.; Pierson, C. T.; and Granger, H. C. (investigators).** The Middle Jurassic vanadium-uranium belt in western Colorado [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 40-41, 1982 [1983].
- Grenney, W. J.** see Malone, R. F.
- Gries, Robbie.** North-south compression of Rocky Mountain foreland structures [abstr.]: *in* AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), AAPG Bulletin, Vol. 66, No. 5, p. 574, May 1982.
- Gries, Robbie.** Oil and gas prospecting beneath Precambrian of foreland thrust plates in Rocky Mountains: AAPG Bulletin, Vol. 67, No. 1, p. 1-28, illus. (incl. 3 tables, sects., sketch maps), 13 ref., January 1983.
- Griffin, Richard** see Pell, Kynric
- Griffith, Earl G.** Young Field, Colorado: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 530-533, illus. (incl. struct. map), 1 ref., 1983.
- Griswold, M. L.** see Pearson, R. C.
- Grogger, P. K.** see Huber, T. P.
- Grout, M. A.** see Verbeek, E. R.
- Grupp, Steve R.** see Schneider, William A.
- Gualtieri, J. L.** see Hobbs, R. G.
- Guderjahn, Charles G.** see Schneider, William A.
- Gulf Oil Corporation; and Standard Oil Company.** Rio Blanco Oil Shale Company, Tract C-a annual progress report; January 1981-December 1981: variously paginated, illus. (incl. tables, geol. sketch maps), April 1982. available from: Gulf Oil Corp., Aurora, CO, United States.
- Guth, L. R.** Estimating the gravitationally induced component of in-situ stress [abstr.]: *in* American Geophysical Union; 1981 fall meeting (Anonymous), Eos, Transactions, American Geophysical Union, Vol. 62, No. 45, p. 1026, November 10, 1981.
- Hail, W. J., Jr.** see Tweto, Ogden
- Hail, William J., Jr.** see Craig, Lawrence C.
- Hakes, W.** see Zeller, E. J.
- Halfpenny, James C. (editor).** Ecological studies in the Colorado alpine: Occasional Paper - Colorado, University, Institute of Arctic and Alpine Research, Vol. 37, 147 p., illus. (incl. tables, sketch maps), 1982. A festschrift for John W. Marr; individual papers within scope are cited separately.
- Hall, Denis.** Field trip; West Maroon Pass orthoclase: Rock & Gem, Vol. 13, No. 11, p. 16-19, illus. (incl. sketch map), November 1983.
- Hallgarth, Walter** see Ellis, Margaret
- Handy, Mark R.** see Hills, F. Allan
- Hansen, W. R.** The geologic story of the Uinta Mountains: Geological Survey Bulletin (Washington), Vol. 1291, 144 p., illus. (incl. sketch maps), 27 ref., 1969. Reprint.
- Hansen, W. R.; Carrara, P. E.; and Rowley, P. R.** Geologic map of the Canyon of Lodone North Quadrangle, Moffat County, Colorado: Geologic Quadrangle Map - U. S. Geological Survey, GQ-1568, 1 sheet, geol. map 1:24,000, 1982 [1983].
- Hansen, W. R.** see also Rowley, P. D.
- Hansen, Wallace R.** Association of Earth Science Editors 1981 field trip; environmental geology of the greater Denver area, Colorado: U. S. Geol. Surv., Denver, CO, United States, 10 p., 1981.
- Hanson, Jerome B.** see Ivey, John B.
- Hara, Yoshio; and Thorn, Colin E.** Preliminary quantitative study of Alpine subnival boulder pavements, Colorado Front Range, U.S.A.: Arctic and Alpine Research, Vol. 14, No. 4, p. 361-367, illus. (incl. 3 tables), 12 ref., November 1982.
- Harrach, G. H.** see Dean, W. E.
- Harris, D. W.** see Pugh, C. A.
- Harris, James D.** Roman Nose Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 434-437, illus. (incl. struct. map), 5 ref., 1983.
- Hartner, John D.** Depositional environments of the Salt Wash sandstones (Upper Jurassic) in portions of Rio Blanco and Moffat counties, Colorado: Master's, 1981, Colorado School of Mines, Golden, CO.



- Harvey, M. D.** see Schumm, Stanley A.
- Hasenohr, E. J.; and Pride, D. E.** Computer mapping of soil and rock geochemistry; a comparison using data from the Breckenridge mining district, Colorado: in 17th application of computers and operations research in the mineral industry (Johnson, Thys B., editor; *et al.*), *Application of Computer Methods in the Mineral Industry*, Vol. 17, p. 728-739, illus. (incl. geol. sketch map), 10 ref., 1982.
- Haskell, Floyd K.** Oil shale in western Colorado: in Proceedings of the 77th national western mining conference and exhibition (Colorado Mining Association), *Mining Year Book* (Denver), Vol. 1974, p. 60, 1974.
- Haskin, Richard A.** see Gingerich, Philip D.
- Hattin, Donald E.** see Archer, Allen W.
- Haun, John D.; and Kent, Harry C.** Colorado oil and gas production to 2000: *Oil and Gas Journal*, Vol. 81, No. 26, p. 115-120, illus. (incl. 4 tables, sketch map), 8 ref., June 27, 1983.
- Hause, W. Dan.** Diamond-bearing kimberlite pipes in Wyoming and Colorado: *Rocks and Minerals*, Vol. 58, No. 5, p. 241-244, illus. (incl. sketch map), 11 ref., October 1983. (Wyoming issue).
- Hause, W. Dan** see also Brink, Carl
- Hawkinson, R. O.; and Lystrom, D. J.** Water-resources investigations of the U. S. Geological Survey in Colorado; fiscal year 1983: Open-File Report (United States Geological Survey, 1978), 83 p., 1 table, index map, 1983. (Rep. No. 83-0138) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Hawn, William S.** see McCullough, M. Bruce
- Hayba, D. D.** A compilation of fluid inclusion and stable isotope data on selected precious- and base-metal epithermal deposits: Open-File Report (United States Geological Survey, 1978), 26 p., 4 tables, 32 ref., 1983. (Rep. No. 83-0450) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Hayes, L. D.** The Colony Shale Oil Project [abstr.]: in AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), *AAPG Bulletin*, Vol. 66, No. 5, p. 580, May 1982.
- Hayes, Miles D.; and Horne, John C.** Variation in depositional systems along shoreline embayments; modern and ancient examples [abstr.]: in AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), *AAPG Bulletin*, Vol. 66, No. 5, p. 580, May 1982.
- Hays, David** see Brune, Robert H.
- see Sixta, David P.
- Heasler, H. P.; Decker, E. R.; and Buelow, K. L.** Heat flow studies in Wyoming; 1979 to 1981: in Geothermal Direct Heat Program; roundup technical conference proceedings; Volume I; papers presented; State Coupled Resource Assessment Program (Ruscetta, Carl A., editor), p. 292-312, illus. (incl. 1 table, sketch maps), 36 ref., July 1982. (Rep. No. DOE/ID/12079-71) (Rep. No. ESL-98) available from: Univ. Utah Res. Inst., Earth Sci. Lab., Salt Lake City, UT, United States.
- Heathcote, R. L.** Perception of desertification on the Southern Great Plains; a preliminary enquiry: in Perception of desertification (Heathcote, R. L., editor), United Nations Univ., Tokyo, Japan, p. 34-59, illus. (incl. 8 tables, sketch maps), 102 ref., 1980.
- Hedge, Carl E.** see Armbrustmacher, Theodore J.
- Heiken, G. H.** see Sedlacek, W. A.
- Heimes, F. J.; and Luckey, R. R.** Method for estimating historical irrigation requirements from ground water in the High Plains in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming: *Water-Resources Investigations*, 68 p., 1982. (Rep. No. PB-82 245 796) available from: NTIS, Springfield, VA, United States (WRI 82-40).
- Heimes, F. J.; and Luckey, R. R.** Estimating 1980 ground-water pumpage for irrigation on the High Plains in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming: *Water-Resources Investigations*, 40 p., 1983. (Rep. No. 83-4123) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Heinrich, E. William.** Precambrian tungsten and copper-zinc skarn deposits of South-central Colorado: *Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado*, Vol. 21, 115 p., illus. (incl. geol. sketch maps), 93 ref., 1981.
- Hembre, D. R.** *Grouse Field*: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), *Rocky Mt. Assoc. Geol.*, Denver, CO, United States, p. 222-227, illus. (incl. sketch maps), 6 ref., 1983.
- Hendricks, D. W.; and Dehaan, R. W.** The input-output water transactions model of supply and demand: *Water Supply & Management*, Vol. 5, No. 4-5, p. 317-330, illus. (incl. 1 table, sketch map), 7 ref., 1981.
- Hendricks, T. S.** Hard work makes things go at a small Colorado mine: *E & MJ, Engineering and*

- Mining Journal, Vol. 183, No. 2, p. 74-76, 1982.
- Henrichs GEOEXploration Company.** Geothermal resistivity resource evaluation survey, Waunita Hot Springs Project, Gunnison County, Colorado: *in* Geothermal resources assessment of Waunita Hot Springs, Colorado (Zacharakis, Ted G., editor), Special Publication - Colorado Geological Survey, Vol. 16, p. 39-51, sketch maps, 1981. (Rep. No. DOE/ET/28365-14) available from: U. S. Dep. Energy, United States.
- Heran, W. D.** see Christopherson, K. R.
- Herr, Randy G.; Picard, M. Dane; and Evans, Stanley H., Jr.** Age and depth of burial, Cambrian Lodone Formation, northeastern Utah and northwestern Colorado: Contributions to Geology, Vol. 21, No. 2, p. 115-121, illus. (incl. 2 tables, sketch map), 32 ref., December 1982. 387, 428, 483 and 535 m.y.
- Hickey, J. C.; Klusman, R. W.; and Voorhees, K. J.** Fault leakage characterization by integrative gas geochemistry/mass spectrometry/pattern recognition procedures [abstr.]: *in* AAPG Rocky Mountain Section meeting (Anonymous), AAPG Bulletin, Vol. 67, No. 8, p. 1342, August 1983.
- Hickey, J. C.** see also Klusman, R. W.
- Hildenbrand, T. G.** see Cordell, Lindrith
- Hill, J. Gilmore.** Divide "D" Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 156-161, illus. (incl. sketch map), 5 ref., 1983.
- Hill, J. Gilmore.** Divide "J" Field (West Minto Field): *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 162-165, illus. (incl. struct. map), 4 ref., 1983.
- Hill, J. Gilmore.** Frasco Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 170-175, illus. (incl. struct. maps), 5 ref., 1983.
- Hill, Lyman.** Akron East Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 2-5, illus. (incl. sketch map), 2 ref., 1983.
- Hill, Lyman.** Redwing Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 426-429, illus. (incl. struct. map), 2 ref., 1983.
- Hillier, D. E.; Schneider, P. A., Jr.; and Hutchinson, E. C.** Depth to the water table (1976-1977) in the Greater Denver area, Front Range urban corridor, Colorado: Miscellaneous Investigations Series - U. S. Geological Survey, I-0856-K, 1 sheet, hydrogeol. map 1:100,000, 1983.
- Hills, F. A.; and Dickinson, K. A.** Silver Plume Granite; possible source of uranium in sandstone uranium deposits, Tallahassee Creek and High Park areas, Fremont and Teller counties, Colorado: Open-File Report (United States Geological Survey, 1978), 26 p., 119 anal., 3 tables, sketch maps, 16 ref., 1982. (Rep. No. 82-0404) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Hills, F. A. (investigator).** Silver Plume Granite-a possible source of uranium, Tallahassee Creek deposits [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 37, 1982 [1983].
- Hills, F. A.** see also Dickinson, K. A.
- Hills, F. Allan; Dickinson, Kendall A.; Nash, J. Thomas; et al.** Denver Quadrangle, Colorado: 76 p., illus. (incl. 4 tables; econ. geol. maps 1:500,000; geochem. maps 1:500,000), 429 ref., September 1982. (Rep. No. PGJ/F-078(82)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche; with a section on Interpretation of U. S. Geological Survey stream-sediment and hydrogeochemical data, by Robinson, Keith, McDonnell, John R., and Yancey, Clyde L.
- Hills, F. Allan; Dodge, Harry W., Jr.; Nash, J. Thomas; et al.** Greeley Quadrangle, Colorado: 64 p., illus. (incl. 5 tables; econ. geol. maps 1:500,000; geochem. maps 1:500,000), 437 ref., September 1982. (Rep. No. PGJ/F-079(82)) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation; includes microfiche; with a section on Interpretation of U. S. Geol. Surv. Stream-Sediment and Hydrogeochem. Data by Robinson, K., McDonnell, J. R., Day, H. C., Campbell, A. M., Dubiel, R. F., Elson, H. B., Malone, M. S., Mudgett, P. B., Murasco, J., Parker, J. M., Priestley, R. D., Roshardt, M., Uziemblo, N. H., Wallace, A. R. and Young, E. J.
- Hills, F. Allan** see also Dickinson, Kendall A.
- Hinchliffe, L.** see Sedlacek, W. A.
- Hirsch, K. F.** Die Ammoniten des Pierre Meeres (Oberkreide) in den westlichen USA [The ammonites of the Pierre sea (Upper Cretaceous) in the Western U.S.]: Der Aufschluss, Vol. 26, No. 3, p. 102-113, illus. (incl. sketch

- maps), March 1975.
- Hlava, P. F. see Floran, R. J.
- Hobbs, R. G.; Gualtieri, J. L.; and Babcock, R. N. Carbonera coal geophysical logging research holes; core descriptions and coal analysis: Open-File Report (United States Geological Survey, 1978), 47 p., 4 tables, 4 ref., 1982. (Rep. No. 82-0827) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Holdaway, K. see Zeller, E. J.
- Holman, G. B. see Fast, C. R.
- Holmberg, R. see Hustrulid, W.
- Holmes, W. F.; and Kimball, B. A. Ground water in the southeastern Uinta Basin, Utah and Colorado: Open-File Report (United States Geological Survey, 1978), 164 p., illus. (incl. sketch maps; index map), 47 ref., 1983. (Rep. No. 83-0271) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Holmquist, Darrel V. Slope stability consideration of the Colorado State Highway 91: in Proceedings of the 33rd annual highway geology symposium; engineering geology and environmental constraints (Hynes, Jeffrey L., editor), Special Publication - Colorado Geological Survey, Vol. 22, p. 62-76, illus. (incl. sketch map), 1983.
- Hon, Kenneth see Dickinson, Kendall A.
- Hood, A. see Vandenbrooks, M.
- Hook, S. C. see Cobban, W. A.
- Hopeck, J. T. see Ellis, M. S.
- Hornbaker, A. L. see Starch, Karl E.
- Horne, John C. see Hayes, Miles D.
- Howard, W. Brant. The hydrogeology of the Raton Basin, southcentral Colorado: Master's, 1982, Indiana Univ., Bloomington, IN.
- Howarth, R. J.; Koch, G. S.; Plant, J. A.; et al. Identification of uraniferous granitoids in the USA using stream sediment geochemical data: in Uranium 81 (Part 1); proceedings of a meeting organized by the Applied Mineralogy & Geochemistry Groups on uranium mineralogy and the geochemistry of natural radioelements in crystalline rocks (Simpson, P. R.; et al.), Mineralogical Magazine, Vol. 44, No. 336, p. 455-470, illus. (incl. 9 tables), 40 ref., December 1981.
- Huber, T. P.; and Grogger, P. K. Glaciation of the Pikes Peak region, Colorado, U.S.A. [abstr.]: in Character and timing of rapid environmental and climatic changes (Markgraf, Vera, chairperson; et al.), Am. Quat. Assoc., Natl. Conf., Abstr., Vol. 7, p. 108, 1982. Seventh biennial conference of the American Quaternary Association.
- Huber, Thomas P. The geomorphology of subalpine snow avalanche runout zones: San Juan Mountains, Colorado: Earth Surfaces Processes and Landforms, Vol. 7, No. 2, p. 109-116, illus. (incl. 1 table, sketch map), 14 ref., April 1982.
- Hues, A. D. see Gallimore, D. L.
- Humphrey, J. R.; and Wong, I. G. Crustal and upper mantle velocity studies in the Colorado Plateau interior from seismic P-wave arrivals and gravity data [abstr.]: in 78th annual meeting, Seismological Society of America, abstracts (Long, Tim, editor), Earthquake Notes, Vol. 54, No. 1, p. 52, March 1982.
- Hundley-Goff, L. M. Lookout Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 318-321, 2 ref., 1983.
- Hustrulid, W.; Cudnick, R.; Trent, R.; et al. Mining technology development for hard rock excavation: in Subsurface space; proceedings of the international symposium (Rockstore'80); Vol. 2 (Bergman, Magnus, editor), Pergamon, Oxford, United Kingdom, p. 919-926 (incl. French sum.), illus. (incl. sketch map), 6 ref., 1981.
- Hustrulid, W. A. see Wadood, A.
- Hutchinson, E. C. see Hillier, D. E.
- Hutchinson, R. see Hustrulid, W.
- Hynes, Jeffrey L. Geology of the Glenwood Canyon along I-70: in Proceedings of the 33rd annual highway geology symposium; engineering geology and environmental constraints (Hynes, Jeffrey L., editor), Special Publication - Colorado Geological Survey, Vol. 22, p. 136-146, illus. (incl. sketch maps, sect.), 5 ref., 1983.
- Illangasekare, T. see Morel-Seytoux, Hubert J.
- Imbus, Scott W.; and Ting, Francis T. C. Petrographic characterization and classification of oil shales [abstr.]: in Proceedings of the Fifty-eighth annual session of the West Virginia Academy of Science (Keller, E. C., Jr., editor), Proceedings of the West Virginia Academy of Science, Vol. 55, No. 1, p. 18-19, April 1983.
- Imlay, R. W. Jurassic (Oxfordian and late Callovian) ammonites from the Western Interior region of the United States: Geological Survey Professional Paper, Vol. 1232, 44 p., illus. (incl. 7 tables, 26 plates, sects., sketch maps), 48 ref., 1982.

- Ingamells, C. O.** From the mountain to the balance pan: *in* Proceedings of the Symposium on chemical analysis of geological materials; techniques, applications and interpretation (Chowdhury, A. N., editor; *et al.*), Special Publication - Geological Survey of India, Vol. 1, p. 1-12, illus. (incl. 3 tables), 4 ref., 1980.
- Ivey, John B.; and Hanson, Jerome B.** Engineering geology, relocation of State Highway 91, Climax Mine area, Summit County, Colorado: *in* Proceedings of the 33rd annual highway geology symposium; engineering geology and environmental constraints (Hynes, Jeffrey L., editor), Special Publication - Colorado Geological Survey, Vol. 22, p. 30-61, illus. (incl. geol. maps), 10 ref., 1983.
- Jaacks, J. A.; and Klusman, R. W.** Seasonal and short-term variations in gas emission at an aseismic site [abstr.]: *in* American Geophysical Union; 1981 fall meeting (Anonymous), Eos, Transactions, American Geophysical Union, Vol. 62, No. 45, p. 962-963, November 10, 1981.
- Jacobson, Mark I.; and Tilander, Nathaniel G.** A lithium-bearing pegmatite in the Clear Creek District, Clear Creek County, Colorado: Rocks and Minerals, Vol. 57, No. 6, p. 241-244, illus. (incl. sketch maps), 4 ref., December 1982.
- Jamison, William R.; and Stearns, David W.** Tectonic deformation of Wingate Sandstone, Colorado National Monument: AAPG Bulletin, Vol. 66, No. 12, p. 2584-2608, illus. (incl. sketch maps), 43 ref., December 1982.
- Janak, Pete M.** see Schneider, William A.
- Jarrett, R. D.** see Cochran, B. J.
- see Elliott, J. G.
- Jayaprakash, G.** see Zeller, E. J.
- Jeffrey, Thomas J.** Waverly Complex: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 512-521, illus. (incl. struct. map), 3 ref., 1983.
- Jehn, James L.** Rehabilitation techniques on three deep wells in the Denver Basin, Colorado [abstr.]: *in* Summaries of papers presented at Tech Education Program during 1982 International Expo (Anonymous), Ground Water, Vol. 21, No. 2, p. 226, April 1983. International Water Well Expo, NWWA's Ground-Water Technology Division Education Program.
- Johnson, R. C.** Measured section of the Upper Cretaceous Mesaverde Formation and lower part of the lower Tertiary Wasatch Formation, Rifle Gap, Garfield County, Colorado: Open-File Report (United States Geological Survey, 1978), 11 p., illus. (incl. strat. col., sketch map), 7 ref., 1982. (Rep. No. 82-0590) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Johnson, R. C.; Granica, M. P.; and Dessenberger, N. C.** Cross section A-A' of Upper Cretaceous and lower Tertiary rocks, southern Piceance Creek basin, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1130-A, 2 sheets, sect., geol. map, 1979. Reprint.
- Johnson, R. C.; Granica, M. P.; and Dessenberger, N. C.** Cross section B-B' of Upper Cretaceous and lower Tertiary rocks, southern Piceance Creek basin, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1130-B, 2 sheets, sect., 1979. Reprint.
- Johnson, R. C.; Granica, M. P.; and Dessenberger, N. C.** Cross section C-C' of Upper Cretaceous and lower Tertiary rocks, southern Piceance Creek basin, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1130-C, 2 sheets, sect., 1979. Reprint.
- Johnson, Verner C.** see McCann, Dan W.
- Jones, Bob.** Pyrite and fluorite: Rock & Gem, Vol. 12, No. 12, p. 40-47, 79, illus., December 1982.
- Jonson, David.** The Fortune vein group and associated Manto orebodies, Resurrection Mine area, Northeast Leadville mining district, Colorado: *in* Aspen, Grizzly Peak, Leadville, Colorado; Denver Region Exploration Geologists' Society 1982 field trip (Pansze, Art, leader; *et al.*), Denver Reg. Explor. Geol. Soc., Denver, CO, United States, unpaginated, illus. (incl. sects., strat. cols., sketch map), 20 ref., 1982.
- Jordan, J. M.; Pritchard, J. I.; Renick, H.; et al.** Exploring for subtle sandstone channels by use of electrical geophysics [abstr.]: *in* AAPG-SEG-SEPM Pacific Section meeting (Anonymous), AAPG Bulletin, Vol. 66, No. 10, p. 1691, October 1982.
- Journel, A. G.** see Froidevaux, R.
- Junge, W. Rahe.** Geologic hazards in the North Fork of the Gunnison River area, Delta and Gunnison counties, Colorado: *in* Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 83-86, illus. (incl. geol. sketch map), 8 ref., 1982.
- Junge, W. Rahe; and Kirkham, Robert M.** An overview of earthquake hazards in Colorado [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 21-22, 1981.

- K. W. Nickerson & Associates. Waunita Hot Springs project, Gunnison County, Colorado: in Geothermal resources assessment of Waunita Hot Springs, Colorado (Zacharakis, Ted G., editor), Special Publication - Colorado Geological Survey, Vol. 16, p. 1-16, 1 table, sketch maps, 2 ref., 1981. (Rep. No. DOE/ET/28365-14) available from: U. S. Dep. Energy, United States.
- Kalliokoski, J. O. see Billings, Patty
- Kaltenbacher, Kathy see Cox, Kathleen L.
- Karimpour, Mohammad Hassan. Petrology, geochemistry, and genesis of the A.O. porphyry copper complex in Jackson and Grand counties, northwestern Colorado: 551 p., Doctoral, 1982, Univ. of Colorado, Boulder, CO. available from: Univ. Microfilms.
- Kauffman, E. G. see Arthur, M. A.
- Kaufman, L. P. see Chang, N. Y.
- Kaupp, V. see MacDonald, H.
- Keil, K. see Floran, R. J.
- Kelkar, Sharad M. see Ahmed, Usman
- Keller, G. R. see Cordell, Lindrith
- Kellerhals, Rolf. Yampa River: in Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction (Simons, Daryl B., editor; et al.), p. 47-54, illus., 9 ref., September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Kellogg, Harold E. see Coalson, Edward
- Kelly, W. C., III see Lee, Martin
- Kelso, Bruce S.; Ladwig, L. R.; and Sitowitz, Linda. Directory of permitted Colorado coal mines, 1981: Map Series - Colorado Geological Survey, Vol. 15, 130 p., 1981.
- Kent, Harry C. see Haun, John D.
- Kidwell, Michael R. see Orchard, David M.
- Kidwell, Mike; and McKenna, Phillip. Cheyenne Wells-Smoky Creek fields: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 108-113, illus. (incl. sketch map), 4 ref., 1983.
- Kihl, R. see Andrews, John T.
- Kim, K. C. see Cuffey, R. J.
- Kimball, B. A. see Holmes, W. F.
- see Lindskov, K. L.
- Kimball, Briant A. Trace elements in suspended sediment, southeastern Uinta Basin, Utah and Colorado: 83 p., Doctoral, 1981, Univ. of Wyoming, Laramie, WY. available from: Univ. Microfilms.
- Kimball, Dan B. Case history; ground-water monitoring at an underground coal mine in West Central Colorado [abstr.]: in Proceedings of the Symposium on practical ground-water monitoring considerations for the mining industry (U. S., National Water Well Association), Ground Water Monitoring Review, Vol. 3, No. 1, p. 151, 1983.
- Kindley, Mark. Interest grows in coal bed methane, technological, legal problems persist: AAPG Explorer, Vol. 4, No. 3, p. 1, 6, November 1982.
- King, J. R. see Lindemann, J. W.
- King, Robert see Montazer, Parviz
- Kirk, A. R.; Billings, Patty; and Sanford, R. F. (investigators). Mine studies, Lake City, Colorado [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 9-10, 1982 [1983].
- Kirkham, Robert M. Field trip road log guide; late Tertiary and Quaternary faulting in central Colorado: in Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 38-52, sketch map, 13 ref., 1981.
- Kirkham, Robert M.; and Colman, Steven M. An overview of the tectonic history of Colorado, with emphasis on the Cenozoic [abstr.]: in Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 16-19, 9 ref., 1981.
- Kirkham, Robert M.; and Ladwig, L. R. Coal resources of the Denver and Cheyenne basins, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 5, 70 p., illus. (incl. 4 tables, sketch maps; geol. maps 1:50,000), 113 ref., 1979.
- Kirkham, Robert M. see also Junge, W. Rahe
- Kirkpatrick, Terry. Little Hoot and Little Hoot South fields: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 290-295, illus. (incl. struct. map), 2 ref., 1983.
- Kirr, James N.; and Evans, David D. Geology and production of Western oil shales: in

- Symposium papers; synthetic fuels from oil shale II (Tarman, Paul B., chairperson; *et al.*), *Inst. Gas Technol.*, Chicago, IL, United States, p. 25-42, 3 tables, sect., sketch maps, 14 ref., March 1982.
- Kiteley, Louise W.** Paleogeography and eustatic-tectonic model of late Campanian (Cretaceous) sedimentation, southwestern Wyoming and northwestern Colorado: *in* Mesozoic paleogeography of the West-Central United States (Reynolds, Mitchell W., editor; *et al.*), *Rocky Mountain Paleogeography Symposium*, Vol. 2, p. 273-303, illus. (incl. sects., block diag., sketch maps), 75 ref., 1983.
- Klahn, Louis J., Jr.; and Doveton, John H.** Utilization of interactive computer graphics to solve complex geological problems; a case study [abstr.]: *in* AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), *AAPG Bulletin*, Vol. 66, No. 5, p. 588, May 1982.
- Klahn, Louis J., Jr.; and Doveton, John H.** Use of interactive computer graphics to solve complex geological problems; a case study [abstr.]: *in* AAPG research conference: Interactive computer applications in petroleum exploration (Anonymous), *AAPG Bulletin*, Vol. 66, No. 10, 1705 p., October 1982.
- Klein, D. P.** Slides showing aeromagnetic and gravity data for regional mineral exploration in Colorado, New Mexico, and Arizona: Open-File Report (United States Geological Survey, 1978), 10 p., 5 slides, illus., 1983. (Rep. No. 83-0443) print, 35-mm color slides available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Klein, D. P.** see also Boler, F. M.
- Kleinkopf, M. D.** see Boler, F. M.
- Klusman, R. W.; Voorhees, K. J.; and Hickey, J. C.** An integrative gas geochemical technique for surficial petroleum exploration [abstr.]: *in* The 36th annual Midwestern exploration meeting of SEG (Anonymous), *Geophysics*, Vol. 48, No. 6, p. 806, June 1983.
- Klusman, R. W.** see also Hickey, J. C.
- see also Jaacks, J. A.
- Klusman, Ronald W.; and Voorhees, Kent J.** A new development in petroleum exploration technology: *Mines Magazine*, Vol. 73, No. 3, p. 6-10, sketch maps, March 1983.
- Knepper, D. H., Jr.** Lineaments derived from analysis of linear features mapped from Landsat images of the Four Corners region of the Southwestern United States: Open-File Report (United States Geological Survey, 1978), 81 p., illus. (incl. sketch maps; tect. map 1:1,000,000), 45 ref., 1982. (Rep. No. 82-0849) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Knutson, Carroll F.; and Dana, George F.** Developments in oil shale in 1981: *in* World energy developments 1981 (Anonymous), *AAPG Bulletin*, Vol. 66, No. 11, p. 2509-2525, illus. (incl. 5 tables, sketch maps), 28 ref., November 1982.
- Koch, G. S.** see Howarth, R. J.
- Kocurek, G.** Erg reconstruction; the Entrada Sandstone (Jurassic) of northern Utah and Colorado: *Palaeogeography, Palaeoclimatology, Palaeoecology*, Vol. 36, No. 1-2, p. 125-153, illus. (incl. sketch map), 3 p. ref., 1981.
- Kocurek, Gary; and Dott, Robert H., Jr.** Jurassic paleogeography and paleoclimate of the central and southern Rocky Mountain region: *in* Mesozoic paleogeography of the West-Central United States (Reynolds, Mitchell W., editor; *et al.*), *Rocky Mountain Paleogeography Symposium*, Vol. 2, p. 101-116, illus. (incl. sect., geol. sketch maps), 80 ref., 1983.
- Koelme, Mark.** Paleotectonic, stratigraphic, and diagenetic history of Rangely area, Colorado [abstr.]: *in* AAPG Rocky Mountain Section meeting (Anonymous), *AAPG Bulletin*, Vol. 67, No. 8, p. 1346, August 1983.
- Kohout, Julie** see Peterson, R. E.
- Konikow, L. F.** Modeling chloride movement in the alluvial aquifer at the Rocky Mountain Arsenal, Colorado: *Geological Survey Water-Supply Paper* (Washington), Vol. 2044, 43 p., illus. (incl. 3 tables, sketch maps), 28 ref., 1974. Reprint.
- Konikow, L. F.** Role of solute-transport models in the analysis of groundwater salinity problems in agricultural areas: *in* Land and stream salinity seminar and workshop (Anonymous), *Agric. Water Manage.*, Vol. 4, No. 1-3, p. 187-205, illus. (incl. 1 table, sketch maps), 20 ref., August 1981.
- Konikow, L. F.; and Thompson, D. W.** Groundwater contamination and aquifer reclamation at the Rocky Mountain Arsenal, Colo. [abstr.]: *in* American Geophysical Union; 1981 fall meeting (Anonymous), *Eos, Transactions, American Geophysical Union*, Vol. 62, No. 45, p. 865, November 10, 1981.
- Kono, Masaru; and Ueno, Naoko.** Paleointensity determination by a modified Thelliers' method: *Rock Magnetism and Paleogeophysics*, Vol. 3, p. 61-66, illus. (incl. 2 tables), 8 ref., 1975.
- Kono, Masaru** see also Tanaka, Hidefumi
- Konrad, Dwayne E.** State report; Colorado: *in* Proceedings, Ground Water Management Districts Association, 4th annual conference (Orton, Lee, chairperson; *et al.*), Proceedings -

- Ground Water Management Districts Association. (U. S. ) Conference, Vol. 4, p. 65-66, 1977.
- Kornblau, M. L.; and Cipra, J. E. Investigation of digital Landsat data for mapping soils under range vegetation: Remote Sensing of Environment, Vol. 13, No. 2, p. 103-112, illus. (incl. 2 tables, sketch maps), 14 ref., May 1983.
- Kornfeld, Joseph A. 1,500 wells expected to develop Wattenberg Field: World Oil, Vol. 173, No. 6, p. 78-79, 1 table, sketch map, November 1971.
- Kornfeld, Joseph A. Interest is high in new East Colorado oil play: World Oil, Vol. 172, No. 2, p. 55, February 1, 1971.
- Kornfeld, Joseph A.; and Travis, Maury M. Colorado oil strikes may mark North Park Basin comeback: World Oil, Vol. 174, No. 4, p. 57-58, 1 table, sketch map, March 1972.
- Kornfeld, Joseph A.; and Travis, Maury M. Cretaceous gas/oil strikes spur Four Corners drilling: World Oil; Vol. 175, No. 7, p. 71-74, geol. sketch map, December 1982.
- Kron, A. see Baldrige, W. S.
- Krothe, N. C.; Oliver, J. W.; and Weeks, J. B. Dissolved solids and sodium in water from the High Plains Aquifer in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming: Hydrologic Investigations Atlas, HA-0658, 2 sheets, hydrogeol. map 1:2,500,000, 1982.
- Krsmanovic, V. D. see Vitorovic, D.
- Krusi, Alan P. see Darrow, Arthur C.
- Kuhn, Gerhard; Daddow, P. D.; and Craig, G. S. Hydrology of area 54, Northern Great Plains and Rocky Mountain coal provinces, Colorado and Wyoming: Open-File Report (United States Geological Survey, 1978), 186 p., 1983. (Rep. No. 83-0146) available from: U. S. Geol. Surv., Water Resour. Div., Denver, CO, United States. Water-resources investigations.
- Labadie, J. W. see Lazaro, R. C.
- Labadie, John W. see Andreu, Joaquin
- LaBounty, James F. see Boehmke, John R.
- Ladwig, L. R. see Kelso, Bruce S.  
-- see Kirkham, Robert M.
- Landis, E. R. see Ellis, Margaret
- Landis, G. P. (investigator). Ore genesis processes at Gilman-Leadville [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 7, 1982 [1983].
- Lane, M. E. see Sharp, W. N.
- Lange, Al. Cowboy Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 130-133, illus. (incl. sketch map), 1983.
- Lange, Al. Rita Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 430-433, illus. (incl. struct. map), 1983.
- Lange, Al. Smoky Hill Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 465-467, illus. (incl. sketch map), 1983.
- Lange, Arthur L. The geophysical environment around Waunita Hot Springs: in Geothermal resources assessment of Waunita Hot Springs, Colorado (Zacharakis, Ted G., editor), Special Publication - Colorado Geological Survey, Vol. 16, p. 52-55, geol. sketch maps, 1981. (Rep. No. DDE/ET/28365-14) available from: U. S. Dep. Energy, United States.
- Larkin, Robert P. Geological education and the senior citizen: Journal of Geological Education, Vol. 30, No. 5, p. 302-303, illus., 6 ref., November 1982.
- Larone, J. B.; and Shen, H. W. Temporal and spatial variations of solute pickup during runoff generation in saline hillslopes: in Modeling components of hydrologic cycle (Singh, Vijay P., editor), Water Resour. Publ., Littleton, CO, United States, p. 449-462, illus. (incl. sketch map), 21 ref., 1982.
- Larsen, D. M. see Narten, P. F.
- Larson, Robert T. Blackjack Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 62-65, illus. (incl. sketch map), 1983.
- Lavender, David. Colorado River country: E. P. Dutton, New York, NY, United States, 238 p., illus., 300 ref., 1982.
- Law, B. E. see Bader, J. W.
- Law, R. E.; and Smith, C. R. Subsurface temperature map showing depth to 180 degrees Fahrenheit in the Greater Green River basin of Wyoming, Colorado, and Utah: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1504, 1 sheet, geophys. surv. map 1:500,000, 1983.
- Lawrence, V. A. see Budding, K. E.
- Lazaro, R. C.; Labadie, J. W.; and Salas, J. D. State-space streamflow forecasting model for optimal river basin management: in Decision

- making for hydrosystems; forecasting and operation (Unny, T. E., editor; *et al.*), *Water Resour. Publ.*, Littleton, CO, United States, p. 325-348, illus. (incl. 2 tables), 18 ref., 1982. International symposium on real-time operation of hydrosystems.
- LeAnderson, Jim; Ludington, Steve; and Bookstrom, Art (conveners).** Origin of fluids and metals in porphyry and epithermal mineral deposits: *Geology (Boulder)*, Vol. 11, No. 9, p. 557-558, September 1983. Penrose Conference report.
- Leanderson, P. J.** see Pillmore, Kathryn A.
- Lee, Kwang K.** see Smith, John Ward
- Lee, M. W.** see Searls, C. A.
- Lee, Martin; and Kelly, W. C., III.** Beall Creek Field: *in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982* (Crouch, Marshall C., III, editor), *Rocky Mt. Assoc. Geol.*, Denver, CO, United States, p. 42-45, illus. (incl. sketch map), 4 ref., 1983.
- Lehtola, Kathleen A.** Articulated Ordovician fish from Canon City, Colorado: *Journal of Paleontology*, Vol. 57, No. 3, p. 605-607, illus., 5 ref., May 1983.
- Leifer, R.** see Sedlacek, W. A.
- Lewis, A.** Silver State Mining Corp.; producing gold for 160 dol/oz in Victor, Colorado: *E & MJ, Engineering and Mining Journal*, Vol. 183, No. 10, p. 102-105, 1982.
- Li Ruh-Ming.** Downstream river morphological changes from proposed reservoir construction on the Yampa River, Colorado: *in Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction* (Simons, Daryl B., editor; *et al.*), p. 55-78, illus. (incl. sketch map), 2 ref., September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Li, Ruh-Ming; and Simons, D. B.** Geomorphological and hydraulic analysis of mountain streams: *in Gravel-bed rivers; fluvial processes, engineering and management* (Hey, R. D., editor; *et al.*), John Wiley, Sons, United Kingdom, p. 425-441, illus. (incl. 4 tables, sketch map), 1 ref., 1982. International workshop on engineering problems in the management of gravel-bed rivers.
- Lichte, F. E.** see Crock, J. G.
- Lindemann, J. W.; Babcock, J. W.; and King, J. R. (editors).** Field trip notes; Creede mining district, San Juan volcanic province, Colorado: *Denver Reg. Explor. Geol. Soc.*, Denver, CO, United States, 63 p., illus. (incl. sects., block diags., geol. sketch maps; colored geol. map 1:62,500), 101 ref., 1981. Individual papers are cited separately.
- Lindemann, J. W.** see also Weiland, E. F.
- Lindsay, W. L.** see Norvell, W. A.
- see Schwab, A. P.
- Lindsey, D. A.; Ashe, S. J.; and Clark, R. F. (investigators).** Copper and uranium in sediments shed from the ancestral Rocky Mountains [abstr.]: *in Geological Survey research 1982, Geological Survey Professional Paper*, Vol. 1375, p. 8, 1982 [1983].
- Lindsey, David A.; Clark, Reino F.; Ashe, Sandra J.; et al.** Minturn and Sangre de Cristo formations of southern Colorado; a prograding fan-delta to alluvial-fan sequence shed from ancestral Rocky Mountains [abstr.]: *in AAPG Rocky Mountain Section meeting (Anonymous), AAPG Bulletin*, Vol. 67, No. 8, p. 1348, August 1983.
- Lindskov, K. L.; and Kimball, B. A.** Quantity and quality of streamflow in the southeastern Uinta Basin, Utah and Colorado: *Open-File Report (United States Geological Survey)*, 1978), 206 p., illus. (incl. 13 tables, sketch maps), 55 ref., 1982. (Rep. No. 82-0688) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Lindskov, K. L.; and Kimball, B. A.** Water resources and potential hydrologic effects of oil-shale development in the southeastern Uinta Basin, Utah and Colorado: *Open-File Report (United States Geological Survey)*, 1978), 100 p., illus. (incl. 3 tables, sketch maps), 50 ref., 1983. (Rep. No. 83-0216) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Lindvall, R. M.** Geologic map of the Sable Quadrangle, Adams and Denver counties, Colorado: *Geologic Quadrangle Map - U. S. Geological Survey, GQ-1567*, 1 sheet, geol. map 1:24,000, 1983.
- Lines, G. C.** Hydrology of area 56, Northern Great Plains and Rocky Mountain coal provinces, Utah and Colorado: *Open-File Report (United States Geological Survey)*, 1978), 47 p., 1983. (Rep. No. 83-0038) available from: U. S. Geol. Surv., Water Resour. Div., Salt Lake City, UT, United States. Water-resources investigations.
- Litaor, M.** see Andrews, John T.
- Litner, S. F.** see Narten, P. F.
- Lockley, Martin G.; Young, Bennett H.; and Carpenter, Kenneth.** Hadrosaur locomotion and herding behavior; evidence from footprints in the Mesaverde Formation, Grand Mesa coal field, Colorado: *The Mountain Geologist*, Vol. 20, No. 1, p. 5-13, illus. (incl. 1 table,



- sect., strat. col., geol. sketch map), 23 ref., January 1983.
- Loeffler, M. John.** Australian-American interbasin water transfer: Annals of the Association of American Geographers, Vol. 60, No. 3, p. 493-516, illus. (incl. 4 tables, sketch maps), September 1970.
- Loehr, William** see Warren, Peter
- Logan, John M.** Rock fabric and hydraulic fracturing; the implications for in-situ stress measurements and permeability enhancement: in Proceedings of the 24th U.S. symposium on rock mechanics; theory, experiment, practice (Mathewson, Christopher C., editor; *et al.*), Proceedings - Symposium on Rock Mechanics, Vol. 24, p. 751-760, illus. (incl. 3 tables), 16 ref., 1983.
- Lorenz, J. C.** Lateral variability in the Concoran and Cozzette blanket sandstones and associated Mesaverde rocks, Piceance Creek basin, northwestern Colorado: in Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 81-86, sketch maps, 6 ref., 1983. SPE/DOE 11608.
- Losh, S. L.** see Ostenaa, Dean A.
- Lowry, R. K.** see Howarth, R. J.
- Lucas, Spencer G.; and Rasmussen, T. E.** Fossil vertebrates from the Upper Cretaceous Williams Fork Formation (Mesaverde Group), Piceance Creek Basin, northwestern Colorado [abstr.]: in Geological Society of America, Rocky Mountain Section, 36th annual meeting; Cordilleran Section, 79th annual meeting, Abstracts with Programs - Geological Society of America, Vol. 15, No. 5, p. 292, March 1983.
- Luckey, R. R.; and Ferrigno, C. F.** A data management system for areal interpretive data for the High Plains in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming: Water-Resources Investigations, 118 p., 1982. (Rep. No. 82-4072) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Luckey, R. R.** see also Heimes, F. J.
- Ludington, S.** see Desborough, G. A.
- Ludington, Steve** see LeAnderson, Jim
- Ludlam, J. R.** see Goodknight, C. S.
- Luft, Stanley J.** see Craig, Lawrence C.
- Lund, Merle.** And they hunted rocks merrily, forever after: Jewelry Making Gems & Minerals, Vol. 535, p. 50-52, illus. (incl. sketch map), May 1982.
- Lupe, Robert D.** see Campbell, John A.
- Luttrell, Mark D.** see Dayvault, Richard D.
- Lux, D. R.** see Rice, C. M.
- Lysne, Peter C.** see Schuler, K. W.
- Lystrom, D. J.** see Hawkinson, R. O.
- MacAlpine, Steve.** Loma Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 296-299, illus. (incl. struct. map), 1983.
- MacDonald, H.; Bridges, L.; Waite, W.; et al.** Shuttle imaging radar; geologic applications: in 1982 ACSSM-ASP fall convention (Cardwell, Fred S., editor; *et al.*), Technical Papers of the American Congress of Surveying and Mapping, Fall Technical Meeting, Vol. 1982, p. 272-281, illus., 11 ref., 1982.
- MacFadden, Bruce J.** see Woodburne, M. O.
- Macintyre, R. M.** see Rice, C. M.
- Mackelprang, Claron E.** Interpretation of geophysical data from the Colado KGRA, Pershing County, Nevada: 27 p., illus., geol. maps 1:24,000, April 1982. (Rep. No. DOE/ID/12079-58) (Rep. No. ESL-71) available from: Univ. Utah Res. Inst., Earth Sci. Lab., Salt Lake City, UT, United States.
- MacPherson, Bruce A.** Geology and uranium deposits of Tallahassee Creek District, Fremont County, Colorado [abstr.]: in 1981 AAPG annual convention with division; SEPM/EMD/DPA, AAPG Bulletin, Vol. 65, No. 5, p. 952, May 1981.
- Madole, R. F.** Surficial geologic map of the Craig 1/2 degrees by 1 degrees Quadrangle, Moffat and Routt counties, Colorado: Miscellaneous Investigations Series - U. S. Geological Survey, I-1346, 1 sheet, map 1:100,000, 1982 [1983].
- Madole, Richard F.** Probable nonglacial origin of "till" in the mountains of north-central Colorado [abstr.]: in Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 219, February 1981.
- Madole, Richard F.; Swinehart, James B.; and Muhs, Daniel R.** Correlation of Holocene dune sands on the central Great Plains and their paleoclimatic implications [abstr.]: in The Geological Society of America, North-Central Section, 15th annual meeting; with North-Central section of the Paleontological Society and the Pander Society (Biggs, Donald L., chairperson), Abstracts with Programs -

- Geological Society of America, Vol. 13, No. 6, p. 287, March 1981.
- Major, Maurice W.** The Rocky Mountain Arsenal well and the Denver earthquakes [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 23, 1981.
- Majors, Thomas J.** Ground water use in Colorado: *in* Proceedings, Ground Water Management Districts Association, 4th annual conference (Orton, Lee, chairperson; et al.), Proceedings - Ground Water Management Districts Association. (U. S. ) Conference, Vol. 4, p. 5-6, 1977.
- Makarechi, Houman** see Chang, N. Y.
- Malan, Roger C.** Geology of uranium deposits in the northern part of the Rocky Mountain Province of Colorado: 102 p., illus. (incl. geol. maps), 73 ref., October 1965 [May 1983]. (Rep. No. AEC-RD-14) available from: U. S. At. Energy Comm., Grand Junction Off., Grand Junction, CO, United States. Includes transparencies.
- Malan, Roger C.** Geology of uranium deposits in the southern part of the Rocky Mountain Province of Colorado: 69 p., illus. (incl. geol. maps), 40 ref., July 1983. (Rep. No. AEC-RD-15) available from: Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. Includes transparencies.
- Malocsay, Zoltan.** Mount Antero crystal; the Colorado Hills are alive with the sounds of rock picks: *Rock & Gem*, Vol. 13, No. 9, p. 48-51, illus., September 1983.
- Malone, R. F.; Grenney, W. J.; and Bowles, D. S.** Reliability of salinity predictions for the Colorado River: *in* The environmental impact of man's use of water; I, Proceedings of a specialised conference of the IAWPR (Jenkins, S. H.), *Water Science and Technology*, Vol. 13, No. 6, p. 223-232, illus. (incl. 2 tables, sketch map), 5 ref., 1981.
- Mansure, Arthur J.** see Reiter, Marshall
- Mark, W. P.** see McLennan, J. D.
- Marks, Janet E.; and Marrs, Ronald W.** Remote sensing exploration for poorly exposed kimberlite in the Colorado-Wyoming region [abstr.]: *in* Genesis and exploration of metallic and nonmetallic mineral and ore deposits of Wyoming and adjacent areas (extended abstracts) (Hausel, W. Dan, editor; et al.), Public Information Circular - Geological Survey of Wyoming, Vol. 19, p. 11-13, 1983. Joint conference of the Geological Survey of Wyoming, Wyoming Geological Association, and the University of Wyoming, Department of Geology and Geophysics; annual spring conference.
- Marrs, Ronald W.** see Marks, Janet E.
- Martell, Charles** see Condie, Kent C.
- Martin, R. A.** see Abrams, G. A.
- see Sharp, W. N.
- Martin, Richard A., Jr.** see Sullivan, J. Timothy
- Martinez, C.; and Duey, Herb.** Rulison Field, Wasatch and Mesaverde: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), *Rocky Mt. Assoc. Geol.*, Denver, CO, United States, p. 442-449, illus. (incl. sketch maps), 3 ref., 1983.
- Maslyn, Mark.** Mega-scallops in the Cave of the Winds, Manitou Springs, Colorado [abstr.]: *in* 1982 National Speleological Society convention abstracts (Dougherty, Percy H., editor), *Geo/2*, Vol. 10, No. 1, p. 11, 1982.
- Maslyn, R. Mark.** Fossil tower karst near Molas Lake, Colorado: *The Mountain Geologist*, Vol. 14, No. 1, p. 17-25, illus. (incl. sketch map), 8 ref., January 1977.
- Maslyn, R. Mark.** Petroleum exploration; real world examples using microcomputers [abstr.]: *in* AAPG research conference; Interactive computer applications in petroleum exploration (Anonymous), *AAPG Bulletin*, Vol. 66, No. 10, p. 1705, October 1982.
- Maslyn, R. Mark.** Barrel Springs Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), *Rocky Mt. Assoc. Geol.*, Denver, CO, United States, p. 22-27, illus. (incl. sects., sketch maps), 1983.
- Massoth, Terry W.** Depositional environments of a surface coal mine in Northwest Colorado: *in* Proceedings; Fifth symposium on the geology of Rocky Mountain coal, 1982 (Gurgel, Klaus D., editor), *Bulletin - Utah Geological and Mineral Survey*, Vol. 118, p. 115-120, illus. (incl. block diags.), 5 ref., May 1982.
- Matuszczak, R. A.** Longhorn Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), *Rocky Mt. Assoc. Geol.*, Denver, CO, United States, p. 314-317, illus. (incl. struct. map), 2 ref., 1983.
- Maura, W. S.** Water-quality data for streams in the southern Yampa River basin, northwestern Colorado: Open-File Report (United States Geological Survey, 1978), 116 p., 2 tables, index map, 2 ref., 1982. (Rep. No. 82-1017) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Maurer, Ruth A.** see Parker, Joni M.

- McCallum, M. E.** Mineralogical and textural-genetic classification of northern Colorado-southern Wyoming kimberlites [abstr.]: *in* Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 219, February 1981.
- McCallum, M. E.** *see also* Bradley, S. D.
- *see also* Pearson, R. C.
- McCalpin, James.** Neotectonics of the northern Sangre de Cristo Mountains, south-central Colorado [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 33, 1981.
- McCalpin, James.** Late Pleistocene glacier dynamics of the west flank of the northern Sangre de Cristo Mountains, south-central Colorado [abstr.]: *in* Character and timing of rapid environmental and climatic changes (Markgraf, Vera, chairperson; *et al.*), Am. Quat. Assoc., Natl. Conf., Abstr., Vol. 7, p. 134, 1982. Seventh biennial conference of the American Quaternary Association.
- McCalpin, James.** The geologic review process at the local government level; a county geologist's perspective [abstr.]: *in* Geological Society of America, Rocky Mountain Section, 36th annual meeting; Cordilleran Section, 79th annual meeting, Abstracts with Programs - Geological Society of America, Vol. 15, No. 5, p. 290, March 1983.
- McCalpin, James** *see also* Colman, Steven M.
- McCalpin, James P.** Quaternary geology and neotectonics of the west flank of the northern Sangre de Cristo Mountains, south-central Colorado: Colorado School of Mines Quarterly, Vol. 77, No. 3, 97 p., illus. (incl. 21 tables, sects., block diags., strat. cols., sketch maps; geol. map 1:116,700), 107 ref., July 1982.
- McCardle, Lauri** *see* Dickinson, Kendall A.
- McCarn, Dan W.; Johnson, Verner C.; and Theis, Nicholas J.** La Junta Quadrangle, Colorado and Kansas: 27 p., illus. (incl. econ. geol. maps 1:500,000; geochem. maps 1:500,000), 62 ref., September 1982. (Rep. No. PGJ/F-100(82)) *available from:* Bendix Field Eng. Corp., Tech. Libr., Grand Junction, CO, United States. National Uranium Resource Evaluation Program; includes microfiche.
- McCarthy, Kevin P.** Helium exploration survey for the Animas Valley, Colorado: Bulletin - Geothermal Resources Council, Vol. 12, No. 7, p. 9-14, illus. (incl. 2 tables, sketch maps), 14 ref., July 1983.
- McCarthy, Kevin P.; Been, Josh M.; Reimer, G. M.; et al.** Helium and ground temperature surveys at Steamboat Springs, Colorado: *in* Geothermal Direct Heat Program; roundup technical conference proceedings; Volume I; papers presented; State Coupled Resource Assessment Program (Ruscetta, Carl A., editor), p. 64-75, 1 table, sketch maps, 25 ref., July 1982. (Rep. No. DOE/ID/12079-71) (Rep. No. ESL-98) *available from:* Univ. Utah Res. Inst., Earth Sci. Lab., Salt Lake City, UT, United States.
- McCarthy, Kevin P.; Been, Josh M.; Reimer, G. M.; et al.** Helium and ground temperature surveys at Steamboat Springs, Colorado: Geothermal Energy, Vol. 10-12 (9), p. 13-16, 1 table, sketch map, 23 ref., September 1982.
- McCarthy, Kevin P.; Been, Josh M.; Reimer, G. M.; et al.** Helium and ground temperature surveys at Steamboat Springs, Colorado: Special Publication - Colorado Geological Survey, Vol. 21, 11 p., illus. (incl. 1 table, geol. sketch maps), 25 ref., 1982. (Rep. No. DOE/ET/28365-21) *available from:* Colo. Geol. Surv., Dep. Nat. Resour., Denver, CO, United States.
- McCarthy, Kevin P.; Zacharakis, Ted G.; and Pearl, Richard Howard.** Geothermal resource assessment of Hartsel, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 19, 86 p., illus. (incl. 20 tables, geol. sketch maps), 55 ref., 1982. (Rep. No. DOE/ET/28365-19) *available from:* Colo. Geol. Surv., Dep. Nat. Resour., Denver, CO, United States.
- McCarthy, Kevin P.; Zacharakis, Ted G.; and Ringrose, Charles D.** Geothermal resource assessment of the Animas Valley, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 17, 60 p., illus. (incl. 9 tables, sects., sketch maps), 63 ref., 1982. (Rep. No. DOE/ET/28365-18) *available from:* Colo. Geol. Surv., Dep. Nat. Resour., Denver, CO, United States.
- McCaslin, John C.** Denver Basin yields new Cretaceous pay: Oil and Gas Journal, Vol. 80, No. 52, p. 219-220, sketch map, December 27, 1982.
- McCaslin, John C.** Raton Basin commands more wildcat attention: Oil and Gas Journal, Vol. 81, No. 15, p. 127-128, sketch map, April 11, 1983.
- McCormick, C. D.** Ambush Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 6-9, illus. (incl. sketch map), 2 ref., 1983.
- McCullough, M. Bruce; Anderson, David L.; Hawn, William S.; et al.** Soil survey of Custer

- County area, Colorado: U. S. Dep. Agric., Soil Conserv. Serv., Washington, DC, United States, 135 p., illus. (incl. 15 tables; soils maps 1:24,000; colored soils map 1:90,080), 9 ref., August 1982. (Publ. in coop. with Colo. Agric. Exp. Stn.).
- McCullum, Donald C.; and Pease, L. R.** Processing rich or lean oil shales; the Tosco II process: *in* Symposium papers; synthetic fuels from oil shale II (Tarman, Paul B., chairperson; *et al.*), Inst. Gas Technol., Chicago, IL, United States, p. 301-313, illus. (incl. 4 tables, sketch map), March 1982.
- McDonnell, John R.** *see* Dickinson, Kendell A.
- *see* Hills, F. Allan
- McInteer, Carlotta** *see* Beyth, M.
- *see* Beyth, Michael
- McIntyre, John. Longbranch Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 310-313, illus. (incl. struct. maps), 2 ref., 1983.
- McIntyre, John. Totem Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 490-493, illus. (incl. struct. map), 2 ref., 1983.
- McKenna, Phillip** *see* Kidwell, Mike
- McLennan, J. D.; Roegiers, J. C.; and Mark, W. P.** The Mancos Formation; an evaluation of the interaction of geological conditions, treatment characteristics and production: *in* Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 63-72, illus. (incl. 2 tables), 15 ref., 1983. SPE/DOE 11606.
- McWreath, H. C., III** *see* Narten, P. F.
- Meierding, Thomas C.** Late Pleistocene glacial equilibrium-line altitudes in the Colorado Front Range; a comparison of methods: Quaternary Research (New York), Vol. 18, No. 3, p. 289-310, illus. (incl. 4 tables, sketch maps), 74 ref., November 1982.
- Meredith, T. S.** *see* Borman, R. G.
- Meyer, R. F.; and Brown, R. R.** Geophysical logs of nine holes drilled in 1978 in the Yampa coal field, Hamilton and Pagoda quadrangles, Moffat County, Colorado: Open-File Report (United States Geological Survey, 1978), 34 p., 1982. (Rep. No. 82-0475) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Meyer, Richard T.; Coe, Barbara A.; and Dick, Jay D.** Appendices of an appraisal for the use of geothermal energy in state-owned buildings in Colorado; Section A, Alamosa; Section B, Buena Vista; Section C, Burlington; Section D, Durango; Section E, Glenwood Springs; Section F, Steamboat Springs: Colorado Geological Survey Open-File Report, Vol. 81-3, 186 p., illus. (incl. tables, sketch maps), 1981. In six separate appendices.
- Meyer, W. T.** *see* Weiland, E. F.
- Mian, Mohammad Asif.** U-Sand (tight) performance predicted by type curves: Oil and Gas Journal, Vol. 81, No. 22, p. 109-112, illus. (incl. 3 tables), 8 ref., May 30, 1983.
- Middleton, Michael D.** A new species and additional material of *Catopsalis* (Mammalia, Multituberculata) from the Western Interior of North America: Journal of Paleontology, Vol. 56, No. 5, p. 1197-1206, illus. (incl. 3 tables, 1 plate), 13 ref., September 1982.
- Miesse, John V. Beta Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall G., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 46-49, illus. (incl. sketch map), 2 ref., 1983.
- Miesse, John V. McClave Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 346-349, illus. (incl. isopach map), 3 ref., 1983.
- Miesse, John V. Wagon Trail Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 508-511, illus. (incl. sketch map), 1983.
- Miknis, Francis P.** *see* Netzel, Daniel A.
- Miller, Glen A.** Hydrologic and engineering considerations for ground-water monitoring wells at oil shale mines, Piceance and Uinta basins, Colorado and Utah [abstr.]: *in* Proceedings of the Symposium on practical ground-water monitoring considerations for the mining industry (U. S., National Water Well Association), Ground Water Monitoring Review, Vol. 3, No. 1, p. 151, 1983.
- Miller, J. J.** *see* Searls, C. A.
- Miller, Karl A.; and Studebaker, Irving G.** Lateral variation of oil shale grade in the Green River Formation: *in* Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 63-68, illus. (incl. 2 tables, sketch map), 9 ref., 1982.
- Miller, Randy V. Border-May Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent

- areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 74-77, illus. (incl. sketch map), 1983.
- Miller, Randy V. Darby Creek Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 140-143, illus. (incl. sketch map, sect.), 1983.
- Miller, Randy V. Elm Grove Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 166-169, illus. (incl. sketch map, sect.), 1983.
- Minges, D. R.** see Cochran, B. J.
- Missouri River Basin Commission.** Missouri River basin water resources management plan; A comprehensive, coordinated, joint plan for water and related land resources and draft environmental impact statement; Appendix H, Water resources problems and opportunities; Appendix G, State planning objectives: variously paginated, illus. (incl. tables, sketch maps), May 1980. *available from:* Mo. River Basin Comm., Omaha, NE, United States. In three separate texts; draft environmental impact statement.
- Miyazaki, Brent; and Dolson, John.** Lonetree Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 304-309, illus. (incl. isopach maps, sects.), 4 ref., 1983.
- Moench, R. H.** see Tweto, Ogden
- Molenaar, C. M.** Major depositional cycles and regional correlations of Upper Cretaceous rocks, southern Colorado Plateau and adjacent areas: *in* Mesozoic paleogeography of the West-Central United States (Reynolds, Mitchell W., editor; *et al.*), Rocky Mountain Paleogeography Symposium, Vol. 2, p. 201-224, illus. (incl. 2 tables, sects., sketch maps), 47 ref., 1983.
- Montazer, Parviz; Chitombo, Gideon; King, Robert; et al.** Spatial distribution of permeability around CSM/ONWI room, Edgar Mine, Idaho Springs, Colorado: *in* Issues in rock mechanics (Goodman, Richard E., editor; *et al.*), Proceedings - Symposium on Rock Mechanics, Vol. 23, p. 47-56, illus. (incl. 1 table, sketch maps), 5 ref., 1982.
- Moore, Steven B. Nugget Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 358-361, illus. (incl. isopach maps), 3 ref., 1983.
- Morel-Seytoux, Hubert J.; Illangasekare, T.; and Daly, C.** Water allocation management of a reach of the South Platte stream-aquifer system in Colorado: *in* Hydraulic engineering in water resources development and management--La technique hydraulique dans la gestion et le developpement des ressources en eau (Anonymous), Int. Assoc. Hydraul. Res., Congr., Proc., Vol. 18, No. 2, p. 179-186 (incl. French sum.), illus., 9 ref., 1979.
- Morrill, Curtis G.; and Stewart, Scott R.** Park Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 366-371, illus. (incl. isopach map), 1 ref., 1983.
- Morrison, Virginia.** Turning barite into beryl: Lapidary Journal, Vol. 36, No. 8, p. 1428-1429, November 1982.
- Morse, David G.** Paleogeography and tectonic implications of Late Cretaceous to middle Tertiary rocks of southern Denver Basin, Colorado [abstr.]: *in* 1981 AAPG annual convention with divisions; SEPM/EMD/DPA, AAPG Bulletin, Vol. 65, No. 5, p. 961-962, May 1981.
- Morse, David G.** Sedimentology and tectonic implications of Oligocene Castle Rock Conglomerate, southern Denver Basin, Colorado [abstr.]: *in* 1981 AAPG annual convention with divisions; SEPM/EMD/DPA, AAPG Bulletin, Vol. 65, No. 5, p. 962, May 1981.
- Morse, Jerome G.; and Rana, Mahmood H.** New perspectives on radiometric exploration for oil and gas: Oil and Gas Journal, Vol. 81, No. 23, p. 87-90, illus. (incl. 1 table, sects., sketch map), 5 ref., June 6, 1983.
- Morse, Jerome G.; and Rana, Mahmood H.** Surface radiometric mapping in oil and gas exploration [abstr.]: *in* The 36th annual Midwestern exploration meeting of SEG (Anonymous), Geophysics, Vol. 48, No. 6, p. 806, June 1983.
- Moses, Todd.** Early reduction in post-fire erosion rates in the Colorado Front Range [abstr.]: *in* American Geomorphological Field Group; Field trip guidebook, 1982 conference (Leopold, Luna B., editor), American Geomorphological Field Group, United States, p. 140, 1982.
- Moss, C.** see Abrams, G. A.
- Mroz, E. J.** see Sedlacek, W. A.
- Mudgett, Philip B.** see Dickinson, Kendell A.
- see Hills, F. Allan
- Muhs, Daniel R.** see Madole, Richard F.
- Murrey, D. G.** see McCarthy, Kevin P.

- Narten, P. F.; Litner, S. F.; Allingham, J. W.; et al. Reclamation of mined lands in the western coal region: Geological Survey Circular, Vol. 0872, 56 p., illus. (incl. 1 table, sketch maps), 54 ref., 1983.
- Nash, J. Thomas see Dickinson, Kendell A.
- see Hills, F. Allan
- Naten, R. W.; and Fuller, R. H. Selected biological characteristics of streams in the southeastern Uinta Basin, Utah and Colorado: Open-File Report (United States Geological Survey, 1978), 38 p., 1981. (Rep. No. 81-0644) available from: U. S. Geol. Surv., Water Resour. Div., Salt Lake City, UT, United States.
- Neeley, Mark C. see McCullough, M. Bruce
- Nelson, A. R. see Ostenaar, Dean A.
- Nelson, C. E.; and Gallagher, J. R. L. Early Proterozoic origin for uranium mineralization in the Colorado Front Range [abstr.]: in Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 220, February 1981.
- Nelson, G. Allan. Stampede Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 484-489, illus. (incl. sketch map), 2 ref., 1983.
- Nelson, Jon S. Moccasin Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 350-353, illus. (incl. struct. map), 3 ref., 1983.
- Nervick, K. H. see Christopherson, K. R.
- Netzel, Daniel A.; and Miknis, Francis P. Hydrocarbon type analysis of Eastern and Western shale oils produced by the IGT Hytort and Fischer assay processes: in Symposium papers; synthetic fuels from oil shale II (Tarman, Paul B., chairperson; et al.), Inst. Gas Technol., Chicago, IL, United States, p. 229-250, illus. (incl. 7 tables), 9 ref., March 1982.
- Newman, Karl R. Stratigraphic framework of Upper Cretaceous (Campanian) coal in western Colorado: in Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 61-64, illus. (incl. sketch maps), 13 ref., 1982.
- Newton, Elisabeth G. Development of publicly owned oil shale lands of United States; prospect for 1980s [abstr.]: in AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), AAPG Bulletin, Vol. 66, No. 5, p. 612-613, May 1982.
- Nichols, H. see Andrews, John T.
- Nichols, Harvey. Review of the late Quaternary history of vegetation and climate in the mountains of Colorado: in Ecological studies in the Colorado alpine (Halfpenny, James C., editor), Occasional Paper - Colorado, University, Institute of Arctic and Alpine Research, Vol. 37, p. 27-33, illus. (incl. sketch maps), 18 ref., 1982.
- Nkomo, I. T. see Zielinski, R. A.
- Nordin, C. F., Jr. see Petsch, H. E., Jr.
- Nordin, Carl F. Probable impact of proposed reservoirs on several reaches of the Yampa River in Colorado; summary of discussions: in Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction (Simons, Daryl B., editor; et al.), p. 16-20, 2 ref., September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Norris, J. M. see Parker, R. S.
- Norvell, W. A.; and Lindsay, W. L. Estimation of the concentration of  $Fe/3+$  and the  $(Fe/3+)(OH/-)/3$  ion product from equilibria EDTA in soil: Soil Science Society of America Journal, Vol. 46, No. 4, p. 710-715, illus. (incl. 4 tables), 22 ref., August 1982. Colo. State Univ. Agric. Exp. Stn. Sci. Ser.; Paper No. 2162.
- Nydahl, John see Pell, Kynric
- Oberhansley, G. G. Lowry Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 334-337, illus. (incl. struct. maps), 1983.
- Osborne, Harry W. Some "old ideas" still apply to the Denver Basin: AAPG Explorer, Vol. 4, No. 2, p. 20-22, illus., October 1982.
- Obradovich, J. D. see Odien, Gilles S.
- O'Brien, S. M. see Prats, M.
- O'Connell, Anne F. Origin of the Glen Eyrie Member of the Fountain Formation: 174 p., Master's, 1981, Indiana Univ., Bloomington, IN.
- O'Connell, Sidnie see Warren, Peter
- Odien, Robert J. N.E. Riverside II Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 354-357, illus. (incl. isopach map), 2 ref., 1983.

- Odin, Gilles S.; and Obradovich, J. D.** NDS 103; Palaeocene, K-Ar/biotite-pumice, Interior N American Basin [abstr.]: *in* Numerical dating in stratigraphy (Odin, Gilles Serge, editor), John Wiley & Sons, Chichester, United Kingdom, p. 767-768, 1982. (A Wiley-Interscience publ.).
- Odin, Gilles S.; and Obradovich, J. D.** NDS 105; Campanian, K-Ar/minerals-bentonite, Interior N American Basin [abstr.]: *in* Numerical dating in stratigraphy (Odin, Gilles Serge, editor), John Wiley & Sons, Chichester, United Kingdom, p. 769-770, 1982. (A Wiley-Interscience publ.).
- Olgaard, Roger E.** *see* Wicker, Walter L.
- Oliver, J. W.** *see* Krothe, N. C.
- Olsen, Sakiko N.** Open- and closed-system migmatites in the Front Range, Colorado: *American Journal of Science*, Vol. 282, No. 10, p. 1596-1622, December 1982.
- Olyphant, Greg A.** Computer simulation of rock-glacier development under viscous and pseudoplastic flow: *Geological Society of America Bulletin*, Vol. 94, No. 4, p. 499-505, illus. (incl. 5 tables), 22 ref., April 1983.
- Olyphant, Greg A.** Analysis of the factors controlling cliff burial by talus within Blanca Massif, southern Colorado, U.S.A.: *Arctic and Alpine Research*, Vol. 15, No. 1, p. 65-75, illus. (incl. 7 tables, sketch map), 40 ref., February 1983.
- Orchard, David M.; and Kidwell, Michael R.** Morrowan stratigraphy, depositional systems, and hydrocarbon accumulation, Sorrento Field, Cheyenne County, Colorado [abstr.]: *in* Energy impact on the future (Anonymous), AAPG Bulletin, Vol. 67, No. 8, p. 1326, August 1983. AAPG Mid-Continent Section meeting.
- Ostenaar, Dean A.; Losh, S. L.; and Nelson, A. R.** Evidence for recurrent late Quaternary faulting, Sawatch Fault, Upper Arkansas Valley, Colorado [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 27-29, 1 table, 1981.
- Ostenaar, Dean A.** *see also* Colman, Steven M.
- Osterkamp, Waite R.; Curtis, R. E., Jr.; and Crowther, H. G.** Sediment and channel-geometry investigations for the Kansas River bank stabilization study, Kansas, Nebraska, and Colorado: Open-File Report (United States Geological Survey, 1978), 71 p., illus. (incl. sketch maps), 13 ref., 1981. (Rep. No. 81-0128) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- O'Sullivan, R. B.; and Pipringos, G. N.** Stratigraphic sections of Middle Jurassic Entrada Sandstone and related rocks from Dewey Bridge, Utah, to Bridgeport, Colorado: U. S. Geol. Surv., Oil Gas Invest. Charts, OC-0122, 1 sheet, sects., sections, 1983.
- Ottmann, Jeffrey D.** Hydrodynamic entrapment of petroleum in the "J" Sandstone of the Denver Basin, northeastern Colorado: Master's, 1981, Univ. of Houston, Houston, TX.
- Ottmann, Jeffrey D.; and Van Siclen, Dewitt C.** Evolution of formation fluids in "J" sandstone, Denver Basin, Colorado [abstr.]: *in* AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), AAPG Bulletin, Vol. 66, No. 5, p. 615, May 1982.
- Otton, James K.** *see* Dickinson, Kendall A.  
-- *see* Hills, F. Allan
- Pacer, John C.** *see* Bell, Mark W.
- Palacios, Nicolas.** Llano Estacado lake water resources study: *in* Proceedings of the Playa lakes symposium (U. S. Fish and Wildlife Service, Office of Biological Services), p. 15-20, February 1981. (Rep. No. FWS/OBS-81/07) available from: U. S. Fish Wildlife Serv., Off. Biol. Serv., Washington, DC, United States.
- Palmer, B. A.** *see* Gallimore, D. L.
- Pansze, Art; and Crowley, Pat (leaders).** Aspen, Grizzly Peak, Leadville, Colorado: Denver Region Exploration Geologists' Society 1982 field trip: Denver Reg. Explor. Geol. Soc., Denver, CO, United States, unpaginated, illus. (incl. sects., strat. cols., geol. sketch maps; geol. map; site location map 1:24,000), 1982. Includes reprints of articles by Bryant, Bruce; Cruson, Michael; and Tweto, Ogden; contributions by Thompson, Tommy and Jonson, David are cited separately.
- Parker, Joni M.; and Maurer, Ruth A.** An economic feasibility study for a geothermal-coal hybrid power plant in Chaffee County, Colorado: *Colorado School of Mines Quarterly*, Vol. 78, No. 1, 29 p., illus. (incl. 11 tables, geol. sketch map), 66 ref., January 1983.
- Parker, Joni M.** *see also* Dickinson, Kendall A.  
-- *see also* Hills, F. Allan
- Parker, R. S.; and Norris, J. M.** Simulated effects of anticipated coal mining on dissolved solids in selected tributaries of the Yampa River, northwestern Colorado: *Water-Resources Investigations*, 72 p., 1983. (Rep. No. 83-4084) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.

- Parsons, Karen J.** see Hills, F. Allan
- Patt, R. D.; Adams, D. B.; and Collins, D. L.** Hydrologic data from Naval Oil Shale Reserves, Parachute Creek basin, northwestern Colorado, 1975-79: Open-File Report (United States Geological Survey, 1978), 134 p., illus. (incl. 28 tables, sketch maps), 11 ref., 1982. (Rep. No. 82-0696) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO., United States.
- Patten, L. L.** see Pearson, R. C.
- Patterson, Bruce D.** Pleistocene vicariance, montane islands, and the evolutionary divergence of some chipmunks (genus *Eutamias*): *Journal of Mammalogy*, Vol. 63, No. 3, p. 387-398, illus. (incl. 1 table, sketch map), 60 ref., August 1982.
- Payne, John B.; and Scott, Alan J.** Late Cretaceous anastomosing fluvial systems, northwestern Colorado [abstr.]: in AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), AAPG Bulletin, Vol. 66, No. 5, p. 616, May 1982.
- Pearl, Richard Howard; Zacharakis, Ted G.; and Ringrose, Charles D.** Geothermal resource assessment of Hot Sulphur Springs, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 23, 50 p., illus. (incl. 11 tables, sketch maps), 40 ref., 1982. (Rep. No. DOE/ET/28365-23) available from: Colo. Geol. Surv., Dep. Nat. Resour., Denver, CO, United States.
- Pearl, Richard Howard; Zacharakis, Ted G.; and Ringrose, Charles D.** Geothermal resource assessment of the Steamboat-Routt Hot Springs area, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 22, 86 p., illus. (incl. 20 tables), 55 ref., 1983. (Rep. No. DOE/ET/28365-24) available from: Colo. Geol. Surv., Dep. Nat. Resour., Denver, CO, United States.
- Pearl, Richard Howard** see also McCarthy, Kevin P.
- see also Ringrose, Charles D.
- see also Zacharakis, Ted G.
- Pearson, Daniel B.** see Baker, Donald R.
- Pearson, R. C.; Braddock, W. A.; Flanigan, V. J.; et al.** Mineral resources of the Comanche-Big South, Neota-Flat Top, and Never Summer Wilderness Study Area, north-central Colorado: Open-File Report (United States Geological Survey, 1978), 78 p., illus. (incl. 450, 10 tables, sketch maps; maps 1:48,000), 27 ref., 1981. (Rep. No. 81-0578) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Pearson, R. C.; McCallum, M. E.; Griswold, M. L.; et al.** Mineral resources of the Rawah Wilderness, Larimer County, Colorado: Open-File Report (United States Geological Survey, 1978), 30 p., map 1:48,000, 1982. (Rep. No. 82-0376) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Pease, L. R.** see McCullum, Donald C.
- Pell, Kynric; Nydahl, John; Donnelly, Denis; et al.** Geothermal heating of the bridges and tunnels in Glenwood Canyon: in Proceedings of the 33rd annual highway geology symposium; engineering geology and environmental constraints (Hynes, Jeffrey L., editor), Special Publication - Colorado Geological Survey, Vol. 22, p. 168-185, illus. (incl. 3 tables), 5 ref., 1983.
- Perrin, D. R.** see Sedlacek, W. A.
- Petermann, Z. E.** see Zielinski, R. A.
- Peterson, E. J.; and Wagner, P.** Some chemical and mineralogical considerations important for understanding leachate chemistry: in Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 516-528, 5 tables, 14 ref., 1982.
- Peterson, Fred** see Campbell, John A.
- Peterson, R. E.; and Kohout, Julie.** An approximation of continuity of lenticular Mesaverde Sandstone lenses utilizing close-well correlations, Piceance Basin, northwestern Colorado: in Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 95-106, illus. (incl. 2 tables, sketch maps), 12 ref., 1983. SPE/DOE 11610.
- Petsch, H. E., Jr.; Rennick, K. B.; and Nordin, C. F., Jr.** Statistical summaries of selected streamflow data; South Platte River in Colorado and Nebraska, North Platte and Platte rivers in Nebraska: Open-File Report (United States Geological Survey, 1978), 268 p., 1980. (Rep. No. 80-0679) available from: U. S. Geol. Surv., Water Resour. Div., Denver, CO, United States.
- Pfendt, P.; and Vitorovic, D.** Comparative investigation of insoluble organic matter of some ancient sediments by bromination [abstr.]: Abstracts of Reports - International Congress on Organic Geochemistry, Vol. 8, No. 1, p. 126-127, 1977.
- Pfendt, P. A.** see Vitorovic, D.
- Pforzheimer, Harry, Jr.,** Update on Paraho: in Symposium papers; synthetic fuels from oil



- shale II (Tarman, Paul B., chairperson; et al.), Inst. Gas Technol., Chicago, IL, United States, p. 315-322, illus. (incl. sketch map), March 1982.
- Phamwon, Sanguan.** Network model for optimal management of stream-aquifer systems: 284 p., Doctoral, 1982, Colorado State Univ., Fort Collins, CO. *available from:* Univ. Microfilms.
- Phillips, Victor Duzerah, III.** Responses by alpine plants and soils to microtopography within sorted polygons: 219 p., Doctoral, 1982, Univ. of Colorado, Boulder, CO. *available from:* Univ. Microfilms.
- Picard, M. Dane** see Herr, Randy G.
- Pierson, C. T.** see Green, M. W.
- Pillmore, Kathryn A.; and Leanderson, P. J.** Geology and mineralization of the Paradise Stock, Gunnison County, Colorado [abstr.]: in Abstracts with programs 1983; Geological Society of America; Rocky Mountain Section 36th annual meeting; Cordilleran Section 79th annual meeting (Anonymous), Abstracts with Programs - Geological Society of America, Vol. 15, No. 5, p. 276, March 1983.
- Pipiringos, G. N.** see O'Sullivan, R. B.
- Pisarowicz, Jim.** The exploration of Spring Cave, Colorado: *Cinther*, Vol. 20, No. 5-6, p. 11-20, 12 ref., June 1978.
- Pisarowicz, Jim.** Alpine karst activities in Colorado; Spring Cave; sump two and beyond: *Alpine Karst Newsletter*, p. 9-11, sketch maps, 1978.
- Pitkin, J. A.; and Duval, J. S.** Interpretation of aerial radiometric data for the Lake City Caldera and vicinity, Hinsdale, San Juan, and Duray counties, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1449, 1 sheet, map, 1982.
- Pitman, J. K.** see Dean, W. E.
- Pitman, Janet K.** Regional stratigraphic and depositional analysis of rock units in the upper Garden Gulch and Parachute Creek members of the Green River Formation, Piceance Creek basin, Colorado: in Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 79-100, illus. (incl. 1 table, sketch maps), 19 ref., 1982.
- Piwinskii, A. J.; and Duba, A.** The permittivity and electrical conductivity of oil shale: *International Journal of Rock Mechanics and Mining Sciences*, Vol. 13, No. 5, p. 165-166, illus., 3 ref., May 1976.
- Plant, J. A.** see Howarth, R. J.
- Pollastro, R. M.; Scholle, Peter A.; and Arthur, M. A.** (investigators). Sedimentologic and diagenetic history of reservoirs in Niobrara Formation, Denver basin [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 25-26, 1982 [1983].
- Pollastro, R. M.** see also Arthur, M. A.
- Porter, Karen W.; and Weimer, Robert J.** Diagenetic sequence related to structural history and petroleum accumulation; Spindle Field, Colorado: *AAPG Bulletin*, Vol. 66, No. 12, p. 2543-2560, illus. (incl. sketch maps), 23 ref., December 1982.
- Powell, J. Dan.** Excursion 2; Road log from Marble to Carbondale, North Thompson Creek, and Glenwood Springs: in *Southeastern Piceance Basin, western Colorado* (Anonymous), *Grand Junction Geol. Soc.*, Grand Junction, CO, United States, p. 27-34, illus., 1982.
- Powell, J. Dan.** Gas fields in Mesaverde sandstones in the Rifle Embayment of the southeastern Piceance Creek basin, Colorado: in *Southeastern Piceance Basin, western Colorado* (Anonymous), *Grand Junction Geol. Soc.*, Grand Junction, CO, United States, p. 55-59, illus. (incl. sketch map), 10 ref., 1982.
- Powers, R. B.** Geology of Willow Creek foreland thrust play, Moffat County, Colorado [abstr.]: in *AAPG annual convention with divisions SEPM/EMD/DPA* (Anonymous), *AAPG Bulletin*, Vol. 66, No. 5, p. 619, May 1982.
- Prasad, Shyam N.** see Borah, Deva K.
- Prats, M.; and O'Brien, S. M.** The thermal conductivity and diffusivity of Green River oil shales: *JPT. Journal of Petroleum Technology*, Vol. 27, No. 1, p. 97-106, illus. (incl. 7 tables), 11 ref., January 1975.
- Pratt, Lisa M.** Terrestrial influence and bioturbation effects on composition of organic matter in Middle Cretaceous shale and limestone sequence near Pueblo, Colorado [abstr.]: in *1981 AAPG annual convention with divisions; SEPM/EMD/DPA*, *AAPG Bulletin*, Vol. 65, No. 5, p. 974, May 1981.
- Pratt, Lisa Mary.** A paleo-oceanographic interpretation of the sedimentary structures, clay minerals, and organic matter in a core of the Middle Cretaceous Greenhorn Formation drilled near Pueblo, Colorado: 286 p., Doctoral, 1982, Princeton Univ., Princeton, NJ. *available from:* Univ. Microfilms.
- Presser, T. S.; Evans, W. C.; White, L. D.; et al.** Chemical and isotopic compositions of selected soda and hot spring waters, Colorado: *Open-File Report* (United States Geological Survey, 1978), 9 p., 1981. (Rep. No. 81-0684) *available from:* U. S. Geol. Surv., Water Resour. Div., Menlo Park, CA, United States.

- Pride, D. E. see Hasenohr, E. J. SPE/DOE 11765.
- Pride, Douglas E. Copper, molybdenum, lead, and silver in soils of the Bonanza Caldera, San Juan volcanic field, Colorado [abstr.]: in The Geological Society of America, North-Central Section 15th annual meeting, Abstracts with Programs - Geological Society of America, Vol. 13, No. 6, p. 313, March 1981.
- Priestley, Raymond D. see Dickinson, Kendall A.  
-- see Hills, F. Allan
- Prinz, Martin see Floran, R. J.
- Pritchard, J. I. see Jordan, J. M.
- Pritchett, Ronald W. Kiowa Creek Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 272-281, illus. (incl. sketch maps), 4 ref., 1983.
- Prost, Gary. Mineral exploration with Skylab photography in central Colorado: in An issue devoted to techniques and results of remote sensing (Goetz, Alexander F. H., editor; et al.), Economic Geology and the Bulletin of the Society of Economic Geologists, Vol. 78, No. 4, p. 633-640, illus. (incl. 1 table, geol. sketch map), 23 ref., July 1983.
- Prothero, D. R. How isochronous are mammalian biostratigraphic events?: Proceedings - North American Paleontological Convention, Vol. 3, p. 405-409, illus. (incl. 1 table, sketch map), 20 ref., 1982.
- Pugh, C. A.; and Harris, D. W. Prediction of landslide-generated water waves: in Transactions of the Fourteenth international congress on large dams; III, Reservoir sedimentation and slope stability; technical and environmental effects (International Commission on Large Dams), Comm. Int. des Grands Barrages, Paris, France, p. 283-316 (incl. French sum.), illus., 14 ref., 1982.
- Radek, Kenneth see McCullough, M. Bruce
- Rana, Mahmood H. see Morse, Jerome G.
- Randall, Art. Atwood, East Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 18-21, illus. (incl. sketch map), 2 ref., 1983.
- Randolph, P. L. Porosity and permeability of Mesaverde Sandstone core from the U.S. D.O.E. Multiwell Experiment, Garfield County, Colorado: in Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 449-460, illus. (incl. 1 table), 1983.
- Rasmuson, B. D. see Blattner, J. L.
- Rasmussen, T. E. see Lucas, Spencer G.
- Raup, Omer B. Evaporite mineral cycles, Paradox Basin, Utah and Colorado [abstr.]: in AAPG-SEG-SEPM Pacific Section meeting (Anonymous), AAPG Bulletin, Vol. 66, No. 10, p. 1698, October 1982.
- Raymond, W. H. see Crock, J. G.
- Raymond, William H. see Sheridan, Douglas M.
- Reimer, G. M. see McCarthy, Kevin P.
- Reiter, Marshall; and Clarkson, Gerry. Geothermal studies in the San Juan Basin and the Four Corners area of the Colorado Plateau; II, Steady-state models of the thermal source of the San Juan volcanic field: Tectonophysics, Vol. 91, No. 3-4, p. 253-269, illus. (incl. 4 tables, sketch map), 18 ref., January 20, 1983.
- Reiter, Marshall; and Mansure, Arthur J. Geothermal studies in the San Juan Basin and the Four Corners area of the Colorado Plateau; I, Terrestrial heat-flow measurements: Tectonophysics, Vol. 91, No. 3-4, p. 233-251, illus. (incl. 4 tables, sketch map), 25 ref., January 20, 1983.
- Renick, H. see Jordan, J. M.
- Rennick, K. B. see Petsch, H. E., Jr.
- Repetski, John E.; and Ethington, Raymond L. Rossodus manitouensis (Conodont), a new Early Ordovician index fossil: Journal of Paleontology, Vol. 57, No. 2, p. 289-301, illus., 54 ref., March 1983.
- Replier, Frank N.; Zacharakis, Ted G.; and Ringrose, Charles D. Geothermal resource assessment of Idaho Springs, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 16 (DOE/ET/28365-17), 50 p., illus. (incl. 8 tables), 45 ref., 1982.
- Rhode, David R.; and Foster, Donald I. Trapper Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 494-499, illus. (incl. sketch map), 1 ref., 1983.
- Rice, C. M.; Lux, D. R.; and Macintyre, R. M. Timing of mineralization and related intrusive activity near Central City, Colorado: Economic Geology and the Bulletin of the Society of Economic Geologists, Vol. 77, No. 7, p. 1655-1666, illus. (incl. 21 anal., 2 tables, geol. sketch maps), 47 ref., November 1982.

- Rice, D. D. (investigator).** Origin of natural gases in San Juan basin [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 26, 1982 [1983].
- Rice, Dudley D.** Relation of natural gas composition to thermal maturity and source rock type in San Juan Basin, northwestern New Mexico and southwestern Colorado: AAPG Bulletin, Vol. 67, No. 8, p. 1199-1218, illus. (incl. 4 tables, sketch maps), 70 ref., August 1983.
- Rice, Dudley D.; and Threlkeld, Charles N.** The San Juan Basin contains large reserves of nonassociated gas: Oil and Gas Journal, Vol. 81, No. 10, p. 129-132, illus. (incl. sect., geol. sketch maps), March 7, 1983.
- Richards, Billy D.** Geology of the Mississippian Leadville Limestone; Fulford area, Eagle County, Colorado [abstr.]: *in* 16th annual meeting, South-central Section, The Geological Society of America, with Texas and Kansas-Oklahoma chapters of the National Association of Geology Teachers (Anonymous), Abstracts with Programs - Geological Society of America, Vol. 14, No. 3, p. 135, February 1982.
- Richardson, Albert L.** Rago, North Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 412-421, illus. (incl. isopach maps). 3 ref., 1983.
- Richardson, R.** see Arthur, M. A.
- Rickard, T. A.** Across the San Juan Mountains: The Mineralogical Record, Vol. 14, No. 3, p. 141-149, illus., June 1983. Abridged and annotated by Smith, Arthur E. and annotated and illustrated by Kosnar, Richard A.; first of two parts.
- Rickard, T. A.** Across the San Juan Mountains: The Mineralogical Record, Vol. 14, No. 4, p. 243-249, illus., July 1983. Abridged and annotated by Smith, Arthur E. and annotated and illustrated by Kosnar, Richard A.
- Rimmer, Dan R.** see Schneider, William A.
- Ringrose, Charles D.; and Pearl, Richard Howard.** Soil mercury investigations, Waunita Hot Springs: *in* Geothermal resources assessment of Waunita Hot Springs, Colorado (Zacharakis, Ted G., editor), Special Publication - Colorado Geological Survey, Vol. 16, p. 63-69, geol. sketch map, 10 ref., 1981. (Rep. No. DOE/ET/28365-14) available from: U. S. Dep. Energy, United States.
- Ringrose, Charles D.** see also McCarthy, Kevin P.  
-- see also Pearl, Richard Howard
- see also Repplier, Frank N.
- see also Zacharakis, Ted G.
- Roberts, Eugene H.** see Bell, Mark W.
- Robinson, C. Scott.** Archer Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 10-13, illus. (incl. sketch map), 5 ref., 1983.
- Robinson, Charles S.; and Cochran, Dale M.** Engineering geology of Vail Pass I-70: *in* Proceedings of the 33rd annual highway geology symposium; engineering geology and environmental constraints (Hynes, Jeffrey L., editor), Special Publication - Colorado Geological Survey, Vol. 22, p. 116-135, illus. (incl. sect., sketch maps), 5 ref., 1983.
- Robinson, Keith** see Dickinson, Kendall A.
- Robinson, M. L.** see Weiland, E. F.
- Robinson, Richard.** Mineralization along the southern Amethyst Vein, Creede District, Colorado: *in* Field trip notes; Creede mining district, San Juan volcanic province, Colorado (Lindemann, J. W., editor; et al.), Denver Reg. Explor. Geol. Soc., Denver, CO, United States, p. 43-50, illus., 1981.
- Robinson, Richard W.** Ore mineralogy and fluid inclusion study of the southern Amethyst vein system, Creede Mining District, Colorado: 85 p., map, Master's, 67 ref., 1981, New Mexico Inst. of Mining & Technol., Socorro, NM.
- Robson, S. G.** Hydraulic characteristics of the principal bedrock aquifers in the Denver Basin, Colorado: Hydrologic Investigations Atlas, HA-0659, 3 sheets, map 1:500,000, 1983.
- Roeber, M. M., Jr.** A summary of the geology and ore deposits of the Bulldog Mountain Mine, Creede mining district, San Juan Mountains, Mineral County, Colorado: *in* Field trip notes; Creede mining district, San Juan volcanic province, Colorado (Lindemann, J. W., editor; et al.), Denver Reg. Explor. Geol. Soc., Denver, CO, United States, p. 19-28, illus., 1981.
- Roegiers, J. C.** see McLennan, J. D.
- Rogers, Douglas V.** Colorado: *in* 1982 Midyear meeting of the Interstate Compact Commission (Treen, David C., chairperson), The Oil and Gas Compact Bulletin, Vol. 41, No. 1, p. 22-23, June 1982.
- Rogers, W. P.** Marble, Colorado; beauty and the beast: *in* Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 87-93, illus. (incl. sketch map), 9 ref., 1982.

- Rogers, W. P.** see also Dayvault, Richard D.
- Rogers, William P.** Earthquake hazard, risk and land-use implications in Colorado [abstr.]: in Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 36, 1981.
- Rold, John W.** Highway geology in Colorado and overview [abstr.]: in Proceedings of the 33rd annual highway geology symposium; engineering geology and environmental constraints (Hynes, Jeffrey L., editor), Special Publication - Colorado Geological Survey, Vol. 22, p. 1-2, 1983.
- Roline, Richard A.** see Boehmke, John R.
- Root, Michael R.** Zenith Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 534-537, illus. (incl. isopach map), 3 ref., 1983.
- Rosasco, P.** see Hustrulid, W.
- Roshardt, Mary** see Dickinson, Kendell A.
- see Hills, F. Allan
- Rosholt, J. N.** see Zielinski, R. A.
- Rosholt, John N.** Isotopic composition of uranium and thorium in crystalline rocks [abstr.]: in 1982 Archean geochemistry field conference; Seminoe Mountains and Hartville Uplift, Wyoming; Part II, Program (Goldich, Samuel S., chairperson), IGCP, Archean Geochem. Proj., U. S. Working Group, United States, Colo. Sch. Mines, United States, Geol. Surv. Wyo., United States, U. S. Geol. Surv., United States, p. 16, 1982.
- Roth, John L.** see Tidwell, William D.
- Rountree, Russ.** Codell play grows hotter despite problems: Western Oil Reporter, Vol. 40, No. 2, p. 69-71, illus. (incl. sketch map), February 1983.
- Rowley, P. D.; Tweto, Ogden; Hansen, W. R.** (compilers); et al. Geologic map of the Vernal 1 degrees by 2 degrees Quadrangle, Colorado, Utah and Wyoming: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1163, 1 sheet, geol. map 1:250,000, 1979. Reprint.
- Rowley, P. D.; and Hansen, W. R.** (investigators). Relation of Bishop Conglomerate to Browns Park Formation in eastern Uinta Mountains, Colorado and Utah [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 57-58, 1982 [1983].
- Rowley, P. R.** see Hansen, W. R.
- Ruckman, A. C.; and Barrett, R. K.** Swelling shale and collapsing soil: in Shales and swelling soils (U. S., National Research Council, Commission on Sociotechnical Systems), Transportation Research Record, Vol. 790, p. 41-45, illus., 10 ref., 1981.
- Ruckman, A. C.** see also Bell, J. R.
- Russell, Dale A.** see Thulborn, Richard A.
- Ryan, Timothy H.; and Windom, Kenneth E.** Geology and geochemistry of basalts from Fishers Peak Mesa, Colorado [abstr.]: in Geological Society of America, Rocky Mountain Section, 36th annual meeting; Cordilleran Section, 79th annual meeting, Abstracts with Programs - Geological Society of America, Vol. 15, No. 5, p. 303, March 1983.
- Salas, J. D.** see Lazaro, R. C.
- Sanders, Welford; and Thurow, Charles.** The role of land use planning in water conservation: in Proceedings of the National water conservation conference on publicly supplied potable water (Dynamic Corporation), National Bureau of Standards Special Publication, Vol. 624, p. 103-111, sketch maps, June 1982.
- Sanford, R. F.** see Kirk, A. R.
- Sartoris, James J.** see Boehmke, John R.
- Sattler, A. R.** The Multiwell Experiment Core Program: in Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 437-444, illus., 38 ref., 1983. SPE/DOE 11763.
- Saunders, D. F.** see Zeller, E. J.
- Saunders, Geoffrey P.** Aquifer dewatering and drawdown at an open mine pit in northwestern Colorado: in Proceedings of the Symposium on practical ground-water monitoring considerations for the mining industry (U. S., National Water Well Association), Ground Water Monitoring Review, Vol. 3, No. 1, p. 122-127, illus. (incl. 3 tables, sect., sketch map), 1983.
- Savage, Dan.** Wildcat finds stir interest in oil-rich Paradox Basin: Western Oil Reporter, Vol. 39, No. 14, p. 79, 81-82, sketch map, November 1982.
- Savage, Dan.** Contractors stay active; spec seismic programs spread costs: Western Oil Reporter, Vol. 39, No. 15, p. 63, 65-66, illus., 1982.
- Savage, Dan.** Colorado; DJ, Paradox, Piceance will remain active: Western Oil Reporter, Vol. 40, No. 1, p. 52-53, 56, illus., January 1983. (Forecast 1983; computerization).

- Scanlan, A. H. (compiler).** Oil and gas fields of Colorado; statistical data through 1981: Information Series - Colorado Geological Survey, Vol. 18, 71 p., illus. (incl. sketch map), 1982.
- Schatz, John F.** see Ahmed, Usman
- see Sinha, K. P.
- Schimmel, David Steven.** Nutrient and organic matter dynamics in grasslands; effects of fire and erosion: 80 p., Doctoral, 1982, Colorado State Univ., Fort Collins, CO. available from: Univ. Microfilms.
- Schmidt, Nicholas M.** Landscaping alternatives and irrigation conservation: in Proceedings of the National water conservation conference on publicly supplied potable water (Dynamic Corporation), National Bureau of Standards Special Publication, Vol. 624, p. 53-59, illus. (incl. 1 table), June 1982.
- Schneider, Jill L.** A cryptovolcanic breccia pipe at Jack Flats, Eagle County, Colorado [abstr.]: in Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 224, February 1981.
- Schneider, Jorg.** Zur Variabilität der Flügel paläozoischer Blattodea (Insecta); Teil I [The variability of the wings of Paleozoic Blattodea, Insecta; Part 1]: in Beiträge zur Palaontologie, Biostratigraphie und Ökologie zum 60. Geburtstag von Prof. Dr. rer. nat. habil. Arno Hermann Müller in Contributions to paleontology, biostratigraphy, and ecology on the sixtieth birthday of Dr. Arno Hermann Müller (Wienholz, Roland; et al.), Freiberg. Forschungsh., Reihe C, Vol. 326, p. 87-105 (incl. English, Russian sum.), illus. (incl. 4 tables, 11 plates), 1977.
- Schneider, P. A., Jr.** see Hillier, D. E.
- Schneider, William A.** Land seismic source study [abstr.]: in AAPG-SEG-SEPM Pacific Section meeting (Anonymous), AAPG Bulletin, Vol. 66, No. 10, p. 1699, October 1982.
- Schneider, William A.; Grupp, Steve R.; Guderjahn, Charles G.; et al.** Comparison of land seismic sources [abstr.]: in Midwest meeting abstracts (Anonymous), Geophysics, Vol. 47, No. 7, p. 1123, July 1982.
- Schneider, William A.** see also Brune, Robert H.
- see also Sixta, David P.
- Scholle, Peter A.** see Arthur, M. A.
- see Pollastro, R. M.
- Schroedl, Alan Robert.** The Archaic of the northern Colorado Plateau: 122 p., illus. (incl. tables), Doctoral, 156 ref., August 1976, Univ. of Utah, Salt Lake City, UT.
- Schuler, K. W.; Lysne, Peter C.; and Stevens, A. L.** Dynamic mechanical properties of two grades of oil shale: International Journal of Rock Mechanics and Mining Sciences, Vol. 13, No. 3, p. 91-95, illus. (incl. 3 tables), 14 ref., March 1976.
- Schumm, Stanley A.; Bean, D. W.; and Harvey, M. D.** Bed-form-dependent pulsating flow in Medano Creek, Colorado: Earth Surface Processes and Landforms, Vol. 7, No. 1, p. 17-28, illus. (incl. 1 table, sketch map, sect.), 15 ref., February 1982.
- Schwab, A. P.; and Lindsay, W. L.** Effect of redox on the solubility and availability of iron: Soil Science Society of America Journal, Vol. 47, No. 2, p. 201-205, illus. (incl. 2 tables), 23 ref., April 1983. Colo. State Univ., Dep. Agron.; Sci. Ser. No. 2708.
- Schwab, A. P.; and Lindsay, W. L.** The effect of redox on the solubility and availability of manganese in a Calcareous soil: Soil Science Society of America Journal, Vol. 47, No. 2, p. 217-220, illus. (incl. 1 table), 20 ref., April 1983. Colo. State Univ., Dep. Agron.; Sci. Ser. No. 2725.
- Scott, Alan J.; and Boyles, J. Michael.** Trace fossil assemblages as indicators of shelf-sandstone facies, Upper Cretaceous, northwestern Colorado [abstr.]: in 1981 AAPG annual convention with divisions; SEPM/EMD/DPA, AAPG Bulletin, Vol. 65, No. 5, p. 989-990, May 1981.
- Scott, Alan J.** see also Boyles, J. Michael
- see also Payne, John B.
- Scott, G. R.; and Wobus, R. A.** Reconnaissance geologic map of Colorado Springs and vicinity, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-0482, 2 sheets, geol. map, 1973. Reprint.
- Scott, G. R.** see also Wobus, R. A.
- Scott, Mary Carroll W.** see Warren, Peter
- Seaman, David M.** April, 1936; Fluorescent minerals from little known localities: Rocks and Minerals, Vol. 51, No. 10 (Retrospective 50th anniversary), p. 493-494, December 1976.
- Searls, C. A.; Lee, M. W.; Miller, J. J.; et al.** A coordinated seismic study of the multi-well experiment site: in Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 115-120, illus., 2 ref., 1983. SPE/DOE 11613.
- Sedlacek, W. A.; Heiken, G. H.; Mroz, E. J.; et al.** Physical and chemical characteristics of

- Mount St. Helens airborne debris: *in* Atmospheric effects and potential climatic impact of the 1980 eruptions of Mount St. Helens (Deepak, Adarsh, editor), NASA Conference Publication, Vol. 2240, p. 83-107, illus. (incl. 10 tables, anal., sketch maps), 4 ref., 1982.
- Seiler, R. L.; and Tooley, J. E.** Erosion and sediment characteristics of the southeastern Uinta Basin, Utah and Colorado: Open-File Report (United States Geological Survey, 1978), 79 p., 1982. (Rep. No. 82-0428) available from: U. S. Geol. Surv., Water Resour. Div., Salt Lake City, UT, United States. Water-resources investigations.
- Self, S.; and Wright, J. V.** Large wave forms from the Fish Canyon Tuff, Colorado: *Geology* (Boulder), Vol. 11, No. 8, p. 443-446, illus. (incl. sketch map), 28 ref., August 1983.
- Selig, Ernest T.** see Stewart, Harry E.
- Senseny, Paul E.; Cain, Patrick J.; and Callahan, Gary D.** Influence of deformation history on permeability and specific storage of Mesaverde Sandstone: *in* Proceedings of the 24th U.S. symposium on rock mechanics: theory, experiment, practice (Mathewson, Christopher C., editor; et al.), Proceedings - Symposium on Rock Mechanics, Vol. 24, p. 525-531, illus. (incl. 2 tables), 4 ref., 1983.
- Shaffer, Mark E.** Earthquake hazard studies for Spinney Mountain Dam, Park County, Colorado. [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 26, 1981.
- Sharp, W. N.; and Lane, M. E.** Geochemical map of the Powderhorn Wilderness Study Area and Cannibal Plateau Roadless Area, Gunnison and Hinsdale counties, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1483-C, 1 sheet, geochem. map 1:50,000, 1983.
- Sharp, W. N.; Martin, R. A.; and Lane, M. E.** Mineral resource potential and geologic map of the Powderhorn Wilderness Study Area and Cannibal Plateau Wilderness Roadless Area, Gunnison and Hinsdale counties, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-1483-A, 6 p., map 1:50,000, 1983.
- Sharp, W. N.** see also Desborough, G. A.
- Shelton, John W.** Grain orientation in shallow marine-shoreface sandstones: *Shale Shaker*, Vol. 25, No. 1, p. 4-7, 1 table, sketch maps, 11 ref., September 1974.
- Shen, H. W.** see Laronne, J. B.
- Shen, Hsieh Wen.** Possible effects of Cross Mountain and Juniper reservoirs on Lily Park and Box Elder reaches on Yampa River, Colorado: *in* Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction (Simons, Daryl B., editor; et al.), p. 79-83, 2 tables, sketch map, September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Shepherd, R. G.** Critique of ground water modeling in the Piceance Basin: *in* Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 559-572, illus. (incl. 1 table, sect., sketch maps), 17 ref., 1982.
- Sheridan, Douglas M.; and Raymond, William H.** Stratatound Precambrian sulfide deposits, Colorado and southern Wyoming: *in* Characteristics of mineral deposit occurrences (Erickson, R. L., compiler), Open-File Report (United States Geological Survey, 1978), p. 92-99, 9 ref., 1982. (Rep. No. 82-0795) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Short, S. K.** see Andrews, John T.
- Shukle, Robert J.** Rocky Mountain Arsenal ground-water reclamation program: *in* Proceedings of the Second national symposium on aquifer restoration and ground water monitoring (Nielsen, David M., editor), Natl. Water Well Assoc., Worthington, OH, United States, p. 366-368, illus. (incl. sketch maps), 1 ref., 1982.
- Shurr, George W.; and Gognat, Timothy A.** Paleotectonism reflected in the Niobrara Formation of the northern Great Plains [abstr.]: *in* Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 226, February 1981.
- Siml, O. R.** see Gallimore, D. L.
- Simon, F. O.** see Van Alstine, R. E.
- Simons, D. B.** see Li, Ruh-Ming
- Simons, Daryl B.** Downstream river channel changes from diversions or reservoir construction; introduction: *in* Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction (Simons, Daryl B., editor; et al.), p. 1-5, September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Simpson, S. L.** see Friedman, J. D.
- Sinha, K. P.; Borschel, T. F.; Schatz, John F.; et al.** Triaxial creep of oil shale and deformation of pillars in the in situ retorting environment: *in* Issues in rock

- mechanics (Goodman, Richard E., editor; *et al.*), Proceedings - Symposium on Rock Mechanics, Vol. 23, p. 341-350, illus. (incl. 2 tables), 9 ref., 1982.
- Sitowitz Hayte, Linda** see Stevenson, Gene M.
- Sitowitz, Linda** see Kelso, Bruce S.
- Sixta, David P.; Hays, David; Schneider, William A.; et al.** A comparison of sign bit and conventional seismic recording in eastern Colorado [abstr.]: *in* The 36th annual Midwestern exploration meeting of SEG (Anonymous), Geophysics, Vol. 48, No. 6, p. 815, June 1983.
- Sixta, David P.** see also Brune, Robert H.
- see also Schneider, William A.
- Skinner, M. F.** see Woodburne, M. D.
- Slechts, Jack.** Roundup Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 438-441, illus. (incl. struct. map), 1983.
- Smith, C. R.** see Law, R. E.
- Smith, D. K.** see Cuffey, R. J.
- Smith, Duane A.; and Wieler, Hank.** Secure the shadow; Lachlan McLean, Colorado mining photographer: Colo. Sch. Mines Press, Golden, CO, United States, 82 p., illus., 1980.
- Smith, Jess W.** Bachelor Mountain silver deposit, Mineral County, Colorado: *in* Field trip notes; Creede mining district, San Juan volcanic province, Colorado (Lindemann, J. W., editor; *et al.*), Denver Reg. Explor. Geol. Soc., Denver, CO, United States, p. 11-18, sects., 1981.
- Smith, John Ward.** Oil shale resource evaluation: *in* Symposium papers; synthetic fuels from oil shale II (Tarman, Paul B., chairperson; *et al.*), Inst. Gas Technol., Chicago, IL, United States, p. 123-142, illus. (incl. sketch maps, sects.), 17 ref., March 1982.
- Smith, John Ward; and Lee, Kwang K.** Geochemistry and physical paleolimnology of Piceance Creek basin oil shales: *in* Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 101-114, illus. (incl. sketch maps), 12 ref., 1982.
- Snell, Gregory L.** see McCullough, M. Bruce
- Snyder, George L.** see Craig, Lawrence C.
- Soetrismo, Hadi P.** see Bishop, Robert E.
- Sonnenberg, S. A.** see Weimer, Robert J.
- Sonnenberg, Stephen A.** Lambert Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 228-233, illus. (incl. sketch maps), 2 ref., 1983.
- Sonnenberg, Stephen A.** Lost Creek - Lanyard fields: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 322-333, illus. (incl. isopach maps, sects.), 3 ref., 1983.
- Sonnenberg, Stephen A.; and Weimer, Robert J.** Tectonics, sedimentation, and petroleum potential, northern Denver Basin, Colorado, Wyoming, and Nebraska [abstr.]: *in* AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), AAPG Bulletin, Vol. 66, No. 5, p. 634, May 1982.
- Sonnenberg, Stephen A.** see also Weimer, Robert J.
- Sperry, P. E.** see Hustrulid, W.
- Spettel, B.** see Floran, R. J.
- Sprague, S. B.** see Hills, F. Allan
- Springer, Robert H.** Busy Bee Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 92-95, illus. (incl. sketch map), 4 ref., 1983.
- Stablein, Newton K.** see Beyth, Michael
- Stallman, Georgia.** Mineralogy and geochemistry of the Echo Park Alluvium, Colorado: Master's, 1981, Univ. of Missouri, Columbia, MO.
- Standard Oil Company** see Gulf Oil Corporation
- Starch, Karl E.; and Hornbaker, A. L.** The mineral industry of Colorado: U. S. Bur. Mines, United States, 18 p., 1982. Preprint from Minerals yearbook, 1981, U. S. Bur. Mines.
- Stearns, David W.** see Jamison, William R.
- Steinhaus, D. W.** see Gallimore, D. L.
- Stellavato, Nick.** Results of the geologic mapping program during shaft sinking and subsequent station development at C-B track: *in* Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 115-135, illus. (incl. 3 tables, sketch map), 2 ref., 1982.
- Steven, T. A.** see Tweto, Ogden
- Stevens, A. L.** see Schuler, K. W.

- Stevenson, G. M. see Baars, D. L.
- February 1982.
- Stevenson, Gene M.; and Sitowitz Hayte, Linda. Oil and gas developments in Four Corners-Intermountain area in 1981: *in* World energy developments 1981 (Anonymous), AAPG Bulletin, Vol. 66, No. 11, p. 1779-1783, 2 tables, sketch map, November 1982.
- Stewart, Harry E.; and Selig, Ernest T. Predicted and measured resilient response of track: *Journal of the Geotechnical Engineering Division*, Vol. 108, GT11, p. 1423-1442, illus. (incl. 5 tables), 27 ref., November 1982.
- Stewart, Scott R. see Morrill, Curtis G.
- Stoddard, John N. Brandon Field (Pennsylvanian): *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 78-81, illus., 2 ref., 1983.
- Stoddard, John N. Brandon Field (Mississippian): *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 82-87, illus. (incl. sketch map), 2 ref., 1983.
- Stormer, John C., Jr. see Whitney, James A.
- Stover, Richard C. see McCullough, M. Bruce
- Strife, Stuart C. Jamboree Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 262-269, illus. (incl. isopach maps), 2 ref., 1983.
- Stright, D. H., Jr.; and Gordon, J. I. Decline curve analysis in fractured low permeability gas wells in the Piceance Basin: *in* Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kensch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 351-362, illus. (incl. 1 table, geol. sketch map), 9 ref., 1983. SPE/DOE 11640.
- Stright, D. H., Jr.; and Gordon, J. I. Decline curve analysis in fractured low permeability gas wells in the Piceance Basin: *in* 1983 Society of Petroleum Engineers Rocky Mountain regional meeting; proceedings (Anonymous), Soc. Pet. Eng. AIME, United States, p. 157-167, illus. (incl. 1 table, sketch map), 9 ref., 1983. SPE/DOE 11640.
- Strimple, H. L. Atokan crinoids [abstr.]: *in* 16th annual meeting, South-central Section, The Geological Society of America, with Texas and Kansas-Oklahoma chapters of the National Association of Geology Teachers (Anonymous), Abstracts with Programs - Geological Society of America, Vol. 14, No. 3, p. 137-138,
- Stuckenrath, R. see Andrews, John T.
- Stuckless, J. S. see Zielinski, R. A.
- Studebaker, Irving G. see Miller, Karl A.
- Stumbur, Kh. O putyakh ispol'zovaniya goryuchikh slantsev v savisimosti ot kachestva ikh organicheskogo veshstva [Ways of using oil shale in relation to the quality of its organic materials]: *Eesti NSV Teaduste Akadeemia Toimetised, Keemia-Geologia*, Vol. 26, No. 4, p. 304-311 (incl. Estonian, French sum.), illus. (incl. sketch map), 3 ref., 1977.
- Styron, C. E. see Casella, V. R.
- Sullivan, J. Timothy; and Martin, Richard A., Jr. Seismic hazard studies for Ridgeway damsite, Colorado [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 30-31, 1981.
- Summer, Rebecca M. Field and laboratory studies on alpine soil erodibility, southern Rocky Mountains, Colorado: *Earth Surfaces Processes and Landforms*, Vol. 7, No. 3, p. 253-266, illus. (incl. 5 tables, sketch map), 1 p. ref., June 1982.
- Sunada, D. K. see Ethridge, Frank G.
- Swanson, Herbert see Pell, Kynric
- Swinehart, James B. see Madole, Richard F.
- Swolfs, H. S. In situ geomechanics of crystalline and sedimentary rocks; Part III, First experiences with the C.S.I.R.O. hollow-inclusion stress cell: *Open-File Report* (United States Geological Survey, 1978), 20 p., illus. (incl. 3 tables, sketch map), 13 ref., 1982. (Rep. No. 82-0990) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States. For reference to part 2, see Open-file report 82-489.
- Swolfs, Henri S. Aspects of the size-strength relationship of unjointed rocks: *in* Proceedings of the 24th U.S. symposium on rock mechanics; theory, experiment, practice (Mathewson, Christopher C., editor; et al.), Proceedings - Symposium on Rock Mechanics, Vol. 24, p. 501-510, illus. (incl. 2 tables), 11 ref., 1983.
- Tainter, Patrick A. Effective exploration strategy; stratigraphic and paleostructural controls on hydrocarbon migration in Denver Basin [abstr.]: *in* AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous), AAPG Bulletin, Vol. 66, No. 5, p. 635-636, May 1982.



- Tainter, Patrick A.** An effective exploration strategy; stratigraphic and paleostructural controls on hydrocarbon migration in the Denver Basin [abstr.]: *in* The 36th annual Midwestern exploration meeting of SEG (Anonymous), Geophysics, Vol. 48, No. 6, p. 810-811, June 1983.
- Tait, D. B.** Piceance Basin hydrology; aquitards and aquicludes: *in* Fifteenth oil shale symposium proceedings (Gary, James H., editor), Oil Shale Symposium Proceedings, Vol. 15, p. 155-156, 1982.
- Tanaka, Hidefumi; and Kono, Masaru.** Origin of NRM of San Juan volcanic rocks from Colorado, USA: Rock Magnetism and Paleogeophysics, Vol. 2, p. 20-23, illus. (incl. 1 table), 14 ref., December 1974.
- Tanji, K. K.** see Whittig, L. D.
- Taylor, J. O.** Three-dimensional mathematical model for simulating the hydrologic system in the Piceance Basin, Colorado: Open-File Report (United States Geological Survey, 1978), 91 p., illus., 1982. (Rep. No. 82-0637) available from: U. S. Geol. Surv., Water Resour. Div., Denver, CO, United States. Water-Resources investigations.
- Taylor, Richard B.** see Dickinson, Kendall A.
- Teufel, Lawrence W.** Prediction of hydraulic fracture azimuth from anelastic strain recovery measurements of oriented core: *in* Issues in rock mechanics (Goodman, Richard E., editor; et al.), Proceedings - Symposium on Rock Mechanics, Vol. 23, p. 238-245, illus. (incl. 2 tables), 13 ref., 1982.
- Thaden, R. E. (investigator).** Shifting margin of the Cretaceous sea in the San Juan basin [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 41, 1982 [1983].
- Thayn, Gregory F.** see Tidwell, William D.
- Theis, Nicholas J.** see McCann, Dan W.
- Thomas, Mark H.** Stratigraphy of the Dakota and Burro Canyon formations near Gunnison, Colorado: Master's, 1981, Colorado School of Mines, Golden, CO.
- Thomasson, Joseph R.** Late Cenozoic grasses and other angiosperms from Kansas, Nebraska, and Colorado; biostratigraphy and relationships to living taxa: Bulletin - Kansas, State Geological Survey, Vol. 218, 68 p., illus. (incl. 6 tables, 11 plates, sects.), 147 ref., September 1979.
- Thompson, D. W.** see Konikow, L. F.
- Thompson, R. W.; and Ferguson, D. A.** The impact of the Federal Surface Mining Control and Reclamation Act: *in* Third international conference on stability in surface mining (Brawner, C. O., editor), Am. Inst. Min. Metall. and Pet. Eng., New York, NY, United States, p. 847-860, illus. (incl. 31 anal., 3 tables), 3 ref., 1982.
- Thompson, Tommy.** Geology of the Leadville mining district: *in* Aspen, Grizzly Peak, Leadville, Colorado; Denver Region Exploration Geologists' Society 1982 field trip (Pansze, Art, leader; et al.), Denver Reg. Explor. Geol. Soc., Denver, CO, United States, unpaginated, illus. (incl. sects., strat. col., sketch map), 17 ref., 1982.
- Thorn, Colin E.** Bedrock microclimatology and the freeze-thaw cycle; a brief illustration: Annals of the Association of American Geographers, Vol. 72, No. 1, p. 131-137, 5 tables, sketch map, 16 ref., March 1982.
- Thorn, Colin E.** see also Hara, Yoshio
- Thorne, Colin R.; and Zevenbergen, Lyle W.** Flow resistance of boulder-bed streams [abstr.]: *in* American Geomorphological Field Group; Field trip guidebook, 1982 conference (Leopold, Luna B., editor), American Geomorphological Field Group, United States, p. 134, 1982.
- Thornton, C. P.** see Cuffey, R. J.
- Threlkeld, Charles N.** see Rice, Dudley D.
- Thulborn, Richard A.; and Russell, Dale A.** Estimated speed of a giant bipedal dinosaur; discussion and reply: Nature (London), Vol. 292, No. 5820, p. 273-274, illus., 11 ref., July 22, 1981. For reference to article by Russell, D. A., and Beland, P., see Nature, Vol. 264, p. 486, 1976.
- Thurrow, Charles** see Sanders, Welford
- Tidwell, William D.; Thayn, Gregory F.; and Roth, John L.** Cretaceous and early Tertiary floras of the intermountain area; a summary: Brigham Young University Geology Studies, Vol. 22, Part 3, p. 77-98, illus. (incl. 3 plates), 71 ref., July 1976.
- Tilander, Nathaniel G.** see Jacobson, Mark I.
- Ting, Francis T. C.** see Imbus, Scott W.
- Tobison, Norman M.** Blade Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 66-69, illus. (incl. sketch map), 1 ref., 1983.
- Tooley, J. E.** see Seiler, R. L.
- Travis, Maury M.** see Kornfeld, Joseph A.
- Trent, R.** see Hustrulid, W.
- Trimble, Stephen.** The Bright Edge; a guide to the national parks of the Colorado Plateau:

- Mus. North. Ariz. Press, Flagstaff, AZ, United States, 74 p., illus., 1979.
- Truettner, W. James. Craig, North Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 134-139, illus. (incl. sketch map), 2 ref., 1983.
- Turk, John T.; and Adams, Dee Briane.** Sensitivity to acidification of lakes in the Flat Tops Wilderness Area, Colorado: Water Resources Research, Vol. 19, No. 2, p. 346-350, illus. (incl. 3 tables, sketch map), 8 ref., April 1983.
- Tweto, Ogden.** Geologic map of the Mount Lincoln 15-minute Quadrangle, Eagle, Lake, Park, and Summit counties, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-0556, 1 sheet, geol. map 1:62,500, 1974. Reprint.
- Tweto, Ogden.** Las Animas Formation (upper Precambrian) in the subsurface of southeastern Colorado: Geological Survey Bulletin (Washington), 1529-G, p. G1-G14, illus. (incl. 1 table, geol. sketch map), 15 ref., 1983. Contributions to stratigraphy.
- Tweto, Ogden.** Geologic sections across Colorado: Miscellaneous Investigations Series - U. S. Geological Survey, I-1416, 1 sheet, sects., sections, 1983.
- Tweto, Ogden; Steven, T. A.; Hall, W. J., Jr. (compilers); et al.** Preliminary geologic map of the Montrose 1 degree by 2 degrees Quadrangle, southwestern Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-0761, 1 sheet, geol. map 1:250,000, 1976. Reprint.
- Tweto, Ogden (investigator).** Precambrian rift filling beneath Colorado plains [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 57, 1982 [1983].
- Tweto, Ogden** see also Rowley, P. D.
- Tyler, Noel; and Ethridge, Frank G.** Depositional setting of the Salt Wash Member of the Morrison Formation, Southwest Colorado: Journal of Sedimentary Petrology, Vol. 53, No. 1, p. 67-82, illus. (incl. block diag., strat. cols., sect., sketch maps), 40 ref., March 1983.
- Tyler, Noel** see also Ethridge, Frank G.
- U. S. Bureau of Land Management.** Wilderness environmental impact statement; alternatives for designation of the wilderness study areas within the Royal Gorge, Saguache, and San Luis planning units of the Canon City District, Colorado: 97 p., illus. (incl. sketch maps), 21 ref., 1982. *available from:* U. S. Bur. Land Manage., United States. Draft.
- U. S. Bureau of Land Management.** Savery Project preference right coal lease applications; Carbon County, State of Wyoming, Moffat and Routt counties, State of Colorado: 51 p., illus. (incl. 6 tables, geol. sketch maps), 22 ref., 1982. *available from:* U. S. Bur. Land Manage., Rawlins, WY, United States. Draft environmental impact statement.
- U. S. Bureau of Land Management.** Glenwood Springs resource management plan: 255 p., illus. (incl. tables; colored environ. geol. maps), 34 ref., February 1983. Draft environmental impact statements; maps in separate volume.
- U. S. Bureau of Land Management.** Prototype oil shale leasing program: 498 p., illus. (incl. tables), January 1983. *available from:* U. S. Bur. Land Manage., Denver, CO, United States. Final supplemental environmental impact statement.
- U. S. Bureau of Land Management.** Uintah Basin synfuels development; Volumes 1 and 2: variously paginated, illus. (incl. tables, geol. sketch maps), February 1983. *available from:* U. S. Bur. Land Manage., Salt Lake City, UT, United States. Final environmental impact statement; in two separate volumes.
- U. S. Bureau of Land Management.** Federal oil shale management program: variously paginated, illus. (incl. tables, geol. sketch maps), February 1983. *available from:* U. S. Bur. Land Manage., Washington, DC, United States. Draft environmental impact statement.
- U. S. Bureau of Land Management, Colorado State Office.** Draft supplemental environmental impact statement for the prototype oil shale leasing program: U. S. Bur. Land Manage., Colo. State Off., Denver, CO, United States, 254 p., illus. (incl. tables, geol. sketch maps), 75 ref., 1982.
- U. S. Bureau of Land Management, Colorado State Office.** White River resource area wilderness planning amendment, Colorado: 99 p., illus. (incl. tables, geol. sketch maps), 7 ref., 1982. *available from:* U. S. Bur. Land Manage., Colo. State Off., Denver, CO, United States. Draft environmental impact statement.
- U. S. Department of the Interior.** Quality of water, Colorado River basin: Quality of Water, Colorado River Basin, Vol. 11, 149 p., illus. (incl. 20 tables, geol. sketch map), 19 ref., January 1983.
- U. S. Environmental Protection Agency, Office of Radiation Programs.** Remedial action standards for inactive uranium processing sites (40 CFR 192); Volumes 1 and 2: variously paginated, illus. (incl. tables), October 1982. (Rep. No. EPA 520/4-82-013-1) (Rep. No. EPA 520/4-82-013-2) *available from:* U. S. Environ. Prot. Agency, Off. Radiat. Prog., Washington, DC, United States. Final environmental impact statement; in two separate volumes.

U. S. Geological Survey/Vance

- U. S. Geological Survey. Water resources data for Colorado, water year 1979; Volume 3, Dolores River Basin, Green River basin, and San Juan River basin: 453 p., 1980. (Rep. No. PB-80 217 979) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Water resources data for Colorado, water year 1979; Volume 1, Missouri River basin, Arkansas River basin, and Rio Grande Basin: 516 p., 1980. (Rep. No. PB-81 124 992) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Water resources data for Colorado, water year 1979; Volume 2, Colorado River basin above Dolores River: 413 p., 1980. (Rep. No. PB-81 213 506) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Water resources data for Colorado, water year 1980; Volume 1, Missouri River basin, Arkansas River basin, and Rio Grande Basin: 551 p., 1981. (Rep. No. PB-82 188 301) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Water resources data for Colorado, water year 1980; Volume 2, Colorado River basin above Dolores River: 404 p., 1981. (Rep. No. PB-82 188 293) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Water resources data, Colorado, water year 1981; Volume 2, Colorado River basin above Dolores River: 371 p., 1981. (Rep. No. PB-83 105 098) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Land use and land cover and associated maps for Montrose, Colorado: Open-File Report (United States Geological Survey, 1978), 2 sheets, land use map 1:250,000, 1982. (Rep. No. 82-0005) available from: U. S. Geol. Surv., Rocky Mt. Mapp. Cent., Denver, CO, United States.
- U. S. Geological Survey. Aeromagnetic map of the Buffalo Peaks area, Colorado: Open-File Report (United States Geological Survey, 1978), 1 sheet, aeromagn. map 1:62,500, 1982. (Rep. No. 82-0978) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- U. S. Geological Survey. Aeromagnetic map of the Fossil Ridge area, Colorado: Open-File Report (United States Geological Survey, 1978), 1 sheet, aeromagn. map 1:62,500, 1982. (Rep. No. 82-0979) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- U. S. Geological Survey. Water resources data for Colorado, water year 1980; Volume 3, Dolores River basin, Green River basin, and San Juan River basin: 467 p., 1982. (Rep. No. PB-82 202 045) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Water resources data for Colorado, water year 1981; Volume 1, Missouri River basin, Arkansas River basin, and Rio Grande Basin: 503 p., 1982. (Rep. No. PB-83 110 874) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Water resources data for Colorado, water year 1981; Volume 3, Dolores River basin, Green River basin, and San Juan River basin: 450 p., 1982. (Rep. No. PB-83 124 446) available from: NTIS, Springfield, VA, United States.
- U. S. Geological Survey. Aeromagnetic map of the Sangre de Cristo Mountains, Colorado: Open-File Report (United States Geological Survey, 1978), 3 sheets, aeromagn. map 1:62,500, 1983. (Rep. No. 83-0060) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- U. S. Office of Surface Mining Reclamation and Enforcement. Proposed mining and reclamation plan, Meeker area mines, Rio Blanco County, Colorado: variously paginated, illus. (incl. tables, geol. sketch maps), October 1982. (Rep. No. DSM-EIS-7) available from: U. S. Off. Sur. Min. Reclam. Enforcement, Washington, DC, United States. Draft environmental impact statement.
- Ubbes, William F. see Montazer, Parviz
- see Wadood, A.
- Ueno, Naoko see Kono, Masaru
- Ullinskey, Gary M. see Cadwgan, Richard M.
- Usdansky, Steven Ira. Topologic properties of c-component, (c+4) phase petrogenetic grids with applications to silica and metamorphic rocks in the Gold Creek area, Gunnison County, Colorado: 170 p., Doctoral, 1981, Univ. of Minnesota, Minneapolis, NM. available from: Univ. Microfilms.
- Van Alstine, R. E.; and Simon, F. D. Fluorine in a closed drainage basin, Saguache and Alamosa counties, Colorado: Geological Survey Bulletin (Washington), Vol. 1533, 7 p., 63 anal., 1 table, sketch map, geochem. map 1:250,000, 21 ref., 1982.
- Van Schmus, W. R. see Bickford, M. E.
- Van Siclen, Dewitt C. see Ottmann, Jeffry D.
- Vance, R. K.; and Blackburn, W. H. Investigation of the basement rocks near Gunnison, Colorado [abstr.]: in Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 229, February 1981. 1700-1650 m.y.

- Vandenbrooks, M.; Durane, B.; and Hood, A.** Thermal evolution experiments performed on kerogen from argillaceous rocks of the Green River Suite (Uinta Basin) [abstr.]: Abstracts of Reports - International Congress on Organic Geochemistry, Vol. 8, No. 1, p. 115-116, 1977.
- Veenhuis, J. E.** see Cochran, B. J.
- Ver Hoeve, Mark W.** Facies-controlled diagenesis and reservoir character, Entrada Sandstone (Late Jurassic), Durango, Colorado [abstr.]: in AAPG annual convention with divisions SEPM/EMD/DPA (Anonymous); AAPG Bulletin, Vol. 66, No. 5, p. 638-639, May 1982.
- Verbeek, E. R.; and Grout, M. A.** (investigators). Mechanics of joints in the Piceance Creek basin, Colorado [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 60-61, 1982 [1983].
- Vitorovic, D.; Pfenndt, P. A.; and Krsmanovic, V. D.** Structural investigations of Aleksinac Shale kerogen by chemical and spectroscopic methods: in Advances in organic geochemistry, 1981 (Bjoroy, M., editor; et al.), Proceedings of the International Meeting on Organic Geochemistry, Vol. 10, p. 620-627, illus. (incl. 1 table), 16 ref., 1983. (A Wiley Heyden publication).
- Vitorovic, D.** see also Ambles, A.  
-- see also Pfenndt, P.
- Voorhees, K. J.** see Hickey, J. C.  
-- see Klusman, R. W.
- Voorhees, Kent J.** see Klusman, Ronald W.
- Voynick, Steve.** Field trip; Ruby Mountain garnets: Rock & Gem, Vol. 13, No. 8, p. 62-65, illus. (incl. sketch map), August 1983.
- Vreeland, Robert H.** Colorado: in the collection Nature's bridges and arches, Robert H. Vreeland, United States, Vol. 18, 77 p., illus., 1982.
- Waddington, R. E.** White River basin oil shale water assessment: in Proceedings of the Conference on water and energy technical and policy issues (Kilpatrick, Fritz, editor; et al.), Am. Soc. Civ. Eng., New York, NY, United States, p. 334-339, 1 table, sketch map, 1982.
- Wadood, A.; El Rabaa, M. A.; Hustrulid, W. A.; et al.** Spatial distribution of deformation moduli around the CSM/ONWI room, Edgar Mine, Idaho Springs, Colorado: in Issues in rock mechanics (Goodman, Richard E., editor; et al.), Proceedings - Symposium on Rock Mechanics, Vol. 23, p. 790-801, illus. (incl. 2 tables), 5 ref., 1982.
- Wagner, P.** see Peterson, E. J.
- Waite, W.** see MacDonald, H.
- Walker, Danny N.; and Frison, George C.** The late Pleistocene and Holocene environment of southeastern Wyoming [abstr.]: in Character and timing of rapid environmental and climatic changes (Markgraf, Vera, chairperson; et al.), Am. Quat. Assoc., Natl. Conf., Abstr., Vol. 7, p. 172, 1982. Seventh biennial conference of the American Quaternary Association.
- Wallace, A. K. (investigator).** Studies of the Schwartzwalder mine, Jefferson County, Colorado [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 35, 1982 [1983].
- Wallace, Alan Ryon.** Structural and mineralogical characteristics and distribution of carbonate-dominated fault breccias associated with uranium deposits, Front Range, Colorado: Economic Geology and the Bulletin of the Society of Economic Geologists, Vol. 77, No. 8, p. 1945-1950, 17 anal., 1 table, geol. sketch maps, 13 ref., December 1982.
- Wallace, Alan Ryon.** Alteration and vein mineralization, Schwartzwalder uranium deposit, Front Range, Colorado: 189 p., Doctoral, 1983, Oregon State Univ., Corvallis, OR. available from: Univ. Microfilms.
- Wallace, Alan Ryon** see also Hills, F. Allan
- Wanke, H.** see Floran, R. J.
- Wanner, John J.** Bighole Lewis Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 50-53, illus. (incl. sketch map), 3 ref., 1983.
- Warren, Peter; Loehr, William; Baldwin, Thomas O.; et al.** Colorado oil shale development scenarios, 1981-2000: Colo. Sch. Mines, Golden, CO, United States, 63 p., illus. (incl. 20 tables), March 1981. Prep. for Governor's Blue Ribbon Panel.
- Wayman, Cooper H.; and Genasci, Gail A.** Permits handbook for coal development: Colo. Sch. Mines Press, Golden, CO, United States, 616 p., illus. (incl. geol. sketch maps), 1981.
- Webster, Mark.** Jackpot Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 256-261, illus. (incl. isopach maps), 3 ref., 1983.
- Webster, Mark.** Sand River Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 460-463, illus. (incl. isopach maps), 3 ref., 1983.

- Webster, Mark. Vallery Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 500-503, illus. (incl. isopach map), 3 ref., 1983.
- Webster, Mark. Xenia West Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 526-529, illus. (incl. isopach map), 2 ref., 1983.
- Weeks, J. B.** *see* Krothe, N. C.
- Weichman, B. E.** *see* Cole, R. D.
- Weichman, Ben.** An update of saline zone oil shale development: *in* Symposium papers; synthetic fuels from oil shale II (Tarman, Paul B., chairperson; et al.), Inst. Gas Technol., Chicago, IL, United States, p. 261-275, illus. (incl. 1 table, sketch maps), March 1982.
- Weiland, E. F.; and Grauch, R. I.** Stream-sediment geochemical survey of the Bureau of Land Management's Arkansas Canyon Planning Unit in south-central (Canon City area) Colorado: Open-File Report (United States Geological Survey, 1978), 97 p., illus. (incl. 700 anal., 4 tables; index map 1:50,000), 1981. (Rep. No. 81-0673) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Weiland, E. F.; Connors, R. A.; Robinson, M. L. (preparers); et al.** Geochemical and geostatistical evaluation, Arkansas Canyon planning unit, Fremont and Custer counties, Colorado: Open-File Report (United States Geological Survey, 1978), 115 p., illus. (incl. 700 anal., 4 tables, sketch maps; geol. map 1:50,000; geochem. maps 1:50,000), 50 ref., 1982. (Rep. No. 82-0462) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Weimer, Paul C.** Upper Cretaceous stratigraphy and tectonic history of the Ridgway area, northwestern San Juan Mountains, Colorado: *The Mountain Geologist*, Vol. 19, No. 4, p. 91-104, illus. (incl. 1 table, sects., strat. cols., sketch maps), 29 ref., October 1982.
- Weimer, Robert J.** Relation of unconformities, tectonics, and sea level changes, Cretaceous of the Denver Basin and adjacent areas: *in* Mesozoic paleogeography of the West-Central United States (Reynolds, Mitchell W., editor; et al.), Rocky Mountain Paleogeography Symposium, Vol. 2, p. 359-276, illus. (incl. sects., block diags., sketch maps), 64 ref., 1983.
- Weimer, Robert J.; and Sonnenberg, S. A.** Codell Sandstone, Denver Basin; frontier exploration in a mature basin [abstr.]: *in* AAPG Rocky Mountain Section meeting (Anonymous), AAPG Bulletin, Vol. 67, No. 8, p. 1360, August 1983.
- Weimer, Robert J.; and Sonnenberg, Stephen A.** Paleostucture analysis of the Pierre Shale, west-central Denver Basin, Colorado [abstr.]: *in* Rocky Mountain Section, the Geological Society of America, 34th annual meeting (Kolm, Kenneth E., chairperson), Abstracts with Programs - Geological Society of America, Vol. 13, No. 4, p. 229, February 1981.
- Weimer, Robert J.; and Sonnenberg, Stephen A.** Codell Sandstone; new exploration play, Denver Basin: *Oil and Gas Journal*, Vol. 81, No. 22, p. 119-125, illus. (incl. sects., sketch maps), 15 ref., May 30, 1983.
- Weimer, Robert J.** *see also* Porter, Karen W.  
-- *see also* Sonnenberg, Stephen A.
- Welder, Frank A.** Ground-water potential for oil shale development in northwestern Colorado [abstr.]: *in* 1981 AAPG annual convention with divisions; SEPM/EMD/DPA, AAPG Bulletin, Vol. 65, No. 5, p. 1006, May 1981.
- Wellborn, Jewel E. F.** Stratigraphy of the Mesaverde Formation on the Mt. Gunnison coal property, Gunnison County, Colorado: *in* Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 65-67, strat. col., sketch map, 6 ref., 1982.
- Wellborn, R. E. Butler Creek Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 96-99, illus. (incl. sketch map), 3 ref., 1983.
- Wellborn, R. E. Delaney Butte Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 148-151, illus. (incl. sketch map), 2 ref., 1983.
- Wellborn, R. E. Lone Pine Field:** *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 300-303, illus. (incl. struct. map), 2 ref., 1983.
- Wengerd, Sherman A.** Scenes from the past: *in* Albuquerque country II (Callender, Jonathan F., editor; et al.), Guidebook - New Mexico Geological Society, Vol. 33, p. 139-140, illus., 1982.
- West, Michael W.** Apparent late Pleistocene and Holocene surface faulting along the east flank of the Gore Range, Summit County, Colorado [abstr.]: *in* Colorado tectonics, seismicity and earthquake hazards; proceedings and field

- trip guide (Junge, W. Rahe, editor), Special Publication - Colorado Geological Survey, Vol. 19, p. 24-25, 2 ref., 1981.
- West, R. C.** see Jordan, J. M.
- Westerdale, Barbara.** Sorrento Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 476-483, illus. (incl. sketch map), 3 ref., 1983.
- Weston, L. K.** see Cole, Rex D.
- Wheeler, Timothy J.** see McCullough, M. Bruce
- White, L. D.** see Presser, T. S.
- White, Sidney E.** Physical and geological nature of the Indian Peaks, Colorado Front Range: *in* Ecological studies in the Colorado alpine (Haifpenny, James C., editor), Occasional Paper - Colorado, University, Institute of Arctic and Alpine Research, Vol. 37, p. 1-12, illus. (incl. geol. sketch maps), 30 ref., 1982.
- Whitney, James A.; and Stormer, John C., Jr.** Igneous sulfides in the Fish Canyon Tuff and the role of sulfur in calc-alkaline magmas: *Geology* (Boulder), Vol. 11, No. 2, p. 99-102, illus. (incl. 4 anal., 1 table), 18 ref., February 1983.
- Whittig, L. D.; Deyo, A. E.; and Tanji, K. K.** Evaporite mineral species in Mancos Shale and salt efflorescence, Upper Colorado River basin: *Soil Science Society of America Journal*, Vol. 46, No. 3, p. 645-651, illus. (incl. 1 table, sketch map), 29 ref., June 1982.
- Wicker, Walter L.; and Olgaard, Roger E.** Golden Spike Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 176-179, illus. (incl. sketch map), 1983.
- Wicker, Walter L.; and Olgaard, Roger E.** Ladder Creek Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 282-285, illus. (incl. struct. map), 1983.
- Wieler, Hank** see Smith, Duane A.
- Wilder, John J.** How to implement a water conservation program; the Denver experience: *in* Proceedings of the National water conservation conference on publicly supplied potable water (Dynamic Corporation), National Bureau of Standards Special Publication, Vol. 624, p. 339-346, June 1982.
- Williams, Alan.** The discovery of Hanging Lake in Fixin to Die Cave and exploration beyond: *Cinther*, Vol. 22, No. 6, p. 8-9, illus., December 1979.
- Williams, Jean O.** Buried treasures of the High Plains: *Water/Engineering & Management*, Vol. 130, No. 3, p. 26-27, illus. (incl. 1 tables), March 1983.
- Williams, Richard S., Jr.; and Driver, N. E.** Plan for hydrologic study of an area to be surface mined for coal in northwestern Colorado: *Open-File Report* (United States Geological Survey, 1978), 23 p., illus. (incl. 3 tables, sketch maps), 5 ref., 1982. (Rep. No. 82-0874) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver Fed. Cent., Lakewood, CO, United States.
- Williams, S. A.** Theisite, a new mineral from Colorado: *Mineralogical Magazine*, Vol. 46, No. 338, p. 49-50, illus. (incl. table), 1982.
- Windom, Kenneth E.** see Ryan, Timothy H.
- Winkle, Candace J.** Quail Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 406-409, illus. (incl. isopach map), 3 ref., 1983.
- Witherbee, L. J.; Godfrey, R. D.; and Dimelow, T. E.** Predicting turbidite-contourite reservoir intervals in tight gas sands; a case study from the Mancos B Sandstone: *in* Proceedings of the 1983 SPE/DOE joint symposium on low permeability gas reservoirs (Kersch, Keith M., chairperson), Soc. Pet. Eng., Denver, CO, United States, p. 87-94, illus. (incl. sketch maps), 16 ref., 1983. SPE/DOE 11609.
- Wobus, R. A.; Epis, R. C.; and Scott, G. R.** Reconnaissance geologic map of the Cripple Creek-Pikes Peak area, Teller, Fremont, and El Paso counties, Colorado: U. S. Geol. Surv., Misc. Field Stud. Map, MF-0805, 1 sheet, geol. map 1:48,000, 1976. Reprint.
- Wobus, R. A.** see also Scott, G. R.
- Wolff, Charles S.; and Workman, Wanda V.** Peoria, North Field: *in* Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 382-385, illus. (incl. sketch map), 2 ref., 1983.
- Wong, I. G.** see Humphrey, J. R.
- Wood, G. H., Jr. (investigator).** Coal occurrences of North America and adjacent areas [abstr.]: *in* Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 15, 1982 [1983].
- Woodburne, M. O.; MacFadden, Bruce J.; and Skinner, M. F.** The North American "Hipparion" datum and implications for the Neogene of the

- Old World: *Geobios*, Vol. 14, No. 4, p. 493-524 (incl. French sum.), illus. (incl. 2 tables, sketch map), 2 p. ref., 1981.
- Workman, Wanda V.** see Wolff, Charles S.
- Wray, Laura L.** **Chieftain and Hawkeye fields:** in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 114-121, illus. (incl. sketch map), 1 ref., 1983.
- Wright, J. V.** see Self, S.
- Wszolek, Patricia C.** see Gelpi, Emilio
- Yang, Chih Ted.** Reservoir construction and Yampa River morphology: in Proceedings; Workshop on downstream river channel changes resulting from diversions or reservoir construction (Simons, Daryl B., editor; et al.), p. 84-96, illus. (incl. 1 table, sketch map), 11 ref., September 1981. (Rep. No. FWS/OBS-81/48) available from: U. S. Fish and Wildlife Service, Washington, DC, United States.
- Yang, Esther** see Gelpi, Emilio
- Yeh, S. T.** see Chang, N. Y.
- Yochelson, Ellis L.** Walcott's discovery of Middle Ordovician vertebrates: *Earth Sciences History*, Vol. 2, No. 1, p. 66-75, illus., 32 ref., 1983. (George W. White issue).
- Young, Bennett H.** see Lockley, Martin G.
- Young, E. J.** Uranium in Wheeler Basin, Grand County, Colorado: Open-File Report (United States Geological Survey, 1978), 31 p., illus. (incl. 12 anal., 8 tables, geol. sketch map), 9 ref., 1982. (Rep. No. 82-0730) available from: U. S. Geol. Surv., Open-File Serv. Sect., West. Distrib. Branch, Denver, CO, United States.
- Young, Edward J.** Laramide-Tertiary intrusive rocks of Colorado [abstr.]: in Proceedings of the 75th national western mining conference and exhibition (Colorado Mining Association), Mining Year Book (Denver), Vol. 1972, p. 53, 1972.
- Young, Edward J.** see also Hills, F. Allan
- Young, Robert G.** Stratigraphy and petroleum geology of the Mesaverde Group, southeastern Piceance Creek basin, Colorado: in Southeastern Piceance Basin, western Colorado (Anonymous), Grand Junction Geol. Soc., Grand Junction, CO, United States, p. 45-54, illus. (incl. 1 table, sect., sketch maps), 15 ref., 1982.
- Zacharakis, Ted G.** Temperature, heat flow maps, and temperature gradient holes: in Geothermal resources assessment of Waunita Hot Springs, Colorado (Zacharakis, Ted G., editor), Special Publication - Colorado Geological Survey, Vol. 16, p. 56-62, geol. sketch maps, 1981. (Rep. No. DOE/ET/28365-14) available from: U. S. Dep. Energy, United States.
- Zacharakis, Ted G.; and Pearl, Richard Howard.** Geothermal resource assessment of Canon City, Colorado area: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 20, 81 p., illus. (incl. 9 tables, geol. sketch maps), 47 ref., 1982. (Rep. No. DOE/ET/28365-22) available from: Colo. Geol. Surv., Dep. Nat. Resour., Denver, CO, United States.
- Zacharakis, Ted G.; Pearl, Richard Howard; and Ringrose, Charles D.** Geothermal resource assessment of Ranger Warm Spring, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 24, 65 p., illus. (incl. 16 tables, sketch maps), 38 ref., 1983. (Rep. No. DOE/ET/28365-26) available from: Colo. Geol. Surv., Dep. Nat. Resour., Denver, CO, United States.
- Zacharakis, Ted G.; Pearl, Richard Howard; and Ringrose, Charles D.** Geothermal resource assessment of western San Luis Valley, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 19, 71 p., illus. (incl. 13 tables, geol. sketch maps), 75 ref., 1983. (Rep. No. DOE/ET/28365-25) available from: Colo. Geol. Surv., Dep. Nat. Resour., Denver, CO, United States.
- Zacharakis, Ted G.; Ringrose, Charles D.; and Pearl, Richard Howard.** Geothermal resources assessment of Duray, Colorado: Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Vol. 15 (DOE/ET/28365-9), 70 p., illus. (incl. 13 tables), 28 ref., 1981.
- Zacharakis, Ted G. (editor).** Geothermal resources assessment of Waunita Hot Springs, Colorado: Special Publication - Colorado Geological Survey, Vol. 16, 69 p., 1981. (Rep. No. DOE/ET/28365-14) available from: U. S. Dep. Energy, United States. Individual articles are cited separately.
- Zacharakis, Ted G.** see also McCarthy, Kevin P.  
-- see also Pearl, Richard Howard  
-- see also Repplier, Frank N.
- Zech, Robert S. (investigator).** Fossil Ridge, Colorado, uranium studies [abstr.]: in Geological Survey research 1982, Geological Survey Professional Paper, Vol. 1375, p. 41, 1982 [1983].
- Zeitner, June Culp.** Some magnificent beryls from the Proctor collection: *Lapidary Journal*, Vol. 36, No. 11, p. 1836-1843, illus., 5 ref., February 1983.

- Zeller, E. J.; Dreschhoff, G.; Angino, E.; et al. Potential uranium host rocks and structures in the central Great Plains: Geology Series - Kansas Geological Survey, Vol. 2, 59 p., illus. (incl. 1 table, geol. sketch maps), 60 ref., August 1976.
- Zeuch, David H. The mechanical behavior of Anvil Points oil shale at elevated temperatures and confining pressures: Canadian Geotechnical Journal = Revue Canadienne de Geotechnique, Vol. 20, No. 2, p. 344-352 (incl. French sum.), illus. (incl. 1 table), 23 ref., May 1983.
- Zevenbergen, Lyle W. see Thorne, Colin R.
- Ziegler, John R. Oil and gas developments in eastern and northwestern Colorado in 1981: in World energy developments 1981 (Anonymous), AAPG Bulletin, Vol. 66, No. 11, p. 1849-1858, 3 tables, sketch map, November 1982.
- Ziegler, John R. Pollen Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 396-399, illus. (incl. isopach map), 2 ref., 1983.
- Ziegler, John R. Poncho Field: in Oil and gas fields of Colorado-Nebraska and adjacent areas 1982 (Crouch, Marshall C., III, editor), Rocky Mt. Assoc. Geol., Denver, CO, United States, p. 400-405, illus. (incl. isopach maps), 1 ref., 1983.
- Ziegler, John R. see also Ethridge, Frank G.
- Zielinski, R. A. The mobility of uranium and other elements during alteration of rhyolite ash to montmorillonite; a case study in the Troublesome Formation, Colorado, U.S.A.: Chemical Geology, Vol. 35, No. 3-4, p. 185-204, illus. (incl. table, anal.), 2 p. ref., 1982.
- Zielinski, R. A.; Petermann, Z. E.; Stuckless, J. S.; et al. The chemical and isotopic record of rock-water interaction in the Sherman Granite, Wyoming and Colorado: Contributions to Mineralogy and Petrology, Vol. 78, No. 3, p. 209-219, illus. (incl. 38 anal., 6 tables, geol. sketch map, sect.), 44 ref., 1981.
- Zimmeman, Judy see Coe, Barbara A.
- Zoback, M. D. Friction, faulting, and in-situ stress [abstr.]: in 78th annual meeting, Seismological Society of America, abstracts (Long, Tim, editor), Earthquake Notes, Vol. 54, No. 1, p. 63, March 1982.



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  - waste disposal:* Mining technology development for hard rock excavation (Hustrulid, W.)
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- Proposed mining and reclamation plan, Meeker area mines, Rio Blanco County, Colorado (U. S. Office of Surface Mining Reclamation and Enforcement)
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- surveys:** An integrated geophysical study of the Shaw Warm Spring area, San Luis Valley, South-central Colorado (Bond, Marc A.)
- Audio-magnetotelluric and telluric profiling studies in the Shaw Warm Springs region, Colorado (Christopherson, K. R.)
  - Interpretation of geophysical data from the Colado KGRA, Pershing County, Nevada (Mackelprang, Claron E.)
  - Slides showing aeromagnetic and gravity data for regional mineral exploration in Colorado, New Mexico, and Arizona (Klein, D. P.)
- geophysics** see also deformation; engineering geology
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- glacial geology--glacial features**
- boulders:** Preliminary quantitative study of Alpine subnival boulder pavements, Colorado Front Range, U.S.A. (Hara, Yoshio)
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- deposition:** Glaciation of the Pikes Peak region, Colorado, U.S.A. (Huber, T. P.)
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  - Soft-sediment deformation by rock glaciers, Indian Peaks wilderness area, Colorado Front Range (Benedict, James B.)
- glacial erosion:** Late Pleistocene glacial equilibrium-line altitudes in the Colorado Front Range; a comparison of methods (Meierding, Thomas C.)
- glacial extent:** Physical and geological nature of the Indian Peaks, Colorado Front Range (White, Sidney E.)
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- avalanches:** The geomorphology of subalpine snow avalanche runout zones: San Juan Mountains, Colorado (Huber, Thomas P.)
- glaciation** see under glacial geology
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- epithermal processes:** Exploration for epithermal gold and silver deposits; the epithermal model (Eimon, Paul)
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- water resources:** A data management system for areal interpretive data for the High Plains in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming (Luckey, R. R.)
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- Great Plains--hydrogeology**
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- Great Plains--stratigraphy**
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*magnetic properties:* Origin of NRM of San Juan volcanic rocks from Colorado, USA (Tanaka, Hidefumi)

### igneous rocks--pyroclastics

*ash-flow tuff:* Large wave forms from the Fish Canyon Tuff, Colorado (Self, S.)

*ignimbrite:* A lead isotope study of mid-Tertiary ignimbrites and lavas from the Sierra Madre Occidental, Chihuahua, Mexico (Barreiro, Barbara A.)

*textures:* Precambrian geology of the Iris area, Gunnison and Saguache counties, Colorado (Afifi, Abdulkader M.)

*tuff:* Igneous sulfides in the Fish Canyon Tuff and the role of sulfur in calc-alkaline magmas (Whitney, James A.)

*volcanic ash:* Physical and chemical characteristics of Mount St. Helens airborne debris (Sedlacek, W. A.)

### igneous rocks--rhyolites

*uranium ores:* Geology and geochemistry of uranium mineralization in rhyolites of the Nellie Creek area, Hinsdale County, Colorado (Gibbs, William Kirk, Jr.)

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*kimberlite:* Kimberlites; a petrologist's best friend (Bolivar, Stephen L.)

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*pyrrhotite:* Igneous sulfides in the Fish Canyon Tuff and the role of sulfur in calc-alkaline magmas (Whitney, James A.)

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*granulites:* Lower crustal granulite facies and related xenoliths from Colorado-Wyoming state line kimberlite (Bradley, S. D.)

*infrared spectroscopy see under methods under spectroscopy*

### Insecta--biogeography

*Holocene:* Paleoenvironmental interpretations of Holocene insect fossil assemblages from the La Poudre Pass site, northern Colorado Front Range (Elias, S. A.)

### Insecta--Blattopteroidea

*Carboniferous:* The variability of the wings of Paleozoic Blattodea, Insecta; Part 1 (Schneider, Jorg)

### Insecta--faunal studies

*Pleistocene:* Paleoenvironmental interpretation of bark beetle fossils from two high altitude sites in the Colorado Rockies (Elias, S. A.)

### Insecta--miscellanea

*Oligocene:* Latest Oligocene insects from the Creede Caldera in southwestern Colorado (Cuffey, R. J.)

*instruments see under field studies under rock mechanics; see under well-logging; see under seismic methods under geophysical methods*

*intrusions see also igneous rocks; metamorphism; metasomatism*

### intrusions--age

*absolute age:* Timing of mineralization and related intrusive activity near Central City, Colorado

(Rice, C. M.)

### intrusions--batholiths

*zoning:* Granite and rhyolite relationships of the Lake City Caldera area, Hinsdale County, Colorado (Ernst, Robert P.)

### intrusions--composition

*alkalic composition:* Mineral deposits associated with alkaline intrusive complexes; examples from Wyoming, Colorado, Montana, and California (Armbrustmacher, Theodore J.)

### intrusions--dikes

*tuff:* Results of the geologic mapping program during shaft sinking and subsequent station development at C-B track (Stellavato, Nick)

### intrusions--emplacement

*age:* Bedrock geology of western Taylor Park, Gunnison County, Colorado (Bailey, Mark H.)

### intrusions--geochemistry

*genesis:* Geology and geochemistry of uranium mineralization in rhyolites of the Nellie Creek area, Hinsdale County, Colorado (Gibbs, William Kirk, Jr.)

### intrusions--petrology

*mineral resources:* Laramide-Tertiary intrusive rocks of Colorado (Young, Edward J.)

### intrusions--pipes

*breccia pipes:* A cryptovolcanic breccia pipe at Jack Flats, Eagle County, Colorado (Schneider, Jill L.)

*kimberlite:* Diamond-bearing kimberlite pipes in Wyoming and Colorado (Hausel, W. Dan)

### intrusions--plutons

*distribution:* Thermal effects on sedimentary organic matter and recognition and mapping of subjacent igneous plutons, Ruby Range, Colorado (Baker, Donald R.)

*geochemistry:* Redskin Granite; a rare-metal-rich Precambrian pluton, Colorado, USA (Desborough, G. A.)

**intrusions--ring complexes***alkalic composition:*

Genetic implication of minor-element and Sr-isotope geochemistry of alkaline rock complexes in the Wet Mountains area, Fremont and Custer counties, Colorado (Armbrustmacher, Theodore J.)

**intrusions--stocks***paleomagnetism:*

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*petrology:* Geology and mineralization of the Paradise Stock, Gunnison County, Colorado (Pillmore, Kathryn A.)

**Invertebrata see also**

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**iron--geochemistry**

*soils:* Effect of redox on the solubility and availability of iron (Schwab, A. P.)

-- Estimation of the concentration of Fe/3+ and the (Fe/3+)(OH/-)/3\_ ion product from equilibria EDTA in soil (Norvell, W. A.)

**isotope dating see absolute age****isotopes see also absolute age; geochronology****isotopes--abundance**

*crystalline rocks:* Isotopic composition of uranium and thorium in crystalline rocks (Rosholt, John N.)

**isotopes--analysis**

*soil gases:* Seasonal and short-term variations in gas emission at an aseismic site (Jaacks, J. A.)

**isotopes--carbon**

*C-13/C-12:* Geochemical and paleobiological evidence for the submarine spring origin of carbonate mounds in the Pierre Shale (Cretaceous) of Colorado (Arthur, M. A.)

-- Origin of natural gases in San Juan basin (Rice, D. D.)

-- Relation of natural gas composition to thermal maturity and source rock type in San Juan Basin, northwestern New Mexico and southwestern Colorado (Rice, Dudley D.)

-- Terrestrial influence and bioturbation effects on composition of organic matter in Middle Cretaceous shale and limestone sequence near Pueblo, Colorado (Pratt, Lisa M.)

**isotopes--coal***radioactive isotopes:*

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**isotopes--hydrogen**

*D/H:* Deuterium content of lignin and of the methyl and OH hydrogen of cellulose (Friedman, Irving)

**isotopes--igneous rocks**

*ratios:* The chemical and isotopic record of rock-water interaction in the Sherman Granite, Wyoming and Colorado (Zielinski, R. A.)

**isotopes--lead**

*Pb-206/Pb-204:* A lead isotope study of mid-Tertiary ignimbrites and lavas from the Sierra Madre Occidental, Chihuahua, Mexico (Barreiro, Barbara A.)

*ratios:* Silver Plume Granite-a possible source of uranium, Tallahassee Creek deposits (Hills, F. A.)

**isotopes--metal ores**

*stable isotopes:* A compilation of fluid inclusion and stable isotope data on selected precious- and base-metal epithermal deposits (Hayba, D. O.)

**isotopes--petroleum**

*tracers:* Surface radiometric mapping in oil and gas exploration (Morse, Jerome G.)

**isotopes--sedimentary rocks**

*ratios:* Geochemical and sedimentologic indicators of depositional environments and diagenetic trends in the Niobrara Formation (Upper Cretaceous), Colorado and

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-- Sedimentologic and diagenetic history of reservoirs in Niobrara Formation, Denver basin (Pollastro, R. M.)

**isotopes--strontium**

*Sr-87/Sr-86:* Genetic implication of minor-element and Sr-isotope geochemistry of alkaline rock complexes in the Wet Mountains area, Fremont and Custer counties, Colorado (Armbrustmacher, Theodore J.)

**isotopes--uranium ores**

*stable isotopes:* Ore emplacement in the Schwartzwalder mine, Jefferson County, Colorado (Anonymous)

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**lava--petrology**

*lava flows:* Geology and geochemistry of basalts from Fishers Peak Mesa, Colorado (Ryan, Timothy H.)

**lead--geochemistry**

*soils:* Copper, molybdenum, lead, and silver in soils of the Bonanza Caldera, San Juan volcanic field, Colorado (Pride, Douglas E.)

**lead--isotopes**

*Pb-206/Pb-204:* A lead isotope study of mid-Tertiary ignimbrites and lavas from the Sierra Madre Occidental, Chihuahua, Mexico (Barreiro, Barbara A.)

*Pb-210:* Surface radiometric mapping in oil and gas exploration (Morse, Jerome G.)

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- Rocky Mountains
- lebensspuren** see under biogenic structures under sedimentary structures; see under effects under diagenesis
- limestone** see also under carbonate rocks under sedimentary rocks
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- lithium--analysis**  
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- lithium ores** see also under economic geology
- magmas** see also igneous rocks; intrusions; lava
- magmas--composition**  
*mafic composition*: A cryptovolcanic breccia pipe at Jack Flats, Eagle County, Colorado (Schneider, Jill L.)  
*ultramafic composition*: Mineralogical and textural-genetic classification of northern Colorado-southern Wyoming kimberlites (McCallum, M. E.)  
*uranium ores*: Geology and geochemistry of uranium mineralization in rhyolites of the Nellie Creek area, Hinsdale County, Colorado (Gibbs, William Kirk, Jr.)
- magmas--differentiation**  
*chemical composition*: Granite and rhyolite relationships of the Lake City Caldera area, Hinsdale County, Colorado (Ernst, Robert P.)  
*fractional crystallization*: Genetic implication of minor-element and Sr-isotope geochemistry of alkaline rock complexes in the Wet Mountains area, Fremont and Custer counties, Colorado (Armbrustmacher, Theodore J.)
- magmas--evolution**  
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- magnetic surveys** see under geophysical surveys
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- Mammalia--Multituberculata**  
*Paleocene*: A new species and additional material of *Catopsalis* (Mammalia, Multituberculata) from the Western Interior of North America (Middleton, Michael D.)
- Mammalia--Perissodactyla**  
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- Mammalia--Primates**  
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- mammals--paleoecology**  
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- manganese--geochemistry**  
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*soils*: The effect of redox on the solubility and availability of manganese in a Calcareous soil (Schwab, A. P.)
- mantle** see also under seismology
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- maps--cartography**  
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- mass movements** see under geomorphology
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 -- Soil mercury investigations, Waunita Hot Springs (Ringrose, Charles D.)
- metal ores** see also under economic geology; gold ores; silver ores; see also under economic geology under automatic data processing; bibliography; Colorado Plateau; Rocky Mountains; symposia
- metal ores--genesis**  
*ore-forming fluids*: Origin of fluids and metals in porphyry and epithermal mineral deposits (LeAnderson, Jim)

- phase equilibria:*  
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- metamorphic rocks** *see also* igneous rocks; metamorphism; metasomatism
- metamorphic rocks--lithostratigraphy**  
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*Proterozoic:* Las Animas Formation (upper Precambrian) in the subsurface of southeastern Colorado (Tweto, Ogden)
- metamorphic rocks--metaigneous rocks**  
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- metamorphic rocks--metasedimentary rocks**  
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- metamorphic rocks--migmatites**  
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- metamorphic rocks--mineral assemblages**  
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- metamorphism** *see also* metamorphic rocks; metasomatism
- metamorphism--contact metamorphism**  
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- metamorphism--P-T conditions**  
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- metasomatic rocks** *see also* igneous rocks; metamorphic rocks; metamorphism; metasomatism
- metasomatic rocks--greisen**  
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- metasomatic rocks--skarn**  
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- metasomatism--processes**  
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- meteor craters** *see also* meteorites
- meteorites--geochemistry**  
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- methods** *see under* automatic data processing; chemical analysis; geochronology; hydrogeology; mathematical geology; mineral exploration; mining geology; spectroscopy
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- mineral deposits, genesis--concepts**  
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- mineral deposits, genesis--metal ores**  
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*processes:* Geology of the Mississippian Leadville Limestone; Fulford area, Eagle County, Colorado (Richards, Billy D.)  
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- Colorado (Bazrafshan, Khosrow)
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- mineral deposits, genesis--processes**  
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- mineral deposits, genesis--silver ores**  
*hydrothermal processes:* Bachelor Mountain silver deposit, Mineral County, Colorado (Smith, Jess W.)  
*structural controls:* Ore mineralogy and fluid inclusion study of the southern Amethyst vein system, Creede Mining District, Colorado (Robinson, Richard W.)
- mineral deposits, genesis--uranium ores**  
*controls:* Field, model, and computer simulation study of some aspects of the origin and distribution of Colorado Plateau-type uranium deposits (Ethridge, Frank G.)  
*hydrothermal processes:* Alteration and vein mineralization, Schwartzwalder uranium deposit, Front Range, Colorado (Wallace, Alan Ryon)  
*processes:* Early Proterozoic origin for uranium mineralization in the Colorado Front Range (Nelson, C. E.)
- structural controls:** Structural and mineralogical characteristics and distribution of carbonate-dominated fault breccias associated with uranium deposits, Front Range, Colorado (Wallace, Alan Ryon)
- mineral exploration--geochemical methods**  
*automatic data processing:* Computer mapping of soil and rock geochemistry; a comparison using data from the Breckenridge mining district, Colorado (Hasenohr, E. J.)  
*data:* Geochemical analyses of rock, stream-sediment, and heavy-mineral concentrate samples collected from the Spanish Peaks Wilderness Study Area, Huerfano and Las Animas counties, Colorado (Budding, K. E.)  
*fluorspar:* Fluorine in a closed drainage basin, Saguache and Alamosa counties, Colorado (Van Alstine, R. E.)  
*metal ores:* Mineral resources of the Comanche-Big South, Neota-Flat Top, and Never Summer Wilderness Study Area, north-central Colorado (Pearson, R. C.)  
*ore guides:* An evaluation of stream sediment and heavy mineral concentrate geochemistry as aids in geologic mapping and mineral exploration in northern Colorado (Allen, Michael Steven)  
*stream sediments:* Analysis of stream sediment reconnaissance data for mineral resources from the Montrose NTMS quadrangle, Colorado (Beyth, Michael)
- Geochemical and geostatistical evaluation, Arkansas Canyon planning unit, Fremont and Custer counties, Colorado (Weiland, E. F.)
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- Stream-sediment geochemical survey of the Bureau of Land Management's Arkansas Canyon Planning Unit in south-central (Canon City area) Colorado (Weiland, E. F.)
- techniques:* Major, minor, and trace elements in samples from the Wheeler Wilderness Study Area, Colorado, as determined by inductively coupled argon plasma-atomic emission spectrometry (Crock, J. G.)
- trace elements:* Silver Plume Granite; possible source of uranium in sandstone uranium deposits, Tallahassee Creek and High Park areas, Fremont and Teller counties, Colorado (Hills, F. A.)
- uranium ores:* Uranium in Wheeler Basin, Grand County, Colorado (Young, E. J.)
- mineral exploration--geological methods**  
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- mineral exploration--geophysical surveys**  
*gravity surveys:* Principal facts for gravity stations in parts of Grand, Clear Creek, and Summit counties, Colorado (Abrams, G. A.)  
*well-logging:* Drilling-mud emanometry, a new technique for uranium exploration (Bell, Mark W.)
- Potential uranium host rocks and structures in the central Great Plains (Zelner, E. J.)
- mineral exploration--methods**  
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- Craig Quadrangle, Colorado (Craig, Lawrence C.)

- Denver Quadrangle, Colorado (Hills, F. Allan)
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- Intermediate-grade uranium resource assessment project for part of the Maybell District, Sand Wash Basin, Colorado (Goodknight, C. S.)
- La Junta Quadrangle, Colorado and Kansas (McCarn, Dan W.)
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#### mineral exploration--ore guides

- metal ores:* Stratabound Precambrian sulfide deposits, Colorado and southern Wyoming (Sheridan, Douglas M.)
  - uranium ores:* Structural and mineralogical characteristics and distribution of carbonate-dominated fault breccias associated with uranium deposits, Front Range, Colorado (Wallace, Alan Ryon)
- #### mineral exploration--remote sensing
- diamonds:* Remote sensing exploration for poorly exposed kimberlite in the Colorado-Wyoming region (Marks, Janet E.)
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##### exploration--techniques

- stream sediments:* Stream sediment exploration sampling for kimberlite in Colorado-Wyoming, and techniques of diamond extraction (Brink, Carl)

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- arsenates:* Theisite, a new mineral from Colorado (Williams, S. A.)
- carbonates:* And they hunted rocks merrily, forever after (Lund, Merle)
- framework silicates, feldspar group:* Field trip; West Maroon Pass orthoclase (Hall, Denis)
- framework silicates, silica minerals:* Mount Antero crystal; the Colorado Hills are alive with the sounds of rock picks (Malocsay, Zoltan)
- miscellaneous minerals:* Across the San Juan Mountains (Rickard, T. A.)
- Across the San Juan Mountains (Rickard, T. A.)
- Rockhounding in the Colorado Rockies (Carson, Xanthus)
- phosphates:* April, 1936; Fluorescent minerals from little known localities (Seaman, David M.)
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##### minerals--arsenates

- theisite:* Theisite, a new mineral from Colorado (Williams, S. A.)

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- calcite:* And they hunted rocks merrily, forever after (Lund, Merle)
- nahcolite:* An update of saline zone oil shale development (Weichman, Ben)

##### minerals--framework silicates, alkali feldspar

- orthoclase:* Field trip; West Maroon Pass orthoclase (Hall, Denis)

##### minerals--framework silicates, silica minerals

- quartz:* Mount Antero crystal; the Colorado Hills are alive with the sounds of rock picks (Malocsay, Zoltan)

##### minerals--miscellaneous minerals

- collecting:* Rockhounding in the Colorado Rockies (Carson, Xanthus)

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- collecting:* Across the San Juan Mountains (Rickard, T. A.)
- Across the San Juan Mountains (Rickard, T. A.)

##### minerals--phosphates

- collecting:* April, 1936; Fluorescent minerals from little known localities (Seaman, David M.)

- turquoise:* Turquoise chief mine (Carson, Xanthus)

##### minerals--ring silicates

- beryl:* Some magnificent beryls from the Proctor collection (Zeitner, June Culp)

- Turning barite into beryl (Morrison, Virginia)

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- barite:* Turning barite into beryl (Morrison, Virginia)

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- Some questions on Piceance Basin hydrology (Birman, Joseph H.)

##### surface mining:

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- mines:* Across the San Juan Mountains (Rickard, T. A.)
- photography:* Secure the shadow; Lachlan McLean, Colorado mining photographer (Smith, Duane A.)

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- monitoring:* Aquifer dewatering and drawdown at an open mine pit in northwestern Colorado (Saunders, Geoffrey P.)

- Case history; ground-water monitoring at an underground coal mine in West Central Colorado (Kimball, Dan B.)

- Hydrologic and engineering considerations for ground-water monitoring wells at oil shale mines, Piceance and Uinta basins, Colorado and Utah (Miller, Glen A.)

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- pollution:* Environmental and health consequences of shale oil production in the USA (Chappeil, Willard)

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- mollusks--ammonoids**  
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- mollusks--biostratigraphy**  
*Cretaceous:* Mid-Cretaceous molluscan biostratigraphy and paleogeography of south-western part of Western Interior, United States (Cobban, W. A.)  
*Jurassic:* Jurassic (Oxfordian and late Callovian) ammonites from the Western Interior region of the United States (Imlay, R. W.)
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- molybdenum ores** see also under economic geology; see also under economic geology under automatic data processing
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- museums--mineralogy**  
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*coal:* Permits handbook for coal development (Wayman, Cooper H.)
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*impact statements:* Missouri River basin water resources management plan; A comprehensive, coordinated, joint plan for water and related land resources and draft environmental impact statement; Appendix H, Water resources problems and opportunities; Appendix G, State planning objectives (Missouri River Basin Commission)
- Remedial action standards for inactive uranium processing sites (40 CFR 192); Volumes 1 and 2 (U. S. Environmental Protection Agency, Office of Radiation Programs)
- reclamation:* Reclamation of mined lands in the western coal region (Narten, P. F.)
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- oil and gas fields** see also under economic geology; natural gas; petroleum
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- oil shale** see also under economic geology
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- organic materials** see also natural gas; oil shale; petroleum
- organic materials--alteration**  
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#### Denver County

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- Friedman, J. D. Lineaments and geologic structure of the northern Paradox Basin, Colorado and Utah
- Hills, F. Allan. Greeley Quadrangle, Colorado
- Holmes, W. F. Ground water in the southeastern Uinta Basin, Utah and Colorado
- Karimpour, Mohammad Hassan. Petrology, geochemistry, and genesis of the A.O. porphyry copper complex in Jackson and Grand counties, northwestern Colorado
- Lindskov, K. L. Water resources and potential hydrologic effects of oil-shale development in the southeastern Uinta Basin, Utah and Colorado
- Malan, Roger C. Geology of uranium deposits in the northern part of the Rocky Mountain Province of Colorado
- O'Sullivan, R. B. Stratigraphic sections of Middle Jurassic Entrada Sandstone and related rocks from Dewey Bridge, Utah, to Bridgeport, Colorado
- Pearl, Richard Howard. Geothermal resource assessment of Hot Sulphur Springs, Colorado
- White, Sidney E. Physical and geological nature of the Indian Peaks, Colorado Front Range
- Young, E. J. Uranium in

Wheeler Basin, Grand County, Colorado

**Gunnison County**

- Afifi, Abdulkader M. Precambrian geology of the Iris area, Gunnison and Saguache counties, Colorado
- Bailey, Mark H. Bedrock geology of western Taylor Park, Gunnison County, Colorado
- Beyth, Michael. Analysis of stream sediment reconnaissance data for mineral resources from the Montrose NTMS quadrangle, Colorado
- Carpenter, Robert H. Interpretation of water sample analyses, Waunita Hot Springs area, Gunnison County, Colorado
- Cox, Roy L. The ground-water impacts of underground coal mining in the Somerset coal field, Delta and Gunnison counties, Colorado
- Daub, Gerald J. Stratigraphy and geology of some coal mines along the North Fork of the Gunnison River, Somerset coal field, Colorado
- Dayvault, Richard D. Excursion 1; Road log from Marble to Lead King Basin and Crystal Dellechaie, Frank. A hydrogeochemical comparison of the Waunita Hot Springs, Hortense, Castle Rock and Anderson Hot Springs
- Geothermex. Waunita Hot Springs, Colorado geothermal prospect reconnaissance evaluation and recommendations
- Goodknight, Craig S. First day; Road log from Delta to junction of Colorado 133 and Gunnison County Road 3 via Hotchkiss, Somerset, and McClure Pass
- Henrichs GEOEXploration Company. Geothermal resistivity resource evaluation survey, Waunita Hot Springs Project, Gunnison County, Colorado
- Junge, W. Rahe. Geologic hazards in the North Fork of the Gunnison River area, Delta and Gunnison counties, Colorado
- K. W. Nickerson & Associates. Waunita Hot Springs project, Gunnison County, Colorado
- Lockley, Martin G. Hadrosaur locomotion and herding behavior; evidence from

footprints in the Mesaverde Formation, Grand Mesa coal field, Colorado

- Malan, Roger C. Geology of uranium deposits in the southern part of the Rocky Mountain Province of Colorado
- Pillmore, Kathryn A. Geology and mineralization of the Paradise Stock, Gunnison County, Colorado
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- Sharp, W. N. Geochemical map of the Powderhorn Wilderness Study Area and Cannibal Plateau Roadless Area, Gunnison and Hinsdale counties, Colorado
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- Thomas, Mark H. Stratigraphy of the Dakota and Burro Canyon formations near Gunnison, Colorado
- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees Quadrangle, southwestern Colorado
- U. S. Geological Survey. Aeromagnetic map of the Fossil Ridge area, Colorado
- U. S. Geological Survey. Land use and land cover and associated maps for Montrose, Colorado
- Usdansky, Steven Ira. Topologic properties of c-component, (c+4) phase petrogenetic grids with applications to silica and metamorphic rocks in the Gold Creek area, Gunnison County, Colorado
- Vance, R. K. Investigation of the basement rocks near Gunnison, Colorado
- Wellborn, Jewel E. F. Stratigraphy of the Mesaverde Formation on the Mt. Gunnison coal property, Gunnison County, Colorado
- Young, Robert G. Stratigraphy and petroleum geology of the Mesaverde Group, southeastern Piceance Creek basin, Colorado
- Zacharakis, Ted G. Geothermal resource assessment of Ranger Warm Spring, Colorado

**Hinsdale County**

- Beyth, Michael. Analysis of stream sediment reconnaissance data for mineral resources from the Montrose NTMS quadrangle, Colorado
- Ernst, Robert P. Granite and rhyolite relationships of the Lake City Caldera area, Hinsdale County, Colorado
- Gibbs, William Kirk, Jr. Geology and geochemistry of uranium mineralization in rhyolites of the Nellie Creek area, Hinsdale County, Colorado
- Pitkin, J. A. Interpretation of aerial radiometric data for the Lake City Caldera and vicinity, Hinsdale, San Juan, and Ouray counties, Colorado
- Reiter, Marshall. Geothermal studies in the San Juan Basin and the Four Corners area of the Colorado Plateau; II, Steady-state models of the thermal source of the San Juan volcanic field
- Rickard, T. A. Across the San Juan Mountains
- Sharp, W. N. Geochemical map of the Powderhorn Wilderness Study Area and Cannibal Plateau Roadless Area, Gunnison and Hinsdale counties, Colorado
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- Tweto, Ogden. Preliminary geologic map of the Montrose 1 degrees by 2 degrees Quadrangle, southwestern Colorado
- U. S. Geological Survey. Land use and land cover and associated maps for Montrose, Colorado

**Huerfano County**

- Budding, K. E. Geochemical analyses of rock, stream-sediment, and heavy-mineral concentrate samples collected from the Spanish Peaks wilderness Study Area, Huerfano and Las Animas counties, Colorado
- Lindsey, David A. Minturn and Sangre de Cristo formations of southern Colorado: a prograding fan-delta to alluvial-fan sequence shed

- from ancestral Rocky Mountains
- Malan, Roger C. Geology of uranium deposits in the southern part of the Rocky Mountain Province of Colorado
- McCalpin, James. Late Pleistocene glacier dynamics of the west flank of the northern Sangre de Cristo Mountains, south-central Colorado
- McCaslin, John C. Raton Basin commands more wildcat attention

**Jackson County**

- Craig, Lawrence C. Craig Quadrangle, Colorado
- Karimpour, Mohammad Hassan. Petrology, geochemistry, and genesis of the A.D. porphyry copper complex in Jackson and Grand counties, northwestern Colorado
- Kornfeld, Joseph A. Colorado oil strikes may mark North Park Basin comeback
- Loeffler, M. John. Australian-American interbasin water transfer
- Malan, Roger C. Geology of uranium deposits in the northern part of the Rocky Mountain Province of Colorado
- Pearson, R. C. Mineral resources of the Comanche-Big South, Neota-Flat Top, and Never Summer Wilderness Study Area, north-central Colorado
- Wellborn, R. E. Butler Creek Field
- Wellborn, R. E. Delaney Butte Field
- Wellborn, R. E. Lone Pine Field

**Jefferson County**

- Anonymous. Central Region
- Anonymous. Ore emplacement in the Schwartzwalder mine, Jefferson County, Colorado
- Costa, John E. Geology of Denver, Colorado, United States of America
- de Rojas, Isabel. Stratigraphy of the Mowry Shale (Cretaceous), western Denver Basin, Colorado
- Fitterman, D. V. Self-potential surveys near several Denver Water Department dams
- Gibbs, J. W. Hydrologic data for urban storm runoff in the Denver metropolitan area, Colorado

- Hillier, D. E. Depth to the water table (1976-1977) in the Greater Denver area, Front Range urban corridor, Colorado
- Kirkham, Robert M. Coal resources of the Denver and Cheyenne basins, Colorado
- Malan, Roger C. Geology of uranium deposits in the northern part of the Rocky Mountain Province of Colorado
- McCalpin, James. The geologic review process at the local government level; a county geologist's perspective
- Odin, Gilles S. NDS 103; Palaeocene, K-Ar/biotite-pumice, Interior N American Basin
- Swoifs, H. S. In situ geomechanics of crystalline and sedimentary rocks; Part III, First experiences with the C.S.I.R.O. hollow-inclusion stress cell
- Wallace, A. K. Studies of the Schwartzwalder mine, Jefferson County, Colorado
- Wallace, Alan Ryon. Structural and mineralogical characteristics and distribution of carbonate-dominated fault breccias associated with uranium deposits, Front Range, Colorado
- Wallace, Alan Ryon. Alteration and vein mineralization, Schwartzwalder uranium deposit, Front Range, Colorado

**Kiowa County**

- Avis, Loren E. Left Hand Field
- Blattner, J. L. Water-level records for the northern High Plains of Colorado, 1978-82
- Brogan, J. Philip. Buscadero Field
- Brogan, J. Philip. Cavalry Field (Mississippian)
- Brogan, J. Philip. Cavalry Field (Morrow)
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- Daniels, Robert P. Salt Lake Field
- Lange, Al. Cowboy Field
- Lange, Al. Rita Field
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- Miesse, John V. McClave Field
- Stoddard, John N. Brandon Field (Mississippian)
- Stoddard, John N. Brandon Field (Pennsylvanian)

**Kit Carson County**

- Blattner, J. L. Water-level records for the northern High Plains of Colorado, 1978-82
- Heathcote, R. L. Perception of desertification on the Southern Great Plains; a preliminary enquiry
- Hundley-Goff, L. M. Lookout Field
- Lange, Al. Smoky Hill Field
- Majors, Thomas J. Ground water use in Colorado
- Meyer, Richard T. Appendices of an appraisal for the use of geothermal energy in state-owned buildings in Colorado; Section A, Alamosa; Section B, Buena Vista; Section C, Burlington; Section D, Durango; Section E, Glenwood Springs; Section F, Steamboat Springs

**La Plata County**

- Campbell, John A. Cortez Quadrangle, Colorado and Utah
- Coe, Barbara A. Colorado Geothermal Commercialization Program; geothermal energy opportunities at four Colorado towns: Durango, Glenwood Springs, Idaho Springs, Duray
- McCarthy, Kevin P. Geothermal resource assessment of the Animas Valley, Colorado
- McCarthy, Kevin P. Helium exploration survey for the Animas Valley, Colorado
- Meyer, Richard T. Appendices of an appraisal for the use of geothermal energy in state-owned buildings in Colorado; Section A, Alamosa; Section B, Buena Vista; Section C, Burlington; Section D, Durango; Section E, Glenwood Springs; Section F, Steamboat Springs
- Reiter, Marshall. Geothermal studies in the San Juan Basin and the Four Corners area of the Colorado Plateau; I, Terrestrial heat-flow measurements
- Rice, Dudley D. Relation of natural gas composition to thermal maturity and source rock type in San Juan Basin, northwestern New Mexico and southwestern Colorado
- Ver Hoeve, Mark W. Facies-controlled diagenesis and reservoir character, Entrada Sandstone (Late

Jurassic), Durango, Colorado

**Lake County**

- Anonymous. Gold veins of the Granite District, Chaffee and Lake Counties, Colorado
- Boehmke, John R. Limnology of Mt. Elbert Forebay; 1978-1979
- Dellechiaie, Frank. A hydrogeochemical comparison of the Waunita Hot Springs, Hortense, Castle Rock and Anderson Hot Springs
- Prost, Gary. Mineral exploration with Skylab photography in central Colorado
- Tweto, Ogden. Geologic map of the Mount Lincoln 15-minute Quadrangle, Eagle, Lake, Park, and Summit counties, Colorado

**Larimer County**

- Condie, Kent C. Early Proterozoic metasediments from north-central Colorado; metamorphism, provenance, and tectonic setting
- de Rojas, Isabel. Stratigraphy of the Mowry Shale (Cretaceous), western Denver Basin, Colorado
- Elias, S. A. Paleoenvironmental interpretations of Holocene insect fossil assemblages from the La Poudre Pass site, northern Colorado Front Range
- Hills, F. Allan. Greeley Quadrangle, Colorado
- Kirkham, Robert M. Coal resources of the Denver and Cheyenne basins, Colorado
- Loeffler, M. John. Australian-American interbasin water transfer
- McCaslin, John C. Denver Basin yields new Cretaceous pay
- Pearson, R. C. Mineral resources of the Comanche-Big South, Neota-Flat Top, and Never Summer Wilderness Study Area, north-central Colorado
- Pearson, R. C. Mineral resources of the Rawah Wilderness, Larimer County, Colorado
- Rountree, Russ. Codell play grows hotter despite problems
- Thorne, Colin R. Flow resistance of boulder-bed streams

**Las Animas County**

- Budding, K. E. Geochemical analyses of rock, stream-sediment, and heavy-mineral concentrate samples collected from the Spanish Peaks Wilderness Study Area, Huerfano and Las Animas counties, Colorado
- Dutcher, Russell R. Petrography and fluorescence properties of bituminous coals of the Spanish Peaks region, Colorado
- Geldon, A. L. Ground water in Raton basin, Las Animas County
- Howard, W. Brant. The hydrogeology of the Raton Basin, southcentral Colorado
- Lindsey, David A. Minturn and Sangre de Cristo formations of southern Colorado; a prograding fan-delta to alluvial-fan sequence shed from ancestral Rocky Mountains
- McCaslin, John C. Raton Basin commands more wildcat attention
- Tweto, Ogden. Las Animas Formation (upper Precambrian) in the subsurface of southeastern Colorado

**Lincoln County**

- Bishop, Robert E. Paleface Field
- Blattner, J. L. Water-level records for the northern High Plains of Colorado, 1978-82

**Logan County**

- Blattner, J. L. Water-level records for the northern High Plains of Colorado, 1978-82
- Fentress, George H. Sodbuster Field
- Hill, J. Gilmore. Divide "D" Field
- Hill, J. Gilmore. Divide "J" Field (West Minto Field)
- Hill, J. Gilmore. Frasco Field
- Kirkpatrick, Terry. Little Hoot and Little Hoot South fields
- Lee, Martin. Beall Creek Field
- Majors, Thomas J. Ground water use in Colorado
- Miller, Randy V. Darby Creek Field
- Miller, Randy V. Elm Grove Field
- Nelson, G. Allan. Stampede Field
- Phamwon, Sanguan. Network model for optimal management

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**Mesa County**

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Friedman, J. D. Lineaments and  
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Gandera, W. E. Plateau Field

Goodknight, Craig S. First  
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Jamison, William R. Tectonic  
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O'Sullivan, R. B.  
Stratigraphic sections of  
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Young, Robert G. Stratigraphy  
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**Mineral County**

Batory, Bruce L. Analysis of  
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Crock, J. G. Major, minor, and  
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Cuffey, R. J. Latest Oligocene  
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Eimon, Paul. Exploration for  
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Eimon, Paul. The Creede mining  
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Giudice, P. M. Ore geology of  
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Lindemann, J. W. Field trip  
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Robinson, Richard.  
Mineralization along the  
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Robinson, Richard W. Ore  
mineralogy and fluid  
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Roeben, M. M., Jr. A summary  
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**Moffat County**

Bader, J. W. Biostratigraphic  
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Boyles, J. Michael. A model  
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Craig, Lawrence C. Vernal  
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Duey, Herb. Blue Gravel Field

Duey, Herb. Great Divide Field

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Goodknight, C. S.

Intermediate-grade uranium  
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Hansen, W. R. The geologic  
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Hansen, W. R. Geologic map of  
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Hartner, John D. Depositional  
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Herr, Randy G. Age and depth  
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Madole, R. F. Surficial  
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Parker, R. S. Simulated  
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Powers, R. B. Geology of  
Willow Creek foreland thrust  
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Rowley, P. D. Geologic map of  
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U. S. Bureau of Land  
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U. S. Bureau of Land  
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**Montezuma County**

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Odin, Gilles S. NDS 105; Campanian, K-Ar/minerals-bentonite, Interior N American Basin  
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Slechta, Jack. Roundup Field  
Webster, Mark. Jackpot Field  
Webster, Mark. Sand River Field  
Webster, Mark. Vallery Field

**Otero County**

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**Duray County**

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**Phillips County**

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**Prowers County**

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Pratt, Lisa Mary. A paleo-oceanographic interpretation of the sedimentary structures, clay minerals, and organic matter in a core of the Middle Cretaceous Greenhorn



- Formation drilled near Pueblo, Colorado
- Rio Blanco County**
- Anderson, B. M. Effects of processed oil shale on the element content of *Atriplex canescens*
- Boyles, J. Michael. A model for migrating shelf-bar sandstones in upper Mancos Shale (Campanian), northwestern Colorado
- Cashion, W. B. Descriptions of four stratigraphic sections of parts of the Green River and Uinta formations in the eastern Uinta Basin, Uintah County, Utah, and Rio Blanco County, Colorado
- Coalson, Edward. Greater Douglas Creek area
- Craig, Lawrence C. Craig Quadrangle, Colorado
- Craig, Lawrence C. Vernal Quadrangle, Colorado and Utah
- Dean, W. E. Geochemical and mineralogical analyses of U. S. Geological Survey oil-shale core CR-2, Piceance Creek basin, Colorado
- Gulf Oil Corporation. Rio Blanco Oil Shale Company, Tract C-a annual progress report; January 1981-December 1981
- Hartner, John D. Depositional environments of the Salt Wash sandstones (Upper Jurassic) in portions of Rio Blanco and Moffat counties, Colorado
- Holmes, W. F. Ground water in the southeastern Uinta Basin, Utah and Colorado
- Johnson, R. C. Cross section A-A' of Upper Cretaceous and lower Tertiary rocks, southern Piceance Creek basin, Colorado
- Kimball, Briant A. Trace elements in suspended sediment, southeastern Uinta Basin, Utah and Colorado
- Koelmel, Mark. Paleotectonic, stratigraphic, and diagenetic history of Rangely area, Colorado
- Lindskov, K. L. Quantity and quality of streamflow in the southeastern Uinta Basin, Utah and Colorado
- Lindskov, K. L. Water resources and potential hydrologic effects of oil-shale development in the southeastern Uinta Basin, Utah and Colorado
- Maura, W. S. Water-quality data for streams in the southern Yampa River basin, northwestern Colorado
- Meyer, R. F. Geophysical logs of nine holes drilled in 1978 in the Yampa coal field, Hamilton and Pagoda quadrangles, Moffat County, Colorado
- Rowley, P. D. Geologic map of the Vernal 1 degrees by 2 degrees Quadrangle, Colorado, Utah and Wyoming
- Taylor, J. D. Three-dimensional mathematical model for simulating the hydrologic system in the Piceance Basin, Colorado
- U. S. Bureau of Land Management. Prototype oil shale leasing program
- U. S. Bureau of Land Management, Colorado State Office. Draft supplemental environmental impact statement for the prototype oil shale leasing program
- U. S. Bureau of Land Management, Colorado State Office. White River resource area wilderness planning amendment, Colorado
- U. S. Office of Surface Mining Reclamation and Enforcement. Proposed mining and reclamation plan, Meeker area mines, Rio Blanco County, Colorado
- Waddington, R. E. White River basin oil shale water assessment
- Welder, Frank A. Ground-water potential for oil shale development in northwestern Colorado
- Rio Grande County**
- Christopherson, K. R. Audio-magnetotelluric and telluric profiling studies in the Shaw Warm Springs region, Colorado
- Zacharakis, Ted G. Geothermal resource assessment of western San Luis Valley, Colorado
- Routt County**
- Bader, J. W. Section A-A', subsurface correlations of some Upper Cretaceous and Tertiary rocks from the Cherokee Ridge, Wyoming, to the southeast flank of the Sand Wash Basin, Colorado
- Boyles, J. Michael. A model for migrating shelf-bar sandstones in upper Mancos Shale (Campanian), northwestern Colorado
- Craig, Lawrence C. Craig Quadrangle, Colorado
- Madole, R. F. Surficial geologic map of the Craig 1/2 degrees by 1 degrees Quadrangle, Moffat and Routt counties, Colorado
- Maura, W. S. Water-quality data for streams in the southern Yampa River basin, northwestern Colorado
- McCarthy, Kevin P. Helium and ground temperature surveys at Steamboat Springs, Colorado
- McCarthy, Kevin P. Helium and ground temperature surveys at Steamboat Springs, Colorado
- Meyer, Richard T. Appendices of an appraisal for the use of geothermal energy in state-owned buildings in Colorado; Section A, Alamosa; Section B, Buena Vista; Section C, Burlington; Section D, Durango; Section E, Glenwood Springs; Section F, Steamboat Springs
- Parker, R. S. Simulated effects of anticipated coal mining on dissolved solids in selected tributaries of the Yampa River, northwestern Colorado
- Pearl, Richard Howard. Geothermal resource assessment of the Steamboat-Routt Hot Springs area, Colorado
- U. S. Bureau of Land Management. Savery Project preference right coal lease applications; Carbon County, State of Wyoming, Moffat and Routt counties, State of Colorado
- Williams, Richard S., Jr. Plan for hydrologic study of an area to be surface mined for coal in northwestern Colorado
- Saguache County**
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Pratt, Lisa M. Terrestrial influence and bioturbation effects on composition of organic matter in Middle Cretaceous shale and limestone sequence near Pueblo, Colorado
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Bridges, Dan. Leadville Limestone, Colorado; Laramide-Tertiary subsurface solution vs Paleozoic karst solution
- Hermosa Formation**  
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- Iles Formation**  
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- J Sandstone**  
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- Lakota Formation**  
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Wray, Laura L. Chieftain and Hawkeye fields  
Ziegler, John R. Poncho Field

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**Las Animas Formation**

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Tweto, Ogden. Las Animas Formation (upper Precambrian) in the subsurface of southeastern Colorado

**Leadville Formation**

Bridges, Dan. Leadville Limestone, Colorado; Laramide-Tertiary subsurface solution vs Paleozoic karst solution

Hynes, Jeffrey L. Geology of the Glenwood Canyon along I-70

Jonson, David. The Fortune vein group and associated Manto orebodies, Resurrection Mine area, Northeast Leadville mining district, Colorado

Maslyn, R. Mark. Fossil tower karst near Molas Lake, Colorado

Prost, Gary. Mineral exploration with Skylab photography in central Colorado

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Thompson, Tommy. Geology of the Leadville mining district

Welder, Frank A. Ground-water potential for oil shale development in northwestern Colorado

Zech, Robert S. Fossil Ridge, Colorado, uranium studies

**Lewis Shale**

McCarthy, Kevin P. Geothermal resource assessment of the Animas Valley, Colorado

McCarthy, Kevin P. Geothermal resource assessment of the Animas Valley, Colorado

**Lobato Basalt**

Brown, L. Paleomagnetic evidence for tectonic rotation of the Colorado Plateau and Rio Grande Rift, New Mexico

**Lodore Formation**

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**Mahogany Zone Shale**

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Tait, D. B. Piceance Basin hydrology; aquitards and aquicludes

**Mancos B Formation**

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Witherbee, L. J. Predicting turbidite-contourite reservoir intervals in tight gas sands; a case study from the Mancos B Sandstone

**Mancos Shale**

Ahmed, Usman. Mini frac; an aid to formation in-situ stress and permeability measurements

Bell, Mark W. Drilling-mud emanometry, a new technique for uranium exploration

Boyles, J. Michael. Upper Cretaceous shelf sandstones, northwestern Colorado; migrating sand-ridge model

Boyles, J. Michael. A model for migrating shelf-bar sandstones in upper Mancos Shale (Campanian), northwestern Colorado

Goodknight, Craig S. First day; Road log from Delta to junction of Colorado 133 and Gunnison County Road 3 via Hotchkiss, Somerset, and McClure Pass

Junge, W. Rahe. Geologic hazards in the North Fork of the Gunnison River area, Delta and Gunnison counties, Colorado

Klahn, Louis J., Jr. Use of interactive computer graphics to solve complex geological problems; a case study

Laronne, J. B. Temporal and spatial variations of solute pickup during runoff generation in saline hillslopes

Martinez, C. Rulison Field, Wasatch and Mesaverde

McLennan, J. D. The Mancos Formation; an evaluation of the interaction of geological conditions, treatment characteristics and production

Odin, Gilles S. NDS 105; Campanian,

K-Ar/minerals-bentonite, Interior N American Basin

Payne, John B. Late Cretaceous anastomosing fluvial systems, northwestern Colorado

Pearl, Richard Howard. Geothermal resource assessment of the Steamboat-Routt Hot Springs area, Colorado

Scott, Alan J. Trace fossil assemblages as indicators of shelf-sandstone facies, Upper Cretaceous, northwestern Colorado

Truettner, W. James. Craig, North Field

Weimer, Paul C. Upper Cretaceous stratigraphy and tectonic history of the Ridgway area, northwestern San Juan Mountains, Colorado

Whittig, L. D. Evaporite mineral species in Mancos Shale and salt efflorescence, Upper Colorado River basin

**Manitou Formation**

Hynes, Jeffrey L. Geology of the Glenwood Canyon along I-70

Jonson, David. The Fortune vein group and associated Manto orebodies, Resurrection Mine area, Northeast Leadville mining district, Colorado

Repetski, John E. *Rossodus manitouensis* (Conodonta), a new Early Ordovician index fossil

Thompson, Tommy. Geology of the Leadville mining

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Zech, Robert S. Fossil Ridge,  
Colorado, uranium studies

**Marmaton Group**

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**Maroon Formation**

Ivey, John B. Engineering  
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area, Summit County,  
Colorado

Koelmel, Mark. Paleotectonic,  
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McCarthy, Kevin P. Geothermal  
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Robinson, Charles S.  
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Pass I-70

**Mesaverde Group**

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**McDermott Formation**

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**Menefee Formation**

Newman, Karl R. Stratigraphic  
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**Mesaverde Group**

Boyles, J. Michael. Comparison  
of wave-dominated deltaic  
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sand-rich strand plains,  
Mesaverde Group, Northwest  
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Craig, Lawrence C. Vernal  
Quadrangle, Colorado and  
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Daub, Gerald J. Stratigraphy  
and geology of some coal  
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of the Gunnison River,  
Somerset coal field,  
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Eatough, M. D. Mineralogic and  
petrologic overview of core  
samples from the Dept. of  
Energy's Western Gas Sands  
Project Multiwell  
Experiment, Piceance Basin,  
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Ellis, Margaret. Coal  
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Carbondale quadrangle,  
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Gandera, W. E. Plateau Field  
Goodnight, Craig S. First  
day; Road log from Delta to  
junction of Colorado 133 and  
Gunnison County Road 3 via  
Hotchkiss, Somerset, and  
McClure Pass

Johnson, R. C. Measured  
section of the Upper  
Cretaceous Mesaverde  
Formation and lower part of  
the lower Tertiary Wasatch  
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Junge, W. Rahe. Geologic  
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Kiteley, Louise W.  
Paleogeography and  
eustatic-tectonic model of  
late Campanian (Cretaceous)  
sedimentation, southwestern  
Wyoming and northwestern  
Colorado

Klusman, Ronald W. A new  
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exploration technology

Lockley, Martin G. Hadrosaur  
locomotion and herding  
behavior; evidence from  
footprints in the Mesaverde  
Formation, Grand Mesa coal  
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Lorenz, J. C. Lateral  
variability in the Corcoran  
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Mesaverde rocks, Piceance  
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Lucas, Spencer G. Fossil  
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Cretaceous Williams Fork  
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Newman, Karl R. Stratigraphic  
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Payne, John B. Late Cretaceous  
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Colorado

Peterson, R. E. An  
approximation of continuity  
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Sandstone lenses utilizing  
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Piceance Basin, northwestern  
Colorado

Powell, J. Dan. Gas fields in  
Mesaverde sandstones in the  
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Randolph, P. L. Porosity and  
permeability of Mesaverde  
Sandstone core from the U.S.  
D.O.E. Multiwell Experiment,  
Garfield County, Colorado

Rice, D. D. Origin of natural  
gases in San Juan basin

Rice, Dudley D. The San Juan  
Basin contains large  
reserves of nonassociated  
gas

Sattler, A. R. The Multiwell  
Experiment Core Program

Saunders, Geoffrey P. Aquifer  
dewatering and drawdown at  
an open mine pit in  
northwestern Colorado

Searls, C. A. A coordinated  
seismic study of the  
multi-well experiment site  
Senseny, Paul E. Influence of  
deformation history on  
permeability and specific  
storage of Mesaverde  
Sandstone

Stright, D. H., Jr. Decline  
curve analysis in fractured  
low permeability gas wells  
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Stright, D. H., Jr. Decline  
curve analysis in fractured  
low permeability gas wells  
in the Piceance Basin

Thulborn, Richard A. Estimated  
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Truettner, W. James. Craig,  
North Field

Wellborn, Jewel E. F.  
Stratigraphy of the  
Mesaverde Formation on the  
Mt. Gunnison coal property,  
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Young, Robert G. Stratigraphy  
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Mesaverde Group,  
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**Middle Lewis Sandstone**

Duey, Herb. Great Divide Field

**Middle Park Formation**

Pearl, Richard Howard.  
Geothermal resource  
assessment of Hot Sulphur  
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**Minturn Formation**

Childers, David W. Diagenesis  
of feldspar in the Minturn  
Formation (Pennsylvanian) of  
Colorado

Ivey, John B. Engineering  
geology, relocation of State  
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- Lindsey, D. A. Copper and uranium in sediments shed from the ancestral Rocky Mountains
- Lindsey, David A. Minturn and Sangre de Cristo formations of southern Colorado; a prograding fan-delta to alluvial-fan sequence shed from ancestral Rocky Mountains
- Robinson, Charles S. Engineering geology of Vail Pass I-70
- Thompson, Tommy. Geology of the Leadville mining district

#### Molas Formation

- Bridges, Dan. Leadville Limestone, Colorado; Laramide-Tertiary subsurface solution vs Paleozoic karst solution
- Maslyn, R. Mark. Fossil tower karst near Molas Lake, Colorado
- Thompson, Tommy. Geology of the Leadville mining district

#### Monkmeyer Sandstone

- Smith, Jess W. Bachelor Mountain silver deposit, Mineral County, Colorado

#### Morgan Formation

- Driese, Steven George. Sedimentology, conodont distribution, and carbonate diagenesis of the upper Morgan Formation (Middle Pennsylvanian), northern Utah and Colorado

#### Morrison Formation

- Bartlett, John D. Holster-Bugle fields
- Cadigan, R. A. Mineralization and other geologic factors related to the Morrison Formation in particular the northern two-thirds of the Colorado Plateau region; basic data and factor-analysis results
- Campbell, John A. Cortez Quadrangle, Colorado and Utah
- Campbell, John A. Moab Quadrangle, Colorado and Utah
- Craig, Lawrence C. Craig Quadrangle, Colorado
- Dickinson, K. A. Oligocene volcanic rock—a source of epigenetic uranium in central Colorado
- Gandera, W. E. Plateau Field
- Green, M. W. The Middle

- Jurassic vanadium-uranium belt in western Colorado
- Hartner, John D. Depositional environments of the Salt Wash sandstones (Upper Jurassic) in portions of Rio Blanco and Moffat counties, Colorado
- K. W. Nickerson & Associates. Waunita Hot Springs project, Gunnison County, Colorado
- McCarn, Dan W. La Junta Quadrangle, Colorado and Kansas
- McCarthy, Kevin P. Geothermal resource assessment of Hartsel, Colorado
- McCarthy, Kevin P. Helium and ground temperature surveys at Steamboat Springs, Colorado
- Pearl, Richard Howard. Geothermal resource assessment of Hot Sulphur Springs, Colorado
- Pearl, Richard Howard. Geothermal resource assessment of the Steamboat-Routt Hot Springs area, Colorado
- Tidwell, William D. Cretaceous and early Tertiary floras of the intermountain area; a summary

#### Morrow Formation

- McCarn, Dan W. La Junta Quadrangle, Colorado and Kansas

#### Mount Garfield Formation

- Newman, Karl R. Stratigraphic framework of Upper Cretaceous (Campanian) coal in western Colorado

#### Mowry Shale

- de Rojas, Isabel. Stratigraphy of the Mowry Shale (Cretaceous), western Denver Basin, Colorado

#### Muddy "J" Formation

- Fast, C. R. The application of massive hydraulic fracturing to the tight Muddy "J" Formation, Wattenberg Field, Colorado
- Logan, John M. Rock fabric and hydraulic fracturing; the implications for in-situ stress measurements and permeability enhancement

#### Muddy Sandstone

- Mian, Mohammad Asif. J-Sand (tight) performance predicted by type curves

#### Mulatto Formation

- Thaden, R. E. Shifting margin of the Cretaceous sea in the San Juan basin

#### New Albany Shale

- Netzel, Daniel A. Hydrocarbon type analysis of Eastern and Western shale oils produced by the IGT Hytort and Fischer assay processes

#### Niobrara Formation

- Archer, Allen W. Trace fossils in Upper Cretaceous shales of the Greenhorn and Niobrara cyclothem
- Archer, Allen W. Analysis of Upper Cretaceous trace-fossil assemblages, U. S. Western Interior
- Arthur, M. A. Geochemical and sedimentologic indicators of depositional environments and diagenetic trends in the Niobrara Formation (Upper Cretaceous), Colorado and Kansas
- Billo, Saleh M. Carbonate petrology of the Fort Hays Member, Niobrara Formation, Boulder County, Boulder, Colorado
- Cockerham, Kirby, Jr. Vernon Field
- Davis, J. L. DeNova Field
- Jeffrey, Thomas J. Waverly Complex
- K. W. Nickerson & Associates. Waunita Hot Springs project, Gunnison County, Colorado
- Lange, Al. Cowboy Field
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- McCarthy, Kevin P. Geothermal resource assessment of Hartsel, Colorado
- McCarthy, Kevin P. Helium and ground temperature surveys at Steamboat Springs, Colorado
- Miese, John V. McClave Field
- Pearl, Richard Howard. Geothermal resource assessment of Hot Sulphur Springs, Colorado
- Pearl, Richard Howard. Geothermal resource assessment of the Steamboat-Routt Hot Springs area, Colorado
- Pollastro, R. M. Sedimentologic and diagenetic history of reservoirs in Niobrara Formation, Denver basin
- Shurr, George W. Paleotectonism reflected in the Niobrara Formation of the northern Great Plains
- Sonnenberg, Stephen A. Lost

Creek - Lanyard fields  
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**Ogallala Formation**

Beams, Robert J. Greenwood  
Topeka Trend fields  
Blattner, J. L. Water-level  
records for the northern  
High Plains of Colorado,  
1979-83  
Borman, R. G. Geology,  
altitude, and depth of the  
bedrock surface beneath the  
Ogallala Formation in the  
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Majors, Thomas J. Ground water  
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Miller, Randy V. Border-May  
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Cenozoic grasses and other  
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Williams, Jean D. Buried  
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**Ouray Formation**

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**Paliza Canyon Formation**

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Daub, Gerald J. Stratigraphy  
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**Parachute Creek Member**

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Cooper, James E.  
Ammonium-nitrogen in Green  
River Formation oil shale  
Dean, W. E. Geochemical and  
mineralogical analyses of U.  
S. Geological Survey  
oil-shale core CR-2,  
Piceance Creek basin,  
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Pitman, Janet K. Regional  
stratigraphic and  
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**Paradise Stock**

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Hynes, Jeffrey L. Geology of  
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Raup, Omer B. Evaporite  
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**Peerless Formation**

Jonson, David. The Fortune  
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**Penokean Suite**

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**Peoria Loess**

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Webster, Mark. Sand River  
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Webster, Mark. Vallery Field  
Webster, Mark. Xenia West  
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Rice, Dudley D. Relation of  
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Rice, Dudley D. The San Juan  
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**Pierre Shale**

Adams, Marilyn J. Cimarron  
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Arthur, M. A. Geochemical and  
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the submarine spring origin  
of carbonate mounds in the  
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Avis, Loren E. Left Hand Field  
Bergstresser, Thomas James.  
Foraminiferal  
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Hill, J. Gilmore. Divide "D"  
Field  
Hill, J. Gilmore. Divide "J"  
Field (West Minto Field)  
Hirsch, K. F. Die Ammoniten  
des Pierre Meeres  
(Oberkreide) in den

- westichen USA  
 K. W. Nickerson & Associates. Waunita Hot Springs project, Gunnison County, Colorado  
 Kornfeld, Joseph A. Colorado oil strikes may mark North Park Basin comeback  
 McCarthy, Kevin P. Geothermal resource assessment of Hartsel, Colorado  
 McCaslin, John C. Raton Basin commands more wildcat attention  
 Moore, Steven B. Nugget Field Morrill, Curtis G. Park Field  
 Nelson, Jon S. Moccasin Field  
 Odin, Gilles S. NDS 105; Campanian, K-Ar/minerals-bentonite, Interior N American Basin  
 Pearl, Richard Howard. Geothermal resource assessment of Hot Sulphur Springs, Colorado  
 Porter, Karen W. Diagenetic sequence related to structural history and petroleum accumulation; Spindle Field, Colorado  
 Slechta, Jack. Roundup Field  
 Weimer, Robert J. Paleostucture analysis of the Pierre Shale, west-central Denver Basin, Colorado
- Pikes Peak Granite**  
 MacPherson, Bruce A. Geology and uranium deposits of Tallahassee Creek District, Fremont County, Colorado
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 Cumella, Stephen P. Relation of Upper Cretaceous regressive sandstone units of the San Juan Basin to source area tectonics  
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 Howard, W. Brant. The hydrogeology of the Raton Basin, southcentral Colorado
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- Raton Formation**  
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 Geldon, A. L. Ground water in Raton basin, Las Animas County  
 McCaslin, John C. Raton Basin commands more wildcat attention
- Raton-Vermejo Aquifer**  
 Howard, W. Brant. The hydrogeology of the Raton Basin, southcentral Colorado
- Red Mountain Intrusive**  
 Graaskamp, Garret W. Paleomagnetism and aspects of structural deformation of the Red Mountain intrusive complex (Urad/Henderson molybdenum deposits), Empire, Colorado
- Redskin Granite**  
 Desborough, G. A. Redskin Granite; a rare-metal-rich Precambrian pluton, Colorado, USA
- Rico Formation**  
 Campbell, John A. Moab Quadrangle, Colorado and Utah
- Rock Springs Formation**  
 Kiteley, Louise W. Paleogeography and eustatic-tectonic model of late Campanian (Cretaceous) sedimentation, southwestern Wyoming and northwestern Colorado
- Rollins Sandstone**  
 Newman, Karl R. Stratigraphic framework of Upper Cretaceous (Campanian) coal in western Colorado  
 Wellborn, Jewel E. F. Stratigraphy of the Mesaverde Formation on the Mt. Gunnison coal property, Gunnison County, Colorado
- Saint Kevin Granite**  
 Thompson, Tommy. Geology of the Leadville mining district
- Saint Louis Limestone**  
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 Brogan, J. Philip. Buscadero Field  
 Brogan, J. Philip. Cavalry Field (Mississippian)
- Stoddard, John N. Brandon Field (Mississippian)  
 Wicker, Walter L. Golden Spike Field  
 Wicker, Walter L. Ladder Creek Field
- Sainte Genevieve Limestone**  
 Miesse, John V. Wagon Trail Field
- Salt Wash Member**  
 Campbell, John A. Moab Quadrangle, Colorado and Utah  
 Craig, Lawrence C. Craig Quadrangle, Colorado  
 Hartner, John D. Depositional environments of the Salt Wash sandstones (Upper Jurassic) in portions of Rio Blanco and Moffat counties, Colorado
- San Jose Formation**  
 McCarthy, Kevin P. Geothermal resource assessment of the Animas Valley, Colorado
- San Juan Formation**  
 Kono, Masaru. Paleointensity determination by a modified Thelliers' method  
 Rickard, T. A. Across the San Juan Mountains
- Sangre de Cristo Formation**  
 Lindsey, D. A. Copper and uranium in sediments shed from the ancestral Rocky Mountains  
 Lindsey, David A. Minturn and Sangre de Cristo formations of southern Colorado; a prograding fan-delta to alluvial-fan sequence shed from ancestral Rocky Mountains  
 McCann, Dan W. La Junta Quadrangle, Colorado and Kansas
- Sante Fe Group**  
 Brown, L. Paleomagnetic evidence for tectonic rotation of the Colorado Plateau and Rio Grande Rift, New Mexico
- Sawatch Quartzite**  
 Hynes, Jeffrey L. Geology of the Glenwood Canyon along I-70  
 Jonson, David. The Fortune vein group and associated Manto orebodies, Resurrection Mine area, Northeast Leadville mining district, Colorado  
 Thompson, Tommy. Geology of

- the Leadville mining district
- Sherman Granite**  
Hills, F. Allan. Greeley Quadrangle, Colorado  
Zielinski, R. A. The chemical and isotopic record of rock-water interaction in the Sherman Granite, Wyoming and Colorado
- Silver Plume Granite**  
Gräaskamp, Garret W. Paleomagnetism and aspects of structural deformation of the Red Mountain intrusive complex (Urad/Henderson molybdenum deposits), Empire, Colorado  
Hills, F. A. Silver Plume Granite—a possible source of uranium, Tallahassee Creek deposits  
Hills, F. A. Silver Plume Granite; possible source of uranium in sandstone uranium deposits, Tallahassee Creek and High Park areas, Fremont and Teller counties, Colorado  
Hills, F. Allan. Greeley Quadrangle, Colorado  
Young, E. J. Uranium in Wheeler Basin, Grand County, Colorado
- Skull Creek Shale**  
Allison, Dennis A. Deer Trail Field  
Carlson, Robert J. Arroyo Field  
Childs, Douglas K. Running Creek Field  
Cox, Kathleen L. Radar Field  
Dolson, John. Comanche Creek Field  
Dolson, John. Hombre Field  
Drouillard, E. K. West Fork Field  
Gerhard, Walter F. Irondale Field  
Harris, James D. Roman Nose Field  
Hill, J. Gilmore. Divide "J" Field (West Minto Field)  
Hill, J. Gilmore. Frasco Field  
Hill, Lyman. Redwing Field  
Larson, Robert T. Blackjack Field  
McCormick, C. D. Ambush Field  
McIntyre, John. Longbranch Field  
McIntyre, John. Totem Field  
Miller, Randy V. Elm Grove Field  
Miyazaki, Brent. Lonetree Field  
Nelson, G. Allan. Stampede Field
- Oberhansley, G. G. Lowry Field  
Odien, Robert J. N.E. Riverside II Field  
Pritchett, Ronald W. Kiowa Creek Field  
Rhode, David R. Trapper Field  
Springer, Robert H. Busy Bee Field  
Tobison, Norman M. Blade Field  
Webster, Mark. Jackpot Field  
Webster, Mark. Sand River Field  
Webster, Mark. Vallery Field  
Webster, Mark. Xenia West Field  
Wolff, Charles S. Peoria, North Field  
Ziegler, John R. Poncho Field
- Smokey Hill Chalk**  
Arthur, M. A. Geochemical and sedimentologic indicators of depositional environments and diagenetic trends in the Niobrara Formation (Upper Cretaceous), Colorado and Kansas
- Snowy Pass Supergroup**  
Condie, Kent C. Early Proterozoic metasediments from north-central Colorado; metamorphism, provenance, and tectonic setting
- Spergen Formation**  
Brogan, J. Philip. Buscadero Field  
Brogan, J. Philip. Cavalry Field (Mississippian)  
Hundley-Goff, L. M. Lookout Field  
Kidwell, Mike. Cheyenne Wells-Smoky Creek fields  
MacAlpine, Steve. Loma Field  
Stoddard, John N. Brandon Field (Mississippian)  
Westerdale, Barbara. Sorrento Field  
Wicker, Walter L. Golden Spike Field  
Wicker, Walter L. Ladder Creek Field
- Summerville Formation**  
Green, M. W. The Middle Jurassic vanadium-uranium belt in western Colorado
- Sunbury Shale**  
Netzel, Daniel A. Hydrocarbon type analysis of Eastern and Western shale oils produced by the IGT Hytort and Fischer assay processes
- Sussex Formation**  
Bartlett, John D. Holster-Bugle fields  
Logan, John M. Rock fabric and hydraulic fracturing; the implications for in-situ stress measurements and permeability enhancement
- Tallahassee Creek Conglomerate**  
Dickinson, K. A. Oligocene volcanic rock—a source of epigenetic uranium in central Colorado
- Terry Sandstone Member**  
Porter, Karen W. Diagenetic sequence related to structural history and petroleum accumulation; Spindle Field, Colorado
- Topeka Formation**  
Beams, Robert J. Greenwood Topeka Trend fields
- Torrivio Member**  
Thaden, R. E. Shifting margin of the Cretaceous sea in the San Juan basin
- Trinidad Sandstone**  
Geldon, A. L. Ground water in Raton basin, Las Animas County  
Howard, W. Brant. The hydrogeology of the Raton Basin, southcentral Colorado  
McCaslin, John C. Raton Basin commands more wildcat attention  
Shelton, John W. Grain orientation in shallow marine-shoreface sandstones
- Troublesome Formation**  
Craig, Lawrence C. Craig Quadrangle, Colorado  
Zielinski, R. A. The mobility of uranium and other elements during alteration of rhyolite ash to montmorillonite; a case study in the Troublesome Formation, Colorado, U.S.A.
- Trout Creek Sandstone**  
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Newman, Karl R. Stratigraphic framework of Upper Cretaceous (Campanian) coal in western Colorado  
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- Tschicoma Formation**  
Brown, L. Paleomagnetic evidence for tectonic rotation of the Colorado Plateau and Rio Grande Rift, New Mexico

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Saunders, Geoffrey P. Aquifer dewatering and drawdown at an open mine pit in northwestern Colorado

**Uinta Formation**

- Birman, Joseph H. Some questions on Piceance Basin hydrology
- Cadwgan, Richard M. Improving monitoring efficiency of deep wells
- Cashion, W. B. Descriptions of four stratigraphic sections of parts of the Green River and Uinta formations in the eastern Uinta Basin, Uintah County, Utah, and Rio Blanco County, Colorado
- Craig, Lawrence C. Vernal Quadrangle, Colorado and Utah
- Donnell, John R. Tongues of the Green River and Uinta formations in the Piceance Creek basin
- Miller, Glen A. Hydrologic and engineering considerations for ground-water monitoring wells at oil shale mines, Piceance and Uinta basins, Colorado and Utah
- Stellavato, Nick. Results of the geologic mapping program during shaft sinking and subsequent station development at C-B track
- Tait, D. B. Piceance Basin hydrology; aquitards and aquicludes

**Valles Rhyolite**

Brown, L. Paleomagnetic evidence for tectonic rotation of the Colorado Plateau and Rio Grande Rift, New Mexico

**Vermejo Formation**

- Dutcher, Russell R. Petrography and fluorescence properties of bituminous coals of the Spanish Peaks region, Colorado
- McCaslin, John C. Raton Basin commands more wildcat attention

**Wall Mountain Tuff**

- Dickinson, K. A. Oligocene volcanic rock—a source of epigenetic uranium in central Colorado
- Morse, David G. Paleogeography and tectonic implications of Late Cretaceous to middle Tertiary rocks of southern Denver Basin, Colorado
- Morse, David G. Sedimentology

and tectonic implications of Oligocene Castle Rock Conglomerate, southern Denver Basin, Colorado

**Wanakah Formation**

Green, M. W. The Middle Jurassic vanadium-uranium belt in western Colorado

**Warsaw Formation**

- Brogan, J. Philip. Cavalry Field (Mississippian)
- Kidwell, Mike. Cheyenne Wells-Smoky Creek fields
- Stoddard, John N. Brandon Field (Mississippian)

**Wasatch Formation**

- Gandera, W. E. Plateau Field
- Johnson, R. C. Measured section of the Upper Cretaceous Mesaverde Formation and lower part of the lower Tertiary Wasatch Formation, Rifle Gap, Garfield County, Colorado
- Junge, W. Rahe. Geologic hazards in the North Fork of the Gunnison River area, Delta and Gunnison counties, Colorado
- Martinez, C. Rulison Field, Wasatch and Mesaverde
- Stright, D. H., Jr. Decline curve analysis in fractured low permeability gas wells in the Piceance Basin
- Truettner, W. James. Craig, North Field

**Weber Sandstone**

- Gibbs, Julie F. Maudlin Gulch Field
- Koelmel, Mark. Paleotectonic, stratigraphic, and diagenetic history of Rangely area, Colorado
- Powers, R. B. Geology of Willow Creek foreland thrust play, Moffat County, Colorado

**White River Formation**

- Kirkpatrick, Terry. Little Hoot and Little Hoot South fields
- Miller, Randy V. Darby Creek Field
- Prothero, D. R. How isochronous are mammalian biostratigraphic events?

**Williams Fork Formation**

Lucas, Spencer G. Fossil vertebrates from the Upper Cretaceous Williams Fork Formation (Mesaverde Group), Piceance Creek Basin, northwestern Colorado

Newman, Karl R. Stratigraphic framework of Upper Cretaceous (Campanian) coal in western Colorado

- Saunders, Geoffrey P. Aquifer dewatering and drawdown at an open mine pit in northwestern Colorado
- Thompson, R. W. The impact of the Federal Surface Mining Control and Reclamation Act
- Young, Robert G. Stratigraphy and petroleum geology of the Mesaverde Group, southeastern Piceance Creek basin, Colorado

**Willow Creek Rhyolite Tuff**

- Giudice, P. M. Ore geology of the central Amethyst Vein area, Creede, Colorado
- Roeber, M. M., Jr. A summary of the geology and ore deposits of the Bulldog Mountain Mine, Creede mining district, San Juan Mountains, Mineral County, Colorado

**Windy Gulch Tuff**

- Giudice, P. M. Ore geology of the central Amethyst Vein area, Creede, Colorado
- Roeber, M. M., Jr. A summary of the geology and ore deposits of the Bulldog Mountain Mine, Creede mining district, San Juan Mountains, Mineral County, Colorado

**Wingate Formation**

- Blodgett, Robert H. Depositional environments of the Upper Triassic Dolores Formation, Southwest Colorado
- Jamison, William R. Tectonic deformation of Wingate Sandstone, Colorado National Monument