

APPENDIX B—PART 1: TOPICAL/SUB-TOPICAL COMPILATION

Bibliography on Topics Related to Transboundary Aquifer Systems of the New Mexico, Trans-Pecos Texas, and Northern Mexico Region (with Alphanumeric Cross-Reference Codes*)

**Topical/Sub-topical Categories, with Alphanumeric Cross-Reference Codes*

A. Bibliographies, Dictionaries, Glossaries, Biographies, Reviews, and News Items	2
A1. Bibliographies, Dictionaries, and Glossaries	2
A2. Biographies and Reviews	3
A3. News Items	8
B. Time: Geologic, Prehistoric, and Historic.....	16
B1. Geologic and Prehistoric Time.....	16
B2. Prehistoric Perspective: US Southwest and Northern Mexico	21
B3. Historic Perspective: US Southwest and Northern Mexico	28
C. Environmental, Physiographic, and Geologic Setting	36
C1. Climatic, Hydrographic, Ecologic, and Paleoenvironmental Setting.....	37
C2. Geologic and Geomorphic Setting	53
C2a. Geologic and Geomorphic Setting: Pre-1990	53
C2b. Geologic and Geomorphic Setting: Post-1989	68
C3. Soil-Geomorphic Relationships and Soil Surveys	82
C4. Geophysical/Geochemical Data and Interpretations	88
D. Basic Hydrogeologic Concepts.....	97
D1. Conceptual Models, Definitions, and Regional Overviews	97
D2. Groundwater-Flow Systems, Including Recharge	111
E. GIS/Remote Sensing and GW-Resource Management/Planning.....	115
E1. GIS/Remote Sensing	115
E2. Resource Management/Planning.....	117
E2a. Desalination.....	123
E2b. Recharge and Recovery	124
E2c. Groundwater-Quality Projection and Waste Management	125
E3. Legal and Environmental Issues and Constraints.....	129
F. Transboundary Regional Hydrogeology and Geohydrology	132
F1. Binational.....	132
F2. USA	142
F3. México	145
G. Early Documents on Mesilla Basin Regional Aquifer Systems (1858-1970)	152
G1. 1858 to 1935.....	152
G2. 1935 to 1970.....	153
H. Contemporary Documents on Mesilla Basin Regional Aquifer Systems.....	155
H1. Hydrogeology.....	155
H2. Hydrochemistry.....	163
H3. Flow Models	171
I. Paleohydrology: Ancestral Fluvial and Pluvial Lake Systems.....	178
I1. Regional Overviews	178
I2. Transboundary Region Paleohydrologic Systems.....	179
I3. Evolution of the Rio Grande Fluvial System.....	182

A. Bibliographies, Dictionaries, Glossaries, Biographies, Reviews, and News Items

A1. Bibliographies, Dictionaries, and Glossaries

- Almada, F.R., 1968, *Diccionario de historia, geografía, y biografía Chihuahuenses* (2nd ed.): Chihuahua, México, Universidad de Chihuahua, 378 p. **(A1, A2, B3, C, F3)**
- Borton, R.L., 1972, *Bibliography of ground-water studies in New Mexico*: New Mexico State Engineer Special Publication, 28 p. **(A1)**
- Borton, R.L., 1978, *Bibliography of ground-water studies in New Mexico, 1873-1977*: New Mexico State Engineer Special Publication, 121 p. **(A1)**
- Borton, R.L., 1980, *Bibliography of ground-water studies in New Mexico, 1848-1979*: New Mexico State Engineer Special Publication, 46 p. **(A1)**
- Burks, M.R., and Schilling, J.H., 1955, *Bibliography of New Mexico geology and mineral technology through 1950*: New Mexico Bureau of Mines and Mineral Resources Bulletin 43, 198 p. **(A1)**
- Burras, S.J., Ernest J., 1973, *Religious Chroniclers and Historians: A Summary with Annotated Bibliography*: in *Handbook of Middle American Indians*, vol. 13. *Guide to Ethnohistorical Sources*, part 2, University of Texas Press, p. 146-147. **(A1, B3)**
- Clark, I.G., 1987, *Water in New Mexico*: University of New Mexico Press, 839 p. **(A1, B3, E2)**
- Driscoll, F.G. (principal author and editor), 1986, *Groundwater and Wells*, Second Edition: Saint Paul, MN, Johnson Division, 1089 p. *See Cable Tool Method*: p. 268-277. **(A1, D1)**
- Dyer, R., 1988, *Bibliography of geologic studies in northwestern Chihuahua, Mexico*: El Paso Geological Society Publication 19, p. 173-179. **(A1, F3)**
- Feth, J.H., 1964a, *Review and annotated bibliography of ancient lake deposits (Precambrian to Pleistocene) in the western United States*: U.S. Geological Survey Bulletin 1080, 119 p. **(A1, I1)**
- Feth, J.H., 1965b, *Selected references on saline ground-water resources of the United States*: U.S. Geological Survey Circular 499, 30 p. **(A1, D1)**
- HarperCollins, 2003, *Collins Diccionario Inglés / Collins Spanish Dictionary* (Seventh unabridged edition): New York, HarperCollins Publishers, 2141 p. ISBN 0-06-053736-1 **(A1)**
- Hawley, J.W., 2005, *Five million years of landscape evolution in New Mexico: An overview based on two centuries of geomorphic conceptual-model development*, in Lucas, S.G., et al., eds., *New Mexico's Ice Ages*: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 9-93. **(A1, A2, C2b, F1, I1, I3)**
- Hawley, J.W., and Granados Olivas, A., 2012, *Progress report on development of an annotated bibliography for transboundary aquifer systems of the Mesilla Basin-Paso del Norte area, New Mexico, Texas, and Chihuahua*, in *Aquifers of West Texas-Theme Session T5*: Geological Society of America, Abstracts with Programs, v. 44, no. 1, p. 38., No. 199147 on CD-ROM. **(A1, F1)**
- Hawley, J.W., and Parsons, R.B., compilers, 1980, *Glossary of selected geomorphic and geologic terms*: West Technical Service Center, Soil Conservation Service [NRCS], USDA, Portland, OR, 30 p. **(A1)**
- Hawley, J.W., Bachman, G.O., and Manley, K., 1976, *Quaternary stratigraphy in the Basin and Range and Great Plains provinces, New Mexico and western Texas*, in Mahaney, W.C., ed., *Quaternary stratigraphy of North America*: Stroudsburg, PA, Dowden, Hutchinson, and Ross, Inc., p. 235-274. **(A1, A2, D1, I1, I3)**
- Hawley, J.W., Granados Olivas, A., and Creel, B.J., 2012, *Progress report on development of an annotated bibliography for transboundary aquifer systems of the Mesilla Basin-Paso del Norte area, New Mexico, Texas, and Chihuahua—Poster Presentation Abstract for 57th Annual New Mexico Water Conference: Hard Choices: Adapting Policy and Management to Water Scarcity* (8/28/12), New Mexico Water Resources Research Institute, NMSU-Las Cruces. <http://kunm.org/post/new-mexicos-hard-choices> **(A1, F1)**
- Hill, R.T., 1896, *Descriptive topographic terms of Spanish America*: National Geographic, v. 7, p. 291-302. **(A1, B3, C2a, F1)**
- Hornberger, G.M., Raffensperger, J.P., Wiberg, P.L., and Eshleman, K.N., 1998, *Elements of physical hydrology*: The Johns Hopkins University Press, 302 p. *See Glossary*, p. 277-292. ISBN 0-8018-5856-9 **(A1, D2)**
- Julyan, R., 1996, *The place names of New Mexico*: University of New Mexico Press, 385 p. **(A1, B3)**
- Krieger, R.A., Hatchett, J.L., and Poole, J.L., 1957, *Preliminary survey of the saline-water resources of the United States*: Geological Survey Water-Supply Paper 1374, 172 p., 2 pls. **(A1, D1, E2a)**
- Márquez-Alameda, A., coordinador del volumen, 1992, *Historia general de Chihuahua I—geología, geografía y arqueología*: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua, 307 p. **(A1, B1, B2, F3)**
- Meinzer, O.E., 1923b, *Outline of ground water hydrology, with definitions*: U.S. Geological Survey Water-Supply Paper 494, 71 p. **(A1, D1)**

- Neuendorf, K.K.E., Mehl, J.P., Jr., and Jackson, J.A., 2005, Glossary of Geology (fifth edition): Alexandria, VA, American Geological Institute, 779 p. (A1)
- Prost, G.L., 1997, English-Spanish and Spanish-English glossary of geoscience terms; Diccionario Inglés-Español y Español-Inglés de Términos de Geociencias: Amsterdam (OPA), Gordon and Beach Science Publishers, 359 p. ISBN 90-5699-562-6 (A1)
- Ray, T., 1966, Bibliography of New Mexico geology and mineral technology, 1961-1965: New Mexico Bureau of Mines and Mineral Resources, Bulletin 90, 124 p. (A1)
- Riggs, H.C., compiler, 1962, Annotated bibliography on hydrology and sedimentation, United States and Canada, 1955-58: U.S. Geological Survey Water-Supply Paper 1546, 236 p. (A1)
- Robinson, T.W., 1958, Phreatophytes: U.S. Geological Survey, Water-Supply Paper 1423, 84 p. (A1, D1)
- Robinson, T.W., and Johnson, A.I., 1961, Selected bibliography on evaporation and transpiration, *in* Contributions to the hydrology of the United States: U.S. Geological Survey, Water-Supply Paper 1539-R, p. R-1 to R-259. *Selected references emphasizing papers from the US from the early 1800's into 1958.* (A1, D1)
- Schilling, C.F., and Schilling, J.H., 1956, Bibliography of New Mexico geology and mineral technology, 1950-1955: New Mexico Bureau of Mines and Mineral Resources, Bulletin 52, 136 p. (A1)
- Schilling, C.F., and Schilling, J.H., 1961, Bibliography of New Mexico geology and mineral technology, 1955-1960: New Mexico Bureau of Mines and Mineral Resources, Bulletin 74, 124 p. (A1)
- Seiglie, G.A., and Weaver, J.D., 1968, Glosario de términos geológicos inglés - español (edición preliminar): Mayagüez, Universidad de Puerto Rico, Colegio de Agricultura y Artes Mecánicas, 84 p. (A1)
- S.S. Papadopoulos & Associates, Inc. (SSPAI-compilers), 2007, Glosario español – inglés de los términos de los recursos del agua y del medio ambiente: Spanish – English glossary of water resource and environmental terms: S.S. Papadopoulos & Associates, Inc., Boulder, CO, unpagged. (A1)
- Stone, W.J., 1990, Index to NMGS guidebook papers on hydrology and related topics – 40 years of water-resource information: New Mexico Geology, v. 12, no. 1, p. 8-14. (A1)
- Stone, W.J., 1992, Water-resource information in New Mexico Bureau of Mines and Mineral Resources reports: New Mexico Bureau of Mines and Mineral Resources, pamphlet, 10 p. (A1)
- Stone, W.J., Mizell, N.H., Hawley, J.W., 1979, Availability of geologic and geophysical data for the eastern half of the U.S. Geological Survey's southwestern alluvial basins, regional aquifer study, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Open-File Report 109, 82 p. (A1)
- Texas General Land Office (TGLO), 1995, Transboundary resource inventory glossary: Spanish-English—Cartographic, environmental, and oil-spill terms: Texas General Land Office, 1700 N. Congress Ave. Austin, TX 78701-1495, 176 p. (A1)
- Thornbury, W.D., 1969, Principles of geomorphology: New York, John Wiley and Sons, Inc., 594 p. (A1, C)
- U.S. Geological Survey-NM Water Science Center, n.d., Selected publications on water resources in New Mexico: <http://nm.water.usgs.gov/publications.html> (A1)
- Vespermann, D., and Schmincke, H., 2000, Scoria cones and tuff rings, *in* Sigurdsson, H., ed., Encyclopedia of volcanoes, New York, Academic Press, p. 683-694. (A1)
- Vorhis, R.C., 1957, Bibliography of publications relating to ground water prepared by the Geological Survey and cooperating agencies—1946-55: U.S. Geological Survey Water-Supply Paper 1492, 203 p. (A1)
- Waring, G.A., and Meinzer, O.E., 1947, Bibliography and index of publications relating to ground water prepared by the Geological Survey and cooperating agencies: U.S. Geological Survey Water-Supply Paper 992, 412 p. (A1)
- Yeh, T.C. (T.-C. Jim), Khaleel, R., and Carroll, K.C., 2015, Flow through heterogeneous geologic media: New York, Cambridge University Press., 343 p. ISBN 978-1-107-07613-6 (A1, D2)

A2. Biographies and Reviews (Many Entries with Comprehensive Bibliographies)

- Akhtar, A., 2021, The Singularity is here—Artificially intelligent advertising technology is poisoning our societies: The Atlantic Dispatches-Opening Argument, v. 328, no. 5, p. 17-21. (A2)
- Alley, W.M., ed., 2013, Five-year interim report of the United States – Mexico Transboundary Aquifer Assessment Program: 2007-2012: U.S. Geological Survey Open-File Report 2013-1059, 31 p. (A2, D1, F1)
- Alley, W.M., and Alley, R., 2013, Too hot to touch – The problem of high-level radioactive waste: New York, Cambridge University Press, 370 p., ISBN 978-1-107-03011-4 www.cambridge.org/alleyalley (A2, D1, E2c)
- Alley, W.M., and Alley, R., 2017, High and Dry – Meeting the challenges of the world's dependence on groundwater: Yale University Press, 304 p., ISBN 978-0-300-22038-4 (A2, D1)

- Alley, W.M., and Alley, R., 2020, The war on the EPA – America's endangered environmental projections: Lanham, MD, Rowman & Littlefield, 287 p., ISBN 978-1-5381-3151-3. *See Chapters 9 and 10: "Toxic Chemicals" and "The Forever Chemicals."* (A2, D1, E2c)
- Alley, W.M., and Leake, S.A., 2004, The journey from safe yield to sustainability: Ground Water, v. 42, no. 1, p. 12-16. (A2, D1)
- Alley, W.M., Reilly, T.M., and Franke, O.L., 1999, Sustainability of ground-water resources: U.S. Geological Survey Circular 1186, 79 p. (A2, D1)
- Almada, F.R., 1968, Diccionario de historia, geografía, y biografía Chihuahuenses (2nd ed.): Chihuahua, México, Universidad de Chihuahua, 378 p. (A1, A2, B3, C, F3)
- Anderson, K.S.J., ed., 2006 Science on the Border: New Mexico Journal of Science, v. 46, 247 p. (A2, F1)
- Barry, T., and Sims, B., 1994, The challenge of cross-border environmentalism: The U.S.-Mexico case: Albuquerque, NM, Resource Center Press, 121 p. ISBN 0-911213-45-7 (A2, B3, E3)
- Birkeland, P.W., 1984, Presentation of the Kirk Bryan Award to Leland H. Gile, John W. Hawley, and Robert B. Grossman, *in* Medals and Awards for 1983: Geological Society of America, v. 95, p. 1003-1004. (A2)
- Bredehoeft, J.D., 2008, An interview with C.V. Theis: Hydrogeology Journal, v. 16, no. 1, p. 5-9. (A2)
- Broecker, W.S., 2010, The great ocean conveyor: Princeton University Press, 176 p. ISBN 9780691143545 (A2, C1)
- Bryan, K., 1923, Erosion and sedimentation in the Papago country, Arizona: U.S. Geological Survey, Bulletin 730-B, p. 19-90. (A2, C2a)
- Clos-Arceud, A., 1966, Le rôle déterminant des ondes aériennes stationnaires dans la structure des ergs sahariens et les formes d'érosion aéroisantes: Académie des Sciences, Paris, Comptes Rendus, Series D., no. 262, p. 2673-2676. (A2, C)
- Culbertson, M.C., 2018, Remembering Charlie Crowder, who worked to build a bi-national border industrial complex: NMPolitics.net, 4 p. (A2)
- Davis, S.N., and Davis, A.G., 2005, Hydrogeology in the United States, 1780-1950: Tucson, Department of Hydrology and Water Resources, University of Arizona, Publication HWR No. 05-02. 140 p. (A2)
- Eardley, A.J., 1962, Structural geology of North America (2nd Edition): New York, Harper and Row, 473 p. (A2)
- Embleton, C., Thomes, J., and Warren, A., 1979, The nature of fluid motion, *in* Embleton and Thomes (eds.), Process in Geomorphology: John Wiley and Sons, N.Y., p. 65-68. (A2, C)
- Fleck, J., 2016, Water is for fighting over, and other myths about water in the West: Washington, DC, Island Press, 264 p. ISBN 9781610916790 (A2, E3)
- Flint, R., and Flint, S.C., 2003, New vantages on the Coronado Expedition, *in* Flint, R., and Flint, S.C., eds., 2003, The Coronado Expedition from the distance of 460 years: University of New Mexico Press, p. 1-10. ISBN 0-8263-2973-6 (A2, B3)
- Fryar, A.E., 2007, The future of hydrogeology, then and now: A look back at O.E. Meinzer's perspectives, 1934 to 1947: Ground Water, v. 45, no. 2, p. 246-249. (A2, D1)
- Galton, F., 1892, Inquiries into human faculty and its development (2nd Edition-Macmillan): New York, Dutton (1911), 302 p. (A2)
- Garber, M., 2023, We're already in the Metaverse – Reality is blurred, boredom is intolerable, and everything is entertainment: The Atlantic, v. 331, no. 2, p. 18-27. (A2)
- Gile, L.H., 1987b, Book review of Weide, D.L., ed., Soils and Quaternary geology of the southwestern United States: Quaternary Research, v. 27, p. 335-336. (A2, C3)
- Glennon, R., 2002, Water follies: Groundwater pumping and the fate of America's fresh waters – Chapter 15. The Tragedy of Law and the Commons [p. 209-224]: Washington DC, Island Press, 314 p. ISBN 1-55963-223-2. (A2, E2)
- Gómez-Caballero, J.A., 2005, Historia e índice comentado del Boletín del Instituto de Geología de la UNAM: Boletín de la Sociedad Geológica Mexicana - Volumen Conmemorativa del Centenario: Aspectos Históricos de la Geología en México. Tomo LVII, Núm. 2, p. 149-185. (A2, F3, G1)
- Graf, W.L., 1988, Fluvial processes in dryland rivers, Berlin, Springer-Verlag, Springer series in physical environment, 346 p. (A2, C1)
- Granados-Olivas, A., 2022, Los recursos hidrológicos en cuencas transfronterizas entre México y Estados Unidos: El Paso del Norte y la gobernanza binacional del agua: Universidad Autónoma de Chihuahua y Universidad Autónoma de Ciudad Juárez, 324 p. ISBN 978-607-536 (A2, B3, F1)
- Grandin, T., 2006, Thinking in pictures - and other reports from my life with autism: New York, Vintage Books, 270 p. ISBN 13: 978-0-307-27565-3 (A2)

- Guinn, J., 2021, *War on the Border: Villa, Pershing, the Texas Rangers, and an American Invasion*: New York, Simon & Schuster, 368 p. ISBN 13:9781982128869 **(A2, B3)**
- Hackett, O.M., 1964, The father of modern ground water hydrology: *Ground Water*, v. 2, no. 1, p. 2-5. **(A2, D1)**
- Hackett, O.M., 1972, Presentation of the O.E. Meinzer Award to George Burke Maxey, with response by George B. Maxey, *in* *Medals and Awards for 1971*: Geological Society of America, v. 83, no. 6, p. xxv-xxviii. **(A2, D1)**
- Harris, L.G., 1996, The Developers: Controlling the Lower Rio Grande 1890-1980, *in* Ortega Klett, C.T., ed., *Reaching the Limits: Stretching the Resources of the Lower Rio Grande*, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 7-12. **(A2, B3, E2, E3)**
- Harris, L.G., 2012, Whose water is it anyway? Anatomy of the water war between El Paso, Texas and New Mexico, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 227-253. ISBN 978-0-86524-902-5 **(A2, B3, E2, E3)**
- Hawley, J.W., 1975b, The desert soil-geomorphology project: New Mexico Geological Society, Guidebook 26, p. 183-185. **(A2, C3)**
- Hawley, J.W., 1978, compiler, 1978, Guidebook to the Rio Grande rift in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources, Circular 163, 241 p. **(A2, C2a, C4)**
- Hawley, J.W., 2005, Five million years of landscape evolution in New Mexico: An overview based on two centuries of geomorphic conceptual-model development, *in* Lucas, S.G., et al., eds., *New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28*, p. 9-93. **(A1, A2, C2b, F1, I1, I3)**
- Hawley, J.W., 2014a, Biographical profile of Leland H. Gile, Jr., *in* Kues, B.S., Lewis, C.J., and Lueth, V.W., *A brief history of geological studies in New Mexico*: New Mexico Geological Society, Special Publication 12, p. 187-189 (*cited references 209-230*). **(A2)**
- Hawley, J.W., 2014b, Biographical profile of Oscar E. Meinzer, *in* Kues, B.S., Lewis, C.J., and Lueth, V.W., *A brief history of geological studies in New Mexico*: New Mexico Geological Society, Special Publication 12, p. 117-119 (*cited references 209-230*). **(A2)**
- Hawley, J.W., and Kernodle, J.M., 2008, Early contributions to arid-zone hydrogeology in the eastern Basin and Range region: *Ground Water*, v. 46, no. 3, p. 510-516. **(A2, B3, D1)**
- Hawley, J.W. and Love, D.W., 1981, Overview of geology as related to environmental concerns in New Mexico, *in* Wells, S.G., and Lambert, W., eds., *Environmental geology and hydrology in New Mexico*: NM Geological Society Special Publication No. 10, p. 1-10. **(A2, E2)**
- Hawley, J.W., Bachman, G.O., and Manley, K., 1976, Quaternary stratigraphy in the Basin and Range and Great Plains provinces, New Mexico and western Texas, *in* Mahaney, W.C., ed., *Quaternary stratigraphy of North America*: Stroudsburg, PA, Dowden, Hutchinson, and Ross, Inc., p. 235-274. **(A1, A2, D1, I1, I3)**
- Hernández, K.L., 2022, *Bab Mexicans*: New York, NY. W.W. Norton & Company, 384 p. ISBN 978-1-324-00437-0 **(A2, B3)**
- Hohn, D., 2011, *Moby-Duck: The true story of 28,800 bath toys lost at sea and the beachcombers, oceanographers, environmentalists, and fools, including the author, who went in search of them*: New York, NY, Viking Penguin; Published in Penguin Books 2012, 402 p., ISBN 978-0-14-312050-6 **(A2, C1, D1)**
- Horgan, P., 1954, *Great rivers, the Rio Grande in North American History*: New York, Holt, Rinehart and Winston, 1020 p. **(A2, B3)**
- Houghton, J., 2004, *Global Warming: The Complete Briefing* (3rd edition): Cambridge University Press, 351 p. **(A2, C1)**
- Hudson, M.R., and Grauch, V.J.S., 2013, Introduction, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater*: Geological Society of America Special Paper 494, p. v-xii. **(A2, C2b, C4)**
- Jamail, D., 2019, *The end of ice: Bearing witness and finding meaning in the path of climate disruption*: New York, The New Press, 272 p. ISBN 13:9781620972342 **(A2, C1)**
- Kahneman, D., and Tversky, A., 1974, Judgement under uncertainty: Heuristics and biases: *Science*, vol. 185, issue 4157, pp. 1124-1131. doi: 10.1126/science.185.4157.1124 **(A2, D1)**
- Kahneman, D., and Tversky, A., 1996, On the reality of cognitive illusions: *Psychological Review*, v. 103, no. 3, p. 582-591. *See Lewis 2017*. **(A2, D1)**
- Keigwin, L.D., Klotsko, S., Zhao, N., Reilly, B., Giosan, L., and Driscoll, N.W., 2018, Deglacial floods in the Beaufort Sea preceded Younger Dryas cooling: *Nature Geoscience*, v.11, no. 8, p. 599-604. **(A2, C1)**
- Kiser, W.S., 2018, *Coast-to-coast empire: Manifest Destiny and the New Mexico borderlands*: University of Oklahoma Press, 273 p., ISBN 378-0-8061-6026-9. *See McDonald 2018 and Merry 2009*. **(A2, B3)**

- Kisner, J., 2022, Hanya Yanagihara's haunted America—Her new novel experiments with alternative versions of history, upending personal and national destinies: *The Atlantic-Culture & Critics*, v. 329, no. 1, p. 86-88. **(A2)**
- Kues, B.S., 2014a, Biographical profile of N.H. Darton, in Kues, B.S., Lewis, C.J., and Lueth, V.W., A brief history of geological studies in New Mexico: New Mexico Geological Society, Special Publication 12, p. 97-98 (*cited references 209-230*). **(A2)**
- Kues, B.S., 2014b, Biographical profile of Willis T. Lee, in Kues, B.S., Lewis, C.J., and Lueth, V.W., A brief history of geological studies in New Mexico: New Mexico Geological Society, Special Publication 12, p. 91-92 (*cited references 209-230*). **(A2)**
- Kues, B.S., Lewis, C.J., and Lueth, V.W., 2014, A brief history of geological studies in New Mexico, with biographical Profiles of notable New Mexico geologists: New Mexico Geological Society, Special Publication 12, 230 p. **(A2)**
- Laplace, P.S., 1825, *Essai Philosophique sur les Probabilités*, fifth edition. New York, Springer. Translated by A. I. Dale 1995; *See Miller and Gelman 2020*. **(A2, D1)**
- Leopold, L.B. 2004. Geomorphology: A sliver off the corpus of science: *Annual Review of Earth and Planetary Science*, v. 32, p. 1-12. **(A2)**
- Lewis, M., 2016, *The undoing project – A friendship that changed our minds*: New York, W.W. Norton & Company, 362 p. ISBN 978-0-393-25459-4. *See Chapter 4: Errors, and Kahneman and Tversky (1974 and 1976)*. **(A2, D1)**
- Lewis, M., 2018, *The fifth risk*: New York, W.W. Norton & Company, 219 p. ISBN 978-1-324-00264-2 **(A2)**
- Lustig, L.K., 1968, Inventory of research on geomorphology and hydrology of desert environments, in McGinnis, W.G., Goldman, B.J., and Paylore, P., eds., *Deserts of the World*: University of Arizona Press, p. 95-286. **(A2, C, D1)**
- Mabbutt, J.A., 1977, *Desert Landforms*: Cambridge MA, M.I.T. Press, 340 p. ISBN 13: 9780262131315 **(A2, C)**
- Mackichan, L., 1980, Clyde Wilson Dies at Age 48: The Divining Rod, New Mexico Water Resources Research Institute, no. 80-3 (Fall 1980), p. 1, 3. <https://nmwrri.nmsu.edu/publications/enews-divining-rod-issues/enews-divining-rod-issues-documents/Vol.%2080%20No.%203%20-%20Fall%201980.pdf> **(A2)**
- Maxey, G.B., 1979. The Meinzer era of U.S. hydrogeology, 1910-1940, in Back, W., and Stephenson, D.A., eds., *Contemporary hydrology—The George Burke Maxey Memorial Volume*: *Journal of Hydrology*, v. 43, no. 1/6, p. 1-6. **(A2)**
- McDonald, D., 2022, Book Review – *Coast-to-coast empire: Manifest Destiny and the New Mexico Borderlands* by William S. Kiser: University of Oklahoma Press, 2018. ISBN 378-0-8061-6026-9, 273 pages, *Southern New Mexico Historical Review*, Volume XXIV (January 2022), p. 69-70. ISSN 1076-9072 <http://www.donaanacountyhistsoc.org> **(A2)**
- McHarg, I.L., 1969, *Design with Nature*: New York, NY, Doubleday/Natural History Press, 197 p. ISBN 13: 978-0471114604. *See Steiner et al. 2019*. **(A2, E2)**
- McPhee, J., 1989, *The Control of Nature*: New York, Farrar, Strauss and Giroux, 272 p. ISBN 0-374-52259-6 **(A2, E2)**
- Merry, R.W., 2009, *A country of vast designs – James K. Polk, the Mexican War, and the Conquest of the American Continent*: New York, Simon & Schuster Paper Back edition, 576 p. **(A2, B3)**
- Meyer, G., Davis, G., and La Moreaux, P.E., 1988, Historical perspective – Chapter 1; in Back, W., Rosenshein, J.S., and Seaber, P.R., eds., *Geology of North America – Hydrogeology*: Geological Society of America, *Decade of North American Geology*, v. 0-2, p. 1-8. **(A2, D1)**
- Miller, J.B., and Gelman, A. 2020, Laplace's theories of cognitive illusions, heuristics and biases: *Statistical Science*, v. 35, no. 2, p. 159-170. **(A2, D1)**
- Minnis, M., 2015, *Al Utton – Aztec Eagle*: Albuquerque, NM, Utton Transboundary Resources Center, 347 p., ISBN 978-0-578-16455-7 **(A2, E3)**
- Monger, H.C., Gile, L.H., Hawley, J.W., and Grossman, R.B., 2009, *The Desert Project – An analysis of aridland soil-geomorphic processes*: New Mexico State University Agricultural Experiment Station Bulletin 798, 76 p. **(A2, C2b, C3)**
- Moorhead, M.L., ed., 1954, *Josiah Gregg [1844], Commerce of the prairies*: University of Oklahoma Press, 469 p. **(A2, B3)**
- Moorhead, M.L., 1958, *New Mexico's royal road, trade and travel on the Chihuahua Trail*: University of Oklahoma Press, 234 p. **(A2, B3)**
- Mueller, J.E., 1975, *Restless river: International law and the behavior of the Rio Grande*: Texas Western Press, University of Texas at El Paso, 155 p. **(A2, B3, E2, F1)**

- Mueller, J.E., ed., 2006, *Autobiography of John Russell Bartlett (1805-1886)*: Providence, RI, The John Carter Brown Library, 226 p. **(A2, B3)**
- O'Connor, S.D., and Day, H.A., 2002, *Lazy B—Growing up on a cattle ranch in the American Southwest*: New York, 2003 Random House Trade Paperback Edition, 318 p. ISBN 0-8129-6673-2 **(A2, B3)**
- Ortega Klett, C.T., ed., 2012, *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, 288 p. ISBN 978-0-86524-902-5 **(A2, E2, E3)**
- Paskus, L., 2020, *At the Precipice – New Mexico's Changing Climate*: University of New Mexico Press, 200 p. ISBN 978-0-8263-5911-7 **(A2, C1)**
- Phillips, F.M., 2014, Biographical profile of Kirk Bryan, *in* Kues, B.S., Lewis, C.J., and Lueth, V.W., *A brief history of geological studies in New Mexico*: New Mexico Geological Society, Special Publication 12, p. 142-143 (*cited references 209-230*). **(A2)**
- Phillips, F.M., Hall, G.E., and Black, M.E., 2011, *Reining in the Rio Grande – People, Land, and Water*: University of New Mexico Press, 252 p. **(A2, B3, C1, D1, E3)**
- Postel, S., 2017, *Replenish – The virtuous cycle of water and prosperity*: Washington, DC, Island Press, 323 p. ISBN 13: 978-1-61091-790-2 **(A2)**
- Pyne, R.D.G., 2005, *Aquifer storage recovery – A guide to groundwater recharge through wells*: Gainesville, FL, ASR Systems LLC, 608 p. ISBN 0-9774337-090000 **(A2, D2, E2b)**
- Rabbitt, M.C., 1989, *The United States Geological Survey: 1879 to 1989*: U.S. Geological Survey, Circular 1050, 52 p. **(A2)**
- Rebert, P., 2001, *La Gran Línea: Mapping the United States–Mexico Boundary, 1849-1857*: University of Texas Press, 268 p. ISBN 0-292-77111-8 **(A2, B3, F1)**
- Reilly, T.E., 2004, A brief history of contributions to ground water hydrology by the U.S. Geological Survey. *Ground Water*, v. 42, no. 4, p. 625-631. **(A2, D1)**
- Reilly, T.E., Dennehy, K.F., Alley, W.M., and Cunningham, W.L., 2008, *Ground-water availability in the United States*: U.S. Geological Survey Circular 1323, 70 p. **(A2, D1)**
- Reisner, M., 1993, *Cadillac desert: The American West and its disappearing water* (revised and updated edition): New York, Penguin Books, 592 p. **(A2, B3, C1)**
- Ríos, A.Á., 1999, *Capirotada: A Nogales memoir*: University of New Mexico Press, 145 p. ISBN 0-8263-20093-7 **(A2, B3)**
- Ritch, W.G., 1883, *Illustrated New Mexico* (3rd ed.): Santa Fe, New Mexican Printing & Publishing, Co, 234 p. **(A2, B3)**
- Sálaz Márquez, R.D., 2004, *Epic of the Greater Southwest: New Mexico · Texas · California · Arizona · Oklahoma · Colorado · Utah · Nevada*: Box 10515, Alameda, NM 87184, Cosmic House, 620 p. ISBN 0-932492-06-1 **(A2, B3)**
- Scarborough, V.L., 2003, *Flow of power; ancient water systems and landscapes*: Santa Fe, School of American Research Resident Scholar Book, 204 p. ISBN 1-930618-32-8 **(A2, B2, D1)**
- Schumm, S.A., 1977, *The fluvial system*: New York, John Wiley and Sons-Interscience, 338 p. **(A2, D1)**
- Schoderbek, D., 2014, Biographical profile of Frank Kottowski, *in* Kues, B.S., Lewis, C.J., and Lueth, V.W., *A brief history of geological studies in New Mexico*: New Mexico Geological Society, Special Publication 12, p. 155-156 (*cited references 209-230*). **(A2)**
- Seager, B. [W.R.], 1994, Russell E. Clemons, 1930-1994: *New Mexico Geology*, v. 16, no. 4, p. 78. **(A2)**
- Sharp, R.P., 1993, *Recollections of Kirk Bryan: a biographical sketch*: *Geomorphology*, v. 6, p. 189-205. **(A2)**
- Sindico, F., 2020, *International Law and Transboundary Aquifers*: Northampton, MA, Edward Elgar Publishing, 208 p. ISBN 978 1 78811 762 3 **(A2, E3)**
- Soil Science Division Staff, Ditzler, C., Scheffe, K., and Monger, H.C., eds., 2017, *Soil Survey Manual*: U.S. Department of Agriculture (USDA), Agriculture Handbook No. 18, Government Printing Office, Washington, D.C., 603 p. **(A2, C3)**
- Sonnichsen, C.L., 1968, *Pass of the North, four centuries on the Rio Grande*: The University of Texas at El Paso, Texas Western Press, 469 p. *See comments on EPdN reach on pp.14-17, 29, 79, 89-91,106-107,132,135-136,147,262, 282-284.* **(A2, B3)**
- Steiner, F.R., Weller, R., M'Closkey, K., and Fleming, B., eds., 2019, *Design with nature now*: Cambridge, MA, Lincoln School for Land Policy—Columbia University Press, 368 p. ISBN 9781558443938. *See McHarg 1969 and <https://mcharg.upenn.edu/conversations/what-does-it-mean-design-nature-now>* **(A2, E2)**
- Stephens, D.B., 1996, *Vadose zone hydrology*: Boca Raton, FL, Lewis Publishers, 347 p. **(A2, D1)**
- Stonestrom, D.A., Constantz, J., Ferré, T.P.A., and Leake, S.A., eds., 2007, *Ground-water recharge in the arid and semiarid southwestern United States*: U.S. Geological Survey Professional Paper 1703, 414 p. **(A2, D2)**

- Taleb, N.N., 2010, *The Black Swan: the impact of the highly improbable* (second edition), with a new section: On robustness & fragility: New York, Random House Trade Paperbacks, 444 p. ISBN 978-0-8129-7381-5 **(A2, D1)**
- Tamayo, J.L., 1968, *Geografía moderna de México* (Quinta edición revisada): México, D.F., Editorial F. Trillas, S.A., 382 p. *See Las regiones geomórficas – Sierra Madre Occidental (p. 43) and Altiplanicie Septentrional (p. 52-53); Vertientes interiores endorreicas – cuencas de las Lagunas Guzman, Santa María y Patos (p. 142-143); and Chihuahua-Potosinense Provincia biótica (p. 162).* **(A2, C, F3)**
- Tolman, C.F., 1937, *Ground Water*: New York, McGraw-Hill Book Co., Inc. 593 p. **(A2, C, D1)**
- Twit, S.J., 1995, *Barren, wild, and worthless: Living in the Chihuahuan Desert*: University of New Mexico Press, 203 p. *See chapter entitled "Terminus", p. 147-180.* **(A2, B3, C1)**
- Valdez, A., and Zimelman, J.R., 2020, Great Sand Dunes, in Lancaster, N. and Hesp, P., eds., *Inland Dunes of North America. Dunes of the World*: Cham, Switz., Springer, p. 1-10. **(A2, C2b)**
- Van Denburgh, A.S., 1996, Memorial to John H. Feth: *Geological Society of America Memorials*, v. 27, December, 1965. *See Feth et al. 1961 and 1965, and Feth 1964.* **(A2)**
- Wang, L., Jiang, W.Y., Jiang, D.B., Zou, Y.F., Liu, Y.Y., Zhang, E.L., Hao, Q.Z., Zhang, D.G., Zhang, D.T., Peng, Z.Y., Xu, B., Yang, X.D., and Lu, H.Y., 2018, Prolonged heavy snowfall during the Younger Dryas: *Journal of Geophysical Research: Atmospheres*, v. 123, no. 24. **(A2, C1)**
- Warren, A., 1979, *Aeolian processes*, in Embleton and Thomes (eds.). *Process in Geomorphology*: New York, John Wiley and Sons, p. 338-342. **(A2, C)**
- Wenzel, L.K., 1942, *Methods for determining permeability of water-bearing materials, with special reference to discharging-well methods*: U.S. Geological Survey, Water-Supply Paper 887, 192 p. **(A2, D2)**
- White, J.D.L., and Ross, P.S., 2011, Maar-diatreme volcanoes: A review. *Journal of Volcanology and Geothermal Research*, from maars to scoria cones: the enigma of monogenetic volcanic fields, p. 11. **(A2)**
- Wylie, P.G., 1955-1959 (1942), *Generation of Vipers*: New York, Rinehart & Company, Inc. *Pocket Books, Inc. GIANT CARDINAL edition: An unabridged reprint of the 20th edition (1955), with new Preface, footnotes, and annotations by the author, 312 p.* **(A2, B3)**

A3. News Items

- Albuquerque Journal (ABQ Jnl), 2019, Union Pacific upgrading facility in Santa Teresa: Albuquerque Journal–METRO & NM, May 5, 2019, p. C2. **(A3)**
- Albuquerque Journal (ABQ Jnl), 2020, New runway finished at Doña Ana Jetport: Albuquerque Journal–METRO & NM, Nov 24, p. A8. **(A3)**
- Albuquerque Journal (ABQ Jnl), 2021, Last call – While water levels dwindle, NM and rest of the Southwest in desperate need of a long-range plan: Albuquerque Journal–OPINION–EDITORIALS, June 27, 2021, p. A10. **(A3)**
- Albuquerque Journal (ABQ Jnl), 2022, NM needs leaders who will tackle real water solutions now: Albuquerque Journal–OPINION–EDITORIAL, Tuesday, September 27, 2022, p. A-10. **(A3)**
- Associated Press, 2013, Railroad facility ON TRACK for an early opening – UP'S Santa Teresa project could be operational by 2014: Albuquerque Journal–BUSINESS, Wednesday, December 25, 2013, p. B1. **(A3)**
- Associated Press, 2019, Report raises alarms over Arizona's water supply: Albuquerque Journal–NATION, Sunday, October 27, 2019, p. A4. **(A3)**
- Attanasio, C., 2019, Trump's threat to close border stirs fears of economic harm - Warnings of layoffs, shortages and grocery store price increases: Albuquerque Journal–NATION, Tuesday, April 2, 2019, p. A4. **(A3)**
- Attanasio, C., and Galvan, A., 2019, Work on more border wall starts on 46-mile stretch west of Santa Teresa and Arizona—Funds come through Trump executive order: Albuquerque Journal–METRO & NM, Sunday, August 25, 2019, p. A11. **(A3)**
- Banerjee, S., Cook, J., and Truett, S., 2018, The border wall endangers the future of humanity and nature: Albuquerque Journal–OPINION–EDITORIAL, Sunday, August 19, 2018, p. A13. **(A3)**
- Bixby, K., and Smith, D., 2020, Ongoing border wall construction has risks: Albuquerque Journal–OPINION–EDITORIAL, Sunday, April 5, 2020, p. A11. **(A3)**
- Boetel, R., 2024a, State's hot-spring geology could unlock energy: Albuquerque Journal–BUSINESS OUTLOOK, Monday, March 25, 2024, p. 2. **(A3)**
- Boetel, R., 2024b, Nationwide PFAS rules announced – News comes on same day as report that PFAS are in NM water: Albuquerque Journal, Thursday, April 11, 2024, p. A1, A8. **(A3, E2c)**

Boyd, D., and Davis T., 2022, Increased protection for wild places – NM conservation projects could get steady funding stream under bond proposal: Albuquerque Journal–LEGISLATIVE GUIDE-CONSERVATION, Saturday, January 15, 2022, p. 14-15. **(A3)**

Brenner, P., 2022, Spaceport subsidies and corporate welfare’s black hole—NM won’t see ROI for \$275 million it gave Virgin Galactic: Albuquerque Journal–OPINION, Tuesday, September 27, 2022, p. A-11. **(A3)**

Bryan, S.M., Associated Press, 2020, Climatologist: Dry Areas in Southwest getting dryer – Precipitation declines as temperatures rise: Albuquerque Journal–METRO & NM, Sunday, September 27, 2020, p. A12, A13. **(A3)**

Bryan, S.M., Associated Press, 2021, Climatologist: Dry snow brings little relief to West—Wind, low water content diminish benefits of recent winter storms: Albuquerque Journal, Tuesday, February 23, 2021, p. A1, A2. **(A3)**

Bryan, S.M., Associated Press, 2022, More fields could go unplanted under New Mexico water plan: Albuquerque Journal, Friday, January 28, 2028, p. A8. **(A3)**

Bryan, S.M., Associated Press, 2023, Lawmakers question fallowing as way to reduce water use along Rio Grande—Legislative Finance Committee gets briefings from top water managers: Albuquerque Journal, Wednesday, June 28, 2023, p. A1, A7. **(A3)**

Bryan, S.M., Associated Press, 2023, US judge recommends settlement over Rio Grande--Calls it consistent with a water-sharing agreement among NM, Texas, Colorado: Albuquerque Journal, Thursday, July 6, 2023, p. A3-A4. **(A3)**

Bryan, S.M., and Daly, M., Associated Press, 2022, ‘Forever chemicals’ pose urgent concern—Contamination suspected at numerous New Mexico sites: Albuquerque Journal, Saturday, August 28, 2022, p. A6, A7. **(A3)**

Cook, C., 2024, Haaland announces \$60M investment in water – Money to address drought resiliency in the Rio Grande south of Elephant Butte: Albuquerque Journal, Saturday May 11, 2024, p. A1, A5. **(A3, E2b)**

Crawley, D. [Dions], 2021, Labor, climate, regulation pose ag challenges: Albuquerque Journal–BUSINESS OUTLOOK, Monday, March 1, 2021, p. 12. **(A3)**

Daly, M. (Associated Press), 2021, Drought places premium on water in Colo. boom town: Albuquerque Journal, Friday, August 20, 2021, p. A12. **(A3)**

D’Amassa, A., Las Cruces Sun-News, 2021, Herrell calls for wall to be finished – New Mexico congresswoman leads delegation of Republican lawmakers to the border: Albuquerque Journal, Monday, April 14, 2021, p. A1, A2. **(A3)**

Davis, T. 2019a, Report: NM water stress level extremely high: Albuquerque Journal, Monday, August 12, 2019. **(A3)**

Davis, T., 2019b, Aquifer on the rebound – Water levels up 30-40 feet; San Juan Project, conservation credited: Albuquerque Journal, Saturday, August 24, 2010, p. A1, A2. **(A3, E2b)**

Davis, T., 2019c, EPA to help farmers clean up toxic foam chemicals – New Mexico suing Air Force to clean up contamination: Albuquerque Journal, Sunday, November 24, 2019, p. A1, A2. **(A3)**

Davis, T., 2020a, Texas, Colorado give NM the OK to use stored water – Permission for emergency use by the state last granted in the 1950s: Albuquerque Journal, Saturday, July 18, 2020, p. A1, A4. **(A3)**

Davis, T., 2020b, Agencies look to acquire more water for minnow – Interstate Stream Commission OKs \$100K for potential lease: Albuquerque Journal, Friday, July 24, 2020, p. B1. **(A3)**

Davis, T., 2020c, Emergency water release a short-term solution – Rio Grande in ABQ would have been dry by now, while northern NM in dire straits: Albuquerque Journal, Saturday, August 8, 2020, p. A8, A9. **(A3)**

Davis, T., 2020d, With river on life support, water debt looms: Albuquerque Journal, Friday, August 14, 2020, p. A7, A8. **(A3)**

Davis, T., 2020e, Planning for New Mexico’s water future – 50-plan will support existing research projects: Albuquerque Journal, Monday, August 17, 2020, p. A1, A6. **(A3)**

Davis, T., 2020f, Cuba [NM] counts on new facility to treat its brackish water – Technology converts extracted minerals to fertilizer: Albuquerque Journal, Monday, August 31, 2020, p. A1, A2. **(A3)**

Davis, T., 2020g, Tracking every last drop – New technology aims to get better water data to farmers: Albuquerque Journal, Saturday, October 10, 2020, p. A10. **(A3)**

Davis, T., 2020h, Dry as a bone – 2021 to be a critically low water supply year: Albuquerque Journal, Saturday, November 12, 2020, p. A5. **(A3)**

Davis, T., 2020i, Rio Grande Compact states jiggle duties – Nearly all of New Mexico is experiencing severe drought: Albuquerque Journal, Saturday, November 13, 2020, p. A8. **(A3)**

Davis, T., 2020j, Deep drought persists in New Mexico: Albuquerque Journal, Saturday, December 19, 2020, p. A5-A6. **(A3)**

- Davis, T., 2021a, NM will pay farmers to stop groundwater use – Plan hopes to understand how aquifer system reacts to scenarios: Albuquerque Journal, Saturday, January 2, 2021, p. A1, A5. **(A3)**
- Davis, T., 2021b, Drought-stricken NM getting little help from winter storms—Snowpack below average across state; northern mountains fare slightly better: Albuquerque Journal, Sunday, January 10, 2021, p. A8-A9. **(A3)**
- Davis, T., 2021c, Rio Grande in *Peril* – NM water manager warn communities to prepare for bleak future: Albuquerque Journal, Monday, February 1, 2021, p. A8-A9. **(A3)**
- Davis, T., 2021d, Fire, rain a bad mix – UNM study shows impacts on Western watersheds: Albuquerque Journal, Saturday, June 5, 2021, p. A1, A3. **(A3, C1)**
- Davis, T., 2021e, ‘We’re sounding the alarm’ on water flow, Elephant Butte managers say: Albuquerque Journal, Sunday, June 20, 2021, p. A1, A16. **(A3)**
- Davis, T., 2021f, Rio Grande to ‘Rio Sand’? – Iconic river may go dry through ABQ this summer: Albuquerque Journal, Saturday, June 26, 2021, p. A1-A2. **(A3)**
- Davis, T., 2021g, In 50 years: Hotter, Drier – New Mexico’s changing climate spells uncertainty for water: Albuquerque Journal, Friday July 23, 2021, p. A1-A2. **(A3)**
- Davis, T., 2021h, Rio Grande goes with monsoon flow – Rains ease fears of river drying, but farmers still face irrigation woes: Albuquerque Journal, Thursday August 12, 2021, p. A5. **(A3)**
- Davis, T., 2021i, Stansbury’s work wins Water Alliance honor – Lawmaker says NM can ‘lead the way.’: Albuquerque Journal, Monday, September 6, 2021, p. A5. **(A3)**
- Davis, T., 2021j, NM water projects seek boost in funding – Lack of cohesive data bases hamper state’s water tracking efforts: Albuquerque Journal, Friday, September 10, 2021, p. A5-A6. **(A3)**
- Davis, T., 2021k, US, Mexico officials urge collaboration on water – Challenges seen in legal frameworks: Albuquerque Journal–METRO & NM, September 30, 2021, p. A7. **(A3)**
- Davis, T., 2021l, Double dip La Niña’ ahead – New Mexico braces for another warm, dry winter: Albuquerque Journal, Monday December 5, 2021, p. A1-A2. **(A3)**
- Davis, T., 2022a, US House reps team up on bipartisan water, drought bills – Databases help groups weigh scarce water conditions: Albuquerque Journal, Friday, May 20, 2022, p. A1, A2. **(A3)**
- Davis, T., 2022b, River down to a trickle; worse may be yet to come: Albuquerque Journal, Monday July 24, 2022, p. A10-A11. **(A3)**
- Davis, T., 2022c, ‘Status quo is not an option’ for Rio Grande: Albuquerque Journal, Wednesday July 27, 2022, p. A1-A2. **(A3)**
- Davis, T., 2022d, Future with less water predicted in plan – State’s water infrastructure was not built for climate change, say analysts: Albuquerque Journal, Saturday August 4, 2022, p. A1, A4. **(A3)**
- Davis, T., 2022e, The Colorado River Compact at 100—Increasing pressures on Colorado River water in NM – Compact made in more water-rich times impacts arid area: Albuquerque Journal, Thursday, September 15, 2022, p. A1, A3. **(A3)**
- Davis, T., ARIZONA DAILY STAR, 2022, The Colorado River Compact at 100—Groundwater is Plan B for Arizona – Farmers, urban users have no idea how much river water use they’ll have to cut: Albuquerque Journal, Wednesday, September 14, 2022, p. A1, A6. **(A3)**
- Dimond, D., 2021, The future of the ‘big, beautiful’ border wall is dim: Albuquerque Journal–OPINION–EDITORIAL, Saturday, January 2, 2021, p. A11. **(A3)**
- Fleck, J., 2013, Texas fires shot in water war – Lawsuit claims N.M. has drained the Rio Grande: Albuquerque Journal, Wednesday, January 9, 2013, p. A1, A2. **(A3, E3)**
- Galvan, A., 2020, Feds give 65 acres for border wall project – Land transfer done for infrastructure use: Albuquerque Journal–METRO & NM, Friday, July 24, 2019, p. B 2. **(A3)**
- Garland, M., 2020, Growing the wind industry is smart – Projects provide jobs and clean power: Albuquerque Journal–NM’S ENERGY FUTURE, Monday, March 16, 2020, p. A11. **(A3)**
- Gleason, M., 2024a, Tech Outlook: NM Tech’s Shari Kelley explains geothermal energy: Albuquerque Journal–BUSINESS OUTLOOK, Monday, March 25, 2024, p. 6. **(A3)**
- Gleason, M., 2024b, ‘The Earth is always hot’ – Geothermal advancements, incentives could help NM meet renewable energy goals: Albuquerque Journal–BUSINESS OUTLOOK, Monday, March 25, 2024, p. 10-12. **(A3)**
- Hamill, J., 2023, On artificial intelligence, and mice and men: Albuquerque Journal–BUSINESS OUTLOOK, Monday, June 5, 2023, p. 14. **(A3)**
- Hamway, S., 2020a, Recycling company to expand in Santa Teresa – Texas firm has 11 plants in US, Mexico: Albuquerque Journal–BUSINESS OUTLOOK, Wednesday, February 19, 2020, p. A10-A11. **(A3, E2c)**

- Hamway, S., 2020b, Taiwanese firm plans move to Santa Teresa – Relocation part of trend for manufacturers to set up sites near customers: Albuquerque Journal–BUSINESS OUTLOOK, Tuesday, December 8, 2020, p. A8. **(A3)**
- Hamway, S., 2021a, NM suit spurs national concern over surgical supplies – State AG is targeting gas from medical plant at Santa Teresa: Albuquerque Journal, Wednesday, June 30, 2021, p. A1, A6. **(A3)**
- Hamway, S., 2021b, Judge halts ‘uncontrolled’ emissions of air pollutant – Medical plant in Santa Teresa ordered to monitor release of ethylene dioxide: Albuquerque Journal, Saturday, June 26, 2021, p. A1, A5. **(A3)**
- Hansen, K. 2023, Infrastructure investments will boost job growth in New Mexico: Albuquerque Journal–OPINION-SOLUTIONS, Monday, September 18, 2023, p. A8. **(A3)**
- Haynes, M., 2020, Managing forests lessens fire damage: Albuquerque Journal, Saturday, October 25, 2020, p. A13. **(A3)**
- Hochman-Vigil, D.M., 2022, Solar-panel investigation casting cloud over NM – Critical components no longer being sent to US: Albuquerque Journal–OPINION, Sunday, May 15, 2022, p. C3. **(A3)**
- Kocherga, A., 2017, Visiting envoy promotes NAFTA’s importance: Albuquerque Journal–BUSINESS OUTLOOK, Friday, November 17, 2017, p. B1-B2. **(A3)**
- Kocherga, A., 2018a, Dedicated lane serves Foxconn – Mexican electronics plant utilizes quick Santa Teresa border crossing: Albuquerque Journal–BUSINESS OUTLOOK, Friday, February 2, 2018, p. A14-A15. **(A3)**
- Kocherga, A., 2018b, Summit looks at border water issues – Participants learn about desalination, cooperation as promising strategies: Albuquerque Journal–METRO & NM, Sunday, March 4, 2018, p. A9-A10. **(A3)**
- Kocherga, A., 2018c, Little panic in pecan region – Measured concern so far among southern NM’s nut orchards, with little immediate impact, *in* NM feels tariff’s bite: Albuquerque Journal–BUSINESS OUTLOOK, Friday, May 7, 2018, p. B11-B12. **(A3)**
- Kocherga, A., 2018d, Meat packer brings 1295 jobs to Sunland Park: Albuquerque Journal–BUSINESS OUTLOOK, Saturday, July 14, 2018, p. A12-A13. **(A3)**
- Kocherga, A., 2018e, NM border visionary Charlie Crowder dies: Albuquerque Journal–UPFRONT, Friday, August 10, 2018, p. A1, A16. **(A3)**
- Kocherga, A., 2018f, Study surveys border opportunities: Albuquerque Journal–BUSINESS, Wednesday, August 15, 2018, p. A10. **(A3)**
- Kocherga, A., 2018g, Border summit focuses on trade turmoil-NAFTA update due Mexico’s Zedillo says: Albuquerque Journal–BUSINESS, Thursday, August 16, 2018, p. A10-A11. **(A3)**
- Kocherga, A., 2018h, Bustling cross-border trade topic of lecture – Jerry Pacheco to share insights of years working in Santa Teresa: Albuquerque Journal–BUSINESS, Wednesday, August 22, 2018, p. A10. **(A3)**
- Kocherga, A., 2019a, President of Mexico visits Ciudad Juárez – López Obrador touts the future impact of new border “free zone:” Albuquerque Journal–METRO & NM, Sunday, January 6, 2019, p. C1-C2. **(A3)**
- Kocherga, A., 2019b, Trump tweets threat to shut down border – New Mexicans say closure could threaten business, tourism: Albuquerque Journal, Saturday, March 30, 2019, p. A1, A4. **(A3)**
- Kocherga, A., 2019c, Border delays take toll on U.S. economy – Trade experts link Trump’s policies to long wait times: Albuquerque Journal–METRO & NM, Sunday, April 21, 2019, p. C1-C2. **(A3)**
- Kocherga, A., 2019d, NM Businesses brace for Mexico tariffs – Gov. says impacts could be ‘economically catastrophic:’ Albuquerque Journal, NM, Saturday, June 1, 2019, p. A1, A5. **(A3)**
- Kocherga, A., 2019e, Tragedy in America – Search for answers continues in wake of El Paso shooting: Region known for its diversity denounces hatred: Albuquerque Journal, Monday, August 5, 2019, p. A1, A6. **(A3)**
- Kocherga, A., 2019f, Presidents visit to El Paso met chorus of protests: Albuquerque Journal, Thursday, August 8, 2019, p. A1, A6. **(A3)**
- Kocherga, A., 2019g, Columbus gets new, improved port of entry: Albuquerque Journal–METRO & NM, Thursday, September 6, 2019, p. A9, A10. **(A3)**
- Kocherga, A., 2019h, Border Contradictions – Southern New Mexico farmer wants a wall – and more workers: Albuquerque Journal–ON THE BORDER, Sunday, September 29, 2019, p. A1, A4 and A5. **(A3)**
- Kolenc, V., 2018, Officials: Amazon bid will aid region – El Paso, Santa Teresa failed to make list of finalists for HQ2: Las Cruces Sun-News, Saturday, January 20, 2018, p. 1A, 7A; Vic Kolenc El Paso Times, USA Today Network-Texas. **(A3)**
- Korte, T., 2011, \$400M Rail Hub for Santa Teresa: Albuquerque Journal–BUSINESS, Saturday, January 8, 2011, p. D1. **(A3)**
- Kotkowski, M.B., 2012, Booming Santa Teresa puts N.M. on map: Albuquerque Journal–BUSINESS, Monday, January 9, 2012, p. 5. **(A3)**

- Land, K., 2020, Santa Fe breaches ‘Exceptional Drought’ status – Historic low flows being recorded this year on the Rio Grande: Albuquerque Journal, Saturday, October 10, 2020, p. A1, A9. **(A3)**
- Lee, M., Associated Press, 2022, NM seeks opportunity in Texas border disruptions – State backs proposal for rail line through Santa Teresa crossing; Albuquerque Journal–METRO & NM, Friday, May 6, 2022, p. A7. *See Stevenson, M., 2022. (A3)*
- Linthicum, K., Fry, W., and Minjares, G., 2020, US urges Mexico to reopen border factories – Mexican health officials warn premature start could lead to widespread deaths: Albuquerque Journal–BUSINESS, Saturday, May 2, 2020, p. A6. **(A3)**
- Lynch, D.J., Sheridan, M.B., and Kim, S.M. (The Washington Post), 2019, Trump secures revised replacement for NAFTA: Albuquerque Journal–NATION, Wednesday, December 11, 2019, p. A6. **(A3)**
- Mata, R., 2021, Immigrants flow through Sunland Park – Small border city’s resources stressed by increased crossings: Albuquerque Journal, Monday, November 15, 2021, p. A1, A5. **(A3)**
- McBranch, D., 2023, Building a hydrogen bridge to a clean-energy future – Trucking would benefit from rapidly expanding availability of hydrogen fuel along major routes: Albuquerque Journal–BUSINESS OUTLOOK, Monday, June 19, 2023, p. 5. **(A3)**
- McHugh, R., 2005, Would-Be Victory – Water bills need to be passed to ease cross-border conflicts: Albuquerque Tribune–INSIGHT & OPINION, Tuesday, May 3, 2005, p. C1. **(A3)**
- McKay, D., 2021, NM lawsuit triggers national concern about surgical supplies – State AG is targeting as emissions from medical plant at Santa Teresa: Albuquerque Journal, Saturday, June 26, 2021, p. A1, A6. **(A3)**
- McKay, D., Perea, S., and Gallagher, M., 2020, NM races to stay ahead of coronavirus curve: Albuquerque Journal, Saturday, March 14, 2020, p. A1, A8. **(A3)**
- McKee, S., 2022, As AI progresses, keep humanity in mind: Albuquerque Journal–BUSINESS, Monday, January 24, 2022, p. 1, 5. **(A3)**
- Naishadham, S., ASSOCIATED PRESS, 2022, Rio Grande managers eye federal cash for drought—Drying river has destroyed critical habitat, hurt farmers: Albuquerque Journal, Sunday, October 24, 2022, p. A1, A3. **(A3)**
- Narvaiz, M., 2023a, Southern New Mexico growth – Pair of food producers choose Santa Teresa to expand operations: Albuquerque Journal–BUSINESS OUTLOOK, Monday, May 15, 2023, p. 7. **(A3)**
- Narvaiz, M., 2023b, State boost helps manufacturer expand in Santa Teresa – Franklin Mountain Packaging has services for box-making industry: Albuquerque Journal–BUSINESS OUTLOOK, Monday, June 12, 2023, p. 4. **(A3)**
- Norvelle, N.R., 2021, NM just can’t make the economics of hydrogen work: Albuquerque Journal–OPINION–LOCAL VOICES, Thursday, December 2, 2021, p. A13. **(A3)**
- Pacheco, J., 2008, Foxconn can sharply alter border economy: Albuquerque Journal–BUSINESS OUTLOOK – International Trade, Monday, August 11, 2008, p. 9. **(A3)**
- Pacheco, J., 2010, Infrastructure benefits both sides of the border: Albuquerque Journal–BUSINESS OUTLOOK – Business Across the Border, Monday, May 24, 2010, p. 20. **(A3, E2, F1)**
- Pacheco, J., 2011, A train ride to economic advancement: Albuquerque Journal–BUSINESS OUTLOOK – Business Across the Border, Monday, October 24, 2011, p. 5. **(A3)**
- Pacheco, J., 2012, Southern N.M. rail project vast in impact: Albuquerque Journal–BUSINESS OUTLOOK – Business Across the Border, Monday, January 9, 2012, p. 3. **(A3)**
- Pacheco, J., 2013, Common sense gone with the wind: Albuquerque Journal–BUSINESS OUTLOOK – Business Across the Border, Monday, April 15, 2013, p. 5. **(A3)**
- Pacheco, J., 2017a, Assaults on NAFTA can’t dim the demand for trade: Albuquerque Journal–BUSINESS OUTLOOK, Monday, October 23, 2017, p. 9, 13. **(A3)**
- Pacheco, J., 2017b, Mexican envoy expresses concerns for NAFTA-Part 1: Albuquerque Journal–BUSINESS OUTLOOK, Monday, December 4, 2017, p. 15. **(A3)**
- Pacheco, J., 2017c, NAFTA sticking points: Autos, sunset clause: Albuquerque Journal–BUSINESS OUTLOOK, Monday, December 18, 2017, p. 9, 12. **(A3)**
- Pacheco, J., 2018a, U.S. industries ramp up their defense of NAFTA: Albuquerque Journal–BUSINESS OUTLOOK, Monday, February 12, 2018, p. 8. **(A3)**
- Pacheco, J., 2018b, ‘Wall’ along border will impinge upon trade growth: Albuquerque Journal–BUSINESS OUTLOOK, Monday, April 2, 2018, p. 8. **(A3)**
- Pacheco, J., 2018c, Visionaries transformed NM-Mexico border area: Albuquerque Journal–BUSINESS OUTLOOK, Monday, August 27, 2018, p. 12-13. **(A3)**

Pacheco, J., 2018d, USMCA: The good, the bad, the ugly: Albuquerque Journal–BUSINESS OUTLOOK, Monday, October 8, 2018, p. 9. **(A3)**

Pacheco, J., 2018e, The Pink Store: A place where we're joined, rather than separated: Albuquerque Journal–BUSINESS OUTLOOK, Monday, November 19, 2018, p. 8. **(A3)**

Pacheco, J., 2019a, Border walls useful in places, but not in others: Albuquerque Journal–BUSINESS OUTLOOK, Monday, February 11, 2019, p. 19, 21. **(A3)**

Pacheco, J., 2019b, Border trade slows to a crawl, no fixes in sight: Albuquerque Journal–BUSINESS OUTLOOK, Monday, April 22, 2019, p. 8. **(A3)**

Pacheco, J., 2019c, NAFTA, USMCA and 'déjà vu all over again:' Albuquerque Journal–BUSINESS OUTLOOK, Monday, July 15, 2019, p. 7, 9. **(A3)**

Pacheco, J., 2019d, With heavy heart, a column I never imagined: Albuquerque Journal–BUSINESS OUTLOOK, Monday, August 12, 2019, p. 3. **(A3)**

Pacheco, J., 2019e, U.S. needs to develop a national recycling strategy: Albuquerque Journal–BUSINESS OUTLOOK, Monday, August 26, 2019, p. 33. **(A3, E2)**

Pacheco, J., 2019f, The impressive impact of trade with Mexico: Albuquerque Journal–BUSINESS OUTLOOK, Monday, September 9, 2019, p. 3. **(A3)**

Pacheco, J., 2019g, USMCA aka NAFTA2 still awaits Congress: Albuquerque Journal–BUSINESS OUTLOOK, Monday, December 2, 2019, p. 10. **(A3)**

Pacheco, J., 2020a, Fight coronavirus chaos with communication: Albuquerque Journal–BUSINESS OUTLOOK, Monday, April 6, 2020, p. 8. **(A3)**

Pacheco, J., 2020b, 2008 conference foresaw pandemic challenge: Albuquerque Journal–BUSINESS OUTLOOK, Monday, May 18, 2020, p. 8. **(A3)**

Pacheco, J., 2020c, Collaboration needed to keep rivers flowing: Albuquerque Journal–BUSINESS OUTLOOK, Monday, October 5, 2020, p. 8. **(A3)**

Pacheco, J., 2020d, Supply chain relies on individuals' behavior: Albuquerque Journal–BUSINESS OUTLOOK, Monday, November 2, 2020, p. 9. **(A3)**

Pacheco, J., 2020e, From Russia to DACA: Global wishes for '21 – Global trade wish list for '21: Albuquerque Journal–BUSINESS OUTLOOK, Monday, December 28, 2020, p. 16-17. **(A3)**

Pacheco, J., 2021a, Texas energy grid crisis affected Mexico, trade: Albuquerque Journal–BUSINESS OUTLOOK, Monday, March 8, 2021, p. 8. **(A3)**

Pacheco, J., 2021b, Now under fire, AMLO is who he's always been: Albuquerque Journal–BUSINESS OUTLOOK, Monday, April 5, 2021, p. 8. **(A3)**

Pacheco, J., 2021c, USMCA hitting some bumps – as expected: Albuquerque Journal–BUSINESS OUTLOOK, Monday, September 6, 2021, p. 16. **(A3)**

Pacheco, J., 2021d, Foreign Trade Zones a critical economic tool: Albuquerque Journal–BUSINESS OUTLOOK, Monday, September 6, 2021, p. 16. **(A3)**

Pacheco, J., 2021e, Loosened borders welcome news for region: Albuquerque Journal–BUSINESS OUTLOOK, Monday, November 1, 2021, p. 12. **(A3)**

Pacheco, Jerry, 2021f, Mexico's energy reform counter to global trends: Albuquerque Journal–BUSINESS OUTLOOK, Monday, December 13, 2021, p. 12. **(A3)**

Pacheco, J., 2022a, Borderplex statistics show major economic activity: Albuquerque Journal–BUSINESS OUTLOOK, Monday, January 17, 2022, p. 12. **(A3)**

Pacheco, J., 2022b, Texas gov's' border boondoggle helped nothing: Albuquerque Journal–BUSINESS OUTLOOK, Monday, April 25, 2022 p. 8. **(A3)**

Pacheco, J., 2022c, Border flub cost US GDP hundreds of millions: Albuquerque Journal–BUSINESS OUTLOOK, Monday, May 9, 2022 p. 4. **(A3)**

Pacheco, J., 2022d, Port of entry set to implement next-generation tech: Albuquerque Journal–BUSINESS OUTLOOK, Monday, October 10, 2022, p. 8. **(A3)**

Pacheco, J., 2023a, The border shouldn't be used as political theater: Albuquerque Journal–BUSINESS OUTLOOK, Monday, January 16, 2023 p. 8. **(A3)**

Pacheco, J., 2023b, Border visits can be helpful – if they aren't too political: Albuquerque Journal–BUSINESS OUTLOOK, Monday, February 27, 2023 p. 8. **(A3)**

Pacheco, J., 2023c, U.S.-Mexico's strained relationship in need of a reset: Albuquerque Journal–BUSINESS OUTLOOK, Monday, March 27, 2023, p. 8. **(A3)**

Pacheco, J., 2023d, Understanding Title 8 and the expiring Title 42: Albuquerque Journal–BUSINESS OUTLOOK, Monday, May 8, 2023, p. 8. **(A3)**

- Pacheco, J., 2023e, As leaders dawdle, hot weather brings perspective: Albuquerque Journal–BUSINESS OUTLOOK, Monday, July 31, 2023 p. 15. **(A3)**
- Pacheco, J., 2024a, Smart immigration bill killed by political status quo: Albuquerque Journal–BUSINESS OUTLOOK, Monday, February 26, 2024, p. 14. **(A3)**
- Pacheco, J., 2024b, Part 1: The slow start to the Santa Teresa Port: Albuquerque Journal–BUSINESS OUTLOOK, Monday, April 8, 2024, p. 13. **(A3)**
- Pacheco, J., 2024c, Part 2: Santa Teresa Port of Entry has found success after slow start: Albuquerque Journal–BUSINESS OUTLOOK, Monday, April 22, 2024, p. 15. **(A3)**
- Peipert, T., and Peterson, B. Associated Press, 2021, Where’s the snow? Rockies winter starts with a whimper – Denver sees high temps in the 70s; drought threatens the region’s low water supply: Albuquerque Journal, Saturday, December 4, 2021, p. A8. **(A3)**
- Phillips, F., 2018, Climate change denial the real ‘fake news’: Albuquerque Journal–OPINION–EDITORIAL SCIENCE AND CLIMATE Section, Sunday, July 8, 2018, p. A11. **(A3, C1)**
- Polich, J., 2021, Is blue hydrogen the bridge to a greener future: Albuquerque Journal, Monday, November 22, 2021, p. 12. *See Robinson-Avila, K., 2021c, NMSU powers up with clean energy.* **(A3)**
- Polich, J., 2023a, Climate anxiety is real – From denial to a disconnect with nature, we don’t face the looming threat: Albuquerque Journal–OPINION–SOLUTIONS, Monday, April 10, 2023, p. A9. **(A3)**
- Polich, J., 2023b, NM needs a special (climate) session now! – There’s \$600 million in federal funding to jumpstart geothermal hub: Albuquerque Journal–OPINION–SOLUTIONS, Monday, May 9, 2023, p. A9. **(A3)**
- Polich, J., 2024, Solution to the plastic problem? Use less of it.: Albuquerque Journal–OPINION–SOLUTIONS, Monday, March 18, 2024, p. A9. **(A3)**
- Poppa, T., 1985, Vast water under Mexico’s sands?: El Paso Herald-Post (Metro), Thursday, February 14, 1985. **(A3, F3)**
- Prokop, D., 2023a, ‘It’s good to have water’—Water-watchers flock to Las Cruces to celebrate the Rio Grande’s annual release: Albuquerque Journal, Friday, May 19, 2023, p. A1, A6. **(A3)**
- Prokop, D., 2023b, Extreme heat is killing more people crossing the border—Death toll has been rising sharply since 2021, but little effort from officials beyond public notices: Albuquerque Journal, Thursday, July 6, 2023, p. A1, A6. **(A3)**
- Prokop, D., 2023c, El Paso Water lawsuit against New Mexico Environment Department will stay in Texas courts: Source New Mexico, August 1, 2023-4:10 AM. **(A3, E2c)**
- Prokop, D., 2023d, Objections to Rio Grande SCOTUS settlement could drop in October: Source New Mexico, Monday, September 18, 2023, 5:05 AM. **(A3)**
- Prokop, D., 2024, State rips Doña Ana County water utility—‘Systemic failures by management’ led to ‘do not drink’ order in December: Albuquerque Journal–METRO&NEW MEXICO, Saturday, January 20, 2024, p. A3-A4. **(A3)**
- Quigley, W., 2011, Border area primed to fuel growth: Albuquerque Journal–BUSINESS, Thursday, March 24, 2011, p. B4. **(A3)**
- Reed, O., Jr., 2023, It’s a dry heat—Albuquerque flirting with record aridity and 100-degree days: Albuquerque Journal, Saturday, July 29, 2023, p. A1, A8. **(A3)**
- Reisen, M., 2020, Wall goes up along NM border – Neighbors see both side of structure: Albuquerque Journal, Sunday, October 11, 2020, p. A1, A9. **(A3)**
- Reisen, M., 2021, Border wall comes to a halt – Immigrant advocate hail Biden’s swift action: Albuquerque Journal, Sunday, January 31, 2021, p. A1, A4 and A5. **(A3)**
- Robinson-Avila, K., 2018a, Pressured by surging prices – Metal products manufacturers in Santa Teresa worry about their ability to stay competitive, *in* NM feels tariff’s bite: Albuquerque Journal–BUSINESS, Friday, May 7, 2018, p. B10, B12. **(A3)**
- Robinson-Avila, K., 2018b, Trade Pact brings relief and questions – ‘I don’t [know] anybody here who really knows what it all means yet’: Albuquerque Journal–BUSINESS OUTLOOK, Monday, October 29, 2018, p. 10-12. **(A3)**
- Robinson-Avila, K., 2020a, Race to carbon-free generation is on – NM utilities are making plans for wholesale energy transition: Albuquerque Journal–BUSINESS OUTLOOK: Charging ahead – THE FUTURE OF ENERGY, Monday, February 10, 2020, p. 12-15. **(A3)**
- Robinson-Avila, K., 2020b, NM gas production up significantly: Albuquerque Journal–BUSINESS OUTLOOK: Charging ahead – THE FUTURE OF ENERGY, Monday, February 10, 2020, p. 18-23. **(A3)**
- Robinson-Avila, K., 2020c, Bringing NM’s grid into the 21st Century – Bill provides tools for planning, financing grid update: Albuquerque Journal–BUSINESS OUTLOOK, Monday, March 2, 2020, p. 4-5. **(A3)**

- Robinson-Avila, K., 2020d, Coronavirus could threaten NM trade – Border companies stock up on inventory, monitor virus spread: Albuquerque Journal, Saturday, March 7, 2020, p. A1, A6. **(A3)**
- Robinson-Avila, K., 2020e, Electric Rise in Wind, Solar – NM striding to 2020 renewable energy goal of 20% with several new projects on tap or online: Albuquerque Journal–BUSINESS OUTLOOK, Monday, June 2020, p. 10-11. **(A3)**
- Robinson-Avila, K., 2020f, More firms are setting up shop at Santa Teresa: Albuquerque Journal–BUSINESS OUTLOOK: Charging ahead – THE FUTURE OF ENERGY, p. A9-A24, Monday, September 14, 2020, p. 10-13. **(A3)**
- Robinson-Avila, K., 2020g, Trade with Mexico up as Asia, Europe falters: Albuquerque Journal–BUSINESS OUTLOOK: Charging ahead – THE FUTURE OF ENERGY, p. A9-A24, Monday, September 14, 2020, p. 11-14. **(A3)**
- Robinson-Avila, K., 2020h, Rise in Wind, Solar – NM leaders look to build a renewable grid that’s resilient too: Albuquerque Journal–BUSINESS OUTLOOK, Monday, November 9, 2020, p. 10-11. **(A3)**
- Robinson-Avila, K., 2021a, Confronting the climate crisis – NM, US poised for a sea change in policy, massive mobilization: Albuquerque Journal– BUSINESS OUTLOOK, Monday, January 11, 2021, p. 11-13. **(A3)**
- Robinson-Avila, K., 2021b, Biden expected to pursue ambitious climate agenda: Albuquerque Journal–BUSINESS OUTLOOK, Monday, January 11, 2021, p. 11, 13. **(A3)**
- Robinson-Avila, K., 2021c, NMSU powers up with clean energy – Power system a ‘living lab:’ Albuquerque Journal, Monday, October 18, 2021, p. A1-A2. *See Polich, J., 2021, Is blue hydrogen the bridge to a greener future? (A3)*
- Robinson-Avila, K., 2021d, Santa Teresa ignites Border economy – NMSU study shows \$1.1B annual impact, nearly 6,000 jobs: Albuquerque Journal–BUSINESS OUTLOOK, Monday, November 15, 2021, p. 10-13. **(A3)**
- Robinson-Avila, K., 2021e, BayoTech’s first production hub to be located in Albuquerque – Local startup built world’s initial compact hydrogen generator: Albuquerque Journal, Saturday, December 4, 2021, p. A1, A8. *See Norvelle 2021, and Polich 2021. (A3)*
- Robinson-Avila, K., 2022a, Hydrogen at the forefront – State is front and center in nationwide debate on pros and cons of hydrogen: Albuquerque Journal–BUSINESS OUTLOOK, Monday, January 17, 2022, p. 10-14. **(A3)**
- Robinson-Avila, K., 2022b, Hydrogen-based aviation takes off – Company will build factory at the Sunport, employ 500: Albuquerque Journal, Friday, March 11, 2022, p. A1, A6. **(A3)**
- Robinson-Avila, K., 2022c, Border boom pushes record NM exports to \$5.4 billion – Last year, state hit a new annual high in global sales, exports to Mexico: Albuquerque Journal, Thursday March 24, 2022, p. A1, A3. **(A3)**
- Robinson-Avila, K., 2022d, Trade dispute threatens NM solar markets – Projects canceled, prices jumping, thousands of jobs are at stake: Albuquerque Journal, Tuesday, April 19, 2022, p. A1, A4. **(A3)**
- Robinson-Avila, K., 2022e, Heinrich leads charge to end solar trade debate – Petition for new tariffs on some Asian imports could lead to US layoffs: Albuquerque Journal, Thursday, April 21, 2022, p. A1, A5. **(A3)**
- Robinson-Avila, K., 2022f, Solar industry in crisis over US trade dispute – NM sees layoffs, cancelled projects over US trade dispute: Albuquerque Journal, Thursday, May 12, 2022, p. A1, A3. **(A3)**
- Robinson-Avila, K., 2022g, Dispute threatened PNM power supplies – Solar project delays worsen shortage estimates for summer 2023: Albuquerque Journal, Thursday, May 12, 2022, p. A1, A3. **(A3)**
- Robinson-Avila, K., 2022h, Dispute threatened PNM power supplies – Solar project delays worsen electricity shortage estimates for summer 2023: Albuquerque Journal, Thursday, May 12, 2022, p. A1, A3. **(A3)**
- Robinson-Avila, K., 2022i, Hydrogen picking up speed—Federal incentives accelerate New Mexico’s hydrogen economy: Albuquerque Journal–BUSINESS OUTLOOK, Monday, September 26, 2022, p. 10-14. **(A3)**
- Robinson-Avila, K., 2023a, Digging into NM’s geothermal potential – Tax breaks, grants and loans are proposed to encourage use of this hot new technology: Albuquerque Journal, Wednesday, January 18, 2023, p. A6. **(A3)**
- Robinson-Avila, K., 2023b, Geothermal makeovers could gain ground in New Mexico – UNM and other institutions consider technology to heat, cool campus buildings: Albuquerque Journal, Monday, January 31, 2023, p. A1, A7. **(A3)**
- Robinson-Avila, K., 2023c, On the Cusp of a Geothermal Renaissance – New technology unlocks massive geothermal energy potential, including in New Mexico: Albuquerque Journal–BUSINESS OUTLOOK, Monday, January 31, 2023, p. 10-12, 14. **(A3)**
- Robinson-Avila, K., 2023d, Sandia pumping up geothermal research: Albuquerque Journal–BUSINESS OUTLOOK, Monday, January 31, 2023, p. 11, 13. **(A3)**

- Robinson-Avila, K., 2023e, Geothermal development incentives on governor's desk: Albuquerque Journal, Saturday, March 25, 2023, p. A1, A5. **(A3)**
- Robinson-Avila, K., 2023f, EPE inaugurates NM's largest solar facility – El Paso Electric says it will power about 60,000 homes: Albuquerque Journal, Saturday, April 7, 2023, p. A1, A5. **(A3)**
- Robinson-Avila, K., 2023g, Forecast looks bright for the solar industry – Obstacles to expansion have cleared, making way for new clean energy projects: Albuquerque Journal–BUSINESS OUTLOOK, Monday, May 1, 2023, p. 10-12. **(A3)**
- Robinson-Avila, K., 2023h, Taiwanese firm to get \$ 3M for expansion – Company confirms \$ 99M investment in NM during governor's visit to Taiwan: Albuquerque Journal, Wednesday, September 20, 2023, p. A1, A8. **(A3)**
- Robinson-Avila, K., and Narvaiz, M., 2023, Autoparts maker coming to NM – Hota Industrial Manufacturing to build new factory at Santa Teresa: Albuquerque Journal, Wednesday, July 5, 2023, p. A1, A8. **(A3)**
- Robinson-Avila, K., and Villagran, L., 2014, Santa Teresa catching fire – Companies flock to border industrial parks as Union Pacific opens massive transshipment station, *in* Boom on the Border: Albuquerque Journal, Monday, April 14, 2014, p. A1, A8. **(A3)**
- Romero, V., 2023, Harnessing power of hydrogen critical to state's energy transition: Albuquerque Journal–OPINION, Friday, July 21, 2023, p. A9. **(A3, E2)**
- Smith, M., 2021, Christmas Eve on the Border – Santa Fe resident finds kindness among officers on both sides: Albuquerque Journal–OPINION–EDITORIAL, Sunday, January 3, 2021, p. A13. **(A3)**
- Spagat, E., 2020, Contracting laws for Border Wall will be waived – Homeland Security says move will speed construction: Albuquerque Journal–METRO & NM, Wednesday, February 19, 2020, p. A7-A8. **(A3)**
- Spagat, E., 2021, Biden halts Border Wall building after Trump's final surge: Albuquerque Journal–NATION, Friday, January 22, 2021, p. A3. **(A3)**
- Spencer, T., and Crawford, T., Associated Press, 2020, US moves nearer to shutdown amid coronavirus fears: Albuquerque Journal, Monday, March 16, 2020, p. A3. **(A3)**
- Stevenson, M., Associated Press, 2022, Mexico favors NM over Texas – Rail link moved to Santa Teresa: Albuquerque Journal–BUSINESS, Wednesday, May 4, 2022, *See Lee, M., 2022. P. A11.* **(A3)**
- Tebor, C. (Los Angeles Times), 2021, Extreme drought takes hold in western states – Fish, wildlife endangered; wildfire risk much greater: Albuquerque Journal–NATION, Sunday, June 20, 2021, p. A4. **(A3)**
- Thomson, B., 2023, Importing water to NM? Challenges are stunning – We need to learn to live with what we've got: Albuquerque Journal–LOCAL VOICES, Sunday, January 22, 2023, p. A3. **(A3)**
- Turner, S., 2019, Study: Border agents, illegal crossings harm environment: Albuquerque Journal, Tuesday, September 24, 2019, p. A1, A5. **(A3)**
- Turner, S., 2020a, 30 miles of replacement border wall complete in New Mexico: Albuquerque Journal–METRO & NM, Saturday, February 29, 2020, p. A7, A8. **(A3)**
- Turner, S., 2020b, Wildlife groups sue over border wall funding: Albuquerque Journal, Thursday, May 13, 2020, p. A6. **(A3)**
- Villagran, L., 2017a, Reflecting on my years of covering borderlands: Albuquerque Journal, Wednesday, June 14, 2017, p. A9, A16. **(A3)**
- Villagran, L., 2017b, Two nations, one aquifer – Border water at risk: Albuquerque Journal, Sunday, June 25, 2017, p. A1, A8, A9. **(A3)**
- Villagran, L., 2017c, Two nations, one aquifer – 'We have a voice but nobody listens' – Lack of potable water forces many Juárez residents to subsist on brackish wells: Albuquerque Journal, Sunday, June 25, 2017, p. A1, A3. **(A3)**
- Villagran, L., and Robinson-Avila, K., 2014, NM, El Paso battling for business, *in* Boom on the Border: Albuquerque Journal, Sunday, April 13, 2014, p. A1, A8. **(A3)**
- Webber, T., Associated Press, 2021, Texas drought raising farmer fears of another Dust Bowl Area once flush with water now depleted: Albuquerque Journal, Friday, September 10, 2021, p. A8. **(A3)**

B. Time: Geologic, Prehistoric, and Historic

B1. Geologic and Prehistoric Time

- Betancourt, J.L., Van Devender, T.R., and Martin, P.S., eds., 1990, Packrat Middens: The last 40,000 years of biotic change: University of Arizona Press, 467 p. **(B1, C1)**

- Betancourt, J.L., Grissino-Mayer, H.D., Salzer, M.W., and Swetnam, T.W., 2002, A test of “annual resolution” in stalagmites using tree rings: *Quaternary Research*, v. 58, no. 2, p. 197-199. **(B1, C1)**
- Berggren, W.A., Hilgen, F.J., Langereis, C.O., Kent, D.V., Obradovich, J.D., Raffi, I., Raymo, M.E., and Shackleton, N.J., 1995, Late Neogene chronology: New perspectives in high-resolution stratigraphy: *Geological Society of America Bulletin*, v. 107, p. 1272-1287. **(B1)**
- Brannen, P., 2021, The dark secrets of the Earth’s deep past – The geologic record suggests that climate models are missing something truly frightening: *The Atlantic*, v. 327, no. 2, p. 60-75. **(B1, C1)**
- Cassiliano, M.L., 1997, Crocodiles, tortoises, and climate: A shibboleth re-examined: *Paeleoclimates*, v. 2, p. 47-69. **(B1, C1, D1)**
- Cerling, I.E., 1991, Carbon dioxide in the atmosphere: evidence from Cenozoic and Mesozoic paleosols: *American Journal of Science*, v. 291, p. 377-400. **(B1, C1, C3)**
- Coe, R.S., Singer, B.S., Pringle, M.S., and Zhao, X., 2004, Matuyama–Brunhes reversal* and Kamikatsura event on Maui: paleomagnetic directions, 40Ar/39Ar ages and implications: *Earth and Planetary Science Letters*, v. 222, p. 667-684. *776 ka **(B1)**
- Crutzen, P.J., and Stoermer, E.F., 2000. The “Anthropocene.” *IGBP Global Change Newsletter*, v. 41, p. 17-18. **(B1, B3, C1)**
- Elias, S.A., 1994, *Quaternary insects and their environments*: Washington, D.C., Smithsonian Institution Press, 284 p. **(B1, B2, C1)**
- Gibbard, P.L., Head, M.J., Walker, M.J.C., and the Subcommission on Quaternary Stratigraphy, 2010, Formal ratification of the Quaternary System/Period and the Pleistocene Series/Epoch with a base at 2.58 Ma: *Journal of Quaternary Science*, v. 25, p. 96-102. **(B1)**
- Gillette, D.D., Carranza-Castaneda, Ó., White, R.S., Jr., Morgan, G.S., Thrasher, L.C., McCord, R., and McCullough, G., 2016, Ontogeny and sexual dimorphism of *Glyptotherium texanum* (Xenarthra, Cingulata) from the Pliocene and Pleistocene (Blancan and Irvingtonian NALMA) of Arizona, New Mexico, and Mexico: *Journal of Mammalian Evolution*, v. 23, p. 133-154. **(B1, C1)**
- Goff, F., and Gardner, J.N., 2004, Late Cenozoic geochronology of volcanism and mineralization in the Jemez Mountains and Valles caldera, north-central New Mexico, *in* Mack, G.H., and Giles, K.J., eds., *The Geology of New Mexico: A geologic history*: New Mexico Geological Society, Special Publication 11, p. 295-312. **(B1, C2b)**
- Gradstein, F.M., Ogg, J.G., Schmitz, M., and Ogg, G., eds., 2012, *The geologic time scale 2012*: Amsterdam, Elsevier, 1176 p. ISBN 9780444594259 **(B1)**
- Hall, S.A., 1985, Quaternary pollen analysis and vegetational history of the Southwest, *in* Bryant, V.M., Jr., and Holloway, R.G., eds. *Pollen records of Late-Quaternary North American sediments*: Dallas, American Association of Stratigraphic Palynologists Foundation, p. 95-123. **(B1, C1)**
- Harris, A.H., 1993, Quaternary vertebrates of New Mexico: *New Mexico Museum of Natural History and Science, Bulletin 2*, p. 179-197. **(B1, B2, C1, C2b)**
- Harris, A.H., 2016, Pleistocene vertebrates of southwestern USA and northwestern Mexico. NMSW-PALEO UTEP Biodiversity Collections. **(B1, B2, C1)**
- Hibbard, C.W., 1960, An interpretation of Pliocene and Pleistocene climates in North America: *Michigan Academy of Science, Arts, and Letters, 62nd Annual Report*, p. 5-30. **(B1, C1, D1)**
- Izett, G.A., and Obradovich, J.D., 1994, 40Ar/39Ar age for the Jaramillo Normal Subchron and the Matuyama/Brunhes geomagnetic boundary: *Journal Geophysical Research*, v. 99, p. 2925-2934. **(B1, C2b)**
- Izett, G.A. and Wilcox, R.E., 1982, Map showing localities and inferred distributions of the Huckleberry Ridge, Mesa Falls, and Lava Creek Ash Beds (Pearlette family ash beds) of Pliocene and Pleistocene age in the western United States and southern Canada: *U.S. Geological Survey Miscellaneous Investigations Map I-1325*, scale 1:4,000,000. **(B1, C2a, I3)**
- Izett, G.A., Obradovich, J.D., and Mehnert, H.H., 1988, The Bishop ash bed (middle Pleistocene) and some older (Pliocene and Pleistocene) chemically similar ash beds in California, Nevada and Utah: *U.S. Geological Survey, Bulletin 1675*, 37 p. **(B1, C2a)**
- King, J.E., 1991, Early and Middle Quaternary vegetation, *in* Smiley, T.L., and four others, *Quaternary paleoclimates*, *in* Morrison, R.B., ed., *Quaternary non-glacial geology; Conterminous U.S.*: Boulder, CO, Geological Society of America, *The Geology of North America*, v. K-2, p. 19-26. **(B1, C1)**
- Kolbert, E., 2014, *The sixth extinction – An unnatural history*: New York, Henry Holt and Company, LLC, 219 p. ISBN 798 0-8050-9311-7 **(B1, C1)**
- Koning, D.J., and Read, A.S., 2010, *Geologic map of the southern Española Basin, Santa Fe County, New Mexico*: New Mexico Bureau of Geology and Mineral Resources, Open-File Report 531. **(B1, D1)**

- Kortemeier, C.P., 1982, Occurrence of Bishop Ash near Grama, New Mexico: *New Mexico Geology*, v. 4, no. 2, p. 22-24. **(B1, C2a)**
- Kukla, G.J., Clement, A.C., Cane, M.A., Gavin, J.E., and Zebiak, S.E., 2002, Last interglacial and early glacial ENSO: *Quaternary Research*, v. 58, no. 1, p. 27-31. **(B1, C1)**
- Leavy, B.D., 1987, Surface-exposure dating of young volcanic rocks using *in situ* buildup of cosmogenic isotopes: Socorro, New Mexico Institute of Mining and Technology, doctoral dissertation, 167 p. **(B1, C2a)**
- LeMone, D.V., and Johnson, R.R., 1969, Neogene flora from the Rincon Hills, Dona Ana County, New Mexico: *New Mexico Bureau of Mines and Mineral Resources, Circular 104*, p. 77-88. **(B1, C1)**
- Lindsay, E.H., 1984, Late Cenozoic mammals from northwestern Mexico: *Journal of Vertebrate Paleontology*, v. 4, p. 208-215. **(B1, C1)**
- Lindsay, E.H., Johnson, N.M., and Opdyke, N.D., 1976, Preliminary correlation of North American Land mammal ages and geomagnetic chronology; *in* *Studies on Cenozoic paleontology and stratigraphy*, Claude W. Hibbard Memorial, volume 3: *University of Michigan Papers in Paleontology*, v. 12, p. 111-119. **(B1, C1)**
- Lindsay, E.H., Opdyke, N.D., and Johnson, N.M., 1984, Blancan-Hemphillian Land Mammal Ages and Late Cenozoic mammal dispersal events: *Annual Review of Earth and Planetary Sciences*, v. 12, p. 445-488. **(B1, C1)**
- Lisiecki, L.E., and Raymo, M.E., 2005, A Plio-Pleistocene stack of 57 globally distributed benthic $\delta^{18}\text{O}$ records: *Paleoceanography*, v. 20, issue 1. **(B1, B2)**
- Long, A., 1966, Late Pleistocene and Recent chronologies of playa lakes in Arizona and New Mexico: *University of Arizona, doctoral dissertation*, 141 p. **(B1, I1)**
- Lucas, S.G., and Oakes, W., 1986, Pliocene (Blancan) vertebrates from the Palomas Formation, south-central New Mexico: *New Mexico Geological Society Guidebook 37*, p. 249-255. **(B1, C1)**
- Lucas, S.G., Morgan, G.S., Love, D.W., and Connell, S.D., 2017, The first North American mammoths: Taxonomy and chronology of early Irvingtonian (early Pleistocene) *Mammuthus* from New Mexico: *Quaternary International*: v. 443, 12 p. **(B1, C1)**
- Lucas, S.G., Morgan, G.S., Estep, J.W., Mack, G.H., and Hawley, J.W., 1999, Co-occurrence of the Proboscideans *Cuvieronius*, *Stegomastodon*, and *Mammuthus* in the Lower Pleistocene of Southern New Mexico: *Journal of Vertebrate Paleontology*, v. 19, no. 3, pp. 595-597. **(B1, C1)**
- Mack, G.H., Salyards, S.L., and James, W.C., 1993, Magnetostratigraphy of the Plio-Pleistocene Camp Rice and Palomas formations in the Rio Grande rift of southern New Mexico: *American Journal of Science*, v. 293, p. 49-77. **(B1, C2b, I3)**
- Mack, G.H., McIntosh, W.C., Leeder, M.R., and Monger, H.C., 1996, Plio-Pleistocene pumice floods in the ancestral Rio Grande, southern Rio Grande rift, USA: *Sedimentary Geology*, v. 103, p. 1-8. **(B1, C2b, I3)**
- Mack, G.H., Salyards, S.L., McIntosh, W.C., and Leeder, M.R., 1998, Reversal magnetostratigraphy and radioisotopic geochronology of the Plio-Pleistocene Camp Rice and Palomas formations, southern Rio Grande rift: *New Mexico Geological Society Guidebook 49*, p. 229-236. **(B1, C2b, I3)**
- Mack, G.H., Cole, D.R., James, W.C., Giordano, T.H., and Salyards, S.L., 1994, Stable oxygen and carbon isotopes of pedogenic carbonate as indicators of Plio-Pleistocene paleoclimate in the southern Rio Grande rift, south-central New Mexico: *American Journal of Science*, v. 294, p. 621-640. **(B1, C1, C3)**
- Márquez-Alameda, A., coordinador del volumen, 1992, *Historia general de Chihuahua I—geología, geografía y arqueología*: *Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua*, 307 p. **(A1, B1, B2, F3)**
- McIntosh, W.C., 1994, $^{40}\text{Ar}/^{39}\text{Ar}$ Geochronology of Late Miocene to Pleistocene basalts of the Zuni Bandera, Red Hill-Quemado and Potrillo Volcanic Fields, New Mexico *Geology*, v. 16, p. 60-61. **(B1, C2b)**
- Miller, R.R., 1981, Coevolution of deserts and pupfishes (Genus *Cyprinodon*) in the American Southwest, *in* Naiman, R.J. and Stoltz, D.L., eds., *Fishes in North America deserts*: New York, John Wiley and Sons, p. 39-94. **(B1, B2, C1, D1, I1, I3)**
- Miller, R.R., and Echelle, A.A., 1975, *Cyprinodon tularosa*, a new cyprinodontid fish for the Tularosa Basin, New Mexico: *The Southwestern Naturalist*, v. 19, no. 4, p. 365-377. **(B1, B2, C1, D1, I2)**
- Minckley, W.L., Hendrickson, D.A., and Bond, C.E., 1986, Geography of western North American freshwater fishes: descriptions and relationships to intracontinental tectonism, *in* Hocutt, C.H. and Wiley, E.O., eds., *The Zoogeography of North American Freshwater Fishes*: New York, John Wiley and Sons, p. 519-613. **(B1, B2, C1, D1, I1)**

- Morgan, G.S., 2022, Moles of the genus *Scalopus* (Mammalia: Soricomorpha: Talpidae) from the late Pliocene and early Pleistocene (Blancan) of New Mexico, in Morgan, G.S., et al., eds., Late Cenozoic Vertebrates from the American Southwest: A tribute to Arthur H. Harris: New Mexico Museum of Natural History and Science, Bulletin 88, p. 139-155. **(B1, C1)**
- Morgan, G.S., and Harris, A.H., 2015, Pliocene and Pleistocene vertebrates of New Mexico, in Lucas, S.G., and Sullivan, R.M., eds., Fossil Vertebrates in New Mexico: New Mexico Museum of Natural History and Science, Bulletin 68, p. 233-247. **(B1, C1)**
- Morgan, G.S., and Lucas, S.G., 2002, Pleistocene vertebrates of the White Sands Missile Range, southern New Mexico: New Mexico Geological Society Guidebook 53, p. 267-276. **(B1, C1)**
- Morgan, G.S., and Lucas, S.G., 2003, Mammalian biochronology of Blancan and Irvingtonian (Pliocene and early Pleistocene) faunas from New Mexico: Bulletin of the American Museum of Natural History, v. 278, p. 269-320. **(B1, C1)**
- Morgan, G.S., and Lucas, S.G., 2005, Pleistocene vertebrates in New Mexico from alluvial, fluvial, and lacustrine deposits, in Lucas, S.G., et al., eds., New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 185-231. **(B1, C1)**
- Morgan, G.S., and White, R.S., Jr., 2005, Miocene and Pliocene vertebrates from Arizona: New Mexico Museum of Natural History and Science, Bulletin 29, p. 115-136. **(B1, C2b)**
- Morgan, G.S., Lucas, S.G., and Estep, J.W., 1998, Pliocene (Blancan) vertebrate fossils from the Camp Rice Formation near Tonuco Mountain, Dona Ana County, southern New Mexico: New Mexico Geological Society Guidebook 49, p. 237-249. **(B1, C2b)**
- Morgan, G.S., Sealey, P.L., and Lucas, S.G., 2008, Late Pliocene (late Blancan) vertebrate faunas from Pearson Mesa, Duncan basin, southwestern New Mexico and southeastern Arizona: New Mexico Museum of Natural History & Science Bulletin 44, p. 141-188. **(B1, C2b)**
- Morgan, G.S., Sealey, P.L., and Lucas, S.G., 2011, Pliocene and early Pleistocene (Blancan) vertebrates from the Palomas Formation in the vicinity of Elephant Butte Lake and Caballo Lake, Sierra County, southwestern New Mexico: New Mexico Museum of Natural History & Science Bulletin 53, p. 664-736. **(B1, C2b)**
- Newell, N.D., 1963, Crises in the History of Life: Scientific American, v. 208, no. 2, p. 76-92. **(B1, C1)**
- Repenning, C.A., and May, S.R., 1986, New evidence for the age of lower part of the Palomas Formation, Truth or Consequences, New Mexico: New Mexico Geological Society Guidebook 37. P. 257-260. **(B1, C2a, I3)**
- Ricketts, J.W., Kelley, S.A., Karlstrom, K.E., Schrandt, B., Donahue, M.S., and van Wijk, L., 2016, Synchronous opening of the Rio Grande rift along its entire length at 25-10 Ma supported by apatite (U-Th)/He and fission-track thermochronology, and evaluation of possible driving mechanisms: Geological Society of America Bulletin, v. 128, p. 397-424. **(B1, C2b, C4)**
- Rosholt, J.N., Coleman, S.M., Stuiver, M., Damon, P.E., Naeser, C.W., Naeser, N.D., Szabo, B.J., Muhs, D.R., Liddicoat, J.C., Forman, S.L., Machette, M.N and Pierce, K.L., 1991, Dating methods applicable to the Quaternary, in Morrison, R.B., ed., Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America, v. K-2, p. 45-74. **(B1)**
- Sarna-Wojcicki, A.M., and Davis, J.O., 1991, Quaternary tephrochronology, in Morrison, R.B., ed., Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America, v. K-2, p. 93-116. **(B1, C2b)**
- Self, S., Heiken, G., Sykes, M.L., Wohletz, K., Fisher, R.V., and Dethier, D.P., 1996, Field excursions to the Jemez Mountains, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 134, 72 p. **(B1, C2b)**
- Smith, G.A., 1994, Climatic influences on continental deposition during late-stage filling of an extensional basin, southeastern Arizona: Geological Society of America Bulletin, v. 106, p. 1212-1228. **(B1, C1, C2b)**
- Smith, G.I., 1991, Continental climatic records and their significance, in Smiley, T.L., and four others, Quaternary paleoclimates; in Morrison, R.B., ed., Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America, v. K-2, p. 35-41. **(B1, B2, C1, II)**
- Smith, M.L., and Miller, R.R., 1986, The evolution of the Rio Grande Basin as inferred from its fish fauna, in Hocutt, C.H. and Wiley, E.O., eds., Zoogeography of North American Freshwater Fishes: New York, John Wiley and Sons, p. 457-485. **(B1, C1, C2a, I3)**

- Stein, R., Kanamatsu, T., Alvarez-Zarikian, C., Higgins, S.M., Channell, J.E.T., Aboud, E., Ohno, M., Acton, G.D., Akimoto, K., Bailey, I., Björklund, K.R., Evans, H., Nielsen, S.H.H., Fang, N., Ferretti, P., Gruetzner, J., Guyodo, Y.J.B., Hagino, K., Harris, R., Hatakeda, K., Hefter, J., Judge, S.A., Kulhanek, D.K., Nanayama, F., Rashid, H., Sierro Sanchez, F.J., Voelker, A., and Zhai, Q., 2006, North Atlantic Paleoceanography: The Last Five Million Years: *Eos Transactions American Geophysical Union*, v. 87, issue 13, p. 129-133. **(B1, B2, C1)**
- Strain, W.S., 1959, Blancan mammalian fauna from Rio Grande Valley, Hudspeth County, Texas: *Geological Society of America Bulletin*, v. 70, no. 2, p. 373-378. **(B1, C2a)**
- Strain, W.S., 1966, Blancan mammalian fauna and Pleistocene formations, Hudspeth County, Texas: *Texas Memorial Museum, Bulletin* 10, 55 p. **(B1, C2a)**
- Stuiver, M., and Reimer, P., 1993, Extended ^{14}C date base and revised CALIB radiocarbon calibration program: *Radiocarbon*, v. 35, p. 215-230. **(B1, B2)**
- Tedford, R.H., 1981, Mammalian biochronology of the late Cenozoic basins of New Mexico: *Geological Society of America Bulletin, Part I*, v. 92, p. 1008-1022. **(B1, C2a)**
- Tomida, Y., 1987, Small mammal fossils and correlation of continental deposits, Safford and Duncan basins, Arizona, USA: Tokyo, National Science Museum, 141 p. **(B1, C2a)**
- Vanderhill, J.B., 1986, Lithostratigraphy, vertebrate paleontology, and magnetostratigraphy of Plio-Pleistocene sediments in the Mesilla Basin, New Mexico: University of Texas at Austin, doctoral dissertation, 311 p. **(B1, C1, C2a)**
- Walker, J.D., and Geissman, J.W., compilers, 2009, Commentary – 2009 Geologic Time Scale: *GSA Today*, v. 19, no. 4/5, p. 60-61. **(B1)**
- Walker, J.D., Geissman, J.W., Bowring, S.A., and Babcock, L.E., compilers, 2012, GSA Geologic Time Scale Poster v. 4: Geological Society of America, GTSP05, 18" x 27.5", **(B1)**
- Walker, M.J.C., Johnsen, S., Rasmussen, S.O., Popp, T., Steffensen, J.P., Gibbard, P., et al., 2009, Formal definition and dating of the GSSP (Global Stratotype Section and Point) for the base of the Holocene using the Greenland NGRIP ice core, and selected auxiliary records: *Journal of Quaternary Science*, v. 24, p. 3-17. **(B1, B2, C1)**
- Walker, M.J.C., Head, M.J., Berkelhammer, M., Björck, S., Cheng, H., Cwynar, L., et al., 2018, Formal ratification of the subdivision of the Holocene Series/Epoch (Quaternary System/Period): two new Global Boundary Stratotype Sections and Points (GSSPs) and three new stages/subseries: *Episodes*, v. 41, no. 4, p. 213-223. **(B1, B2, C1)**
- Williams, W.J.W., 1999, Evolution of Quaternary intraplate mafic lavas using ^3He surface exposure and $^{40}\text{Ar}/^{39}\text{Ar}$ dating, and detailed elemental He, Sr, Nd, and Pb isotopic signatures: Potrillo Volcanic Field, New Mexico, U.S.A., and San Quintín Volcanic Field, Baja California Norte, México: University of Texas at El Paso, doctoral dissertation, 195 p. **(B1, C2b, C4)**
- Williams, W.J.W., and Poths, J., 1994, The Potrillo Volcanic Field, southern Rio Grande rift: ^3He surface exposure dates and petrogenetic considerations: *New Mexico Geology*, v. 16, p. 81. **(B1, C2b, C4)**
- Woodburne, M.O., and Swisher, C.C. III, 1995, Land mammal high resolution geochronology, intercontinental overland dispersals, sea level, climate, and vicariance, in *Geochronology, time scales, and global stratigraphic correlation: SEPM Special Publication*, no. 54, p. 335-364. **(B1, B2, C1)**
- Yan, Y., Bender, M.L., Brook, E.J., Clifford, H.M., Kemeny, P.C., Kurbatov, A.V., et al., 2019, Two-million-year-old snapshots of atmospheric gases from Antarctic ice: *Nature*, v. 574, p. 663-666. **(B1, B2, C1)**
- Zalasiewicz, J., Waters, C.N., Williams, M., and Summerhayes, C., eds., 2019. *The Anthropocene as a geological time unit: A guide to the scientific evidence and current debate*. Cambridge, UK; Cambridge University Press, 361 p. **(B1, B2, B3, C1, D1)**
- Zalasiewicz, J., Waters, C.N., Ellis, E.C., Head, M.J., Vidas, D., Steffen, W., Thomas, J.A., Horn, A., Summerhayes, C., Leinfelder, R., McNeill, J.R., Gałuszka, A., Williams, M., Barnosky, A.D., Richter, D. de B., Gibbard, P.L., Syvitski, J., Jeandel, C., Cearreta, A., Cundy, A.B., Fairchild, I.J., Rose, N.L., Ivar do Sul, J.A., Shotyk, W., Turner, S., Waple, M., and Zinke, J., 2021, The Anthropocene: comparing its meaning in geology (chronostratigraphy) with conceptual approaches arising in other disciplines: *AGUPUBS Online Library*, Wiley.com, 44 p. **(B1, B2, B3, C1, D1)**

B2. Prehistoric Perspective: US Southwest and Northern Mexico

- Ackerly, N.W., 1999, The evolution of the Rio Grande, *in* Ortega Klett, C.T., ed., Proceedings of the 43rd Annual New Mexico Water Conference: Water Challenges on the Lower Rio Grande. New Mexico Water Resources Research Institute Report No. 310, p. 26-32. *This is an excellent introduction to the historical river-flow record.* (B2, B3)
- Ackerly, N.W., 2000, Paleohydrology of the Rio Grande, *in* Ortega Klett, C.T., ed., Proceedings of the 44th Annual New Mexico Water Conference: The Rio Grande Compact: It's the law! New Mexico Water Resources Research Institute Report No. 312, p. 113-123. (B2, B3)
- Adams, R.M., 1992, Ideologies: Unity and diversity, *in* Demarest, A.A., and Conrad, G.W., eds., 1992, Ideology and Pre-Columbian Civilizations: School of American Research Advanced Seminar Series: Santa Fe, NM, School of American Research Press, 205-221 p. ISBN 0-933452-83-7 (B2)
- Bennett, M.R., Bustos, D., Pigati, J.S., Springer, K.B., Urban, T.M., Holliday, V.T., Reynolds, S.C., Budka, M., Honke, J.S., Hudson, A.M., Fenerty, B., Connelly, C., Martinez, P.J., Santucci, V.L., and Odess, D., 2021, Evidence of humans in North America during the Last Glacial Maximum, 2021, Science, v. 373, issue 6562, p. 1528-1531. (B2, C1, I2)
- Biondi, F., Gershunov, A., and Cayan, D.R., 2001a, Pacific Decadal Oscillation Reconstruction. International Tree-Ring Data Bank: IGBP PAGES/World Data Center for Paleoclimatology Data Contribution Series #2001-001. NOAA/NGDC Paleoclimatology Program, Boulder CO, USA. (B2, B3, C1)
- Blagbrough, J.W., 1994, Late Wisconsin climatic inferences from rock glaciers in south-central and west-central New Mexico and east-central Arizona: New Mexico Geology, v. 16, p. 65-71. (B2, C1)
- Brand, D.C., 1937, The natural landscape of northwestern Chihuahua: University of New Mexico Press, 74 p. (B2, C, C1, C2a, F3)
- Bryan, K., 1941, Correlation of the deposits of Sandia Cave, New Mexico, with the glacial chronology (appendix), *in* Hibben, F.C., Evidences of Early Occupation in Sandia Cave, New Mexico, and Other Sites in the Sandia-Manzano Region, Smithsonian Miscellaneous Collections 99, p. 45-64. (B2, C1)
- Buck, B.J., 1996, Late Quaternary Landscape Evolution, Paleoclimate and Geoarchaeology, Southern New Mexico and West Texas: New Mexico State University, doctoral dissertation, 398 p. (B2, C1, C2b, C3)
- Buck, B.J., and Monger, H.C., 1999, Stable isotopes and soil-geomorphology as indicators of Holocene climate change, northern Chihuahuan Desert: Journal of Arid Environments, v. 43, p. 357-373. (B2, C1, C3)
- Bustos, D., Jakeway, J., Urban, T.M., Holliday, V.T., Fenerty, B., Raichlen, D.A., Budka, M., Reynolds, S.C., Allen, B.D., Love, D.W., Santucci, V.L., Odess, D., Willey, P., McDonald, H.G., and Bennett, M.R., 2018, Footprints preserve terminal Pleistocene hunt? Human-sloth interactions in North America: Science Advances [AAAS], v. 4, issue 4, 6 p. (B2, C1, I2)
- Castiglia, P.J., 2002, Late Quaternary climate history of the pluvial Lake Palomas system, Chihuahua, Mexico; University of New Mexico, master's thesis, 161 p. (B2, C1, F3, I2)
- Castiglia, P.J., and Fawcett, P.J., 2006, Large Holocene lakes and climate change in the Chihuahuan Desert: Geology, v. 34, no. 2, p. 113-116. *Seminal paper; but they still do not recognize the major contribution of Mimbres Basin/River system to pluvial Lake Palomas.* (B2, C1, F3, I2)
- Cole, D.R., and Monger, H.C., 1994, Influence of atmospheric CO₂ on the decline of C₄ plants during the last deglaciation: Nature, v. 368, p. 533-536. (B2, C1, C3)
- Conklin, R.P., 1932, Conklin Cavern: The discoveries in the bone cave at Bishop's Cap, New Mexico: West Texas Historical and Scientific Society Bulletin, v. 44, p. 7-19. (B2, C1)
- Connin, S.L., Betancourt, J., and Quade, J., 1998, Late Pleistocene C₄ plant dominance and summer rainfall in the southwestern United States from isotopic study of herbivore teeth: Quaternary Research, v. 50, p. 179-193. (B2, C1)
- Darling, B.K., Hibbs, B.J., and Sharp, J.M., 2017, Integrations of carbon-14 and Oxygen-18 as a basis for differentiating between Late Pleistocene and post-Pleistocene groundwater ages along flow paths of two West Texas bolson aquifers: Geological Society of America 129th Annual Meeting, Abstracts with Programs, v. 49, no. 7. ISSN 0016-7592 (B2, C1, H2, H3)
- D'Arrigo, R.D., and Jacoby, G.C., 1992, A tree-ring reconstruction of New Mexico winter precipitation and its relation to El Niño/southern oscillation events, *in* Diaz, H.F. and V. Markgraf (eds.), El Niño: Historical and paleoclimatic aspects of the Southern Oscillation: New York, Cambridge University Press, 476 p. (B2, C1)
- Dean, J.S., and Robinson, W.J., 1978, Expanded tree-ring chronologies for the southwestern United States: University of Arizona, Laboratory of Tree-Ring Research, Chronology Series III. (B2, B3, C1)

- Demarest, A.A., 1992, Archaeology, ideology, and Pre-Columbian cultural evolution: Search for an approach, *in* Demarest, A.A., and Conrad, G.W., eds., Ideology and Pre-Columbian Civilizations: School of American Research Advanced Seminar Series: Santa Fe, NM, School of American Research Press, p. 1-13. ISBN 0-933452-83-7 **(B2)**
- Demarest, A.A., and Conrad, G.W., eds., 1992, Ideology and Pre-Columbian Civilizations: School of American Research Advanced Seminar Series: Santa Fe, NM, School of American Research Press, 261 p. ISBN 0-933452-83-7 **(B2)**
- Di Peso, C.C., 1974, Casas Grandes: A Fallen Trading Center of the Gran Chichimeca, Volumes 1 to 3: Dragoon and Flagstaff, AZ, The Amerind Foundation and Northland Press. ISBN13: 978-0873580564 **(B2)**
- Di Peso, C.C., Rinaldo, J.P., and Fenner, G.C., 1974, Casas Grandes: A fallen trading center of the Gran Chichimeca, Volumes 4 and 5: Dragoon and Flagstaff, AZ, The Amerind Foundation and Northland Press. *Fig. 4.5: Color illustration of 13th-14th Century Well* **(B2)**
- Drew, L.G., ed., 1972, Tree-ring chronologies of western North America, II. Arizona, New Mexico, and Texas: University of Arizona, Laboratory of Tree-Ring Research, Chronology Series I. **(B2, B3, C1)**
- Eames, A.J., 1930, Report on ground-sloth coprolite from Dona Ana County, New Mexico: American Journal of Science, v. 119, p. 353-356. **(B2, C1)**
- Elias, S.A., 1987, Paleoenvironmental significance of Late Quaternary insect fossils from packrat middens in south-central New Mexico: The Southwestern Naturalist, v. 32, p. 383-390. **(B2, C1)**
- Elias, S.A., 1994, Quaternary insects and their environments: Washington, D.C., Smithsonian Institution Press, 284 p. **(B1, B2, C1)**
- Fish, S.K., Fish, P.R., and Villalpando, M. Elisa, eds., 2007, Trincheras sites in time, space, and society: Amerind Studies in Archaeology, Vol. 1 (series editor, J.A. Ware). University of Arizona Press, 288 p. **(B2, C1)**
- Foster, M.S., 1992, Arqueología del Valle de Casas Grandes: Sitio Paquimé, in Márquez-Alameda, A., coordinador del 22^{ésimo}, Historia general de Chihuahua I – Geología, geografía y arqueología: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua, p. 229-282. **(B2, F3)**
- Freeman, C.E., 1972, Pollen study of some Holocene alluvial deposits in Doña Ana County, southern New Mexico: Texas Journal of Science, v. 24, no. 2, p. 203-220. **(B2, C1, C2a)**
- Gordon, M.E., Morgan, G.S., and Lucas, S.G., 2002, Fossil molluscan fauna from Pleistocene Lake Otero, Tularosa Basin, southern New Mexico: New Mexico Geological Society Guidebook 53, p. 47-48. **(B2, C1, I2)**
- Grissino-Mayer, H.D., 1995, Tree-ring reconstructions of climate and fire history at El Malpais National Monument, New Mexico: University of Arizona, doctoral dissertation, 407 p. **(B2, B3, C1)**
- Grissino-Mayer, H., Swetnam, T.W., and Adams, R.K., 1997, The rare, old-aged conifers of El Malpais: Their role in understanding climatic change in the American Southwest: New Mexico Bureau of Mines and Mineral Resources, Bulletin 156, p. 155-161. **(B2, C1)**
- Grissino-Mayer, H., Baisan, C.H., Morino, K.A., and Swetnam, T.W., 2002, Multi-century trends in past climate for the Middle Rio Grande Basin, AD 622-1992: Final report submitted to the USDA Forest Service, Albuquerque, NM. Laboratory of Tree-Ring Science, Report 2002/6. **(B2, C1)**
- Hall, S.A., 2005, Ice Age vegetation and flora of New Mexico, *in* Lucas, S.G., et al., eds., New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 171-183. **(B2, C1)**
- Hall, S.A., and Peterson, J.A., 2013, Floodplain construction of the Rio Grande at El Paso, Texas, USA – Response to Holocene climate change: Quaternary Science Review, v. 65, p. 102-119. **(B2, C1)**
- Hall, S.A., and Riskind, D.H., 2010, Palynology, radiocarbon dating, and woodrat middens: New applications at Hueco Tanks, Trans-Pecos Texas, USA: Journal of Arid Environments: v. 74, p. 725-730. **(B2, C1)**
- Hall, S.A., Miller, M.R., and Goble, R.J., 2010, Geochronology of the Bolson sand sheet, New Mexico and Texas, and its archaeological significance: Geological Society of America Bulletin; v. 122, no. 11/12, p. 1950-1967, 16 figures, 5 tables. **(B2, C1, C2b, C3)**
- Hallman, P.R., and Hallman, D.P., 1997, A new Mammuthus columbi locality from Hidalgo County, southwestern New Mexico: Journal of Paleontology, Abstracts of papers, v. 17, no. 3, p 51A. **(B2, C1, I2)**
- Harris, A.H., 1977, Wisconsin age environments in the northern Chihuahuan Desert: Evidence from higher vertebrates, *in* Wauer, R.H. and Riskind, D.H., eds., Symposium on the biological resources of the Chihuahuan Desert region, United States and Mexico, National Park Service Proceedings and Transactions Series, No. 3, p. 23-52. **(B2, C1)**
- Harris, A.H., 1985a, Late Pleistocene vertebrate paleoecology of the west: University of Texas Press, 293 p. **(B2, C2a)**
- Harris, A.H., 1985b, Preliminary report on the vertebrate fauna of U-bar Cave, Hidalgo County, New Mexico: New Mexico Geology, v. 7, no. 4, p. 74-77, 84. **(B2, C1)**

- Harris, A.H., 1988, Late Pleistocene and Holocene *Microtus* (*Pitymys*) (Rodentia: Cricetidae) in New Mexico: *Journal of Vertebrate Paleontology*, v. 8, no. 3, p. 307-313. **(B2, C1, C2a)**
- Harris, A.H., 1989, The New Mexican late Wisconsin – East versus west: *National Geographic Research*, v. 5, p. 205-217. **(B2, C1, C2a)**
- Harris, A.H., 1993, Quaternary vertebrates of New Mexico: New Mexico Museum of Natural History and Science, Bulletin 2, p. 179-197. **(B1, B2, C1, C2b)**
- Harris, A.H., 1997, Geographic and chronologic patterns in Late Pleistocene vertebrate faunas, southern New Mexico, in Lucas, S.G., Estep, J.W., Williamson, T.E., and Morgan, G.S., *New Mexico's Fossil Record 1: New Mexico Museum of Natural History and Science Bulletin No. 11*, p.129-134. **(B2, C1, C2b)**
- Harris, A.H., 2016, Pleistocene vertebrates of southwestern USA and northwestern Mexico. NMSW-PALEO UTEP Biodiversity Collections. **(B1, B2, C1)**
- Hartmann, W.K., and Flint, R., 2003, Before the Coronado expedition: Who knew what and when did they know it?, in Flint, R., and Flint, S.C., eds., *The Coronado expedition—From a distance of 460 years*: University of New Mexico Press. P. 20-41. **(B2)**
- Hawley, J.W., 1983, Quaternary geology of the Rhodes Canyon (RATSCAT) Site, in Eidenbach, P.L., ed., *The prehistory of Rhodes Canyon, New Mexico*: Tularosa, NM, Human Systems Research, Inc., p. 17-32. **(B2, C2a, C3, I2)**
- Haynes, C.V., Jr., 1968, Geochronology of late Quaternary alluvium, in Morrison, R.B., and Wright, H.W. Jr., eds., *Means of correlation of Quaternary successions*: University of Utah Press, INQUA VII Congress, v. 8, p. 591-631. **(B2, C2a)**
- Herold, L.C., 1965, Trincheras and physical environment along the Rio Gavilan, Chihuahua, Mexico: Department of Geography, University of Denver, Publications in Geography 65-1 (5/1970 reprint), 233 p. **(B2, C1, F3)**
- Herold, L.C., and Miller, R.F., 1994, Soil moisture conditions in agricultural terraces associated with a Highland Variant of the Casas Grandes Culture, Chihuahua, Mexico, in Foss, J.E., et al., eds., *Proceedings of the First International Conference on Pedo-Archaeology: Special Publication 93-03*, University of Tennessee Agricultural Experiment Station, Knoxville, p. 185-190. **(B2, C1, C3, F3)**
- Herold, L.C., and Miller, R.F., 1995, Water availability for plant growth in Precolumbian terrace soils, Chihuahua, Mexico, in Toll, H.W., ed., *Soil, water, biology, and belief in prehistoric and traditional Southwestern agriculture*: New Mexico Archaeological Council, C & M Press, Denver, Colorado, p. 145-153. **(B2, C1, C3, F3)**
- Herrick, C.L., 1900, The geology of the White Sands of New Mexico: *Journal of Geology*, v. 8, p. 112-128. **(B2, C1, G1, I2)**
- Herrick, C.L., 1904, Lake Otero, an ancient salt lake in southeastern New Mexico: *American Geologist*, v. 34, p. 174-189. **(B2, C1, G1, I2)**
- Holliday, V.T., and Miller, D.S., 2013, The Clovis landscape, Chapter 13, p. 221-245, in Graf, K.E, Ketron, C.V., and Waters, M.R., eds., *Paleoamerican Odyssey*, Center for the Study of the First Americans, Department of Anthropology, College Station, Texas A&M University, 573 p. ISBN 13 978-0-615-82691-2 **(B2, C1, C3)**
- Howard, William A., and Griffiths, T.M., 1966, Trinchera distribution in the Sierra Madre Occidental, Mexico: Department of Geography, University of Denver, Technical Paper No. 66-1. **(B2, C1, F3)**
- Huang, Y., Street-Perrott, F.A., Metcalfe, S.E., Brenner, M., Moreland, M., and Freeman, K.H., 2001, Climate change as the dominant control on glacial-interglacial variations in C3 and C4 plant abundance: *Science*, v. 293, p. 1647-1651. **(B2, C1)**
- Hubbs, C.L., and Miller, R.R., 1948, Correlation between fish distribution and hydrographic history in the desert basins of western United States, in *The Great Basin*, with emphasis on glacial and postglacial times: *Bulletin of the University of Utah*, v. 38, p. 17-166. **(B2, C1, I1)**
- Hunt, A., and Morgan, G.S., 2022, Coprolites in caves: Late Pleistocene coprofaunas of the American Southwest and their significance, in Morgan, G.S. et al., eds., *Late Cenozoic Vertebrates from the American Southwest: A tribute to Arthur H. Harris*: New Mexico Museum of Natural History and Science, Bulletin 88, p. 343-359 **(B2, C1)**
- Irwin-Williams, C. and Haynes, C.V., 1970, Climatic change and early population dynamics in the southwestern United States: *Quaternary Research*, v. 1, p. 59-71. **(B2, C1)**
- Jasechko, S., Lechler, A., Pausata, F.S.R., Fawcett, P.J., Gleeson, T., Cendón, D.I., Galeewsky, J., LeGrande, A.N., Risi, C., Sharp, Z.D., Welker, J.M., Werner, M., Yoshimura, K., 2015. Late-glacial to late-Holocene shifts in global precipitation $\delta^{18}\text{O}$: *Climate Past*, v. 11, p. 1375-1393. **(B2, C1)**

- Johnston, M.C., 1977, Brief resume of botanical, including vegetational, features of the Chihuahuan Desert region with special emphasis on their uniqueness, *in* Wauer, R.H., and Riskind, D.H., Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, p. 335-359. **(B2, C1)**
- Kirkpatrick, D.T., and Duran, M.S., 1998, Prehistoric peoples of the northern Chihuahuan Desert: New Mexico Geological Society Guidebook 49, p. 42-45. **(B2)**
- Krider, P.R., 1998, Paleoclimatic significance of late Quaternary lacustrine and alluvial stratigraphy, Animas Valley, New Mexico, Quaternary Research, v. 50, p. 283-289. **(B2, C1, F1, I2)**
- Lehner, F., Wahl, E.R., Wood, A.W., Blatchford, D.B., and Llewellyn, D., 2017, Assessing recent declines in Upper Rio Grande runoff efficiency from a paleoclimatic perspective: Geophysical Research Letters, v. 44, p. 4124-4133. **(B2, C1, I3)**
- Leopold, L.B., 1951, Pleistocene climate in New Mexico: American Journal of Science, v. 249, p. 152-168. **(B2, C1, I1)**
- Lisiecki, L.E., and Raymo, M.E., 2005, A Plio-Pleistocene stack of 57 globally distributed benthic $\delta^{18}\text{O}$ records: Paleoceanography, v. 20, issue 1. **(B1, B2)**
- Llewellyn, D., and Vaddey, S., 2013, West-wide climate risk assessment: Upper Rio Grande impact assessment: U.S. Bureau of Reclamation, Upper Colorado Region, 169 p.
<https://www.usbr.gov/watersmart/baseline/docs/urgia/URGIAMainReport.pdf> **(B2, B3, C1, D1)**
- Long, A., Hansen, R.M., and Martin, P.S., 1974, Extinction of the Shasta Ground Sloth: Geological Society of America Bulletin, v. 85, p. 1843-1848. **(B2, C1)**
- Love, D.W., and Hawley, J.W., 2010, Geology of the Montano Site Complex- Chapter 3 (p. 3-1 to 3-32); and Data synthesis, interpretation and summary-Chapter 13: The nature of the agricultural system (p. 13-5 and 13-6), *in* Report on 1988 data recovery at the Montano Site Complex, LA 33223; City of Albuquerque, New Mexico; and Subsequent analysis of collections (NMCRIIS No. 116852). Report No. CEC-2009-12, submitted by Criterion Environmental Consulting, 4801 Lang Avenue NE, Suite 110, Albuquerque, NM 87109. Submitted to: Wilson & Company, Inc. 4900 Lang Avenue NE, Albuquerque, NM 87109; and City of Albuquerque, One Civic Plaza NW, Albuquerque, NM 87102. March 22, 2010. **(B2, C1, C3, I3)**
- Lozinsky, R.P., Harrison, R.W., and Lekson, S.H., 1995, Elephant Butte – Eastern Black Range region: Journeys from desert lakes to mountain ghost towns: New Mexico Bureau of Mines and Mineral Resources, Scenic Trips to the Geologic Past No. 16, 169 p. *Building of Elephant Butte Dam, p. 60-65.* **(B2, B3, C2b)**
- Lucas, S.G., Morgan, G.S., Hawley, J.W., and Gordon, M.E., 2002, Late Pleistocene Lake Otero, Tularosa Basin, southern New Mexico: Current Research in the Pleistocene, v. 19, p. 59-61. **(B2, C1, I2)**
- Lucas, S.G., Morgan, G.S., Hawley, J.W., and Love, D.W., 2002, Mammal footprints from the Upper Pleistocene of the Tularosa Basin, Dona Ana County, New Mexico: New Mexico Geological Society Guidebook 53, p. 285-288. **(B2, C1, I2)**
- Lyle, M., Heusser, L., Ravelo C., Yamamoto, M., Barron, J., Diffenbaugh, N.S., Herbert, T., and Andreasen, D., 2012, Out of the tropics: The Pacific, Great Basin Lakes, and Late Pleistocene water cycle in the western United States: Science, v. 337, Issue 6102, p. 1629-1633. **(B2, C1, I1)**
- Madsen, D.B., Davis, L.G. Rhode, D., and Oviatt, C.G., 2022, Comment on “Evidence of humans in North America during the Last Glacial Maximum:” Science, v. 373, issue 6577, p. 1-2. **(B2, C1, I2)**
- Márquez-Alameda, A., coordinador del volumen, 1992, Historia general de Chihuahua I—geología, geografía y arqueología: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua, 307 p. **(A1, B1, B2, F3)**
- Martin, P.S., 1963a, Geochronology of pluvial Lake Cochise, southern Arizona, II. Pollen analysis of a 42-meter core: Ecology, v. 44, p. 436-444. **(B2, C1, I2)**
- Martin, P.S., 1963b, The last 10,000 years, a fossil pollen record of the American Southwest: University of Arizona Press, 87 p. **(B2, C1)**
- Martin, P.S., and Mehringer, P.J., Jr., 1965, Pleistocene pollen analysis and biogeography of the southwest, *in* Wright, H.E., Jr., and Frey, D.G., eds., The Quaternary of the United States: Princeton University Press, p. 433-451. **(B2, C1)**
- McCraw, D.J., 1985, A Phytogeographic History of *Larrea* in Southwestern New Mexico Illustrating the Historical Expansion of the Chihuahuan Desert: University of New Mexico, master's thesis, 137 p. **(B2, C1)**
- McDonald, H.G., 2022, Paleoecology of the extinct Shasta ground sloth. *Nothrotheriops shastensis* (Xenarthra, Notrotheridae): The physical environment, *in* Morgan, G.S., et al., eds., Late Cenozoic Vertebrates from the American Southwest: A tribute to Arthur H. Harris: New Mexico Museum of Natural History and Science, Bulletin 88, p. 22-44. **(B2, C1)**

- Meinzer, O.E., 1911, Geology and water resources of Estancia Valley, New Mexico: U.S. Geological Survey Water-Supply Paper 275, 89 p. **(B2, C1, C2a, D1, G1, I1, I2)**
- Meinzer, O.E., and Hare, R.F., 1915, Geology and water resources of the Tularosa Basin, New Mexico: U.S. Geological Survey Water-Supply Paper 343, 317 p. **(B2, C1, C2a, D1, G1, I2)**
- Meinzer, O.E., 1922, Map of the Pleistocene lakes of the Basin and Range province and its significance: Geological Society of America Bulletin, v. 33, issue 3, p. 541-552. **(B2, C1, D1, I1)**
- Meko, D.M., 1990, Inferences from tree rings on low frequency variations in runoff in the interior western United States, *in* Proceedings of the Sixth Annual Pacific Climate Workshop: Sacramento, California Department of Water Resources, Interagency Ecological Studies Program, Technical Report 23, p. 123-127. **(B2, B3, C1)**
- Menking, K.M., and Anderson, R.Y., 2003, Contributions of La Niña and El Niño to Middle Holocene drought and late Holocene moisture in the American Southwest: *Geology*: v. 31, p. 937-940. **(B2, C1)**
- Metcalf, A.L., 1967, Late Quaternary mollusks of the Rio Grande Valley, Caballo Dam to El Paso, Texas: El Paso, Texas Western Press, University of Texas at El Paso, Science Series No. 1, 62 p. **(B2, C1, C2a)**
- Metcalf, A.L., 1969, Quaternary surface sediments and mollusks – Southern Mesilla Valley, New Mexico and Texas: New Mexico Geological Society Guidebook 20, p. 158-164. **(B2, C1, C2a)**
- Metcalf, A.L., 1977, Some Quaternary molluscan faunas from the northern Chihuahuan Desert and their paleoecological implications; *in* Wauer, R.H., and Riskind, D.H., Transactions, Symposium on the biological resources of the Chihuahuan Desert region, Alpine, Texas, October, 1974: Washington, D.C., U.S. Government Printing Office (U.S. National Park Service Transactions and Proceedings Series No. 3), p. 53-66. **(B2, C1, C2a)**
- Metcalf, A.L., 1997, Land snails of New Mexico from an historical zoogeographical point of view, *in* Metcalf, A.L., and Smartt, R.A., eds., 1997, Land snails of New Mexico: New Mexico Museum of Natural History and Science Bulletin 10, p. 71-108. **(B2, B3, C1, C2b)**
- Metcalf, A.L., and Smartt, R.A., eds., 1997, Land snails of New Mexico: New Mexico Museum of Natural History and Science Bulletin 10, 145 p. **(B2, B3, C1, C2b)**
- Metcalf, S., Bimpson, A., Courtice, A.J., and O'Hara, S., 1997, Climate change at the monsoon/westerly boundary in northern Mexico: *Journal of Paleolimnology*, v. 17, p. 155-171. **(B2, C1, F3, I2)**
- Metcalf, S., Say, A., Black, S., McCulloch, R., and O'Hara, S., 2002, Wet conditions during the last glaciation in the Chihuahuan Desert, Alta Babicora basin, Mexico: *Quaternary Research*, v. 57, p. 91-101. **(B2, C1, F3, I2)**
- Miller, R.R., 1981, Coevolution of deserts and pupfishes (Genus *Cyprinodon*) in the American Southwest, *in* Naiman, R.J. and Stoltz, D.L., eds., *Fishes in North America deserts*: New York, John Wiley and Sons, p. 39-94. **(B1, B2, C1, D1, I1, I3)**
- Miller, R.R., and Echelle, A.A., 1975, *Cyprinodon tularosa*, a new cyprinodontid fish for the Tularosa Basin, New Mexico: *The Southwestern Naturalist*, v. 19, no. 4, p. 365-377. **(B1, B2, C1, D1, I2)**
- Minckley, W.L., 1969, Environments of the Bolsón of Cuatro Ciénegas, Coahuila, Mexico, with special reference to aquatic biota: University of Texas at El Paso, Science Series 2, p. 1-65. **(B2, C1, F3, I1)**
- Minckley, W.L., Hendrickson, D.A., and Bond, C.E., 1986, Geography of western North American freshwater fishes: descriptions and relationships to intracontinental tectonism, *in* Hocutt, C.H. and Wiley, E.O., eds., *The Zoogeography of North American Freshwater Fishes*: New York, John Wiley and Sons, p. 519-613. **(B1, B2, C1, D1, I1)**
- Minnis, P.E., and Sandor, J., 2010, Mimbres potter's fields, *in* Nelson, M.C., and Hegmon, M., eds., *Mimbres Lives and Landscapes: A School for Advanced Research Popular Southwestern Archaeology Book*: Santa Fe, NM, School of Advanced Research Press, p. 83-89. ISBN 978-1-934691-24-3 **(B2)**
- Monger, H.C., Buck, B.J., Hawley, J.W., and Rachal, D., 2012, Geochronology of the Bolson sand sheet, New Mexico and Texas, and its archaeological significance: Discussion: Geological Society of America Bulletin; v. 124, no. 5/6, p. 1552-1556, 3 figures. **(B2, C1, C2b, C3)**
- Monger, H.C., Cole, D.R., Gish, J.W., and Giordano, T.H., 1998, Stable carbon and oxygen isotopes in Quaternary soil carbonates as indicators of ecogeomorphic changes in the northern Chihuahuan Desert, USA: *Geoderma*, v. 82, p. 137-172. **(B2, C1, C3)**
- Nelson, M.C., and Hegmon, M., eds., 2010, *Mimbres Lives and Landscapes: A School for Advanced Research Popular Southwestern Archaeology Book*: Santa Fe, NM, School of Advanced Research Press, 128 p. ISBN 978-1-934691-24-3 **(B2)**
- Nordt, L., 2003, Late Quaternary fluvial landscape evolution in desert grasslands of northern Chihuahua, Mexico: Geological Society of America Bulletin, v. 115, no. 5, p. 596-606. **(B2, C1, C2b, F3)**

- Ortega-Ramírez, J.R., Valiente-Banuet, A., Urrutia-Fucugauchi, J., Mortera-Gutierrez, C.A., and Alvarado-Valdéz, G., 1998, Paleoclimatic changes during the late Pleistocene-Holocene in Laguna Babicora, near the Chihuahuan Desert, Mexico: *Canadian Journal of Earth Science*, v. 35, p. 1168-1179. **(B2, C1, F3, I2)**
- Palacios-Fest, M.R., Carreño, A.L., Ortega-Ramírez, J.R., and Alvarado-Valdéz, G., 2002, A paleoenvironmental reconstruction of Laguna Babicora, Chihuahua, Mexico based on ostracode paleoecology and trace element shell chemistry: *Journal of Paleolimnology*, v. 27, p. 185-206. **(B2, C1, F3, I2)**
- Pigati, J.S., Springer, K.B., Bennett, M.R., Bustos, D., Urban, T.M., Holliday, V.T., Reynolds, S.C., and Odess, D., 2022, Response to comment on “Evidence of humans in North America during the Last Glacial Maximum”: *Science*, v. 375, issue 6577, p. 1-2. **(B2, C1, I2)**
- Polyak, V.J., Rasmussen, J.B.T., and Asmeron, Y., 2004, Prolonged wet period in the southwestern United States through the younger Dryas: *Geology*, v. 32, no. 1, p. 5-8. **(B2, C1)**
- Polyak, V.J., Cokendolpher, J.C., Norton, R.A., and Asmeron, Y., 2001, Wetter and cooler late Holocene climate in the southwestern United States from mites preserved in stalagmites: *Geology*, v. 29, no. 7, p. 643-646. **(B2, C1)**
- Robinson, W., 1970, Ft. Wingate tree-ring sequence (NM031). **(B2, B3, C1)**
- Rugeley, T., 2020, *Epic Mexico: A History from Earliest Times*: University of Oklahoma Press, 270 p. ISBN 13: 978-0806167077 **(B2, B3)**
- Sandor, J.H., Gersper, P.L., and Hawley, J.W., 1986, Soils at prehistoric agricultural terracing sites in New Mexico: I. Site placement, soil morphology and classification; II. Organic matter and bulk density changes; III. Phosphorous, selected micronutrients, and pH: *Soil Science Society of America Journal*, v. 50, no. 1, p. 166-180. **(B2, C3)**
- Sandor, J.A., Gersper, P.L. and Hawley, J.W., 1990, Prehistoric agricultural terraces and soils in the Mimbres area, New Mexico, *in* Thomas, K., ed., *Soils and early agriculture*: *World Archaeology* v. 22, no. 1., p. 70-86. **(B2, C3)**
- Sandor, J.A., Hawley, J.W., Schiowitz, R.H., and Gersper, P.L., 2008, Soil-geomorphic setting and change in prehistoric agricultural terraces in the Mimbres area, New Mexico: *New Mexico Geological Society Guidebook 59*, p. 167-175. **(B2, C3)**
- Sandor, J.A., Hawley, J.W., Schiowitz, R.H., and Gersper, P.L., 2008, Soil-geomorphic setting and change in prehistoric agricultural terraces in the Mimbres area, New Mexico: *New Mexico Geological Society Guidebook 59*, p. 167-175. **(B2, C1, C3)**
- Scarborough, V.L., 2003, *Flow of power; ancient water systems and landscapes*: Santa Fe, School of American Research Resident Scholar Book, 204 p. ISBN 1-930618-32-8 **(A2, B2, D1)**
- Simons, E.L., and Alexander, N.L., 1964, Age of the Shasta ground sloth from Aden Crater, New Mexico: *American Antiquity*, v. 29, no. 3, p. 390-391. **(B2, C1)**
- Smiley, T.L., Bryson, R.A., King, J.E., Kukla, G.J., and Smith, G.I., 1991, Quaternary paleoclimates, *in* Morrison, R.B., ed., *Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America*, v. K-2, p. 13-44. **(B2, C1)**
- Smith, G.I., 1991, Continental climatic records and their significance, *in* Smiley, T.L., and four others, *Quaternary paleoclimates; in* Morrison, R.B., ed., *Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America*, v. K-2, p. 35-41. **(B1, B2, C1, I1)**
- Smith, G.I., and Street-Perrott, F.A., 1983, Pluvial lakes of the western United States, *in* Porter, S.C., ed., *Late Quaternary environments of the United States*, volume 1, *The Late Pleistocene*: University of Minnesota Press, p. 190-212. **(B2, C1, I1)**
- Spaulding, W.G. and Graumlich, L.J., 1986, The last pluvial climatic episode of southwestern North America: *Nature*, v. 320, p. 441-444. **(B2, C1)**
- Spaulding, W.G., Leopold, E.B., and Van Devender, T.R., 1983, Late Wisconsin paleoecology of the American Southwest, *in* Porter, S.C., ed., *Late Quaternary Environments of the United States*, volume 1, *The Late Pleistocene*: University of Minnesota Press, p. 259-293. **(B2, C1)**
- Stein, R., Kanamatsu, T., Alvarez-Zarikian, C., Higgins, S.M., Channell, J.E.T., Aboud, E., Ohno, M., Acton, G.D., Akimoto, K., Bailey, I., Björklund, K.R., Evans, H., Nielsen, S.H.H., Fang, N., Ferretti, P., Gruetzner, J., Guyodo, Y.J.B., Hagino, K., Harris, R., Hatakeda, K., Hefter, J., Judge, S.A., Kulhanek, D.K., Nanayama, F., Rashid, H., Sierro Sanchez, F.J., Voelker, A., and Zhai, Q., 2006, North Atlantic Paleoceanography: The Last Five Million Years: *Eos Transactions American Geophysical Union*, v. 87, issue 13, p. 129-133. **(B1, B2, C1)**
- Stone, G.H., 1901, Notes on the extinct glaciers of Arizona and New Mexico: *Science*, v. 14, p. 798. **(B2, C1)**

- Street-Perrott, F.A., and Harrison, S.P., 1985, Temporal variations in lake levels since 30,000 ¹⁴C yr B.P.: An index of the global hydrologic cycle, *in* Hansen, J.E., and Takahashi, T., eds., *Climate processes and sensitivity*: Washington, D.C., American Geophysical Union, p. 118-129. **(B2, I1)**
- Stuiver, M., and Reimer, P., 1993, Extended ¹⁴C date base and revised CALIB radiocarbon calibration program: *Radiocarbon*, v. 35, p. 215-230. **(B1, B2)**
- Swetnam, T.W., and Betancourt, J.L., 1998, Mesoscale disturbance and ecological response to decadal climate variability in the American Southwest: *Journal of Climate*, v. 11, p. 3128-3147. **(B2, C1)**
- Thompson, R.S.C., Van Devender, T.R., Martin, P.S., Foppe, T., and Long, A., 1980, Shasta ground sloth. (*Nothrotheriops shastensis* Hoffstetter) at Shelter Cave, New Mexico: *Environment and extinction*: *Quaternary Research*, v. 14, p. 360-376. **(B2, C1)**
- Van Devender, T.R., 1985, Climatic cadences and the composition of Chihuahuan Desert communities: The late Pleistocene packrat midden record, *in* Diamond, J., and Case, T.J., eds., *Community Ecology*: New York, Harper and Rowe, p. 285-299. **(B2, C1)**
- Van Devender, T.R., 1986, Pleistocene climates and endemism in the Chihuahuan Desert flora, *in* *Invited Papers from the Second Symposium on Resources of the Chihuahuan Desert Region-United States and Mexico*, Alpine, Texas, October, 1983: Alpine, Chihuahuan Desert Research Institute, p. 1-19. **(B2, C1)**
- Van Devender, T.R., 1990, Late Quaternary vegetation and climate in the Chihuahuan Desert, United States and Mexico, *in* Betancourt, J.L., Van Devender, T.R., and Martin, P.S., eds., *Packrat middens, the last 40,000 years of biotic change*: University of Arizona Press, p. 104-133. **(B2, C1)**
- Van Devender, T.R., 1995, Desert grassland history: Changing climates, evolution, biogeography, and community dynamics, *in* McClaren, M.P., and Van Devender, T.R., and Martin, P.S., eds., *The desert grassland*: University of Arizona Press, p. 68-99. **(B2, C1)**
- Van Devender, T.R., and Spaulding, W.G., 1979, Development of vegetation and climate in the southwestern United States: *Science*, v. 204, p. 701-710. **(B2, C1)**
- Van Devender, T.R., and Toolin, L.J., 1983, Late Quaternary vegetation of the San Andres Mountains, Sierra County, New Mexico, *in* Eidenbach, P.L., ed., *The prehistory of Rhodes Canyon, New Mexico*: Tularosa, NM, Human Systems Research, Inc., p. 33-54. **(B2, C1)**
- Van Devender, T.R., Betancourt, J.L., and Wimberly, M., 1984, Biogeographic implications of a packrat midden sequence from the Sacramento Mountains, south-central New Mexico: *Quaternary Research*, v. 22, p. 344-360. **(B2, C1)**
- Van Devender, T.R., and Worthington, R.D., 1977, The herpetofauna of Howell's Ridge Cave and the paleoecology of the northwestern Chihuahuan Desert; *in* Wauer, R.H., and Riskind, D.H., *Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region*, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, p. 85-106. **(B2, C1)**
- Van Devender, T.R., Thompson, R.S., and Betancourt, J.L., 1987, Vegetation history of the deserts of southwestern North America: The nature and timing of the late Wisconsin-Holocene transition, *in* Ruddiman, W.F., and Wright, H.E., Jr., eds., *North America and adjacent oceans since the last glaciation*: Geological Society of America, p. 323-352. **(B2, C1)**
- Van West, C.R., Windes, T.C., Levine, F., Grissino-Mayer, H.D., and Salzer, M.W., 2013, The role of climate in early Spanish-Native American interactions in the US Southwest, *in* Mathers, C., Mitchem, J.M., and Haecker, C.M., eds., *Native and Spanish New Worlds – Sixteenth-Century Entradas in the American Southwest and Southeast (Amerind Studies in Anthropology Series)*: University of Arizona Press, p. 81-98. **(B2, C1)**
- Viau, A.E., Gajewski, K., Fines, P., Atkinson, D.E., and Sawanda, M.C., 2002, Widespread evidence of 1500 year climate variability in North America during the past 14,000 years: *Geology*, v. 30, p. 455-458. **(B2, C1)**
- Vierra, B.J., 2009, Keystone in context: A significant Archaic Period site in El Paso, Texas: *Keystone Heritage Park, Inc.*, P.O. Box 221527 (4220 Doniphan Rd.), El Paso, TX, 53 p. **(B2)**
- Vogel, V.J., 1972, *This Country was ours – A documentary history of the American Indian*: New York, Harper & Row, 473 p. **(B2, B3)**
- Wagner, J.D.M., Cole, J.E., Beck, J.W., Patchett, P.J., Henderson, G.M., Barnett, H.R., 2010, Moisture variability in the southwestern United States linked to abrupt glacial climate change. *Nature Geoscience*, v. 3, p. 110-113. **(B2, C1)**
- Walker, M.J.C., Johnsen, S., Rasmussen, S.O., Popp, T., Steffensen, J.P., Gibbard, P., et al., 2009, Formal definition and dating of the GSSP (Global Stratotype Section and Point) for the base of the Holocene using the Greenland NGRIP ice core, and selected auxiliary records: *Journal of Quaternary Science*, v. 24, p. 3-17. **(B1, B2, C1)**

- Walker, M.J.C., Head, M.J., Berkelhammer, M., Björck, S., Cheng, H., Cwynar, L., et al., 2018, Formal ratification of the subdivision of the Holocene Series/Epoch (Quaternary System/Period): two new Global Boundary Stratotype Sections and Points (GSSPs) and three new stages/subseries: *Episodes*, v. 41, no. 4, p. 213-223. **(B1, B2, C1)**
- Waters, M.R., 1985, Late Quaternary alluvial stratigraphy of Whitewater Draw, Arizona: Implication for regional correlation of fluvial deposits in the American Southwest: *Geology*, v. 13, p. 705-708. **(B2, C2a, I2)**
- Waters, M.R., 1989, Late Quaternary lacustrine history and paleoclimatic significance of pluvial Lake Cochise, southeastern Arizona: *Quaternary Research*, v. 32, p. 1-11. **(B2, C1, C2a, I2)**
- Waters, M.R., and Haynes, C.V., 2001, Late Quaternary arroyo formation and climate change in the American Southwest: *Geology*, v. 29, p. 399-402. **(B2, C1, C2b)**
- Wells, P.V., 1977, Post glacial origin of the present Chihuahuan Desert less than 11,500 years ago, in Wauer, R.H., and Riskind, D.H., eds., *Transactions of the symposium on the biological resources of the Chihuahuan Desert region*, National Park Service Proceedings and Transactions Series, no. 3, p. 67-83. **(B2, C1)**
- Wells, P.V., 1979, An equable glaciopluvial in the West: Pleniglacial evidence of increased precipitation of a gradient from the Great Basin to the Sonoran and Chihuahuan Deserts: *Quaternary Research*, v. 12, no. 3, p. 311-325. **(B2, C1)**
- Western Water Assessment (WWA) – Rio Grande TreeFlow 2008 Tree-ring reconstruction of streamflow and climate for the Rio Grande basin and adjacent basins [including Rio Grande near Otowi, NM from 1450-2002]: University of Colorado at Boulder. **(B2, B3, C1, D1)**
- Woodburne, M.O., and Swisher, C.C. III, 1995, Land mammal high resolution geochronology, intercontinental overland dispersals, sea level, climate, and vicariance, in *Geochronology, time scales, and global stratigraphic correlation*: SEPM Special Publication, no. 54, p. 335-364. **(B1, B2, C1)**
- Woodhouse, C.A., Meko, D.M., MacDonald, G.M., Stahle, D.W., Cook, E.R., and Turner, B.L., 2010, A 1,200-year perspective of 21st century drought in Southwestern North America: *Proceedings of the National Academy of Sciences of the United States of America*, v. 107, no. 50, p. 21283-21288. **(B2, B3, C1)**
- Yan, Y., Bender, M.L., Brook, E.J., Clifford, H.M., Kemeny, P.C., Kurbatov, A.V., et al., 2019, Two-million-year-old snapshots of atmospheric gases from Antarctic ice: *Nature*, v. 574, p. 663-666. **(B1, B2, C1)**
- Zalasiewicz, J., Waters, C.N., Williams, M., and Summerhayes, C., eds., 2019. *The Anthropocene as a geological time unit: A guide to the scientific evidence and current debate*. Cambridge, UK; Cambridge University Press, 361 p. **(B1, B2, B3, C1, D1)**
- Zalasiewicz, J., Waters, C.N., Ellis, E.C., Head, M.J., Vidas, D., Steffen, W., Thomas, J.A., Horn, A., Summerhayes, C., Leinfelder, R., McNeill, J.R., Gałuszka, A., Williams, M., Barnosky, A.D., Richter, D. de B., Gibbard, P.L., Syvitski, J., Jeandel, C., Cearreta, A., Cundy, A.B., Fairchild, I.J., Rose, N.L., Ivar do Sul, J.A., Shotyk, W., Turner, S., Waple, M., and Zinke, J., 2021, *The Anthropocene: comparing its meaning in geology (chronostratigraphy) with conceptual approaches arising in other disciplines*: AGUPUBS Online Library, Wiley.com, 44 p. **(B1, B2, B3, C1, D1)**

B3. Historical Perspective: US Southwest and Northern Mexico

- Abert, J.W., 1848, Report of Lieut. J.W. Abert of his examination of New Mexico in the years 1846-'47: U.S. 30th Congress, First Session, Senate Executive Document 7 and House Executive Document 41, p. 417-546. **(B3)**
- Ackerly, N.W., 1999, The evolution of the Rio Grande, in Ortega Klett, C.T., ed., *Proceedings of the 43rd Annual New Mexico Water Conference: Water Challenges on the Lower Rio Grande*. New Mexico Water Resources Research Institute Report No. 310, p. 26-32. *This is an excellent introduction to the historical river-flow record.* **(B2, B3)**
- Ackerly, N.W., 2000, Paleohydrology of the Rio Grande, in Ortega Klett, C.T., ed., *Proceedings of the 44th Annual New Mexico Water Conference: The Rio Grande Compact: It's the law!* New Mexico Water Resources Research Institute Report No. 312, p. 113-123. **(B2, B3)**
- Adorno, R., and Pautz, P.C., eds., and translators, 1999, Álvaro Núñez Cabeza de Vaca, “*Relation of 1542*,” in Álvaro Núñez Cabeza de Vaca: His Account, His Life, and the Expedition of Pánfilo de Narváez: University of Nebraska Press, 212 p. ISBN 13: [9780803264168](https://doi.org/10.1306/9780803264168) **(B3)**
- Allen, C.D., 2022, IV. Climate change: Terrestrial ecosystem responses and feedbacks to water resources in New Mexico in New Mexico, in Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 37-53. **(B3, C1)**

- Allen, C.D., Breshears, D.D., and McDowell, N.G., 2015, On underestimation of global vulnerability to tree mortality and forest die-off to from hotter drought in the Anthropocene: *Ecosphere*, v. 6, no. 8, p. 1-55. **(B3, C1)**
- Almada, F.R., 1968, *Diccionario de 29esis29ic, geografía, y biografía Chihuahuenses* (2nd ed.): Chihuahua, México, Universidad de Chihuahua, 378 p. **(A1, A2, B3, C, F3)**
- AMAFCA, 2018, Middle Rio Grande watershed based municipal separate storm sewer system permit: Stormwater Management Program for the Albuquerque Metropolitan Arroyo Flood Control Authority, NPDES Permit, No. NMR04A000, 331 p. **(B3, C1)**
- Anderson, G.B., 1906, *The conquest of the desert: Out West*, v. XXV, 109-124 **(B3, E3)**
- Antisell, T., 1856, Geological Report [Parke's surveys in California and near thirty-second parallel]; U.S. Pacific railroad exploration: U.S. 33rd Congress, Second Session, Senate Executive Document 78 and House Executive Document 91, v. 7, part 2, 204 p. **(B3)**
- Barry, T., and Sims, B., 1994, The challenge of cross-border environmentalism: The U.S.-Mexico case: Albuquerque, NM, Resource Center Press, 121 p. ISBN 0-911213-45-7 **(A2, B3, E3)**
- Barry, T., Browne, H., and Sims, B., 1994, The great divide: The challenge of U.S.-Mexico Relations in the 1990s: New York, Grove Press, 452 p. ISBN 0-8021-1559-4 **(B3, E3)**
- Bailey, L.R., ed., 1963, The A.B. Gray report; survey of a route on the 32nd Parallel for the Texas Western Railroad, 1854; and including the reminiscences of Peter R. Brady who accompanied the expedition (p. 169-227) – with Introduction and Notes by L.R. Bailey (xi-xix): Los Angeles, Westernlore Press, 240 p. *See comments on EpdN reach on p. 35, 42-43, 50-60, 137, 153-155, 184-185.* **(B3)**
- Baker, W.W., 1943, Final report on the construction of the canalization feature of the Rio Grande Canalization Project: International Boundary Commission (IBC), p. 4, 16, 18, 32. *See Glover 2018.* **(B3, E2)**
- Bartlett, J.R., 1854, Personal narrative of expeditions and incidents in Texas, New Mexico, California, Sonora, and Chihuahua, connected with the United States and Mexican Boundary Commission during the years 1850—1853: New York, D. Appleton and Company, 2 vols., 1130 p. [1965 reprint, Glorieta, NM, Rio Grande Press]. **(B3)**
- Bartlett, R.A., 1962, *Great surveys of the American West*: University of Oklahoma, 408 p. **(B3)**
- Bell, W.A., 1869, *New tracks in North America*: London, Chapman and Hall, 558 p. [1965 reprint, Albuquerque, Horn and Wallace Publishers]. **(B3)**
- Biondi, F., Gershunov, A., and Cayan, D.R., 2001a, Pacific Decadal Oscillation Reconstruction. International Tree-Ring Data Bank: IGBP PAGES/World Data Center for Paleoclimatology Data Contribution Series #2001-001. NOAA/NGDC Paleoclimatology Program, Boulder CO, USA. **(B2, B3, C1)**
- Biondi, F., Gershunov, A., and Cayan, D.R., 2001b, Pacific Decadal Variability since 1661: *Journal of Climate* (AMS), v. 14, p. 5-10. **(B3, C1)**
- Biondi, F., Gershunov, A., and Cayan, D.R., 2001c, Pacific Decadal Variability – International Tree-Ring Data Bank: IGBP PAGES/World Data Center for Paleoclimatology Data Contribution Series #2001-001. NOAA/NGDC Paleoclimatology Program, Boulder CO, USA. **(B3, C1)**
- Bradford, J.B., Betancourt, J.L., Butterfield, B.J., Munson, S.M., and Wood, T.E., 2018, Anticipatory natural resource science and management for a changing future: *Frontiers: Ecology and the Environment*, v. 16, no. 5, p. 295-303. **(B3, C1)**
- Burras, S.J., Ernest J., 1973, Religious Chroniclers and Historians: A Summary with Annotated Bibliography: in *Handbook of Middle American Indians*, vol. 13. Guide to Ethnohistorical Sources, part 2, University of Texas Press, p. 146-147. **(A1, B3)**
- Clark, I.G., 1987, *Water in New Mexico*: University of New Mexico Press, 839 p. **(A1, B3, E2)**
- Clendenen, C.C., 1961, *The United States and Poncho Villa: A study in unconventional diplomacy*: American Historical Association, Cornell University Press, Literary Licensing, LLC paperback, 363 p. ISBN 13:978-0944383391 **(B3)**
- Conkling, R.P., and Conkling, M.B., 1947, *Butterfield Overland Mail, 1857-1869, Volumes, I, II, III*: Glendale, CA, Arthur H. Clark Publishing Company. **(B3)**
- Cooke, Philip St. George, 1878, *The conquest of New Mexico and California in 1846-1848: An historical and personal narrative*: New York, G.P. Putnam & Sons, 308 p. [1964 facsimile reprint, with foreword by Philip St. George Cooke, III; Albuquerque, Horn and Wallace]. **(B3)**
- Coues, E., ed., 1895 [1913], *The Expeditions of Zebulon Montgomery Pike, Vol. 1 of 3: To Headwaters of the Mississippi River, Through Louisiana Territory, and in New Spain, During the Years 1805-6-7* (Forgotten Books Classic Reprint – May 10, 2017) Paperback, 488 p. ISBN 13: 978-1332291045 **(B3)**

- Cutts, J.M., 1847, *The conquest of New Mexico and California, by the forces of the United States, in the years 1846 & 1847*: Philadelphia, Carey & Hart, 264 p. [1965 facsimile reprint, with foreword by George P. Hammond; Albuquerque, Horn & Wallace, Publishers]. **(B3)**
- Dailey, D., 2021, Paso del Norte in 1817: From the Report of Father Juan Rafael Rascón: *Southern New Mexico Historical Review*, Volume XXVIII (January 2021), p. 1-9. <http://www.donaanacountyhistsoc.org> **(B3)**
- Darton, N.H., 1933, *Guidebook of the western United States, Part F, The Southern Pacific Lines*, New Orleans to Los Angeles. U.S. Geological Survey Bulletin 845. 304 p., 29 route maps. [West TX, and Southern NM and AZ: p. 120-160]. **(B3, C2a, F2, G1)**
- Dean, J.S., and Robinson, W.J., 1978, *Expanded tree-ring chronologies for the southwestern United States*: University of Arizona, Laboratory of Tree-Ring Research, Chronology Series III. **(B2, B3, C1)**
- Deason, M.G., 1998, An historical overview of playas and other wetland/riparian areas of “Nuevo Mexico,” in Herrera, E., Bahr, T.G., Ortega Klett, C.T., and Creel, B.J., eds., *Water resources issues in New Mexico*: *New Mexico Journal of Science*, v. 38. p. 189-218. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> **(B3, C1)**
- Dick-Peddie, W.A., Moir, W.H., and Spellenberg, R., 2000, *New Mexico vegetation: past, present, and future*: University of New Mexico Press, 280 p. **(B3, C1)**
- Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., Phillips, F.M., Bauer, P.W., Allen, C.D., DuBois, D., Harvey, M.D., King, J.P., McFadden, L.D., Thomson, B.M., and Tillery, A.C., 2022, *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM BG and MR Bulletin 164, 218 p. **(B3, C1)**
- Crutzen, P.J., and Stoermer, E.F., 2000. The “Anthropocene.” *IGBP Global Change Newsletter*, v. 41, p. 17-18. **(B1, B3, C1)**
- Disturnell, J., 1847. *Mapa de los Estados Unidos de Méjico, Segun lo organizado y definido por las varias actas del Congreso de dicha Republica y construido por las mejores autoridades*, 7th Revised Edition: *New York*, John Disturnell. **(B3)**
- Drew, L.G., ed., 1972, *Tree-ring chronologies of western North America, II. Arizona, New Mexico, and Texas*: University of Arizona, Laboratory of Tree-Ring Research, Chronology Series I. **(B2, B3, C1)**
- Ellis, S.R., Levings, G.W., Carter, L.F., Richey, S.F., and Radell, M.J., 1993, *Rio Grande Valley, Colorado, New Mexico, and Texas*: *Water Resources Bulletin*, v. 29, no. 4, p. 617-646. **(B3, C1, D1, F2)**
- Emory, W.H., 1848, *Notes on a military reconnaissance from Fort Leavenworth, in Missouri to San Diego, in California*: U.S. 30th Congress, First Session, Senate Executive Document 7 and House Executive Document 41, p. 1-416. **(B3)**
- Emory, W.H., 1857, *Report on the United States and Mexican Boundary Survey Made under the Direction of the Secretary of the Interior: 34th Congress, 1st Session, House of Representatives, Executive Document No. 135, 2 vol.*, Washington, D.C., Cornelius Wendell printer [Texas Historical Association facsimile reprint (1987), 3 vols.]. **(B3)**
- Esslinger, G.L., 1996, *Water development on the Lower Rio Grande: The Elephant Butte Project*, in Ortega Klett, C.T., ed., *Reaching the Limits: Stretching the Resources of the Lower Rio Grande*, *Proceedings of the 40th Annual New Mexico Water Conference*: New Mexico Water Resources Research Institute Report No. 297, p. 13-19. **(B3, E2, E3)**
- Everitt, B., 1993, Channel responses to declining flow on the Rio Grande between Ft. Quitman and Presidio, Texas: *Geomorphology*, v. 6, p. 225-242. **(B3, C1, C2b)**
- Everitt, B., 1998, Chronology of the spread of Tamarisk in the central Rio Grande: *Wetlands*, v. 18, no. 4, p. 658-668. **(B3, C1, C2b)**
- Fergusson, E., 1973 [1959], *New Mexico: A pageant of three peoples*; second edition with Introduction by Paul Horgan: University of New Mexico Press, 408 p. ISBN 0-8263-0271-8 **(B3)**
- Fergusson, H., 1933, *Rio Grande*: New York, Alfred A. Knopf, 296 p., with index (p. i-viii) and 18 photographs **(B3)**
- Flannigan, K.G., 2007, Surface water management: Working within the legal framework: *Natural Resources Journal*, v. 47, no. 3, p. 515-523. *1938 Rio Grande Compact* **(B3, E2, E3)**
- Flint, R., and Flint, S.C., 2003, *New vantages on the Coronado Expedition*, in Flint, R., and Flint, S.C., eds., 2003, *The Coronado Expedition from the distance of 460 years*: University of New Mexico Press, p. 1-10. ISBN 0-8263-2973-6 **(A2, B3)**
- Flint, R., and Flint, S.C., 2013, *Catch as catch can: The evolving history of the Contact Period Southwest, 1838-Present*, in Mathers, C., Mitchem, J.M., and Haecker, C.M., eds., *Native and Spanish New Worlds—Sixteenth-Century Entradas in the American Southwest and Southeast (Amerind Studies in Anthropology Series)*: University of Arizona Press, p. 47-62. **(B3)**

- Flint, R., and Flint, S.C., 2019, A most splendid company: The Coronado Expedition in global perspective: University of New Mexico Press, 450 p. ISBN 978-0-8263-6002-9 **(B3)**
- Follett, W.W., 1898, Rio Grande Waters – Equitable distribution of waters of the Rio Grande: Message to the President of the United States: 55th Congress, 2nd Session, U.S. Senate Document No. 229, Washington, D.C., US Government Printing Office, 289 p. **(B3, D1, E3)**
- Glover, A., 2018, Levees of the Hatch and Mesilla Valleys: N.M. Geological Society Guidebook 69, p. 63-64. *See Baker 1943.* **(B3, E2)**
- Goetzmann, W.H., 1959, Army Exploration in the American West, 1803-1863: University of Nebraska Press, 489 p. **(B3)**
- Goetzmann, W.H., 1962, Introduction – The personal narrative of James O. Pattie: Unabridged 1831 edition: Philadelphia and New York, J.P. Lippincott Company-Keystone Western Americana series, p. v-x. **(B3)**
- Granados-Olivas, A., 2022, Los recursos hidrológicos en cuencas transfronterizas entre México y Estados Unidos: El Paso del Norte y la gobernanza binacional del agua: Universidad Autónoma de Chihuahua y Universidad Autónoma de Ciudad Juárez, 324 p. ISBN 978-607-536 **(A2, B3, F1)**
- Gregg, J., 1844, Commerce of the Prairies, edited by Max L. Moorhead, 1954: University of Oklahoma Press, 469 p. *See Gregg's comments on **EpdN** reach on p. 98-101, 272-275; and Moorhead 1958.* **(B3)**
- Griffin, D., Woodhouse, C.A., Meko, D.M., Stahle, D.W., Faulstich, H.L., Carrillo, C., Touchan, R., Castro, C.L., and Leavitt, S.W., 2013, North American monsoon precipitation reconstructed from tree-ring latewood: Geophysical Research Letters, v. 40, no. 5, p. 954-958. **(B3, C1)**
- Grissino-Mayer, H.D., 1995, Tree-ring reconstructions of climate and fire history at El Malpais National Monument, New Mexico: University of Arizona, doctoral dissertation, 407 p. **(B2, B3, C1)**
- Guinn, J., 2021, War on the Border: Villa, Pershing, the Texas Rangers, and an American Invasion: New York, Simon & Schuster, 368 p. ISBN13:9781982128869 **(A2, B3)**
- Gutzler, D.S., and DuBois, D., 2022, II. Future projections of climate in New Mexico, *in* Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 9-21. **(B3, C1)**
- Hackett, C.W., 1942, Revolt of the Pueblo Indians of New Mexico and Otermín's attempted reconquest Coronado, 1680-1682, *in* Hammond, G.P., ed., translations of original documents by Charmion Clair Shelby; Coronado Cuarto Centennial Publications, 1540-1940, Vol. VIII [8]: University of New Mexico Press, 452 p. **(B3)**
- Hall, S.A., 1990, Pollen evidence for historic vegetational change, Hueco Bolson, Texas: The Texas Journal of Science, v. 42, no. 4, p. 399-403. **(B3, C1)**
- Hammond, G.P., 1965, Foreword to facsimile reprint of Cutts. J.M., 1847, The conquest of New Mexico and California...: Albuquerque, Horn & Wallace, Publishers, p. ii. **(B3)**
- Hammond, G.P., and Rey, A., 1953, Don Juan de Oñate, colonizer of New Mexico, 1595-1628; Coronado Cuarto Centennial Publications, 1540-1940, Albuquerque, Vol. II: University of New Mexico Press, 1187 p. *May 4, 1498 Oñate party leaves **EpdN** and enters NM (p. 95).* **(B3)**
- Hammond, G.P., and Rey, A., 1966, The rediscovery of New Mexico, 1580-1594: The explorations of Chamuscado, Espejo, Canstano de Sosa, Morlete, and Leyva de Bonilla and Humaña; Coronado Cuarto Centennial Publications, 1540-1940, Albuquerque, Vol. III: University of New Mexico Press, 341 p. **(B3)**
- Harris, L.G., 1996, The Developers: Controlling the Lower Rio Grande 1890-1980, *in* Ortega Klett, C.T., ed., Reaching the Limits: Stretching the Resources of the Lower Rio Grande, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 7-12. **(A2, B3, E2, E3)**
- Harris, L.G., 2012, Whose water is it anyway? Anatomy of the water war between El Paso, Texas and New Mexico, *in* Ortega Klett, C.T., ed., One hundred years of water wars in New Mexico: Santa Fe, Sunstone Press, p. 227-253. ISBN 978-0-86524-902-5 **(A2, B3, E2, E3)**
- Hawley, J.W., and Kernodle, J.M., 2008, Early contributions to arid-zone hydrogeology in the eastern Basin and Range region: Ground Water, v. 46, no. 3, p. 510-516. **(A2, B3, D1)**
- Hayden, F.V., 1873, First, second, and third annual reports of the United States Geological Survey of the Territories for the years 1867, 1868, and 1869: Publication of the Hayden Survey, Washington, DC, Government Printing Office, 261 p. **(B3, D1)**
- Hernandez, J.W., 2012a, Preface, *in* Ortega Klett, C.T., ed., One hundred years of water wars in New Mexico: Santa Fe, Sunstone Press, p. 9. ISBN 978-0-86524-902-5 **(B3, E3)**

- Hernandez, J.W., 2012b, Conflicts in the division of New Mexico's share of the Colorado River, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 202-211. ISBN 978-0-86524-902-5. **(B3, E3)**
- Hernandez, J.W., 2012c, Ready to Fight: Steve Reynolds-Institution-Engineer-Litigator, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 52-65. ISBN 978-0-86524-902-5 **(B3, E3)**
- Hernandez, J.W., 2012d, Water wars during our Territorial years, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 19-28. ISBN 978-0-86524-902-5 **(B3, E3)**
- Hernández, K.L., 2022, *Bab Mexicans*: New York, NY. W.W. Norton & Company, 384 p. ISBN 978-1-324-00437-0 **(A2, B3)**
- Hill, R.T., 1891, Preliminary notes on the topography and geology of northern Mexico and southwest Texas, and New Mexico: *American Geologist*, v. 8, p. 133-141. **(B3, C2a, F1)**
- Hill, R.T., 1892a, Notes on the Texas-New Mexican region: *Geological Society of America Bulletin*, v. 3, p. 85-100. **(B3, C2a)**
- Hill, R.T., 1896, Descriptive topographic terms of Spanish America: *National Geographic*, v. 7, p. 291-302. **(A1, B3, C2a, F1)**
- Hill, R.T., 1900, Physical geography of the Texas region: *U.S. Geological Survey Topographical Atlas Folio 3*, 12 p. **(B3, C2a, G1)**
- Horgan, P., 1954, *Great rivers, the Rio Grande in North American History*: New York, Holt, Rinehart and Winston, 1020 p. **(A2, B3)**
- Horn, C., 1963, *New Mexico's troubled years—the story of the early territorial governors*: Albuquerque, Horn & Wallace, Publishers, 239 p. **(B3)**
- Hughes, A.E., 1914, The beginning of Spanish settlement in the El Paso District: *University of California Publications in History*, v. 1, no. 3, p. 295-392. **(B3)**
- Hundley, N., 1966, *Dividing the waters: A century of controversy between the United States and Mexico*: University of California Press, 266 p. **(B3, E3, F1)**
- Jackson, D., ed., 1966, *The Journals of Zebulon Montgomery Pike, with letters and related documents*: University of Oklahoma Press; 2 Volume facsimile; v. 1, 464 p.; v. 2, 449 p. **(B3)**
- James, H.L., 1969, History of the United States-Mexican boundary survey – 1848-1855: *New Mexico Geological Society Guidebook 20*, p. 40-55. **(B3, F1)**
- Julyan, R., 1996, *The place names of New Mexico*: University of New Mexico Press, 385 p. **(A1, B3)**
- Kelley, S., Augusten, I., Mann, J., and Katz, L., 2007, History of Rio Grande reservoirs in New Mexico: Legislation and litigation: *Natural Resources Journal*, v. 47, no. 3, p. 525-613. **(B3, E2)**
- King, J.P., 2022, VII. Changes in surface-water and groundwater supplies and impacts on agricultural, industrial, and municipal users, *in* Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 81-89. **(B3, C1)**
- Kiser, W.S., 2018, *Coast-to-coast empire: Manifest Destiny and the New Mexico borderlands*: University of Oklahoma Press, 273 p., ISBN 378-0-8061-6026-9. *See McDonald 2018 and Merry 2009.* **(A2, B3)**
- Kludt, T., Love, D., Newton, T., and Allen, B., 2018, Summary of Landforms of the Central Jornada del Muerto that Influence the Hydrology and Path of El Camino Real de Tierra Adentro: *New Mexico Geological Society Guidebook 69*, p. 57-59. **(B3, C2b)**
- Lister, F.C., and Lister, R.H., 1966, *Chihuahua, storehouse of storms*: University of New Mexico Press, 360 p. **(B3)**
- Llewellyn, D., and Vaddey, S., 2013, West-wide climate risk assessment: Upper Rio Grande impact assessment: U.S. Bureau of Reclamation, Upper Colorado Region, 169 p.
<https://www.usbr.gov/watersmart/baseline/docs/urgia/URGIAMainReport.pdf> **(B2, B3, C1, D1)**
- Lozinsky, R.P., Harrison, R.W., and Lekson, S.H., 1995, Elephant Butte – Eastern Black Range region: Journeys from desert lakes to mountain ghost towns: *New Mexico Bureau of Mines and Mineral Resources, Scenic Trips to the Geologic Past No. 16*, 169 p. *Building of Elephant Butte Dam*, p. 60-65. **(B2, B3, C2b)**
- Martínez-Sifuentes, A.R., Villanueva-Díaz, J., Carlón-Allende T., and Estrada-Ávalos, J., 2020, 243 years of reconstructed streamflow volume and identification of extreme hydroclimatic events in the Conchos River Basin, Chihuahua, Mexico: *Trees*, v. 34, p. 1347-1361. **(B3, C1, F3)**
- Mathers, C., Mitchem, J.M., and Haecker, C.M., eds., 2013, *Native and Spanish New Worlds—Sixteenth-Century Entradas in the American Southwest and Southeast (Amerind Studies in Anthropology Series)*: University of Arizona Press, 382 p. ISBN 978-0-8165-3020-5 **(B3, C1)**

- Meko, D.M., 1990, Inferences from tree rings on low frequency variations in runoff in the interior western United States, *in* Proceedings of the Sixth Annual Pacific Climate Workshop: Sacramento, California Department of Water Resources, Interagency Ecological Studies Program, Technical Report 23, p. 123-127. **(B2, B3, C1)**
- Merry, R.W., 2009, A country of vast designs – James K. Polk, the Mexican War, and the Conquest of the American Continent: New York, Simon & Schuster Paper Back edition, 576 p. **(A2, B3)**
- Metcalf, A.L., 1997, Land snails of New Mexico from an historical zoogeographical point of view, *in* Metcalf, A.L., and Smartt, R.A., eds., 1997, Land snails of New Mexico: New Mexico Museum of Natural History and Science Bulletin 10, p. 71-108. **(B2, B3, C1, C2b)**
- Metcalf, A.L., and Smartt, R.A., eds., 1997, Land snails of New Mexico: New Mexico Museum of Natural History and Science Bulletin 10, 145 p. **(B2, B3, C1, C2b)**
- Moorhead, M.L., ed., 1954, Josiah Gregg [1844], Commerce of the prairies: University of Oklahoma Press, 469 p. **(A2, B3)**
- Moorhead, M.L., 1958, New Mexico's royal road, trade and travel on the Chihuahua Trail: University of Oklahoma Press, 234 p. **(A2, B3)**
- Mueller, J.E., 1975, Restless river: International law and the behavior of the Rio Grande: Texas Western Press, University of Texas at El Paso, 155 p. **(A2, B3, E2, F1)**
- Mueller, J.E., 2000, An annotated guide to the artwork of the United States Boundary Commission, 1850-1853, under the direction of John Russell Bartlett: GEM Enterprises, 4120 Tesota Drive, Las Cruces, NM 88011, 228 p. **(B3)**
- Mueller, J.E., ed., 2006, Autobiography of John Russell Bartlett (1805-1886): Providence, RI, The John Carter Brown Library, 226 p. **(A2, B3)**
- National Resources Committee, 1938, The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico, and Texas: Washington, D.C., U.S. Government Printing Office. 566 p. **(B3, D1, G1)**
- Newell, F.H., 1893, Water supply for irrigation: U.S. Geological Survey, 13th Annual Report 13, Part 3a, p. 7-99. **(B3, D1)**
- Núñez Cabeza de Vaca, Álvar, 1555, "Relation" of 1542." *See Adorno and Pautz (1999)*. **(B3)**
- O'Connor, S.D., and Day, H.A., 2002, Lazy B—Growing up on a cattle ranch in the American Southwest: New York, 2003 Random House Trade Paperback Edition, 318 p. ISBN 0-8129-6673-2 **(A2, B3)**
- Ortega Klett, C.T., ed., 2000, The Rio Grande Compact: It's the Law!: Proceedings of the 44th Annual New Mexico Water Conference, New Mexico Water Resources Research Institute Report No. 310, 199 p. **(B3, E2, E3)**
- O'Sullivan, J.L., 1839, The great nation of futurity: United States Democratic Review, v. 6, no. 23, p. 426-430. *Introduction of Manifest Destiny concept.* **(B3)**
- O'Sullivan, J.L., 1845, Annexation: United States Magazine and Democratic Review, v. 17, no.1 (July-August 1845), p. 5-10 [*First newsmedia use of term "Manifest Destiny."* P. 6 quote]. **(B3)**
- Pattie, J.O., 1831, The personal narrative of James O. Pattie: Unabridged 1831 edition, with introduction by William H. Goetzmann, 1962: Philadelphia and New York, J.P. Lippincott Company-Keystone Western Americana series, 269 p. *See comments on EpdN reach (10/23-28/1826) on p. 101-102. Note, however that parts of the "narrative," like many of that era, contains lots of flamboyant self-promotion.* **(B3)**
- Pérez de Villagrà, Don Gáspar, 1962, A History of New Mexico, Alcalá—1610 (Translated by Gilberto Espinosa, F.D. Hodge, ed.): Glorieta, NM, The Rio Grande Press, 308 p. p. 21, May 4 1498 Oñate party leaves EpdN and enters NM. **(B3)**
- Phillips, F.M., Hall, G.E., and Black, M.E., 2011, Reining in the Rio Grande – People, Land, and Water: University of New Mexico Press, 252 p. **(A2, B3, C1, D1, E3)**
- Pope, J., 1854, Report on exploration of a route for the Pacific Railroad near the 32nd Parallel of north latitude from Red River to the Rio Grande, *in* Explorations and surveys for a railroad route from the Mississippi River to the Pacific Ocean, volume 2, Washington, DC, p. 37-41. **(B3)**
- Powell, P.W., 1952, Soldiers, Indians, and silver: The northward advance of New Spain, 1550-1600: University of California Press, 317 p. **(B3)**
- Rebert, P., 2001, La Gran Línea: Mapping the United States–Mexico Boundary, 1849-1857: University of Texas Press, 268 p. ISBN 0-292-77111-8 **(A2, B3, F1)**
- Rebert, P., 2005, Views of the Borderlands: The Report on the United States and Mexican Boundary Survey, 1857-1859: Terrae Incognitae—the Official Publication of The Society for the History of Discoveries, v. 37, p. 75-90. **(B3, F1)**

- Reisner, M., 1993, Cadillac desert: The American West and its disappearing water (revised and updated edition): New York, Penguin Books, 592 p. **(A2, B3, C1)**
- Renteria-Villalobos, M., Hanson, R.T., and Eastoe, C., 2022, Evaluation of climate variability on sustainability for transboundary water supply in Chihuahua, Mexico: *Journal of Hydrology: Regional Studies*, v. 44, 19 p. **(B3, C1, F3)**
- Ríos, A.Á., 1999, Capirotada: A Nogales memoir: University of New Mexico Press, 145 p. ISBN 0-8263-20093-7 **(A2, B3)**
- Ritch, W.G., 1883, Illustrated New Mexico (3rd ed.): Santa Fe, New Mexican Printing & Publishing, Co, 234 p. **(A2, B3)**
- Rittenhouse, J.D., 1965, Disturnell's Treaty Map: The map that was part of the Treaty of Guadalupe Hidalgo on Southwestern Boundaries, 1848: Santa Fe, Stagecoach Press, 20 p., with map. **(B3)**
- Robinson, W., 1970, Ft. Wingate tree-ring sequence (NM031). **(B2, B3, C1)**
- Rugeley, T., 2020, Epic Mexico: A History from Earliest Times: University of Oklahoma Press, 270 p. ISBN 13: 978-0806167077 **(B2, B3)**
- Sálaz Márquez, R.D., 1999, New Mexico: A brief multi history: Box 10515, Alameda, NM 87184, Cosmic House, 675 p. ISBN 0-932492-05-3 **(B3)**
- Sálaz Márquez, R.D., 2004, Epic of the Greater Southwest: New Mexico · Texas · California · Arizona · Oklahoma · Colorado · Utah · Nevada: Box 10515, Alameda, NM 87184, Cosmic House, 620 p. ISBN 0-932492-06-1 **(A2, B3)**
- Samek Norton, H., 1998, Apaches and the mining menace; Indian-White conflicts in southwestern New Mexico, 1800-1886: New Mexico Geological Society Guidebook 49, p. 55-60. **(B3)**
- Scholes, F.V., 1929, Documents for the history of New Mexico Missions in the Seventeenth Century: *New Mexico Historical Review*, v. IV, p. 45-58. **(B3)**
- Scurlock, D., 1998, From the Rio to the Sierra: An environmental history of the Middle Rio Grande basin: U.S. Department of Agriculture, Rocky Mountain Research Station, Forest Service General Technical Report, RMRS-GTR-5, 440 p. **(B3, C1)**
- Siegel, D.J., 2020, The future of geoscience in the context of emerging climate disruption: *GSA Today*, v. 30, no. 2, p. 4-5. **(B3, C1, D1)**
- Simmons, M., 1988, New Mexico, an interpretive history; new edition: University of New Mexico Press, 207 p. **(B3)**
- Sonnichsen, C.L., 1968, Pass of the North, four centuries on the Rio Grande: University of Texas at El Paso, Texas Western Press, 469 p. *See comments on **EpdN** reach on pp.14-17, 29, 79, 89-91,106-107,132,135-136,147,262, 282-284.* **(A2, B3)**
- Stabler, H., 1911, Some stream waters of the western United States, with chapters on sediment carried by the Rio Grande and the industrial application of water analyses: U.S. Geological Survey Water-Supply Paper 274, 188 p. **(B3, G1)**
- Stockton, C.W., 1990, Climatic, hydrologic, and water-supply inferences from tree rings: *Civil Engineering Practice*, p. 37-52. **(B3, C1, D1)**
- Stockton, C.W., Quinlan, P.T., and Boggess, W.R., 1983, Climate change and surface-water availability in the Upper Rio Grande basin, *in* Region and State Water Resources Planning and Management: American Water Resources Association, p. 311-321. **(B3, C1)**
- Szynkiewicz, A., Borrok, D.M., Ganjegunte, G.K., Skrzypek, G., Ma, L., Rearick, M.S., and Perkins, G.B., 2015b, Isotopic studies of the Upper and Middle Rio Grande. Part 2- Salt loads and human impacts in south New Mexico and west Texas: *Chemical Geology*, v. 14, p. 336-350. **(B3, E2a)**
- Thomson, B.M., and Gutzler, D.S., 2022, VIII. Effect of climate change on extreme precipitation events and stormwater management in New Mexico *in* Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 91-105. **(B3, C1)**
- Thomson, B.M., and Phillips, F.M., 2022, IX. Impacts of warming climate on water quality in New Mexico *in* Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 105-121. **(B3, C1)**
- Tompkins, F., 1934, Chasing Villa: Harrisburg, PA, Military Service Publishing Company, High-lonesome Books reprint edition, 272 p. ISBN 13:978-0944383391 **(B3)**

- Towler, E., Llewellyn, D., Prein, A., and Gilleland, E., 2020, Extreme-value analysis for the characterization of extremes in water resources: A generalized workflow and case study on New Mexico monsoon precipitation: *Weather and Climate Extremes*, v. 29, p. 11. **(B3, C1)**
- Tweit, S.J., 1995, *Barren, wild, and worthless: Living in the Chihuahuan Desert*: University of New Mexico Press, 203 p. *See chapter entitled "Terminus", p. 147-180.* **(A2, B3, C1)**
- U.S. National Resources Committee, 1938, *The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico, and Texas*: Washington, D.C., U.S. Government Printing Office. 566 p. **(B3, D1, G1)**
- U.S. Reclamation Service, 1914, *Maps of Mesilla Valley, showing various known river channels*: U.S. Department of Interior, Bureau of Reclamation, Rio Grande Project. **(B3, E1, G1)**
- Van Zandt, F.K., 1966, *Boundaries of the United States and the several states*: U.S. Geological Survey, Bulletin 1212, 291 p. **(B3)**
- Vetancurt (Vetancourt, Betancourt), Agustín de, 1697-1698, *Teatro Mexicano: Descripción breve de los sucesos ejemplares, históricos y religiosos del Nuevo Mundo de las Indias. Crónica de la Provincia del Santo Evangelio de México. Menologio franciscano de los varones más señalados, que con sus vidas ejemplares, perfección religiosa, ciencia, predicación evangélica en su vida, ilustraron la Provincia del Santo Evangelio de México*. México, Editorial Porrúa, 1971. Contents: I. Sucessos naturales. Sucessos políticos. –II. De los sucessos militares de las armas. Tratado de la ciudad de México. Tratado de la ciudad de Puebla. –III. Chronica de la Provincia del Santo Evangelico. –IV. Menologio franciscano de los varones más señalados, que con sus vidas exemplares ilustraron la Provencia de el Santo Evangelio de México. **(B3)**
- Vogel, V.J., 1972, *This Country was ours – A documentary history of the American Indian*: New York, Harper & Row, 473 p. **(B2, B3)**
- Wals, V., 1951, *History of the El Paso area 1680-1692*: University of New Mexico, doctoral dissertation, 345 p. **(B3)**
- Wasserman, M., 2015, *Pesos and politics: Business, elites, foreigners, and government in Mexico*: Stanford University Press, 257 p. ISBN 9780804791540 **(B3)**
- Wasserman, M., 2017, *Tragedy and opportunity in Mexican mining during the Revolution: Stories from the Engineering and Mining Journal: The Mining History Association 2017 Journal*, p. 40-52. **(B3)**
- Weber, D.J., 1973, *Foreigners in their native land: Historic roots of the Mexican Americans*: University of New Mexico Press, 288 p. ISBN 0-8273-0279-3 **(B3)**
- Weber, D.J., 1982, *The Mexican frontier 1821-1846: The American Southwest under Mexico*: University of New Mexico Press, 416 p., ISBN 0-8263-0603-9 **(B3)**
- Weber, D.J., 1992, *The Spanish frontier in North America*: Yale University Press, 602 p. ISBN: 9780300051988 **(B3)**
- Western Water Assessment (WWA) – Rio Grande TreeFlow 2008 Tree-ring reconstruction of streamflow and climate for the Rio Grande basin and adjacent basins [including Rio Grande near Otowi, NM from 1450-2002]: University of Colorado at Boulder. **(B2, B3, C1, D1)**
- Williams, A.P., Cook, E.R., Smerdon, J.E., Cook, B.I., Abotzoglou, J.T., Bolles, K., Baek, S.H., Badger, A.M., and Livneh, B., 2020a, Large contribution from anthropogenic warming to an emerging North American megadrought: *Science*, v. 368, issue 6488, p. 314-318. **(B3, C1)**
- Williams, A.P., Cook, E.R., Smerdon, J.E., Cook, B.I., Abatzoglou, J.T., Bolles, K., Baek, S.H., Badger, A.M., and Livneh, B., 2020b, Erratum for the Report "Large contribution from anthropogenic warming to an emerging North American megadrought" by Park Williams, A., Cook, E.R., Smerdon, J.E., Cook, B.I., Abatzoglou, J.T., Bolles, K., Baek, S.H., Badger, A.M., and Livneh, B.: *Science*, v. 370, no. 6516, p. 367. **(B3, C1)**
- Winther, O.O., 1957, *The Southern Overland Mail and Stagecoach Line, 1857-1861*: New Mexico Historical Review, v. 32, no. 2, p. 81-106. **(B3)**
- Wislizenus, A. [Frederick Adolph(us)], 1969, *Memoir of a tour to northern Mexico, connected with Col. Doniphan's expedition in 1846 and 1847 [1848]; with Foreword by Jack D. Rittenhouse*: Calvin Horn Publisher, Inc., Albuquerque, 141p. *See comments on EpdN reach on p. 37-43.* **(B3)**
- Woodhouse, C.A., Meko, D.M., MacDonald, G.M., Stahle, D.W., Cook, E.R., and Turner, B.L., 2010, A 1,200-year perspective of 21st century drought in Southwestern North America: *Proceedings of the National Academy of Sciences of the United States of America*, v. 107, no. 50, p. 21283-21288. **(B2, B3, C1)**
- Woodhouse, C.A., Stahle, D.W., and Villanueva Díaz, J., 2012, *Rio Grande and Rio Conchos water supply variability over the past 500 years*: *Climate Research*, v. 51, p. 125-136. **(B3, C1, F1)**

- Wylie, P.G., 1955-1959 (1942), *Generation of Vipers*: New York, Rinehart & Company, Inc. *Pocket Books, Inc. GIANT CARDINAL edition: An unabridged reprint of the 20th edition (1955), with new Preface, footnotes, and annotations by the author*, 312 p. **(A2, B3)**
- Yanoff, S., and Muldavin, E., 2008, Grassland-shrubland transformation and grazing: A century-scale view of a Northern Chihuahuan Desert grassland: *Journal of Arid Environments*, v. 72, no. 9, p. 1594-1605. **(B3, C1)**
- York, J.C., and Dick-Peddie, W.A., 1969, Vegetation changes in southern New Mexico during the past hundred years, in McGinnies, W.G. and Goldman, B.J., *Arid lands in perspective*: University of Arizona Press, p. 155-166. **(B3, C1)**
- Zalasiewicz, J., Waters, C.N., Williams, M., and Summerhayes, C., eds., 2019. *The Anthropocene as a geological time unit: A guide to the scientific evidence and current debate*. Cambridge, UK; Cambridge University Press, 361 p. **(B1, B2, B3, C1, D1)**
- Zalasiewicz, J., Waters, C.N., Ellis, E.C., Head, M.J., Vidas, D., Steffen, W., Thomas, J.A., Horn, A., Summerhayes, C., Leinfelder, R., McNeill, J.R., Gałuszka, A., Williams, M., Barnosky, A.D., Richter, D. de B., Gibbard, P.L., Syvitski, J., Jeandel, C., Cearreta, A., Cundy, A.B., Fairchild, I.J., Rose, N.L., Ivar do Sul, J.A., Shotyk, W., Turner, S., Waprich, M., and Zinke J., 2021, *The Anthropocene: comparing its meaning in geology (chronostratigraphy) with conceptual approaches arising in other disciplines*: AGUPUBS Online Library, Wiley.com, 44 p. **(B1, B2, B3, C1, D1)**

C. Environmental, Physiographic, and Geologic Setting

- Almada, F.R., 1968, *Diccionario de historia, geografía, y biografía Chihuahuenses* (2nd ed.): Chihuahua, México, Universidad de Chihuahua, 378 p. **(A1, A2, B3, C, F3)**
- Brand, D.C., 1937, *The natural landscape of northwestern Chihuahua*: University of New Mexico Press, 74 p. **(B2, C, C1, C2a, F3)**
- Clos-Arceuduc, A., 1966, Le rôle déterminant des ondes aériennes stationnaires dans la structure des ergs sahariens et les 36esis d'érosion aroisantes: *Academie des Sciences, Paris, Comptes.Rendus.*, Series D., no. 262, p. 2673-2676. **(A2, C)**
- Embleton, C., Thomes, J., and Warren, A., 1979, The nature of fluid motion, in Embleton and Thomes (eds.), *Process in Geomorphology*: John Wiley and Sons, N.Y., p. 65-68. **(A2, C)**
- Fenneman, N.M., 1931, *Physiography of the western United States*: New York, McGraw-Hill Book Co., 534 p. **(C)**
- Fenneman, N.M., and Johnson, D.W., 1946, *Physiographic divisions of the conterminous U.S.*: U.S. Geological Survey, accessed June 9, 2016 at <http://water.usgs.gov/lookup/getspatial?physio> **(C)**
- Hunt, C.B., 1974, *Natural regions of the United States and Canada*: San Francisco, W.H. Freeman and Company, 725 I **(C)**
- INEGI, 2001, *Subprovincias fisiográficas*: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional, accessed April 2015 at <http://www3.inegi.org.mx/sistemas/biblioteca/ficha.aspx?upc=702825267599> **(C, F3)**
- Lustig, L.K., 1968, Inventory of research on geomorphology and hydrology of desert environments, in McGinnis, W.G., Goldman, B.J., and Paylore, P., eds., *Deserts of the World*: University of Arizona Press, p. 95-286. **(A2, C, D1)**
- Mabbutt, J.A., 1977, *Desert Landforms*: Cambridge MA, M.I.T. Press, 340 p. ISBN 13: 9780262131315 **(A2, C)**
- McLeish, W. (Abstract), 1968, On the mechanics of wind-slick generation: *Deep Sea Research and Oceanographic Abstracts*, v. 15, issue 4, p. 461-469. **(C)**
- Ordóñez, E., 1936, Physiographic provinces of Mexico: *American Association of Petroleum Geologists Bulletin*, v. 20, no. 10, p. 1277-1307. **(C, F3)**
- Ordóñez, E., 1942, Las provincias fisiográficas de México: *Revista Geografía de Instituto Panamericano Geografía e Historia*, tomo. 1, nos. 2-3. **(C, F3)**
- Powell, J.W., 1885, On the Organization of Scientific Work of the General Government: Extracts from the testimony taken by the Joint Commission of the Senate and House of Representatives to "consider the present organization of the Signal Service, Geological Survey, Coast and Geodetic Survey, and the Hydrographic Office of the Navy Department, with the view to secure greater efficiency and economy of administration." Washington, Government Printing Office, 468 p. **(C, D1, E2)**
- Powell, J.W., 1895, *Physiographic regions of the United States*: National Geographic Society Monograph 3, p. 65-100. **(C)**
- Schumm, S.A., 1965, Quaternary paleohydrology, in Wright, H.E. Jr., and Frey, D.C., eds., *The Quaternary of the United States*: Princeton University Press, p. 783-794. **(C, D1)**

- Schumm, S.A., 1968, Speculations concerning paleohydrologic controls on terrestrial sedimentation: Geological Society of America Bulletin, v. 79, p. 1573-1588. **(C, D1)**
- Tamayo, J.L., 1968, Geografía moderna de México (5th revised edition): México, D.F., Editorial F. Trillas, S.A., 382 p. See *Las regiones geomórficas – Sierra Madre Occidental* (p. 43) and *Altiplanicie Septentrional* (p. 52-53); *Vertientes interiores endorréicas – cuencas de las Lagunas Guzman, Santa María y Patos* (p. 142-143); and *Provincias bióticas – Chihuahua-Potosinense* (p. 162). **(A2, C, F3)**
- Tarr, R.S., 1890, Drainage systems of New Mexico: American Geologist, v. 5, p. 261-270. **(C, G1)**
- Thornbury, W.D., 1965, Regional geomorphology of the United States: New York, John Wiley and Sons, 609 p. **(C)**
- Thornbury, W.D., 1969, Principles of geomorphology: New York, John Wiley and Sons, Inc., 594 p. **(A1, C)**
- Tight, W.G., 1905, Bolson plains of the Southwest: American Geologist, v. 36, p. 271-284. **(C)**
- Tolman, C.F., 1937, Ground Water: New York, McGraw-Hill Book Co., Inc. 593 p. **(A2, C, D1)**
- Warren, A., 1979, Aeolian processes, in Embleton and Thomes (eds.). Process in Geomorphology: New York, John Wiley and Sons, p. 338-342. **(A2, C)**

C1. Climatic, Hydrographic, Ecologic, and Paleoenvironmental Setting

- Allen, B.D., 2005, Ice Age lakes in New Mexico, in Lucas, S.G., Morgan, G.A., and Zeigler, K.E., eds., New Mexico's Ice Ages: New Mexico Museum of Natural History and Science Bulletin 18, 107-114. **(C1, I2)**
- Allen, B.D., Love, D.W., and Myers, R.G., 2009, Evidence for late Pleistocene hydrologic and climatic change from Lake Otero, Tularosa Basin, south-central New Mexico: New Mexico Geology, v. 31, no. 1, p. 9-25. **(C1, I1, I2)**
- Allen, C.D., 2022, IV. Climate change: Terrestrial ecosystem responses and feedbacks to water resources in New Mexico in New Mexico, in Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 37-53. **(B3, C1)**
- Allen, C.D., Breshears, D.D., and McDowell, N.G., 2015, On underestimation of global vulnerability to tree mortality and forest die-off to from hotter drought in the Anthropocene: Ecosphere, v. 6, no. 8, p. 1-55. **(B3, C1)**
- AMAFCA, 2018, Middle Rio Grande watershed based municipal separate storm sewer system permit: Stormwater Management Program for the Albuquerque Metropolitan Arroyo Flood Control Authority, NPDES Permit, No. NMR04A000, 331 p. **(B3, C1)**
- Antevs, E., 1954, Climate of New Mexico during the last glacio-pluvial: Journal of Geology, v. 62, p. 182-191. **(C1, I1)**
- Armour, J., 2002, A Late Pleistocene and Holocene High-Resolution Glacial and Paleoclimate Record from the Southern Sangre de Cristo Mountains, Northern New Mexico: University of New Mexico, master's thesis, 150 p. **(C1)**
- Armour, J., Fawcett, P.J., and Geissman, J.W., 2002, 15 k.y. paleoclimatic and glacial record from Northern New Mexico: Geology, v. 30, no. 8, p. 723-726. **(C1)**
- Ashbaugh, K.M., and Metcalf, A.L., 1986, Fossil molluscan faunas from four spring-related deposits in the northern Chihuahua Desert, southern New Mexico and westernmost Texas: New Mexico Bureau of Mines and Mineral Resources, Circular 200, 25 p. **(C1)**
- Axtell, R.W., 1978, Ancient playas and their influence on recent herpetofauna of the northern Chihuahua Desert, in Wauer, R.H. and Riskind, D.H., eds., Transactions, Symposium on the Biological Resources of the Chihuahua Desert Region, Alpine, Texas, October, 1974: Washington, D.C., U.S. Government Printing Office, U.S. National Park Service Transactions and Proceedings Series No. 3, p. 493-512. *Premature introduction of Lake Morrison!* **(C1, I2)**
- Barry, R.G., 1983, Late Pleistocene climatology, in Porter, S.C., ed., Late Quaternary environments of the United States, volume 1, The Late Pleistocene: University of Minnesota Press, p. 390-407. **(C1)**
- Bennett, M.R., Bustos, D., Pigati, J.S., Springer, K.B., Urban, T.M., Holliday, V.T., Reynolds, S.C., Budka, M., Honke, J.S., Hudson, A.M., Fenerty, B., Connelly, C., Martinez, P.J., Santucci, V.L., and Odess, D., 2021, Evidence of humans in North America during the Last Glacial Maximum, 2021, Science, v. 373, issue 6562, p. 1528-1531. **(B2, C1, I2)**
- Bennett, K.E., Talsma, C., and Boero, R., 2021, Concurrent Changes in Extreme Hydroclimate Events in the Colorado River Basin: Water, v. 13, no. 7, p. 978. doi: 10.3390/w13070978 **(C1)**
- Bestelmeyer, B.T., Burkett, L.M., Lister, L., Brown, J.R., and Schooley, R.L., 2019, Collaborative approaches to strengthen the role of science in rangeland conservation: Rangelands, v. 41, no. 5, p. 218-226. **(C1)**

- Bestelmeyer, B.T., Duniway, M.C., James, D.K., Burkett, L.M., and Havstad, K., 2013, A test of critical thresholds and their indicators in a desertification-prone ecosystem: more resilience than we thought: *Ecology Letters*, v. 16, p. 339-345. **(C1)**
- Bestelmeyer, B.T., Peters, D.C., Archer, S.R., Browning, D.M., Okin, G.S., Schooley, R.L., and Webb, N.P., 2018, The grassland-shrubland regime shift in the southwestern United States: Misconceptions and their implications for management: *Bioscience*, v. 68, no. 9, p. 678-690. **(C1)**
- Betancourt, J.L., Van Devender, T.R., and Martin, P.S., eds., 1990, *Packrat Middens: The last 40,000 years of biotic change*: University of Arizona Press, 467 p. **(B1, C1)**
- Betancourt, J.L., Grissino-Mayer, H.D., Salzer, M.W., and Swetnam, T.W., 2002, A test of “annual resolution” in stalagmites using tree rings: *Quaternary Research*, v. 58, no. 2, p. 197-199. **(B1, C1)**
- Biondi, F., Gershunov, A., and Cayan, D.R., 2001a, Pacific Decadal Oscillation Reconstruction. International Tree-Ring Data Bank: IGBP PAGES/World Data Center for Paleoclimatology Data Contribution Series #2001-001. NOAA/NGDC Paleoclimatology Program, Boulder CO, USA. **(B2, B3, C1)**
- Biondi, F., Gershunov, A., and Cayan, D.R., 2001b, Pacific Decadal Variability since 1661: *Journal of Climate* (AMS), v. 14, p. 5-10. **(B3, C1)**
- Biondi, F., Gershunov, A., and Cayan, D.R., 2001c, Pacific Decadal Variability – International Tree-Ring Data Bank: IGBP PAGES/World Data Center for Paleoclimatology Data Contribution Series #2001-001. NOAA/NGDC Paleoclimatology Program, Boulder CO, USA. **(B3, C1)**
- Blagbrough, J.W., 1994, Late Wisconsin climatic inferences from rock glaciers in south-central and west-central New Mexico and east-central Arizona: *New Mexico Geology*, v. 16, p. 65-71. **(B2, C1)**
- Boulton, G.S., Peacock, J.D., and Sutherland, D.G., 2002, Quaternary, Chapter 15: *in* Trewin, N.H., ed., *The Geology of Scotland* (4th edition, 576 p.): London, The Geological Society, p. 409-430. **(C1, D1)**
- Bradford, J.B., Betancourt, J.L., Butterfield, B.J., Munson, S.M., and Wood, T.E., 2018, Anticipatory natural resource science and management for a changing future: *Frontiers: Ecology and the Environment*, v. 16, no. 5, p. 295-303. **(B3, C1)**
- Brand, D.C., 1937, *The natural landscape of northwestern Chihuahua*: University of New Mexico Press, 74 p. **(B2, C, C1, C2a, F3)**
- Brannen, P., 2021, The dark secrets of the Earth’s deep past – The geologic record suggests that climate models are missing something truly frightening: *The Atlantic*, v. 327, no. 2, p. 60-75. **(B1, C1)**
- Briske, D.D., Bestelmeyer, B.T., Brown, J.R., Fuhlendorf, S.D.H., and Polley, W., 2013, The Savory Method can not green deserts or reverse climate change: *Rangelands*, v. 35, no. 5, p. 72-74. **(C1)**
- Broecker, W.S., 2010, *The great ocean conveyor*: Princeton University Press, 176 p. ISBN 9780691143545 **(A2, C1)**
- Bryan, K., 1941, Correlation of the deposits of Sandia Cave, New Mexico, with the glacial chronology (appendix), *in* Hibben, F.C., *Evidences of Early Occupation in Sandia Cave, New Mexico, and Other Sites in the Sandia-Manzano Region*, Smithsonian Miscellaneous Collections 99, p. 45-64. **(B2, C1)**
- Buck, B.J., 1996, *Late Quaternary Landscape Evolution, Paleoclimate and Geoarchaeology, Southern New Mexico and West Texas*: New Mexico State University, doctoral dissertation, 398 p. **(B2, C1, C2b, C3)**
- Buck, B.J., and Monger, H.C., 1999, Stable isotopes and soil-geomorphology as indicators of Holocene climate change, northern Chihuahuan Desert: *Journal of Arid Environments*, v. 43, p. 357-373. **(B2, C1, C3)**
- Buffington, L.C., and Herbel, C.H., 1965, Vegetation changes on a semidesert grassland range: *Ecological Monographs*, v. 35, p. 139-164. **(C1)**
- Bustos, D., Jakeway, J., Urban, T.M., Holliday, V.T., Fenerty, B., Raichlen, D.A., Budka, M., Reynolds, S.C., Allen, B.D., Love, D.W., Santucci, V.L., Odess, D., Willey, P., McDonald, H.G., and Bennett, M.R., 2018, Footprints preserve terminal Pleistocene hunt? Human-sloth interactions in North America: *Science Advances* [AAAS], v. 4, issue 4, 6 p. **(B2, C1, I2)**
- Campos-Enriquez, J.O., Ortega-Ramírez, J., Alariste-Vilchis, D., Cruz-Gática, R., and Cabral-Cano, E., 1999, Relationship between extensional tectonic style and paleoclimatic elements at Laguna El Fresnal, Chihuahua Desert, Mexico: *Geomorphology*, v. 28, p. 75-94. **(C1, C2b, F3, I2)**
- Cassiliano, M.L., 1997, Crocodiles, tortoises, and climate: A shibboleth re-examined: *Paleoclimates*, v. 2, p. 47-69. **(B1, C1, D1)**
- Castiglia, P.J., 2002, *Late Quaternary climate history of the pluvial Lake Palomas system, Chihuahua, Mexico*: University of New Mexico, master’s thesis, 161 p. **(B2, C1, F3, I2)**
- Castiglia, P.J., and Fawcett, P.J., 2006, Large Holocene lakes and climate change in the Chihuahuan Desert: *Geology*, v. 34, no. 2, p. 113-116. *Seminal paper; but they still do not recognize the major contribution of Mimbres Basin/River system to pluvial Lake Palomas.* **(B2, C1, F3, I2)**

- Cayan, D.R., Redmond, K.T., and Riddle, L.G., 1999, ENSO and hydrologic extremes in the western United States: *Journal of Climate*, v. 12, p. 2881-2893. **(C1)**
- Cerling, I.E., 1984, The stable isotopic composition of modern soil carbonate and its relationship to climate: *Earth and Planetary Science Letters*, v. 71, p. 229-240. **(C1, C3)**
- Cerling, I.E., 1991, Carbon dioxide in the atmosphere: evidence from Cenozoic and Mesozoic paleosols: *American Journal of Science*, v. 291, p. 377-400. **(B1, C1, C3)**
- Cerling, I.E., and Quade, J., 1993, Stable carbon and oxygen isotopes in soil carbonates, *in* Swart, P.K., Lohmann, K.C., McKenzie, J., and Savin, S., eds., *Climate Change in Continental Isotopic Records*: American Geophysical Union, Geophysical Monograph 78, p. 217-231. **(C1, C3)**
- Chavarria, S.B., and Gutzler, D.S., 2018, Observed changes in climate and streamflow in the upper Rio Grande basin: *Journal of the American Water Resources Association*, v. 54, no. 3, p. 644-659. **(C1)**
- Chavez, F.P., Strutton, P.G., Friederich, G.E., Feely, R.A., Feldman, G.C., Foley, D.G., and McPhaden, M.J., 1999, Biological and chemical response of the equatorial Pacific Ocean to the 1997-1998 El Niño: *Science*: v. 286, p. 2,126-2,131. **(C1)**
- Chermak, J., Gutzler, D.S., Johnson, P., King, J.P., Reynis, L., Aldrich, G., and O'Donnell, M., 2015, New Mexico universities working group on water supply vulnerabilities: Final report to the interim committee on water and natural resources New Mexico Bureau of Geology and Mineral Resources, Open-File Report 577. **(C1, D1)**
- Christensen, J.H., Hewitson, B., Busuioc, A., Chen, A., Gao, X., Held, I., Jones, R., Kolli, R.K., Kwon, W.T., Laprise, R., Magana Rueda, V., Mearns, L., Menendez, C.G., Raisanen, J., Rinke, A., Sarr, A., and Whetton, P., 2007, Regional Climate Projections, Chapter 11 *in* Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor, M., and Miller, H.L., eds., *Climate Change 2007: The Physical Science Basis: Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*; Cambridge, UK and NY: Cambridge University Press. **(C1)**
- Climate Prediction Center, ND, Previous ENSO events (1877-present): Online data retrieval system. **(C1)**
- Cole, D.R., and Monger, H.C., 1994, Influence of atmospheric CO₂ on the decline of C₄ plants during the last deglaciation: *Nature*, v. 368, p. 533-536. **(B2, C1, C3)**
- Conklin, R.P., 1932, Conklin Cavern: The discoveries in the bone cave at Bishop's Cap, New Mexico: *West Texas Historical and Scientific Society Bulletin*, v. 44, p. 7-19. **(B2, C1)**
- Connell, S.D., Smith, G.A., Geissman, J.W., and McIntosh, W.C., 2013, Climatic controls on nonmarine depositional sequences, Albuquerque Basin, Rio Grande rift, north-central New Mexico, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on the Rio Grande rift: from tectonics to groundwater*: Geological Society of America, Special Publication, p. 483-485. **(C1, I3)**
- Connin, S.L., Betancourt, J., and Quade, J., 1998, Late Pleistocene C₄ plant dominance and summer rainfall in the southwestern United States from isotopic study of herbivore teeth: *Quaternary Research*, v. 50, p. 179-193. **(B2, C1)**
- Creel, B.J., 2010, Research needs in the U.S. portion of the Rio Grande watershed: *Journal of Transboundary Water Resources*, v. 1, p. 31-41. <https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(C1, E2, E3)**
- Crutzen, P.J., and Stoermer, E.F., 2000. The "Anthropocene:" *IGBP Global Change Newsletter*, v. 41, p. 17-18. **(B1, C1)**
- Darling, B.K., Hibbs, B.J., and Sharp, J.M., Jr., 1998, Environmental isotopes as indicators of the residence time of ground waters in the Eagle Flat and Red Light Draw Basins of Trans-Pecos, Texas: *West Texas Geological Society Publication* no. 98-105, p. 259-270. **(C1, H2, H3)**
- Darling, B.K., Hibbs, B.J., and Sharp, J.M., 2017, Integrations of carbon-14 and Oxygen-18 as a basis for differentiating between Late Pleistocene and post-Pleistocene groundwater ages along flow paths of two West Texas bolson aquifers: *Geological Society of America 129th Annual Meeting, Abstracts with Programs*, v. 49, no. 7. ISSN 0016-7592 **(B2, C1, H2, H3)**
- D'Arrigo, R.D., and Jacoby, G.C., 1992, A tree-ring reconstruction of New Mexico winter precipitation and its relation to El Niño/southern oscillation events, *in* Diaz, H.F. and Markgraf, V., eds., *El Niño: Historical and paleoclimatic aspects of the Southern Oscillation*: New York, Cambridge University Press, 476 p. **(B2, C1)**
- Davis, T., 2021d, Fire, rain a bad mix – UNM study shows impacts on Western watersheds: *Albuquerque Journal*, Saturday, June 5, 2021, p. A1, A3. **(A3, C1)**
- Dean, J.S., and Robinson, W.J., 1978, Expanded tree-ring chronologies for the southwestern United States: *University of Arizona, Laboratory of Tree-Ring Research, Chronology Series III*. **(B2, B3, C1)**

- Deason, M.G., 1998, An historical overview of playas and other wetland/riparian areas of “Nuevo Mexico,” *in* Herrera, E., Bahr, T.G., Ortega Klett, C.T., and Creel, B.J., eds., *Water resources issues in New Mexico: New Mexico Journal of Science*, v. 38. p. 189-218. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> **(B3, C1)**
- deBuys, W., 2011, *A great aridness: Climate change and the future of the American Southwest*: New York, Oxford University Press, 369 p. ISBN 9780199778928 **(C1)**
- Diaz, H.F., and Markgraf, V., eds., 1992, *El Niño: Historical and Paleoclimatic aspects of the Southern Oscillation*: New York: Cambridge University Press. 476 p. **(C1)**
- Dick-Peddie, W.A., 1965, Changing vegetation patterns in southern New Mexico: *New Mexico Geological Society Guidebook 16*, p. 234-235. *See York and Dick-Peddie 1969.* **(C1)**
- Dick-Peddie, W.A., 1993, *New Mexico vegetation - past, present, and future*: University of New Mexico Press, 244 p. **(C1)**
- Dick-Peddie, W.A., Moir, W.H., and Spellenberg, R., 2000, *New Mexico vegetation: past, present, and future*: University of New Mexico Press, 280 p. **(B3, C1)**
- Döll, P., 2009, Vulnerability to the impact of climate change on renewable groundwater resources: A global-scale assessment: *Environmental Research Letters*, v. 4, no. 3, p. 13. **(C1, D1, D2)**
- Douglas, M.W., Maddox, R.A., Howard, K., and Reyes, S., 1993, The Mexican monsoon: *Journal of Climate*, v. 6, p. 1665-1677. **(C1)**
- Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., Phillips, F.M., Bauer, P.W., Allen, C.D., DuBois, D., Harvey, M.D., King, J.P., McFadden, L.D., Thomson, B.M., and Tillery, A.C., 2022, *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM BG and MR Bulletin 164, 218 p. **(B3, C1)**
- Drew, L.G., ed., 1972, *Tree-ring chronologies of western North America, II. Arizona, New Mexico, and Texas*: University of Arizona, Laboratory of Tree-Ring Research, Chronology Series I. **(B2, B3, C1)**
- Eames, A.J., 1930, Report on ground-sloth coprolite from Dona Ana County, New Mexico: *American Journal of Science*, v. 119, p. 353-356. **(B2, C1)**
- Earman, S., and Dettinger, M., 2011, Potential impacts of climate change on groundwater resources – A global review: *Journal of Water and Climate Change*, v. 2, no. 4, p. 213-229. **(C1, D1, D2)**
- Eastoe, C.J., 2020, Sources of perennial water supporting critical ecosystems, San Pedro Valley, Arizona: *Environmental & Engineering Geoscience*, v. XXVI, no. 4, p. 463-479. **(C1, D2, H1, H2, H3)**
- Eastoe, C.J., and Dettman, D.L., 2016, Isotope amount effects in hydrologic and climate reconstructions of monsoon climates: Implications of some long-term data sets for precipitation: *Chemical Geology*, v. 430, p. 76-89. **(C1, D1, H2)**
- Eastoe, C.J., and Wright, W.E., 2019, Hydrology of mountain blocks in Arizona and New Mexico as revealed by isotopes in groundwater and precipitation: *Geosciences*, v. 9, article 461. **(C1, D2, H2, H3)**
- Echelle, A.A., Echelle, A.F., and Edds, D.R., 1987, Population structure of four pupfish species (Cyprinodontidae: Cyprinodon) from the Chihuahuan desert region of New Mexico and Texas: allozymic variation: *Copeia*, v. 3, p. 668-681. **(C1, I2, I3)**
- Elias, E.H., Rango, A., Steele, C.M., Mejia, J.F., and Smith, R., 2015, Assessing climate change impacts on water availability of snowmelt-dominated basins of the Upper Rio Grande Basin: *Journal of Hydrology: Regional Studies*, v. 3, p. 525-546. **(C1, F1)**
- Elias, S.A., 1987, Paleoenvironmental significance of Late Quaternary insect fossils from packrat middens in south-central New Mexico: *The Southwestern Naturalist*, v. 32, p. 383-390. **(B2, C1)**
- Elias, S.A., 1994, *Quaternary insects and their environments*: Washington, D.C., Smithsonian Institution Press, 284 p. **(B1, B2, C1)**
- Ellis, S.R., Levings, G.W., Carter, L.F., Richey, S.F., and Radell, M.J., 1993, Rio Grande Valley, Colorado, New Mexico, and Texas: *Water Resources Bulletin*, v. 29, no. 4, p. 617-646. **(B3, C1, D1, F2)**
- Etheredge, D., Gutzler, D.S., and Pazzaglia, F.J., 2004, Geomorphic response to seasonal variations in rainfall in the Southwest United States: *Geological Society of America Bulletin*, v. 116, no. 5, p. 606. **(C1)**
- Everitt, B., 1993, Channel responses to declining flow on the Rio Grande between Ft. Quitman and Presidio, Texas: *Geomorphology*, v. 6, p. 225-242. **(B3, C1, C2b)**
- Everitt, B., 1998, Chronology of the spread of Tamarisk in the central Rio Grande: *Wetlands*, v. 18, no. 4, p. 658-668. **(B3, C1, C2b)**
- Feth, J.H., and Whitehead, H.C., 1961, Chemical character of precipitation at Menlo Park, California: U.S. Geological Survey Professional Paper 424-D, p. 29-30. **(C1, C3, D1)**
- Feth, J.H., and Whitehead, H.C., 1964, Chemical composition of rain, dry fallout, and bulk precipitation at Menlo Park, California, 1957-1959: *Journal of Geophysical Research*, v. 69, p. 3319-3333. **(C1, C3, D1)**

- Fish, S.K., Fish, P.R., and Villalpando, M.E., eds., 2007, *Trincheras sites in time, space, and society: Amerind Studies in Archaeology*, Vol. 1 (series editor, J.A. Ware). University of Arizona Press, 288 p. **(B2, C1)**
- Fleck, J., and Udall, B., 2021, Managing Colorado River risk (Editorial): *Science*, v. 372, issue 6545, p. 885. **(C1, E3)**
- Freeman, C.E., 1972, Pollen study of some Holocene alluvial deposits in Doña Ana County, southern New Mexico: *Texas Journal of Science*, v. 24, no. 2, p. 203-220. **(B2, C1, C2a)**
- Gabin, V.L., and Lesperance L.E., 1977, *New Mexico Climatic data: precipitation, temperature, evaporation, and winds—monthly and annual means 1850-1975*: Socorro, NM, W.K. Summers and Associates, privately printed, 436 p. **(C1)**
- Gardner, J.L., 1951, Vegetation in the Creosotebush area of the Rio Grande Valley in New Mexico: *Ecological Monographs*, v. 21, p. 349-403. **(C1)**
- Gatewood, J.S., Wilson, A., Thomas, H.E., and Kister, L.R., 1964, General effects on water resources of drought in the Southwest, 1942-1956: U.S. Geological Survey Professional Paper 372-B, p. B1-B55. **(C1, D1, E2)**
- Gile, L.H., Gibbens, R.P., and Lenz, J.M., 1995, Soils and sediments associated with remarkable, deeply penetrating roots of crucifixion thorn (*Koeberlinia spinosa* Zucc.): *Journal of Arid Environments*. v. 35, p. 137-151. **(C1, C3)**
- Gile, L.H., Gibbens, R.P., and Lenz, J.M., 1998, Soil-induced variability in root systems of creosotebush (*Larrea tridentata*) and tarbush (*Flourensia cernua*): *Journal of Arid Environments*, v. 39, p. 57-78. **(C1, C3)**
- Gile, L.H., Monger, H.C., Grossman, R.B., Ahrens, R.J., Hawley, J.W., Peterson, F.F., Gibbens, R.P., Lenz, J.M., Bestelmeyer, B.T., and Nolen, B.A., 2007, *A 50th Anniversary Guidebook for the Desert Project*: Lincoln, NE, U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, 279 p. **(C1, C2b, C3)**
- Gillette, D.D., Carranza-Castaneda, Ó, White, R.S., Jr., Morgan, G.S., Thrasher, L.C., McCord, R., and McCullough, G., 2016, Ontogeny and sexual dimorphism of *Glyptotherium texanum* (Xenarthra, Cingulata) from the Pliocene and Pleistocene (Blancan and Irvingtonian NALMA) of Arizona, New Mexico, and Mexico: *Journal of Mammalian Evolution*, v. 23, p. 133-154. **(B1, C1)**
- Gordon, M.E., Morgan, G.S., and Lucas, S.G., 2002, Fossil molluscan fauna from Pleistocene Lake Otero, Tularosa Basin, southern New Mexico: *New Mexico Geological Society Guidebook* 53, p. 47-48. **(B2, C1, I2)**
- Graf, W.L., 1988, *Fluvial processes in dryland rivers*, Berlin, Springer-Verlag, Springer series in physical environment, 346 p. **(A2, C1)**
- Griffin, D., Woodhouse, C.A., Meko, D.M., Stahle, D.W., Faulstich, H.L., Carrillo, C., Touchan, R., Castro, C.L., and Leavitt, S.W., 2013, North American monsoon precipitation reconstructed from tree-ring latewood: *Geophysical Research Letters*, v. 40, no. 5, p. 954-958. **(B3, C1)**
- Grissino-Mayer, H.D., 1995, Tree-ring reconstructions of climate and fire history at El Malpais National Monument, New Mexico: University of Arizona, doctoral dissertation, 407 p. **(B2, B3, C1)**
- Grissino-Mayer, H., Swetnam, T.W., and Adams, R.K., 1997, The rare, old-aged conifers of El Malpais: Their role in understanding climatic change in the American Southwest: *New Mexico Bureau of Mines and Mineral Resources, Bulletin* 156, p. 155-161. **(B2, C1)**
- Grissino-Mayer, H., Baisan, C.H., Morino, K.A., and Swetnam, T.W., 2002, Multi-century trends in past climate for the Middle Rio Grande Basin, AD 622-1992: Final report submitted to the USDA Forest Service, Albuquerque, NM. Laboratory of Tree-Ring Science, Report 2002/6. **(B2, C1)**
- Gutzler, D.S., 2005, Once and future climates in New Mexico and North America; the icehouse and the hothouse anti-analogues, in Lucas, S.G., Morgan, G.A., and Zeigler, K.E., eds., *New Mexico's Ice Ages*: New Mexico Museum of Natural History and Science Bulletin 18, 107-114. <http://nmnaturalhistory.org/bulletins> **(C1)**
- Gutzler, D.S., 2020, New Mexico's climate in the 21st Century – A great change is underway: *New Mexico Earth Matters*, Summer 2020, p. 1-5. **(C1)**
- Gutzler, D.S., and DuBois, D., 2022, II. Future projections of climate in New Mexico, in Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 9-21. **(B3, C1)**
- Gutzler, D.S., and Robbins, T.O., 2011, Climate variability and projected change in the western United States: regional downscaling and drought statistics: *Climate Dynamics*, v. 37, no. 5, p. 835-849. **(C1)**
- Hall, S.A., 1985, Quaternary pollen analysis and vegetational history of the Southwest, in Bryant, V.M. Jr., and Holloway, R.G., eds. *Pollen records of Late-Quaternary North American sediments*: Dallas, American Association of Stratigraphic Palynologists Foundation, p. 95-123. **(B1, C1)**

- Hall, S.A., 1990, Pollen evidence for historic vegetational change, Hueco Bolson, Texas: *The Texas Journal of Science*, v. 42, no. 4, p. 399-403. **(B3, C1)**
- Hall, S.A., 2005, Ice Age vegetation and flora of New Mexico, *in* Lucas, S.G., et al., eds., *New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28*, p. 171-183. **(B2, C1)**
- Hall, S.A., and Peterson, J.A., 2013, Floodplain construction of the Rio Grande at El Paso, Texas, USA – Response to Holocene climate change: *Quaternary Science Review*, v. 65, p. 102-119. **(B2, C1)**
- Hall, S.A., and Riskind, D.H., 2010, Palynology, radiocarbon dating, and woodrat middens: New applications at Hueco Tanks, Trans-Pecos Texas, USA: *Journal of Arid Environments*, v. 74, p. 725-730. **(B2, C1)**
- Hall, S.A., Miller, M.R., and Goble, R.J., 2010, Geochronology of the Bolson sand sheet, New Mexico and Texas, and its archaeological significance: *Geological Society of America Bulletin*; v. 122, no. 11/12, p. 1950-1967, 16 figures, 5 tables. **(B2, C1, C2b, C3)**
- Hallman, P.R., and Hallman, D.P., 1997, A new *Mammuthus columbi* locality from Hidalgo County, southwestern New Mexico: *Journal of Paleontology, Abstracts of papers*, v. 17, no. 3, p. 51A. **(B2, C1, I2)**
- Harris, A.H., 1977, Wisconsin age environments in the northern Chihuahuan Desert: Evidence from higher vertebrates, *in* Wauer, R.H. and Riskind, D.H., eds., *Symposium on the biological resources of the Chihuahuan Desert region, United States and Mexico, National Park Service Proceedings and Transactions Series, No. 3*, p. 23-52. **(B2, C1)**
- Harris, A.H., 1985b, Preliminary report on the vertebrate fauna of U-bar Cave, Hidalgo County, New Mexico: *New Mexico Geology*, v. 7, no. 4, p. 74-77, 84. **(B2, C1)**
- Harris, A.H., 1987, Reconstruction of mid-Wisconsin environments in southern New Mexico: *National Geographic Research*, v. 3, p. 142-151. **(B2, C1)**
- Harris, A.H., 1988, Late Pleistocene and Holocene *Microtus* (*Pitymys*) (*Rodentia: Cricetidae*) in New Mexico: *Journal of Vertebrate Paleontology*, v. 8, no. 3, p. 307-313. **(B2, C1, C2a)**
- Harris, A.H., 1989, The New Mexican late Wisconsin – East versus west: *National Geographic Research*, v. 5, p. 205-217. **(B2, C1, C2a)**
- Harris, A.H., 1993, Quaternary vertebrates of New Mexico: *New Mexico Museum of Natural History and Science, Bulletin 2*, p. 179-197. **(B1, B2, C1, C2b)**
- Harris, A.H., 1997, Geographic and chronologic patterns in Late Pleistocene vertebrate faunas, southern New Mexico, *in* Lucas, S.G., Estep, J.W., Williamson, T.E., and Morgan, G.S., *New Mexico's Fossil Record 1: New Mexico Museum of Natural History and Science Bulletin No. 11*, p.129-134. **(B2, C1, C2b)**
- Harris, A.H., 2016, Pleistocene vertebrates of southwestern USA and northwestern Mexico. NMSW-PALEO UTEP Biodiversity Collections. **(B1, B2, C1)**
- Heckman, L.M., and Mueller, J.E., 1998, The Aguirre Spring debris flow of August 14, 1991: *New Mexico Geological Society Guidebook 49*, p. 61-69. **(C1, C2b)**
- Hendrickson, J., 1977, Saline habitats and halophytic vegetation of the Chihuahuan Desert region, *in* Wauer, R.H., and Riskind, D.H., *Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3*, p. 289-314. **(C1)**
- Herbel, C.H., and Gibbens, R.P., 1996, Post-drought vegetation dynamics on arid rangelands of southern New Mexico: *New Mexico State University, Agricultural Experiment Station Bulletin 776*, 102 p. **(C1)**
- Herbel, C.H., and Gile, L.H., 1973, Field moisture regimes and morphology of some arid-land soils in New Mexico, *in* Bruce, R.R., and Stelly, M., eds., *Field soil-water regime: Soil Science Society of America, Special Publication No. 5*, p. 119-152. **(C1, C3)**
- Herold, L.C., 1965, Trincheras and physical environment along the Rio Gavilan, Chihuahua, Mexico: *Department of Geography, University of Denver, Publications in Geography 65-1 (5/1970 reprint)*, 233 p. **(B2, C1, F3)**
- Herold, L.C., and Miller, R.F., 1994, Soil moisture conditions in agricultural terraces associated with a Highland Variant of the Casas Grandes Culture, Chihuahua, Mexico, *in* Foss, J.E., et al., eds., *Proceedings of the First International Conference on Peto-Archaeology: Special Publication 93-03, University of Tennessee Agricultural Experiment Station, Knoxville*, p. 185-190. **(B2, C1, C3, F3)**
- Herold, L.C., and Miller, R.F., 1995, Water availability for plant growth in Precolumbian terrace soils, Chihuahua, Mexico, *in* Toll, H.W., ed., *Soil, water, biology, and belief in prehistoric and traditional Southwestern agriculture: New Mexico Archaeological Council, C & M Press, Denver, Colorado*, p. 145-153. **(B2, C1, C3, F3)**
- Herrick, C.L., 1900, The geology of the White Sands of New Mexico: *Journal of Geology*, v. 8, p. 112-128. **(B2, C1, G1, I2)**

- Herrick, C.L., 1904, Lake Otero, an ancient salt lake in southeastern New Mexico: *American Geologist*, v. 34, p. 174-189. **(B2, C1, G1, I2)**
- Hibbard, C.W., 1960, An interpretation of Pliocene and Pleistocene climates in North America: *Michigan Academy of Science, Arts, and Letters*, 62nd Annual Report, p. 5-30. **(B1, C1, D1)**
- Hohn, D., 2011, *Moby-Duck: The true story of 28,800 bath toys lost at sea and the beachcombers, oceanographers, environmentalists, and fools, including the author, who went in search of them*: New York, NY, Viking Penguin; Published in Penguin Books 2012, 402 p., ISBN 978-0-14-312050-6 **(A2, C1, D1)**
- Holliday, V.T., and Miller, D.S., 2013, The Clovis landscape, Chapter 13, p. 221-245, *in* Graf, K.E., Ketron, C.V., and Waters, M.R., eds., *Paleoamerican Odyssey*, Center for the Study of the First Americans, Department of Anthropology, College Station, Texas A&M University, 573 p. ISBN 13 978-0-615-82691-2 **(B2, C1, C3)**
- Hoidale, G.B., Smith, S.M., Blanco, A.J. and Barber, T.L., 1967, A study of atmospheric dust: *Atmospheric Science Laboratory*, White Sands Missile Range, New Mexico, ECOM Report No. 5067, 132 p. **(C1, C3)**
- Houde, P., and Peltier, D., 2018, A New *Stegomastodon* Skull (Proboscidea: Gomphotheriidae) from the Camp Rice Formation, Doña Ana County, New Mexico: *N.M. Geological Society Guidebook* 69, p. 53-56. **(C1, C2b)**
- Howard, W.A., and Griffiths, T.M., 1966, Trinchera distribution in the Sierra Madre Occidental, Mexico: *Department of Geography*, University of Denver, Technical Paper No. 66-1. **(B2, C1, F3)**
- Houghton, J., 2004, *Global Warming: The Complete Briefing* (3rd edition): Cambridge University Press, 351 p. **(A2, C1)**
- Huang, Y., Street-Perrott, F.A., Metcalfe, S.E., Brenner, M., Moreland, M., and Freeman, K.H., 2001, Climate change as the dominant control on glacial-interglacial variations in C3 and C4 plant abundance: *Science*, v. 293, p. 1647-1651. **(B2, C1)**
- Hubbs, C.L., and Miller, R.R., 1948, Correlation between fish distribution and hydrographic history in the desert basins of western United States, *in* *The Great Basin*, with emphasis on glacial and postglacial times: *Bulletin of the University of Utah*, v. 38, p. 17-166. **(B2, C1, I1)**
- Hunt, A., and Morgan, G.S., 2022, Coprolites in caves: Late Pleistocene coprofaunas of the American Southwest and their significance, *in* Morgan, G.S. et al., eds., *Late Cenozoic Vertebrates from the American Southwest: A tribute to Arthur H. Harris*: New Mexico Museum of Natural History and Science, Bulletin 88, p. 343-359 **(B2, C1)**
- Hurd, B., Leary, N., Jones, R., and Smith, L.B., 1999, Relative regional vulnerability of water resources to climate change: *Journal of the American Water Resources Association*, v. 35, no. 6, p. 1399-1410. **(C1, E1, E2)**
- Irwin-Williams, C., and Haynes, C.V., 1970, Climatic change and early population dynamics in the southwestern United States: *Quaternary Research*, v. 1, p. 59-71. **(B2, C1)**
- Jamail, D., 2019, *The end of ice: Bearing witness and finding meaning in the path of climate disruption*: New York, The New Press, 272 p. ISBN 13:9781620972342 **(A2, C1)**
- Jarvis, M.D., Buck, B., and Witcher, J.C., 1998, Quaternary paleospring deposits at San Diego Mountain in south-central New Mexico: *New Mexico Geological Society Guidebook* 49, p. 71-74. **(B2, C1, C4, H1)**
- Jasechko, S., Lechler, A., Pausata, F.S.R., Fawcett, P.J., Gleeson, T., Cendón, D.I., Galeewsky, J., LeGrande, A.N., Risi, C., Sharp, Z.D., Welker, J.M., Werner, M., Yoshimura, K., 2015, Late-glacial to late-Holocene shifts in global precipitation $\delta^{18}\text{O}$: *Climate Past*, v. 11, p. 1375-1393. **(B2, C1)**
- Jochems, A.P., and Morgan, G.S., 2018, A stable isotope record from paleosols and groundwater carbonate of the Plio-Pleistocene Camp Rice Formation, Hatch-Rincon Basin, southern New Mexico: *N.M. Geological Society Guidebook* 69, p. 109-117. **(C1, C2b, C3)**
- Johnston, M.C., 1977, Brief resume of botanical, including vegetational, features of the Chihuahuan Desert region with special emphasis on their uniqueness, *in* Wauer, R.H., and Riskind, D.H., *Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region*, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, p. 335-359. **(B2, C1)**
- Junge, C.E., and Werby, R.T., 1958, The concentration of chloride, sodium, potassium, calcium, and sulfate in rain water over the United States: *Journal of Meteorology*, v. 15, p. 417-425. **(C1, C3, D1)**
- Keigwin, L.D., Klotsko, S., Zhao, N., Reilly, B., Giosan, L., and Driscoll, N.W., 2018, Deglacial floods in the Beaufort Sea preceded Younger Dryas cooling: *Nature Geoscience*, v.11, no. 8, p. 599-604. **(A2, C1)**
- Kennedy, J.F., 2004, Application of GIS and remote sensing methods to the paleohydrography of the Paso del Norte region. *ETD Collection for University of Texas, El Paso*. AAI3138516. **(C1, E1, F1, I2)**
- King, J.E., 1991, Early and Middle Quaternary vegetation, *in* Smiley, T.L., and four others, *Quaternary paleoclimates*, *in* Morrison, R.B., ed., *Quaternary non-glacial geology; Conterminous U.S.*: Boulder, CO, Geological Society of America, *The Geology of North America*, v. K-2, p. 19-26. **(B1, C1)**

- King, J.P., 2022, VII. Changes in surface-water and groundwater supplies and impacts on agricultural, industrial, and municipal users, *in* Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources: NM Bureau of Geology and Mineral Resources Bulletin 164*, p. 81-89. **(B3, C1)**
- Kolbert, E., 2014, *The sixth extinction – An unnatural history*: New York, Henry Holt and Company, LLC, 219 p. ISBN 798 0-8050-9311-7 **(B1, C1)**
- Knutti, R., Rogelj, J., Sedláček, J., and Fischer, E.M., 2016, A scientific critique of the two-degree climate change target: *Nature Geoscience*, v. 9, p. 13. **(C1)**
- Krider, P.R., 1998, Paleoclimatic significance of late Quaternary lacustrine and alluvial stratigraphy, Animas Valley, New Mexico, *Quaternary Research*, v. 50, p. 283-289. **(B2, C1, F1, I2)**
- Kukla, G.J., Clement, A.C., Cane, M.A., Gavin, J.E., and Zebiak, S.E., 2002, Last interglacial and early glacial ENSO: *Quaternary Research*, v. 58, no. 1, p. 27-31. **(B1, C1)**
- Lehner, F., Wahl, E.R., Wood, A.W., Blatchford, D.B., and Llewellyn, D., 2017, Assessing recent declines in Upper Rio Grande runoff efficiency from a paleoclimatic perspective: *Geophysical Research Letters*, v. 44, p. 4124-4133. **(B2, C1, I3)**
- LeMone, D.V., and Johnson, R.R., 1969, Neogene flora from the Rincon Hills, Dona Ana County, New Mexico: *New Mexico Bureau of Mines and Mineral Resources, Circular 104*, p. 77-88. **(B1, C1)**
- Leopold, L.B., 1951, Pleistocene climate in New Mexico: *American Journal of Science*, v. 249, p. 152-168. **(B2, C1, I1)**
- Lindsay, E.H., 1984, Late Cenozoic mammals from northwestern Mexico: *Journal of Vertebrate Paleontology*, v. 4, p. 208-215. **(B1, C1)**
- Lindsay, E.H., Johnson, N.M., and Opdyke, N.D., 1976, Preliminary correlation of North American Land mammal ages and geomagnetic chronology; *in* *Studies on Cenozoic paleontology and stratigraphy*, Claude W. Hibbard Memorial, volume 3: *University of Michigan Papers in Paleontology*, v. 12, p. 111-119. **(B1, C1)**
- Lindsay, E.H., Opdyke, N.D., and Johnson, N.M., 1984, Blancan-Hemphillian Land Mammal Ages and Late Cenozoic mammal dispersal events: *Annual Review of Earth and Planetary Sciences*, v. 12, p. 445-488. **(B1, C1)**
- Llewellyn, D., and Vaddey, S., 2013, West-wide climate risk assessment: Upper Rio Grande impact assessment: U.S. Bureau of Reclamation, Upper Colorado Region, 169 p.
<https://www.usbr.gov/watersmart/baseline/docs/urgla/URGIAMainReport.pdf> **(B2, B3, C1, D1)**
- Long, A., Hansen, R.M., and Martin, P.S., 1974, Extinction of the Shasta Ground Sloth: *Geological Society of America Bulletin*, v. 85, p. 1843-1848. **(B2, C1)**
- Lorenz, E., 1963, Deterministic non-periodic flow: *Journal of the Atmospheric Sciences*, v. 20, no. 2, p. 130-141. **(C1, D1)**
- Lorenz, E., 1976, Nondeterministic theories of climate change: *Quaternary Research*, v. 60, issue 4, p. 495-506. **(C1, D1)**
- Love, D.W., and Hawley, J.W., 2010, *Geology of the Montano Site Complex- Chapter 3 (p. 3-1 to 3-32); and Data synthesis, interpretation and summary-Chapter 13: The nature of the agricultural system (p. 13-5 and 13-6), in Report on 1988 data recovery at the Montano Site Complex, LA 33223; City of Albuquerque, New Mexico; and Subsequent analysis of collections (NMCRIS No. 116852). Report No. CEC-2009-12, submitted by Criterion Environmental Consulting, 4801 Lang Avenue NE, Suite 110, Albuquerque, NM 87109. Submitted to: Wilson & Company, Inc. 4900 Lang Avenue NE, Albuquerque, NM 87109; and City of Albuquerque, One Civic Plaza NW, Albuquerque, NM 87102. March 22, 2010. (B2, C1, C3, I3)*
- Lucas, S.G., and Oakes, W., 1986, Pliocene (Blancan) vertebrates from the Palomas Formation, south-central New Mexico: *New Mexico Geological Society Guidebook 37*, p. 249-255. **(B1, C1)**
- Lucas, S.G., Morgan, G.S., Hawley, J.W., and Gordon, M.E., 2002, Late Pleistocene Lake Otero, Tularosa Basin, southern New Mexico: *Current Research in the Pleistocene*, v. 19, p. 59-61. **(B2, C1, I2)**
- Lucas, S.G., Morgan, G.S., Hawley, J.W., and Love, D.W., 2002, Mammal footprints from the Upper Pleistocene of the Tularosa Basin, Dona Ana County, New Mexico: *New Mexico Geological Society Guidebook 53*, p. 285-288. **(B2, C1, I2)**
- Lucas, S.G., Morgan, G.S., Love, D.W., and Connell, S.D., 2017, The first North American mammoths: Taxonomy and chronology of early Irvingtonian (early Pleistocene) *Mammuthus* from New Mexico: *Quaternary International*: v. 443, 12 p. **(B1, C1)**
- Lucas, S.G., Morgan, G.S., Estep, J.W., Mack, G.H., and Hawley, J.W., 1999, Co-occurrence of the Proboscideans *Cuvieronius*, *Stegomastodon*, and *Mammuthus* in the Lower Pleistocene of Southern New Mexico: *Journal of Vertebrate Paleontology*, v. 19, no. 3, pp. 595-597. **(B1, C1)**

- Lyle, M., Heusser, L., Ravelo, C., Yamamoto, M., Barron, J., Diffenbaugh, N.S., Herbert, T., and Andreasen, D., 2012, Out of the tropics: The Pacific, Great Basin Lakes, and Late Pleistocene water cycle in the western United States: *Science*, v. 337, issue 6102, p. 1629-1633. **(B2, C1, I1)**
- Mack, G.H., Cole, D.R., James, W.C., Giordano, T.H., and Salyards, S.L., 1994, Stable oxygen and carbon isotopes of pedogenic carbonate as indicators of Plio-Pleistocene paleoclimate in the southern Rio Grande rift, south-central New Mexico: *American Journal of Science*, v. 294, p. 621-640. **(B1, C1, C3)**
- Madsen, D.B., Davis, L.G. Rhode, D., and Oviatt, C.G., 2022, Comment on “Evidence of humans in North America during the Last Glacial Maximum:” *Science*, v. 373, issue 6577, p. 1-2. **(B2, C1, I2)**
- Mann, M.E., Bradley, R.S., and Hughes, M.K., 1999, Northern hemisphere temperatures during the past millennium: inferences, uncertainties, and limitations: *Geophysical Research Letters*, v. 26, p. 759-762. **(C1, D1)**
- Mantua, N.J., and Hare, S.R., 2002, The Pacific decadal oscillation: *Journal of Oceanography*, v. 58, p. 35-42. **(C1)**
- Marsh, G.P., 1865, *Man and nature: Or, Physical geography as modified by human action*: New York, Charles Scribner, 560 p. **(C1, E3)**
- Martin, P.S., 1963a, Geochronology of pluvial Lake Cochise, southern Arizona, II. Pollen analysis of a 42-meter core: *Ecology*, v. 44, p. 436-444. **(B2, C1, I2)**
- Martin, P.S., 1963b, *The last 10,000 years, a fossil pollen record of the American Southwest*: University of Arizona Press, 87 p. **(B2, C1)**
- Martin, P.S., and Mehringer, P.J., Jr., 1965, Pleistocene pollen analysis and biogeography of the southwest, in Wright, H.E., Jr., and Frey, D.G., eds., *The Quaternary of the United States*: Princeton University Press, p. 433-451. **(B2, C1)**
- Martínez-Sifuentes, A.R., Villanueva-Díaz, J., Carlón-Allende T., and Estrada-Ávalos, J., 2020, 243 years of reconstructed streamflow volume and identification of extreme hydroclimatic events in the Conchos River Basin, Chihuahua, Mexico: *Trees*, v. 34, p. 1347-1361. **(B3, C1, F3)**
- Mathers, C., Mitchem, J.M., and Haecker, C.M., eds., 2013, *Native and Spanish New Worlds—Sixteenth-Century Entradas in the American Southwest and Southeast (Amerind Studies in Anthropology Series)*: University of Arizona Press, 382 p. ISBN 978-0-8165-3020-5 **(B3, C1)**
- McCabe, J.G., and Dettinger, M.D., 1999, Decadal variations in the strength of ENSO teleconnections with precipitation in the western United States: *International Journal of Climatology*, v. 19, 1399-1410. **(C1)**
- McCraw, D.J., 1985, *A Phytogeographic History of Larrea in Southwestern New Mexico Illustrating the Historical Expansion of the Chihuahuan Desert*: University of New Mexico, master's thesis, 137 p. **(B2, C1)**
- McDonald, H.G., 2022, Paleocology of the extinct Shasta ground sloth. *Nothrotheriops shastensis* (Xenarthra, Notrotheridae): The physical environment, in Morgan, G.S., et al., eds., *Late Cenozoic Vertebrates from the American Southwest: A tribute to Arthur H. Harris*: New Mexico Museum of Natural History and Science, Bulletin 88, p. 22-44. **(B2, C1)**
- McKinnon, K.A., Poppick, A., and Simpson, I.R., 2021, Hot extremes have become drier in the United States Southwest: *Nature Climate Change*, v. 11, no. 7, p. 598-604. **(C1)**
- Meinzer, O.E., 1911, *Geology and water resources of Estancia Valley, New Mexico*: U.S. Geological Survey Water-Supply Paper 275, 89 p. **(B2, C1, C2a, D1, G1, I1, I2)**
- Meinzer, O.E. and Hare, R.F., 1915, *Geology and water resources of the Tularosa Basin, New Mexico*: U.S. Geological Survey Water-Supply Paper 343, 317 p. **(B2, C1, C2a, D1, G1, I2)**
- Meinzer, O.E., 1922, Map of the Pleistocene lakes of the Basin and Range province and its significance: *Geological Society of America Bulletin*, v. 33, issue 3, p. 541-552. **(B2, C1, D1, I1)**
- Meinzer, O.E., and Kelton, F.C., 1912, *Geology and water resources of Sulphur Springs Valley, Arizona*: U.S. Geological Survey Water-Supply Paper 320, 231 p. **(B2, C1, D1, G1, I1)**
- Meixner, T., Manning, A.H., Stonestrom, D.A., Allen, D.M., Ajami, H., Blasch, K.W., Brookfield, A.E., Castro, C.L., Clark, J.F., Gochis, D.J., Flint, A.L., Neff, K.L., Niraula, R., Rodell, M., Scanlon, B.R., Singha, K., and Walvoord, M.A., 2016, Implications of projected climate change for groundwater recharge in the western United States: *Journal of Hydrology*, v. 534, p. 124-138. **(C1, D2)**
- Meko, D.M., 1990, Inferences from tree rings on low frequency variations in runoff in the interior western United States, in *Proceedings of the Sixth Annual Pacific Climate Workshop*: Sacramento, California Department of Water Resources, Interagency Ecological Studies Program, Technical Report 23, p. 123-127. **(B2, B3, C1)**
- Menking, K.M., and Anderson, R.Y., 2003, Contributions of La Niña and El Niño to Middle Holocene drought and late Holocene moisture in the American Southwest: *Geology*, v. 31, p. 937-940. **(B2, C1)**
- Metcalf, A.L., 1967, *Late Quaternary mollusks of the Rio Grande Valley, Caballo Dam to El Paso, Texas*: El Paso, Texas Western Press, University of Texas at El Paso, Science Series No. 1, 62 p. **(B2, C1, C2a)**

- Metcalfe, A.L., 1969, Quaternary surface sediments and mollusks – Southern Mesilla Valley, New Mexico and Texas: New Mexico Geological Society Guidebook 20, p. 158-164. **(B2, C1, C2a)**
- Metcalfe, A.L., 1977, Some Quaternary molluscan faunas from the northern Chihuahuan Desert and their paleoecological implications; *in* Wauer, R.H., and Riskind, D.H., Transactions, Symposium on the biological resources of the Chihuahuan Desert region, Alpine, Texas, October, 1974: Washington, D.C., U.S. Government Printing Office (U.S. National Park Service Transactions and Proceedings Series No. 3), p. 53-66. **(B2, C1, C2a)**
- Metcalfe, A.L., 1997, Land snails of New Mexico from an historical zoogeographical point of view, *in* Metcalfe, A.L., and Smartt, R.A., eds., 1997, Land snails of New Mexico: New Mexico Museum of Natural History and Science Bulletin 10, p. 71-108. **(B2, B3, C1, C2b)**
- Metcalfe, A.L., and Smartt, R.A., eds., 1997, Land snails of New Mexico: New Mexico Museum of Natural History and Science Bulletin 10, 145 p. **(B2, B3, C1, C2b)**
- Metcalfe, S., Bimpson, A., Courtice, A.J., and O'Hara, S., 1997, Climate change at the monsoon/westerly boundary in northern Mexico: Journal of Paleolimnology, v. 17, p. 155-171. **(B2, C1, F3, I2)**
- Metcalfe, S., Say, A., Black, S., McCulloch, R., and O'Hara, S., 2002, Wet conditions during the last glaciation in the Chihuahuan Desert, Alta Babicora basin, Mexico: Quaternary Research, v. 57, p. 91-101. **(B2, C1, F3, I2)**
- Miller, R.R., 1981, Coevolution of deserts and pupfishes (Genus *Cyprinodon*) in the American Southwest, *in* Naiman, R.J. and Stoltz, D.L., eds., Fishes in North America deserts: New York, John Wiley and Sons, p. 39-94. **(B1, B2, C1, D1, I1, I3)**
- Miller, R.R., and Echelle, A.A., 1975, *Cyprinodon tularosa*, a new cyprinodontid fish for the Tularosa Basin, New Mexico: The Southwestern Naturalist, v. 19, no. 4, p. 365-377. **(B1, B2, C1, D1, I2)**
- Milly, P.C.D., and Dunne, K.A., 2020, Colorado River flow dwindles as warming-driven loss of reflective snow energizes evaporation: Science v. 367, no. 6483, p. 1252-1255. **(C1)**
- Milly, P.C.D., Betancourt, J., Falkenmark, M., Hirsch, R.M., Kundzewicz, Z.W., Lettenmaier, D.P., and Stouffer, R.J., 2008, Stationarity is dead: Whither water management?: Science, v. 319, no. 5863, p. 573-574. **(C1, D1)**
- Minckley, W.L., 1969, Environments of the Bolsón of Cuatro Ciénegas, Coahuila, Mexico, with special reference to aquatic biota: University of Texas at El Paso, Science Series 2, p. 1-65. **(B2, C1, F3, I1)**
- Minckley, W.L., Hendrickson, D.A., and Bond, C.E., 1986, Geography of western North American freshwater fishes: descriptions and relationships to intracontinental tectonism, *in* Hocutt, C.H. and Wiley, E.O., eds., The Zoogeography of North American Freshwater Fishes: New York, John Wiley and Sons, p. 519-613. **(B1, B2, C1, D1, I1)**
- Monger, H.C., Buck, B.J., Hawley, J.W., and Rachal, D., 2012, Geochronology of the Bolson sand sheet, New Mexico and Texas, and its archaeological significance: Discussion: Geological Society of America Bulletin; v. 124, no. 5/6, p. 1552-1556, 3 figures. **(B2, C1, C2b, C3)**
- Monger, H.C., Cole, D.R., Buck, B.J., and Gallegos, R.A., 2009, Scale and the isotopic record of C4 plants in pedogenic carbonate: from the biome to the rhizosphere: Ecology, v. 90, p. 1498-1511. **(C1, C3)**
- Monger, H.C., Cole, D.R., Gish, J.W., and Giordano, T.H., 1998, Stable carbon and oxygen isotopes in Quaternary soil carbonates as indicators of ecogeomorphic changes in the northern Chihuahuan Desert, USA: Geoderma, v. 82, p. 137-172. **(B2, C1, C3)**
- Morgan, G.S., 2022, Moles of the genus *Scalopus* (Mammalia: Soricomorpha: Talpidae) from the late Pliocene and early Pleistocene (Blancan) of New Mexico, *in* Morgan, G.S. et al., eds., Late Cenozoic Vertebrates from the American Southwest: A tribute to Arthur H. Harris: New Mexico Museum of Natural History and Science, Bulletin 88, p. 139-155. **(B1, C1)**
- Morgan, G.S., and Harris, A.H., 2015, Pliocene and Pleistocene vertebrates of New Mexico, *in* Lucas, S.G., and Sullivan, R.M., eds., Fossil Vertebrates in New Mexico: New Mexico Museum of Natural History and Science, Bulletin 68, p. 233-247. **(B1, C1)**
- Morgan, G.S., and Lucas, S.G., 2002, Pleistocene vertebrates of the White Sands Missile Range, southern New Mexico: New Mexico Geological Society Guidebook 53, p. 267-276. **(B1, C1)**
- Morgan, G.S., and Lucas, S.G., 2003, Mammalian biochronology of Blancan and Irvingtonian (Pliocene and early Pleistocene) faunas from New Mexico: Bulletin of the American Museum of Natural History, v. 278, p. 269-320. **(B1, C1)**
- Morgan, G.S., and Lucas, S.G., 2005, Pleistocene vertebrates in New Mexico from alluvial, fluvial, and lacustrine deposits, *in* Lucas, S.G., et al., eds., New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 185-231. **(B1, C1)**

- Morgan, G.S., Sealey, P.L., Jochems, A.P., and Gensler, P.A., 2018, Late Pliocene (Blancan) vertebrates from the Camp Rice Formation in the vicinity of Hatch, Dona Ana and Sierra Counties, southern New Mexico, in Lucas, S.G., and Sullivan, R.M., eds., *Fossil Record 6: New Mexico Museum of Natural History and Science, Bulletin 79*, v. 2, p. 513-553. **(C1, C2b)**
- Morgan, G.S., Hulbert, H.C., Jr., Gottlieb, E.S., Amato, J.M., Mack, G.H., Jonell, T.N., 2017, The tapir *Tapirus* (Mammalia: Perissodactyla) from the late Pliocene (early Blancan) Tonuco Mountain Local Fauna, Camp Rice Formation, Doña Ana County, southern New Mexico: *New Mexico Geology*, v. 39, no. 2, p. 28-39. **(C1, C2b)**
- Moya, H., 2007, Possible effects of border fence construction and operation on fauna. Specialist discussion, in de la Parra, C., and Córdova, A., eds., *A barrier to our shared environment: The border fence between the United States and Mexico*: Mexico, DF; Secretaría de Mejoramiento de Ambiente y Recursos Naturales, p. 77-86. **(C1, E3, F1)**
- Mumme, S.P., 2003, Revising the 1944 Water Treaty: Reflections on the Rio Grande drought crisis and other matters: *Journal of the Southwest*, v. 45, p. 649-670. **(C1, E3, F1)**
- Newell, N.D., 1963, Crises in the History of Life: *Scientific American*, v. 208, no. 2, p. 76-92. **(B1, C1)**
- NMOSE (New Mexico Office of the State Engineer), website: <https://www.ose.nm.gov/> **(C1, D1)**
- NMSU State Climate Network: Aug. 2004, Las Cruces Plant Science Center Website, <https://leyendeckersc.nmsu.edu/> **(C1)**
- Nordt, L., 2003, Late Quaternary fluvial landscape evolution in desert grasslands of northern Chihuahua, Mexico: *Geological Society of America Bulletin*, v. 115, no. 5, p. 596-606. **(B2, C1, C2b, F3)**
- Nyachoti, S., 2016, Application of uranium and strontium isotopes as salinity and paleo-environmental tracers: Insight from the Rio Grande river and pedogenic carbonates in dryland soils of Southwest, USA: University of Texas at El Paso, doctoral dissertation, 231 p. **(C1, C3, C4, H3)**
- Omernik, J.M., 2004, Perspectives on the nature and definition of Ecological Regions: *Environmental Management*, p. 34 – Supplement 1, p. 27-38. **(C1)**
- Ortega-Ramírez, J.R., Valiente-Banuet, A., Urrutia-Fucugauchi, J., Mortera-Gutierrez, C.A., and Alvarado-Valdéz, G., 1998, Paleoclimatic changes during the late Pleistocene-Holocene in Laguna Babicora, near the Chihuahuan Desert, Mexico: *Canadian Journal of Earth Science*, v. 35, p. 1168-1179. **(B2, C1, F3, I2)**
- Overpeck, J.T., and Udall, B., 2020, Climate change and aridification of North America: *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, v. 117, no. 22, p. 11856-11858. **(C1, D1)**
- Palacios-Fest, M.R., Carreño, A.L., Ortega-Ramírez, J.R., and Alvarado-Valdéz, G., 2002, A paleoenvironmental reconstruction of Laguna Babicora, Chihuahua, Mexico based on ostracode paleoecology and trace element shell chemistry: *Journal of Paleolimnology*, v. 27, p. 185-206. **(B2, C1, F3, I2)**
- Pascolini-Campbell, M., Seager, R., Pinson, A., and Cook, B.I., 2017, Covariability of climate and streamflow in the Upper Rio Grande from interannual to interdecadal timescales: *Journal of Hydrology: Regional Studies*, v. 13, p. 58-71. **(C1)**
- Paskus, L., 2020, *At the Precipice – New Mexico’s Changing Climate*: University of New Mexico Press, 200 p. ISBN 978-0-8263-5911-7 **(A2, C1)**
- Penndorf, J., 2018, Adapting for the effects of climate change: *Urban Land*, v. 77, no. 3, p. 75-78. **(C1, E3)**
- Pennisi, E., 2022, Hard ‘skin’ on the surface of soils helps keep dust storms at bay – Climate and trampling threaten “biocrusts,” allowing wind to attack dry soils: *Science*, v. 376, issue 6595, p. 386-387. doi/10.1126/science.addo451 **(C1, C3)**
- Phillips, F., 2018, Climate change denial the real ‘fake news.’ *Albuquerque Journal–OPINION–EDITORIAL SCIENCE AND CLIMATE* Section, Sunday, July 8, 2018, p. A11. **(A3, C1)**
- Phillips, F.M., Hall, G.E., and Black, M.E., 2011, *Reining in the Rio Grande – People, Land, and Water*: University of New Mexico Press, 252 p. **(A2, B3, C1, D1, E3)**
- Pigati, J.S., Springer, K.B., Bennett, M.R., Bustos, D., Urban, T.M., Holliday, V.T., Reynolds, S.C., and Odess, D., 2022, Response to comment on “Evidence of humans in North America during the Last Glacial Maximum”: *Science*, v. 375, issue 6577, p. 1-2. **(B2, C1, I2)**
- Pinkava, D.J., 1977, Vegetation and flora of the Cuatro Ciénegas Basin, Coahuila, Mexico, in Wauer, R.H., and Riskind, D.H., *Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3*, p. 327-333. **(C1, F3, I1)**
- Polyak, V.J., Rasmussen, J.B.T., and Asmeron, Y., 2004, Prolonged wet period in the southwestern United States through the younger Dryas: *Geology*, v. 32, no. 1, p. 5-8. **(B2, C1)**

- Polyak, V.J., Cokendolpher, J.C., Norton, R.A., and Asmeron, Y., 2001, Wetter and cooler late Holocene climate in the southwestern United States from mites preserved in stalagmites: *Geology*, v. 29, no. 7, p. 643-646. **(B2, C1)**
- Poore, R.Z., Pacich, M.J., and Grissino-Mayer, H.D., 2005, Record of the North American southwest monsoon from Gulf of California sediment cores: *Geology*, v. 33, p. 209-212. **(C1)**
- Powell, A.M., and Turner, B.L., 1977, Aspects of the plant biology of the gypsum outcrops of the Chihuahuan Desert, *in* Wauer, R.H., and Riskind, D.H., Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, p. 315-325. **(C1, C3)**
- Quade, J., Cerling, T.E., and Bowman, J.R., 1989, Systematic variations in the carbon and oxygen isotopic composition of pedogenic carbonate along elevation transects in the southern Great Basin, United States: *Geological Society of America Bulletin*, v. 101, p. 464-475. **(C1, C3, C4)**
- Quinn, W.H., Neal, V.T., and Antuñez de Mayo, S.E., 1987, El Niño occurrences over the past four and a half centuries: *Journal of Geophysical Research*, v. 92, no. C13, p. 14,449-14,461. **(C1)**
- Randel, W.J., 2018, The seasonal fingerprint of climate change – Satellite data provide evidence for human impacts on the seasonal temperature cycle: *Science*, v. 361, p. 227-228. **(C1)**
- Rango, A., 2006, Snow: The real water supply for the Rio Grande basin, *in* Anderson, K.S.J., ed., *Science on the Border*: New Mexico Journal of Science, v. 44, p. 99-118. **(C1, F1)**
- Räsänen, M.E., Auri, J.M., Huitti, J.V., Klap, A.K., and Virtasalo, J.J., 2009, A shift from lithostratigraphic to allostratigraphic classification of Quaternary glacial deposits: *GSA Today*, v. 19, no. 2, p. 4-11. **(C1, D1)**
- Reisner, M., 1993, Cadillac desert: The American West and its disappearing water (revised and updated edition): New York, Penguin Books, 592 p. **(A2, B3, C1)**
- Renteria-Villalobos, M., Hanson, R.T., and Eastoe, C., 2022, Evaluation of climate variability on sustainability for transboundary water supply in Chihuahua, Mexico: *Journal of Hydrology: Regional Studies*, v. 44, 19 p. **(B3, C1, F3)**
- Robinson, W., 1970, Ft. Wingate tree-ring sequence (NM031). **(B2, B3, C1)**
- Schmidt, R.H., Jr., 1973, A geographical survey of Chihuahua: El Paso, Texas Western Press (UTEP), Southwestern Studies Monograph No. 37, 63 p. **(C1, C2a, F3)**
- Schmidt, R.H., Jr., 1979, A climatic delineation of the “real” Chihuahuan Desert region: *Phytologia*, v. 44, p. 129-133. **(C1, F1)**
- Schmidt, R.H., Jr., 1986, Chihuahuan climate, *in* *Invited papers from the Second Symposium on Resources of the Chihuahuan Desert Region – United States and Mexico II*: Alpine, Texas, Chihuahuan Desert Research Institute, October, 1983, p. 40-63. **(C1, F1)**
- Schmidt, R.H., Jr., 1989, The arid zones of Mexico: Climatic extremes and conceptualization of the Sonoran Desert: *Journal of Arid Environments*, v. 16, p. 241-256. **(C1, F3)**
- Scott, A.G., 1976, Revised estimates of mean-annual runoff summary of precipitation and discharge data for Post Headquarters area, White Sands Missile Range, New Mexico: U.S. Geological Survey Open-File Report 76-86, 30 p. **(C1)**
- Scurlock, D., 1998, From the Rio to the Sierra: An environmental history of the Middle Rio Grande basin: U.S. Department of Agriculture, Rocky Mountain Research Station, Forest Service General Technical Report, RMRS-GTR-5, 440 p. **(B3, C1)**
- Seager, R., Lis, N., Feldman, J., Ting, M., Williams, A. P., Nakamura, J., Liu, H., and Henderson, N., 2017, Whither the 100th meridian? The once and future physical and human geography of America’s arid-humid divide. Part I: The story so far: *Earth Interactions*, v. 22, p. 22. **(C1)**
- Seager, R., Ting, M., Li, C., Naik (Henderson), N., Cook, B., Nakamura, J., and Liu, H., 2013, Projections of declining surface-water availability for southwestern United States: *Nature Climatic Change*, v. 3, p. 482-486. **(C1)**
- Seager, R., Ting, M., Held, I., Kushnir, Y., Lu, J., Vecchi, G., Huang, H.P., Harnik, N., Leetmaa, A., Lau, N.C., Li, C., Velez, J., and Naik, N., 2007, Model Projections of an Imminent Transition to a More Arid Climate in Southwestern North America: *Science*, v. 316, issue 5828, p. 1181-1184. **(C1)**
- Seager, R., Tzarnov, A., and Nakamura, J., 2009, Drought in the southwestern United States: Causes, variability over the last millennium, and the potential for future hydroclimatic change: *Journal of Climate*, v. 22, p. 5021-5045. **(C1)**
- Siegel, D.J., 2020, The future of geoscience in the context of emerging climate disruption: *GSA Today*, v. 30, no. 2, p. 4-5. **(B3, C1, D1)**

- Simons, E.L., and Alexander, N.L., 1964, Age of the Shasta ground sloth from Aden Crater, New Mexico: *American Antiquity*, v. 29, no. 3, p. 390-391. **(B2, C1)**
- Small, E.E., 2005, Climatic controls on diffuse groundwater recharge in arid and semiarid environments of the southwestern United States: *Water Resources Research*, v. 41, p. 18. **(C1, D2)**
- Smiley, T.L., Bryson, R.A., King, J.E., Kukla, G.J., and Smith, G.I., 1991, Quaternary paleoclimates, in Morrison, R.B., ed., *Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America*, v. K-2, p. 13-44. **(B2, C1)**
- Smith, G.A., 1994, Climatic influences on continental deposition during late-stage filling of an extensional basin, southeastern Arizona: *Geological Society of America Bulletin*, v. 106, p. 1212-1228. **(B1, C1, C2b)**
- Smith, G.A., Wang, Y., Cerling, T.E., and Geissman, J.W., 1993, Comparison of a paleosol-carbonate isotope record to other records of Pliocene-early Pleistocene climate in the western United States: *Geology*, v. 21, p. 691-694. **(C1, C2b)**
- Smith, G.I., 1991, Continental climatic records and their significance, in Smiley, T.L., and four others, *Quaternary paleoclimates; in Morrison, R.B., ed., Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America*, v. K-2, p. 35-41. **(B1, B2, C1, I1)**
- Smith, G.I., and Street-Perrott, F.A., 1983, Pluvial lakes of the western United States, in Porter, S.C., ed., *Late Quaternary environments of the United States*, volume 1, *The Late Pleistocene*: University of Minnesota Press, p. 190-212. **(B2, C1, I1)**
- Smith, M.L., and Miller, R.R., 1986, The evolution of the Rio Grande Basin as inferred from its fish fauna, in Hocutt, C.H. and Wiley, E.O., eds., *Zoogeography of North American Freshwater Fishes*: New York, John Wiley and Sons, p. 457-485. **(B1, C1, C2a, I3)**
- Spaulding, W.G., and Graumlich, L.J., 1986, The last pluvial climatic episode of southwestern North America: *Nature*, v. 320, p. 441-444. **(B2, C1)**
- Spaulding, W.G., Leopold, E.B., and Van Devender, T.R., 1983, Late Wisconsin paleoecology of the American Southwest, in Porter, S.C., ed., *Late Quaternary Environments of the United States*, volume 1, *The Late Pleistocene*: University of Minnesota Press, p. 259-293. **(B2, C1)**
- Stahle, D.W., and Cleaveland, M.K., 1993, Southern oscillation extremes reconstructed from tree rings of the Sierra Madre Occidental and Southern Great Plains: *Journal of Climate*, v. 6, p. 129-140. **(C1)**
- Stegner, W., 1990, It all began with conservation: *Smithsonian*, v. 21 no.1, p. 35-43. **(C1, E3)**
- Stegner, W., 1998, *When sparrows fall—The making of the American West*: Edited with Preface by Page Stegner: New York, Henry Holt and Company, 359 p. ISBN 0-8050-6296-3 **(C1, E3)**
- Stein, R., Kanamatsu, T., Alvarez-Zarikian, C., Higgins, S.M., Channell, J.E.T., Aboud, E., Ohno, M., Acton, G.D., Akimoto, K., Bailey, I., Björklund, K.R., Evans, H., Nielsen, S.H.H., Fang, N., Ferretti, P., Gruetzner, J., Guyodo, Y.J.B., Hagino, K., Harris, R., Hatakeda, K., Hefter, J., Judge, S.A., Kulhanek, D.K., Nanayama, F., Rashid, H., Sierro Sanchez, F.J., Voelker, A., and Zhai, Q., 2006, North Atlantic Paleoceanography: The Last Five Million Years: *Eos Transactions American Geophysical Union*, v. 87, issue 13, p. 129-133. **(B1, B2, C1)**
- Stockton, C.W., 1990, Climatic, hydrologic, and water-supply inferences from tree rings: *Civil Engineering Practice*, p. 37-52. **(B3, C1, D1)**
- Stockton, C.W., Quinlan, P.T., and Boggess, W.R., 1983, Climate change and surface-water availability in the Upper Rio Grande basin, in *Region and State Water Resources Planning and Management*: American Water Resources Association, p. 311-321. **(B3, C1)**
- Stone, G.H., 1901, Notes on the extinct glaciers of Arizona and New Mexico: *Science*, v. 14, p. 798. **(B2, C1)**
- Stone, W.J., 1973, The hydrometeorological ground truth facility at White Sands Missile Range, New Mexico: U.S. Army Electronics Commission Technical Report 5513, 34 p. **(C1)**
- Stone, W.J., 1998, Origin and hazard implications of a matrix-free boulder deposit on the east flank of the Organ Mountains, south-central New Mexico: *New Mexico Geological Society Guidebook 49*, p. 75-77. *Includes brief account of the 8/19/1978 WSMR Hwy flash flood.* **(C1, C2b)**
- Stone, W.J., 2002, Quaternary flooding of the Tularosa Basin? – Implications of a soil-water-chloride profile from WSMR: *New Mexico Geological Society Guidebook*, 53rd Field Conference, p. 49-50. **(C1, C2b)**
- Stone, W.J., and Brown, D.R., 1975, Rainfall-runoff relationships for a small semiarid watershed, western flank San Andres Mountains, New Mexico: *New Mexico Geological Society Guidebook 26*, p. 205-212. **(C1)**
- Stone, W.J., Minnis, M., Thompson, S., and Nunn, S.C., 1990, *The Rio Grande Basin: Proceedings, The Rio Grande Basin – Global Climate Change Scenarios*, New Mexico Water Resources Research Institute Report No. M24, p. 17-26. **(C1, I3)**

- Swetnam, T.W., and Betancourt, J.L., 1998, Mesoscale disturbance and ecological response to decadal climate variability in the American Southwest: *Journal of Climate*, v. 11, p. 3128-3147. **(B2, C1)**
- Székely, A. [Ambassador], 1991, An uncertain future: Climate change and the US-Mexico Agenda: Transboundary Resources Report, v. 6, no. 3, p. 1-2. **(C1, E3, F1)**
- Terracon, John Shomaker and Associates, I., Livingston, A., LLC, INC., Zia Engineering and Environmental, I., and Southwest, S., 2003, The New Mexico Lower Rio Grande Regional Water Plan: Prepared for the Lower Rio Grande Water Users Organization. https://www.ose.nm.gov/Planning/RWP/11_LRG/1999/LOWER-RIO-GRANDE-REGIONAL-WATER-PLAN.pdf **(C1)**
- Thomas, H.E., 1962, The meteorologic phenomenon of drought in the Southwest – Drought in the Southwest, 1942-56: U.S. Geological Survey, Professional Paper 372-A, p. A1-A43. **(C1)**
- Thomas, H.E., 1963, General summary of the effects of drought in the southwest, 1942-1956: U.S. Geological Survey Professional Paper 372-H, p. H1-H22. **(C1, D1)**
- Thomas, H.E., and Leopold, L.B., 1964, Ground Water in North America: *Science*, v. 143, no. 3610, p. 1001-1003. **(C1, D1)**
- Thomas, H.E., and others, 1963b, Effects of drought in basins of interior drainage – Drought in the Southwest, 1942-1956: U.S. Geological Survey Professional Paper 372-E, p. E1-E51. **(C1, D1)**
- Thompson, R.S.C., 1991, Pliocene environments and climates in the western United States: *Quaternary Science Reviews*, v. 10, p. 115-132. **(C1)**
- Thompson, R.S.C., Van Devender, T.R., Martin, P.S., Foppe, T., and Long, A., 1980, Shasta ground sloth. (*Nothrotheriops shastensis* Hoffstetter) at Shelter Cave, New Mexico: Environment and extinction: *Quaternary Research*, v. 14, p. 360-376. **(B2, C1)**
- Thompson, R.S.C., Whitlock, C., Bartlein, P.J., Harrison, S.P., and Spaulding, W.G., 1993, Climatic changes in the western United States since 18,000 yr B.P., in Wright, H.E., Jr., Kutzbach, E., Webb, T. III, Ruddiman, W.F., Street-Perrott, and Bartlein, P.J. eds., *Global climates since the last glacial maximum*: University of Minnesota Press, p. 468-515. **(C1)**
- Thomson, B.M., 2021, Stormwater capture in the arid southwest: Flood protection versus water supply: *Journal of Water Resources Planning and Management*, v. 147, no. 5, p. 8. **(C1)**
- Thomson, B.M., and Gutzler, D.S., 2022, VIII. Effect of climate change on extreme precipitation events and stormwater management in New Mexico in Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 91-105. **(B3, C1)**
- Thomson, B.M., and Phillips, F.M., 2022, IX. Impacts of warming climate on water quality in New Mexico in Dunbar, N.W., Gutzler, D.S., Pearthree, K.S., and Phillips, F.M., eds., *Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources*: NM Bureau of Geology and Mineral Resources Bulletin 164, p. 105-121. **(B3, C1)**
- Thunell, R., Tappa, E., Pride, C., and Kincaid, E., 1999, Sea-surface temperature anomalies associated with the 1997-1998 El Niño recorded in oxygen isotope composition of planktonic foraminifera: *Geology*, v. 27, no. 9, p. 843-846. **(C1)**
- Towler, E., Llewellyn, D., Prein, A., and Gilleland, E., 2020, Extreme-value analysis for the characterization of extremes in water resources: A generalized workflow and case study on New Mexico monsoon precipitation: *Weather and Climate Extremes*, v. 29, p. 11. **(B3, C1)**
- Triepke, F.J., Muldavin, E.H., and Wahlberg, M.M., 2019, Using climate projections to assess ecosystem vulnerability at scales relevant to managers: *Ecosphere*, v. 10, no. 9, p.e02854 **(C1)**
- Tweit, S.J., 1995, Barren, wild, and worthless: Living in the Chihuahuan Desert: University of New Mexico Press, 203 p. See chapter entitled "Terminus", p. 147-180. **(A2, B3, C1)**
- Udall, B., and Overpeck, J., 2017, The twenty-first century Colorado River hot drought and implications for the future: *Water Resources Research*, v. 53, no. 3, p. 2404-2418. **(C1)**
- U.S. Bureau of Reclamation (USBOR), Reclamation SECURE Water Act, 2021, Section 503(c) Reclamation Climate Change and Water, 226 p. **(C1)**
- U.S. Department of Commerce, 2001, Cooperative Weather Station Data Files: National Oceanic and Atmospheric Administration, National Climate Data Center. **(C1)**
- U.S. Department of Commerce-NOAA, 2005, Climatic summary for El Paso, Texas: National Oceanic and Atmospheric Administration. **(C1)**
- U.S. Department of Commerce-NOAA, 2015, Location of US Climate Divisions: National Oceanic and Atmospheric Administration, NOAA Research, Earth System Research Laboratory. **(C1)**

- U.S. Geological Survey, n.d., Water Resources Data, Calendar Year Streamflow Statistics: Online data retrieval system. <http://water.usgs.gov/nm/nwis/sw> (C1)
- U.S. Geological Survey, n.d., Climate-change data: Online data retrieval system, <http://climchange.cr.usgs.gov/info/sw> (C1)
- U.S. Geological Survey, n.d., Climate-change data: Online data retrieval system, <http://climchange.cr.usgs.gov/info/sw> (C1)
- Vanderhill, J.B., 1986, Lithostratigraphy, vertebrate paleontology, and magnetostratigraphy of Plio-Pleistocene sediments in the Mesilla Basin, New Mexico: University of Texas at Austin, doctoral dissertation, 311 p. (B1, C1, C2a)
- Van Devender, T.R., 1985, Climatic cadences and the composition of Chihuahuan Desert communities: The late Pleistocene packrat midden record, *in* Diamond, J., and Case, T.J., eds., *Community Ecology*: New York, Harper and Rowe, p. 285-299. (B2, C1)
- Van Devender, T.R., 1986, Pleistocene climates and endemism in the Chihuahuan Desert flora, *in* *Invited Papers from the Second Symposium on Resources of the Chihuahuan Desert Region-United States and Mexico*, Alpine, Texas, October, 1983: Alpine, Chihuahuan Desert Research Institute, p. 1-19. (B2, C1)
- Van Devender, T.R., 1990, Late Quaternary vegetation and climate in the Chihuahuan Desert, United States and Mexico, *in* Betancourt, J.L., Van Devender, T.R., and Martin, P.S., eds., *Packrat middens, the last 40,000 years of biotic change*: University of Arizona Press, p. 104-133. (B2, C1)
- Van Devender, T.R., 1995, Desert grassland history: Changing climates, evolution, biogeography, and community dynamics, *in* McClaren, M.P., and Van Devender, T.R., and Martin, P.S., eds., *The desert grassland*: University of Arizona Press, p. 68-99. (B2, C1)
- Van Devender, T.R., and Spaulding, W.G., 1979, Development of vegetation and climate in the southwestern United States: *Science*, v. 204, p. 701-710. (B2, C1)
- Van Devender, T.R., and Toolin, L.J., 1983, Late Quaternary vegetation of the San Andres Mountains, Sierra County, New Mexico, *in* Eidenbach, P.L., ed., *The prehistory of Rhodes Canyon*, New Mexico: Tularosa, NM, Human Systems Research, Inc., p. 33-54. (B2, C1)
- Van Devender, T.R., Betancourt, J.L., and Wimberly, M., 1984, Biogeographic implications of a packrat midden sequence from the Sacramento Mountains, south-central New Mexico: *Quaternary Research*, v. 22, p. 344-360. (B2, C1)
- Van Devender, T.R., and Worthington, R.D., 1977, The herpetofauna of Howell's Ridge Cave and the paleoecology of the northwestern Chihuahuan Desert; *in* Wauer, R.H., and Riskind, D.H., *Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region*, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, p. 85-106. (B2, C1)
- Van Devender, T.R., Thompson, R.S., and Betancourt, J.L., 1987, Vegetation history of the deserts of southwestern North America: The nature and timing of the late Wisconsin-Holocene transition, *in* Ruddiman, W.F., and Wright, H.E., Jr., eds., *North America and adjacent oceans since the last glaciation*: Geological Society of America, p. 323-352. (B2, C1)
- Van West, C.R., Windes, T.C., Levine, F., Grissino-Mayer, H.D., and Salzer, M.W., 2013, The role of climate in early Spanish-Native American interactions in the US Southwest, *in* Mathers, C., Mitchem, J.M., and Haecker, C.M., eds., *Native and Spanish New Worlds – Sixteenth-Century Entradas in the American Southwest and Southeast (Amerind Studies in Anthropology Series)*: University of Arizona Press, p. 81-98. (B2, C1)
- Varady, R.G., Scott, C.A., Wilder, M., Morehouse, B., Pineda Pablos, N., and Garfin, G.M., 2013, Transboundary adaptive management to reduce climate-change vulnerability in the western U.S.-Mexico border region: *Environmental Science Policy*, v. 26, p. 102-112. (C1, E3, F1)
- Viau, A.E., Gajewski, K., Fines, P., Atkinson, D.E., and Sawanda, M.C., 2002, Widespread evidence of 1500 year climate variability in North America during the past 14,000 years: *Geology*, v. 30, p. 455-458. (B2, C1)
- Wagner, J.D.M., Cole, J.E., Beck, J.W., Patchett, P.J., Henderson, G.M., Barnett, H.R., 2010, Moisture variability in the southwestern United States linked to abrupt glacial climate change. *Nature Geoscience*, v. 3, p. 110-113. (B2, C1)
- Walker, M.J.C., Johnsen, S., Rasmussen, S.O., Popp, T., Steffensen, J-P., Gibbard, P., et al., 2009, Formal definition and dating of the GSSP (Global Stratotype Section and Point) for the base of the Holocene using the Greenland NGRIP ice core, and selected auxiliary records: *Journal of Quaternary Science*, v. 24, p. 3-17. (B1, B2, C1)

- Walker, M.J.C., Head, M.J., Berkelhammer, M., Björck, S., Cheng, H., Cwynar, L., et al., 2018, Formal ratification of the subdivision of the Holocene Series/Epoch (Quaternary System/Period): two new Global Boundary Stratotype Sections and Points (GSSPs) and three new stages/subseries: *Episodes*, v. 41, no. 4, p. 213-223. **(B1, B2, C1)**
- Wang, L., Jiang, W.Y., Jiang, D.B., Zou, Y.F., Liu, Y.Y., Zhang, E.L., Hao, Q.Z., Zhang, D.G., Zhang, D.T., Peng, Z.Y., Xu, B., Yang, X.D., and Lu, H.Y., 2018, Prolonged heavy snowfall during the Younger Dryas: *Journal of Geophysical Research: Atmospheres*, v. 123, no. 24. **(A2, C1)**
- Waters, M.R., 1989, Late Quaternary lacustrine history and paleoclimatic significance of pluvial Lake Cochise, southeastern Arizona: *Quaternary Research*, v. 32, p. 1-11. **(B2, C1, C2a, I2)**
- Waters, M.R., and Haynes, C.V., 2001, Late Quaternary arroyo formation and climate change in the American Southwest: *Geology*, v. 29, p. 399-402. **(B2, C1, C2b)**
- Wauer, R.H., and Riskind, D.H., 1977, Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, USGPO: 1978 O - 258-713, 658 p. **(C1, F1)**
- Wells, S.G., and seven others, 1987, Geomorphology of glacial erosional features in the southern Sangre de Cristo Mountains of New Mexico, *in* Menges, C.M., ed., Quaternary tectonics, landform evolution, soil chronologies, and glacial deposits – Northern Rio Grande rift of New Mexico: Friends of the Pleistocene – Rocky Mountain Cell 1987 Field Trip Guidebook: Albuquerque, UNM, p. 195-203. **(C1)**
- Wells, P.V., 1977, Post glacial origin of the present Chihuahuan Desert less than 11,500 years ago, *in* Wauer, R.H. and Riskind, D.H., eds., Transactions of the symposium on the biological resources of the Chihuahuan Desert region, National Park Service Proceedings and Transactions Series, no. 3, p. 67-83. **(B2, C1)**
- Wells, P.V., 1979, An equable glaciopluvial in the West: Pleniglacial evidence of increased precipitation of a gradient from the Great Basin to the Sonoran and Chihuahuan Deserts: *Quaternary Research*, v. 12, no. 3, p. 311-325. **(B2, C1)**
- Wesling, J., 1988, Glacial chronology and soil development in Winsor Creek drainage basin, southernmost Sangre de Cristo Mountains, New Mexico: University of New Mexico, master's thesis, 186 p. **(C1)**
- Western Water Assessment (WWA) - Rio Grande Tree Flow 2008 Tree-ring reconstruction of streamflow and climate for the Rio Grande basin and adjacent basins [including Rio Grande near Otowi, NM from 1450-2002]: University of Colorado at Boulder. **(B2, B3, C1, D1)**
- Wilder, M., Scott, C.A., Pineda Pablos, N., Varady, R.G., Garfin, G.M., and McEvoy, J., 2010, Adapting Across Boundaries: Climate Change, Social Learning, and Resilience in the U.S.-Mexico Border Region: *Annals of the Association of American Geographers*, v. 100, p. 917-928. **(C1, E3, F1)**
- Williams, A.P., Cook, E.R., Smerdon, J.E., Cook, B.I., Abatzoglou, J.T., Bolles, K., Baek, S.H., Badger, A.M., and Livneh, B., 2020a, Large contribution from anthropogenic warming to an emerging North American megadrought: *Science*, v. 368, issue 6488, p. 314-318. **(B3, C1)**
- Williams, A.P., Cook, E.R., Smerdon, J.E., Cook, B.I., Abatzoglou, J.T., Bolles, K., Baek, S.H., Badger, A.M., and Livneh, B., 2020b, Erratum for the Report “Large contribution from anthropogenic warming to an emerging North American megadrought” by Park Williams, A., Cook, E.R., Smerdon, J.E., Cook, B.I., Abatzoglou, J.T., Bolles, K., Baek, S.H., Badger, A.M., and Livneh, B.: *Science*, v. 370, no. 6516, p. 367. **(B3, C1)**
- Winkler, D.E., Belnap, J., Hoover, D., Reed, S.C., and Duniway, M.C., 2019, Shrub persistence and increased grass mortality in response to drought in dryland systems: *Global Change Biology*, v. 25, no. 9, p. 3121-3135. **(C1)**
- Woodburne, M.O., and Swisher, C.C. III, 1995, Land mammal high resolution geochronology, intercontinental overland dispersals, sea level, climate, and vicariance, *in* Geochronology, time scales, and global stratigraphic correlation: SEPM Special Publication, no. 54, p. 335-364. **(B1, B2, C1)**
- Woodhouse, C.A., Meko, D.M., MacDonald, G.M., Stahle, D.W., Cook, E.R., and Turner, B.L., 2010, A 1,200-year perspective of 21st century drought in Southwestern North America: *Proceedings of the National Academy of Sciences of the United States of America*, v. 107, no. 50, p. 21283-21288. **(B2, B3, C1)**
- Woodhouse, C.A., Stahle, D.W., and Villanueva Díaz, J., 2012, Rio Grande and Rio Conchos water supply variability over the past 500 years: *Climate Research*, v. 51, p. 125-136. **(B3, C1, F1)**
- Yan, Y., Bender, M.L., Brook, E.J., Clifford, H.M., Kemeny, P.C., Kurbatov, A.V., et al., 2019, Two-million-year-old snapshots of atmospheric gases from Antarctic ice: *Nature*, v. 574, p. 663-666. **(B1, B2, C1)**
- Yanoff, S., and Muldavin, E., 2008, Grassland-shrubland transformation and grazing: A century-scale view of a Northern Chihuahuan Desert grassland: *Journal of Arid Environments*, v. 72, no. 9, p. 1594-1605. **(B3, C1)**

- York, J.C., and Dick-Peddie, W.A., 1969, Vegetation changes in southern New Mexico during the past hundred years, *in* McGinnies, W.G. and Goldman, B.J., *Arid lands in perspective*: University of Arizona Press, p. 155-166. **(B3, C1)**
- Zalasiewicz, J., Waters, C.N., Williams, M., and Summerhayes, C., eds., 2019. *The Anthropocene as a geological time unit: A guide to the scientific evidence and current debate*. Cambridge, UK; Cambridge University Press, 361 p. **(B1, B2, B3, C1, D1)**
- Zalasiewicz, J., Waters, C.N., Ellis, E.C., Head, M.J., Vidas, D., Steffen, W., Thomas, J.A., Horn, A., Summerhayes, C., Leinfelder, R., McNeill, J.R., Gałuszka, A., Williams, M., Barnosky, A.D., Richter, D. de B., Gibbard, P.L., Syvitski, J., Jeandel, C., Cearreta, A., Cundy, A.B., Fairchild, I.J., Rose, N.L., Ivar do Sul, J.A., Shotyk, W., Turner, S., Waple, M., and Zinke, J., 2021, *The Anthropocene: comparing its meaning in geology (chronostratigraphy) with conceptual approaches arising in other disciplines*: AGUPUBS Online Library, Wiley.com, 44 p. **(B1, B2, B3, C1, D1)**
- Ze'ev, G., and Smith, D.J., 2001, Interdecadal climate variability and regime-scale shifts in Pacific North America: *Geophysical Research Letters*, v. 28, p. 1515-1518. **(C1)**

C2. Geologic and Geomorphic Setting

C2a. Geologic and Geomorphic Setting: Pre-1990

- Akerston, W.A., 1970, Interpretation of sediments and vertebrate fossils in fill of Red Light Bolson, southeastern Hudspeth County, Texas, *in* *Geology of the southern Quitman Mountains area, Trans-Pecos Texas*: Society of Economic Geologists and Mineralogists, Permian Basin Section, Guidebook, Pub. 70-11, p. 82-87. **(C2a)**
- Albritton, C.C., and Bryan, K., 1939, Quaternary stratigraphy in the Davis Mountains, Trans-Pecos Texas: *Geological Society of America Bulletin*, v. 50, p. 1473-1474. **(C2a)**
- Albritton, C.C., Jr., and Smith, J.F., Jr., 1965, *Geology of the Sierra Blanca area, Hudspeth County, Texas*: U.S. Geological Survey Professional Paper 594-J, 131 p. **(C2a, D1, F1)**
- Amsbury, D.L., 1957, *Geology of the Pinto Canyon area, Presidio County, Trans-Pecos, Texas*: University of Texas at Austin, doctoral dissertation, 203 p. **(C2a)**
- Amsbury, D.L., 1958, *Geology of the Pinto Canyon area, Presidio County, Texas*: University of Texas, Bureau of Economic Geology, Quadrangle Map 22, with text. **(C2a)**
- Anderholm, S.K., 1985, Clay-size fraction and powdered whole-rock X-ray analyses of alluvial basin deposits in central and southern New Mexico: U.S. Geological Survey Open-File Report 85-163, 18 p. **(C2a, H2)**
- Anderson, R.E., 1971, Thin-skin distention in tertiary rocks of southeastern Nevada: *Geological Society of America, Bulletin*, v. 82, no. 1, p. 43-58. *See Stewart 1971*. **(C2a)**
- Bachman, G.O., and Mehnert, H.H., 1978, New K-Ar dates and late Pliocene to Holocene geomorphic history of the central Rio Grande region, New Mexico: *Geological Society of America Bulletin*, v. 89, no. 2, p. 283-292. **(C2a, I3)**
- Baker, C.L., 1927, Exploratory geology of a part of southwestern Trans-Pecos Texas, *in* *The Geology of Texas; Volume II, Structural and Economic Geology*: University of Texas Bulletin, No. 2745, 60 p. **(C2a, F1)**
- Baker, C.L., 1934, Major structural features of Trans-Pecos Texas, *in* *The Geology of Texas; Volume II, Structural and Economic Geology*: University of Texas Bulletin, No. 3401, p. 137-214. **(C2a)**
- Barker, D.S., 1987, Tertiary alkaline magmatism in Trans-Pecos Texas: *in* *Geological Society of America Special Publication No. 30*, p. 415-431. **(C2a)**
- Bautista, J., and Goodell, P., 1983, Bimodal volcanism in the Colonia México-Highway 10 area, Chihuahua, Mexico: *El Paso Geological Society, Pub 15*, p. 235-231. **(C2a)**
- Beehner, T.S., 1989, *Geologic and geomorphic analysis of the Organ Mountains Fault, south-central New Mexico*: Texas A&M University, master's thesis, 88 p. **(C2a)**
- Berg, E.L., 1969, *Geology of Sierra de Samalayuca, Chihuahua, Mexico*: New Mexico Geological Society Guidebook 20, p. 176-182. **(C2a, F3)**
- Berge, T.B., 1982, Structural evolution of the northeastern Chihuahua Tectonic Belt, *in* Powers, R.B., ed., *Geologic Studies of the Cordilleran Thrust Belt, Volume I: Rocky Mountain Association of Geologists*, p. 451-457. **(C2a)**
- Bersch, M.G., 1977, *Petrology and geology of the southern West Potrillo basalt field, Dona Ana County, New Mexico*: University of Texas at El Paso, master's thesis, 59 p. **(C2a, C4, F1)**
- Blount, J.G., 1983, *The Geology of the Los Filtros area, Chihuahua, Mexico*: El Paso Geological Society, Publication 15, p. 157-164. **(C2a)**

- Böse, E., 1910, Monografía geológica y paleontológica del Cerro de Muleros cerca de Ciudad Juárez, Estado de Chihuahua, y descripción de la fauna cretácea de La Encanatada, Placer de Guadalupe, Estado de Chihuahua: Instituto Geológico de Mexico, Bulletin 25, 193 p. **(C2a)**
- Brand, D.C., 1937, The natural landscape of northwestern Chihuahua: University of New Mexico Press, 74 p. **(B2, C, C1, C2a, F3)**
- Brown, M.L., 1985, Geology of the Sierra de los Chinos-Cerro de la Cueva area, northwest Chihuahua, Mexico: University of Texas at El Paso, master's thesis, 81 p. **(C2a)**
- Bryan, K., 1923, Erosion and sedimentation in the Papago country, Arizona: U.S. Geological Survey, Bulletin 730-B, p. 19-90. **(C2a, A2)**
- Bryan, K., 1925, Date of channel trenching (arroyo cutting) in the arid Southwest: Science, n.s., v. 62, p.338-344. **(C2a)**
- Bryan, K., 1936, Processes of formation of pediments at Granite Gap, New Mexico: Zeitschrift für Geomorphologie, Bd. 9, H. 4, p.125-135. **(C2a)**
- Bryan, K., 1940a, Erosion of the valleys of the southwest: New Mexico Quarterly, p. 227-232. **(C2a)**
- Bryan, K., 1940b, The retreat of slopes, *in* von Englen, O.D., ed., Symposium, Walther Penck's contribution to geomorphology: Association of American Geographers Annals, v. 30, p. 254-268. **(C2a)**
- Bryan, K., and McCann, F.T., 1937, The Ceja del Rio Puerco: A border feature of the Basin and Range province in New Mexico, Part I. Stratigraphy and structure: Journal of Geology, v. 45, no. 8, p. 801-828. **(C2a)**
- Bryan, K., and McCann, F.T., 1938, The Ceja del Rio Puerco: A border feature of the Basin and Range province in New Mexico, Part II. Geomorphology: Journal of Geology, v. 46, p. 1-16. **(C2a)**
- Burrows, R.H., 1909, Geology of northern Mexico: Mining and Scientific Press, v. 99, no. 9 (whole no. 2562, 28 Aug.), p. 290-294; continued as "Geology of northeastern Mexico," *in* v. 99, no. 10 (4 Sept.), p. 324-327. **(C2a, F3, G1)**
- Callahan, C.J., 1973, Aden Basalt Volcanic Depressions, Doña Ana County, New Mexico: University of Texas at El Paso, master's thesis, 82 p. **(C2a)**
- Callahan, C., and Terrazas, C., 1971, Topographic map-Potrillo Maar area, Chihuahua, Mexico; scale-1:12,000 and 10 ft contour interval; *with annotations on* Geology by Chester Callahan, and *plane-table* Topography by Chuck Terrazas [unpublished map prepared for the University of Texas at El Paso, Department of Geology]: C. Callahan to J. Hawley letter transmittal of 7/1/1981. **(C2a)**
- Cameron, K.L., Nimz, G.J., Kuentz, D., Niemeyer, S., and Gunn, S., 1989, Southern Cordillera basaltic andesite suite, southern Chihuahua, Mexico – A link between Tertiary continental arc and flood basalt magmatism in North America: Journal of Geophysical Research, v. 94, p. 7817-7840. *See Seager and Mack 2003, p 70.* **(C2a)**
- Campa, M.F., and Coney, P.J., 1983, Tectono-stratigraphic terranes and mineral resource distributions in Mexico: Canadian Journal of Earth Sciences, v. 20, p. 1040-1051. **(C2a)**
- Cantú-Chapa, A., 1970, El Kimeridgiano Inferior de Samalayuca, Chihuahua: Revista del Instituto Mexicano del Petróleo, v. 11, no. 3, p. 40-44. **(C2a)**
- Cantú-Chapa, C.M., Sandoval-Silva, R., and Arenas-Partida, R., 1985, Evolución sedimentaria del Cretácico Inferior en el norte de México; Revista Instituto Mexicano del Petróleo, v. 17, no. 2, p. 14-37. **(C2a, F3)**
- Chapin, C.E., 1971, The Rio Grande rift, Part I: Modifications and additions: Guidebook of the San Luis Basin, Colorado, New Mexico Geological Society Guidebook 22, p. 191-201. **(C2a, I3)**
- Chapin, C.E., 1979, Evolution of the Rio Grande rift – A summary, *in* Riecker, R.E., ed., Rio Grande rift: Tectonics and magmatism: Washington, D.C., American Geophysical Union, p. 1-5. **(C2a)**
- Chapin, C.E., and Cather, S.M., 1981, Eocene tectonics and sedimentation in the Colorado Plateau – Rocky Mountain area, *in* Dickinson, W.R., and Payne, W.D., eds., Relations of Tectonics to Ore Deposits in the Southern Cordillera: Arizona Geological Society Digest. 14 p. 173-198. **(C2a)**
- Chapin, C.E., and Seager, W.R., 1975, Evolution of the Rio Grande rift in the Socorro and Las Cruces areas: New Mexico Geological Society Guidebook 26, p. 297-321. **(C2a, I3)**
- Chávez-Quirarte, R., 1986, Stratigraphy and structural geology of Sierra de Sapello, Northern Chihuahua, Mexico: University of Texas at El Paso, doctoral dissertation, 167 p. **(C2a, F3)**
- Clark, K.F., and Ponce, S.B., 1983, Summary of the lithologic framework and contained mineral resources in north central Chihuahua: El Paso Geological Society, Pub. 15, p. 76-93. **(C2a)**
- Clark, K.F., Foster, C.T., and Damon, P.E., 1983, Cenozoic mineral deposits and subduction-related magmatic arcs and in Mexico: Geological Society of America Bulletin, v. 93, p. 533-544. **(C2a)**
- Clemons, R.E., 1975, Petrology of the Bell Top Formation: New Mexico Geological Society Guidebook 26, p. 123-130. **(C2a)**

- Clemons, R.E., 1976a, Geology of east half of Corralitos Ranch Quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 36, two sheets, scale 1:24,000. **(C2a)**
- Clemons, R.E., 1976b, Sierra de las Uvas ash-flow field, south-central New Mexico: New Mexico Geological Society Special Publication 6, p. 115-121. **(C2a)**
- Clemons, R.E., 1977, Geology of west half of Corralitos Ranch Quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 44, two sheets, scale 1:24,000. **(C2a, H1)**
- Clemons, R.E., 1979, Geology of Good Sight Mountains and Uvas Valley, southwest New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 169, 31 p. *First map of Lake Good Sight* **(C2a, H1, I2)**
- Clemons, R.E., 1986, Petrography and stratigraphy of Seville-Trident exploration wells near Deming, New Mexico: New Mexico Geology, v. 8, no. 1, p. 5-11. **(C2a, H1)**
- Clemons, R.E., and Seager, W.R., 1973, Geology of Souse Springs Quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 100, 31 p. **(C2a)**
- Clemons, R.E., Hawley, J.W., Hoffer, J.M., and Seager, W.R., 1975, Las Cruces to the Sierra de las Uvas and Aden volcanic area and return: New Mexico Geological Society Guidebook 26, p. 17-34. **(C2a)**
- Cook, K.L., 1969, Active rift systems in the Basin and Range province: Tectonophysics, v. 8, p. 469-511. **(C2a, C4)**
- Cooper, J.R., 1959, Reconnaissance Geologic Map of Southeastern Cochise County, Arizona: U.S. Geological Survey Mineral Investigations Field Studies Map MF-213, scale 1:125,000. **(C2a)**
- Cope, E.D., 1884, On the distribution of the Loup Fork formation in New Mexico: Proceedings of the American Philosophical Society, v. 21, 308-309. *Earliest mention of presence of "Santa Fe beds" in lower RG Valley near T or C.* **(C2a, G1)**
- Corbitt, L.L., 1988, Tectonics of thrust and fold belt of northwestern Chihuahua: New Mexico Geological Society Guidebook 39, p. 67-90. **(C2a)**
- Córdoba, D.A.^a 1969a, Geología del área de Cerro de Muleros o Cristo Rey, Escala ~1:43,000: [Inset map on] Hoja Ciudad Juárez 13R-a (3): Carta Geológica de México, escala 1:100,000, *Reprinted as back-cover insert in Córdoba and others, 1969.* **(C2a, F3)**
- Córdoba, D.A., 1969b, Hoja Ciudad Juárez 13 R-a (3) con Resumen de la Geología de la Hoja Ciudad Juárez de Chihuahua: Universidad Nacional Autónoma de México, Instituto Geología, Carta Geología de México, Serie de 1:100,000. *Reprinted as back-cover insert in Córdoba and others, 1969.* **(C2a, F3)**
- Córdoba, D.A., 1969c, Mesozoic stratigraphy of northeastern Chihuahua, Mexico: New Mexico Geological Society Guidebook 20, p. 91-101. **(C2a, F3)**
- Córdoba, D.A., Rodríguez-Torres, R., and Guerrero-García, J., 1970, Mesozoic stratigraphy of the northern portion of the Chihuahua Trough, *in* The Geologic Framework of the Chihuahua Tectonic Belt: Symposium in honor of Professor Ronald K. DeFord: West Texas Geological Society and University of Texas at Austin, p. 83-97. **(C2a, F3)**
- Córdoba, D.A., Wengert, S.A., and Shomaker, J.W., eds., 1969, Guidebook of the Border Region: New Mexico Geological Society Guidebook 20, 218 p. *See Road Log Section, p. 1-38.* **(C2a)**
- Cordell, L., 1975, Combined geophysical studies at Kilbourne Hole maar, New Mexico: New Mexico Geological Society Guidebook 26, p. 269-271. **(C2a, C4)**
- Dane, C.H., and Bachman, G.O., 1965, Geologic map of New Mexico: U.S. Geological Survey and New Mexico Institute of Mining and Technology, scale 1:500,000. **(C2a)**
- Darton, N.H., 1916a, Explosion craters: Science Monthly, v. 3, no. 4, p. 417-430. **(C1a, D1, G1)**
- Darton, N.H., 1917, Deming folio: U.S. Geological Survey Geologic Atlas of the United States, Folio 207, 15 p., 4 maps (scale 1:125,000), 9 Plates. **(C2a)**
- Darton, N.H., 1922, Geologic structure of parts of New Mexico: U.S. Geological Survey Bulletin 726-E, p. 173-275. **(C2a)**
- Darton, N.H., 1928a, Geologic map of New Mexico: U.S. Geological Survey, scale 1:500,000. **(C2a, D1)**
- Darton, N.H., 1928b, Red beds and associated formations within New Mexico with outline of the geology of the state: U.S. Geological Survey, Bulletin 794, 356 p. **(C2a, D1)**
- Darton, N.H., 1933, Guidebook of the western United States, Part F, The Southern Pacific Lines, New Orleans to Los Angeles. U.S. Geological Survey Bulletin 845. 304 p., 29 route maps. [West TX, and Southern NM and AZ: p. 120-160]. **(B3, C2a, F2, G1)**
- Davie, W., Jr., and Spiegel, Z., 1967, Geology and water resources of Las Animas Creek and vicinity, Sierra County, New Mexico: New Mexico State Engineer Hydrographic Survey Report, 44 p. **(C2a, G2, H1)**

- Deal, D., 1979, Evolution of the Rio Conchos – Rio Grande drainage system, *in* Walton, A.W., and Henry, C.D., eds. Cenozoic geology of the Trans-Pecos volcanic field: University of Texas at Austin, Bureau of Economic Geology, Guidebook 19, p. 137-146. *Chihuahuan Desert Research Institute Contribution No. 43. (C2a, I3)*
- DeBrine, B., Spiegel, Z., and Williams, D., 1963, Cenozoic sedimentary rocks in Socorro Valley, New Mexico: New Mexico Geological Society Guidebook 14, p. 123-131. **(C2a)**
- DeFord, R.K., 1969, Some keys to the geology of northern Chihuahua: New Mexico Geological Society Guidebook 20, p. 61-67. **(C2a)**
- DeFord, R.K., and Haenggi, W.T., 1970, Stratigraphic nomenclature of Cretaceous rocks in northeastern Chihuahua, *in* The Geologic Framework of the Chihuahua Tectonic Belt; Symposium in honor of Professor Ronald K. DeFord: West Texas Geological Society and University of Texas at Austin, p. 175-196. **(C2a)**
- DeHon, R.A., 1965, Maare of La Mesa: New Mexico Geological Society, Guidebook 16, p. 204-209. **(C2a)**
- Denison, R.E., and Hetherington, E.A., 1970, Basement rocks in far west Texas and south-central New Mexico, *in* Border stratigraphy symposium: New Mexico Bureau of Mines and Mineral Resources, Circular 104, p. 1-16. **(C2a)**
- Denison, R.E., Burke, W.H., and Hetherington, E.A., 1970, Basement rock framework of parts of Texas, southern New Mexico and northern Mexico; *in* Seewald, K., and Sundeen, D., eds., The Geologic Framework of the Chihuahua Tectonic Belt: West Texas Geological Society, p. 3-14. **(C2a)**
- Denison, R.E., Burke, W.H., Jr., Hetherington, E.A., and Otto, J.B., 1970, Basement rock framework of parts of Texas, southern New Mexico and northern Mexico, *in* The Geologic Framework of the Chihuahua Tectonic Belt; Symposium in honor of Professor Ronald K. DeFord: West Texas Geological Society and University of Texas at Austin, p. 3-14. **(C2a)**
- Denny, C.S., 1941, Quaternary geology of the San Acacia area, New Mexico: Journal of Geology, v. 49, no. 3, p. 225-260. **(C2a)**
- Diaz, T., and Navarro, A., 1974 [1964], Lithology and stratigraphic correlation of the Upper Paleozoic in the region of Palomas, Chihuahua, *in* Geologic Field Trip Guidebook thru the States of Chihuahua and Sinaloa, Mexico: West Texas Geological Society, Publication 74-63, p. 104-129. **(C2a, F2)**
- Dickerson, E.J., 1966, Bolson fill, pediment and terrace deposits of Hot Springs area, Presidio County, Texas: University of Texas at Austin, master's thesis 100 p. **(C2a)**
- Dickerson, P.W., and Hoffer, J.M., eds. 1980, Trans-Pecos Region – Southeastern New Mexico and West Texas: New Mexico Geological Society Guidebook 31, 314 p. **(C2a)**
- Dickinson, W.R., Klute, M.R., and Swift, P.N., 1986, The Bisbee Basin and its bearing on late Mesozoic paleogeographic and paleotectonic relations between the Cordilleran and Caribbean regions, *in* Abbott, P.L. ed., Cretaceous Stratigraphy Western North America, Society of Economic Paleontologists and Mineralogists, Pacific Section, Book 46, p. 51-62. **(C2a, C2b)**
- Dietrich, J.W., 1957, Geology of the Presidio area, Presidio County, Texas: University of Texas at Austin, doctoral dissertation, 313 p. **(C2a)**
- Dixon, G.H., Baltz, E.H., Stipp, T.F., and Bieberman, R.A., 1955, Map of New Mexico showing test wells for oil and gas, oil and gas fields, and pipelines: U.S. Geological Survey Oil and Gas Investigations Map OM-159. **(C2a)**
- Doty, G.C., 1963, Water-supply development at the National Aeronautics and Space Agency-Apollo Propulsion System Development Facility, Doña Ana County, New Mexico: U.S. Geological Survey Open-File Report 63-29, 40 p. **(C2a, H1)**
- Doty, G.C., 1967, Supply well for Doña Ana Range Camp, Doña Ana County, New Mexico: U.S. Geological Survey Open-File Report 67-84, 23 p. **(C2a, H1)**
- Doty, G.C., and Cooper, I.B., 1970, Stratigraphic test well T-14, Post area, White Sands Missile Range, New Mexico: U.S. Geological Survey Open-File Report 70-113, 33 p. **(C2a, H1)**
- Drewes, H., and Thorman, C.H., 1980, Geologic map of the Steins Quadrangle and the adjacent part of the Vanar Quadrangle, Hidalgo County, New Mexico: U.S. Geological Survey, Miscellaneous Investigations Series, Map I-1220, scale 1:24,000. *Improper use of pluvial "Lake Lordsburg" for "Lake Animas."* **(C2a, I2)**
- Drewes, H., Houser, B.B., Hedlund, D.C., Richter, D.H., Thorman, C.H., and Finnell, T.L., 1985, Geologic map of the Silver City 1° x 2° Quadrangle, New Mexico and Arizona: U.S. Geological Survey Miscellaneous Investigations Series Map, I-1310-C, scale 1:250,000. **(C2a)**
- Dunham, K.C., 1935, The geology of the Organ Mountains, with an account of the geology and mineral resources of Dona Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 11, 272 p. **(C2a, G1)**

- Dyer, R., 1987, First day, Part A; Road log from El Paso/Ciudad Juárez via Villa Ahumada, El Sueco to Ciudad Chihuahua, *in* Excursión Geológica, Libro Guía de Caminos, Sociedad Geológica Mexicana, Universidad Autónoma de Chihuahua, and the University of Texas at El Paso, p. 2-30. **(C2a, F1)**
- Dyer, R., 1989, Structural geology of the Franklin Mountains, West Texas, *in* Muehlberger, W.R., and Dickerson, P.W., Structure and stratigraphy of Trans-Pecos Texas: 28th International Geological Congress, Field Trip Guidebook T317, p. 65-70. **(C2a)**
- Eguiluz de Antuñano, S., 1984, Tectónica Cenozoica del norte de México: Asociación Mexicana de Geólogos Petroleros, Boletín, Tomo XXXVI, p. 43-62. **(C2a, F3)**
- Elston, W.E., Deal, E.G., and Logsdon, M.J., 1983, Geology and geothermal waters of the Lightning Dock region, Animas Valley and Pyramid Mountains, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 177, 44 p. **(C2a, C4, H1, H2)**
- Figuers, S.H., 1987, Structural geology and geophysics of the Pipeline complex, northern Franklin Mountains, El Paso, Texas: University of Texas at El Paso, doctoral dissertation, 279 p. **(C2a, C4)**
- Fitzsimmons, J.P., and Balk, C.L., eds., 1965, Guidebook of southwestern II: New Mexico Geological Society, Guidebook 16, 244 p. **(C2a)**
- Fleischhauer, H.L., Jr., and Stone, W.J., 1982, Quaternary geology of Lake Animas, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 174, 25 p. **(C2a, I2)**
- Fox, W.J., 1975, The Broad Canyon Dam: New Mexico Geological Society Guidebook 26, p. 181. **(C2a)**
- Frantes, T., 1981, The geology of the Palomas volcanic field, northern Chihuahua Mexico: University of Texas at El Paso, master's thesis, 70 p. **(C2a, F3)**
- Frantes, T., and Hoffer, J.M., 1982, The geology of the Palomas volcanic field, northern Chihuahua Mexico: New Mexico Geology, v. 4, p. 6-8. **(C2a, F3)**
- Freeman, C.E., 1972, Pollen study of some Holocene alluvial deposits in Doña Ana County, southern New Mexico: Texas Journal of Science, v. 24, no. 2, p. 203-220. **(B2, C1, C2a)**
- Galusha, T., Johnson, N.M., Lindsay, E.H., Opdyke, N.D., and Tedford, R.H., 1984, Biostratigraphy and magnetostratigraphy, late Pliocene rocks, 111 Ranch, Arizona: Geological Society of America Bulletin, v. 95, p. 714-722. **(C2a)**
- Garcia, R.A., 1970, Geology and petrography of andesitic intrusions in and near El Paso, Texas: University of Texas at El Paso, master's thesis, 139 p. **(C2a)**
- Gilbert, G.K., 1875, Report on the geology of New Mexico and Arizona: U.S. Geographical and Geological Survey west of the 100th meridian (Wheeler Survey), v. 3, p. 501-567. **(C2a, G1)**
- Gile, L.H., 1986, Late Holocene displacement along the Organ Mountains fault in southern New Mexico – A summary: New Mexico Geology, v. 8, no. 1, p. 1-4. **(C2a, C3)**
- Gile, L.H., 1987a, A pedologic chronology of Kilbourne Hole, southern New Mexico: I. Soils in tuff; II. Time of the explosions: Soil Science Society of America Journal, v. 51, p. 746-760. **(C2a, C3)**
- Gile, L.H., and Hawley, J.W., 1966, Periodic sedimentation and soil formation on an alluvial-fan piedmont in southern New Mexico: Soil Science Society of America Proceedings, v. 30, p. 261-268. **(C2a, C3)**
- Gile, L.H., and Hawley, J.W., 1968, Age and comparative development of desert soils at the Gardner Spring radiocarbon site, New Mexico: Soil Science Society of America Proceedings, v. 32, no. 5, p. 709-719. **(C2a, C3)**
- Gile, L.H., and Hawley, J.W., 1972, The prediction of soil occurrence in certain desert regions of the southwestern United States: Soil Science Society of America Proceedings, v. 36, no. 1, p. 119-124. **(C2a, C3)**
- Gile, L.H., Hawley, J.W., and Grossman, R.B., 1970, Distribution and genesis of soils and geomorphic surfaces in a desert region of southern New Mexico: Soil Science Society of America, Guidebook, Soil-Geomorphology Field Conference, New Mexico State University Agronomy Department, 155 p. **(C2a, C3)**
- Gile, L.H., Hawley, J.W., and Grossman, R.B., 1981, Soils and geomorphology in the Basin Range area of southern New Mexico – Guidebook to the Desert Project: New Mexico Bureau of Mines and Mineral Resources, Memoir 39, 222 p. <https://geoinfo.nmt.edu/publications/monographs/memoirs/39/> **(C2a, C3)**
- Goetz, L.K., 1985, Salt Basin graben; a Basin-and-Range right-lateral transtensional; some speculations, *in* Dickerson, P.W., and Muehlberger, R.W., eds., 1985, Structure and tectonics of Trans-Pecos Texas: West Texas Geological Society, Pub. No. 85-81, p. 165-168. **(C2a)**
- Gómez, F., 1983, Geology of Sierra del Aguila, northern Chihuahua, Mexico, *in* Geology and Mineral Resources of North-Central Chihuahua: El Paso Geological Society, Guidebook 1983 Field Conference, p. 261-267. **(C2a, F3)**
- Gordon, C.H., 1910, Sierra and central Socorro Counties, *in* Lingren, W., Graton, L.C., and Gordon, C.H., eds., The ore deposits of New Mexico: U.S. Geological Survey Professional Paper 68, p. 213-285. **(C2a, G1)**

- Greenwood, E., Kottlowski, F.E., and Thompson, S. III, 1977, Petroleum potential and stratigraphy of the Pedregosa basin: Comparison with Permian and Orogande basins: American Association of Petroleum Geologists Bulletin, v. 61, p. 1448-1469. **(C2a)**
- Gries, J.G., 1970, Geology of Sierra de la Parra, northeastern Chihuahua, Mexico: University of Texas Austin, doctoral dissertation, 151 p. **(C2a, F3)**
- Gries, J.G., 1979, Problems of delineation of the Rio Grande rift into Chihuahua tectonic belt of northern New Mexico, in Riecker, R.E., ed., Rio Grande rift: Tectonics and magmatism: Washington, D.C., American Geophysical Union, p. 107-113. **(C2a, F1)**
- Gries, J.G., 1980, Laramide evaporite tectonics of Trans-Pecos Texas: New Mexico Geological Society Guidebook 31, p. 93-100. **(C2a, F1)**
- Gries, J.G., and Haenggi, W.T., 1970, Structural evolution of the eastern Chihuahua Tectonic Belt, in The Geologic Framework of the Chihuahua Tectonic Belt: Symposium in honor of Professor Ronald K. DeFord, West Texas Geological Society and University of Texas at Austin, p. 119-137. **(C2a, F1)**
- Groat, C.F., 1970, Geology of Presidio Bolson, Presidio County, Texas and adjacent Chihuahua, Mexico: University of Texas at Austin, doctoral dissertation, 167 p. **(C2a, F1, I3)**
- Groat, C.F., 1972, Presidio Bolson, Trans-Pecos Texas and adjacent Mexico: Geology of a desert basin aquifer system: Texas Bureau of Economic Geology Report of Investigation 76, 46 p. **(C2a, F1, I3)**
- Guerrero, J.C., 1969, Stratigraphy of Banco de Lucero, State of Chihuahua, in The Border Region, New Mexico Geological Society Guidebook 20, p. 171-172. **(C2a, F3)**
- Haenggi, W.T., 1966, Geology of the El Cuervo area, northeastern Chihuahua, Mexico: University of Texas, doctoral dissertation, 403 p. **(C2a, F3)**
- Halpenny, L.C., Babcock, J.A., and Greene, D.K., 1972, Basic data report, ASARCO La Mesa test production water well: Tucson, AZ, Water Development Corporation Open-File Report, 40 p. **(C2a, H1, H2, H3)**
- Hamilton, W., and Myers, B.W., 1966, Cenozoic tectonics of the western United States: Reviews of Geophysics Rev., v. 4, p. 509-549. **(C2a, C4)**
- Harbour, R.L., 1972, Geology of the northern Franklin Mountains, Texas and New Mexico: U.S. Geological Survey Bulletin 1298, 129 p. **(C2a)**
- Harley, G.T., 1934, The geology and ore deposits of Sierra County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 10, 220 p. **(C2a, G1)**
- Harris, A.H., 1988, Late Pleistocene and Holocene *Microtus* (*Pitymys*) (Rodentia: Cricetidae) in New Mexico: Journal of Vertebrate Paleontology, v. 8, no. 3, p. 307-313. **(B2, C1, C2a)**
- Harris, A.H., 1989, The New Mexican late Wisconsin – East versus west: National Geographic Research, v. 5, p. 205-217. **(B2, C1, C2a)**
- Hawley, J.W., 1965, Geomorphic surfaces along the Rio Grande Valley from El Paso, Texas to Caballo Reservoir, New Mexico: New Mexico Geological Society, Guidebook 16, p. 188-198. **(C2a)**
- Hawley, J.W., 1969a, Geology and its relation to the hydrologic system, in King, W.E., Hawley, J.W., Taylor, A.M., and Wilson, R.P., Hydrogeology of the Rio Grande Valley and adjacent intermontane areas of southern New Mexico: New Mexico Water Resources Research Institute Report No. 6, p. 19-47; *cf. King, W.E., and others, Geology and ground-water resources of central and western Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 1, p. 9-24, 61-62. (C2a, H1)*
- Hawley, J.W., 1969b, Notes on the geomorphology and late Cenozoic geology of northwestern Chihuahua: New Mexico Geological Society Guidebook 20, p. 131-142. **(C2a, F3)**
- Hawley, J.W., compiler, 1970, Cenozoic stratigraphy of the Rio Grande Valley area, Doña Ana County, New Mexico: El Paso Geological Society, Guidebook 4, 49 p. **(C2a, F2)**
- Hawley, J.W., 1972, Geologic-geomorphic mapping to serve soil resource development: Soil Conservation Society of America, Proceedings of the 27th Annual Meeting, p. 24-30. **(C2a, C3)**
- Hawley, J.W., 1975a, Quaternary history of Doña Ana County region, south-central New Mexico: New Mexico Geological Society Guidebook 26, p. 139-150. **(C2a, F1, I3)**
- Hawley, J.W., compiler, 1978, Guidebook to the Rio Grande rift in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources, Circular 163, 241 p. **(A2, C2a, C4)**
- Hawley, J.W., 1981, Pleistocene and Pliocene history of the international boundary area, southern New Mexico: El Paso Geological Society, Guidebook to April 1981 field trip, p. 26-32. **(C2a, F1)**
- Hawley, J.W., 1983, Quaternary geology of the Rhodes Canyon (RATSCAT) Site, in Eidenbach, P.L., ed., The prehistory of Rhodes Canyon, New Mexico: Tularosa, NM, Human Systems Research, Inc., p. 17-32. **(B2, C2a, C3, I2)**

- Hawley, J.W., 1986, Physiographic provinces [and] landforms of New Mexico, *in* Williams, J.L., ed., New Mexico in Maps (2nd edition): University of New Mexico Press, p. 23-31. **(C2a)**
- Hawley, J.W., and Gile, L.H., 1966, Landscape evolution and soil genesis in the Rio Grande region, southern New Mexico: Friends of the Pleistocene, Rocky Mountain Section, Guidebook 11th Field Conference; La Cruces, New Mexico State University Agronomy Department, Special Publication, 74 p. **(C2a, C3)**
- Hawley, J.W., and Kottlowski, F.E., 1965, Road logs from Las Cruces to Nutt and from Lordsburg to Rodeo: New Mexico Geological Society Guidebook 16, p. 15-27. **(C2a)**
- Hawley, J.W., and Kottlowski, F.E., 1969, Quaternary geology of the south-central New Mexico border region, *in* Border Stratigraphy Symposium: New Mexico Bureau of Mines and Mineral Resources, Circular 104, p. 89-115. **(C2a)**
- Hawley, J.W., and Seager, W.R., 1969, Description of Santa Fe Group measured sections: Appendix A, *in* Hawley, J.W., and five others, The Santa Fe Group in the south-central New Mexico border region New Mexico Bureau of Mines and Mineral Resources, Circular 104, p. 68-76. **(C2a)**
- Hawley, J.W., and Seager, W.R., 1978, New Mexico-Texas State Line to Elephant Butte Reservoir, *in* Guidebook to Rio Grande Rift in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources, Circular 163, p. 71-91. **(C2a)**
- Hawley, J.W., Gile, L.H., and Grossman, R.B. (abstract), 1968, Caliche development related to the geomorphic evolution of the Rio Grande Valley: Geological Society of America, Abstracts with Programs, v. 3, no. 3, p. 130. **(C2a, C3)**
- Hawley, J.W., Seager, W.R., and Clemons, R.E., 1975, Las Cruces to north Mesilla Valley, Cedar Hills, San Diego Mountain and Rincon area: New Mexico Geological Society Guidebook 26, p. 35-53. **(C2a)**
- Hawley, J.W., Kottlowski, F.E., Seager, W.R., King, W.E., Strain, W.S., and LeMone, D.V., 1969, The Santa Fe Group in the south-central New Mexico border region, *in* Border Stratigraphy Symposium: New Mexico Bureau of Mines and Mineral Resources, Circular 104, p. 52-76. **(C2a, F1)**
- Haynes, C.V., Jr., 1968, Geochronology of late Quaternary alluvium, *in* Morrison, R.B., and Wright, H.W., Jr., eds., Means of correlation of Quaternary successions: University of Utah Press, INQUA VII Congress, v. 8, p. 591-631. **(B2, C2a)**
- Henderson, G., 1979, Geology of the Medley Kaolin deposits and associated volcanic rocks, Jeff Davis County, Texas: Baylor University, master's thesis, 186 p. **(C2a)**
- Henry, C.D., 1979, Geologic setting and geochemistry of thermal water and geothermal assessment, Trans-Pecos Texas: Texas Bureau of Economic Geology, Report of Investigations 96, 48 p. **(C2a, F1, H1, H2)**
- Henry, C.D., and Gluck, J.K., 1981, A preliminary assessment of the geologic setting, hydrology, and geochemistry of the Hueco Tanks geothermal area, Texas and New Mexico: University of Texas at Austin, Bureau of Economic Geology, Geological Circular 81-1, 48 p. **(C2a, H1, H2)**
- Henry, C.D., and Price, J.G., 1984, Variations in caldera development in the Tertiary volcanic field of Trans-Pecos Texas: Journal of Geophysical Research, v. 91, p. 6213-6224. **(C2a)**
- Henry, C.D., and Price, J.G., 1985, Summary of the tectonic development of Trans-Pecos Texas: University of Texas at Austin, Bureau of Economic Geology, Miscellaneous Map No. 36, scale 1:500,000, text 8 p. **(C2a, F1)**
- Henry, C.D., and Price, J.G., 1986, Early Basin and Range development in Trans-Pecos Texas and adjacent Chihuahua: Magmatism and orientation, timing, and style of extension: Journal of Geophysical Research, v. 91, no. B6, p. 6213-6224. **(C2a)**
- Henry, C.D., and Price, J.G., 1989, Geology, *in* Bedinger, M.S., Sargent, K.A., and Langer, W.H., Studies of geology and hydrology in the Basin and Range province, southwestern United States, for isolation of high-level radioactive waste – Characterization of the Trans-Pecos region, Texas, U.S. Geological Survey Professional Paper 1370-B, p. 4-22. **(C2a)**
- Henry, C.D., Price, J.G., and Sargent, K.A., 1989, Quaternary tectonism, *in* Bedinger, M.S., Sargent, K.A. and Langer, W.H., eds., Studies of geology and hydrology in the Basin and Range province, southwestern United States, for isolation of high-level radioactive waste – Characterization of the Trans-Pecos region, Texas: U.S. Geological Survey Professional Paper 1370B, p. 26-30. **(C2a)**
- Hill, R.T., 1891, Preliminary notes on the topography and geology of northern Mexico and southwest Texas, and New Mexico: American Geologist, v. 8, p. 133-141. **(B3, C2a, F1)**
- Hill, R.T., 1892a, Notes on the Texas-New Mexican region: Geological Society of America Bulletin, v. 3, p. 85-100. **(B3, C2a)**
- Hill, R.T., 1896, Descriptive topographic terms of Spanish America: National Geographic, v. 7, p. 291-302. **(A1, B3, C2a, F1)**

- Hill, R.T., 1900, Physical geography of the Texas region: U.S. Geological Survey Topographical Atlas Folio 3, 12 p. **(B3, C2a, G1)**
- Hoffer, J.M., 1970, Petrology and mineralogy of the Campus Andesite pluton, El Paso, Texas: Geological Society of America Bulletin, v. 81, p. 2129-2136. **(C2a)**
- Hoffer, J.M., 1971, Mineralogy and petrology of the Santo Tomas-Black Mountain basalt field, Potrillo volcanics, south-central New Mexico: Geological Society of America Bulletin, vol. 82, no. 3, p. 603-612. **(C2a)**
- Hoffer, J.M., 1976, Geology of the Potrillo basalt field, south-central New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 149, 30 p. **(C2a)**
- Hoover, J.D., Ensendot, S.E., Barnes, C.G., and Dyer, R., 1988, Early Trans-Pecos magmatism: Petrology and geochemistry of Eocene intrusive rocks of the El Paso area: New Mexico Geological Society Guidebook 39, p. 109-118. **(C2a, F1)**
- INEGI, 1983b, Agua Prieta H12-3, Cartas Geologica: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(C2a)**
- INEGI, 1983e, Ciudad Juárez H13-1, Cartas Geologica: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(C2a)**
- Izett, G.A., and Wilcox, R.E., 1982, Map showing localities and inferred distributions of the Huckleberry Ridge, Mesa Falls, and Lava Creek Ash Beds (Pearlette family ash beds) of Pliocene and Pleistocene age in the western United States and southern Canada: U.S. Geological Survey Miscellaneous Investigations Map I-1325, scale 1:4,000,000. **(B1, C2a, I3)**
- Izett, G.A., Obradovich, J.D., and Mehnert, H.H., 1988, The Bishop ash bed (middle Pleistocene) and some older (Pliocene and Pleistocene) chemically similar ash beds in California, Nevada and Utah: U.S. Geological Survey, Bulletin 1675, 37 p. **(B1, C2a)**
- Jackson, D.B., and Bisdorf, R.J., 1975, Direct-current soundings on the La Mesa Surface near Kilbourne and Hunt Holes, New Mexico: New Mexico Geological Society Guidebook 26, p. 273-275. **(C2a, C4)**
- Johnson, W.D., Jr., Hawley, J.W., Stone, W.J., Kottowski, F.E., Henry, C.D., and Price, J.G., 1989, Geology, *in* Bedinger, M.S., and others, Studies of geology and hydrology in the Basin and Range Province, southwestern United States, for isolation of high-level radioactive waste; characterization of the Rio Grande region, New Mexico and Texas: U.S. Geological Survey Professional Paper 1370-C, p. C7-C19. **(C2a)**
- Jones, B.R., and Reaser, D.F., 1970, Geology of southern Quitman Mountains, Hudspeth County, Texas: Texas Bureau of Economic Geology, Geologic Quadrangle Map No. 39. **(C2a)**
- Kahn, P.A., 1987, Geology of Aden Crater, Dona Ana County, New Mexico: University of Texas at El Paso, master's thesis, 89 p. **(C2a)**
- Kelley, S.A., and Matheny, J.P., 1983, Geology of Anthony quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 54, scale 1:24,000. **(C2a)**
- Kelley, V.C., 1952, Tectonics of the Rio Grande depression of central New Mexico: New Mexico Geological Society Guidebook 3, p. 92-105. **(C2a)**
- Kelley, V.C., 1954a, Tectonic map of a part of Rio Grande area, New Mexico: U.S. Geological Survey Oil and Gas Investigations Map OM-157. **(C2a)**
- Kelley, V.C., 1954b, The Rio Grande depression from Taos to Santa Fe New Mexico: New Mexico Geological Society Guidebook 7, p. 109-114. **(C2a)**
- Kelley, V.C., and Silver, C., 1952, Geology of the Caballo Mountains: University of New Mexico, Publications in Geology, no. 5, 286 p. **(C2a)**
- Keller, G.R., Callender, J.F., Hawley, J.W., Chamberlin, R.M., Kluth, C.F., Olsen, K.H., and Lozinsky, R.P., 1989, Rio Grande rift: 28th International Geologic Congress Field Trip Guidebook T318, Washington, D.C., American Geophysical Union, 37 p. **(C2a)**
- King, P.B., 1935, Outline of structural development of Trans-Pecos Texas: American Association of Petroleum Geologists, Bulletin, v. 19, p. 221-261. **(C2a, F1)**
- King, W.E., and Kelley, R.E., 1980, Geology and paleontology of Tortugas Mountain, Doña Ana County, New Mexico: New Mexico Geology, v. 2, no. 3, p. 33-35. **(C2a)**
- King, W.E., Hawley, J.W., and Cliett, T.E., (Abstract), 1971, Santa Fe Group and Rio Grande Valley-fill aquifers in the south-central New Mexico border region: Geological Society of America, Abstracts with Programs, v. 3, no. 3, p. 239-240. **(C2a, F1, H1)**

- Kortemeier, C.P., 1982, Occurrence of Bishop Ash near Grama, New Mexico: *New Mexico Geology*, v. 4, no. 2, p. 22-24. **(B1, C2a)**
- Kottlowski, F.E., 1953, Tertiary-Quaternary sediments of the Rio Grande Valley in southern New Mexico: *New Mexico Geological Society Guidebook 4*, p. 30-41, 144-148. **(C2a)**
- Kottlowski, F.E., 1955, Cenozoic sedimentary rocks in south-central New Mexico: *New Mexico Geological Society, Guidebook 6*, p. 88-91. **(C2a)**
- Kottlowski, F.E., 1958a, Geologic history of the Rio Grande near El Paso: *West Texas Geological Society, Guidebook 1958 Field Trip*, p. 46-54. *N.M. Bureau of Mines and Mineral Resources, Reprint Series No. 1. Reprint produced with permission of the West Texas Geological Society, Inc.* **(C2a, F1)**
- Kottlowski, F.E., 1958b, Lake Otero-second phase formation of New Mexico's gypsum dunes: *Geological Society of America Bulletin*, v. 33, p. 541-552. **(C2a, I2)**
- Kottlowski, F.E., 1960, Reconnaissance geologic map of Las Cruces 30-minute quadrangle: *New Mexico Bureau of Mines and Mineral Resources, Geologic Map 14*. **(C2a)**
- Kottlowski, F.E., 1965a, Facets of the Late Paleozoic strata of southwestern New Mexico: *New Mexico Geological Society Guidebook 16*, p., 141-147. **(C2a)**
- Kottlowski, F.E., 1965b Sedimentary basins of south-central and southwestern New Mexico: *American Association of Petroleum Geologists Bulletin*, v. 49, nos. 11 and 12, p. 2120-2139. **(C2a)**
- Kottlowski, F.E., and Hawley, J.W., 1975, Las Cruces to southern San Andres Mountains and return: *New Mexico Geological Society Guidebook 26*, p. 1-16. **(C2a)**
- Kottlowski, F.E., and LeMone, D.V., eds., 1969, Border stratigraphy symposium: *New Mexico Bureau of Mines and Mineral Resources Circular 104*, 123 p. **(C2a)**
- Kottlowski, F.E., Foster, R.W., and Wengerd, S.A., 1969, Key oil tests and stratigraphic sections in southwest New Mexico: *New Mexico Geological Society Guidebook 20*, p. 186-196. **(C2a)**
- Kottlowski, F.E., Flower, R.H., Thompson, M.L. and Foster, R.W., 1956, Stratigraphic studies of the San Andres Mountains, New Mexico: *New Mexico Bureau of Mines and Mineral Resources, Memoir 1*, 132 p. **(C2a)**
- Kreitler, C.W., Raney, J.A., Nativ, R., Collins, E.W., Mullican, W.F. III, Gustavson, T.C., and Henry, C.D., 1987, Siting a low-level radioactive waste disposal facility in Texas, volume four – Geologic and hydrologic investigations of the State of Texas and University of Texas lands: *University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Low-Level Radioactive Waste Disposal Authority under contract no. IAC (86-87)-1722*, 330 p. **(C2a, E2c, F2, H1, H2)**
- Lambert, P.W., 1968, Quaternary stratigraphy of the Albuquerque area, New Mexico: *University of New Mexico, doctoral dissertation*, 329 p. **(C2a)**
- Leavy, B.D., 1987, Surface-exposure dating of young volcanic rocks using *in situ* buildup of cosmogenic isotopes: *Socorro, New Mexico Institute of Mining and Technology, doctoral dissertation*, 167 p. **(B1, C2a)**
- Lee, W.T., 1907a, Afton Craters of southern New Mexico: *Geological Society of America Bulletin*, v. 18, p. 211-220. **(C2a, F2, G1)**
- Lee, W.T., 1907b, Water resources of the Rio Grande Valley in New Mexico: *U.S. Geological Survey Water-Supply Paper 188*, 59 p. **(C2a, F2, G1)**
- Lehman, T.M., 1986, Late Cretaceous sedimentation in Trans-Pecos Texas, *in* Pause, P.H. and Spears, R.G., eds., *Geology of the Big Bend area and Solitario dome, Texas: West Texas Geological Society 1986 Field Trip Guidebook*, p. 105-110. **(C2a)**
- LeMone, D.V., and Lovejoy, E.M.P., eds., 1976, El Paso Geological Society symposium on the stratigraphy and structure of the Franklin Mountains: *El Paso Geological Society, Quinn Memorial Volume*, 250 p. **(C2a)**
- Limón-González, M., 1986, Evaluación geológico-geoquímica de la provincia de Chihuahua: *Asociación Mexicana de Geólogos Petroleros, Boletín*, Tomo XXXVIII, p. 3-58. **(C2a, C4, F3)**
- López-Ramos, E., 1988, Geología y aprovechamiento integral de las perforaciones en el altiplano Mexicano: *Geomimet*, v. 151, p. 84-100. **(C2a, F3)**
- Lovejoy, E.M.P., 1973, Evolution of the western boundary fault, Franklin Mountains, Texas: *American Association of Petroleum Geologists Bulletin*, v. 57, no. 9, p. 1766-1776. **(C2a)**
- Lovejoy, E.M.P., 1975a, An interpretation of the structural geology of the Franklin Mountains, Texas: *New Mexico Geological Society Guidebook 26*, p. 261-268. **(C2a)**
- Lovejoy, E.M.P., 1975b, Cenozoic tectonics of the El Paso, Texas region, *in* *Exploration from the mountains to the basins: El Paso Geological Society – Transactions, Joint meeting of American Association of Petroleum Geologists, Southwest Section, Society of Economic Paleontologists and Mineralogists, Permian Basin Section*, p. 95-100. **(C2a)**

- Lovejoy, E.M.P., 1976a, Geology of Cerro de Cristo Rey uplift, Chihuahua and New Mexico: New Mexico Bureau of Mines and Mineral Resources Memoir 31, 84 p. **(C2a, F1)**
- Lovejoy, E.M.P., 1976b, Neotectonics of the southeast end of the Rio Grande rift along the Mesilla Valley fault zone and the course of the Rio Grande, El Paso, Texas, in Symposium on the stratigraphy of the Franklin Mountains: El Paso Geological Society, Quinn Memorial Volume, p. 123-138. **(C2a)**
- Lovejoy, E.M.P., ed., 1979, Sierra de Juarez, Chihuahua, Mexico: Structure and history: El Paso Geological Society, Special Publication, 59 p. **(C2a, F3)**
- Lovejoy, E.M.P., and Hawley, J.W., 1978, Southern rift guide 1, El Paso to New Mexico-Texas state line, in Hawley, J.W., compiler, Guidebook to Rio Grande rift in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources Circular 163, p. 57-71. **(C2a)**
- Lovejoy, E.M.P., and Seager, W.R., 1978, Discussion of structural geology of Franklin Mountains, in Hawley, J.W., compiler, Guidebook to Rio Grande rift in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources, Circular 163, p. 68-69. **(C2a)**
- Lozinsky, R.P., 1986, Geology and late Cenozoic history of the Elephant Butte area, Sierra County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 187, 40 p. **(C2a)**
- Lozinsky, R.P., and Hawley, J.W., 1986, The Palomas Formation of south-central New Mexico – A formal definition: New Mexico Geology, v. 8, no. 4, p. 73-82. **(C2a, I3)**
- Luedke, R.G., and Smith, R.L., 1978, Map showing distribution, composition, and age of late Cenozoic volcanic centers in Arizona and New Mexico: U.S. Geological Survey Miscellaneous Investigations Map I-1091-A, scale 1:1,000,000. **(C2a)**
- Machette, M.N., 1985, Calcic soils of the southwestern United States, in Weide, D.L., ed., Quaternary soils and geomorphology of the American Southwest: Geological Society of America Special Paper 203, p. 1-21. **(C2a, C3)**
- Machette, M.N., 1987, Preliminary assessment of paleoseismicity at White Sands Missile Range, southern New Mexico: Evidence for recency of faulting, fault segmentation, and repeat intervals for major earthquakes in the region: U.S. Geological Survey Open-File Report 87-444, 46 p. **(C2a, C4)**
- Mack, G.H., and Clemons, R.E., 1988, Structural and stratigraphic evidence for the Laramide (Early Tertiary) Burro uplift in southwestern New Mexico. New Mexico Geological Society Guidebook 39, p. 59-66. **(C2a)**
- Mattick, R.E., 1967, A seismic and gravity profile across the Hueco bolson, Texas: U.S. Geological Survey Professional Paper 575-D, p. D85-D91. **(C2a, C4)**
- Mauger, R.L., 1981, Geology and petrology of the central part of the Caldera-Del Nido block, Chihuahua, Mexico: American Association of Petroleum Geologists Studies in Geology, no. 13, p. 205-242. **(C2a, F3)**
- McAnulty, W.N., compiler, 1980, Generalized geology and structure of Trans-Pecos Texas and adjacent Republic of Mexico: New Mexico Geological Society Guidebook 26, scale 1:625,000, pocket contents. **(C2a, F1)**
- McDowell, F.W., and Clabaugh, S.E., 1979, Ignimbrites of the Sierra Madre Occidental and their relation to the tectonic history of western Mexico: Geological Society of America Special Publication 180, p. 113-124. **(C2a, F3)**
- Meinzer, O.E., 1911, Geology and water resources of Estancia Valley, New Mexico: U.S. Geological Survey Water-Supply Paper 275, 89 p. **(B2, C1, C2a, D1, G1, I1, I2)**
- Meinzer, O.E., and Hare, R.F., 1915, Geology and water resources of the Tularosa Basin, New Mexico: U.S. Geological Survey Water-Supply Paper 343, 317 p. **(B2, C1, C2a, D1, G1, I2)**
- Meinzer, O.E., and Kelton, F.C., 1912, Geology and water resources of Sulphur Springs Valley, Arizona: U.S. Geological Survey Water-Supply Paper 320, 231 p. **(B2, C1, D1, G1, I1)**
- Metcalf, A.L., 1967, Late Quaternary mollusks of the Rio Grande Valley, Caballo Dam to El Paso, Texas: El Paso, Texas Western Press, University of Texas at El Paso, Science Series No. 1, 62 p. **(B2, C1, C2a)**
- Metcalf, A.L., 1969, Quaternary surface sediments and mollusks – Southern Mesilla Valley, New Mexico and Texas: New Mexico Geological Society Guidebook 20, p. 158-164. **(B2, C1, C2a)**
- Metcalf, A.L., 1977, Some Quaternary molluscan faunas from the northern Chihuahuan Desert and their paleoecological implications; in Wauer, R.H., and Riskind, D.H., Transactions, Symposium on the biological resources of the Chihuahuan Desert region, Alpine, Texas, October, 1974: Washington, D.C., U.S. Government Printing Office (U.S. National Park Service Transactions and Proceedings Series No. 3), p. 53-66. **(B2, C1, C2a)**
- Morrison, R.B., 1969, Photointerpretive mapping from space photographs of Quaternary geomorphic feature and soil associations in northern Chihuahua and adjoining New Mexico and Texas: New Mexico Geological Society Guidebook 20, p. 116-129. **(C2a, C3, E1, F1, I2)**

- Mraz, J.R., and Keller, G.R., 1980, Structure of the Presidio Bolson area, Texas, interpreted from gravity data: Texas Bureau of Economic Geology, Geological Circular 80-13, 20 p. **(C2a, C4)**
- Muehlberger, W.R., 1980, The Texas lineament revisited, *in* Dickerson, P.W., and Hoffer, J.M., eds., Trans-Pecos Region—Southeastern New Mexico and West Texas: New Mexico Geological Society Guidebook 31, p. 113-121. **(C2a)**
- Muehlberger, W.R., and Dickerson, P.W., 1989a, Structure and stratigraphy of Trans-Pecos Texas: American Geophysical Union Field Trip Guidebook T317, 197 p. **(C2a)**
- Muehlberger, W.R., and Dickerson, P.W., 1989b, A tectonic history of Trans-Pecos Texas, *in* Structure and Stratigraphy of Trans-Pecos Texas: American Geophysical Union, 28th International Geological Congress, Field Trip Guidebook T317, p. 35-54 **(C2a)**
- Muehlberger, W.R., Belcher, R.C., and Goetz, L.K., 1978, Quaternary faulting in Trans-Pecos Texas: *Geology*, v. 6, p. 337-340. **(C2a)**
- Mueller, J.E., and Twidale, C.R., 1988, Geomorphic development of the City of Rocks: *New Mexico Geology*, v. 10, p. 185-190. **(C2a)**
- Myers, R.G., and Orr, B.R., 1986, Geohydrology of the aquifer in the Santa Fe Group, northern West Mesa of the Mesilla Basin near Las Cruces, New Mexico: U.S. Geological Survey Water Resources Investigations Report 84-4190, 37 p. **(C2a, H1)**
- Navarro, A., and Tovar, J., 1974a, Stratigraphy and tectonics of the State of Chihuahua, Mexico, *in* Geologic Field Trip Guidebook thru the States of Chihuahua and Sinaloa, Mexico: West Texas Geological Society, Publication 74-63, p. 87-91. **(C2a, F3)**
- Navarro, A., and Tovar, J., 1974b, Stratigraphic correlations of the Upper Paleozoic in the region of Palomas, Chihuahua, *in* Geologic Field Trip Guidebook thru the States of Chihuahua and Sinaloa, Mexico: West Texas Geological Society, Publication 74-63, p. 23-27. **(C2a, F3)**
- Navarro, A., and Tovar, J., 1975, Stratigraphy and tectonics of the State of Chihuahua, Mexico, *in* Hills, J.M., ed. Exploration from the mountains to the basins, Mexico: El Paso Geological Society, p. 87-91. **(C2a, F3)**
- Nelson, L.A., 1940, Paleozoic stratigraphy of the Franklin Mountains of West Texas: *American Association of Petroleum Geologists Bulletin*, v. 24, no. 1, p. 157-172. **(C2a)**
- Padovani, E.R., 1987, The ground truth from crustal xenoliths; a multifaceted approach, *in* Noller, J.S., Kirby, S.H., and Nielson-Pike, J.E., eds., Geophysics and petrology of the deep crust and upper mantle: Washington, DC, U.S. Geological Survey, p. 40-43. **(C2a, C4)**
- Padovani, E.R., and Reid, M.R., 1989, Field guide to Kilbourne Hole maar: New Mexico Bureau of Mines and Mineral Resources Memoir 46, p. 174-185. **(C2a)**
- Page, R.O., 1975, Malpais maar volcano: New Mexico Geological Society Guidebook 28, p. 135-137. **(C2a, F1)**
- Paige, S., and Darton, N.H., 1916, Descriptions of the Silver City Quadrangle, New Mexico: U.S. Geological Survey, *Geologic Atlas Folio* 199, 10 p. **(C2a, G1)**
- Parker, D.F., 1983, Origin of the trachyte-quartz trachyte-peralkalic rhyolite suite of the Oligocene Paisano volcano, Trans-Pecos Texas. *Geological Society of America Bulletin*, v. 94, p. 614-629. **(C2a)**
- Parker, D.F., 1986, Stratigraphy, structural, and petrologic development of the Buckhorn caldera, northern Davis Mountains, Trans-Pecos Texas, *in* Price, J.G., Henry, C.D., Parker, D.F., and Barker, D.S., eds., Igneous geology of Trans-Pecos Texas: Fieldtrip guide and research articles, University of Texas at Austin Bureau of Economic Geology Guidebook 23, p. 286-302. **(C2a)**
- Pearson, B.T., 1980, General survey of oil and gas prospects of Trans-Pecos Texas: New Mexico Geological Society Guidebook 26, p. 271-275. **(C2a)**
- Price, J.G., and Henry, C.D., 1985, Summary of Tertiary stress orientations and tectonic history of Trans-Pecos Texas, *in* Dickerson, P.W., and Muehlberger, W.R., eds., Structure and Tectonics of West Texas: West Texas Geological Society, v. 85-81, p. 149-151. **(C2a, F1)**
- Raisz, E. (2nd edition), 1964, Landforms of Mexico. Prepared for the Cartography Branch of the Office of Naval Research (with inset maps of Physiographic Provinces, States, and Territories): Cambridge, MA.; Institute of Geographical Exploration, Harvard University. Scale 1:29,560,000. **(C2a, F3)**
- Ramberg, I.B., Cook, F.A., and Smithson, S.B., 1978, Structure of the Rio Grande rift in southern New Mexico and West Texas based on gravity interpretation: *Geological Society of America Bulletin*, vol. 89, no. 1, p. 107-123. **(C2a, C4)**
- Ramírez, J.C., and Acevedo, F., 1957, Notas sobre la Geología de Chihuahua: *Boletan Asociación Mexicanos Geólogos Petróleos*, v. 9, nos. 9 y 10, p. i-xiv, p. 583-772. **(C2a, F3)**

- Reaser, D.F., 1982, Geometry and deformational environment of the Cineguilla-Quitman range in northeastern Chihuahua, Mexico and western Trans-Pecos Texas, USA, *in* Powers, R.B. (ed.), *Geologic studies of the Cordilleran thrust belt*, v. 1: Denver, Co., Rocky Mountain Association of Geologists, p. 425-449. **(C2a, F1)**
- Reaser, D.F., and Underwood, J.R., Jr., 1980, Tectonic style and deformation environments in the Eagle-southern Quitman Mountains, western Trans-Pecos Texas, *in* Dickerson, P.W., Hoffer, J.M., and Callender, J.F., eds., *Trans-Pecos region: New Mexico Geological Society Guidebook 31*, p. 123-130. **(C2a, F1)**
- Reeves, C.C., Jr., 1965, Pluvial Lake Palomas, northwestern Chihuahua, Mexico; and Pleistocene geologic history of south-central New Mexico: *New Mexico Geological Society Guidebook 16*, p. 199-203. **(C2a, F3, I2, I3)**
- Reeves, C.C., Jr., 1969, Pluvial Lake Palomas, northwestern Chihuahua, Mexico: *New Mexico Geological Society Guidebook 20*, p. 143-154. **(C2a, C4, F3, I2, I3)**
- Reeves, C.C., Jr., and DeHon, R.A., 1965, Geology of Potrillo maar, New Mexico and northern Chihuahua, Mexico: *American Journal of Science*, v. 263, p. 401-409. **(C2a, F1)**
- Reiter, M., 1978, Discussion of structural geology of Franklin Mountains, *in* *Guidebook to Rio Grande rift in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources, Circular 163*, p. 68-69. **(C2a, C4)**
- Repenning, C.A., and May, S.R., 1986, New evidence for the age of lower part of the Palomas Formation, Truth or Consequences, New Mexico: *New Mexico Geological Society Guidebook 37*, p. 257-260. **(B1, C2a, I3)**
- Reyerros de Castillo, M.M., 1974, Corales del Jurásico superior de Chihuahua: *Universidad Nacional Autónoma de México, Instituto de Geología, Paleontología Mexicana*, no. 40, p. 7-43. **(C2a, F3)**
- Reynolds, R.L., and Larsen, E.E., 1972, Paleomagnetism of Pearlette-like air-fall ash in the midwestern and western United States: A means of correlating Pleistocene deposits: *Geological Society of America, Abstracts with Programs*, v. 4, no. 6, p. 405. **(C2a, C4)**
- Richardson, G.B., 1909, Description of the El Paso quadrangle, Texas: *U.S. Geological Survey Geological Atlas, El Paso folio*, ser. no. 116, 11 p. **(C2a)**
- Riecker, R.E., ed., 1979, *Rio Grande rift: Tectonics and magmatism*: Washington, D.C., American Geophysical Union, 438 p. **(C2a, C4)**
- Roberts, D.C., and Dyer, R., 1988, A preliminary report on the geology of the Cerro Panales area, east-central Chihuahua, Mexico, *in* *Stratigraphy, Tectonics and Resources of Parts of Sierra Madre Occidental Province, Mexico: El Paso Geological Society, Guidebook 1988 Field Conference*, p. 159-172. **(C2a, F3)**
- Rodríguez, J.T., 1975, Preliminary geologic map of the northeastern section of the State of Chihuahua, *in* *Exploration from the mountains to the basins, El Paso Geological Society Special Publication*. **(C2a, F3)**
- Rodríguez-Torres, R., 1969, Mesozoic stratigraphy of Sierra de la Alcaparra, northeastern Chihuahua, Mexico: *New Mexico Geological Society Guidebook 20*, p. 173-175. **(C2a, F3)**
- Rodríguez-Torres, R., and Guerrero-García, J.C., 1981, Hoja Villa Ahumada, 13R-a (9): *Universidad Nacional Autónoma México, Instituto de Geología, Cartas Geológicas de México, serie 1:100,000*, 1 mapa. **(C2a, F3)**
- Ross, C.A., and Ross, J.R.P., 1986, Paleotectonics and sedimentation in Arizona and New Mexico: *American Association of Petroleum Geologists, Memoir 41*, p. 653-668. **(C2a)**
- Ruhe, R.V., 1962, Age of the Rio Grande Valley in southern New Mexico, *Journal of Geology*, v. 70, p. 151-167. **(C2a)**
- Ruhe, R.V., 1964, Landscape morphology and alluvial deposits in southern New Mexico: *Annals of the Association of American Geographers*, v. 54, p. 147-159. **(C2a, C3)**
- Ruhe, R.V., 1967, Geomorphic surfaces and surficial deposits in southern New Mexico: *New Mexico Bureau of Mines and Mineral Resources, Memoir 18*, 65 p. **(C2a, C3)**
- Sargent, K.A., Hawley, J.W., Henry, C.D., Stone, W.J., and Kottlowski, F.E., 1989, Quaternary tectonism, *in* *studies of geology and hydrology in the Basin and Range Province, southwestern United States, for isolation of high-level radioactive waste; characterization of the Rio Grande Region, New Mexico and Texas: U.S. Geological Survey Professional Paper 1370-C*, p. C23-C26. **(C2a)**
- Schmidt, R.H., Jr., 1973, A geographical survey of Chihuahua: *El Paso, Texas Western Press (UTEP), Southwestern Studies Monograph No. 37*, 63 p. **(C1, C2a, F3)**
- Schmidt, R.H., Jr., (Abstract), 1978, The Samalayuca sand dune area and its relation to the physical environment: *74th Annual Meeting Proceedings, Association of American Geographers*, p. 112. **(C2a)**
- Schmidt, R.H., Jr., and Marston, R.A., 1981, Los Medanos de Samalayuca, Chihuahua, Mexico: *New Mexico Journal of Science*, v. 21, no. 2, p. 21-27. **(C2a, F3)**

- Seager, W.R., 1961, Geology of the Jarilla Mountains, Tularosa Basin, New Mexico: University of New Mexico, master's thesis, 80 p. **(C2a)**
- Seager, W.R., 1973a, Geologic map and sections of Bishop Cap – Organ Mountains area, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 29, scale 1:24,000. **(C2a)**
- Seager, W.R., 1973b, Resurgent volcano-tectonic depression of Oligocene age, south-central New Mexico: Geological Society of America, Bulletin, v. 84, p. 3611-3626. **(C2a)**
- Seager, W.R., 1975a, Cenozoic tectonic evolution of the Las Cruces area, New Mexico: New Mexico Geological Society, Guidebook 26, p. 241-250. **(C2a)**
- Seager, W.R., 1975b, Geologic map and sections of south half of San Diego Mountain quadrangle, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 35, scale 1:62,500. **(C2a)**
- Seager, W.R., 1980, Quaternary fault system in the Tularosa and Hueco Basins, southern New Mexico and west Texas: New Mexico Geological Society Guidebook 31, p. 131-135. **(C2a)**
- Seager, W.R., 1981, Geology of the Organ Mountains and southern San Andres Mountains, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Memoir 36, 97 p. **(C2a)**
- Seager, W.R., 1982, Geologic cross sections and gravity profiles of the northwest part of Las Cruces 1° x 2° sheet (gravity sections by Daggett, P.R. and Keller, G.R.), Sheet 2, *in* Seager, W.R., Hawley, J.W., Kottlowski, F.E., and Kelley, S.A., Geology of northwest part of Las Cruces 1° x 2° sheet, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 60, scale 1:125,000. **(C2a)**
- Seager, W.R., 1983, Laramide wrench faults, basement-cored uplifts, and complimentary basins in southern New Mexico: New Mexico Geology, v. 5, no. 4, p. 69-76. **(C2a)**
- Seager, W.R., 1986a, Reconnaissance geologic map of Kaylor Mountain 15-minute quadrangle, Doña Ana and Sierra counties, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report 401, scale 1:62,500, 1 sheet. **(C2a)**
- Seager, W.R., 1986b, Third-day road log, from Truth of Consequences to southeastern Caballo mountains and San Diego Mountain via I-25 and the Jornada del Muerto: New Mexico Geological Society Guidebook 37, p. 35-52. **(C2a)**
- Seager, W.R., 1987, Caldera-like collapse at Kilbourne Hole Maar, New Mexico: New Mexico Geology, v. 9, no. 4, p. 69-73. **(C2a)**
- Seager, W.R., 1989, Geology beneath and around the West Portrillo basalts, Doña Ana and Luna Counties, New Mexico: New Mexico Geology, v. 11, no. 3, p. 53-59. **(C2a)**
- Seager, W.R., and Brown, L.F., 1978, The Organ caldera: New Mexico Geological Society, Special Publication 7, p. 137-149. **(C2a)**
- Seager, W.R., and Clemons, R.E., 1975, Middle to late Tertiary geology of the Cedar Hills-Selden Hills area, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 133, 24 p. **(C2a)**
- Seager, W.R., and Clemons, R.E., 1988, Geology of Hermanas quadrangle, Luna County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Geologic Map, GM-63, scale 1:24,000. **(C2a)**
- Seager, W.R., and Hawley, J.W., 1973, Geology of Rincon quadrangle, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 101, 56 p., map scale 1:24,000. **(C2a)**
- Seager, W.R., and Hawley, J.W., 1987, Geologic sections and gravity profiles through the east half of Las Cruces and northeast El Paso 1° x 2° sheets, New Mexico, *in* Seager, W.R., Hawley, J.W., Kottlowski, F.E., and Kelley, S.A., Geology of east half of Las Cruces and northeast El Paso 1° x 2° sheets, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 57, scale 1:125,000. **(C2a, C4)**
- Seager, W.R., and McCurry, M., 1988, The cogenetic Organ cauldron and batholith, south-central New Mexico: Journal of Geophysical Research, v. 93, no. B5, p. 4421-4433. **(C2a)**
- Seager, W.R., and Morgan, P., 1978a, Stop S3, Leasburg Dam-Radium Springs overlook discussion, *in* Hawley, J.W., and Seager, W.R., 1978, New Mexico-Texas State Line to Elephant Butte Reservoir—Guidebook to Rio Grande Rift in New Mexico and Colorado: New Mexico Bureau of Mines & Mineral Resources, Circular 163, p. 75-78. **(C2a, C4)**
- Seager, W.R., and Morgan, P., 1978b, Stop S5, San Diego [Tonuco] Mountain discussion, *in* Hawley, J.W., and Seager, W.R., 1978, New Mexico-Texas State Line to Elephant Butte Reservoir – Guidebook to Rio Grande Rift in New Mexico and Colorado: New Mexico Bureau of Mines & Mineral Resources Circular 163, p. 82-83. **(C2a, C4)**
- Seager, W.R., and Morgan, P., 1979, Rio Grande rift in southern New Mexico, west Texas and northern Chihuahua, *in* Riecker, R.E., ed., Rio Grande rift, tectonics and magmatism: Washington D.C., American Geophysical Union, p. 87-106. **(C2a, C4)**

- Seager, W.R., Clemons, R.E., and Callender, J.F., eds. 1975, Guidebook of the Las Cruces Country: New Mexico Geological Society Guidebook 26, 376 p. **(C2a)**
- Seager, W.R., Clemons, R.E., and Hawley, J.W., 1975, Geology of Sierra Alta Quadrangle, Doña Ana County, New Mexico, New Mexico Bureau of Mines and Mineral Resources, Bulletin 102, 56 p., map scale 1:24,000. **(C2a)**
- Seager, W.R., Hawley, J.W., and Clemons, R.E., 1971, Geology of San Diego Mountain area, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 97, 38 p., map scale 1:24,000. **(C2)**
- Seager, W.R., Hawley, J.W., and Mack, G.H., 2015 [1995 revision], Geologic map of Hatch 7.5-minute quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Open-File Geologic Map 213, scale 1:24,000. CD-ROM. <http://geoinfo.nmt.edu/publications/maps/geologic/ofgm/> **(C2b)**
- Seager, W.R., Kottowski, F.E., and Hawley, J.W., 1976, Geology of Doña Ana Mountains, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 147, 36 p., 2 tables, 13 figs., 3 sheets, scale 1:24,000. **(C2a)**
- Seager, W.R., Clemons, R.E., Hawley, J.W., and Kelley, R.E., 1982, Geology of northwest part of Las Cruces 1° x 2° sheet, New Mexico: New Mexico Bureau of Mines and Mineral Resources Geologic Map, GM-53, scale 1:125,000, 3 sheets. **(C2a)**
- Seager, W.R., Hawley, J.W., Kottowski, F.E., and Kelley, S.A., 1987, Geologic map of east half of Las Cruces and northeast El Paso 1° x 2° sheets, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map, GM-57, scale 1:125,000, 3 sheets. **(C2a)**
- Seager, W.R., Mack, G.H., Raimonde, M.S., and Ryan, R.G., 1986, Laramide basement-cored uplift and basins in south-central New Mexico: New Mexico Geological Society Guidebook 37, p. 123-130. **(C2a)**
- Seager, W.R., Shafiqullah, M., Hawley, J.W., and Marvin, R.F., 1984, New K-Ar dates from basalts and the evolution of the southern Rio Grande: Geological Society of America Bulletin, v. 95, no. 1, p. 87-99. **(C2a, I3)**
- Sharps, J.A., and Freeman, V.L., 1964, Geologic map of The Mouth of Pecos and Feely quadrangles, Val Verde County, Texas: U.S. Geological Survey, Miscellaneous Geologic Investigations Map I-440, scale 1:62,500. **(C2a, F1, I3)**
- Sinno, Y.A., Daggett, P.H., Keller, G.R., Morgan, P., and Harder, S.H., 1986, Crustal structure of the southern Rio Grande rift determined from seismic refraction profiling: Journal of Geophysical Research, v. 91, p. 6,143-6,156. **(C2a, C4)**
- Sivils, D.J., and Phillips, J.D., 1986, Geology of Sierra [Alta] de Palomas: El Paso Geological Society, Guidebook, p. 60-66. **(C2a, F3)**
- Smith, M.L., and Miller, R.R., 1986, The evolution of the Rio Grande Basin as inferred from its fish fauna, *in* Hocutt, C.H. and Wiley, E.O., eds., Zoogeography of North American Freshwater Fishes: New York, John Wiley and Sons, p. 457-485. **(B1, C1, C2a, I3)**
- Smith, R.E., 1956, Ground water of the El Paso District, Texas: Texas Board of Water Engineers, Bulletin 5603, 33 p. **(C2a, F1, G2)**
- Sociedad Geológica Mexicana, A.C. (SGM), 1985, Plano geológico minero, Chihuahua, Mexico: Sociedad Geológica Mexicana, A.C., Delegación Chihuahua, Escala 1:500,000. **(C2a, F3)**
- Stevens, J.B., and Stevens, M.S., 1985, Basin and Range deformation and depositional timing, Trans-Pecos Texas, *in* Structure and Tectonics of Trans-Pecos Texas: West Texas Geological Society, Publication 85-81, p. 157-163. **(C2a)**
- Stewart, J.H., 1971, Basin and Range structure, a system of horsts and grabens produced by deep-seated extension: Geological Society of America, Bulletin, v. 82, p. 1019-1044. **(C2a)**
- Strain, W.S., 1959, Blancan mammalian fauna from Rio Grande Valley, Hudspeth County, Texas: Geological Society of America Bulletin, v. 70, no. 2, p. 373-378. **(B1, C2a)**
- Strain, W.S., 1966, Blancan mammalian fauna and Pleistocene formations, Hudspeth County, Texas: Texas Memorial Museum, Bulletin 10, 55 p. **(B1, C2a)**
- Strain, W.S., 1968, Cerro de Muleros (Cerro de Cristo Rey): West Texas Geological Society, Delaware Basin Exploration Guide, Publication 68-55, p. 82. **(C2a)**
- Strain, W.S., 1969, Late Cenozoic strata of the El Paso-Juarez area: New Mexico Geological Society Guidebook 20, p. 155-157. **(C2a)**
- Strain, W.S., 1971, Late Cenozoic bolson integration in the Chihuahua tectonic belt, *in* The geologic framework of the Chihuahua tectonic belt: West Texas Geological Society, Publication No. 71-59, p. 167-173. **(C2a)**

- Strain, W.S., 1976, New formation names in the Cretaceous at Cerro de Cristo Rey, Doña Ana County, New Mexico, *in* Lovejoy, E.M.P., Geology of Cerro de Cristo Rey uplift, Chihuahua and New Mexico: New Mexico Bureau of Mines and Mineral Resources, Memoir 31, p. 77-82. **(C2a)**
- Strain, W.S., 1980, Pleistocene rocks in El Paso and Hudspeth Counties, Texas adjacent of Interstate Highway 10: New Mexico Geological Society Guidebook 31, p. 179-181. **(C2a)**
- Stuart, C.J., and Willingham, D.L., 1984, Late Tertiary and Quaternary fluvial deposits in the Mesilla and Hueco bolsons, El Paso area, Texas: *Sedimentary Geology*, v. 38, p. 1-20. **(C2a)**
- Swanson, R.J., 1989, Radium Springs geothermal area: A field study: New Mexico Institute of Mining and Technology, master's thesis, 106 p. **(C2a, C4)**
- Tedford, R.H., 1981, Mammalian biochronology of the late Cenozoic basins of New Mexico: *Geological Society of America Bulletin*, Part I, v. 92, p. 1008-1022. **(B1, C2a)**
- Tomida, Y., 1987, Small mammal fossils and correlation of continental deposits, Safford and Duncan basins, Arizona, USA: Tokyo, National Science Museum, 141 p. **(B1, C2a)**
- Thompson, S. III, 1982a, Oil and gas exploration wells in southwestern New Mexico, *in* Drewes, H, ed., Cordilleran overthrust belt, Texas to Arizona: Rocky Mountain Association of Geologists, Guidebook to Field Conference, v. 1, p. 137-153. **(C2a)**
- Thompson, S. III, 1982b, Oil and gas exploration wells in southwestern New Mexico, *in* Powers, R.B., ed., Geologic studies of the Cordilleran thrust belt: Rocky Mountain Association of Geologists Guidebook to Field Conference, v. 2, p. 521-536. **(C2a)**
- Thompson, S. III, and Bieberman, R.A., 1975, Oil and gas exploration wells in Doña Ana County, New Mexico: New Mexico Geological Society Guidebook 26, p. 171-174. **(C2a, F1)**
- Thompson, S. III, Tovar, J.C., and Conley, J.N., 1978, Oil and gas exploration wells in the Pedregosa Basin: New Mexico Geological Society Guidebook 29, p. 331-342. **(C2a, F1)**
- Tolman, C.F., 1909, Erosion and deposition in southern Arizona bolson region: *Journal of Geology*, v. VII, no. II, p. 136-163. **(C2a, D1)**
- Tovar, J., 1969, Stratigraphic study of the Sierra Santa Rita: New Mexico Geological Society Guidebook 20, p. 165-170. **(C2a, F3)**
- Tovar, J.C., and Valencia, J., 1974, Road Log, First Day: Ojinaga to Chihuahua City, *in* Geologic Field Trip Guidebook thru the States of Chihuahua and Sinaloa, Mexico: West Texas Geological Society, Publication 74-63, p. 7-43. **(C2a, F3)**
- Tovar-R, J., Vázquez, H., Lozano, S., 1978, Interpretación integrada geológica-geofísica, porción norte de Chihuahua: Asociación Mexicana de Geólogos Petroleros, Boletín, Tomo XXX, p. 59-132. **(C2a, C4, F3)**
- Underwood, J.R., Jr., 1963, Geology of Eagle Mountains and vicinity, Hudspeth County, Texas: Texas Bureau of Economic Geology, Geologic Quadrangle Map No. 26, 32 p. text. **(C2a, F2)**
- Underwood, J.R., Jr., 1980, Physiographic features, Trans-Pecos region: New Mexico Geological Society Guidebook 31, p. 57-58. **(C2a, F1)**
- Uphoff, T.L., 1978, Subsurface stratigraphy and structure of the Mesilla and Hueco bolsons, El Paso region, Texas and New Mexico: University of Texas at El Paso, master's thesis, 66 p. **(C2a, F2)**
- U.S. Geological Survey, 2021, The National Map, accessed June 30, 2021 at: <https://www.usgs.gov/core-science-systems/national-geospatial-program/national-map> **(C2a)**
- Vanderhill, J.B., 1986, Lithostratigraphy, vertebrate paleontology, and magnetostratigraphy of Plio-Pleistocene sediments in the Mesilla Basin, New Mexico: University of Texas at Austin, doctoral dissertation, 311 p. **(B1, C1, C2a)**
- Veldhuis, J.H., and Keller, G.R., 1980, An integrated geological and geophysical study of the Salt Basin graben: New Mexico Geological Society Guidebook 31, p. 141-150. **(C2a, C4)**
- Vlissides, S.D., and Bieberman, R.A., 1961, Map of New Mexico showing oil and gas fields, unsuccessful test wells, Precambrian rocks, and pipelines: U.S. Geological Survey Oil and Gas Investigations Map OM-207. **(C2a)**
- Waters, M.R., 1985, Late Quaternary alluvial stratigraphy of Whitewater Draw, Arizona: Implication for regional correlation of fluvial deposits in the American Southwest: *Geology*, v. 13, p. 705-708. **(B2, C2a, I2)**
- Waters, M.R., 1989, Late Quaternary lacustrine history and paleoclimatic significance of pluvial Lake Cochise, southeastern Arizona: *Quaternary Research*, v. 32, p. 1-11. **(B2, C1, C2a, I2)**
- Webb, D.S., 1969, Facets of the geology of the Sierra del Presidio area, north-central Chihuahua: New Mexico Geological Society Guidebook 20, p. 182-185. **(C2a)**
- Weber, R.H., 1964, Cenozoic volcanic rocks of Socorro County: New Mexico Geological Society Guidebook 14, p. 132-143. **(C2a)**

- Wells, S.G., and Lambert, W.P., eds., 1981, Environmental Geology and Hydrology in New Mexico: New Mexico Geological Society, Special Publication No 10., 152 p. **(C2a)**
- West Texas Geological Society (WTGS), 1974, Geologic Field Trip Guidebook through the States of Chihuahua and Sinoloa, Mexico: West Texas Geological Society, Publication 74-63, 150 p. **(C2a)**
- Wohletz, K.H., and Sheridan, M.F., 1983, Hydrovolcanic explosions: II, Evolution of basaltic tuff rings and tuff cones: American Journal of Science, vol. 283, no. 5, p. 385-413. **(C2a, D1)**
- Woodward, L.A., and DuChene, H.R., 1982, Tectonics and hydrocarbon potential of thrust and fold belt, southwestern New Mexico, *in* Powers, R.B., ed., Geologic studies of the Cordilleran thrust belt: Rocky Mountain Association of Geologists Guidebook, v. 1, p. 409-418. **(C2a)**
- Woodward, L.A., Callender, J.F., Seager, W.R., Chapin, C.E., Gries, J.C., Schaffer, W.L., and Zilinski, R.E., 1978, Tectonic map of the Rio Grande rift region in New Mexico, Chihuahua, and Texas, *in* Hawley, J.W., compiler, Guidebook to the Rio Grande rift in New Mexico and Colorado: N.M. Bureau of Mines and Mineral Resources, Circular 163, Sheet 2, approx. scale 1:1,000,000. **(C2a)**
- Zoback, M.L., and Zoback, M.D., 1989, Tectonic stress field of the continental United States, *in* Pakiser, L.C., and Mooney, W.D, eds., Geophysical Framework of the Continental United States: Geological Society of America Memoir 172, p. 523-539. **(C2a, C4)**

C2b. Geologic and Geomorphic Setting: Post-1989

- Adams, D.C., and Keller, G.R., 1994, Crustal structure and basin geometry in south-central New Mexico, *in* Keller, G.R., and Cather, S.M., eds., Basins of the Rio Grande rift: Structure, stratigraphy and tectonic setting: Geological Society of America Special Paper 291, p. 241-255. **(C2b, C4)**
- Amato, J.F., Mack, G.H., Jonell, T.N., Seager, W.R., and Upchurch, G.R., 2017, Onset of the Laramide orogeny and associated magmatism in southern New Mexico based on U-Pb geochronology: Geological Society of America Bulletin. v. 129, p. 1209-1226. **(C2b)**
- Anderson, R.Y., 2006, Pangean monsoon and climatic cycles in NM-Texas State-Line [Castile Fm] outcrop: New Mexico Geological Society Guidebook 57, p. 80-81. **(C2b)**
- Anderson, R.Y., and Dean, W.E., 1995, Filling the Delaware Basin: Hydrologic and climatic controls on the Upper Permian Castile varved evaporite, *in* Scholle, P.A., Peryt, T.M., and Ullmer-Scholle, D.S., eds., The Permian of Northern Pangea, Volume 2: Sedimentary Basins and Economic Resources: Berlin, Springer-Verlag, p. 61-78. **(C2b)**
- Anthony, E.Y., and Poths, J., 1992, The surface exposure dating and magma dynamics, the Potrillo Volcanic Field, Rio Grande Rift, New Mexico: Geochimica et Cosmochimica Acta, v. 56, p. 4105-4108. **(C2b, C4)**
- Anthony, E.Y., Hoffer, J.M., Waggoner, W.K., and Chen, W., 1992, Compositional diversity in Late Cenozoic mafic lavas in the Rio Grande Rift and Basin and Range Province, southern New Mexico: Geological Society of America Bulletin, v. 104, p. 973-979. **(C2b, C4)**
- Averill, M.G., 2007, A lithospheric investigation of the southern Rio Grande rift: University of Texas at El Paso, doctoral dissertation, 213 p. **(C2b, C4)**
- Averill, M.G., and Miller, K.C., 2013, Upper crustal structure of the southern Rio Grande rift: A composite record of rift and pre-rift tectonics, *in* Hudson, M.R., and Grauch, V.J.S., eds., New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater: Geological Society of America Special Paper 494, p. 463-474. doi: 10.1130/2013.2494(17) **(C2b, C4)**
- Avila, V.M., Doser, D.I., Dena-Ornelas, O.S., Moncada, M.M., and Marrufo-Cannon, S.S., 2016, Using geophysical techniques to trace active faults in the urbanized northern Hueco Bolson, West Texas, USA, and northern Chihuahua, Mexico: Geosphere, v. 12, no. 1, p. 264-280. **(C2b, C4)**
- Baker, L.A., Schinagel, S., Villalobos, J.I., Avila, V., Montana, C.J., and Kaip, G. (abstract), 2012, A microgravity survey to determine the extent of an andesitic sill that intrudes across the Rio Grande River basin, Rio Grande Rift valley, Sunland Park, New Mexico: San Francisco, California, 2012 Fall Meeting, American Geophysical Union, abstract ED23B-0765. **(C2b, C4)**
- Baldrige, W.S., 2004, Pliocene-Quaternary volcanism in New Mexico and a model for genesis of magmas in continental extension, *in* Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society, Special Publication 11, p. 312-330. **(C2b, C4)**
- Baldrige, W.S., Keller, G.R., Haak, V., Wendtland, E., Jiracek, G.R., and Olsen, K.H., 1995, Rio Grande rift, *in* Olsen, K.H., ed., Continental rifts: Evolution, structure, tectonics: Developments in Tectonics 25: Amsterdam, Elsevier, p. 233-275. **(C2b)**
- Beehner, T.S., 1990, Burial of fault scarps along the Organ Mountains fault, south-central New Mexico: Bulletin of the Association of Engineering Geologists, v. 27, no. 1, p. 1-19. *See Gile 1991.* **(C2b, C3, C4)**

- Biddle, J., Ricketts, J.W., Amato, J.M., 2018, Constraining timing of extension in the southern Rio Grande Rift and basin and range using apatite and zircon (U-Th)/He thermochronology: New Mexico Geological Society Guidebook 69, p. 127-135. *Repository: 2018002* **(C2b)**
- Blair, T.C., Clark, J.S., and Wells, S.G., 1990, Quaternary continental stratigraphy, landscape evolution, and application to archaeology: Jicarilla piedmont and Tularosa graben floor, White Sands Missile Range, New Mexico: Geological Society of America Bulletin, v. 102, p. 748-759. **(C2b)**
- Budhathoki, P., 2013, Integrated geological and geophysical studies of the Indio Mountains and Hueco Bolson, West Texas: University of Texas and El Paso, doctoral dissertation, 126 p. **(C2b, C4)**
- Budhathoki, P., Doser, D.I., Thapalia, A., Langford, R.P. and Avila, V.M., 2018. Geological and geophysical studies of the structure and stratigraphy of the northwestern Hueco Bolson aquifer, El Paso, Texas. *Geosphere*, v. 14, no. 2, p. 731-748. **(C2b, C4)**
- Buck, B.J., 1996, Late Quaternary Landscape Evolution, Paleoclimate and Geoarchaeology, Southern New Mexico and West Texas: New Mexico State University, doctoral dissertation, 398 p. **(B2, C1, C2b, C3)**
- Buck, B.J., Kipp, J.M., Jr., and Monger, H.C., 1998, Eolian stratigraphy of interbasin fault depressions in the northern Hueco and southern Tularosa Basin: Evidence for neotectonic activity: New Mexico Geological Society Guidebook 49, p. 97-86. **(C2b, C4)**
- Burgos, A., 1993, A gravimetric study of the thickness of the unconsolidated materials in the Hueco Bolson aquifer, Juárez area, Chihuahua Mexico: University of Texas at El Paso, master's thesis, 259 p. **(C2b, C4)**
- Campos-Enriquez, J.O., Ortega-Ramírez, J., Alariste-Vilchis, D., Cruz-Gática, R., and Cabral-Cano, E., 1999, Relationship between extensional tectonic style and paleoclimatic elements at Laguna El Fresnal, Chihuahua Desert, Mexico: *Geomorphology*, v. 28, p. 75-94. **(C1, C2b, F3, I2)**
- Carciumaru, D.D., 2005, Structural geology and tectonics of the northern Chihuahua trough: University of Texas at El Paso, doctoral dissertation, 99 p. **(C2b, F3)**
- Chapin, C.E., 2008, Interplay of oceanographic and paleoclimate events with tectonism during middle to late Miocene sedimentation across the southwestern USA: *Geosphere*, v. 4, no. 6, p. 976-991. **(C2b)**
- Chapin, C.E., and Cather, S.M., 1994, Tectonic setting of the axial basins of the northern and central Rio Grande Basin, New Mexico, *in* Keller, G.R., and Cather, S.M., eds., *Basins of the Rio Grande Rift – Structure, stratigraphy, and tectonic setting*. Geological Society of America, Special Paper 291, p. 5-25. **(C2b, I3)**
- Chapin, C.E., McIntosh, W.C., and Chamberlin, R.M., 2004, The late Eocene-Oligocene peak of Cenozoic volcanism in southwestern New Mexico, *in* Mack, G.H., and Giles, K.J., eds., *The Geology of New Mexico: A geologic history*: New Mexico Geological Society Special Publication 11, p. 271-294. **(C2b)**
- Clemons, R.E., 1993, Petrographic analysis of Cenozoic-Mesozoic-Permian well cuttings from two exploration wells in south-central New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 203, 28 p. **(C2b, H1)**
- Clemons, R.E., 1998, Geology of the Florida Mountains, southwestern New Mexico: New Mexico Bureau of Mines and Mineral Resources Memoir 43, 113 p., 5 plates. **(C2b)**
- Collins, E.W., and Raney, J.A., 1991, Tertiary and Quaternary structure and paleotectonics of the Hueco Basin, Trans-Pecos Texas and Chihuahua, Mexico: University of Texas at Austin, Bureau of Economic Geology, Geological Circular GC 91-2, 44 p. **(C2b)**
- Collins, E.W., and Raney, J.A., 1993. Late Cenozoic faults of the region surrounding the Eagle Flat study area, northwestern Trans-Pecos Texas: University of Texas at Austin, Bureau of Economic Geology final contract report, prepared for Texas Low-Level Radioactive Waste Disposal Authority under Interagency Contract IAC (92-93)-0910, 74 p. **(C2b, C4)**
- Collins, E.W., and Raney, J.A., 1994a, Impact of late Cenozoic extension on Laramide overthrust belt and Diablo platform margins, northwestern Trans-Pecos Texas: New Mexico Bureau of Mines and Mineral Resources Bulletin 150, p. 71-81. **(C2b)**
- Collins, E.W., and Raney, J.A., 1994b, Tertiary and Quaternary tectonics of the Hueco Bolson, Trans-Pecos Texas and Chihuahua, Mexico, *in* Keller, G.R., and Cather, S.M., eds., *Basins of the Rio Grande Rift – Structure, stratigraphy, and tectonic setting*: Geological Society of America Special Paper 291, p. 265-282. **(C2b)**
- Collins, E.W., and Raney, J.A., 1997, Quaternary faults within intermontane basins of northwest Trans-Pecos Texas and Chihuahua, Mexico: University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 245, 59 p. **(C2b)**
- Collins, E.W., and Raney, J.A., 2000, Geologic map of west Hueco Bolson, El Paso region, Texas: University of Texas at Austin, Bureau of Economic Geology, Miscellaneous Map No. 40, scale 1:100,000. **(C2b, F1)**

- Collins, E., Haller, K.M., and Machette, M.N., compilers, 2015, Fault number 900, East Franklin Mountains fault, *in* Quaternary fault and fold database of the United States: U.S. Geological Survey website, accessed June 24, 2021 at <https://earthquakes.usgs.gov/hazards/qfaults> **(C2b, C4)**
- Connell, S.D., Love, D.W., and Dunbar, N.W., 2007, Geomorphology and stratigraphy of inset fluvial deposits along the Rio Grande Valley in the central Albuquerque Basin: *New Mexico Geology*, v. 29, no. 1, p. 13-31. **(C2b, D1, I3)**
- Connell, S.D., Hawley, J.W., and Love, D.W., 2005, Late Cenozoic drainage development in the southeastern Basin and Range of New Mexico, southeasternmost Arizona and western Texas, *in* Lucas, S.G., Morgan, G., and Zeigler, K.E., eds., 2005, *New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28*, p. 125-150. **(C2b, I1, I3)**
- Cook, J.P., Youberg, A., Pearthree, P.A., Onken, J.A., MacFarlane, B.J., Hadad, D.E., Bigio, E.R., and Kowler, A.L., 2010, Mapping of the Holocene river alluvium along the San Pedro River, Aravaipa Creek, and Babocomari River, Southeastern Arizona: *Arizona Geological Survey Digital Map DM-RM-1*, 76 p. **(C2b)**
- Creitz, R.H., Hampton, B.A., Mack, G.H., and Amato, J.A., 2018, New U-Pb geochronology from middle-late Eocene (-46-36 Ma) intermediate volcanic rocks of the Palm Park Formation and Orejon Andesite in south-central New Mexico: *New Mexico Geological Society Guidebook 69*, p. 147-157. *Repository: 2018004* **(C2b)**
- DeHon, R., and Earl, R., 2018a, Reassessment of features in the Aden Crater lava flows, Doña Ana County, New Mexico: *New Mexico Geology*, v. 40, p. 17-26. **(C2b)**
- DeHon, R.A., and Earl, R.A., 2018b, The Aden lava flows, Doña Ana County, New Mexico: *N.M. Geological Society Guidebook 69*, p. 197-202. **(C2b)**
- Dethier, D.P., 2001, Pleistocene incision rates in the western United States calibrated using Lava Creek B tephra: *Geology*, v. 29, no. 9, p. 783-786. **(C2b, I3)**
- Dickerson, P.W., 2013, Tascotal Mesa transfer zone—An element of the Border Corridor transform system, Rio Grande rift of West Texas and adjacent Mexico, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater: Geological Society of America Special Paper 494*, p. 475-500. doi: 10.1130/2013.2494(18) **(C2b)**
- Dickerson, P.W., and Muehlberger, W.R., 1994, Basins in the Big Bend segment of the Rio Grande rift, Trans-Pecos Texas: *Geological Society of America Special Paper 294*, p. 283-297. **(C2b, I3)**
- Dickinson, W.R., 2002, The Basin and Range Province as a composite extensional domain: *International Geology Review*, v. 44, p. 1-38. **(C2b)**
- Dickinson, W.R., 2003a, Depositional facies of the Quiburis Formation, basin fill of the San Pedro trough, southeastern Arizona Basin and Range Province; *in* Reynolds, R.G. and Flores, R.M., eds., *Cenozoic Systems of the Rocky Mountain Region: Society for Sedimentary Geology, Denver, CO*, p. 157-181. **(C2b)**
- Dickinson, W.R., Klute, M.R., and Swift, P.N., 1986, The Bisbee Basin and its bearing on late Mesozoic paleogeographic and paleotectonic relations between the Cordilleran and Caribbean regions, *in* Abbott, P.L. ed., *Cretaceous Stratigraphy Western North America, Society of Economic Paleontologists and Mineralogists, Pacific Section, Book 46*, p. 51-62. **(C2a, C2b)**
- Doser, D.I., Avila, V., Budhathoki, P., Marrufo, S., Montana, C.J., Kaip, G., Moncada, M., and Dena-Ornelas, O. (abstract), 2012, Determining deep basin structure of the Hueco and southern Mesilla bolsons, west Texas, southern New Mexico and northern Chihuahua using nonseismic geophysical techniques: *San Francisco, California, 2012 Fall Meeting, American Geophysical Union, abstract NS41B-1672*. **(C2b, C4)**
- Drewes, H., 1991, Description and development of the Cordilleran orogenic belt in the southwestern United States and northern Mexico: *U.S. Geological Survey Professional Paper 1512*, 97 p. **(C2b, F1)**
- Drewes, H., and Dyer, R., 1993, Geologic map and structure sections of the Sierra Juarez, Chihuahua, Mexico: *U.S. Geological Survey Miscellaneous Investigations Map I-2287*, scale 1:12,500. **(C2b, F3)**
- Dunbar, N.W., 2005, Quaternary volcanism in New Mexico, *in* Lucas, S.G., Morgan, G., and Zeigler, K.E., eds., *New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28*, p. 95-106. **(C2b)**
- Earman, C.J., McPherson, O.L., Phillips, F.M., Ralser, S., Herrin, J.M., and Broska, J., 2008, Tectonic influences on ground water quality: insight from complementary methods: *Ground Water*, v. 46, no. 3, p. 354-371. **(C2b, D1, H2)**
- Esser, R.P., 2003a, $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology results from clasts from late Cretaceous/early Tertiary units of the Caballo Mountains, New Mexico: *New Mexico Bureau of Geology and Mineral Resources, Argon open-file reports, OF-AR-16* **(C2b)**

- Esser, R.P., 2003b, $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology results from volcanic rocks, southern New Mexico: New Mexico Bureau of Geology and Mineral Resources, Argon open-file reports, OF-AR-18 **(C2b)**
- Everitt, B., 1993, Channel responses to declining flow on the Rio Grande between Ft. Quitman and Presidio, Texas: *Geomorphology*, v. 6, p. 225-242. **(B3, C1, C2b)**
- Everitt, B., 1998, Chronology of the spread of Tamarisk in the central Rio Grande: *Wetlands*, v. 18, no. 4, p. 658-668. **(B3, C1, C2b)**
- Faulds, J.E., and Varga, R.J., 1998, The role of accommodation zones and transfer zones in the regional segmentation of extended terranes, *in* Faulds, J.E., and Stewart, J.H., eds., *Accommodation zones and transfer zones: The regional segmentation of the Basin and Range province*: Geological Society of America Special Paper 323, p. 1-45. **(C2b)**
- Finch, S.T., Jr., McCoy, A., Mellis, E., 2008, Geologic Controls on Ground-Water Flow in the Mimbres Basin, Southwestern New Mexico: New Mexico Geological Society Guidebook 59, p. 189-198. **(C2b, H1, H3)**
- Gile, L.H., 1990, Chronology of lava and associated soils near San Miguel, New Mexico: *Quaternary Research*, v. 33, p. 37-50. **(C2b, C3)**
- Gile, L.H., 1991, Discussion, burial of fault scarps along the Organ Mountains fault, south-central New Mexico: *Bulletin of the Association of Engineering Geologists*, v. 27, no. 3, p. 325, 326. *See Beehner 1990*. **(C2b, C3)**
- Gile, L.H., 1994b, Soils, geomorphology, and multiple displacements along the Organ Mountains fault in southern New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 133, 91 p. **(C2b, C3)**
- Gile, L.H., 2002, Lake Jornada, an early-middle Pleistocene lake in the Jornada del Muerto Basin, southern New Mexico: *New Mexico Geology*, v. 24, no. 1, p. 3-14. **(C2b, C3, I2)**
- Gile, L.H., Grossman, R.B., Hawley, J.W., and Monger, H.C., 1996, Ancient soils of the Rincon surface, northern Doña County, *in* Gile, L.H., and Ahrens, R.J., eds., *Supplement to the Desert Project Soil Monograph, Volume II: Soils and landscapes astride the Rio Grande Valley near Las Cruces, New Mexico*: U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, NE, Soil Survey Investigation Report No. 44, p. 1-110. **(C2b, C3)**
- Gile, L.H., Hawley, J.W., Grossman, R.B., Monger, H.C., Montoya, C.E., and Mack, G.H., 1995, Supplement to the Desert Project Guidebook, with emphasis on soil micromorphology: New Mexico Bureau of Mines and Mineral Resources, Bulletin 142, 96 p. **(C2b, C3)**
- Gile, L.H., Monger, H.C., Grossman, R.B., Ahrens, R.J., Hawley, J.W., Peterson, F.F., Gibbens, R.P., Lenz, J.M., Bestelmeyer, B.T., and Nolen, B.A., 2007, A 50th Anniversary Guidebook for the Desert Project: Lincoln, NE, U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, 279 p. **(C1, C2b, C3)**
- Goerger, L.L., 1993, Carbonate petrography of the Panther Seep (Virgilian-Wolfcampian?) – Lower Hueco (Wolfcampian) Formations in the Dona Ana and Robledo Mountains, Dona Ana County, New Mexico: New Mexico State University, master's thesis, 111 p. **(C2b)**
- Goff, F., and Gardner, J.N., 2004, Late Cenozoic geochronology of volcanism and mineralization in the Jemez Mountains and Valles caldera, north-central New Mexico, *in* Mack, G.H., and Giles, K.J., eds., *The Geology of New Mexico: A geologic history*: New Mexico Geological Society, Special Publication 11, p. 295-312. **(B1, C2b)**
- Grauch, V.J.S., 2000, High-resolution aeromagnetic data for the Albuquerque Basin: U.S. Geological Survey, Denver, CO, Digital Map. **(C2b, C4)**
- Grauch, V.J.S., and Connell, S.D., 2013, New perspectives on the geometry of the Albuquerque Basin, Rio Grande rift, New Mexico: Insights from geophysical models of rift-fill thickness, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater*: Geological Society of America Special Paper 494, p. 427-462. **(C2b, C4)**
- Grauch, V.J.S., and Hudson, M.R., 2007, Guides to understanding the aeromagnetic expression of faults in sedimentary basins: Lessons learned from the central Rio Grande rift: *Geosphere*, v. 3, no. 6, p. 596-623. **(C2b, C4)**
- Gustavson, T.C., 1990, Regional stratigraphy and geomorphic evolution of the southern Hueco Bolson, west Texas and Chihuahua, Mexico, *in* Kreitler, C.W., and Sharp, J.M., Jr., eds., *Hydrology of Trans-Pecos Texas*: University of Texas at Austin, Bureau of Economic Geology, Guidebook 25, p. 27-35. **(C2b, C3, I3)**
- Gustavson, T.C., 1991a, Arid basin depositional systems and paleosols: Fort Hancock and Camp Rice Formations (Pliocene-Pleistocene) Hueco Bolson, West Texas and adjacent Mexico: University of Texas at Austin, Bureau of Economic Geology, Report of Investigations No. 198, 49 p. **(C2b, C3, I3)**

- Gustavson, T.C., 1991b, Buried vertisols in lacustrine facies of the Pliocene Fort Hancock Formation, Hueco Bolson, West Texas and Chihuahua, Mexico: *Geological Society of America Bulletin*, v. 103, p. 448-460. **(C2b, C3, I3)**
- Hadi, J., 1991, A study of the structure and subsurface geometry of the Hueco Bolson: University of Texas at El Paso, master's thesis, 88 p. **(C2b, C4)**
- Haenggi, W.T., 2001, Tectonic history of the Chihuahua trough, Mexico, and adjacent USA; Part I, The pre-Mesozoic Setting: *Boletín de Sociedad Geológica Mexicana*, Tomo 54, p. 28-66. **(C2b, F3)**
- Haenggi, W.T., 2002, Tectonic history of the Chihuahua trough, Mexico, and adjacent USA; Part II, Mesozoic and Cenozoic: *Boletín de Sociedad Geológica Mexicana*, Tomo 55, p. 38-74. **(C2b, F3)**
- Hall, S.A., Miller, M.R., and Goble, R.J., 2010, Geochronology of the Bolson sand sheet, New Mexico and Texas, and its archaeological significance: *Geological Society of America Bulletin*; v. 122, no. 11/12, p. 1950-1967, 16 figures, 5 tables. **(B2, C1, C2b, C3)**
- Hamblock, J.M., 2006. Understanding the composition, origin, and evolution of the continental crust: Case studies in the southern Rio Grande Rift, New Mexico, and the coast plutonic complex, British Columbia, Canada: University of Texas at El Paso, doctoral dissertation, 226 p. **(C2b, C4)**
- Hamblock, J.H., Andronicos, C.L., Miller, K.C., Barnes, G.C., Ren, M., Averill, M.G., and Anthony, E.Y., 2007, A composite geologic and seismic profile beneath the southern Rio Grande rift in New Mexico, based on xenolith mineralogy, temperature, and pressure: *Tectonophysics*, v. 442, issues 1-4, p. 14-48. **(C2b, C4)**
- Harris, A.H., 1993, Quaternary vertebrates of New Mexico: *New Mexico Museum of Natural History and Science, Bulletin* 2, p. 179-197. **(B1, B2, C1, C2b)**
- Harris, A.H., 1997, Geographic and chronologic patterns in Late Pleistocene vertebrate faunas, southern New Mexico, *in* Lucas, S.G., Estep, J.W., Williamson, T.E., and Morgan, G.S., *New Mexico's Fossil Record 1: New Mexico Museum of Natural History and Science Bulletin* No. 11, p.129-134. **(B2, C1, C2b)**
- Hawley, J.W., 1993, Geomorphic setting and late Quaternary history of pluvial-lake basins in the southern New Mexico region: *New Mexico Bureau of Mines and Mineral Resources, Open-File Report* 391, 28 p. **(C2b, I1)**
- Hawley, J.W., 2005, Five million years of landscape evolution in New Mexico: An overview based on two centuries of geomorphic conceptual-model development, *in* Lucas, S.G., et al., eds., *New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin* No. 28, p. 9-93. **(A1, A2, C2b, F1, I1, I3)**
- Hawley, J.W., and Longmire, P.A., 1992, Site characterization and selection, *in* Reith, C.C. and Thomson, B.M., eds., *Deserts as Dumps? The disposal of hazardous materials in arid ecosystems*: University of New Mexico Press, p. 57-99. **(C2b, D1, E2c)**
- Hawley, J.W., Hibbs, B.J., Kennedy, J.F., Creel, B.J., Remmenga, M.D., Johnson, M., Lee, M.M., and Dinterman, P., 2000, Trans-International Boundary aquifers in southwestern New Mexico: New Mexico Water Resources Research Institute, prepared for U.S. Environmental Protection Agency-Region 6 and International Boundary and Water Commission; Technical Completion Report-Interagency Contract X-996350-01-3, 126 p. <https://nmwrri.nmsu.edu/publications/pub-external-pages/trans-international-boundary-aquifers-in-southwest-new-mexico.html> **(C2b, D1, F1, I2)**
- Heckman, L.M., and Mueller, J.E., 1998, The Aguirre Spring debris flow of August 14, 1991: *New Mexico Geological Society Guidebook* 49, p. 61-69. **(C1, C2b)**
- Hennings, P.H., 1994, Structural transect of the southern Chihuahua fold belt between Ojinaga and Aldama, Chihuahua, Mexico: *Tectonics*, v. 13, p. 1445-1460. **(C2b, F3)**
- Henry, C.D., 1998a, Basement controlled transfer zones in an area of low-magnitude extension, eastern Basin and Range province, Trans-Pecos Texas, *in* Faulds, J.E., Stewart, J.H., eds., *Accommodation Zones and Transfer Zones; The Regional Segmentation of the Basin and Range Province: Geological Society of America Special Publication* 323, p. 75-88. **(C2b, F1)**
- Henry, C.D., 1998b, Geology of Big Bend Ranch State Park, Texas: *Texas Bureau of Economic Geology, Guidebook* 27, 72 p., 2 maps. **(C2b, F1)**
- Henry, C.D., Kunk, M.J., and McIntosh, W.C., 1994, $^{40}\text{Ar}/^{39}\text{Ar}$ chronology and volcanology of silicic volcanism in the Davis Mountains, Trans-Pecos Texas: *Geological Society of America Bulletin*, v. 106, p. 1359-1376. **(C2b)**
- Henry, C.D., Price, J.G., and James, E.W., 1991, Mid-Cenozoic stress evolution and magmatism in the southern Cordillera, Texas and Mexico: Transition from continental arc to intraplate extension, *Journal of Geophysical Research*, v. 96, p. 13545-13560. **(C2b)**

- Heywood, C.E., 1995, Investigation of aquifer-system compaction in the Hueco basin, Texas, USA, in 5th International symposium on land subsidence, Delft, Netherlands, October, 1995: International Association of Hydrological Sciences Publication 234, p. 35-45. **(C2b, C4, D1)**
- Heywood, C.E., 2002, Estimation of alluvial-fill thickness in the Mimbres ground-water basin, New Mexico, from interpretation of isostatic residual gravity anomalies: U.S. Geological Survey, Water Resources Investigations Report 02-4007, 15 p. **(C2b, C4)**
- Hill, C.A., 1996, Geology of the Delaware Basin, Guadalupe, Apache, and Glass Mountains, New Mexico and West Texas: Permian Basin Section-SEPM, Publication 96-39, 480 p. **(C2b)**
- Hill, C.A., 1999, Reevaluation of the Hovey channel in the Delaware Basin, West Texas: American Association of Petroleum Geologist Bulletin, v. 83, no. 2, p. 277-294. **(C2b)**
- Hoffer, J.M., 2001a, Geology of Potrillo Maar, southern New Mexico and northern Chihuahua, Mexico, in Crumpler, L.S., and Lucas, S.G., eds., Volcanology in New Mexico: New Mexico Museum of Natural History and Science, Bulletin 18, p. 137-140. **(C2b, F1)**
- Hoffer, J.M., 2001b, Geology of the West Potrillo Mountains, in Crumpler, L.S., and Lucas, S.G., eds., Volcanology in New Mexico: New Mexico Museum of Natural History and Science, Bulletin 18, p. 141-145. **(C2b)**
- Hoffer, J.M., and Hoffer, R.L., 1981, Guidebook of the Border: Southern New Mexico—Northern Chihuahua: El Paso Geological Society, April 1981 Field Trip Guidebook, 96 p. **(C2b, F1)**
- Hoffer, J.M., Penn, B.S., Quezada, O.A., and Morales, M.A., 1998, Qualitative age relationships of Late Cenozoic cinder cones, southern Rio Grande rift, utilizing cone morphology and Landsat thematic imagery: New Mexico Geological Society Guidebook 49, p. 123-128. **(C2b, E1, F2)**
- Houde, P., and Peltier, D., 2018, A New *Stegomastodon* Skull (Proboscidea: Gomphotheriidae) from the Camp Rice Formation, Doña Ana County, New Mexico: N.M. Geological Society, Guidebook 69, p. 53-56. **(C1, C2b)**
- Hudson, M.R., and Grauch, V.J.S., 2013, Introduction, in Hudson, M.R., and Grauch, V.J.S., eds., New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater: Geological Society of America Special Paper 494, p. v-xii. **(A2, C2b, C4)**
- Ingersoll, R.V., Cavazza, W., Baldrige, W.S., and Shafiqullah, M., 1990, Cenozoic sedimentation and paleotectonics of north-central New Mexico: Implications for initiation and evolution of the Rio Grande rift: Geological Society of America Bulletin, v. 102, p. 1280-1296. **(C2b)**
- Izett, G.A., and Obradovich, J.D., 1994, 40Ar/39Ar age for the Jaramillo Normal Subchron and the Matuyama/Brunhes geomagnetic boundary: Journal Geophysical Research, v. 99, p. 2925-2934. **(B1, C2b)**
- Jiménez, A.J., 1999, An integrated analysis of basins in the Rio Grande Rift in northern Chihuahua, Mexico: El Paso, *ETD Collection for University of Texas, El Paso*. AAIEP05329. **(C2b, C4, F1, H1)**
- Jiménez, A.J., and Keller, G.R., 2000, Rift basin structure in the border region of northwestern Chihuahua: New Mexico Geological Society Guidebook 51, p. 79-83. **(C2b, C4, F1, H1)**
- Jochems, A.P., 2017, Geologic map of the Arroyo Cuervo 7.5-minute quadrangle, Doña Ana and Sierra Counties, New Mexico: New Mexico Bureau of Geology and Mineral Resources, Open-File Geologic Map OF-GM 261, scale 1:24,000. **(C2b)**
- Jochems, A.P., and Koning, D.J., 2015 [2020], Geologic map of the Williamsburg 7.5-minute quadrangle, Sierra Counties, New Mexico: New Mexico Bureau of Geology and Mineral Resources, Open-File Geologic Map OF-GM 250, scale 1:24,000. **(C2b)**
- Jochems, A.P., and Koning, D.J., 2016, Saladone Tank 7.5-Minute Quadrangle, Sierra County, New Mexico: New Mexico Bureau of Geology and Mineral Resources, Open-File Geologic Map OF-GM 259, scale 1:24,000. **(C2b)**
- Jochems, A.P., and Morgan, G.S., 2018, A stable isotope record from paleosols and groundwater carbonate of the Plio-Pleistocene Camp Rice Formation, Hatch-Rincon Basin, southern New Mexico: N.M. Geological Society Guidebook 69, p. 109-117. **(C1, C2b, C3)**
- Karlstrom, K.E., Amato, J.M., Williams, M.L., Heizler, M., Shaw, C.A., Read, A.S., Bauer, P., 2004. Proterozoic tectonic evolution of the New Mexico region: A synthesis. in Mack, G.H., and Giles, K.J., eds., The geology of New Mexico: A geologic history: New Mexico Geology Society, Special Publication 11, p. 1-34. **(C2b)**
- Keaton, J.R., 1993, Maps of potential earthquake hazards in the urban area of El Paso, Texas: U.S. Geological Survey, technical report prepared under contract 1434-92-G-2171, 87 p. **(C2b, C4)**
- Keaton, J.R., and Barnes, J.R., 1995, Paleoseismic evaluation of the East Franklin Mountains fault, El Paso, Texas: Technical report to U.S. Geological Survey, under Contract 1434-94-G-2389, December 1995. *See Collins and others, 2015.* **(C2b, C4)**

- Keaton, J.R., Barnes, J.R., Scherschel, C.A., and Monger, H.C. (abstract), 1995, Evidence for episodic earthquake activity along the East Franklin Mountains fault, El Paso, Texas: Geological Society of America Abstracts with Programs, v. 27, no. 4, p. 17. **(C2b, C4)**
- Keller, G.R., 2004, Geophysical constraints on the crustal structure of New Mexico, *in* Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society, Special Publication 11, p. 439-456. **(C2b, C4)**
- Keller, G.R., and Baldrige, W.S., 1999, The Rio Grande rift: A geological and geophysical review: Rocky Mountain Geology, v. 134, p. 131-148. **(C2b, C4)**
- Keller, G.R., and Cather, S.M., eds., 1994, Basins of the Rio Grande rift: Structure, stratigraphy and tectonic setting: Geological Society of America Special Paper 291, 304 p. **(C2b, C4)**
- Keller, G.R., Morgan, P., and Seager, W.R., 1990, Crustal structure, gravity anomalies and heat flow in the southern Rio Grande rift and their relationship to extensional tectonics: Tectonophysics, v. 174, p. 21-37. **(C2b, C4)**
- Kelley, S.A., and Chapin, C.E., 1997, Cooling histories of mountain ranges in the southern Rio Grande rift based on apatite fission-track analysis—a reconnaissance survey: New Mexico Geology, v. 19, p. 1-14. **(C2b)**
- Khatun, S., Doser, D.I., Imana, E.C., and Keller, G.R., 2007, Locating faults in the southern Mesilla Bolson, west Texas and southern New Mexico, using 3-D modeling of precision gravity data: Journal of Environmental & Engineering Geophysics, v. 12, p. 149-161. **(C2b, C4)**
- Kieling, M.J., 1993, Depositional environments and petrography of the Thurman Formation (Oligocene) and their implications to evolution of the southern Rio Grande rift, New Mexico: New Mexico State University, master's thesis, 88 p. **(C2b)**
- Kieling, J.E., 1993, Sedimentology and provenance of the Hayner Ranch and Rincon Valley Formations (Upper Oligocene(?)-Miocene) in the southern Rio Grande rift: New Mexico State University, master's thesis, 105 p. **(C2b)**
- Kludt, T., Love, D., Newton, T., and Allen, B., 2018, Summary of Landforms of the Central Jornada del Muerto that Influence the Hydrology and Path of El Camino Real de Tierra Adentro: New Mexico Geological Society Guidebook 69, p. 57-59. **(B3, C2b)**
- Koning, D.J., Jochems, A.P., and Cikoski, C., 2015, Geologic map of the Skute Stone Arroyo 7.5-minute quadrangle, Sierra County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Open-File Geologic Map 252, scale 1:24,000. CD-ROM. **(C2b)**
- Koning, D.J., Jochems, A.P., and Heizler, M.T., 2018, Early Pliocene paleovalley incision during early Rio Grande evolution in southern New Mexico: New Mexico Geological Society Guidebook 69, p. 93-108. *Repository: 2018001*. **(C2b)**
- Koning, D.J., Jochems, A.P., Foster, R., Cox, B., Lucas, S., Mack, G.H., and Zeigler, K.E., 2018, Geologic map of the Cuchillo 7.5-minute quadrangle, Sierra County, New Mexico: New Mexico Bureau of Geology and Mineral Resources, Open-File Geologic Map 271, scale 1:24,000. **(C2b)**
- Kues, B.S., and Giles, K.A., 2004, The Late Paleozoic Ancestral Rocky Mountains system in New Mexico, *in* Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society Special Publication 11, p. 95-136. **(C2b)**
- Langford, R.P., Jackson, M.L.W., and Whitelaw, M.J., 1999, The Miocene to Pleistocene filling of a mature extensional basin in Trans-Pecos Texas: Geomorphic and hydrologic controls on deposition: Sedimentary Geology, v. 128, p. 131-153. **(C2b)**
- Lawton, T.E., 2000, Inversion of Late Jurassic – Early Cretaceous extensional faults of the Bisbee basin, southeastern Arizona and southwestern New Mexico: New Mexico Geological Society, Guidebook 51, p. 95-102. **(C2b)**
- Lawton, T.E., 2004, Upper Jurassic and lower Cretaceous strata of southwestern New Mexico and northern Chihuahua, Mexico, *in* Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society Special Publication 11, p. 153-168. **(C2b, F1)**
- Lawton, T.E., McMillan, N.J., and McLemore, V.T., eds., 2000, Southwest Passage: A trip through the Phanerozoic: New Mexico Geological Society, Guidebook 33, 281 p. **(C2b, F1)**
- Lawton, T.F., McMillan, N.J., McLemore, V.T., and Hawley, J.W., 2000, Second day road log, from Lordsburg to Deming via Little Hatchet Mountains and Victorio Mountains: New Mexico Geological Society Guidebook 51, p. 17-30. **(C2b, F1)**
- Leeder, M.R., Mack, G.H., Peakall, J., and Salyards, S.L., 1996, First quantitative test of alluvial stratigraphic models: Southern Rio Grande rift, New Mexico: Geology, v. 24, no. 1, p. 87-90. **(C2b, I3)**

- Lindsey, G., 2012, Investigation of a suspected meteor impact at Upham, New Mexico: New Mexico Geological Society Guidebook 63, p. 219-226. *Note: Since the paper's author ignores published evidence based on detailed field mapping by W.R. Seager and associates; the "meteor impact" hypothesis is rejected herein. (C2b)*
- Lindsey, G., 2013, A major landslide involving an inverted paleochannel in Sierra County, New Mexico: Journal of Earth Science and Engineering, v. 3, p. 791-808. *Mr. Lindsey has no understanding of geology in general or the dip-slope stratigraphy and structure of the Caballo Mountains in particular "His "inverted c"annel" is a cuesta of somewhat folded basal Love Ranch fanglomerate an " his "breakaway"scarp" is a ridge of Cretaceous sandstone capped and protected by a pediment veneer of Palomas gravel.... There is nothing in that area that is consistent with a landslide! (W.R. Seager to J.W. Hawley, 4/1/2115-cf. Seager and Mack, 2003). (C2b)*
- Love, D.W., and Seager, W.R., 1996, Fluvial fans and related basin deposits of the Mimbres drainage: New Mexico Geology, v. 18, p. 81-92. **(C2b, I2)**
- Love, D.W., Allen, B.D., Scholle, P.A., and Bustos, D., 2020, White Sands National Park, in Scholle, P.A., Ulmer-Scholle, D.S., Cather, S.M., and Kelley, S.A., eds., The Geology of Southern New Mexico's Parks, Monuments, and Public Lands: New Mexico Bureau of Geology and Mineral Resources, 404 p. ISBN 978-1-883905-48-4 **(C2b, I2)**
- Lozinsky, R.P., 1994, Cenozoic stratigraphy, sandstone petrology, and depositional history of the Albuquerque basin, central New Mexico: Geological Society of America Special Paper 291, p. 73-82. **(C2b, I3)**
- Lozinsky, R.P., Harrison, R.W., and Lekson, S.H., 1995, Elephant Butte – Eastern Black Range region: Journeys from desert lakes to mountain ghost towns: New Mexico Bureau of Mines and Mineral Resources, Scenic Trips to the Geologic Past No. 16, 169 p. *Building of Elephant Butte Dam, p. 60-65. (B2, B3, C2b)*
- Lucas, S.G., and Hawley, J.W., 2002, The Otero Formation, Pleistocene lacustrine strata in the Tularosa Basin, southern New Mexico: New Mexico Geological Society Guidebook 53, p. 277-283. **(C2b, I2)**
- Lucas, S.G., Corbett, L.L., and Estep, J.W., 1998, Cretaceous stratigraphy, paleontology, petrography, depositional environments, and cycle stratigraphy at Cerro de Cristo Rey, Doña Ana County, New Mexico: New Mexico Geological Society Guidebook 49, p. 197-203. **(C2b, F1)**
- Lucas, S.G., Krainer, K., Spielmann, J.A., and Durney, K., 2010, Cretaceous stratigraphy, paleontology, petrography, depositional environments, and cycle stratigraphy at Cerro de Cristo Rey, Doña Ana County, New Mexico: New Mexico Geology, v. 32, no. 4, p. 103-130. **(C2b, F1)**
- Luedke, R.G., and Smith, R.L., 1991, Quaternary volcanism in the western conterminous United States, in Morrison, R.B., ed., Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America, v. K-2, p. 75-92. **(C2b)**
- Lueth, V., Goodell, P.C., and Heizler, M.T., 1998, Geochemistry, geochronology, and tectonic implications of jarosite mineralization in the northern Franklin Mountains, Dona Ana County, New Mexico: New Mexico Geological Society Guidebook 49, p. 309-315. **(C2b)**
- Lueth, V., Giles, K.A., Lucas, S.G., Kues, B.S., Myers, S.G., and Ullmer-Scholle, D., eds., 2002, Geology of White Sands: New Mexico Geological Society Guidebook 53, 340 p. **(C2b)**
- Machette, M., Thompson, R., Marchetti, D., and Smith, R.S.U., 2013, Evolution of ancient Lake Alamosa and integration of the Rio Grande during the Pliocene and Pleistocene, in Hudson, M.R., and Grauch, V.J.S., eds., New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater: Geological Society of America Special Paper 494, p. 1-20. doi: 10.1130/2013.2494(01) **(C2b, C3, I3)**
- Machette, M.N., Personius, S.F., Kelson, K.I., Haller, K.M., and Dart, R.L., 1998, Map and Data for Quaternary Faults and Folds in New Mexico: U.S. Geological Survey Open-File Report 98-521, 443 p. **(C2b, C4)**
- Maciejewski, T.J., and Miller, K.C., 1998, Geophysical interpretation of subsurface geology, pediment of the San Andres Mountains to the Jornada del Muerto Basin, New Mexico: New Mexico Geological Society Guidebook 49, p. 101-106. **(C2b, C4)**
- Mack, G.H., 1997, The geology of southern New Mexico: University of New Mexico Press, 176 p. **(C2b)**
- Mack, G.H., 2004, Middle and late Cenozoic crustal extension, sedimentation, and volcanism in the southern Rio Grande rift, Basin and Range, and southern Transition Zone of southwestern New Mexico, in Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society Special Publication 11, p. 389-406. **(C2b, I3)**
- Mack, G.H., 2018, Authigenic opal and calcite beds in axial-fluvial sediment of the Camp Rice Formation (Pliocene-lower Pleistocene), Rincon Hills – Third-day Road Log from Las Cruces to Rincon Hills: N.M. Geological Society Guidebook 69, p. 39-45. **(C2b)**

- Mack, G.H., and Giles, K.A., eds., 2004, The geology of New Mexico, A geologic history: New Mexico Geological Society, Special Publication 11, 474 p. **(C2b)**
- Mack, G.H., and James, W.C., 1992, Calcic paleosols of the Camp Rice and Palomas Formations, southern Rio Grande rift, USA: *Sedimentary Geology*, v. 77, p. 89-109. **(C2b, C3)**
- Mack, G.H., and Leeder, M.R., 1999, Climatic and tectonic controls on alluvial-fan and axial-fluvial sedimentation in the Plio-Pleistocene Palomas half graben, southern Rio Grande rift, USA: *Journal of Sedimentary Research*, v. 69, p. 635-652. **(C2b)**
- Mack, G.H., and McMillan, N.J., 1998, Second-day road log from Las Cruces to Selden Canyon, Broad Canyon, and Rincon Arroyo: New Mexico Geological Society Guidebook 49, p. 23-34. **(C2b)**
- Mack, G.H., and Seager, W.R., 1990, Tectonic controls on facies distribution of the Camp Rice and Palomas Formations (Pliocene–Pleistocene) in the southern Rio Grande rift: *Geological Society of America Bulletin*, v. 102, p. 45-53. **(C2b)**
- Mack, G.H., and Seager, W.R., 1995, Transfer zones in the southern Rio Grande rift: *Journal of the Geological Society of London*, v. 152, p. 551-560. **(C2b)**
- Mack, G.H., Austin, G.S., and Barker, J.M., eds., 1998, Las Cruces Country II. New Mexico Geological Society Guidebook 49, 325 p. **(C2b)**
- Mack, G.H., Cole, D.R., and Trevino, L., 2000, The distribution and discrimination of shallow, authigenic carbonate in the Pliocene-Pleistocene Palomas Basin, southern Rio Grande rift: *Geological Society of America Bulletin*, v. 112, p. 643-656. **(C2b, C3)**
- Mack, G.H., Dunbar, N., and Foster, R., 2009, New sites of 3.1-Ma pumice beds in axial-fluvial strata of the Camp Rice and Palomas Formations, southern Rio Grande rift: *New Mexico Geology*, v. 31, no. 2, p. 31-37. **(C2b, I3)**
- Mack, G.H., James, W.C., and Salyards, S.L., 1994, Late Pliocene and early Pleistocene sedimentation as influenced by intrabasinal faulting, southern Rio Grande rift: *Geological Society of America Special Paper* 291, p. 257-264. **(C2b)**
- Mack, G.H., Kottlowksi, F.E., and Seager, W.R., 1998b, The stratigraphy of south-central New Mexico: New Mexico Geological Society Guidebook 49, p. 135-154. **(C2b, I3)**
- Mack, G.H., Leeder, M.R., and Salyards, S.L., 1999, Temporal and spatial variability of alluvial-fan and axial-fluvial sedimentation in the Plio-Pleistocene Palomas half graben, southern Rio Grande rift, New Mexico, USA: *SEPM, Special Publication No. 73*, p. 165-177. **(C2b)**
- Mack, G.H., Love, D.W., and Seager, W.R., 1997, Spillover models for axial rivers in regions of continental extension: The Rio Mimbres and Rio Grande in the southern Rio Grande rift, USA. *Sedimentology*, v. 44, p. 637-652. **(C2b, I3)**
- Mack, G.H., Salyards, S.L., and James, W.C., 1993, Magnetostratigraphy of the Plio-Pleistocene Camp Rice and Palomas formations in the Rio Grande rift of southern New Mexico: *American Journal of Science*, v. 293, p. 49-77. **(B1, C2b, I3)**
- Mack, G.H., Seager, W.R., and Kieling, J., 1994, Late Oligocene and Miocene faulting and sedimentation, and evolution of the southern Rio Grande rift, New Mexico, USA: *Sedimentary Geology*, v. 92, p. 79-96. **(C2b)**
- Mack, G.H., Seager, W.R., and Leeder, M.R., 2003, Synclinal-horst basins: Examples from the southern Rio Grande rift and southern transition zone of southwestern New Mexico, USA: *Basin Research*, v. 15, p. 365-377. **(C2b)**
- Mack, G.H., McIntosh, W.C., Leeder, M.R., and Monger, H.C., 1996, Plio-Pleistocene pumice floods in the ancestral Rio Grande, southern Rio Grande rift, USA: *Sedimentary Geology*, v. 103, p. 1-8. **(B1, C2b, I3)**
- Mack, G.H., Nightengale, A.L., Seager, W.R., and Clemons, R.E., 1994, The Oligocene Goodsight-Cedar Hills half graben near Las Cruces, and its implications on the evolution of the Mogollon-Datil volcanic field and to the southern Rio Grande rift: New Mexico Geological Society Guidebook 45, p. 135-143. **(C2b)**
- Mack, G.H., Salyards, S.L., McIntosh, W.C., and Leeder, M.R., 1998, Reversal magnetostratigraphy and radioisotopic geochronology of the Plio-Pleistocene Camp Rice and Palomas formations, southern Rio Grande rift: New Mexico Geological Society Guidebook 49, p. 229-236. **(B1, C2b, I3)**
- Mack, G.H., Hampton, B.A., Ramos, F.C., Witcher, J.C., and Ulmer-Scholle, D.S., eds., 2018a, Las Cruces Country III: Socorro, NM, N.M. Geological Society, Inc. Guidebook 69, 219 p. ISBN 1-58546-108-3 **(C2b)**
- Mack, G.H., Hampton, B.A., Seager, W.R., Ramos, F.C., and Witcher, J.C., 2018b, Geologic Evolution of Southern New Mexico: Second-day Road Log from Las Cruces to the Northwestern Doña Ana Mountains and West-central Robledo Mountain: N.M. Geological Society, Guidebook 69, p. 15-29. **(C2b)**

- Mack, G.H., Ramos, F.C., Hampton, B.A., Seager, W.R., and Witcher, J.C., 2018c, The Doña Ana Caldera and Regional Outflow Sheets: First-day Road Log from Las Cruces to Southern Doña Ana Mountains and Point of Rocks: N.M. Geological Society, Guidebook 69, p. 1-13. **(C2b)**
- Mack, G.H., Seager, W.R., Leeder, M.R., Perea-Arlucea, M., and Salyards, S.L., 2006, Pliocene and Quaternary history of the Rio Grande, the axial river of the southern Rio Grande rift, New Mexico, USA: *Earth-Science Reviews*, v. 77, p. 141-162. **(C2b, I3)**
- Mack, G.H., Hampton, B.A., Seager, W.R., Ramos, F.C., and Witcher, J.C., 2018b, Geologic Evolution of Southern New Mexico: Second-day Road Log from Las Cruces to the Northwestern Doña Ana Mountains and West-central Robledo Mountain: N.M. Geological Society, Guidebook 69, p. 15-29. **(C2b)**
- Mack, G.H., Jones, M.C., Tabor, N.J., Ramos, F.C., Scott, S.R., and Witcher, J.C., 2012, Mixed geothermal and shallow meteoric origin of opal and calcite beds in Pliocene-lower Pleistocene axial-fluvial strata, southern Rio Grande rift, Rincon Hills, New Mexico, U.S.A.: *Journal of Sedimentary Research*, v. 82, p. 616-631. **(C2b, C4, H2)**
- Maksim, N., 2016, An integrated geophysical survey of Kilbourne Hole, southern New Mexico: Implications for near surface exploration of Mars and the Moon: University of Texas at El Paso, doctoral dissertation, 80 p. **(C2b, C4)**
- McCalpin, J.P., 2006, Quaternary faulting and seismic source characterization in the El Paso-Juarez metropolitan area; Collaborative research with the University of Texas at El Paso, Program Element II: Evaluate Urban Hazard and Risk, final Technical Report, National Earth Quake Hazards Reduction Program U.S. Geological Survey, 68 p. **(C2b, C4, F1)**
- McCormick, C.L., Smith, C.I., and Henry, C.D., 1996, Cretaceous stratigraphy, *in* Henry, C.D. and Muehlberger, W.R., eds., *Geology of the Solitario dome, Trans-Pecos Texas: Paleozoic, Mesozoic, and Cenozoic sedimentation, tectonism, and magmatism*: University of Texas at Austin, Bureau of Economic Geology Report of Investigations No. 240, p. 30-46. **(C2b)**
- McDowell, F.W., and Mauger, R.L., 1994, K-Ar and U-Pb zircon chronology of Late Cretaceous and Tertiary magmatism in central Chihuahua State, Mexico: *Geological Society of America Bulletin*, v. 106, p. 118-132. **(C2b, F3)**
- McDowell, F.W., Roldán-Quintana, J., and Amaya-Martínez, R., 1997, Interrelationship of sedimentary and volcanic deposits associated with Tertiary extension in Sonora, Mexico: *Geological Society of America Bulletin*, v. 109, no. 10, p. 1349-1360. **(C2b, F3)**
- McIntosh, W.C., 1994, 40Ar/39Ar Geochronology of Late Miocene to Pleistocene basalts of the Zuni Bandera, Red Hill-Quemado and Potrillo Volcanic Fields, New Mexico *Geology*, v. 16, p. 60-61. **(B1, C2b)**
- McIntosh, W.C., and Bryan, C., 2000, Chronology and geochemistry of the Boot Heel volcanic field, New Mexico: *New Mexico Geological Society Guidebook 51*, p. 157-174. **(C2b)**
- McLemore, V.T., McIntosh, W.C., and Hawley, J.W., 2000, First-day road log to Ruth Mine (Lordsburg district) to Twelve Mile Hill to Rock House Canyon (Pyramid Mountains) to Burgett's Greenhouses (Animas Valley) to Steins (Peloncillo Mountains): *New Mexico Geological Society Guidebook 51*, p. 1-16. **(C2b)**
- McMillan, N.J., 2004, Magmatic record of Laramide subduction and transition to Tertiary extension: Upper Cretaceous through Eocene igneous rocks of New Mexico, *in* Mack, G.H., and Giles, K.J., eds., *The Geology of New Mexico: A geologic history*: New Mexico Geological Society Special Publication 11, p. 249-270. **(C2b)**
- McMillan, N.J., Dicken, A.P., and Haag, D., 2000, Evolution of magma source regions in the Rio Grande rift, southern New Mexico: *Geological Society of America Bulletin*, v. 113, 1582-1593. **(C2b)**
- McMillan, N.J., McLemore, V.T., Amato, J.M., Hawley, J.W., and Giles, K.A., 2000, Third day road log, from Deming to Victorio Canyon and the southern Florida Mountains: *New Mexico Geological Society Guidebook 51*, p. 31-44. **(C2b)**
- Metcalf, A.L., 1997, Land snails of New Mexico from an historical zoogeographical point of view, *in* Metcalf, A.L., and Smartt, R.A., eds., 1997, *Land snails of New Mexico*: New Mexico Museum of Natural History and Science Bulletin 10, p. 71-108. **(B2, B3, C1, C2b)**
- Metcalf, A.L., and Smartt, R.A., eds., 1997, *Land snails of New Mexico*: New Mexico Museum of Natural History and Science Bulletin 10, 145 p. **(B2, B3, C1, C2b)**
- Monger, H.C., Buck, B.J., Hawley, J.W., and Rachal, D., 2012, Geochronology of the Bolson sand sheet, New Mexico and Texas, and its archaeological significance: Discussion: *Geological Society of America Bulletin*; v. 124, no. 5/6, p. 1552-1556, 3 figures. **(B2, C1, C2b, C3)**

- Monger, H.C., Gile, L.H., Hawley, J.W., and Grossman, R.B., 2009, The Desert Project – An analysis of aridland soil-geomorphic processes: New Mexico State University Agricultural Experiment Station Bulletin 798, 76 p. **(A2, C2b, C3)**
- Molina, C., 1997, Stratigraphy and structure of the Sierra Samalayuca, northern Chihuahua, Mexico: University of Texas at El Paso, master's thesis, 135 p. **(C2b, F3)**
- Monreal, R., and Longoria, J.F., 1995, Transpressional deformational pattern related to basement faults in the Mesozoic of northeastern Chihuahua: México, Hermosillo, Universidad de Sonora, Departamento de Geología, Boletín, v. 12, no. 2, p. 17-34. **(C2b, F3)**
- Monreal, R., and Longoria, J., 1999, A revision of the Upper Jurassic and Lower Cretaceous stratigraphic nomenclature for the Chihuahua trough, north-central Mexico: Implications for lithocorrelations, *in* Bartolini, C., Wilson, J.L., Lawton, T.F., eds., Mesozoic Sedimentary and Tectonic History of North-Central Mexico: Geological Society of America, Special Paper 340, p. 69-92. **(C2b, F3)**
- Morgan, G.S., and White, R.S., Jr., 2005, Miocene and Pliocene vertebrates from Arizona: New Mexico Museum of Natural History and Science, Bulletin 29, p. 115-136. **(B1, C2b)**
- Morgan, G.S., Lucas, S.G., and Estep, J.W., 1998, Pliocene (Blancan) vertebrate fossils from the Camp Rice Formation near Tonuco Mountain, Dona Ana County, southern New Mexico: New Mexico Geological Society Guidebook 49, p. 237-249. **(B1, C2b)**
- Morgan, G.S., Sealey, P.L., and Lucas, S.G., 2008, Late Pliocene (late Blancan) vertebrate faunas from Pearson Mesa, Duncan basin, southwestern New Mexico and southeastern Arizona: New Mexico Museum of Natural History & Science Bulletin 44, p. 141-188. **(B1, C2b)**
- Morgan, G.S., Sealey, P.L., and Lucas, S.G., 2011, Pliocene and early Pleistocene (Blancan) vertebrates from the Palomas Formation in the vicinity of Elephant Butte Lake and Caballo Lake, Sierra County, southwestern New Mexico: New Mexico Museum of Natural History & Science Bulletin 53, p. 664-736. **(B1, C2b)**
- Morgan, G.S., Sealey, P.L., Jochems, A.P., and Gensler, P.A., 2018, Late Pliocene (Blancan) vertebrates from the Camp Rice Formation in the vicinity of Hatch, Dona Ana and Sierra Counties, southern New Mexico, *in* Lucas, S.G., and Sullivan, R.M., eds., Fossil Record 6: New Mexico Museum of Natural History and Science, Bulletin 79, v. 2, p. 513-553. **(C1, C2b)**
- Morgan, G.S., Hulbert, H.C., Jr., Gottlieb, E.S., Amato, J.M., Mack, G.H., Jonell, T.N., 2017, The tapir *Tapirus* (Mammalia: Perissodactyla) from the late Pliocene (early Blancan) Tonuco Mountain Local Fauna, Camp Rice Formation, Doña Ana County, southern New Mexico: New Mexico Geology, v. 39, no. 2, p. 28-39. **(C1, C2b)**
- Morrison, R.B., 1991, Quaternary geology of the southern Basin and Range province, *in* Morrison, R.B., ed., Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America, v. K-2, p. 353-371. **(C2b, I1)**
- Mueller, J.E., and Twidale, C.R., 2002, Geomorphic development of the giants of the Mimbres, Grant County, New Mexico: New Mexico Geology, v. 24, no. 2, p. 39-48. **(C2b)**
- Naus, C.A., 2002, Conceptual model of the bolson-fill aquifer, Soledad Canyon area, Doña Ana County, New Mexico: New Mexico Geological Society Guidebook 53, p. 309-318. **(C2b, H1)**
- NMBGMR (New Mexico Bureau of Geology and Mineral Resources), 2003, Geologic Map of New Mexico, scale 1:500,000. **(C2b)**
- Nordt, L., 2003, Late Quaternary fluvial landscape evolution in desert grasslands of northern Chihuahua, Mexico: Geological Society of America Bulletin, v. 115, no. 5, p. 596-606. **(B2, C1, C2b, F3)**
- Ortega-Gutiérrez, F., Mitre-Salazar, L.M., Roldán-Quintana, J., Aranda-Gómez, J., Morán-Zenteno, D., Alaniz-Álvarez, S.A., and Nieto-Samaniego, A., 1992, Carta Geológica de la Republica Mexicana escala 1: 2,000,000: Consejo de Recursos Naturales, Universidad Nacional Autónoma de México, Instituto de Geología, 5a. Edición. **(C2b)**
- Pazzaglia, F.J., 2005, River responses to Ice Age (Quaternary) climates in New Mexico, *in* Lucas, S.G., et al., eds., New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 115-124. **(C2b, I3)**
- Pazzaglia, F.J., and Hawley, J.W., 2004, Neogene (rift flank) and Quaternary geology and geomorphology, *in* Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society Special Publication 11, p. 407-438. **(C2b)**
- Perez-Arlucea, M., Mack, G., and Leeder, M., 2000, Reconstructing the ancestral (Plio-Pleistocene) Rio Grande in its active tectonic setting, southern Rio Grande Rift, New Mexico, USA: Sedimentology, v. 47, p. 701-720. **(C2b, I3)**

- Ramos, F.C., and Heizler, M.T., 2018, Age relationships of volcanic rocks in the Doña Ana Mountains: New Mexico Geological Society Guidebook 69, p. 159-163. **(C2b)**
- Ramos, F.C., Heizler, M.T., Hampton, B.A., 2018a, $^{40}\text{Ar}/^{39}\text{Ar}$ ages of Palm Park volcanic rocks, south-central New Mexico: New Mexico Geological Society Guidebook 69, p. 165-171. *Repository: 2018005*
<http://nmgs.nmt.edu/repository/index.cfm?rid=2018005> **(C2b)**
- Ramos, F.C., Jacobs, M., and Hampton, B.A., 2018b, Sr and Pb isotope variations of feldspars in the middle to late Eocene Palm Park Formation and Orejon Andesite: Implications for regional variability and magmatic source characteristics: New Mexico Geological Society Guidebook 69, p. 181-188. **(C2b, C4)**
- Ramos, F.C., Hampton, B.A., Seager, W.R., and Mack, G.H., 2018c, Cenozoic Igneous Activity in the Organ Mountains: Third-day (A) road log from Las Cruces to Dripping Springs Recreation Area, Organ Mountains: New Mexico Geological Society Guidebook 69, p. 31-37. **(C2b)**
- Raney, J.A., and Collins, E.W., 1994a, Geologic map of the El Paso quadrangle, Texas: University of Texas at Austin, Bureau of Economic Geology Open-File Map, 1 sheet, scale 1:24,000. **(C2b, F1)**
- Raney, J.A., and Collins, E.W., 1994b, Geologic map of the North Franklin Mountain quadrangle, Texas: University of Texas at Austin, Bureau of Economic Geology Open-File Map, 1 sheet, scale 1:24,000. **(C2b)**
- Respasch, M., Karlstrom, K., Heizler, M., and Pecha, M., 2017, Birth and evolution of the Rio Grande fluvial system in the past 8 Ma: Progressive downward integration and the influence of tectonics, volcanism, and climate: *Earth-Science Reviews*, v. 168, p. 113-164. **(C2b, I3)**
- Reyes Cortés, I.A., 1992, Geología de Chihuahua, in Márquez-Alameda, A., Coordinador del volumen, 1992, *Historia general de Chihuahua I—geología, geografía y arqueología*: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua, p. 45-101. **(C2b, F3)**
- Reyes-Cortés, I.A., and Goodell, P.C., 2000, Geologic setting and mineralization: Sierra Peña Blanca, Chihuahua, Mexico, in *Cuarta Reunión Sobre la Geología del Noroeste de México y Areas Adyacentes*, Estación Regional del Noroeste: Universidad Nacional Autónoma de México, Instituto de Geología, Estación Regional del Noroeste, Publicaciones Ocasionales, no. 2, p. 101. **(C2b, F3)**
- Richter, D.H., Lawrence, V.A., Drewes, H., Young, T.H., Enders, M.S., Damon, P.E., and Thorman, C.H., 1990, Geologic map of the San Simon Quadrangle and parts of the Summit Hills and Mondel Quadrangles, Cochise, Graham, and Greenlee Counties, Arizona, and Hidalgo County, New Mexico: U.S. Geological Survey, Miscellaneous Investigations Series, Map I-1951, scale 1:48,000. *Improper use of pluvial Lake Lordsburg for Lake Animas*. **(C2b, I2)**
- Ricketts, J.W., Amato, J.M., and Gavel, M.M. 2021, The origin and tectonic significance of the Basin and Range—Rio Grande rift boundary in southern New Mexico, USA: *GSA Today*, v. 31, no. 10, p. 4-10. **(C2b, C4)**
- Ricketts, J.W., Kelley, S.A., Karlstrom, K.E., Schrandt, B., Donahue, M.S., and van Wijk, L, 2016, Synchronous opening of the Rio Grande rift along its entire length at 25-10 Ma supported by apatite (U-Th)/He and fission-track thermochronology, and evaluation of possible driving mechanisms: *Geological Society of America Bulletin*, v. 128, p. 397-424. **(B1, C2b, C4)**
- Rioux, M., Farmer, G.L., Bowring, S.A., Wootton, K.M., Amato, J.M., Coleman, D.S., and Verplanck, P., 2016, The link between volcanism and plutonism in epizonal magma systems: High-precision U-Pb geochronology from the Organ Mountains caldera and batholith: New Mexico: *Contributions to Mineralogy and Petrology*, v. 171, p. 1-22. **(C2b)**
- Rogers, K.L., Larson, E.E., Smith, G.A., Katzman, D., Smith, G.R., Cerling, T., Wang, Y., Baker, R.G., Lohman, K.C., Repenning, C.A., Patterson, P., Mackie, G., 1992, Pliocene and Pleistocene geologic and climatic evolution in the San Luis valley of south-central Colorado: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 94, p. 55-86. **(C2b, I3)**
- Rose, J.M., 2006, Differences in the dune morphology related to changes in groundwater geochemistry, White Sands National Monument: University of Texas at El Paso, master's thesis, 89 p. **(C2b, H2, I2)**
- Ruiz, A., 2004, Upper crustal structure of the southern Rio Grande rift: University of Texas at El Paso, master's thesis, 52 p. **(C2b, C4)**
- Sarna-Wojcicki, A.M., and Davis, J.O., 1991, Quaternary tephrochronology, in Morrison, R.B., ed., *Quaternary non-glacial geology; Conterminous U.S.*: Boulder, CO, Geological Society of America, *The Geology of North America*, v. K-2, p. 93-116. **(B1, C2b)**
- Scharman, M.R., 2006, Structural constraints on Laramide shortening and Rio Grande rift extension in the central Franklin Mountains, El Paso County, Texas: University of Texas at El Paso, master's thesis, 70 p. **(C2b)**
- Schmidt, R.H., 1992, Chihuahua, tierra de contrastes geográficos: Geografía, in Márquez-Alameda, A., Coordinador del volumen, 1992, *Historia general de Chihuahua I – Geología, geografía y arqueología*: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua, p. 45-101. **(C2b, F3)**

- Scholle, P.A., Ulmer-Scholle, D.S., Cather, S.M., and Kelley, S.A., eds., 2020, The Geology of Southern New Mexico's Parks, Monuments, and Public Lands: New Mexico Bureau of Geology and Mineral Resources, 404 p. **(C2b)**
- Seager, W.R., 1990, Eagle nest-Granite Hill area, Luna County, New Mexico—a new look at some old rocks: *New Mexico Geology*, v. 12, no. 1, p. 1-7 and 19. **(C2b)**
- Seager, W.R., 1995, Geology of southwest quarter of Las Cruces and northwest El Paso 1° x 2° sheets: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 60, scale 1:125,000. **(C2b, C4)**
- Seager, W.R., 2004, Laramide (late Cretaceous to Eocene) tectonics of southwestern New Mexico, *in* Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society, Special Publication 11, p. 183-202. **(C2b)**
- Seager, W.R., and Mack, G.H., 1991, Geology of Garfield Quadrangle, Sierra and Doña Ana Counties, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 128, 27 p., map scale 1:24,000. **(C2b)**
- Seager, W.R., and Mack, G.H., 1994, Geology of the East Potrillo Mountains and vicinity, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 113, 27 p. **(C2b)**
- Seager, W.R., and Mack, G.H., 1995, Jornada Draw fault: a major Pliocene-Pleistocene normal fault in the southern Jornada del Muerto: *New Mexico Geology*, v. 17, no. 3, p. 37-43. **(C2b)**
- Seager, W.R., and Mack, G.H., 1998, Geology of McLeod Tank quadrangle, Sierra and Doña Ana Counties, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 77, scale 1:24,000. **(C2b)**
- Seager, W.R., and Mack, G.H., 2003, Geology of the Caballo Mountains, New Mexico: New Mexico Bureau of Geology and Mineral Resources Memoir 49, 136 p. **(C2b)**
- Seager, W.R., and Mack, G.H., 2018, Geology of the Doña Ana Mountains, south-central New Mexico: A summary: N.M. Geological Society, Guidebook 69, p. 71-81. **(C2b)**
- Seager, W.R., Hawley, J.W., and Mack, G.H., 2010, Geologic map of the Hatch quadrangle, Doña Ana County, New Mexico, New Mexico Bureau of Geology and Mineral Resources, Open-File Report 213, scale 1:24,000. Revised edition of 1995 map. <http://geoinfo.nmt.edu/publications/maps/geologic/ofgm/> **(C2b)**
- Seager, W.R., Kelley, S.A., Thacker, J.O., and Kelley, R.E., 2023, San Diego Mountain: A “Rosetta Stone” for Interpreting the Cenozoic Tectonic Evolution of South-Central New Mexico: *New Mexico Geology*, v. 44, no. 2, p. 23-62. **(C2b, I3)**
- Seager, W.R., Kottlowski, F.E., and Hawley, J.W., 2008, Geologic Map of the Robledo Mountains and vicinity, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Open-File Report 509, scale 1:24,000, CD-ROM. <http://geoinfo.nmt.edu/publications/maps/geologic/ofgm/> **(C2b)**
- Seager, W.R., Mack, G.H., and Lawton, T.F., 1997, Structural kinematics and depositional history of a Laramide uplift-basin pair in southern New Mexico: Implications for development of intraforeland basins: *Geological Society of America Bulletin*, v. 107, p. 1389-1401. **(C2b)**
- Seager, W.R., Thacker, J.O., and Kelley, S.A., 2021, Geologic map of the Selden Canyon 7.5 minute quadrangle, Dona Ana County, New Mexico: New Mexico Bureau of Geology and Mineral Resources Open-File Geologic Map OF-GM-290, scale 1:24,000. **(C2b)**
- Self, S., Heiken, G., Sykes, M.L., Wohletz, K., Fisher, R.V., and Dethier, D.P., 1996, Field excursions to the Jemez Mountains, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 134, 72 p. **(B1, C2b)**
- Sellepack, B., 2003, The Stratigraphy of the Pliocene-Pleistocene Santa Fe Group in the Southern Mesilla Basin: University of Texas at El Paso, master's thesis, 268 p. **(C2b)**
- Shannon, W.M., Barnes, C.G., Bickford, M.E., 1997, Grenville magmatism in West Texas: petrology and geochemistry of the Red Bluff granitic suite. *Journal of Petrology* 38, p. 1279-1305. **(C2b)**
- Sion, B.D., Phillips, F.M., Axen, G.A., Harrison, B.J.B., Love, D.W., and Zimmerer, M.J., 2018, Chronology of terraces in the Rio Grande rift, Socorro Basin, New Mexico: Implications for terrace formation: *Geosphere*, v. 16, 22 p. **(C2b)**
- Slate, J.L., Sarna-Wojcicki, A.M., Koning, D.J., Wan, E., Wahl, D.B., Connell, S.D., Perkins, M.E., 2013, Upper Neogene tephrochronologic correlations of the Espanola Basin and Jemez Mountains volcanic field, northern Rio Grande rift, north-central New Mexico, *in* Hudson, M.R., and Grauch, V.J.S., eds., New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater: Geological Society of America Special Paper 494, p. 463-474. doi: 10.1130/2013.2494(12) **(C2b)**
- Smith, G.A., 1994, Climatic influences on continental deposition during late-stage filling of an extensional basin, southeastern Arizona: *Geological Society of America Bulletin*, v. 106, p. 1212-1228. **(C1, C2b)**

- Smith, G.A., 2004, Middle to late Cenozoic development of the Rio Grande rift and adjacent regions in northern New Mexico: New Mexico Geological Society, Special Publication 11, p. 331-358. **(C2b, I3)**
- Smith, G.A., Wang, Y., Cerling, T.E., and Geissman, J.W., 1993, Comparison of a paleosol-carbonate isotope record to other records of Pliocene-early Pleistocene climate in the western United States: *Geology*, v. 21, p. 691-694. **(C1, C2b)**
- Stevens, J.B., and Stevens, M.S., 1990, Stratigraphy and major structural-tectonic events along and near the Rio Grande, Trans-Pecos Texas and adjacent Chihuahua and Coahuila, Mexico, *in* *Geology of the Big Bend and Trans-Pecos Texas*: South Texas Geological Society, Guidebook, p. 56-94. **(C2b)**
- Stewart, J.H., 1998, Regional characteristics, tilt domains, and extensional history of the late Cenozoic Basin and Range province, western North America: Geological Society of America, Special Paper 323, p. 47-74. **(C2b)**
- Stone, W.J., 1998, Origin and hazard implications of a matrix-free boulder deposit on the east flank of the Organ Mountains, south-central New Mexico: New Mexico Geological Society Guidebook 49, p. 75-77. *Includes brief account of the 8/19/1978 WSMR Hwy flash flood.* **(C1, C2b)**
- Stone, W.J., 2002, Quaternary flooding of the Tularosa Basin? – Implications of a soil-water-chloride profile from WSMR: New Mexico Geological Society Guidebook 53, p. 49-50. **(C1, C2b)**
- Stoudt, E.L., 1996, Precambrian-Devonian geology of the Franklin Mountains, West Texas-analogs for exploration and production in Ordovician and Silurian karsted reservoirs in the Permian Basin: West Texas Geological Society, Publication 96-100, p. 117-123. **(C2b)**
- Szynkiewicz A., Moore, C.H., Glamoclija M., and Pratt, L.M., 2009, Sulfur isotope signatures in gypsiferous sediments of the Estancia and Tularosa Basins as paleoindicators of sulfate sources, hydrologic cycle and bacterial activity: *Geochimica et Cosmochimica Acta*, v. 73, 6162-6186. **(C2b, C4, I2)**
- Szynkiewicz A., Moore, C.H., Glamoclija M., Bustos D., and Pratt, L.M., 2010, The origin of coarsely crystalline gypsum domes in a saline playa environment at the White Sands National Monument, New Mexico: *Journal of Geophysical Research – Earth Surface*, v. 115, issue F2. **(C2b, C4, I2)**
- Szynkiewicz A., Ewing, R.C., Moore, C.H., Glamoclija, M., Bustos, D., and Pratt, L.M., 2009, Origin of terrestrial gypsum dunes – Implications for Martian gypsum-rich dunes of Olympia Undae: *Geomorphology*, v. 121, no. 1-2, p. 69-83. **(C2b, C4, I2)**
- Thapalila, A., 2014, Geochemical studies of backfill aggregate, lake sediment cores and the Hueco Bolson Aquifer: University of Texas at El Paso, doctoral dissertation, 142 p. **(C2b, C4, H1, H2)**
- Thompson, R.N., Ottley, C.J., Smith, P.M., Pearson, D.G., Dickin, A.P., Morrison, M.A., and Gibson, S.A., 2005, Source of the Quaternary alkalic basalts, picrites and basanites of the Potrillo Volcanic Field, New Mexico, USA: Lithosphere or convecting mantle?: *Journal of Petrology*, v. 46, issue 8, p. 1603-1643. **(C2b, C4)**
- Tremblay, T.A., 1999, ARCINFO data base for geologic data of the west Hueco Bolson, El Paso region, Texas: University of Texas at Austin, Bureau of Economic Geology, open-file digital data base. **(C2b, E1)**
- Urbanczyk, K., Rohr, D., and White, J.C., 2001, Geologic history of West Texas, *in* Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., *Aquifers of West Texas*: Texas Water Development Board Report 356, p. 17-40. **(C2b, H1)**
- Valdez, A., and Zimbelman, J.R., 2020, Great Sand Dunes, *in* Lancaster, N. and Hesp, P., eds., *Inland Dunes of North America. Dunes of the World*: Cham, Switz., Springer, p. 1-10. **(A2, C2b)**
- Vincent, K.R., and Krider, P.R., 1998, Geomorphic Surface Maps of the Southern Animas Valley, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report OF-429, 14 plates. 60 p. **(C2b)**
- Vitarelli, D.C., 2021, Eruptive volume, and explosion energy estimated from Kilbourne Hole Maar, south-central New Mexico (Abstract): *New Mexico Geology*, v. 43, no. 1, p. 12-13. **(C2b)**
- Waggoner, W.K., 1990, Petrology and geochemistry of mantle-derived lavas from Potrillo maar, New Mexico: University of Texas at El Paso, Senior Honors thesis, 69 p. **(C2b, C4)**
- Walsh, P., 2008, A new method for analyzing the effects of joints and stratigraphy on spring locations: A case study from the Sacramento Mountains, south-central New Mexico, USA: *Hydrogeology Journal*, v. 16, no. 4, p. 737-747. **(C2b, D1)**
- Waters, M.R., and Haynes, C.V., 2001, Late Quaternary arroyo formation and climate change in the American Southwest: *Geology*, v. 29, p. 399-402. **(B2, C1, C2b)**
- Williams, W.J.W., 1999, Evolution of Quaternary intraplate mafic lavas using ^3He surface exposure and $^{40}\text{Ar}/^{39}\text{Ar}$ dating, and detailed elemental He, Sr, Nd, and Pb isotopic signatures: Potrillo Volcanic Field, New Mexico, U.S.A., and San Quintín Volcanic Field, Baja California Norte, México: University of Texas at El Paso, doctoral dissertation, 195 p. **(B1, C2b, C4)**

- Williams, W.J.W., and Poths, J., 1994, The Potrillo Volcanic Field, southern Rio Grande rift: ^3He surface exposure dates and petrogenetic considerations: *New Mexico Geology*, v. 16, p. 81. **(B1, C2b, C4)**
- Witcher, J.C., 1998, The Rincon SLH 1 geothermal well: *New Mexico Geological Society Guidebook* 49, p. 35-40. **(C2b, C4, H1, H2)**
- Witcher, J.C., 2008, Evidence for large-scale Laramide tectonic inversion and amid-Tertiary caldera ring fracture zone at the Lightning Dock Geothermal system, New Mexico: *New Mexico Geological Society, Guidebook* 59, p. 177-187. **(C2b, C4, H1, H2)**
- Witcher, J.C., and Mack, G.H., 2018, Masson Farm Geothermal Greenhouses at Radium Springs: Thirlay (C) Road Log from Las Cruces to Geothermal Greenhouses of the Masson Farm at Radium Springs: *New Mexico Geological Society Guidebook* 69, p. 47-51. **(C2b, C4, H2)**
- Witcher, J.C., King, J.P., Hawley, J.W., Kennedy, J.F., Williams, J., Cleary, M., and Bothern, L., 2004, Sources of Salinity in the Rio Grande and Mesilla Basin Groundwater: *New Mexico Water Resources Research Institute Report No. 330*, 168 p., with appendices and plates on CD ROM.
<https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-330.html> **(C2b, E2a, H1, H2)**
- Wu, K., 2002, The structural geology and tectonics of the southern Franklin Mountains in El Paso County, Texas: University of Texas at El Paso, master's thesis, 67 p. **(C2b)**
- Zimmerer, M.J., and McIntosh, W.C., 2013, Geochronologic evidence of upper-crustal *in situ* differentiation: Silicic magmatism and the Organ caldera complex, New Mexico: *Geosphere*, v. 9, p. 1-15. **(C2b)**
- Zwaninger, J.A., 1990a, Nuevos conceptos de la estratigrafía mesozoica de Chihuahua, *in* Goodell, P.C., García-Gutiérrez, C., and Reyes-Cortés, I., eds., *Symposium on Energy Resources of the Chihuahua Desert*: Universidad Autónoma de Chihuahua, Chihuahua, México. **(C2b, F3)**
- Zwaninger, J.A., 1990b, Regionalización sedimentaria del paleozoico de Chihuahua, *in* Goodell, P.C., García-Gutiérrez, C., and Reyes-Cortés, I., eds., *Symposium on Energy Resources of the Chihuahua Desert*: Universidad Autónoma de Chihuahua, Chihuahua, México. **(C2b, F3)**
- Zwaninger, J.A., 1992, New concepts in Mesozoic stratigraphy of Chihuahua, *in* Goodell, P.C., García-Gutiérrez, C., and Reyes-Cortés, I., eds., *Energy Resources of the Chihuahua Desert region*: El Paso Geological Society, p. 77-124. **(C2b, F3)**

C3. Soil-Geomorphic Relationships and Soil Surveys

- Beehner, T.S., 1990, Burial of fault scarps along the Organ Mountains fault, south-central New Mexico: *Bulletin of the Association of Engineering Geologists*, v. 27, no. 1, p. 1-19. *See Gile 1991.* **(C2b, C3, C4)**
- Buck, B.J., 1996, Late Quaternary Landscape Evolution, Paleoclimate and Geoarchaeology, Southern New Mexico and West Texas: New Mexico State University, doctoral dissertation, 398 p. **(B2, C1, C2b, C3)**
- Buck, B.J., and Monger, H.C., 1999, Stable isotopes and soil-geomorphology as indicators of Holocene climate change, northern Chihuahuan Desert: *Journal of Arid Environments*, v. 43, p. 357-373. **(B2, C1, C3)**
- Bulloch, H.F., Jr., and Neher, R.E., 1980, Soil Survey of Doña Ana County area, New Mexico: U.S. Soil Conservation [Natural Resource] Service, 177 p. **(C3)**
- Cerling, I.E., 1984, The stable isotopic composition of modern soil carbonate and its relationship to climate: *Earth and Planetary Science Letters*, v. 71, p. 229-240. **(C1, C3)**
- Cerling, I.E., 1991, Carbon dioxide in the atmosphere: evidence from Cenozoic and Mesozoic paleosols: *American Journal of Science*, v. 291, p. 377-400. **(B1, C1, C3)**
- Cerling, I.E., and Quade, J., 1993, Stable carbon and oxygen isotopes in soil carbonates, *in* Swart, P.K., Lohmann, K.C., McKenzie, J., and Savin, S., eds., *Climate Change in Continental Isotopic Records*: American Geophysical Union, *Geophysical Monograph* 78, p. 217-231. **(C1, C3)**
- Cole, D.R., and Monger, H.C., 1994, Influence of atmospheric CO_2 on the decline of C_4 plants during the last deglaciation: *Nature*, v. 368, p. 533-536. **(B2, C1, C3)**
- Cox, D.H., 1973, Soil Survey of Hidalgo County, New Mexico; with a section on climate by F.E. Houghton (p. 86-88). U.S. Department of Agriculture, Soil Conservation Service and Forest Service. Washington D.C. 20402, Superintendent of Documents, U.S. Government Printing Office, 90 p. **(C3)**
- Derr, P.S., 1981, Soil Survey of the Otero Area, New Mexico-Parts of Otero, Eddy, and Chaves Counties: U.S. Department of Agriculture, Soil Conservation Service and Forest Service, in cooperation with the NMSU Agricultural Experiment Station, 244 p.; with 24 map sheets, scale 1:24,000/1:63,000. **(C3)**
- Feth, J.H., and Whitehead, H.C., 1961, Chemical character of precipitation at Menlo Park, California: U.S. Geological Survey Professional Paper 424-D, p. 29-30. **(C1, C3, D1)**
- Feth, J.H., and Whitehead, H.C., 1964, Chemical composition of rain, dry fallout, and bulk precipitation at Menlo Park, California, 1957-1959: *Journal of Geophysical Research*, v. 69, p. 3319-3333. **(C1, C3, D1)**

- Flores Mata, G., 1970, Informe de Actividades, mayo 1967-septiembre 1970, Anexos 3: Mapa de Grandes Grupos de Suelos Del Edo. de Chihuahua de acurdo al Sistema de FAO/UNESCO/SRH, [y] Anexos 4. De 26 cuerdo al sistema Americano de la 7a, Aproximación: Secretaria de Recursos Hidráulicos, Jefatura Irrigación y Control de Ríos, Dirección de Agrología, Serie Estudios Publicación Numero 1, 33 p. **(C3, F3)**
- Gile, L.H., 1961, A classification of ca horizons in soils of a desert region, Doña Ana County, New Mexico: Soil Science Society of America Proceedings, v. 25, no. 1, p. 52-61. **(C3)**
- Gile, L.H., 1966a, Coppice dunes and the Rotura soil: Soil Science Society of America Proceedings, v. 30, p. 657-660. **(C3)**
- Gile, L.H., 1966b, Cambic and certain noncambic horizons in desert soils of southern New Mexico: Soil Science Society of America Proceedings, v. 31, no. 6, p. 773-781. **(C3)**
- Gile, L.H., 1967, Soils of an ancient basin floor near Las Cruces, New Mexico: Soil Science, v. 103, no. 4, p. 265-276. **(C3)**
- Gile, L.H., 1970, Soils of the Rio Grande Valley border in southern New Mexico: Soil Science Society of America Proceedings, v. 34, no. 3, p. 465-472. **(C3)**
- Gile, L.H., 1975a, Causes of soil boundaries in an arid region: I. Age and parent materials: Soil Science Society of America Proceedings, v. 39, p. 316-323. **(C3)**
- Gile, L.H., 1975b, Causes of soil boundaries in an arid region: II. Dissection, moisture, and faunal activity: Soil Science Society of America Proceedings, v. 39, p. 324-330. **(C3)**
- Gile, L.H., 1975c, Holocene soils and soil-geomorphic relations in an arid region of southern New Mexico: Quaternary Research, v. 5, p. 321-360. **(C3)**
- Gile, L.H., 1977, Holocene soils and soil-geomorphic relations in a semi-arid region of southern New Mexico: Quaternary Research, v. 7, p. 112-132. **(C3)**
- Gile, L.H., 1986, Late Holocene displacement along the Organ Mountains fault in southern New Mexico – A summary: New Mexico Geology, v. 8, no. 1, p. 1-4. **(C2a, C3)**
- Gile, L.H., 1987a, A pedologic chronology of Kilbourne Hole, southern New Mexico: I. Soils in tuff; II. Time of the explosions: Soil Science Society of America Journal, v. 51, p. 746-760. **(C2a, C3)**
- Gile, L.H., 1987b, Book review of Weide, D.L., ed., Soils and Quaternary geology of the southwestern United States: Quaternary Research, v. 27, p. 335-336. **(A2, C3)**
- Gile, L.H., 1990, Chronology of lava and associated soils near San Miguel, New Mexico: Quaternary Research, v. 33, p. 37-50. **(C2b, C3)**
- Gile, L.H., 1991, Discussion, burial of fault scarps along the Organ Mountains fault, south-central New Mexico: Bulletin of the Association of Engineering Geologists, v. 27, no. 3, p. 325, 326. *See Beehner 1990.* **(C2b, C3)**
- Gile, L.H., 1993, Carbonate stages in sandy soils of the Leasburg surface, southern New Mexico: Soil Science, v. 156, p. 101-110. **(C3)**
- Gile, L.H., 1994a, Soils of an eolian analog of the Leasburg surface, southern New Mexico: Quaternary Research, v. 41, p. 191-199. **(C3)**
- Gile, L.H., 1994b, Soils, geomorphology, and multiple displacements along the Organ Mountains fault in southern New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 133, 91 p. **(C2b, C3)**
- Gile, L.H., 1999, Eolian and associated pedogenic features of the Jornada Basin floor, southern New Mexico: Soil Science Society of America Journal, v. 63, p. 151-163. **(C3)**
- Gile, L.H., 2002, Lake Jornada, an early-middle Pleistocene lake in the Jornada del Muerto Basin, southern New Mexico: New Mexico Geology, v. 24, no. 1, p. 3-14. **(C2b, C3, I3)**
- Gile, L.H. and Ahrens, R.J., eds., 1994, Supplement to the Desert Project Soil Monograph, Volume I: Soils and landscapes astride the Rio Grande Valley near Las Cruces, New Mexico: U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, NE, Soil Survey Investigation Report No. 44, 592 p. **(C3)**
- Gile, L.H., Gibbens, R.P., and Lenz, J.M., 1995, Soils and sediments associated with remarkable, deeply penetrating roots of crucifixion thorn (*Koeberlinia spinosa* Zucc.): Journal of Arid Environments. v. 35, p. 137-151. **(C1, C3)**
- Gile, L.H., Gibbens, R.P., and Lenz, J.M. 1998, Soil-induced variability in root systems of creosotebush (*Larrea tridentata*) and tarbush (*Flourensia cernua*): Journal of Arid Environments, v. 39, p. 57-78. **(C1, C3)**
- Gile, L.H., and Grossman, R.B., 1968, Morphology of the argillic horizon in desert soils of southern New Mexico: Soil Science, v. 106, no. 1, p. 6-15. **(C3)**
- Gile, L.H., and Grossman, R.B., 1979, The Desert Project Soil Monograph: U.S. Department of Agriculture, National Technical Information Service, Document No. PB80-13534, Springfield, VA 22161, 984 p. **(C3)**

- Gile, L.H., and Hawley, J.W., 1966, Periodic sedimentation and soil formation on an alluvial-fan piedmont in southern New Mexico: *Soil Science Society of America Proceedings*, v. 30, p. 261-268. **(C2a, C3)**
- Gile, L.H., and Hawley, J.W., 1968, Age and comparative development of desert soils at the Gardner Spring radiocarbon site, New Mexico: *Soil Science Society of America Proceedings*, v. 32, no. 5, p. 709-719. **(C2a, C3)**
- Gile, L.H., and Hawley, J.W., 1972, The prediction of soil occurrence in certain desert regions of the southwestern United States: *Soil Science Society of America Proceedings*, v. 36, no. 1, p. 119-124. **(C3)**
- Gile, L.H., Ahrens, R.J., and Anderson S.P., eds., 2003, Supplement to the Desert Project Soil Monograph, Volume III: Soils and landscapes astride the Rio Grande Valley near Las Cruces, New Mexico: U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, NE, Soil Survey Investigation Report No. 44, 374 p., with 28 1:15,840 scale maps - printed and on CD. **(C3)**
- Gile, L.H., Hawley, J.W., and Grossman, R.B., 1970, Distribution and genesis of soils and geomorphic surfaces in a desert region of southern New Mexico: *Soil Science Society of America, Guidebook, Soil-Geomorphology Field Conference*, New Mexico State University Agronomy Department, 155 p. **(C2a, C3)**
- Gile, L.H., Hawley, J.W., and Grossman, R.B., 1981, Soils and geomorphology in the Basin Range area of southern New Mexico – Guidebook to the Desert Project: New Mexico Bureau of Mines and Mineral Resources, Memoir 39, 222 p. <https://geoinfo.nmt.edu/publications/monographs/memoirs/39/> **(C2a, C3)**
- Gile, L.H., Peterson, F.F., and Grossman, R.B., 1965, The K horizon--a master soil horizon of carbonate accumulation: *Soil Science*, v. 99, no. 2, p. 74-82. **(C3)**
- Gile, L.H., Peterson, F.F., and Grossman, R.B., 1966, Morphological and genetic sequences of carbonate accumulation in desert soils: *Soil Science*, v. 101, no. 5, p. 347-360. **(C3)**
- Gile, L.H., Grossman, R.B., Hawley, J.W., and Monger, H.C., 1996, Ancient soils of the Rincon surface, northern Doña County, *in* Gile, L.H., and Ahrens, R.J., eds., Supplement to the Desert Project Soil Monograph, Volume II: Soils and landscapes astride the Rio Grande Valley near Las Cruces, New Mexico: U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, Lincoln, NE, Soil Survey Investigation Report No. 44, p. 1-110. **(C2b, C3)**
- Gile, L.H., Hawley, J.W., Grossman, R.B., Monger, H.C., Montoya, C.E., and Mack, G.H., 1995, Supplement to the Desert Project Guidebook, with emphasis on soil micromorphology: New Mexico Bureau of Mines and Mineral Resources, Bulletin 142, 96 p. **(C2b, C3)**
- Gile, L.H., Monger, H.C., Grossman, R.B., Ahrens, R.J., Hawley, J.W., Peterson, F.F., Gibbens, R.P., Lenz, J.M., Bestelmeyer, B.T., and Nolen, B.A., 2007, A 50th Anniversary Guidebook for the Desert Project: Lincoln, NE, U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, 279 p. **(C1, C2b, C3)**
- Grossman, R.B., Ahrens, R.J., Gile, L.H., Montoya, C.E., and Chadwick, O.A., 1995, Areal evaluation of organic and carbonate carbon in a desert area of southern New Mexico, *in* *Soils and global change*: London, CRC Press, Inc., p. 81-92. **(C3)**
- Gustavson, T.C., 1990, Regional stratigraphy and geomorphic evolution of the southern Hueco Bolson, west Texas and Chihuahua, Mexico, *in* Kreitler, C.W., and Sharp, J.M., Jr., eds., *Hydrology of Trans-Pecos Texas*: University of Texas at Austin, Bureau of Economic Geology, Guidebook 25, p. 27-35. **(C2b, C3, I3)**
- Gustavson, T.C., 1991a, Arid basin depositional systems and paleosols: Fort Hancock and Camp Rice Formations (Pliocene-Pleistocene) Hueco Bolson, West Texas and adjacent Mexico: University of Texas at Austin, Bureau of Economic Geology, Report of Investigations No. 198, 49 p. **(C2b, C3, I3)**
- Gustavson, T.C., 1991b, Buried vertisols in lacustrine facies of the Pliocene Fort Hancock Formation, Hueco Bolson, West Texas and Chihuahua, Mexico: *Geological Society of America Bulletin*, v. 103, p. 448-460. **(C2b, C3, I3)**
- Hall, S.A., Miller, M.R., and Goble, R.J., 2010, Geochronology of the Bolson sand sheet, New Mexico and Texas, and its archaeological significance: *Geological Society of America Bulletin*; v. 122, no. 11/12, p. 1950-1967, 16 figures, 5 tables. **(B2, C1, C2b, C3)**
- Hawley, J.W., 1972, Geologic-geomorphic mapping to serve soil resource development: *Soil Conservation Society of America, Proceedings of 27th Annual Meeting*, p. 24-30. **(C2a, C3)**
- Hawley, J.W., 1975b, The desert soil-geomorphology project: New Mexico Geological Society, Guidebook 26, p. 183-185. **(A2, C3)**
- Hawley, J.W., 1983, Quaternary geology of the Rhodes Canyon (RATSCAT) Site, *in* Eidenbach, P.L., ed., *The prehistory of Rhodes Canyon*, New Mexico: Tularosa, NM, Human Systems Research, Inc., p. 17-32. **(B2, C2a, C3, I2)**

- Hawley, J.W., and Gile, L.H., 1966, Landscape evolution and soil genesis in the Rio Grande region, southern New Mexico: Friends of the Pleistocene, Rocky Mountain Section, Guidebook 11th Field Conference; La Cruces, New Mexico State University Agronomy Department, Special Publication, 74 p. **(C2a, C3)**
- Hawley, J.W., Gile, L.H., and Grossman, R.B. (abstract), 1968, Caliche development related to the geomorphic evolution of the Rio Grande Valley: Geological Society of America, Abstracts with Programs, v. 3, no. 3, p. 130. **(C2a, C3)**
- Herbel, C.H., and Gibbens, R.P., 1996, Post-drought vegetation dynamics on arid rangelands of southern New Mexico: New Mexico State University, Agricultural Experiment Station Bulletin 776, 102 p. **(C1)**
- Herbel, C.H., and Gile, L.H., 1973, Field moisture regimes and morphology of some arid-land soils in New Mexico, *in* Bruce, R.R., and Stelly, M., eds., Field soil-water regime: Soil Science Society of America, Special Publication No. 5, p. 119-152. **(C1, C3)**
- Herbel, C.H., Gile, L.H., Fredrickson, E.L., and Gibbens, R.P., 1994, Soil water and soils at soil water sites, Jornada Experimental Range, *in* Studies of soil and landscape evolution in southern New Mexico: Supplement to the Desert Project Soil Monograph, v. I, Soil Survey Investigations (NRCS) Report 44, Lincoln, NB. **(C3)**
- Herold, L.C., and Miller, R.F., 1994, Soil moisture conditions in agricultural terraces associated with a Highland Variant of the Casas Grandes Culture, Chihuahua, Mexico, *in* Foss, J.E., et al., eds., Proceedings of the First International Conference on Pedo-Archaeology: Special Publication 93-03, University of Tennessee Agricultural Experiment Station, Knoxville, p. 185-190. **(B2, C1, C3, F3)**
- Herold, L.C., and Miller, R.F., 1995, Water availability for plant growth in Precolumbian terrace soils, Chihuahua, Mexico, *in* Toll, H.W., ed., Soil, water, biology, and belief in prehistoric and traditional Southwestern agriculture: New Mexico Archaeological Council, C & M Press, Denver, Colorado, p. 145-153. **(B2, C1, C3, F3)**
- Holliday, V.T., and Miller, D.S., 2013, The Clovis landscape, Chapter 13, p. 221-245, *in* Graf, K.E, Ketron, C.V., and Waters, M.R., eds., Paleoamerican Odyssey, Center for the Study of the First Americans, Department of Anthropology, College Station, Texas A&M University, 573 p. ISBN 13 978-0-615-82691-2 **(B2, C1, C3)**
- Hoidale, G.B., Smith, S.M., Blanco, A.J. and Barber, T.L., 1967, A study of atmospheric dust: Atmospheric Science Laboratory, White Sands Missile Range, New Mexico, ECOM Report No. 5067, 132 p. **(C1, C3)**
- INEGI, 1983a-ap, Agua Prieta H12-1, Cartas Edafológica: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Coordinación General de los Servicios Nacionales de Estadística, Geografía e Informática. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(C3, F3)**
- INEGI, 1983a-cj, Ciudad Juárez H13-1, Cartas Edafológica: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(C3, F3)**
- Jochems, A.P., and Morgan, G.S., 2018, A stable isotope record from paleosols and groundwater carbonate of the Plio-Pleistocene Camp Rice Formation, Hatch-Rincon Basin, southern New Mexico: N.M. Geological Society Guidebook 69, p. 109-117. **(C1, C2b, C3)**
- Junge, C.E., and Werby, R.T., 1958, The concentration of chloride, sodium, potassium, calcium, and sulfate in rain water over the United States: Journal of Meteorology, v. 15, p. 417-425. **(C1, C3, D1)**
- Kimble, J.M., and Nettleton, W.D., 1989, Proceedings of Fourth International Correlation Meeting (ISCOM IV) – Characterization, Classification, and Utilization of Aridisols. Part B: Sites, Discussions, and Proposals: National Leader for Soil Classification, Soil Survey Division, USDA-SCS [NRCS], P.O. Box 2890, Washington, D.C. 20013, USA, 168 p. **(C3)**
- Love, D.W., and Hawley, J.W., 2010, Geology of the Montano Site Complex- Chapter 3 (p. 3-1 to 3-32); and Data synthesis, interpretation and summary-Chapter 13: The nature of the agricultural system (p. 13-5 and 13-6), *in* Report on 1988 data recovery at the Montano Site Complex, LA 33223; City of Albuquerque, New Mexico; and Subsequent analysis of collections (NMCRIS No. 116852). Report No. CEC-2009-12, submitted by Criterion Environmental Consulting, 4801 Lang Avenue NE, Suite 110, Albuquerque, NM 87109. Submitted to: Wilson & Company, Inc. 4900 Lang Avenue NE, Albuquerque, NM 87109; and City of Albuquerque, One Civic Plaza NW, Albuquerque, NM 87102. March 22, 2010. **(B2, C1, C3, I3)**
- Machette, M.N., 1985, Calcic soils of the southwestern United States, *in* Weide, D.L., ed., Quaternary soils and geomorphology of the American Southwest: Geological Society of America Special Paper 203, p. 1-21. **(C2a, C3)**

- Machette, M., Thompson, R., Marchetti, D., and Smith, R.S.U., 2013, Evolution of ancient Lake Alamosa and integration of the Rio Grande during the Pliocene and Pleistocene, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater*: Geological Society of America Special Paper 494, P. 1-20. doi: 10.1130/2013.2494(01) **(C2b, C3, I3)**
- Mack, G.H., and James, W.C., 1992, Calcic paleosols of the Camp Rice and Palomas Formations, southern Rio Grande rift, USA: *Sedimentary Geology*, v. 77, p. 89-109. **(C2b, C3)**
- Mack, G.H., Cole, D.R., and Trevino, L., 2000, The distribution and discrimination of shallow, authigenic carbonate in the Pliocene-Pleistocene Palomas Basin, southern Rio Grande rift: *Geological Society of America Bulletin*, v. 112, p. 643-656. **(C2b, C3)**
- Mack, G.H., James, W.C., and Monger, H.C., 1993, Classification of paleosols, *Geological Society of America Bulletin*, v. 105, no. 2, p. 129-136. **(C3)**
- Mack, G.H., Cole, D.R., James, W.C., Giordano, T.H., and Salyards, S.L., 1994, Stable oxygen and carbon isotopes of pedogenic carbonate as indicators of Plio-Pleistocene paleoclimate in the southern Rio Grande rift, south-central New Mexico: *American Journal of Science*, v. 294, p. 621-640. **(B1, C1, C3)**
- Maker, H.J., Neher, R.E., Derr, P.H., and Anderson, J.U., 1971, Soil Associations and land classifications for irrigation, Doña Ana County: New Mexico State University Agricultural Experiment Station, Research Report 183, 40 p. **(C3)**
- Maker, H.J., Derr, P.S., and Anderson, J.U., 1972, Soil associations and land classification for irrigation, Otero County: New Mexico State University Agricultural Experiment Station, Research Report 238, 63 p. **(C3)**
- Maker, H.J., Bailey, O.F., and Anderson, J.U., 1970, Soil Associations and Land Classification, Luna County; with section on climate by F.E Houghton (p. 6-7): N.M. Agriculture Experiment Station Research Report 176, New Mexico State University, 31 p. **(C3)**
- McFadden, L.D., 2013, Strongly dust-influenced soils and what they tell us about landscape dynamics in vegetated aridlands of the Southwestern United States: *Geological Society of America Special Paper* 500, p. 501-532. **(C3)**
- Monger, H.C., 1993, Soil-geomorphic and paleoclimatic characteristics of the Fort Bliss Maneuver Areas, southern New Mexico and western Texas: U.S. Army Air Defense Artillery Center, Fort Bliss; Directorate of Environment; Environment Management Division, Cultural Resources Branch; Historic and Natural Resources Report No. 10, 233 p. **(C3)**
- Monger, H.C., 1995, Pedology in arid lands archaeological research: An example from southern New Mexico-western Texas, *in* Collens, M., ed., *Pedological perspectives in archaeological research*: Soil Science Society of America Special Publication 44, p. 35-50. **(C3)**
- Monger, H.C., and Daugherty, L.A., 1991a, Pressure solution: possible mechanism for silicate grain dissolution in a petrocalcic horizon: *Soil Science Society of America Journal*, v. 55, no. 6, p. 1625-1629. **(C3)**
- Monger, H.C., and Daugherty, L.A., 1991b, Neoformation of palygorskite in a southern New Mexico Aridisol: *Soil Science Society of America Journal*, v. 55, no. 6, p. 1646-1650. **(C3)**
- Monger, H.C., and Gallegos, R., 1997, Mineralogy and eolian sedimentation - Lost River Playa, Otero County New Mexico: Report submitted to Geo-Marine Inc., New Mexico State University, Las Cruces New Mexico, 16 p. **(C3, I2)**
- Monger, H.C., and Lynn, W.C., 1996, Clay mineralogy of the Desert Project and Rincon Surface study area, *in* Gile, L.H., and Ahrens, R.J., eds., *Studies of soil and landscape evolution in southern New Mexico: Supplement to the Desert Project Soil Monograph*, v. II, Soil Survey Investigations (NRCS) Report 44, Lincoln, NB, p. 111-155. **(C3)**
- Monger, H.C., Daugherty, L.A., and Gile, L.H., 1991, A microscopic examination of pedogenic calcite in an Aridisol of southern New Mexico, *in* Occurrence, characteristics, and genesis of carbonate, gypsum, and silica accumulation in soils: Soil Science Society of America Special Publication No. 26, p. 37-60. **(C3)**
- Monger, H.C., Buck, B.J., Hawley, J.W., and Rachal, D., 2012, Geochronology of the Bolson sand sheet, New Mexico and Texas, and its archaeological significance: Discussion: *Geological Society of America Bulletin*; v. 124, no. 5/6, p. 1552-1556, 3 figures. **(B2, C1, C2b, C3)**
- Monger, H.C., Cole, D.R., Buck, B.J., and Gallegos, R.A., 2009, Scale and the isotopic record of C4 plants in pedogenic carbonate: from the biome to the rhizosphere: *Ecology*, v. 90, p. 1498-1511. **(C1, C3)**
- Monger, H.C., Cole, D.R., Gish, J.W., and Giordano, T.H., 1998, Stable carbon and oxygen isotopes in Quaternary soil carbonates as indicators of ecogeomorphic changes in the northern Chihuahuan Desert, USA: *Geoderma*, v. 82, p. 137-172. **(B2, C1, C3)**

- Monger, H.C., Gile, L.H., Hawley, J.W., and Grossman, R.B., 2009, The Desert Project – An analysis of aridland soil-geomorphic processes: New Mexico State University Agricultural Experiment Station Bulletin 798, 76 p. **(A2, C2b, C3)**
- Morrison, R.B., 1969, Photointerpretive mapping from space photographs of Quaternary geomorphic feature and soil associations in northern Chihuahua and adjoining New Mexico and Texas: New Mexico Geological Society Guidebook 20, p. 116-129. **(C2a, C3, E1, F1, I2)**
- Neher, R.E., and Buchanan, W.A., 1980, Soil survey of Luna County, New Mexico: U.S. Department of Agriculture, Soil Conservation Service, 64 p. **(C3)**
- Nelson, J.W., and Holmes, L.C., 1914, Soil Survey of the Mesilla Valley, New Mexico-Texas: U.S. Department of Agriculture, Bureau of Soils, Washington, D.C., U.S. Government Printing Office, 39 p. map scale 1:63,360. *Shallow depth to water table shown in large no. soil-test borings.* **(C3, G1)**
- Nyachoti, S., 2016, Application of uranium and strontium isotopes as salinity and paleo-environmental tracers: Insight from the Rio Grande river and pedogenic carbonates in dryland soils of Southwest, USA: University of Texas at El Paso, doctoral dissertation, 231 p. **(C1, C3, C4, H3)**
- Pennisi, E., 2022, Hard ‘skin’ on the surface of soils helps keep dust storms at bay – Climate and trampling threaten “biocrusts,” allowing wind to attack dry soils: Science, v. 376, issue 6595, p. 386-387. doi/10.1126/science.addo451 **(C1, C3)**
- Phillips, F.M., 1994, Environmental tracers for water movement in desert soils of the American Southwest: Soil Science Society of America Journal, v. 58, p. 15-24. **(C3, D2)**
- Powell, A.M., and Turner, B.L., 1977, Aspects of the plant biology of the gypsum outcrops of the Chihuahuan Desert, in Wauer, R.H., and Riskind, D.H., Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, p. 315-325. **(C1, C3)**
- Quade, J., Cerling, T.E., and Bowman, J.R., 1989, Systematic variations in the carbon and oxygen isotopic composition of pedogenic carbonate along elevation transects in the southern Great Basin, United States: Geological Society of America Bulletin, v. 101, p. 464-475. **(C1, C3, C4)**
- Reheis, M.C., Goodmacher, J.C., Harden, J.W., McFadden, L.D., Rockwell, T.K., Shroba, R.R., Sowers, J.M., and Taylor, E.M., 1995, Quaternary soils and dust deposition in southern Nevada and California: Geological Society of America Bulletin, v. 107, p. 1003-1022. **(C3)**
- Reheis, M.C., Sowers, J.M., Taylor, E.M., McFadden, L.D., and Harden, J.W., 1992, Morphology and genesis of carbonate soils on the Kyle Canyon Fan, Nevada, U.S.A.: Geoderma, v. 52, Elsevier Science Publishers B.V., Amsterdam, The Netherlands, p. 303-342. **(C3)**
- Ruhe, R.V., 1964, Landscape morphology and alluvial deposits in southern New Mexico: Annals of the Association of American Geographers, v. 54, p. 147-159. **(C2a, C3)**
- Ruhe, R.V., 1967, Geomorphic surfaces and surficial deposits in southern New Mexico: New Mexico Bureau of Mines and Mineral Resources, Memoir 18, 65 p. **(C2a, C3)**
- Sandor, J.H., Gersper, P.L., and Hawley, J.W., 1986, Soils at prehistoric agricultural terracing sites in New Mexico: I. Site placement, soil morphology and classification; II. Organic matter and bulk density changes; III. Phosphorous, selected micronutrients, and pH: Soil Science Society of America Journal, v. 50, no. 1, p. 166-180. **(B2, C3)**
- Sandor, J.A., Gersper, P.L., and Hawley, J.W., 1990, Prehistoric agricultural terraces and soils in the Mimbres area, New Mexico, in Thomas, K., ed., Soils and early agriculture: World Archaeology v. 22, no. 1., p. 70-86. **(B2, C3)**
- Sandor, J.A., Hawley, J.W., Schiowitz, R.H., and Gersper, P.L., 2008, Soil-geomorphic setting and change in prehistoric agricultural terraces in the Mimbres area, New Mexico: New Mexico Geological Society Guidebook 59, p. 167-175. **(B2, C3)**
- Slate, J.L., Smith, G.A., Yang, W., and Cerling, T.E., 1996, Carbonate-paleosol genesis in the Plio-Pleistocene St. David Formation, southeastern Arizona: Journal of Sedimentary Research, v. 66, no. 1, p. 85-94. **(C3)**
- Soil Science Division Staff, Ditzler, C., Scheffe, K., and Monger, H.C., eds., 2017, Soil Survey Manual: U.S. Department of Agriculture (USDA), Agriculture Handbook No. 18, Government Printing Office, Washington, D.C., 603 p. **(A2, C3)**
- SSURGO, 2002/2003: Soil Survey Geographic Database of the National Resources Conservation Service (NRCS) for Doña Ana County, provided by the Elephant Butte Irrigation District. **(C3)**
- Sweet, A.T., and Poulson, E.N., 1931, Soil Survey of the Deming area, New Mexico: U.S. Department of Agriculture, Bureau of Chemistry and Soils, Series 1928, no. 2, 20 p., map scale 1:63,360. **(C3)**

- Sweet, A.T., and Poulson, E.N., 1933, Soil Survey of the Rincon area, New Mexico: U.S. Department of Agriculture, Bureau of Chemistry and Soils, Series 1930, no. 5, 24 p., map scale 1:63,360. *Shallow depth to water table shown in large number of soil-test borings.* (C3, H1)
- U.S. Soil Conservation Service, Soil Survey Staff, 1960, Soil classification: A comprehensive system, 7th Approximation: Washington, D.C., U.S. Department of Agriculture, Soil Conservation Service, 265 p. (C3)
- U.S. Soil Conservation Service, Soil Survey Staff, 1967, Supplement to soil classification system, A comprehensive system, 7th Approximation: Washington, D.C., U.S. Department of Agriculture, Soil Conservation Service, 207 p. (C3)
- Vanden Heuvel, R.C., 1966, The occurrence of sepiolite and attapulgite in the calcareous zone of a soil near Las Cruces, New Mexico, *in* Clays and clay minerals: Proceedings of the 13th National Conference on clays and clay minerals, New York, Pergamon Press, p. 193-207. (C3)

C4. Geophysical/Geochemical Data and Interpretations

- Ackermann, H.D., Pankratz, L.W., and Klein, D.P., 1994, Six regionally extensive upper-crustal refraction profiles in southwest New Mexico: U.S. Geological Survey Open-File Report 94-965, 6 p. *See Klein 1995.* (C4)
- Adams, D.C., and Keller, G.R., 1994, Crustal structure and basin geometry in south-central New Mexico, *in* Keller, G.R., and Cather, S.M., eds., Basins of the Rio Grande rift: Structure, stratigraphy and tectonic setting: Geological Society of America Special Paper 291, p. 241-255. (C2b, C4)
- Al-Garni, M.A., 1996, Direct current resistivity investigation of groundwater in the lower Mesilla Valley, New Mexico and Texas: Colorado School of Mines, master's thesis, 126 p. *See Zohdy et al. 1976.* (C4, H2)
- Anthony, E.Y., and Poths, J., 1992, The surface exposure dating and magma dynamics, the Potrillo Volcanic Field, Rio Grande Rift, New Mexico: *Geochimica et Cosmochimica Acta*, v. 56, p. 4105-4108. (C2b, C4)
- Anthony, E.Y., Hoffer, J.M., Waggoner, W.K., and Chen, W., 1992, Compositional diversity in Late Cenozoic mafic lavas in the Rio Grande Rift and Basin and Range Province, southern New Mexico: *Geologic Society of America Bulletin*, v. 104, p. 973-979. (C2b, C4)
- Arunshankar, B.N., 1993, Use of earth resistivity method for monitoring saline groundwater movement in aquifers: University of Texas at El Paso, master's thesis, 79 p. (C4, H2, H3)
- Averill, M.G., 2007, A lithospheric investigation of the southern Rio Grande rift: University of Texas at El Paso, doctoral dissertation, 213 p. (C2b, C4)
- Averill, M.G., and Miller, K.C., 2013, Upper crustal structure of the southern Rio Grande rift: A composite record of rift and pre-rift tectonics, *in* Hudson, M.R., and Grauch, V.J.S., eds., New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater: Geological Society of America Special Paper 494, p. 463-474. doi: 10.1130/2013.2494(17) (C2b, C4)
- Avila, V.M., 2011, An investigation of the seismic hazards of the El Paso-Juárez region: The nature and extent of the southern east Franklin mountains fault zone: University of Texas at El Paso, master's thesis, 51 p. (C4)
- Avila, V.M., Doser, D.I., Dena-Ornelas, O.S., Moncada, M.M., and Marrufo-Cannon, S.S., 2016, Using geophysical techniques to trace active faults in the urbanized northern Hueco Bolson, West Texas, USA, and northern Chihuahua, Mexico: *Geosphere*, v. 12, no. 1, p. 264-280. (C2b, C4)
- Baker, L.A., Schinagel, S., Villalobos, J.I., Avila, V., Montana, C.J., and Kaip, G. (abstract), 2012, A microgravity survey to determine the extent of an andesitic sill that intrudes across the Rio Grande River basin, Rio Grande Rift valley, Sunland Park, New Mexico: San Francisco, California, 2012 Fall Meeting, American Geophysical Union, abstract ED23B-0765. (C2b, C4)
- Baldrige, W.S., 2004, Pliocene-Quaternary volcanism in New Mexico and a model for genesis of magmas in continental extension, *in* Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society, Special Publication 11, p. 312-330. (C2b, C4)
- Barnes, C.G., Ensenat, S.E., and Hoover, J.D., 1991, Mineralogy and geochemistry of Eocene intrusive rocks and their enclaves, El Paso area, Texas and New Mexico: *American Mineralogist*, v. 76, p. 1306-1318. (C4)
- Bartolino, J.R., 1997, Chlorofluorocarbon and tritium age determination of ground-water recharge in the Ryan Flat Subbasin, Trans-Pecos Texas: U.S. Geological Survey Water-Resources Investigations Report 96-4245, 29 p. (C4, D2, H3)
- Baumgardner, R.W., and Scanlon, B.R., 1992, Surface fissures in the Hueco Bolson and adjacent basins, West Texas: University of Texas Bureau of Economic Geology, Geological Circular 92-2, 40 p. (C4, D2, H3)
- Beck, R.W., 2004, Guidance Manual for Reverse Osmosis Desalination Facility Permitting Requirements in Texas: Prepared for Texas Water Development Board, November 23, 2004, 86 p. (C4, E2)
- Beehner, T.S., 1990, Burial of fault scarps along the Organ Mountains fault, south-central New Mexico: *Bulletin of the Association of Engineering Geologists*, v. 27, no. 1, p. 1-19. *See Gile 1991.* (C2b, C3, C4)

- Belzer, W.L., Miller, K.C., and Harder, S., 2002, Shallow geophysical study of the Grapevine Canyon area, eastern Tularosa Basin: Implications for groundwater resources: New Mexico Geological Society Guidebook 53, p. 79-84. **(C4, H1)**
- Bersch, M.G., 1977, Petrology and geology of the southern West Potrillo basalt field, Dona Ana County, New Mexico: University of Texas at El Paso, master's thesis, 59 p. **(C2a, C4, F1)**
- Birch, F., 1982, Gravity models of the Albuquerque Basin: Rio Grande Basin, New Mexico: Geophysics, v. 47, p. 1185-1197. **(C4)**
- Bond, G.N., Boucher, J.H., Eriksen, W.T., Hudson, S.L., and Kaiser, B.D., 1981, A direct application of geothermal energy at L'EGGS Plant, Las Cruces, New Mexico: U.S. Department of Energy, Idaho Operations Office, Report DOE/ID/12047-3. **(C4)**
- Budhathoki, P., 2013, Integrated geological and geophysical studies of the Indio Mountains and Hueco Bolson, West Texas: University of Texas and El Paso, doctoral dissertation, 126 p. **(C2b, C4)**
- Budhathoki, P., Doser, D.I., Thapalia, A., Langford, R.P., and Avila, V.M., 2018. Geological and geophysical studies of the structure and stratigraphy of the northwestern Hueco Bolson aquifer, El Paso, Texas. *Geosphere*, v. 14, no. 2, p. 731-748. **(C2b, C4)**
- Buck, B.J., Kipp, J.M. Jr., and Monger, H.C., 1998, Eolian stratigraphy of interbasin fault depressions in the northern Hueco and southern Tularosa Basins: Evidence for neotectonic activity: New Mexico Geological Society, Guidebook 49, p. 97-86. **(C2b, C4)**
- Burgos, A., 1993, A gravimetric study of the thickness of the unconsolidated materials in the Hueco Bolson aquifer, Juárez area, Chihuahua Mexico: University of Texas at El Paso, master's thesis, 259 p. **(C2b, C4)**
- Cain, M.J., 2002, FUGRO RESOLVE survey for the International Boundary and Water Commission Texas levee survey II: Fugro Airborne Surveys Corp., Mississauga, Ontario, 58 p. **(C4, H1)**
- Chang, J., Miller, K.C., and Keller, R.G., 1999, Seismic expression of Late Cretaceous to Recent structure in southwestern New Mexico: *Rocky Mountain Geology*, v. 34, p. 131-148. **(C4)**
- Chaturvedi, L., 1981, New Mexico State University geothermal production well: N.M. Energy Institute Technical Completion Report, 48 p. **(C4, H1, H2)**
- Collins, E.W., and Raney, J.A., 1993. Late Cenozoic faults of the region surrounding the Eagle Flat study area, northwestern Trans-Pecos Texas: University of Texas at Austin, Bureau of Economic Geology final contract report, prepared for Texas Low-Level Radioactive Waste Disposal Authority under Interagency Contract IAC (92-93)-0910, 74 p. **(C2b, C4)**
- Collins, E., Haller, K.M., and Machette, M.N., compilers, 2015, Fault number 900, East Franklin Mountains fault, *in* Quaternary fault and fold database of the United States: U.S. Geological Survey website, accessed June 24, 2021 at <https://earthquakes.usgs.gov/hazards/qfaults> **(C2b, C4)**
- Cook, K.L., 1969, Active rift systems in the Basin and Range province: *Tectonophysics*, v. 8, p. 469-511. **(C2a, C4)**
- Cordell, L., 1975, Combined geophysical studies at Kilbourne Hole maar, New Mexico: New Mexico Geological Society Guidebook 26, p. 269-271. **(C2a, C4)**
- Cordell, L., 1976, Aeromagnetic and gravity studies of the Rio Grande graben in New Mexico between Belen and Pilar: New Mexico Geological Society, Special Publication 6, p. 62-70. **(C4)**
- Cordell, L., 1978, Regional geophysical setting of the Rio Grande rift: *Geological Society of America Bulletin* 89, p. 1073-1090. **(C4)**
- Cordell, L., Keller, G.R., and Hildenbrand, T.G., 1982, Bouguer gravity map of the Rio Grande rift, Colorado, New Mexico, and Texas: U.S. Geological Survey Geophysical Investigations Series, Map GP-949, scale 1:1,000,000. **(C4)**
- Cuniff, R.A., 1986, New Mexico State University, Geothermal Exploratory Well, DT-3; Final completion report: New Mexico State University Physical Science Laboratory (Las Cruces, NM-88003-3458), 151 p. **(C4, H2)**
- Daggett, P.H., and Keller, G.R., 1982, Complete Bouguer anomaly map of northwest part of Las Cruces 1° x 2° sheet, Sheet 3, *in* Seager, W.R., Hawley, J.W., Kottowski, F.E., and Kelley, S.A., *Geology of northwest part of Las Cruces 1° x 2° sheet*, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 60, scale 1:125,000. **(C4)**
- Daggett, P.H., and Keller, G.R., 1987, Complete Bouguer anomaly map of east half of Las Cruces and northeast El Paso 1° x 2° sheets, Sheet 3, *in* Seager, W.R., Hawley, J.W., Kottowski, F.E., and Kelley, S.A., *Geology of east half of Las Cruces and northeast El Paso 1° x 2° sheets*, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 57, scale 1:125,000. **(C4)**

- Daggett, P.H., and Keller, G.R., 1995, Complete Bouguer anomaly map of southwest quarter of Las Cruces and El Paso 1° x 2° sheets, Sheet 3, *in* Seager, W.R., Geology of the southwest quarter of the Las Cruces and northwest El Paso 1° x 2° sheets: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 60, scale 1:125,000. **(C4)**
- Daggett, P.H., Keller, G.R., Morgan, P., and Wen, C.L., 1986, Structure of the southern Rio Grande rift from gravity interpretation: *Journal of Geophysical Research*, v. 91, no. B6, p. 6157-6167. **(C4)**
- Daniel B. Stephens and Associates, Inc. (DBSAI), 2010, Evaluation of Rio Grande salinity San Marcial, New Mexico to El Paso, Texas: Report (pdf) prepared for the New Mexico Interstate Stream Commission and New Mexico Environment Department, June 30, 2019, 202 p. **(C4, E2, H2)**
- DeAngelo, M.V., and Keller, G.R., 1988, Geophysical anomalies in southwestern New Mexico: *New Mexico Geological Society Guidebook* 39, p. 71-75. **(C4)**
- Decker, E.R., and Smithson, S.B., 1975, Heat flow and gravity interpretation across the Rio Grande rift in southern New Mexico and west Texas: *Journal of Geophysical Research*, v. 80, no. 17, p. 2542-2552. **(C4)**
- Decker, E.R., Cook, F.A., Ramberg, I.B., and Smithson, S.B., 1975, Significance of geothermal and gravity studies in the Las Cruces area: *New Mexico Geological Society Guidebook* 26, p. 251-259. **(C4)**
- de la O-Carreño, A., 1944, A new development of the theory and application of the potential-drop-ratio method of electrical prospecting: *Transactions, American Geophysical Union*, v. 25, issue 4, p. 575-584. **(C4, F3)**
- de la O-Carreño, A., 1948, The two non-parallel layers problem according to the new development of the potential drop ratio method of the electrical prospecting: *Transactions, American Geophysical Union*, v. 29, issue 1, p. 51-58. **(C4, F3)**
- *de la O-Carreño, A., 1958, Investigation of subsurface geohydrologic conditions at Juárez, Chihuahua, applying electrical geophysics: Mexico City, D.F., 55 p. **(C4, F3)**
- **From USGS English translations, courtesy of Barry J. Hibbs 11/12/2021*
- Doser, D.I., Avila, V., Budhathoki, P., Marrufo, S., Montana, C.J., Kaip, G., Moncada, M., and Dena-Ornelas, O. (abstract), 2012, Determining deep basin structure of the Hueco and southern Mesilla bolsons, west Texas, southern New Mexico and northern Chihuahua using nonseismic geophysical techniques: San Francisco, California, 2012 Fall Meeting, American Geophysical Union, abstract NS41B-1672. **(C2b, C4)**
- Eardley, A.J., and Stringham, B., 1952, Selenite crystals in clays of the Great Salt Lake: *Journal of Sedimentary Petrology*, v. 22, no. 4, p. 234-238. **(C4, H1)**
- Elston, W.E., Deal, E.G., and Logsdon, M.J., 1983, Geology and geothermal waters of the Lightning Dock region, Animas Valley and Pyramid Mountains, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 177, 44 p. **(C2a, C4, H1, H2)**
- Figuers, S.H., 1987, Structural geology and geophysics of the Pipeline complex, northern Franklin Mountains, El Paso, Texas: University of Texas at El Paso, doctoral dissertation, 279 p. **(C2a, C4)**
- Fuchs, E.H., King, J.P., and Carroll, K.C., 2019, Quantifying disconnection of groundwater from managed-ephemeral surface water during drought and conjunctive agricultural use. *Water Resources Research*, v. 55, p. 5871-5890. **(C4, H3)**
- Garcia, S., Louvat, P., Gaillardet, J., Nyachoti, S., and Ma, L., 2021, Combining uranium, boron, and strontium isotope ratios ($^{234}\text{U}/^{238}\text{U}$, $\delta^{11}\text{B}$, $^{87}\text{Sr}/^{86}\text{Sr}$) to trace and quantify salinity contributions to Rio Grande river in Southwestern United States: *Frontiers in Water*, v. 2, article 575216, 24 p. **(C4, H2)**
- Gates, J.S., and Stanley, W.D., 1976, Hydrologic interpretation of geophysical data from the southeastern Hueco Bolson, El Paso and Hudspeth Counties, Texas: U.S. Geological Survey Open-File Report 76-650, 37 p. **(C4, F2, H1)**
- Gelhar, L.W., and McLin, S., 1979, Evaluation of a hydrosalinity model of irrigation return flow water quality in the Mesilla Valley, New Mexico: U.S. Environmental Protection Agency. **(C4, E2b, H2)**
- Gillespie, C.L., 2002, Integrated geophysical, geological and remote sensing study of selected basins in the Rio Grande rift: University of Texas at El Paso, doctoral dissertation, 185 p. **(C4, E1)**
- Gilmer, A.L., Mauldin, R.A., and Keller, G.R., 1986, A gravity study of the Jornada del Muerto and Palomas Basins: *New Mexico Geological Society Guidebook* 37, p. 131-134. **(C4)**
- Granillo, J.A., Jr., 2004, A gravimetric study of the structure of the northeast portion of the Hueco Bolson, Texas employing GIS technology: University of Texas at El Paso, master's thesis, 127 p. **(C4, E1)**
- Grauch, V.J.S., 2000, High-resolution aeromagnetic data for the Albuquerque Basin: U.S. Geological Survey, Denver, CO, Digital Map. **(C2b, C4)**

- Grauch, V.J.S., and Connell, S.D., 2013, New perspectives on the geometry of the Albuquerque Basin, Rio Grande rift, New Mexico: Insights from geophysical models of rift-fill thickness, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater: Geological Society of America Special Paper 494*, p. 427-462. **(C2b, C4)**
- Grauch, V.J.S., and Hudson, M.R., 2007, Guides to understanding the aeromagnetic expression of faults in sedimentary basins: Lessons learned from the central Rio Grande rift: *Geosphere*, v. 3, no. 6, p. 596-623. **(C2b, C4)**
- Gross, J., 1988, A hydrogeological investigation of the Las Cruces geothermal field: New Mexico State University, master's thesis, 212 p. **(C4, H1)**
- Gross, J., and Icerman, L., 1983, Subsurface investigations for the area surrounding Tortugas Mountain, Doña Ana County, New Mexico: New Mexico Energy Research and Development Institute, Interim Report NMERDI 2-67-2238 (2), 70 p. **(C4, H1)**
- Gunaji, N.N., Thode, E.F., Chaturvedi, L., Walvekar, A., LaFrance, L., Swanberg, C.A., and Jiracek, G.R., 1978, Geothermal application feasibility study for the New Mexico State University campus: New Mexico Energy Institute at New Mexico State University, Technical Report – NMEI 13 - Contract 76-205, 118 p. **(C4, H2)**
- Hadi, J., 1991, A study of the structure and subsurface geometry of the Hueco Bolson: University of Texas at El Paso, master's thesis, 88 p. **(C2b, C4)**
- Hamblock, J.M., 2006, Understanding the composition, origin, and evolution of the continental crust: Case studies in the southern Rio Grande Rift, New Mexico, and the coast plutonic complex, British Columbia, Canada: University of Texas at El Paso, doctoral dissertation, 226 p. **(C2b, C4)**
- Hamblock, J.H., Andronicos, C.L., Miller, K.C., Barnes, G.C., Ren, M., Averill, M.G., and Anthony, E.Y., 2007, A composite geologic and seismic profile beneath the southern Rio Grande rift in New Mexico, based on xenolith mineralogy, temperature, and pressure: *Tectonophysics*, v. 442, issues 1-4, p. 14-48. **(C2b, C4)**
- Hamilton, W., and Myers, B.W., 1966, Cenozoic tectonics of the western United States: *Reviews of Geophysics Rev.*, v. 4, p. 509-549. **(C2a, C4)**
- Harder, S.H., Keller, G.R., Daggett, P.H., and Sinno, Y.A., 1986, Cenozoic-fill-thickness estimates from P-wave delays in the Jornada del Muerto and Palomas Basins: *New Mexico Geological Society Guidebook 37*, p. 135-138. **(C4)**
- Hawley, J.W., 1978, compiler, 1978, Guidebook to the Rio Grande rift in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources, Circular 163, 241 p. **(A2, C2a, C4)**
- Heywood, C.E., 1992, Isostatic residual gravity anomalies of New Mexico: U.S. Geological Survey, Water Resources Investigations Report 91-4065, 27 p. **(C4)**
- Heywood, C.E., 1995, Investigation of aquifer-system compaction in the Hueco basin, Texas, USA, in 5th International symposium on land subsidence, Delft, Netherlands, October, 1995: International Association of Hydrological Sciences Publication 234, p. 35-45. **(C2b, C4, D1)**
- Heywood, C.E., 2002, Estimation of alluvial-fill thickness in the Mimbres ground-water basin, New Mexico, from interpretation of isostatic residual gravity anomalies: U.S. Geological Survey, Water Resources Investigations Report 02-4007, 15 p. **(C2b, C4)**
- Heywood, C.E., 2003, Summary of extensometric measurements in El Paso, Texas: U.S. Geological Survey, Water Resources Investigations Report 03-4158, 11 p. **(C4, D1, F2)**
- Hiebing, M.S., 2016, Using geochemistry and gravity data to pinpoint sources of salinity in the Rio Grande and fault networks of the Mesilla Basin: University of Texas at El Paso, master's thesis, 104 p. **(C4, H2)**
- Hiebing, M.S., Doser, D., Avila, V., and Ma, L., 2018, Geophysical Studies of Fault and Bedrock Control on Groundwater Geochemistry within the Southern Mesilla Basin, West Texas and Southern New Mexico, *Geosphere*, v. 14, no. 4, p. 1912-1934. **(C4, H2)**
- Hoffer, J.M., 1979, Geothermal exploration of western Trans-Pecos Texas: El Paso, Texas Western Press, 50 p. **(C4, H2)**
- Hoffer, J.M., 1980, A note on geothermal indicators in southern Hudspeth and Culbertson County Texas: *New Mexico Geological Society Guidebook 26*, p. 257-258. **(C4, H2)**
- Hoover, D.B., and Tippens, C.L., 1975, A reconnaissance audio-magnetotelluric survey at Kilbourne Hole, New Mexico: *New Mexico Geological Society Guidebook 26*, p. 277-278. **(C4)**
- Hudson, M.R., and Grauch, V.J.S., 2013, Introduction, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater: Geological Society of America Special Paper 494*, p. v-xii. **(A2, C2b, C4)**

- Icerman, L., and Lohse, R.L., 1983, Geothermal low-temperature reservoir assessment in Dona Ana County, New Mexico: New Mexico Energy Research and Development Institute Report 2-69-2202, 188 p. **(C4, H2)**
- Ikard, S., Teeple, A., and Humberson, D., 2021, Gradient self-potential logging in the Rio Grande to identify gaining and losing reaches across the Mesilla Valley: *Water*, v. 13, issue 10, Article 1331, 21 p. **(C4, H3)**
- Ikard, S.J., Carroll, K.C., Rucker, D.F., Teeple, A.P., Tsai, C.-H., Payne, J.D., Fuchs, E.H., and Jamil, A., 2023, Geoelectric Monitoring of the Electric Potential Field of the Lower Rio Grande before, during, and after Intermittent Streamflow, May-October, 2022: *Water*, v. 15, no. 1652, 47 p. **(C4, H3)**
- Imana, E.M.C., 2002, The Mesilla Bolson: an integrated geophysical, hydrological, and structural analysis utilizing free air anomalies: University of Texas at El Paso, doctoral thesis, 152 p. **(C4, H1)**
- Jackson, D.B., 1976, Schlumberger soundings in the Las Cruces, New Mexico, area: U.S. Geological Survey Open-File Report 76-231, 170 p. **(C4)**
- Jackson, D.B., and Bisdorf, R.J., 1975, Direct-current soundings on the La Mesa Surface near Kilbourne and Hunt Holes, New Mexico: New Mexico Geological Society Guidebook 26, p. 273-275. **(C2a, C4)**
- Jarvis, M.D., Buck, B., and Witcher, J.C., 1998, Quaternary paleospring deposits at San Diego Mountain in south-central New Mexico: New Mexico Geological Society Guidebook 49, p. 71-74. **(C1, C4, H1, H2)**
- Jiménez, A.J., 1999, An integrated analysis of basins in the Rio Grande Rift in northern Chihuahua, Mexico: El Paso, *ETD Collection for University of Texas, El Paso*. AAIEP05329. **(C2b, C4, F1, H1)**
- Jiménez, A.J., and Keller, G.R., 2000, Rift basin structure in the border region of northwestern Chihuahua: New Mexico Geological Society Guidebook 51, p. 79-83. **(C2b, C4, F1, H1)**
- Keaton, J.R., 1993, Maps of potential earthquake hazards in the urban area of El Paso, Texas: U.S. Geological Survey, technical report prepared under contract 1434-92-G-2171, 87 p. **(C2b, C4)**
- Keaton, J.R., and Barnes, J.R., 1995, Paleoseismic evaluation of the East Franklin Mountains fault, El Paso, Texas: Technical report to U.S. Geological Survey, under Contract 1434-94-G-2389, December 1995. *See Collins and others, 2015*. **(C2b, C4)**
- Keaton, J.R., Barnes, J.R., Scherschel, C.A., and Monger, H.C. (abstract), 1995, Evidence for episodic earthquake activity along the East Franklin Mountains fault, El Paso, Texas: Geological Society of America Abstracts with Programs, v. 27, no. 4, p. 17. **(C2b, C4)**
- Keller, G.R., 2004, Geophysical constraints on the crustal structure of New Mexico, *in* Mack, G.H., and Giles, K.J., eds., *The Geology of New Mexico: A geologic history*: New Mexico Geological Society, Special Publication 11, p. 439-456. **(C2b, C4)**
- Keller, G.R., and Baldrige, W.S., 1999, The Rio Grande rift: A geological and geophysical review: *Rocky Mountain Geology*, v. 134, p. 131-148. **(C2b, C4)**
- Keller, G.R., and Cather, S.M., eds., 1994, Basins of the Rio Grande rift: Structure, stratigraphy and tectonic setting: Geological Society of America Special Paper 291, 304 p. **(C2b, C4)**
- Keller, G.R., and Peeples, W.J., 1985, Regional gravity and magnetic anomalies in West Texas, *in* Dickerson, P.W., and Muehlberger, W.R., eds., *Structure and tectonics of Trans-Pecos Texas*: West Texas Geological Society Publication 85-81, p. 101-105. **(C4)**
- Keller, G.R., Morgan, P., and Seager, W.R., 1990, Crustal structure, gravity anomalies and heat flow in the southern Rio Grande rift and their relationship to extensional tectonics: *Tectonophysics*, v. 174, p. 21-37. **(C2b, C4)**
- Keller, G.R., Penn, B.S., and Harder, S.H., 1998, Las Cruces country: a geophysical and remote sensing perspective: New Mexico Geological Society Guidebook 49, p. 87-91. **(C4, E1)**
- Keller, G.R., Seager, W.R., and Thompson, S. III, 1986, A seismic reflection study of part of the southern Jornada del Muerto: New Mexico Geological Society Guidebook 37, p. 139-142. **(C4)**
- Kelley, R.E., 2015, New Mexico Geothermal Play Fairway Analysis from LANL. Geothermal Data Repository. <https://gdr.openei.org/submissions/597> **(C4, E1, H2)**
- Khatun, S., Doser, D.I., Imana, E.C., and Keller, G.R., 2007, Locating faults in the southern Mesilla Bolson, west Texas and southern New Mexico, using 3-D modeling of precision gravity data: *Journal of Environmental & Engineering Geophysics*, v. 12, p. 149-161. **(C2b, C4)**
- Klein, D.P., 1995, Structure of the basins and ranges, southwest New Mexico, and interpretation of seismic velocity sections: U.S Geological Survey Open-File Report 95-406, 60 p. (with plates by G.A. Adams and P.L. Hill, scale 1:250,000 and 1:500,000). **(C4, F2)**
- Kucks, R.P., Hill, P.L., and Heywood, C.E., 2001, New Mexico aeromagnetic and gravity maps and data: A web site for distribution of data, version 1.0: U.S. Geological Survey Open-File Report 01-0061. **(C4)**
- Land, L.F., and Armstrong, C.A., 1985, A preliminary assessment of land-surface subsidence in the El Paso area, Texas: U.S. Geological Survey Water Resources Investigations Report 85-4155, 96 p. **(C4, D1, H3)**

- Laney, R.L., Raymond, R.H., and Winnika, C.C., 1978, Maps showing water-level declines, land subsidence, and earth fissures in south-central Arizona: US. Geological Survey Water-Resources Investigations 78-83, 2 sheets, scale 1:125,000. **(C4, D1, H3)**
- Langman, J.B., and Ellis, A.S., 2013, Geochemical indicators of interbasin groundwater flow within the southern Rio Grande Valley, southwestern USA: *Environmental Earth Science* v. 68, p. 1285-1303. **(C4, H2, H3)**
- Langman, J.B., Robertson, A.J., Bynum, J., and Gebhardt, F.E., 2008, Geochemical trends and natural attenuation of RDX, nitrate, and perchlorate in the Hazardous Test Area fractured-granite aquifer, White Sands Missile Range, New Mexico, 1996-2006: U.S. Geological Survey Scientific Investigations Report 2008-5157, 45 p. **(C4, E2c, H2, H3)**
- Limón-González, M., 1986, Evaluación geológico-geoquímica de la provincia de Chihuahua: Asociación Mexicana de Geólogos Petroleros, Boletín, Tomo XXXVIII, p. 3-58. **(C2a, C4, F3)**
- Machette, M.N., 1987, Preliminary assessment of paleoseismicity at White Sands Missile Range, southern New Mexico: Evidence for recency of faulting, fault segmentation, and repeat intervals for major earthquakes in the region: U.S. Geological Survey Open-File Report 87-444, 46 p. **(C2a, C4)**
- Machette, M.N., Personius, S.F., Kelson, K.I., Haller, K.M., and Dart, R.L., 1998, Map and Data for Quaternary Faults and Folds in New Mexico: U.S. Geological Survey Open-File Report 98-521, 443 p. **(C2b, C4)**
- Maciejewski, T.J., and Miller, K.C., 1998, Geophysical interpretation of subsurface geology, pediment of the San Andres Mountains to the Jornada del Muerto Basin, New Mexico: New Mexico Geological Society Guidebook 49, p. 101-106. **(C2b, C4)**
- Mack, G.H., Jones, M.C., Tabor, N.J., Ramos, F.C., Scott, S.R., and Witcher, J.C., 2012, Mixed geothermal and shallow meteoric origin of opal and calcite beds in Pliocene-lower Pleistocene axial-fluvial strata, southern Rio Grande rift, Rincon Hills, New Mexico, U.S.A.: *Journal of Sedimentary Research*, v. 82, p. 616-631. **(C2b, C4, H2)**
- Maksim, N., 2016, An integrated geophysical survey of Kilbourne Hole, southern New Mexico: Implications for near surface exploration of Mars and the Moon: University of Texas at El Paso, doctoral dissertation, 80 p. **(C2b, C4)**
- Marrufo, S.S., 2011, An integrated geological and geophysical study of the fresh and brackish water boundary in the Hueco Bolson, west Texas: University of Texas at El Paso, master's thesis, 108 p. **(C4, E2a, F1, H2)**
- Mattick, R.E., 1967, A seismic and gravity profile across the Hueco bolson, Texas: U.S. Geological Survey Professional Paper 575-D, p. D85-D91. **(C2a, C4)**
- McCalpin, J.P., 2006, Quaternary faulting and seismic source characterization in the El Paso-Juarez metropolitan area; Collaborative research with the University of Texas at El Paso, Program Element II: Evaluate Urban Hazard and Risk, final Technical Report, National Earth Quake Hazards Reduction Program U.S. Geological Survey, 68 p. **(C2b, C4, F1)**
- Moncada, M.M., 2011, Estudios geofísicos para la recarga de acuíferos en la zona norte del Estado de Chihuahua: Ciudad Juárez, Universidad Autónoma de Ciudad Juárez, unpublished B.S. thesis, 87 p. **(C4, F3)**
- Moncada-Gutierrez, M., 2016, A Geophysical investigation at Potrillo Maar: University of Texas at El Paso, master's thesis, 47 p. **(C4, F1)**
- Morgan, P., Harder, V., Swanberg, C.A., and Daggett, P.H., 1981, A groundwater convection model for Rio Grande rift geothermal resources: *Geothermal Resources Council Transactions*, v. 5, p. 193-196. **(C4, H2)**
- Moyer, D.L., Anderholm, S.K., Hogan, J.F., Phillips, F.M., Hibbs, B.J., Witcher, J.C., Matherne, A.M., and Falk, S.E., 2013, Knowledge and understanding of dissolved solids in the Rio Grande – San Acacia, New Mexico, to Fort Quitman, Texas, and plan for future studies and monitoring: U.S. Geological Survey Open-File Report 2013-1190, 55 p. **(C4, F1, H2)**
- Mraz, J.R., and Keller, G.R., 1980, Structure of the Presidio Bolson area, Texas, interpreted from gravity data: Texas Bureau of Economic Geology, Geological Circular 80-13, 20 p. **(C2a, C4)**
- Nyachoti, S., 2016, Application of uranium and strontium isotopes as salinity and paleo-environmental tracers: Insight from the Rio Grande river and pedogenic carbonates in dryland soils of Southwest, USA: University of Texas at El Paso, doctoral dissertation, 231 p. **(C1, C3, C4, H3)**
- O'Brien, K.M., and Stone, W.J., 1984, Role of geological and geophysical data in modeling a southwestern alluvial basin: *Ground Water*, v. 22, no. 6, p. 717-727. **(C4, H1, H3)**
- O'Donnell, J.E., Martinez, R., and Williams, J., 1975, Telluric current soundings near Kilbourne and Hunt Holes, New Mexico: New Mexico Geological Society Guidebook 26, p. 279-280. **(C4)**
- Paine, J.G., and Collins, E.W., 2002, Evaluating potential groundwater resources on State Lands in El Paso County, Texas using airborne geophysics: Report prepared by the University of Texas Bureau of Economic Geology for the General Land Office under contract no. 02-306R, 87 p. **(C4, F2)**

- Padovani, E.R., 1987, The ground truth from crustal xenoliths; a multifaceted approach, *in* Noller, J.S., Kirby, S.H., and Nielson-Pike, J.E., eds., *Geophysics and petrology of the deep crust and upper mantle*: Washington, DC, US Geological Survey, p. 40-43. **(C2a, C4)**
- Pearson, E.A., Rucker, D.F., Tsai, C-H., Fuchs, E.H., Carroll, K.C. 2022, Electrical resistivity monitoring of lower Rio Grande River-Groundwater intermittency: *Journal of Hydrology*, v. 613, 13 p. **(C4, H3)**
- Pepin, J., Person, M., Phillips, F. M., Kelley, S., Timmons, S., Owens, L., and others, 2015, Deep fluid circulation within crystalline basement rocks and the role of hydrologic windows in the formation of Truth or Consequences, New Mexico low temperature geothermal system: *Geofluids*, v. 15, p. 139-160. **(C4, H2)**
- Pepin, J.D., Robertson, A.J., and Kelley, S.A., 2022, Salinity contributions from geothermal waters to the Rio Grande and shallow aquifer system in the transboundary Mesilla Basin (United States)/Conejos-Médanos (Mexico), *Water*, v. 14, issue 1, article 33, 24 p. **(C4, H2, H3)**
- Quade, J., Cerling, T.E., and Bowman, J.R., 1989, Systematic variations in the carbon and oxygen isotopic composition of pedogenic carbonate along elevation transects in the southern Great Basin, United States: *Geological Society of America Bulletin*, v. 101, p. 464-475. **(C1, C3, C4)**
- Ramberg, I.B., Cook, F.A., and Smithson, S.B., 1978, Structure of the Rio Grande rift in southern New Mexico and West Texas based on gravity interpretation: *Geological Society of America Bulletin*, vol. 89, no. 1, p. 107-123. **(C2a, C4)**
- Ramos, F.C., Jacobs, M., and Hampton, B.A., 2018b, Sr and Pb isotope variations of feldspars in the middle to late Eocene Palm Park Formation and Orejon Andesite: Implications for regional variability and magmatic source characteristics: *New Mexico Geological Society Guidebook* 69, p. 181-188. **(C2b, C4)**
- Reaser, D.F., Underwood, J.R., and Jones, R.B., 1975, Geothermal prospects of the Eagle-Quitman Mountains and vicinity, Trans-Pecos Texas: *West Texas Geological Society Guidebook* 75-15, p. 155-161. **(C4, F2, H2)**
- Reeves, C.C., Jr., 1969, Pluvial Lake Palomas, northwestern Chihuahua, Mexico: *New Mexico Geological Society Guidebook* 20, p. 143-154. **(C2a, C4, F3, I2, I3)**
- Reiter, M., 1978, Discussion of structural geology of Franklin Mountains, *in* *Guidebook to Rio Grande rift in New Mexico and Colorado*: New Mexico Bureau of Mines and Mineral Resources, Circular 163, p. 68-69. **(C2a, C4)**
- Reiter, M., 2001, Using precision temperature logs to estimate horizontal and vertical groundwater flow components: *Water Resources Research*, v. 37, no. 3, p. 663-674. **(C4, D2, H3)**
- Reiter, M., 2005, Possible ambiguities in subsurface temperature logs: Consideration of ground-water flow and ground surface temperature change: *Pure and Applied Geophysics*, v. 162, no. 2, p. 343-355. **(C4, H3)**
- Reiter, M., and Barroll, M.W., 1990, High heat flow in the Jornada del Muerto: A region of crustal thinning in the Rio Grande rift without upper crustal extension: *Tectonophysics*, v. 174, p. 183-195. **(C4)**
- Reiter, M., and Chamberlin, R.M., 2011, Alternative perspectives of crustal and upper mantle phenomena along the Rio Grande rift: *GSA Today*, v. 21, no. 2, p. 4-9. **(C4)**
- Reiter, M., and Wade, S.C., 1994, A hydrothermal study to estimate vertical groundwater flow in the Canutillo Well Field, between Las Cruces and El Paso: *New Mexico Water Resources Research Institute Report* No. 282. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-282.html> **(C4, H3)**
- Reiter, M., Shearer, C., and Edwards, C.L., 1978, Geothermal anomalies along the Rio Grande rift in New Mexico: *Geology*, v. 6, no. 2, p. 85-88. **(C4)**
- Reiter, M., Edwards, C.L., Hartman, H., and Weidman, C., 1975, Terrestrial heat flow along the Rio Grande rift, New Mexico and southern Colorado: *Geological Society of America, Bulletin*, v. 86, no. 2, p. 811-818. **(C4)**
- Reiter, M., Edwards, C.L., Mansure, A.J., and Shearer, C., 1978, Heat-flow data and major geologic features along the Rio Grande rift in New Mexico, *in* *Guidebook to Rio Grande rift in New Mexico and Colorado*: New Mexico Bureau of Mines and Mineral Resources, Circular 163, p. 234. **(C4)**
- Reiter, M., Eggleston, R.E., Broadwell, B.R., and Minier, J., 1986, Estimates of terrestrial heat flow from deep petroleum tests along the Rio Grande rift in central and southern New Mexico: *Journal of Geophysical Research*, v. 91, no. B6, p. 6225-6245. **(C4)**
- Reynolds, R.L., and Larsen, E.E., 1972, Paleomagnetism of Pearlette-like air-fall ash in the midwestern and western United States: A means of correlating Pleistocene deposits: *Geological Society of America, Abstracts with Programs*, v. 4, no. 6, p. 405. **(C2a, C4)**
- Reynolds, C.B. & Associates, 1986, Shallow seismic reflection survey, Canutillo area, Texas and New Mexico: Unpublished consultant's report for U.S. Geological Society by Charles B. Reynolds & Associates, 4409 San Andres Ave., NE, Albuquerque, NM 87110, 8 p., 2 figs., 12 enclosed seismic profiles. **(C4)**

- Reynolds, C.B. & Associates, 1987, Shallow seismic reflection line CA-1, Doña Ana County, New Mexico and El Paso County, Texas: Unpublished consultant's report for U.S. Geological Society by Charles B. Reynolds & Associates, 4409 San Andres Ave., NE, Albuquerque, NM 87110, 4 p., 1 fig., 2 enclosed seismic profiles. **(C4)**
- Ricketts, J.W., Amato, J.M., and Gavel, M.M. 2021, The origin and tectonic significance of the Basin and Range—Rio Grande rift boundary in southern New Mexico, USA: *GSA Today*, v. 31, no. 10, p. 4-10. **(C2b, C4)**
- Ricketts, J.W., Kelley, S.A., Karlstrom, K.E., Schrnandt, B., Donahue, M.S., and van Wijk, L, 2016, Synchronous opening of the Rio Grande rift along its entire length at 25-10 Ma supported by apatite (U-Th)/He and fission-track thermochronology, and evaluation of possible driving mechanisms: *Geological Society of America Bulletin*, v. 128, p. 397-424. **(B1, C2b, C4)**
- Riecker, R.E., ed., 1979, Rio Grande rift: Tectonics and magmatism: Washington, D.C., American Geophysical Union, 438 p. **(C2a, C4)**
- Robertson, A.J., Kennedy, J.R., Wildermuth, L.M., Bell, M.T., Fuchs, E.H., Rinehart, A., and Fernald, I., 2023. Determining seasonal recharge, storage changes, and specific yield using repeat microgravity and water-level measurements in the Mesilla Basin alluvial aquifer, New Mexico, 2016-2018: *Journal of Applied Geophysics* v. 209, 18 p. **(C4, H3)**
- Ross, H.P., and Witcher, J.C., 1998, Self-potential surveys of three geothermal areas in the southern Rio Grande rift, New Mexico: *New Mexico Geological Society Guidebook* 49, p. 93-100. **(C4)**
- Ruiz, A., 2004, Upper crustal structure of the southern Rio Grande rift: University of Texas at El Paso, master's thesis, 52 p. **(C2b, C4)**
- Sayre, A.N., and Stephenson, E.L., 1937, The use of resistivity methods in the location of salt-water bodies in the El Paso, Texas, area: *American Geophysical Union Transactions*, 18th Annual Meeting, p. 393-398. **(C4, G2, H2)**
- Schneider, R.V., and Keller, G.R., 1994, Crustal structure of the western margin of the Rio Grande rift and Mogollon-Datil volcanic field, southwestern New Mexico and southeastern Arizona; *in* Basins of the Rio Grande rift: Structure, stratigraphy and tectonic setting: *Geological Society of America Special Paper* 291, p. 207-226. **(C4)**
- Seager, W.R., 1982, Geologic cross sections and gravity profiles of the northwest part of Las Cruces 1° x 2° sheet (gravity sections by P.R. Daggett and G.R. Keller), Sheet 2, *in* Seager, W.R., Hawley, J.W., Kottlowski, F.E., and Kelley, S.A., *Geology of northwest part of Las Cruces 1° x 2° sheet*, New Mexico: New Mexico Bureau of Mines and Mineral Resources, *Geologic Map* 60, scale 1:125,000. **(C2a, C4)**
- Seager, W.R., 1995, *Geology of southwest quarter of Las Cruces and northwest El Paso 1° x 2° sheets*: New Mexico Bureau of Mines and Mineral Resources, *Geologic Map* 60, scale 1:125,000. **(C2b, C4)**
- Seager, W.R., and Hawley, J.W., 1987, Geologic sections and gravity profiles through the east half of Las Cruces and northeast El Paso 1° x 2° sheets, New Mexico, *in* Seager, W.R., Hawley, J.W., Kottlowski, F.E., and Kelley, S.A., *Geology of east half of Las Cruces and northeast El Paso 1° x 2° sheets*, New Mexico: New Mexico Bureau of Mines and Mineral Resources, *Geologic Map* 57, scale 1:125,000. **(C2a, C4)**
- Seager, W.R., and Morgan, P., 1978a, Stop S3, Leasburg Dam-Radium Springs overlook discussion, *in* Hawley, J.W., and Seager, W.R., 1978, *New Mexico-Texas State Line to Elephant Butte Reservoir—Guidebook to Rio Grande Rift in New Mexico and Colorado*: New Mexico Bureau of Mines & Mineral Resources Circular 163, p. 75-78. **(C2a, C4)**
- Seager, W.R., and Morgan, P., 1978b, Stop S5, San Diego [Tonuco] Mountain discussion, *in* Hawley, J.W., and Seager, W.R., 1978, *New Mexico-Texas State Line to Elephant Butte Reservoir—Guidebook to Rio Grande Rift in New Mexico and Colorado*: New Mexico Bureau of Mines & Mineral Resources Circular 163, p. 82-83. **(C2a, C4)**
- Seager, W.R., and Morgan, P., 1979, Rio Grande rift in southern New Mexico, west Texas and northern Chihuahua, *in* Riecker, R.E., ed., *Rio Grande rift, tectonics and magmatism*: Washington D.C., American Geophysical Union, p. 87-106. **(C2a, C4)**
- Seager, W.R., Hawley, J.W., Kottlowski, F.E., and Kelley, S.A., 1987, *Geology of east half of Las Cruces and northeast El Paso 1° x 2° sheets*, New Mexico: New Mexico Bureau of Mines and Mineral Resources, *Geologic Map* 57, scale: 1:125,000, 3 sheets; *with* Daggett, P.H., Keller, G.R., *Complete Bouguer anomaly [gravity] map of east half of Las Cruces and northeast El Paso 1° x 2° sheets* (scale 1:125,000), New Mexico, *and* Seager, W.R., and Hawley, J.W., *Geologic sections and gravity profiles through the east half of Las Cruces and northeast El Paso 1° x 2° sheets* (scale 1:125,000), New Mexico, 2 sheets. **(C2a, C4)**

- Sinno, Y.A., Daggett, P.H., Keller, G.R., Morgan, P., and Harder, S.H., 1986, Crustal structure of the southern Rio Grande rift determined from seismic refraction profiling: *Journal of Geophysical Research*, v. 91, p. 6,143-6,156. **(C2a, C4)**
- Snyder, J.T., 1986, Heat flow in the southern Mesilla Basin, with an analysis of East Potrillo geothermal system, Doña Ana County, New Mexico: New Mexico State University, master's thesis, 252 p. **(C4, F2, H1)**
- Summers, W.K., 1976, Catalog of thermal waters in New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 4, 80 p., with chemical analyses in back-pocket microfiche. **(C4, H2)**
- Swanberg, C.A., 1975, Detection of geothermal components in ground waters of Doña Ana County, southern Rio Grande rift, New Mexico: New Mexico Geological Society Guidebook 26, p. 175-180. **(C4)**
- Swanberg, C.A., 1979, Chemistry of thermal and nonthermal groundwaters in the Rio Grande rift and adjacent tectonics provinces, *in* Riecker, R.E., ed., Rio Grande rift, tectonics and magmatism: Washington D.C., American Geophysical Union, p. 279-288. **(C4)**
- Swanson, R.J., 1989, Radium Springs geothermal area: A field study: New Mexico Institute of Mining and Technology, master's thesis, 106 p. **(C2a, C4)**
- Szynkiewicz A., Moore, C.H., Glamoclija, M., and Pratt, L.M., 2009, Sulfur isotope signatures in gypsiferous sediments of the Estancia and Tularosa Basins as paleoindicators of sulfate sources, hydrologic cycle and bacterial activity: *Geochimica et Cosmochimica Acta*, v. 73, 6162-6186. **(C2b, C4, I2)**
- Szynkiewicz A., Moore, C.H., Glamoclija, M., Bustos, D., and Pratt, L.M., 2010, The origin of coarsely crystalline gypsum domes in a saline playa environment at the White Sands National Monument, New Mexico: *Journal of Geophysical Research – Earth Surface*, v. 115, issue F2. **(C2b, C4, I2)**
- Szynkiewicz, A., Newton, B.T., Timmons, S.S., and Borrok, D.M., 2012, The sources and budget for dissolved sulfate in a fractured carbonate aquifer, southern Sacramento Mountains, New Mexico, USA: *Applied geochemistry*, v. 27, no. 8, p. 1451-1462. **(C4)**
- Szynkiewicz A., Ewing, R.C., Moore, C.H., Glamoclija, M., Bustos, D., and Pratt, L.M., 2009, Origin of terrestrial gypsum dunes – Implications for Martian gypsum-rich dunes of Olympia Undae: *Geomorphology*, v. 121, no. 1-2, p. 69-83. **(C2b, C4, I2)**
- Taylor, B., and Roy, R.F., 1980, A preliminary heat flow map of west Texas, *in* Dickerson, P.W., Hoffer, J.M., and Callender, J.F., eds., Trans-Pecos region: Socorro, New Mexico Geological Society Guidebook 33, p. 137-139. **(C4, H1)**
- Teeple, A.P., 2017a, Geophysics- and geochemistry-based assessment of the geochemical characteristics and groundwater-flow system of the U.S. part of the Mesilla Basin/Conejos-Médanos aquifer system in Doña Ana County, New Mexico, and El Paso County, Texas, 2010-12: U.S. Geological Survey Scientific Investigations Report 2017-5028, 183 p. **(C4, H2)**
- Teeple, A.P., 2017b, Time-domain electromagnetic data used in the assessment of the U.S. part of the Mesilla Basin/Conejos-Médanos Aquifer System in Doña Ana County, New Mexico, and El Paso County, Texas: U.S. Geological Survey data release. **(C4)**
- Thapalila, A., 2014, Geochemical studies of backfill aggregate, lake sediment cores and the Hueco Bolson Aquifer: University of Texas at El Paso, doctoral dissertation, 142 p. **(C2b, C4, H1, H2)**
- Thompson, R.N., Ottley, C.J., Smith, P.M., Pearson, D.G., Dickin, A.P., Morrison, M.A., and Gibson, S.A., 2005, Source of the Quaternary alkalic basalts, picrites and basanites of the Potrillo Volcanic Field, New Mexico, USA: Lithosphere or convecting mantle?: *Journal of Petrology*, v. 46, issue 8, p. 1603-1643. **(C2b, C4)**
- Tovar-R, J., Vázquez, H., Lozano, S., 1978, Interpretación integrada geológica-geofísica, porción norte de Chihuahua: Asociación Mexicana de Geólogos Petroleros, Boletín, Tomo XXX, p. 59-132. **(C2a, C4, F3)**
- Towle, J.N., and Fitterman, D.V., 1975, Geomagnetic variations at Kilbourne Hole, New Mexico: New Mexico Geological Society Guidebook 26, p. 281. **(C4)**
- U.S. Geological Survey, n.d., Search earthquake archives, accessed 15 January 2015 at <http://earthquake.usgs.gov/earthquakes/search/> **(C4)**
- Veldhuis, J.H., and Keller, G.R., 1980, An integrated geological and geophysical study of the Salt Basin graben: New Mexico Geological Society Guidebook 31, p. 141-150. **(C2a, C4)**
- Wade, S.C., and Reiter, M., 1994, Hydrothermal estimation of vertical ground-water flow, Canutillo, Texas: *Ground Water*, v. 32, no. 5, p. 735-742. **(C4, H3)**
- Waggoner, W.K., 1990, Petrology and geochemistry of mantle-derived lavas from Potrillo maar, New Mexico: University of Texas at El Paso, Senior Honors thesis, 69 p. **(C2b, C4)**
- Wen, C.L., 1983, A study of bolson-fill thickness in the southern Rio Grande rift, southern New Mexico, west Texas and northern Chihuahua: University of Texas, master's thesis, 74 p. **(C4, F1)**

- White, D.E., 1983, Summary of hydrologic information in the El Paso, Texas area, with emphasis on ground-water studies, 1903–80: U.S. Geological Survey Open-File Report 83-775, 77 p. **(C4, H1)**
- White, D.E., Baker, E.T., Jr., and Sperka, R., 1997, Hydrology of the shallow aquifer and uppermost semiconfined aquifer near El Paso, Texas: U.S. Geological Survey Water-Resources Investigations Report 97-4263, 37 p. **(C4, H1)**
- Williams, W.J.W., 1999, Evolution of Quaternary intraplate mafic lavas using ^3He surface exposure and $^{40}\text{Ar}/^{39}\text{Ar}$ dating, and detailed elemental He, Sr, Nd, and Pb isotopic signatures: Potrillo Volcanic Field, New Mexico, U.S.A., and San Quintín Volcanic Field, Baja California Norte, México: University of Texas at El Paso, doctoral dissertation, 195 p. **(B1, C2b, C4)**
- Williams, W.J.W., and Poths, J., 1994, The Potrillo Volcanic Field, southern Rio Grande rift: ^3He surface exposure dates and petrogenetic considerations: New Mexico Geology, v. 16, p. 81. **(B1, C2b, C4)**
- Witcher, J.C., 1988, Geothermal resources of southwestern New Mexico: New Mexico Geological Society Guidebook 39, p. 191-197. **(C4, F2, H2, H3)**
- Witcher, J.C., 1991a, Radon soil-gas surveys with diffusion-model corrections in geothermal exploration: Geothermal Resources Council Transactions, v. 15, p. 301-308. **(C4, H1, H2)**
- Witcher, J.C., 1991b, The Rincon geothermal system, southern Rio Grande rift, New Mexico; a preliminary report on a recent discovery: Transactions, Geothermal Resources Council, v. 15, p. 205-212. **(C4, H1, H2)**
- Witcher, J.C., 1995, A geothermal resource database of New Mexico. Southwest Technology Development Institute, New Mexico State University, 28 p. **(C4, H1, H2)**
- Witcher, J.C., 1998, The Rincon SLH 1 geothermal well: New Mexico Geological Society Guidebook 49, p. 35-40. **(C2b, C4, H1, H2)**
- Witcher, J.C., 2008, Evidence for large-scale Laramide tectonic inversion and amid-Tertiary caldera ring fracture zone at the Lightning Dock Geothermal system, New Mexico: New Mexico Geological Society, Guidebook 59, p. 177-187. **(C2b, C4, H1, H2)**
- Witcher, J.C., 2010, Geothermal greenhouse heating at Radium Springs, New Mexico: New Mexico Bureau of Geology and Mineral Resources, Lite Geology, p. 12-13. **(C4, H2)**
- Witcher, J.C., and Mack, G.H., 2018, Masson Farm Geothermal Greenhouses at Radium Springs: Tld-day (C) Road Log from Las Cruces to Geothermal Greenhouses of the Masson Farm at Radium Springs: N.M. Geological Society Guidebook 69, p. 47-51. **(C2b, C4, H2)**
- Woodward, D.G., and Myers, R.G., 1997, Seismic investigation of the buried horst between the Jornada del Muerto and Mesilla ground-water basins near Las Cruces, Doña Ana County, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 97-4147, 45 p. **(C4, H1)**
- Zoback, M.L., and Zoback, M.D., 1989, Tectonic stress field of the continental United States, *in* Pakiser, L.C., and Mooney, W.D, eds., Geophysical Framework of the Continental United States: Geological Society of America Memoir 172, p. 523-539. **(C2a, C4)**
- Zohdy, A.A.R., 1969, The use of Schlumberger and equatorial soundings in groundwater investigations near El Paso, Texas: Geophysics, v. 34, p. 713-728. **(C4)**
- Zohdy, A.A.R., Bisdorf, R.J., and Gates, J.S., 1976, Schlumberger soundings in the lower Mesilla Valley of the Rio Grande, Texas and New Mexico: U.S. Geological Survey Open-File Report 76-324, 77 p. *See Al-Garni 1996.* **(C4)**
- Zohdy, A.A.R., Eaton, G.P., and Mabey, D.R., 1974, Application of surface geophysics to ground-water investigations: U.S. Geological Survey, Techniques of Water-Resources Investigations, Book 2, Collection of Environmental Data, Chapter D1, 116 p. **(C4)**
- Zohdy, A.A.R., Jackson, D.B., Mattick, R.E., and Peterson, D.L., 1969, Geophysical survey for ground water at White Sands Missile Range, New Mexico: U.S. Geological Survey Open-File Report 69-326, 144 p. **(C4)**

D. Basic Hydrogeologic Concepts

D1. Conceptual Models, Definitions, and Regional Overviews

- Ahmed, A.A., 2009, Using lithologic modeling techniques for aquifer characterization and groundwater flow modeling of the Sohag area, Egypt: Hydrogeology Journal, v. 17, no. 5, p. 1189-1201. **(D1)**
- Albritton, C.C., Jr., and Smith, J.F., Jr., 1965, Geology of the Sierra Blanca area, Hudspeth County, Texas: U.S. Geological Survey Professional Paper 594-J, 131 p. **(C2a, D1, F1)**
- Allen, J.R.L., 1965, A review of the origin and characteristics of recent alluvial sediments: Sedimentology (Special Issue), v. 5, no. 2, p. 91-191. **(D1)**

- Aller, L., Bennett, T., Lehr, J., and Petty R., 1987, DRASTIC: A Standardized system for evaluating ground water pollution potential using hydrogeologic settings: Worthington, OH, National Water Well Association (NWWA), 641 p. – Washington, D.C., U.S. Environmental Protection Agency, NWWA/EPA Series, EPA/600/2-85/018. **(D1, E2c)**
- Alley, W.M., ed., 2013, Five-year interim report of the United States – Mexico Transboundary Aquifer Assessment Program: 2007-2012: U.S. Geological Survey Open-File Report 2013-1059, 31 p. **(A2, D1, F1)**
- Alley, W.M., and Alley, R., 2013, Too hot to touch – The problem of high-level radioactive waste: New York, Cambridge University Press, 370 p., ISBN 978-1-107-03011-4 www.cambridge.org/alleyalley **(A2, D1, E2c)**
- Alley, W.M., and Alley, R., 2017, High and Dry – Meeting the challenges of the world’s dependence on groundwater: Yale University Press, 304 p., ISBN 978-0-300-22038-4 **(A2, D1)**
- Alley, W.M., and Alley, R., 2020, The war on the EPA – America’s endangered environmental projections: Lanham, MD, Rowman & Littlefield, 287 p., ISBN 978-1-5381-3151-3. *See Chapters 9 and 10: “Toxic Chemicals” and “The Forever Chemicals.”* **(A2, D1, E2c)**
- Alley, W.M., and Leake, S.A., 2004, The journey from safe yield to sustainability: Ground Water, v. 42, no. 1, p. 12-16. **(A2, D1)**
- Alley, W.M., Reilly, T.M., and Franke, O.L., 1999, Sustainability of ground-water resources: U.S. Geological Survey Circular 1186, 79 p. **(A2, D1)**
- Anderson, T.W., 1995, Summary of the southwest alluvial basins, regional aquifer-system analysis, south-central Arizona and parts of adjacent states: U.S. Geological Survey Professional Paper 1406-A, 33 p. **(D1, F2)**
- Anderson, T.W., Freethy, G.W., and Tucci, P., 1993, Geohydrology and Water Resources of Alluvial Basins in South-central Arizona and Parts of Adjacent States: U.S. Geological Survey Professional Paper 1406-B, 67 p. **(D1)**
- Anderson, T.W., Welder, G.E., Lesser, G., and Trujillo, A., 1988, Region 7, Central alluvial basins, *in* Back, W., Rosenshein, J.S., and Seaber, P.R., eds. Hydrogeology – The Geology of North America: Geological Society of America, DNAG Volume. O-2, p. 81-86. **(D1)**
- Anning, D.W., and Konieczki, A.D., 2005, Classification of hydrogeologic areas and hydrogeologic flow systems in the Basin and Range Physiographic Province: U.S. Geological Survey Professional Paper 1702, 37 p. **(D1)**
- Back, W., Rosenshein, J.S., and Seaber, P.R., eds., 1988, Hydrogeology: The geology of North America, Volume 1-2, Boulder, Colorado, Geological Society of America, 534 p. **(D1)**
- Baldwin, B., 1956, The Santa Fe group of north-central New Mexico: New Mexico Geological Society Guidebook 35, p. 115-121. **(D1)**
- Baldwin, B., 1963, Part 2—Geology, *in* Spiegel, Z.E., and Baldwin, B., Geology and water resources of the Santa Fe area, New Mexico: U.S. Geological Survey Water-Supply Paper 1525, p. 21-89. **(D1)**
- Bedinger, M.S., Sargent, K.A., and Langer, W.H., 1989c, Studies of geology and hydrology in the Basin and Range province, southwestern United States, for isolation of high-level radioactive waste – Evaluation of regions: U.S. Geological Survey Professional Paper 1370-H, 61 p. **(D1)**
- Bedinger, M.S., Sargent, K.A., and Reed, J.E., 1984, Geologic and hydrologic characterization of the Basin and Range province relative to the disposal of high-level radioactive waste – Part I, Introduction and guidelines: U.S. Geological Survey Circular 904-A, 16 p. **(D1)**
- Bedinger, M.S., Sargent, K.A., Langer, W.H., Sherman, K.B., Reed, J.E., and Brady, B.T., 1989, Studies of geology and hydrology in the Basin and Range province, southwestern United States, for isolation of high-level radioactive waste – Basis of characterization and evaluation: U.S. Geological Survey Professional Paper 1370-A, 41 p. **(D1)**
- Bell, J.W., Amelung, F., Ramelli, A.R., and Blewitt, G., 2008, Permanent scatterer InSAR reveals seasonal and long-term aquifer-system response to groundwater pumping and artificial recharge: Water Resources Research, v. 44, W02427. **(D1)**
- Bexfield, L.M., Thiros, S.A., Anning, D.W., Huntington, J.M., and McKinney, T.S., 2011, Effects of natural and human factors on groundwater quality of basin-fill aquifers in the southwestern United States – Conceptual models for selected contaminants: U.S. Geological Survey Scientific Investigations Report 2011-5020, 90 p. **(D1, E2c, H2)**
- Blaney, J.A., and Hanson, E.G., 1965, Consumptive use and water requirements in New Mexico: New Mexico State Engineer Technical Report 32, 32 p., 6 figs. **(D1)**
- Boulton, G.S., Peacock, J.D., and Sutherland, D.G., 2002, Quaternary, Chapter 15: *in* Trewin, N.H., ed., The Geology of Scotland (4th edition, 576 p.): London, The Geological Society, p. 409-430. **(C1, D1)**
- Bowman, I., 1911, Well-drilling methods: USGS Water-Supply Paper 257, 139 p. **(D1)**

- Bryan, K., 1938, Geology and groundwater conditions of the Rio Grande depression in Colorado and New Mexico, *in* [U.S.] National Resources Committee, Regional Planning part VI---The Rio Grande joint investigations in the upper Rio Grande basin in Colorado, New Mexico, and Texas, 1936-1937: U.S. Government Printing Office, Washington, D.C., v. 1, part 2, p. 197-225. **(D1, G2, I3)**
- Bull, W.B., 1968, Alluvial fans: *Journal of Geological Education*, v. 16, p. 101-106. **(D1)**
- Bull, W.B., 1977, The alluvial fan environment: *Progress in Physical Geography*, v. 1, p. 222-270. **(D1)**
- Bull, W.B., 2007, *Tectonic geomorphology of mountains: A new approach to paleoseismology*: Malden, MA, Blackwell Publishing, 316 p. **(D1)**
- Burbey, T.J., 1999, Effects of horizontal strain in estimating specific storage and compaction in confined and leaky systems: *Hydrogeology Journal*, v. 7, p. 521-532. **(D1)**
- Burbey, T.J., 2001, Storage coefficient revisited: Is purely vertical strain a good assumption?: *Ground Water*, v. 39, no. 3, p. 458-464. **(D1)**
- Burbey, T.J., and Helm, D.C., 1999, Modeling three-dimensional deformation in response to pumping of unconsolidated aquifers: *Environmental & Engineering Geoscience*, v. 5, p. 199-212. **(D1)**
- Carpenter, M.C., 1999, South-Central Arizona – Earth fissures and subsidence complicate development of desert water resources, *in* D. Galloway, Jones, D.R., and Ingebritzen, S.E., eds., *Land subsidence in the United States*: U.S. Geological Survey Circular 1182, p. 65-78. **(D1)**
- Cassiliano, M.L., 1997, Crocodiles, tortoises, and climate: A shibboleth re-examined: *Paleoclimates*, v. 2, p. 47-69. **(B1, C1, D1)**
- Chermak, J., Gutzler, D.S., Johnson, P., King, J.P., Reynis, L., Aldrich, G., and O'Donnell, M., 2015, New Mexico universities working group on water supply vulnerabilities: Final report to the interim committee on water and natural resources New Mexico Bureau of Geology and Mineral Resources, Open-File Report 577. **(C1, D1)**
- Cohen, P., 1963, Specific yield and particle-size relationships of Quaternary alluvium, Humboldt River Valley near Winnemucca, Nevada: U.S. Geological Survey Water-Supply Paper 1669-M, 24 p. **(D1, D2)**
- Cohen, P., 1966, Water in the Humboldt River Valley near Winnemucca, Nevada: U.S. Geological Survey Water-Supply Paper 1816, 75 p. **(D1, D2)**
- Cohen, P. and others, 1965, Water Resources of the Humboldt River Valley near Winnemucca, Nevada: U.S. Geological Survey Water-Supply Paper 1795, 143 p. **(D1, D2)**
- Connell, S.D., 2008, Refinements in the stratigraphic nomenclature of the Santa Fe Group, northwestern Albuquerque Basin, New Mexico: *New Mexico Geology*, v. 30, no. 1, p. 14-35. **(D1)**
- Connell, S.D., Love, D.W., and Dunbar, N.W., 2007, Geomorphology and stratigraphy of inset fluvial deposits along the Rio Grande Valley in the central Albuquerque Basin: *New Mexico Geology*, v. 29, no. 1, p. 13-31. **(C2b, D1, I3)**
- Contaldo, G.J., and Mueller, J.E., 1991, Earth fissures of the Mimbres Basin, southwestern New Mexico: *New Mexico Geology*, v. 13, p. 69-74. **(D1, H1)**
- Craig, H., 1961a, Isotopic variation in meteoric waters: *Science*, v. 133, p. 1702-1703. **(D1)**
- Craig, H., 1961b, Standard for reporting concentrations of deuterium and oxygen-18 in natural waters: *Science*, v. 133, p. 1833-1834. **(D1)**
- Darton, N.H., 1899, Preliminary report on the geology and water resources of Nebraska west of the 103rd Meridian: U.S. Geological Survey 19th Annual Report, part 4, p. 719-785, plates 74-118. [*Ogallala lithostratigraphic unit* named] **(D1)**
- Darton, N.H., 1905, Preliminary report on the geology and underground water resources of the central Great Plains: U.S. Geological Survey Professional Paper 32, 433 p. [*Ogallala lithostratigraphic unit* defined] **(D1)**
- Darton, N.H., 1914, Underground water of Luna County, New Mexico: U.S. Geological Survey Water-Supply Paper 345, p. 25-40. **(D1, G1)**
- Darton, N.H., 1916a, Explosion craters: *Science Monthly*, v. 3, no. 4, p. 417-430. **(C2a, D1, G1)**
- Darton, N.H., 1916b, Geology and underground water of Luna County, New Mexico: U.S. Geological Survey Bulletin 618, 188 p. **(D1, G1)**
- Darton, N.H., 1928a, Geologic map of New Mexico: U.S. Geological Survey, scale 1:500,000. **(C2a, D1)**
- Darton, N.H., 1928b, Red beds and associated formations within New Mexico with outline of the geology of the state: U.S. Geological Survey, Bulletin 794, 356 p. **(C2a, D1)**
- Darton, N.H., and others, 1916, Guidebook to the western United States, part C, the Santa Fe route: U.S. Geological Survey, Bulletin 613, p. 81-100. **(D1)**
- Davidson, S.K., Hartley, A.J., Weissmann, G.S., Nichols, G.J., and Scuderi, L.A., 2013, Geomorphic elements on modern distributive fluvial systems: *Geomorphology*, v. 180-181, p. 82-85. **(D1)**

- Davis, S.N., and DeWiest, R.G.M., 1966, *Hydrogeology*, New York, John Wiley & Sons, Inc., 463 p. **(D1)**
- Deming, D., 2002, *Introduction to hydrogeology*: New York, The McGraw-Hill Book Companies, Inc., 468 p. ISBN 0-07-232622-0 **(D1)**
- Deming, D., and Bredehoeft, J.D., 2002, Groundwater at the U.S. Geological Survey, 1879-2000, *in* *Introduction to hydrogeology*: New York, The McGraw-Hill Book Companies, Inc., p. 8-11. **(D1)**
- Dickinson, W.R., 1970, Interpreting detrital modes of greywacke and arkose: *Journal of Sedimentary Petrology*, v. 40, p. 695-707. **(D1)**
- Dickinson, W.R., 2003b, The place and power of myth in geoscience: An associate editor's perspective: *American Journal of Science*, v. 303, p. 856-864. **(D1)**
- Döll, P., 2009, Vulnerability to the impact of climate change on renewable groundwater resources: A global-scale assessment: *Environmental Research Letters*, v. 4, no. 3, p. 13. **(C1, D1, D2)**
- Domenico, P.A., and Schwartz, F.W., 1990, *Physical and chemical hydrogeology*: New York, NY, John Wiley & Sons, 824 p. **(D1)**
- Driscoll, F.G. (principal author and editor), 1986, *Groundwater and Wells*, Second Edition: Saint Paul, MN, Johnson Division, 1089 p. *See Cable Tool Method*: p. 268-277. **(A1, D1)**
- Eakin, T.E., Price, D., and Harrill, J.R., 1976, Summary appraisals of the nation's ground-water resources – Great Basin region: U.S. Geological Survey Professional Paper 813-G, 37 p. **(D1)**
- Earman, S., and Dettinger, M., 2011, Potential impacts of climate change on groundwater resources – A global review: *Journal of Water and Climate Change*, v. 2, no. 4, p. 213-229. **(C1, D1, D2)**
- Earman, S., McPherson, B.J., Phillips, F.M., Ralser, S., Herrin, J.M., and Broska, J., 2008, Tectonic influences on ground water quality: insight from complementary methods: *Ground Water*, v. 46, no. 3, p. 354-371. **(C2b, D1, H2)**
- Ellis, S.R., Levings, G.W., Carter, L.F., Richey, S.F., and Radell, M.J., 1993, Rio Grande Valley, Colorado, New Mexico, and Texas: *Water Resources Bulletin*, v. 29, no. 4, p. 617-646. **(B3, C1, D1, F2)**
- Eastoe, C.J., and Dettman, D.L., 2016, Isotope amount effects in hydrologic and climate reconstructions of monsoon climates: Implications of some long-term data sets for precipitation: *Chemical Geology*, v. 430, p. 76-89. **(C1, D1, H2)**
- Feth, J.H., 1965a, Preliminary map of the conterminous United States showing depth to and quality of shallowest ground water containing more than 1,000 parts per million dissolved solids: U.S. Geological Survey Hydrologic Atlas 199, 31 p., 2 pls., 1:3,000,000. **(D1, H2)**
- Feth, J.H., 1965b, Selected references on saline ground-water resources of the United States: U.S. Geological Survey Circular 499, 30 p. **(A1, D1)**
- Feth, J.H., 1981, Chloride in natural continental water – A review: U.S. Geological Survey Water-Supply Paper 2176, 30 p. **(D1)**
- Feth, J.H., and Whitehead, H.C., 1961, Chemical character of precipitation at Menlo Park, California: U.S. Geological Survey Professional Paper 424-D, p. 29-30. **(C1, C3, D1)**
- Feth, J.H., and Whitehead, H.C., 1964, Chemical composition of rain, dry fallout, and bulk precipitation at Menlo Park, California, 1957-1959: *Journal of Geophysical Research*, v. 69, p. 3319-3333. **(C1, C3, D1)**
- Fetter, C.W., 1988, *Applied hydrogeology*: Columbus, OH, Merrill Publishing Co., 592 p. **(D1)**
- Follett, W.W., 1898, Rio Grande Waters—Equitable distribution of waters of the Rio Grande: Message to the President of the United States: 55th Congress, 2nd Session, U.S. Senate Document No. 229, Washington, D.C., US Government Printing Office, 289 p. **(B3, D1, E3)**
- Freeze, R.A., and Cherry, J.A., 1979, *Groundwater*: Englewood Cliffs, N.J., Prentice Hall, 604 p. **(D1)**
- Fryar, A.E., 2007, The future of hydrogeology, then and now: A look back at O.E. Meinzer's perspectives, 1934 to 1947: *Ground Water*, v. 45, no. 2, p. 246-249. **(A2, D1)**
- Frye, J.C., and Willman, H.B., 1962, Morphostratigraphic units in Pleistocene stratigraphy: *American Association of Petroleum Geologists Bulletin*, v. 46, p. 112-113. **(D1)**
- Galloway, D., Jones, D.R., and Ingebritzen, S.E., 1999, Land subsidence in the United States: U.S. Geological Survey Circular 1182, 177 p. **(D1)**
- Galloway, W.E., 2005, Gulf of Mexico Basin depositional record of Cenozoic North American drainage basin evolution: *International Association of Sedimentologists, Special Publication 35*, p. 409-423. **(D1, I3)**
- Gámez, J., Ranis, M., and Eppes, M., 2021, Bringing art to your science and thus your science to the people: Joining visual culture and scientific evidence: *GSA Today*, v.1, no. 8, p. 13. **(D1)**
- Garcia-Ruiz, J.M., Villasuso, R., Ayora, C., Canals, A., and Otálora, F., 2007, Formation of natural gypsum megacrystals in Naica, Mexico: *Geology*, v. 35, no. 4, p. 327-330. **(D1, F3)**

- Gatewood, J.S., Wilson, A., Thomas, H.E., and Kister, L.R., 1964, General effects on water resources of drought in the Southwest, 1942-1956: U.S. Geological Survey Professional Paper 372-B, p. B1-B55. **(C1, D1, E2)**
- Gelhar, L.W., 1993, Stochastic subsurface hydrology, 1st edition: Englewood Cliffs, NJ, Prentice-Hall Engineering, Science, and Mathematics, 390 p. **(D1)**
- Gelhar, L.W., and Axness, C.L., 1983, Three-dimensional stochastic analysis of macro-dispersion in aquifers: *Water Resources Research*, v. 19, no. 1, p. 161-180. *See Molz 2015.* **(D1)**
- Gelhar, L.W., Welty, C., and Rehfeldt, K.R., 1992, A critical review of data on field-scale dispersion in aquifers: *Water Resources Research*, v. 21, no. 7, p. 1955-1974. *See Molz 2015.* **(D1)**
- Gelhar, L.W., Gutjahr, A.L., and Naff, R.L., 1979, Stochastic analysis of macro-dispersion in a stratified aquifer: *Water Resources Research*, v. 15, no. 6, p. 1387-1397. *See Molz 2015.* **(D1)**
- Geosoft, 2016, Oasis montaj application help system: Geosoft. <http://www.geosoft.com/products/oasis-montaj/> VOXEL modeling **(D1, E2)**
- Gonfiantini, R., 1978, Standards for stable isotope measurements in natural compounds: *Nature*, v. 271, 534-536. **(D1)**
- Haase, C.S., and Lozinsky, R.P., 1992, Estimation of hydrologic parameters, in Hawley, J.W., and Haase, C.S., compilers, Hydrogeologic framework of the northern Albuquerque Basin: New Mexico Bureau of Mines and Mineral Resources, Open-File Report 387, p. VI-1 to VI-3. **(D1)**
- Hackett, O.M., 1964, The father of modern ground water hydrology: *Ground Water*, v. 2, no. 1, p. 2-5. **(A2, D1)**
- Hackett, O.M., 1972, Presentation of the O.E. Meinzer Award to George Burke Maxey, with response by George B. Maxey, in *Medals and Awards for 1971: Geological Society of America*, v. 83, no. 6, p. xxv-xxviii. **(A2, D1)**
- Haneberg, W.C., 1995, Depth-porosity relationships and virgin specific storage estimates for the upper Santa Fe Group aquifer system, central Albuquerque Basin, New Mexico: *New Mexico Geology*, v. 17, no. 4, p. 62-71. **(D1)**
- Haneberg, W.C., and Friesen, R.L., 1995, Tilts, strains, and ground-water levels near an earth fissure in the Mimbres Basin, New Mexico: *Geological Society of America Bulletin*, v. 107, p. 316-326. **(D1, H1)**
- Haneberg, W.C., Mozley, P.S., Moore, J.C., and Goodwin, L.B., eds., 1999, Faults and subsurface fluid flow in the shallow crust: *American Geophysical Union Monograph* 113. **(D1, D2)**
- Hanson, R.T., 1989, Aquifer-system compaction, Tucson Basin, and Avra Valley, Arizona: U.S. Geological Survey Water-Resources Investigations Report 88-4172, 69 p. **(D1)**
- Hardin, G., 1968, The tragedy of the commons: *Science*, v. 162, p.1243-1247. **(D1)**
- Harrill, J.R., and Prudic, D.E., 1998, Aquifer systems in the Great Basin region of Nevada, Utah, and adjacent states—Summary report: U.S. Geological Survey Professional Paper 1409-A, 66 p. **(D1)**
- Hartley, A.J., Weissmann, G.S., Nichols, G.J., and Warwick, G.L., 2010, Large distributive fluvial systems, characteristics, distribution, and controls on development: *Journal of Sedimentary Research*, v. 80, issue 2, p. 167-183. **(D1)**
- Hawley, J.W., 1962, Late Pleistocene and recent geology of the Winnemucca segment of the Humboldt River Valley, Nevada: University of Illinois at Urbana-Champaign, doctoral dissertation, 220 p. **(D1)**
- Hawley, J.W., 2020, A Hydrogeologic perspective on groundwater conservation in the northern Rio Grande basin, New Mexico, Texas, and Chihuahua—2014 Albert E. Utton Memorial Lecture, in Sheely, M., ed. *Proceedings, 59th Annual New Mexico Water Conference*, Santa Fe, NM., p. 59-85, with 28 pptx slide pdf on CD-ROM. **(D1, F1, H1)**
- Hawley, J.W., and Haase, C.S., 1992, compilers, Hydrogeologic framework of the northern Albuquerque Basin: New Mexico Bureau of Mines and Mineral Resources, Open-File Report OF-387, 74 p., 8 Appendices, Glossary. **(D1)**
- Hawley, J.W., and Kernodle, J.M., 2000, Overview of the hydrogeology and geohydrology of the northern Rio Grande basin—Colorado, New Mexico, and Texas, in Ortega Klett, C.T., ed., *Proceedings of the 44th Annual New Mexico Water Conference*: New Mexico Water Resources Research Institute Report No. 312, p. 79-102. **(D1)**
- Hawley, J.W., and Kernodle, J.M., 2008, Early contributions to arid-zone hydrogeology in the eastern Basin and Range region: *Ground Water*, v. 46, no. 3, p. 510-516. **(A2, B3, D1)**
- Hawley, J.W., and Longmire, P.A., 1992, Site characterization and selection, in Reith, C.C. and Thomson, B.M., eds., *Deserts as Dumps? The disposal of hazardous materials in arid ecosystems*: University of New Mexico Press, p. 57-99. **(C2b, D1, E2c)**
- Hawley, J.W., and Wilson, W.E. III, 1965, Quaternary geology of the Winnemucca area, Nevada: Desert Research Institute at Reno, Technical Report No. 5, 66 p. **(D1)**

- Hawley, J.W., Bachman, G.O., and Manley, K., 1976, Quaternary stratigraphy in the Basin and Range and Great Plains provinces, New Mexico and western Texas, *in* Mahaney, W.C., ed., Quaternary stratigraphy of North America: Stroudsburg, PA, Dowden, Hutchinson, and Ross, Inc., p. 235-274. **(A1, A2, D1, I1, I3)**
- Hawley, J.W., Haase, C.S., and Lozinsky, R.P., 1995, An underground view of the Albuquerque Basin, New Mexico, *in* Ortega Klett, C.T., ed., Proceedings of the 39th Annual New Mexico Water Conference, New Mexico Water Resources Research Institute Report No. 290, p. 37-55. **(D1)**
- Hawley, J.W., Kambhammettu, B.V.N.P., and Creel, B.J., 2010, Digital hydrogeologic-framework model of the San Francisco River basin, west-central New Mexico and east-central Arizona: New Mexico Water Resources Research Institute Report No. 354, 51 p., 7 tables and 5 figures, with 3 plates and Appendix on CD ROM. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-354.html> **(D1, H1)**
- Hawley, J.W., Wilson, W.E., Cartwright, K., Swinderman, J., and Farvolden, R.N., 1961, Progress report on the geologic phase of the Humboldt River Project for Field Season 1960, *in* Progress Report, Humboldt River Research Project—A State-Federal Cooperative Program: Carson City, Nevada State Department of Conservation and Natural Resources, p. 26-32. **(D1)**
- Hawley, J.W., Hibbs, B.J., Kennedy, J.F., Creel, B.J., Remmenga, M.D., Johnson, M., Lee, M.M., and Dinterman, P., 2000, Trans-International Boundary aquifers in southwestern New Mexico: New Mexico Water Resources Research Institute, prepared for U.S. Environmental Protection Agency-Region 6 and International Boundary and Water Commission; Technical Completion Report-Interagency Contract X-996350-01-3, 126 p. <https://nmwrri.nmsu.edu/publications/pub-external-pages/trans-international-boundary-aquifers-in-southwest-new-mexico.html> **(C2b, D1, F1, I2)**
- Hayden, F.V., 1873, First, second, and third annual reports of the United States Geological Survey of the Territories for the years 1867, 1868, and 1869: Publication of the Hayden Survey, Washington, DC, Government Printing Office, 261 p. **(B3, D1)**
- Heath, R.C., 1988, Hydrogeologic setting of regions, *in* Back, W., Rosenshein, J.S., and Seaber, P.R., eds. Hydrogeology – The Geology of North America: Geological Society of America, DNAG Volume. O-2, p. 15-23. **(D1)**
- Heilweil, V.M., and Brooks, L.E., eds., 2011, Conceptual model of the Great Basin carbonate and alluvial aquifer system: U.S. Geological Survey, Scientific Investigations Report 2010-5193, 191 p., 2 pls., data. **(D1, D2)**
- Heindl, L.A., 1962, Should the term “Gila Conglomerate” be abandoned?: Arizona Geological Society Digest, v. 5, p.73-88. **(D1)**
- Heindl, L.A., and McCullough, R.A., 1961, Geology and the availability of water in the lower Bonita Creek area, Graham County, Arizona: U.S. Geological Survey, Water-Supply Paper 1589, 40 p. **(D1)**
- Helm, D.C., 1975, One-dimensional simulation of aquifer system compaction near Pixley, California, 1. Constant parameters: Water Resources Research, v. 11, no. 3, p. 465-478. **(D1)**
- Helm, D.C., 1982, Conceptual aspects of subsidence due to fluid withdrawal, *in* Narasimhan, T.N., ed, Recent trends in hydrogeology: Geological Society of America, Special Paper 189, p. 103-139. **(D1)**
- Helm, D.C., 1984a, Analysis of sedimentary skeletal deformation in a confined aquifer and the resulting drawdown: American Geophysical Union, Water Resources Monograph 9, Groundwater Hydraulics, p. 29-82. **(D1)**
- Helm, D.C., 1984b, Field-based computational techniques for predicting subsidence due to fluid withdrawal; *in* Holzer, T.L., ed., Man-induced land subsidence: Geological Society of America, Reviews in Engineering Geology VI: Groundwater Hydraulics, p. 1-22. **(D1)**
- Helm, D.C., 1987, Three-dimensional consolidation theory in terms of the velocity of solids: Geotechnique, v. 37, no. 3, p. 369-392. **(D1)**
- Helm, D.C., 1994a, Hydraulic forces that play a role in generating fissures at depth: Bulletin of the Association of Engineering Geologists, v. 16, no 3, p. 293-304. **(D1)**
- Helm, D.C., 1994b, Horizontal aquifer movement in a Theis-Theim confined system: Water Resources Research, v. 30, p. 953-964. **(D1)**
- Hem, J.D., 1989, Study and interpretation of the chemical characteristics of natural water (3d ed.): U.S. Geological Survey Water-Supply Paper 2254, 263 p., 3 pls. **(D1)**
- Herrick, E.H., and Davis, L.V., 1965, Availability of ground water in the Tularosa Basin and adjoining areas: U.S. Geological Survey Hydrologic Investigations Atlas, HA-191, scale 1:760,320. **(D1, G2)**
- Hester, C.M., and Coleman, J., 2014, Between an uncomfortable position and an absurd one: Groundwater, v. 52, no. 5, p. 645-646. **(D1, H3)**
- Heywood, C.E., 1995, Investigation of aquifer-system compaction in the Hueco basin, Texas, USA, in 5th International symposium on land subsidence, Delft, Netherlands, October, 1995: International Association of Hydrological Sciences Publication 234, p. 35-45. **(C2b, C4, D1)**

- Heywood, C.E., 2003, Summary of extensometric measurements in El Paso, Texas: U.S. Geological Survey, Water Resources Investigations Report 03-4158, 11 p. **(C4, D1, F2)**
- Hibbard, C.W., 1960, An interpretation of Pliocene and Pleistocene climates in North America: Michigan Academy of Science, Arts, and Letters, 62nd Annual Report, p. 5-30. **(B1, C1, D1)**
- Hibbs, B., 2020, Long term climate change and environmental implications of aquifer flow capacity in arid groundwater basins, *in* Ahmad, S., and Murray, R., eds., Groundwater Sustainability, HydroClimate/Climate Change, and Environmental Engineering: American Society of Civil Engineers: Reston, VA, USA, p. 89-96. **(D1, D2)**
- Hibbs, B.J., 2008, Foreword: Ground water in arid zones: Ground Water, v. 46, no. 3, p. 345-347. **(D1)**
- Hibbs, B.J., 2022, Commentary and review of modern environmental problems linked to Historic flow capacity in arid groundwater basins: Geosciences, v. 12, no. 124, 36 p. **(D1, D2)**
- Hibbs, B.J., and Darling, B.K., 2005, Revisiting a classification scheme for U.S.-Mexico alluvial basin-fill aquifers: Ground Water, v. 43, no. 5, p. 750-763. **(D1, D2, F1)**
- Hohn, D., 2011, Moby-Duck: The true story of 28,800 bath toys lost at sea and the beachcombers, oceanographers, environmentalists, and fools, including the author, who went in search of them: New York, NY, Viking Penguin; Published in Penguin Books 2012, 402 p., ISBN 978-0-14-312050-6 **(A2, C1, D1)**
- Holzer, T.L., 1981, Preconsolidation stress on aquifer systems in area of induced land subsidence: Water Resources Research, v. 17, p. 693-704. **(D1)**
- Hubbert, M.K., 1940, The theory of groundwater motion: Journal of Geology, v. 48, p. 785-944. **(D1)**
- Huff, G.F., 2004, An overview of the hydrogeology of saline groundwater in New Mexico, *in* Ortega Klett, C.T., ed., Proceedings of the 49th Annual New Mexico Water Conference: Water desalination and reuse strategies for New Mexico. New Mexico Water Resources Research Institute Report No. 336, p. 21-34. <https://nmwrri.nmsu.edu/wp-content/uploads/2015/watcon/proc49/huff.pdf> **(D1, E2a, H2)**
- Jarvis, T., Giordano, M., Puri, S., Matsumoto, K., and Wolf, A., 2005, International borders, ground water flow, and hydroschizophrenia: Ground Water, v. 43, p. 764-770. **(D1, E3)**
- Journel, A.G., and Huijbregts, C.J., 1978, Mining geostatistics: New York, Academic Press, 600 p. VOXEL modeling **(D1, E2)**
- Junge, C.E., and Werby, R.T., 1958, The concentration of chloride, sodium, potassium, calcium, and sulfate in rain water over the United States: Journal of Meteorology, v. 15, p. 417-425. **(C1, C3, D1)**
- Kahneman, D., and Tversky, A., 1974, Judgement under uncertainty: Heuristics and biases: Science, vol. 185, issue 4157, pp. 1124-1131. **(A2, D1)**
- Kahneman, D., and Tversky, A., 1996, On the reality of cognitive illusions: Psychological Review, v. 103, no. 3, p. 582-591. *See Lewis 2017.* **(A2, D1)**
- Kang, M., and Jackson, R.B., 2016, Salinity of deep groundwater in California: Water quantity, quality, and protection: PNAS-Environmental Sciences, 6 p. **(D1, E2a)**
- Kendy, E., 2003, The false promise of sustainable pumping: Ground Water, v. 41, no. 1, p. 2-4. **(D1)**
- Kernodle, J.M., 1992a, Results of simulations by a preliminary numerical model of land subsidence in the El Paso, Texas, area: U.S. Geological Survey Water-Resources Investigations Report 92-4037, 35 p. **(D1, H3)**
- Kernodle, J.M., 1996, Simulation of ground-water flow in the Albuquerque Basin, central New Mexico, 1901-95, with projections to 2020: U.S. Geological Survey Water Resources Investigations Report 94-4251. 59 p. **(D1, D2)**
- Kernodle, J.M., McAda, D.P., and Thorn, C.R., 1995, Simulation of Ground-water Flow in the Albuquerque Basin, Central New Mexico: U.S. Geological Survey, Water Resources Investigations Report 94-4251, 114 p. **(D1, D2)**
- Knechtel, M.M., 1937, Geology and ground-water resources of the Gila River and San Simon Creek, Graham County, Arizona: U.S. Geological Survey Water-Supply Paper 796, p. i-iv, 181-222. **(D1, G2)**
- Knowles, T.R., and Alvarez, J.H., 1979, Simulated effects of ground-water pumping in portions of the Hueco bolson in Texas and Mexico during the period 1973 through 2029: Texas Department of Water Resources LP-104, 26 p. **(D1, H3)**
- Knowlton, D.R., 1939, Unitization – Its progress and future, drilling and production practice: American Petroleum Institute Report 39, p. 630-639. **(D1)**
- Konieczki, A.D., and Heilman, J.A., 2004, Water-use trends in the desert Southwest: U.S. Geological Survey Scientific Investigations Report 2004-5148, 32 p. **(D1)**
- Konikow, L.F., and Leake, S.A., 2014, Depletion and capture: Revisiting “the source of water derived from wells.” Ground Water, v. 52 (suppl. 1), p. 100-111. **(D1, H3)**

- Koning, D.J., and Read, A.S., 2010, Geologic map of the southern Española Basin, Santa Fe County, New Mexico: New Mexico Bureau of Geology and Mineral Resources, Open-File Report 531. **(B1, D1)**
- Krieger, R.A., Hatchett, J.L., and Poole, J.L., 1957, Preliminary survey of the saline-water resources of the United States: Geological Survey Water-Supply Paper 1374, 172 p., 2 pls. **(A1, D1, E2a)**
- Land, L.F., and Armstrong, C.A., 1985, A preliminary assessment of land-surface subsidence in the El Paso area, Texas: U.S. Geological Survey Water Resources Investigations Report 85-4155, 96 p. **(C4, D1, H3)**
- Laney, R.L., Raymond, R.H., and Winnika, C.C., 1978, Maps showing water-level declines, land subsidence, and earth fissures in south-central Arizona: US. Geological Survey Water-Resources Investigations 78-83, 2 sheets, scale 1:125,000. **(C4, D1, H3)**
- Laplace, P.S., 1825, *Essai Philosophique sur les Probabilités*, fifth edition. New York, Springer. Translated by A.I. Dale 1995; *See Miller and Gelman 2020*. **(A2, D1)**
- LBG–Guyton Associates, 2003, Brackish groundwater manual for Texas regional water planning groups: Texas Water Development Board, 188 p. at http://www.twdb.texas.gov/publications/reports/contracted_reports/doc/2001483395.pdf **(D1, E2a)**
- Leake, S.A., 2011, Capture—rates and directions of groundwater flow don’t matter: From theory to practice (Technical Commentary): *Ground Water*, v. 49, no. 4, p. 456. **(D1, H3)**
- Leake, S.A., and Prudic, D.E., 1988, Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model: U.S. Geological Survey Open-File Report 88-482, 80 p. **(D1)**
- Lee, W.T., 1922, The face of the earth as seen from the air: A study in the application of airplane photography to geography: American Geographical Society, Special Publication No. 1, 110 p. **(D1, E1)**
- Lee, W.T., 1924, A visit to Carlsbad Cavern: *National Geographic Magazine*, v. 45, no. 1, p. 1-40. **(D1)**
- Lee, W.T., 1925a, Erosion by solution and fill: *U.S. Geological Survey Bulletin* 760-D, p. 107-121. **(D1)**
- Lee, W.T., 1925b, New discoveries in Carlsbad Cavern: *National Geographic Magazine*, v. 48, no. 3, p. 301-319. **(D1)**
- Leeder, M.R., 1998, *Lyell’s Principles of Geology: foundations of sedimentology*, in Blundell, D.J. and Scott, A.C., eds., *Lyell: the past is the key to the present*: Geological Society of London, Special Publication 143, p. 97-110. **(D1)**
- Lewis, M., 2016, *The undoing project – A friendship that changed our minds*: New York, W.W. Norton & Company, 362 p. ISBN 978-0-393-25459-4. *See Chapter 4: Errors, and Kahneman and Tversky (1974 and 1976)*. **(A2, D1)**
- Llewellyn, D., and Vaddey, S., 2013, West-wide climate risk assessment: Upper Rio Grande impact assessment: U.S. Bureau of Reclamation, Upper Colorado Region, 169 p. <https://www.usbr.gov/watersmart/baseline/docs/urgia/URGIAMainReport.pdf> **(B2, B3, C1, D1)**
- Lohman, S.W., 1979, Ground-water hydraulics: U.S. Geological Survey Professional Paper 708, 70 p. **(D1)**
- Lohman, S.W., and others, 1972, Definitions of selected ground-water terms – Revisions and conceptual refinements: U.S. Geological Survey Water-Supply Paper 1988, 21 p. **(D1)**
- Lorenz, E., 1963, Deterministic non-periodic flow: *Journal of the Atmospheric Sciences*, v. 20, no. 2, p. 130-141. **(C1, D1)**
- Lorenz, E., 1976, Nondeterministic theories of climate change: *Quaternary Research*, v. 60, issue 4, p. 495-506. **(C1, D1)**
- Lustig, L.K., 1968, Inventory of research on geomorphology and hydrology of desert environments, in McGinnis, W.G., Goldman, B.J., and Paylore, P., eds., *Deserts of the World*: University of Arizona Press, p. 95-286. **(A2, C, D1)**
- Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., 2001, *Aquifers of West Texas*: Texas Water Development Board Report 356, 272 p. **(D1, F2)**
- MacMillan, J.R., Naff, R.L., and Gelhar, L.W., 1976, Prediction and numerical simulation of subsidence associated with proposed groundwater withdrawal in the Tularosa Basin, New Mexico: International Association of Hydrological Sciences, Publication No. 121, Proceedings of the Anaheim Symposium, p. 600-608. **(D1, H3)**
- Maddock, T. III, and Wright Water Engineers, Inc., 1987, An investigation of the effects of proposed pumping in the Lower Rio Grande Declared Basin: University of Arizona, variously paged. **(D1, H3)**
- Mandel, S., 1979, Problems of large-scale groundwater development, in Back, W., and Stephenson, D.A., eds., *Contemporary hydrology – The George Burke Maxey Memorial Volume*: *Journal of Hydrology*, v. 43, no. 1/6, p. 439-443. *Seminal discussion of groundwater mining*. **(D1)**

- Mandelbrot, B., 1982, *The fractal geometry of nature*: New York, W.H. Freeman and Company, 480 p. ISBN 10: 0716711869 **(D1)**
- Mann, M.E., Bradley, R.S., and Hughes, M.K., 1999, Northern hemisphere temperatures during the past millennium: inferences, uncertainties, and limitations: *Geophysical Research Letters*, v. 26, p. 759-762. **(C1, D1)**
- Maxey, G.B., 1964, Hydrostratigraphic units: *Journal of Hydrology*, v. 2, no. 2, p. 124-129. **(D1)**
- Maxey, G.B., 1968, Hydrogeology of desert basins: *Ground Water*, v. 6, no. 5, p. 1-22. **(D1)**
- Maxey, G.B., and Eakin, T.E., 1949, Ground water in White River Valley, White Pine, Nye, and Lincoln Counties, Nevada: Nevada State Engineer's Office, Water Resources Bulletin 8, 59 p. **(D1, D2)**
- Maxey, G.B., and Farvolden, R.N., 1965, Hydrogeologic factors in problems of contamination in arid lands: *Ground Water*, v. 3, no. 4, p. 29-32. **(D1, E2c)**
- Maxey, G.B., and Jameson, C.H., 1948, Geology and water resources of Las Vegas, Pahrump, and Indian Springs Valleys, Clark and Nye Counties, Nevada: Nevada State Engineer's Office, Water Resources Bulletin 5, 121 p. **(D1)**
- Maxey, G.B., and Shamberger, H.A., 1961, The Humboldt River Research Project in Nevada, *in* Ground water in arid zones: International Association of Scientific Hydrology, Publication No. 57, p. 437-454. **(D1)**
- McAda, D.P., and Barrow, P., 2002, Simulation of ground-water flow in the Middle Rio Grande basin between Cochiti and San Acacia, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 02-4200, 81 p. **(D1)**
- McCord, J.T., and Stephens, D.B., 1999, Contrasts in regional and local-scale heterogeneity in relation to ground-water supply and contamination in the Albuquerque Basin: *New Mexico Geological Society Guidebook 50*, p. 401-408. **(D1, E2c)**
- Meinzer, O.E., 1911, Geology and water resources of Estancia Valley, New Mexico: U.S. Geological Survey Water-Supply Paper 275, 89 p. **(B2, C1, C2a, D1, G1, I1, I2)**
- Meinzer, O.E., 1922, Map of the Pleistocene lakes of the Basin and Range province and its significance: *Geological Society of America Bulletin*, v. 33, issue 3, p. 541-552. **(B2, C1, D1, I1)**
- Meinzer, O.E., 1923a, The occurrence of ground water in the United States, with discussion of principles: U.S. Geological Survey Water-Supply Paper 489, 321 p. **(D1)**
- Meinzer, O.E., 1923b, Outline of ground water hydrology, with definitions: U.S. Geological Survey Water-Supply Paper 494, 71 p. **(A1, D1)**
- Meinzer, O.E., and Hare, R.F., 1915, Geology and water resources of the Tularosa Basin, New Mexico: U.S. Geological Survey Water-Supply Paper 343, 317 p. **(B2, C1, C2a, D1, G1, I2)**
- Meinzer, O.E., and Kelton, F.C., 1912, Geology and water resources of Sulphur Springs Valley, Arizona: U.S. Geological Survey Water-Supply Paper 320, 231 p. **(B2, C1, D1, G1, I1)**
- Meinzer, O.E., Renich, B.C., and Bryan, K., 1926, Geology of No. 3 reservoir site of the Carlsbad irrigation project, New Mexico with respect to water tightness: U.S. Geological Society Water-Supply Paper 580, p. 12-13. **(D1)**
- Meyer, G., Davis, G., and La Moreaux, P.E., 1988, Historical Perspective - Chapter 1; *in* Back, W., Rosenshein, J.S., and Seaber, P.R., eds., *Geology of North America – Hydrogeology*: Geological Society of America, *Decade of North American Geology*, v. 0-2, p. 1-8. **(A2, D1)**
- Mifflin, M.D., 1988, Region 5, Great Basin, *in* Back, W., Rosenshein, J.S., and Seaber, P.R., eds. *Hydrogeology – The Geology of North America*: Geological Society of America, *Decade of North American Geology*, v. 0-2, p. 69-78. **(D1)**
- Mifflin, M.D., 1968, Delineation of Groundwater Flow Systems in Nevada: University of Nevada-Reno, Desert Research Institute, Technical Report Series H-W, Hydrology and Water Resources Publication 4, 109 p. **(D1, D2)**
- Mifflin, M.D., 1988, Region 5, Great Basin, *in* Back, W., Rosenshein, J.S., and Seaber, P.R., eds. *Hydrogeology – The Geology of North America*: Geological Society of America, *Decade of North American Geology*, v. 0-2, p. 69-78. **(D1, D2)**
- Mifflin, M.D., and Hess, J.W., 1979, Regional carbonate flow systems in Nevada: *Journal of Hydrology*, v. 43, p. 217-237. **(D1, D2)**
- Miller, G.A., 1956, The magical number seven, plus or minus two: Some limits to our capacity of processing information: *Psychological Review*, v. 63, p. 31-38. **(D1)**
- Miller, J.B., and Gelman, A., 2020, Laplace's theories of cognitive illusions, heuristics and biases: *Statistical Science*, v. 35, no. 2, p. 159-170. **(A2, D1)**

- Miller, R.R., 1981, Coevolution of deserts and pupfishes (Genus *Cyprinodon*) in the American Southwest, in Naiman, R.J. and Stoltz, D.L., eds., *Fishes in North America deserts*: New York, John Wiley and Sons, p. 39-94. **(B1, B2, C1, D1, I1, I3)**
- Miller, R.R., and Echelle, A.A., 1975, *Cyprinodon tularosa*, a new cyprinodontid fish for the Tularosa Basin, New Mexico: *The Southwestern Naturalist*, v. 19, no. 4, p. 365-377. **(B1, B2, C1, D1, I2)**
- Milly, P.C.D., Betancourt, J., Falkenmark, M., Hirsch, R.M., Kundzewicz, Z.W., Lettenmaier, D.P., and Stouffer, R.J., 2008, Stationarity is dead: Whither water management?: *Science*, v. 319, no. 5863, p. 573-574. **(C1, D1)**
- Minckley, W.L., Hendrickson, D.A., and Bond, C.E., 1986, Geography of western North American freshwater fishes: descriptions and relationships to intracontinental tectonism, in Hocutt, C.H. and Wiley, E.O., eds., *The Zoogeography of North American Freshwater Fishes*: New York, John Wiley and Sons, p. 519-613. **(B1, B2, C1, D1, I1)**
- Molz, F., 2015, Advection, dispersion, and confusion: Groundwater (Technical Commentary), v. 53, no. 3, p. 348-353. *See Gelhar et al. 1992.* **(D1)**
- Nash, D.J., 1996, Groundwater sapping and valley development in the Hackness Hills, North Yorkshire, England: *Earth Surface Processes and Landforms* (9th edition), v. 21, no. 9, p. 781-795. **(D1)**
- National Ground Water Association (NGWA), 2010, Brackish groundwater: Westerville, Ohio, National Ground Water Association information brief, 4 p., accessed March 8, 2013. **(D1, E2a)**
- National Ground Water Association (NGWA), 2014, Best suggested practices for aquifer storage and recovery: 601 Dempsey Rd., Westerville OH 43081-8978, NGWA Press. 21 p. ISBN 1-56034-026-6 **(D1, E2b)**
- National Ground Water Association (NGWA), 2019a, NEWSLINE—NGWA supports legislation to create national to PFAS crisis: Groundwater Monitoring & Remediation, v. 39, issue 3, p. 6. **(D1, E2c)**
- National Ground Water Association (NGWA), 2019b, NEWSLINE—Congress introduces a flurry of PFAS legislation: Groundwater Monitoring & Remediation, v. 39, issue 3, p. 7. **(D1, E2c)**
- National Ground Water Association (NGWA), 2019c, NEWSLINE—NSF Standards add PFOA and PFOS reduction claims requirements: Groundwater Monitoring & Remediation, v. 39, issue 3, p. 7. **(D1, E2c)**
- National Research Council (NRC), 2008, Desalination—A national perspective: Washington, D.C., The National Academies Press, 316 p. **(D1, E2a)**
- National Research Council (NRC), 2012, Water reuse: Expanding the nation's water supply through reuse of municipal wastewater—Prepublication Report from the Committee on the Assessment of Water Reuse as an Approach to Meeting Future Water Supply Needs: Washington D.C., National Academies Press. http://www.nap.edu/catalog.php?record_id=13303 **(D1, E2c)**
- Neal, J.T., Langer, A.M., and Kerr, P.F., 1968, Giant desiccation polygons of Great Basin playas: *Geological Society of America Bulletin*, v. 70, no. 1, p. 69-90. **(D1, I1)**
- Newell, F.H., 1893, Water supply for irrigation: U.S. Geological Survey, 13th Annual Report 13, Part 3a, p. 7-99. **(B3, D1)**
- Nichols, G., 2015, Stratigraphic architecture of fluvial distributive systems in Basins of internal drainage: Search and Discovery Article #51145 (2015), 42 p. pdf. *For related information contact author directly at Nautilus Ltd, Hermitage, Berkshire, United Kingdom g.nichols@nautilusworld.com* **(D1)**
- NMOSE (New Mexico Office of the State Engineer), n.d., website: <https://www.ose.nm.gov/> **(C1, D1)**
- North American Commission on Stratigraphic Nomenclature (NACOSN), 2005, North American Stratigraphic Code: The American Association of Petroleum Geologists Bulletin, v. 89, p. 1547-1591. **(D1)**
- Ortiz, D., and Lange, K.M., 1996, Water resources data, New Mexico, Water Year 1995: U.S. Geological Survey Water-Data Report NM-95-1, 628 p. **(D1)**
- Ortiz, D., Lange, K.M., and Beal, L.V., 1998, Water resources data, New Mexico, Water Year 1997: U.S. Geological Survey Water-Data Report NM-97-1, 574 p. **(D1)**
- Ortiz, D., Lange, K.M., and Beal, L.V., 1999, Water resources data, New Mexico, Water Year 1998, volume 1. The Rio Grande Basin, the Mimbres River Basin, and the Tularosa Valley Basin: U.S. Geological Survey Water-Data Report NM-98-1, 404 p. **(D1)**
- Ortiz, D., Lange, K.M., and Beal, L.V., 2000, Water resources data, New Mexico, Water Year 1999, volume 1. The Rio Grande Basin, the Mimbres River Basin, and the Tularosa Valley Basin: U.S. Geological Survey Water-Data Report NM-99-1, 402 p. **(D1)**
- Ortiz, D., Lange, K.M., and Beal, L.V., 2001, Water resources data, New Mexico, Water Year 2000, volume 1. The Rio Grande Basin, the Mimbres River Basin, and the Tularosa Valley Basin: U.S. Geological Survey Water-Data Report NM-00-1, 411 p. **(D1)**

- Orville, P.M., 1963, Alkali exchange between vapor and feldspar phases: *American Journal of Science*, v. 261, p. 201-237. **(D1)**
- Osborn, N.I., Smith, S.J., and Seger, C.H., 2013, Hydrogeology, distribution, and volume of saline groundwater in the southern midcontinent and adjacent areas of the United States: U.S. Geological Survey Scientific Investigations Report 2013-5017, 58 p. VOXEL modeling **(D1, E2a)**
- Overpeck, J.T., and Udall, B., 2020, Climate change and aridification of North America: *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, v. 117, no. 22, p. 11856-11858. **(C1, D1)**
- Phillips, F.M., Hall, G.E., and Black, M.E., 2011, *Reining in the Rio Grande – People, Land, and Water*: University of New Mexico Press, 252 p. **(A2, B3, C1, D1, E3)**
- Piper, A.M., 1944, A graphic procedure in the geochemical interpretations of water analyses: *Transactions, American Geophysical Union*, v. 25, p. 914-923. **(D1)**
- Plummer, L.N., Michel, R.L., Thurman, E.M., and Glynn, P.D., 1993, Environmental tracers for age-dating young ground water, *in* Alley, W.M., ed., *Regional ground-water quality*: New York, Van Nostrand Reinhold, p. 255-294. **(D1, D2)**
- Plummer, L.N., Bexfield, L.M., Anderholm, S.K., Sanford, W.E., and Busenberg, E., 2004, Geochemical characterization of ground-water flow in the Santa Fe Group aquifer system, Middle Rio Grande Basin, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 03-4141, 369 p., with CD-ROM. **(D1, D2, H3)**
- Poland, J.F., Lofgren, B.E., Ireland, R.L., and Pugh, R.G., 1975, Land subsidence in the San Joaquin Valley, California, as of 1972: U.S. Geological Survey Professional Paper 437-H, 78 p. **(D1)**
- Pool, D.R., 1985, Aquifer geology of alluvial basins of Arizona, *in* Anderson, T.W., and Johnson, A.I., eds., *Regional Aquifer Systems of the United States, Southwest Alluvial Basins of Arizona*: American Water Resources Association Monograph Series 7, p. 25-36. **(D1)**
- Powell, J.W., 1885, On the Organization of Scientific Work of the General Government: Extracts from the testimony taken by the Joint Commission of the Senate and House of Representatives to “consider the present organization of the Signal Service, Geological Survey, Coast and Geodetic Survey, and the Hydrographic Office of the Navy Department, with the view to secure greater efficiency and economy of administration.” Washington, Government Printing Office, 468 p. **(C, D1, E2)**
- Räsänen, M.E., Auri, J.M., Huitti, J.V., Klap, A.K., and Virtasalo, J.J., 2009, A shift from lithostratigraphic to allostratigraphic classification of Quaternary glacial deposits: *GSA Today*, v. 19, no. 2, p. 4-11. **(C1, D1)**
- Reilly, T.E., 2004, A brief history of contributions to ground water hydrology by the U.S. Geological Survey. *Ground Water*, v. 42, no. 4, p. 625-631. **(A2, D1)**
- Reilly, T.E., Dennehy, K.F., Alley, W.M., and Cunningham, W.L., 2008, Ground-water availability in the United States: U.S. Geological Survey Circular 1323, 70 p. **(A2, D1)**
- Remick, W.H., 1989, *Maps Showing Groundwater Conditions in the Duncan-Virden Valley Basin, Greenlee and Cochise Counties, Arizona, and Hidalgo and Grant Counties, New Mexico*: State of Arizona, Department of Water Resources, Hydrologic Map Series Report Number 16, Sheets 1 and 2, scale 1:125,000. **(D1, F2)**
- Ritchie, A.B., Hanson, R.T., Galanter, A.E., Boyce, S.E., Damar, N.A., Shephard, Z.M., and Tillman, F.D., 2018, Digital hydrologic and geospatial data for the Rio Grande transboundary integrated hydrologic model and water-availability analysis, New Mexico and Texas, United States, and Northern Chihuahua, Mexico: U.S. Geological Survey data release. **(D1, E1, F1)**
- Rivera, A., 2021a, Knowledge capsules on TBA – Transboundary Aquifer -vs- Transboundary Groundwater; Transboundary zoning: to zone or not to zone; and Sustainable use of groundwater within a transboundary aquifer context: *IAHG-TBA Commission Newsletter*; v. 2, issue 1, p. 10-11. **(D1, E3)**
- Rivera, A., 2021b, What should we manage, aquifers or groundwater? Guest Editorial: *Groundwater*, v. 59, issue 5, p. 2. **(D1, E3)**
- Robertson, F.N., 1991, Geochemistry of ground water in alluvial basins of Arizona and adjacent parts of Nevada, New Mexico, and California: U.S. Geological Survey Professional Paper 1406-C, 90 p. **(D1)**
- Robinson, T.W., 1958, Phreatophytes: U.S. Geological Survey, Water-Supply Paper 1423, 84 p. **(A1, D1)**
- Robinson, T.W., and Johnson, A.I., 1961, Selected bibliography on evaporation and transpiration, *in* *Contributions to the hydrology of the United States*: U.S. Geological Survey, Water-Supply Paper 1539-R, p. R-1 to R-259. *Selected references emphasizing papers from the US from the early 1800's into 1958.* **(A1, D1)**
- Robson, S.G., and Banta, E.R., 1995, Arizona, Colorado, New Mexico, and Utah; Chapter C of Ground water atlas of the United States: U.S. Geological Survey Hydrologic Atlas 730, 32 p. **(D1)**

- Ryder, P.D., 1996, Ground water atlas of the United States—Segment 4, Oklahoma, Texas: U.S. Geological Survey Hydrologic Investigations Atlas 730-E, 20 p. **(D1)**
- Sayre, A.N., and Livingston, P., 1945, Ground-water resources of the El Paso area, Texas: U.S. Geological Survey Water-Supply Paper 919, 190 p. **(D1, F2, G2)**
- Scalapino, R.A., 1949, Ground-Water Resources of the El Paso Area, Texas: Texas Board of Water Engineers, Progress Report No. 6, 22 p. **(D1, G2)**
- Scarborough, V.L., 2003, Flow of power; ancient water systems and landscapes: Santa Fe, School of American Research Resident Scholar Book, 204 p. ISBN 1-930618-32-8 **(A2, B2, D1)**
- Schmid, W., Hanson, R.T., Maddock III, T.M., and Leake, S.A., 2006, User's guide for the Farm process (FMP) for the U.S. Geological Survey's modular three-dimensional finite difference ground-water flow model, MODFLOW-2000: U.S. Geological Survey Techniques and Methods 6-A17, 127 p. **(D1)**
- Schmid, W., Hanson, R.T., Faunt, C.C., and Phillips, S.P., 2008, Hindcast of water availability in regional aquifer systems using MODFLOW's Farm Process: Proceedings of HydroPredict 2008, Prague, Czech Republic, September 15-19, 2008, p. 311-314. **(D1)**
- Schumm, S.A., 1965, Quaternary paleohydrology, in Wright, H.E., Jr., and Frey, D.C., eds., The Quaternary of the United States: Princeton University Press, p. 783-794. **(C, D1)**
- Schumm, S.A., 1968, Speculations concerning paleohydrologic controls on terrestrial sedimentation: Geological Society of America Bulletin, v. 79, p. 1573-1588. **(C, D1)**
- Schumm, S.A., 1977, The fluvial system: New York, John Wiley and Sons-Interscience, 338 p. **(A2, D1)**
- Schwennesen, A.T., 1918, Ground water in the Animas, Playas, Hachita, and San Luis Basins, New Mexico: U.S. Geological Survey Water-Supply Paper 422, 152 p. **(D1, F2, G1, I2)**
- Schwennesen, A.T., and Forbes, R.H., 1918, Ground water in San Simon Valley, Arizona: U.S. Geological Survey Water-Supply Paper 425, p. 1-35. **(D1, G1, I2)**
- Seaber, P.R., 1988, Hydrostratigraphic units, in Back, W., Rosenshein, J.S., and Seaber, P.R., eds., Geology of North America – Hydrogeology: Geological Society of America, Decade of North American Geology, v. 0-2, p. 9-14. **(D1)**
- Sharp, J.M., Jr., 2001, Regional groundwater flow systems in basins in Trans-Pecos Texas, in Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., Aquifers of West Texas: Austin, Texas Water Development Board Report 356, p. 66-75. **(D1, D2)**
- Sharp, J.M., Jr., Mayer, J.R., and McCutcheon, E., 1993, Hydrologic trends in the Dell City area, Hudspeth County, Texas: New Mexico Geological Society Guidebook 44, p. 327-330. **(D1)**
- Sheng, Z., and Helm, D.C., 1994, Displacement discontinuity modeling of fissuring caused by ground-water withdrawal, in Siriwardane, H.J., and Zaman, M.M., eds., Proceedings of the 8th International Conference on Computer Methods and Advances in Geomechanics, Morgantown, WV, USA: Rotterdam, Netherlands, A.A. Balkema, p. 1263-1268. **(D1)**
- Sheng, Z., Helm, D.C., and Li, J., 2003, Mechanisms of earth fissuring caused by groundwater withdrawal: Journal of Environmental Geosciences, v. 9, no. 4, p. 313-324. **(D1)**
- Sheng, Z., Darr, M., King, J.P., Bumgarner, J., and Michelsen, A., 2013, Mesilla Basin/Conejos-Médanos section of the Transboundary Aquifer Assessment Program, in Alley, W.M., ed., Five-year interim report of the United States-Mexico Transboundary Aquifer Assessment Program: 2007-2012: U.S. Geological Survey Open-File Report 2013-1059, 31 p. **(D1, F1)**
- Sheridan, M.F., and Wohletz, K.H., 1981, Hydrovolcanic Explosions: The Systematics of Water-Pyroclast Equilibration: Science, vol. 212, no. 4,501, p. 1,387-1,389. **(D1)**
- Siebenshal, C.E., 1910, Geology and water resources of the San Luis Valley, Colorado: U.S. Geological Survey, Water-Supply Paper 240, 128 p. **(D1, I1, I3)**
- Siegel, D., 2008, Reductionist hydrogeology: ten fundamental principles: Hydrological Processes, v. 22, p. 4967-4970. **(D1)**
- Siegel, D.J., 2020, The future of geoscience in the context of emerging climate disruption: GSA Today, v. 30, no. 2, p. 4-5. **(B3, C1, D1)**
- Siegel, D.J., and Hinchey, E.J., 2019, Big data and the curse of scale: Groundwater, v. 57, no. 4, p. 505. **(D1)**
- Spiegel, Z.E., and Baldwin, B., 1963, Geology and water resources of the Santa Fe area, New Mexico: U.S. Geological Survey, Water-Supply Paper 1525, 258 p. **(D1, G2)**
- Smith, G.A., 2000, Recognition and significance of streamflow-dominated piedmont facies in extensional basins: Basin Research, v. 12, p. 399-411. **(D1)**
- Smith, G.I., 1966, Geology of Searles Lake – A guide to prospecting for buried continental salines, in Second Symposium on Salt, Cleveland, Northern Ohio Geological Society, p. 167-180. **(D1, I1)**

- Stanton, J.S., Anning, D.W., Brown, C.J., Moore, R.B., McGuire, V.L., Qi, S.L., Harris, A.C., Dennehy, K.F., McMahon, P.B., Degnan, J.R., and Böhlke, J.K., 2017, Brackish groundwater in the United States: U.S. Geological Survey Professional Paper 1833, 185 p. **(D1, E2a)**
- Stephens, D.B., 1996, Vadose zone hydrology: Boca Raton, FL, Lewis Publishers, 347 p. **(A2, D1)**
- Stockton, C.W., 1990, Climatic, hydrologic, and water-supply inferences from tree rings: Civil Engineering Practice, p. 37-52. **(B3, C1, D1)**
- Taleb, N.N., 2010, The Black Swan: the impact of the highly improbable (second edition), with a new section: On robustness & fragility: New York, Random House Trade Paperbacks, 444 p. ISBN 978-0-8129-7381-5 **(A2, D1)**
- Texas Water Development Board (TWDB), 2017, Groundwater Database Reports: <http://www.twdb.texas.gov/groundwater/data/gwdbprpt.asp> **(D1)**
- Theis, C.V., 1935a, The relation between lowering the piezometric surface and the rate and duration of discharge of well using ground water storage: American Geophysical Union Transactions, 16th Annual Meeting, part 2, p. 519-524. **(D1, D2)**
- Theis, C.V., 1935b, The source of water derived from wells: Essential factors controlling the response of an aquifer to development: Civil Engineer, v. 10, p. 277-280. **(D1, D2)**
- Theis, C.V., 1938, Ground water in the middle Rio Grande valley in [U.S.] Natural Resources Committee, Regional Planning part VI---The Rio Grande joint investigations in the upper Rio Grande basin in Colorado, New Mexico, and Texas, 1936-1937: Washington, D.C., U.S. Government Printing Office, v. 1, part 2, p. 268-291. **(D1, D2)**
- Thiros, S.A., Paul, A.P., Bexfield, L.M., and Anning, D.W., 2014, The quality of our Nation's waters – Water quality in basin-fill aquifers of the southwestern United States: Arizona, California, Colorado, Nevada, New Mexico, and Utah, 1993-2009: U.S. Geological Survey Circular 1358, 113 p. **(D1)**
- Thomas, H.E., 1963, General summary of the effects of drought in the southwest, 1942-1956: U.S. Geological Survey Professional Paper 372-H, p. H1-H22. **(C1, D1)**
- Thomas, H.E., and Leopold, L.B., 1964, Ground Water in North America: Science, v. 143, no. 3610, p. 1001-1003. **(C1, D1)**
- Thomas, H.E., and others, 1963a, Effects of drought in the Rio Grande basin – Drought in the Southwest, 1942-56: U.S. Geological Survey Professional Paper 372-D, p. D1-D59. **(D1)**
- Thomas, H.E., and others, 1963b, Effects of drought in basins of interior drainage – Drought in the Southwest, 1942-1956: U.S. Geological Survey Professional Paper 372-E, p. E1-E51. **(C1, D1)**
- Thompson, J.C., Kreidler, C.W., and Young, M.H., 2020, Exploring groundwater recoverability in Texas, maximum economically recoverable storage: Texas Water Journal, v. 11, no. 1, p. 152-171. **(D1, H3)**
- Thorn, C.R., McAda, D.P., and Kernodle, J.M., 1993, Geohydrologic framework and hydrologic conditions in the Albuquerque Basin, central New Mexico: U.S. Geological Survey, Water-Resources Investigations Report 93-4149, 106 p. **(D1, D2)**
- Todd, D.K., 1980, Groundwater hydrology (2nd ed.): New York, John Wiley and Sons, 535 p. **(D1)**
- Tolman, C.F., 1909, Erosion and deposition in southern Arizona bolson region: Journal of Geology, v. VII, no. II, p. 136-163. **(C2a, D1)**
- Tolman, C.F., 1937, Ground Water: New York, McGraw-Hill Book Co., Inc. 593 p. **(A2, C, D1)**
- Toth, J., 1963, A theoretical analysis of groundwater flow in small drainage basins: Journal of Geophysics Research, 68, p. 4795-4812. **(D1)**
- Trauger, F.D., 1972, Water Resources and General Geology of Grant County, New Mexico; Hydrologic Report 2; New Mexico Bureau of Mines and Mineral Resources, Socorro, 1972, 211 p. **(D1, H1, H2)**
- U.S. Environmental Protection Agency (EPA), 2012, Guidance for the Determination of underground Sources of Drinking Water: Washington, DC, US Environmental Protection Agency. **(D1, E2)**
- U.S. Environmental Protection Agency, 2015b, Guidance for determination of underground sources of drinking water (USDWs): U.S. Environmental Protection Agency Regional Guidance 3, 3 p., accessed March 23, 2016 at <https://www.epa.gov/sites/production/files/2015-09/documents/r5-deepwell-guidance3-determination-underground-sources-drinking-water-19870205.pdf> **(D1, E2c)**
- U.S. Geological Survey, 1961, Surface water supply of the United States—Part 8, Western Gulf of Mexico basins; U.S. Geological Survey Water-Supply Paper 1612, p. 411-413. **(D1)**
- U.S. Geological Survey, 1965, Magnitude and frequency of floods in the United States—Part 8, Western Gulf of Mexico basins; U.S. Geological Survey Water-Supply Paper 1682, p. 418-422. **(D1)**
- U.S. Geological Survey, 1968a, Water resources data for New Mexico, part 1. Surface-water records: U.S. Geological Survey Water Resources Division, Albuquerque, 242 p., 4 figs. **(D1)**

- U.S. Geological Survey, 1968b, Water resources data for New Mexico, part 2. water quality records: U.S. Geological Survey Water Resources Division, Albuquerque, 207 p., 2 figs. **(D1, E2a)**
- U.S. Geological Survey, 1975, Hydrologic unit map – 1974, State of Arizona, prepared in cooperation with the U.S. Water Resources Council: Reston, VA, U.S. Geological Survey Hydrologic Unit Map, scale 1:500,000. **(D1, E2)**
- U.S. Geological Survey, 1976, Hydrologic Unit Map – 1974, State of New Mexico: Reston, VA, U.S. Geological Survey Hydrologic Unit Map, scale 1:500,000. **(D1, E2)**
- U.S. Geological Survey, 2016, New Mexico Water Science Center, Groundwater Information and Data, accessed September 1, 2016 at <https://nm.water.usgs.gov/infodata/groundwater.html> **(D1, E2)**
- U.S. Geological Survey, 2017, U.S. Geological Survey National Water Information System: <https://dx.doi.org/10.5066/F7P55KJN> **(D1, E2)**
- U.S. Geological Survey, n.d., Water Resources Data, Calendar Year Streamflow Statistics: Online data retrieval system. <http://water.usgs.gov/nm/nwis/sw> **(D1)**
- U.S. National Resources Committee, 1938, The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico, and Texas: Washington, D.C., U.S. Government Printing Office. 566 p. **(B3, D1, G1)**
- Walsh, P., 2008, A new method for analyzing the effects of joints and stratigraphy on spring locations: A case study from the Sacramento Mountains, south-central New Mexico, USA: *Hydrogeology Journal*, v. 16, no. 4, p. 737-747. **(C2b, D1)**
- Waltemeyer, S.D., 1994, Methods for estimating streamflow at mountain fronts in southern New Mexico: U.S. Geological Survey Water-Resources Investigations Report 93-4213, 17 p. **(D1, D2)**
- Waltemeyer, S.D., 2001, Estimates of mountain-front streamflow available for potential recharge to the Tularosa Basin, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 01-4013, 8 p. **(D1, D2)**
- Waltemeyer, S.D., 2008, Analysis of the magnitude and frequency of peak discharge and maximum observed peak discharge in New Mexico and surrounding areas: U.S. Geological Survey Scientific Investigations Report 2008-5119, 105 p. **(D1, D2)**
- Weissmann, G., Hartley, A., and Nichols, G., 2011, Alluvial facies distribution in continental sedimentary basins—distributive fluvial systems, *in* Davidson, S., Leleu, S., and North, C., eds., *Rock to rock record: The preservation of fluvial sediments and their subsequent interpretation*: SEPM (Society for Sedimentary Geology), v. 79, p. 327-355. ISBN 978-1-56576-305 **(D1)**
- West, F., 1996, The Mesilla Valley: A century of water resources investigations, *in* Ortega Klett, C.T., ed., *Reaching the Limits: Stretching the Resources of the Lower Rio Grande*, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 21-28. **(D1, H3)**
- West, S.W., and Broadhurst, W.L., 1975, Summary appraisals of the Nation's ground-water resources—Rio Grande region: U.S. Geological Survey Professional Paper 813-D. 39 p. **(D1)**
- Western Water Assessment (WWA) - Rio Grande TreeFlow 2008 Tree-ring reconstruction of streamflow and climate for the Rio Grande basin and adjacent basins [including Rio Grande near Otowi, NM from 1450-2002]: University of Colorado at Boulder. **(B2, B3, C1, D1)**
- Wilkins, D.W., 1986, Geohydrology of the Southwest Alluvial Basins, Regional Aquifer-systems analysis in parts of Colorado, New Mexico, and Texas: U.S. Geological Survey Water Resources Investigations Report 84-4224, 61 p. **(D1, F2)**
- Wilkins, D.W., 1998, Summary of the southwest alluvial basins regional aquifer-system analysis in parts of Colorado, New Mexico, and Texas: U.S. Geological Survey Professional Paper 1407-A, 49 p. **(D1, F2)**
- Wilkins, D.W., Scott, W.B., and Kaehler, C.A., 1980, Planning report for the Southwest Alluvial Basins (east) regional aquifer-system analysis, parts of Colorado, New Mexico, and Texas: U.S. Geological Survey Open-File Report 80-564, Albuquerque, NM, 39 p. **(D1)**
- Willden, R., and Mabey, D.R., 1961, Giant desiccation fissures on the Black Rock and Smoke Creek Deserts, Nevada: *Science*, v. 133. p. 1359-1360. **(D1, H)**
- Winograd, I.J., and Thordarson, W., 1975, Hydrogeologic and hydrogeochemical framework, South-Central Great Basin, Nevada-California, with special reference to the Nevada Test Site: U.S. Geological Survey Professional Paper 712-C, 126 p. **(D1)**
- Winter, T.C., Harvey, J.W., Franke, O.L., and Alley, W.M., 1999, Ground water and surface water – A single resource: U.S. Geological Survey Circular 1139, 79 p. **(D1)**
- Wohletz, K.H., and Sheridan, M.F., 1983, Hydrovolcanic explosions: II, Evolution of basaltic tuff rings and tuff cones: *American Journal of Science*, v. 283, no. 5, p. 385-413. **(C2a, D1)**

- Woumeni, R.S., and Vauclin, M., 2006, A field study of the coupled effects of aquifer stratification, fluid density, and groundwater fluctuations on dispersity assessments: *Advances in Water Resources*, v. 29, no. 7, p. 1037-1055. **(D1)**
- Zalasiewicz, J., Waters, C.N., Williams, M., and Summerhayes, C., eds., 2019. *The Anthropocene as a geological time unit: A guide to the scientific evidence and current debate*. Cambridge, UK; Cambridge University Press, 361 p. **(B1, B2, B3, C1, D1)**
- Zalasiewicz, J., Waters, C.N., Ellis, E.C., Head, M.J., Vidas, D., Steffen, W., Thomas, J.A., Horn, A., Summerhayes, C., Leinfelder, R., McNeill, J.R., Gałuszka, A., Williams, M., Barnosky, A.D., Richter, D. de B., Gibbard, P.L., Syvitski, J., Jeandel, C., Cearreta, A., Cundy, A.B., Fairchild, I.J., Rose, N.L., Ivar do Sul, J.A., Shotyk, W., Turner, S., Waple, M., and Zinke, J., 2021, *The Anthropocene: comparing its meaning in geology (chronostratigraphy) with conceptual approaches arising in other disciplines*: AGUPUBS Online Library, Wiley.com, 44 p. **(B1, B2, B3, C1, D1)**

D2. Groundwater-Flow Systems, Including Recharge

- Anderholm, S.K., 2000, Mountain-front recharge along the eastern side of the Middle Rio Grande basin, central New Mexico: U.S. Geological Survey Water-Resources Investigations Report 00-4010, 36 p. **(D2)**
- Asano, T., 1985, ed., *Artificial recharge of groundwater, section III, Groundwater recharge operations*: Boston and London, Butterworth Publishers, p. 357-576. **(D2, E2b)**
- Bartolino, J.R., 1997, Chlorofluorocarbon and tritium age determination of ground-water recharge in the Ryan Flat Subbasin, Trans-Pecos Texas: U.S. Geological Survey Water-Resources Investigations Report 96-4245, 29 p. **(C4, D2, H3)**
- Baumgardner, R.W., and Scanlon, B.R., 1992, Surface fissures in the Hueco Bolson and adjacent basins, West Texas: University of Texas Bureau of Economic Geology, Geological Circular 92-2, 40 p. **(C4, D2, H3)**
- Bouwer, H., 1988, Design and management of infiltration basins for artificial recharge of ground water, *in* Ortega Klett, C.T., ed., *Ground Water Management, Proceedings of the 32nd Annual New Mexico Water Conference*: New Mexico Water Resources Research Institute Report No. 229, p. 111-123. **(D2, E2b)**
- Bouwer, H., 2002, Artificial recharge of groundwater: Hydrogeology and engineering: *Hydrogeology Journal* (2002) v. 10, p. 121-142. **(D2, E2b)**
- Bouwer, H., and Maddock III, T.M., 1997, Making sense of the interactions between groundwater and streamflow: Lessons for water masters and adjudicators: *Rivers*, v. 6, no. 1, p. 19-31. **(D2)**
- Chowdhury, A.H., Uliana, M., and Wade, S., 2008, Ground water recharge and flow characteristics using multiple isotopes: *Ground Water*, v. 46, no. 3, p. 426-413. **(D2, H2, H3)**
- Chuang, F.C., McKee, E.H., Howard, K.A., 2003, Hydrogeologic factors that influence ground water movement in the Desert Southwest United States: U.S. Geological Survey Open-File Report 03-294, 39 p. **(D2, F1)**
- Coes, A.L., and Pool, D.R., 2007, Ephemeral-stream channel and basin-floor infiltration and recharge in the Sierra Vista subwatershed of the Upper San Pedro Basin, southeastern Arizona; *in* Stonestrom, D.A., Constantz, J., Ferre, T., and Leake, S., eds., *Ground-Water Recharge in the Arid and Semiarid Southwestern United States*: U.S. Geological Survey Professional Paper 1703-J, p. 253-311. **(D2, H3)**
- Cohen, P., 1963, Specific yield and particle-size relationships of Quaternary alluvium, Humboldt River Valley near Winnemucca, Nevada: U.S. Geological Survey Water-Supply Paper 1669-M, 24 p. **(D1, D2)**
- Cohen, P., 1966, Water in the Humboldt River Valley near Winnemucca, Nevada: U.S. Geological Survey Water-Supply Paper 1816, 75 p. **(D1, D2)**
- Cohen, P. and others, 1965, *Water Resources of the Humboldt River Valley near Winnemucca, Nevada*: U.S. Geological Survey Water-Supply Paper 1795, 143 p. **(D1, D2)**
- Cunningham, E.E.B., Long, A., Eastoe, C.J., and Bassett, R.L., 1998, Migration of recharge waters downgradient from the Santa Catalina Mountains into the Tucson Basin aquifer: *Hydrogeology Journal*, v. 6, no. 1, p. 94-103. **(D2, H3)**
- Dadakakis, J.S., 2004, Isotopic and geochemical characterization of recharge and salinity in a shallow floodplain aquifer near El Paso, Texas: University of Arizona, master's thesis, 102 p. **(D2, H2)**
- Dillon, P., Zhang, Y., Alley, W., and Vanderzalm, J., 2022, *Managed Aquifer Recharge: Overview and Governance*: IAH Special Publication, 90 p. **(D2, E2b)**
- Döll, P., 2009, Vulnerability to the impact of climate change on renewable groundwater resources: A global-scale assessment: *Environmental Research Letters*, v. 4, no. 3, p. 13. **(C1, D1, D2)**
- Druhan, J.L., Hogan, J.F., Eastoe, C.J., Hibbs, B.J., and Hutchison, W.R., 2008, Hydrogeologic controls on groundwater recharge and salinization: a geochemical analysis of the northern Hueco Bolson aquifer, Texas, USA: *Hydrogeology Journal*, v. 16, no. 2, p. 281-296. **(D2, H1, H2)**

- Earman, S., and Dettinger, M., 2011, Potential impacts of climate change on groundwater resources – A global review: *Journal of Water and Climate Change*, v. 2, no. 4, p. 213-229. **(C1, D1, D2)**
- Eastoe, C.J., 2020. Sources of perennial water supporting critical ecosystems, San Pedro Valley, Arizona: *Environmental & Engineering Geoscience*, v. XXVI, no. 4, p. 463-479. **(C1, D2, H1, H2, H3)**
- Eastoe, C., and Towne, D., 2018, Regional zonation of groundwater recharge mechanisms in alluvial basins of Arizona: Interpretation of isotope mapping: *Journal of Geochemical Exploration*, v. 194, p. 135-145. **(D2, H2, H3)**
- Eastoe, C.J., and Wright, W.E., 2019, Hydrology of mountain blocks in Arizona and New Mexico as revealed by isotopes in groundwater and precipitation: *Geosciences*, v. 9, article 461. **(C1, D2, H2, H3)**
- Feth, J.H., 1964b, Hidden recharge: *Ground Water*, v. 2, no. 4, p.14-17. **(D2)**
- Flint, A.L., Flint, L.E., Hevesi, J.A., and Blainey, J.B., 2004, Fundamental concepts of recharge in the Desert Southwest: A regional modeling perspective, *in* *Groundwater recharge in a desert environment: the southwestern United States*: Washington, DC, American Geophysical Union, Water Science and Application 9, p. 159-184. **(D2)**
- Granados Olivas, A., and Kretzschmar, T., 2001, Uso de sistemas de información Geográfica y sistemas de teledetección en la identificación y mapeo de potenciales zonas de recarga hacia acuíferos del Desierto Chihuahuá: VIII Reunión Nacional sobre Sistemas de Captación de Agua de Lluvia, Cd. Chihuahua, Chih., SEMARNAT [Mexico]. 17 p. **(D2, E1, F3)**
- Haneberg, W.C., Mozley, P.S., Moore, J.C., and Goodwin, L.B., eds., 1999, Faults and subsurface fluid flow in the shallow crust: American Geophysical Union Monograph 113. **(D1, D2)**
- Heilweil, V.M., and Brooks, L.E., eds., 2011, Conceptual model of the Great Basin carbonate and alluvial aquifer system: U.S. Geological Survey, Scientific Investigations Report 2010-5193, 191 p., 2 pls., data. **(D1, D2)**
- Hibbs, B., 2020, Long term climate change and environmental implications of aquifer flow capacity in arid groundwater basins, *in* Ahmad, S., and Murray, R., eds., *Groundwater Sustainability, HydroClimate/Climate Change, and Environmental Engineering*: American Society of Civil Engineers: Reston, VA, USA, p. 89-96. **(D1, D2)**
- Hibbs, B.J., 2022, Commentary and review of modern environmental problems linked to Historic flow capacity in arid groundwater basins: *Geosciences*, v. 12, no. 124, 36 p. **(D1, D2)**
- Hibbs, B.J., and Darling, B.K., 2005, Revisiting a classification scheme for U.S.-Mexico alluvial basin-fill aquifers: *Ground Water*, v. 43, no. 5, p. 750-763. **(D1, D2, F1)**
- Hogan, J.E., Phillips, F.M., and Scanlon, B.R., eds., 2004a, *Groundwater recharge in a desert environment: the southwestern United States*: Washington, DC, American Geophysical Union, Water Science and Application 9, 294 p. **(D2)**
- Hogan, J.E., Phillips, F.M., and Scanlon, B.R., 2004b, Introduction and overview, *in* *Groundwater recharge in a desert environment: the southwestern United States*: Washington, DC, American Geophysical Union, Water Science and Application 9, p. 1-14. **(D2)**
- Hogan, J., Phillips, F., Eastoe, C., Lacey, H., Mills, S., and Oelsner, G., 2012, Isotopic tracing of hydrological processes and water quality along the upper Rio Grande, USA, *in* *Monitoring Isotopes in Rivers: Creation of the Global Network of Isotopes in Rivers (GNIR)*: Tecdoc 1673, International Atomic Energy Agency, Vienna, Austria, p. 111-136. **(D2, H2, H3)**
- Hogan, J.F., Phillips, F.M., Mills, S.K., Hendrickx, J.M.H., Ruiz, J.T., Chesley, J.T., and Asmeron, Y., 2007, Geologic origins of salinization in a semi-arid river: The role of sedimentary basin brines: *Geology*, v. 35, no. 12, p. 1063-1066. **(D2, H2, H3)**
- Hornberger, G.M., Raffensperger, J.P., Wiberg, P.L., and Eshleman, K.N., 1998, *Elements of physical hydrology*: The Johns Hopkins University Press, 302 p. *See Glossary*, p. 277-292. ISBN 0-8018-5856-9 **(A1, D2)**
- Kernodle, J.M., 1992b, Summary of U.S. Geological Survey ground-water-flow models of basin-fill aquifers in the southwestern alluvial basins region, Colorado, New Mexico, and Texas: U.S. Geological Survey Open-File Report 90-361, 81 p. **(D2, H3)**
- Kernodle, J.M., 1996. Simulation of ground-water flow in the Albuquerque Basin, central New Mexico, 1901-95, with projections to 2020: U.S. Geological Survey Water Resources Investigations Report 94-4251. 59 p. **(D1, D2)**
- Kernodle, J.M., McAda, D.P., and Thorn, C.R., 1995. Simulation of Ground-water Flow in the Albuquerque Basin, Central New Mexico: U.S. Geological Survey, Water Resources Investigations Report 94-4251, 114 p. **(D1, D2)**

- Knorr, D.B., 1988, City of El Paso ground water recharge project, *in* Ortega Klett, C.T., ed., Ground Water Management, Proceedings of the 32nd Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 229, p. 87-101. **(D2, E2b)**
- Knorr, D.B., and Cliett, T., 1985, Proposed groundwater recharge at El Paso, Texas, *in* Asano, T., ed., Artificial recharge of groundwater: Boston, Butterworth Publishers, p. 425-479. **(D2, E2b)**
- Leake, S.A., and Prudic, D.E., 1988, Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model: U.S. Geological Survey Open-File Report 88-482, 80 p. **(D2, H3)**
- Logan, H.H., 1984, A ground-water recharge project associated with a flood protection plan in Hudspeth County, Texas – Supportive geologic applications: Texas Christian University, master's thesis, 110 p. **(D2, H3)**
- Manning, A.K., 2011, Mountain-block recharge, present and past, in the eastern Española Basin, New Mexico, USA: *Hydrogeology Journal*, v. 19, no. 2, p. 379-397. **(D2, H3)**
- Markovich, K.H., Manning, A.H., Condon, L.E., and McIntosh, J.C., 2019, Mountain-block recharge: A review of current understanding: *Water Resources Research*, v. 55, p. 8278-8304. **(D2, H2)**
- Markovich, K.H., Condon, L.E., Carroll, K.C., Purtschert, R., and McIntosh, J.C., 2021, A mountain-front recharge component characterization approach combining groundwater age distributions, noble gas thermometry, and fluid and energy transport modeling: *Water Resources Research*, v. 57, p. 1-21. **(D2, H2)**
- Maxey, G.B., and Eakin, T.E., 1949, Ground water in White River Valley, White Pine, Nye, and Lincoln Counties, Nevada: Nevada State Engineer's Office, *Water Resources Bulletin* 8, 59 p. **(D1, D2)**
- Mayer, J.R., and Sharp, J.M., Jr., 1998, Fracture control of regional groundwater flow in a carbonate aquifer in a semi-arid region: *Geological Society of America Bulletin*, v. 110, p. 1657-1671. **(D2, H3)**
- Meixner, T., Manning, A.H., Stonestrom, D.A., Allen, D.M., Ajami, H., Blasch, K.W., Brookfield, A.E., Castro, C.L., Clark, J.F., Gochis, D., Flint, A.L., Neff, K.L., Niraula, R., Rodell, M., Scanlon, B.R., Singha, K., and Walvoord, M.A., 2016, Implications of projected climate change for groundwater recharge in the western United States: *Journal of Hydrology*, v. 534, p. 124-138. **(C1, D2)**
- Mifflin, M.D., 1968, Delineation of Groundwater Flow Systems in Nevada: University of Nevada-Reno, Desert Research Institute, Technical Report Series H-W, *Hydrology and Water Resources Publication* 4, 109 p. **(D1, D2)**
- Mifflin, M.D., 1988, Region 5, Great Basin, *in* Back, W., Rosenshein, J.S., and Seaber, P.R., eds. *Hydrogeology – The Geology of North America: Geological Society of America, Decade of North American Geology*, v. 0-2, p. 69-78. **(D1, D2)**
- Mifflin, M.D., and Hess, J.W., 1979, Regional carbonate flow systems in Nevada: *Journal of Hydrology*, v. 43, p. 217-237. **(D1, D2)**
- Peterson, D.M., and Wilson, J.L., 1988, Variably saturated flow between streams and aquifers: New Mexico Water Resources Research Institute Report No. 233, 289 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-233.html> **(D2, H3)**
- Phillips, F.M., 1994, Environmental tracers for water movement in desert soils of the American Southwest: *Soil Science Society of America Journal*, v. 58, p. 15-24. **(C3, D2)**
- Phillips, F.M., Walvoord, M.A., and Small, E.E., 2004, Effects of environmental change on groundwater recharge in the American Southwest, *in* Hogan, J.F., Phillips, F.M., and Scanlon, B.R., eds., *Groundwater recharge in a desert environment: Water Science and Application 9*: Washington, DC, American Geophysical Union, p. 273-294. **(D2)**
- Phillips, F.M., Hogan, J.F., Mills, S.K., and Hendrickx, J.M.H., 2003, Environmental tracers applied to quantifying causes of salinity in arid-region rivers: Preliminary results from the Rio Grande, southwestern USA, *in* Alsharhan, A.S., and Wood, W.W., eds., *Water resources perspectives: Evaluation, management and policy*: Amsterdam, Elsevier, p. 327-334. **(D2, H2)**
- Phillips, F.M., Campbell, A.R., Kruger, C., Johnson, P.S., Roberts, R., and Keyes, E., 1992, A reconstruction of the response of the water balance in western United States lake basins to climate change: New Mexico Water Resources Research Institute Report No. 269, 167 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-269.html> **(D2, H1)**
- Plummer, L.N., Michel, R.L., Thurman, E.M., and Glynn, P.D., 1993, Environmental tracers for age-dating young ground water, *in* Alley, W.M., ed., *Regional ground-water quality*: New York, Van Nostrand Reinhold, p. 255-294. **(D1, D2)**

- Plummer, L.N., Bexfield, L.M., Anderholm, S.K., Sanford, W.E., and Busenberg, E., 2004, Geochemical characterization of ground-water flow in the Santa Fe Group aquifer system, Middle Rio Grande Basin, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 03-4141, 369 p., with CD-ROM. **(D1, D2, H3)**
- Pyne, R.D.G., 2005, Aquifer storage recovery – A guide to groundwater recharge through wells: Gainesville, FL, ASR Systems LLC, 608 p. ISBN 0-9774337-090000 **(A2, D2, E2b)**
- Reiter, M., 2001, Using precision temperature logs to estimate horizontal and vertical groundwater flow components: *Water Resources Research*, v. 37, no. 3, p. 663-674. **(C4, D2, H3)**
- Scanlon, B.R., 2004, Evaluation of methods of estimating recharge in semiarid and arid regions in the southwestern U.S., *in* Hogan, J.E., Phillips, F.M., and Scanlon, B.R., eds., *Groundwater recharge in a desert environment: the southwestern United States*: Washington, DC, American Geophysical Union, *Water Science and Application* 9, p. 23-4. **(D2)**
- Scanlon, B.R., and Cook, P.G., 2002, Preface: Theme issue on groundwater recharge: *Hydrogeology Journal*, v. 10, no. 1, p. 3-4. **(D2)**
- Scanlon, B.R., Darling, B.K., and Mullican, W.F. III, 2001, Evaluation of Groundwater recharge in basins of Trans-Pecos Texas, *in* Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., *Aquifers of West Texas*: Austin, Texas Water Development Board Report 356, p. 26-40. **(D2)**
- Schmid, W., and Hanson, R.T., 2009, The Farm Process Version 2 (FMP2) for MODFLOW-2005 - Modifications and Upgrades to FMP1: U.S. Geological Survey Techniques in Water Resources Investigations, Book 6, Chapter A32, 102 p. **(D2)**
- Schmid, W., Hanson, R.T., Maddock III, T.M., and Leake, S.A., 2006, User's guide for the Farm process (FMP) for the U.S. Geological Survey's modular three-dimensional finite difference ground-water flow model, MODFLOW-2000: U.S. Geological Survey Techniques and Methods 6-A17, 127 p. **(D2)**
- Schmid, W., Hanson, R.T., Faunt, C.C., and Phillips, S.P., 2008, Hindcast of water availability in regional aquifer systems using MODFLOW's Farm Process: *Proceedings of HydroPredict 2008*, Prague, Czech Republic, September 15-19, 2008, p. 311-314. **(D2)**
- Sharp, J.M., Jr., 2001, Regional groundwater flow systems in basins in Trans-Pecos Texas, *in* Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., *Aquifers of West Texas*: Austin, Texas Water Development Board Report 356, p. 66-75. **(D1, D2)**
- Sigda, J.M., and Wilson, J.L., 2003, Are faults preferential flow paths through semiarid and arid vadose zones?: *Water Resources Research*, v. 39, no. 8, p. 10-1 – 10-14. **(D2, H3)**
- Slichter, C.S., 1899, Theoretical investigation of the motion of ground waters: U.S. Geological Survey Annual Report 19, part 2, p. 295-384. **(D2)**
- Slichter, C.S., 1902, The motions of underground water: U.S. Geological Survey Water-Supply and Irrigation Paper 67, 106 p. **(D2)**
- Slichter, C.S., 1905a, Field measurements of the rate of movement of underground waters: U.S. Geological Survey Water-Supply and Irrigation Paper 140, 122 p. **(D2, G1)**
- Small, E.E., 2005, Climatic controls on diffuse groundwater recharge in arid and semiarid environments of the southwestern United States: *Water Resources Research*, v. 41, p. 18. **(C1, D2)**
- Spiegel, Z.E., 1962, Hydraulics of certain stream-connected aquifer systems: New Mexico State Engineer Special Report, 105 p. **(D2, G2)**
- Stallman, R.W., 1963, Computation of ground-water velocity temperature data: U.S. Geological Survey Water-Supply Paper 1544-H, p. 33-46. **(D2)**
- Stephens, D.B., Ewing, A., and Moore, S., 2018, Managed aquifer recharge, *in* *Groundwater: State of the Science and Practice*: Westerville, OH, National Ground Water Association Press, p. 63-66. **(D2, E2b)**
- Stone, W.J., 1988 [revised 1991], Recharge at the White Sands hazardous-waste facility, Otero County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report 346, 22 p. **(D2, H3)**
- Stonestrom, D.A., Constantz, J., Ferré, T.P.A., and Leake, S.A., eds., 2007, Ground-water recharge in the arid and semiarid southwestern United States: U.S. Geological Survey Professional Paper 1703, 414 p. **(A2, D2)**
- Talbot, W.R., 2003, El Paso Water Utilities, Canutillo underflow evaluation; Revised estimates of underflow capture; 1995 to 2002: Denver, Colo., Bureau of Reclamation Technical Services Center, Water Resources Services Division, Groundwater and Drainage Group, Technical Memorandum D-8550, 25 p. **(D2, H3)**
- Theis, C.V., 1935a, The relation between lowering the piezometric surface and the rate and duration of discharge of well using ground water storage: *American Geophysical Union Transactions*, 16th Annual Meeting, part 2, p. 519-524. **(D1, D2)**

- Theis, C.V., 1935b, The source of water derived from wells: Essential factors controlling the response of an aquifer to development: *Civil Engineer*, v. 10, p. 277-280. **(D1, D2)**
- Theis, C.V., 1938, Ground water in the middle Rio Grande valley in [U.S.] Natural Resources Committee, Regional Planning part VI---The Rio Grande joint investigations in the upper Rio Grande basin in Colorado, New Mexico, and Texas, 1936-1937: Washington, D.C., U.S. Government Printing Office, v. 1, part 2, p. 268-291. **(D1, D2)**
- Thorn, C.R., McAda, D.P., and Kernodle, J.M., 1993, Geohydrologic framework and hydrologic conditions in the Albuquerque Basin, central New Mexico: U.S. Geological Survey, Water-Resources Investigations Report 93-4149, 106 p. **(D1, D2)**
- Tillman, F.D., Pool, D.R., and Leake, S.A., 2015, The effect of modeled recharge distribution on simulated groundwater availability and capture: *Groundwater*, v. 53, no. 3, p. 378-388. **(D2)**
- Wahi, A.K., Hogan, J.F., Ekwurzel, B., Baillie, M.N., Eastoe, C.J., 2008. Geochemical quantification of semiarid mountain recharge: *Ground Water*, v. 46, p. 414-425. **(D2, H2, H3)**
- Waltemeyer, S.D., 1994, Methods for estimating streamflow at mountain fronts in southern New Mexico: U.S. Geological Survey Water-Resources Investigations Report 93-4213, 17 p. **(D1, D2)**
- Waltemeyer, S.D., 2001, Estimates of mountain-front streamflow available for potential recharge to the Tularosa Basin, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 01-4013, 8 p. **(D1, D2)**
- Waltemeyer, S.D., 2008, Analysis of the magnitude and frequency of peak discharge and maximum observed peak discharge in New Mexico and surrounding areas: U.S. Geological Survey Scientific Investigations Report 2008-5119, 105 p. **(D1, D2)**
- Walvoord, M.A., and Scanlon, B.R., 2004, Hydrologic processes in deep vadose zones in interdrainage arid environments, *in* Hogan, J.E., Phillips, F.M., and Scanlon, B.R., eds., 2004, Groundwater recharge in a desert environment: the southwestern United States: Washington, DC, American Geophysical Union, Water Science and Application 9, p. 15-28. **(D2)**
- Wasiolek, M., 1995, Subsurface recharge to the Tesuque aquifer system from selected drainage basins along the western side of the Sangre de Cristo Mountains near Santa Fe, New Mexico. U.S. Geological Survey Water Resources Investigations Report 94-4072, 43 p. **(D2, H3)**
- Wenzel, L.K., 1942, Methods for determining permeability of water-bearing materials, with special reference to discharging-well methods: U.S. Geological Survey, Water-Supply Paper 887, 192 p. **(A2, D2)**
- Whitworth, T.M., 1995, Hydrochemical computer modeling of proposed artificial recharge of the upper Santa Fe Group aquifer, Albuquerque New Mexico: *New Mexico Geology*, v. 17, no. 4, p. 72-78. **(D2, E2b)**
- Wierenga, P.J., Hills, R.G., and Hudson, D.B., 1991, The Las Cruces Trench Site: Experimental Results and One-Dimensional Flow Predictions. *Water Resources Research*, v. 27, p. 2695-2705. **(D2, H3)**
- Wierenga, P.J., Hudson, D.B., Hills, R.G., Porro, I., Kirkland, M.R., and Vinson, J., 1990, Flow and Transport at the Las Cruces Trench Site; Experiment 1 and 2: U.S. Nuclear Regulatory Commission Report, NUREG/CR-5607, 413 p. **(D2, H3)**
- Wilson, J.L., and Guane, H., 2004, Mountain-block hydrology and mountain-front recharge, *in* Groundwater recharge in a desert environment: the southwestern United States: Washington, DC, American Geophysical Union, Water Science and Application 9, p. 113-137. **(D2)**
- Yeh, T.C. (T.-C. Jim), Khaleel, R., and Carroll, K.C., 2015, Flow through heterogeneous geologic media: New York, Cambridge University Pres., 343 p. ISBN 978-1-107-07613-6 **(A1, D2)**
- Yager, R.M., 1998, Detecting influential observations in nonlinear regression modeling of groundwater flow. *Water Resources Research*, v. 34, no. 7, p. 1623-1633. **(D2)**

E. GIS/Remote Sensing and GW-Resource Management/Planning

E1. GIS/Remote Sensing

- Czerniak, R., 1996, U.S.-Mexico border geographic information system: New Mexico Geographic Information Council, Inc. (NMGIC), The Map Legend, v. 7, issue 2, p. 1. **(E1)**
- Czerniak, R., and Garber, D., 1996, United States-Mexico border geographic information system, *in* Ortega Klett, C.T., ed., Proceedings of the 40th Annual New Mexico Water Conference, New Mexico Water Resources Research Institute Report No. 297, p. 39-46. **(E1)**
- Gillespie, C.L., 2002, Integrated geophysical, geological and remote sensing study of selected basins in the Rio Grande rift: University of Texas at El Paso, doctoral dissertation, 185 p. **(C4, E1)**

- Granados Olivas, A., 2000, Relationships between Landforms and Hydrogeology in the Lower Casas Grandes Basin, Ascension, Chihuahua, Mexico: Department of Agronomy and Horticulture, New Mexico State University, doctoral dissertation, 292 p. **(E1, F3, H1)**
- Granados Olivas, A., and Kretzschmar, T., 2001, Uso de sistemas de información Geográfica y sistemas de teledetección en la identificación y mapeo de potenciales zonas de recarga hacia acuíferos del Desierto Chihuahua: VIII Reunión Nacional sobre Sistemas de Captación de Agua de Lluvia, Cd. Chihuahua, Chih., SEMARNAT [Mexico]. 17 p. **(D2, E1, F3)**
- Granados Olivas, A., and Monger, H.C., 1999, Remote Sensing Technology for Development Planning Along the U.S.-Mexico Border: Hydrogeology and Geomorphology, *in* Herrera, E. and Mexal, J., eds., Ensuring Sustainable Development of Arid Lands Through Time: Las Cruces, New Mexico Academy of Science Journal, v. 39, p. 123-137. **(E1, E2, F1)**
- Granados, A., Creel, B., Kennedy, J., and Aldouri, R., 2001, Water planning GIS for the Paso del Norte region, *in* Aldama, A., Aparicio, F.J., and Equihua, R., eds. First International Symposium on Transboundary Waters Management, Proceedings: Asociación Mexicana de Hidráulica, Avances en Hidráulica 10, p.147-154. **(E1, E2, F1)**
- Granados Olivas, A., Brown, C., Greenlee, J., Creel, B., Hawley, J.W., Kennedy, J., Dena-Ornelas, O., and Hurd, B., 2006, Geographic information systems at the Paso del Norte region. The academic accomplishments and challenges for a Transboundary water resources GIS cooperation, *in* Anderson, K.S.J., ed., Science on the Border: New Mexico Journal of Science, v. 46, p. 45-56. **(E1, F1)**
- Granillo, J.A., Jr., 2004, A gravimetric study of the structure of the northeast portion of the Hueco Bolson, Texas employing GIS technology: University of Texas at El Paso, master's thesis, 127 p. **(C4, E1)**
- Hoffer, J.M., Penn, B.S., Quezada, O.A., and Morales, M.A., 1998, Qualitative age relationships of Late Cenozoic cinder cones, southern Rio Grande rift, utilizing cone morphology and Landsat thematic imagery: New Mexico Geological Society Guidebook 49, p. 123-128. **(C2b, E1, F2)**
- Hurd, B., Leary, N., Jones, R., and Smith, L.B., 1999, Relative regional vulnerability of water resources to climate change: Journal of the American Water Resources Association, v. 35, no. 6, p. 1399-1410. **(C1, E1, E2)**
- Hurd, B., Brown, C., Greenlee, J., Granados Olivas, A., and Hendrie, M., 2006, Assessing water-resource vulnerability for arid watersheds: GIS-based research in the Paso del Norte region, *in* Anderson, K.S.J., ed., Science on the Border: New Mexico Journal of Science, v. 46, p. 203-235. **(E1, E2, F1)**
- INEGI, 1982, Ciudad Juárez H13-1, Cartas Topográfica: SPP Programación y Presupuesto. Coordinación General de los Servicios Nacionales de Estadística, Geografía e Informática. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(E1, F3)**
- INEGI, 1995, Ciudad Juárez H13-1, Espacio mapa a Ciudad Juárez, Hoja H13-1; EOSAT Inc. Images, fecha de las imágenes de Febrero a Abril 1993: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(E1, F3)**
- INEGI, n.d.1, Ciudad Juárez-H13A25, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.2, El Barreal-H13A33, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.3, El Congelado-H13A34, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.4, El Sancho-H13A44, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.4, Los Chontes-H13A24, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.5, Nuevo Cuauhtémoc-H13A24, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.6, Ojos de Santa Maria-H13A43, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- International Boundary and Water Commission (IBWC), 2011, Acuífero Conejos-Médanos: Binational Waters map. https://www.ibwc.gov/wp-content/uploads/2022/12/Conejos_Medanos_Aquifer.jpg **(E1, F3)**
- Keller, G.R., Penn, B.S., and Harder, S.H., 1998, Las Cruces country: a geophysical and remote sensing perspective: New Mexico Geological Society Guidebook 49, p. 87-91. **(C4, E1)**
- Kelley, R.E., 2015, New Mexico Geothermal Play Fairway Analysis from LANL. Geothermal Data Repository. <https://gdr.openei.org/submissions/597> **(C4, E1, H2)**

- Kennedy, J.F., 2004, Application of GIS and remote sensing methods to the paleohydrography of the Paso del Norte region. *ETD Collection for University of Texas, El Paso*. AAI3138516. (C1, E1, F1, I2)
- Lee, W.T., 1922, The face of the earth as seen from the air: A study in the application of airplane photography to geography: American Geographical Society, Special Publication No. 1, 110 p. (D1, E1)
- Martin, J., Kennedy, J.F., Nolen, B., and Jones, G., 2000, Converting New Mexico Bureau of Mines and Mineral Resources Geologic Map 53 to digital form (abstract of poster presentation): New Mexico Bureau of Mines and Mineral Resources, New Mexico Geology, v. 22, no. 2, p. 55. (E1)
- Morrison, R.B., 1969, Photointerpretive mapping from space photographs of Quaternary geomorphic feature and soil associations in northern Chihuahua and adjoining New Mexico and Texas: New Mexico Geological Society Guidebook 20, p. 116-129. (C2a, C3, E1, F1, I2)
- New Mexico Geographic Information Council, Inc. (NMGIC), 1996, TRIP: Transboundary Resource Inventory Project: The Map Legend, v. 7, issue 2, p. 5-6. (E1, F1)
- NMOSE-GIS, NM Office of the State Engineer – GIS-Geographic Information System, webpage: <https://www.ose.nm.gov/GIS/index.php> (E1)
- Ritchie, A.B., Hanson, R.T., Galanter, A.E., Boyce, S.E., Damar, N.A., Shephard, Z.M., and Tillman, F.D., 2018, Digital hydrologic and geospatial data for the Rio Grande transboundary integrated hydrologic model and water-availability analysis, New Mexico and Texas, United States, and Northern Chihuahua, Mexico: U.S. Geological Survey data release. (D1, E1, F1)
- Tremblay, T.A., 1999, ARCINFO data base for geologic data of the west Hueco Bolson, El Paso region, Texas: University of Texas at Austin, Bureau of Economic Geology, open-file digital data base. (C2b, E1)
- U.S. Army Map Service-Corps of Engineers (USAMS-CE), 1963, El Paso Sheet – Edition 1-AMS, NH 13-1 1:250,000 scale. Prepared within the collaborative program of the Departamento Cartográfico Militar of Mexico, Inter-American Geodetic Survey, and Army Map Service, Corps of Engineers, United States Army. See *INEGI 1982*. (E1, F1)
- U.S. Department of Interior-Geological Survey, 1982, Hatch, New Mexico *metric* topographic map N3230-W10700/30x60, scale 1:100,000. (E1)
- U.S. Department of Interior-Geological Survey, 1987, Las Cruces, New Mexico-Texas *metric* topographic map N3200-W10600/30x60, scale 1:100,000. (E1)
- U.S. Department of Interior-Geological Survey, 1992, Columbus, New Mexico-Chihuahua *metric* topographic map N3130-W10700/30x60, scale 1:100,000 (2006 BLM Edition). (E1)
- U.S. Department of Interior-Geological Survey, 1995, White Sands, New Mexico-Chihuahua *metric* topographic map N3230-W10600/30x60, scale 1:100,000. (E1)
- U.S. Department of Interior-Geological Survey, 2000, El Paso, Texas-New Mexico-Chihuahua *metric* topographic map N3130-W10600/30x60, scale 1:100,000. (E1)
- U.S. Department of Interior-Geological Survey, 2001, Deming, New Mexico *metric* topographic map N3200-W10700/30x60, scale 1:100,000. (E1)
- U.S. Reclamation Service, 1914, Maps of Mesilla Valley, showing various known river channels: U.S. Department of Interior, Bureau of Reclamation, Rio Grande Project. (B3, E1, G1)

E2. Resource Management/Planning

- Ahadi, R., Samani, Z., and Skaggs, R., 2013, Evaluating on-farm irrigation efficiency across the watershed – A case study of New Mexico's Lower Rio Grande Basin: *Agricultural Water Management*, v. 124, p. 52-57. (E2)
- Aldama, A., Aparicio, F.J., and Equihua, R., eds., 2002, First International Symposium on Transboundary Waters Management, Proceedings: Asociación Mexicana de Hidráulica, Avances en Hidráulica 10, México, D.F., 650 p., ISBN 968-5536-08-2 (E2, F1)
- Archuleta, E.G., 1995, Effective water planning for the Las Cruces/El Paso/Juarez area, in Ortega Klett, C.T., ed., Proceedings of the 39th Annual New Mexico Water Conference, New Mexico Water Resource Research Institute Report No. 290, p. 245-259. (E2, F1)
- Archuleta, E., 2010, How cooperative planning and technology have led to successful water management in the Paso del Norte region: *Journal of Transboundary Water Resources*, v. 1, p. 11-30. <https://nmwrrr.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> (E2)
- Ashworth, J.B., 1990, Evaluation of ground-water resources in El Paso County, Texas: Texas Water Development Board Report 324, 25 p. (E2, H1)
- Ashworth, J.B., and Nordstrom, P.L., 1989, Public supply ground-water use in western Texas: Texas Water Development Board Report 311, 163 p. (E2)

- Bahr, T., 1998, An overview of New Mexico's water resources, in Herrera, E., Bahr, T.G., Ortega Klett, C.T., and Creel, B.J., eds., Water resources issues in New Mexico: New Mexico Journal of Science, v. 38. p. 3-34. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> (E2)
- Baker, W.W., 1943, Final report on the construction of the canalization feature of the Rio Grande Canalization Project: International Boundary Commission (IBC), p. 4, 16, 18, 32. *See Glover 2018.* (B3, E2)
- Balleau, W.P., 1988, Water approximation and transfer in a general hydrogeologic system: Natural Resources Journal, v. 29, no. 2, p. 269-291. (E2, H1, H3)
- Beck, R.W., 2004, Guidance Manual for Reverse Osmosis Desalination Facility Permitting Requirements in Texas: Prepared for Texas Water Development Board, November 23, 2004, 86 p. (C4, E2)
- Beene, D., Fuchs, E., Rinehart, E., and Lin, Y. (Abstract), 2020, Feedbacks of irrigator decisions, hydrologic change and long-term water planning, Mesilla Valley, N.M.: Program with abstracts, Water, Energy, and Policy in a Changing Climate Conference, National Groundwater Association (NGWA), Albuquerque, NM, February 24-25, 2020. (E2)
- Bradley, M.D., and DeCook, K.J., 1978, Ground water occurrence and utilization in the Arizona-Sonora border regions: Natural Resources Journal, v. 18, no. 1, p. 29. (E2, E3)
- Brown, C., Sheng, Z., and Rich, M., 2004, Paso del Norte Watershed Council Coordinated Water Resources Database Project: New Mexico Water Resources Research Institute and Texas Water Resources Institute, Report No. 327. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-327.html> (E2)
- Burkholder, J.L., 1919, Drainage works of the Rio Grande Irrigation Project: Engineering News Record, v. 83, p. 543-549. (E2)
- Charbeneau, R.J., 1982, Groundwater resources in the Texas Rio Grande basin: Natural Resources Journal, v. 22, p. 957-970. (E2, E3, F1)
- Chávez, O.E., 2000, Mining of Internationally Shared Aquifers: The El Paso-Juarez Case, Natural Resources Journal, v. 40, issue 2 (The La Paz Symposium on Transboundary Groundwater Management on the U.S. - Mexico Border, p. 237-260. (E2, E3)
- City of Las Cruces, 2016, Water resources – Where does our water come from? (E2)
- Clark, I.G., 1987, Water in New Mexico: University of New Mexico Press, 839 p. (A1, B3, E2)
- Clark, R.E., 1965, Groundwater management: Law and local response: Arizona Law Review, v. 6, p. 178, 189. (E2, E3)
- Clark, R.E., 1978, Institutional Alternatives for Managing Groundwater Resources: Notes for a Proposal, Natural Resources Journal, v. 18, no. 1 (Symposium on U.S.-Mexican Transboundary Resources, Part II), p. 153-161. (E2, E3)
- Cornell University Law School Legal Information Institute, ND, United States-Mexico Transboundary Aquifer Act, 2006, Public Law no. 109-448, 120 Statute 3328, accessed October 22, 2015 at https://www.law.cornell.edu/topn/united_states-mexico_transboundary_aquifer_assessment_act (E2, F1)
- Creel, B.J., 2010, Research needs in the U.S. portion of the Rio Grande watershed: Journal of Transboundary Water Resources, v. 1, p. 31-41. <https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> (C1, E2, E3)
- Daniel B. Stephens and Associates, Inc. (DBSAI), 2010, Evaluation of Rio Grande salinity San Marcial, New Mexico to El Paso, Texas: Report (pdf) prepared for the New Mexico Interstate Stream Commission and New Mexico Environment Department, June 30, 2019, 202 p. (C4, E2, H2)
- Davis, M.E., and Leggat, E.R., 1967, Preliminary results of the investigation of the saline-water resources in the Hueco bolson near El Paso, Texas: U.S. Geological Survey Open-File Report 67-79, 27 p. (E2, H2)
- Day, J.C., 1978, International aquifer management: The Hueco Bolson on the Rio Grande River: Natural Resources Journal, v. 18, p. 163-180. (E2, E3, F2)
- Dinwiddie, G.A., 1967, Rio Grande basin: Geography, geology, and hydrology, in Water Resources of New Mexico: Santa Fe, New Mexico State Planning Office, p. 129-142. (E2, I1)
- Dinwiddie, G.A., Mourant, W.A., and Basler, J.A., 1966, Municipal water supplies and uses, southwestern New Mexico; New Mexico State Engineer Technical report 29D, Santa Fe, New Mexico, p. 17-34. (E2)
- Eastoe, C.J., and Clark, B., 2018, Understanding the water resources of a small rural community: Citizen science in Cascabel, Arizona: Journal Contemporary Water Research and Education, v. 164, p. 19-41. (E2)
- El Paso Water (EPW), ND, Water Resources-El Paso Water: https://epwater.org/our_water/water_resources (E2, E2a, E2b, F2)
- El Paso Water Utilities, 2007, Water: Water Resources, accessed for reproduction in Teeple (2017), August 2014 at https://epwater.org/our_water/water_resources (E2, F1)

- Esslinger, G.L., 1996, Water development on the Lower Rio Grande: The Elephant Butte Project, *in* Ortega Klett, C.T., ed., *Reaching the Limits: Stretching the Resources of the Lower Rio Grande*, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 13-19. **(B3, E2, E3)**
- Esslinger, G.L., 1998, Water politics in southern New Mexico: *New Mexico Journal of Science*, v. 38. p. 83-103. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> **(E2, E3)**
- Esslinger, G., 2021, Confronting water shortages on the Lower Rio Grande, *New Mexico Water Dialogue*, Dialogue Newsletter – June 2021. <https://nmwaterdialogue.org/dialogue-newsletter-june-2021/> **(E2, E3)**
- Estepp, J.D., 1990, Ground water protection and management strategies for El Paso County: Texas Water Commission Unpublished Report, 34 p. **(E2)**
- Finch, S.T., Jr., 1999, Results from installation of ground-water monitoring system, and proposed ground-water monitoring plan, Las Cruces Landfill, Las Cruces, New Mexico: Consultants report prepared by John Shomaker & Associates for the City of Las Cruces, 25 p. **(E2, H1, H2)**
- Flannigan, K.G., 2007, Surface water management: Working within the legal framework: *Natural Resources Journal*, v. 47, no. 3, p. 515-523. *1938 Rio Grande Compact* **(B3, E2, E3)**
- Flores Mata, G., and six others, 1973, Informe complementario del Proyecto de Rehabilitación del Distrito de Riego del Valle de Juárez: El presente estudio fue elaborado por Personal Técnico de las Direcciones Generales de Estudios y Planeación: Secretaría de Recursos Hidráulicos, Jefatura Irrigación y Control de Ríos, Dirección de Agrología, Serie Estudios Publicación Numero 6. variously paged. **(E2, F3)**
- Gatewood, J.S., Wilson, A., Thomas, H.E., and Kister, L.R., 1964, General effects on water resources of drought in the Southwest, 1942-1956: U.S. Geological Survey Professional Paper 372-B, p. B1-B55. **(C1, D1, E2)**
- Geosoft, 2016, Oasis montaj application help system: Geosoft. <http://www.geosoft.com/products/oasis-montaj/> VOXEL modeling **(D1, E2)**
- Glennon, R., 2002, *Water follies: Groundwater pumping and the fat' of America's fresh waters* – Chapter 15. The Tragedy of Law and the Commons [p. 209-224]: Washington DC, Island Press, 314 p. ISBN 1-55963-223-2 **(A2, E2)**
- Glover, A., 2018, Levees of the Hatch and Mesilla Valleys: N.M. Geological Society Guidebook 69, p. 63-64. *See Baker 1943*. **(B3, E2)**
- Granados Olivas, A., 2010, Future solutions: Research needs in the Mexican section of the Rio Grande (Bravo) watershed: *Journal of Transboundary Water Resources*, v. 1, p. 147-157. <https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E2, F3)**
- Granados Olivas, A., and Monger, H.C., 1999, Remote Sensing Technology for Development Planning Along the U.S.-Mexico Border: Hydrogeology and Geomorphology, *in* Herrera, E. and Mexal, J., eds., *Ensuring Sustainable Development of Arid Lands Through Time*: Las Cruces, New Mexico Academy of Science Journal, v. 39, p. 123-137. **(E1, E2, F1)**
- Granados Olivas, A., Creel, B., Kennedy, J., and Aldouri, R., 2001, Water planning GIS for the Paso del Norte region, *in* Aldama, A., Aparicio, F.J., and Equihua, R., eds. *First International Symposium on Transboundary Waters Management*, Proceedings: Asociación Mexicana de Hidráulica, *Avances en Hidráulica* 10, p. 147-154. **(E1, E2, F1)**
- Granados Olivas, A., Creel, B., Sánchez-Flores, E., Chávez, J., and Hawley, J.W., 2012, Thirty years of groundwater evolution – Challenges and opportunities for binational planning and sustainable management of the Paso del Norte watersheds, *in* Lee, E., and Ganster, P., *The U.S.-Mexican border environment: Progress and challenges for sustainability*: Southwest Consortium for Environmental Research and Policy, SCERP Monograph Series, no. 16, San Diego State University Press, p. 201-217. ISBN 0-925613-53-3 **(E2, F1)**
- Granados Olivas, A., Sánchez-Flores, E., Rojas-Villa Lobos, H.L., Chávez, J., Hawley, J., and Creel, B., 2009, Historia y resultados del programa de intercambio de información entre México y Estados Unidos referente a la temática de agua subterránea: Casa de la región Paso del Norte (Chihuahua-Nuevo México-Texas), *in* Plenge-Tellechea, F. y Pérez-León, J.A., coordinadores, *Ciencia en la frontera: Revista de ciencia y tecnología de la UACJ*, v. VII, no. 4, p. 63-71. **(E2, F1)**
- Harris, L.G., 1996, The Developers: Controlling the Lower Rio Grande 1890-1980, *in* Ortega Klett, C.T., ed., *Reaching the Limits: Stretching the Resources of the Lower Rio Grande*, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 7-12. **(A2, B3, E2, E3)**
- Harris, L.G., 2012, Whose water is it anyway? Anatomy of the water war between El Paso, Texas and New Mexico, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 227-253. ISBN 978-0-86524-902-5 **(A2, B3, E2, E3)**

- Hawley, J.W., and Love, D.W., 1981, Overview of geology as related to environmental concerns in New Mexico, *in* Wells, S.G., and Lambert, W., eds., *Environmental geology and hydrology in New Mexico*: NM Geological Society, Special Publication No. 10, p. 1-10. **(A2, E2)**
- Hathaway, D.L., 2011, Transboundary groundwater policy: Developing approaches in the western and southwestern United States. *Journal of the American Water Resources Association (JAWRA)*, v. 47, no. 1, p. 103-113. **(E2, F1)**
- Hayton, R.D., 1978a, Institutional policies for U.S.-Mexico groundwater management: *Natural Resources Journal*, v. 18, no. 1 (Symposium on U.S.-Mexican Transboundary Resources, Part II), p. 201-212. **(E2, E3, F1)**
- Hayton, R.D., 1978b, The ground water legal regime as instrument of policy objectives and management requirements, *in* ANNALES JURIS AQUARUM II: Caracas, Venezuela; 2nd International Conference on Water Law and Administration (Feb. 1976), p. 8-14. **(E2, E3, F1)**
- Herrera, E., Bahr, T.G., Ortega Klett, C.T., and Creel, B.J., eds., 1998, Water resources issues in New Mexico: *New Mexico Journal of Science*, v. 38, 360 p. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> **(E2)**
- Horsburgh, P., 1986, Urbanization and the Chihuahuan Desert region *in* *Invited papers from the Second Symposium on Resources of the Chihuahuan Desert Region – United states and Mexico II: Alpine, Texas, Chihuahuan Desert Research Institute*, October, 1983, p. 159-172. **(E2)**
- Hurd, B., Leary, N., Jones, R., and Smith, L.B., 1999, Relative regional vulnerability of water resources to climate change: *Journal of the American Water Resources Association*, v. 35, no. 6, p. 1399-1410. **(C1, E1, E2)**
- Hurd, B., Brown, C., Greenlee, J., Granados Olivas, A., and Hendrie, M., 2006, Assessing water-resource vulnerability for arid watersheds: GIS-based research in the Paso del Norte region, *in* Anderson, K.S.J., ed., *Science on the Border*: *New Mexico Journal of Science*, v. 46, p. 203-235. **(E1, E2, F1)**
- INEGI, 2010, Población total, municipio Juárez, Chihuahua: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México, accessed September 2014 at www.inegi.org.mx/sistemas/mexicocifras/default.aspx?ent=08 **(E2, F3)**
- International Boundary Commission (IBC), 1935, Final Report: Control and canalization of the Rio Grande, Caballo Dam, New Mexico to El Paso, Texas: p. 5. *See Glover 2018.* **(E2)**
- International Boundary Commission (IBC), 1936, Final Report: Control and canalization of the Rio Grande, Caballo Dam site, New Mexico to Courchesne Bridge at El Paso, Texas: p. 2-3. *See Glover 2018.* **(E2)**
- Journel, A.G., and Huijbregts, C.J., 1978, *Mining geostatistics*: New York, Academic Press, 600 p. **(D1, E2)**
- Kelley, S., Augusten, I., Mann, J., and Katz, L., 2007, History of Rio Grande reservoirs in New Mexico: Legislation and litigation: *Natural Resources Journal*, v. 47, no. 3, p. 525-613. **(B3, E2)**
- King, J.P., 2015, Balancing agricultural use of surface water and groundwater along the Rio Grande: *New Mexico Water Resources Research Institute 60th Annual New Mexico Water Conference Proceedings*, Taos, N. Mex., October 8-9, 2015, p. 79-84. **(E2)**
- King, J.P., and Maitland, J., 2003, *Water for River Restoration: Potential for Collaboration between Agricultural and Environmental Water Users in the Rio Grande Project Area: Report prepared for Chihuahuan Desert Program, World Wildlife Fund.* **(E2)**
- Lansford, R.R., Lucero, D., Gore, C., Wilken, W.W., Nedom, R., Lucero, A.A., and Schultz, J., 1997, *Irrigation water sources and cropland acreages in New Mexico, 1994-1996*: New Mexico State University, Agricultural Experiment Station Technical Report 29. **(E2)**
- Lee, E., and Ganster, P., eds., 2012, *The U.S.-Mexican border environment: Progress and challenges for sustainability*: Southwest Consortium for Environmental Research and Policy, SCERP Monograph Series, no. 16, 453 p., ISBN 0-925613-53-3 **(E2, E3)**
- Lippincott, J.B., 1939, Southwestern border water problems: *American Water Works Association Journal*, v. 31, no. 1, p. 1-29. **(E2, F1)**
- Lloyd, W.J., 1982, Growth of the municipal water system in Ciudad Juarez, Mexico: *Natural Resources Journal*, v. 22, p. 943-954. **(E2, F3)**
- Lloyd, W.J., and Marston, R.A., 1985, Municipal and industrial water supply in Ciudad Juárez, Mexico: *American Water Resources Association, Water Resources Bulletin*, v. 21, no. 5, p. 841-849. **(E2, F3)**
- Lowery, N.A., 1995, Binational water management, a case study of the Binational Water Program/Program Binacional de Agua for the El Paso/Ciudad Juarez Region, *in* Jensen, R., ed., *Proceedings of the 24th Water for Texas Conference, Research Leads the Way*, p. 625-633. **(E2)**
- Marin, L.E., 2014, Public participation in Mexico's water management . . . or not? Guest Editorial: *Groundwater*, v. 52, no. 6, p. 813-814. **(E2)**

- Marston, R.A., and Lloyd, W.J., 1985, River budget for the Rio Grande-El Paso-Juarez Valley: *Journal of Arid Environments*, v. 8, p. 109-119. **(E2, F1)**
- Marston, R.A., Lloyd, W.J., and Peeples, W.J., 1983, Water resource development options for southeast El Paso Valley. Report prepared for Horizon Communities Improvement Association, El Paso, Texas, 127 p. **(E2, F1)**
- McCoy, A.M., and Peery, R.L., 2008, City of Las Cruces 40-year water development plan: John Shomaker and Associates, Inc., 515 p. **(E2)**
- McHarg, I.L., 1969, *Design with Nature*: New York, NY, Doubleday/Natural History Press, 197 p. ISBN 13: 978-0471114604. See Steiner et al. 2019. **(A2, E2)**
- McPhee, J., 1989, *The Control of Nature*: New York, Farrar, Strauss and Giroux, 272 p. ISBN 0-374-52259-6 **(A2, E2)**
- Mueller, J.E., 1975, *Restless river: International law and the behavior of the Rio Grande*: Texas Western Press, University of Texas at El Paso, 155 p. **(A2, B3, E2, F1)**
- Mumme, S.P., 1994, The North American Free Trade Agreement: The Environmental Side Agreement and Parallel Bilateral Border Accords: *Transboundary Resources Report*, v. 8, no. 3, p. 1-3. **(E2, E3, F1)**
- Mumme, S.P., 2000, Minute 242 and beyond: Challenges and opportunities for managing transboundary groundwater on the Mexico-US Border: *Natural Resources Journal*, v. 40, no. 2, p. 341-378. **(E2, E3, F1)**
- Mumme, S.P., 2010, Environmental governance in the Rio Grande watershed: Binational institutions and the transboundary water crisis - *An agenda for strengthening binational water governance along the Rio Grande*: *Journal of Transboundary Water Resources*, v. 1, p. 43-68.
<https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E2, E3, F1)**
- Mumme, S., 2019, The 1944 U.S.-Mexico Water Treaty as a Constitutional Document; Rice University's Baker Institute for Public Policy: Houston, TX, USA, p. 15. **(E2, E3, F1)**
- Muñoz-Meléndez, G., Quintero-Núñez, M., and Sweedler, A., 2012, Energy for a sustainable border region in 2030, in Lee, E., and Ganster, P., *The U.S.-Mexican border environment: Progress and challenges for sustainability*: Southwest Consortium for Environmental Research and Policy, SCERP Monograph Series, no. 16, San Diego State University Press, p. 289-325. **(E2, E3, F1)**
- National Ground Water Association (NGWA), 2010, Brackish groundwater: Westerville, OH, National Ground Water Association Information Brief. **(A1, D1, E2)**
- National Ground Water Association (NGWA), 2010, Brackish groundwater: Westerville, OH, National Ground Water Association Information Brief. **(A1, D1, E2)**
- Ortega Klett, C.T., ed., 2000, *The Rio Grande Compact: It's the Law!*: Proceedings of the 44th Annual New Mexico Water Conference, New Mexico Water Resources Research Institute Report No. 310, 199 p. **(B3, E2, E3)**
- Ortega Klett, C.T., ed., 2012, *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, 288 p. ISBN 978-0-86524-902-5 **(A2, E2, E3)**
- Pacheco, J., 2010, Infrastructure benefits both sides of the border: *Albuquerque Journal-BUSINESS OUTLOOK – Business Across the Border*, Monday, May 24, 2010, p. 20. **(A3, E2, F1)**
- Parcher, J., and Hernández, A., 2008, U.S.-Mexico Border Geographic Information System: U.S. Department of the Interior – U.S. Geological Survey Fact Sheet 2008-3069, 4 p. **(E2, F1)**
- Parcher, J.W., Woodward, D.G., and Duval, R.A., 2010, A descriptive overview of the Rio Grande-Rio Bravo watershed: *Journal of Transboundary Water Resources*, v. 1, p. 159-177.
<https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E2, F1)**
- Paso del Norte Water Task Force (PdNWTF), 2001, Water planning in the Paso del Norte: Toward regional coordination: Paso del Norte Water Task Force Report, 31 p. **(E2, F1)**
- Patterson, J.L., 1965, Magnitude and frequency of floods in the United States—Part 8, western Gulf of Mexico basins: U.S. Geological Survey Water-Supply Paper 1682, p. 419-422. **(E2)**
- Powell, J.W., 1885, *On the Organization of Scientific Work of the General Government*: Extracts from the testimony taken by the Joint Commission of the Senate and House of Representatives to “consider the present organization of the Signal Service, Geological Survey, Coast and Geodetic Survey, and the Hydrographic Office of the Navy Department, with the view to secure greater efficiency and economy of administration.” Washington, Government Printing Office, 468 p. **(C, D1, E2)**
- Ramírez-López, A., Gorder, P., and Delgadillo-Reynoso, P., 2002, Tri-regional water planning in the border area between Mexico and the U.S.A., in Aldama, A., Aparicio, F.J., and Equihua, R., eds. *First International Symposium on Transboundary Waters Management*, Proceedings: Asociación Mexicana de Hidráulica, *Avances en Hidráulica* 10, p. 301-307. **(E2, F1)**

- Romero, V., 2023, Harnessing power of hydrogen critical to state's energy transition: Albuquerque Journal—OPINION, Friday, July 21, 2023, p. A9. **(A3, E2)**
- Sandoval Solis, S., 2011, Water planning and management for large scale river basins. Case of study: Rio Grande/Rio Bravo transboundary basin: University of Texas at Austin, doctoral dissertation. **(E2, F1)**
- Sheng, Z., 2013, Impacts of groundwater pumping and climate variability on groundwater availability in the Rio Grande Basin: *Ecosphere*, v. 4, no. 1, p. 1-25. **(E2, F1, H3)**
- Sheng, Z., and Devere, J., 2005, Understanding and managing the stressed Mexico-USA transboundary aquifer in the Hueco bolson aquifer in the El Paso del Norte region as a complex system: *Hydrogeology Journal*, v. 13, no. 5-6, p. 813-825. **(E2, F1)**
- Sheng, Z., Mace, R.E., and Fahey, M.P., 2001, The Hueco Bolson: An aquifer at the crossroads, in Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., *Aquifers of West Texas*: Austin, Texas Water Development Board Report 356, p. 66-75. **(E2, F1)**
- Steiner, F.R., Weller, R., M'Closkey, K., and Fleming, B., eds., 2019, *Design with nature now*: Cambridge, MA, Lincoln School for Land Policy—Columbia University Press, 368 p. ISBN 9781558443938. See *McHarg 1969* and <https://mcharg.upenn.edu/conversations/what-does-it-mean-design-nature-now> **(A2, E2)**
- Tanski, J., Hanson, A., Granados, A., and Samani, Z., 1998, Water Quality Assessment Plan for Columbus, N.M. and Palomas, Chihuahua, in SCERP-FY 1998. **(E2, F1, H2)**
- Tetra Tech EM Inc., 1998, Subsurface investigation of the New Mexico oxidation lagoons (SWMU nos. 19,25B, and 27B), Fort Bliss, Texas: Tetra Tech EM Inc., 47 p. **(E2, H1)**
- Tetra Tech EM Inc., 2004a, Final report for well installation activities within the Mesilla Valley, Lower Rio Grande Basin: Consultant's report for New Mexico Interstate Stream Commission, 8 p. **(E2, H1)**
- Tetra Tech EM, Inc., 2004b, Report of surveying activities conducted within the Rincon and Mesilla Valleys, New Mexico: Prepared for New Mexico Interstate Stream Commission: Albuquerque, NM, Tetra Tech EM, Inc. **(E2)**
- Texas Water Development Board (TWDB), 2012, Groundwater database reports, accessed September 2012 at <http://www.twdb.texas.gov/groundwater/data/gwdbprpt.asp> **(E2)**
- Titus, F.B., Jr., 1967, Geography, geology, and hydrology [of Central Closed Basins], in *Water Resources of New Mexico*: Santa Fe, New Mexico State Planning Office, p. 129-142. **(E2, I1)**
- Trauger, F.D., and Doty, G.C., 1965, Ground water – Its occurrence and relation to the economy and geology of southwestern New Mexico: *New Mexico Geological Society Guidebook 16*, p. 215-227. **(E2, F2, G2)**
- U.S. Bureau of Reclamation, 1973, Water resources of El Paso County, Texas: Report prepared for the Texas Water Development Board, 97 p. **(E2, F2)**
- U.S. Bureau of Reclamation (USBOR), 2011, Reclamation – Managing water in the West – Rio Grande Project. **(E2, F2)**
- U.S. Census Bureau, 2015, American Fact Finder. **(E2)**
- U.S. Environmental Protection Agency (EPA), 2012, Guidance for the Determination of underground Sources of Drinking Water: Washington, DC, US Environmental Protection Agency. **(D1, E2)**
- U.S. Geological Survey, 1975, Hydrologic unit map – 1974, State of Arizona, prepared in cooperation with the U.S. Water Resources Council: Reston, VA, U.S. Geological Survey Hydrologic Unit Map, scale 1:500,000. **(D1, E2)**
- U.S. Geological Survey, 1976, Hydrologic Unit Map – 1974, State of New Mexico: Reston, VA, U.S. Geological Survey Hydrologic Unit Map, scale 1:500,000. **(D1, E2)**
- U.S. Geological Survey, 2016, New Mexico Water Science Center, Groundwater Information and Data, accessed September 1, 2016 at <https://nm.water.usgs.gov/infodata/groundwater.html> **(D1, E2)**
- U.S. Geological Survey, 2017, U.S. Geological Survey National Water Information System: <https://dx.doi.org/10.5066/F7P55KJN> **(D1, E2)**
- University of Texas, 2005, Rio Grande-Rio Bravo studies: Center for Research in Water Resources, accessed July 2014 at <https://www.census.gov/quickfacts/> **(E2, F1)**
- Vickers, A.L., 2002, Handbook of water use and conservation: Amherst, MS, WaterPlow Press, 446 p. ISBN 1-93579-07-05 **(E2)**
- Ward, F.A., 1998, Economics of water conservation, in Herrera, E., Bahr, T.G., Ortega Klett, C.T., and Creel, B.J., eds., *Water resources issues in New Mexico*: New Mexico Journal of Science, v. 38, p. 127-139. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> **(E2)**
- Ward, F.A., Mayer, A.S., Garnica, L.A., Townsend, N.T., and Gutzler, D.S., 2019, The economics of aquifer protection plans under climate water stress: New insights from hydroeconomic modeling: *Journal of Hydrology*, v. 576, 667-684. **(E2)**

- Wilson, B.C., and Lucero, A.A., 1998, Water Use by categories in New Mexico counties and river basins, and irrigated acreage in 1995: New Mexico State Engineer Office Technical Report 49, 149 p. **(E2)**
- Woodward, D., and Duval R., 1996, United States-Mexico Border Area, as delineated by a shared-water resource perspective—Fact sheet 1: United States Department of the Interior U.S.-Mexico Border Field Coordinating Committee, 4 p. **(E2, F1)**

E2a. Desalination

- CDM News, 2003, A desert community quenches its thirst: CDM News Article Reprint, v. 37, no. 1, 4 p. **(E2a)**
- Clayton, M.E., Kjellsson, J.B., and Webber, M.E., 2014, Can renewable energy and desalination tackle two problems at once? *EARTH*, November/December 2014, p. 60-65. **(E2a)**
- El Paso Water (EPW), ND, Water Resources-El Paso Water: https://epwater.org/our_water/water_resources **(E2, E2a, E2b, F2)**
- Erlitski, R., and Craver, D. (Abstract), 2020, High-Recovery for Quick Recovery: Desalination solves multiple challenges to a community in need: Program with abstracts, Water, Energy, and Policy in a Changing Climate Conference, National Groundwater Association (NGWA), Albuquerque, NM, February 24-25, 2020. **(E2a)**
- Feth, J.H., and others, 1965, Preliminary map of the conterminous United States showing depth to and quality of shallowest ground water containing more than 1,000 parts per million dissolved solids: U.S. Geological Survey HA-199, 31 p. **(E2a, H2)**
- Gates, J.S., White, D.E., Stanley, W.D., and Ackermann, H.D., 1980, Availability of fresh and slightly saline ground water in the basins of westernmost Texas: Texas Department of Water Resources, Report 256, 108 p. [First published as USGS Open-File Report 78-663, 115 p.] **(E2a, H2)**
- Gude, V.G., 2016, Desalination and sustainability – An appraisal and current perspective: *Water Research*, v. 89, p. 87-106. **(E2a)**
- Henthorne, L., 2003, Desalinization today: *Southwest Hydrology*, v. 2, no. 3, p. 12-13. **(E2a)**
- Hightower, M., 2003, Desalinization of inland brackish water: Issues and concerns: *Southwest Hydrology*, v. 2, no. 3, p. 18-19. **(E2a)**
- Hightower, M., 2022, Using brackish and saline waters to support hydrogen production opportunities in New Mexico: White Paper for the New Mexico Desalination Association, NMDESAL 2022-100-Version (3/2022), 9 p. **(E2a)**
- Hinkebein, T., 2003, The future of water development in the Southwest—The development of the desalinization and water purification roadmap: *Southwest Hydrology*, v. 2, no. 3, p. 22-25. **(E2a)**
- Hood, J.W., and Kister, L.R., 1962, Saline-water resources of New Mexico: U.S. Geological Survey Water-Supply Paper 1601, 70 p. **(E2a, H2)**
- Huff, G.F., 2004, An overview of the hydrogeology of saline groundwater in New Mexico, in Ortega Klett, C.T., ed., *Proceedings of the 49th Annual New Mexico Water Conference: Water desalination and reuse strategies for New Mexico*. New Mexico Water Resources Research Institute Report No. 336, p. 21-34. **(D1, E2a, H2)**
- Kang, M., and Jackson, R.B., 2016, Salinity of deep groundwater in California: Water quantity, quality, and protection: *PNAS-Environmental Sciences*, 6 p. **(D1, E2a)**
- Krieger, R.A., Hatchett, J.L., and Poole, J.L., 1957, Preliminary survey of the saline-water resources of the United States: Geological Survey Water-Supply Paper 1374, 172 p., 2 pls. **(A1, D1, E2a)**
- Land, L., 2016, Overview of Fresh and Brackish Water Quality in New Mexico: New Mexico Bureau of Geology, Open-File Report 583, 49 p. **(E2a, H2)**
- Land, L., and Johnson, P., 2004, New Mexico brackish groundwater assessment program workshop – Report of findings and recommendations: New Mexico Office of the State Engineer Report, 23 p. **(E2a, H2)**
- LBG–Guyton Associates, 2003, Brackish groundwater manual for Texas regional water planning groups: Texas Water Development Board, 188 p. http://www.twdb.texas.gov/publications/reports/contracted_reports/doc/2001483395.pdf **(D1, E2a)**
- Marrufo, S.S., 2011, An integrated geological and geophysical study of the fresh and brackish water boundary in the Hueco Bolson, west Texas: University of Texas at El Paso, master's thesis, 108 p. **(C4, E2a, F1, H2)**
- McLean, J.S., 1970, Saline ground-water resources of the Tularosa Basin, New Mexico: U.S. Office of Saline Water Research and Development Progress Report No. 561, 128 p. **(E2a, H2)**
- McLean, J.S., 1975, Saline ground water in the Tularosa Basin, New Mexico: New Mexico Geological Society Guidebook 26, p. 237-238. **(E2a, H2)**

- Mills, S.K., 2003, Quantifying salinization of the Rio Grande using environmental tracers: New Mexico Institute of Mining and Technology, master's thesis, 397 p. **(E2a, H2)**
- Moore, S.J., Bassett, R.L., Liu, B., Wolf, C.P., and Doremus, D., 2008, Geochemical tracers to evaluate hydrogeologic controls on river salinization: *Ground Water*, v. 46, no. 3, p. 489-501. **(E2a, F2, H2)**
- National Ground Water Association (NGWA), 2010, Brackish groundwater: Westerville, Ohio, National Ground Water Association information brief, 4 p., accessed March 8, 2013 at http://www.ngwa.org/Media-Center/briefs/Documents/Brackish_water_info_brief_2010.pdf **(D1, E2a)**
- National Research Council (NRC), 2008, Desalination—A national perspective: Washington, D.C., The National Academies Press, 316 p. **(D1, E2a)**
- NRS Engineering Water Solutions, 2008, Guidance manual for brackish groundwater desalination in Texas: Austin, Tex., Texas Water Development Board, 96 p., accessed June 10, 2015 at http://www.twdb.texas.gov/publications/reports/contracted_reports/doc/0604830581_BrackishDesal.pdf **(E2a)**
- Osborn, N.I., Smith, S.J., and Seger, C.H., 2013, Hydrogeology, distribution, and volume of saline groundwater in the southern midcontinent and adjacent areas of the United States: U.S. Geological Survey Scientific Investigations Report 2013-5017, 58 p. VOXEL modeling **(D1, E2a)**
- Sahs & Associates. P.C., 2013, Using brackish water to meet the State's [Texas] growing water demands. **(E2a)**
- Stanton, J.S., Anning, D.W., Brown, C.J., Moore, R.B., McGuire, V.L., Qi, S.L., Harris, A.C., Dennehy, K.F., McMahon, P.B., Degnan, J.R., and Böhlke, J.K., 2017, Brackish groundwater in the United States: U.S. Geological Survey Professional Paper 1833, 185 p. **(D1, E2a)**
- Summers, W.K., and Schwab, G.E., 1970, A survey of saline groundwater as a mineral resource, in Mattox, R.B., ed., *Saline water: The Committee on Desert and Arid Zones Research, Southwestern and Rocky Mountain Division, A.A.A.S., New Mexico Highlands University, Contribution No. 13*, 31-45. **(E2a, H2)**
- Szynkiewicz, A., Borrok, D.M., Skrzypek, G., and Rearick, M.S., 2015a, Isotopic studies of the Upper and Middle Rio Grande. Part 1- Importance of sulfide weathering in the riverine sulfate budget: *Chemical Geology*, v. 411, p. 323-335. **(E2a)**
- Szynkiewicz, A., Witcher, J.C., Modelska, M., Borrok, D.M., and Pratt, L.M., 2011, Anthropogenic sulphate loads in the Rio Grande, New Mexico (USA): *Chemical Geology*, v. 283, no. 3-4, p. 194-209. **(E2a)**
- Szynkiewicz, A., Borrok, D.M., Ganjegunte, G.K., Skrzypek, G., Ma, L., Rearick, M.S., and Perkins, G.B., 2015b, Isotopic studies of the Upper and Middle Rio Grande. Part 2- Salt loads and human impacts in south New Mexico and west Texas: *Chemical Geology*, v. 14, p. 336-350. **(B3, E2a)**
- Texas Water Development Board (TWDB), 2010, Desalination plants: Texas Water Development Board database, accessed June 11, 2015 at <http://www2.twdb.texas.gov/apps/desal/DesalPlants.aspx> **(E2a)**
- Texas Water Development Board (TWDB), 2015, Brackish resources aquifer characterization system (BRACS): Texas Water Development Board Web site, <http://www.twdb.texas.gov/innovativewater/bracs/> **(E2a)**
- U.S. Bureau of Reclamation, 2003, Desalting handbook for planners (3d ed.): Washington D.C., Bureau of Reclamation, 310 p. **(E2a)**
- U.S. Geological Survey, 1968b, Water resources data for New Mexico, part 2. water quality records: U.S. Geological Survey Water Resources Division, Albuquerque, 207 p., 2 figs. **(D1, E2a)**
- Witcher, J.C., King, J.P., Hawley, J.W., Kennedy, J.F., Williams, J., Cleary, M., and Bothern, L., 2004, Sources of Salinity in the Rio Grande and Mesilla Basin Groundwater: New Mexico Water Resources Research Institute Report No. 330, 168 p., with appendices and plates on CD ROM. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-330.html> **(C2b, E2a, H1, H2)**

E2b. Recharge and Recovery

- Ajami, H., Meixner, T., Dominguez, F., Hogan, J., and Maddock, T. III, 2012, Seasonalizing mountain system recharge in semi-arid basins – Climate change impacts: *Ground Water*, v. 50, no. 4, p. 585-597. **(E2b, H3)**
- Asano, T., 1985, ed., Artificial recharge of groundwater, section III, Groundwater recharge operations: Boston and London, Butterworth Publishers, p. 357-576. **(D2, E2b)**
- Bouwer, H., 1988, Design and management of infiltration basins for artificial recharge of ground water, in Ortega Klett, C.T., ed., *Ground Water Management*, Proceedings of the 32nd Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 229, p. 111-123. **(D2, E2b)**
- Bouwer, H., 2002, Artificial recharge of groundwater: Hydrogeology and engineering: *Hydrogeology Journal* (2002) v. 10, p. 121-142. **(D2, E2b)**

- Buszka, P.M., Brock, R.D., and Hooper, R.P., 1994, Hydrogeology and selected water-quality aspects of the Hueco Bolson aquifer at the Hueco Bolson Recharge Project area, El Paso, Texas: U.S. Geological Survey Water-Resources Investigations Report 94-4092, 41 p. **(E2b, F2)**
- Cook, C., 2024, Haaland announces \$60M investment in water – Money to address drought resiliency in the Rio Grande south of Elephant Butte: Albuquerque Journal, Saturday May 11, 2024, p. A1, A5. **(A3, E2b)**
- Davidson, T.T., 1998, Groundwater recharge: The legal realities of keeping the hydrologic system whole, *in* Herrera, E., Bahr, T.G., Ortega Klett, C.T., and Creel, B.J., eds., Water resources issues in New Mexico: New Mexico Journal of Science, v. 38. p. 35-53. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> **(E2b, E3)**
- Davis, T., 2019b, Aquifer on the rebound—Water levels up 30-40 feet; San Juan Project, conservation credited: Albuquerque Journal, Saturday, August 24, 2010, p. A1, A2. **(A3, E2b)**
- Dillon, P., Zhang, Y., Alley, W., and Vanderzalm, J., 2022, Managed Aquifer Recharge: Overview and Governance: IAH Special Publication, 90 p. **(D2, E2b)**
- El Paso Water (EPW), ND, Water Resources-El Paso Water: https://epwater.org/our_water/water_resources **(E2, E2a, E2b, F2)**
- Garza, S., Weeks, E.P., and White, D.E., 1980, Appraisal of potential for injection-well recharge of the Hueco bolson with treated sewage effluent – Preliminary study of the northeast El Paso area, Texas: U.S. Geological Survey Open-File Report 80-1106, 37 p. **(E2b, F2, H2)**
- Gelhar, L.W., and McLin, S., 1979, Evaluation of a hydrosalinity model of irrigation return flow water quality in the Mesilla Valley, New Mexico: U.S. Environmental Protection Agency. **(C4, E2b, H2)**
- Knorr, D.B., 1988, City of El Paso ground water recharge project, *in* Ortega Klett, C.T., ed., Ground Water Management, Proceedings of the 32nd Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 229, p. 87-101. **(D2, E2b)**
- Knorr, D.B., and Cliett, T., 1985, Proposed groundwater recharge at El Paso, Texas, *in* Asano, T., ed., Artificial recharge of groundwater: Boston, Butterworth Publishers, p. 425-479. **(D2, E2b)**
- National Ground Water Association (NGWA), 2014, Best suggested practices for aquifer storage and recovery: 601 Dempsey Rd., Westerville OH 43081-8978, NGWA Press. 21 p. ISBN 1-56034-026-6 **(D1, E2b)**
- Pyne, R.D.G., 2005, Aquifer storage recovery – A guide to groundwater recharge through wells: Gainesville, FL, ASR Systems LLC, 608 p. ISBN 0-9774337-090000 **(A2, D2, E2b)**
- Sheng, Z., 2005, An aquifer storage and recovery system with reclaimed wastewater to preserve native groundwater resources in El Paso, Texas: Journal of Environmental Management, v. 75, issue 4, p. 367-377. **(E2b, E2c)**
- Stephens, D.B., Ewing, A., and Moore, S., 2018, Managed aquifer recharge, *in* Groundwater: State of the Science and Practice: Westerville, OH, National Ground Water Association Press, p. 63-66. **(D2, E2b)**
- Topper, R., and Rein, K.G., 2017, Considerations for subsurface water storage in Colorado: Rocky Mountain Water, May 2017, p. 22-25. **(E2b)**
- Whitworth, T.M., 1995, Hydrochemical computer modeling of proposed artificial recharge of the upper Santa Fe Group aquifer, Albuquerque New Mexico: New Mexico Geology, v. 17, no. 4, p. 72-78. **(D2, E2b)**
- Wolf, C., Ewing, A., and Yuhas, K. (Abstract), 2020, Securing water supply for Albuquerque, New Mexico using managed aquifer recharge: Program with abstracts, Water, Energy, and Policy in a Changing Climate Conference, National Groundwater Association (NGWA), Albuquerque, NM, February 24-25, 2020. **(E2b)**

E2c. Groundwater-Quality Projection and Waste Management

- Abeyta, C.G., 1996, Geohydrologic site characterization of the municipal solid waste landfill facility, U.S. Army Air Defense Artillery Center and Fort Bliss, El Paso County, Texas: U.S. Geological Survey Water-Resources Investigations Report 95-4217, 36 p. **(E2c, H2)**
- Abeyta, C.G., and Roybal, R.G., 1996, Ground-water quality, Water Year 1995, and statistical analysis of ground-water quality data, Water Years 1994-95, at the Chromic Acid Pit site, U.S. Army Air Defense Artillery Center and Fort Bliss, El Paso, Texas: U.S. Geological Survey Water-Resources Investigations Report 96-4211, 42 p. **(E2c, H2)**
- Aller, L., Bennett, T., Lehr, J., and Petty R., 1987, DRASTIC: A Standardized system for evaluating ground water pollution potential using hydrogeologic settings: Worthington, OH, National Water Well Association (NWWA), 641 p. – Washington, D.C., U.S. Environmental Protection Agency, NWWA/EPA Series, EPA/600/2-85/018. **(D1, E2c)**
- Alley, W.M., and Alley, R., 2013, Too hot to touch – The problem of high-level radioactive waste: New York, Cambridge University Press, 370 p., ISBN 978-1-107-03011-4 www.cambridge.org/alleyalley **(A2, D1, E2c)**

- Alley, W.M., and Alley, R., 2020, The war on the EPA – America’s endangered environmental projections: Lanham, MD, Rowman & Littlefield, 287 p., ISBN 978-1-5381-3151-3. *See Chapters 9 and 10: “Toxic Chemicals” and “The Forever Chemicals.”* **(A2, D1, E2c)**
- Bexfield, L.M., Thiros, S.A., Anning, D.W., Huntington, J.M., and McKinney, T.S., 2011, Effects of natural and human factors on groundwater quality of basin-fill aquifers in the southwestern United States – Conceptual models for selected contaminants: U.S. Geological Survey Scientific Investigations Report 2011-5020, 90 p. **(D1, E2c, H2)**
- Boetel, R., 2024b, Nationwide PFAS rules announced – News comes on same day as report that PFAS are in NM water: Albuquerque Journal, Thursday, April 11, 2024, p. A1, A8. **(A3, E2c)**
- CH2MHill, 2013, Distal Mesilla conceptual site model prepared for the United States Army Corps of Engineers: Technical Report, 224 p. **(E2c, F1, H1, H2)**
- Creel, B.J., Sammis, T.W., Kennedy, J.F., Sitze, D.O., Asare, D., Monger, H.C., and Samani, Z., 1998, Groundwater aquifer sensitivity assessment and management practices evaluation for pesticides in the Mesilla Valley: New Mexico Water Resources Research Institute Report No. 305, 50 p., <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-305.html> **(E2c, H2)**
- Cross, B.L., 1991, A ground-water protection strategy, the City of El Paso: Texas Water Commission Report 91-01, 154 p. **(E2c)**
- Divine, C., Killingstad, M., Mortensen, L., Beciragic, A., Dettmer, A., and Alspach, B., 2024, The plastiverse extends to hydrogeologic systems: Microplastics are an important emerging groundwater contaminant class: Groundwater Monitoring & Remediation, v. 44, issue 1, p. 15-38. **(E2c)**
- Hamway, S., 2020a, Recycling company to expand in Santa Teresa—Texas firm has 11 plants in US, Mexico: Albuquerque Journal—BUSINESS, Wednesday, February 19, 2020, p. A10-A11. **(A3, E2c)**
- Hawley, J.W., and Longmire, P.A., 1992, Site characterization and selection, *in* Reith, C.C. and Thomson, B.M., eds., *Deserts as Dumps? The disposal of hazardous materials in arid ecosystems*: University of New Mexico Press, p. 57-99. **(C2b, D1, E2c)**
- Horst, J., McDonough, J., and Houtz, E., 2020, Understanding and managing the potential by-products of PFAS destruction, *in* *Advances in Remediation Solutions: Groundwater Monitoring & Remediation*, v. 20, no. 2, p. 17-27. **(E2c)**
- Hu, X.C., Andrews, D.Q., Lindstrom, A.B., Bruton, T.A., Schaidler, L.A., Grandjean, P., Lohmann, R., Carignan, C.C., Blum, A., Balan, S.A., Higgins, C.P., and Sunderland, E.M., 2016, Detection of Poly- and Perfluoroalkyl Substances (PFASs) in U.S. Drinking Water Linked to Industrial Sites, Military Fire Training Areas, and Wastewater Treatment Plants: *Environmental Science & Technology Letters*, v. 3, no. 10, p. 344-350. Published online 2016 Aug 9. doi: [10.1021/acs.estlett.6b00260](https://doi.org/10.1021/acs.estlett.6b00260) **(E2c)**
- Kalinski, R.J., Kelly, W.E., Bogardi, I., Ehrman, R.L., and Yamamoto, R.L., 1994, Correlation between *DRASTIC* vulnerabilities and incidents of VOC contamination in municipal wells in Nebraska: *Ground Water*, v. 32, no. 1, p. 31-34. **(E2c)**
- Kennedy, J.F., 1999, Aquifer sensitivity assessment for the Lower Rio Grande, *in* Ortega Klett, C.T., ed., *Proceedings of the 43rd Annual New Mexico Water Conference: Water Challenges on the Lower Rio Grande*. New Mexico Water Resources Research Institute Report No. 310. p. 84-104. **(E2c)**
- Kreitler, C.W., Raney, J.A., Nativ, R., Collins, E.W., Mullican, W.F. III, Gustavson, T.C., and Henry, C.D., 1987, Siting a low-level radioactive waste disposal facility in Texas, volume four – Geologic and hydrologic investigations of the State of Texas and University of Texas lands: University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Low-Level Radioactive Waste Disposal Authority under contract no. IAC (86-87)-1722, 330 p. **(C2a, E2c, F2, H1, H2)**
- Landrigan, P.J., Gehlbach, S.H., Rosenblum, B.F., and others, 1975, Epidemic lead absorption near an ore smelter: the role of particulate lead: *New England Journal of Medicine*, v. 292, p. 123-129. **(E2c)**
- Langman, J.B., Robertson, A.J., Bynum, J., and Gebhardt, F.E., 2008, Geochemical trends and natural attenuation of RDX, nitrate, and perchlorate in the Hazardous Test Area fractured-granite aquifer, White Sands Missile Range, New Mexico, 1996-2006: U.S. Geological Survey Scientific Investigations Report 2008-5157, 45 p. **(C4, E2c, H2, H3)**
- Leake, S.A., and Hanson, R.T., 1986, Distribution and movement of trichloroethylene in ground water in the Tucson area, Arizona: U.S. Geological Survey Water-Resources Investigations Report 86-4313, 61 p. **(E2c)**
- Longmire, P.A., Gallaher, B.M., and Hawley, J.W., 1981, Geologic, geochemical and hydrological criteria for disposal of hazardous wastes in New Mexico, *in* Wells, S.G., and Lambert, W., eds., 1981, *Environmental geology and hydrology in New Mexico*: New Mexico Geological Society Special Publication 10, p. 93-102. **(E2c)**

- Lim, X., 2019, Tainted water: The scientists tracing thousands of fluorinated chemicals in our environment: *Nature*, v. 566, no. 7742, p. 26-29. **(E2c)**
- Macías-Coral, M., Samani, Z., and Martínez, S.L., 2006, Two countries-one common problem: How to deal with dairy manure along the United States-Mexico border, *in* Anderson, K.S.J., ed., *Science on the Border: N.M. Journal of Science*, v. 44, p. 89-97. **(E2c)**
- Maxey, G.B., and Farvolden, R.N., 1965, Hydrogeologic factors in problems of contamination in arid lands: *Ground Water*, v. 3, no. 4, p. 29-32. **(D1, E2c)**
- McCord, J.T., and Stephens, D.B., 1999, Contrasts in regional and local-scale heterogeneity in relation to ground-water supply and contamination in the Albuquerque Basin: *New Mexico Geological Society Guidebook* 50, p. 401-408. **(D1, E2c)**
- McCray, J.E., Kirkland, S.L., Siegrist, R.L., and Thyne, G.D., 2005, Model parameters for simulating the fate and transport of on-site wastewater nutrients, *Ground Water*, v. 43, no. 4, p. 628-639. **(E2c)**
- McLay, C.D., Dragden, R., Sparling, G., and Selvarajah, N., 2001, Predicting groundwater nitrate concentrations in a region of mixed agricultural land use: a comparison of three different approaches: *Environmental Pollution*, v. 115, p. 191-204. **(E2c)**
- McQuillan, D.M., 1982, Pollution of the Rio Grande valley-fill aquifer: *New Mexico Geological Society Guidebook* 33, p. 357-360. **(E2c)**
- McQuillan, D., 2004, Ground-water quality impacts from on-site septic systems, *in* *Proceedings, 13th Annual Conference National Onsite Wastewater Recycling Association*, Albuquerque, NM, November 7-10, 2004, p. 1-13. **(E2c)**
- McQuillan, D.M., and Keller, N.S., 1988, Ground water contamination in New Mexico 1927-1986, *in* Ortega Klett, C.T., ed., *Ground Water Management, Proceedings of the 32nd Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 229*, p. 87-101. **(E2c)**
- National Ground Water Association (NGWA), 2019a, NEWSLINE—NGWA supports legislation to create national to PFAS crisis: *Groundwater Monitoring & Remediation*, v. 39, issue 3, p. 6. **(D1, E2c)**
- National Ground Water Association (NGWA), 2019b, NEWSLINE—Congress introduces a flurry of PFAS legislation: *Groundwater Monitoring & Remediation*, v. 39, issue 3, p. 7. **(D1, E2c)**
- National Ground Water Association (NGWA), 2019c, NEWSLINE—NSF Standards add PFOA and PFOS reduction claims requirements: *Groundwater Monitoring & Remediation*, v. 39, issue 3, p. 7. **(D1, E2c)**
- National Research Council (NRC), 2012, *Water reuse: Expanding the nation's water supply through reuse of municipal wastewater—Prepublication Report from the Committee on the Assessment of Water Reuse as an Approach to Meeting Future Water Supply Needs*: Washington D.C., National Academies Press. http://www.nap.edu/catalog.php?record_id=13303 **(D1, E2c)**
- Ordóñez, B.R., Romero, L.R., and Mora, R., 1976, Epidemiologic investigation regarding levels of lead in the pediatric population and in the household environment in the city of Juárez, Chihuahua, in relation to a smelter in El Paso, Texas [Spanish]: *Boletín de la Oficina Sanitaria Panamericana*, v. 80, p. 303-317. **(E2c)**
- Pacheco, J., 2019e, U.S. needs to develop a national recycling strategy: *Albuquerque Journal—BUSINESS OUTLOOK*, Monday, August 26, 2019, p. 33. **(A3, E2c)**
- Panagopoulos, G.P., Antonakos, A., and Lambrakis, N.J., 2006, Optimization of the DRASTIC method for groundwater vulnerability assessment via the use of simple statistical methods and GIS: *Hydrology Journal*, v. 14, no. 6, p. 894-911. **(E2c)**
- Petronis, L.H., Finch, S.T., Jr., and Shomaker, J.W., 2006, Ground-water flow and solute transport model for the Griggs and Walnut Superfund Site, Las Cruces, New Mexico: Albuquerque, N.M., John Shomaker & Associates, Inc., 53 p. **(E2c, H2, H3)**
- Prokop, D., 2023c, El Paso Water lawsuit against New Mexico Environment Department will stay in Texas courts: *Source New Mexico*, August 1, 2023-4:10 AM. **(A3, E2c)**
- Rosen, L., 1994, A study of *DRASTIC* methodology, with emphasis on Swedish conditions: *Ground Water*, v. 32, no. 2, p. 278-285. **(E2c)**
- Ross, I., Kalve, E., McDonough, J., Hurst, J., Miles, J., and Pancras, T., 2019, *in* Bell, C.H., Gentile, M., Kalve, E., Ross, I., Horst, J., and Suthersan, S., eds., *Per- and polyfluoroalkyl substances*: Boca Raton, FL, CRC Press, p. 85-257. *See USEPA 2019*. **(E2c)**
- Rupert, M.G., 2001, Calibration of the *DRASTIC* groundwater vulnerability mapping method: *Ground Water*, v. 39, no. 4, p. 625-630. **(E2c)**

- Sheng, Z., 2005, An aquifer storage and recovery system with reclaimed wastewater to preserve native groundwater resources in El Paso, Texas: *Journal of Environmental Management*, v. 75, issue 4, p. 367-377. **(E2b, E2c)**
- Suthersan, S., Quinnan, J., Horst, J., Ross, I., Kalve, E., Bell, C., and Pancras, T., 2016a, Making strides in management of “Emerging Contaminants,” *in* *Advances in Remediation Solutions: Groundwater Monitoring & Remediation*, v. 36, no. 1, p. 16-25. *See Fig. 1 and USEPA 2015.* **(E2c)**
- Suthersan, S., Horst, J., Ross, I., Kalve, E., Quinnan, J., Houtz, E., and Burdick, J., 2016b, Responding to “emerging contaminant” impacts: Situation managements, *in* *Advances in Remediation Solutions: Groundwater Monitoring & Remediation*, v. 36, no. 3, p. 22-32. **(E2c)**
- Teclaff, L.A., 1982, Principles of transboundary pollution control: Mexico-Symposium on Anticipating Transboundary Resource Needs and Issues in the U.S.-Mexico Border Region to the Year 2000: *Natural Resources Journal*, v. 22, p. 1065-1079. **(E2c, E3)**
- Thomson, B.D., and McQuillan, D.M., 1984, Nitrate contamination of groundwater in Albuquerque, *in* W.J. Stone, compiler, *Selected papers on water quality and pollution in New Mexico*: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 7, p. 204-216. **(E2c)**
- U.S. Center for Disease Control (CDC-MMWR), 1997, Epidemiologic notes and report on human led absorption – Texas: Morbidity and Mortality Weekly Report (MMWR), September 19, 1997, v. 46, no. 37, p. 871-877. **(E2c)**
- U.S. Environmental Protection Agency (EPA), n.d., EPA_NonpointSourcePollution, Polluted runoff: Nonpoint source pollution. **(E2c)**
- U.S. Environmental Protection Agency (EPA), n.d., EPA_PCBs, Polychlorinated Biphenyls (PCBs): Learn about polychlorinated biphenyls (PCBs). **(E2c)**
- U.S. Environmental Protection Agency (EPA), n.d., EPA_SDWA, Safe drinking water act (SDWA). **(E2c)**
- U.S. Environmental Protection Agency (USEPA), 2003a, The Concentrated Animal Feeding Operation (CAFO) Revised Rule. **(E2c)**
- U.S. Environmental Protection Agency (USEPA), 2003b, Standards for use or disposal of sewage sludge- Final Rule: EPA 40CFR, Part 503, 48, p. 851-852. **(E2c)**
- U.S. Environmental Protection Agency, 2015a, Secondary drinking water standards—Guidance for nuisance chemicals: U.S. Environmental Protection Agency, accessed March 2, 2016 at <https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals> **(E2c)**
- U.S. Environmental Protection Agency, 2015b, Guidance for determination of underground sources of drinking water (USDWs): U.S. Environmental Protection Agency Regional Guidance 3, 3 p., accessed March 23, 2016 at <https://www.epa.gov/sites/production/files/2015-09/documents/r5-deepwell-guidance3-determination-underground-sources-drinking-water-19870205.pdf> **(D1, E2c)**
- U.S. Environmental Protection Agency (USEPA), 2015c, The third unregulated contaminant monitoring rule (UCMR3): data summary. *See Suthersan et al. 2016a.* **(E2c)**
- U.S. Environmental Protection Agency (USEPA), 2019, Per- and polyfluoroalkyl substances (PFAS) action plan- EPA Publication 100K20002. **(E2c)**
- Walker, J.S., Brown, C., and Fernald, S., 2015, Use of the *DRASTIC* Model to evaluate groundwater pollution sensitivity from on-site wastewater systems in the Mesilla Basin: New Mexico Water Resources Research Institute Report No. 367, 98 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-367.html> **(E2c)**
- Wilson, L., 1981, Potential for ground-water pollution in New Mexico: New Mexico Geological Society, Special Publication No. 10, p. 47-54. **(E2c)**
- Wilson, L., Anderson, S.T., Jenkins, D.N., and Cristiano, C., 1979, Program for the statewide monitoring of ground-water quality in New Mexico: unpublished final report on file in the office of New Mexico Environmental Improvement Division, Santa Fe, New Mexico, 180 p. **(E2c)**
- Worrall, F., and Kolpin, D.W., 2004, Aquifer vulnerability to pesticide pollution – Combining soil, landuse and aquifer properties with molecular descriptors: *Journal of Hydrology*, v. 293, no. 1-4, p. 191-204. **(E2c)**
- Yang, Y.S., and Wang, L., 2010, Catchment-scale vulnerability assessment of groundwater pollution from diffuse sources using the *DRASTIC* method: a case study: *Hydrological Sciences Journal*, v. 55, no. 7, p. 1206-1216. **(E2c)**

E3. Legal and Environmental Issues and Constraints

- Anderson, G.B., 1906, The conquest of the desert: Out West, v. XXV, 109-124 **(B3, E3)**
- Barry, T., and Sims, B., 1994, The challenge of cross-border environmentalism: The U.S.-Mexico case: Albuquerque, NM, Resource Center Press, 121 p. ISBN 0-911213-45-7 **(A2, B3, E3)**
- Barry, T., Browne, H., and Sims, B., 1994, The great divide: The challenge of U.S.-Mexico Relations in the 1990s: New York, Grove Press, 452 p. ISBN 0-8021-1559-4 **(B3, E3)**
- Bradley, M.D., and DeCook, K.J., 1978, Ground water occurrence and utilization in the Arizona-Sonora border regions: Natural Resources Journal, v. 18, no. 1, p. 29. **(E2, E3)**
- Charbeneau, R.J., 1982, Groundwater resources in the Texas Rio Grande basin: Natural Resources Journal, v. 22, p. 957-970. **(E2, E3, F1)**
- Chávez, O.E., 2000, Mining of Internationally Shared Aquifers: The El Paso-Juarez Case, Natural Resources Journal, v. 40, issue 2 (The La Paz Symposium on Transboundary Groundwater Management on the U.S. - Mexico Border, p. 237-260. **(E2, E3)**
- Clark, I.G., 1975, The Elephant Butte controversy: a chapter in the emergence of Federal water law: Journal of American History, v. 61, no. 4, p. 1006-1033. **(E3)**
- Clark, R.E., 1965, Groundwater management: Law and local response: Arizona Law Review, v. 6, p. 178, 189. **(E2, E3)**
- Clark, R.E., 1978, Institutional Alternatives for Managing Groundwater Resources: Notes for a Proposal, Natural Resources Journal, v. 18, no. 1 (Symposium on U.S.-Mexican Transboundary Resources, Part II), p. 153-161. **(E2, E3)**
- Conti, K.I., 2014, Factors Enabling Transboundary Aquifer Cooperation: A Global Analysis: International Groundwater Resources Assessment Centre (IGRAC-UNESCO), Delft, Netherlands, p. 108. **(E3)**
- Creel, B.J., 2010, Research needs in the U.S. portion of the Rio Grande watershed: Journal of Transboundary Water Resources, v. 1, p. 31-41. <https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(C1, E2, E3)**
- Davidson, T.T., 1998, Groundwater recharge: The legal realities of keeping the hydrologic system whole, in Herrera, E., Bahr, T.G., Ortega Klett, C.T., and Creel, B.J., eds., Water resources issues in New Mexico: New Mexico Journal of Science, v. 38. p. 35-53. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> **(E2b, E3)**
- Day, J.C., 1978, International aquifer management: The Hueco Bolson on the Rio Grande River: Natural Resources Journal, v. 18, p. 163-180. **(E2, E3, F2)**
- Esslinger, G.L., 1996, Water development on the Lower Rio Grande: The Elephant Butte Project, in Ortega Klett, C.T., ed., Reaching the Limits: Stretching the Resources of the Lower Rio Grande, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 13-19. **(B3, E2, E3)**
- Esslinger, G.L., 1998, Water politics in southern New Mexico: New Mexico Journal of Science, v. 38. p. 83-103. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m26.pdf> **(E2, E3)**
- Esslinger, G., 2021, Confronting water shortages on the Lower Rio Grande, New Mexico Water Dialogue, Dialogue Newsletter – June 2021. <https://nmwaterdialogue.org/dialogue-newsletter-june-2021/> **(E2, E3)**
- Flannigan, K.G., 2007, Surface water management: Working within the legal framework: Natural Resources Journal, v. 47, no. 3, p. 515-523. *1938 Rio Grande Compact* **(B3, E2, E3)**
- Fleck, J., 2013, Texas fires shot in water war – Lawsuit claims N.M. has drained the Rio Grande: Albuquerque Journal, Wednesday, January 9, 2013, p. A1, A2. **(A3, E3)**
- Fleck, J., 2016, Water is for fighting over, and other myths about water in the West: Washington, DC, Island Press, 264 p. ISBN 9781610916790 **(A2, E3)**
- Fleck, J., and Udall, B., 2021, Managing Colorado River risk (Editorial): Science, v. 372, issue 6545, p. 885. **(C1, E3)**
- Follett, W.W., 1898, Rio Grande Waters - Equitable distribution of waters of the Rio Grande: Message to the President of the United States: 55th Congress, 2nd Session, U.S. Senate Document No. 229, Washington, D.C., US Government Printing Office, 289 p. **(B3, D1, E3)**
- Ganster, P., and Walter, H., eds., 1990, Environmental hazards and bioresource management in the United States-Mexico Borderlands: Los Angeles, UCLA Latin American Center Publications, 504 p. 0-87903-503-X Paper. **(E3)**

- Harris, L.G., 1996, The Developers: Controlling the Lower Rio Grande 1890-1980, *in* Ortega Klett, C.T., ed., *Reaching the Limits: Stretching the Resources of the Lower Rio Grande*, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 7-12. **(A2, B3, E2, E3)**
- Harris, L.G., 2012, Whose water is it anyway? Anatomy of the water war between El Paso, Texas and New Mexico, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 227-253. ISBN 978-0-86524-902-5 **(A2, B3, E2, E3)**
- Hayton, R.D., 1978a, Institutional policies for U.S.-Mexico groundwater management: *Natural Resources Journal*, v. 18, no. 1 (Symposium on U.S.-Mexican Transboundary Resources, Part II), p. 201-212. **(E2, E3, F1)**
- Hayton, R.D., 1978b, The ground water legal regime as instrument of policy objectives and management requirements, *in* ANNALES JURIS AQUARUM II: Caracas, Venezuela; 2nd International Conference on Water Law and Administration (Feb. 1976), p. 8-14. **(E2, E3, F1)**
- Hernandez, J.W., 2012a, Preface, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 9. ISBN 978-0-86524-902-5 **(B3, E3)**
- Hernandez, J.W., 2012b, Conflicts in the division of New Mexico's share of the Colorado River, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 202-211. ISBN 978-0-86524-902-5 **(B3, E3)**
- Hernandez, J.W., 2012c, Ready to Fight: Steve Reynolds-Institution-Engineer-Litigator, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 52-65. ISBN 978-0-86524-902-5 **(B3, E3)**
- Hernandez, J.W., 2012d, Water wars during our Territorial years, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 19-28. ISBN 978-0-86524-902-5 **(B3, E3)**
- Hundley, N., 1966, *Dividing the waters: A century of controversy between the United States and Mexico*: University of California Press, 266 p. **(B3, E3, F1)**
- Jarvis, T., Giordano, M., Puri, S., Matsumoto, K., and Wolf, A., 2005, International borders, ground water flow, and hydroschizophrenia: *Ground Water*, v. 43, p. 764-770. **(D1, E3)**
- Lee, E., and Ganster, P., eds., 2012, *The U.S.-Mexican border environment: Progress and challenges for sustainability*: Southwest Consortium for Environmental Research and Policy, SCERP Monograph Series, no. 16, 453 p., ISBN 0-925613-53-3 **(E2, E3)**
- Lee Wilson and Associates, Inc., 1986, Exhibit 1 of the City of El Paso in support of its applications to appropriate ground water in New Mexico: Unpublished consultant's report prepared for the El Paso Water Utilities Public Service Board, 75 p. **(E3, H1, H3)**
- Littlefield, D.R., 1987, *Interstate Water Conflicts, Compromises, and Compacts: The Rio Grande, 1880-1938*: University of California, Los Angeles, Ph.D. thesis in History, 368 p. **(E3)**
- Littlefield, D.R., 2000, The history of the Rio Grande Compact of 1938, *in* Ortega Klett, C.T., ed., *Proceedings of the 44th Annual New Mexico Water Conference: The Rio Grande Compact: It's the Law!*: New Mexico Water Resources Research Institute Report No. 312, p. 21-28. **(E3)**
- Littlefield, D.R., 2008, *Conflict on the Rio Grande: Water and the Law, 1879-1939*: University of Oklahoma Press, p. 299. ISBN 978-0-8061-3998-2 **(E3)**
- Malagamba, F.A., 1990, Troublesome equity in distribution of shared water resources: The U.S.-Mexico border, *in* Ganster, P., and Walter, H., eds., *Environmental hazards and bioresource management in the United States-Mexico Borderlands*: Los Angeles, UCLA Latin American Center Publications, p. 13-21. **(E3, F1)**
- Marsh, G.P., 1865, *Man and nature: Or, Physical geography as modified by human action*: New York, Charles Scribner, 560 p. **(C1, E3)**
- Matthews, K., 2012, The mother of all water rights adjudications, *in* Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 254-261. ISBN 978-0-86524-902-5 **(E3)**
- Megdal, S.B., and Petersen-Perlman, J.D., 2018, Groundwater Governance and Assessment in a Transboundary Setting, *in* Grover, V.I., ed., *Lake Governance: Water: Emerging Issues and Innovative Responses Series: A Science Publishers Book*: Boca Raton, FL, CRC Press, p. 40-64. **(E3)**
- Minnis, M., 2015, *Al Utton – Aztec Eagle*: Albuquerque, NM, Utton Transboundary Resources Center, 347 p., ISBN 978-0-578-16455-7 **(A2, E3)**
- Moya, H., 2007, Possible effects of border fence construction and operation on fauna. Specialist discussion, *in* de la Parra, C., and Córdova, A., eds., *A barrier to our shared environment: The border fence between the United States and Mexico*: Mexico, DF; Secretaría de Mejoramiento de Ambiente y Recursos Naturales, p. 77-86. **(C1, E3, F1)**

- Mumme, S.P., 1994, The North American Free Trade Agreement: The Environmental Side Agreement and Parallel Bilateral Border Accords: Transboundary Resources Report, v. 8, no. 3, p. 1-3. **(E2, E3, F1)**
- Mumme, S.P., 2000, Minute 242 and beyond: Challenges and opportunities for managing transboundary groundwater on the Mexico-US Border: Natural Resources Journal, v. 40, no. 2, p. 341-378. **(E2, E3, F1)**
- Mumme, S.P., 2003, Revising the 1944 Water Treaty: Reflections on the Rio Grande drought crisis and other matters: Journal of the Southwest, v. 45, p. 649-670. **(C1, E3, F1)**
- Mumme, S.P., 2010, Environmental governance in the Rio Grande watershed: Binational institutions and the transboundary water crisis-*An agenda for strengthening binational water governance along the Rio Grande*: Journal of Transboundary Water Resources, v. 1, p. 43-68.
<https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E2, E3, F1)**
- Mumme, S., 2019, The 1944 U.S.-Mexico Water Treaty as a Constitutional Document; Rice University's Baker Institute for Public Policy: Houston, TX, USA, p. 15. **(E2, E3, F1)**
- Muñoz-Meléndez, G., Quintero-Núñez, M., and Sweedler, A., 2012, Energy for a sustainable border region in 2030, *in* Lee, E., and Ganster, P., The U.S.-Mexican border environment: Progress and challenges for sustainability: Southwest Consortium for Environmental Research and Policy, SCERP Monograph Series, no. 16, San Diego State University Press, p. 289-325. **(E2, E3, F1)**
- Ortega Klett, C.T., ed., 2000, The Rio Grande Compact: It's the Law!: Proceedings of the 44th Annual New Mexico Water Conference, New Mexico Water Resources Research Institute Report No. 310, 199 p. **(B3, E2, E3)**
- Ortega Klett, C.T., ed., 2012, One hundred years of water wars in New Mexico: Santa Fe, Sunstone Press, 288 p. ISBN 978-0-86524-902-5 **(A2, E2, E3)**
- Penndorf, J., 2018, Adapting for the effects of climate change: Urban Land, v. 77, no. 3, p. 75-78. **(C1, E3)**
- Phillips, F.M., Hall, G.E., and Black, M.E., 2011, Reining in the Rio Grande – People, Land, and Water: University of New Mexico Press, 252 p. **(A2, B3, C1, D1, E3)**
- Rivera, A., 2021a, Knowledge capsules on TBA – Transboundary Aquifer -vs- Transboundary Groundwater; Transboundary zoning: to zone or not to zone; and Sustainable use of groundwater within a transboundary aquifer context: IAHG-TBA Commission Newsletter; v. 2, issue 1, p. 10-11. **(D1, E3)**
- Rivera, A., 2021b, What should we manage, aquifers or groundwater? Guest Editorial: Groundwater, v. 59 issue 5, p. 2. **(D1, E3)**
- Sanchez, R., and Eckstein, G., 2017, Aquifers Shared Between Mexico and the United States: Management Perspectives and Their Transboundary Nature: Groundwater, v. 55, p. 495-505. **(E3, F1)**
- Sanchez, R., and Eckstein, G., 2019, The path towards groundwater management in the borderlands of Mexico and Texas: Wiley Interdisciplinary Reviews (WIREs) Water, v. 7, article e1399. **(E3, F1)**
- Sanchez, R., Rodriguez, L., and Tortajada, C., 2018, Transboundary aquifers between Chihuahua, Coahuila, Nuevo Leon and Tamaulipas, Mexico, and Texas, USA: Identification and categorization, *in* Rivera, A. and Candela, L., eds., Special Issue on International Shared Aquifer Resources Assessment and Management: Journal of Hydrology: Regional Studies, v. 20, p. 74-102. **(E3, F1)**
- Sindico, F., 2020, International Law and Transboundary Aquifers: Northampton, MA, Edward Elgar Publishing, 208 p. ISBN 978-1-78811-762 3 **(A2, E3)**
- Stegner, W., 1990, It all began with conservation: Smithsonian, v. 21 no.1, p. 35-43. **(C1, E3)**
- Stegner, W., 1998, When sparrows fall—The making of the American West: Edited with Preface by Page Stegner: New York, Henry Holt and Company, 359 p. ISBN 0-8050-6296-3 **(C1, E3)**
- Székely, A. [Ambassador], 1991, An uncertain future: Climate change and the US-Mexico Agenda: Transboundary Resources Report, v. 6, no. 3, p. 1-2. **(C1, E3, F1)**
- Székely, A. [Ambassador], 2010, Albert E. Utton Memorial Lecture (2003): Journal of Transboundary Water Resources, v. 1, p. 189-198. <https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E3, F1)**
- Tapia-Villaseñor, E.M., and Megdal, S., 2021, The U.S.-Mexico Transboundary Aquifer Assessment Program as a Model for Transborder Groundwater Collaboration: Water 2021, 13, 530, p. 1-22. **(E3, F1)**
- Teclaff, L.A., 1982, Principles of transboundary pollution control: Mexico-Symposium on Anticipating Transboundary Resource Needs and Issues in the U.S.-Mexico Border Region to the Year 2000: Natural Resources Journal, v. 22, p. 1065-1079. **(E2c, E3)**
- United States and Mexico, 1907, Convention between the United States and Mexico Equitable Distribution of the Waters of the Rio Grande: Signed at Washington, May 21, 1906: Ratification advised by the Senate, June 26, 1906; ratified by the President, December 26, 1906; ratified by Mexico, January 5, 1907; ratifications Exchanged at Washington, January 16, 1907; and proclaimed, January 16, 1907: Washington, DC; U.S. Government Printing Office, 3 p. **(E3, F1)**

- US-MX TAA (United States-Mexico Transboundary Aquifer Act), 2006, Public Law no. 109-448, 120 Statute 3328, Cornell University Law School Legal Information Institute, p. S.214-15.
https://www.law.cornell.edu/topn/united_states-mexico_transboundary_aquifer_assessment_act **(E3, F1)**
- Utton, A.E., 1983, Some International Aspects of Groundwater Development in the Mexico-United States Frontier Region: UNM School of Law, Natural Resources Center Report to The Governor's Law Study Committee, 58 p. **(E3, F1)**
- Utton, A.E., 1994, Water and the arid Southwest: An international region under stress: *Natural Resources Journal*, v. 34, no. 4, p. 957-961. **(E3, F1)**
- Utton, A.E., 1996, Remarks made by Professor Al Utton upon receiving an award of appreciation at the 40th Annual Water Conference, in Ortega Klett, C.T., ed., *Reaching the Limits: Stretching the Resources of the Lower Rio Grande*, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 7-12. **(E3, F1)**
- Utton, A.E., and Atkinson, C.K., 1979, International groundwater management: The case for the Mexico-United States frontier: New Mexico Water Resources Research Institute Report No. 109, 130 p.
<https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-109.html> **(E3, F1)**
- Utton, A.E., and Atkinson, C.K., 1981, International groundwater management: The case for the Mexico-United States frontier, in Teclaff, L.A., and Utton, A.E., eds., *International Groundwater Law*: New York, Oceana Publications, Inc., p. 175-188. **(E3, F1)**
- Utton, A.E., and Atkinson, C.K., 1983, La Administración Internacional de Aguas Subterráneas: El Caso de la Región Fronteriza México-Estados Unidos: *Boletín Mexicano de Derecho Comparado - UNAM Instituto de Investigación Jurídicas: Nuevo Serie*, Año XVI, Mayo-Agosto de 1983, No. 47. **(E3, F1)**
- Valentine, J.A., 2012, Adjudications: Managing water wars in New Mexico, in Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 29-51. **(E3)**
- Varady, R.G., Scott, C.A., Wilder, M., Morehouse, B., Pineda Pablos, N., and Garfin, G.M., 2013, Transboundary adaptive management to reduce climate-change vulnerability in the western U.S.-Mexico border region: *Environmental Science Policy*, v. 26, p. 102-112. **(C1, E3, F1)**
- Wilder, M., Scott, C.A., Pineda Pablos, N., Varady, R.G., Garfin, G.M., and McEvoy, J., 2010, Adapting Across Boundaries: Climate Change, Social Learning, and Resilience in the U.S.-Mexico Border Region: *Annals of the Association of American Geographers*, v. 100, p. 917-928. **(C1, E3, F1)**
- Wood, M.K., 2012, Future water wars in New Mexico, in Ortega Klett, C.T., ed., *One hundred years of water wars in New Mexico*: Santa Fe, Sunstone Press, p. 262-282. ISBN 978-0-86524-902-5 **(E3)**

F. Transboundary Regional Hydrogeology and Geohydrology

F1. Binational

- Albritton, C.C., Jr., and Smith, J.F., Jr., 1965, *Geology of the Sierra Blanca area, Hudspeth County, Texas*: U.S. Geological Survey Professional Paper 594-J, 131 p. **(C2a, D1, F1)**
- Aldama, A., Aparicio, F.J., and Equihua, R., eds., 2002, *First International Symposium on Transboundary Waters Management, Proceedings: Asociación Mexicana de Hidráulica, Avances en Hidráulica 10*, México, D.F., 650 p., ISBN 968-5536-08-2 **(E2, F1)**
- Alley, W.M., ed., 2013, *Five-year interim report of the United States – Mexico Transboundary Aquifer Assessment Program: 2007-2012*: U.S. Geological Survey Open-File Report 2013-1059, 31 p. **(A2, D1, F1)**
- Anderson, K.S.J., ed., 2006 *Science on the Border*: New Mexico Journal of Science, v. 46, 247 p. **(A2, F1)**
- Araurjo-Mendieta, J. and Casar-González, R., 1987, Estratigrafía y sedimentología del Jurásico Superior en la cuenca de Chihuahua, norte de México: *Revista del Instituto Mexicano del Petróleo*, v. 19, no. 1, p. 6-29. **(F1)**
- Archuleta, E.G., 1995, Effective water planning for the Las Cruces/El Paso/Juarez area, in Ortega Klett, C.T., ed., *Proceedings of the 39th Annual New Mexico Water Conference*, N.M. Water Resource Research Institute Report 290, p. 245-259. **(E2, F1)**
- Baker, C.L., 1927, *Exploratory geology of a part of southwestern Trans-Pecos Texas*, in *The Geology of Texas; Volume II, Structural and Economic Geology*: University of Texas Bulletin, No. 2745, 60 p. **(C2a, F1)**
- Bersch, M.G., 1977, *Petrology and geology of the southern West Potrillo basalt field, Dona Ana County, New Mexico*: University of Texas at El Paso, master's thesis, 59 p. **(C2a, C4, F1)**

- Blandford, T.N., and Wilson, J.L., 1987. Large scale parameter estimation through the inverse procedure and uncertainty propagation in the Columbus Basin, New Mexico; New Mexico Water Resources Research Institute Report No. 226, 247 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-226.html> **(F1, H3)**
- CH2MHill, 2013, Distal Mesilla conceptual site model prepared for the United States Army Corps of Engineers: Technical Report, 224 p. **(E2c, F1, H1, H2)**
- Charbeneau, R.J., 1982, Groundwater resources in the Texas Rio Grande basin: *Natural Resources Journal*, v. 22, p. 957-970. **(E2, E3, F1)**
- Collins, E.W., and Raney, J.A., 2000, Geologic map of west Hueco Bolson, El Paso region, Texas: University of Texas at Austin, Bureau of Economic Geology, Miscellaneous Map No. 40, scale 1:100,000. **(C2b, F1)**
- Cornell University Law School Legal Information Institute, ND, United States-Mexico Transboundary Aquifer Act, 2006, Public Law no. 109-448, 120 Statute 3328, accessed October 22, 2015 at https://www.law.cornell.edu/topn/united_states-mexico_transboundary_aquifer_assessment_act **(E2, F1)**
- Creel, B.J., and Hawley, J.W., 2001, Water resources of the Border Region of New Mexico, in Bloom, G., report coordinator, New Mexico's border with Mexico: Creating a viable agenda for growth: Albuquerque, New Mexico First 27th Town Hall Background Report, p. 60-79. <http://www.nmfirst.org> **(F1)**
- Creel, B.J., Hawley, J.W., Kennedy, J.F., and Granados Olivas, A., 2006, Groundwater resources of the New Mexico-Texas-Chihuahua border region, in Anderson, K.S.J., ed., *Science on the Border: N.M. Journal of Science*, v. 44, p. 11-29. **(F1, H1)**
- Chuang, F.C., McKee, E.H., Howard, K.A., 2003, Hydrogeologic factors that influence ground water movement in the Desert Southwest United States: U.S. Geological Survey Open-File Report 03-294, 39 p., **(D2, F1)**
- Dadakis, J.S., 2004, Isotopic and geochemical characterization of recharge and salinity in a shallow floodplain aquifer near El Paso, Texas: University of Arizona, master's thesis, 102 p. **(D2, F1, H2)**
- Drewes, H., 1991, Description and development of the Cordilleran orogenic belt in the southwestern United States and northern Mexico: U.S. Geological Survey Professional Paper 1512, 97 p. **(C2b, F1)**
- Dyer, R., 1987, First day, Part A; Road log from El Paso/Ciudad Juárez via Villa Ahumada, El Sueco to Ciudad Chihuahua, in *Excursión Geológica, Libroto Guía de Caminos*, Sociedad Geológica Mexicana, Universidad Autónoma de Chihuahua, and the University of Texas at El Paso, p. 2-30. **(C2a, F1)**
- Elias, E.H., Rango, A., Steele, C.M., Mejia, J.F., and Smith, R., 2015, Assessing climate change impacts on water availability of snowmelt-dominated basins of the Upper Rio Grande Basin: *Journal of Hydrology: Regional Studies*, v. 3, p. 525-546. **(C1, F1)**
- El Paso Water Utilities, 2007, Water: Water Resources, accessed for reproduction in Teeple (2017), August 2014 at https://epwater.org/our_water/water_resources **(E2, F1)**
- Garcia-Vasquez, A.C., Granados-Olivas, A., Samani, Z., and Fernald, A., 2022, Investigation of the origin of Hueco Bolson and Mesilla Basin aquifers (US and Mexico) with isotopic data analysis: *Water*, v. 14 (526), 17 p. **(F1)**
- Granados-Olivas, A., 2022, Los recursos hidrológicos en cuencas transfronterizas entre México y Estados Unidos: El Paso del Norte y la gobernanza binacional del agua: Universidad Autónoma de Chihuahua y Universidad Autónoma de Ciudad Juárez, 324 p. ISBN 978-607-536 **(A2, B3, F1)**
- Granados Olivas, A., and Monger, H.C., 1999, Remote Sensing Technology for Development Planning Along the U.S.-Mexico Border: Hydrogeology and Geomorphology, in Herrera, E. and Mexal, J., eds., *Ensuring Sustainable Development of Arid Lands Through Time: Las Cruces*, New Mexico Academy of Science Journal, v. 39, p. 123-137. **(E1, E2, F1)**
- Granados Olivas, A., Creel, B., Kennedy, J., and Aldouri, R., 2001, Water planning GIS for the Paso del Norte region, in Aldama, A., Aparicio, F.J., and Equihua, R., eds. *First International Symposium on Transboundary Waters Management, Proceedings: Asociación Mexicana de Hidráulica, Avances en Hidráulica* 10, p.147-154. **(E1, E2, F1)**
- Granados Olivas, A., Creel, B., Sánchez-Flores, E., Chávez, J., and Hawley, J.W., 2012, Thirty years of groundwater evolution – Challenges and opportunities for binational planning and sustainable management of the Paso del Norte watersheds, in Lee, E., and Ganster, P., *The U.S.-Mexican border environment: Progress and challenges for sustainability: Southwest Consortium for Environmental Research and Policy, SCERP Monograph Series*, no. 16, San Diego State University Press, p. 201-217. ISBN 0-925613-53-3 **(E2, F1)**

- Granados Olivas, A., Sánchez-Flores, E., Rojas-Villa Lobos, H.L., Chávez, J., Hawley, J., and Creel, B., 2009, Historia y resultados del programa de intercambio de información entre México y Estados Unidos referente a la temática de agua subterránea: Casa de la región Paso del Norte (Chihuahua-Nuevo México-Texas), *in* Plenge-Tellechea, F. y Pérez-León, J.A., coordinadores, Ciencia en la frontera: Revista de ciencia y tecnología de la UACJ, v. VII, no. 4, p. 63-71. **(E2, F1)**
- Granados Olivas, A., Brown, C., Greenlee, J., Creel, B., Hawley, J.W., Kennedy, J., Dena-Ornelas, O., and Hurd, B., 2006, Geographic information systems at the Paso del Norte region. The academic accomplishments and challenges for a Transboundary water resources GIS cooperation, *in* Anderson, K.S.J., ed., Science on the Border: New Mexico Journal of Science, v. 46, p. 45-56. **(E1, F1)**
- Gries, J.G., 1979, Problems of delineation of the Rio Grande rift into Chihuahua tectonic belt of northern New Mexico, *in* Riecker, R.E., ed., Rio Grande rift: Tectonics and magmatism: Washington, D.C., American Geophysical Union, p. 107-113. **(C2a, F1)**
- Gries, J.G., 1980, Laramide evaporite tectonics of Trans-Pecos Texas: New Mexico Geological Society Guidebook 31, p. 93-100. **(C2a, F1)**
- Gries, J.G., and Haenggi, W.T., 1970, Structural evolution of the eastern Chihuahua Tectonic Belt, *in* The Geologic Framework of the Chihuahua Tectonic Belt: Symposium in honor of Professor Ronald K. DeFord, West Texas Geological Society and University of Texas at Austin, p. 119-137. **(C2a, F1)**
- Groat, C.F., 1970, Geology of Presido Bolson, Presidio County, Texas and adjacent Chihuahua, Mexico: University of Texas at Austin, doctoral dissertation, 167 p. **(C2a, F1, I3)**
- Groat, C.F., 1972, Presido Bolson, Trans-Pecos Texas and adjacent Mexico: Geology of a desert basin aquifer system: Texas Bureau of Economic Geology Report of Investigation 76, 46 p. **(C2a, F1, I3)**
- Hanson, R.T., Schmid, W., Knight, J., and Maddock T. III, 2013, Integrated hydrologic modeling of a transboundary aquifer system – Lower Rio Grande: MODFLOW and More 2013: Translating Science into Practice Conference: Golden, Colo., Colorado School of Mines, Integrated Groundwater Modeling Center, June 2-5, 2013, 5 p. **(F1, H3)**
- Hanson, R.T., Ritchie, A.B., Boyce, S.E., Galanter, A.E., Ferguson, I.A., Flint, L.E., and Henson, W.R., 2018, Rio Grande transboundary integrated hydrologic model and water-availability analysis, New Mexico and Texas, United States, and Northern Chihuahua, Mexico: U.S Geological Survey Open-File Report 2018-1091, 185 p. **(F1, H3)**
- Hathaway, D.L., 2011, Transboundary groundwater policy: Developing approaches in the western and southwestern United States. Journal of the American Water Resources Association (JAWRA), v. 47, no. 1, p. 103-113. **(E2, F1)**
- Hawley, J.W., 1975a, Quaternary history of Doña Ana County region, south-central New Mexico: New Mexico Geological Society Guidebook 26, p. 139-150. **(C2a, F1, I3)**
- Hawley, J.W., 1981, Pleistocene and Pliocene history of the international boundary area, southern New Mexico: El Paso Geological Society, Guidebook to April 1981 field trip, p. 26-32. **(C2a, F1)**
- Hawley, J.W., 2005, Five million years of landscape evolution in New Mexico: An overview based on two centuries of geomorphic conceptual-model development, *in* Lucas, S.G., et al., eds., New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 9-93. **(A1, A2, C2b, F1, I1, I3)**
- Hawley, J.W., 2020, A Hydrogeologic perspective on groundwater conservation in the northern Rio Grande basin, New Mexico, Texas, and Chihuahua—2014 Albert E. Utton Memorial Lecture, *in* Sheely, M., ed. Proceedings, 59th Annual New Mexico Water Conference, Santa Fe, NM., p. 59-85, with 28 pptx slide pdf on CD-ROM. **(D1, F1, H1)**
- Hawley, J.W., and Granados Olivas, A., 2012, Progress report on development of an annotated bibliography for transboundary aquifer systems of the Mesilla Basin-Paso del Norte area, New Mexico, Texas, and Chihuahua, *in* Aquifers of West Texas-Theme Session T5: Geological Society of America, Abstracts with Programs, v. 44, no. 1., p. 38., No. 199147 on CD-ROM. **(A1, F1)**
- Hawley, J.W., and Kennedy, J.F., 2004, Creation of a digital hydrogeologic framework model of the Mesilla Basin and southern Jornada del Muerto Basin: New Mexico Water Resources Research Institute, New Mexico State University; prepared for Lower Rio Grande Water Users Organization; Report No. 332, 105 p., with plates and appendix on CD ROM. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-332.html> **(F1, H1)**

- Hawley, J.W., and Swanson, B.H., 2022, Conservation of shared groundwater resources in the binational Mesilla Basin-El Paso Del Norte Region—A Hydrogeological Perspective, *in* Granados-Olivas, Alfredo, coordinador, Los Recursos Hidrológicos en Cuencas Transfronterizas entre México y los Estados Unidos: El Paso del Norte y la Gobernanza Binacional de Agua [Hydrological Resources in Transboundary Basins between Mexico and the United States: El Paso del Norte and the Binational Water Governance]: Universidad Autónoma de Ciudad Juárez y Universidad Autónoma de Chihuahua, p. 202-323. ISBN 978-607-536 (F1, H1)
- Hawley, J.W., Granados Olivas, A., and Creel, B.J., 2012, Progress report on development of an annotated bibliography for transboundary aquifer systems of the Mesilla Basin-Paso del Norte area, New Mexico, Texas, and Chihuahua—Poster Presentation Abstract *for* 57th Annual New Mexico Water Conference: Hard Choices: Adapting Policy and Management to Water Scarcity (8/28/12), New Mexico Water Resources Research Institute, NMSU-Las Cruces. <http://kunm.org/post/new-mexicos-hard-choices> (A1, F1)
- Hawley, J.W., Kennedy, J.F., Granados Olivas, A., and Ortiz, M.A., 2009, Hydrogeologic framework of the binational western Hueco Bolson-Paso del Norte area, Texas, New Mexico, and Chihuahua: Overview and progress report on digital model development: New Mexico Water Resources Research Report No. 349, 45 p., 2 pls. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-349.html> (F1, H1)
- Hawley, J.W., Kennedy, J.F., Hibbs, B.J., and Cleary, M., 2002, Basin-fill aquifers of the southern New Mexico border region, USA and Mexico: Their hydrogeologic framework, and related aspects of groundwater flow and chemistry, in Integrated Trans-boundary Water Management: Proceedings of a special joint conference of Universities Council on Water Resources (UCOWR), Environmental & Water Resources Institute of ASCE (EWRI), U.S. Army Corps of Engineers Institute for Water Resources (CEIWR), and National Ground Water Association (NGWA), p. 164-172. (F1, H1)
- Hawley, J.W., Swanson, B.H., Walker, J.S., and Glaze, S.H., 2024, Hydrogeologic Framework of the Mesilla Basin Region of New Mexico, Texas, and Chihuahua (Mexico) – Advances in Conceptual and Digital Model Development: NM Water Resources Research Institute, NMSU, Technical Completion Report No 363, 312 p., APPENDICES A to H. (F1, H1)
- Hawley, J.W., Kottowski, F.E., Seager, W.R., King, W.E., Strain, W.S., and LeMone, D.V., 1969, The Santa Fe Group in the south-central New Mexico border region, *in* Border Stratigraphy Symposium: New Mexico Bureau of Mines and Mineral Resources, Circular 104, p. 52-76. (C2a, F1)
- Hawley, J.W., Hibbs, B.J., Kennedy, J.F., Creel, B.J., Remmenga, M.D., Johnson, M., Lee, M.M., and Dinterman, P., 2000, Trans-International Boundary aquifers in southwestern New Mexico: New Mexico Water Resources Research Institute, prepared for U.S. Environmental Protection Agency-Region 6 and International Boundary and Water Commission; Technical Completion Report-Interagency Contract X-996350-01-3, 126 p. <https://nmwrri.nmsu.edu/publications/pub-external-pages/trans-international-boundary-aquifers-in-southwest-new-mexico.html> (C2b, D1, F1, I2)
- Hayton, R.D., 1978a, Institutional policies for U.S.-Mexico groundwater management: Natural Resources Journal, v. 18, no. 1 (Symposium on U.S.-Mexican Transboundary Resources, Part II), p. 201-212. (E2, E3, F1)
- Hayton, R.D., 1978b, The ground water legal regime as instrument of policy objectives and management requirements, *in* ANNALES JURIS AQUARUM II: Caracas, Venezuela; 2nd International Conference on Water Law and Administration (Feb. 1976), p. 8-14. (E2, E3, F1)
- Henry, C.D., 1979, Geologic setting and geochemistry of thermal water and geothermal assessment, Trans-Pecos Texas: Texas Bureau of Economic Geology, Report of Investigations 96, 48 p. (C2a, F1, H1, H2)
- Henry, C.D., 1998a, Basement controlled transfer zones in an area of low-magnitude extension, eastern Basin and Range province, Trans-Pecos Texas, *in* Faults, J.E., Stewart, J.H., eds., Accommodation Zones and Transfer Zones; The Regional Segmentation of the Basin and Range Province: Geological Society of America Special Publication 323, p. 75-88. (C2b, F1)
- Henry, C.D., 1998b, Geology of Big Bend Ranch State Park, Texas: Texas Bureau of Economic Geology, Guidebook 27, 72 p., 2 maps. (C2b, F1)
- Henry, C.D., and Price, J.G., 1985, Summary of the tectonic development of Trans-Pecos Texas: University of Texas at Austin, Bureau of Economic Geology, Miscellaneous Map No. 36, scale 1:500,000, text 8 p. (C2a, F1)
- Hernandez, J.W., 1978, Interrelationships of ground and surface water quality in the El Paso-Juarez and Mesilla Valleys: Natural Resources Journal, v. 18, no. 1 (Symposium on U.S.-Mexican Transboundary Resources, Part II), p. 1-9. (F1, H2)

- Heywood, C.E., and Yager, R.M., 2003, Simulated ground-water flow in the Hueco Bolson, an alluvial-basin aquifer system near El Paso, Texas: U.S. Geological Survey Water Resources Investigations Report 02-4108, 27 p. **(F1, H3)**
- Hibbs, B.J., 1999a, Hydrogeologic and water quality issues along the El Paso/Juarez corridor: An international case study: *Environmental & Engineering Geoscience*, vol. V, no. 1, p. 27-39. **(F1, H1, H2)**
- Hibbs, B.J., 1999b, Modeling aquifer flow capacity and ground-water path lines in a Chihuahuan Desert basin, *in* Hydrological issues of the 21st Century: Ecology, Environment, and Human Health: American Institute of Hydrology, Hydrological Science and Technology, v. 15, no. 1-4, p. 200-212. **(F1, H3)**
- Hibbs, B.J., and Boghici, R.N., 1999, On the Rio Grande aquifer: Flow relationships, salinization, and environmental problems: *Environmental & Engineering Geoscience*, v. 5, p. 51-59. **(F1, H1, H2)**
- Hibbs, B.J., and Darling, B.K., 2005, Revisiting a classification scheme for U.S.-Mexico alluvial basin-fill aquifers: *Ground Water*, v. 43, no. 5, p. 750-763. **(D1, D2, F1)**
- Hibbs, B.J., and Merino, M., 2006, A geologic source of salinity in the Rio Grande aquifer near El Paso, Texas: *New Mexico Journal of Science*, v. 46, 165-181. **(F1, H1, H2)**
- Hibbs, B., and Merino, M., 2007, Discovering a geologic salinity source in the Rio Grande aquifer: *Southwest Hydrology*: v. 6, p. 20-23. **(F1, H1, H2)**
- Hibbs, B., and Merino, M., 2020, Reinterpreting models of slope-front recharge in a desert basin: *Geosciences*, v. 10, no. 297, 20 p. Licensee MDPI, Basel, Switzerland. **(F1, H1, H2)**
- Hibbs, B.J., Darling, B.K., and Jones, I.C., 1998, Hydrogeologic regimes of arid-zone aquifers beneath low-level radioactive waste and other waste repositories in Trans-Pecos, Texas and northern Chihuahua, Mexico, *in* Van Brahana, J., and others, eds., *Gambling with groundwater – Physical, chemical, and biological aspects of aquifer-stream relationships*: American Institute of Hydrology, St. Paul, Minnesota, p. 311-322. **(F1, H1, H2)**
- Hibbs, B.J., Lee, M.M., and Hawley, J.W., 1999, Evolution of hydrochemical facies in the Mimbres Basin aquifer system: A transboundary resource, *in* Hydrological issues of the 21st Century: Ecology, Environment, and Human Health: American Institute of Hydrology, Hydrological Science and Technology, v. 15, no. 1-4, p. 52-65. **(F1, H1, H2)**
- Hibbs, B., Eastoe, C., Hawley, J., and Granados, A., 2015, Multiyear study of the binational Hueco Bolson Aquifer reformulates key conceptual models of groundwater flow, *in* *Water is not for gambling: Utilizing science to reduce uncertainty*: Proceedings 2015 UCOWWR/NIWR/CUAHSI Annual Conference, Universities Council on Water Resources, p. 81-86. <https://ucowr.org/> **(F1, H1, H2)**
- Hibbs, B.J., Lee, M.M., Hawley, J.W., and Kennedy, J.F., 2000, Some notes on the hydrogeology and ground-water quality of the Animas basin system, southwestern New Mexico: *New Mexico Geological Society, Guidebook 51*, p. 227-234. **(F1, H1, H2)**
- Hibbs, B., Phillips, F., Hogan, J., Eastoe, C., Hawley, J., Granados, A., and Hutchison, B., 2003, Hydrogeologic and Isotopic Study of the Groundwater Resources of the Hueco Bolson Aquifer El Paso/Juárez Area: *Hydrological Science and Technology*, v. 19, no. 1-4, p. 109-119. **(F1, H1, H2)**
- Hibbs, B., Phillips, F., Hogan, J., Eastoe, C., Hawley, J.W., Kennedy, J.F., Nuñez, F., Granados, A., and Kretschmar, T., 2003, Binational Study of the Surface and Ground Water Resources of the El Paso/Juárez International Corridor, *in* Rubin, K., ed., *Trans-Boundary Water Issues: The Universities Council on Water Resources, Water Resources Update, Issue No. 125*, p. 25-30. **(F1, H1, H2)**
- Hibbs, B.J., Creel, B.J., Boghici, R., Hayes, M., Ashworth, J., Hanson, A., Samani, Z., Kennedy, J.F., Hann, P., and Stevens, K., 1997, Transboundary Aquifers of the El Paso/Ciudad Juarez/Las Cruces Region: U.S. Environmental Protection Agency, Region 6; Technical Contract Report- Interagency Contracts X-996343-01-0 and X-996350-01-0, prepared by the Texas Water Development Board and the New Mexico Water Resources Research Institute, variously paged. *See TWDB, 1997, Appendix C—G.I.S. coverages, metadata descriptions, [and] groundwater data sets on CD-ROM, with Water Quality map insert on back-cover.* <https://nmwrri.nmsu.edu/publications/publications.html> **(F1, H1, H2)**

- Hibbs, B., Boghici, R., Ashworth, J., Hayes, M., Peckham, D., Guillen, R., Fuentes, O., Lalloth, N., Morales, M., Maldonado, A., Creel, B., Kennedy, J., Hanson, A., Samani, Z., Nunez, F., Lemus, R., Moreno, G., Rascon, E., Kuo, R., Waggoner, S., Ito, C., Robinson, J., Valdez, J., Little, D., Rascon, A., Reyes, A., Williams, K., Vaughan, M., Cabra, O., Kelly, T., and King, C., 1998, Transboundary aquifers and binational ground-water data base, City of El Paso/Ciudad Juárez area; Base de datos binacional del acuífero transfronterizo, de Ciudad Juárez, Chih./El Paso, Tex.: first binational aquifer report and data base sanctioned by the governments of the United States and Mexico, 47 p. + appendices and CD-ROM. Participating agencies; International Boundary and Water Commission, U.S. Environmental Protection Agency, Texas Water Development Board, New Mexico Water Resources Research Institute, Comisión Internacional de Límites y Aguas, Comisión Nacional del Agua, Junta Municipal de Agua y Saneamiento de Ciudad Juárez. **(F1, H1, H2)**
- Hill, R.T., 1891, Preliminary notes on the topography and geology of northern Mexico and southwest Texas, and New Mexico: *American Geologist*, v. 8, p. 133-141. **(B3, C2a, F1)**
- Hill, R.T., 1896, Descriptive topographic terms of Spanish America: *National Geographic*, v. 7, p. 291-302. **(A1, B3, C2a, F1)**
- Hoffer, J.M., 2001a, Geology of Potrillo Maar, southern New Mexico and northern Chihuahua, Mexico, in Crumpler, L.S., and Lucas, S.G., eds., *Volcanology in New Mexico: New Mexico Museum of Natural History and Science, Bulletin 18*, p. 137-140. **(C2b, F1)**
- Hoover, J.D., Ensendot, S.E., Barnes, C.G., and Dyer, R., 1988, Early Trans-Pecos magmatism: Petrology and geochemistry of Eocene intrusive rocks of the El Paso area: *New Mexico Geological Society Guidebook 39*, p. 109-118. **(C2a, F1)**
- Hundley, N., 1966, *Dividing the waters: A century of controversy between the United States and Mexico*: University of California Press, 266 p. **(B3, E3, F1)**
- Hurd, B., Brown, C., Greenlee, J., Granados Olivas, A., and Hendrie, M., 2006, Assessing water-resource vulnerability for arid watersheds: GIS-based research in the Paso del Norte region, in Anderson, K.S.J., ed., *Science on the Border: New Mexico Journal of Science*, v. 46, p. 203-235. **(E1, E2, F1)**
- International Boundary and Water Commission (IBWC), 1930-2000, Flow of the Rio Grande and related data from Elephant Butte Dam, New Mexico, to the Gulf of Mexico: International Boundary and Water Commission, Water Bulletin Nos. 1-70. **(F1)**
- International Boundary and Water Commission, 1989 (IBWC), Ground-water conditions and resources in El Paso/Juarez Valley: Prepared by Hydraulics Branch, Planning Division, U.S. Section, International Boundary and Water Commission, 41 p. **(F1)**
- International Boundary and Water Commission (IBWC), 2009a, Rio Grande Historical Mean Daily Discharge Data. Retrieved from <https://ibwcsftpstg.blob.core.windows.net/wad/TelemetryTXT/08370500.txt> site no: 08-3705.00, Rio Grande at Fort Quitman, TX near Colonia Luis Leon, Chih. **(F1)**
- International Boundary and Water Commission (IBWC), 2009b, Rio Grande Historical Mean Daily Discharge Data. Retrieved from <https://ibwcsftpstg.blob.core.windows.net/wad/TelemetryTXT/08374200.txt> site no: 08-3742.00, Rio Grande below Rio Conchos near Presidio, TX and Ojinaga, Chih. **(F1)**
- International Boundary and Water Commission (IBWC), 2010, Hydrogeological activities in the Conejos-Medanos/Mesilla Basin Aquifer, Chihuahua Phase I: Prepared by the International Boundary and Water Commission, and Mexican Geological Survey, v. 1, 109 p. *See INEGI 2012*. **(F1)**
- International Boundary and Water Commission (IBWC), 2013, Rio Grande historical mean daily discharge data, accessed January 17, 2013 at https://www.ibwc.gov/Water_Data/histf101.html **(F1)**
- James, H.L., 1969, History of the United States-Mexican boundary survey – 1848-1855: *New Mexico Geological Society Guidebook 20*, p. 40-55. **(B3, F1)**
- Jiménez, A.J., 1999, An integrated analysis of basins in the Rio Grande Rift in northern Chihuahua, Mexico: El Paso, *ETD Collection for University of Texas, El Paso*. AAIEP05329. **(C2b, C4, F1, H1)**
- Jiménez, A.J., and Keller, G.R., 2000, Rift basin structure in the border region of northwestern Chihuahua: *New Mexico Geological Society Guidebook 51*, p. 79-83. **(C2b, C4, F1, H1)**
- Kennedy, J.F., 2004, Application of GIS and remote sensing methods to the paleohydrography of the Paso del Norte region. *ETD Collection for University of Texas, El Paso*. AA13138516. **(C1, E1, F1, I2)**
- Kennedy, J.F., and Hawley, J.W., 2003, Late Quaternary paleohydrology of a linked pluvial-lake and Ancestral Rio Grande system, Paso Del Norte Region, Southwestern USA And Northern Mexico in *Shaping the Earth, a Quaternary Perspective: XVI INQUA Congress (July 23-30, 2003)*, Desert Research Institute, Reno, NV, Programs with Abstracts, p. 181. **(F1, H1, I2)**

- Kennedy, J.F., Granados Olivas, A., and Aldouri, R., 2002, Creating a single map, regional geographic information system to support water planning in the Paso del Norte region: New Mexico Water Resources Research Institute Report No. 322, 22 p., CD-ROM <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-322.html> **(F1, H1, I2)**
- Kennedy, J.F., Hawley, J.W., and Johnson, M., 2000, The hydrogeologic framework of basin-fill aquifers and associated ground-water-flow systems in southwestern New Mexico—An overview: New Mexico Geological Society Guidebook 51, p. 235-244. **(F1, H1, I2)**
- King, P.B., 1935, Outline of structural development of Trans-Pecos Texas: American Association of Petroleum Geologists, Bulletin, v. 19, p. 221-261. **(C2a, F1)**
- King, W.E., Hawley, J.W., and Cliett, T.E. (Abstract), 1971, Santa Fe Group and Rio Grande Valley-fill aquifers in the south-central New Mexico border region: Geological Society of America, Abstracts with Programs, v. 3, no. 3, p. 239-240. **(C2a, F1, H1)**
- Kottlowski, F.E., 1958a, Geologic history of the Rio Grande near El Paso: West Texas Geological Society, Guidebook 1958 Field Trip, Franklin and Hueco Mountains, Texas, p. 46-54. *N.M. Bureau of Mines and Mineral Resources, Reprint Series No. 1. Reprint produced with permission of the West Texas Geological Society, Inc.* **(C2a, F1)**
- Krider, P.R., 1998, Paleoclimatic significance of late Quaternary lacustrine and alluvial stratigraphy, Animas Valley, New Mexico, Quaternary Research, v. 50, p. 283-289. **(B2, C1, F1, I2)**
- Lawton, T.E., 2004, Upper Jurassic and lower Cretaceous strata of southwestern New Mexico and northern Chihuahua, Mexico, *in* Mack, G.H., and Giles, K.J., eds., The Geology of New Mexico: A geologic history: New Mexico Geological Society Special Publication 11, p. 153-168. **(C2b, F1)**
- Lawton, T.E., McMillan, N.J., and McLemore, V.T., eds., 2000, Southwest Passage: A trip through the Phanerozoic: New Mexico Geological Society, Guidebook 33, 281 p. **(C2b, F1)**
- Lawton, T.F., McMillan, N.J., McLemore, V.T., and Hawley, J.W., 2000, Second day road log, from Lordsburg to Deming via Little Hatchet Mountains and Victorio Mountains: New Mexico Geological Society Guidebook 51, p. 17-30. **(C2b, F1)**
- Lippincott, J.B., 1939, Southwestern border water problems: American Water Works Association Journal, v. 31, no. 1, p. 1-29. **(E2, F1)**
- Lovejoy, E.M.P., 1976a, Geology of Cerro de Cristo Rey uplift, Chihuahua and New Mexico: New Mexico Bureau of Mines and Mineral Resources Memoir 31, 84 p. **(C2a, F1)**
- Lucas, S.G., Corbett, L.L., and Estep, J.W., 1998, Cretaceous stratigraphy, paleontology, petrography, depositional environments, and cycle stratigraphy at Cerro de Cristo Rey, Doña Ana County, New Mexico: New Mexico Geological Society Guidebook 49, p. 197-203. **(C2b, F1)**
- Lucas, S.G., Krainer, K., Spielmann, J.A., and Durney, K., 2010, Cretaceous stratigraphy, paleontology, petrography, depositional environments, and cycle stratigraphy at Cerro de Cristo Rey, Doña Ana County, New Mexico: New Mexico Geology, v. 32, no. 4, p. 103-130. **(C2b, F1)**
- Malagamba, F.A., 1990, Troublesome equity in distribution of shared water resources: The U.S.-Mexico border, *in* Ganster, P., and Walter, H., eds., Environmental hazards and bioresource management in the United States-Mexico Borderlands: Los Angeles, UCLA Latin American Center Publications, p. 13-21. **(E3, F1)**
- Marrufo, S.S., 2011, An integrated geological and geophysical study of the fresh and brackish water boundary in the Hueco Bolson, west Texas: University of Texas at El Paso, master's thesis, 108 p. **(C4, E2a, F1, H2)**
- Marston, R.A., and Lloyd, W.J., 1985, River budget for the Rio Grande-El Paso-Juarez Valley: Journal of Arid Environments, v. 8, p. 109-119. **(E2, F1)**
- Marston, R.A., Lloyd, W.J., and Peebles, W.J., 1983, Water resource development options for southeast El Paso Valley. Report prepared for Horizon Communities Improvement Association, El Paso, Texas, 127 p. **(E2, F1)**
- McAnulty, W.N., compiler, 1980, Generalized geology and structure of Trans-Pecos Texas and adjacent Republic of Mexico: New Mexico Geological Society Guidebook 26, scale 1:625,000, pocket contents. **(C2a, F1)**
- McCalpin, J.P., 2006, Quaternary faulting and seismic source characterization in the El Paso-Juarez metropolitan area; Collaborative research with the University of Texas at El Paso, Program Element II: Evaluate Urban Hazard and Risk, final Technical Report, National Earth Quake Hazards Reduction Program U.S. Geological Survey, 68 p. **(C2b, C4, F1)**
- McLean, J.S., 1977, Hydrologic Maps and Data in the Mimbres Basin, New Mexico: U.S. Geological Survey Open-File Report 77-314, 531 p. **(H1, H2, F1)**

- Miyamoto, S., Fenn, L.B., and Swietlik, D., 1995, Flow, salts, and trace elements in the Rio Grande: A review: College Station, Texas A&M University, Texas Agricultural Experiment Station Technical Report 169, 34 p. **(F1, H2)**
- Moncada-Gutierrez, M., 2016, A Geophysical investigation at Potrillo Maar: University of Texas at El Paso, master's thesis, 47 p. **(C4, F1)**
- Morrison, R.B., 1969, Photointerpretive mapping from space photographs of Quaternary geomorphic feature and soil associations in northern Chihuahua and adjoining New Mexico and Texas: New Mexico Geological Society Guidebook 20, p. 116-129. **(C2a, C3, E1, F1, I2)**
- Moya, H., 2007, Possible effects of border fence construction and operation on fauna. Specialist discussion, *in* de la Parra, C., and Córdova, A., eds., A barrier to our shared environment: The border fence between the United States and Mexico: Mexico, DF; Secretaría de Mejoramiento de Ambiente y Recursos Naturales, p. 77-86. **(C1, E3, F1)**
- Moyer, D.L., Anderholm, S.K., Hogan, J.F., Phillips, F.M., Hibbs, B.J., Witcher, J.C., Matherne, A.M., and Falk, S.E., 2013, Knowledge and understanding of dissolved solids in the Rio Grande – San Acacia, New Mexico, to Fort Quitman, Texas, and plan for future studies and monitoring: U.S. Geological Survey Open-File Report 2013-1190, 55 p. **(C4, F1, H2)**
- Mueller, J.E., 1975, Restless river: International law and the behavior of the Rio Grande: Texas Western Press, University of Texas at El Paso, 155 p. **(A2, B3, E2, F1)**
- Mumme, S.P., 1994, The North American Free Trade Agreement: The Environmental Side Agreement and Parallel Bilateral Border Accords: Transboundary Resources Report, v. 8, no. 3, p. 1-3. **(E2, E3, F1)**
- Mumme, S.P., 2000, Minute 242 and beyond: Challenges and opportunities for managing transboundary groundwater on the Mexico-US Border: Natural Resources Journal, v. 40, no. 2, p. 341-378. **(E2, E3, F1)**
- Mumme, S.P., 2003, Revising the 1944 Water Treaty: Reflections on the Rio Grande drought crisis and other matters: Journal of the Southwest, v. 45, p. 649-670. **(C1, E3, F1)**
- Mumme, S.P., 2010, Environmental governance in the Rio Grande watershed: Binational institutions and the transboundary water crisis-*An agenda for strengthening binational water governance along the Rio Grande*: Journal of Transboundary Water Resources, v. 1, p. 43-68.
<https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E2, E3, F1)**
- Mumme, S., 2019, The 1944 U.S.-Mexico Water Treaty as a Constitutional Document; Rice University's Baker Institute for Public Policy: Houston, TX, USA, p. 15. **(E2, E3, F1)**
- Muñoz-Meléndez, G., Quintero-Núñez, M., and Sweedler, A., 2012, Energy for a sustainable border region in 2030, *in* Lee, E., and Ganster, P., The U.S.-Mexican border environment: Progress and challenges for sustainability: Southwest Consortium for Environmental Research and Policy, SCERP Monograph Series, no. 16, San Diego State University Press, p. 289-325. **(E2, E3, F1)**
- New Mexico Geographic Information Council, Inc. (NMGIC), 1996, TRIP: Transboundary Resource Inventory Project: The Map Legend, v. 7, issue 2, p. 5-6. **(E1, F1)**
- Pacheco, J., 2010, Infrastructure benefits both sides of the border: Albuquerque Journal-BUSINESS OUTLOOK – Business Across the Border, Monday, May 24, 2010, p. 20. **(A3, E2, F1)**
- Page, R.O., 1975, Malpais maar volcano: New Mexico Geological Society Guidebook 28, p. 135-137. **(C2a, F1)**
- Parcher, J., and Hernández, A., 2008, U.S.-Mexico Border Geographic Information System: U.S. Department of the Interior – U.S. Geological Survey Fact Sheet 2008-3069, 4 p. **(E2, F1)**
- Parcher, J.W., Woodward, D.G., and Duval R.A., 2010, A descriptive overview of the Rio Grande-Rio Bravo watershed: Journal of Transboundary Water Resources, v. 1, p. 159-177.
<https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E2, F1)**
- Paso del Norte Water Task Force (PdNWTf), 2001, Water planning in the Paso del Norte: Toward regional coordination: Paso del Norte Water Task Force Report, 31 p. **(E2, F1)**
- Price, J.G., and Henry, C.D., 1985, Summary of Tertiary stress orientations and tectonic history of Trans-Pecos Texas, *in* Dickerson, P.W., and Muehlberger, W.R., eds., Structure and Tectonics of West Texas: West Texas Geological Society, v. 85-81, p. 149-151. **(C2a, F1)**
- Ramírez-López, A., Gorder, P., and Delgadillo-Reynoso, P., 2002, Tri-regional water planning in the border area between Mexico and the U.S.A., *in* Aldama, A., Aparicio, F.J., and Equihua, R., eds. First International Symposium on Transboundary Waters Management, Proceedings: Asociación Mexicana de Hidráulica, Avances en Hidráulica 10, p. 301-307. **(E2, F1)**
- Raney, J.A., and Collins, E.W., 1994a, Geologic map of the El Paso quadrangle, Texas: University of Texas at Austin, Bureau of Economic Geology Open-File Map, 1 sheet, scale 1:24,000. **(C2b, F1)**

- Rango, A., 2006, Snow: The real water supply for the Rio Grande basin, *in* Anderson, K.S.J., ed., *Science on the Border: New Mexico Journal of Science*, v. 44, p. 99-118. **(C1, F1)**
- Reaser, D.F., 1982, Geometry and deformational environment of the Cineguilla-Quitman range in northeastern Chihuahua, Mexico and western Trans-Pecos Texas, USA, *in* Powers, R.B., ed., *Geologic studies of the Cordilleran thrust belt*, v. 1: Denver, Co., Rocky Mountain Association of Geologists, p. 425-449. **(C2a, F1)**
- Reaser, D.F., and Underwood, J.R., Jr., 1980, Tectonic style and deformation environments in the Eagle-southern Quitman Mountains, western Trans-Pecos Texas, *in* Dickerson, P.W., Hoffer, J.M., and Callender, J.F., eds., *Trans-Pecos region: New Mexico Geological Society Guidebook 31*, p. 123-130. **(C2a, F1)**
- Rebert, P., 2001, *La Gran Línea: Mapping the United States–Mexico Boundary, 1849-1857*: University of Texas Press, 268 p. ISBN 0-292-77111-8 **(A2, B3, F1)**
- Rebert, P., 2005, Views of the Borderlands: The Report on the United States and Mexican Boundary Survey, 1857-1859: *Terrae Incognitae—the Official Publication of The Society for the History of Discoveries*, v. 37, p. 75-90. **(B3, F1)**
- Reeves, C.C., Jr., and DeHon, R.A., 1965. Geology of Potrillo maar, New Mexico and northern Chihuahua, Mexico: *American Journal of Science*, v. 263, p. 401-409. **(C2a, F1)**
- Ritchie, A.B., Hanson, R.T., Galanter, A.E., Boyce, S.E., Damar, N.A., Shephard, Z.M., and Tillman, F.D., 2018, Digital hydrologic and geospatial data for the Rio Grande transboundary integrated hydrologic model and water-availability analysis, New Mexico and Texas, United States, and Northern Chihuahua, Mexico: U.S. Geological Survey data release. **(D1, E1, F1)**
- Robertson, A.J., Matherne, A-M., Pepin, J.D., Ritchie, A.B., Sweetkind, D.S., Teeple, A.P., Granados-Olivas, A., García-Vásquez, A.M., Carroll, K.C., Fuchs, E.H. and Galanter, A.E., 2022, Mesilla/Conejos-Médanos Basin: U.S.-Mexico Transboundary Water Resources: *Water*, v. 14, article 134, 36 p. **(F1)**
- Sanchez, R., and Eckstein, G., 2017, Aquifers Shared Between Mexico and the United States: Management Perspectives and Their Transboundary Nature: *Groundwater*, v. 55, p. 495-505. **(E3, F1)**
- Sanchez, R., and Eckstein, G., 2019, The path towards groundwater management in the borderlands of Mexico and Texas: *Wiley Interdisciplinary Reviews (WIREs) Water*, v. 7, article e1399. **(E3, F1)**
- Sanchez, R., Rodriguez, L., and Tortajada, C., 2018, Transboundary aquifers between Chihuahua, Coahuila, Nuevo Leon and Tamaulipas, Mexico, and Texas, USA: Identification and categorization, *in* Rivera, A. and Candela, L., eds., *Special Issue on International Shared Aquifer Resources Assessment and Management: Journal of Hydrology: Regional Studies*, v. 20, p. 74-102. **(E3, F1)**
- Sandoval Solis, S., 2011, Water planning and management for large scale river basins. Case of study: Rio Grande/Rio Bravo transboundary basin: University of Texas at Austin, doctoral dissertation. **(E2, F1)**
- Schmidt, R.H., Jr., 1979, A climatic delineation of the “real” Chihuahuan Desert region: *Phytologia*, v. 44, p. 129-133. **(C1, F1)**
- Schmidt, R.H., Jr., 1986, Chihuahuan climate, *in* *Invited papers from the Second Symposium on Resources of the Chihuahuan Desert Region – United States and Mexico II: Alpine, Texas, Chihuahuan Desert Research Institute*, October, 1983, p. 40-63. **(C1, F1)**
- Sharps, J.A., and Freeman, V.L., 1964, Geologic map of The Mouth of Pecos and Feely quadrangles, Val Verde County, Texas: U.S. Geological Survey, *Miscellaneous Geologic Investigations Map I-440*, scale 1:62,500. **(C2a, F1, I3)**
- Sheng, Z., 2013, Impacts of groundwater pumping and climate variability on groundwater availability in the Rio Grande Basin: *Ecosphere*, v. 4, no. 1, p. 1-25. **(E2, F1, H3)**
- Sheng, Z., and Devere, J., 2005, Understanding and managing the stressed Mexico-USA transboundary aquifer in the Hueco bolson aquifer in the El Paso del Norte region as a complex system: *Hydrogeology Journal*, v. 13, no. 5-6, p. 813-825. **(E2, F1)**
- Sheng, Z., Mace, R.E., and Fahey, M.P., 2001, The Hueco Bolson: An aquifer at the crossroads, *in* Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., *Aquifers of West Texas: Austin, Texas Water Development Board Report 356*, p. 66-75. **(E2, F1)**
- Sheng, Z., Darr, M., King, J.P., Bumgarner, J., and Michelsen, A., 2013, Mesilla Basin/Conejos-Médanos section of the Transboundary Aquifer Assessment Program, *in* Alley, W.M., ed., *Five-year interim report of the United States-Mexico Transboundary Aquifer Assessment Program: 2007-2012*: U.S. Geological Survey Open-File Report 2013-1059, 31 p. **(D1, F1)**
- Smith, R.E., 1956, Ground water of the El Paso District, Texas: Texas Board of Water Engineers, *Bulletin 5603*, 33 p. **(C2a, F1, G2)**

- Székely, A. [Ambassador], 1991, An uncertain future: Climate change and the US-Mexico Agenda: Transboundary Resources Report, v. 6, no. 3, p. 1-2. **(C1, E3, F1)**
- Székely, A. [Ambassador], 2010, Albert E. Utton Memorial Lecture (2003): Journal of Transboundary Water Resources, v. 1, p. 189-198. <https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E3, F1)**
- Tanski, J., Hanson, A., Granados, A. and Samani, Z., 1998. Water Quality Assessment Plan for Columbus, N.M. and Palomas, Chihuahua, in SCERP-FY 1998. **(E2, F1, H2)**
- Tapia-Villaseñor, E.M., and Megdal, S., 2021, The U.S.-Mexico Transboundary Aquifer Assessment Program as a Model for Transborder Groundwater Collaboration: Water 2021, 13, 530, p. 1-22. **(E3, F1)**
- Texas Water Development Board (TWDB), 1997, Appendix C – G.I.S. coverages, metadata descriptions,[and] groundwater data sets on CD-ROM, with Water Quality map* insert on back-cover; in Hibbs and 9 others, Transboundary Aquifers of the El Paso/Ciudad Juarez/Las Cruces Region: U.S. Environmental Protection Agency, Region 6; Technical Contract Report - Interagency Contracts X-996343-01-0 and X-996350-01-0, prepared by the Texas Water Development Board and the New Mexico Water Resources Research Institute, variously paged. *Map includes Stiff diagrams color-coded for four total dissolved solids classes [0-1,000, 1,000-3,000, 3,000-5,000, and >5,000 mg/L] for more than 200 wells in Doña Ana and Otero Counties, NM; El Paso and Hudspeth Counties, TX; and contiguous parts of Chihuahua. <https://nmwrri.nmsu.edu/publications/publications.html> **(F1, H2)**
- Thompson, S. III, Tovar, J.C., and Conley, J.N., 1978, Oil and gas exploration wells in the Pedregosa Basin: New Mexico Geological Society Guidebook 29, p. 331-342. **(C2a, F1)**
- Underwood, J.R., Jr., 1980, Physiographic features, Trans-Pecos region: New Mexico Geological Society Guidebook 31, p. 57-58. **(C2a, F1)**
- United States and Mexico, 1907, Convention between the United States and Mexico Equitable Distribution of the Waters of the Rio Grande: Signed at Washington, May 21, 1906: Ratification advised by the Senate, June 26, 1906; ratified by the President, December 26, 1906; ratified by Mexico, January 5, 1907; ratifications Exchanged at Washington, January 16, 1907; and proclaimed, January 16, 1907: Washington, DC; U.S. Government Printing Office, 3 p. **(E3, F1)**
- University of Texas, 2005, Rio Grande-Rio Bravo studies: Center for Research in Water Resources, accessed July 2014 at <https://www.census.gov/quickfacts/> **(E2, F1)**
- U.S. Army Map Service-Corps of Engineers (USAMS-CE), 1963, El Paso Sheet – Edition 1-AMS, NH 13-1 1:250,000 scale. Prepared within the collaborative program of the Departamento Cartográfico Militar of Mexico, Inter-American Geodetic Survey, and Army Map Service, Corps of Engineers, United States Army. See *INEGI 1982*. **(E1, F1)**
- US-MX TAA (United States-Mexico Transboundary Aquifer Act), 2006, Public Law no. 109-448, 120 Statute 3328, Cornell University Law School Legal Information Institute, p. S.214-15. https://www.law.cornell.edu/topn/united_states-mexico_transboundary_aquifer_assessment_act **(E3, F1)**
- Utton, A.E., 1983, Some International Aspects of Groundwater Development in the Mexico-United States Frontier Region: UNM School of Law, Natural Resources Center Report to The Governor's Law Study Committee, 58 p. **(E3, F1)**
- Utton, A.E., 1994, Water and the arid Southwest: An international region under stress: Natural Resources Journal, v. 34, no. 4, p. 957-961. **(E3, F1)**
- Utton, A.E., 1996, Remarks made by Professor Al Utton upon receiving an award of appreciation at the 40th Annual Water Conference, in Ortega Klett, C.T., ed., Reaching the Limits: Stretching the Resources of the Lower Rio Grande, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 7-12. **(E3, F1)**
- Utton, A.E., and Atkinson, C.K., 1979, International groundwater management: The case for the Mexico-United States frontier: New Mexico Water Resources Research Institute Report No. 109, 130 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-109.html> **(E3, F1)**
- Utton, A.E., and Atkinson, C.K., 1981, International groundwater management: The case for the Mexico-United States frontier, in Teclaff, L.A., and Utton, A.E., eds., International Groundwater Law: New York, Oceana Publications, Inc., p. 175-188. **(E3, F1)**
- Utton, A.E., and Atkinson, C.K., 1983, La Administración Internacional de Aguas Subterráneas: El Caso de la Región Fronteriza México-Estados Unidos: Boletín Mexicano de Derecho Comparado - UNAM Instituto de Investigación Jurídicas: Nuevo Serie, Año XVI, Mayo-Agosto de 1983, No. 47. **(E3, F1)**

- Varady, R.G., Scott, C.A., Wilder, M., Morehouse, B., Pineda Pablos, N., and Garfin, G.M., 2013, Transboundary adaptive management to reduce climate-change vulnerability in the western U.S.-Mexico border region: *Environmental Science Policy*, v. 26, p. 102-112. **(C1, E3, F1)**
- Wauer, R.H., and Riskind, D.H., 1977, Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, USGPO: 1978 O - 258-713, 658 p. **(C1, F1)**
- Wen, C.L., 1983, A study of bolson-fill thickness in the southern Rio Grande rift, southern New Mexico, west Texas and northern Chihuahua: University of Texas at Austin, master's thesis, 74 p. **(C4, F1)**
- Wilder, M., Scott, C.A., Pineda Pablos, N., Varady, R.G., Garfin, G.M., and McEvoy, J., 2010, Adapting Across Boundaries: Climate Change, Social Learning, and Resilience in the U.S.-Mexico Border Region: *Annals of the Association of American Geographers*, v. 100, p. 917-928. **(C1, E3, F1)**
- Woodhouse, C.A., Stahle, D.W., and Villanueva Díaz, J., 2012, Rio Grande and Rio Conchos water supply variability over the past 500 years: *Climate Research*, v. 51, p. 125-136. **(B3, C1, F1)**
- Woodward, D., and Duval R., 1996, United States-Mexico Border Area, as delineated by a shared-water resource perspective—Fact sheet 1: United States Department of the Interior U.S.-Mexico Border Field Coordinating Committee, 4 p. **(E2, F1)**

F2. USA

- Abeyta, C.G., 1996, Geohydrologic site characterization of the municipal solid waste landfill facility, U.S. Army Air Defense Artillery Center and Fort Bliss, El Paso County, Texas: U.S. Geological Survey Water-Resources Investigations Report 95-4217, 36 p. **(E2c, H2)**
- Abeyta, C.G., and Roybal, R.G., 1996, Ground-water quality, Water Year 1995, and statistical analysis of ground-water quality data, Water Years 1994-95, at the Chromic Acid Pit site, U.S. Army Air Defense Artillery Center and Fort Bliss, El Paso, Texas: U.S. Geological Survey Water-Resources Investigations Report 96-4211, 42 p. **(E2c, H2)**
- Anderson, T.W., 1995, Summary of the southwest alluvial basins, regional aquifer-system analysis, south-central Arizona and parts of adjacent states: U.S. Geological Survey Professional Paper 1406-A, 33 p. **(D1, F2)**
- Barnes, R.L., 1991, Maps Showing Groundwater Conditions in the San Simon Sub-basin of the Safford Basin; Graham and Cochise Counties, Arizona; Hidalgo County, New Mexico: State of Arizona, Department of Water Resources, Hydrologic Map Series Report No. 19, 2 sheets, scale 1:250,000. **(F2)**
- Bedinger, M.S., Sargent, K.A., and Langer, W.H., eds., 1989a, Studies of geology and hydrology in the Basin and Range province, southwestern United States, for isolation of high-level radioactive waste – Characterization of the Trans-Pecos region, Texas, U.S. Geological Survey Professional Paper 1370-B, 43 p. **(F2, H3)**
- Bedinger, M.S., Sargent, K.A., and Langer, W.H., eds., 1989b, Studies of geology and hydrology in the Basin and Range province, southwestern United States, for isolation of high-level radioactive waste – Characterization of the Rio Grande region, New Mexico and Texas: U.S. Geological Survey Professional Paper 1370-C, 48 p. **(F2, H3)**
- Buszka, P.M., Brock, R.D., and Hooper, R.P., 1994, Hydrogeology and selected water-quality aspects of the Hueco Bolson aquifer at the Hueco Bolson Recharge Project area, El Paso, Texas: U.S. Geological Survey Water-Resources Investigations Report 94-4092, 41 p. **(E2b, F2)**
- Darton, N.H., 1933, Guidebook of the western United States, Part F, The Southern Pacific Lines, New Orleans to Los Angeles. U.S. Geological Survey Bulletin 845. 304 p., 29 route maps. [West TX, and Southern NM and AZ: p. 120-160]. **(B3, C2a, F2, G1)**
- Day, J.C., 1978, International aquifer management: The Hueco Bolson on the Rio Grande River: *Natural Resources Journal*, v. 18, p. 163-180. **(E2, E3, F2)**
- Diaz, T., and Navarro, A., 1974 [1964], Lithology and stratigraphic correlation of the Upper Paleozoic in the region of Palomas, Chihuahua, in *Geologic Field Trip Guidebook thru the States of Chihuahua and Sinaloa, Mexico*: West Texas Geological Society, Publication 74-63, p. 104-129. **(C2a, F2)**
- Dunbar, J.B., Murphy, W.L., Ballard, R.F., McGill, T.E., Peyman-Dove, L.D., and Bishop, M.J., 2004, Condition assessment of U.S. International Boundary and Water Commission, Texas and New Mexico levees – Report 2: U.S. Army Corps of Engineers Engineer Research and Development Center, 121 p. **(F2, H1)**
- Ellis, S.R., Levings, G.W., Carter, L.F., Richey, S.F., and Radell, M.J., 1993, Rio Grande Valley, Colorado, New Mexico, and Texas: *Water Resources Bulletin*, v. 29, no. 4, p. 617-646. **(B3, C1, D1, F2)**
- El Paso Water (EPW), ND, Water Resources-El Paso Water: https://epwater.org/our_water/water_resources **(E2, E2a, E2b, F2)**

- Fisher, R.S., and Mullican, W.F. III, 1990, Integration of ground-water and vadose zone geochemistry to investigate hydrochemical evolution: A case study in arid lands of the northern Chihuahuan Desert, Trans-Pecos Texas: University of Texas at Austin, Bureau of Economic Geology, Geological Circular GC 90-5, p. 1-36. **(F2, H1, H2)**
- Fisher, R.S., and Mullican, W.F. III, 1997, Hydrochemical evolution of sodium-sulphate and sodium-chloride groundwater beneath the northern Chihuahuan Desert, Trans-Pecos Texas, USA: *Hydrogeology Journal*, v. 5, p. 4-16. **(F2, H1, H2)**
- Frenzel, P.F., 1992, Simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas. Supplement to Open-File Report 88-305: U.S. Geological Survey Water Resources Investigations Report 91-4155, 152 p. **(F2, H3)**
- Frenzel, P.F., and Kaehler, C.A., 1990, Geohydrology and simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas; *with a section on Water quality and geochemistry by S.K. Anderholm*: U.S. Geological Survey Open-File Report 88-305, 179 p. **(F2, H2, H3)**
- Frenzel, P.F., and Kaehler, C.A., 1992, Geohydrology and simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas, *with a section on Water quality and geochemistry by S.K. Anderholm*: U.S. Geological Survey Professional Paper 1407-C, 105 p. **(F2, H2, H3)**
- Garza, S., Weeks, E.P., and White, D.E., 1980, Appraisal of potential for injection-well recharge of the Hueco bolson with treated sewage effluent – Preliminary study of the northeast El Paso area, Texas: U.S. Geological Survey Open-File Report 80-1106, 37 p. **(E2b, F2, H2)**
- Gates, J.S., and Stanley, W.D., 1976, Hydrologic interpretation of geophysical data from the southeastern Hueco Bolson, El Paso and Hudspeth Counties, Texas: U.S. Geological Survey Open-File Report 76-650, 37 p. **(C4, F2, H1)**
- Hanson, R.T., McLean, J.S., and Miller, R.S., 1994, Hydrogeologic framework and preliminary simulation of ground-water flow in the Mimbres Basin, southwestern New Mexico: U.S. Geological Survey Water-Resources Investigations Report 94-4011, 118 p. **(F2, H1, H3)**
- Hawley, J.W., compiler, 1970, Cenozoic stratigraphy of the Rio Grande Valley area, Doña Ana County, New Mexico: El Paso Geological Society, Guidebook 4, 49 p. **(C2a, F2)**
- Heywood, C.E., 2003, Summary of extensometric measurements in El Paso, Texas: U.S. Geological Survey, Water Resources Investigations Report 03-4158, 11 p. **(C4, D1, F2)**
- Hoffer, J.M., Penn, B.S., Quezada, O.A., and Morales, M.A., 1998, Qualitative age relationships of Late Cenozoic cinder cones, southern Rio Grande rift, utilizing cone morphology and Landsat thematic imagery: New Mexico Geological Society Guidebook 49, p. 123-128. **(C2b, E1, F2)**
- Kelly, T.E., 1974, Reconnaissance investigation of ground water in the Rio Grande drainage basin—with special emphasis on saline ground-water resources: U.S. Geological Survey Hydrologic Investigations Atlas 510, 4 sheets. **(F2, H2)**
- Kelly, T.E., Myers, B.N., and Hershey, L.A., 1975, Saline ground-water resources of the Rio Grande drainage basin—a pilot study: U.S. Office of Saline-Water Research and Development, Progress Report 560, 70 p. **(F2, H2)**
- King, W.E., Hawley, J.W., Taylor, A.M., and Wilson, R.P., 1969, Hydrogeology of the Rio Grande Valley and adjacent intermontane areas of southern New Mexico: New Mexico Water Resources Research Institute Miscellaneous Report No. M6, 141 p. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m6.pdf> **(F2, H1, H2)**
- King, W.E., Hawley, J.W., Taylor, A.M., and Wilson, R.P., 1971, Geology and ground-water resources of central and western Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 1, 64 p. **(F2, H1, H2)**
- Kirby, J.W., 1968, Water resources – El Paso County, Texas, past, present, future: University of Texas at El Paso, master's thesis, 190 p., 5 figs. **(F2, G2)**
- Klein, D.P., 1995, Structure of the basins and ranges, southwest New Mexico, and interpretation of seismic velocity sections: U.S. Geological Survey Open-File Report 95-406, 60 p. (with plates by G.A. Adams and P.L. Hill, scale 1:250,000 and 1:500,000). **(C4, F2)**
- Knowles, D.B., and Kennedy, R.A., 1958, Ground-water resources of the Hueco Bolson northeast of El Paso, Texas: U.S. Geological Survey, Water-Supply Paper 1426, 186 p. **(F2, G2)**

- Kreitler, C.W., Raney, J.A., Nativ, R., Collins, E.W., Mullican, W.F. III, Gustavson, T.C., and Henry, C.D., 1987, Siting a low-level radioactive waste disposal facility in Texas, volume four – Geologic and hydrologic investigations of the State of Texas and University of Texas lands: University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Low-Level Radioactive Waste Disposal Authority under contract no. IAC (86-87)-1722, 330 p. **(C2a, E2c, F2, H1, H2)**
- Kubicki, C., Carroll, K.C., Witcher, J.C., and Robertson, A., 2021, An Integrated Geochemical Approach for Defining Sources of Groundwater Salinity in the Southern Rio Grande Valley of the Mesilla Basin, New Mexico and West Texas, USA: New Mexico Water Resources Research Institute Report No. 388, 40 p., 3 Appendices. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-388.html> **(F2, H1, H2, H3)**
- Lee, W.T., 1907a, Afton Craters of southern New Mexico: Geological Society of America Bulletin, v. 18, p. 211-220. **(C2a, F2, G1)**
- Lee, W.T., 1907b, Water resources of the Rio Grande Valley in New Mexico: U.S. Geological Survey, Water-Supply Paper 188, 59 p. **(C2a, F2, G1)**
- Leggat, E.R., 1962, Development of ground-water of the El Paso district, Texas: 1955-60, Progress Report No. 8: Texas Water Commission, Bulletin 6204, 56 p. **(F2, G2)**
- Leggat, E.R., and Davis, M.E., 1962, Analog model study of the Hueco Bolson near El Paso, Texas: Texas Water Development Board, 26 p. **(F2, H3)**
- Leggat, E.R., Lowry, M.E., and Hood, J.W., 1962, Ground-water resources of the lower Mesilla Valley, Texas and New Mexico: Texas Water Commission, Bulletin 6203, 191 p. **(F2, G2, H1, H2)**
- Leggat, E.R., Lowry, M.E., and Hood, J.W., 1963, Ground-water resources of the lower Mesilla Valley, Texas and New Mexico: U.S. Geological Survey, Water-Supply Paper 1669AA, 49 p. **(F2, G2, H1, H2)**
- Levings, G.W., Healy, D.F., Richey, S.F., and Carter, L.F., 1998, Water quality in the Rio Grande Valley, Colorado, New Mexico, and Texas: U.S. Geological survey Circular 1162, updated April 1, 1998. **(F2, H2)**
- Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., 2001, Aquifers of West Texas: Texas Water Development Board Report 356, 272 p. **(D1, F2)**
- Moore, S.J., Bassett, R.L., Liu, B., Wolf, C.P., and Doremus, D., 2008, Geochemical tracers to evaluate hydrogeologic controls on river salinization: Ground Water, v. 46, no. 3, p. 489-501. **(E2a, F2, H2)**
- Paine, J.G., and Collins, E.W., 2002, Evaluating potential groundwater resources on State Lands in El Paso County, Texas using airborne geophysics: Report prepared by the University of Texas Bureau of Economic Geology for the General Land Office under contract no. 02-306R, 87 p. **(C4, F2)**
- Reaser, D.F., Underwood, J.R., and Jones, R.B., 1975, Geothermal prospects of the Eagle-Quitman Mountains and vicinity, Trans-Pecos Texas: West Texas Geological Society Guidebook 75-15, p. 155-161. **(C4, F2, H2)**
- Remick, W.H., 1989, Maps Showing Groundwater Conditions in the Duncan-Virden Valley Basin, Greenlee and Cochise Counties, Arizona, and Hidalgo and Grant Counties, New Mexico: State of Arizona, Department of Water Resources, Hydrologic Map Series Report Number 16, Sheets 1 and 2, scale 1:125,000. **(D1, F2)**
- Sayre, A.N., and Livingston, P., 1945, Ground-water resources of the El Paso area, Texas: U.S. Geological Survey Water-Supply Paper 919, 190 p. **(D1, F2, G2)**
- Scanlon, B.R., Goldsmith, R.S., and Langford, R.P., 2000, Relationship between arid geomorphic settings and unsaturated flow: a case study, Chihuahuan Desert, Texas: University of Texas at Austin, Bureau of Economic Geology, Report of Investigations No. 261, 133 p. **(F2)**
- Schwennesen, A.T., 1918, Ground water in the Animas, Playas, Hachita, and San Luis Basins, New Mexico: U.S. Geological Survey Water-Supply Paper 422, 152 p. **(D1, F2, G1, I2)**
- Snyder, J.T., 1986, Heat flow in the southern Mesilla Basin, with an analysis of East Potrillo geothermal system, Doña Ana County, New Mexico: New Mexico State University, master's thesis, 252 p. **(C4, F2, H1)**
- Stone, W.J., 2000, Challenges of Basin and Range hydrogeology – Examples from Hidalgo County, New Mexico: New Mexico Geological Society, Guidebook 51, p. 221-225. **(F2, H1)**
- Texas Water Development Board (TWDB), 1972, A survey of the subsurface saline water of Texas: Texas Water Development Board, Report 157, v. 1, 113 p. **(F2)**
- Thiros, S.A., Bexfield, L.M., Anning, D.W., and Huntington, J.M., eds., 2010, Conceptual understanding and ground-water quality of selected basin-fill aquifers in the Southwestern United States: U.S. Geological Survey Professional Paper 1781, 288 p. **(F2, H2)**
- Thiros, S.A., Paul, A.P., Bexfield, L.M., and Anning, D.W., 2014, The quality of our Nation's waters—Water quality in basin-fill aquifers of the southwestern United States: Arizona, California, Colorado, Nevada, New Mexico, and Utah, 1993-2009: U.S. Geological Survey Circular 1358, 113 p. **(F2, H2)**

- Trauger, F.D., and Doty, G.C., 1965, Ground water – Its occurrence and relation to the economy and geology of southwestern New Mexico: New Mexico Geological Society Guidebook 16, p. 215-227. **(E2, F2, G2)**
- Trauger, F.D., and Herrick, E.H., 1962, Ground water in central Hachita Valley northeast of the Big Hatchet Mountains, Hidalgo County, New Mexico: New Mexico State Engineer Office Technical Report No. 26, 21 p. **(F2, H1, H2)**
- Trauger, F.D., and Stoneman, D.L., 1975, Geohydrology of the Santa Teresa area, Doña Ana County, New Mexico: *prepared by Earth Environmental Consultants, Inc., Albuquerque, NM for C.L. Crowder Investment Company*, 44 p. *including tables and well logs* **(F2, H1, H2, H3)**
- Underwood, J.R., Jr., 1963, Geology of Eagle Mountains and vicinity, Hudspeth County, Texas: Texas Bureau of Economic Geology, Geologic Quadrangle Map No. 26, 32 p. text. **(C2a, F2)**
- Uphoff, T.L., 1978, Subsurface stratigraphy and structure of the Mesilla and Hueco bolsons, El Paso region, Texas and New Mexico: University of Texas at El Paso, master's thesis, 66 p. **(C2a, F2)**
- U.S. Bureau of Reclamation, 1973, Water resources of El Paso County, Texas: Report prepared for the Texas Water Development Board, 97 p. **(E2, F2)**
- U.S. Bureau of Reclamation (USBOR), 2011, Reclamation – Managing water in the west – Rio Grande Project. **(E2, F2)**
- Waltemeyer, S.D., 2008, Analysis of the magnitude and frequency of peak discharge and maximum observed peak discharge in New Mexico and surrounding areas: U.S. Geological Survey, Scientific Investigations Report 2008-5119, 105 p. **(F2, H4)**
- White, D.E., Gates, J.S., Smith, J.T., and Fry, B.J., 1980, Ground-water data for the Salt Basin, Eagle Flat, Red Light Draw, Green River Valley, and Presidio Bolson in westernmost Texas: Texas Department of Water Resources Report 259, 97 p. **(F2)**
- Wilkins, D.W., 1986, Geohydrology of the Southwest Alluvial Basins, Regional Aquifer-systems analysis in parts of Colorado, New Mexico, and Texas: U.S. Geological Survey Water Resources Investigations Reports 84-4224, 61 p. **(D1, F2)**
- Wilkins, D.W., 1998, Summary of the Southwest Alluvial Basins, regional aquifer-systems analysis in parts of Colorado, New Mexico, and Texas: U.S. Geological Survey Professional Paper 1407-A, 49 p. **(F2)**
- Witcher, J.C., 1988, Geothermal resources of southwestern New Mexico: New Mexico Geological Society, Guidebook 39, p. 191-197. **(C4, F2, H2, H3)**

F3. México

- Almada, F.R., 1968, Diccionario de historia, geografía, y biografía Chihuahuenses (2nd ed.): Chihuahua, México, Universidad de Chihuahua, 378 p. **(A1, A2, B3, C, F3)**
- Bell, J.J., 1963, Geology of the foothills of Sierra de los Pinos, northern Chihuahua, near Indian Hot Springs, Hudspeth County, Texas: University of Texas at Austin, master's thesis, 83 p. **(F3)**
- Berg, E.L., 1969, Geology of Sierra de Samalayuca, Chihuahua, Mexico: New Mexico Geological Society Guidebook 20, p. 176-182. **(C2a, F3)**
- Blásquez López, L., 1959, Hidrogeológica de las regiones desérticas de México: Universidad Nacional Autónoma de México, Anales del Instituto de Geología, Tomo XV, 172 p. **(F3)**
- Bluntzer, R.L., 1975, Selected water well and ground-water chemical analysis data, Ciudad Juarez, Chihuahua, Mexico: Texas Water Development Board Open-File Report, 29 p. **(F3, H2)**
- Brand, D.C., 1937, The natural landscape of northwestern Chihuahua: University of New Mexico Press, 74 p. **(B2, C, C1, C2a, F3)**
- Burrows, R.H., 1909, Geology of northern Mexico: Mining and Scientific Press, v. 99, no. 9 (whole no. 2562, 28 Aug.), p. 290-294; continued as "Geology of northeastern Mexico," *in* v. 99, no. 10 (4 Sept.), p. 324-327. **(C2a, F3, G1)**
- Campos-Enriquez, J.O., Ortega-Ramírez, J., Alariste-Vilchis, D., Cruz-Gática, R., and Cabral-Cano, E., 1999, Relationship between extensional tectonic style and paleoclimatic elements at Laguna El Fresnal, Chihuahua Desert, Mexico: Geomorphology, v. 28, p. 75-94. **(C1, C2b, F3, I2)**
- Cantú-Chapa, C.M., Sandoval-Silva, R., and Arenas-Partida, R., 1985, Evolución sedimentaria del Cretácico Inferior en el norte de México; Revista Instituto Mexicano del Petróleo, v. 17, no. 2, p. 14-37. **(C2a, F3)**
- Carciumaru, D.D., 2005, Structural geology and tectonics of the northern Chihuahua trough: University of Texas at El Paso, doctoral dissertation, 99 p. **(C2b, F3)**
- Castiglia, P.J., 2002, Late Quaternary climate history of the pluvial Lake Palomas system, Chihuahua, Mexico: University of New Mexico, master's thesis, 161 p. **(B2, C1, F3, I2)**

- Castiglia, P.J., and Fawcett, P.J., 2006, Large Holocene lakes and climate change in the Chihuahuan Desert: Geology, v. 34, no. 2, p. 113-116. *Seminal paper; but they still do not recognize the major contribution of Mimbres Basin/River system to pluvial Lake Palomas.* **(B2, C1, F3, I2)**
- Castillo, R.C., Cortes, A., Morales, P., Romero, G., and Villegas, R., 1984, A survey of groundwater flow using deuterium and oxygen-18 as tracers, in Samalayuca Dunes Northern Mexico: *Revista Mexicanos de Física*, v. 30, no. 4, p. 147-155. **(F3, H2, H3)**
- Chávez-Quirarte, R., 1986, Stratigraphy and structural geology of Sierra de Sapello, Northern Chihuahua, Mexico: University of Texas at El Paso, doctoral dissertation, 167 p. **(C2a, F3)**
- C^aNAGUA, 2015a, Actualización de la Disponibilidad Media Anual de Agua en el Acuífero Conejos Médanos (0823), Estado de Chihuahua: Subdirección General Técnica, México DF, p. 1-32. **(F3)**
- CONAGUA, 2015b, Actualización de la Disponibilidad Media Anual de Agua en el Acuífero Valle de Juárez (0833), Estado de Chihuahua: Subdirección General Técnica, México DF, p. 1-36. **(F3)**
- CONAGUA, 2020, Actualización de la Disponibilidad Media Anual de Agua en el Acuífero Conejos-Medanos (0823) Estado de Chihuahua, in Subdirección General Técnica Gerencia de Aguas Subterráneas; Comisión Nacional del Agua: Mexico City, Mexico, 36 p.
https://sigagis.conagua.gob.mx/gas1/Edos_Acuiferos_18/chihuahua/DR_0823.pdf. **(F3)**
- Córdoba, D.A., 1969a, Geología del área de Cerro de Muleros o Cristo Rey, Escala ~1:43,000: [Inset map on] Hoja Ciudad Juárez 13R-a (3): Carta Geológica de México, escala 1:100,000, *Reprinted as back-cover insert in Córdoba and others, 1969.* **(C2a, F3)**
- Córdoba, D.A., 1969b, Hoja Ciudad Juárez 13 R-a (3) con Resumen de la Geología de la Hoja Ciudad Juárez de Chihuahua: Universidad Nacional Autónoma de México, Instituto Geología, Carta Geológica de México, Serie de 1:100,000. *Reprinted as back-cover insert in Córdoba and others, 1969.* **(C2a, F3)**
- Córdoba, D.A., 1969c, Mesozoic stratigraphy of northeastern Chihuahua, Mexico: *New Mexico Geological Society Guidebook 20*, p. 91-101. **(C2a, F3)**
- Córdoba, D.A., Rodríguez-Torres, R., and Guerrero-García, J., 1970, Mesozoic stratigraphy of the northern portion of the Chihuahua Trough, in *The Geologic Framework of the Chihuahua Tectonic Belt: Symposium in honor of Professor Ronald K. DeFord*: West Texas Geological Society and University of Texas at Austin, p. 83-97. **(C2a, F3)**
- de la O-Carreño, A., 1944, A new development of the theory and application of the potential-drop-ratio method of electrical prospecting: *Transactions, American Geophysical Union*, v. 25, issue 4, p. 575-584. **(C4, F3)**
- de la O-Carreño, A., 1948, The two non-parallel layers problem according to the new development of the potential drop ratio method of the electrical prospecting: *Transactions, American Geophysical Union*, v. 29, issue 1, p. 51-58. **(C4, F3)**
- de la O-Carreño, A., 1951, Las provincias geohidrológicas de México (primera parte): Instituto de Geología, Universidad Nacional Autónoma de México, 137 p. *En forma sumaria, expone los principios de la Geohidrología, haciendo hincapié en sus conceptos básicos, así como en la etimología y semántica del vocabulario de esa especialidad. Se incluye una "Síntesis de la hidrología superficial de la República."* **(F3)**
- de la O-Carreño, A., 1954, Las provincias geohidrológicas de México (segunda parte): Instituto de Geología, Universidad Nacional Autónoma de México, 166 p. *En este número se expone los fundamentos del cálculo de escurrimiento, evaporación e infiltración en cada cuenca. En seguida, estos principios se aplican a cada una de las diversas cuencas y vertientes del territorio nacional.* **(F3)**
- *de la O-Carreño, A., 1957a, Water supply wells of Juárez, Chihuahua, a hydrology study: Mexico City, D.F., 23 p. **From USGS English translations, courtesy of Barry J. Hibbs 11/12/2021* **(F3)**
- *de la O-Carreño, A., 1957b, Preliminary geohydrological study of the Juárez Valley and surrounding areas, State of Chihuahua: Mexico City, D.F., 101 p. **From USGS English translations, courtesy of Barry J. Hibbs 11/12/2021* **(F3)**
- *de la O-Carreño, A., 1958, Investigation of subsurface geohydrologic conditions at Juárez, Chihuahua, applying electrical geophysics: Mexico City, D.F., 55 p. **From USGS English translations, courtesy of Barry J. Hibbs 11/12/2021* **(C4, F3)**
- Drewes, H., and Dyer, R., 1993, Geologic map and structure sections of the Sierra Juárez, Chihuahua, Mexico: U.S. Geological Survey Miscellaneous Investigations Map I-2287, scale 1:12,500. **(C2b, F3)**
- Dyer, R., 1988, Bibliography of geologic studies in northwestern Chihuahua, Mexico: *El Paso Geological Society Publication 19*, p. 173-179. **(A1, F3)**
- Eguiluz de Antuñano, S., 1984, Tectónica Cenozoica del norte de México: *Asociación Mexicana de Geólogos Petroleros, Boletín*, Tomo XXXVI, p. 43-62. **(C2a, F3)**

- Flores Mata, G., 1970, Informe de Actividades, mayo 1967-septiembre 1970, Anexos 3: Mapa de Grandes Grupos de Suelos del Edo. de Chihuahua de acuerdo al Sistema de FAO/UNESCO/SRH, Anexos 4. De 147 acuerdo al sistema Americano de la 7a, Aproximación: Secretaria de Recursos Hidráulicos, Dirección de Agrología, Serie Estudios Publicación Numero 1, 33 p. **(C3, F3)**
- Flores Mata, G., and six others, 1973, Informe complementario del Proyecto de Rehabilitación del Distrito de Riego del Valle de Juárez: El presente estudio fue elaborado por Personal Técnico de las Direcciones Generales de Estudios y Planeación: Secretaria de Recursos Hidráulicos, Dirección de Agrología, Serie Estudios Publicación Numero 6. variously paged. **(E2, F3)**
- Foster, M.S., 1992, Arqueología del Valle de Casas Grandes: Sitio Paquimé, in Márquez-Alameda, A., coordinador del volumen, Historia general de Chihuahua I – Geología, geografía y arqueología: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua, p. 229-282. **(B2, F3)**
- Frantes, T., 1981, The geology of the Palomas volcanic field, northern Chihuahua Mexico: University of Texas at El Paso, master's thesis, 70 p. **(C2a, F3)**
- Frantes, T., and Hoffer, J.M., 1982, The geology of the Palomas volcanic field, northern Chihuahua Mexico: New Mexico Geology, v. 4, p. 6-8. **(C2a, F3)**
- García-Ruiz, J.M., Villasuso, R., Ayora, C., Canals, A., and Otálora, F., 2007, Formation of natural gypsum megacrystals in Naica, Mexico: Geology, v. 35, no. 4, p. 327-330. **(D1, F3)**
- Gómez, F., 1983, Geology of Sierra del Aguila, northern Chihuahua, Mexico, in Geology and Mineral Resources of North-Central Chihuahua: El Paso Geological Society, Guidebook 1983 Field Conference, p. 261-267. **(C2a, F3)**
- Gómez-Caballero, J.A., 2005, Historia e índice comentado del Boletín del Instituto de Geología de la UNAM: Boletín de la Sociedad Geológica Mexicana - Volumen Conmemorativa del Centenario: Aspectos Históricos de la Geología en México. Tomo LVII, Núm. 2, p. 149-185. **(A2, F3, G1)**
- Granados Olivas, A., 2000, Relationships between Landforms and Hydrogeology in the Lower Casas Grandes Basin, Ascension, Chihuahua, Mexico: New Mexico State University, doctoral dissertation, 292 p. **(E1, F3, H1)**
- Granados Olivas, A., 2010, Future solutions: Research needs in the Mexican section of the Rio Grande (Bravo) watershed: Journal of Transboundary Water Resources, v. 1, p. 147-157. <https://nmwrri.nmsu.edu/publications/pub-documents/JTWR-Book.pdf> **(E2, F3)**
- Granados Olivas, A., and Kretzschmar, T., 2001, Uso de sistemas de información Geográfica y sistemas de teledetección en la identificación y mapeo de potenciales zonas de recarga hacia acuíferos del Desierto Chihuahua: VIII Reunión Nacional sobre Sistemas de Captación de Agua de Lluvia, Cd. Chihuahua, Chih., SEMARNAT [Mexico]. 17 p. **(D2, E1, F3)**
- Gries, J.G., 1970, Geology of Sierra de la Parra, northeastern Chihuahua, Mexico: University of Texas at Austin, doctoral dissertation, 151 p. **(C2a, F3)**
- Guerrero, J.C., 1969, Stratigraphy of Banco de Lucero, State of Chihuahua, in The Border Region, New Mexico Geological Society Guidebook 20, p. 171-172. **(C2a, F3)**
- Gutiérrez-Ojeda, C., 2001, Aquifer recharge estimation at Mesilla Bolson and Guaymas aquifer systems, Mexico, in IAEA, eds., Isotope based assessment of groundwater renewal in water scarce regions: IAEA-TECDOC-1246, Vienna, International Atomic Energy Agency, p. 23-44. See *Secretaria de Recursos Hidráulicos 1988, Pozo no. 9-El Parabién*. **(F3, H2, H3)**
- Haenggi, W.T., 1966, Geology of the El Cuervo area, northeastern Chihuahua, Mexico: University of Texas at Austin, doctoral dissertation, 403 p. **(C2a, F3)**
- Haenggi, W.T., 2001, Tectonic history of the Chihuahua trough, Mexico, and adjacent USA; Part I, The pre-Mesozoic Setting: Boletín de Sociedad Geológica Mexicana, Tomo 54, p. 28-66. **(C2b, F3)**
- Haenggi, W.T., 2002, Tectonic history of the Chihuahua trough, Mexico, and adjacent USA; Part II, Mesozoic and Cenozoic: Boletín de Sociedad Geológica Mexicana, Tomo 55, p. 38-74. **(C2b, F3)**
- Hawley, J.W., 1969b, Notes on the geomorphology and late Cenozoic geology of northwestern Chihuahua: New Mexico Geological Society Guidebook 20, p. 131-142. **(C2a, F3)**
- Hennings, P.H., 1994, Structural transect of the southern Chihuahua fold belt between Ojinaga and Aldama, Chihuahua, Mexico: Tectonics, v. 13, p. 1445-1460. **(C2b, F3)**
- Herold, L.C., 1965, Trincheras and physical environment along the Rio Gavilan, Chihuahua, Mexico: Department of Geography, University of Denver, Publications in Geography 65-1 (5/1970 reprint), 233 p. **(B2, C1, F3)**

- Herold, L.C., and Miller, R.F., 1994, Soil moisture conditions in agricultural terraces associated with a Highland Variant of the Casas Grandes Culture, Chihuahua, Mexico, *in* Foss, J.E., et al., eds., Proceedings of the First International Conference on Pedo-Archaeology: Special Publication 93-03, University of Tennessee Agricultural Experiment Station, Knoxville, p. 185-190. **(B2, C1, C3, F3)**
- Herold, L.C., and Miller, R.F., 1995, Water availability for plant growth in Precolumbian terrace soils, Chihuahua, Mexico, *in* Toll, H.W., ed., Soil, water, biology, and belief in prehistoric and traditional Southwestern agriculture: New Mexico Archaeological Council, C & M Press, Denver, Colorado, p. 145-153. **(B2, C1, C3, F3)**
- Howard, W.A., and Griffiths, T.M., 1966, Trinchera distribution in the Sierra Madre Occidental, Mexico: Department of Geography, University of Denver, Technical Paper No. 66-1. **(B2, C1, F3)**
- INEGI, 1981, Carta Geológica: Chihuahua, México: Instituto Nacional de Estadística, Geografía e Informática, México., D.F., Escala 1:000,000. **(F3)**
- INEGI, 1982, Ciudad Juárez H13-1, Cartas Topográfica: SPP Programación y Presupuesto. Coordinación General de los Servicios Nacionales de Estadística, Geografía e Informática. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(E1, F3)**
- INEGI, 1983a-ap, Agua Prieta H12-1, Cartas Edafológica: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Coordinación General de los Servicios Nacionales de Estadística, Geografía e Informática. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(C3, F3)**
- INEGI, 1983b-ap, Agua Prieta H12-1, Cartas Geológica: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(F3)**
- INEGI, 1983c-ap, Agua Prieta H12-1, Cartas Hidrológica de Aguas: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(F3)**
- INEGI, 1983a-cj, Ciudad Juárez H13-1, Cartas Edafológica: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(C3, F3)**
- INEGI, 1983b-cj, Ciudad Juárez H13-1, Cartas Geológica: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(F3)**
- INEGI, 1983c-cj, Ciudad Juárez H13-1, Cartas Hidrológica de Aguas: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(F3)**
- INEGI, 1995, Ciudad Juárez H13-1, Espacio mapa a Ciudad Juárez, Hoja H13-1; EOSAT Inc. Images, fecha de las imágenes de Febrero a Abril 1993: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional. Escala 1:250,000. **(E1, F3)**
- INEGI, 1999, Estudio Hidrológico del Estado de Chihuahua: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México, 222 p. ISBN 970-13-2077-8 **(F3)**
- INEGI, 2001, Subprovincias fisiográficas: Instituto Nacional de Estadística, Geografía e Informática, SPP Programación y Presupuesto. Dirección General de Geografía del Territorio Nacional, accessed April 2015. **(C, F3)**
- INEGI, 2010, Población total, municipio Juárez, Chihuahua: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México, accessed September 2014 at: www.inegi.org.mx/sistemas/mexicocifras/default.aspx?ent=08 **(E2, F3)**
- INEGI, 2012, Zona Hidrogeológica Conejos-Médanos: Instituto Nacional de Estadística y Geografía, Edificio Sede, Av. Héroe de Nacozari Sur 2301, Fraccionamiento Jardines del Parque, 20276, Aguascalientes, Aguascalientes; DR©2012, Impreso en México. www.inegi.org.mx; atencion.usuarios@inegi.org.mx **(F3)**
- INEGI, n.d.1, Ciudad Juárez-H13A25, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.2, El Barreal-H13A33, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.3, El Congelado-H13A34, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**

- INEGI, n.d.4, El Sancho-H13A44, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.4, Los Chontes-H13A24, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.5, Nuevo Cuauhtémoc-H13A24, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- INEGI, n.d.6, Ojos de Santa Maria-H13A43, Cartas Topográfica: Instituto Nacional de Estadística, Geografía e Informática; Dirección General de Difusión, Aguascalientes, México. Escala 1: 50,000. **(E1, F3)**
- International Boundary and Water Commission (IBWC), 2011, Acuífero Conejos-Médanos: Binational Waters map. https://www.ibwc.gov/wp-content/uploads/2022/12/Conejos_Medanos_Aquifer.jpg **(E1, F3)**
- Junta Municipal de Agua y Saneamiento (JMAS), 2000, Modelo Matemático de Simulación Hidrodinámica y de Transporte de Solutos del Acuífero Bolsón de la Mesilla (Zona Conejos-Médanos). Reporte técnico No. DSGEO-012/00. *See* CONAGUA 2020. **(F3, H2, H3)**
- Limón-González, M., 1986, Evaluación geológico-geoquímica de la provincia de Chihuahua: Asociación Mexicana de Geólogos Petroleros, Boletín, Tomo XXXVIII, p. 3-58. **(C2a, C4, F3)**
- Lloyd, W.J., 1982, Growth of the municipal water system in Ciudad Juárez, Mexico: *Natural Resources Journal*, v. 22, p. 943-954. **(E2, F3)**
- Lloyd, W.J., and Marston, R.A., 1985, Municipal and industrial water supply in Ciudad Juárez, Mexico: *American Water Resources Association, Water Resources Bulletin*, v. 21, no. 5, p. 841-849. **(E2, F3)**
- López-Ramos, E., 1988, Geología y aprovechamiento integral de las perforaciones en el altiplano Mexicano: *Geomimet*, v. 151, p. 84-100. **(C2a, F3)**
- Lovejoy, E.M.P., ed., 1979, Sierra de Juárez, Chihuahua, Mexico: Structure and history: *El Paso Geological Society, Special Publication*, 59 p. **(C2a, F3)**
- Márquez-Alameda, A., coordinador del volumen, 1992, Historia general de Chihuahua I—geología, geografía y arqueología: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua, 307 p. **(A1, B1, B2, F3)**
- Martínez-Sifuentes, A.R., Villanueva-Díaz, J., Carlón-Allende T., and Estrada-Ávalos, J., 2020, 243 years of reconstructed streamflow volume and identification of extreme hydroclimatic events in the Conchos River Basin, Chihuahua, Mexico: *Trees*, v. 34, p. 1347-1361. **(B3, C1, F3)**
- Mauger, R.L., 1981, Geology and petrology of the central part of the Caldera-Del Nido block, Chihuahua, Mexico: *American Association of Petroleum Geologists Studies in Geology*, no. 13, p. 205-242. **(C2a, F3)**
- McDowell, F.W., and Clabaugh, S.E., 1979, Ignimbrites of the Sierra Madre Occidental and their relation to the tectonic history of western Mexico: *Geological Society of America Special Publication* 180, p. 113-124. **(C2a, F3)**
- McDowell, F.W., and Mauger, R.L., 1994, K-Ar and U-Pb zircon chronology of Late Cretaceous and Tertiary magmatism in central Chihuahua State, Mexico: *Geological Society of America Bulletin*, v. 106, p. 118-132. **(C2b, F3)**
- McDowell, F.W., Roldán-Quintana, J., and Amaya-Martínez, R., 1997, Interrelationship of sedimentary and volcanic deposits associated with Tertiary extension in Sonora, Mexico: *Geological Society of America Bulletin*, v. 109, no. 10, p. 1349-1360. **(C2b, F3)**
- Metcalfe, S., Bimpson, A., Courtice, A.J., and O'Hara, S., 1997, Climate change at the monsoon/westerly boundary in northern Mexico: *Journal of Paleolimnology*, v. 17, p. 155-171. **(B2, C1, F3, I2)**
- Metcalfe, S., Say, A., Black, S., McCulloch, R., and O'Hara, S., 2002, Wet conditions during the last glaciation in the Chihuahuan Desert, Alta Babícora basin, Mexico: *Quaternary Research*, v. 57, p. 91-101. **(B2, C1, F3, I2)**
- Minckley, W.L., 1969, Environments of the Bolsón of Cuatro Ciénegas, Coahuila, Mexico, with special reference to aquatic biota: *University of Texas at El Paso, Science Series* 2, p. 1-65. **(B2, C1, F3, I1)**
- Moncada, M.M., 2011, Estudios geofísicos para la recarga de acuíferos en la zona norte del Estado de Chihuahua: Ciudad Juárez, Universidad Autónoma de Ciudad Juárez, unpublished B.S. thesis, 87 p. **(C4, F3)**
- Molina, C., 1997, Stratigraphy and structure of the Sierra Samalayuca, northern Chihuahua, Mexico: *University of Texas at El Paso, master's thesis*, 135 p. **(C2b, F3)**
- Monreal, R., and Longoria, J.F., 1995, Transpressional deformational pattern related to basement faults in the Mesozoic of northeastern Chihuahua: México, Hermosillo, Universidad de Sonora, Departamento de Geología, Boletín, v. 12, no. 2, p. 17-34. **(C2b, F3)**

- Monreal, R., and Longoria, J., 1999, A revision of the Upper Jurassic and Lower Cretaceous stratigraphic nomenclature for the Chihuahua trough, north-central Mexico: Implications for lithocorrelations, *in* Bartolini, C., Wilson, J.L., and Lawton, T.F., eds., *Mesozoic Sedimentary and Tectonic History of North-Central Mexico: Geological Society of America, Special Paper 340*, p. 69-92. **(C2b, F3)**
- Navarro, A., and Tovar, J., 1974a, Stratigraphy and tectonics of the State of Chihuahua, Mexico, *in* *Geologic Field Trip Guidebook thru the States of Chihuahua and Sinaloa, Mexico: West Texas Geological Society, Publication 74-63*, p. 87-91. **(C2a, F3)**
- Navarro, A., and Tovar, J., 1974b, Stratigraphic correlations of the Upper Paleozoic in the region of Palomas, Chihuahua, *in* *Geologic Field Trip Guidebook thru the States of Chihuahua and Sinaloa, Mexico: West Texas Geological Society, Publication 74-63*, p. 23-27. **(C2a, F3)**
- Navarro, A., and Tovar, J., 1975, Stratigraphy and tectonics of the State of Chihuahua, Mexico, *in* Hills, J.M., ed. *Exploration from the mountains to the basins, Mexico: El Paso Geological Society*, p. 87-91. **(C2a, F3)**
- Nordt, L., 2003, Late Quaternary fluvial landscape evolution in desert grasslands of northern Chihuahua, Mexico: *Geological Society of America Bulletin*, v. 115, no. 5, p. 596-606. **(B2, C1, C2b, F3)**
- Ordóñez, E., 1936, Physiographic provinces of Mexico: *American Association of Petroleum Geologists Bulletin*, v. 20, no. 10, p. 1277-1307. **(C, F3)**
- Ordóñez, E., 1942, Las provincias fisiográficas de México: *Revista Geografía de Instituto Panamericano Geografía e Historia*, tomo. 1, nos. 2-3. **(C, F3)**
- Ortega-Ramírez, J.R., Valiente-Banuet, A., Urrutia-Fucugauchi, J., Mortera-Gutierrez, C.A., and Alvarado-Valdéz, G., 1998, Paleoclimatic changes during the late Pleistocene-Holocene in Laguna Babicora, near the Chihuahuan Desert, Mexico: *Canadian Journal of Earth Science*, v. 35, p. 1168-1179. **(B2, C1, F3, I2)**
- Palacios-Fest, M.R., Carreño, A.L., Ortega-Ramírez, J.R., and Alvarado-Valdéz, G., 2002, A paleoenvironmental reconstruction of Laguna Babicora, Chihuahua, Mexico based on ostracode paleoecology and trace element shell chemistry: *Journal of Paleolimnology*, v. 27, p. 185-206. **(B2, C1, F3, I2)**
- Pinkava, D.J., 1977, Vegetation and flora of the Cuatro Ciénegas Basin, Coahuila, Mexico, *in* Wauer, R.H., and Riskind, D.H., *Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3*, p. 327-333. **(C1, F3, I1)**
- Poppa, T., 1985, Vast water under Mexico's sands?: *El Paso Herald-Post (Metro)*, Thursday, February 14, 1985. **(A3, F3)**
- Raisz, E. (2nd edition), 1964, *Landforms of Mexico*. Prepared for the Cartography Branch of the Office of Naval Research (with inset maps of Physiographic Provinces, States, and Territories): Cambridge, MA.; Institute of Geographical Exploration, Harvard University. Scale 1:29,560,000. **(C2a, F3)**
- Ramírez, J.C., and Acevedo, F., 1957, Notas sobre la Geología de Chihuahua: *Boletan Asociación Mexicana de Geólogos Petróleos*, v. 9, no. 9 y 10, p. i-xiv, 583-772. **(C2a, F3)**
- Reeves, C.C., Jr., 1965, Pluvial Lake Palomas, northwestern Chihuahua, Mexico; and Pleistocene geologic history of south-central New Mexico: *New Mexico Geological Society Guidebook 16*, p. 199-203. **(C2a, F3, I2, I3)**
- Reeves, C.C., Jr., 1969, Pluvial Lake Palomas, northwestern Chihuahua, Mexico: *New Mexico Geological Society Guidebook 20*, p. 143-154. **(C2a, C4, F3, I2, I3)**
- Renteria-Villalobos, M., Hanson, R.T., and Eastoe, C., 2022, Evaluation of climate variability on sustainability for transboundary water supply in Chihuahua, Mexico: *Journal of Hydrology: Regional Studies*, v. 44, 19 p. **(B3, C1, F3)**
- Reyeros de Castillo, M.M., 1974, Corales del Jurásico superior de Chihuahua: *Universidad Nacional Autónoma de México, Instituto de Geología, Paleontología Mexicana*, no. 40, p. 7-43. **(C2a, F3)**
- Reyes Cortés, I.A., 1992, Geología de Chihuahua, *in* Márquez-Alameda, A., *Coordinador del volumen*, 1992, *Historia general de Chihuahua I—geología, geografía y arqueología: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua*, p. 45-101. **(C2b, F3)**
- Reyes-Cortés, I.A., and Goodell, P.C., 2000, Geologic setting and mineralization: Sierra Peña Blanca, Chihuahua, Mexico, *in* *Cuarta Reunión Sobre la Geología del Noroeste de México y Areas Adyacentes, Estación Regional del Noroeste: Universidad Nacional Autónoma de México, Instituto de Geología, Estación Regional del Noroeste, Publicaciones Ocasionales*, no. 2, p. 101. **(C2b, F3)**
- Roberts, D.C., and Dyer, R., 1988, A preliminary report on the geology of the Cerro Panales area, east-central Chihuahua, Mexico, *in* *Stratigraphy, Tectonics and Resources of Parts of Sierra Madre Occidental Province, Mexico: El Paso Geological Society, Guidebook 1988 Field Conference*, p. 159-172. **(C2a, F3)**

- Rodríguez, J.T., 1975, Preliminary geologic map of the northeastern section of the State of Chihuahua, *in* Exploration from the mountains to the basins, El Paso Geological Society Special Publication. **(C2a, F3)**
- Rodríguez-Torres, R., 1969, Mesozoic stratigraphy of Sierra de la Alcaparra, northeastern Chihuahua, Mexico: New Mexico Geological Society Guidebook 20, p. 173-175. **(C2a, F3)**
- Rodríguez-Torres, R., and Guerrero-García, J.C., 1981, Hoja Villa Ahumada, 13R-a (9): Universidad Nacional Autónoma México, Instituto de Geología, Cartas Geológicas de México, serie 1:100,000, 1 mapa. **(C2a, F3)**
- Sanchez, R., Rodriguez, L., and Tortajada, C., 2018, Transboundary aquifers between Chihuahua, Coahuila, Nuevo Leon and Tamaulipas, Mexico, and Texas, USA: Identification and categorization, *in* Rivera, A. and Candela, L., eds., Special Issue on International Shared Aquifer Resources Assessment and Management: Journal of Hydrology: Regional Studies, v. 20, 12/2018, p. 74-102. **(F1, F3)**
- Schmidt, R.H., Jr., 1973, A geographical survey of Chihuahua: El Paso, Texas Western Press (UTEP), Southwestern Studies Monograph No. 37, 63 p. **(C1, C2a, F3)**
- Schmidt, R.H., Jr., 1989, The arid zones of Mexico: Climatic extremes and conceptualization of the Sonoran Desert: Journal of Arid Environments, v. 16, p. 241-256. **(C1, F3)**
- Schmidt, R.H., 1992, Chihuahua, tierra de contrastes geográficos: Geografía, *in* Márquez-Alameda, A., Coordinador del volumen, 1992, Historia general de Chihuahua I – Geología, geografía y arqueología: Universidad Autónoma de Ciudad Juárez y Gobierno del Estado Chihuahua, p. 45-101. **(C2b, F3)**
- Schmidt, R.H., Jr., and Marston, R.A., 1981, Los Medanos de Samalayuca, Chihuahua, Mexico: New Mexico Journal of Science, v. 21, no. 2, p. 21-27. **(C2a, F3)**
- Secretaría de Programación y Presupuesto (SPP), 1981, Carta Hidrológica: Aguas Subterráneas, Chihuahua: Escala 1:1,000,000. **(F3)**
- Secretaría de Recursos Hidráulicos (SRH), 1960, Plano Hidrogeológica de Chihuahua: SRH Dirección de Aprovechamientos Hidráulicos, Departamento de Aguas del Subsuelo. Escala 1:1,000,000. **(F3)**
- Secretaría de Agricultura y Recursos Hidráulicos (SARH), 1988, Resultados de las perforaciones por la S.A.R.H. en la zona de Conejos Médanos, Chihuahua—Programa de exploración: SARH Departamento de Aguas del Subsuelo, Anexos 2 y 3. *See Gutiérrez-Ojeda 2001, p. 26.* **(F3, H1)**
- Servicio Geológico Mexicano (SGM), 2011, Hydrogeological activities in the Conejos-Médanos aquifer, State of Chihuahua, Phase I: Servicio Geológico Mexicano, v. 1, 109 p. **(F3, H1)**
- Sivils, D.J., and Phillips, J.D., 1986, Geology of Sierra [Alta] de Palomas: El Paso Geological Society, Guidebook, p. 60-66. **(C2a, F3)**
- Sociedad Geológico Mexicana, A.C. (SGM), 1985, Plano geológico minero, Chihuahua, Mexico: Sociedad Geológico Mexicana, A.C., Delegación Chihuahua, Escala 1:500,000. **(C2a, F3)**
- Tamayo, J.L., 1968, Geografía moderna de México (Quinta edición revisada): México, D.F., Editorial F. Trillas, S.A., 382 p. *See Las regiones geomórficas – Sierra Madre Occidental (p. 43) and Altiplanicie Septentrional (p. 52-53); Vertientes interiores endorréicas – cuencas de las Lagunas Guzman, Santa María y Patos (p. 142-143); and Chihuahua-Potosinense Provincia biótica (p. 162).* **(A2, C, F3)**
- Tovar, J., 1969, Stratigraphic study of the Sierra Santa Rita: New Mexico Geological Society Guidebook 20, p. 165-170. **(C2a, F3)**
- Tovar, J.C., and Valencia, J., 1974, Road Log, First Day: Ojinaga to Chihuahua City, *in* Geologic Field Trip Guidebook thru the States of Chihuahua and Sinaloa, Mexico: West Texas Geological Society, Publication 74-63, p. 7-43. **(C2a, F3)**
- Tovar-R, J., Vázquez, H., Lozano, S., 1978, Interpretación integrada geológica-geofísica, porción norte de Chihuahua: Asociación Mexicana de Geólogos Petroleros, Boletín, Tomo XXX, p. 59-132. **(C2a, C4, F3)**
- Wolaver, B.D., Sharp, J.M., Jr., Rodriguez, J.M., and Ibarra Flores, J.C., 2008, Delineation of regional arid karstic aquifers: and integrative data approach: Ground Water, v. 46, no. 3, 396-413. **(F3, I2)**
- Zwanzinger, J.A., 1990a, Nuevos conceptos de la estratigrafía mesozoica de Chihuahua, *in* Goodell, P.C., García-Gutiérrez, C., and Reyes-Cortés, I., eds., Symposium on Energy Resources of the Chihuahua Desert: Universidad Autónoma de Chihuahua, Chihuahua, México. **(C2b, F3)**
- Zwanzinger, J.A., 1990b, Regionalización sedimentaria del paleozoico de Chihuahua, *in* Goodell, P.C., García-Gutiérrez, C., and Reyes-Cortés, I., eds., Symposium on Energy Resources of the Chihuahua Desert: Universidad Autónoma de Chihuahua, Chihuahua, México. **(C2b, F3)**
- Zwanzinger, J.A., 1992, New concepts in Mesozoic stratigraphy of Chihuahua, *in* Goodell, P.C., García-Gutiérrez, C., and Reyes-Cortés, I., eds., Energy Resources of the Chihuahua Desert region: El Paso Geological Society, p. 77-124. **(C2b, F3)**

G. Early Documents on Mesilla Basin Region Aquifer Systems (1858-1970)

G1. 1858 to 1935

- Baptey, M.M., 1955, Alkali metasomatism and petrology of some keratophyres: *Geology Magazine*, v. 92, no. 2, p. 104-126. **(G1)**
- Barker, F.C., 1898, Irrigation in Mesilla Valley, New Mexico: U.S. Geological Survey Water-Supply and Irrigation Paper 10, 51 p. **(G1)**
- Bryan, K., 1909, Geology in the vicinity of Albuquerque: University of New Mexico Bulletin 51, Geological Series, v. 3, no. 1, 24 p. **(G1, I3)**
- Burrows, R.H., 1909, Geology of northern Mexico: Mining and Scientific Press, v. 99, no. 9 (whole no. 2562, 28 Aug.), p. 290-294; continued as "Geology of northeastern Mexico," in v. 99, no. 10 (4 Sept.), p. 324-327. **(C2a, F3, G1)**
- Cope, E.D., 1884, On the distribution of the Loup Fork formation in New Mexico: *Proceedings of the American Philosophical Society*, v. 21, 308-309. *Earliest mention of presence of "Santa Fe beds" in lower RG Valley near T or C.* **(C2a, G1)**
- Darton, N.H., 1914, Underground water of Luna County, New Mexico: U.S. Geological Survey Water-Supply Paper 345, p. 25-40. **(D1, G1)**
- Darton, N.H., 1916a, Explosion craters: *Science Monthly*, v. 3, no. 4, p. 417-430. **(C2a, D1, G1)**
- Darton, N.H., 1916b, Geology and underground water of Luna County, New Mexico: U.S. Geological Survey Bulletin 618, 188 p. **(D1, G1)**
- Darton, N.H., 1933, Guidebook of the western United States, Part F, The Southern Pacific Lines, New Orleans to Los Angeles. U.S. Geological Survey Bulletin 845. 304 p., 29 route maps. [West TX, and Southern NM and AZ: p. 120-160]. **(B3, C2a, F2, G1)**
- Dunham, K.C., 1935, The geology of the Organ Mountains, with an account of the geology and mineral resources of Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 11, 272 p. **(C2a, G1)**
- Follansbee, R., Porter, E.A., Follett, W.W., and Gray, G.A., 1915, Water resources of the Rio Grande basin, 1888-1913: U.S. Geological Survey Water-Supply Paper 358, p. 679-694. **(G1)**
- Gilbert, G.K., 1875, Report on the geology of New Mexico and Arizona: U.S. Geographical and Geological Survey west of the 100th meridian (Wheeler Survey), v. 3, p. 501-567. **(C2a, G1)**
- Gómez-Caballero, J.A., 2005, Historia e índice comentado del Boletín del Instituto de Geología de la UNAM: Boletín de la Sociedad Geológica Mexicana - Volumen Conmemorativa del Centenario: Aspectos Históricos de la Geología en México. Tomo LVII, Núm. 2, p. 149-185. **(A2, F3, G1)**
- Gordon, C.H., 1910, Sierra and central Socorro Counties, in Lingren, W., Graton, L.C., and Gordon, C.H., eds., The ore deposits of New Mexico: U.S. Geological Survey Professional Paper 68, p. 213-285. **(C2a, G1)**
- Harley, G.T., 1934, The geology and ore deposits of Sierra County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 10, 220 p. **(C2a, G1)**
- Herrick, C.L., 1900, The geology of the White Sands of New Mexico: *Journal of Geology*, v. 8, p. 112-128. **(B2, C1, G1, I2)**
- Herrick, C.L., 1904, Lake Otero, an ancient salt lake in southeastern New Mexico: *American Geologist*, v. 34, p. 174-189. **(B2, C1, G1, I2)**
- Hill, R.T., 1892b, Underground waters of the arid region: *Engineering Magazine*, v. 3, p. 653-660. **(G1)**
- Hill, R.T., 1900, Physical geography of the Texas region: U.S. Geological Survey Topographical Atlas Folio 3, 12 p. **(B3, C2a, G1)**
- Keyes, C.R., 1903, Ephemeral lakes in arid regions: *American Journal of Science*, 4th series, v. 16, p. 377-378. **(G1, I1)**
- Keyes, C.R., 1905, Geology and underground water conditions of the Jornada del Muerto, New Mexico: U.S. Geological Survey, Water-Supply and Irrigation Paper 123, 42 p. **(G1)**
- Lee, W.T., 1907a, Afton Craters of southern New Mexico: *Geological Society of America Bulletin*, v. 18, p. 211-220. **(C2a, F2, G1)**
- Lee, W.T., 1907b, Water resources of the Rio Grande Valley in New Mexico: U.S. Geological Survey Water-Supply Paper 188, 59 p. **(C2a, F2, G1)**
- Meinzer, O.E., 1911, Geology and water resources of Estancia Valley, New Mexico: U.S. Geological Survey Water-Supply Paper 275, 89 p. **(B2, C1, C2a, D1, G1, I1, I2)**
- Meinzer, O.E., and Hare, R.F., 1915, Geology and water resources of the Tularosa Basin, New Mexico: U.S. Geological Survey Water-Supply Paper 343, 317 p. **(B2, C1, C2a, D1, G1, I2)**

- Meinzer, O.E., and Kelton, F.C., 1912, Geology and water resources of Sulphur Springs Valley, Arizona: U.S. Geological Survey Water-Supply Paper 320, 231 p. **(B2, C1, D1, G1, I1)**
- National Resources Committee, 1938, The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico, and Texas: Washington, D.C., U.S. Government Printing Office. 566 p. **(B3, D1, G1)**
- Nelson, J.W., and Holmes, L.C., 1914, Soil Survey of the Mesilla Valley, New Mexico-Texas: U.S. Department of Agriculture, Bureau of Soils, Washington, D.C., U.S. Government Printing Office, 39 p. map scale 1:63,360. *Shallow depth to water table shown in large no. soil-test borings.* **(C3, G1)**
- Paige, S., and Darton, N.H., 1916, Descriptions of the Silver City Quadrangle, New Mexico: U.S. Geological Survey, Geologic Atlas Folio 199, 10 p. **(C2a, G1)**
- Richardson, G.B., 1909, Description of the El Paso quadrangle, Texas: U.S. Geological Survey Geological Atlas, El Paso folio, ser. no. 116, 11 p. **(G1)**
- Schwennesen, A.T., 1918, Ground water in the Animas, Playas, Hachita, and San Luis Basins, New Mexico: U.S. Geological Survey Water-Supply Paper 422, 152 p. **(D1, F2, G1, I2)**
- Schwennesen, A.T., and Forbes, R.H., 1918, Ground water in San Simon Valley, Arizona: U.S. Geological Survey Water-Supply Paper 425, p. 1-35. **(D1, G1, I2)**
- Shumard, G.G., 1858, Observations on the geological formation of the country between the Rio Pecos and the Rio Grande in New Mexico, near the line of the 32nd parallel; being an abstract of a portion of the geologic report of the expedition under Capt. John Pope, Corps of Engineers, U.S. Army; in the year 1855: St. Louis Academy of Science Transactions, v. 1, p. 273-289. **(G1)**
- Slichter, C.S., 1905a, Field measurements of the rate of movement of underground waters: U.S. Geological Survey Water-Supply and Irrigation Paper 140, 122 p. **(D2, G1)**
- Slichter, C.S., 1905b, Observations on ground waters of the Rio Grande valley: U.S. Geological Survey Water-Supply and Irrigation Paper 141, 83 p. **(G1)**
- Stabler, H., 1911, Some stream waters of the western United States, with chapters on sediment carried by the Rio Grande and the industrial application of water analyses: U.S. Geological Survey Water-Supply Paper 274, 188 p. **(B3, G1)**
- Sweet, A.T., and Poulson, E.N., 1933, Soil Survey of the Rincon area, New Mexico: U.S. Department of Agriculture, Bureau of Chemistry and Soils, Series 1930, no. 5, 24 p., map scale 1:63,360. **(C3, G1)**
- Tarr, R.S., 1890, Drainage systems of New Mexico: American Geologist, v. 5, p. 261-270. **(C, G1)**
- U.S. Reclamation Service, 1914, Maps of Mesilla Valley, showing various known river channels: U.S. Department of Interior, Bureau of Reclamation, Rio Grande Project. **(B3, E1, G1)**
- White, W.N., 1931, Preliminary report on ground-water supply of Mimbres Valley, New Mexico: U.S. Geological Survey Water-Supply Paper 637, part b, p. 69-90. **(G1)**

G2. 1935 to 1970

- Audsley, G.L., 1959, Records of wells and results of exploratory drilling in the El Paso Valley and Hueco Bolson southeast of El Paso, Texas: U.S. Geological Survey Open-File Report, 144 p. *See Gates, J.S. and Stanley, W.D., 1976, U.S. Geological Survey Open-File Report 76-650, <https://pubs.usgs.gov/of/1976/0650/report.pdf>* **(G2)**
- Basler, J.A., and Alary, L.J., 1968, Quality of shallow ground water in the Rincon and Mesilla Valley, New Mexico and Texas: U.S. Geological Survey Open-File Report 68-7, 30 p., 5 figs. **(G2, H2)**
- Bryan, K., 1938, Geology and groundwater conditions of the Rio Grande depression in Colorado and New Mexico, *in* [U.S.] National Resources Committee, Regional Planning part VI—The Rio Grande joint investigations in the upper Rio Grande basin in Colorado, New Mexico, and Texas, 1936-1937: U.S. Government Printing Office, Washington, D.C., v. 1, part 2, p. 197-225. **(D1, G2, I3)**
- Chico, R.J., 1963, Playa mud cracks: regular and king sized: Geological Society of America, Special Paper 76, p. 306. **(G2, I1)**
- Chico, R.J., 1968, Playa, *in* Fairbridge, R.W., ed., The Encyclopedia of Geomorphology—Encyclopedia of Earth Sciences Series, Volume III: New York, Reinhold Book Corporation, p. 865-871. **(G2, I1)**
- Conover, C.S., 1954, Ground-water conditions in the Rincon and Mesilla Valleys and adjacent areas in New Mexico: U.S. Geological Survey Water-Supply Paper 1230, 200 p. **(G2)**
- Conover, C.S., Herrick, E.H., Wood, J.W., and Weir, J.E., Jr., 1955, The occurrence of ground water in south-central New Mexico: New Mexico Geological Society Guidebook 5, p. 108-119. **(G2)**
- Cox, E.R., and Reeder, H.O., 1962, Ground-water conditions in the Rio Grande Valley between Las Palomas and Truth or Consequences, New Mexico: N.M. State Engineer Technical Report 25, 47 p. **(G2, H1)**

- Davie, W., Jr., and Spiegel, Z., 1967, Geology and water resources of Las Animas Creek and vicinity, Sierra County, New Mexico: New Mexico State Engineer Hydrographic Survey Report, 44 p. **(C2a, G2, H1)**
- Davis, L.V., and Busch, F.E., 1968, Summary of hydrologic investigations by the United States Geological Survey at White Sands Missile Range, New Mexico: U.S. Geological Survey Open-File Report 68-70, 299 p., 27 figs. **(G2)**
- Davis, M.E., 1962, Development of ground water in the El Paso District, Texas 1960-63, Progress Report No. 9: Texas Water Commission Bulletin 6514, 34 p., 9 figs. **(G2)**
- Davis, M.E., and Leggat, E.R., 1965, Reconnaissance investigation of the ground-water resources of the upper Rio Grande basin, Texas, *in* Reconnaissance investigations of the ground-water resources of the Rio Grande basin, Texas: Texas Water Commission Bulletin 6502, p. U1-U99. **(G2, H1)**
- Doty, G.C., 1960, Reconnaissance of ground water in Playas Valley, Hidalgo County, New Mexico: New Mexico State Engineer Office, Technical Report No. 15, 40 p. **(G2, H1)**
- Herrick, E.H., and Davis, L.V., 1965, Availability of ground water in the Tularosa Basin and adjoining areas: U.S. Geological Survey Hydrologic Investigations Atlas, HA-191, scale 1:760,320. **(D1, G2)**
- Hood, J.W., and Scalapino, R.A., 1951, Summary of the development of ground water for irrigation in the Lobo Flats area, Culberson and Jeff Davis Counties, Texas: Austin, Texas Board of Water Engineers Bulletin 5102, 25 p. **(G2)**
- Kirby, J.W., 1968, Water resources – El Paso County, Texas, past, present, future: University of Texas at El Paso, master's thesis, 190 p., 5 figs. **(F2, G2)**
- Knechtel, M.M., 1937, Geology and ground-water resources of the Gila River and San Simon Creek, Graham County, Arizona: U.S. Geological Survey Water-Supply Paper 796, p. i-iv, 181-222. **(D1, G2)**
- Knowles, D.B., and Kennedy, R.A., 1958, Ground-water resources of the Hueco Bolson northeast of El Paso, Texas: U.S. Geological Survey, Water-Supply Paper 1426, 186 p. **(F2, G2)**
- Lang, W.B., 1943, Gigantic drying cracks in the Animas Valley, New Mexico: *Science*, v. 98, p. 593-594. **(G2, I2)**
- Leggat, E.R., 1962, Development of ground-water of the El Paso district, Texas: 1955-60, Progress Report No. 8: Texas Water Commission, Bulletin 6204, 56 p. **(F2, G2)**
- Leggat, E.R., Lowry, M.E., and Hood, J.W., 1962, Ground-water resources of the lower Mesilla Valley, Texas and New Mexico: Texas Water Commission, Bulletin 6203, 191 p. **(F2, G2, H1, H2)**
- Leggat, E.R., Lowry, M.E., and Hood, J.W., 1963, Ground-water resources of the lower Mesilla Valley, Texas and New Mexico: U.S. Geological Survey, Water-Supply Paper 1669AA, 49 p. **(F2, G2, H1, H2)**
- Meeks, T.O., 1950, The occurrence of ground water in the Alamogordo-Tularosa area of the Otero Soil Conservation District, New Mexico: U.S. Soil Conservation Service Regional Bulletin 111, Geological Series 2, 42 p. **(G2)**
- Reeder, H.O., 1957, Ground water in Animas Valley, Hidalgo County, New Mexico: New Mexico State Engineer Office, Technical Report No. 11, 101 p. **(G2, I2)**
- Sayre, A.N., and Livingston, P., 1945, Ground-water resources of the El Paso area, Texas: U.S. Geological Survey Water-Supply Paper 919, 190 p. **(D1, F2, G2)**
- Sayre, A.N., and Stephenson, E.L., 1937, The use of resistivity methods in the location of salt-water bodies in the El Paso, Texas, area: *American Geophysical Union Transactions*, 18th Annual Meeting, p. 393-398. **(C4, G2, H2)**
- Scalapino, R.A., 1949, Ground-Water Resources of the El Paso Area, Texas: Texas Board of Water Engineers, Progress Report No. 6, 22 p. **(D1, G2)**
- Smith, R.E., 1956, Ground water of the El Paso District, Texas: Texas Board of Water Engineers, Bulletin 5603, 33 p. **(C2a, F1, G2)**
- Spiegel, Z., 1956, Progress report on the hydrology of the Lewis Flats-Eastern Extension area, Luna County, New Mexico: New Mexico State Engineer Open-File Report, 31 p. **(G2)**
- Spiegel, Z., 1958, Report on investigation of the geology and hydrology of T. 27 S., R. 8 W., Luna County, New Mexico: New Mexico State Engineer Open-File Report, 5 p. **(G2)**
- Spiegel, Z.E., 1962, Hydraulics of certain stream-connected aquifer systems: New Mexico State Engineer Special Report, 105 p. **(D2, G2)**
- Spiegel, Z.E., and Baldwin, B., 1963, Geology and water resources of the Santa Fe area, New Mexico: U.S. Geological Survey, Water-Supply Paper 1525, 258 p. **(D1, G2)**
- Spaulding, W.G., Leopold, E.B., and Van Devender, T.R., 1983, Late Wisconsin paleoecology of the Theis, C.V., 1942, Ground-water supplies near Las Cruces: U.S. Geological Survey Open-File Report, 5 p. *See also* Theis, C.V., and others, eds., Short papers on water resources in New Mexico U.S. Geological Survey Open-File Report 91-81, p. 35-38. **(G2)**

- Theis, C.V., 1942, Ground-water supplies near Las Cruces: U.S. Geological Survey Open-File Report, 5 p. *See also* Theis, C.V., and others, eds., Short papers on water resources in New Mexico U.S. Geological Survey Open-File Report 91-81, p. 35-38. **(G2)**
- Theis, C.V., 1991a, The availability of irrigation water at the Alamogordo Air Base - February, 27, 1942, in Theis, C.V., and others, eds., Short papers on water resources in New Mexico, 1937-57: U.S. Geological Survey Open-File Report 91-81, p. 35-38. **(G2)**
- Theis, C.V., 1991b, Ground-water conditions in the vicinity of Orogrande, New Mexico - July 1942, in Theis, C.V., and others, eds., Short papers on water resources in New Mexico, 1937-57: U.S. Geological Survey Open-File Report 91-81, p. 57-59. **(G2)**
- Theis, C.V., 1991c, Memorandum on the water supply of Alamogordo, New Mexico - May 19, 1945, in Theis, C.V., and others, eds., Short papers on water resources in New Mexico, 1937-57: U.S. Geological Survey Open-File Report 91-81, p. 67-69. **(G2)**
- Trauger, F.D., and Doty, G.C., 1965, Ground water – Its occurrence and relation to the economy and geology of southwestern New Mexico: New Mexico Geological Society Guidebook 16, p. 215-227. **(E2, F2, G2)**
- U.S. National Resources Committee, 1938, The Rio Grande Joint Investigation in the Upper Rio Grande Basin in Colorado, New Mexico, and Texas: Washington, D.C., U.S. Government Printing Office. 566 p. **(B3, D1, G1)**
- Wright, H.E., Jr., 1946, Tertiary and Quaternary geology of the lower Puerco area, New Mexico: Geological Society of America Bulletin, v. 57, p. 383-456. **(G2)**

H. Contemporary Documents on Mesilla Basin Regional Aquifer Systems

H1. Hydrogeology

- Abernathy, G.H., and Small, F.P., 1986, Field measurements of stress changes in an aquifer matrix during pumping cycles – Final Report to S.E. Reynolds, N.M. Interstate Stream Commission: Civil, Agricultural and Geological Engineering Department, New Mexico State University, 99 p. **(H1, H2, H3)**
- Alvarez, H.J., and Buckner, A.W., 1980, Ground-water development in the El Paso region, Texas, with emphasis on the resources of the lower El Paso Valley: Texas Department of Water Resources Report 246, 346 p. **(H1)**
- Ashworth, J.B., 1990, Evaluation of ground-water resources in El Paso County, Texas: Texas Water Development Board Report 324, 25 p. **(E2, H1)**
- Balleau, W.P., 1988, Water approximation and transfer in a general hydrogeologic system: Natural Resources Journal, v. 29, no. 2, p. 269-291. **(E2, H1, H3)**
- Belzer, W.L., Miller, K.C., and Harder, S., 2002, Shallow geophysical study of the Grapevine Canyon area, eastern Tularosa Basin: Implications for groundwater resources: New Mexico Geological Society Guidebook 53, p. 79-84. **(C4, H1)**
- Brown and Caldwell, circa 1975, Generalized geologic cross-section A-A', Crowder Well Field, Santa Teresa Fig. 4: 2010 contribution to NM WRRI TAAP database by Thomas Maddock III. **(H1)**
- Buckner, A.W., 1974, Results of exploratory drilling in the El Paso Valley and Hueco Bolson southeast of El Paso, Texas of the El Paso Valley, Texas: Texas Water Development Board, Open-File Report, 42 p. **(H1)**
- Cain, M.J., 2002, FUGRO RESOLVE survey for the International Boundary and Water Commission Texas levee survey II: Fugro Airborne Surveys Corp., Mississauga, Ontario, 58 p. **(C4, H1)**
- Chaturvedi, L., 1981, New Mexico State University geothermal production well: N.M. Energy Institute Technical Completion Report, 48 p. **(C4, H1, H2)**
- CH2MHill, 2013, Distal Mesilla conceptual site model prepared for the United States Army Corps of Engineers: Technical Report, 224 p. **(E2c, F1, H1, H2)**
- Cliett, T., 1969, Groundwater occurrence of the El Paso area and its related geology: New Mexico Geological Society Guidebook 20, p. 209-214. **(H1)**
- Cliett, T., and Hawley, J.W., 1996, General geology and groundwater occurrence of the El Paso area, in Ortega Klett, C.T., ed., Proceedings of the 40th Annual New Mexico Water Conference, New Mexico Water Resource Research Institute Report No. 297, p. 51-56. **(H1, H2)**
- Clemons, R.E., 1977, Geology of west half of Corralitos Ranch Quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Geologic Map 44, two sheets, scale 1:24,000. **(C2a, H1)**
- Clemons, R.E., 1979, Geology of Good Sight Mountains and Uvas Valley, southwest New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 169, 31 p. *First map of Lake Good Sight* **(C2a, H1, I2)**
- Clemons, R.E., 1986, Petrography and stratigraphy of Seville-Trident exploration wells near Deming, New Mexico: New Mexico Geology, v. 8, no. 1, p. 5-11. **(C2a, H1)**

- Clemons, R.E., 1993, Petrographic analysis of Cenozoic-Mesozoic-Permian well cuttings from two exploration wells in south-central New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 203, 28 p. **(C2b, H1)**
- Contaldo, G.J., and Mueller, J.E., 1991, Earth fissures of the Mimbres Basin, southwestern New Mexico: New Mexico Geology, v. 13, p. 69-74. **(D1, H1)**
- Cox, E.R., and Reeder, H.O., 1962, Ground-water conditions in the Rio Grande Valley between Las Palomas and Truth or Consequences, New Mexico: N.M. State Engineer Technical Report 25, 47 p. **(G2, H1)**
- Creel, B.J., Hawley, J.W., Kennedy, J.F., and Granados Olivas, A., 2006, Groundwater resources of the New Mexico-Texas-Chihuahua border region, *in* Anderson, K.S.J., ed., Science on the Border: N.M. Journal of Science, v. 44, p. 11-29. **(F1, H1)**
- Davie, W., Jr., and Spiegel, Z., 1967, Geology and water resources of Las Animas Creek and vicinity, Sierra County, New Mexico: New Mexico State Engineer Hydrographic Survey Report, 44 p. **(C2a, G2, H1)**
- Davis, M.E., and Leggat, E.R., 1965, Reconnaissance investigation of the ground-water resources of the upper Rio Grande basin, Texas, *in* Reconnaissance investigations of the ground-water resources of the Rio Grande basin, Texas: Texas Water Commission Bulletin 6502, p. U1-U99. **(G2, H1)**
- Dickinson, J.E., Pool, D.R., Groom, R.W., and Davis, L.J., 2010a, Inference of lithologic distributions in an alluvial aquifer using airborne transient electromagnetic surveys: Geophysics, v. 75, no. 4, p. WA149–WA161. **(H1)**
- Dickinson, J.E., Kennedy, J.R., Pool, D.R., Cordova, J.T., Parker, J.T.C., Macy, J.P., and Thomas, B.E., 2010b, Hydrogeologic Framework of the Middle San Pedro Watershed, Southeastern Arizona: U.S. Geological Survey Scientific Investigations Report 2010-5126, 36 p. **(H1)**
- Doty, G.C., 1960, Reconnaissance of ground water in Playas Valley, Hidalgo County, New Mexico: New Mexico State Engineer Office Technical Report No. 15, 40 p. **(G2, H1)**
- Doty, G.C., 1963, Water-supply development at the National Aeronautics and Space Agency-Apollo Propulsion System Development Facility, Doña Ana County, New Mexico: U.S. Geological Survey Open-File Report 63-29, 40 p. **(C2a, H1)**
- Doty, G.C., 1967, Supply well for Doña Ana Range Camp, Doña Ana County, New Mexico: U.S. Geological Survey Open-File Report 67-84, 23 p. **(C2a, H1)**
- Doty, G.C., and Cooper, I.B., 1970, Stratigraphic test well T-14, Post area, White Sands Missile Range, New Mexico: U.S. Geological Survey Open-File Report 70-113, 33 p. **(C2a, H1)**
- Druhan, J.L., Hogan, J.F., Eastoe C.J., Hibbs, B.J., and Hutchison, W.R., 2008, Hydrogeologic controls on groundwater recharge and salinization: a geochemical analysis of the northern Hueco Bolson aquifer, Texas, USA: Hydrogeology Journal, v. 16, no. 2, p. 281-296. **(D2, H1, H2)**
- Dunbar, J.B., Murphy, W.L., Ballard, R.F., McGill, T.E., Peyman-Dove, L.D., and Bishop, M.J., 2004, Condition assessment of U.S. International Boundary and Water Commission, Texas and New Mexico levees – Report 2: U.S. Army Corps of Engineers Engineer Research and Development Center, 121 p. **(F2, H1)**
- Eastoe, C.J., 2020, Sources of perennial water supporting critical ecosystems, San Pedro Valley, Arizona: Environmental & Engineering Geoscience, v. XXVI, no. 4, p. 463-479. **(C1, D2, H1, H2, H3)**
- Eastoe, C.J., and Rodney, R., 2014, Isotopes as tracers of water origin in and near a regional carbonate aquifer: The Southern Sacramento Mountains, New Mexico: Water, v. 6, p. 301-323. **(H1, H2)**
- Eastoe, C.J., Hutchison, W.R., Hibbs, B.J., Hawley, J., and Hogan, J.F., 2010, Interaction of a river with an alluvial basin aquifer: Stable isotopes, salinity and water budgets: Journal of Hydrology, v. 395, p. 67-78. **(H1, H2)**
- Eastoe, C.J., Hibbs, B.J., Granados Olivas, A., Hogan, J.F., Hawley, J., and Hutchison, W.R., 2008, Isotopes in the Hueco Bolson aquifer, Texas (USA) and Chihuahua (Mexico): Local and general implications for recharge sources in alluvial basins: Hydrogeology Journal, v. 16, no. 4, p. 737-747. **(H1, H2)**
- Elston, W.E., Deal, E.G., and Logsdon, M.J., 1983, Geology and geothermal waters of the Lightning Dock region, Animas Valley and Pyramid Mountains, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 177, 44 p. **(C2a, C4, H1, H2)**
- Finch, S.T., Jr., 1999, Results from installation of ground-water monitoring system, and proposed ground-water monitoring plan, Las Cruces Landfill, Las Cruces, New Mexico: Consultants report prepared by John Shomaker & Associates for the City of Las Cruces, 25 p. **(E2, H1, H2)**
- Finch, S.T., Jr., McCoy, A., Mellis, E., 2008, Geologic Controls on Ground-Water Flow in the Mimbres Basin, Southwestern New Mexico: New Mexico Geological Society Guidebook 59, p. 189-198. **(C2b, H1, H3)**

- Fisher, R.S., and Mullican, W.F. III, 1990, Integration of ground-water and vadose zone geochemistry to investigate hydrochemical evolution: A case study in arid lands of the northern Chihuahuan Desert, Trans-Pecos Texas: University of Texas at Austin, Bureau of Economic Geology, Geological Circular GC 90-5, p. 1-36. **(F2, H1, H2)**
- Fisher, R.S., and Mullican, W.F. III, 1997, Hydrochemical evolution of sodium-sulphate and sodium-chloride groundwater beneath the northern Chihuahuan Desert, Trans-Pecos Texas, USA: *Hydrogeology Journal*, v. 5, p. 4-16. **(F2, H1, H2)**
- Freethy, G.W., Pool, D.R., Anderson, T.W., and Tucci, P., 1986, Description and generalized description of aquifer materials in alluvial basin of Arizona and adjacent parts of California and New Mexico: U.S. Geological Survey Hydrologic Investigations Atlas HA-664, 4 sheets, scale 1:500,000. **(H1)**
- Gates, J.S., White, D.E., and Leggat, E.R., 1984, Preliminary study of aquifers of the lower Mesilla Valley in Texas and New Mexico by model simulation: U.S. Geological Survey Water Resources Investigations Report 84-4317, 21 p. **(H1, H3)**
- Gates, J.S., and Stanley, W.D., 1976, Hydrologic interpretation of geophysical data from the southeastern Hueco Bolson, El Paso and Hudspeth Counties, Texas: U.S. Geological Survey Open-File Report 76-650, 37 p. **(C4, F2, H1)**
- Giles, G.C., and Pearson, J.W., 1998, Characterization of hydrostratigraphy and groundwater flow on the southwestern San Andres Mountains pediment, NASA-JSC White Sands Test Facility: New Mexico Geological Society Guidebook 49, p. 317-325. **(H1, H3)**
- Granados Olivas, A., 2000, Relationships between Landforms and Hydrogeology in the Lower Casas Grandes Basin, Ascension, Chihuahua, Mexico: New Mexico State University, doctoral dissertation, 292 p. **(E1, F3, H1)**
- Gross, J., 1988, A hydrogeological investigation of the Las Cruces geothermal field: New Mexico State University, master's thesis, 212 p. **(C4, H1)**
- Gross, J., and Icerman, L., 1983, Subsurface investigations for the area surrounding Tortugas Mountain, Doña Ana County, New Mexico: New Mexico Energy Research and Development Institute, Interim Report NMERDI 2-67-2238 (2), 70 p. **(C4, H1)**
- Gunaji-Klement & Associates, 1994, Water quality and availability plan for Miner's Ridge Subdivision in Dona Ana County, New Mexico: Report prepared for: Mr. George B. Rawson, Pueblo Builders, Inc., P.O. Box 1286, Las Cruces, NM 88004 by Gunaji-Klement & Associates, Engineers & Geologists, P.O. Box 5008, Las Cruces, NM 88003, 19 p., with 1. Clemons, C.E., 1994, Report on lithologic analysis of cuttings from well in NE ¼ Sec. 22, T23S, R3E; and 2. SW Geophysical Services, Inc., 9/26/1994, Borehole geophysical logs: SP, Electrical Resistivity, Gamma Ray, and Neutron. **(H1, H2)**
- Gunaji-Klement & Associates, 2001, Sonoma Ranch Golf Course Well Completion Report: Submitted to: Mr. George B. Rawson, Sonoma Ranch Development Company, P.O. Box 936, Las Cruces, NM 88004 by Gunaji-Klement & Associates, Consulting Engineers, P.O. Box 5008, Las Cruces, NM 88003-5008, 19 p., with SW Geophysical Services, Inc., 7/17/2001, Borehole geophysical logs: SP, Electrical Resistivity, and Temperature. **(H1, H2)**
- Gungle, B.G., Callegary, J.B., Paretti, N.V., Kennedy, J.R., Eastoe, C.J., Turner, D.S., Dickinson, J.E., Levick, L.R., and Sugg, Z.P., 2017, Hydrological Conditions and Evaluation of Sustainable Groundwater Use in the Sierra Vista Sub-watershed, Upper San Pedro Basin, Southeastern Arizona: U.S. Geological Survey Scientific Investigation Report 2016-5114, 90 p. **(H1, H2, H3)**
- Halpenny, L.C., Babcock, J.A., and Greene, D.K., 1972, Basic data report, ASARCO La Mesa test production water well: Tucson, AZ, Water Development Corporation Open-File Report, 40 p. **(C2a, H1, H2, H3)**
- Haneberg, W.C., and Friesen, R.L., 1995, Tilts, strains, and ground-water levels near an earth fissure in the Mimbres Basin, New Mexico: *Geological Society of America Bulletin*, v. 107, p. 316-326. **(D1, H1)**
- Hanson, R.T., McLean, J.S., and Miller, R.S., 1994, Hydrogeologic framework and preliminary simulation of ground-water flow in the Mimbres Basin, southwestern New Mexico: U.S. Geological Survey Water-Resources Investigations Report 94-4011, 118 p. **(F2, H1, H3)**
- Hawley, J.W., 1969a, Geology and its relation to the hydrologic system, in King, W.E., Hawley, J.W., Taylor, A.M., and Wilson, R.P., *Hydrogeology of the Rio Grande Valley and adjacent intermontane areas of southern New Mexico*: New Mexico Water Resources Research Institute Report No. 6, p. 19-47; cf. King, W.E., and others, *Geology and ground-water resources of central and western Doña Ana County, New Mexico*: New Mexico Bureau of Mines and Mineral Resources, *Hydrologic Report 1*, p. 9-24, 61-62. **(C2a, H1)**

- Hawley, J.W., 1984, Hydrogeologic cross sections of the Mesilla Bolson, New Mexico and Texas: New Mexico Bureau of Mines and Minerals Resources, Open-File Report 190, 10 p. *Appendix in Peterson, D.M., Khaleel, R., and Hawley, J.W., 1984. (H1)*
- Hawley, J.W., 2020, A Hydrogeologic perspective on groundwater conservation in the northern Rio Grande basin, New Mexico, Texas, and Chihuahua—2014 Albert E. Utton Memorial Lecture, *in* Sheely, M., ed. Proceedings, 59th Annual New Mexico Water Conference, Santa Fe, NM., p. 59-85, with 28 pptx slide pdf on CD-ROM. **(D1, F1, H1)**
- Hawley, J.W., and Kennedy, J.F., 2004, Creation of a digital hydrogeologic framework model of the Mesilla Basin and southern Jornada del Muerto Basin: New Mexico Water Resources Research Institute, New Mexico State University; prepared for Lower Rio Grande Water Users Organization; Report No. 332, 105 p., with plates and appendix on CD ROM. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-332.html> **(F1, H1)**
- Hawley, J.W., and Lozinsky, R.P., 1992, Hydrogeologic framework of the Mesilla Basin in New Mexico and western Texas: New Mexico Bureau of Mines and Mineral Resources, Open-File Report 323, 55 p. **(H1)**
- Hawley, J.W., and Swanson, B.H. (Abstract), 2020, Hydrogeologic framework of the International Boundary Zone of the Mesilla Basin region: Program with abstracts, Water, Energy, and Policy in a Changing Climate Conference, National Groundwater Association (NGWA), Albuquerque, NM, February 24-25, 2020. **(H1)**
- Hawley, J.W., and Swanson, B.H., 2022, Conservation of shared groundwater resources in the binational Mesilla Basin-El Paso Del Norte Region—A Hydrogeological Perspective, *in* Granados-Olivas, Alfredo, coordinador, Los Recursos Hidrológicos en Cuencas Transfronterizas entre México y los Estados Unidos: El Paso del Norte y la Gobernanza Binacional de Agua [Hydrological Resources in Transboundary Basins between Mexico and the United States: El Paso del Norte and the Binational Water Governance]: Universidad Autónoma de Ciudad Juárez y Universidad Autónoma de Chihuahua, p. 202-323. ISBN 978-607-536 **(F1, H1)**
- Hawley, J.W., Kambhammettu, B.V.N.P., and Creel, B.J., 2010, Digital hydrogeologic-framework model of the San Francisco River basin, west-central New Mexico and east-central Arizona: New Mexico Water Resources Research Institute Report No. 354, 51 p., 7 tables and 5 figures, with 3 plates and Appendix on CD ROM. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-354.html> **(D1, H1)**
- Hawley, J.W., Kennedy, J.F., and Creel, B.J., 2001, The Mesilla Basin aquifer system of New Mexico, West Texas and Chihuahua—an overview of its hydrogeologic framework and related aspects of groundwater flow and chemistry, *in* Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., Aquifers of West Texas: Texas Water Development Board Report 356, p. 76-99. **(H1)**
- Hawley, J.W., Kennedy, J.F., Granados Olivas, A., and Ortiz, M.A., 2009, Hydrogeologic framework of the binational western Hueco Bolson-Paso del Norte area, Texas, New Mexico, and Chihuahua: Overview and progress report on digital model development: New Mexico Water Resources Research Institute Report No. 349, 45 p., 2 pls. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-349.html> **(F1, H1)**
- Hawley, J.W., Kennedy, J.F., Hibbs, B.J., and Cleary, M., 2002, Basin-fill aquifers of the southern New Mexico border region, USA and Mexico: Their hydrogeologic framework, and related aspects of groundwater flow and chemistry, *in* Integrated Trans-boundary Water Management: Proceedings of a special joint conference of Universities Council on Water Resources (UCOWR), Environmental & Water Resources Institute of ASCE (EWRI), U.S. Army Corps of Engineers Institute for Water Resources (CEIWR), and National Ground Water Association (NGWA), p. 164-172. **(F1, H1)**
- Hawley, J.W., Kennedy, J.F., Ortiz, M.A., and Carrasco, S., 2005, Creation of a digital hydrogeologic framework model of the Rincon Valley and adjacent areas of Dona Ana, Sierra and Luna Counties NM: New Mexico Water Resources Research Institute; Addendum to Report No. 332 on CD ROM. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-332.html> **(H1)**
- Hawley, J.W., Swanson, B.H., Walker, J.S., and Glaze, S.H., 2024, Hydrogeologic Framework of the Mesilla Basin Region of New Mexico, Texas, and Chihuahua (Mexico) – Advances in Conceptual and Digital Model Development: NM Water Resources Research Institute, NMSU, Technical Completion Report No 363, 312 p., APPENDICES A to H. **(F1, H1)**
- Henry, C.D., 1979, Geologic setting and geochemistry of thermal water and geothermal assessment, Trans-Pecos Texas: Texas Bureau of Economic Geology, Report of Investigations 96, 48 p. **(C2a, F1, H1, H2)**
- Henry, C.D., and Gluck, J.K., 1981, A preliminary assessment of the geologic setting, hydrology, and geochemistry of the Hueco Tanks geothermal area, Texas and New Mexico: University of Texas at Austin, Bureau of Economic Geology, Geological Circular 81-1, 48 p. **(C2b, H1, H2)**

- Hibbs, B.J., 1999a, Hydrogeologic and water quality issues along the El Paso/Juarez corridor: An international case study: *Environmental & Engineering Geoscience*, vol. V, no. 1, p. 27-39. **(F1, H1, H2)**
- Hibbs, B.J., and Boghici, R.N., 1999, On the Rio Grande aquifer: Flow relationships, salinization, and environmental problems: *Environmental & Engineering Geoscience*, v. 5, p. 51-59. **(F1, H1, H2)**
- Hibbs, B.J., and Merino, M., 2006, A geologic source of salinity in the Rio Grande aquifer near El Paso, Texas: *New Mexico Journal of Science*, v. 46, 165-181. **(F1, H1, H2)**
- Hibbs, B., and Merino, M., 2007, Discovering a geologic salinity source in the Rio Grande aquifer: *Southwest Hydrology*: v. 6, p. 20-23. **(F1, H1, H2)**
- Hibbs, B., and Merino, M., 2020, Reinterpreting models of slope-front recharge in a desert basin: *Geosciences*, v. 10, no. 297, 20 p. Licensee MDPI, Basel, Switzerland. **(F1, H1, H2)**
- Hibbs, B.J., Darling, B.K., and Jones, I.C., 1998, Hydrogeologic regimes of arid-zone aquifers beneath low-level radioactive waste and other waste repositories in Trans-Pecos, Texas and northern Chihuahua, Mexico, *in* Van Brahana, J., and others, eds., *Gambling with groundwater – Physical, chemical, and biological aspects of aquifer-stream relationships*: American Institute of Hydrology, St. Paul, Minnesota, p. 311-322. **(F1, H1, H2)**
- Hibbs, B.J., Lee, M.M., and Hawley, J.W., 1999, Evolution of hydrochemical facies in the Mimbres Basin aquifer system: A transboundary resource, *in* *Hydrological issues of the 21st Century: Ecology, Environment, and Human Health*: American Institute of Hydrology, Hydrological Science and Technology, v. 15, no. 1-4, p. 52-65. **(F1, H1, H2)**
- Hibbs, B., Eastoe, C., Hawley, J., and Granados, A., 2015, Multiyear study of the binational Hueco Bolson Aquifer reformulates key conceptual models of groundwater flow, *in* *Water is not for gambling: Utilizing science to reduce uncertainty*: Proceedings 2015 UCOWWR/NIWR/CUAHSI Annual Conference, Universities Council on Water Resources, p. 81-86. <https://ucowwr.org/> **(F1, H1, H2)**
- Hibbs, B.J., Lee, M.M., Hawley, J.W., and Kennedy, J.F., 2000, Some notes on the hydrogeology and ground-water quality of the Animas basin system, southwestern New Mexico: *New Mexico Geological Society, Guidebook 51*, p. 227-234. **(F1, H1, H2)**
- Hibbs B., Phillips, F., Hogan, J., Eastoe, C., Hawley, J., Granados, A., and Hutchison, B., 2003, Hydrogeologic and Isotopic Study of the Groundwater Resources of the Hueco Bolson Aquifer El Paso/Juárez Area: *Hydrological Science and Technology*, v. 19, no. 1-4, p. 109-119. **(F1, H1, H2)**
- Hibbs, B., Phillips, F., Hogan, J., Eastoe, C., Hawley, J.W., Kennedy, J.F., Nuñez, F., Granados, A., and Kretzschmar, T., 2003, Binational Study of the Surface and Ground Water Resources of the El Paso/Juárez International Corridor, *in* Rubin, K., ed., *Trans-Boundary Water Issues: The Universities Council on Water Resources, Water Resources Update, Issue No. 125*, p. 25-30. **(F1, H1, H2)**
- Hibbs, B.J., Creel, B.J., Boghici, R., Hayes, M., Ashworth, J., Hanson, A., Samani, Z., Kennedy, J.F., Hann, P., and Stevens, K., 1997, Transboundary Aquifers of the El Paso/Ciudad Juárez/Las Cruces Region: U.S. Environmental Protection Agency, Region 6; Technical Contract Report- Interagency Contracts X-996343-01-0 and X-996350-01-0, prepared by the Texas Water Development Board and the New Mexico Water Resources Research Institute, variously paged. *See TWDB, 1997, Appendix C—G.I.S. coverages, metadata descriptions, [and] groundwater data sets on CD-ROM, with Water Quality map insert on back-cover.* <https://nmwrri.nmsu.edu/publications/publications.html> **(F1, H1, H2)**
- Hibbs, B., Boghici, R., Ashworth, J., Hayes, M., Peckham, D., Guillen, R., Fuentes, O., Laloith, N., Morales, M., Maldonado, A., Creel, B., Kennedy, J., Hanson, A., Samani, Z., Nunez, F., Lemus, R., Moreno, G., Rascon, E., Kuo, R., Waggoner, S., Ito, C., Robinson, J., Valdez, J., Little, D., Rascon, A., Reyes, A., Williams, K., Vaughan, M., Cabra, O., Kelly, T., and King, C., 1998, Transboundary aquifers and binational groundwater data base, City of El Paso/Ciudad Juárez area; Base de datos binacional del acuífero transfronterizo, de Ciudad Juárez, Chih./El Paso, Tex.: first binational aquifer report and data base sanctioned by the governments of the United States and Mexico, 47 p. + appendices and CD-ROM. Participating agencies; International Boundary and Water Commission, U.S. Environmental Protection Agency, Texas Water Development Board, New Mexico Water Resources Research Institute, Comisión Internacional de Limites y Aguas, Comisión Nacional del Agua, Junta Municipal de Agua y Saneamiento de Ciudad Juárez. **(F1, H1, H2)**
- Hutchison, W.R., 2006, Groundwater management in El Paso, Texas: University of Texas at El Paso, Center for Environmental Resource Management, doctoral dissertation, 329 p. **(H1, H2, H3)**
- Hutchison, W.R., and Hibbs, B.J., 2008, Ground water budget analysis and cross-formational leakage in an arid basin: *Ground Water*, v. 46, no. 3, p. 384-395. **(H1, H2, H3)**

- Imana, E.M.C., 2002, The Mesilla Bolson: an integrated geophysical, hydrological, and structural analysis utilizing free air anomalies: University of Texas at El Paso, doctoral thesis, 152 p. **(C4, H1)**
- Jarvis, M.D., Buck, B., and Witcher, J.C., 1998, Quaternary paleospring deposits at San Diego Mountain in south-central New Mexico: New Mexico Geological Society Guidebook 49, p. 71-74. **(C1, C4, H1, H2)**
- Jiménez, A.J., 1999, An integrated analysis of basins in the Rio Grande Rift in northern Chihuahua, Mexico: El Paso, *ETD Collection for University of Texas, El Paso*. AAIEP05329. **(C2b, C4, F1, H1)**
- Jiménez, A.J., and Keller, G.R., 2000, Rift basin structure in the border region of northwestern Chihuahua: New Mexico Geological Society Guidebook 51, p. 79-83. **(C2b, C4, F1, H1)**
- Kambhammettu, B.V.N.P., Allena, P., and King, J.P., 2010, Simulation of groundwater flow in the southern Jornada Del Muerto Basin, Doña Ana County, New Mexico: New Mexico Water Resources Research Institute Report No. 352, prepared for Lower Rio Grande Water Users Organization (LRGWUO), 63 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-352.html> **(H1, H3)**
- Kennedy, J.F., and Hawley, J.W., 2003, Late Quaternary paleohydrology of a linked pluvial-lake and Ancestral Rio Grande system, Paso Del Norte Region, Southwestern USA And Northern Mexico *in* Shaping the Earth, a Quaternary Perspective: XVI INQUA Congress (July 23-30, 2003), Desert Research Institute, Reno, NV, Programs with Abstracts, p. 181. **(F1, H1, I2)**
- Kennedy, J.F., Granados Olivas, A., and Aldouri, R., 2002, Creating a single map, regional geographic information system to support water planning in the Paso del Norte region: New Mexico Water Resources Research Institute Report No. 322, 22 p., CD-ROM <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-322.html> **(F1, H1, I2)**
- Kennedy, J.F., Hawley, J.W., and Johnson, M., 2000, The hydrogeologic framework of basin-fill aquifers and associated ground-water-flow systems in southwestern New Mexico—An overview: New Mexico Geological Society Guidebook 51, p. 235-244. **(F1, H1, I2)**
- King, W.E., 1973, Hydrogeology of La Mesa, Doña Ana County, New Mexico, *in* Guidebook to the geology of south-central Doña Ana County, New Mexico: El Paso Geological Society 7th Annual Field Trip, p. 56-67. **(H1)**
- King, W.E., and Hawley, J.W., 1975, Geology and ground-water resources of the Las Cruces area: New Mexico Geological Society Guidebook 26, p. 195-204. **(H1)**
- King, W.E., Hawley, J.W., and Cliett, T.E. (Abstract), 1971, Santa Fe Group and Rio Grande Valley-fill aquifers in the south-central New Mexico border region: Geological Society of America, Abstracts with Programs, v. 3, no. 3, p. 239-240. **(C2a, F1, H1)**
- King, W.E., Hawley, J.W., Taylor, A.M., and Wilson, R.P., 1969, Hydrogeology of the Rio Grande Valley and adjacent intermontane areas of southern New Mexico: New Mexico Water Resources Research Institute Miscellaneous Report No. M6, 141 p. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m6.pdf> **(F2, H1, H2)**
- King, W.E., Hawley, J.W., Taylor, A.M., and Wilson, R.P., 1971, Geology and ground-water resources of central and western Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 1, 64 p. **(F2, H1, H2)**
- Kreitler, C.W., Raney, J.A., Nativ, R., Collins, E.W., Mullican, W.F. III, Gustavson, T.C., and Henry, C.D., 1987, Siting a low-level radioactive waste disposal facility in Texas, volume four – Geologic and hydrologic investigations of the State of Texas and University of Texas lands: University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Low-Level Radioactive Waste Disposal Authority under contract no. IAC (86-87)-1722, 330 p. **(C2a, E2c, F2, H1, H2)**
- Kubicki, C., Carroll, K.C., Witcher, J.C., and Robertson, A., 2021, An Integrated Geochemical Approach for Defining Sources of Groundwater Salinity in the Southern Rio Grande Valley of the Mesilla Basin, New Mexico and West Texas, USA: New Mexico Water Resources Research Institute Report No. 388, 40 p., 3 Appendices. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-388.html> **(F2, H1, H2, H3)**
- Lee Wilson and Associates, Inc., 1986, Exhibit 1 of the City of El Paso in support of its applications to appropriate ground water in New Mexico: Unpublished consultant's report prepared for the El Paso Water Utilities Public Service Board, 75 p. **(E3, H1, H3)**
- Leggat, E.R., Lowry, M.E., and Hood, J.W., 1962, Ground-water resources of the lower Mesilla Valley, Texas and New Mexico: Texas Water Commission, Bulletin 6203, 191 p. **(F2, G2, H1, H2)**
- Leggat, E.R., Lowry, M.E., and Hood, J.W., 1963, Ground-water resources of the lower Mesilla Valley, Texas and New Mexico: U.S. Geological Survey, Water-Supply Paper 1669AA, 49 p. **(F2, G2, H1, H2)**

- Mack, P.D.C., 1985, Correlation and provenance of facies within the upper Santa Fe Group in the subsurface of the Mesilla Valley, southern New Mexico: New Mexico State University, master's thesis, 137 p. **(H1)**
- McLean, J.S., 1977, Hydrologic Maps and Data in the Mimbres Basin, New Mexico: U.S. Geological Survey Open File Report 77-314, 531 p. **(H1, H2, F1)**
- Myers, R.G., and Orr, B.R., 1986, Geohydrology of the aquifer in the Santa Fe Group, northern West Mesa of the Mesilla Basin near Las Cruces, New Mexico: U.S. Geological Survey Water Resources Investigations Report 84-4190, 37 p. **(C2a, H1)**
- Naus, C.A., 2002, Conceptual model of the bolson-fill aquifer, Soledad Canyon area, Doña Ana County, New Mexico: New Mexico Geological Society Guidebook 53, p. 309-318. **(C2b, H1)**
- Newton, B.T., and Allen, B. 2014. Hydrologic investigation at White Sands National Monument: N. M. Bureau Geology and Mineral Resources, Open-File Report, v. 0559, p. 1-51. **(H1, H2)**
- Nickerson, E.L., 1986, Selected geohydrologic data for the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas: U.S. Geological Survey Open-File Report 86-75, 59 p. **(H1)**
- Nickerson, E.L., 1995, Selected geohydrologic data for the Mesilla ground-water basin, 1987 through 1992 water years, Doña Ana County, New Mexico and El Paso County, Texas: U.S. Geological Survey Open-File Report 95-111, 123 p. **(H1)**
- Nickerson, E.L., 2006, Description of piezometers and ground-water-quality characteristics at three new sites in the Lower Mesilla Valley, Texas, and New Mexico: U.S. Geological Survey Scientific Investigations Report 2005-5248, 27 p. **(H1, H2)**
- Nickerson, E.L., and Myers, R.G., 1993, Geohydrology of the Mesilla ground-water basin, Doña Ana county, New Mexico, and El Paso County, Texas: U.S. Geological Survey Water-Resources Investigations Report 92-4156, 89 p. **(H1, H2)**
- O'Brien, K.M., and Stone, W.J., 1984, Role of geological and geophysical data in modeling a southwestern alluvial basin: Ground Water, v. 22, no. 6, p. 717-727. **(C4, H1, H3)**
- Orr, B.R., and Myers, R.G., 1986, Water resources in basin-fill deposits in the Tularosa Basin, New Mexico: U.S. Geological Survey Water Resources Investigations Report 85-4219, 94 p. **(H1, H2)**
- Orr, B.R., and Risser, D.W., 1992, Geohydrology and potential effects of development of freshwater resources in the northern part of the Hueco Bolson, Doña Ana and Otero Counties, New Mexico, and El Paso County, Texas: U.S. Geological Survey Water-Resources Investigations Report 91-4082, 92 p. **(H1, H2)**
- Orr, B.R., and White R.R., 1985, Selected hydrologic data from the northern part of the Hueco Bolson, New Mexico and Texas: U.S. Geological Survey Open-File Report 85-696, 88 p. **(H1)**
- Peterson, D.M., Khaleel, R., and Hawley, J.W., 1984, Quasi three-dimensional modeling of groundwater flow in the Mesilla Bolson, New Mexico: New Mexico Water Resources Research Institute Report No. 178, 185 p. <https://nmwrr.nmsu.edu/publications/technical-reports/tr-reports/tr-178.html> **(H1, H3)**
- Risser, D.W., 1988, Simulated water-level and water-quality changes in the bolson-fill aquifer, Post Headquarters Area, White Sands Missile Range, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 87-4152, 71 p. **(H1, H2)**
- Schwab, K.J., 1992, Maps Showing Groundwater Conditions in the San Bernardino Valley Basin, Cochise County, Arizona, and Hidalgo County, New Mexico: Phoenix, AZ, Department of Water Resources, Hydrologic Map Series Report Number 24, 1 sheet. **(H1)**
- Snyder, J.T., 1986, Heat flow in the southern Mesilla Basin, with an analysis of East Potrillo geothermal system, Doña Ana County, New Mexico: New Mexico State University, master's thesis, 252 p. **(C4, F2, H1)**
- Secretaría de Agricultura y Recursos Hidráulicos (SARH), 1988, Resultados de las perforaciones por la S.A.R.H. en la zona de Conejos Médanos, Chihuahua—Programa de exploración: SARH Departamento de Aguas del Subsuelo, Anexos 2 y 3. *See Gutiérrez-Ojeda 2001, p. 26.* **(F3, H1)**
- Servicio Geológico Mexicano (SGM), 2011, Hydrogeological activities in the Conejos-Médanos aquifer, State of Chihuahua, Phase I: Servicio Geológico Mexicano, v. 1, 109 p. **(F3, H1)**
- S.S. Papadopoulos & Associates, Inc. (SSPA), 1987, Hydrogeologic evaluation of proposed appropriation of ground water from the Lower Rio Grande Underground Basin by the City of El Paso: S.S. Papadopoulos & Associates, Inc., main report prepared for the State of New Mexico, variously paged. **(H1, H3)**
- Stone, W.J., 2000, Challenges of Basin and Range hydrogeology – Examples from Hidalgo County, New Mexico: New Mexico Geological Society, Guidebook 51, p. 221-225. **(F2, H1)**
- Sweet, A.T., and Poulson, E.N., 1933, Soil Survey of the Rincon area, New Mexico: U.S. Department of Agriculture, Bureau of Chemistry and Soils, Series 1930, no. 5, 24 p., map scale 1:63,360. *Shallow depth to water table shown in large number of soil-test borings.* **(C3, H1)**

- Sweetkind, D.S., 2017, Three-dimensional hydrogeologic framework model of the Rio Grande transboundary region of New Mexico and Texas, USA, and northern Chihuahua, Mexico: U.S. Geological Survey Scientific Investigations Report 2017-5060, 49 p. **(H1)**
- Sweetkind, D.S., 2018, Digital 3D geologic framework of the Las Cruces area: New Mexico Geological Society Guidebook 69, p. 60-62. **(H1)**
- Sweetkind, D.S., Hanson, R.T., Ritchie, A.B., and Hawley, J.W., 2017, Data release of Three-Dimensional Hydrogeologic Framework Model of the Rio Grande Transboundary Region of New Mexico and Texas, USA and Northern Chihuahua, Mexico: U.S. Geological Survey data release. **(H1)**
- Taylor, A.M., 1967, Geohydrologic investigations in the Mesilla Valley, New Mexico: New Mexico State University, master's thesis, 130 p. **(H1, H3)**
- Taylor, B., and Roy, R.F., 1980, A preliminary heat flow map of west Texas, *in* Dickerson, P.W., Hoffer, J.M., and Callender, J.F., eds., Trans-Pecos region: Socorro, New Mexico Geological Society Guidebook 33, p. 137-139. **(C4, H1)**
- Tetra Tech EM Inc., 1998, Subsurface investigation of the New Mexico oxidation lagoons (SWMU nos. 19,25B, and 27B), Fort Bliss, Texas: Tetra Tech EM Inc., 47 p. **(E2, H1)**
- Tetra Tech EM Inc., 2004a, Final report for well installation activities within the Mesilla Valley, Lower Rio Grande Basin: Consultant's report for New Mexico Interstate Stream Commission, 8 p. **(E2, H1)**
- Thapalila, A., 2014, Geochemical studies of backfill aggregate, lake sediment cores and the Hueco Bolson Aquifer: University of Texas at El Paso, doctoral dissertation, 142 p. **(C2b, C4, H1, H2)**
- Trauger, F.D., 1972, Water Resources and General Geology of Grant County, New Mexico; Hydrologic Report 2; New Mexico Bureau of Mines and Mineral Resources, Socorro, 1972, 211 p. **(D1, H1)**
- Trauger, F.D., and Herrick, E.H., 1962, Ground water in central Hachita Valley northeast of the Big Hatchet Mountains, Hidalgo County, New Mexico: New Mexico State Engineer Office Technical Report No. 26, 21 p. **(F2, H1, H2)**
- Trauger, F.D., and Stoneman, D.L., 1975, Geohydrology of the Santa Teresa area, Doña Ana County, New Mexico: *prepared by Earth Environmental Consultants, Inc., Albuquerque, NM for C.L. Crowder Investment Company*, 44 p. *including tables and well logs* **(F2, H1, H2, H3)**
- Urbanczyk, K., Rohr, D., and White, J.C., 2001, Geologic history of West Texas, *in* Mace, R.E., Mullican, W.F. III, and Angle, E.S., eds., Aquifers of West Texas: Texas Water Development Board Report 356, p. 17-40. **(C2b, H1)**
- White, D.E., 1983, Summary of hydrologic information in the El Paso, Texas area, with emphasis on ground-water studies, 1903-1980: U.S. Geological Survey Open-File Report 83-775, 77 p. **(C4, H1)**
- White, D.E., Baker, E.T., Jr., and Sperka, R., 1997, Hydrology of the shallow aquifer and uppermost semiconfined aquifer near El Paso, Texas: U.S. Geological Survey Water-Resources Investigations Report 97-4263, 37 p. **(C4, H1)**
- Wilson, C.A., and Myers, R.G., 1981, Ground-water resources of the Soledad Canyon re-entrant and adjacent areas, White Sands Missile Range and Fort Bliss Military Reservation, Doña Ana County, New Mexico: U.S. Geological Survey Water-resources Investigations Report 81-645, 22 p. **(H1, H2)**
- Wilson, C.A., and White, R.R., 1984, Geohydrology of the central Mesilla Valley, Doña Ana County, New Mexico: U.S. Geological Survey Water Resources Investigations Report 82-444, 144 p. **(H1, H2)**
- Wilson, C.A., White, R.R., Orr, B.R., and Roybal, R.G., 1981, Water resources of the Rincon and Mesilla Valleys and adjacent areas, New Mexico: New Mexico State Engineer Technical Report 43, 514 p. **(H1, H2)**
- Witcher, J.C., 1991a, Radon soil-gas surveys with diffusion-model corrections in geothermal exploration: Geothermal Resources Council Transactions, v. 15, p. 301-308. **(C4, H1, H2)**
- Witcher, J.C., 1991b, The Rincon geothermal system, southern Rio Grande rift, New Mexico; a preliminary report on a recent discovery: Transactions, Geothermal Resources Council, v. 15, p. 205-212. **(C4, H1, H2)**
- Witcher, J.C., 1995, A geothermal resource database of New Mexico. Southwest Technology Development Institute, New Mexico State University, 28 p. **(C4, H1, H2)**
- Witcher, J.C., 1998, The Rincon SLH 1 geothermal well: New Mexico Geological Society Guidebook 49, p. 35-40. **(C2b, C4, H1, H2)**
- Witcher, J.C., 2008, Evidence for large-scale Laramide tectonic inversion and amid-Tertiary caldera ring fracture zone at the Lightning Dock Geothermal system, New Mexico: New Mexico Geological Society, Guidebook 59, p. 177-187. **(C2b, C4, H1, H2)**

- Witcher, J.C., King, J.P., Hawley, J.W., Kennedy, J.F., Williams, J., Cleary, M., and Bothern, L., 2004, Sources of Salinity in the Rio Grande and Mesilla Basin Groundwater: New Mexico Water Resources Research Institute Report No. 330, 168 p., with appendices and plates on CD ROM.
<https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-330.html> (C2b, E2a, H1, H2)
- Woodward, D.G., and Myers, R.G., 1997, Seismic investigation of the buried horst between the Jornada del Muerto and Mesilla ground-water basins near Las Cruces, Doña Ana County, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 97-4147, 45 p. (C4, H1)

H2. Hydrochemistry

- Abernathy, G.H., and Small, F.P., 1986, Field measurements of stress changes in an aquifer matrix during pumping cycles – Final Report to S.E. Reynolds, N.M. Interstate Stream Commission: Civil, Agricultural and Geological Engineering Department, New Mexico State University, 99 p. (H1, H2, H3)
- Abeyta, C.G., 1996, Geohydrologic site characterization of the municipal solid waste landfill facility, U.S. Army Air Defense Artillery Center and Fort Bliss, El Paso County, Texas: U.S. Geological Survey Water-Resources Investigations Report 95-4217, 36 p. (E2c, H2)
- Abeyta, C.G., and Roybal, R.G., 1996, Ground-water quality, Water Year 1995, and statistical analysis of ground-water quality data, Water Years 1994-95, at the Chromic Acid Pit site, U.S. Army Air Defense Artillery Center and Fort Bliss, El Paso, Texas: U.S. Geological Survey Water-Resources Investigations Report 96-4211, 42 p. (E2c, H2)
- Al-Garni, M.A., 1996, Direct current resistivity investigation of groundwater in the lower Mesilla Valley, New Mexico and Texas: Colorado School of Mines, master's thesis, 126 p. *See Zohdy et al. 1976.* (C4, H2)
- Anderholm, S.K., 1985, Clay-size fraction and powdered whole-rock X-ray analyses of alluvial basin deposits in central and southern New Mexico: U.S. Geological Survey Open-File Report 85-163, 18 p. (C2a, H2)
- Anderholm, S.K., 2002, Water-quality assessment of the Rio Grande Valley, Colorado, New Mexico, and Texas – Surface-water quality, shallow ground-water quality, and factors affecting water quality in the Rincon Valley, south-central New Mexico, 1994-95: U.S. Geological Survey Water-Resources Investigations Report 02-4188, 117 p. (H2)
- Anderholm, S.K., and Heywood, C.E., 2003, Chemistry and age of ground water in the southwestern Hueco Bolson, New Mexico and Texas: U.S. Geological Survey Water-Resources Investigations Report 02-4237, 16 p. (H2)
- Anning, D.W., Bauch, N.J., Gerner, S.J., Flynn, M.E., Hamlin, S.N., Moore, S.J., Schaefer, D.H., Anderholm, S.K., and Spangler, L.E., 2010, Dissolved solids in basin-fill aquifers and streams in the Southwestern United States (ver. 1.1, March 22, 2010): U.S. Geological Survey Scientific Investigations Report 2006-5315, 168 p., 1 pl., appendixes, data files. (H2)
- Arunshankar, B.N., 1993, Use of earth resistivity method for monitoring saline groundwater movement in aquifers: University of Texas at El Paso, master's thesis, 79 p. (C4, H2, H3)
- Basler, J.A., and Alary, L.J., 1968, Quality of shallow ground water in the Rincon and Mesilla Valley, New Mexico and Texas: U.S. Geological Survey Open-File Report 68-7, 30 p., 5 figs. (G2, H2)
- Bexfield, L.M., and Anderholm, S.K., 1997, Water-quality assessment of the Rio Grande Valley, Colorado, New Mexico, and Texas – Ground-water quality in the Rio Grande flood plain, Cochiti Lake, New Mexico, to El Paso, Texas, 1995. U.S. Geological Survey Water-Resources Investigations Report 96-4249, 93 p. (H2)
- Bexfield, L.M., Thiros, S.A., Anning, D.W., Huntington, J.M., and McKinney, T.S., 2011, Effects of natural and human factors on groundwater quality of basin-fill aquifers in the southwestern United States – Conceptual models for selected contaminants: U.S. Geological Survey Scientific Investigations Report 2011-5020, 90 p. (D1, E2c, H2)
- Bluntzer, R.L., 1975, Selected water well and ground-water chemical analysis data, Ciudad Juarez, Chihuahua, Mexico: Texas Water Development Board Open-File Report, 29 p. (F3, H2)
- Brady, B.T., Mulvihill, D.A., Hart, D.L., Jr., and Langer, W.H., 1984, Maps showing ground-water levels, springs, and depth to ground water, Basin and Range Province, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 83-4118-B, 6 p., 2 sheets, scale 1:500,000. (H2)
- Castillo, R.C., Cortes, A., Morales, P., Romero, G., and Villegas, R., 1984, A survey of groundwater flow using deuterium and oxygen-18 as tracers, in Samalayuca Dunes Northern Mexico: *Revista Mexicanos de Física*, v. 30, no. 4, p. 147-155. (F3, H2, H3)
- CH2MHill, 2013, Distal Mesilla conceptual site model prepared for the United States Army Corps of Engineers: Technical Report, 224 p. (E2c, F1, H1, H2)

- Chaturvedi, L., 1981, New Mexico State University geothermal production well: N.M. Energy Institute Technical Completion Report, 48 p. **(C4, H1, H2)**
- Chowdhury, A.H., Uliana, M., and Wade, S., 2008, Ground water recharge and flow characteristics using multiple isotopes: *Ground Water*, v. 46, no. 3, p. 426-413. **(D2, H2, H3)**
- Cliett, T., and Hawley, J.W., 1996, General geology and groundwater occurrence of the El Paso area, *in* Ortega Klett, C.T., ed., *Proceedings of the 40th Annual New Mexico Water Conference*, New Mexico Water Resources Research Institute Report No. 297, p. 51-56. **(H1, H2)**
- Creel, B.J., Sammis, T.W., Kennedy, J.F., Sitze, D.O., Asare, D., Monger, H.C., and Samani, Z., 1998, Ground-water aquifer sensitivity assessment and management practices evaluation for pesticides in the Mesilla Valley: New Mexico Water Resources Research Institute Report No. 305, 50 p., <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-305.html> **(E2c, H2)**
- Cuniff, R.A., 1986, New Mexico State University, Geothermal Exploratory Well, DT-3; Final completion report: New Mexico State University Physical Science Laboratory (Las Cruces, NM-88003-3458), 151 p. **(C4, H2)**
- Dadakakis, J.S., 2004, Isotopic and geochemical characterization of recharge and salinity in a shallow floodplain aquifer near El Paso, Texas: University of Arizona, master's thesis, 102 p. **(D2, F1, H2)**
- Daniel B. Stephens and Associates, Inc. (DBSAI), 2010, Evaluation of Rio Grande salinity San Marcial, New Mexico to El Paso, Texas: Report (pdf) prepared for the New Mexico Interstate Stream Commission and New Mexico Environment Department, June 30, 2019, 202 p. **(C4, E2, H2)**
- Darling, B.K., Hibbs, B.J., and Sharp, J.M., Jr., 1998, Environmental isotopes as indicators of the residence time of ground waters in the Eagle Flat and Red Light Draw Basins of Trans-Pecos, Texas: *West Texas Geological Society Publication* no. 98-105, p. 259-270. **(C1, H2, H3)**
- Darling, B.K., Hibbs, B.J., and Sharp, J.M., 2017, Integrations of carbon-14 and Oxygen-18 as a basis for differentiating between Late Pleistocene and post-Pleistocene groundwater ages along flow paths of two West Texas bolson aquifers: *Geological Society of America 129th Annual Meeting, Abstracts with Programs*, v. 49, no. 7. ISSN 0016-7592 **(B2, C1, H2, H3)**
- Davis, M.E., and Leggat, E.R., 1967, Preliminary results of the investigation of the saline-water resources in the Hueco bolson near El Paso, Texas: *U.S. Geological Survey Open-File Report* 67-79, 27 p. **(E2, H2)**
- Doremus, D., and Michelsen, A.M., 2008, Rio Grande salinity management—First steps towards interstate solutions, *in* Ortega Klett, C.T., ed., *Surface Water Opportunities, Proceedings of the 53rd Annual New Mexico Water Conference*: New Mexico Water Resources Research Institute Report No. 347, p. 57-64. **(H2)**
- Driscoll, J.M., and Sherson, L.R., 2016, Variability of surface-water quantity and quality, and shallow groundwater levels and quality within the Rio Grande Project area, New Mexico and Texas, 2009-13: *U.S. Geological Survey Scientific Investigations Report*, 2016-5006. **(H2, H3)**
- Druhan, J.L., Hogan, J.F., Eastoe C.J., Hibbs, B.J., and Hutchison, W.R., 2008, Hydrogeologic controls on groundwater recharge and salinization: a geochemical analysis of the northern Hueco Bolson aquifer, Texas, USA: *Hydrogeology Journal*, v. 16, no. 2, p. 281-296. **(D2, H1, H2)**
- Earman, C.J., McPherson, O.L., Phillips, F.M., Ralser, S., Herrin, J.M., and Broska, J., 2008, Tectonic influences on ground water quality: insight from complementary methods: *Ground Water*, v. 46, no. 3, p. 354-371. **(C2b, D1, H2)**
- Eastoe, C.J., 2020, Sources of perennial water supporting critical ecosystems, San Pedro Valley, Arizona: *Environmental & Engineering Geoscience*, v. XXVI, no. 4, p. 463-479. **(C1, D2, H1, H2, H3)**
- Eastoe, C.J., and Dettman, D.L., 2016, Isotope amount effects in hydrologic and climate reconstructions of monsoon climates: Implications of some long-term data sets for precipitation: *Chemical Geology*, v. 430, p. 76-89. **(C1, D1, H2)**
- Eastoe, C.J., and Rodney, R., 2014, Isotopes as tracers of water origin in and near a regional carbonate aquifer: The Southern Sacramento Mountains, New Mexico: *Water*, v. 6, p. 301-323. **(H1, H2)**
- Eastoe, C., and Towne, D., 2018, Regional zonation of groundwater recharge mechanisms in alluvial basins of Arizona: Interpretation of isotope mapping: *Journal of Geochemical Exploration*, v. 194, p. 135-145. **(D2, H2, H3)**
- Eastoe, C.J., and Wright, W.E., 2019, Hydrology of mountain blocks in Arizona and New Mexico as revealed by isotopes in groundwater and precipitation: *Geosciences*, v. 9, article 461. **(C1, D2, H2, H3)**
- Eastoe, C.J., Hutchison, W.R., Hibbs, B.J., Hawley, J., and Hogan, J.F., 2010, Interaction of a river with an alluvial basin aquifer: Stable isotopes, salinity and water budgets: *Journal of Hydrology*, v. 395, p. 67-78. **(H1, H2)**

- Eastoe, C.J., Hibbs, B.J., Granados Olivas, A., Hogan, J.F., Hawley, J., and Hutchison, W.R., 2008, Isotopes in the Hueco Bolson aquifer, Texas (USA) and Chihuahua (Mexico): Local and general implications for recharge sources in alluvial basins: *Hydrogeology Journal*, v. 16, no. 4, p. 737-747. **(H1, H2)**
- Elston, W.E., Deal, E.G., and Logsdon, M.J., 1983, Geology and geothermal waters of the Lightning Dock region, Animas Valley and Pyramid Mountains, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 177, 44 p. **(C2a, C4, H1, H2)**
- Feth, J.H., 1965a, Preliminary map of the conterminous United States showing depth to and quality of shallowest ground water containing more than 1,000 parts per million dissolved solids: U.S. Geological Survey Hydrologic Atlas 199, 31 p., 2 pls., 1:3,000,000. **(D1, H2)**
- Feth, J.H., and others, 1965, Preliminary map of the conterminous United States showing depth to and quality of shallowest ground water containing more than 1.000 parts per million dissolved solids: U.S. Geological Survey HA-199, 31 p. **(E2a, H2)**
- Finch, S.T., Jr., 1999, Results from installation of ground-water monitoring system, and proposed ground-water monitoring plan, Las Cruces Landfill, Las Cruces, New Mexico: Consultants report prepared by John Shomaker & Associates for the City of Las Cruces, 25 p. **(E2, H1, H2)**
- Fisher, R.S., and Mullican, W.F. III, 1990, Integration of ground-water and vadose zone geochemistry to investigate hydrochemical evolution: A case study in arid lands of the northern Chihuahuan Desert, Trans-Pecos Texas: University of Texas at Austin, Bureau of Economic Geology, Geological Circular GC 90-5, p. 1-36. **(F2, H1, H2)**
- Fisher, R.S., and Mullican, W.F. III, 1997, Hydrochemical evolution of sodium-sulphate and sodium-chloride groundwater beneath the northern Chihuahuan Desert, Trans-Pecos Texas, USA: *Hydrogeology Journal*, v. 5, p. 4-16. **(F2, H1, H2)**
- Frenzel, P.F., and Kaehler, C.A., 1990, Geohydrology and simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas; *with a section on Water quality and geochemistry by S.K. Anderholm*: U.S. Geological Survey Open-File Report 88-305, 179 p. **(F2, H2, H3)**
- Frenzel, P.F., and Kaehler, C.A., 1992, Geohydrology and simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas, *with a section on Water quality and geochemistry by S.K. Anderholm*: U.S. Geological Survey Professional Paper 1407-C, 105 p. **(F2, H2, H3)**
- Garcia, S., 2017, Tracing anthropogenic salinity inputs to the semi-arid Rio Grande river: a multi-isotope tracer approach: University of Texas at El Paso, master's thesis, 90 p. **(H2)**
- Garcia, S., Louvat, P., Gaillardet, J., Nyachoti, S., and Ma, L., 2021, Combining uranium, boron, and strontium isotope ratios ($^{234}\text{U}/^{238}\text{U}$, $\delta^{11}\text{B}$, $^{87}\text{Sr}/^{86}\text{Sr}$) to trace and quantify salinity contributions to Rio Grande river in Southwestern United States: *Frontiers in Water*, v. 2, article 575216, 24 p. **(C4, H2)**
- Garza, S., Weeks, E.P., and White, D.E., 1980, Appraisal of potential for injection-well recharge of the Hueco bolson with treated sewage effluent – Preliminary study of the northeast El Paso area, Texas: U.S. Geological Survey Open-File Report 80-1106, 37 p. **(E2b, F2, H2)**
- Gates, J.S., White, D.E., Stanley, W.D., and Ackermann, H.D., 1980, Availability of fresh and slightly saline ground water in the basins of westernmost Texas: Texas Department of Water Resources, Report 256, 108 p. [First published as USGS Open-File Report 78-663, 115 p.] **(E2a, H2)**
- Gelhar, L.W., and McLin, S., 1979, Evaluation of a hydrosalinity model of irrigation return flow water quality in the Mesilla Valley, New Mexico: U.S. Environmental Protection Agency. **(C4, E2b, H2)**
- Groschen, G.E., 1994, Simulation of ground-water flow and the movement of saline water in the Hueco Bolson aquifer, El Paso, Texas, and adjacent areas: U.S. Geological Survey Open-File Report 92-171, 87 p. **(H2, H3)**
- Gunaji-Klement & Associates, 1994, Water quality and availability plan for Miner's Ridge Subdivision in Dona Ana County, New Mexico: Report prepared for: Mr. George B. Rawson, Pueblo Builders, Inc., P.O. Box 1286, Las Cruces, NM 88004 by Gunaji-Klement & Associates, Engineers & Geologists, P.O. Box 5008, Las Cruces, NM 88003, 19 p., *with* 1. Clemons, C.E., 1994, Report on lithologic analysis of cuttings from well in NE ¼ Sec. 22, T23S, R3E; and 2. SW Geophysical Services, Inc., 9/26/1994, Borehole geophysical logs: SP, Electrical Resistivity, Gamma Ray, and Neutron. **(H1, H2)**
- Gunaji-Klement & Associates, 2001, Sonoma Ranch Golf Course Well Completion Report: Submitted to: Mr. George B. Rawson, Sonoma Ranch Development Company, P.O. Box 936, Las Cruces, NM 88004 by Gunaji-Klement & Associates, Consulting Engineers, P.O. Box 5008, Las Cruces, NM 88003-5008, 19 p., *with* SW Geophysical Services, Inc., 7/17/2001, Borehole geophysical logs: SP, Electrical Resistivity, and Temperature. **(H1, H2)**

- Gunaji, N.N., 1961, Ground-water conditions in Elephant Butte Irrigation District: Las Cruces, New Mexico State University, Engineering Experiment Station, 43 p. **(H2, H3)**
- Gunaji, N.N., Thode, E.F., Chaturvedi, L., Walvekar, A., LaFrance, L., Swanberg, C.A., and Jiracek, G.R., 1978, Geothermal application feasibility study for the New Mexico State University campus: New Mexico Energy Institute at New Mexico State University, Technical Report NMEI 13 – Contract 76-205, 118 p. **(C4, H2)**
- Gungle, B.G., Callegary, J.B., Parette, N.V., Kennedy, J.R., Eastoe, C.J., Turner, D.S., Dickinson, J.E., Levick, L.R., and Sugg, Z.P., 2017, Hydrological Conditions and Evaluation of Sustainable Groundwater Use in the Sierra Vista Sub-watershed, Upper San Pedro Basin, Southeastern Arizona: U.S. Geological Survey Scientific Investigation Report 2016-5114, 90 p. **(H1, H2, H3)**
- Gutiérrez-Ojeda, C., 2001, Aquifer recharge estimation at Mesilla Bolson and Guaymas aquifer systems, Mexico, *in* IAEA, eds., Isotope based assessment of groundwater renewal in water scarce regions: IAEA-TECDOC-1246, Vienna, International Atomic Energy Agency, p. 23-44. *See Secretaria de Recursos Hidráulicos 1988, Pozo no. 9-El Parabién.* **(F3, H2, H3)**
- Halpenny, L.C., Babcock, J.A., and Greene, D.K., 1972, Basic data report, ASARCO La Mesa test production water well: Tucson, AZ, Water Development Corporation Open-File Report, 40 p. **(C2a, H1, H2, H3)**
- Healy, D.F., 1996, Water-quality assessment of the Rio Grande Valley study unit, Colorado, New Mexico, and Texas – Occurrence and distribution of selected pesticides and nutrients at selected surface-water sites in the Mesilla Valley, 1994-1995: U.S. Geological Survey Water-Resources Investigations Report 96-4069, 85 p. **(H2)**
- Henry, C.D., 1979, Geologic setting and geochemistry of thermal water and geothermal assessment, Trans-Pecos Texas: Texas Bureau of Economic Geology, Report of Investigations 96, 48 p. **(C2a, F1, H1, H2)**
- Henry, C.D., and Gluck, J.K., 1981, A preliminary assessment of the geologic setting, hydrology, and geochemistry of the Hueco Tanks geothermal area, Texas and New Mexico: University of Texas at Austin, Bureau of Economic Geology, Geological Circular 81-1, 48 p. **(C2b, H1, H2)**
- Hernandez, J.W., 1978, Interrelationships of ground and surface water quality in the El Paso-Juarez and Mesilla Valleys: *Natural Resources Journal*, v. 18, no. 1 (Symposium on U.S.-Mexican Transboundary Resources, Part II), p. 1-9. **(F1, H2)**
- Hibbs, B.J., 1999a, Hydrogeologic and water quality issues along the El Paso/Juarez corridor: An international case study: *Environmental & Engineering Geoscience*, vol. V, no. 1, p. 27-39. **(F1, H1, H2)**
- Hibbs, B.J., and Boghici, R.N., 1999, On the Rio Grande aquifer: Flow relationships, salinization, and environmental problems: *Environmental & Engineering Geoscience*, v. 5, p. 51-59. **(F1, H1, H2)**
- Hibbs, B.J., and Merino, M., 2006, A geologic source of salinity in the Rio Grande aquifer near El Paso, Texas: *New Mexico Journal of Science*, v. 46, 165-181. **(F1, H1, H2)**
- Hibbs, B., and Merino, M., 2007, Discovering a geologic salinity source in the Rio Grande aquifer: *Southwest Hydrology*: v. 6, p. 20-23. **(F1, H1, H2)**
- Hibbs, B., and Merino, M., 2020, Reinterpreting models of slope-front recharge in a desert basin: *Geosciences*, v. 10, no. 297, 20 p. Licensee MDPI, Basel, Switzerland. **(F1, H1, H2)**
- Hibbs, B.J., Darling, B.K., and Jones, I.C., 1998, Hydrogeologic regimes of arid-zone aquifers beneath low-level radioactive waste and other waste repositories in Trans-Pecos, Texas and northern Chihuahua, Mexico, *in* Van Brahana, J., and others, eds., *Gambling with groundwater – Physical, chemical, and biological aspects of aquifer-stream relationships*: American Institute of Hydrology, St. Paul, Minnesota, p. 311-322. **(F1, H1, H2)**
- Hibbs, B.J., Lee, M.M., and Hawley, J.W., 1999, Evolution of hydrochemical facies in the Mimbres Basin aquifer system: A transboundary resource, *in* *Hydrological issues of the 21st Century: Ecology, Environment, and Human Health*: American Institute of Hydrology, Hydrological Science and Technology, v. 15, no. 1-4, p. 52-65. **(F1, H1, H2)**
- Hibbs, B., Eastoe, C., Hawley, J., and Granados, A., 2015, Multiyear study of the binational Hueco Bolson Aquifer reformulates key conceptual models of groundwater flow, *in* *Water is not for gambling: Utilizing science to reduce uncertainty*: Proceedings 2015 UCOWWR/NIWR/CUAHSI Annual Conference, Universities Council on Water Resources, p. 81-86. <https://ucowr.org/> **(F1, H1, H2)**
- Hibbs, B.J., Lee, M.M., Hawley, J.W., and Kennedy, J.F., 2000, Some notes on the hydrogeology and ground-water quality of the Animas basin system, southwestern New Mexico: *New Mexico Geological Society, Guidebook 51*, p. 227-234. **(F1, H1, H2)**

- Hibbs, B., Phillips, F., Hogan, J., Eastoe, C., Hawley, J., Granados, A., and Hutchison, B., 2003, Hydrogeologic and Isotopic Study of the Groundwater Resources of the Hueco Bolson Aquifer El Paso/Juárez Area: *Hydrological Science and Technology*, v. 19, no. 1-4, p. 109-119. **(F1, H1, H2)**
- Hibbs, B., Phillips, F., Hogan, J., Eastoe, C., Hawley, J.W., Kennedy, J.F., Nuñez, F., Granados, A., and Kretzschmar, T., 2003, Binational Study of the Surface and Ground Water Resources of the El Paso/Juárez International Corridor, in Rubin, K., ed., *Trans-Boundary Water Issues: The Universities Council on Water Resources*, Water Resources Update, Issue No. 125, p. 25-30. **(F1, H1, H2)**
- Hibbs, B.J., Creel, B.J., Boghici, R., Hayes, M., Ashworth, J., Hanson, A., Samani, Z., Kennedy, J.F., Hann, P., and Stevens, K., 1997, Transboundary Aquifers of the El Paso/Ciudad Juárez/Las Cruces Region: U.S. Environmental Protection Agency, Region 6; Technical Contract Report- Interagency Contracts X-996343-01-0 and X-996350-01-0, prepared by the Texas Water Development Board and the New Mexico Water Resources Research Institute, variously paged. See *TWDB, 1997, Appendix C—G.I.S. coverages, metadata descriptions, [and] groundwater data sets on CD-ROM, with Water Quality map insert on back-cover*. <https://nmwrri.nmsu.edu/publications/publications.html> **(F1, H1, H2)**
- Hibbs, B., Boghici, R., Ashworth, J., Hayes, M., Peckham, D., Guillen, R., Fuentes, O., Laloith, N., Morales, M., Maldonado, A., Creel, B., Kennedy, J., Hanson, A., Samani, Z., Nunez, F., Lemus, R., Moreno, G., Rascon, E., Kuo, R., Waggoner, S., Ito, C., Robinson, J., Valdez, J., Little, D., Rascon, A., Reyes, A., Williams, K., Vaughan, M., Cabra, O., Kelly, T., and King, C., 1998, Transboundary aquifers and binational groundwater data base, City of El Paso/Ciudad Juárez area; Base de datos binacional del acuífero transfronterizo, de Ciudad Juárez, Chih./El Paso, Tex.: first binational aquifer report and data base sanctioned by the governments of the United States and Mexico, 47 p. + appendices and CD-ROM. Participating agencies; International Boundary and Water Commission, U.S. Environmental Protection Agency, Texas Water Development Board, New Mexico Water Resources Research Institute, Comisión Internacional de Limites y Aguas, Comisión Nacional del Agua, Junta Municipal de Agua y Saneamiento de Ciudad Juárez. **(F1, H1, H2)**
- Hiebing, M.S., 2016. Using geochemistry and gravity data to pinpoint sources of salinity in the Rio Grande and fault networks of the Mesilla Basin: University of Texas at El Paso, master's thesis, 104 p. **(C4, H2)**
- Hiebing, M.S., Doser, D., Avila, V., and Ma, L., 2018, Geophysical Studies of Fault and Bedrock Control on Groundwater Geochemistry within the Southern Mesilla Basin, West Texas and Southern New Mexico, *Geosphere*, v. 14, no. 4, p. 1912-1934. **(C4, H2)**
- Hoffer, J.M., 1979, Geothermal exploration of western Trans-Pecos Texas: El Paso, Texas Western Press, 50 p. **(C4, H2)**
- Hoffer, J.M., 1980, A note on geothermal indicators in southern Hudspeth and Culbertson County Texas: *New Mexico Geological Society Guidebook* 26, p. 257-258. **(C4, H2)**
- Hogan, J., Phillips, F., Eastoe, C., Lacey, H., Mills, S., and Oelsner, G., 2012, Isotopic tracing of hydrological processes and water quality along the upper Rio Grande, USA, in *Monitoring Isotopes in Rivers: Creation of the Global Network of Isotopes in Rivers (GNIR): Tecdoc 1673*, International Atomic Energy Agency, Vienna, Austria, p. 111-136. **(D2, H2, H3)**
- Hogan, J.F., Phillips, F.M., Mills, S.K., Hendrickx, J.M.H., Ruiz, J.T., Chesley, J.T., and Asmeron, Y., 2007, Geologic origins of salinization in a semi-arid river: The role of sedimentary basin brines: *Geology*, v. 35, no. 12, p. 1063-1066. **(D2, H2, H3)**
- Hood, J.W., and Kister, L.R., 1962, Saline-water resources of New Mexico: U.S. Geological Survey Water-Supply Paper 1601, 70 p. **(E2a, H2)**
- Huff, G.F., 2002, Apparent age of ground water near the southeastern margin of the Tularosa Basin, Otero County, New Mexico: *New Mexico Geological Society Guidebook* 53, p. 303-307. **(H2)**
- Huff, G.F., 2004, An overview of the hydrogeology of saline groundwater in New Mexico, in Ortega Klett, C.T., ed., *Proceedings of the 49th Annual New Mexico Water Conference: Water desalination and reuse strategies for New Mexico*. New Mexico Water Resources Research Institute Report No. 336, p. 21-34. **(D1, E2a, H2)**
- Hutchison, W.R., 2006, Groundwater management in El Paso, Texas: University of Texas at El Paso, Center for Environmental Resource Management, doctoral dissertation, 329 p. **(H1, H2, H3)**
- Hutchison, W.R., and Hibbs, B.J., 2008, Ground water budget analysis and cross-formational leakage in an arid basin: *Ground Water*, v. 46, no. 3, p. 384-395. **(H1, H2, H3)**
- Icerman, L., and Lohse, R.L., 1983, Geothermal low-temperature reservoir assessment in Dona Ana County, New Mexico: New Mexico Energy Research and Development Institute Report 2-69-2202, 188 p. **(C4, H2)**

- Jarvis, M.D., Buck, B., and Witcher, J.C., 1998, Quaternary paleospring deposits at San Diego Mountain in south-central New Mexico: New Mexico Geological Society Guidebook 49, p. 71-74. **(C1, C4, H1, H2)**
- Junta Municipal de Agua y Saneamiento (JMAS), 2000, Modelo Matemático de Simulación Hidrodinámica y de Transporte de Solutos del Acuífero Bolsón de la Mesilla (Zona Conejos-Médanos). Reporte técnico No. DSGEO-012/00. *See* CONAGUA 2020. **(F3, H2, H3)**
- Kelley, R.E., 2015, New Mexico Geothermal Play Fairway Analysis from LANL. Geothermal Data Repository. <https://gdr.openei.org/submissions/597> **(C4, E1, H2)**
- Kelly, T.E., 1974, Reconnaissance investigation of ground water in the Rio Grande drainage basin—with special emphasis on saline ground-water resources: U.S. Geological Survey Hydrologic Investigations Atlas 510, 4 sheets. **(F2, H2)**
- Kelly, T.E., Myers, B.N., and Hershey, L.A., 1975, Saline ground-water resources of the Rio Grande drainage basin—a pilot study: U.S. Office of Saline-Water Research and Development, Progress Report 560, 70 p. **(F2, H2)**
- King, W.E., Hawley, J.W., Taylor, A.M., and Wilson, R.P., 1969, Hydrogeology of the Rio Grande Valley and adjacent intermontane areas of southern New Mexico: New Mexico Water Resources Research Institute Miscellaneous Report No. M6, 141 p. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-documents/m6.pdf> **(F2, H1, H2)**
- King, W.E., Hawley, J.W., Taylor, A.M., and Wilson, R.P., 1971, Geology and ground-water resources of central and western Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 1, 64 p. **(F2, H1, H2)**
- Kreitler, C.W., Raney, J.A., Nativ, R., Collins, E.W., Mullican, W.F. III, Gustavson, T.C., and Henry, C.D., 1987, Siting a low-level radioactive waste disposal facility in Texas, volume four – Geologic and hydrologic investigations of the State of Texas and University of Texas lands: University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Low-Level Radioactive Waste Disposal Authority under contract no. IAC (86-87)-1722, 330 p. **(C2a, E2c, F2, H1, H2)**
- Kubicki, C., Carroll, K.C., Witcher, J.C., and Robertson, A., 2021, An Integrated Geochemical Approach for Defining Sources of Groundwater Salinity in the Southern Rio Grande Valley of the Mesilla Basin, New Mexico and West Texas, USA: New Mexico Water Resources Research Institute Report No. 388, 40 p., 3 Appendices. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-388.html> **(F2, H1, H2, H3)**
- Land, L., 2016, Overview of Fresh and Brackish Water Quality in New Mexico: New Mexico Bureau of Geology, Open-File Report 583, 49 p. **(E2a, H2)**
- Land, L., and Johnson, P., 2004, New Mexico brackish groundwater assessment program workshop – Report of findings and recommendations: New Mexico Office of the State Engineer Report, 23 p. **(E2a, H2)**
- Langman, J.B., and Ellis, A.S., 2013, Geochemical indicators of interbasin groundwater flow within the southern Rio Grande Valley, southwestern USA: Environmental Earth Science v. 68, p. 1285-1303. **(C4, H2, H3)**
- Langman, J.B., Robertson, A.J., Bynum, J., and Gebhardt, F.E., 2008, Geochemical trends and natural attenuation of RDX, nitrate, and perchlorate in the Hazardous Test Area fractured-granite aquifer, White Sands Missile Range, New Mexico, 1996-2006: U.S. Geological Survey Scientific Investigations Report 2008-5157, 45 p. **(C4, E2c, H2, H3)**
- Levings, G.W., Healy, D.F., Richey, S.F., and Carter, L.F., 1998, Water quality in the Rio Grande Valley, Colorado, New Mexico, and Texas: U.S. Geological survey Circular 1162 updated April 1, 1998. **(F2, H2)**
- Leggat, E.R., Lowry, M.E., and Hood, J.W., 1962, Ground-water resources of the lower Mesilla Valley, Texas and New Mexico: Texas Water Commission, Bulletin 6203, 191 p. **(F2, G2, H1, H2)**
- Leggat, E.R., Lowry, M.E., and Hood, J.W., 1963, Ground-water resources of the lower Mesilla Valley, Texas and New Mexico: U.S. Geological Survey, Water-Supply Paper 1669AA, 49 p. **(F2, G2, H1, H2)**
- Mack, G.H., Jones, M.C., Tabor, N.J., Ramos, F.C., Scott, S.R., and Witcher, J.C., 2012, Mixed geothermal and shallow meteoric origin of opal and calcite beds in Pliocene-lower Pleistocene axial-fluvial strata, southern Rio Grande rift, Rincon Hills, New Mexico, U.S.A.: Journal of Sedimentary Research, v. 82, p. 616-631. **(C2b, C4, H2)**
- Markovich, K.H., Manning, A.H., Condon, L.E., and McIntosh, J.C., 2019, Mountain-block recharge: A review of current understanding: Water Resources Research, v. 55, p. 8278-8304. **(D2, H2)**
- Markovich, K.H., Condon, L.E., Carroll, K.C., Purtschert, R., and McIntosh, J.C., 2021, A mountain-front recharge component characterization approach combining groundwater age distributions, noble gas thermometry, and fluid and energy transport modeling: Water Resources Research, v. 57, p. 1-21. **(D2, H2)**

- Marrufo, S.S., 2011, An integrated geological and geophysical study of the fresh and brackish water boundary in the Hueco Bolson, west Texas: University of Texas at El Paso, master's thesis, 108 p. **(C4, E2a, F1, H2)**
- McLean, J.S., 1970, Saline ground-water resources of the Tularosa Basin, New Mexico: U.S. Office of Saline Water Research and Development Progress Report No. 561, 128 p. **(E2a, H2)**
- McLean, J.S., 1975, Saline ground water in the Tularosa Basin, New Mexico: New Mexico Geological Society Guidebook 26, p. 237-238. **(E2a, H2)**
- McLean, J.S., 1977, Hydrologic Maps and Data in the Mimbres Basin, New Mexico: U.S. Geological Survey Open-File Report 77-314, 531 p. **(H1, H2, F1)**
- Mills, S.K., 2003, Quantifying salinization of the Rio Grande using environmental tracers: New Mexico Institute of Mining and Technology, master's thesis, 397 p. **(E2a, H2)**
- Miyamoto, S., Fenn, L.B., and Swietlik, D., 1995, Flow, salts, and trace elements in the Rio Grande: A review: College Station, Texas A&M University, Texas Agricultural Experiment Station Technical Report 169, 34 p. **(F1, H2)**
- Moore, S.J., and Anderholm, S.K., 2002, Spatial and temporal variations in streamflow, dissolved solids, nutrients, and suspended sediment in the Rio Grande Valley Study Unit, Colorado, New Mexico, and Texas, 1993-95: U.S. Geological Survey Water-Resources Investigations Report 02-4224, 52 p. **(H2)**
- Moore, S.J., Bassett, R.L., Liu, B., Wolf, C.P., and Doremus, D., 2008, Geochemical tracers to evaluate hydrogeologic controls on river salinization: Ground Water, v. 46, no. 3, p. 489-501. **(E2a, F2, H2)**
- Morgan, P., Harder, V., Swanberg, C.A., and Daggett, P.H., 1981, A groundwater convection model for Rio Grande rift geothermal resources: Geothermal Resources Council Transactions, v. 5, p. 193-196. **(C4, H2)**
- Moyer, D.L., Anderholm, S.K., Hogan, J.F., Phillips, F.M., Hibbs, B.J., Witcher, J.C., Matherne, A.M., and Falk, S.E., 2013, Knowledge and understanding of dissolved solids in the Rio Grande – San Acacia, New Mexico, to Fort Quitman, Texas, and plan for future studies and monitoring: U.S. Geological Survey Open-File Report 2013-1190, 55 p. **(C4, F1, H2)**
- Newton, B.T., and Allen, B. 2014. Hydrologic investigation at White Sands National Monument: N.M. Bureau Geology and Mineral Resources, Open-File Report, v. 0559, p. 1-51. **(H1, H2)**
- Nickerson, E.L., 2006, Description of piezometers and ground-water-quality characteristics at three new sites in the Lower Mesilla Valley, Texas, and New Mexico: U.S. Geological Survey Scientific Investigations Report 2005-5248, 27 p. **(H1, H2)**
- Nickerson, E.L., and Myers, R.G., 1993, Geohydrology of the Mesilla ground-water basin, Doña Ana County, New Mexico, and El Paso County, Texas: U.S. Geological Survey Water-Resources Investigations Report 92-4156, 89 p. **(H1, H2)**
- Orr, B.R., and Myers, R.G., 1986, Water resources in basin-fill deposits in the Tularosa Basin, New Mexico: U.S. Geological Survey Water Resources Investigations Report 85-4219, 94 p. **(H1, H2)**
- Orr, B.R., and Risser, D.W., 1992, Geohydrology and potential effects of development of freshwater resources in the northern part of the Hueco Bolson, Doña Ana and Otero Counties, New Mexico, and El Paso County, Texas: U.S. Geological Survey Water-Resources Investigations Report 91-4082, 92 p. **(H1, H2)**
- Pepin, J., Person, M., Phillips, F. M., Kelley, S., Timmons, S., Owens, L., and others, 2015, Deep fluid circulation within crystalline basement rocks and the role of hydrologic windows in the formation of Truth or Consequences, New Mexico low temperature geothermal system: Geofluids, v. 15, p. 139-160. **(C4, H2)**
- Pepin, J.D., Robertson, A.J., and Kelley, S.A., 2022, Salinity contributions from geothermal waters to the Rio Grande and shallow aquifer system in the transboundary Mesilla Basin (United States)/Conejos-Médanos (Mexico), Water, v. 14, issue 1, article 33, 24 p. **(C4, H2, H3)**
- Petronis, L.H., Finch, S.T., Jr., and Shomaker, J.W., 2006, Ground-water flow and solute transport model for the Griggs and Walnut Superfund Site, Las Cruces, New Mexico: Albuquerque, N.M., John Shomaker & Associates, Inc., 53 p. **(E2c, H2, H3)**
- Phillips, F.M., Hogan, J.F., Mills, S.K., and Hendrickx, J.M.H., 2003, Environmental tracers applied to quantifying causes of salinity in arid-region rivers: Preliminary results from the Rio Grande, southwestern USA, *in* Alsharhan, A.S., and Wood, W.W., eds., Water resources perspectives: Evaluation, management and policy: Amsterdam, Elsevier, p. 327-334. **(D2, H2)**
- Rao, B.R., 1988, An estimate of fresh water storage in the southern Jornada del Muerto Basin, New Mexico: New Mexico State Engineer, TDH-88-8, 7 p. **(H2)**
- Reaser, D.F., Underwood, J.R., and Jones, R.B., 1975, Geothermal prospects of the Eagle-Quitman Mountains and vicinity, Trans-Pecos Texas: West Texas Geological Society Guidebook 75-15, p. 155-161. **(C4, F2, H2)**

- Risser, D.W., 1988, Simulated water-level and water-quality changes in the bolson-fill aquifer, Post Headquarters Area, White Sands Missile Range, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 87-4152, 71 p. **(H1, H2)**
- Rose, J.M., 2006, Differences in the dune morphology related to changes in groundwater geochemistry, White Sands National Monument: University of Texas at El Paso, master's thesis, 89 p. **(C2b, H2, I2)**
- Sanford, W.E., Plummer, L.N., McAda, D.P., Bexfield, L.M., and Anderholm, S.K., 2004, Hydrochemical tracers in the Middle Rio Grande basin, USA: 2. Calibration of a groundwater-flow model: *Hydrogeology Journal*, v. 12, no. 4, p. 389-407. **(H2, H3)**
- Sayre, A.N., and Stephenson, E.L., 1937, The use of resistivity methods in the location of salt-water bodies in the El Paso, Texas, area: *American Geophysical Union Transactions*, 18th Annual Meeting, p. 393-398. **(C4, G2, H2)**
- Schulze-Makuch, D., and Kennedy, J.F., 2000, Microbiological and Chemical Characterization of Geothermal Fluids at the Tortugas Mountain Geothermal Area, Southern New Mexico, USA: *Hydrogeology Journal*, v. 8, p. 295-309. **(H2)**
- Schultz-Makuch, D., Goodell, P., Kretzschmar, T., and Kennedy, J.F., 2003, Microbial and chemical characterization of a groundwater flow system in an intermontane basin of southern New Mexico, USA: *Hydrogeology Journal*, v. 11, no. 3, p. 401-412. **(H2)**
- Stickel, R., 1991, The effect of groundwater flow on the hydrochemical variability of groundwater in the southern Jornada del Muerto Basin, Doña Ana and Sierra Counties, New Mexico: New Mexico State University, master's thesis, 111 p. **(H2, H3)**
- Summers, W.K., 1976, Catalog of thermal waters in New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 4, 80 p., with chemical analyses in back-pocket microfiche. **(C4, H2)**
- Summers, W.K., and Schwab, G.E., 1970, A survey of saline groundwater as a mineral resource, in Mattox, R.B., ed. *Saline water: The Committee on Desert and Arid Zones Research*, Southwestern and Rocky Mountain Division, A.A.A.S., New Mexico Highlands University, Contribution No. 13, 31-45. **(E2a, H2)**
- Tanski, J., Hanson, A., Granados, A. and Samani, Z., 1998. Water Quality Assessment Plan for Columbus, N.M. and Palomas, Chihuahua, in SCERP-FY 1998. **(E2, F1, H2)**
- Teeple, A.P., 2017a, Geophysics- and geochemistry-based assessment of the geochemical characteristics and groundwater-flow system of the U.S. part of the Mesilla Basin/Conejos-Médanos aquifer system in Doña Ana County, New Mexico, and El Paso County, Texas, 2010-12: U.S. Geological Survey Scientific Investigations Report 2017-5028, 183 p. **(C4, H2)**
- Texas Water Development Board (TWDB), 1997, Appendix C – G.I.S. coverages, metadata descriptions,[and] groundwater data sets on CD-ROM, with Water Quality map* insert on back-cover; in Hibbs and 9 others, *Transboundary Aquifers of the El Paso/Ciudad Juarez/Las Cruces Region*: U.S. Environmental Protection Agency, Region 6; Technical Contract Report- Interagency Contracts X-996343-01-0 and X-996350-01-0, prepared by the Texas Water Development Board and the New Mexico Water Resources Research Institute, variously paged. *Map includes Stiff diagrams color-coded for four total dissolved solids classes [0-1,000, 1,000-3,000, 3,000-5,000, and >5,000 mg/L] for more than 200 wells in Doña Ana and Otero Counties, NM; El Paso and Hudspeth Counties, TX; and contiguous parts of Chihuahua. <https://nmwrri.nmsu.edu/publications/publications.html> **(F1, H2)**
- Thapalila, A., 2014, Geochemical studies of backfill aggregate, lake sediment cores and the Hueco Bolson Aquifer: University of Texas at El Paso, doctoral dissertation, 142 p. **(C2b, C4, H1, H2)**
- Thiros, S.A., Bexfield, L.M., Anning, D.W., and Huntington, J.M., eds., 2010, Conceptual understanding and ground-water quality of selected basin-fill aquifers in the Southwestern United States: U.S. Geological Survey Professional Paper 1781, 288 p. **(F2, H2)**
- Tillery, S., Sheng, Z., King, J.P., Creel, B., Brown, C., Michelsen, A., Srinivasan, R., and Granados Olivas, A., 2009, The development of a coordinated database for water resources and flow model in the Paseo del Norte watershed (phase III)—Part II, availability of flow and water quality data for the Rio Grande Project area: New Mexico Water Resources Research Institute Report No. 348, Part II, and Texas Water Resources Institute Technical Report 359, Part II, 14 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-348-i.html> **(H2, H3)**
- Trauger, F.D., 1972, Water Resources and General Geology of Grant County, New Mexico; Hydrologic Report 2; New Mexico Bureau of Mines and Mineral Resources, Socorro, 1972, 211 p. **(D1, H1, H2)**
- Trauger, F.D., and Herrick, E.H., 1962, Ground water in central Hachita Valley northeast of the Big Hatchet Mountains, Hidalgo County, New Mexico: New Mexico State Engineer Office Technical Report No. 26, 21 p. **(F2, H1, H2)**

- Trauger, F.D., and Stoneman, D.L., 1975, Geohydrology of the Santa Teresa area, Doña Ana County, New Mexico: *prepared by Earth Environmental Consultants, Inc., Albuquerque, NM for C.L. Crowder Investment Company*, 44 p. *including tables and well logs* (F2, H1, H2, H3)
- U.S. Geological Survey, 1968, Water resources data for New Mexico, part 2. water quality records: U.S. Geological Survey Water Resources Division, Albuquerque, 207 p., 2 figs. (C1, H2)
- Wahi, A.K., Hogan, J.F., Ekwurzel, B., Baillie, M.N., Eastoe, C.J., 2008. Geochemical quantification of semiarid mountain recharge: *Ground Water*, v. 46, p. 414-425. (D2, H2, H3)
- Walton, J., Ohlmacher, G., Utz, D., and Kutianawala, M., 1999, Response of the Rio Grande and shallow ground water in the Mesilla Bolson to irrigation, climate stress, and pumping: *Environmental & Engineering Geoscience*, v. 5, no. 1, p. 41-50. (H2, H3)
- Wierenga, P.J., 1979, Soil salinity and cotton yields as affected by surface and trickle irrigation: New Mexico Water Resources Research Institute Report No. 106, 212 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-106.html> (H2, H3)
- Wilson, C.A., and Myers, R.G., 1981, Ground-water resources of the Soledad Canyon re-entrant and adjacent areas, White Sands Missile Range and Fort Bliss Military Reservation, Doña Ana County, New Mexico: U.S. Geological Survey Water-resources Investigations Report 81-645, 22 p. (H1, H2)
- Wilson, C.A., and White, R.R., 1984, Geohydrology of the central Mesilla Valley, Doña Ana County, New Mexico: U.S. Geological Survey Water Resources Investigations Report 82-444, 144 p. (H1, H2)
- Wilson, C.A., White, R.R., Orr, B.R., and Roybal, R.G., 1981, Water resources of the Rincon and Mesilla Valleys and adjacent areas, New Mexico: New Mexico State Engineer Technical Report 43, 514 p. (H1, H2)
- Witcher, J.C., 1988, Geothermal resources of southwestern New Mexico: New Mexico Geological Society Guidebook 39, p. 191-197. (C4, F2, H2, H3)
- Witcher, J.C., 1991a, Radon soil-gas surveys with diffusion-model corrections in geothermal exploration: *Geothermal Resources Council Transactions*, v. 15, p. 301-308. (C4, H1, H2)
- Witcher, J.C., 1991b, The Rincon geothermal system, southern Rio Grande rift, New Mexico; a preliminary report on a recent discovery: *Transactions, Geothermal Resources Council*, v. 15, p. 205-212. (C4, H1, H2)
- Witcher, J.C., 1995, A geothermal resource database of New Mexico. Southwest Technology Development Institute, New Mexico State University, 28 p. (C4, H1, H2)
- Witcher, J.C., 1998, The Rincon SLH 1 geothermal well: New Mexico Geological Society Guidebook 49, p. 35-40. (C2b, C4, H1, H2)
- Witcher, J.C., 2008, Evidence for large-scale Laramide tectonic inversion and amid-Tertiary caldera ring fracture zone at the Lightning Dock Geothermal system, New Mexico: New Mexico Geological Society, Guidebook 59, p. 177-187. (C2b, C4, H1, H2)
- Witcher, J.C., 2010, Geothermal greenhouse heating at Radium Springs, New Mexico: New Mexico Bureau of Geology and Mineral Resources, *Lite Geology*, p. 12-13. (C4, H2)
- Witcher, J.C., and Mack, G.H., 2018, Masson Farm Geothermal Greenhouses at Radium Springs: Third-day (C) Road Log from Las Cruces to Geothermal Greenhouses of the Masson Farm at Radium Springs: N.M. Geological Society Guidebook 69, p. 47-51. (C2b, C4, H2)
- Witcher, J.C., King, J.P., Hawley, J.W., Kennedy, J.F., Williams, J., Cleary, M., and Bothern, L., 2004, Sources of Salinity in the Rio Grande and Mesilla Basin Groundwater: New Mexico Water Resources Research Institute Report No. 330, 168 p., with appendices and plates on CD ROM. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-330.html> (C2b, E2a, H1, H2)

H3. Flow Models

- Abernathy, G.H., and Small, F.P., 1986, Field measurements of stress changes in an aquifer matrix during pumping cycles – Final Report to S.E. Reynolds, N.M. Interstate Stream Commission: Civil, Agricultural and Geological Engineering Department, New Mexico State University, 99 p. (H1, H2, H3)
- Ajami, H., Meixner, T., Dominguez, F., Hogan, J., and Maddock, T. III, 2012, Seasonalizing mountain system recharge in semi-arid basins – Climate change impacts: *Ground Water*, v. 50, no. 4, p. 585-597. (E2b, H3)
- Arunshankar, B.N., 1993, Use of earth resistivity method for monitoring saline groundwater movement in aquifers: University of Texas at El Paso, master's thesis, 79 p. (C4, H2, H3)
- Ball, G.P., Robertson, A.J., and Medina Morales, K., 2020, Seepage investigation of the Rio Grande from below Leasburg Dam, Leasburg, New Mexico, to above El Paso, Texas, 2018: U.S. Geological Survey Scientific Investigations Report 2019-5140, 16 p. (H3)
- Balleau, W.P., 1988, Water approximation and transfer in a general hydrogeologic system: *Natural Resources Journal*, v. 29, no. 2, p. 269-291. (E2, H1, H3)

- Balleau, W.P., 1999, Groundwater modeling in the lower Rio Grande, *in* Ortega Klett, C.T., ed., Proceedings of the 43rd Annual New Mexico Water Conference: Water Challenges on the Lower Rio Grande. New Mexico Water Resources Research Institute Report No. 310, p. 46-58. **(H3)**
- Bartolino, J.R., 1997, Chlorofluorocarbon and tritium age determination of ground-water recharge in the Ryan Flat Subbasin, Trans-Pecos Texas: U.S. Geological Survey Water-Resources Investigations Report 96-4245, 29 p. **(C4, D2, H3)**
- Baumgardner, R.W., and Scanlon, B.R., 1992, Surface fissures in the Hueco Bolson and adjacent basins, West Texas: University of Texas Bureau of Economic Geology, Geological Circular 92-2, 40 p. **(C4, D2, H3)**
- Bedinger, M.S., Sargent, K.A., and Langer, W.H., eds., 1989a, Studies of geology and hydrology in the Basin and Range province, southwestern United States, for isolation of high-level radioactive waste – Characterization of the Trans-Pecos region, Texas, U.S. Geological Survey Professional Paper 1370-B, 43 p. **(F2, H3)**
- Bedinger, M.S., Sargent, K.A., and Langer, W.H., eds., 1989b, Studies of geology and hydrology in the Basin and Range province, southwestern United States, for isolation of high-level radioactive waste – Characterization of the Rio Grande region, New Mexico and Texas: U.S. Geological Survey Professional Paper 1370-C, 48 p. **(F2, H3)**
- Blandford, T.N., and Wilson, J.L., 1987, Large scale parameter estimation through the inverse procedure and uncertainty propagation in the Columbus Basin, New Mexico; New Mexico Water Resources Research Institute Report No. 226, 247 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-226.html> **(F1, H3)**
- Briody, A.C., Robertson, A.J., Thomas, N., 2016, Seepage Investigation of the Rio Grande From Below Leasburg Dam, Leasburg, New Mexico, to Above American Dam, El Paso, Texas, 2015. U.S. Geological Survey Scientific Investigations Report, 2016-5011. **(H3)**
- Castillo, R.C., Cortes, A., Morales, P., Romero, G., and Villegas, R., 1984, A survey of groundwater flow using deuterium and oxygen-18 as tracers, in Samalayuca Dunes Northern Mexico: *Revista Mexicanos de Física*, v. 30, no. 4, p. 147-155. **(F3, H2, H3)**
- Chowdhury, A.H., Uliana, M., and Wade, S., 2008, Ground water recharge and flow characteristics using multiple isotopes: *Ground Water*, v. 46, no. 3, p. 426-413. **(D2, H2, H3)**
- Coes, A.L., and Pool, D.R., 2007, Ephemeral-stream channel and basin-floor infiltration and recharge in the Sierra Vista subwatershed of the Upper San Pedro Basin, southeastern Arizona; *in* Stonestrom, D.A., Constantz, J., Ferre, T., and Leake, S., eds., *Ground-Water Recharge in the Arid and Semiarid Southwestern United States*: U.S. Geological Survey Professional Paper 1703-J, p. 253-311. **(D2, H3)**
- Cordova, J.T., Dickinson, J.E., Beisner, K.R., Hopkins, C.B., Kennedy, J.R., Pool, D.R., Glenn, E.P., Nagler, P.L., and Thomas, B.E., 2015, Hydrology of the Middle San Pedro watershed, Southeastern Arizona: U.S. Geological Survey Scientific Investigations Report 2013-5040, 77 p. **(H3)**
- Crilley, D.M., Matherne, A.M., Thomas, N., and Falk, S.E., 2013, Seepage investigations of the Rio Grande from below Leasburg Dam, Leasburg, New Mexico, to above American Dam, El Paso, Texas, 2006-13: U.S. Geological Survey Open-File Report 2013-1233, 34 p. **(H3)**
- Cunningham, E.E.B., Long, A., Eastoe, C.J., and Bassett, R.L., 1998, Migration of recharge waters downgradient from the Santa Catalina Mountains into the Tucson Basin aquifer: *Hydrogeology Journal*, v. 6, no. 1, p. 94-103. **(D2, H3)**
- Darling, B.K., Hibbs, B.J., and Sharp, J.M., Jr., 1998, Environmental isotopes as indicators of the residence time of ground waters in the Eagle Flat and Red Light Draw Basins of Trans-Pecos, Texas: West Texas Geological Society Publication no. 98-105, p. 259-270. **(C1, H2, H3)**
- Darling, B.K., Hibbs, B.J., and Sharp, J.M., 2017, Integrations of carbon-14 and Oxygen-18 as a basis for differentiating between Late Pleistocene and post-Pleistocene groundwater ages along flow paths of two West Texas bolson aquifers: Geological Society of America 129th Annual Meeting, Abstracts with Programs, v. 49, no. 7. ISSN 0016-7592 **(B2, C1, H2, H3)**
- Driscoll, J.M., and Sherson, L.R., 2016, Variability of surface-water quantity and quality, and shallow groundwater levels and quality within the Rio Grande Project area, New Mexico and Texas, 2009-13: U.S. Geological Survey Scientific Investigations Report, 2016-5006. **(H2, H3)**
- Eastoe, C.J., 2020, Sources of perennial water supporting critical ecosystems, San Pedro Valley, Arizona: *Environmental & Engineering Geoscience*, v. XXVI, no. 4, p. 463-479. **(C1, D2, H1, H2, H3)**
- Eastoe, C., and Towne, D., 2018, Regional zonation of groundwater recharge mechanisms in alluvial basins of Arizona: Interpretation of isotope mapping: *Journal of Geochemical Exploration*, v. 194, p. 135-145. **(D2, H2, H3)**

- Eastoe, C.J., and Wright, W.E., 2019, Hydrology of mountain blocks in Arizona and New Mexico as revealed by isotopes in groundwater and precipitation: *Geosciences*, v. 9, article 461. **(C1, D2, H2, H3)**
- Finch, S.T., Jr., McCoy, A., Mellis, E., 2008, Geologic Controls on Ground-Water Flow in the Mimbres Basin, Southwestern New Mexico: *New Mexico Geological Society Guidebook 59*, p. 189-198. **(C2b, H1, H3)**
- Freethy, G.W., and Anderson, T.W., 1986, Predevelopment hydrologic conditions in parts of alluvial basins of Arizona and adjacent parts of California and New Mexico: U.S. Geological Survey Hydrologic Investigations Atlas HA-664, 3 sheets, scale 1:500,000. **(H3)**
- Frenzel, P.F., 1992, Simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas. Supplement to Open-File Report 88-305: U.S. Geological Survey Water Resources Investigations Report 91-4155, 152 p. **(F2, H3)**
- Frenzel, P.F., and Kaehler, C.A., 1990, Geohydrology and simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas; *with a section on Water quality and geochemistry by S.K. Anderholm*: U.S. Geological Survey Open-File Report 88-305, 179 p. **(F2, H2, H3)**
- Frenzel, P.F., and Kaehler, C.A., 1992, Geohydrology and simulation of ground-water flow in the Mesilla Basin, Doña Ana County, New Mexico and El Paso County, Texas, *with a section on Water quality and geochemistry by S.K. Anderholm*: U.S. Geological Survey Professional Paper 1407-C, 105 p. **(F2, H2, H3)**
- Fuchs, E.H., King, J.P., and Carroll, K.C., 2019, Quantifying disconnection of groundwater from managed-ephemeral surface water during drought and conjunctive agricultural use. *Water Resources Research*, v. 55, p. 5871-5890. **(C4, H3)**
- Gates, J.S., White, D.E., and Leggat, E.R., 1984, Preliminary study of aquifers of the lower Mesilla Valley in Texas and New Mexico by model simulation: U.S. Geological Survey Water Resources Investigations Report 84-4317, 21 p. **(H1, H3)**
- Giles, G.C., and Pearson, J.W., 1998, Characterization of hydrostratigraphy and groundwater flow on the southwestern San Andres Mountains pediment, NASA-JSC White Sands Test Facility: *New Mexico Geological Society Guidebook 49*, p. 317-325. **(H1, H3)**
- Groschen, G.E., 1994, Simulation of ground-water flow and the movement of saline water in the Hueco Bolson aquifer, El Paso, Texas, and adjacent areas: U.S. Geological Survey Open-File Report 92-171, 87 p. **(H2, H3)**
- Gunaji, N.N., 1961, Ground-water conditions in Elephant Butte Irrigation District: Las Cruces, New Mexico State University, Engineering Experiment Station, 43 p. **(H2, H3)**
- Gungle, B.G., Callegary, J.B., Parette, N.V., Kennedy, J.R., Eastoe, C.J., Turner, D.S., Dickinson, J.E., Levick, L.R., and Sugg, Z.P., 2017, Hydrological Conditions and Evaluation of Sustainable Groundwater Use in the Sierra Vista Sub-watershed, Upper San Pedro Basin, Southeastern Arizona: U.S. Geological Survey Scientific Investigation Report 2016-5114, 90 p. **(H1, H2, H3)**
- Gutiérrez-Ojeda, C., 2001, Aquifer recharge estimation at Mesilla Bolson and Guaymas aquifer systems, Mexico, *in* IAEA, eds., *Isotope based assessment of groundwater renewal in water scarce regions: IAEA-TECDOC-1246*, Vienna, International Atomic Energy Agency, p. 23-44. *See Secretaria de Recursos Hidráulicos 1988, Pozo no. 9-El Parabién.* **(F3, H2, H3)**
- Halpenny, L.C., Babcock, J.A., and Greene, D.K., 1972, Basic data report, ASARCO La Mesa test production water well: Tucson, AZ, Water Development Corporation Open-File Report, 40 p. **(C2a, H1, H2, H3)**
- Hamilton, S.L., and Maddock, T. III, 1990, Application of a ground-water flow model to the Mesilla Basin, New Mexico and Texas: University of Arizona Department of Hydrology and Water Resources, 295 p. **(H3)**
- Hamilton, S.L., and Maddock, T. III, 1993, Application of a ground-water flow model to the Mesilla Basin, New Mexico and Texas: University of Arizona Department of Hydrology and Water Resources HWR No. 93-020, variously paged. **(H3)**
- Hanson, R.T., McLean, J.S., and Miller, R.S., 1994, Hydrogeologic framework and preliminary simulation of ground-water flow in the Mimbres Basin, southwestern New Mexico: U.S. Geological Survey Water-Resources Investigations Report 94-4011, 118 p. **(F2, H1, H3)**
- Hanson, R.T., Schmid, W., Knight, J., and Maddock T. III, 2013, Integrated hydrologic modeling of a transboundary aquifer system – Lower Rio Grande: MODFLOW and More 2013: Translating Science into Practice Conference: Golden, Colo., Colorado School of Mines, Integrated Groundwater Modeling Center, June 2-5, 2013, 5 p. **(F1, H3)**
- Hanson, R.T., Ritchie, A.B., Boyce, S.E., Galanter, A.E., Ferguson, I.A., Flint, L.E., and Henson, W.R., 2018, Rio Grande transboundary integrated hydrologic model and water-availability analysis, New Mexico and Texas, United States, and Northern Chihuahua, Mexico: U.S Geological Survey Open-File Report 2018-1091, 185 p. **(F1, H3)**

- Hawkins, D.B., and Stephens, D.B., 1983, Ground-water modeling in a southwestern alluvial basin: *Ground Water*, v. 21, no. 6, p. 733-739. **(H3)**
- Hester, C.M., and Coleman, J., 2014, Between an uncomfortable position and an absurd one: *Groundwater*, v. 52, no. 5, p. 645-646. **(D1, H3)**
- Heywood, C.E., and Yager, R.M., 2003, Simulated ground-water flow in the Hueco Bolson, an alluvial-basin aquifer system near El Paso, Texas: U.S. Geological Survey Water Resources Investigations Report 02-4108, 27 p. **(F1, H3)**
- Hibbs, B.J., 1999b, Modeling aquifer flow capacity and ground-water path lines in a Chihuahuan Desert basin, *in* Hydrological issues of the 21st Century: Ecology, Environment, and Human Health: American Institute of Hydrology, Hydrological Science and Technology, v. 15, no. 1-4, p. 200-212. **(F1, H3)**
- Hogan, J., Phillips, F., Eastoe, C., Lacey, H., Mills, S., and Oelsner, G., 2012, Isotopic tracing of hydrological processes and water quality along the upper Rio Grande, USA, *in* Monitoring Isotopes in Rivers: Creation of the Global Network of Isotopes in Rivers (GNIR): Tecdoc 1673, International Atomic Energy Agency, Vienna, Austria, p. 111-136. **(D2, H2, H3)**
- Hogan, J.F., Phillips, F.M., Mills, S.K., Hendrickx, J.M.H., Ruiz, J.T., Chesley, J.T., and Asmeron, Y., 2007, Geologic origins of salinization in a semi-arid river: The role of sedimentary basin brines: *Geology*, v. 35, no. 12, p. 1063-1066. **(D2, H2, H3)**
- Huff, G.F., 2005, Simulation of ground-water flow in the basin-fill aquifer of the Tularosa Basin, south-central New Mexico, predevelopment through 2040: U.S. Geological Survey, Scientific Investigations Report 2004-5197, 98 p. **(H3)**
- Hutchison, W.R., 2006, Groundwater management in El Paso, Texas: University of Texas at El Paso, Center for Environmental Resource Management, doctoral dissertation, 329 p. **(H1, H2, H3)**
- Hutchison, W.R., and Hibbs, B.J., 2008, Ground water budget analysis and cross-formational leakage in an arid basin: *Ground Water*, v. 46, no. 3, p. 384-395. **(H1, H2, H3)**
- Ikard, S., Teeple, A., and Humberson, D., 2021, Gradient self-potential logging in the Rio Grande to identify gaining and losing reaches across the Mesilla Valley: *Water*, v. 13, issue 10, Article 1331, 21 p. **(C4, H3)**
- Ikard, S.J., Carroll, K.C., Rucker, D.F., Teeple, A.P., Tsai, C.-H., Payne, J.D., Fuchs, E.H., and Jamil, A., 2023, Geoelectric Monitoring of the Electric Potential Field of the Lower Rio Grande before, during, and after Intermittent Streamflow, May-October, 2022: *Water*, v. 15, no. 1652, 47 p. **(C4, H3)**
- Kambhammettu, B.V.N.P., Allena, P., and King, J.P., 2010, Simulation of groundwater flow in the southern Jornada Del Muerto Basin, Doña Ana County, New Mexico: New Mexico Water Resources Research Institute Report No. 352, prepared for Lower Rio Grande Water Users Organization (LRGWUO), 63 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-352.html> **(H1, H3)**
- Kambhammettu, B.V.N.P., Schmid, W., and King, J.P., and Creel, B.J., 2012, Effects of elevation resolution on evapotranspiration simulations using MODFLOW: *Ground Water*, v. 50, no. 3, p. 367-375. **(H3)**
- Kernodle, J.M., 1992a, Results of simulations by a preliminary numerical model of land subsidence in the El Paso, Texas, area: U.S. Geological Survey Water-Resources Investigations Report 92-4037, 35 p. **(D1, H3)**
- Kernodle, J.M., 1992b, Summary of U.S. Geological Survey ground-water-flow models of basin-fill aquifers in the southwestern alluvial basins region, Colorado, New Mexico, and Texas: U.S. Geological Survey Open-File Report 90-361, 81 p. **(D2, H3)**
- Khaleel, R., Palumbo, M.R., Peterson, D.D., and Hawley, J.W., 1983, Numerical Modeling of groundwater flow in the lower Rio Grande Basin, New Mexico: New Mexico Water Resources Research Institute, Project No. 135465 Completion Report, 188 p. **(H3)**
- King, J.P., Bawazir, A.S., and Wentzel, M.W., 1996, Water Supply Preliminary Evaluation New Mexico Spaceport: Las Cruces, New Mexico State University. **(H3)**
- Knowles, T.R., and Alvarez, J.H., 1979, Simulated effects of ground-water pumping in portions of the Hueco bolson in Texas and Mexico during the period 1973 through 2029: Texas Department of Water Resources LP-104, 26 p. **(D1, H3)**
- Konikow, L.F., and Leake, S.A., 2014, Depletion and capture: Revisiting “the source of water derived from wells.” *Ground Water*, v. 52 (suppl. 1), p. 100-111. **(D1, H3)**
- Kubicki, C., Carroll, K.C., Witcher, J.C., and Robertson, A., 2021, An Integrated Geochemical Approach for Defining Sources of Groundwater Salinity in the Southern Rio Grande Valley of the Mesilla Basin, New Mexico and West Texas, USA: New Mexico Water Resources Research Institute Report No. 388, 40 p., 3 Appendices. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-388.html> **(F2, H1, H2, H3)**

- Land, L.F., and Armstrong, C.A., 1985, A preliminary assessment of land-surface subsidence in the El Paso area, Texas: U.S. Geological Survey Water Resources Investigations Report 85-4155, 96 p. **(C4, D1, H3)**
- Laney, R.L., Raymond, R.H., and Winnika, C.C., 1978, Maps showing water-level declines, land subsidence, and earth fissures in south-central Arizona: US. Geological Survey Water-Resources Investigations 78-83, 2 sheets, scale 1:125,000. **(C4, D1, H3)**
- Lang, P.T., and Maddock, T. III, 1995, Simulation of groundwater flow to assess the effects of pumping and canal lining on the hydrologic regime of the Mesilla Basin, Doña Ana County, New Mexico & El Paso County, Texas: University of Arizona, Department of Hydrology and Water Resources. **(H3)**
- Langman, J.B., and Ellis, A.S., 2013, Geochemical indicators of interbasin groundwater flow within the southern Rio Grande Valley, southwestern USA: *Environmental Earth Science* v. 68, p. 1285-1303. **(C4, H2, H3)**
- Langman, J.B., Robertson, A.J., Bynum, J., and Gebhardt, F.E., 2008, Geochemical trends and natural attenuation of RDX, nitrate, and perchlorate in the Hazardous Test Area fractured-granite aquifer, White Sands Missile Range, New Mexico, 1996-2006: U.S. Geological Survey Scientific Investigations Report 2008-5157, 45 p. **(C4, E2c, H2, H3)**
- Leake, S.A., 2011, Capture—rates and directions of groundwater flow don't matter: From theory to practice (Technical Commentary): *Ground Water*, v. 49, no. 4, p. 456. **(D2, H3)**
- Leake, S.A., and Prudic, D.E., 1988, Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model: U.S. Geological Survey Open-File Report 88-482, 80 p. **(D2, H3)**
- Lee Wilson and Associates, Inc., 1986, Exhibit 1 of the City of El Paso in support of its applications to appropriate ground water in New Mexico: Unpublished consultant's report prepared for the El Paso Water Utilities Public Service Board, 75 p. **(E3, H1, H3)**
- Leggat, E.R., and Davis, M.E., 1962, Analog model study of the Hueco Bolson near El Paso, Texas: Texas Water Development Board, 26 p. **(F2, H3)**
- Logan, H.H., 1984, A ground-water recharge project associated with a flood protection plan in Hudspeth County, Texas – Supportive geologic applications: Texas Christian University, master's thesis, 110 p. **(D2, H3)**
- MacMillan, J.R., Naff, R.L., and Gelhar, L.W., 1976, Prediction and numerical simulation of subsidence associated with proposed groundwater withdrawal in the Tularosa Basin, New Mexico: International Association of Hydrological Sciences, Publication No. 121, Proceedings of the Anaheim Symposium, p. 600-608. **(D1, H3)**
- Maddock, T. III, and Wright Water Engineers, Inc., 1987, An investigation of the effects of proposed pumping in the Lower Rio Grande Declared Basin: University of Arizona, variously paged. **(D1, H3)**
- Manning, A.K., 2011, Mountain-block recharge, present and past, in the eastern Española Basin, New Mexico, USA: *Hydrogeology Journal*, v. 19, no. 2, p. 379-397. **(D2, H3)**
- Mayer, J.R., and Sharp, J.M., Jr., 1998, Fracture control of regional groundwater flow in a carbonate aquifer in a semi-arid region: *Geological Society of America Bulletin*, v. 110, p. 1657-1671. **(D2, H3)**
- Meyer, W.R., 1976, Digital model for simulated effects of ground water pumping in the Hueco Bolson, El Paso area, Texas, New Mexico, and Mexico: U.S. Geological Survey Water-Resources Investigations 58-75, 31 p. **(H3)**
- Meyer, W.R., and Gordon, J.D., 1972, Development of ground water in the El Paso district, Texas, 1963-1970, *in* Texas Water Development Board Report 53, 50 p. **(H3)**
- Nickerson, E.L., 1989, Aquifer tests in the flood-plain alluvium and Santa Fe Group at the Rio Grande near Canutillo, El Paso County, Texas: U.S. Geological Survey Water-Resources Investigations Report 89-4011, 29 p. **(H3)**
- Nickerson, E.L., 1998, U.S. Geological Survey seepage investigations of the Lower Rio Grande in the Mesilla Valley, *in* Ortega Klett, C.T., ed., Proceedings of the 43rd Annual New Mexico Water Conference: Water Challenges on the Lower Rio Grande. New Mexico Water Resources Research Institute Report No. 310, p. 59-68. **(H3)**
- Nyachoti, S., 2016, Application of uranium and strontium isotopes as salinity and paleo-environmental tracers: Insight from the Rio Grande river and pedogenic carbonates in dryland soils of Southwest, USA: University of Texas at El Paso, doctoral dissertation, 231 p. **(C1, C3, C4, H3)**
- O'Brien, K.M., and Stone, W.J., 1983, a two-dimensional hydrologic model of the Animas Valley, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report 133, 63 p. **(H3)**
- O'Brien, K.M., and Stone, W.J., 1984, Role of geological and geophysical data in modeling a southwestern alluvial basin: *Ground Water*, v. 22, no. 6, p. 717-727. **(C4, H1, H3)**

- Pearson, E.A., Rucker, D.F., Tsai, C-H., Fuchs, E.H., Carroll, K.C. 2022, Electrical resistivity monitoring of lower Rio Grande River-Groundwater intermittency: *Journal of Hydrology*, v. 613. 13 p. **(C4, H3)**
- Pepin, J.D., Robertson, A.J., and Kelley, S.A., 2022, Salinity contributions from geothermal waters to the Rio Grande and shallow aquifer system in the transboundary Mesilla Basin (United States)/Conejos-Médanos (Mexico), *Water*, v. 14, issue 1, article 33, 24 p. **(C4, H2, H3)**
- Peterson, D.M., and Wilson, J.L., 1988, Variably saturated flow between streams and aquifers: New Mexico Water Resources Research Institute Report No. 233, 289 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-233.html> **(D2, H3)**
- Peterson, D.M., Khaleel, R., and Hawley, J.W., 1984, Quasi three-dimensional modeling of groundwater flow in the Mesilla Bolson, New Mexico: New Mexico Water Resources Research Institute Report No. 178, 185 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-178.html> **(H1, H3)**
- Petronis, L.H., Finch, S.T., Jr., and Shomaker, J.W., 2006, Ground-water flow and solute transport model for the Griggs and Walnut Superfund Site, Las Cruces, New Mexico: Albuquerque, N.M., John Shomaker & Associates, Inc., 53 p. **(E2c, H2, H3)**
- Plummer, L.N., Bexfield, L.M., Anderholm, S.K., Sanford, W.E., and Busenberg, E., 2004, Geochemical characterization of ground-water flow in the Santa Fe Group aquifer system, Middle Rio Grande Basin, New Mexico: U.S. Geological Survey Water-Resources Investigations Report 03-4141, 369 p., with CD-ROM. **(D1, D2, H3)**
- Rao, B.K., 1988, Digital Model of Groundwater Flow in the Southern Jornada del Muerto Basin, New Mexico: New Mexico State Engineer Report TDH-88-7, 10 p. **(H3)**
- Reiter, M., 2001, Using precision temperature logs to estimate horizontal and vertical groundwater flow components: *Water Resources Research*, v. 37, no. 3, p. 663-674. **(C4, D2, H3)**
- Reiter, M., 2005, Possible ambiguities in subsurface temperature logs: Consideration of ground-water flow and ground surface temperature change: *Pure and Applied Geophysics*, v. 162, no. 2, p. 343-355. **(C4, H3)**
- Reiter, M., and Wade, S.C., 1994, A hydrothermal study to estimate vertical groundwater flow in the Canutillo Well Field, between Las Cruces and El Paso: New Mexico Water Resources Research Institute Report No. 282. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-282.html> **(C4, H3)**
- Richardson, G.L., 1971, Water-table investigation in the Mesilla Valley, unpublished Master's thesis, New Mexico State University. *See Richardson and others, 1972.* **(H3)**
- Richardson, G.L., Gebbard, T.G., Jr., and Brutsaert, W.F., 1972, Water-table investigation in the Mesilla Valley: Las Cruces, New Mexico State University, Engineering Experiment Station Technical Report 76, 206 p. **(H3)**
- Robertson, A.J., Kennedy, J.R., Wildermuth, L.M., Bell, M.T., Fuchs, E.H., Rinehart, A., and Fernald, I., 2023. Determining seasonal recharge, storage changes, and specific yield using repeat microgravity and water-level measurements in the Mesilla Basin alluvial aquifer, New Mexico, 2016-2018: *Journal of Applied Geophysics* v. 209, 18 p. **(C4, H3)**
- Sanford, W.E., Plummer, L.N., McAda, D.P., Bexfield, L.M., and Anderholm, S.K., 2004, Hydrochemical tracers in the Middle Rio Grande basin, USA: 2. Calibration of a groundwater-flow model: *Hydrogeology Journal*, v. 12, no. 4, p. 389-407. **(H2, H3)**
- Schmid, W., King, J.P., and Maddock, T.M. III, 2009, Conjunctive surface-water/groundwater model in the southern Rincon Valley using MODFLOW-2005 with the Farm Process: New Mexico Water Resources Research Institute and Texas Water Resources Institute, Report 350, 53 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-350.html> **(H3)**
- Sheng, Z., 2013, Impacts of groundwater pumping and climate variability on groundwater availability in the Rio Grande Basin: *Ecosphere*, v. 4, no. 1, p. 1-25. **(E2, F1, H3)**
- Shomaker, J.W., and Finch, S.T., Jr., 1996, Multilayer ground-water flow model of southern Jornada del Muerto Basin, Doña Ana County, New Mexico, and predicted effects of pumping wells LRG-430-S-29 and -S-30. Albuquerque, New Mexico: John Shomaker & Associates, Inc., 26 p., 5 tables, 20 figures. **(H3)**
- S.S. Papadopoulos & Associates, Inc. (SSPA), 1987, Hydrogeologic evaluation of proposed appropriation of ground water from the Lower Rio Grande Underground Basin by the City of El Paso: S.S. Papadopoulos & Associates, Inc., main report prepared for the State of New Mexico, variously paged. **(H1, H3)**
- S.S. Papadopoulos & Associates, Inc. (SSPA), 2007, Groundwater Flow Model for Administration and Management in the Lower Rio Grande Basin: Boulder, Colorado: Prepared for the State of New Mexico, 69 p. **(H3)**
- Stickel, R., 1991, The effect of groundwater flow on the hydrochemical variability of groundwater in the southern Jornada del Muerto Basin, Doña Ana and Sierra Counties, New Mexico: New Mexico State University, master's thesis, 111 p. **(H2, H3)**

- Stone, W.J., 1988 [revised 1991], Recharge at the White Sands hazardous-waste facility, Otero County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report 346, 22 p. **(D2, H3)**
- Talbot, W.R., 2003, El Paso Water Utilities, Canutillo underflow evaluation; Revised estimates of underflow capture; 1995 to 2002: Denver, Colo., Bureau of Reclamation Technical Services Center, Water Resources Services Division, Groundwater and Drainage Group, Technical Memorandum D-8550, 25 p. **(D2, H3)**
- Taylor, A.M., 1967, Geohydrologic investigations in the Mesilla Valley, New Mexico: New Mexico State University, master's thesis, 130 p. **(H1, H3)**
- Tillery, S., and King, J.P., 2006, MODFLOW-2000 Farm Package Case Study: Southern Rincon Valley, New Mexico: Technical Report prepared for the U.S. Army Corps of Engineers, New Mexico State University, Department of Civil & Geological Engineering, January 2006. **(H3)**
- Tillery, S., Sheng, Z., King, J.P., Creel, B., Brown, C., Michelsen, A., Srinivasan, R., and Granados Olivas, A., 2009, The development of a coordinated database for water resources and flow model in the Paseo del Norte watershed (phase III) – Part II, availability of flow and water quality data for the Rio Grande Project area: New Mexico Water Resources Research Institute Report No. 348, Part II, and Texas Water Resources Institute Technical Report 359, Part II, 14 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-348-i.html> **(H2, H3)**
- Thompson, J.C., Kreitler, C.W., and Young, M.H., 2020, Exploring groundwater recoverability in Texas, maximum economically recoverable storage: Texas Water Journal, v. 11, no. 1, p. 152-171. **(D1, H3)**
- Trauger, F.D., and Stoneman, D.L., 1975, Geohydrology of the Santa Teresa area, Doña Ana County, New Mexico: prepared by Earth Environmental Consultants, Inc., Albuquerque, NM for C.L. Crowder Investment Company, 44 p. including tables and well logs **(F2, H1, H2, H3)**
- Updegraff, C.D., and Gelhar, L.W., 1978, Parameter estimation for a lumped-parameter ground-water model of the Mesilla Valley, New Mexico: New Mexico Water Resources Research Institute Report No. 97, 69 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-097.html> **(H3)**
- Wade, S.C., and Reiter, M., 1994, Hydrothermal estimation of vertical ground-water flow, Canutillo, Texas: Ground Water, v. 32, no. 5, p. 735-742. **(C4, H3)**
- Wahi, A.K., Hogan, J.F., Ekwurzel, B., Baillie, M.N., Eastoe, C.J., 2008. Geochemical quantification of semiarid mountain recharge: Ground Water, v. 46, p. 414-425. **(D2, H2, H3)**
- Walton, J., Ohlmacher, G., Utz, D., and Kutianawala, M., 1999, Response of the Rio Grande and shallow ground water in the Mesilla Bolson to irrigation, climate stress, and pumping: Environmental & Engineering Geoscience, v. 5, no. 1, p. 41-50. **(H2, H3)**
- Wasiolek, M., 1995, Subsurface recharge to the Tesuque aquifer system from selected drainage basins along the western side of the Sangre de Cristo Mountains near Santa Fe, New Mexico. U.S. Geological Survey, Water Resources Investigations Report 94-4072, 43 p. **(D2, H3)**
- Weeden, A., 1999, Simulation of groundwater flow in the Rincon Valley Area and Mesilla Basin, New Mexico and Texas: University of Arizona, master's thesis, 209 p. **(H3)**
- West, F., 1996, The Mesilla Valley: A century of water resources investigations, in Ortega Klett, C.T., ed., Reaching the Limits: Stretching the Resources of the Lower Rio Grande, Proceedings of the 40th Annual New Mexico Water Conference: New Mexico Water Resources Research Institute Report No. 297, p. 21-28. **(D1, H3)**
- Wierenga, P.J., 1979, Soil salinity and cotton yields as affected by surface and trickle irrigation: New Mexico Water Resources Research Institute Report No. 106, 212 p. <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-106.html> **(H2, H3)**
- Wierenga, P.J., Hills, R.G., and Hudson, D.B., 1991, The Las Cruces Trench Site: Experimental Results and One-Dimensional Flow Predictions. Water Resources Research, v. 27, p. 2695-2705. **(D2, H3)**
- Wierenga, P.J., Hudson, D.B., Hills, R.G., Porro, I., Kirkland, M.R., and Vinson, J., 1990, Flow and Transport at the Las Cruces Trench Site; Experiment 1 and 2: U.S. Nuclear Regulatory Commission Report, NUREG/CR-5607, 413 p. **(D2, H3)**
- Witcher, J.C., 1988, Geothermal resources of southwestern New Mexico: New Mexico Geological Society, Guidebook 39, p. 191-197. **(C4, F2, H2, H3)**
- Witcher, J.C., 2008, Evidence for large-scale Laramide tectonic inversion and amid-Tertiary caldera ring fracture zone at the Lightning Dock Geothermal system, New Mexico: New Mexico Geological Society, Guidebook 59, p. 177-187. **(H1, H3)**

I. Paleohydrology: Ancestral Fluvial and Pluvial Lake Systems

II. Regional Overviews

- Allen, B.D., Love, D.W., and Myers, R.G., 2009, Evidence for late Pleistocene hydrologic and climatic change from Lake Otero, Tularosa Basin, south-central New Mexico: *New Mexico Geology*, v. 31, no. 1, p. 9-25. **(C1, I1, I2)**
- Allmendinger, R.J., 1972, Hydrologic control over the origin of gypsum at Lake Lucero, White Sands National Monument, New Mexico: New Mexico Institute of Mining & Technology, master's thesis, 82 p. **(I1, I2)**
- Allmendinger, R.J., and Titus, F.B., 1973, Regional hydrology and evaporative discharge as present-day source of gypsum at White Sands National Monument, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report 55, 26 p. **(I1, I2)**
- Antevs, E., 1954, Climate of New Mexico during the last glacio-pluvial: *Journal of Geology*, v. 62, p. 182-191. **(C1, I1)**
- Chico, R.J., 1963, Playa mud cracks: regular and king sized: Geological Society of America, Special Paper 76, p. 306. **(G2, I1)**
- Chico, R.J., 1968, Playa, in Fairbridge, R.W., ed., *The Encyclopedia of Geomorphology—Encyclopedia of Earth Sciences Series, Volume III*: New York, Reinhold Book Corporation, p. 865-871. **(G2, I1)**
- Connell, S.D., Hawley, J.W., and Love, D.W., 2005, Late Cenozoic drainage development in the southeastern Basin and Range of New Mexico, southeasternmost Arizona and western Texas, in Lucas, S.G., Morgan, G., and Zeigler, K.E., eds., 2005, *New Mexico's Ice Ages*: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 125-150. **(C2b, I1, I3)**
- Dinwiddie, G.A., 1967, Rio Grande basin: Geography, geology, and hydrology, in *Water Resources of New Mexico*: Santa Fe, New Mexico State Planning Office, p. 129-142. **(E2, I1)**
- Eardley, A.J., and Stringham, B., 1952, Selenite crystals in clays of the Great Salt Lake: *Journal of Sedimentary Petrology*, v. 22, no. 4, p. 234-238. **(C4, I1)**
- Feth, J.H., 1961, A new map of western conterminous United States showing the maximum known or inferred of Pleistocene lakes: U.S. Geological Survey Professional Paper 424-B, p. 110-112. **(I1)**
- Feth, J.H., 1963, Tertiary lake deposits in western conterminous United States: *Science*, v. 139, p. 107-110. **(I1)**
- Feth, J.H., 1964a, Review and annotated bibliography of ancient lake deposits (Precambrian to Pleistocene) in the western United States: U.S. Geological Survey Bulletin 1080, 119 p. **(A1, I1)**
- Hawley, J.W., 1993, Geomorphic setting and late Quaternary history of pluvial-lake basins in the southern New Mexico region: New Mexico Bureau of Mines and Mineral Resources, Open-File Report 391, 28 p. **(C2b, I1)**
- Hawley, J.W., 2005, Five million years of landscape evolution in New Mexico: An overview based on two centuries of geomorphic conceptual-model development, in Lucas, S.G., et al., eds., *New Mexico's Ice Ages*: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 9-93. **(A1, A2, C2b, F1, I1, I3)**
- Hawley, J.W., Bachman, G.O., and Manley, K., 1976, Quaternary stratigraphy in the Basin and Range and Great Plains provinces, New Mexico and western Texas, in Mahaney, W.C., ed., *Quaternary stratigraphy of North America*: Stroudsburg, PA, Dowden, Hutchinson, and Ross, Inc., p. 235-274. **(A1, A2, D1, I1, I3)**
- House, P.K., Pearthree, P.A., and Perkins, M.E., 2008, Stratigraphic evidence for the role of lake-spillover in the birth of the lower Colorado River in southern Nevada and western Arizona: Geological Society of America, Special Paper 439, p. 235-254. **(I1)**
- Hubbs, C.L., and Miller, R.R., 1948, Correlation between fish distribution and hydrographic history in the desert basins of western United States, in *The Great Basin, with emphasis on glacial and postglacial times*: Bulletin of the University of Utah, v. 38, p. 17-166. **(B2, C1, I1)**
- Keyes, C.R., 1903, Ephemeral lakes in arid regions: *American Journal of Science*, 4th series, v. 16, p. 377-378. **(G1, I1)**
- Leopold, L.B., 1951, Pleistocene climate in New Mexico: *American Journal of Science*, v. 249, p. 152-168. **(B2, C1, I1)**
- Long, A., 1966, Late Pleistocene and Recent chronologies of playa lakes in Arizona and New Mexico: University of Arizona, doctoral dissertation, 141 p. **(B1, I1)**
- Lyle, M., Heusser, L., Ravelo C., Yamamoto, M., Barron, J., Diffenbaugh, N.S., Herbert, T., and Andreasen, D., 2012, Out of the tropics: The Pacific, Great Basin Lakes, and Late Pleistocene water cycle in the western United States: *Science*, v. 337, issue 6102, p. 1629-1633. **(B2, C1, I1)**
- Meinzer, O.E., 1911, Geology and water resources of Estancia Valley, New Mexico: U.S. Geological Survey Water-Supply Paper 275, 89 p. **(B2, C1, C2a, D1, G1, I1, I2)**

- Meinzer, O.E., 1922, Map of the Pleistocene lakes of the Basin and Range province and its significance: Geological Society of America Bulletin, v. 33, issue 3, p. 541-552. **(B2, C1, D1, I1)**
- Meinzer, O.E., and Kelton, F.C., 1912, Geology and water resources of Sulphur Springs Valley, Arizona: U.S. Geological Survey Water-Supply Paper 320, 231 p. **(B2, C1, D1, G1, I1)**
- Miller, R.R., 1981, Coevolution of deserts and pupfishes (Genus *Cyprinodon*) in the American Southwest, in Naiman, R.J. and Stoltz, D.L., eds., Fishes in North America deserts: New York, John Wiley and Sons, p. 39-94. **(B1, B2, C1, D1, I1, I3)**
- Minckley, W.L., 1969, Environments of the Bolsón of Cuatro Ciénegas, Coahuila, Mexico, with special reference to aquatic biota: University of Texas at El Paso, Science Series 2, p. 1-65. **(B2, C1, F3, I1)**
- Minckley, W.L., Hendrickson, D.A., and Bond, C.E., 1986, Geography of western North American freshwater fishes: descriptions and relationships to intracontinental tectonism, in Hocutt, C.H. and Wiley, E.O., eds., The Zoogeography of North American Freshwater Fishes: New York, John Wiley and Sons, p. 519-613. **(B1, B2, C1, D1, I1)**
- Morrison, R.B., 1991, Quaternary geology of the southern Basin and Range province, in Morrison, R.B., ed., Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America, v. K-2, p. 353-371. **(C2b, I1)**
- Neal, J.T., Langer, A.M., and Kerr, P.F., 1968, Giant desiccation polygons of Great Basin playas: Geological Society of America Bulletin, v. 70, no. 1, p. 69-90. **(D1, I1)**
- Phillips, F.M., Campbell, A.R., Kruger, C., Johnson, P.S., Roberts, R., and Keyes, E., 1992, A reconstruction of the response of the water balance in western United States lake basins to climate change: New Mexico Water Resources Research Institute Report (Volume 1) No. 269, 167 p.
<https://nmwrr.nmsu.edu/publications/technical-reports/tr-reports/tr-269.html> **(D2, I1)**
- Pinkava, D.J., 1977, Vegetation and flora of the Cuatro Ciénegas Basin, Coahuila, Mexico, in Wauer, R.H., and Riskind, D.H., Transactions, Symposium on the Biological Resources of the Chihuahuan Desert Region, Alpine, Texas, October, 1974: U.S. National Park Service Transactions and Proceedings Series No. 3, p. 327-333. **(C1, F3, I1)**
- Schreiber, J.R., Jr., 1978, Geology of the Wilcox playa, Cochise County, Arizona: New Mexico Geological Society Guidebook 29, p. 277-282. **(I1)**
- Schreiber, J.R., Jr., Pine, G.L., Pipkin, B.W., Robinson, R.C., and Wilt, J.C., 1972, Sedimentologic studies in the Wilcox Playa area, Cochise County, Arizona, in Reeves, C.C., Jr., ed., Playa lake symposium: Texas Tech University, p. 133-184. **(I1)**
- Siebenshal, C.E., 1910, Geology and water resources of the San Luis Valley, Colorado: U.S. Geological Survey, Water-Supply Paper 240, 128 p. **(D1, I1, I3)**
- Smith, G.I., 1966, Geology of Searles Lake – A guide to prospecting for buried continental salines, in Second Symposium on Salt, Cleveland, Northern Ohio Geological Society, p. 167-180. **(D1, I1)**
- Smith, G.I., 1991, Continental climatic records and their significance, in Smiley, T.L., and four others, Quaternary paleoclimates; in Morrison, R.B., ed., Quaternary non-glacial geology; Conterminous U.S.: Boulder, CO, Geological Society of America, The Geology of North America, v. K-2, p. 35-41. **(B1, B2, C1, I1)**
- Smith, G.I., and Street-Perrott, F.A., 1983, Pluvial lakes of the western United States, in Porter, S.C., ed., Late Quaternary environments of the United States, volume 1, The Late Pleistocene: University of Minnesota Press, p. 190-212. **(B2, C1, I1)**
- Street-Perrott, F.A., and Harrison, S.P., 1985, Temporal variations in lake levels since 30,000 ¹⁴C yr B.P.: An index of the global hydrologic cycle, in Hansen, J.E., and Takahashi, T., eds., Climate processes and sensitivity: Washington, D.C., American Geophysical Union, p. 118-129. **(B1, I1)**
- Titus, F.B., Jr., 1967, Geography, geology, and hydrology [of Central Closed Basins], in Water Resources of New Mexico: Santa Fe, New Mexico State Planning Office, p. 129-142. **(E2, I1)**
- Willden, R., and Mabey, D.R., 1961, Giant desiccation fissures on the Black Rock and Smoke Creek Deserts, Nevada: Science, v. 133, p. 1359-1360. **(D1, I1)**
- Williams, T.R., and Bedinger, M.S., 1984, Selected geologic and hydrologic characteristics of the Basin and Range province, western United States--Pleistocene lakes and marshes: U.S. Geological Survey Miscellaneous Investigations Series Map I-1522-D, scale 1:2,500,000. **(I1)**

I2. Transboundary Region Paleohydrologic Systems

- Allen, B.D., 2005, Ice Age lakes in New Mexico, in Lucas, S.G., Morgan, G.A., and Zeigler, K.E., eds., New Mexico's Ice Ages: New Mexico Museum of Natural History and Science Bulletin 18, 107-114. **(C1, I2)**

- Allen, B.D., Love, D.W., and Myers, R.G., 2009, Evidence for late Pleistocene hydrologic and climatic change from Lake Otero, Tularosa Basin, south-central New Mexico: *New Mexico Geology*, v. 31, no. 1, p. 9-25. **(C1, I1, I2)**
- Allmendinger, R.J., 1972, Hydrologic control over the origin of gypsum at Lake Lucero, White Sands National Monument, New Mexico: New Mexico Institute of Mining & Technology, master's thesis, 82 p. **(I1, I2)**
- Allmendinger, R.J., and Titus, F.B., 1973, Regional hydrology and evaporative discharge as present-day source of gypsum at White Sands National Monument, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report 55, 26 p. **(I1, I2)**
- Axtell, R.W., 1978, Ancient playas and their influence on recent herpetofauna of the northern Chihuahua Desert, in Wauer, R.H., and Riskind, D.H., eds., *Transactions, Symposium on the Biological Resources of the Chihuahua Desert Region*, Alpine, Texas, October, 1974: Washington, D.C., U.S. Government Printing Office, U.S. National Park Service Transactions and Proceedings Series No. 3, p. 493-512. *Premature introduction of Lake Morrison!* **(C1, I2)**
- Bennett, M.R., Bustos, D., Pigati, J.S., Springer, K.B., Urban, T.M., Holliday, V.T., Reynolds, S.C., Budka, M., Honke, J.S., Hudson, A.M., Fenerty, B., Connelly, C., Martinez, P.J., Santucci, V.L., and Odess, D., 2021, Evidence of humans in North America during the Last Glacial Maximum, 2021, *Science*, v. 373, issue 6562, p. 1528-1531. **(B2, C1, I2)**
- Bustos, D., Jakeway, J., Urban, T.M., Holliday, V.T., Fenerty, B., Raichlen, D.A., Budka, M., Reynolds, S.C., Allen, B.D., Love, D.W., Santucci, V.L., Odess, D., Willey, P., McDonald, H.G., and Bennett, M.R., 2018, Footprints preserve terminal Pleistocene hunt? Human-sloth interactions in North America: *Science Advances [AAAS]*, v. 4, issue 4, 6 p. **(B2, C1, I2)**
- Campos-Enriquez, J.O., Ortega-Ramírez, J., Alariste-Vilchis, D., Cruz-Gática, R., and Cabral-Cano, E., 1999, Relationship between extensional tectonic style and paleoclimatic elements at Laguna El Fresnal, Chihuahua Desert, Mexico: *Geomorphology*, v. 28, p. 75-94. **(C1, C2b, F3, I2)**
- Castiglia, P.J., 2002, Late Quaternary climate history of the pluvial Lake Palomas system, Chihuahua, Mexico: University of New Mexico, master's thesis, 161 p. **(B2, C1, F3, I2)**
- Castiglia, P.J., and Fawcett, P.J., 2006, Large Holocene lakes and climate change in the Chihuahuan Desert: *Geology*, v. 34, no. 2, p. 113-116. *Seminal paper; but they still do not recognize the major contribution of Mimbres Basin/River system to pluvial Lake Palomas.* **(B2, C1, F3, I2)**
- Clemons, R.E., 1979, Geology of Good Sight Mountains and Uvas Valley, southwest New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 169, 31 p. *First map of Lake Good Sight* **(C2a, H1, I2)**
- Drewes, H., and Thorman, C.H., 1980, Geologic map of the Steins Quadrangle and the adjacent part of the Vanar Quadrangle, Hidalgo County, New Mexico: U.S. Geological Survey, Miscellaneous Investigations Series, Map I-1220, scale 1:24,000. *Improper use of pluvial "Lake Lordsburg" for "Lake Animas."* **(C2a, I2)**
- Echelle, A.A., Echelle, A.F., and Edds, D.R., 1987, Population structure of four pupfish species (Cyprinodontidae: Cyprinodon) from the Chihuahuan desert region of New Mexico and Texas: allozymic variation: *Copeia*, v. 3, p. 668-681. **(C1, I2, I3)**
- Fleischhauer, H.L., Jr., and Stone, W.J., 1982, Quaternary geology of Lake Animas, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 174, 25 p. **(C2a, I2)**
- Gile, L.H., 2002, Lake Jornada, an early-middle Pleistocene lake in the Jornada del Muerto Basin, southern New Mexico: *New Mexico Geology*, v. 24, no. 1, p. 3-14. **(C2b, C3, I2)**
- Gordon, M.E., Morgan, G.S., and Lucas, S.G., 2002, Fossil molluscan fauna from Pleistocene Lake Otero, Tularosa Basin, southern New Mexico: *New Mexico Geological Society Guidebook* 53, p. 47-48. **(B2, C1, I2)**
- Hallman, P.R., and Hallman, D.P., 1997, A new *Mammuthus columbi* locality from Hidalgo County, southwestern New Mexico: *Journal of Paleontology*, Abstracts of papers, v. 17, no. 3, p. 51A. **(B2, C1, I2)**
- Hawley, J.W., 1983, Quaternary geology of the Rhodes Canyon (RATSCAT) Site, in Eidenbach, P.L., ed., *The prehistory of Rhodes Canyon*, New Mexico: Tularosa, NM, Human Systems Research, Inc., p. 17-32. **(B2, C2a, C3, I2)**
- Hawley, J.W., Hibbs, B.J., Kennedy, J.F., Creel, B.J., Remmenga, M.D., Johnson, M., Lee, M.M., and Dinterman, P., 2000, Trans-International Boundary aquifers in southwestern New Mexico: New Mexico Water Resources Research Institute, prepared for U.S. Environmental Protection Agency-Region 6 and International Boundary and Water Commission; Technical Completion Report-Interagency Contract X-996350-01-3, 126 p. <https://nmwrri.nmsu.edu/publications/pub-external-pages/trans-international-boundary-aquifers-in-southwest-new-mexico.html> **(C2b, D1, F1, I2)**
- Herrick, C.L., 1900, The geology of the White Sands of New Mexico: *Journal of Geology*, v. 8, p. 112-128. **(B2, C1, G1, I2)**

- Herrick, C.L., 1904, Lake Otero, an ancient salt lake in southeastern New Mexico: *American Geologist*, v. 34, p. 174-189. **(B2, C1, G1, I2)**
- Kennedy, J.F., and Hawley, J.W., 2003, Late Quaternary paleohydrology of a linked pluvial-lake and Ancestral Rio Grande system, Paso Del Norte Region, Southwestern USA And Northern Mexico *in* *Shaping the Earth, a Quaternary Perspective: XVI INQUA Congress (July 23-30, 2003)*, Desert Research Institute, Reno, NV, Programs with Abstracts, p. 181. **(F1, H1, I2)**
- Kennedy, J.F., Granados Olivas, A., and Aldouri, R., 2002, Creating a single map, regional geographic information system to support water planning in the Paso del Norte region: New Mexico Water Resources Research Institute Report No. 322, 22 p., CD-ROM <https://nmwrri.nmsu.edu/publications/technical-reports/tr-reports/tr-322.html> **(F1, H1, I2)**
- Kennedy, J.F., 2004, Application of GIS and remote sensing methods to the paleohydrography of the Paso del Norte region. *ETD Collection for University of Texas, El Paso*. AAI3138516. **(C1, E1, F1, I2)**
- Kennedy, J.F., Hawley, J.W., and Johnson, M., 2000, The hydrogeologic framework of basin-fill aquifers and associated ground-water-flow systems in southwestern New Mexico—An overview: *New Mexico Geological Society Guidebook 51*, p. 235-244. **(F1, H1, I2)**
- Kottlowski, F.E., 1958b, Lake Otero-second phase formation of New Mexico's gypsum dunes: *Geological Society of America Bulletin*, v. 33, p. 541-552. **(C2a, I2)**
- Krider, P.R., 1998, Paleoclimatic significance of late Quaternary lacustrine and alluvial stratigraphy, Animas Valley, New Mexico, *Quaternary Research*, v. 50, p. 283-289. **(B2, C1, F1, I2)**
- Lang, W.B., 1943, Gigantic drying cracks in the Animas Valley, New Mexico: *Science*, v. 98, p. 593-594. **(G2, I2)**
- Langford, R.P., 2002, Playa lake shorelines and the Holocene history of the White Sands dune field. *New Mexico Geological Society Guidebook 53*, p. 45-47. **(I2)**
- Langford, R.P., 2002, The Holocene History of the White Sands Dune Field and influences on Eolian Deflation and Playa Lakes. *Quaternary International, Special Publication*. **(I2)**
- Love, D.W., and Seager, W.R., 1996, Fluvial fans and related basin deposits of the Mimbres drainage: *New Mexico Geology*, v. 18, p. 81-92. **(C2b, I2)**
- Love, D.W., Allen, B.D., Scholle, P.A., and Bustos, D., 2020, White Sands National Park, *in* Scholle, P.A., Ulmer-Scholle, D.S., Cather, S.M., and Kelley, S.A., eds., *The Geology of Southern New Mexico's Parks, Monuments, and Public Lands: New Mexico Bureau of Geology and Mineral Resources*, 404 p. ISBN 978-1-883905-48-4 **(C2b, I2)**
- Lucas, S.G., and Hawley, J.W., 2002, The Otero Formation, Pleistocene lacustrine strata in the Tularosa Basin, southern New Mexico: *New Mexico Geological Society Guidebook 53*, p. 277-283. **(C2b, I2)**
- Lucas, S.G., Morgan, G.S., Hawley, J.W., and Gordon, M.E., 2002, Late Pleistocene Lake Otero, Tularosa Basin, southern New Mexico: *Current Research in the Pleistocene*, v. 19, p. 59-61. **(B2, C1, I2)**
- Lucas, S.G., Morgan, G.S., Hawley, J.W., and Love, D.W., 2002, Mammal footprints from the Upper Pleistocene of the Tularosa Basin, Dona Ana County, New Mexico: *New Mexico Geological Society Guidebook 53*, p. 285-288. **(B2, C1, I2)**
- Madsen, D.B., Davis, L.G. Rhode, D., and Oviatt, C.G., 2022, Comment on "Evidence of humans in North America during the Last Glacial Maximum:" *Science*, v. 373, issue 6577, p. 1-2. **(B2, C1, I2)**
- Martin, P.S., 1963a, Geochronology of pluvial Lake Cochise, southern Arizona, II. Pollen analysis of a 42-meter core: *Ecology*, v. 44, p. 436-444. **(B2, C1, I2)**
- Meinzer, O.E., 1911, Geology and water resources of Estancia Valley, New Mexico: U.S. Geological Survey Water-Supply Paper 275, 89 p. **(B2, C1, C2a, D1, G1, I1, I2)**
- Meinzer, O.E., and Hare, R.F., 1915, Geology and water resources of the Tularosa Basin, New Mexico: U.S. Geological Survey Water-Supply Paper 343, 317 p. **(B2, C1, C2a, D1, G1, I2)**
- Metcalfe, S., Bimpson, A., Courtice, A.J., and O'Hara, S., 1997, Climate change at the monsoon/westerly boundary in northern Mexico: *Journal of Paleolimnology*, v. 17, p. 155-171. **(B2, C1, F3, I2)**
- Metcalfe, S., Say, A., Black, S., McCulloch, R., and O'Hara, S., 2002, Wet conditions during the last glaciation in the Chihuahuan Desert, Alta Babicora basin, Mexico: *Quaternary Research*, v. 57, p. 91-101. **(B2, C1, F3, I2)**
- Miller, R.R., and Echelle, A.A., 1975, *Cyprinodon tularosa*, a new cyprinodontid fish for the Tularosa Basin, New Mexico: *The Southwestern Naturalist*, v. 19, no. 4, p. 365-377. **(B1, B2, C1, D1, I2)**
- Monger, H.C., and Gallegos, R., 1997, Mineralogy and eolian sedimentation - Lost River Playa, Otero County New Mexico: Report submitted to Geo-Marine Inc. New Mexico: State University, Las Cruces New Mexico, 16 p. **(C3, I2)**

- Morrison, R.B., 1969, Photointerpretive mapping from space photographs of Quaternary geomorphic feature and soil associations in northern Chihuahua and adjoining New Mexico and Texas: New Mexico Geological Society Guidebook 20, p. 116-129. **(C2a, C3, E1, F1, I2)**
- Ortega-Ramírez, J.R., Valiente-Banuet, A., Urrutia-Fucugauchi, J., Mortera-Gutierrez, C.A., and Alvarado-Valdéz, G., 1998, Paleoclimatic changes during the late Pleistocene-Holocene in Laguna Babicora, near the Chihuahuan Desert, Mexico: Canadian Journal of Earth Science, v. 35, p. 1168-1179. **(B2, C1, F3, I2)**
- Palacios-Fest, M.R., Carreño, A.L., Ortega-Ramírez, J.R., and Alvarado-Valdéz, G., 2002, A paleoenvironmental reconstruction of Laguna Babicora, Chihuahua, Mexico based on ostracode paleoecology and trace element shell chemistry: Journal of Paleolimnology, v. 27, p. 185-206. **(B2, C1, F3, I2)**
- Pigati, J.S., Springer, K.B., Bennett, M.R., Bustos, D., Urban, T.M., Holliday, V.T., Reynolds, S.C., and Odess, D., 2022, Response to comment on “Evidence of humans in North America during the Last Glacial Maximum”: Science, v. 375, issue 6577, p. 1-2. **(B2, C1, I2)**
- Reeder, H.O., 1957, Ground water in Animas Valley, Hidalgo County, New Mexico: New Mexico State Engineer Office, Technical Report No. 11, 101 p. **(G2, I2)**
- Reeves, C.C., Jr., 1965, Pluvial Lake Palomas, northwestern Chihuahua, Mexico; and Pleistocene geologic history of south-central New Mexico: New Mexico Geological Society Guidebook 16, p. 199-203. **(C2a, F3, I2, I3)**
- Reeves, C.C., Jr., 1969, Pluvial Lake Palomas, northwestern Chihuahua, Mexico: New Mexico Geological Society Guidebook 20, p. 143-154. **(C2a, C4, F3, I2, I3)**
- Richter, D.H., Lawrence, V.A., Drewes, H., Young, T.H., Enders, M.S., Damon, P.E., and Thorman, C.H., 1990, Geologic map of the San Simon Quadrangle and parts of the Summit Hills and Mondel Quadrangles, Cochise, Graham, and Greenlee Counties, Arizona, and Hidalgo County, New Mexico: U.S. Geological Survey, Miscellaneous Investigations Series, Map I-1951, scale 1:48,000. *Improper use of pluvial Lake Lordsburg for Lake Animas!* **(C2b, I2)**
- Rose, J.M., 2006, Differences in the dune morphology related to changes in groundwater geochemistry, White Sands National Monument: University of Texas at El Paso, master’s thesis, 89 p. **(C2b, H2, I2)**
- Schwennesen, A.T., 1918, Ground water in the Animas, Playas, Hachita, and San Luis Basins, New Mexico: U.S. Geological Survey Water-Supply Paper 422, 152 p. **(D1, F2, G1, I2)**
- Schwennesen, A.T., and Forbes, R.H., 1918, Ground water in San Simon Valley, Arizona: U.S. Geological Survey Water-Supply Paper 425, p. 1-35. **(D1, G1, I2)**
- Szynkiewicz, A., Moore, C.H., Glamoclija, M., and Pratt, L.M., 2009, Sulfur isotope signatures in gypsiferous sediments of the Estancia and Tularosa Basins as paleoindicators of sulfate sources, hydrologic cycle and bacterial activity: Geochimica et Cosmochimica Acta, v. 73, 6162-6186. **(C2b, C4, I2)**
- Szynkiewicz, A., Moore, C.H., Glamoclija, M., Bustos, D., and Pratt, L.M., 2010, The origin of coarsely crystalline gypsum domes in a saline playa environment at the White Sands National Monument, New Mexico: Journal of Geophysical Research – Earth Surface, v. 115, issue F2. **(C2b, C4, I2)**
- Szynkiewicz, A., Ewing, R.C., Moore, C.H., Glamoclija, M., Bustos, D., and Pratt, L.M., 2009, Origin of terrestrial gypsum dunes – Implications for Martian gypsum-rich dunes of Olympia Undae: Geomorphology, v. 121, no. 1-2, p. 69-83. **(C2b, C4, I2)**
- Waters, M.R., 1985, Late Quaternary alluvial stratigraphy of Whitewater Draw, Arizona: Implication for regional correlation of fluvial deposits in the American Southwest: Geology, v. 13, p. 705-708. **(B2, C2a, I2)**
- Waters, M.R., 1989, Late Quaternary lacustrine history and paleoclimatic significance of pluvial Lake Cochise, southeastern Arizona: Quaternary Research, v. 32, p. 1-11. **(B2, C1, C2a, I2)**
- Weber, R.H., and Kottowski, F.E., 1959, Gypsum resources of New Mexico: New Mexico Bureau of Mines and Mineral Resources, Bulletin 68, 68 p. *Note: Lake Otero described.* **(I2)**
- Wilkins, D.E., and Currey, D.R., 1997, Timing and extent of Late Quaternary paleolakes in the Trans-Pecos closed basin, west Texas and south-central New Mexico: Quaternary Research, v. 47, p. 306-315. **(I2)**
- Wolaver, B.D., Sharp, J.M., Jr., Rodriguez, J.M., and Ibarra Flores, J.C., 2008, Delineation of regional arid karstic aquifers: and integrative data approach: Ground Water, v. 46, no. 3, 396-413. **(F3, I2)**

I3. Evolution of the Rio Grande Fluvial System

- Bachman, G.O., and Mehnert, H.H., 1978, New K-Ar dates and late Pliocene to Holocene geomorphic history of the central Rio Grande region, New Mexico: Geological Society of American Bulletin, v. 89, no. 2, p. 283-292. **(C2a, I3)**
- Bryan, K., 1909, Geology in the vicinity of Albuquerque: University of New Mexico Bulletin 51, Geological Series, v. 3, no. 1, 24 p. **(G1, I3)**

- Bryan, K., 1938, Geology and groundwater conditions of the Rio Grande depression in Colorado and New Mexico, *in* [U.S.] National Resources Committee, Regional Planning part VI—The Rio Grande joint investigations in the upper Rio Grande basin in Colorado, New Mexico, and Texas, 1936-1937: U.S. Government Printing Office, Washington, D.C., v. 1, part 2, p. 197-225. **(D1, G2, I3)**
- Chapin, C.E., 1971, The Rio Grande rift, Part I: Modifications and additions: Guidebook of the San Luis Basin, Colorado, New Mexico Geological Society Guidebook 22, p. 191-201. **(C2a, I3)**
- Chapin, C.E., and Cather, S.M., 1994, Tectonic setting of the axial basins of the northern and central Rio Grande Basin, New Mexico, *in* Keller, G.R., and Cather, S.M., eds., Basins of the Rio Grande Rift – Structure, stratigraphy, and tectonic setting. Geological Society of America Special Paper 291, p. 5-25. **(C2b, I3)**
- Chapin, C.E., and Seager, W.R., 1975, Evolution of the Rio Grande rift in the Socorro and Las Cruces areas: New Mexico Geological Society Guidebook 26, p. 297-321. **(C2a, I3)**
- Connell, S.D., Hawley, J.W., and Love, D.W., 2005, Late Cenozoic drainage development in the southeastern Basin and Range of New Mexico, southeasternmost Arizona and western Texas, *in* Lucas, S.G., Morgan, G., and Zeigler, K.E., eds., 2005, New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 125-150. **(C2b, I1, I3)**
- Connell, S.D., Love, D.W., and Dunbar, N.W., 2007, Geomorphology and stratigraphy of inset fluvial deposits along the Rio Grande Valley in the central Albuquerque Basin: New Mexico Geology, v. 29, no. 1, p. 13-31. **(C2b, D1, I3)**
- Connell, S.D., Smith, G.A., Geissman, J.W., and McIntosh, W.C., 2013, Climatic controls on nonmarine depositional sequences, Albuquerque Basin, Rio Grande rift, north-central New Mexico, *in* Hudson, M.R., and Grauch, V.J.S., eds., New Perspectives on the Rio Grande rift: from tectonics to groundwater: Geological Society of America, Special Publication, p. 483-485. **(C1, I3)**
- Deal, D., 1979, Evolution of the Rio Conchos – Rio Grande drainage system, *in* Walton, A.W., and Henry, C.D., eds. Cenozoic geology of the Trans-Pecos volcanic field: University of Texas at Austin, Bureau of Economic Geology, Guidebook 19, p. 137-146. *Chihuahuan Desert Research Institute Contribution No. 43*. **(C2a, I3)**
- Dethier, D.P., 2001, Pleistocene incision rates in the western United States calibrated using Lava Creek B tephra: Geology, v. 29, no. 9, p. 783-786. **(C2b, I3)**
- Dickerson, P.W., and Muehlberger, W.R., 1994, Basins in the Big Bend segment of the Rio Grande rift, Trans-Pecos Texas: Geological Society of America Special Paper 294, p. 283-297. **(C2b, I3)**
- Echelle, A.A., Echelle, A.F., and Edds, D.R., 1987, Population structure of four pupfish species (Cyprinodontidae: Cyprinodon) from the Chihuahuan desert region of New Mexico and Texas: allozymic variation: Copeia, v. 3, p. 668-681. **(C1, I2, I3)**
- Galloway, W.E., 2005, Gulf of Mexico Basin depositional record of Cenozoic North American drainage basin evolution: International Association of Sedimentologists, Special Publication 35, p. 409-423. **(D1, I3)**
- Groat, C.F., 1970, Geology of Presidio Bolson, Presidio County, Texas and adjacent Chihuahua, Mexico: University of Texas at Austin, doctoral dissertation, 167 p. **(C2a, F1, I3)**
- Groat, C.F., 1972, Presidio Bolson, Trans-Pecos Texas and adjacent Mexico: Geology of a desert basin aquifer system: Texas Bureau of Economic Geology Report of Investigation 76, 46 p. **(C2a, F1, I3)**
- Gustavson, T.C., 1990, Regional stratigraphy and geomorphic evolution of the southern Hueco Bolson, west Texas and Chihuahua, Mexico, *in* Kreitler, C.W., and Sharp, J.M., Jr., eds., Hydrology of Trans-Pecos Texas: University of Texas at Austin, Bureau of Economic Geology, Guidebook 25, p. 27-35. **(C2b, C3, I3)**
- Gustavson, T.C., 1991a, Arid basin depositional systems and paleosols: Fort Hancock and Camp Rice Formations (Pliocene-Pleistocene) Hueco Bolson, West Texas and adjacent Mexico: University of Texas at Austin, Bureau of Economic Geology, Report of Investigations No. 198, 49 p. **(C2b, C3, I3)**
- Gustavson, T.C., 1991b, Buried vertisols in lacustrine facies of the Pliocene Fort Hancock Formation, Hueco Bolson, West Texas and Chihuahua, Mexico: Geological Society of America Bulletin, v. 103, p. 448-460. **(C2b, C3, I3)**
- Hawley, J.W., 1975a, Quaternary history of Doña Ana County region, south-central New Mexico: New Mexico Geological Society Guidebook 26, p. 139-150. **(C2a, F1, I3)**
- Hawley, J.W., 2005, Five million years of landscape evolution in New Mexico: An overview based on two centuries of geomorphic conceptual-model development, *in* Lucas, S.G., et al., eds., New Mexico's Ice Ages: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 9-93. **(A1, A2, C2b, F1, I1, I3)**
- Hawley, J.W., Bachman, G.O., and Manley, K., 1976, Quaternary stratigraphy in the Basin and Range and Great Plains provinces, New Mexico and western Texas, *in* Mahaney, W.C., ed., Quaternary stratigraphy of North America: Stroudsburg, PA, Dowden, Hutchinson, and Ross, Inc., p. 235-274. **(A1, A2, D1, I1, I3)**

- Izett, G.A., and Wilcox, R.E., 1982, Map showing localities and inferred distributions of the Huckleberry Ridge, Mesa Falls, and Lava Creek Ash Beds (Pearlette family ash beds) of Pliocene and Pleistocene age in the western United States and southern Canada: U.S. Geological Survey Miscellaneous Investigations Map I-1325, scale 1:4,000,000. **(B1, C2a, I3)**
- Leeder, M.R., Mack, G.H., Peakall, J., and Salyards, S.L., 1996, First quantitative test of alluvial stratigraphic models: Southern Rio Grande rift, New Mexico: *Geology*, v. 24, no. 1, p. 87-90. **(C2b, I3)**
- Lehner, F., Wahl, E.R., Wood, A.W., Blatchford, D.B., and Llewellyn, D., 2017, Assessing recent declines in Upper Rio Grande runoff efficiency from a paleoclimatic perspective: *Geophysical Research Letters*, v. 44, p. 4124-4133. **(B2, C1, I3)**
- Love, D.W., and Hawley, J.W., 2010, Geology of the Montano Site Complex- Chapter 3 (p. 3-1 to 3-32); and Data synthesis, interpretation and summary-Chapter 13: The nature of the agricultural system (p. 13-5 and 13-6), *in* Report on 1988 data recovery at the Montano Site Complex, LA 33223; City of Albuquerque, New Mexico; and Subsequent analysis of collections (NMCRIS No. 116852). Report No. CEC-2009-12, submitted by Criterion Environmental Consulting, 4801 Lang Avenue NE, Suite 110, Albuquerque, NM 87109. Submitted to: Wilson & Company, Inc. 4900 Lang Avenue NE, Albuquerque, NM 87109; and City of Albuquerque, One Civic Plaza NW, Albuquerque, NM 87102. March 22, 2010. **(B2, C1, C3, I3)**
- Lozinsky, R.P., 1994, Cenozoic stratigraphy, sandstone petrology, and depositional history of the Albuquerque basin, central New Mexico: Geological Society of America Special Paper 291, p. 73-82. **(C2b, I3)**
- Lozinsky, R.P., and Hawley, J.W., 1986, The Palomas Formation of south-central New Mexico – A formal definition: *New Mexico Geology*, v. 8, no. 4, p. 73-82. **(C2a, I3)**
- Machette, M., Thompson, R., Marchetti, D., and Smith, R.S.U., 2013, Evolution of ancient Lake Alamosa and integration of the Rio Grande during the Pliocene and Pleistocene, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater*: Geological Society of America Special Paper 494, p. 1-20. doi: 10.1130/2013.2494(01) **(C2b, C3, I3)**
- Mack, G.H., 2004, Middle and late Cenozoic crustal extension, sedimentation, and volcanism in the southern Rio Grande rift, Basin and Range, and southern Transition Zone of southwestern New Mexico, *in* Mack, G.H., and Giles, K.J., eds., *The Geology of New Mexico: A geologic history*: New Mexico Geological Society Special Publication 11, p. 389-406. **(C2b, I3)**
- Mack, G.H., Dunbar, N., and Foster, R., 2009, New sites of 3.1-Ma pumice beds in axial-fluvial strata of the Camp Rice and Palomas Formations, southern Rio Grande rift: *New Mexico Geology*, v. 31, no. 2, p. 31-37. **(C2b, I3)**
- Mack, G.H., Kottlowski, F.E., and Seager, W.R., 1998b, The stratigraphy of south-central New Mexico: *New Mexico Geological Society Guidebook* 49, p. 135-154. **(C2b, I3)**
- Mack, G.H., Love, D.W., and Seager, W.R., 1997, Spillover models for axial rivers in regions of continental extension: The Rio Mimbres and Rio Grande in the southern Rio Grande rift, USA. *Sedimentology*, v. 44, p. 637-652. **(C2b, I3)**
- Mack, G.H., Salyards, S.L., and James, W.C., 1993, Magnetostratigraphy of the Plio-Pleistocene Camp Rice and Palomas formations in the Rio Grande rift of southern New Mexico: *American Journal of Science*, v. 293, p. 49-77. **(B1, C2b, I3)**
- Mack, G.H., McIntosh, W.C., Leeder, M.R., and Monger, H.C., 1996, Plio-Pleistocene pumice floods in the ancestral Rio Grande, southern Rio Grande rift, USA: *Sedimentary Geology*, v. 103, p. 1-8. **(B1, C2b, I3)**
- Mack, G.H., Salyards, S.L., McIntosh, W.C., and Leeder, M.R., 1998, Reversal magnetostratigraphy and radioisotopic geochronology of the Plio-Pleistocene Camp Rice and Palomas formations, southern Rio Grande rift: *New Mexico Geological Society Guidebook* 49, p. 229-236. **(B1, C2b, I3)**
- Mack, G.H., Seager, W.R., Leeder, M.R., Perea-Arlucea, M., and Salyards, S.L., 2006, Pliocene and Quaternary history of the Rio Grande, the axial river of the southern Rio Grande rift, New Mexico, USA: *Earth-Science Reviews*, v. 77, p. 141-162. **(C2b, I3)**
- Miller, R.R., 1981, Coevolution of deserts and pupfishes (Genus *Cyprinodon*) in the American Southwest, *in* Naiman, R.J. and Stoltz, D.L., eds., *Fishes in North America deserts*: New York, John Wiley and Sons, p. 39-94. **(B1, B2, C1, D1, I1, I3)**
- Pazzaglia, F.J., 2005, River responses to Ice Age (Quaternary) climates in New Mexico, *in* Lucas, S.G., et al., eds., *New Mexico's Ice Ages*: New Mexico Museum of Natural History & Science Bulletin No. 28, p. 115-124. **(C2b, I3)**
- Perez-Arlucea, M., Mack, G., and Leeder, M., 2000, Reconstructing the ancestral (Plio-Pleistocene) Rio Grande in its active tectonic setting, southern Rio Grande Rift, New Mexico, USA: *Sedimentology*, v. 47, p. 701-720. **(C2b, I3)**

- Reeves, C.C., Jr., 1965, Pluvial Lake Palomas, northwestern Chihuahua, Mexico; and Pleistocene geologic history of south-central New Mexico: New Mexico Geological Society Guidebook 16, p. 199-203. **(C2a, F3, I2, I3)**
- Reeves, C.C., Jr., 1969, Pluvial Lake Palomas, northwestern Chihuahua, Mexico: New Mexico Geological Society Guidebook 20, p. 143-154. **(C2a, C4, F3, I2, I3)**
- Reneau, S.L., and Dethier, D.P., 1996, Pliocene and Quaternary history of the Rio Grande, White Rock Canyon and vicinity, New Mexico: New Mexico Geological society Guidebook 47, p. 317-324. **(I3)**
- Repenning, C.A., and May, S.R., 1986, New evidence for the age of lower part of the Palomas Formation, Truth or Consequences, New Mexico: New Mexico Geological Society Guidebook 37. p. 257-260. **(B1, C2a, I3)**
- Respasch, M., Karlstrom, K., Heizler, M., and Pecha, M., 2017, Birth and evolution of the Rio Grande fluvial system in the past 8 Ma: Progressive downward integration and the influence of tectonics, volcanism, and climate: *Earth-Science Reviews*, v. 168, p. 113-164. **(C2b, I3)**
- Rogers, K.L., Larson, E.E., Smith, G.A., Katzman, D., Smith, G.R., Cerling, T., Wang, Y., Baker, R.G., Lohman, K.C., Repenning, C.A., Patterson, P., Mackie, G., 1992, Pliocene and Pleistocene geologic and climatic evolution in the San Luis valley of south-central Colorado: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 94, p. 55-86. **(C2b, I3)**
- Ruleman, C.A., Hudson, A.M., Thompson, R.A., Miggins, D.P., Paces, J.B., and Goehring, B.M., 2019, Middle Pleistocene formation of the Rio Grande Gorge, San Luis Valle, south-central Colorado and north-central New Mexico, USA: Process, timing, and downstream implications: *Quaternary Science Reviews*, v. 223, no. 105846, p. 1-48. **(I3)**
- Ruleman, C.A., Thompson, R.A., Shroba, R.R., Anderson, M., Drenth, B.J., Rotzien, J., and Lyon, J., 2013, Late Miocene—Pleistocene evolution of a Rio Grande rift subbasin, Sunshine Valley—Costilla Plain, San Luis Basin, New Mexico and Colorado, *in* Hudson, M.R., and Grauch, V.J.S., eds., *New Perspectives on Rio Grande Rift Basins: From Tectonics to Groundwater*: Geological Society of America Special Paper 494, p. 47-73. **(I3)**
- Seager, W.R., Kelley, S.A., Thacker, J.O., and Kelley, R.E., 2023, San Diego Mountain: A “Rosetta Stone” for Interpreting the Cenozoic Tectonic Evolution of South-Central New Mexico: *New Mexico Geology*, v. 44, no. 2, p. 23-62. **(C2b, I3)**
- Seager, W.R., Shafiqullah, M., Hawley, J.W., and Marvin, R.F., 1984, New K-Ar dates from basalts and the evolution of the southern Rio Grande: *Geological Society of America Bulletin*, v. 95, no. 1, p. 87-99. **(C2a, I3)**
- Sharps, J.A., and Freeman, V.L., 1964, Geologic map of The Mouth of Pecos and Feely quadrangles, Val Verde County, Texas: U.S. Geological Survey, Miscellaneous Geologic Investigations Map I-440, scale 1:62,500. **(C2a, F1, I3)**
- Siebenthal, C.E., 1910, Geology and water resources of the San Luis Valley, Colorado: U.S. Geological Survey, Water-Supply Paper 240, 128 p. **(D1, I1, I3)**
- Smith, G.A., 2004, Middle to late Cenozoic development of the Rio Grande rift and adjacent regions in northern New Mexico: New Mexico Geological Society, Special Publication 11, p. 331-358. **(C2b, I3)**
- Smith, M.L., and Miller, R.R., 1986, The evolution of the Rio Grande Basin as inferred from its fish fauna, *in* Hocutt, C.H. and Wiley, E.O., eds., *Zoogeography of North American Freshwater Fishes*: New York, John Wiley and Sons, p. 457-485. **(B1, C1, C2a, I3)**
- Stevens, J.C., 1938, The effect of silt removal and flow regulation of the Rio Grande and Colorado rivers: *Transactions of the American Geophysical Union*, v. 19, p. 653-659. **(I3)**
- Stone, W.J., Minnis, M., Thompson, S., and Nunn, S.C., 1990, The Rio Grande Basin: Proceedings, The Rio Grande Basin – Global Climate Change Scenarios, New Mexico Water Resources Research Institute Report No. M24, p. 17-26. <https://nmwrri.nmsu.edu/publications/miscellaneous-reports/m-reports/m24-proceedings-of-workshops-and-conferences-the-río-grande-basin-global-climate-change-scenarios.html> **(C1, I3)**
- U.S. Geological Survey, n.d., Water Resources Data, Calendar Year Streamflow Statistics: Online data retrieval system, <http://water.usgs.gov/nm/nwis/sw> **(C1, I3)**