

RICHARD R. PARIZEK

EDUCATION

1956 B.A. in Geology, University of Connecticut
1960 M.S. in Geology, University of Illinois
1961 Ph.D. in Geology, University of Illinois

PROFESSIONAL EXPERIENCE

1956=1961 Research Assistant, Ground-Water Geology and Geophysical Exploration Sec., Illinois State Geological Survey

1959-1960 Party Chief, Saskatchewan Research Council; and Acting Head of the Council's Ground-Water and Pleistocene Geology Mapping Program (Summer 1960)

1961-1965 Assistant Professor of Geology and Geophysics, The Pennsylvania State University

1961-1978 Co-Developer and Member Waste Water Renovation and Research Committee, The Penn State Living Filter Project, (site selection, hydrogeologic characterization, monitoring aspects, future expansion, public relations). Advisory Committee Reestablished 1990-Present

1965-1971 Associate Professor of Geology and Geophysics, The Pennsylvania State University

1967-1968 Appointed Member Phase I of Project Ketch Safety
Concept by Honorable Clifford Jones, Secretary of Commerce Advisory Committee On Atomic Energy Development and Radiation Control, Commonwealth of Pennsylvania

1969-1985 Assistant and Associate Director, Mineral Conservation Section, The Pennsylvania State University

1971-1972 Visiting Distinguished Lecturer, American Geological Institute.

1971 Visiting Scholar, Stanford University and Desert Research Institute, University of Nevada-Reno

1971-1997 Professor of Geology, Department of Geosciences, The Pennsylvania State University

1972-1979 Pennsylvania's representative to U.S.-Canadian Great Lakes Pollution from Land Use Activities Reference Group (PLUARG), Appointed by the International Joint Commission

1978 Visiting Scientist, Radiohydrology Branch, U.S. Geological Survey, Denver Federal Center

1978-1984 Panel Member, Waste Isolation Pilot Plant (WIPP), Appointed by Committee on Radioactive Waste Management, National Academy of Sciences

1985 Visiting Scholar, Changchun College of Geology and The Institute of Karst Geology, Guilin, Peoples Republic of China

1990-1997 Appointed Administrative Law Judge, Atomic Safety and Licensing Board Panel, by the U.S. Nuclear Regulatory Commission, Washington, D.C.

1995-1997 Consultant, U.S. Nuclear Waste Technology Review Board, Arlington, VA

1996 Visiting Professor, National Cheng Kung University, Tainan, Taiwan, Republic of China.
Hydrogeologic Characterization of Complex Hydrogeologic Terrains

1997-2000 Appointed Board Member, U.S. Nuclear Waste Technical Review Board (NWTRB) by President William J. Clinton, March 26, 1997, Arlington, VA

- 1997-2013 Professor of Geology and Geo-Environmental Engineering, Department of Geosciences, The Pennsylvania State University
- 2001-2004 Re-appointed Board Member, U.S. Nuclear Waste Technical Review Board (NWTRB) by President William J. Clinton, April 19, 2000, Arlington, VA
- 2003-9/10/04 Chairman, Panel on the Natural System, U.S. Nuclear Waste Technical Review Board Arlington, VA. Appointed February 11, 2003
- 2003-9/10/04 Member, Panel on Repository System Performance and Integration, U.S. Nuclear Waste Technical Review Board Arlington, VA. Appointed February 11, 2003
- 2007 National Ground Water Association and U.S. Environmental Protection Agency, Planning and Advisory Role. Fracture Rock Conference, Sept. 24-27, Portland, ME
- 2008 National Ground Water Association and U.S. Environmental Protection Agency, Planning and Advisory Role. Remediation of Abandoned Mine Lands Conference, October 3, 2008, Denver, CO
- 2008-Present K.A. Parizek and R.R. Parizek Work on fracture zones and ancient tomb locations in Valley of Kings named “One of Ten Top Discoveries in Egypt” during 2008 by the History Channel. Continues to be aired Worldwide 2008-present.
- 2008-Present R.R. Parizek shared with A. Kalney, Antiquity Inspector, Aswan Egypt a second “One of Ten Top Discoveries in Egypt during 2008 by the History Channel. Fire used to assist in quarrying obelisks and other large stone blocks. Continues to be aired Worldwide 2008-present.
- 2013-Present Emeritus Professor of Geology and Geo-Environmental Engineering, Department of Geosciences, The Pennsylvania State University
- 2013 Visiting Professor, National Cheng Kung University, Tainan, Taiwan, Republic of China and Development Research Institute. Observations and hydrogeologic analysis related to CPC Corporation’s proposed CO₂ sequestration program, Northwestern Taiwan
- 2016-Present Appointed Member Pennsylvania Grade Crude Development Advisory Council by Tom Wolf, Governor Commonwealth of Pennsylvania. Appointed October 25, 2016. Member Subcommittee Abandoned Wells and Subcommittee on Produced Water

UNIVERSITY-RELATED ACTIVITIES

Courses Taught

Environmental Geology Seminar (First such seminar offered in the U.S., 1962-2013)
 Field Problems in Appalachian Geology
 Field Studies in North America
 Glacial and Pleistocene Geology
 Introduction to Geomorphology
 Introduction to Hydrogeology
 Introduction to Environmental Geology
 Problems in Hydrogeology
 Quantitative Methods in Hydrogeology
 Issues in Geosciences
 Geological and Man-made Hazards
 Environment Earth
 Senior Thesis Research
 Graduate Thesis and Dissertation Research
 Freshman Seminar
 Numerous workshops, short courses and guest lectures

OTHER ACTIVITIES

Society Membership

American Association for the Advancement of Science
American Geophysical Union
American Institute of Hydrology
Geological Society of America (Fellow 1988)
Sigma Xi
National Ground Water Association
International Institute of Hydrology
American Society of Civil Engineers

Honors and Awards

Cooperative Fellowship, National Science Foundation, 1960-61

Superior Achievement Award, U.S. Environmental Protection Agency, Philadelphia Regional Office, 1976 (Presented to the Living Filter Research Team)

The Karl M. Mason Award, 1977, Pennsylvania Department of Environmental Resources, Harrisburg, PA

Ideal Citizen of the Age of Enlightenment Award, September 25, 1977. Mahassh Yogi, Founder of the World Government For the Age of Enlightenment.

Named Sixth Birdsall Distinguished Lecturer, Hydrogeology Division, The Geological Society of America 1982-83

Clear Water Conservancy Award, 1984, The Clear Water Conservancy of Central Pennsylvania

Matthew J. and Anne C. Wilson Outstanding Teaching Award, April 20, 1986, College of Earth and Mineral Sciences, The Pennsylvania State University

Department of Geosciences, The Pennsylvania State University, selected as the third most desirable graduate program for an M.S. degree program by professional hydrogeologists, National Ground Water Association

United States Nuclear Regulatory Commission "Demonstrating High Personal Integrity and Exemplary Ability Worthy of Special Trust and Confidence." Richard R. Parizek was appointed The Twenty-Second Day of October, 1990, Administrative Judge of the Atomic Safety and Licensing Board Panel

Awarded a Medal in honor of Gabriel Narutowicz, Professor of Water Engineering of the University of Zurich, and the First President of the Republic of Poland. This medal is awarded for distinguished service to Environmental Science and Engineering by the Institute of Meteorology and Water Management. Warsaw, September 25, 1991

Award of Special Recognition in appreciation of contribution of expertise and support to the Pennsylvania Technical Assistance Program (PENNTAP), October 31, 1997

M. King Hubbert Award. Presented to a person who has made a major scientific or engineering contribution to the knowledge of ground water through research, technical papers, teaching, and/or practical applications. Presented during the National Ground Water Association National Convention and Exposition, Las Vegas Convention Center, December 14, 1998

Honors and Awards (Continued)

Richard R. Parizek Graduate Fellowship in Hydrogeology, Department of Geosciences, The Pennsylvania State University, established by Ronald A. and Joyce Landon and Family Foundation in recognition of Richard R. Parizek's outstanding academic career, June 1999. This Graduate Fellowship in Hydrogeology was fully vested during summer 2003 through generous donations from Mr. and Mrs. Ronald A. Landon and Family and more than 63 Graduates and Friends of the Department of Geosciences.

Richard R. Parizek Endowment for Fellowship, Field Studies in Geosciences. First contribution 2005; Vested by 2007.

Award for Distinguished Service in Hydrogeology. Presented by the Hydrogeology Division, The Geological Society of America, Denver, Colorado, October 26, 1999

C.V. Theis Award Presented by the American Institute of Hydrology, the Society for Registered/Certified Hydrologists and Hydrogeologists. Presented at the 20th Anniversary and Annual Meeting (Hydrologic Science: Challenges for the 21st Century), Bloomington, MN, in recognition of his many contributions to hydrology, October 14-17, 2001

Robert E. Umbaugh Distinguished Lecturer 2002 DuBois Campus, The Pennsylvania State University

Michel T. Halbouty Award and Distinguished Lecture "Coal v Nuclear Energy: Hydrogeologic Perspectives" the Geological Society of America, Geoscience in a Changing World, Annual Meeting and Exposition, Denver, CO, Monday, November 8, 2004

Over 40 Years of Influence in Environmental Hydrogeology: In Honor of Dick Parizek, I. Session No. 134-1 through 13, pp. 322-324, and II. Session No. 165-1 through 9, pp 388-389, Hydrogeology Division, the Geological Society of America Geoscience in a Changing World, Annual Meeting and Exposition, Denver, CO, November 7-19, 2004, Abstracts with Programs Vol. 36, No. 5

Wilson Award for Outstanding Service, College of Earth and Mineral Sciences, April 30, 2006

St. Photios Award, presented by Metropolitan Savas, Greek Orthodox Metropolis of Pittsburgh, April 22, 2017

Spring Creek Watershed Commission Distinguished Watershed Mentor Award proudly Presented to Dr. Richard R. Parizek, December 28, 2022

National Academy of Sciences (National Research Council)

National Academy of Science/National Research Council Panel Member, Waste Isolation Pilot Plant (WIPP), Committee on Radioactive Waste Management (The National Academy of Sciences), to evaluate U.S. project to store TRU and high level radioactive wastes in bedded salt near Carlsbad, NM, 1978-84

Member, Ad Hoc Committee, Planning Session on Surface Mining for Coal and Protection of Aquifers, National Research Council (The National Academy of Sciences), 1978

Panel Member, KBS-2, Committee on Radioactive Waste Management (The National Academy of Sciences), to evaluate Swedish Govt.'s plan to store high level radioactive wastes in granite repositories, 1979-80

Panel Member, Study of the Isolation System for Geologic Disposal of Radioactive Waste (Waste Isolation Systems Panel or WISP), Committee on Radioactive Waste Management (The National Academy of Sciences), 1980-82

National Academy of Sciences (National Research Council) (Continued)

Member, Ad Hoc Committee on the Geological Aspects of Industrial Waste Disposal, Office of Earth Science, Assembly of Mathematical and Physical Sciences, National Research Council (The National Academy of Sciences), 1981

Member, Geological Sciences Board, Assembly of Mathematical and Physical Sciences, National Research Council (National Academy of Sciences), 1981-82

Report Reviewer Appointed by National Research Council Report Review Committee. "Risk and Decisions About Disposition of Transuranic and High-Level Radioactive Waste" Committee on Risk-Based Approaches for Disposition of Transuranic and High-Level Radioactive Waste, Board on Radioactive Waste Management, Division on Earth and Life Sciences, National Research Council of the National Academies, 215 pp

United States Government

Visiting Scientist, Radiohydrology Branch, U.S. Geological Survey, Denver Federal Center, 1978

Dell City, TX, Floodwater-Groundwater Recharge Project, U.S. Department of Agriculture

Lecturer, Groundwater Short Courses, Engineering Geologists, U.S. Department of Agriculture, Black Hills, SD, Savannah, GA

Love Canal Litigation Team, U.S. Dept. of Justice, 1983-85

Lecturer, Special Topics on Fracture Flow, U.S. Geological Survey Training Branch, Denver, CO, 1985, 1986

Member, Salt Modeling Task Force, Office of Nuclear Waste Isolation, Columbus, Ohio, 1985

Evaluation Panel, Earth Sciences Division, Lawrence Berkeley Laboratory, Berkeley, California

Consultant, Mine Water to Heat Pump Demonstration Study, A.E. Peters Architect, Scranton, PA, Argonne National Laboratory, Argonne, IL

Consultant, West Valley Demonstration Project, Hydrogeologic Study Needs, Oak Ridge National Laboratory, Oak Ridge, TN

Administrative Law Judge, Atomic Safety and Licensing Board Panel, U.S. Nuclear Regulatory Commission, Washington, D.C., 1990-97

Annual Meeting and Workshop, Administrative Law Judge, Atomic Safety and Licensing Board Panel, 1990, Bethesda, MD; 1991, Reno, NV; 1992 Philadelphia, PA; 1994, Chicago, IL; 1995, Bethesda MD; 1996, Atlanta, GA

Butler Tunnel Litigation Team, Wilkes-Barre, PA, U.S. Dept. of Justice, 1993-96

Parizek, R.R., Lecturer, Application of AS/SVE in fractured media. Third Strategic Technology Exchange Workshop (STEW III), U.S. Env. Protection Agency Region III, July 11-13, 1994, Valley Forge, PA

Training: Standards of Ethical Conduct for Employees of the Executive Branch and the Summary of Ethical Requirements Applicable to Special Government Employees: 1990 through 1995; 1997 through 2004

Consultant, U.S. Nuclear Waste Technical Review Board, Arlington, VA, 1995-1997

United States Government (Continued)

Appointed Board Member, U.S. Nuclear Waste Technical Review Board, by President William J. Clinton, Arlington, VA, 1997-2000

Re-appointed Board Member, U.S. Nuclear Waste Technical Review Board, by President William J. Clinton, Arlington, VA, 2001-2004

Member of the Site Characterization and Total System Performance Assessment Panels, U.S. Nuclear Waste Technical Review Board, Arlington, VA, 1997-2003

Chairman, Panel on the Natural System, U.S. Nuclear Waste Technical Review Board, Arlington, VA, February 11, 2003- September 10, 2004

Member, Panel on Repository System Performance and Integration, U.S. Nuclear Technical Review Board, Arlington, VA, February 11, 2003- September 10, 2004

Workshop and Short Course on Fracture Trace- and Lineament-Related Structures and their Applications to Groundwater Exploratory and Related Geotechnical Projects. U.S. Army Corps of Engineers, Humphreys Engineering Center Special Activities, Fort Belvoir, VA, R.R. Parizek and D.P. Gold, Instructors, Including one day field trip

Frequent site visits, Yucca Mountain Underground ECBM and cross-drift studies facilities, Death Valley Regional Groundwater Basin, and national laboratories, 1997-2004

Site visit, Waste Isolation Pilot Plant (WIPP), Carlsbad, NM, 1978-1984; 1998

Site visit, Idaho National Engineering Laboratory, Idaho Falls, ID 2000

Natural Systems Panel Meeting, Flow and transport within the unsaturated zones (UZ) and saturated zone (SZ) under isothermal conditions, Yucca Mountain, NV, R.R. Parizek, Chairman, Las Vegas, NV, March 9-1, 2004

Panel Member Natural Barrier Thrust Area U.S. DOE's Office of Civilian Radioactive Waste Management (OCRWM), Office of Science and Technology Program. Evaluation and recommendation of projects to be funded by OCRWM's OST&I Program to support the Yucca Mountain Mission. January 1, 2005 to September 10, 2007

Workshop and Short Course on Fracture Trace- and Lineament-Related Structures and their Applications to Groundwater Exploratory and Related Geotechnical Projects. U.S. Army Corps of Engineers, Humphreys Engineering Center Special Activities, Fort Belvoir, VA, R.R. Parizek and D.P. Gold, Instructors, Including one day field trip

Parizek, R.R., Testimony presented before the U.S. Nuclear Waste Technical Review Board Meeting, U.S. DOE West Valley Demonstration Project, Lawrenceville and West Valley, N.Y., April 27-28, 2011

Parizek, R.R., Panelist and Session Organizer with C.M. Newbury and A.M. Simmons, Special Session No. 73: The Past Yucca Mountain Project-Advancing Science and Technology for the Future: Was It Worth the Cost? Abstract with Programs, Vol. 43, No. 5, p 196-197, Minneapolis, Minnesota, October 9-12, 2011

International Activities

U.S. Delegate, Institute de la Vie, On a Plan for Humanity, Paris, France, 1976

Pennsylvania's Representative, Land Drainage Activities Ref. Group (PLUARG) Int'l. Joint Commission's Study of Great Lakes Pollution (U.S. and Canada Water Quality Agreement, 1972), 1972-80

International Activities (Continued)

U.S. Chairman, TASK A (Definition of state of knowledge of pollution from land use activities; definition of research needs, early action recommendations, evaluation of technical methods to cope with pollution problems, costs and social implications for their adoption, Pollution from Land Use Activities Ref. Group (PLUARG), Int'l Joint Commission, 1973-1980

Technical Advisor, Public Info. Program and Pennsylvania's Public Panel, Pollution from Land Use Activities Reference Group (PLUARG), Int'l Joint Commission, 1977-78

Testimony before the International Joint Commission's Hearing on the Pollution from Land Use Activities Reference Group (PLUARG, Final Report, Buffalo, NY; Cleveland, OH; Chicago, IL), 1978

United Nation's Development Project, Strengthening DSI Ground Water Investigative Capability, State Hydraulic Works (Ankara, Turkey), 1979

Environmental Consultant, Provincia di Roma and City of Rome, Italy, 1979

Panel Member, KBS-2, Committee on Radioactive Waste Management, National Research Council (The National Academy of Sciences), to evaluate Swedish Govt.'s plan to store high level, 1979-80

Visiting Scholar, Lectures to Changchun College of Geology, Changchun, and The Institute of Karst Geology, Guilin, Peoples Republic of China, 1985

Invited participant, First USA/USSR Joint Conference on Environmental Hydrology and Hydrogeology, American Institute of Hydrology and Leningrad Mining Institute and Institute of Water Problems, USSR Academy of Sciences, Leningrad, USSR, June 18-21, 1990

Delegate to Water Resources Management and Water Pollution Control: Perspectives from Poland and United States, Institute of Meteorology and Water Management, Warsaw, Poland, and Environmental Resources Research Institute of the Pennsylvania State University, University Park, PA, September 22-25, 1991, Warsaw, Poland. Department of Water Management, Podlesna 61, Warsaw 01-673, Poland

Invited Visiting Scientist, to assist the Radiohydroecogeological Center, Ukrainian Academy of Sciences in their review and analysis of the Chernobyl fallout problem, plans and programs for remediation and the geologic isolation of high-level radioactive wastes

USAID delegate of a six-man team to investigate the needs and opportunities for privatization of an environmental geological firm in the Ukraine, June 17-July 20, 1993. Invited speaker, July 1994

Visiting Professor, National Cheng Kung University, Tainan, Taiwan, Republic of China, July 24-August 8, 1996. Hydrogeologic Characterization of Complex Hydrogeologic Terrains

NWTRB site visit, Pinawa, Manitoba, to review The Canadian Nuclear Waste Isolation Program and Underground Granite Laboratory, Fall 1997

NWTRB site visit and review, Swedish Program for Nuclear Waste Isolation, Svensk Kärnbränslehantering AB (SKB) Copper Canister Design and Manufacturing, Interim Waste Storage Facility, Äspö Hard Rock Laboratory, Oskarhamn's activities related to spent nuclear fuel, May 3-5, 1998

NWTRB site visit and review, Finland's Program for Nuclear Waste Isolation within a granite repository, Posiva's Loviisa interim waste storage facility and low level radioactive waste storage facility at Hästholmen, May 7-8, 1998

International Activities (Continued)

NWTRB site visit, Republic of Germany, CASTOR-Cast Manufacturing Center, Ahaus SF interim waste storage building, nonheat generating waste disposal site in the Asse and Morsleben Salt Mines, Gorleben pilot conditioning plant, Gorbelen interim storage facility, and Gorbelen salt dome site characterization program, June 6-12, 1998

Needs Assessment and Opportunities for the Alcoa Foundation Proposed Chair in Hydrogeology/Water Resources Management, University of the West Indies. With Dr. Rafael G. Quimpo, Prof. and Chair, Dept. of Civil Engineering, University of Pittsburgh, PA, Aug.-Nov. 1998

Member, U.S. Nuclear Waste Technical Review Board, and Chair of the delegation to review the People's Republic of China's plans and programs for the disposal of nuclear weapons and reactor fuel within a mined geological repository within granite. Meetings with Beijing Research Institute of Geology, China's Environmental Protection Agency, and the China National Nuclear Corporation. Site inspection of the proposed Beishan Site, Gansu Province, People's Republic of China. October 2-13, 1999

Parizek, R.R., S.S. Alexander, D.P. Gold and E.J. Walters, 1999 to present, Member of a Joint U.S. Pennsylvania State University-Egypt Geological Survey and Mining Authority, study team concerned with hydrogeologic characterization and preservation of the Hieronkopolis Temple-Town Archeological Site, near Edfu, and other ancient antiquities in Egypt

Site visit, Dublin Port Tunnel Project, Port Authority, Dublin, Ireland, June 27-30, 2001

NWTRB site visit, Mount Terri Tunnel research site, Nagra Radioactive Waste Storage and Reduction Facility and, Grimsel Hard Rock Laboratory, Switzerland, July 9-12, 2001

NWTRB site visit, update of Germany's High Level Radioactive Waste Isolation Program, Presentations and discussions with the committee responsible for rethinking the nation's waste management strategy, Berlin, Germany, July 16-17, 2001

NWTRB site visit, Review of all aspects of Japan's Nuclear Waste Management Program with: Ministry of Economy, Trade, and Industry (METI); Nuclear Energy Policy, Planning Division, Tokai Works; Agency for Natural Resources and Energy (ANRE); Nuclear and Industry Safety Agency (NISA); Nuclear Waste Management Organization of Japan (NUMO); Japan Nuclear Cycle Development Institute (JNC), Tokai Facility; Radioactive Waste Funding and Research Center (RWMC); Tono Geoscience Center and Nizunami URL construction site, JNC (invited lecture by R.R. Parizek. Current status of Japan Nuclear Fuel Limited Facilities (JNFL) uranium enrichment plant, low-level radioactive waste disposal center, vitrified waste storage center, spent fuel receiving and storage facility, reprocessing plant, mox fuel fabrication plant planning, U.S. Embassy, Tokyo, Tokai-mura, Ibaraki, Rakkasho-mura, Tajimi, and Nizunami, October 20-27, 2001

Clays In Natural and Engineered Barriers For Radioactive Waste Confinement. International Meeting, Reims, France, December 9-12, 2002

Visit to the French Bure Clay Field Research Laboratory, December 13, 2002

NWTRB site visits, Nopol ore body in the Peña Blanca uranium district analogue site, Natural analog for performance assessment for geologic disposal of nuclear wastes within an oxidizing environment, Chihuahua State, Mexico, May 20-23, 2001; May 18-20, 2003

MRS 2003, Scientific Basis for Nuclear Waste Management XXVII, International Meeting, Kalmar, Sweden, June 15-18, 2003

Site visit, Svensk Kärnbränslehantering AB (SKB) Canister Laboratory, Cooper Canister Welding Options and non-destructive testing methods. Oskarshamn, Sweden, June 19, 2003

International Activities (Continued)

Site visit, Äspö Hard Rock Research Laboratory, Äspö, Sweden, June 19, 2003

Invited Participant NANet International Workshop Natural Analogues: their Application to Repository Safety Assessment and Stakeholder Communication, Château de Cadarache, France, May 12-13, 2004

White Papers and Reports Submitted to the Supreme Council of Antiquities, Zahi Hawass, Secretary General, Zalmalek, Cairo, Egypt

Parizek, R.R., 2001, Options For Controlling Groundwater at Edfu, Esna, and other Antiquities In the Nile Valley, Egypt, White Paper, 37 pp

Parizek, R.R., A. El-Gohary, K.A. Parizek, E.J. Walters, D.P. Gold and S.S. Alexander, 2005, Preservation of Old Mudbrick “Fort”, South of the Temple-Town Hierakonpolis Site Wadi Abu Sufian, Egypt, 28 pp

Parizek, R.R., 2005, Hydrogeologic Trip and Phase I Report. Submitted to Frontera Resources Eastern Georgia, Tbilisi, Georgia, 47 pp

Parizek, R.R., 2006, New Evidence for a Rising Water Table at the Old Mudbrick “Fort”, Wadi Abu Sufian, Hierakonpolis; Need for Early Action to Protect the “Fort”. Letter submitted to Dr. Zahi Hawass, Secretary General, Supreme Council of Antiquities, Zalmalak, Cairo, Egypt

Parizek, R.R., U. Zvizdadze, R. Spiller, M. Pilson, T. Thoem, M. Burjanadze, Z. Gaganidze, B. Glonti, K.A. Parizek and M. Mardashova, 2008, Block XII Regional Hydrogeologic Foundation Report, Prepared For Frontera Eastern Georgia Limited, Tbilisi, Georgia, Submitted to State Agencies, Republic of Georgia, 2008, 172 pp

Parizek, K.A., and R.R. Parizek, Photographic documentation of tomb interior, mapping of joints, fracture zones and faults, related damage to tombs and locations, Valley of Kings, Egypt

Parizek, R.R., (Head of Mission), J.S. Westerman, B. Issawi and A.M. Azziz Moneim. Excavation and Hydrogeologic Investigations within the Osireion, Abydos, Egypt. January 2008-2016

Parizek, R.R., 2018, Invited speaker and participant International Course and Field Seminar: Characterization and Engineering of Karst Aquifers, Zabljak-Durmitor Mt., Virpazar-Skadar Lake in Montenegro, and in Trebinje, Bosnia and Herzegovina, June 1-6, 2018

Parizek, R.R., 2018, Invited Lecture. Appalachian Karst Characterization and Engineering of Karst Aquifers, June 2-6, 2018; Keynote address, International Symposium Karst 2018, Expect the Unexpected June 6-9, 2018, Trebinje, Bosnia & Herzegovina. In recognition of Petar T. Milanovic's 80th Birthday. Hydro Power Plant Dabar, University of Belgrade, Faculty of Mining and Geology, Centre for Karst Hydrogeology of the Department of Hydrogeology in Partnership IAH Karst Commission and Geological Survey Republic of Srpska

State Government

Member, Project KETCH Safety Concept, Appointed by Honorable Clifford Jones, Secretary of Commerce, Advisory Committee on Advisory Comm. on Atomic Energy Development and Radiation Control, Commonwealth of Pennsylvania, Review of U.S. Atomic Energy Commission and Columbia Gas Corp. joint proposal to store natural gas in nuclear device-induced rubble chimneys, Sproul State Forest, PA, N.J. Palladio, Chairman, S.S. Alexander, E.C. Barnes, H.L. Hartmand and R.R. Parizek, 1966-1968

Member, Subcommittee on Geologic Hazards of Pennsylvania, 1961-1962

State Government (Continued)

Member, Task Force on the Use of Abandoned Strip Mines for Solid Waste Disposal, Pa. Dept. of Health, Bureau of Housing and Env. Control, 1961-1963

Study of low level radioactive waste disposal needs for the Commonwealth of Pennsylvania, Pennsylvania Dept. of Commerce, 1964-1967

Site selection for a potential nuclear fuel reprocessing plant and radioactive waste disposal, Commonwealth of Pennsylvania, Dept. of Commerce, 1967-1968

Lectures before the Ground Water Short Course for State Employees, Harrisburg Area Community College, Harrisburg, PA

Examiner, Pennsylvania Civil Service Commission, 1974-1978

Member, Peer Review Panel, Hazardous and Toxic Substance Management in New Jersey, Governor's Commission on Science and Technology, 1983-85

Advisory Member, Acid Mine Drainage Task Force, State of West Virginia, 1983-1985

Royal Hartage Bedrock Advisory Panel and Litigation Team, Superfund Project, Criner, OK, 1987-1990

Short Course on Remote Sensing and Photography Applied to Hydrogeology, with D.P. Gold, for Maine Department of Natural Resources, Augusta, ME, Feb. 1-4, 1989

Hydraulic Seals Committee Member, House Resolution 39, a joint resolution of The Pennsylvania House of Representatives and Senate, 1989-1991

Member, Hydrogeologic Investigative Team, to evaluate subsidence and hydrologic impacts of the proposed Meridian Minerals, Longwall Coal Mine, Bull Mountains, MT. Appointed by the State of Montana, Department of State Lands (DSL) in cooperation with the U.S. Office of Surface Mining Reclamation and Enforcement (OSM)

Seneca Falls Geotechnical Engineering Session, Soil Bureau of the New York State Department of Transportation (NYSDOT) and New York State Electric and Gas Corporation (NYSEG) Binghamton, NY, September 4-5, 1991, Waterloo, New York

Invited lecture Droughts: getting ahead of the curve, Environmental Issues Forum, Joint Conservation Committee, The Joint Legislative Air and Water Pollution Control and Conservation Committee, Harrisburg, PA, September 24, 2002, Hearing Room No 1, North Office Building, Capitol Complex

Briefing with Arthur Rose to State Legislative Committee concerned with I-99 Acid Rock Drainage (ARD) April 29, 2004

Member, Stockertown Sinkhole Interagency Task Force, U.S. Army Corps of Engineers (USACE), PENN DOT, PA DEP, PA DCNR, and USGS. Appointed by PA DEP January 1, 2005 to 2007. These state and federal agencies have been charged with the tasks of resolving the sinkhole problems in a critical area delineated near Stockertown, PA. Sinkholes adjacent to the Hercules Cement Co. Quarry have resulted in the destruction of Route 33 bridge, its reconstruction and subsequent continued settlement, destruction of the 2017 bridge, inflow of Bushkill and Little Bushkill Creeks into swallow holes and destruction of private property.

State Government (Continued)

I-99 Acid Rock Drainage Remediation Measures. Unsolicited. Independent analysis of Acid Rock Drainage Migration and Mitigation Measures proposed by PennDOT, their consultants and PA DEP to address problems encountered at Skytop, Centre County PA. 2004-2009. Reports submitted to PA Fish and Boat Commission, PA DEP, PennDOT, Patton Township Supervisors and Engineers, Clearwater Conservancy and others.

Shell Appalachia-Upstream Americas, U.S.G.S., PADEP, Stray Gas Mitigation and Groundwater Protection in Marcellus Development Wells, Tioga County, PA. Wednesday, September 21, 2011

DEP's Gas Industry Second Workshop (Invited) "Deepest Fresh Groundwater" Eugene W. Pine, P.G. Coordinator, Environmental Program Manager, PADEP, Ramada Inn, State College, PA October 5-6, 2011

Gaudlip, J.W., Y.C. Chen, H.A. Elliott, H. Lin, J. Loughran, R.R. Parizek and J. Swanderski, 2012. Penn State's Living Filter-Wastewater Recycling Supported by Scientific Research: A 50-Year Anniversary, Pennsylvania Water Environment Association Penn Tec 2012, 84th Annual Technical Conference & Exhibition. Penn State Conference Center Hotel, June 3-6, 2012

Parizek, R.R., Field Trip Leader, Glacial Processes, Tioga Co. PA, October 26, 2012, Shell Appalachia and others as part of an extended Devonian Black Shales trip conducted by M. Arthur, R. Slingerland and others, October 23-28, 2011

2016-Present Appointed Member Pennsylvania Grade Crude Development Advisory Council by Tom Wolf, Governor Commonwealth of Pennsylvania. Appointed October 25, 2016. Member Subcommittee Abandoned Wells and Subcommittee on Produced Water

Other Interests

Advisor on water supply and protection, waste disposal, stormwater, sinkholes, foundation structural stability, Div. of Design and Construction, Maintenance and Utilities; presently Engineering Services, Office of Physical Plant, The Pennsylvania State University, 1961-Present

Private Consultant, hydrogeologic, environmental, foundation and mining related problems for private individuals, corporations, municipalities, state, federal and international governments, 1961-Present

Invited Lecturer, Pennsylvania Water Well Contractor's Association, 1962-1980

Numerous contributions to "State of the Weather Shape of the Earth," Channel 3 WPSX Television and to "Penntap," 1965-1967

Penrose Conference on Aquitards, Hydrogeology Div., Geol. Soc. of America, Asilmore, CA, 1971

Program Chairman, Annual Mtg., Hydrogeology Div., Geology Society of America, 1971

Field Trip Chairman, Annual Mtg., Hydrogeology Div., Geology Society of America, 1971

Visiting Distinguished Lecturer, American Geological Institute, 1971-72

Penrose Conference on Carbonates, Hydrogeology Div., Geo. Soc. of America, Vail, CO

Co-Technical Consultant, "The Living Filter," a color film report of a ten-year experiment in waste water renovation and conservation (First Place Award 1972, Forestry Film Festival, Society of American Foresters), 1972, A Hornbein-Wood Film, Lemont, PA

Other Interests (Continued)

Technical Consultant, "To Water By Air," a color film report on the Fracture Trace Method for Groundwater Prospecting, A Hornbein-Wood Film, Lemont, PA

Registered Professional Geologist, State of Delaware, (No. 213), 1975-1987

Lectures, Course on Ground-Water Hydrology, Susquehanna University with Harrisburg Area Community College, Harrisburg, PA

Co-Chairman, Symposium on Engineering Geology in Karst Terranes, Int'l. Assn. of Engineering Geologists, Hershey, Pa, 1978

LAWWS Program, Land Application Of Waste Water And Sludge, Continuing Education, Coop. Ext. Prog., U.S. Dept. of Agriculture and Institute for Research on Land and Water Resources (video tape and text of hydrological and geological considerations), 1978

1986 Apperson-Hearst Distinguished Lecturer - "On The Environmental Cost of Coal With Suggestions for Remedial Actions". School of Mining Engineering, University of California, Berkeley, California, February 19, 1986

Lectures to the Ground-Water Short Course for the Southern Electric Power Generators Association, with Southern Services Company, Birmingham, Alabama, August 1986

1986 Mayfield Distinguished Lectures, Bowling Green State University Bowling Green, OH
"The Environmental Cost of Coal with Selected Remedial Actions" (Public Lecture)
"Geologic Controls on Karst Aquifer Development" (Departmental Luncheon Seminar)
"On the Nature and Hydrologic Significance of Fracture Trace and Lineament Related Structures" (Workshop)

Satellite Hydrology and Remote Sensing, Short Courses presented for the National Water Well Association. R.R. Parizek, D.P. Gold and others from Satellite Hydrology Corp.

Springfield, MA	1987
Cambridge, MA	May 11-13, 1987
Denver, CO	Aug. 26-28, 1987
San Francisco, CA	Sept. 25-27, 1998
Annapolis, MD	1990

Fracture Traces and Lineament Analysis: Application to Groundwater Resources Characterization and Protection, Short Courses presented for the National Water Well Association, R.R. Parizek and D.P. Gold:

Portland, ME	Aug. 25-27, 1992
University Park, PA	Apr. 18-21, 1994, Keller Conference Center, PSU
University Park, PA	Apr. 3-6, 1995, PSU Conference Center (with Jay Parish)
University Park, PA	Apr. 7-10, 1997, PSU Conference Center
University Park, PA	Mar. 29-Apr. 1, 1999, Penn Stater Conference Center
State College, PA	Apr. 24-27, 2001 Days Inn Conference Center
University Park, PA	Nov. 5-8, 2002, Penn State Conference Center
University Park, PA	Nov. 2-5, 2004, Penn State Conference Center
University Park, PA	Oct. 9-12, 2006, Penn State Conference Center
University Park, PA	April 7-10, 2008, Penn State Conference Center
University Park, PA	Nov. 9-12, 2009, Penn State Conference Center
University Park, PA	Apr. 2010, Penn State Conference Center
University Park, PA	Oct. 15-18, 2012 Penn State Conference Center
University Park, PA	2014 Penn State Conference Center
University Park, PA	Oct. 3-6, 2016 Penn State Conference Center
University Park, PA	Oct. 29- Nov. 1, 2018 Penn State Conference Center

Other Interests (Continued)

Distinguished Seminar Series on Ground Water Science, "Karst: A Systems Approach for Fun and Profit," The National Water Well Association, 1987

Geology Spring Visiting Lecture Series, Short Course: Principles of Hydrogeology as Revealed in Case Studies, Geology Department, University of Vermont, March 24-25, 1988

Keynote Address, Pennsylvania Academy of Science Annual Dinner, Seven Springs, PA, April 15, 1988

Lectures to the New Eastern Electrical Power Generators Association, with Southern Services Corp., Birmingham, AL, and Dunn Geosciences, Camp Hill, PA, 1988

President, Richard R. Parizek and Associates, Consulting Hydrogeologists and Environmental Geologists, 1989 to Present

Opinion Writing, Twenty-Fifth Annual Meeting of the Atomic Safety and Licensing Board Panel, The National Judicial College, American Bar Association, The University of Nevada, Reno, NV, October 6-11, 1991

Protection of Water Resources, Short Courses Offered for Certification of Golf Course Superintendents, Golf Course Superintendents Association of America, Lawrence, KS, S. Harrison and R.R. Parizek, Instructors:

Illinois Regional Chapter, Saint Charles, IL, 1991

62nd International Golf Course Conference and Show, Las Vegas, NV, March 1991

Ontario Regional Chapter, Toronto, Ontario, Canada, Oct. 9-10, 1991

63rd International Golf Course Conference and Show, New Orleans Convention Center, New Orleans, LA, Feb. 10-17, 1992

Texas Regional Meeting, San Antonio, TX, Dec. 10-11, 1993

64th International Golf Course Conference and Show, Dallas, TX, Jan 31-Feb. 3, 1994

Michigan Regional Meeting, Gaylord, MI, Feb. 23-23, 1994

Hawaiian Regional Meeting, Honolulu, HI, July 21-22, 1994

Georgia Regional Meeting, Atlanta, GA, Jan. 5-6, 1995

65th International Golf Course Conference and Show, San Francisco, CA, Feb. 22-24, 1995

California Regional Meeting, San Diego, CA, Jan. 1996

66th International Golf Course Conference and Show, Orlando, FL, Feb. 7-9, 1996

New Miner Trainer, Mine Safety Class and Certification, instructors: J. Flick, Director of Field Services and M. Rudosky, PA Dept. of Labor, Mine Safety, University Park, PA, June 10-11, 1993

Water Quality Issues Committee, College of Agriculture, The Pennsylvania State University 1993-present

Parizek, R.R., Organizer and Instructor, Fracture Tracer and Lineament Analysis Workshop including Gahana Remote Sensing Project, Desert Research Institute University of Nevada System, Las Vegas and Reno, NV, January 5-7, 1994, Las Vegas, NV

Registered Professional Geologist, Department of State Bureau of Professional and Occupational Affairs, Commonwealth of Pennsylvania, License Number PG-002873-G, 1995-Present

Listed as an Honored Professional in the nationwide Register's Who's Who in Executives and Businesses, 2002 edition

Organized Program Geoarcheology Special Session T-2, Nature, Effects and Control of Groundwater at Archeological Sites, Annual Meeting, Geological Society of America, Denver, CO, October 27-30, 2002 with D.P. Gold

RESEARCH

Research Interests

Hydrogeology of karst, fractured-rock dominated and glaciated terranes; geological controls on the porosity and permeability distribution within these terranes, factors controlling ground-water occurrence and movement, exploration and development of water and the sustained-yield analysis of wells, well fields and aquifer systems together with water quality protection. Surface water-groundwater interactions, physical and chemical controls

Hydrogeology of coal bearing strata, impact of surface and deep coal mines on the environmental setting, application of hydrogeological and geochemical principles to abatement of pollution from mine drainage, pre-mine planning, and mine restoration

Relationship between land use and ground-water pollution resulting from sanitary landfills, highways, nuclear waste disposal, land treatment of municipal waste water and sludges, and other industrial wastes. Geology applied to land planning

Hydrogeologic characterization of archeological sites to preserve Ancient Egyptian Antiquities From rising water levels and accumulation of evaporite salts (Hieronkopolis Temple Town, Ancient Mudbrick "Fort". Unfinished Aswan Oblisque Quarry, Osireion, Abydos, Egypt)

Hydrogeologic characterization and photographic documentation of Tombs within the Valley of Kings and Queens, Luxor, Egypt with K.A. Parizek, Assistant Prof. Integrative Arts, The Pennsylvania State University, University Park, PA

Funded Research

Funding agencies and other sources included, among others:

Center County Soil and Water Conservation District
Central Fund for Research, Pennsylvania State University
Mineral Conservation Section, College of Earth & Mineral Sciences
Office of Vice President for Research, Pennsylvania State University
Institute for Research on Land and Water Resources
Pennsylvania Department of Commerce
Pennsylvania Department of Environmental Resources
Pennsylvania Department of Health (Former name)
Pennsylvania Department of Transportation
Office of Surface Mining, U.S. Department of Interior
NASA
Federal Highway Administration
U.S. Department of Agriculture
National Institute of Health
U.S. Department of Interior
U.S. Environmental Protection Agency
U.S. Department of Agriculture, N.E. Pesticide Impact Assessment
U.S. Department of Agriculture, Cooperative Extension Program
U.S. Bureau of Mines
U.S. Bureau of Mines, Generic Center, Reno, Nevada
Nuclear Regulatory Commission
International Joint Commission
Grundy Foundation
Richard King Mellon Foundation
Ben Franklin Partnership
E.I. duPont de Nemours - Savannah River Plant
Westinghouse Corp. - Savannah River Plant
C and K Coal Company
Chesapeake Bay Foundation
Pennsylvania Bureau of Forestry, Pennsylvania Department of Environmental Resources

Pennsylvania Energy Development Association (PEDA)
Johnson Wax "We Care For America Program"
Pennsylvania Bureau of Community Affairs, Pennsylvania Department of Environmental Resources
Al Hamilton Contracting Company
National Mined Land Reclamation Center - Eastern Region
Office of Physical Plant, The Pennsylvania State University
U.S.-Egypt Board on Scientific and Technological Cooperation (NSF)
Pennsylvania Geological and Topographic Survey
James Westerman, Osireion-Seti-I Temple Mission Abydos Egypt
Richard and Estelle Parizek

Notable Accomplishments

Thesis advisor and research supervisor for 100 completed M.S., Ph.D. and DED degrees and 15+ senior theses (1961-2013). These alumni are included among outstanding college/university and secondary school educators; state regulatory and state and federal geological survey officials; U.S. Geological Survey and National Laboratory research hydrologists; owners, principals and staff of hydrogeological consulting firms; contributors/owners of oil and gas companies and more.

Co-developer of the fracture trace and lineament method of groundwater prospecting and related applications with L. H. Lattman, President (Retired), New Mexico Tech, Socorro, NM. This discovery has gained national and international recognition and widespread application when exploring for groundwater, conducting site characterization studies of areas dominated by fracture rock, design of groundwater monitoring programs, pollutant plume cleanup, mine, tunnel, reservoir and other geotechnical projects

Co-developer of the Living Filter Concept, The Pennsylvania State University, University Park, PA, with D.D. Davis, M.A. Farrell, L.T. Kardos, R.R. Kuntz, E.A. Myers, J.S. Nesbitt and W.E. Sopper. Year around treatment of secondary effluent by land application to cropland and forests to enhance groundwater recharge, 1961 to 1967, 1990 to present.

Early proponent for the need for liners to control leachate from sanitary landfills

Factors influencing acid mine drainage formation, use of natural, physical and chemical systems to control acid mine drainage resulting from coal mines with emphasis on passive methods, with E.G. Williams, R. Hornberger, A.W. Rose, S.A. Waters, W. Guo, D.R. Evans and J.L. Morrison

Co-developer of a geological landscape terrane classification system for land planning with M.A. Battaglia and D.R. Jones, Department of Landscape Architecture, The Pennsylvania State University, University Park, PA

Influence of continental glaciers on regional groundwater flow with T.H. Filley, Argonne National Laboratory. A numerical model was developed to investigate the porous v nonporous bed boundary conditions below ice sheets and their consequences to groundwater flow

Lecturer before more than 350 separate colleges, universities, scientific and trade associations in the United States, Canada, Europe, Asia and Africa

Introduction to Hydrogeology, the longest continuing class with the largest enrollment in North and South America, Fall 1961-2007, Spring, Fall 2012, Fall 2013. This class has been offered to nearly 5,000 advanced undergraduate and graduate students. This class is continuing, offered by other faculty members since 2013

Offered the first and longest continuing class in the U.S. on Environmental Geology, Spring 1962-2013

US News and World Report ranked the Hydrogeology Program, Department of Geosciences, The Pennsylvania State University, fourth in the nation, 1998; fifth in 1999; fifth in 2006

Notable Accomplishments (Continued)

Pennsylvania's representative to U.S. Canadian Great Lakes Pollution From Land Use Activities reference Group (PLUARG) Appointed by International Joint Commission. First science and engineering based effort to identify and quantify diffuse sources of pollutants within the Great Lakes, state of knowledge, definition of research needs, early action recommendations, evaluation of technical methods (BMPs) to cope with pollution problems, costs and social implications for their adoption (1972-1979)

Hydrogeologic characterization of Ancient Egyptian Antiquity Sites (Hierakonpolis Temple-Town, Ancient Mudbrick Fort, Aswan Obelisk Quarry, Valley of Kings, Osireion and Seti I Temple, Abydos), evaluation of passive and active measures for controlling rising groundwater and capillary water levels and control of the accumulation of destructive evaporite salts. Evidence that fire was used in the quarrying of obelisks, evidence of a canal used to transport stone from Aswan Quarry, investigation and confirmation of K.A. Parizek's hypothesis that ancient tomb builders used zones of fracture concentration when locating and constructing tombs, need to seal fractures to prevent seepage of flood water into tombs. Head of Mission, Osireion hydrogeologic site characterization and dewatering project, Abydos, Egypt (2008-present)

Nearly 42 years have been dedicated to nuclear energy concerns. Early efforts included a needs assessment for a low level radioactive waste burial ground to meet Pennsylvania's requirements, possible siting of a nuclear fuel reprocessing plant and associated high-intermediate- and low-level radioactive waste isolation facility in Pennsylvania, and as a member of the project KETCH safety committee to provide independent oversight of AEC- Columbia Gas proposal to create rubble chimneys in which to store natural gas in Pennsylvania using nuclear devices. Parizek provided oversight for 8 years as a member of the NRC/NAS's Waste Isolation Pilot Plant (WIPP) where TRU wastes were to be stored in bedded salt near Carlsbad, NM. This facility is now an operating nuclear waste isolation facility for non-heart generating transuranic radioactive wastes. He served as a NRC/NAS KBS II panel member to review Sweden's plan to store high level radioactive wastes in a mined granite repository. As a member of the US Waste Isolation Systems Panel (WISP), he contributed to the review of all aspects of DOE's high level radioactive waste management plan: from the source of wastes, its transportation, to underground emplacement in a mined geological repository at one of up to nine sites under study. He served as an Administrative Law Judge (Atomic Safety and Licensing Board Panel) for the Nuclear Regulatory Commission.

Concurrently, he served nearly 2 years as an unpaid consultant to the Nuclear Waste Technical Review Board (NWTRB) created by Congress to provide independent oversight of US. DOE's program to develop a mined geologic repository to store high-level radioactive wastes in Yucca Mountain, Nevada. This led to two, four-year appointments as a board member by President William J. Clinton. During this period, DOE has met many important milestones including the development of an underground exploratory- studies facility, cross-drift exploratory tunnel, issuance of a DEIS, EIS, site recommendation to and from the Secretary of Energy, acceptance of the site recommendation by President Bush and by Congress. A total systems performance assessment (TSPA) was performed in anticipation of a December 2004 license application submission to the Nuclear Regulatory Commission (NRC). In February 2003, Parizek was appointed chairman of the Board's Natural Systems panel. During his tenure, he visited and was briefed by nuclear waste isolation programs in Canada, Germany, Sweden, Finland, Switzerland, Peoples Republic of China, Taiwan and Japan

He was invited to review the Chernobyl Power Station accident, its impacts on the surrounding hydrogeologic setting and ongoing field studies being conducted in the Ukraine. He served as a 6 member U.S. AID sponsored investigative team related to this power plant disaster, 1991-1992

PUBLICATIONS AND TECHNICAL COMPLETION REPORTS

- Pryor, W.A., G.B. Maxey, and R.R. Parizek, 1956, Sources of groundwater for water flooding in Illinois, *Ill. Geol Survey Bull.*, v. 80, pp. 51-76
- Parizek, R.R., 1957, Source and occurrence of brines for water flooding in Illinois, *Trans. of Ill. State Academy of Science*, v. 50, pp. 180-186
- Christiansen, E.A., and R.R. Parizek, 1961, A summary of studies completed to date of the groundwater geology and hydrology of the buried Missouri and Yellowstone Valleys near Estevan, Saskatchewan, Saskatchewan Research Council Geol. Div., Cir. 1, 31 pp
- Parizek, R.R., 1961, Glacial geology of the Willow Bunch Lake area, Ph.D. dissertation, Dept. of Geology, University of Illinois, Urbana, IL, 206 pp
- Parizek, R.R., 1962, U.S. Senate, Water resources research memorandum of the Chairman to the Committee on Interior and Insular Affairs, Summary of Activities in Hydrogeology-Mineral Conservation and Department of Geology, The Pennsylvania State University, pp. 285-288 (Committee Print of 87th Congress, 2nd Session)
- Parizek, R.R., 1963, Development of the hydrologic cycle concept and our challenge in the 20th Century, *Mineral Industries Bull.*, v. 32, no. 7, 8 pp
- Osborn, E.F., 1963, Statement of Dr. E.F. Osborn, Vice President for Research, The Pennsylvania State University (prepared by R.R. Parizek), Scientific and Engineering Research Needs: Hearings before Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives 88th Congress, 1st Section, Serial No. 9 - Part II (Public Witness) pp. 8-13
- Lattman, L.H., and R.R. Parizek, 1964, Relationship between fracture traces and the occurrence of ground water in carbonate rocks, *J. of Hydrology*, v. 2, no. 2, pp. 73-96
- Parizek, R.R., 1964, Geology of the Willow Bunch Lake area (72-H) Saskatchewan, Saskatchewan Research Council, Geol. Div., no. 4, 47 pp
- Remick, F.J., R.R. Parizek, and E.G. Williams, 1964, Survey of need for a waste burial facility in Pennsylvania including: geologic and hydrologic evaluation of proposed sites for burial of solid radioactive wastes in Pennsylvania. PA Dept. of Commerce, Harrisburg, PA
- Parizek, R.R., and L.J. Drew, 1966, Random drilling for water in carbonate rocks, Proc. of Symp. and Short Course on Computers and Operations Research in Mineral Industries (Mineral Ind. Exp. Station, The Pennsylvania State Univ.), Special Pub. 2-65, v. 3, pp. 1-22
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- Palladino, N.J., S.S. Alexander, E.C. Barnes, H.L. Hartman and R.R. Parizek, 1967, Review of Phase I of "Project Ketch Safety Concept", Report Submitted to Clifford Jones, Secretary of Commerce, Chairman, Advisory Committee on Atomic Energy Development and Radiation Control, Commonwealth of Pennsylvania, Harrisburg, July 31, 1967, 19 pp
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- Dutcher, R.R., E.B. Jones, H.L. Lovell, R.R. Parizek, and R. Stefanko, 1967, Mine drainage part II: The hydrogeologic setting, *Mineral Industries*, v. 36, no. 4, pp. 1-7

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- Carrucio, F.T., and R.R. Parizek, 1967, An evaluation of factors influencing acid mine drainage production from various strata of the Allegheny group and the ground water interactions in selected areas of western Pennsylvania, The Coal Research Board, Commonwealth of Pennsylvania, Spec. Research Report SR-65, 213 pp
- Parizek, R.R., 1967, Strike-dip indicator, *J. of Sed. Petrol.*, v. 37, no. 4, p. 1249-1250
- Marsh, C.R., and R.R. Parizek, 1968, Induction-tuned method to determine casing lengths in hydrogeologic investigations, *Ground Water*, v. 6, no. 6, pp. 17-23
- Parizek, R.R., G.C. Geisler, and F.T. Caruccio, 1968, Suitability of Pennsylvania regions for nuclear fuel reprocessing and radioactive waste disposal, Report to the Pennsylvania Dept. of Commerce, Harrisburg, PA, 158 pp
- Lane, B.E., and R.R. Parizek, 1969, Leachate movement in the sub-soil beneath a sanitary landfill trench traced by means of suction lysimeters, *Proc. Second Mid-Atlantic Waste Conference* (Drexel Inst. of Tech.), pp. 261-277
- Parizek, R.R., and E.A. Myers, 1969, Recharge of ground water from renovated sewage effluent by spray irrigation, *Proc. 4th Am. Water Res. Conf.*, v. 6, pp. 426-443
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- Siddiqui, S.H., and R.R. Parizek, 1971, Evaluation of measurement errors by repeated pumping tests, *J. of Hydrology*, v. 13, no. 2, pp. 182-191
- Siddiqui, S.H., and R.R. Parizek, 1971, Hydrogeologic factors influencing well yields in folded and faulted carbonate rocks in central Pennsylvania, *Water Resources Res.*, v. 7, no. 5, pp. 1295-1312
- Parizek, R.R., W.B. White, and D. Langmuir, 1971, Hydrogeology and geochemistry of carbonate rocks of the central Appalachian type: *Guidebook, Annual Mtg. of Geol. Soc. of America* (Washington, D.C.), and *Mineral Conservation Section*, The Pennsylvania State Univ., Circular 82, 181 pp

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