Curriculum Vitae

Name: Perry L. McCarty

Education: B. S. Civil Engineering, Wayne State University, 1953
S. M. Sanitary Engineering, Massachusetts Institute of Technology, 1957
Sc.D. Sanitary Engineering, Massachusetts Institute of Technology, 1959

Employment:

1962-date:	Faculty Member, Stanford University
1999-date:	Silas H. Palmer Professor of Civil Engineering Emeritus
1989-2003:	Director, Western Region Hazardous Substance Research Center
1980-1985:	Chairman, Department of Civil Engineering
1975-1999:	Silas H. Palmer Professor of Civil Engineering
1967-1975:	Professor of Civil Engineering
1962-1967:	Associate Professor of Civil Engineering
2008-2013:	World Class University Professor, Department of Environmental Engineering, Inha University, Incheon, Korea
2004-2007:	Chair Professor, Department of Environmental Science and Engineering, Tsinghua University, Bejing, China
2003:	Lecturer, Stanford Canada and Great Lakes College
1971:	Visiting Professor, University of Cape Town, South Africa
1968-1969:	Honorary Research Associate, Harvard University
1969:	Visiting Lecturer, Summer Institute in Advanced Sanitary Chemistry, Harvard University
1968-1972:	Faculty Member, Curso de Postgrado en Ingenieria Hidrologica, Ministerio de Obros Publicos, Venezuela
1959-1962:	Assistant Professor of Sanitary Engineering, Massachusetts Institute of Technology
1958-1959	Instructor of Sanitary Engineering, Massachusetts Institute of Technology
1958-1961:	Associate, Rolf Eliassen Associates, Research, development, and industrial waste treatment design
1957:	Research Staff, Massachusetts Institute of Technology
1956:	Engineer, Civil Engineers, Inc., Subdivision and water treatment plant design
1954-1956:	U.S. Army
1954:	Field Engineer, George Jerome and Company, Construction inspector
1953-1954:	Instructor: Department of Civil Engineering, Wayne State University
1953:	Field Engineer: Hubbell, Roth and Clark, Subdivision development
1952:	Engineer: Pate and Hirn, Subdivision design
1951:	Field Engineer: Edwin Orr. Subdivision development

Honors:

Tau Beta Pi Fellowship, 1956-57.
Harrison P. Eddy Award of the Water Environment Federation for Noteworthy Research (with Ross E. McKinney), 1962.
Walter L. Huber Research Prize of the American Society of Civil Engineers, 1964.
First prize for best paper presented at annual meeting of Society for Industrial Microbiology, 1965.
Inaugural Distinguished Faculty Award in Sanitary Engineering, the American Association of Professors in Sanitary Engineering, 1966.
NSF Science Faculty Fellowship, 1968-69.
Thomas Camp Award of the Water Environment Federation, for Unique Application of Engineering Research, 1975.
Member, National Academy of Engineering, 1977.
Harrison P. Eddy Award of the Water Environment Federation for Noteworthy Research (with Kenneth J. Williamson), 1977.
Simon W. Freese Environmental Engineering Lecture Award, American Society of Civil Engineers, 1979.
Engineering-Science Research Award, Association of Environmental Engineering Professors (with Bruce E. Rittmann), 1979.
Fellow, American Association for the Advancement of Science, 1980.
Honorary Member, American Water Works Association, 1981.
Thomas R. Camp Lecturer Award, Boston Society of Civil Engineers, 1983.
Engineering-Science Research Award, Association of Environmental Engineering Professors (with Edward J. Bouwer), 1983.
Distinguished Professor Lectureship, Association of Environmental Engineering Professors, 1984.
Outstanding Publication Award (with Alonzo Wm. Lawrence), Association of Environmental Engineering Professors, 1985.
Research Division Best Paper Award, American Water Works Association (with Marco Aieta) 1985.
Life Member, American Water Works Association, 1987.
Outstanding Publication Award, Association of Environmental Engineering Professors, 1988.
Wayne State University Engineering Hall of Fame, 1988.
A. P. Black Research Award, American Water Works Association, 1989.
Honorary Member, Water Environment Federation, 1989.
Inaugural Tsuan Hua Feng Distinguished Lecturer, University of Massachusetts, 1989.
CH2M HILL Research Award, Association of Environmental Engineering Professors (with Craig S. Criddle), 1990.
The John and Alice Tyler Prize for Environmental Achievement, 1992.
Engineering-Science Research Award, Association of Environmental Engineering Professors (with Lisa Alvarez-Cohen), 1992.
Founder's Award for sustained and outstanding contributions to environmental engineering education, Association of Environmental Engineering Professors, 1992.
Research Fellowship, Japan Society for the Promotion of Science, 1992.

Honorary Degree of Doctor of Engineering, Colorado School of Mines, 1992.
Fellow, American Academy of Microbiology, 1993.
Fellow, California Council on Science and Technology
J. James R. Croes Medal, American Society of Civil Engineers, 1995.
Life Member, American Society of Civil Engineers, 1995.
Fellow, American Academy of Arts and Sciences, 1996.
The Athalie Richardson Irvine Clarke Prize for Outstanding Achievements in Water Science and Technology, 1997.
Certificate of Merit, Division of Environmental Chemistry, American Chemical Society, 1997.
CH2M HILL Research Award, Association of Environmental Engineering Professors (with James E. Anderson), 1997.
Dean's Award for Academic Excellence, Stanford University, 1997.
Outstanding Publication Award (with Edward J. Bouwer), Association of Environmental Engineering Professors, 1998.
Inaugural Walter J. Weber Distinguished Lecturer, University of Michigan, 2000.
Inaugural Distinguished Visiting Lecturer, Environmental Engineering and Science, University of Illinois, 2000.
Abel Wolman Distinguished Lecturer, National Academies, 2001.
The Barnett F. Dodge 2001 Distinguished Lecturer in Chemical Engineering, Yale University
Inaugural Association of Environmental Engineers and Scientists Distinguished Lecturer, Georgia Institute of Technology, 2002.
Outstanding Publication Award (with Kenneth Williamson), Association of Environmental Engineering and Science Professors, 2003.
Inaugural Ryckman Lecture, Environmental Engineering and Science Program, Washington University, 2003
Golden Drop Award, American Water Works Association, 2007
Stockholm Water Prize, 2007
Brown and Caldwell Lifetime Achievement Award, 2008
Lifetime Achievement Award, Groundwater Resources Association of California, 2008
Honorary Member, American Academy of Environmental Engineers, 2009
Water Industry Hall of Fame, American Water Works Association, 2009
Honorary Degree of Doctor of Engineering, Nanyang Technological University, Singapore, 2010
Honorary Professor, Harbin Institute of Technology, China, 2011
Association of Environmental Engineering and Science Professors Lecturer, WEFTEC, 2011
Honorary Professor, National Chiao Tung University, Taiwan, 2011
Honorary Fellow, the Chinese Institute of Environmental Engineering, Taiwan, 2011
Distinguished Member, American Society of Civil Engineers, 2012
Fellow, Water Environment Federation, 2012
Gordon Maskew Fair Distinguished Engineering Educator Medal, Water Environment Federation, 2012

Life Member, Association of Environmental Engineering and Science Professors, 2012
Joan Hodges Queneau Palladium Medal for engineering achievement in environmental conservation, National Audubon Society, 2013
Gordon Maskew Fair Award for exemplary professional conduct, recognized achievements, and significant contributions to the world's environment, American Academy of Environmental Engineers and Scientists, 2014
Stanford Engineering Hero, 2016

Organizations: American Society of Civil Engineers
Water Environment Federation
American Water Works Association
American Association for the Advancement of Science
Association of Environmental Engineering and Science Professors
Tau Beta Pi
Omicron Delta Kappa
Kappa Mu Epsilon
Sigma Xi

Professional Activities:

Member, Research Grants Study Section on Environmental Science and Engineering, U.S. Public Health Service, 1964-1966.
Member, Water Pollution Control Federation Program Planning Committee, 1964-1970.
Chairman, American Water Works Association, Task Group on Nutrients in Water, 1965-69.
Chairman, Workshop Seminar on Anaerobic Waste Treatment, U.S.P.H.S., 1965.
Chairman, Standard Methods Committee on Gases in Water, 1965-1970.
Assistant Editor, American Society of Civil Engineers, Sanitary Engineering Division Newsletter, 1965-68.
Member, American Society of Engineering Education, Sanitary Engineering Committee, 1965-67.
Consultant, Interagency Agricultural Wastewater Treatment Study, Federal Water Pollution Control Administration, U.S. Bureau of Reclamation, and California Department of Water Resources, 1966-1971.
Chairman, National Symposium on Estuarine Pollution, ASCE, August 1967.
Chairman, San Francisco Sanitary Engineering Section, American Society of Civil Engineers, 1967.
Trustee, Water Quality Division, American Water Works Association, 1967 to 1974.

Vice Chairman, American Society of Engineering Education, Environmental Engineering Division, 1968-69.

Board of Directors and Consultant, Biostimulation and Biotoxicity Study, California Water Resources Control Board, 1970-1971.

Member, Committee on Wastewater Reclamation, American Water Works Association, 1970-1972.

Member, Committee on Quality Control in Reservoirs, American Water Works Association, 1970-1973.

Consultant, Training Grants Division, Environmental Protection Agency, 1970-1975.

Vice Chairman, Gordon Research Conference on Environmental Science-Air, 1971.

Member, U.S. National Academy of Science – Indian National Science Academy Workshop on, "Water in Man's Life in India," September, 1971, New Delhi, India.

Consultant, Symbiotic Study on Agricultural Wastewaters, U.S. Bureau of Reclamation and California Department of Water Resources, 1971-1973.

Member, Advisory Board, *Environmental Science & Technology*, 1971-1973.

Member, Sanitary Engineering Advisory Committee, California Department of Public Health, 1971-1975.

Member, George Westinghouse Environmental Student Award Committee, American Society of Engineering Education, 1971-1973.

Member, Committee on Control of Nitrates, American Water Works Association, 1971-1974.

Chairman, Water Quality Division, American Water Works Association, 1972-1973.

Chairman, Gordon Research Conference, Environmental Sciences – Water 1972.

Participant, Smithsonian Institution Study on the Effect of Rapid Urbanization on the Environment in Seoul, Korea, 1972.

Member, Water Quality Policy Committee, National Academy of Sciences - National Academy of Engineering, Advisory to the National Commission on Water Quality, 1973- 1976.

Member, T & P Research Committee, American Water Works Association, 1973-1976.

Engineering Board of Consultants: John Wiley & Sons, 1974-1980.

Member, Environmental Studies Board, National Research Council, National Academies, 1976-1981.

Member, Potomac Estuary Committee, National Research Council, National Academies, 1976-1979.

Chairman, Panel on Treatment Processes, National Research Council, National Academies, 1976-1977.

Chairman, Research Committee, Technical and Professional Council, American Water Works Association, 1976-1981.

Member, Technical and Professional Council, American Water Works Association, 1976-1981.

Vice Chairman, Environmental Studies Board, National Research Council, National Academies, 1977-1980.
Member, Commission on Natural Resources, National Research Council, National Academies, 1977-1980.
Member, Stanford Technical Delegation to the People's Republic of China, March-April 1978.
Chairman, Camp Medal Award Committee, Water Pollution Control Federation, 1977-1979.
Member, Innovative and Alternative Technology Committee, California Water Resources Control Board, 1979-1981.
Member, Aquaculture Technical Advisory Committee, California Water Resources Control Board, 1979-1981.
Member, Scientific Advisory Board, Southern California Coastal Water Research Project, 1979-1980.
Member, Panel on Wastewater Reuse Criteria, National Research Council, National Academies, 1979-1982.
Member, Expert Committee on Engineering and Technology, International Joint Commission on the Great Lakes, 1979-1982.
Chairman, Committee to Review Potomac Estuary Experimental Water Treatment Plant, National Research Council, National Academies, 1979-1984.
Member, Committee to Review the Metropolitan Washington Area Water Supply Study, National Research Council, National Academies, 1979-1984.
Chairman, Scientific Advisory Board, Southern California Coastal Water Research Project, 1980-1986.
Member, Visiting Committee, Harvard University Division of Applied Science, 1980-1985.
Member, Wastewater Reclamation Health Effects Advisory Panel, California Department of Health Services, 1980-1985.
Member, Scientific Advisory Board, National Center for Ground Water Research, 1980-1986.
Member, National Science Foundation Advisory Subcommittee for Civil and Environmental Engineering, 1981-85.
Director, International Conference on Ground Water Quality, 1981.
Trustee, Research Division, American Water Works Association, 1981-1985.
Trustee, American Water Works Research Foundation, 1981-1985.
Guest Lecturer, Chinese Academy of Sciences, Biogas Production, Guangzhou and Chengdu, China, 1982.
Chairman, Scientific Panel to Evaluate Sacramento-San Joaquin Delta Water Quality, California Department of Water Resources, 1982-1983.
Member, Task Force on Ground Water Pollution, Office of Technology Assessment, U.S. Congress, 1983-1985.
Member, Engineering Education Board, National Academy of Engineering, 1984-1987.
Member, Engineering Research Board, National Research Council, National Academies, 1984-1986.

Member, Drinking Water Standards Committee, American Water Works Association, 1984-1986.

Member, Organizing Committee, Specialized Seminar on Degradation, Retention, and Dispersion of Pollutants in Groundwater, Copenhagen, 1984.

Chairman, Panel on Energy, Environment, and Resources, National Research Council, National Academies, 1984-1986.

Member, Committee on Groundwater Protection, National Research Council, National Academies, 1984-1986.

Member, Visiting Committee, Princeton University, Dept. of Civil Engineering, 1985-1988.

Chairman, Visiting Committee, University of Minnesota, Dept. of Civil Engineering, 1985.

Member, Technical Advisory Committee, Clean Sites, Inc., 1985-94.

Member, Commission on Mathematics, Physics, Resources, National Research Council, National Academies, 1985-1988.

Editor, *Journal of Contaminant Hydrology*, 1985-1993.

Member, Scientific Advisory Panel on Groundwater Recharge, State of California, 1986-1987.

Member, Visiting Committee, California Institute of Technology, Division of Engineering and Applied Science, 1986-92.

Chairman, Visiting Committee, University of California, Berkeley, Department of Civil Engineering, 1987.

Member, Visiting Committee, University of Southern California, Department of Civil Engineering, 1987.

Member, National Institute of Environmental Health Sciences Panel for review of Superfund Phase II proposals, 1988.

Chairman, Environmental Protection Agency Panel, for review of Hazardous Substance Research Center proposals, 1988.

Member, SCOPE Panel on Groundwater Contamination, 1988-1995.

Member, Civil Engineering Visiting Committee, Massachusetts Institute of Technology, 1989-1993.

Member, Advisory Committee for Center for Environmental Health Sciences, Massachusetts Institute of Technology, 1989-92.

Member, Board on Radioactive Waste Management, National Research Council, National Academies, 1989-1996.

Member, Research Council, WEF Research Foundation, 1989-95.

Chairman, Program Planning Committee, International Symposium on Processes Governing the Movement and Fate of Contaminants in Groundwater, 1989.

Member, Evaluation Committee on Civil Engineering, University of California, Berkeley, 1990.

Chairman, Committee on Remedial Action Priorities for Hazardous Waste Sites, National Research Council, National Academies, 1991-1994.

Chairman, Environmental Protection Agency Panel for review of proposals for Centers of Excellence, 1991.

Member, Visiting Committee, Dept. of Environmental Engineering and Science, University of North Carolina, Chapel Hill, 1992.
Member, Visiting Committee, Environmental Engineering Program, University of Texas, San Antonio, 1992.
Member, Advisory Board, Marine Bioremediation Program, University of Washington, 1993-1996.
Associate Editor, *Journal of Contaminant Hydrology*, 1993-2006.
Member, Editorial Board, *Biodegradation*, 1993-
Alcoa - Environmental Technology Advisory Board, 1993-2005
Member, Work Group, President's Council on Sustainable Development, 1994-1995.
Member, Commission on Geosciences, Environment, Resources; National Research Council, National Academies, 1994-1997.
Member, National Forum on Science and Technology Goals - No. 1: Environment, National Research Council, National Academies, 1995.
Chairman, Virtual Commission on Environmental Management Science, National Research Council, National Academies, 1996-1998.
Member, Visiting Committee, Dept. of Civil Engineering, Northwestern University, 1996.
Chairman, Peer Review Group, VOC Study in Groundwater, 1996-1999.
Member, Selection Committee, George and Cynthia Mitchell International Prize for Sustainable Development, National Academy of Sciences, 1996-1997.
Member, Visiting Committee, Dept. of Civil Engineering, Cornell University, 1996.
Member, Selection Committee, Blasker Award for Environmental Science and Engineering, 1996-2001
Member, Committee on Intrinsic Bioremediation, National Research Council, National Academies, 1997-2000.
Member, Science Advisory Board, Strategic Environmental Research and Development Program, U.S. DOD, DOE, and EPA, 1997- 2002, 2005-2010.
Chairman, Blue Ribbon Panel on San Diego Water Repurification Project, 1998.
Member, Chemical & Environmental Engineering Department Industrial Advisory Committee, University of Arizona, 1999-2002
Member, Committee on Assessment of Risks from Remediation of PCB-Contaminated Sediments, National Research Council, National Academies, 1999-2001
External Examiner, Environmental Engineering Program, Department of Chemical and Environmental Engineering, National University of Singapore, 1999-2001
Member, Expert Panel for Review of Groundwater Treatment Technology, Aerojet General Corporation, 2000-2001.
Member, Expert Panel on Water Reuse, West Basin Municipal Utility District, 2001-2002

Member, Tritium Migration Independent Scientific Peer Review Panel, U.S. Department of Energy, 2001-2002
Member, Civil Engineering Peer Committee, National Academy of Engineering, 2001-2004
Member, Panel for Independent Review of DDT Contamination, Kenwood Avenue, Los Angeles, requested by Congresswoman Jane Harmon, 2001
Member, Committee on Water Quality Improvement for The Pittsburgh Region, National Research Council, The National Academies, 2002-2004
Member, Oversight Committee for Strengthening Science-Based Decision Making, Policy and Global Affairs Division, the National Academies, 2002-2007
Member, Research Advisory Board, National Water Research Institute, 2005-.
Member, Vietnam Education Foundation Review Panel, The National Academies, 2005.
Member, The Athalie Richardson Irvine Clarke Prize Executive Committee, 2005-2007.
Member, External Advisory Committee, Water: Systems, Science, Society Program, Tufts University, 2006-2013
Member, Committee on Sediments Dredging at Superfund Megasites, The National Academies, 2006-2007.
Member, Steering Committee for Environmental & Water Technologies, National University of Singapore, 2006-2007
Member, Division of Environmental Science & Engineering Visiting Committee, National University of Singapore, 2006-2007
Member, Project Evaluation Panel, Environmental and Water Industry Development Council, Ministry of the Environment and Water Resources, Singapore, 2006-
Associate Editor-in-Chief, *Frontiers of Environmental Science & Engineering in China*, 2006-.
Member, Lee Kuan Yew Water Prize Nominating Committee, Singapore, 2008-
Member, Peer Review Team, Capital Regional Districts Core Area Wastewater Management Program, Victoria, British Columbia, 2009
Member, Environmental Science and Engineering Visiting Committee, Colorado School of Mines, 2009
Member, International Scientific Advisory Board, World City Forum, Incheon, Korea, 2009.
Chair, External Review Committee, Academic Program Review of Environment Science and Engineering, Tsinghua University, Beijing, China, 2010.
Member, IWA China AD Advisory Group, 2013-2016
Member, Expert Panel to Advise California Division of Drinking Water on Development of Water Recycling Criteria for Potable Reuse, 2014-2016
Chair, External Review Committee, Nanyang Environment & Water Research Institute, Nanyang Technological University, Singapore, 2016

Invited Guest Lecturer at Universities:

Arizona State University
Brigham Young University
California Institute of Technology
California State Polytechnical University San Luis Obispo
Central Public Health Engineering Research Institute, Nagpur, India
Chico State University
Clarkson University
Clemson University
College of Engineering, Guindy, Madras, India
Cornell University
Dalian University of Technology, China
Drexel University
Georgia Institute of Technology
Hanoi University of Technology, Vietnam
Hanyang University, Korea
Harvard University
Hong Kong University of Science & Technology, Hong Kong
Imperial College London, England
Inha University, Korea
Institute of Biology, Chinese Academy of Sciences, Chengdu, China
Institute of Energy Conversion, Chinese Academy of Sciences, Guangzhou, China
Iowa State University
Johns Hopkins University
Keimyung University, Korea
Korea University, Korea
Kyoto University, Japan
Manhattan College
Marquette University
Massachusetts Institute of Technology
Northeastern University
Pennsylvania State University
Princeton University
Rensselear Polytechnic Institute
Rice University
Rutgers University
San Jose State University
Seoul National University, Korea
Sungkyunkwan University, Korea
Swiss Federal Institute of Technology, Zürich, Switzerland
Technische Universitat, Dresden, Germany
The Agricultural University Wageningen, The Netherlands
Tokyo University, Japan
Tsinghua University, Beijing, China
Tufts University

University of Alberta, Canada
University of Arizona
University of Birmingham, England
University of California Berkeley
University of California Davis
University of California Riverside
University of California San Diego
University of California San Francisco
University of Cape Town, South Africa
University of Central Florida
University of Colorado
University of Connecticut
University of Florida Gainsville
University of Houston
University of Illinois
University of Iowa
University of Karlsruhe, Germany
University of Maryland
University of Massachusetts
University of Michigan
University of Nevada, Reno
University of New Mexico
University of North Carolina
University of Notre Dame
University of Oklahoma
University of Texas Austin
University of Texas Dallas
University of Toronto
University of Washington
Vanderbilt University
Vietnam National University, Ho Chi Minh City
Vietnamese Academy of Science and Technology
Virginia Polytechnic Institute
Washington University
Wayne State University
Yale University
Yonsei University, Korea

List of Publications

1. McCarty, P. L., and McKinney, R. E., "Volatile Acid Toxicity in Anaerobic Digestion," *Journal Water Pollution Control Fed*., **33**, 223-232 (1961).
2. McCarty, P. L., and McKinney, R. E., "Salt Toxicity in Anaerobic Digestion," *Journal Water Pollution Control Fed*., **33**, 399-415 (1961).
3. McCarty, P. L., and Vath, C. A., "Volatile Acid Digestion at High Loading Rates," *International Journal of Air and Water Pollution*, **6**, 65-73 (1962).
4. McCarty, P. L., and Brodersen, C. F., "Theory of Extended Aeration Activated Sludge," *Journal Water Pollution Control Fed*., **34**, 1095-1103 (1962).
5. McCarty, P. L., Jeris, J. S., and Murdoch, W., "Significance of Individual Volatile Acids in Anaerobic Treatment" in *Proceedings of the 17th Industrial Waste Conference, 1962*, Purdue Engineering Extension Series No. 112, pp. 421-439 (1963); also *Journal Water Pollution Control Fed*., **35**, 1501-1516 (1963).
6. Jeris, J. S., and McCarty, P. L., "Biochemistry of Methane Fermentation Using C^{14} Tracers" in *Proceedings of the 17th Industrial Waste Conference, 1962*, Purdue Engineering Extension Series No. 112, pp. 181-197 (1963); also *Journal Water Pollution Control Fed*., **37**, 178-192 (1965).
7. Speece, R. E., and McCarty, P. L., "Nutrient Requirements and Biological Solids Accumulation in Anaerobic Digestion" in *Advances in Water Pollution Research*, Vol. 2, Pergamon Press, London, pp. 305-322 (1964).
8. McCarty, P. L., and Brosseau, M. H., "Effect of High Concentrations of Individual Volatile Acids on Anaerobic Treatment" in *Proceedings of the 18th Industrial Waste Conference, 1963*, Purdue Engineering Extension Series No. 115, pp. 283-296 (1964).
9. McCarty, P. L., "The Methane Fermentation," Chap. 16, pp. 314-343 in *Principles and Applications in Aquatic Microbiology*, H. Heukelekian and N. C. Dondero, Eds., John Wiley, New York (1964).
10. McCarty, P. L., "Research and Development for Reuse of Water," pp. 55-59 in *Water; Development, Utilization, Conservation*, Western Resources Conference 1963, R. K. McNickle, Ed., University of Colorado Press, Boulder (1964).
11. Kugelman, Irwin J., and McCarty, P. L., "Cation Toxicity and Stimulation in Anaerobic Waste Treatment," *Journal Water Pollution Control Fed*., **37**, 97-116 (1965).
12. Konecky, M. S., Kelley, E. J., Symons, J. M., and McCarty, Perry L., "The Determination of the Biodegradability of Detergents (Esso Research Biodegradation Test)," presented at the 36th Annual Meeting of the Water Pollution Control Fed. (October 1963).
13. McCarty, P. L., "Thermodynamics of Biological Synthesis and Growth" in *Advances in Water Pollution Research*, Vol. 2, pp. 169-187, Pergamon Press, New York (1965); also *International Journal of Air and Water Pollution*, **9**, 621-639 (1965).
14. McCarty, P. L., "Free Energy as a Parameter in Biological Treatment, A Discussion," *Journal Sanitary Engineering Division, American Society of Civil Engineers*, **89**(SA6), 65-68 (December 1963).
15. Lawrence, A. Wm., McCarty, P. L., and Guerin, F. J., "The Effects of Sulfides on Anaerobic Treatment" in *Proceedings of the 19th Purdue Industrial Waste Conference* (May 1964); also *International Journal of Air and Water Pollution*, **10**, 207-221 (1966).

16. Kugleman, I. J., and McCarty, P. L., "Cation Toxicity and Stimulation in Anaerobic Waste Treatment. II. Daily Feed Studies" in *Proceedings of the 19th Purdue Industrial Waste Conference*, pp. 667-686 (May 1964).
17. Lawrence, A. Wm., and McCarty, P. L., "The Role of Sulfides in Preventing Heavy Metal Toxicity in Anaerobic Digestion," *Journal Water Pollution Control Fed*., **37**, 392-406 (1965).
18. McCarty, P. L., "Anaerobic Waste Treatment Fundamentals. Part I, Chemistry and Microbiology," *Public Works*, **95**, 107-112 (September 1964).
19. McCarty, P. L., "Anaerobic Waste Treatment Fundamentals. Part II, Environmental Requirements and Control," *Public Works*, **95**, 123-126 (October 1964).
20. McCarty, P. L., "Anaerobic Waste Treatment Fundamentals. Part III, Toxic Materials and Their Control," *Public Works*, **95**, 91-94 (November 1964).
21. McCarty, P. L., "Anaerobic Waste Treatment Fundamentals. Part IV, Process Design," *Public Works*, **95**, 95-99 (December 1964).
22. McCarty, P.L., "Kinetics of Waste Assimilation in Anaerobic Treatment," Chap. 17, pp.144-155 in *Developments in Industrial Microbiology*, American Institute of Biological Sciences, Washington, D.C. (1966).
23. Lawrence, A. Wm., and McCarty, P. L., "Kinetics of Methane Fermentation in Anaerobic Treatment," *Journal Water Pollution Control Fed.,* **41**, R1-R17 (1969).
24. McCarty, P. L., "Sludge Concentration--Needs, Accomplishments, and Future Goals," *Journal Water Pollution Control Fed*., **38**, 493-507 (1966).
25. King, P. H., and McCarty, P. L., "The Movement of Pesticides in Soils" in *Proceedings of the 21st Purdue Industrial Waste Conference*, pp. 156-171 (1966).
26. McCarty, P. L., Chairman, Task Group, "Nutrient Associated Problems in Water Quality and Treatment," *J.ournal American Water Works Association*, **58**, 1337-1355 (1966).
27. McCarty, P. L., Chairman, Task Group, "Sources of Nitrogen and Phosphorus in Water Supplies," *Journal American Water Works Association*, **59**, 344-366 (1967).
28. McCarty, P. L., "Anaerobic Treatment of Soluble Wastes," pp. 336-352 in *Advances in Water Quality Improvement*, E. F. Gloyna and W. W. Eckenfelder, Eds., University of Texas Press, Austin (1968).
29. McCarty, P. L., "Discussion of the Role of Enzymes in Contact Stabilization Process" in *Advances in Water Pollution Research*, Vol. 2, R. H. Siddigi, R. S. Englebrecht, and R. E. Speece, Eds., Water Pollution Control Federation, Washington, D.C., pp. 372-376 (1967).
30. Hill, D. W., and McCarty, P. L., "Anaerobic Degradation of Selected Chlorinated Hydrocarbon Pesticides," *Journal Water Pollution Control Fed*., **39**, 1259-1277 (1967).
31. Stratton, F. E., and McCarty, P. L., "Prediction of Nitrification Effects on the Dissolved Oxygen Balance in Streams," *Environmental Science and Technology*, **1**, 405-410 (1967).
32. Young, J. C., and McCarty, P. L., "The Anaerobic Filter for Waste Treatment" in *Proceedings of the 22nd Industrial Waste Conference*, Purdue University, pp. 559-574 (1967); also *Journal Water Pollution Control Fed.*, **41**, R160-R173 (1969).
33. McCarty, P. L., "Enzymes in Waste Treatment," *Bulletin, California Water Pollution Control Association*, **3**, 35-36 (1967).

34. McCarty, P. L., Chairman, Task Group, "Chemistry of Nitrogen and Phosphorus in Water," *Journal American Water Works Association*, **62**, 127-140 (1970).

35. McCarty, P. L., "Natural Succession of Microbial Processes Constituting the Anaerobic Decomposition of Organic Compounds, A Discussion," presented at the Fourth International Conference on Water Pollution Research, Prague (April 1969).

36. Stratton, F. E., and McCarty, P. L., "Graphical Evaluation of the Kinetic Parameters for Bacterial Growth," *Canadian Journal Microbiology*, **15**, 1201-1205 (1969).

37. King. P. H., and McCarty, P. L., "A Chromatic Model for Predicting Pesticide Migration in Soils," *Soil Science*, **106**, 248-261 (1968).

38. Lawrence, A. Wm., and McCarty, P. L., "Unified Basis for Biological Treatment Design and Operation," *Journal Sanitary Engineering Division, American Society of Civil Engineers*, **96**(SA3), 757-778 (1970).

39. Stratton, F. E., and McCarty, P. L., "Evaluation of Nitrification in Streams, A Discussion," *Journal of Sanitary Engineering Division, American Society of Civil Engineers*, **95**(SA5), 952-955 (1969).

40. St. Amant, P., and McCarty, P. L., "Treatment of High Nitrate Waters," *Journal American Water Works Association*, **61**, 659-662 (1969).

41. McCarty, P. L., Beck, L., and St. Amant, P., "Biological Denitrification of Wastewaters by Addition of Organic Materials," *Proceedings of the 24th Annual Industrial Waste Conference*, Purdue University, pp. 1271-1285 (May, 1969).

42. Foree, E. G., and McCarty, P. L., "The Decomposition of Algae in Anaerobic Waters," *Proceedings of the 24th Industrial Waste Conference*, Purdue University, pp. 13-36 (May 1969); also *Environmental Science and Technology*, **4**, 842-849 (1970).

43. McCarty, P. L., "Energetics and Bacterial Growth," Chap. 21 in *Organic Compounds in Aquatic Environments*, S. D. Faust and J. V. Hunter, Eds., Marcel Dekker, Inc., New York, pp. 495-531 (1971).

44. Foree, E. G., Jewell, W. J., and McCarty, P. L., "The Extent of Nitrogen and Phosphorus Regeneration from Decomposing Algae" in *Advances in Water Pollution Research*, Vol. I, S. H. Jenkins, Ed., III-27/1-15, Pergamon Press (1970).

45. McCarty, P. L., "Biological Processes for Nitrogen Removal—Theory and Application," *University of Illinois Bulletin*, **68**(2), 136-152 (August 5, 1970).

46. McCarty, P. L., "Phosphorus and Nitrogen Removal by Biological Systems," *Wastewater Reclamation and Reuse Workshop Proceedings*, pp. 226-251, University of California, Tahoe City (June 26, 1970).

47. Bain, R. D., McCarty, P. L., Robertson, J. A., and Pierce, W. H., "Effects of an Oxidation Pond Effluent on Receiving Waters in the San Joaquin River Estuary," *2nd International Symposium for Waste Treatment Lagoons*, pp. 168-180, University of Kansas (June 1970).

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