

John Thomas O'Connor, EngD, PE

2401 Tahoe Court, Columbia, MO 65203-1444
Tel. (573) 446-5595; Toll-free (877) 22-WATER
Fax (240) 757-7574; Cell (573) 289-2153; john@h2oc.com

EDUCATION

The Cooper Union, New York City	Bachelor of Civil Engineering	1955
New Jersey Institute of Technology	Master of Science in Civil Engineering	1958
The Johns Hopkins University	EngD, Sanitary Engineering	1961

REGISTERED PROFESSIONAL ENGINEER

New York	374931960
Illinois	062-022981 1962
Missouri	E-18476 1976

PROFESSIONAL EXPERIENCE

1993 - present	CEO, H2O'C Engineering, LLC, Columbia, Missouri
1992 - 1995	Chief, Illinois State Water Survey, Champaign, Illinois
1975 - 1992	Chairman, Department of Civil Engineering & C. W. LaPierre Professor, University of Missouri-Columbia, Columbia, Missouri
(1990)	Fulbright Scholar: Department of Civil Engineering, University of Canterbury, Christchurch, New Zealand
1961 - 1975	Professor, '70-'75; Associate Prof., '64-'69; Assistant Prof., '61-'64 Univ. of Illinois at Urbana-Champaign, Dept. of Civil Engineering
(1972)	Visiting Professor, Department of Chemistry, Montana State University, Bozeman, MT
(1969)	Sabbatical Leave., Division of Engineering and Applied Physics, Harvard University, Cambridge, MA
1958 - 1961	Research Assoc., Dept. of Sanitary Engineering & Water Resources, Institute for Coop. Research, Atomic Energy Commission Project, <i>Fate of Radioactive Zinc in Natural Water Systems</i> The Johns Hopkins University, Baltimore, Maryland ('60 - '61)
(1959)	USAEC, Oak Ridge Institute for Nuclear Studies, Oak Ridge, TN
(1958 - 1960)	USPHS Research Fellow, The Johns Hopkins University, Balt., MD
1956 - 1957	Civil Engineer, George A. Fuller Construction Company, NYC
1955 - 1956	Civil and Sanitary Engineer, Elson T. Killam, Sanitary and Hydraulic Engineers, Milburn, NJ

SCIENTIFIC, TECHNICAL SOCIETIES; PROFESSIONAL ACTIVITIES

Fellow: American Society of Civil Engineers (ASCE): Environ. Engr. Div. (EED)
Newsletter Editor; EED Secretary, 1968-1976

Life Member: Water Environment Fed.; American Chemical Soc.; Am. Water Works Assn.

Member: American Society of Limnology and Oceanography

Chairman: Fulbright Awards Committee for Australasia, 1998-1999

USEPA: Grant / Fellowship Peer Review Panelist, 1994-1998;
Peer Review Panelist, 1995-1998, Environ. Engineering Research Division;
Small Business Innovative Research (SBIR)

HONORS

1981 Simon A. Freese Award & Lecture, Amer. Soc. of Civil Eng., Env. Eng. Div.
Global Envir. Deterioration & the Future of the Envir. Engr. Profession,
Address to National Conference on Environmental Engineering, Atlanta, GA.

1990 Fulbright Award, New Zealand-U.S. Educational Foundation,
University of Canterbury, Christchurch, New Zealand

2001 Honorary Member, Missouri Water and Wastewater Conference

2002 Dr. Warren A. Kramer Award, Missouri Section, Amer. Water Works Assoc.

2007 Gold Water Drop Award, American Water Works Association

2009 Dr. Warren A. Kramer Award, Missouri Section, Amer. Water Works Assoc.
for book, *Water Treatment Plant Performance Evaluations and Operations*

PUBLICATION AWARDS

1975 *Deterioration of Water Quality in Distribution Systems*, Journal AWWA

1976 *Effect of Ozonation on the Removal of Iron from Ground Water Containing
Organic Substances*, Journal, AWWA

1980 *Biologically-Mediated Corrosion and its Effects on Water Quality in
Distribution Systems*, Journal, AWWA

BOOKS, CHAPTERS

1971 *AWWA Manual on Water Quality and Treatment*: McGraw-Hill
Iron & Manganese Removal (Ch. 11);
Management of Water Treatment Plant Residues (Ch. 13)

1972 *Environmental Engineering Unit Operations & Unit Processes Lab. Manual*,
Assoc. of Environmental Engineering Professors, 210 pp., August 1972

2002 *Control of Microorganisms in Drinking Water*, Amer. Soc. of Civil Eng.
Ch. 3: Microbially-Mediated Corr. and Water Quality Deter., p. 23-50
Ch. 8: Rapid Sand Filtration, p. 127-148.

PUBLICATIONS RELATED TO WATER QUALITY AND TREATMENT

Zinc in Natural Surface Waters

- O'Connor, J. T., and Renn, C. E., Evaluation of Procedures for the Determination of Zinc, *Journal of the American Water Works Association*, 55: 5, 631-637, May 1963.
- O'Connor, J. T., and Renn, C. E., Wintner, I., Zinc Conc. in Rivers of the Chesapeake Bay Region, *Journal of the American Water Works Association*, 56:3, 280-286, March 1964.
- O'Connor, J. T., and Renn, C. E., Soluble-Adsorbed Zinc Equilibrium in Natural Waters, *Journal American Water Works Association*, 56: 8, 1055-1061, Aug. 1964.
- O'Connor, J. T., Fate of Zinc in Natural Surface Waters, Div. of Biol. and Med., USAEC, Oct. 1968.

Iron and Manganese, Organic Materials in Ground Waters

- O'Connor, J. T., Englebrecht, R. S., and Ghosh, M. M., Significance and Removal of Iron in Water Supplies, Proceedings, 4th Annual Sanitary Engineering Conf., Vanderbilt Univ., June 1965.
- Ghosh, M. M., O'Connor, J. T., and Englebrecht, R. S., Precipitation of Iron in Aerated Ground Water, *J. Sanitary Engineering Division, American Society of Civil Engineers*, 92: SA1, 199-213, 1966; Discussions by W. Stumm & P. Singer; J. Morgan & F. Birkner; F. Winklehaus, F. DiGiano & W. Weber, Jr.
- O'Connor, J. T., Englebrecht, R. S., and Ghosh, M. M., Removal of Iron from Ground Waters, Proceedings, Symposium on Acid Mine Drainage, Pittsburgh, Pennsylvania, May 1965.
- Robinson, L. R., O'Connor, J. T., and Englebrecht, R. S., Organic Materials in IL Ground Waters, *Journal of the American Water Works Association*, February 1967.
- Englebrecht, R. S., O'Connor, J. T., and Ghosh, M. M., Iron Removal by Aeration and Filtration, *Water and Sewage Works*, Vol. 114, pp. 123-128, April 1967.
- O'Connor, J. T., Iron and Manganese Removal: Methods and Practice, Proceedings, Sanitary Engineering Institute, University of Wisconsin, March 1969.
- O'Connor, J. T., The Practice of Iron and Manganese Removal, *Water and Sewage Works*, pp. R68-R70, Nov. 1969.

Drinking Water Disinfection

- O'Connor, J. T., and Kapoor, S. K., Small Quantity Field Disinfection, *Journal of the American Water Works Association*, Vol. 62, No. 2, pp. 80-84, February 1970.

Magnesium Oxide for Iron Removal

- O'Connor, J. T., and Benson, B., Iron Removal Using Magnesium Oxide, *J. Sanitary Engineering Division, ASCE*, Vol. 96, No. 7, No. SA6, pp. 1377-1386, Dec. 1970.

Biologically-Mediated Deterioration of Water Quality During Filtration of Ground Waters

- O'Connor, J. T., and Baliga, K. Y., Control of Bacterial Growths in Rapid Sand Filters, *J. Sanitary Engineering Division, ASCE*, Vol. 96, No. 7, No. SA6, pp. 1377-1386, Dec. 1970.
- Baliga, K. Y., and O'Connor, J. T., Biologically-Mediated Chemical Changes in the Filtration of Aerated Ground Waters, *Journal of the American Water Works Association*, Vol. 63, No. 5, pp. 292-297, May 1971.

Books, Chapters

- O'Connor, J. T., **AWWA Manual on Water Quality and Treatment:**
Chapter 11: Iron & Manganese Removal
Chapter 13: Management of Water Treatment Plant Residues
American Water Works Association, McGraw-Hill, 1971.
- O'Connor, J. T., Editor, **Environ. Engineering Unit Operations & Unit Processes Lab. Manual,**
Association of Environmental Engineering Professors, 210 pp., August 1972.
- O'Connor, T. L. and O'Connor, J. T.,
Control of Microorganisms in Drinking Water,
Chapter 3: Microbially-Mediated Corrosion and Water Quality Deterioration,
O'Connor, J. T., and O'Connor, T. L.
Chapter 8: Rapid Sand Filtration
American Society of Civil Engineers, 2002
- O'Connor, J. T., and O'Connor, Tom, and Rick Twait,
Water Treatment Plant Performance Evaluations and Operations,
John Wiley & Sons, 2009

Removal of Trace Metals: Arsenic, Barium, Cadmium, Mercury and Selenium

- O'Connor, J. T., and Gullledge, J. H, Removal of Arsenic (V) from Water by Adsorption on Aluminum and Ferric Hydroxides,
J. American Water Works Assoc., 65:8:548-552, Aug. 1973.
- O'Connor, J. T., Removal of Trace Inorganic Constituents by Conventional Water Treatment Processes,
Proceedings, 16th Water Quality Conference, University of Illinois, Urbana, Feb. 1974.
- O'Connor, J. T., Removal of Trace Metals by Conventional Water Treatment Systems,
Water and Sewage Works, October 1974.
- O'Connor, J. T., Thiem, L., and Badorek, D., Removal of Mercury from Drinking Water Using Activated Carbon,
Journal of the American Water Works Association, August 1976.
- Thiem, L., and O'Connor, J. T., Removal of Barium, Cadmium, Mercury and Selenium from Drinking Water Supplies,
Municipal Environmental Research Laboratory, ORD, USEPA, Cincinnati, Ohio, 1982

Microbially-Mediated Corrosion and Water Quality Deterioration During Distribution

- O'Connor, John T., Hash, L. and Edwards, A. B., Deterioration of Water Quality in Distrib. Systems,
Journal of the American Water Works Association, March, 1975.
- O'Connor, J. T., and Cromley, T., Effect of Ozonation on the Removal of Iron from a Ground Water Containing Organic Substances,
Journal of the American Water Works Association, June 1976.
- Banerji, S. K., Knocke, W. R., Lee, S., and O'Connor, J. T., Biologically-Mediated Water Quality Changes in Water Distribution Systems (Part I),
Proc., Annual Conference, American Water Works Assn., June 1977.
- Lee, S., O'Connor, J. T., and Banerji, S. K., Biologically-Mediated Deterioration of Water Quality in Distribution Systems, (Part 2),
Proc., American Water Works Association, WQTC, Kansas City, Missouri, December 1977.

Lee, S., O'Connor, J. T., and Banerji, S. K., Biologically-Mediated Corrosion and Water Quality Deterioration,

Proc., American Water Works Association, WQTC, Phila., PA, Dec. 1979.

Lee, S., O'Connor, J. T., and Banerji, S. K., Biologically-Mediated Corrosion and its Effects on Water Quality in Distribution Systems,

Journal of the American Water Works Association, November 1980.

Prakash, T. M., Banerji, S. K., and O'Connor, J. T., Development of a Pipe Manifold System for Monitoring Water Quality in Water Distribution Systems,

Proc., Annual Conference, American Water Works Association, Nashville, TN, December 1982.

O'Connor, J. T., and Banerji, S. K., Biologically-Mediated Corrosion and Water Quality Deterioration in Distribution Systems,

Municipal Environmental Research Laboratory, Office of Research and Development, USEPA, Cincinnati, Ohio, EPA-600/52-84-056 (NTIS Order No. PB-84-157-494) April 1984.

Removal of Organic Substances & THMs by Granular Activated Carbon and Polymeric Adsorbents

O'Connor, J. T., Badorek, D., Thiem, L., and Popalisky, J. R., Design, Construction and Operation of a Pilot Plant for the Removal of Organic Substances from Missouri River Water,

Proceedings, Annual Conf., American Water Works Association, Anaheim, CA, May 1977.

O'Connor, J. T., Plant Operation to Minimize Formation of Chlorinated Substances,

Journal, Missouri Water and Sewerage Conference, Vol. XLIX 1978.

O'Connor, J. T., Badorek, D., and Thiem, L., Removal of Trace Organics from Drinking Water Using Activated Carbon and Polymeric Adsorbents,

Municipal Environ. Research Lab., ORD, USEPA, Cinn., Ohio, 1980.

Badorek, D. L., Thiem, L. T., and O'Connor, J. T., Removal of Trihalomethanes and Total Organic Carbon from Drinking Water by Adsorption onto Several Granular Activated Carbons,

Proc., Amer. Chem. Soc., Symp. on Removal of Organic Substances, Ann Arbor Press, 1981.

Oulman, C., Snoeyink, V., O'Connor, J. T., and Taras, M., Removing Trace Organics from Drinking Water Using Activated Carbon and Polymeric Adsorbents,

Municipal Environmental Research Laboratory, ORD, USEPA, Cincinnati, Ohio, July 1981.

O'Connor, J. T., Pilot Plant Studies of Chlorine and Chloramine Disinfection of Missouri R. Water,

Journal, Missouri Water and Sewerage Conference, Vol. XLVII, 1981.

Banerji, S. K., and O'Connor, J. T., Guide to Comparative Treatment Mode Efficiencies,

Water and Sewage Works, August 1980.

Virus Removal and Inactivation

Reach, C. D., O'Connor, J. T., and Hemphill, L., Virus and Bacterial Quality of Missouri River Water,

Proc., Annual Conference, American Water Works Association, San Francisco, CA, June 1979.

O'Connor, J. T., Hemphill, L., and Reach, C. D., Removal of Virus from Public Water Supplies,

MERL, ORD, USEPA, Cinn., OH, August 1982.

Phosphates and Silicates for Corrosion Control

Banerji, S. K., O'Connor, J. T., and Huang, D., Polyphosphate Additions for Corrosion Control in Water Distribution Systems,

Proc., Natl. Conf. on Env. Eng., American Society of Civil Engineers, Boulder, CO, July 1983.

Banerji, S. K., Bauman, J. E., and O'Connor, J. T., Evaluation of Silicate and Phosphate Compounds for Corrosion Control,

Water Eng. Res. Lab., ORD, USEPA, Cinn., Ohio, EPA/600/S2-87/031, June 1987.

Control of Microorganisms in Water Plant Effluents, Distrib. Systems and Household Plumbing

O'Connor, J. T., Brazos, B. J., Ford, W. C., Dusenberg, L. L., and Summerford, B. E., Chemical and Microbiological Evaluation of Drinking Water Systems in Missouri,
Proceedings, American Water Works Association, WQTC, Denver, Colorado, December 1984.

Brazos, B. J., and O'Connor, J. T., Electron Micrographic Survey of a Drinking Water System,
Proceedings, American Water Works Association, WQTC, Denver, Colorado, December 1984.

O'Connor, J. T., Brazos, B. J., Ford, W. C., and Plaskett, J., Chemical and Microbiological Evaluations of Drinking Water Systems in Missouri: Summer Conditions,
American Water Works Association Annual Conference, Washington, D. C., June 1985.

Brazos, B. J., O'Connor, J. T., and Abcouwer, S. A., Kinetics of Chlorine Depletion and Microbial Growth in Household Plumbing Systems,
Proc., American Water Works Association, WQTC, Houston, Texas, December 1985.

Brazos, B. J., and O'Connor, J. T., A Transmission Electron Micrographic Survey of the Planktonic Bacterial Population in Chlorinated and Non-Chlorinated Drinking Water,
Proc., American Water Works Association, WQTC, Houston, Texas, December 1985.

Brazos, B. J., O'Connor, J. T., and Lenau, C. W., Seasonal Effects on Total Bacterial Removals in a Rapid Sand Filtration Plant,
Proc., American Water Works Association, WQTC, Portland, Oregon, pp. 795-834, Nov. 1986.

Brazos, B. J., O'Connor, J. T., Ford, W. C., Lane, J. L., Dusenberg, L. L., and Summerford, B. E., Variances from Mandatory Disinfection--Eval. and Maint. of Microbiological Quality of Source Waters,
Proc., American Water Works Association, WQTC, Portland, OR, Nov. 1986.

Brazos, B. J., O'Connor, J. T., and Kirchoff, B., Fractionation of Turbidity in the Missouri River,
Proc., American Water Works Association, WQTC, Baltimore, MD, 721-740, Nov. 1987.

Brazos, B. J., and O'Connor, J. T., Relative Contributions of Regrowth and Aftergrowth to the Number of Bacteria in a Drinking Water Distribution System,
Proc., American Water Works Association, WQTC, Baltimore, MD., pp. 433-467, Nov. 1987.

Brazos, B. J., and O'Connor, J. T., Seasonal Effects on Removal of Particle-Associated Bacteria in a Rapid Sand Filtration Plant,
Proc., American Water Works Association, WQTC, St. Louis, Missouri, pp. 577-630, Nov. 1988.

Kirchoff, B., Brazos, B. J., and O'Connor, J. T., Comparative Reductions of Turbidity, Heterotrophic Plate Count and Total Bacteria in a Ground Water, Lime Softening Plant,
Proc., American Water Works Association, WQTC, St. Louis, Missouri, pp. 870-889, Nov. 1988.

O'Connor, J. T., Banerji, S. K., and Brazos, B. J., Water Quality Deter.: Recognizing the Symptoms,
Public Works, Vol. 119, No. 13:44-46, December 1988.

O'Connor, J. T., Banerji, S. K., and Brazos, B. J., Development of a Distribution System Protocol,
Public Works, Vol. 120, No., 1:62-63, 114-115, January 1989.

O'Connor, J. T., Banerji, S. K., and Brazos, B. J., Recommended Chemical and Microbiological Analyses for Distribution System Monitoring,
Public Works, Vol. 120, No. 2:46-48, February 1989.

Brazos, B. J., and O'Connor, J. T., Seasonal Effects on the Generation of Particle-Associated Bacteria During Distribution.
Proc., American Water Works Association, WQTC, Philadelphia, PA, November 1990.

Brazos, B. J., and O'Connor, J. T., Seasonal Effects on the Generation of Particle-Associated Bacteria During Distribution,
J. of Environmental Engineering, Am. Soc. of Civil Engineers, Vol. 122, No. 12, Dec., 1996.

Turbidity and Other Microbiological Surrogates

O'Connor, J. T., and Brazos, B. J., An Assessment of the Use of Direct Microscopic Counts in Evaluating Drinking Water Treatment Processes,
ASTM Spec. Tech. Pub. 1102: Monitoring Water in the 1990's: Meeting New Challenges, 1990.

Brazos, B. J., and O'Connor, J. T., The Effect of Lower Turbidity on Distribution System Water Quality, Research Report, American Water Works Association Research Foundation, 1992.

Wetlands for Tertiary Wastewater Treatment

Stober, J. T. and O'Connor, J. T., Seasonal Evaluations of an Evolved Wetland providing Tertiary Wastewater Treatment: BOD, Nitrate, Phosphate, and Sulfate Reductions,
Proceedings, Water Environment Federation, Annual Conference, Chicago, Illinois, Oct. 1994.

Stober, J. T., O'Connor, J. T., and Brazos, B. J. Winter and Spring Field Evaluations of a Wetland providing Tertiary Wastewater Treatment,
Water Environment Research, Vol. 69, No. 5: 961-968 July/Aug., 1997.

H₂O'C Engineering Technical Publications, 1993 - 2008

Atrazine Removal

Stober, J. T., Brazos, B. J., and O'Connor, J. T.,
Bench-Scale Studies of Atrazine Removal with Powdered Activated Carbon,
Missouri Water and Wastewater Conference, Springfield, Missouri, Sept. 1996.

Removal of Ammonium Ion by Ion Exchange

Brazos, B. J., O'Connor, J. T., and Klekamp, Ken,
Control of Water Quality Deterioration in Water Distribution Systems: Washington, Illinois Employs a Novel Method to Remove Ammonium Ion and Control Nitrification During Distribution, Public Works, Vol. 127, No. 12, November, 1996.

Evaluation of Water Treatment Plant Performance

Brazos, B. J., and O'Connor, J. T.,
Evaluation of Rapid Sand Filters for Control of Microorganisms in Drinking Water:
Parts One and Two, *Public Works, Vol. 128, Nos. 3-4 :March-April, 1997.*

Control of Copper Corrosion

Murphy, B., O'Connor, J. T., and O'Connor, T. L.,
Willmar, Minnesota Battles Copper Corrosion:
Part 1: The Problem and the Search for Effective Treatment Alternatives
Part 2: Nitrification, Bacteria and Copper Corrosion in Household Plumbing
Part 3: Results of Pilot Plant Column and Copper Pipe Test Loop Studies
Public Works, Vol. 128, Nos. 11-13, October, November, December, 1997.

Control of Nitrification in Water Distribution Systems

Murphy, B., O'Connor, J. T., and O'Connor, T. L.,
Willmar, Minnesota Controls Nitrification in the Distribution System
Part 1: Ozonation
Part 2: Breakpoint Ammonium Reduction Treatment
Public Works, Vol. 129, Nos. 10, 11, September, October, 1998.

T. L. O'Connor, Bart Murphy and J. T. O'Connor,
Controlling Nitrification in a Water Distribution System Using Sodium Chlorite
Water Engineering and Management, Vol. 148, No. 9, September, 2001.

Control of Microbial Nutrients in Water Distribution Systems

O'Connor, T. L., O'Connor, J. T. and Gerdes, S.,
Control of Water Quality Deterioration in Water Distribution Systems:
Part 1. Presence of Methane in Illinois Well Water Supplies
Part 2. Removal of Methane at Normal, Illinois
Part 3. Studies of Methane Removal by Aeration
Part 4. Alternatives for Removal of Microbial Nutrients
Water Engineering and Management, Vol. 146, Nos. 3-6, March-June, 1999.

Stream Biomonitoring

O'Connor, T. L. and O'Connor, J. T.,
Stream Biomonitoring Assesses the Impact of Large-Scale Livestock Production,
Water Engineering and Management, Vol. 146, No. 10, October, 1999.

Microbially-Mediated Corrosion and Water Quality Deterioration During Distribution

O'Connor, T. L. and O'Connor, J. T.,
Water Quality Deterioration in Distribution Systems:
Part 1: Recognition of the Role of Microorganisms
Part 2: Microbial Processes in Distribution Mains
Part 3: Microbially-Mediated Deterioration in Ground Water Supplies
Part 4: Microbially-Mediated Deterioration in Surface Water Supplies
Water Engineering and Management, V. 147-148; Nos. 10-12, 1; Oct.-Dec., 2000; Jan. 2001.

Arsenic in Drinking Water

O'Connor, J. T.,
Arsenic in Drinking Water:
Part 1. The Development of Drinking Water Regulations
Part 2. Human Exposure and Health Effects
Part 3. Occurrence of Arsenic in U.S. Waters
Part 4. Arsenic Removal Methods
Water Engineering and Management, V. 149, Nos. 2, 3, 5, 6, February, March, May, June 2002.

Books:

Control of Microorganisms in Drinking Water,

O'Connor, T. L. and O'Connor, J. T.,
Chapter 3: Microbially-Mediated Corrosion and Water Quality Deterioration, pp. 23-50
O'Connor, J. T., and O'Connor, T. L.
Chapter 8: Rapid Sand Filtration, pp. 127-148

American Society of Civil Engineers, 2002, ISBN 0-7844-00635-9

Water Treatment Plant Performance Evaluations and Operations

O'Connor, J. T., and O'Connor, Tom, and Rick Twait
John Wiley & Sons, 2009, ISBN 978-0-470-28861-0